

# Tall Zirā'a

THE GADARA REGION PROJECT (2001-2011)

Dieter Vieweger | Jutta Häser (eds.)

9

**The 2018 and 2019 Excavation Seasons**

The Iron Age, Hellenistic and Early Roman  
Period in Area II

Katharina Schmidt (ed.)





German Protestant Institute of Archaeology  
(GPIA)



Biblical Archaeological Institute Wuppertal  
(BAI)



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Final Report

## Volume 9

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Katharina Schmidt (ed.)

With contributions by H. Blitte, H.-M. Jakubik, B. Jansen,  
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*Dieter Vieweger and Jutta Häser*



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# LIST OF ABBREVIATIONS

## Abbreviated Journals and Series

AA	Archäologischer Anzeiger	PEFA	Palestine Exploration Fund Annual
AAJ	Annual of the Department of Antiquities	PF	Pergamenische Forschungen
AASOR	Annual of the American Society of Oriental Research	PhoenixExOrLux	Phoenix. Bulletin uitgegeven door het Voorazatisch-Egyptisch Genootschap „Ex Oriente Lux“
ADPV	Abhandlungen des Deutschen Palästina-Vereins	RB	Revue Biblique
AJA	American Journal of Archaeology	SHAJ	Studies in the History and Archaeology of Jordan
AMS	Asia Minor Studien	TZ	D. Vieweger – J. Häser (eds.), Tall Zirā'a. The Gadara Region Project (2001–2011). Final Report
AncNearEastSt	Ancient Near East Studies		
AOAT	Alter Orient und Altes Testament. Veröffentlichungen zur Kultur und Geschichte des Alten Orients und des Alten Testaments	TZ 1: Introduction	D. Vieweger – J. Häser (eds.), Introduction. TZ Volume 1 (Norderstedt 2017)
BaM	Bagdader Mitteilungen	TZ 2: Early and Middle Bronze Age	D. Vieweger (with contributions by A. Schwermer and N. Benecke), Early and Middle Bronze Age (Strata 25–17). TZ Volume 2 (Norderstedt 2019)
BarIntSer	British Archaeological Reports. International Series		
BASOR	Bulletin of the American School of Oriental Research	TZ 6: From Hellenistic to Umayyad Period	F. Kenkel – S. Hoss, Hellenistic to Umayyad Period (Strata 8–3). Ceramic, Glass and Metal Finds. TZ Volume 6 (Norderstedt 2020)
Berytus	Berytus. Archaeological Studies		
IEJ	Israel Exploration Journal	TZ 8: Wādī al-‘Arab Survey	K. Soennecken – P. Leiverkus (eds.), Wādī al-‘Arab Survey. TZ Volume 8 (2021)
JdI	Jahrbuch des Deutschen Archäologischen Institutes		
JRS	Journal of Roman Archaeology	ZDPV	Zeitschrift des Deutschen Palästina-Vereins
MedA	Mediterranean Archaeology		
NEA	Near East Archaeology		
OrA	Orient-Archäologie		

## General abbreviations

AE	bronze	h	high
AR	silver	i.e.	id est
c.	circa	Inst	installation
Cat.	catalogue	l	left
cent.	century	L	Locus
cf.	confer	m	metre
Chap(s).	chapter(s)	mm	millimetre
cm	centimetre	n	number
Dia.	diameter	Obv.	obverse
Dism	Dismantling	Pl(s).	plate(s)
e.g.	example given	r	right
etc.	et cetera	Ref.	reference
F	floor	Rev.	reverse
Fig(s).	figure(s)	Tab.	Table
frgt(s).	fragment(s)	W	wall
gr	gram		

## Abbreviations in the catalogue tables

Wth	width
L	length
Th.	thickness
H	height
Dia.	diameter

## Abbreviations for Typology and Ware in *Chaps. 8 and 9*

BSU	fabric group, based on the three fabric groups B, S and U defined by Kenkel in 2012. Used for Hellenistic/Roman fine ware.	FL	fabric group, based on the fabric groups F and L defined by Kenkel in 2012. Used for Persian to Hellenistic amphoras and common ware.
ESA	Eastern Sigillata A; see especially: J. W. Hayes, <i>Sigillate Orientali</i> , in: J.W. Hayes, <i>Enciclopedia dell'Arte Antica Classica e Orientale. Atlante delle Forme Ceramiche II, Rom</i>	JOP	fabric group, based on the three fabric groups J, O and P defined by Kenkel in 2012. Used for Hellenistic/Roman kitchen ware.
		KtEZ	Kochtopf Eisenzeit (Cooking Pot Iron Age): Typology after Schwermer 2015

# PREFACE

*by Katharina Schmidt*

This book presents the results of the 2018 and 2019 activities of the Gadara Region Project.

The publication of this ninth volume of the Tall Zar'a series was made possible by the support and help granted by the authorities of the Department of Antiquities of Jordan and their individual representative members. We are grateful to the German Archaeological Institute (DAI) for their sponsorship of the field and study seasons, as well as for funding the publication of this monograph.

There are many people of our international and interdisciplinary team of experts to thank for their efforts, hard work, great expertise and personal commitment:

Ruben Davtyan, Helen Gries, Brita Jansen, field supervisors; David Burkhardt, Amany al Dabouki, Karlotta Herbst, Philipp Massar, Olaf Schüssler, Erdal Türker, trench supervisors; Benjamin Schröder, registration of small finds; Max Bourceau, Martin Loch, Laith Melkawi, registration support; Antje Cassel, registration and storage management; Samar Shammass and Bettina Springer-Ferazin, pottery, Eva Strothenke-Koch, pottery, lamps and amphora stamps; Maria Bernatzki and Joshua Mende, pottery drawings; Benjamin Schröder and Hans-Martin Jakubik, stone tools; Birte Meller, use-wear analysis, Linda Olsvig-Whittaker, botanical remains; Hélène Blitte, metal finds; Achim Lichtenberger, coins; Brita Jansen, painted wall plaster.

The digitalizations of pottery drawings were carried out by Amany al Dabouki and Bettina Springer-Ferazin. The hand and digital drawings of the small finds were largely carried out by Sereen al Shoubaki and Bettina Springer-Ferazin. The site plans and section drawings as well as photogrammetric plans and SfM (Structure from Motion) models were prepared by Juliane Goischke, who was the surveyor during the field season.

Excavation and site photographs were taken largely by Katharina Schmidt. Most of the object photographs were produced under her direction by Karlotta Herbst and Amany al Dabouki after some training provided by the professional photographer Johannes Kramer. Some objects of the 2018 season were photographed by Mohammad Adi, the plaster fragments were largely photographed by Brita Jansen, the coins by Katharina Martin.

We have to thank all our colleagues from Umm Qays without whose effort, work and support, the excavations would have not been possible, in particular Imran and Ferial Melkawi for taking care of the excavations house and the culinary well-being of the team.

The publication would have not been possible without Brita Jansen and Isabelle Ruben who have to be thanked sincerely for their editorial and translation works.



# INTRODUCTION

by Katharina Schmidt

Tall Zar'a is located in the middle of the Wādī al-'Arab in northern Jordan and was continuously occupied for at least 5000 years, thus offering a unique insight into the way of life in the region.<sup>1</sup> The long continuity of its settlement results from the favourable location of Tall Zar'a on a route between the Jordan valley and the Jordanian highland and from the presence of an artesian spring in its centre, which created optimal settlement conditions over thousands of years.

The first excavation season on the Tall was carried out in 2003 by D. Vieweger with financial support from the Society of Friends of the Biblical Archaeological Institute Wuppertal (BAI). In 2004, D. Vieweger (BAI) and J. Häser (German Protestant Institute of Archaeology [GPIA] in Amman) started a close cooperation that ensured a continuous archaeological and interdisciplinary collaboration for the further excavation seasons and resulted in the establishment of the Gadara Region Project. From this point on, the Gadara Region Project was an integral part of the work of the GPIA Amman, which was continued from 2013 to 2016 by F. Kenkel (Director of the GPIA Amman until 2016), who herself published a comprehensive volume on Hellenistic pottery from the previous field seasons.<sup>2</sup>

The framework for the research on the Tall and in Wādī al-'Arab in general is the Gadara Region Project, which has included a geophysical survey and excavations on Tall Zar'a and the study of the landscape around the site. Altogether 18 excavation seasons were carried out in the years from 2001 to 2010, and an archaeological surface survey was carried out for the area surrounding Tall Zar'a, the Wādī al-'Arab, and the Wādī az-Zaḥar from 2009 to 2012.<sup>3</sup> Systematic excavations concentrated on the north-western slope of the Tall in Area I from 2003 to 2011. Here, settlement structures from the Early Bronze Age to the Hellenistic period were uncovered, thus providing archaeological evidence

of the general settlement sequence. In Area II, in the northern part of the Tall, excavations uncovered parts of the Byzantine, Roman and Hellenistic settlement between the years 2006 to 2009 and 2011. The Byzantine period was also investigated more intensively in Area III, in the southern part of the mound (*Fig. 0.1*).

Since 2018, K. Schmidt has been leading the excavations at Tall Zar'a, still as part of the Gadara Region Project, and which have been receiving funding from the German Archaeological Institute (DAI). A first excavation season was carried out in the autumn of 2018, followed by a spring season in the following year, 2019. Several smaller study seasons were initiated to ensure that the results could be published in a monograph.

The excavation and research seasons that have been conducted at Tall Zar'a since 2018 are dedicated to the settlement history of the Iron Age II to the Hellenistic period in Area II. Iron Age and Hellenistic building structures had already been identified in Area I during the previous excavations, but only relatively few building structures of the Iron Age IIB and C had been detected. Also, the transition between the late Iron Age and Hellenistic period could only be understood to a limited extent in Area I (*Fig. 0.1*).

With the continuation of the excavations, the intention was to gain further insight into the detailed chronological sequence of occupation at Tall Zar'a between the Iron Age II and the Hellenistic period, and in particular to follow up on that period in the northern area of the Tall, in Area II (*Fig. 0.1*). The highest part of the Tall is in the north, where there is the largest accumulation of building debris. Since the Byzantine and early Roman layers had already been removed from here, reaching the Hellenistic and Iron Age layers was possible with relatively little effort (*Fig. 0.2*).

The excavations were therefore carried out in Area II, the northernmost part of the Tall, and this

1 On the Wādī al-'Arab and its surroundings, see in detail TZ 1: Introduction, 20–22.

2 F. Kenkel, Untersuchungen zur hellenistischen, römischen und byzantinischen Keramik des Tall Zirā'a im Wādī al-'Arab (Nordjordanien) – Handelsobjekte und Alltagsge-

genstände einer ländlichen Siedlung im Einflussgebiet der Dekapolisstädte (Dissertation University Cologne 2012) <kups.ub.uni-koeln.de/4977> ([08.08.2021) and TZ 6: From Hellenistic to Umayyad Period.

3 TZ 8: Wādī al-'Arab Survey.

area was investigated for larger building structures. The excavations of 2018 and 2019 were able to demonstrate a massive restructuring of the northern area of the Tall, which took place in the early Hellenistic period and to which a large part of the Iron Age domestic quarters (Iron Age II B) fell victim. This aspect is particularly interesting in view of the geographical proximity to Gadara and the interaction between the two sites.

Several study seasons were dedicated to the reprocessing of the pottery, the stone finds, the painted wall plaster, the metal finds, coins, other types of small finds as well as the botanical remains. Currently, the reprocessing of the bone finds is still pending.

The pottery and a large part of the finds from the excavations at Tall Zar'a are systematically stored in the excavation house Bayt Melkawi in Umm Qays. An expansion and development of further storage facilities was completed in 2017. A selection of pottery and metal finds was taken to Amman directly after the excavations and cleaned by Naif al Zaben at the American Center of Research (ACOR). Thus, the identification of the coins and metal objects for publication was possible very rapidly.

### *General remarks regarding systems and processes used within the publications*

Citation styles are based on the directives provided by the DAI, but have been adapted to the conventions of English language publications.

In order to minimize misunderstanding, the problem of transliterating Arabic and Hebrew words into English spelling using Latin letters for local sites and family names is dealt with by using the transcription of the Oxford Encyclopedia of Archaeology in the Near East (OEANE) or of TAVO (see the Tübinger Bibelatlas). In case of doubt, the spelling commonly used in English-language literature was applied.

In this report the name of the site is spelled Tall Zar'a. This is the name used in the first publications of the Gadara Region Project (e. g. Dijkstra et al. 2009; Vieweger 2002) and corresponds to the transcription of the older Arabic name of the modern location. In contrast, the name Tall Zirā'a, most recently used in the Gadara Region Project, is based on a more recent Arabic version of the name that has moved further away from the ethymological origin of the word.<sup>4</sup>

Other transcriptions include: Tell Zer'ah (MEGA Jordan; Jadis; Kerestes et al. 1977/1978; Glueck 1951); Tell Zer'a (Reicke – Rost 1979); Tell Zara'a/Tell Zara'a (Schumacher 1890 and Steuernagel 1926); Tell Zira'a (Hanbury-Tenison 1984); Tall Zirā'a.

4 I would like to thank Omar al Ghul for this reference.

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# THE STRATIGRAPHY AND ARCHITECTURAL REMAINS

by Katharina Schmidt

The excavations in the years 2018 and 2019 focused on Area II in the very north of the Tall (*Fig. 0.1*). The northernmost part of the Tall is the most prominent and most protected one with a steep slope that drops down 44 m (TZ 1: Introduction, 28). The accumulations in this area were higher than in other parts of the Tall and were investigated in the 2006 to 2009 excavation seasons and again in 2011 (TZ 1: Introduction, 28). Therefore, when excavations started in 2018, the uppermost building layers of the Ottoman, Byzantine and Roman periods had already been documented and partly removed.<sup>5</sup>

The selection of excavation areas for the 2018 season was dictated by the existing Byzantine and Roman structures. Since the walls from these periods were quite massive and partly still standing in places, the excavation trenches were initially in areas with no visible building remains; existing Roman and Byzantine walls were only removed in parts (*Fig. 0.2*). In some places, therefore, the Byzantine and Roman walls represented the boundaries of the excavation areas, e.g. the eastern boundary of AX 129 and AW 129 and the northern boundaries of AW 126 and AW 127.

The trenches were then expanded or reopened during the 2019 excavation season; the selection of expansions was based on the existing contexts and buildings, which are discussed in detail below (*Fig. 0.3*). The remaining Byzantine architectural structures were dismantled in the course of the expansions in 2019. It became clear that some of the Byzantine structures had very deep foundations and had massively disturbed the architecture of the preceding phases. This must be taken into account for the strata near the surface, since the deep Byzantine foundations sometimes led to a serious mixing of layers.

The different excavation areas of Area II were divided into “North”, “West” and “South” (*Fig. 0.4*). The Northern Area comprised the quad-

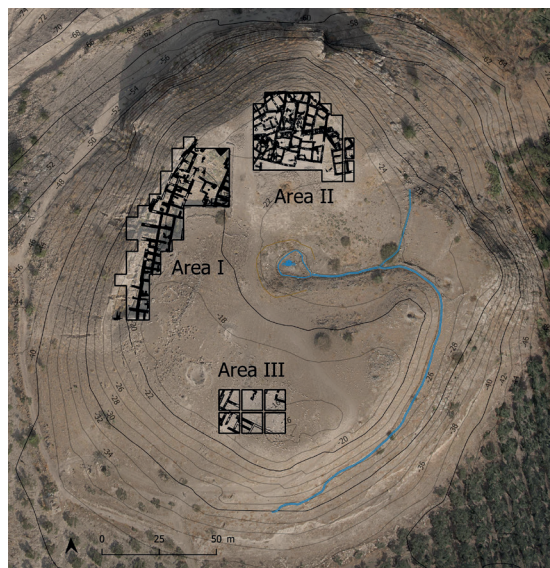


Fig. 0.1 The three excavation areas on Tall Zar'a. The excavations in 2018 and 2019 focused on Area II.

rants AY 127/128, AX 127–129, AW 128/129 and AV 128/129. The Western Area covered AW 126/127 and the Southern Area covered AU 127–131 and AT 127–129. In addition, a test trench was opened in 2019 west of Area II and just north of Area I in AU 123/124 in order to investigate the western part of the large wall W11186 and the western stone massif (*Fig. 0.4*).

A striking architectural feature of Area II, due to its dimensions, was a quarry stone wall (W11186) about 2.5 m thick and c. 35 m long, which had already been partly exposed by the excavations in 2012 (*Fig. 0.2*). The wall ran east-west across almost the entire Tall. At the eastern edge of the Tall the wall broke off abruptly, which was confirmed by cleaning work and a test trench opened in 2019. The break-off of the wall was most probably due to a massive landslide on this side of the Tall at

5 These periods have been and will be presented in the Tall Zirā'a publication series. The Roman period in Area II is being studied by Susan Schütz as part of her doctoral thesis. Frauke Kenkel and Stefanie Hoss published the pottery, glass and metal finds of the Hellenistic to Umayyad peri-

ods, see TZ 6: From Hellenistic to Umayyad Period; Jutta Häser and Susan Schütz are working on the stratigraphy from the Persian to the Umayyad period (TZ Volume 5, in preparation), and Jutta Häser on the Abbasid to the Ottoman period (TZ Volume 7, in preparation).

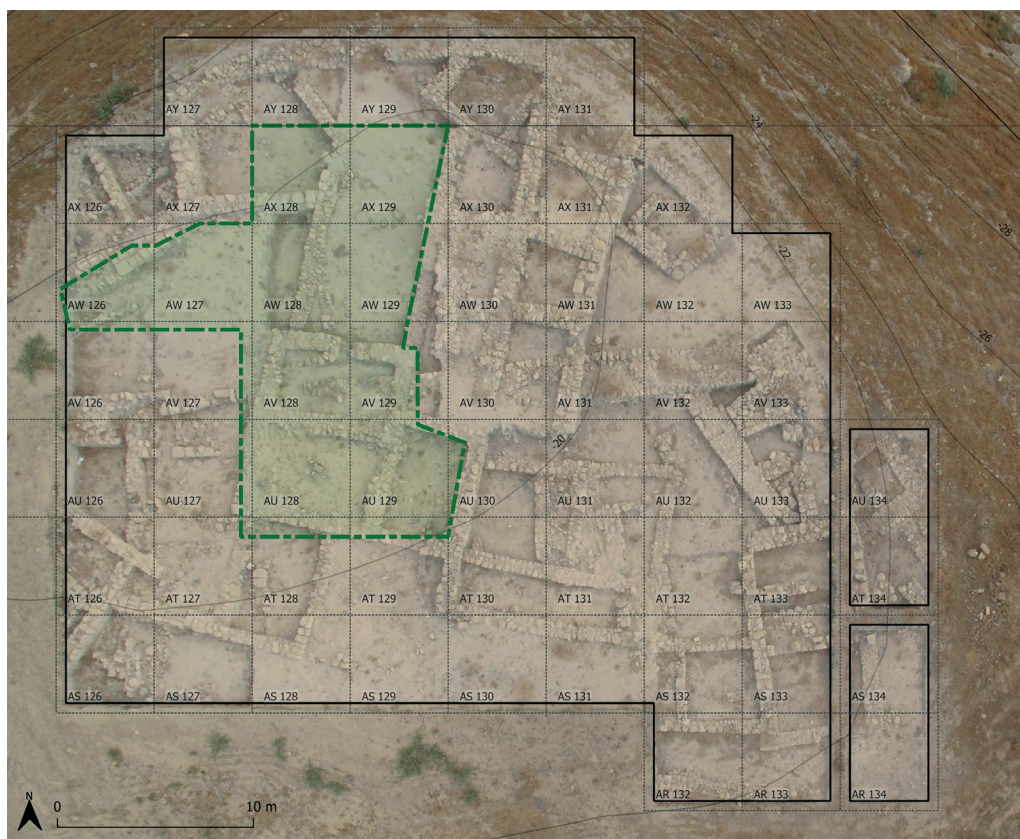


Fig. 0.2 Aerial photo taken in 2012 from a balloon, showing the Roman and Byzantine walls in Area II before the excavation in 2018. The excavation areas opened in 2018 are marked in green.

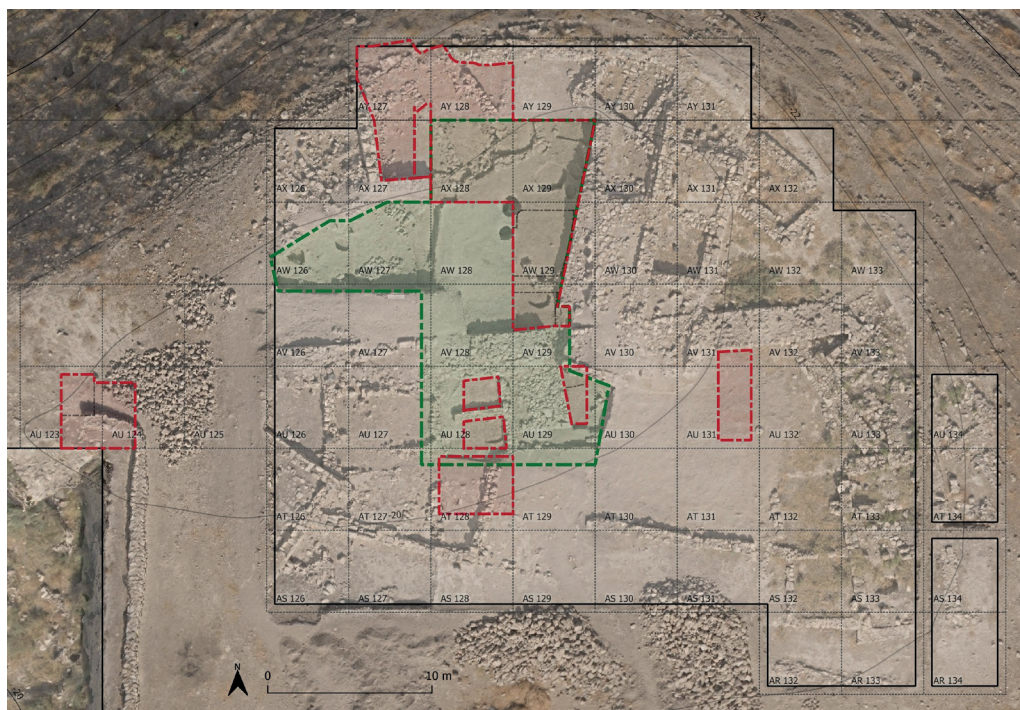


Fig. 0.3 Aerial photo taken by APAAME in 2018 and laid under the excavation grid, showing the trenches opened in 2018 (green) and 2019 (red); Area II.





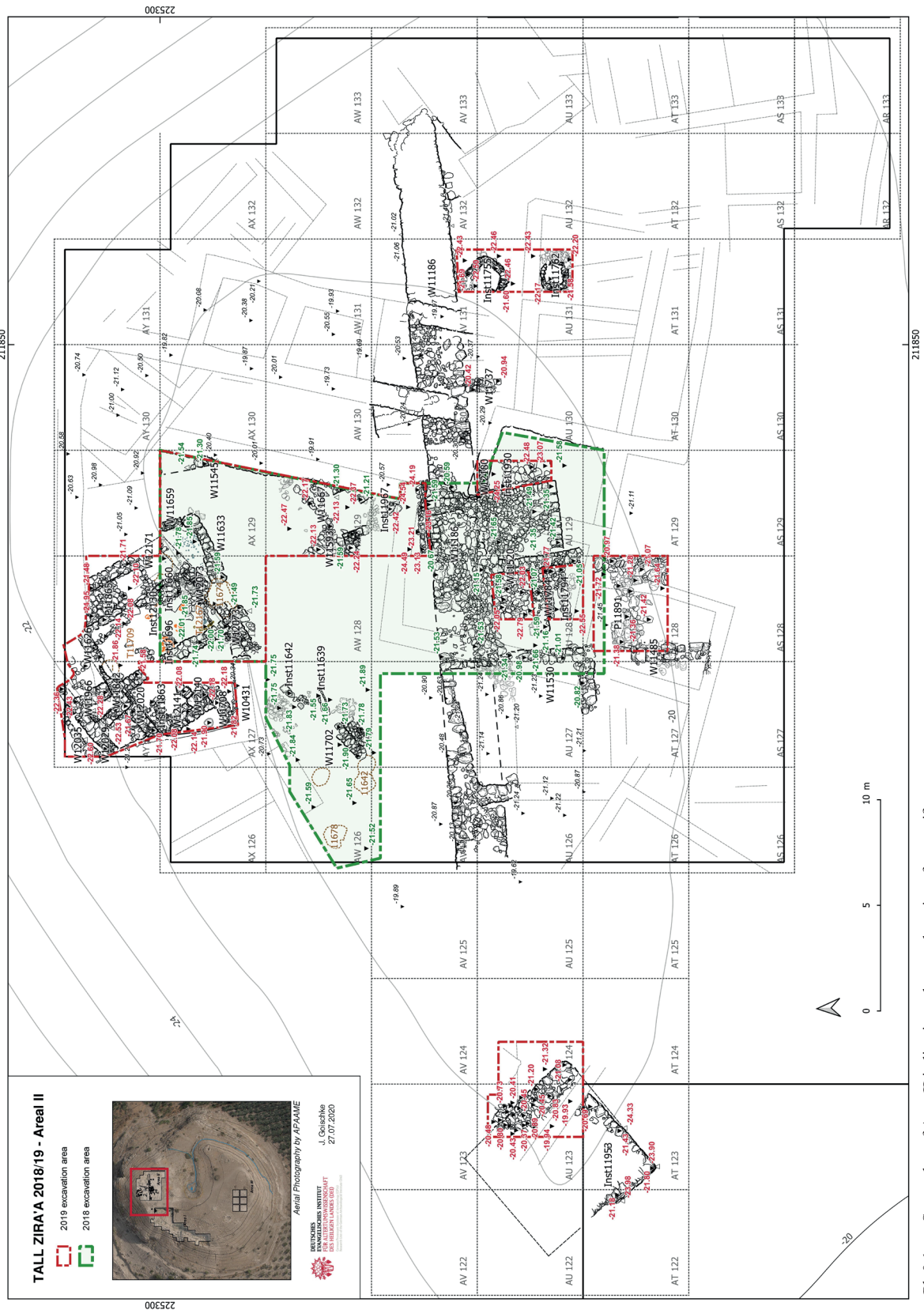
Fig. 0.5 Selection of partially restored ceramic vessels from Area II (from left to right: TZ102289-002, TZ 102298-002, TZ 102208-012, TZ 102163-002)

an unknown date. At its western end, the wall was most likely connected to a stone massif (W11953; *Pl. 0.1*). The stone massif was first excavated in 2009 but its dating has so far remained an open question (see *Chap. 4*). Another stone massif was uncovered in quadrants AU 128/129, which was integrated into the structure of wall W11186.

In addition to the description of the architectural structures, a major focus of this publication is the detailed description of the sequence of layers. For this purpose, a detailed but simplified overview was prepared to show the relationship of the layers to each other (see *Pl. 0.2*). Only the vertical relation-

ships have been taken into account in the illustration, the horizontal relationships of the loci to each other are shown on the plans, which can be found in each chapter.

In the text and on the plans in this chapter, pit (e. g., Pit11111) is used to designate pits; this slight abbreviation represents 'pit locus' (e. g., Pit L11111), and it is also used in the remaining chapters of this volume. The finding numbers (TZ numbers) are given in this chapter without the extension numbers if they are -001 (e.g., TZ 121314-001 is given as TZ 121314). If the extension numbers differ from -001 (-002, -003), they are specified.



Pl. 0.1 Stone plan of Area II indicating relevant elevations for specific structures.



Pl. 0.2 Simplified schematic overview of the stratigraphic sequence of the excavated trenches showing only vertical relations.

# 1. NORTHERN AREA: ARCHAEOLOGICAL AND ARCHITECTURAL EVIDENCE

The Northern Area comprised the squares AY 127/128, AX 127–129, AW 128/129 and part of AV 128/129. The northern excavation boundary was marked by the edge of the Tall, the eastern boundary by the later Byzantine building structures, the southern boundary was the large wall W11186, and to the west, the area was bordered by the trench borders of AX 127, AY 127, AW 128 and AV 128 (*Fig. 0.4*)

Architectural remains were only preserved at the northern edge of the Tall and comprised the remains of Building A and to its west, a small corner

of Building B. Building A is largely attributed to the Iron Age II period; so far three building phases have been excavated, the major one of which was Phase 2 (see *Chap. 1.3*).

The area south of Building A and north of the large wall W11186 was characterized by numerous pits, some of which were over a metre deep. Only a few structural remains were uncovered here, which could not be assigned to any larger architectural complex. Directly north of the large wall W11186, in AV 129, a deep sounding was dug to examine the outer wall face of W11186 (*Fig. 4.1*).

## 1.1. Area with Pits (AW 128/129, AV 128/129)

### 1.1.1. Description

Most of the Northern Area consisted of a large open space without any major structures in it. The schematic overview (*Pl. 0.2*) shows the extent to which this area was interspersed with pits, some of which were over a metre deep, such as Pit11505/11595/11592 and Pit11508. The pits were dug from different levels. Also, in many cases, it was not possible to define the edges of the pits; in addition, many of the pits were close together or intersected each other, so that it was not possible to separate them accurately. Therefore, in some cases it was difficult to attribute finds to a specific pit with any certainty or even to the surrounding loci, and so the possible mixing of contexts must often be taken into account. The finds from the pit area show a broad date range between the 3<sup>rd</sup> cent. BCE and 3<sup>rd</sup> cent. CE, although the majority of finds can be attributed to the 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE.

Three mayor different layers from which the pits were dug could be identified, although the actual walking horizons corresponding to the pits could only be identified in a few cases (*Pl. 0.2* and *Figs. 1.1, 1.5*). The layers were generally slightly higher in the north of the area than in the south and the pits are discussed below from the oldest to the youngest. An absolute chronology of the layers could not be defined because of the difficulties described above.

The upper layer (L11500, L11507) was reached immediately after clearing the surface layer of where the previous excavation ended, which contained the head of a broken terracotta figurine depicting a lion or perhaps a dog (TZ 112816-001/L11500; see *Chap. 17.1*), which is difficult to date (Hellenistic or Roman), a Hellenistic coin (TZ 112851-001/L11500; see *Chap. 18*), a fragment of a chalkstone vessel (TZ 112809-001/L11500; see *Chap. 13*), and some pottery lamp fragments, TZ 112827-001, TZ 112826-001 (2<sup>nd</sup> to 1<sup>st</sup> cent. BCE), TZ 112801-001 (2<sup>nd</sup> to 1<sup>st</sup> cent. BCE) and TZ 112849-001, TZ 112845-001 (Roman period): all from L11500 (see *Chap. 10, Cat. 10.24; 10.26; 10.28; 10.32; 10.38*). The pits in this layer in the north (AW 128/129) were dug from an elevation of about 21.00 BSL (below sea level), and in the south (AV 128/129) from about 21.15 BSL (*Pl. 0.2*).

The pits dug from the upper layer in the north of the trench were Pit11503/11535, 11538, 11534, 11504, 11505/11592/11595, 11539, 11504 and 11531/11588/11589/11657, and in the south, Pit11513, 11510, and 11508. In the south, six small, almost round pits (Pits11537, 11532, 11509, 11506, 11512, 11536) that were arranged in two almost parallel rows were uncovered and they contained no finds (*Pl. 0.2* and *Fig. 1.1*). Because of their sizes and overall arrangement, these pits can be inter-

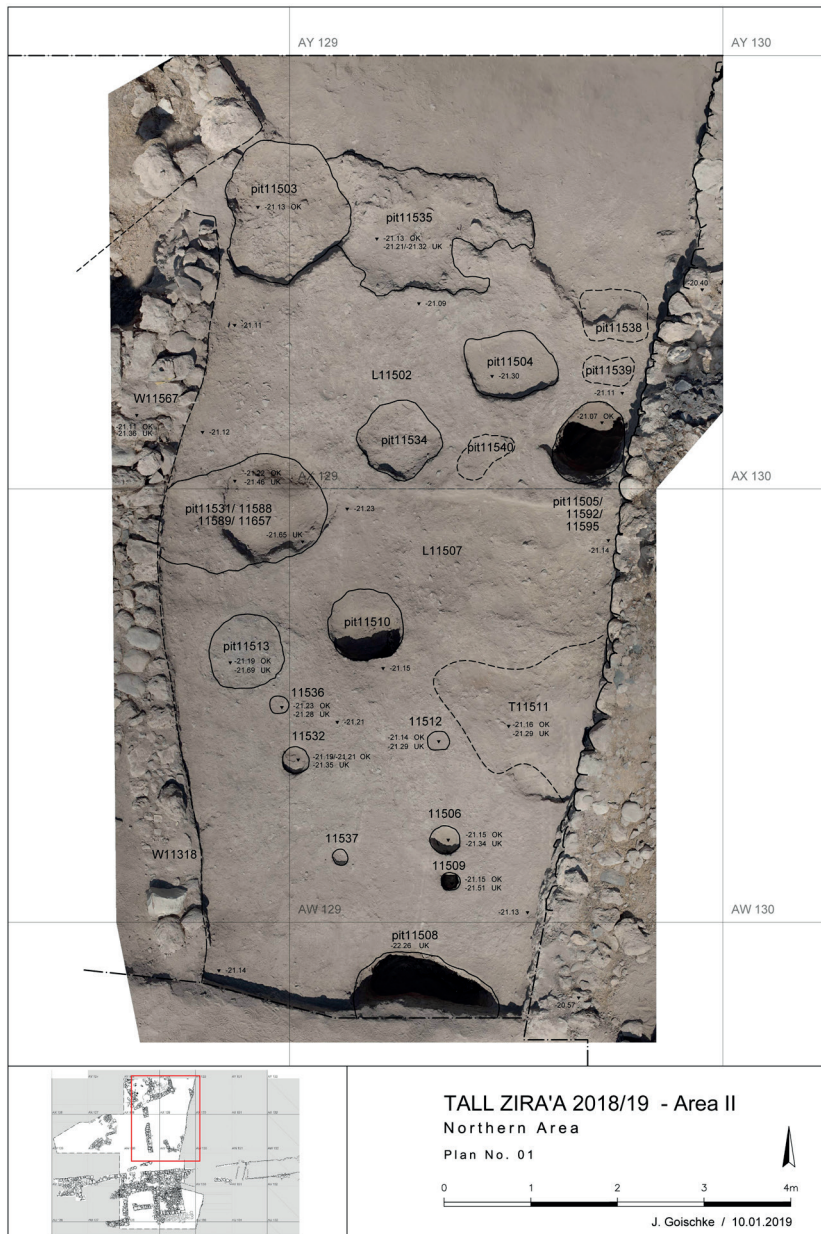


Fig. 1.1 Plan of the pits in the upper layer in the Northern Area. On the left and right side of the plan, the later Byzantine walls border the trench; these were studied previously.

preted as postholes, which probably indicated the presence of a tent or shade roof here. To the east of the postholes, there was a spread of fragments of a *tabun* (T11511), its foundations were recognized at a lower level (21.30 BSL). Around this *tabun* a hard, light beige beaten earth floor (no number) was identified. The depth of the pits in the upper layer varied from a minimum of 0.10 m (Pit11534, 11504, 11538, 11539, 11540), to over 0.30–0.40 m (Pit11503/11535, 11531/11588/11589/11657, 11513, 11510), up to maximum of over 1 m (Pit11505/11595, 11508).

Pit11503/11535 in the very north of the area had no clearly visible edges and was heavily dissected by recent roots. The pit fill contained a lot of pottery and a small amount of bone; noteworthy finds were a broken glass rod with comparisons in the Roman period (TZ 122847-001/L11503; see *Chap. 17.2*), a lamp fragment (TZ 112848-001/L11503; see *Chap. 10*), and a hammer stone (TZ 112892-001/L11503; see *Chap. 12*).

Pit11505/11592/11595 was almost 1 m deep, was circular in plan, had a clearly recognizable edge and had almost vertical, straight walls (*Fig. 1.1*). The fill

was brown, loose and mixed with stones, and contained a large amount of pottery and bones, as well as *tabun* fragments. Two stamped amphora handles came from this locus; for handle TZ 113318-001/L11505 (*Chap. 11*) the reading of the eponym Σύμμαχος, points to a date of 198–163 BCE; handle TZ 113283-001/L11595 falls in the period from 205–121 BCE; 205/198–175/161 BCE or 145–121 BCE. Two lamp fragments, TZ 113379-001/L11592 and TZ 113281-001/L11592, also point to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE (see *Chap. 10*). Two stone rings made of basalt were also found in this pit (TZ 113205-001/L11592 and TZ 113479-001/L11592; see *Chaps. 12; 16.4; 19*).

Pit11531/11588/11589/11657 lay in the west, was clearly visible on the surface, and was almost a metre deep (*Fig. 1.1*). The fill was loose, brownish humus, and contained many pottery sherds and animal bones, as well as a large amount of ash. A coin of Antiochos IV (175–164 BCE) was found here (TZ 113118/L11588; see *Chap. 18*), as well as two stamped amphora handles: TZ 113050/L11588 carries the name of Σώστρατος (207–202 BCE), and TZ 113106/L11588, though poorly preserved, a dating of the piece to the Hellenistic period is probable (*Chap. 11*). Also a Hellenistic lamp fragment (TZ 113143/L11588; see *Chap. 10*) was found, as well as a gaming piece made of stone (TZ 113025/L11588; see *Chap. 12*).

Pits11538, 11534, 11539, 11504, 11510 were very flat compared to the pits discussed above, and their edges were difficult to identify (*Fig. 1.1*). There were almost no finds from these pit fills, except from Pit11534 in which a shoulder fragment of a pottery lamp was found (TZ 113260: 3<sup>rd</sup> to 5<sup>th</sup> cent. CE; see *Chap. 10*).

The loci (L11502) surrounding the pits contained very few finds in comparison to the pits. One of the few datable finds was the fragment of an early Roman chalkstone vessel (TZ 112832; see *Chap. 13*), which was found in L11502 and dates to between 63 BCE and 135 CE.

In the southwestern area, there was a circular Pit11513 (*Fig. 1.1*). The fill contained hard, brownish earth interspersed with a lot of ash and charcoal, as well as stones. Apart from ceramics and bones, a Rhodian amphora handle (TZ 112808/L11513; see *Chap. 11*) that carries the stamp name of the eponym Αρατοφάνης, who can be attributed in a time between 210 and 108 BCE, was found in this pit.

The irregular Pit11508 was in the southern part of the trench; its edge was sharp and clearly vis-



Fig. 1.2 Pit11590 which initially looked like two different pits was later identified as one pit; next to it (lower left) is the deep Pit11505/11592/11595.

ible and it widened slightly towards the bottom (*Fig. 1.1*). It was almost 1.20 m deep, and filled with heterogeneous, loose brown deposits, which contained a lot of pottery, bones, stones and remains of a *tabun*; a hammer stone (TZ 112861) and a sling stone (TZ 112912) were also found (see *Chap. 12*), as well as metal and glass fragments.

Pit11591 was slightly below the first layer and about 0.30 m deep and had an irregular, rounded shape (*Pl. 0.2*). The pit contained a lot of ashy material and remains of a *tabun*, as well as many finds including large amounts of pottery, large iron fragments, bone and two stamped amphora handles. The stamp on the amphora handle TZ 113204 points to a date between 174/160 and 146 BCE, and handle TZ 113203 to the period between 205/198 and 175/161 BCE (*Chap. 11*). Also, a basalt bowl (TZ 113277) and a ring made of basalt (TZ 113205) were found here (see *Chaps. 12 and 16*). Use-wear analysis indicates that the ring was used as a fly wheel of a pump-drill or crank-drill, or perhaps even a spacer used on the bearing of a potter's wheel (see *Chap. 19.4*).

Pit11586 was shallow and irregular, and contained an ashy, brown to dark brown fill with almost no finds (*Pl. 0.2*).

Pit11590, in the northern part, was about 0.40 m deep, and the edges of the pit were only vaguely visible (*Fig. 1.2*). Apart from a considerable amount of charcoal, pottery and bones, an intact chalkstone bowl (TZ 113077; see *Chap. 13*), typical of the early Roman period (63 BCE–136 CE), was found; five metal objects and a glass fragment have not yet been analysed.



Fig. 1.3 Close-up of the surface of Pit 11590 with the almost intact early Roman chalkstone vessel TZ 113077.



Fig. 1.4 Wall W11593 and W11667 forming a hoof-shape structure; pit 11508 (left).

Within the surrounding locus L11550 (*Pl. 0.2*), two lamp fragments (TZ 112924, TZ 113087; see *Chap. 10*) were found, both dating to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE, as well as a fragment of an early Roman chalkstone mug (TZ 113096; see *Chap. 13*). This layer was also characterized by a large number of bones and accumulations of ash in several places.

In the southern part of the trench, L11541, L11587 and L11594 formed the surrounding deposition layers (*Pl. 0.2*). L11541 was immediately north of the large wall W11186, and west of Pit 11508. Here, a coin (TZ 112921/L11541; see *Chap. 18*) was found, dating to the time of Alexander Jannaeus (103–76 BCE). Also, a carnelian bead (TZ 112894), a sling stone (TZ 112896), and a quern (TZ 112919) should be mentioned (see *Chap. 12*). In the underlying layer L11594, two lamp fragments (TZ 113196, TZ 113314; see *Chap. 10*) dating from the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE were found. The soil in this area was soft and of a light beige colour, containing a large amount of pottery and bone. L11587 did not contain any significant finds.

A distinct walking horizon was associated with some walls in the southern part of the Northern Area: Wall W11593 and W11667 formed to an irregular rectangular installation which was open to the north, thus forming a hoof shape (*Figs. 1.4* and *1.5*). The installation was c. 1.76 m long (N–S) and c. 1.47 m wide (E–W), the wall was a maximum of 0.55 m thick and only two layers were preserved. W11593 ran into the east profile and was built of unworked boulders, and basalt stones, which in places had large gaps in which ceramics, bones and flint objects were found. The stones of

W11593 were more carefully chosen than for the rest of the structure. W11667 was only poorly preserved and represented the eastern angle of the installation. L11658 was the deposit within W11593 and W11667, and contained hardly any finds. Furthermore, no trace of fire could be found, so this structure was neither a stove or fireplace nor a waste pit. The loci around the installation were L11662 to the south, L11661, L11614, L11572 and L11651 to the west, and L11693 to the north (*Pl. 0.2* and *Fig. 1.5*). In L11572, three lamp fragments (TZ 113200, TZ 113171 and TZ 113176; see *Chap. 10*), all dating to 2<sup>nd</sup>–1<sup>st</sup> cent. BCE, were found, and in L11651 there was a rubbing stone (TZ 113380; see *Chap. 12*).

Building A, Phase 1 was in the northern part of the trench, and it is discussed in detail below in *Chap. 1.3*. The deposits surrounding Building A, Phase 1 were L11695 and L11630, and below them L11971/11974 and L12011 (*Fig. 1.5*). Both loci were dug down from the layers where the earlier excavations had ended. L12011 and L11974 contained a large number of finds, among them three Hellenistic coins: TZ 114361 dates to the reign of Typhon (142–138 BCE), TZ 114360 and TZ 114456 to the Hellenistic period (see *Chap. 18*). A Rhodian amphora rim with stamped handle (TZ 102200-002; see *Chap. 11*), which can be attributed to the same period (145–109 BCE), was also found here; a lamp fragment, TZ 114425, also came from this context, which could not be dated (see *Chap. 10*). Other finds included an early Roman chalkstone bowl (TZ 114475; see *Chap. 13*), and a weaving-pattern spatula (TZ 114980; see *Chap. 16*) were found as well as gaming pieces



Fig. 1.5 Plan of the pits and some architectural remains of the lower layer in the Northern Area. On the right, a late Byzantine wall borders the trench.

made of bone (TZ 114328-001 and TZ 114328-002/L11974), a bone tool (TZ 114979/L12011; see *Chap. 15*), an iron bar (TZ 114347/L12011), a plate with nail (TZ 114348/L12011), a copper alloy strike plate (TZ 114349/L12011; *Chap. 14*), a sling stone (TZ 114512/L11974), and a quern (TZ 114271/L11974; *Chap. 12*).

Several pits, which were cut from a higher level, were located here (Pits11631/11655, 11632 and 11697; *Pl. 0.2* and *Fig. 1.5*). The pits had no clearly detectable edges, and were between 0.20

and 0.35 m deep. Pit11631/11655 contained very loose, dark brown soil, ceramics and bones were found throughout the pit fill. They contained a stone mould, that was most likely used to make jewellery (TZ 113366/L11631 see *Chaps. 12* and *17*), for which there are comparisons from the early Roman period. There was a large number of undiagnostic pottery sherds, and a number of larger stones and pebbles should be mentioned. Pit11697 contained loose, ashy soil and large fragments of charcoal.

### 1.1.2. Interpretation

The area with pits begins directly north of wall W11186 and extends north to the southern wall of Building A over a N–S length of over 10 m, and covering about 8 m E–W. This area remained largely unbuilt, and thus served as an open space. A large number of pits, postholes and remains of ovens were found here. The presence of ovens indicates baking and cooking activities in this area, while the postholes could point to a tent or simple roof structures. The simply built horseshoe-shaped structure in the south of the Northern Area must also be seen in the context of these domestic activities and possibly served as a shelter. The large number of pits, which were dug from different levels and some of which reached a

considerable depth (over 1 m), suggests that, apart from the domesticated activities, the Northern Area functioned mainly as a dump. The finds from this area fall into a broad chronological range between the 3<sup>rd</sup> cent. BCE and 3<sup>rd</sup> cent. CE, but most were from the 2<sup>nd</sup>–1<sup>st</sup> cent. BCE. Thus, the pit field was certainly created in the Hellenistic period and possibly continued to be used as such into the Roman period. If this area is placed in the larger settlement context, the pit field must be considered in relation to the large wall W11186. W11186 was still in place in Hellenistic times, as discussed in *Chap. 4*, and the pit field was, therefore, located outside this wall and can thus be interpreted as a waste dump.

## 1.2. Deep Sounding in AV 129

### 1.2.1. Description

A deep sounding was dug directly north of the large wall W11186 in AV 129 in order to investigate the course and profile of wall W11186, to examine its foundations and its date (*Fig. 0.4*).<sup>6</sup>

The deposits in the sounding were assigned locus numbers at regular intervals in order to determine possible chronological changes as accurately as possible. Floor levels could only be identified in a few cases, in the form of beaten earth floors; most of the locus numbers, therefore, only indicate artificial divisions between the different layers. The total depth of the trench was c. 2.90 metres. By the end of the season in 2019, the foundations of wall W11186 had not been reached, but information on the construction of the wall was obtained, (see *Chap. 4*). In the following, the different loci within the sounding are discussed in detail from the earliest to the latest deposit, with particular regard to the finds and the <sup>14</sup>C dates that were obtained, in order to evaluate the chronological sequence.

The lowest horizon excavated was a floor level of a hard, light-beige beaten earth that was assigned the numbers F12169, F12168, and F12170. The deposit on top of the floor consisted of dark brown, homogenous, partly ashy soil (L12160, L12161,

L12159). Situated in the northeast, L12159 contained large amounts of ash (*Pl. 0.2* and *Fig. 1.6*). Two <sup>14</sup>C samples were taken from these lowest excavated layers (F12169/L12159) of the trench and they fell, with high probability, between 1209 and 1019 BCE (*Chap. 21*). The finds comprised a few pottery sherds, only five of which were diagnostic pieces, and bones. One fragment of an open oil lamp (TZ 114605/L12160; see *Chap. 10*) can be attributed to the early Hellenistic period. In L12161, a coin (TZ 114576; see *Chap. 18*) was found which was too worn to identify. In the overlying deposits only a few diagnostic sherds were found, such as two fragments of a ceramic jug (TZ 102326-002 and -003), probably Hellenistic in date; a rim fragment of a common ware jug (TZ 102315-002/L12159), probably Hellenistic; and a rim of a common ware amphora (TZ 102315-003/L12159) from the late 2<sup>nd</sup> cent. BCE (see *Chap. 9*). There was also one rim fragment of a small jug with funnel mouth (TZ 102332-002/F12168) and a rim fragment of a cooking pot (TZ 102314-002/L12160), which both point to the Iron Age, probably to the Iron Age I (see *Chap. 9*). The lowest layers of the sounding were thus heavily mixed in terms of find material, as both Iron Age I

6 Another deep sounding was dug on the southern side of the wall, see *Chap. 3.2.3*.

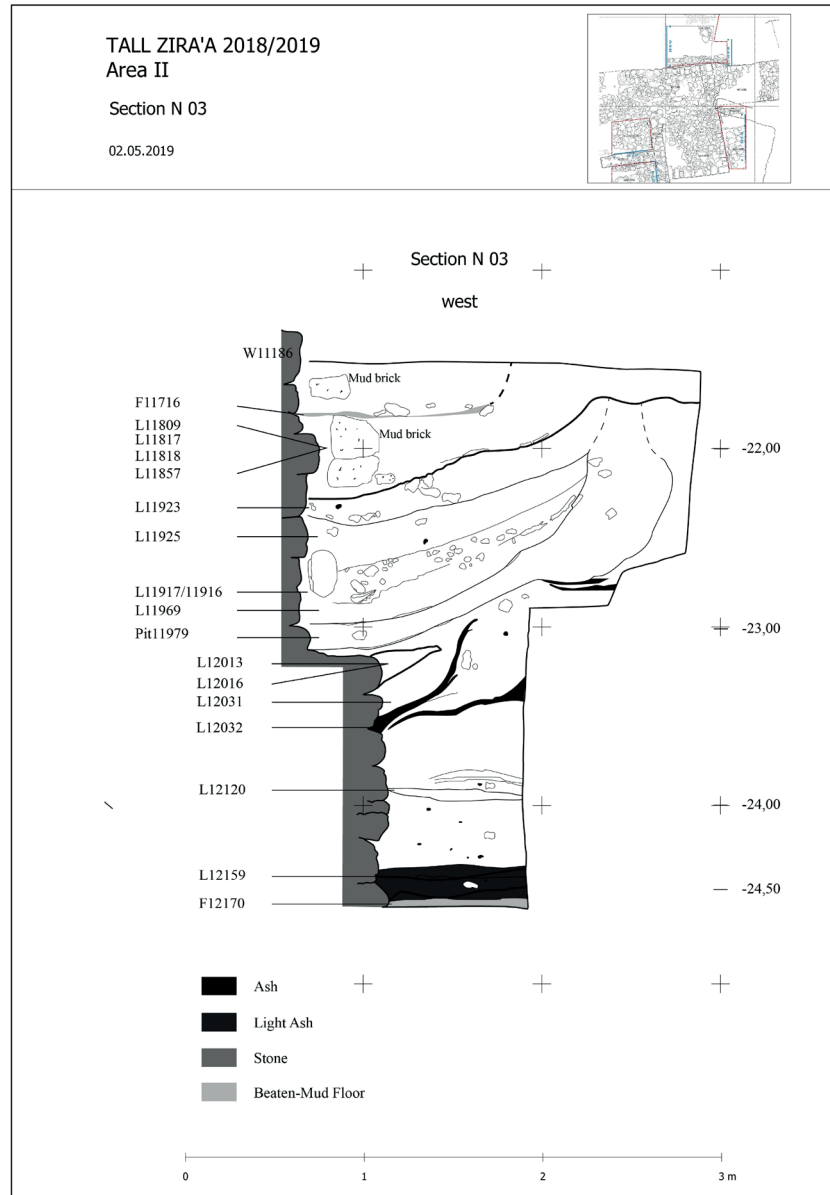


Fig. 1.6 West section of the sounding in AV 129.

and II and Hellenistic material was found there; the  $^{14}\text{C}$  dates pointed to the Iron Age I.

Above the ash layer there was a continuous deposition layer c. 0.80 m thick, which was only occasionally interspersed with clay bands, such as L12120. The deposit comprised L12137, L12138, L12136, L12127, L12120, L12126, L12121, L12119, L12116, L12115, L12059, L12089, L12086, L12087, L12080, L12081 and L12078. For the exact sequence of the layers (see *Pl. 0.2* and *Fig. 1.6*). The loci were artificially separated from each other, however, no differences in the con-

sistency of the earth was observed despite the clay bands. The soil was light brown, heterogeneous, and in places very firm and loamy. It also contained inclusions of burnt clay, gravel and stones as well as ash and charcoal in places. These deposits produced only a few finds, including pottery and bones. The few diagnostic sherds were: in L12127, a Late Bronze Age “milk bowl” (TZ 102295-011), and Hellenistic/early Roman rim sherds (TZ 102295-004, TZ 102295-006); in L12126, the rim of an Iron Age cooking pot (TZ 102283-004); in L12078, fragments of an Iron Age jug (TZ 102245-002); and in

L12119, an Iron Age cooking pot (TZ 102285-002) and the rim of a Hellenistic fish plate (TZ 102285-004; 2<sup>nd</sup> BCE – 1<sup>st</sup> cent. CE; see *Chap. 9*).

The loci above were L12032 and L12024 and consisted of a dark brown to blackish, clay-rich soil with considerable amounts of ash, stones and ceramics. The soil was relatively soft; the ash-rich layer extended over the western part of the trench to the northern profile. This layer was easily distinguished from the layers below (*Pl. 0.2* and *Fig. 1.6*). Few finds came from these deposits, and they included pottery, bone (among them bone tool TZ 115012), metal finds and shell fragments. A <sup>14</sup>C sample was taken from L12032, and it fell into the time span of 1326–1257 BCE with 95% confidence (*Chap. 21*). In L12016, a needle (TZ 114342; see *Chap. 14*) made of copper alloy was found, as well as a rubbing stone (TZ 114618; see *Chap. 12*); in L12013, a bone tool (TZ 115012; see *Chap. 15*) and a fibula bow (TZ 114457; see *Chap. 14*) dating to the Iron Age were found. Only a few diagnostic sherds could be identified: In L12016, a mix of Iron Age II and Iron Age I (TZ 102208-007, TZ 102208-003, TZ 102208-012; *Pl. 0.1*) and Hellenistic pottery (TZ 102208-002, TZ 102208-008, TZ 102208-005, TZ 102208-010; *Fig. 0.5*) were identified; the same was the case for L12013: TZ 102199-003 and -004 are Iron Age in date, and TZ 102199-005 can be identified as a Hellenistic Eastern Sigillata A (ESA) fragment (see *Chap. 9*).

Pit11979 stretched over the entire width of the trench, and was filled with different layers up to c. 22 BSL (*Pl. 0.2* and *Fig. 1.6*). The fill of the large pit was not homogeneous being composed of layers of different consistencies, which were distinguished as follows. The lowest layer of the pit fill, L11979, consisted of light beige clay interspersed with remains of clay brick; above this, L11969 consisted of clay-rich soil with ash inclusions, and some small- and medium-sized stones, gravel and charcoal soot. The deposits above were L11916, L11917, which were also heterogeneous with many inclusions of gravel, sand, soot and occasionally charcoal and ash; all these deposits were very clear in the western and eastern sections (*Pl. 0.2* and *Fig. 1.6*). A number of pottery and bone fragments and some metal remains came from these layers, including a copper alloy garment pin (TZ 114224/L11916; see *Chap. 14*) probably Hellenistic in date, as well as four diagnostic Iron Age sherds (TZ 102141-002 and -005, TZ 102141-004, TZ 102141-003; see *Chap. 9*).

Higher up, the pit fill consisted of L11925, L11923, L11867, L11902, L11861, L11909, L11907 and L11893 (*Pl. 0.2*). These loci were heterogeneous deposits, interspersed with stones, pebbles and many finds and pottery. The finds include a bone tool (TZ 114952/L11925; see *Chap. 15*), metal objects, such as an iron spike (TZ 114192/L11923), a copper alloy pendant/bell (TZ 114177/L11923), a copper alloy spatula (TZ 114139/L11923), an iron bar (TZ 114195/L11867), and an iron ring (TZ 114137/L11861; see *Chap. 14*), glass fragments and stone artifacts. L11861 yielded a coin (TZ 114093; see *Chap. 18*) dating to the time of Antiochos IV (175–164 BCE); also the heads of two different anthropomorphic figurines (TZ 114202 and TZ 114203; see *Chap. 17*), which can probably be attributed to the 2<sup>nd</sup> cent. BCE. In L11902, a fragment of an oil lamp was found (TZ 114250), which could point to the late Iron Age or early Hellenistic period; another lamp came from L11867 (TZ 114249; see *Chap. 10*) of unknown date. L11923 contained a handle of a Rhodian amphora (TZ 102085; see *Chap. 11*), which can be attributed to the Hellenistic period. A number of diagnostic pottery sherds were identified, mostly Hellenistic in date, but also a few Iron Age II sherds (see *Chap. 9*). L11907 contained a coin (TZ 114204/L11907; see *Chap. 18*) dating to the Hellenistic period; also a fragment of lamp (TZ 114248/L11907; see *Chap. 10*) that points to a Hellenistic or Roman date (1<sup>st</sup> cent. BCE to end of 1<sup>st</sup> cent. CE); four Iron Age II diagnostic sherds were identified, as well as two late Iron Age/Persian, and one Hellenistic sherd (TZ 102129; see *Chap. 9*). In L11893, an iron nail (TZ 114174; see *Chap. 14*), and the fragment of a flint sickle (TZ 114459; see *Chap. 12*) were found, apart from ceramics (TZ 102099; see *Chap. 9*), which included eight diagnostic Iron Age sherds, most of them Iron Age IIB, and five sherds which point to the Persian/Hellenistic or possibly early Roman period, as well as a large number of bones.

The layer that was deposited above comprised L11857, L11818, L11817, L11813 and L11809 (*Pl. 0.2* and *Fig. 1.6*). The soil of these loci was heterogeneous, grey-brown, solid material, containing inclusions of sand and gravel, as well as lumps of clay and mud brick fragments. Remains of a *tabun* were found scattered in the upper loci. The layers were also rich in pottery, stone artefacts, bones, metal, pyramidal loom weights (TZ 114723/L11857, TZ 113965/L11818, 113966/L11818, TZ 113969/L11818, 113967/L11817, TZ 113885/

L11809, TZ 113886/L11809, TZ 113987/L11817; see *Chap. 16*), and there was also a copper alloy needle (TZ 114098/L11857), and an iron nail (TZ113957/L11817; see *Chap. 14*). L11818 contained a Rhodian amphora handle (TZ 102016; see *Chap. 11*) which dates to the 2<sup>nd</sup> quarter of 2<sup>nd</sup> cent. BCE. A coin (TZ 113877; see *Chap. 18*) was found in L11809, which was too worn to identify. With regard to the diagnostic pottery (TZ 101997; see *Chap. 9*), six Iron Age II B and nine Hellenistic sherds were identified in L11809.

F11716 was a floor level that had *tabun* T11715 and which was covered by deposits L11712 and L11710 (*Pl. 0.2* and *Fig. 1.6*). The floor was scattered with ceramics, bone, metal finds including a copper alloy fragment (TZ113749/L11712) and lump (TZ113750/L11712, see *Chap. 14*), and loom weights including a pyramidal loom weight (TZ113859/L11710, see *Chap. 16*). The best comparisons for the pyramidal loom weights point to the period between the Iron Age IIC and the Hellenistic period (see *Chap. 16*).

### 1.2.2. Interpretation

Trench AV 129 was a narrow but deep sounding excavated in many arbitrary layers, each of which

was assigned a locus number in order to identify possible changes in the material culture and thereby find dating evidence for wall W11186. The analysis of the individual layers and their finds shows that down to the deepest excavated horizon, F12169/12170/12168, the find repertoire was mixed; the finds mainly fall into the Iron Age I, II and the Hellenistic period, although a Late Bronze Age milk bowl fragment was also found there. The sediments in the lower part of the trench were deposited horizontally, but in the upper part a large pit (Pit11979) was cut into the ground and it extended east-west along the wall W11186 (*Fig. 1.6*). Pit11979 contained a heterogeneous fill; the finds date to the Iron Age and Hellenistic period, though some pottery sherds can be attributed to an early Roman date. The strong intermixing of the finds in the sounding shows that reconstruction works must have taken place in this area directly in front of wall W11186. The reconstruction works most likely took place in the Hellenistic period, since no material later than the Hellenistic was found in the lowest layers of sounding AV 129. Isolated finds possibly dated to the early Roman period were found only in the uppermost layers of trench AV 129, and these could have arrived there as a result of the overlying large Pit11508 (*Fig. 1.5*; *Pl. 0.2*).

## 1.3. Buildings A and B

### 1.3.1. Building A, Phase 1

The most recent phase of Building A was Phase 1 (abbreviated to Building A/1), of which only a small part remained (*Figs. 1.7* and *1.8*).

Only the southern boundary of Building A/1 remained, consisting of wall W11633. Its northern and western boundaries were destroyed by later building activities. W11633 ran SSW–NNE, and was disturbed by Pit11674 in the west (*Figs. 1.7* and *1.8*). The wall consisted of unworked boulder stones with an average size of  $0.47 \times 0.44$  m. In the western part, the wall was double-faced, in the east it was a single row of stones. The eastern end of the wall was significantly wider and ended with a large corner stone. It is possible that Building A/1 was open to the east, as no wall was detected below W11659, and then only at a later stage this opening would have been blocked by

wall W11659 (1 m long, 0.40–0.52 m wide) that ran north from wall W11633 (*Pl. 0.2*). The stones of W11659 were significantly smaller (max.  $0.21 \times 0.12$  m, min.  $0.09 \times 0.10$  m), and less carefully placed; there was an 0.08 m-wide gap between W11659 and W11633, indicating a later blocking. No other architectural feature of this phase was preserved.

The floor F11665 of Building A/1 consisted of small pebbles and gravel embedded in a hard layer of clay. The floor was detected immediately north of W11633 and extended westward to end at an accumulation of large stones, which were most likely the remnants of the destruction of the building. The eastern boundary of the floor was W11659 (*Fig. 1.7*). Directly on top of the pebble floor F11665 was an ash layer (L11656) containing much charcoal,

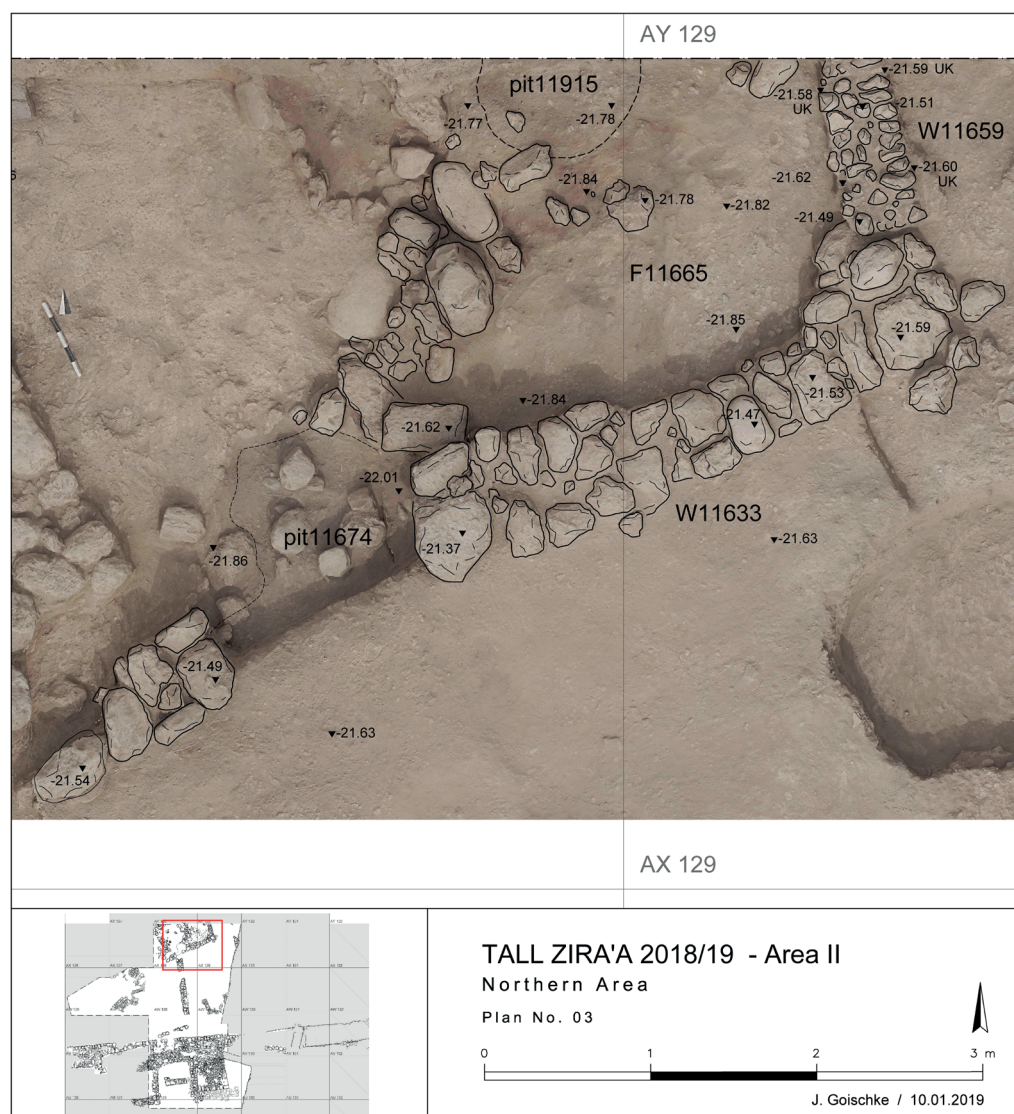


Fig. 1.7 Plan and orthophoto of Building A, Phase 1.

which indicates fire inside the room. The deposits above the ash layer comprised L11652, L11636 and L11613, which consisted of dark brown earth mixed with ash. There were many large stones within these loci which could be the remnants of the building's destruction. Only a relatively small amount of pottery and bone was found. Floor F11665 and its deposits were disturbed by a later pit (Pit11915) in the north, which also cut deeply into the previous phase of the building (Building A/2), and which resulted in some pottery mixing in Room 2 (Fig. 1.8). A  $^{14}\text{C}$  sample was taken from a piece of a charcoal from floor F11665, which gave an absolute date of 766–536 BCE at 95% confidence, and does not allow

for a more specific chronological attribution of this layer (*Chap. 21*). With regard to the finds, a mortar (TZ 113373/L11656), a quern (TZ 113464/L11656), and a large grinding stone (TZ 113455/L11636) were found directly associated with floor F11665 (see *Chap. 12*). Conclusions about the dating of the context cannot be drawn from these objects, but assumptions on the function can be made: The fact that floor F11665 was made of pebbles indicates that this area was most likely a courtyard, and the working stones suggest that food preparation activities might have been carried out in this open space.

Only a small number of diagnostic sherds were found in Building A/1, and these came solely from

L11636: A bowl sherd TZ 102341-002 points to an Iron Age IIC date, the other sherds indicate an Iron Age IIB date; TZ 102341-004 can most probably be identified as a Chocolate-on-White Ware sherd of the Late Bronze Age. The Late Bronze Age sherd points to some considerable mixing that must have occurred, which is also suggested by a much later early Roman chalkstone vessel (TZ 113363/L11656; see *Chap. 13*) found close to Pit11915 (*Figs. 1.7 and 1.8*). Despite the Late Bronze Age sherd, the composition of the assemblage from L11636 is of interest (Iron Age IIC and IIB). Similar assemblages were also found in L11864, L11899, L11896 and L12021. What these assemblages have in common is that they are different from the consistent Iron Age IIB assemblages from Phase 2 and 3 in the sense that, as well as Iron Age IIB pottery, they also contain Iron Age IIC and early Hellenistic pottery; so far, Iron Age IIC pottery has only been identified in these contexts. It should be noted that, currently, a certain percentage of the pieces from L11636, L11864, L11899, L11896 and L12021 cannot yet be assigned to a particular period (see *Chap. 9*). On the basis of comparisons with other sites, Shammas identifies these assemblages as more recent than those found in Phase 2 and 3 of Building A, which belong to the Iron Age IIB period (*Chap. 9*). Stratigraphically, Building A/1 is more recent than Building A/2, however, the possibility must remain open that Pit11915 could also be responsible for mixing the contexts with later material. This is also likely because the pit edges were difficult to identify (*Fig. 1.7*).

### 1.3.2. Building A, Phase 2

Building A/2 is approximately  $8 \times 9$  m in size, and consisted of four rooms (Rooms 1–4). The extent and layout of the whole building could not be determined, because parts of the northeastern corner as well as the western part of the building lay outside the excavation limits. The northern part of the house was eroded (*Figs. 1.8 and 1.9*).

The north side of Building A/2 was formed by wall W12029, which lay right on the edge of the Tall, the east side by wall W11732, the south side by wall W12142, and the west side by wall W11690. The northern wall W12029 followed the contour of the slope from west to east and was therefore slightly curved; only fragmentary parts of it were preserved. The stones of the wall were of different sizes (max.  $0.19 \times 0.25$  m, min.  $0.8 \times 0.14$  m) and the joints were

Fig. 1.8 Simplified schematic overview of the stratigraphic sequence of Building A.

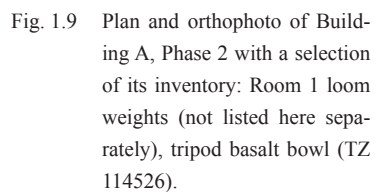




Fig. 1.10 Partition wall separating Room 1 from Room 2 with installations Inst11868, 11856, 12130, 11660 and 11898, from the north.

filled by numerous very small stones. The eastern wall of Building A/2, wall W11732, ran NW–SE and was preserved over a length of 4.10 m (NW–SE), it was 0.65 m wide and 0.40 m high (two courses). The wall was built directly on top of an underlying mud brick wall, W12171, which was part of the earlier, Phase 3, building (*Chap. 1.3.4*). The stones were of irregular sizes between  $0.22 \times 0.40$  m and  $0.27 \times 0.35$  m. The southern bounding wall (W12142) was also very fragmentary. W12142 was partly disturbed by a later pit (Pit11674) and was partly demolished during a later renovation in Phase 1 (*Chap. 1.3.1*). Wall W11690, on the west side, was a double-faced wall, 0.60 m wide and 3.45 m long; the wall was 0.60 m high in the north, where three courses were still preserved, but only 0.15 m high in the southwest. W11690 ran NW–SE; the stones were unworked and were of different shapes and sizes (max.  $0.30 \times 0.40$  m, min.  $0.22 \times 0.25$  m). Building A/2 consisted of five spaces (Rooms 1–4), but the entrance to the building remains unclear.

### Room 1

Room 1 was the largest room and was in the centre of the building. It had a beaten earth floor, F11708

in the north and F11689 in the south; the elevation of the floor decreased to the north towards the edge of the Tall (*Fig. 1.9*). The entrance to Room 1 was in the north and was indicated by threshold Th11911. Room 1 was separated from Room 2, in the east, by a partition wall (no number) which ran NW–SE, parallel to W11690 and against which a number of installations were built (Inst11868, 11856, 12130, 11660; *Fig. 1.10*).

Inst11898 was in the southeastern corner of Room 1, and attached to the western wall of Room 1 (W11690) was Inst12172, containing remains of a circular structure that was most probably a *tabun* (T12123). Inst11696, which lay to the south of Inst12172, consisted of irregular stones set in a semi-circle as well as some large and thick pottery sherds placed against the stone structure. *Tabun* T11709 was situated in the middle of the northern part, directly in front of the entrance to Room 1.

Traces of fire, in the form of large quantities of ash, were found around all the installations in the northern part of Room 1. They can thus be interpreted as hearths (Inst11868, 11856, 11696) and bread ovens (T11709, Inst12172/12123). It is, therefore, likely that the northern part of the room was used for cooking and baking activities which required fire installations. In contrast, Inst11660 and Inst12130,

as well as the rest of the southern part of the room, did not have any traces of fire.

Inst11868 was almost rectangular ( $1.37 \times 1.00$  m), abutting wall W11626 to the north and Inst11856 to the south. Inst11868 was built of boulders ( $0.30 \times 0.30 \times 0.25$  m,  $0.27 \times 0.35 \times 0.13$  m,  $0.54 \times 0.34 \times 0.19$  m), and between the south end and the northwest corner, a quern (TZ 114585/L12176; see *Chap. 12*) was found in a secondary context built into the inside face of the installation. The fill within the installation contained a lot of ash, so it was most probably a hearth. In the immediate vicinity of the installation, a doughnut-shaped loom weight (TZ 114722/L12176; see *Chap. 16*) was found in addition to pottery sherds (TZ 102330/L12176) and bones (TZ 114928/L12176).

Inst11856 was connected to the south end of Inst11868, and was an oval-rectangular shape. Its walls were built of quarry stones but stone tools were also found in the walls, such as rubbing stones (TZ 114619/L12012 and TZ 114581/L12175), a fragmented basin (TZ 114596/L12175), and an architectural element made of granite (TZ 114610/L12175; see *Chaps. 12* and *19*). The fragmented basin and the architectural element were most likely re-used in this context, but the situation was not clear with regard to the rubbing stones. The inside of the installation was filled with solid homogeneous soil that contained a lot of ash and charcoal. Many pottery fragments, among them a fragment of a jug or flask (TZ 102056/L11856), a fragment of a cooking pot (TZ 102331-003/L12175), and a bowl, (TZ 102331-002/L12175) were found. Furthermore, calcined bones (TZ 114122, TZ 118495/L12175), a rubbing stone made of basalt (TZ 114073-001/L11856; see *Chaps. 12* and *19*) and many clay lumps, some of which were heavily burnt in parts were found in these loci. The rubbing stone must have laid in the fire for quite some time, as there were traces of burning on its surface (see *Chap. 19*). Like Inst11868, this installation was also identified as hearth.

Across the room, on the west side, attached to the western wall Inst12172 was preserved to a height of 0.25 m. It consisted of two structures, the outer one was a semicircular stone structure (Inst12172), and the inner one was a rounded clay structure that could probably be interpreted as a *tabun*. Within the clay structure there was ashy soil that contained a small amount of pottery (TZ 122280) and bone (TZ 114984; *Fig. 1.9*)

In the north of the room, in the centre close to the entrance, were the remains of a round *tabun* T11709

(*Fig. 1.9*). The diameter could no longer be determined due to its poor condition. The *tabun* was in the middle of an ashy area, and a mortar (TZ 11373) was also found in it. The poor state of preservation and the worked stone suggest that the *tabun* was no longer in use at the time of the collapse of the house. In general, the floor in the entrance area was very tidy, only a few objects were found there. Also, the hearths contained almost no finds or ceramics; most of the finds, which were mainly made of stone, were built into the walls of the installations.

The deposits which were directly on floor F11708 in the northern part of Room 1 were L11671 and L11704, and above L12132, L12134 and L12123 (*Figs. 1.8; 1.9*). The soil of L11671 consisted of loose, dark brown silty soil with a high concentration of ash and charcoal. A doughnut-shaped loom weight of unfired clay (TZ 113713) was found in the very northeastern part of the room and it most likely belonged to the group of loom weights found in L11687 (see *Chap. 16*). Other finds included a drill socket (TZ 113722/11671; see *Chaps. 12* and *19.4*), a quern (TZ 114534/L12132), and pottery sherds (TZ 101947/11671) which included two fragmented cooking pots (Type 1a and 2a; see *Chap. 7*). The botanical remains from Room 1 were minimal; only a few traces of *Vitis vinifera* (domestic grape) were found here (see *Chap. 20*).

Installations Inst11660 and Inst12130, in the southeastern part of the room, showed no traces of fire (*Figs. 1.8; 1.9*). In the southeastern corner of Room 1 was Inst11898, which consisted of a number of large, irregular boulders, partly standing upright to a height of c. 0.60 m (*Fig. 1.11*). The boulders were significantly larger than the size of boulder usually found in Building A/2. Inst11898 consisted of one large boulder with several smaller stones around it and which connected to W12142. A surprisingly large number of light-coloured clay lumps were found around this installation, which was not the case in other parts of Room 1. It is possible that Inst11898 served as a support for roof beams, and the clay lumps may then have been part of a ceiling, or some sort of plastering that was attached to the boulders. A similar construction of roof-supporting stone slabs was preserved at Tall Abu al-Kharaz, where, however, they were placed in the centre of the room (phase XIV; Fischer 2013: 42, *fig. 26A*).

Within Inst11898, covered by stones of the same installation, the intact stamp seal TZ 114329 with two caprines flanking a tree was found, which is well dated to the Iron Age I to III (see *Chap. 17*). The seal



Fig. 1.11 Southeastern corner of Room 1 with Inst11898 with the large flat stone and the upright stone and the adjoining rectangular Inst11660 and Inst12130.

was buried when the house collapsed and slipped between the large stones of Inst11898; however, it is also possible that the seal was either deliberately hidden or was accidentally lost here (Fig. 1.12). However, based on the situation in which it was found, it is clear that the seal belongs to Phase 2 of Building A. Furthermore, many complete stone tools (see *Chaps. 12 and 19*) were found in the corner of the room around Inst11898; among them were a large fragmented grinding stone (TZ 114171:  $0.17 \times 0.10$  m), a grinding stone which was most likely still in the process of manufacture (TZ 114274; see *Chap. 19.4*), a hammerstone (TZ 114158), a rubbing stone or pestle (TZ 114395) and a sling stone (TZ 114207), as well as pottery including a plate and a jar (TZ 102097; see *Chap. 7*). All the tools were most likely part of the floor inventory, which was buried by the roof and walls when the house collapsed; however, it cannot be ruled out that some of the pieces had been used as building material. With regard to the quern TZ 114274, use-wear analysis showed that the quern was most likely still in the process of manufacture (see *Chap. 19*). It seems reasonable to assume that the many stone tools, including the unfinished quern (TZ 114274), were stored in this part of the house, between Inst11660 and Inst11898.



Fig. 1.12 The stamp seal (TZ 114329) *in situ*, (on the stone that the N arrow is pointing to) in the installation Inst11898 and the large upright standing stone.

North of Inst11898 is installation Inst11660 (Figs. 1.9; 1.10; 1.11). The soil within the boundary was brown and soft with only a few traces of ash (L11897) and only a few undiagnostic pottery sherds (TZ 102095). Just north of it was semicircular Inst12130, 0.54 m wide, built of six irregular boulders (max.  $0.29 \times 0.14 \times 0.18$  m). Various fills (L11855) were excavated within the installation. The lowest consisted of dark, very homogeneous



Fig. 1.13 Tripod bowl TZ 113519 in situ next to wall W11690 and upside down on the large stone which cannot be seen yet; one of the 24 doughnut-shaped loom weights is already visible.



Fig. 1.14 Inventory in the southern part of Room 1: The 24 loom weights are lined up along wall W11690, next to the large stone on which the tripod bowl TZ 113519 lay upside down, and the two broken cooking pots in the middle of the room.

material, above which sat a light, sandy layer with blurred edges, the colour of which varied from white to grey to slightly reddish. Above Inst11660, in L11691, fragments of broken mud brick were found and a few undiagnostic sherds were scattered in the fill.

On the western side of Room 1, Inst11696 was built against wall W11690 (Fig. 1.9). The installation was c.  $0.40 \times 0.50$  m wide, and consisted of a bed of flat chalkstones and irregular basalt stones (c.  $0.10 \times 0.15$  m). Above the flat stones, there was a large amount of ash (L12133) from which a charcoal sample was taken for  $^{14}\text{C}$  analysis. The results show that, with 95% confidence, there is a 100% chance that the sample dates to 802–771 BCE (see Chap. 21). Large vessel fragments were found that belonged to a cooking pot (Type 1a) and a bowl (see Chap. 7), as well as a pumice abradar (TZ 114531; see Chap. 12). Use-wear analysis indicates that the tool was used as an abradar for stone, the residues point to a connection with wall plaster, suggesting the possibility that it was used in connection with stone walls and plaster (see Chap. 19). Inst11696 was lined by a structure of unfired clay, sealed by a hard clay packing. This was again surrounded by a stone circle consisting of larger, angular stones. The soil around this installation contained ash and small pieces of broken mud brick, in particular in the area next to the wall. Due to the large amount of ash as well as the presence of cooking pot sherds, Inst11696 is interpreted as a hearth/cooking installation.

The beaten earth floor F11689 in the southern part of the room was overlaid by L11687/11699, L11614/11694 and L11691 (Fig. 1.8). The deposit consisted of a silty-clayey soil, partly containing

ash, which increased around Inst11696. In places and in particular in the upper part of the deposit, a higher concentration of broken mud brick occurred sporadically. The deposition layers above these comprised L11692 and L11585, which could also be included as part of the usage horizon of the house. A charcoal sample for  $^{14}\text{C}$  analysis was taken from L11694 and it falls, at a confidence of c. 50%, into the period between 656 and 549 BCE, but with a c. 30% chance of dating to 789–739 BCE (see Chap. 21).

In the southwestern part of Room 1, directly adjacent to the wall (W11690), 24 doughnut-shaped loom weights made of unfired clay were found in L11687 (TZ 113578, TZ 113713, TZ 113546, TZ 113570, TZ 113575, TZ 113566, TZ 113567, TZ 113569, TZ 113577, TZ 113544, TZ 113547, TZ 113542, TZ 113576, TZ 113545, TZ 113548, TZ 113550, TZ 113572, TZ 113543, TZ 113551, TZ 113571, TZ 113574, TZ 113565, TZ 113541, TZ 113549). Further loom weights of this kind were found in L11691 (TZ 113444; TZ 113444), and in L11671 (TZ 113713; see Chap. 16; Figs. 1.14 and 1.15). The loom weights were found in soil with a substantial amount of crushed mud brick, and directly next to them, lying upside down on the top of a large natural rock, was a complete tripod bowl (TZ 113522/L11691) made of basalt (Figs. 1.13 and 1.15). Next to this, a polisher or rubbing stone (TZ 113519/L11699) was found. Use-wear analysis showed that the rubbing stone TZ 113519 served multifunctional purposes, such as pecking, abrading and polishing. Use-wear analysis of the surface of the tripod basalt bowl TZ 113522 showed traces of micro-fibres in addition to circular striations and abrading which indi-



Fig. 1.15 Selection of the room inventory of Room 2 (Building A/2): ceramic decanters TZ 113492 and TZ 113372; tripod bowl TZ 113519 and selection of dough-nut-shaped loom weights.

cates repeated, circular movements (see *Chap. 19.4*). The large stone on which the tripod was placed upside down could have been used as a base for rubbing and pounding (see *Chap. 19*), the abrading tool TZ 113519 may very well have been used in combination with the large stone and/or the tripod bowl (TZ 113519; *Figs. 1.13 and 1.15*).

In the middle of the room, two complete ceramic decanters (TZ 113492/L11691, TZ 113372/L11585; *Pl. 7.7*) were unearthed (*Fig. 1.15*). Decanter TZ 113372 with a kettle rim and TZ 113492 with a slightly everted rim are almost complete, and have a low ring bases, a single handle, and have a characteristic layer of red slip. These pieces can be safely attributed to the Iron Age IIB (8<sup>th</sup> cent. BCE) with comparisons from level XIV in Tell Abu al-Kharaz (Fischer 2013, fig. 419:9), and from Tell er-Rumeith stratum VIB (Barako–Lapp 2015, fig. 3.31: 9; see *Chap. 7*). In addition, two broken cooking pots (TZ 101924-002/L11691 and TZ 101866/L11585) were found lying in a heavy concentration of ash surrounded by small pieces of pottery, flint and bone. Several of the cooking pots are of medium and large sizes. One of these pots (TZ 101866/L11585) has a potter's mark on its handle, which is a simple circular imprint; the rim of this pot is straight with a rounded section and dates to the Iron Age IIB (see *Chap. 7*). The other objects found directly on the floor comprised a stone spindle whorl (TZ 112913/L11585; see *Chap. 16*), which most likely belonged together with the loom weights, a fragment of a quern (TZ 113463/Locus11585), and a grinding stone (TZ 113454/L11585; see *Chap. 12 and 19*).

## Room 2

Room 2 was situated east of Room 1 and was most likely entered from Room 1 (Fig. 1.9), as indicated by a large flat stone that lay on the ground, south of installation Inst11856, which may have served as the threshold (Fig. 1.16). Three-quarters of Room 2 was covered by a pavement (F11865) made of large rounded boulders (max. 0.40 × 0.25 m; min. 0.21 × 0.23 m). The stones were carefully chosen and all had a flat surface; the gaps between the stones were carefully filled with smaller stones. Such stone pavements, that are not necessarily part of a courtyard, have been found, for instance, at Tall Abu al-Kharaz (Fischer 2013: 42, fig. 26A). Pavement F11865 lies south of W11626 and wall W11732 lies east of it. The deposit above the pavement, L11853, contained no finds but large amounts of ash and broken mud brick fragments, most likely resulting from the collapse of the walls (Fig. 1.18). There must have been nothing on the floor, unless there were perishable materials, although no traces of seeds or grains were detected.

In the southern part of the room, the pavement was disturbed but continued further south with two rows of stones. At the south end, the room was disturbed by a later pit, Pit11915, that cut through floor F11906 (Fig. 1.16). The deposit in the disturbed part of the room (L11854) contained finds such as a rubbing stone (TZ 114159), which could have been used as an “all round” tool for hammering, rubbing and polishing; it might even have been in contact with a hard material such as metal (see *Chaps. 12 and 19.4*). Apart from this, there were a number of diagnostic sherds (TZ 102062), which can be attributed to the Iron Age IIB period (see *Chap. 7*).

A layer c. 0.30 m thick lay immediately above the floor over the entire room (L11824, L11843, L11845) and thus belonged to Phase 2. The deposition layer above comprised L11733 and L11727, which belonged to Phase 1 (Fig. 1.8). L11824, L11843 and L11845 bear witness to the destruction of Building A/2: The entire layer was characterized by a heterogeneous, hard, greyish-brown soil, partly containing loamy sediment which was relatively loose and soft. The soil contained remnants of broken mud bricks partially burnt secondarily, and large pieces of charcoal, possibly from charred wooden beams. There was also a scatter of large stones (0.15 × 0.12 m) which were partly charred.

Finds from the layers above (L11733 and L11727) comprised pottery TZ 102020/L11733



Fig. 1.16 Room 2 with pavement F11865, wall W11732 and Pit11915, view from the west.

and TZ 101982/L11727 dating to the Iron Age IIB (L11733) as well as to the Hellenistic period (L11727), which indicated a mixing with younger material (see *Chaps. 1.3.1* and 7). There was also a loom weight (TZ 113968/L11733), a bone with cut marks (TZ 114048/L11733), an architectural element made of basalt (TZ 114048/L11733) and a basalt plate (TZ 114088/L11733). The basalt plate TZ 114088 was examined for use-wear by Meller (see *Chap. 19.4*) and provided interesting results: It used to hold some kind of organic and mineral material, which remained on the surface of the slab under a mineralized crust. Meller suggests that it most likely relates to the processing of pigments with an organic binder.

Floor F11906 in the south of the room was a beaten earth floor that included a lot of pebbles. It was cut by Pit11915. The edges of this pit were first clearly identified in L11896, but large amounts of ash had already been detected above it in the overlaying loci. Therefore, it cannot be excluded that the pit was later than the floor (*Fig. 1.8*). This is supported by a glass fragment that was found in the pit that belonged to an almost transparent glass vessel which was most likely blown, and thus dates to no earlier than the Roman period (TZ 114643). Pit11915 was round and filled almost the entire southern part of the room. L11896 and L11899 were the deposits on top of floor F11906, and next to the pit. L11864, L11870, and above this layer L11858, comprised the deposits within the room further north. The soil was light brownish-grey and hard throughout, and was heterogeneously mixed with inclusions of smaller stones, crushed ceramics and large bone fragments. L11896, which was directly on top of F11906 was

very hard, homogeneous, grey earth with only a little pottery and bone. Among the finds were bone tools (TZ 114972/L11896 and TZ 114972/L11896), and two fragments of a possible bone lid or palette (TZ 114972-002, TZ 114972-003/L11896; see *Chap. 15*), two copper pendants or bells (TZ 114194 and TZ 114193/L11899; see *Chap. 14*), a grinding stone (TZ 114226/L11899), two sling stones (TZ 114422 and TZ 114466/L11899), a game piece (TZ 114553/L11899), a rubbing stone (TZ 114392/L11864), and a burin (TZ 114706/L11864; see *Chap. 12*).

### Room 3 and Room 4

The northern part of the house, consisting of Room 3 and Room 4, was right on the northern edge of the Tall, and the northern boundary wall W12029 was almost completely eroded away (*Figs. 1.8* and *1.9*).

Room 3 was bounded in the west by wall W11894 (Phase 2) and in the south by wall W11842 and W11626; the eastern boundary lay outside the excavated area. Room 3 was clearly connected to the rest of Building A by threshold Th11911 leading to Room 1. It was, however, unclear, whether Room 3 could also be accessed from outside, from the north or from the east. The floor of Room 3 consisted of a yellowish beaten earth floor F12023 which abutted threshold Th11911. The surface of the floor was poor in finds, and only a few pottery sherds were found here (TZ 102215). The deposition layer (L12008) on top of the floor contained a few pottery sherds and bones only (*Fig. 1.8*). The finds from this layer were, however, heavily mixed with material from later periods because of a later wall that disturbed this context.

Room 4 was west of Room 3, and was bounded in the south by wall W11841, and in the east by W11894 (Phase 2). The northern wall W12029 (Phase 2), which had almost completely eroded away, was built directly on top of an earlier wall W12029 (Phase 3), and was also bonded into W11894 (Phase 2; *Fig. 1.18*). W11894 was built of unworked stones and was ca. 1 m high (Phase 2 and 3). It was c. 0.5 m thick, and made of two courses of stones, which were a maximum of 0.33 m and minimum of 0.9 m wide. No traces of mud brick were detected here. Wall W11841 overlay an earlier wall W12020 (Phase 3; *Figs. 1.17* and *1.18*). W11841 was c. 0.66 m thick, c. 0.40 m high and consisted



Fig. 1.17 Orthophoto of the elevation of wall W12020 (south face) made of broken mud brick (lower layers) and the overlying wall W11841.



Fig. 1.18 Room 4 Building A, Phase 2 from the north.



Fig. 1.19 Basin TZ 114549 to the left abutted by Inst11913 consisting of rammed mud and a limestone setting in the southern part of Room 4.



Fig. 1.20 Detail of a lower grinding stone TZ 114549 with Inst11913 to the right.



Fig. 1.21 Area between Building A and Building B, view from the north.

of two courses of stones. It was made of unworked boulders, and one basalt stone was re-used in the wall. Gaps in the wall were filled with smaller stones, and a layer of broken mud brick was clearly identified in the section, which belonged to the earlier wall W12020 (Phase 3; *Fig. 1.17*). W12029 (Phase 2) overlay W12029 (Phase 3) and consisted of six large unworked stones.

The western limit of Room 4 was not clear as it lay outside the excavation area, and therefore the entrance to this room was also unclear. The floor of Room 4 (F11913) was made of beaten earth. In the southeastern corner of the room, between W11841 and W11894, a limestone basin (TZ 114549; L: 0.33 m; W: 0.27 m; H: 0.14 m) was built in the corner (*Figs. 1.19 and 1.20*). The basin was certainly in a secondary position (see *Chap. 19.4*). However, it was fitted exactly into the corner, as shown by the traces of tool marks on the sides (see *Chap. 19.4*), creating the exact shape. Directly abutting the west side of the basin was a smoothed, concave structure made of clay, the surface of which was made of very fine, light yellow rammed earth. To the west, an installation (Inst11913) of boulders with the remains

of two broken mud bricks, most likely belonging to a former mud brick superstructure, was found (*Figs. 1.19 and 1.20*). This installation probably served as the base for a storage container which might have been made of a perishable material, e.g. a basket. This can be concluded from the lack of use wear on the surface of the basin, which excludes its use as a working stone.

The deposition layer (L11922) on top of the floor consisted of heterogeneous, loose soil with gravel; there were only a few pottery vessels (TZ 102114) from the Iron Age IIB, among them sherds of storage kraters. Apart from these, the floor was clean.

### *Area between Building A and Building B*

To the west of Room 1 was an area bounded in the north by W11841 and in the west by wall W11706 of Building B. Along the east face of wall W11706, an additional wall W12141 ran almost along its entire length which formed corner W12140 in the south. (*Figs. 1.9 and 1.21*). No floor level could be determined in this area, but based on the floor levels in the adjacent rooms of Buildings A and B,

the lowest level to be counted as Phase 2 was at L11869 with the overlying loci L11848 and L11849 (Fig. 1.8). Both of these loci were characterized by soft, homogenous soil, containing a substantial amount of ash. Larger stones were found dispersed in this area and only few pieces of pottery and bone were found. L11673, L11828 and L11669 comprised the deposition layers above; while L11673 and L11828 contained homogeneous dark brown soil with relatively few finds, L11669 was rich in ash but also contained few finds, such as bone fragments and undiagnostic sherds. The area between Buildings A and B was presumed to be an open area due to the lack of a proper southern bounding wall, the lack of a floor or walking horizon. It is also noticeable that, unlike in the rooms of Building A, no collapsed material from a crumbling roof or walls was found, e. g. in the form of broken mud bricks or heavily charred organic remains, which could also be an indication of an outdoor area, just as are the small number of finds made in this area.

### *Interpretation Building A/2*

Building A, Phase 2 is a rich source of information on everyday life since it collapsed completely, burying many objects. The collapse was attested by broken mud brick that was found throughout the deposits in Building A but in particular in the upper level of Rooms 2 and 3. It also showed that the walls had been constructed with a stone foundation and a mud-brick superstructure. What led to the collapse of the roof remains uncertain at this point. The objects found directly on the floors or in the deposit immediately above them must have been in use at the time of the collapse and all point to the Iron Age IIB. All the floor deposits as well as those from the installations were examined for palaeobotanical remains (see Chap. 20) and use-wear analysis was carried out on the stone tools (see Chap. 19).

Building A was clearly of domestic character. In the northern part of the building, all the fire-related installations were found, some of them close to the doorway. These included a *tabun*, which indicates that bread was baked here. The two installations, Inst11868 and Inst11856, directly east of the entrance were most probably used as hearths for cooking, since they contained a lot of ash, furthermore in Inst11856 there was a large number of calcined bones, which make it likely that remains of animal bones were burned here. Also the installation

Inst11696, against the western wall of Room 1, can be interpreted as a cooking hearth, due to the large amount of ash as well as the presence of cooking pot sherds.

The southern part of the compound showed evidence of food preparation witnessed by the complete tripod bowl (TZ 114526) and divers other stone tools used for grinding and crushing which were found here. Craft activities were possibly also performed in the southern part of Room 1, as attested by the presence of a bow drill socket (TZ 113722) and the pumice abrader (TZ 114531) – or the tools were at least stored here. The large number of stone tools found in the area between Inst11660 and Inst11898 was very striking, including an unfinished stone tool; this accumulation indicates that tools were stored in this southeast corner of the room. A stamp seal (TZ 114329) was also found in this corner of the room, but it was unclear whether it was buried accidentally when the house collapsed or whether it was lost or hidden there before. Furthermore, the southern part of the room was used for textile production, as the loom weights and the spindle whorl that were found here indicate. Since the loom weights were found lying in a row next to the western wall W11690, it can be assumed they represented a loom that stood there, that was functioning when the house collapsed. According to Boertien (2015: 263), weaving could be performed outdoors as well as indoors if there was sufficient light, which could imply that either the southern part of the room was not roofed, or another, larger, opening existed in the southern wall which is disturbed by a pit. With regard to what was produced here, we can assume that it was woollen textiles, because the average weight of the 24 loom weights found in Building A is 250 gr., weaving vegetable fibres requires significantly heavier weights (see Chap. 16). The decanters (TZ 113372, TZ 113492) as well as the two cooking pots (TZ 101924-002, TZ 101866) found in the middle of the southern part of Room 1 furthermore indicate that cooking and storing materials were kept here; they can be attributed to the Iron Age IIB (8<sup>th</sup> cent. BCE). The botanical remains from Room 1 were minimal, as only a few traces of *Vitis vinifera* (domestic grape) were found here (see Chap. 20).

In the stone-paved area of Room 2 no traces of working tools of any kind were found, nor were there any palaeobotanical remains; it is therefore probable that items were stored here, probably in baskets, leather or other organic materials that did

not survive. Palaeobotanical remains were also absent from the northern Rooms 3 and 4 and there were very few finds. A stone basin (TZ 114549) located in the southeastern corner of Room 4 was most likely used as a base for a storage vessel or to store other containers, which could indicate that food and other materials were kept in this part of the house.

The majority of pottery sherds found in Building A date to the second half of the Iron Age IIB (8<sup>th</sup> cent. BCE). The Iron Age material is clearly contemporaneous with the material of phases XIV and XIII at Tell Abu al-Kharaz (Fischer 2013, 516: tab. 83) and with Tell er-Rumeith stratum VIB that dates to the 2<sup>nd</sup> half of the Iron Age IIB (Barako – Lapp 2015, 73: tab. 3.2), and therefore to the 8<sup>th</sup> cent. BCE (and probably from the late 9<sup>th</sup> cent. BCE; see *Chap. 7*). The <sup>14</sup>C sample taken from the middle of hearth Inst11696 confirms the date suggested by the pottery for Phase 2 and points to the period between 802 and 771 BCE, with 95% confidence. However, Hellenistic sherds were found in a few loci, e. g. a saucer (TZ 102061-002) from L11854, as well as in L11727 in Room 2 and L11691 in Room 1. These loci were either in close proximity to pits which were most likely responsible for the mixing in of later material (L11854 disturbed by Pit11915), or they were mixed with the overlying, younger loci, such as L11727 and L11691. The complete inventory of Building A shows, in an exemplary manner, daily – and especially female – household activities, including weaving, food preparation, cooking and baking. Stamp seals were personal objects and were therefore the property of the seal bearer. The stamp seal found in Building A not only clearly belonged to the inventory of this building, but to one of its inhabitants.

### 1.3.3. Building B

Very few remains have so far been excavated that belong to Building B. In fact, only a corner of Room 1 was preserved, in quadrant AX 127 (*Fig. 1.9*). The room was bounded to the east by wall W11706 – out of which loom weight TZ 114445 was recovered (see *Chap. 16*) – and to the south by W11708. The floor F11721 was easy to distinguish from the fill above (L11725) since it was a very hard, light beige layer, partly scattered with pebbles (*Figs. 1.21 and 1.22*). A large, upright, rounded, standing stone was found here the function of which is not yet clear. L11725, which lay directly on top



Fig. 1.22 Building B, corner of Room 1, view from the south.

of the floor, was a very loose ashy layer that did not contain any finds (*Fig. 1.8*). Above this layer was L11673, which overlay the whole room; it did not contain any pottery but there was a substantial amount of animal bone, which has not yet been analysed (TZ 113763). Based on the level of the floor F11721, it is likely that it was contemporaneous with Phase 2 of Building A; however, further excavation is needed to confirm this.

### 1.3.4. Building A, Phase 3

The outline of Building A/2 broadly followed the lines of Building A/3, which has not been fully excavated yet. Wall W12073 forms the southern limit, W11706 the western, W12029 the northern, and W12171 the eastern limit of Building A/3. The most significant structural change between Phases 3 and 2 was the construction of the wall W11690 in Phase 2 and thus the reduction from a larger Room 1 in Phase 3 to a significantly smaller Room 1 in Phase 2. By the end of the 2019 season, the level of the Phase 3 floors had not been reached in most parts of the excavation (*Fig. 1.23*).

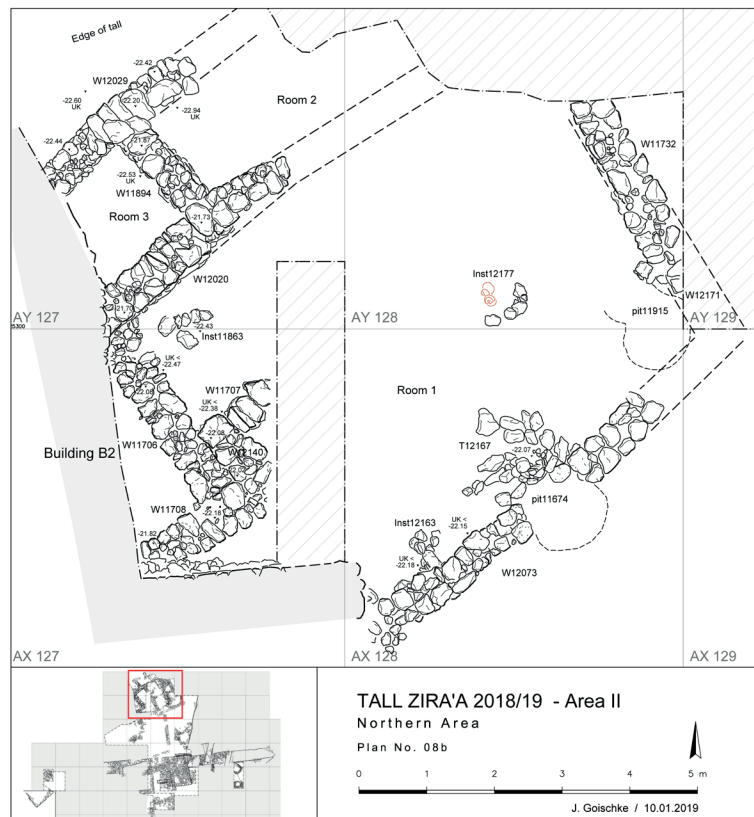


Fig. 1.23 Plan and orthophoto of Building A, Phase 3.



Fig. 1.24 Almost intact decanter with juglet (TZ 102246-002) belonging to inventory of Room 1, Building A/3, leaning against wall W12073 (Phase 3); Inst12163 on the right. These objects were built over by the later wall W11690 (Phase 2).

Room 1 was bordered in the south by wall W12073, which ran SW–NE (5.50 m long) on the same alignment as the later wall W12142 (Phase 2; Fig. 1.9). As exposed so far, W12073 was three courses high (total height: 0.25 m); the wall was constructed of boulders and quarry stones ( $0.35 \times 0.33$  m and min.  $0.20 \times 0.15$  m), was double-faced and 0.55 m thick. In the middle, the wall was disturbed by Pit11674, which was c. 1 m in diameter and northeastern corner was disturbed by another Pit11915 (already disturbing parts of Room 2 Phase 2). Wall W11690 of Phase 2 was erected on top of the objects of Room 1 in Phase 3. Wall W11690 was built directly on top of an intact juglet (TZ 102246-002/L12083) and a large, damaged, pot (Fig. 1.24), as well as a decanter (TZ 102289-002/L12135) which are discussed in detail below. These vessels were found *in situ* leaning against W12073, and close to a single-rowed installation Inst12163 stretching 0.40 m into the room (Figs. 1.23 and 1.24). A stone installation (T12167) made of unworked stones was built next to W12073. The installation was c. 0.80 m in diameter and contained a *tabun* as attested by the scattered clay walls.

The eastern boundary of Room 1 was marked by wall W12171; it was built over by the Phase 2 wall W11732 which is indicated on Fig. 1.23 by a dashed line. So far, only the face of Wall W12171 has been investigated and it consisted of quarry stones and boulders. The wall used to have a mud brick superstructure, which was cut off by the overlying wall W11732, but which was still visible in the profile of

the wall. W12171 had at least two courses (height preserved: approx. 0.25 m); the lowest course has not yet been reached. The northern boundary wall of Room 1 was wall W12020, and the western limit was most likely wall W11706, which remained in use in the later Phase 2. W11706 was wider than the other walls, and in parts it was three stones wide, reaching a maximum width of 1.20 m in the south (W12140). The wall consisted of different sized boulders, creating a wall with an irregular structure (max.  $0.48 \times 0.30$  m / min.  $0.7 \times 0.7$  m). Firepit Inst11863, in the northwestern corner between W12020 and W11706, was identified as such due to the large amount of ash that was found in this corner.

As indicated above, the floor level of Room 1 has not yet been reached. However, the fill in which a number of vessels and vessel fragments were found comprised L12135 (decanter with strainer TZ 102289-002; Pl. 0.5), and L12083 (the intact jug TZ 102246-002; Fig. 0.5) in the southern end of the room; the other deposits at the same level comprised L12164, and L12083, as well as L12174, which was situated around T12167. The deposits above consisted of L12113, L12076, L12158, and L12139 (Fig. 1.8). These loci all belong to Phase 3 of Building A, and were sealed by floors F11689 and F11708 of Building A/2. The deposits consisted of brownish, homogeneous earth interspersed with a few pebbles, but otherwise had no inclusions. The pottery from these loci was not mixed with later pottery and was dated to slightly earlier than the pottery from Phase 2 and therefore points to the late 9<sup>th</sup> and to the 8<sup>th</sup> cent. BCE (see Chap. 7). Apart from the ceramic vessels and fragments there were a number of other finds in the Phase 3 deposits, such as a cosmetic applicator made of copper alloy which cannot be dated precisely (TZ 114488/L12139; see Chap. 14), rubbing stones (TZ 114507/L12083 and TZ 114558, TZ 114611/L12164, TZ 114513/L12076), a grinding stone (TZ 114584/L12164), a quern (TZ 114595/L12164), two pounders (TZ 114503/L12076 and TZ 114611/L12164), a mortar (TZ 114516/L12076), and a basalt bowl (TZ 114481/L12076), which all come from the southern part of Room 1. The pounder TZ 114503 shows traces of intensive contact with another material, also traces of crushing and grinding are visible; the use wear also implies that the pounder had some kind of (organic) attachment (see Chap. 19). The use-wear analysis of mortar TZ 114516 shows that it was used for food-processing, in combination with a pestle (see Chap. 19). Also, two dough-

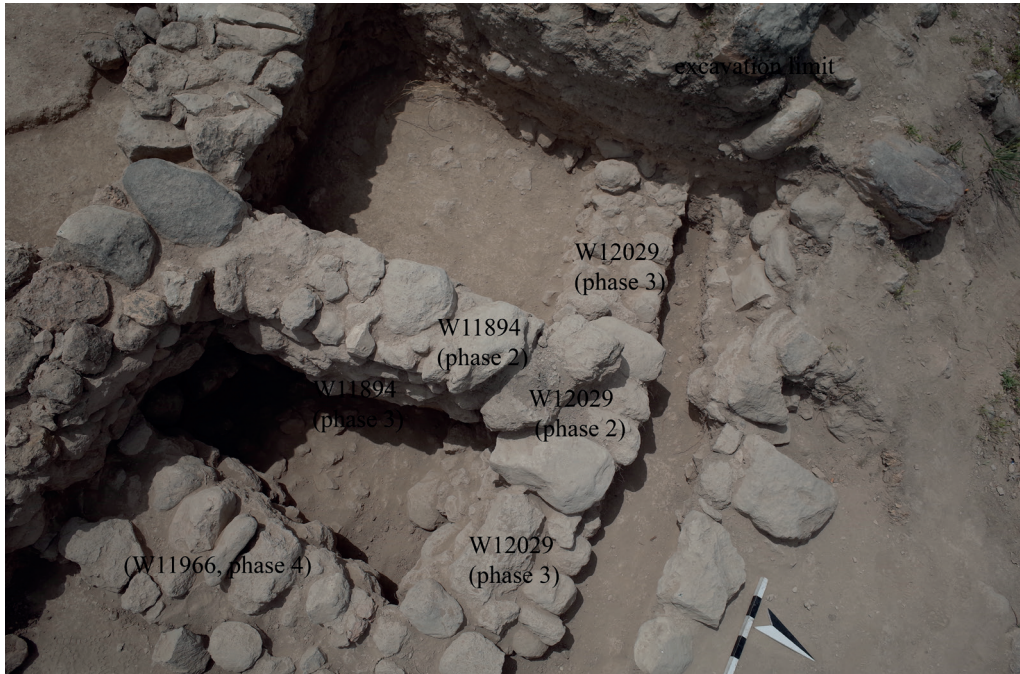


Fig. 1.25 Photo of the northern boundary wall of Building A showing Phase 2 wall W12029 above and Phase 3 below; also visible is wall W11894, which was used in both Phase 2 and Phase 3.

nut-shaped loom-weights made of baked clay were found here (TZ 114426 and TZ114722/L12076; see *Chap. 16*).<sup>7</sup>

In the northwestern part of Room 1, the lower edge of fireplace Inst11863 was reached within L12083. This fireplace consisted of an accumulation of stones loosely placed in an almost semi-circular row, with a few wide gaps between them. Above the stones, a massive layer of ash was excavated (L11848). Within this area, a large number of finds were made, including a polisher (TZ 114507/L12083; see *Chap. 12*), pottery (TZ 102246/L12083, TZ 102214/L12022; see *Chap. 7*), bones (TZ 114866), two metal finds (TZ 114406, TZ 114487; see *Chap. 14*), and a quern (TZ 114501/L12022; see *Chap. 19.4*). The damage patterns on the surface of the quern indicate that grain or legumes were processed (see *Chap. 19*). Polisher TZ 114507 was most likely used in connection with ceramic production (see *Chap. 19*). The deposition layer above comprised L11869, and L11849, containing much pottery (TZ 102084).

Room 2, and Room 3 to its east, were directly north of Room 1; the connection between Room 1 and Room 2 is, however not clear yet. W12029 served as the northern wall for Rooms 2 and 3; it followed the E–W contour of the slope and was,

therefore, slightly curved. In the west, W12029 lay outside the excavation limits, thus the continuation of the wall is as yet unclear. Two distinctive construction phases were differentiated in the northern wall, showing that it was used in both in Phase 3 and Phase 2 (*Fig. 1.25*). The same was true for the N–S wall W11894, which was the dividing wall between Rooms 2 and 3. Only one course of Wall W11894 of Phase 2 was preserved, the earlier Phase 3 was only observed in the profile. The northern end of W11894 was bonded with W12029, which consisted of unworked boulders (max.  $19 \times 0.25$  m, min.  $0.08 \times 0.14$  m). Two courses were still in place, and stood c. 0.30 m high. The joints of the stones were filled with lot of smaller stones. The stones of the overlaying, younger part of W12029 (Phase 2) were much larger.

Not many of the loci in Rooms 2 and 3 were excavated (*Fig. 1.8*). Among the loci in Room 3,

7 A charcoal sample was taken from a locus close to the *tabun* T12167 (L12174). At 95% confidence with a chance of 78%, the sample falls into the time span of 696–540 BCE. The data determined by the  $^{14}\text{C}$  analysis deviate from the expected time span obtained by the relative chronological sequence (*Chap. 21*).

only L12012 was opened which contained a projectile point made of a copper alloy (TZ 114489; see *Chap. 14*) and a pecking stone (TZ 114619).

### *Interpretation Building A, Phase 3*

At this point, only a few conclusions can be made about Building A, Phase 3, since this phase has not

yet been fully excavated. Based on the information available, especially the stone tools, Building A/3 also had a strong domestic character, since the finds indicate food production, processing and storage, as well as small craft activities. Chronologically, the pottery can be dated somewhat earlier than the pottery of Phase 2 i.e. to the late 9<sup>th</sup> to the 8<sup>th</sup> cent. BCE; unlike Phase 2, the Phase 3 pottery is not mixed with later material (see *Chap. 7*).

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## 2. WESTERN AREA: ARCHAEOLOGICAL AND ARCHITECTURAL EVIDENCE

### 2.1. Description

The Western Area covers the quadrants AW 126/27 and small parts of AV 126/27 (*Fig. 2.1*). The edge of the excavation in the north was determined by the Byzantine walls (W10736, W19738), and in the east, by a deep trench that had been opened in previous seasons (*Fig. 0.2*). The Western Area revealed only a few walls (W11702, Inst11642) and part of a water channel (Inst11639).

The water drain (Inst11639) was built of standing stones in two parallel rows, running SW–NE. The installation was about 1.5 m long, its western part was not preserved, and to the east it sat in a bed of pebbles, F11645 (*Fig. 2.1*). The pebble layer F11645 was laid on top of another, harder, pebble layer F11675/11676; the layers could be distinguished from one another because the lower layer, F11675, also contained large amounts of pottery (L11679; *Fig. 2.3*). Apart from pottery, the pebble and ceramic layer contained only a few finds, such as a spherical loom weight of baked clay (TZ 113441/L11675; see *Chap. 16*); a carnelian bead (TZ 113526/L11701; see *Chap. 12*) was found in the layer just below.

Just to the southwest of the drainage channel was wall W11702, which ran SW–NE; its southwest end was disturbed by the later Pit11642/11646 (*Figs. 2.1* and *2.2*). W11702 was a double-faced wall along the south face of which was an irregular layer of several stones (Inst11682), which most likely represented the collapse of the wall (*Fig. 2.1*). The rounded stone structure in the northeastern part of the trench, directly north to Inst11642 was most likely the base of a large pit that was not recognized during the course of the excavation (*Fig. 2.1*). In the northern part of the Western Area towards the edge of the excavation, traces of fire and burnt mud brick survived, but no floor level was detected.

The layers which overlay the installations in AV 127/AW 127 comprised L11638, L11637, L11640, L11620, L11621, L11622, L11681 and L11684; they were of loose consistency and brownish colour (*Fig. 2.2*). In L11622, a lamp fragment TZ 113259 was found, which can be dated to the late Iron Age to early Hellenistic period (see *Chap. 10*); a mortar bowl (TZ 113316/L11637), a quern (TZ 113201/L11620), and a hammer stone

(TZ 113286/L11622; see *Chap. 12*) also came from these layers. There was a clear change in the soil consistency between these loci and the overlaying locus L11617, which, apart from undiagnostic sherds and bones, contained no further finds (*Fig. 2.2*).

The western part of the Western Area (AV 126/AW 126) was not excavated down to the same level as in the east. The level reached here comprised the beaten earth floor F11644 which was characterized by a hard, light beige layer approx. 0.07 m thick (*Figs. 2.1* and *2.2*). The floor could be detected clearly in the western part of the area, however, towards the east, it was gradually destroyed. Pit11678, and most likely also Pit11642/11646 and Pit11643 were cut from the floor F11644 (*Figs. 2.1* and *2.2*). Pits11678 and 11642/11646 were over 0.50 m deep. Pit11678, in the west, was irregular and had clearly defined borders, the edge being partly marked with flat stones. The top of the pit was defined by an ash layer 0.10–0.15 m thick, which was covered by humus; apart from undiagnostic pottery sherds and bones there were no other finds. Further east was an irregular-shaped Pit11642/11646, bordered to the west by large stones which probably belonged to wall W11702. The sides of the pit were steep, and the fill contained ashy soil with pottery and bone. The edge of Pit11643 was very clear, and the fill consisted of ashy layers with no finds.

The deposit overlying the floor and the pits consisted of L11641, L11677 and L11647. Coin TZ 113368 was found on floor F11644, which unfortunately is too worn to be identified (see *Chap. 18*). One spindle whorl (TZ 113418/L11641; see *Chaps. 12* and *16*), a basalt bowl (TZ 113465/L11641), a lid made of calcite (TZ 113431/L11677; see *Chap. 12*), and a drill socket (TZ 113722/L11677; see *Chap. 19.4*) were found in this layer. Neither the pits nor the deposits directly on the floor produced any finds that could provide any dating evidence (*Fig. 2.2*). The overlying layer was marked in the west by the poorly preserved *tabun* T11618; it was c. 0.30 m in diameter and the base had been laid out with stones, three of which were preserved; the soil within the installation was very ashy. The floor on which the *tabun* was placed could not be proper-



Fig. 2.1 Stone plan and ortho-photo of the Western Trench.

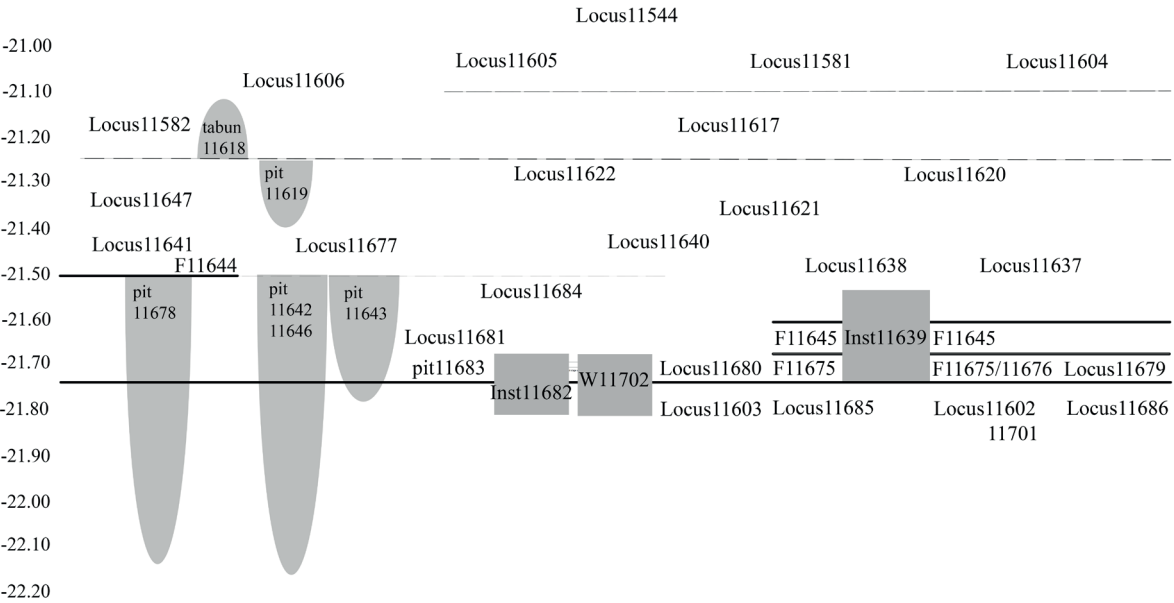


Fig. 2.2 Schematic plan of the stratigraphy of the Western Area. Loci and installations are shown in vertical relation to each other and not in horizontal relation.

ly identified. Only the upper edge of Pit11619 could be detected, which contained no finds apart from a few bones.

The layer below the topmost loci was L11617. The topmost loci L11606, L11605, L11581 and L11604 were just below the surface layer L11544 and contained at least three poorly preserved recent burials, which were reburied with the help of the local authorities. This layer was characterized by sandy soil, which was interspersed with stones and ashy material. In L11581, a lamp fragment TZ 113267 was found, which dates from the 2<sup>nd</sup>–1<sup>st</sup> cent. BCE (see *Chap. 10*); also a game piece (TZ 113058/L11606), a limestone vessel fragment (TZ 113047/L11605), a hinge stone (TZ 113182/L11581), a grinding stone (TZ 113023/L11581), as well as a weight stone or loom weight made of basalt (TZ 113057/L11604) were found in this layer (*Fig. 2.2*).

## 2.2. Interpretation

The Western Area is the western continuation of the open and unbuilt “area with pits” located in the Northern Area (see *Chap. 1.1*). Here too, the presence of numerous pits indicates that this area was most likely used as a dump. At this point in the excavation, the drainage channel (Inst11639) with the surrounding gravel layer, as well as the walls and building remains (W11702 and Inst11682) cannot be connected to any other architectural structures. Currently, the only chronological indicators are the



Fig. 2.3 Photo from the east showing the drainage channel Inst11639 and the lower pebble layer F11675/11676 with pottery (L11679).

two lamp fragments TZ 113267 (2<sup>nd</sup>–1<sup>st</sup> cent. BCE) and TZ 113259/L11622 (late Iron Age/Hellenistic), but these were found in a mixed deposit close to the surface. The coin TZ 113368, which was found on floor F11644, cannot be identified. If this area is seen as the western extension of the northern pit area, then its use as a waste site in Hellenistic times is likely; in this respect, the levels (maximum 21.70 BSL) correspond to those of the northern pit area.



### 3. SOUTHERN AREA: ARCHAEOLOGICAL AND ARCHITECTURAL EVIDENCE

The excavations in the Southern Area covered squares AU 127–131 and AT 128 (*Fig. 3.1*). In the

following, trenches AU 128, AU 129, and AU 131/AV 131 will be discussed individually.

#### 3.1. Trench AU 128

##### 3.1.1. Description

The major architectural feature found in AU 128 was two adjacent rooms in which some thousand fragments of painted wall plaster were found, both on the floors and in the deposits in the rooms (see *Chap. 5*). The northern room was attached to the large wall W11186, which formed its north wall. The east side of both rooms was wall W11520, but the southern and the western boundaries both lay outside the excavation boundary. The northern and southern rooms were separated by an E–W wall, W11521 (*Fig. 3.1*).

Wall W11520 was 4.5 m long, 0.55 m wide. It was a double-faced wall made of unworked stones of different sizes and ran almost exactly N–S. Three courses of the wall were preserved, but in the northern part the wall was less high. The exact connection between W11520 and the large wall W11186 could not be determined because of collapsed stones (*Fig. 3.3*); however, it was obvious that W11186 served as the northern wall of the northern room. Therefore, W11186 must still have existed to a certain height when the rooms were built. Dividing wall W11521 ran E–W and abutted W11520 leaving a small gap between them. Wall W11521 was 0.55 m wide and 3.0 m long; in the west it ended with a straight end. W11521 was built of irregular, unworked stones, also including some reused materials, such as grindstones. On the top of W11521 remains of mud bricks and coloured wall plaster fragments were found, as well as two pieces of marble recorded under the same find number (TZ 113980; *Fig. 3.2*). The remains of mud brick indicate that W11521 had a mud brick superstructure on top of a stone base.

F11597 south of wall W11521, and F11566 north of it were beaten earth floors with a hard whitish surface. The northern floor F11566 dropped slightly towards the west. The eastern part of the floor was even and flat, but the western part was

very uneven. The southern floor F11597 was less clearly identifiable; in the east, Pit11552/11578 disturbed the floor (*Pl. 0.2* and *Fig. 3.1*).

The layer directly above floor F11566 in the northern room was composed of L11584 in the west and L11564 in the east (*Pl. 0.2*). The soft, greenish earth of L11564 was clearly different from the overlying deposit L11565. L11584 contained soft ashy material, which was also clearly different from the collapsed material above (L11565). A number of painted wall plaster fragments were found in L11584 (TZ 113603: 15 frgts, TZ 113603: 2 frgts, TZ 113603: 4 frgts.). They show different types of decoration such as the imitation of natural stone (“red spotted natural stone imitation on yellow ground”), a monochrome white paint, rose background paint with green, as well as red-black-white colouration (see *Chap. 5*). This locus was thus the lowest layer in which fragments of painted wall plaster were found; there were far fewer fragments here than in the layers above. These layers also contained collapsed stones, as well as pottery (only a small amount of diagnostic sherds), and glass fragments: the pottery from L11584 included a rim fragment of a juglet in fine ware (TZ 101865-003 points to the 3<sup>rd</sup> to 1<sup>st</sup> cent. BCE); the rim fragments of an amphora (TZ 101865-004 and TZ 101865-005 point to the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE); and various cooking pot fragments (TZ 101865-009, TZ 101865-011, TZ 101865-010, TZ 101865-016, TZ 101865-012) that could fall into the period from the 2<sup>nd</sup> cent. BCE to the 4<sup>th</sup> cent. CE. From L11564 came amphora rims TZ 101855-002 and TZ 101855-003 as well as cooking pots TZ 101855-004, TZ 101855-005, TZ 101855-006 that are typical for the period from the 1<sup>st</sup> to early 4<sup>th</sup> cent. CE (see *Chap. 8*). The pottery from the two loci, L11584 and L11564, dates from the 3<sup>rd</sup> cent. BCE to the early 4<sup>th</sup> cent. CE. The overlying layer L11565, apart from Hellenistic/

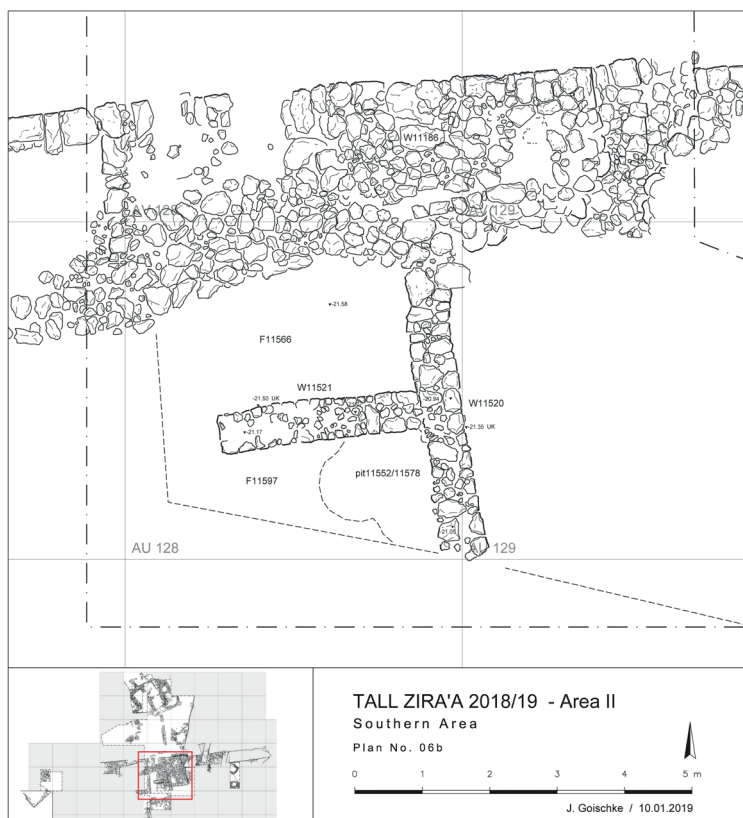


Fig. 3.1 Stone plan and orthophoto of the two rooms directly south of the wall (W11186).



Fig. 3.2 Remains of painted wall plaster on the mud brick material above the stone base of W11521.

early Roman sherds (TZ 101856-004, TZ 101856-008, TZ 101856-010, TZ 101856-012, TZ 101856-014), also contained Iron Age cooking pot sherds (TZ 101856-007, TZ 101856-009) which show that the context was mixed (see *Chap. 8*). Furthermore, a coin (TZ 113085/L11565; see *Chap. 18*) was found here, which is probably Hellenistic in date.

In the southern room, floor F11597 was directly overlain by L11596, which was cut by Pit11552/11578 (*Pl. 0.2*). L11596 consisted of collapse which contained a lot of mud brick material and wall plaster fragments (TZ 113602; see *Chap. 5*). These were the same type of painted fragments as were found in L11584 (see above). The diagnostic pottery sherds that were found in the floor material F11597 came from an Iron Age cooking pot (TZ 101876-002), a Hellenistic/Roman pithos (TZ 101876-003), an amphora (TZ 101876-004) and cooking pots (TZ 101876-005, TZ 101876-006, TZ 101876-010); also an Echinus-bowl fragment (TZ 101876-009; see *Chap. 8*) which dates to the 3<sup>rd</sup> to 1<sup>st</sup> cent. BCE. Layer L11596, just above the floor level, contained a coin (TZ 113284, see *Chap. 18*) which can be dated to the time of Alexander Jannaeus, and more precisely to the year 78 BCE. The cooking pot sherds (TZ 101868-005, TZ 101868-007, TZ 101868-006; see *Chap. 8*) from L11596 date to between the last quarter of the 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half of the 3<sup>rd</sup> cent. CE. Thus, the building material for the floor of the southern room contained pottery that could fall from the Iron Age period to the early Roman period, and the deposit just above the floor was also mixed – probably due to the Pit11552/11578 – but the majority of finds point to a late Hellenistic/early Roman date.

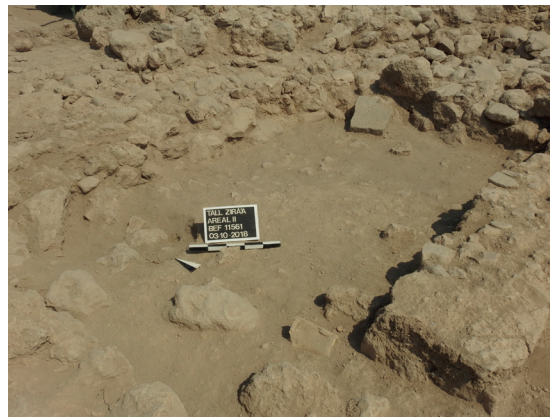


Fig. 3.3 View into the northern room showing L11561 with a lot of collapse, including painted wall plaster fragments.

Pit11552/11578 was sealed by L11563 (*Pl. 0.2*); the pit fill contained pottery, some of which had long running times, which points to the Hellenistic period to the early 4<sup>th</sup> cent. CE (see *Chap. 8*). A mortar bowl (TZ 113039/L11552) and a basalt plate (TZ 113035/L11552; see *Chap. 12*) also came from this pit, but these could not be dated.

Deposit L11561, in the northern room, was characterized by collapsed material such as mud brick and unworked stones (*Pl. 0.2* and *Fig. 3.3*). A grinding stone (TZ 113024), which was probably not *in situ*, as well as many fragments of painted wall plaster (TZ 113595) were found here (see *Chap. 5*). The repertoire of painted wall plaster differs from the one found below (see *Chap. 5*). The pottery in L11561 included a large number of diagnostic sherds (TZ 101846) but was largely mixed, containing Hellenistic fine ware sherds (TZ 101846-017, TZ 101846-021) as well as Iron Age cooking pot fragments (TZ 101846-013, TZ 101846-015) and later Roman pottery fragments (see *Chap. 8*).

The overlying loci L11554 and L11519 were also characterized by collapsed material, which was hard and heterogeneously mixed with tiny glass and metal fragments, as well as mud-brick fragments, stones and pebbles (*Fig. 3.4*). These loci also contained many fragments of painted wall plaster (TZ 113594; see *Chap. 5*). The pottery in L11554 and L11519 (TZ 101815) included a reasonable number of diagnostic sherds (TZ 101833) of different types of vessels which can be attributed to the time span from the 2<sup>nd</sup> cent. BCE to the 3<sup>rd</sup> cent. CE, and some Iron Age cooking pot sherds were also present (see *Chap. 8*). The pottery indicates that the material of L11554 and L11519 was mixed, which



Fig. 3.4 Close-up of the surface of L11554 with fragments of painted wall plaster.

was supported by the heterogenous nature of the soil of this layer.

In the southern room, L11563 and L11562 were above L11596 as well as over Pit11552/11578. These loci were characterized by soft, dark brown soil. The amount of diagnostic pottery was relatively small (TZ 101847/L11563 and TZ 101848/L11562) comprising Iron Age sherds as well as early Hellenistic and early Roman material, including an *eastern sigillata* (ESA) fragment (TZ 101848-005) dating to 180 BCE–70 CE (see Chap. 8). There were also some painted wall plaster fragments (TZ 113036/L11563 and TZ 113592/L11562), which all belong to one decoration type (‘structural style’). Among the painted wall plaster fragments, larger fragments as well as groups of several matching pieces were found (see Chap. 5). L11522 was a layer of collapse above L11563 and L11562 and also partially over wall W11521 (Pl. 0.2 and Fig. 3.5). This layer consisted of very hard material containing two fragments of pottery lamps (TZ 112875 and TZ 112876) which fall into a period from the 1<sup>st</sup> to 3<sup>rd</sup> cent. CE. The pottery in L11522 (TZ 101821) can be attributed to the Hellenistic and early Roman period (TZ 101815/L11519) and included a sherd of fine ware dating the 2<sup>nd</sup>–1<sup>st</sup> cent. BCE (TZ 101821-006) among pieces which also run to the 3<sup>rd</sup> cent CE (see Chap. 8).

In summary, the fills in both the northern area (comprising L11561, L11554 and L11519) and the southern area (comprising L11563, L11562, and L11522) contain pottery material that can be dated from the Iron Age through the early Hellenistic to the early Roman period.

L11517 was the deposit that overlay both rooms and the dividing wall W11521 (Pl. 0.2). In this layer fragments of the painted wall plaster (TZ 113596) appeared, in fact, many painted wall plaster fragments were found of mixed types (among them architectural decoration, imitations of natural stones, as well as monochrome and combined fields of different colours). It was also noteworthy that in some cases large pottery sherds were integrated into the plaster, for example fragment TZ 113596, which includes a ribbed vessel sherd (see Chap. 5). This locus also produced a fragment of oil lamp (TZ 114692; see Chap. 10), dating to the 2<sup>nd</sup> half of the 1<sup>st</sup> cent. to the 3<sup>rd</sup> cent. CE, and a number of diagnostic sherds (TZ 101802) that can be attributed to the 2<sup>nd</sup> cent. BCE to the 4<sup>th</sup> cent. CE (see Chap. 8).

L11517 was covered by L11516 which, apart from painted wall plaster fragments (TZ 11516), also contained four late Roman coins (TZ 112837, TZ 112844, TZ 112835, TZ 112846. TZ 112844; see Chap. 18) dating to the reign of Constantius II (355–361 CE), and a fragment of a Herodian lamp (TZ 112850/L11516; see Chap. 10) dating to between the 3<sup>rd</sup> and the 5<sup>th</sup> cent. CE. The pottery (TZ 101801; see Chap. 8) was composed of pieces dating to the 2<sup>nd</sup> cent. BCE to the 2<sup>nd</sup> cent. CE.

### 3.1.2. Interpretation

The period of construction of the two rooms can be only broadly determined: A strong chronological marker is a coin dated to the period of Alexander Jannaeus, specifically to the year 78 BCE, which was found in the layer (L11596) just above the floor level of the southern room. However, the pottery types found on the floors F11566 and F11597 of the northern and southern rooms respectively have longer running times and point to the Hellenistic and Roman periods, some of the sherds could even occur into the 4<sup>th</sup> cent. CE. Due to the long duration of some pottery forms, a narrower chronological range for the construction of the rooms cannot be established.

The upper deposits within both rooms contained Iron Age cooking pot sherds, Hellenistic/Roman pottery and a Hellenistic coin, which shows that the upper layers were mixed, possibly through the presence of pit 11552/11578 (at least in the southern room) and through later construction works



Fig. 3.5 Situation showing the two rooms from north after the removal of the Byzantine wall. Wall W11521 is overlaid by collapse L11522 (view from the north).

that could have involved the levelling of the room with partly older material. The layers underneath the rooms, which are discussed in *Chap. 3.2*, also point to Hellenistic to early Roman times, according to the pottery and coins found there. During this period wall W11186 was still in use when the two rooms were built, since the northern room used it as its north wall. How high W11186 still stood at the time of the construction of the rooms must remain uncertain.

Of the loci excavated in 2018 and 2019, painted wall plaster occurred only in the two room fills discussed here. The wall plaster was found in the lower layers directly above the floors as well as in

the fill layers of the rooms. Jansen (see *Chap. 5*) assumes that the wall plaster was used here secondarily as building material for filling and levelling these spaces but was originally attached to another building. This is supported by the fact that the fragments of the wall decoration were not found in a coherent manner, i.e. they were not in a position from which they could have fallen from a collapsed wall, but were recovered in many small pieces out of context. The wall decoration itself must therefore be older than the two rooms in which they were found; for the oldest wall decorations Jansen proposes a date of the end of the 3<sup>rd</sup>/beginning of the 2<sup>nd</sup> cent. BCE (see *Chap. 5*).

## 3.2. Stone Massif Inst11576 and the Adjacent Soundings in AU 128 and AU 129

In order to investigate the foundation level of the stone massif Inst11576 and the large wall W11186 as well as the relationship between them, a deep sounding was cut in AU 129. Another deep sounding in AU 128, below the two rooms in the Southern Area (see *Chap. 3.1*), was dug in order to investigate the western extent of the stone massif Inst11576 (*Fig. 3.6*). In the sounding in AU 129, the foundation level of stone massif Inst11576 and wall W11186 were not reached by the end of the 2019 season, however, it became clear that both structures were connected and therefore were built at the same time. The sounding in AU 129 ran

along the entire eastern side of the stone massif Inst11576; the east side of the sounding reached the quadrant boundary of AU 129 (including a 0.5 m baulk; *Fig. 3.6*). The sounding was about 3 m deep, and the lowest locus reached was L12053 (*Pl. 0.2*). The sounding in AU 128 was cut directly to the south of the stone massif Inst11576 (northern edge), in the southern room where the painted wall plaster was uncovered. The trench extended to the southern boundary of quadrant AU 128 (*Fig. 3.6*). The trench could only be excavated to a depth of c. 1 m and the lowest locus was L11950 (*Pl. 0.2*).

### 3.2.1. Stone massif Inst11576 and overlying layers

Stone massif Inst11576 was bonded with wall W11186, so both structures must have been built at the same time (for a detailed description see *Chap. 4; Fig. 3.6*). The stone massif was on the south side of wall W11186 and was thus on the inner side of the assumed fortification (see *Chaps. 4 and 22*). The massif was rectangular shaped, its eastern side was 3.70 m long N–S, the southern side was exposed over a length of 6.70 m E–W, and its western edge has not been determined yet.

The stone massif Inst11576 was directly overlain by the loci L11781, L11792, L11833 and L11879/11881, and above these were L11832 and L11573, all of which consisted of heterogeneous material, containing smaller and larger stones as well as broken mud bricks and light brown clay lumps (*Pl. 0.2*). This deposit represented the layer which was between the top of the stone massif Inst11576 and the collapse Inst11570, which had most likely fallen from the wall W11186 (*Pl. 0.2 and Fig. 3.7*). Three coins were found in these layers: TZ 114608/L11781, which can be attributed to the time of Alexander Jannaeus (103–76 BCE), TZ 113958/L11781, which is probably of Hellenistic date, and TZ 114061/L11792 of uncertain date (see *Chap. 18*). There were also many metal finds, including an iron bar (TZ 113956/L11781) and an iron nail (TZ 114096/L11881), as well as fragments of glass and undiagnostic pot-

tery sherds. The layers above the stone collapse Inst11570 comprised L11525 and L11523, which contained a fragment of an oil lamp (TZ 112862/L11525: late 1<sup>st</sup> cent. BCE to 2<sup>nd</sup> cent. CE; see *Chap. 10*), and pottery fragments (TZ 101807/L11523; see *Chap. 8*) that could point to the Persian to Roman period.

The west side of the stone massif Inst11576 was overlain by the two rooms discussed above in *Chap. 3.1*. However, wall W11521 was not built directly on the top face of the stone massif but above another wall W11784, following the same alignment, but slightly offset from it to the north (*Figs. 3.8 and 3.9*). Wall W11784 was only one course high and consisted of unworked stones (min. 0.10 × 0.10 m and max. 0.25 × 0.35 m). It is likely that W11784 was demolished in the course of the construction of the later wall W11521. The western end of stone massif Inst11576 was preserved at a much lower elevation (21.77 BSL) than in the eastern part in AU 129 (21.42 BSL). This difference in level, which must have resulted from the removal of portions of the massif, was evidently due to the construction of W11784. Thus, at the latest, by the time this wall was constructed, the stone massif Inst11576 could no longer have been in use. This idea was corroborated by a thin layer of soil between massif Inst11576 and W11784 (*Fig. 3.12*).

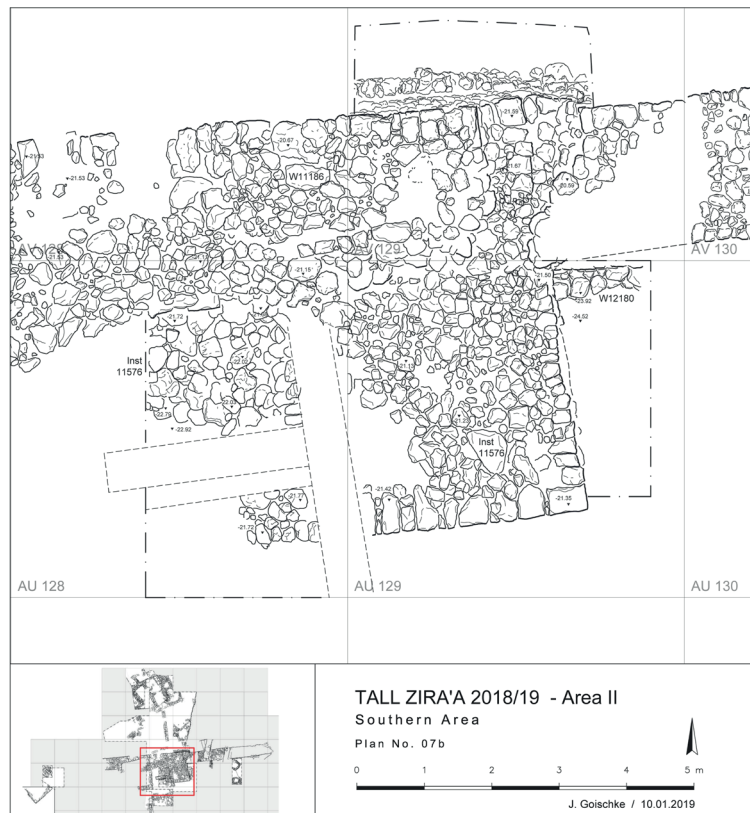


Fig. 3.6 Stone plan and orthophoto plan of the stone massif Inst11576 and wall W11186 with the deep soundings in AU 128 and AU 129.



Fig. 3.7 Orthophoto of the collapse Inst11570 overlying loci L11781, L11792, L11833, L11879/11881 and the top of the stone massif Inst11576.



Fig. 3.8 Photograph showing the wall W11784 underlying the later wall W11521. The upper parts of the stone massif Inst11576 can also be seen to the south.

### 3.2.2. Sounding in AU 128

A deep sounding was made southeastern in the corner of AU 128 in order to investigate the southern face of stone massif Inst11576; the foundation layer was, however, not reached (*Pl. 0.2; Figs. 3.6; 3.12*). In this trench several layers of deposits were exposed, the earliest of which was L11950, which contained a coin (TZ 114253; see *Chap. 18*), probably from the Hellenistic period. The overlying layers in the west of the trench comprised L11929 and L11878, which consisted of a loamy, largely ash-grey soil with much burnt material, especially bone. They also contained two coins (TZ 114095 and TZ 114094/L11878; see *Chap. 18*), both probably of Hellenistic date, a fragment of a basalt loom weight (TZ 114381/L11929; see *Chap. 16*) and fragments of copper alloy (TZ 113097/L11878; see *Chap. 14*). These loci were easy to separate from the adjacent loci in the east of the trench: L11947, L11943 and L11942, which were very heterogeneous and contained clay lumps, pieces of coal, and almost no finds. The overlying loci, L11926, L11876, L11799, L11795/11798 and L11793, were homogenous but did not contain many finds or pottery (*Pl. 0.2 and Fig. 3.12*).



Fig. 3.9 Photograph showing wall W11784 underneath wall W11521. On the left, in the deep sounding, part of the stone massif is visible, which, on the right side, is preserved at a higher level.

### 3.2.3. Deep sounding AU 129

In order to investigate the connection between the stone massif Inst11576 and the large wall W11186, a deep sounding was opened along the eastern face of Inst11576 (Fig. 3.6). The foundation level was not reached of either W11186 or of Inst11576.

The earliest deposition layers comprised L12053, L12047 and L12037, which formed a loose, grey-brown layer of sediment (*Pl. 0.2*) containing gravel and larger stones as well as pottery and bones, including some worked horn (TZ 114874/L12053; see *Chap. 15*). Above these, L11995 and L11988 formed a homogeneous, yellowish-brown layer with some ashy areas that overlay the layers. L11952 above L11995 differed clearly from these by its loose dark brown soil. Within this locus there was a row of stones (Inst11993) which was probably part of the lower part of wall W11186 (Fig. 3.10). The function of Inst11993 is still unclear, and it was also unclear if Inst11993 was actually part of W11186; this needs clarification in future excavation seasons. Apart from undiagnostic pottery, a large number of bones, some of them with cutting marks were uncovered, as well as a quern (TZ 113271/L11988; see *Chap. 12*), and three rod fragments made of

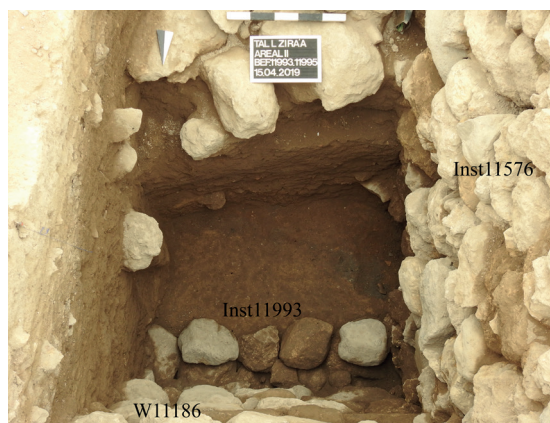


Fig. 3.10 Deep trench in the south showing stone row Inst11993 which is directly built next to the large wall W11186, in the west it abuts stone massif Inst11576.

copper alloy (TZ 114230, TZ 114232, TZ 114302/L11952; see *Chap. 14*).

In the layers above, an accumulation of stones, probably a wall Inst11930 was uncovered, which consisted of quarry stones of different sizes ( $0.15 \times 0.10$  m to  $0.70 \times 0.30$  m) that were not set regularly (*Pl. 0.2* and Fig. 3.11). No floor could be detected



Fig. 3.11 Sounding in AU129 showing the stone installation Inst11930.

around it. As can be seen in the plan (Fig. 3.6) and section (Fig. 3.12) Inst11930 was very close to the stone massif Inst11576, at a height of 22.48 BSL, and a small gap is recognizable. Loci L11944, L11933 and L11927 were contemporary with the stone structure Inst11930. Deposit L11933 contained a coin (TZ 114176; see Chap. 18), which dates to the time of Alexander Jannaeus (103–76 BCE), and the few diagnostic pottery sherds (TZ 102112/L11933; see Chap. 9) point to the Hellenistic or slightly earlier period.

The loci above comprised L11782 and L11780, which formed a coherent layer (Pl. 0.2). L11782 was loose and contained much gravel, burnt clay and many broken pieces of limestone. Both loci contained considerable amounts of pottery and bones, and also several stone objects, such as a spindle whorl (TZ 114197/L11782; see Chap. 16). The pottery from L11782 contained several diagnostic fragments (TZ 102051; see Chap. 9) which point to the Iron Age (7 pieces), including the body fragment of a painted flask dating to the 10<sup>th</sup> to early 9<sup>th</sup> cent., as well as fragments dating to the Iron Age IIB, and Hellenistic period (5 pieces).

The overlying loci L11777, L11772 and L11764 were a deposition layer that was disturbed by ashy deposits L11839 and L11771 (Pl. 0.2). These deposits contained many small pieces of unburnt clay as well as pieces of charcoal. L11772 contained a coin (TZ 113878), dating to the period of Alexander Jannaeus (103–76 BCE); and L11764 contained a Hasmonaean coin (TZ 113862, see Chap. 18). Diagnostic sherds from L11764 (TZ 101992; see Chap. 9) point to the Iron Age IIB (1 piece) and early Hellenistic period (2 pieces).

Loci L11838/11837, L11747/11753 and L11738/11739 were above and apart from a considerable amount of pottery which points to the Iron Age and Hellenistic period (TZ 101991/L11837 and TZ 101971/L11738: mostly 4<sup>th</sup> to 1<sup>st</sup> cent. BCE; see Chap. 9), a coin (TZ 113872/L11838) most probably of Hellenistic date and a Hasmonaean coin (TZ 113833/L11837; see Chap. 18) were also found here. In L11747 and L11838, fragments of unpainted plaster were found. Also, a copper alloy bar (TZ 113821/L11753: unspecified), loom weights (TZ 113823, TZ 113824/L11838), and a spindle whorl (TZ 113860/L11838; see Chap. 16) as well as a whetstone (TZ 113873/L11738) were uncovered.

The deposits L11601, L11599 and L11579 combined to form a loose, partially ash-bearing layer which could be distinguished from L11568, which was next to them. In L11568, a lamp fragment (TZ 113051; see Chap. 10) was found, which dates to the time between the late Iron Age and the early Hellenistic period. L11599 contained a coin (TZ 113333; see Chap. 18), dated to Valentinianus I (364–367 CE). L11558 and L11557 comprised the uppermost layers after the dismantling of the Byzantine walls.

The strata in the deep sounding AU 129 were less mixed than those in the deep sounding AV 129, which was outside (north of) W11186. Even though there was no dating evidence from the lowest loci of AU 129, only Iron Age and Hellenistic pottery was found in the strata above. It was not until Locus L11933 that a Hasmonaean coin was found; other Hasmonaean coins come to light in the layers above. The finds in the fill layers in this sounding thus suggest that after the Hellenistic period no mixing of the material took place here; the deposits, as far as we can trace them at the present time, thus originated during the Iron Age and Hellenistic periods.

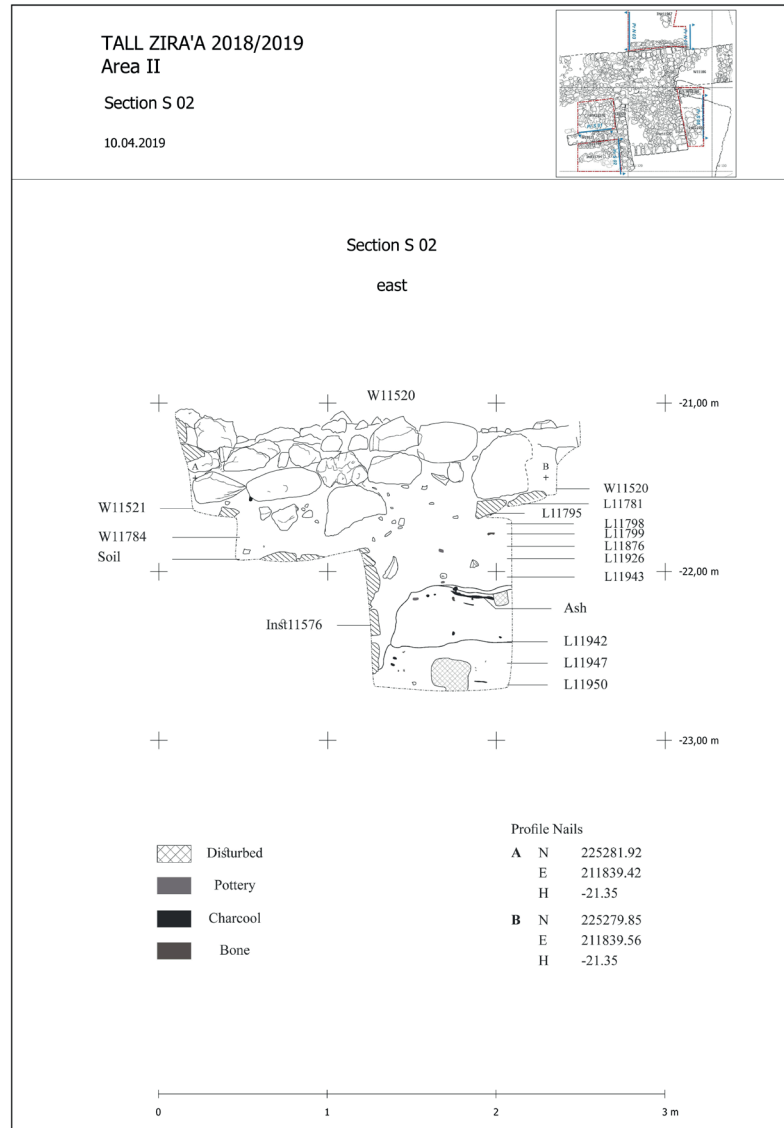


Fig. 3.12 Eastern section of sounding 02 in AU 128

### 3.2.4. Interpretation

The foundations of stone massif Inst11576 and wall W11186 were not reached in either of the deep soundings, but it was possible to determine that they were built in conjunction with each other and therefore built at the same time. Future excavations will therefore aim at reaching the foundations of both structures in order to clarify the date. Some preliminary assumptions can, however, already be drawn from the distribution of finds in the deep soundings: The strata in deep sounding AU 129 within the fortification were less mixed than the strata in deep sounding AV 129,

which was outside the fortification. There was no dating evidence in the lowest loci of AU 129 (around 24.50 BSL) and only Iron Age and Hellenistic pottery was found in the strata above. Not until Locus L11933 (around 22.70 BSL) a Hasmonean coin was found, and further Hasmonean coins were recorded in the layers above, which suggests that after the Hellenistic period no mixing of the material took place in the vicinity of the wall and the stone massif, which is the same situation as outside the fortification in AV 129 (see *Chap. 1.2*).

The deposition layers and the collapse above stone massif Inst11576 were directly below the two rooms discussed in *Chap. 3.1*. The small finds (coins and lamps) and the pottery point to the Hellenistic to the early Roman period. Before the two rooms were built, W11784 was erected, which probably indicates the existence of an earlier phase of this building. The two rooms erected above W11784, discussed in *Chap. 3.1*, must have also been built during the Hellenistic to the early Roman period. With regard to the function of stone massif Inst11576 it can be stated that it was overbuilt at some point in Hellenistic/early Roman period. The collapse Inst11570

could, on the one hand, indicate that at least parts of wall W11186 were no longer in use in the Hellenistic/early Roman period but, on the other hand, may also point to a construction or reconstruction of wall W11186 which was accompanied by the demolition of certain parts of it, and collapse Inst11567 could represent such a demolition. The top of the western part of stone massif Inst11576 was preserved at a slightly lower elevation (21.77 BSL) than its eastern part in AU 129 (21.42 BSL). This difference must have been the result of the removal of portions of the stone massif, probably during the construction of wall W11784.

### 3.3. AU 131

#### 3.3.1. Description

In square AU 131, a trench 2.50 m wide and 5 m long was opened just south of large wall W11186. Two circular stone structures were uncovered, Inst11755 in the north and Inst11762 in the south, which are best interpreted as silos (*Fig. 3.13*). The structures were built on a beaten earth floor which was difficult to identify (F12065 and F12066; *Pl. 0.2*).

Inst11755 was the larger stone installation, with a maximum diameter of 1.75 m, situated in the northern part of the trench close to the large wall W11186, and it ran into the west section (*Fig. 3.14*). The masonry consisted of several layers of unworked quarry stones (length approx. 0.20 to 0.40 m) and reused basalt stones. The joints are filled with earth and small pieces of flint. The maximum preserved height within the installation was 0.92 m. Inside the installation there were collapsed stones (L11889), which could have belonged to the roofing of the installation.

Within Inst11755 there was a beaten earth floor F11980 and on top of it fills L11934, L11932, L11889, L11790, L11749, L11745 and L11740 (*Pl. 0.2*). Only a few diagnostic sherds were found in this installation (see *Chap. 9*): directly on the floor F11980, almost all the identifiable sherds were Iron Age in date – only one Hellenistic sherd was found (TZ 102157). In the layers above, in L11889 there were two Iron Age sherds (TZ 102093). Further finds within the fills included a pierced astragalus (TZ 115010/L11934; see *Chap. 15*), probably used as gaming piece or tool, as well as three unbaked cylindrical-spherical loom weights: TZ 114186,

TZ 114187/L11889 and TZ 114188/L11932, and one bi-conical loom weight, TZ 114189/L11932, which had most likely all belonged to the same loom (see *Chap. 16*). Regarding the archaeobotanical remains, in L11934, the layer directly above the floor, a number of seeds of domestic bitter vetch (*Vicia ervilia*), lentil (*Lens culinaris*), as well as cereals such as wheat (*Triticum turgidum subsp. parvicoccum*) and barley (*Hordeum vulgare*) were identified; grains of wheat (*Triticum aestivum*) were also found in L11932 (see *Chap. 20*). The very large number of grains and seeds in this context suggested its use as a silo to store different types of cereals and legumes; this was also supported by the fact that almost no pottery was found here.

In the southern part of the trench lay Inst11762. The upper part and the entire eastern part of the structure was destroyed, the collapsed material was uncovered east of the structure (*Fig. 3.16*). Inst11762 was a rounded-oval shape, and consisted of seven courses of irregular, unworked rubble stones (0.15 × 0.08 m to 0.27 × 0.32 m), which stood to a height of 0.80–0.87 m. The wall was leaning slightly inwards, which led to the assumption that Inst11762 and possibly also Inst11755 were vaulted. The joints between the larger stones contained clay and were chinked with small stones (0.05 to 0.10 m). The diameter of the installation was a maximum of 1.09 m and a minimum of 0.62 m. Inside Inst11762, a beaten earth floor F11962 was found, and above it the deposits L11945, L11928, L11963 and L11872. The deposits were homogenous, with

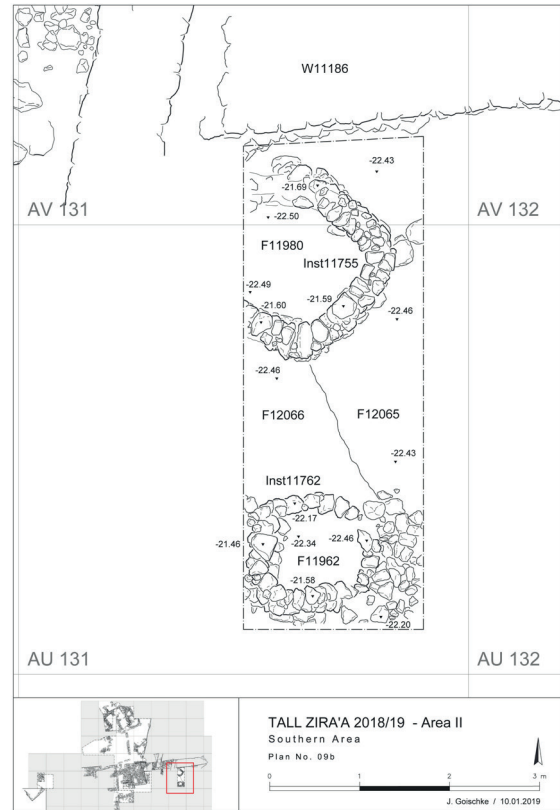
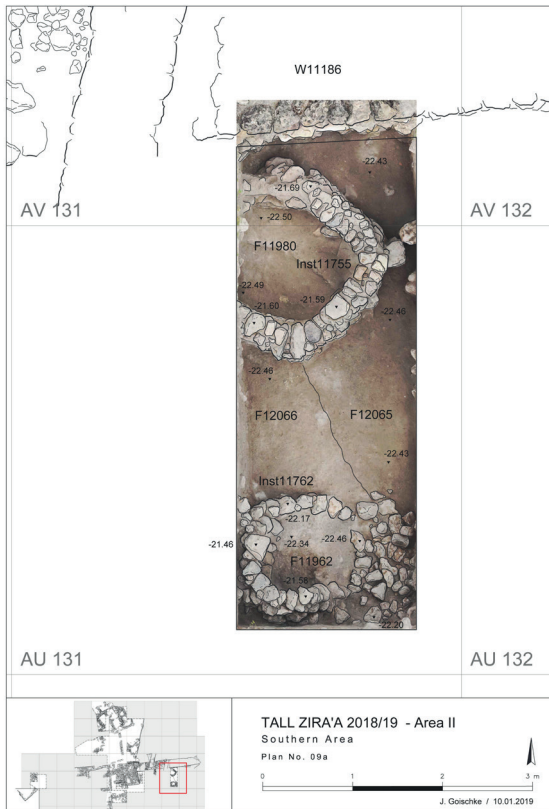


Fig. 3.13 Stone plan and orthophoto of the two circular stone structures Inst11755 in the north and Inst11762 in the south of trench AU 131.



Fig. 3.14 The two installations, Inst11755 and Inst11762, from the north.



Fig. 3.15 Installation 11755 with collapsed stone material within the structure.

relatively few finds. Directly on the floor F11962, the majority of the diagnostic sherds point to the Hellenistic/early Roman period, and only a few to the Iron Age (TZ 102156); for the pottery from L11945 (TZ 102121) and L11928 (TZ 102101) a Hellenistic or Iron Age date can be assumed (see Chap. 9).



Fig. 3.16 Photo of installation Inst11762 with collapsed wall on the eastern part.

The archaeobotanical remains were numerous and occurred in the layer directly above the floor, in L11945: Barley (*Hordeum vulgare*), wheat (*Triticum*), bitter vetch (*Vicia ervilia*) and various wild flowers (*Onosma aleppica*, *compositae species*) were recorded. The presence of wheat and barley grains support the possible interpretation of the installations being grain silos (see *Chap. 20*).

The surrounding loci were meticulously excavated, and a detailed overview can be found in the schematic representation (*Pl. 0.2*). L11985 and L11986 were the lowest layer just above floors F12065 and F12066. The overlying layer consisted of L11964, L11965, L11938 and L11935. The pottery that could be identified in this layer contained mainly Iron Age sherds, and a few Persian sherds (TZ 102140/L11964, TZ 102143/L11965; see *Chap. 9*); apart from this, there were two hammer stones (TZ 114199/L11938 and TZ 114423/L11935; see *Chap. 12*). The overlying layer consisted of L11888 and L11887, which was soft soil mixed with ash and some bone fragments; it contained no finds or pottery.

The overlying floors F11786 and F11886 comprised a beaten earth floor on which wall W11763 was built (*Fig. 3.17*). The wall ran NNW–SSE in a slight eastward arc and was 2.2 m long. It consisted of a layer of quarry stones (limestone, basalt and other magmatites) about 0.15 to 0.35 m long, set crosswise (as a binder). A fragment of oil lamp (TZ 114840; see *Chap. 10*) came from this wall, dating to the early Hellenistic period. Floor F11886 and the locus directly overlying it, L11765, contained only Iron Age sherds (TZ 102079/L11886, TZ 102000/L11765; see *Chap. 9*).



Fig. 3.17 Wall W11763 and both installations Inst11755 and Inst11762.

The layers on top of the floor up to the upper edge of wall W11763 comprised L11788, L11789, L11766 and L11770, which consisted of soft, grey-brown clayey soil with inclusions of gravel and stones. In these layers, the diagnostic sherds were almost all from the Iron Age (TZ 102011/L11766; see *Chap. 9*); a gaming piece made of basalt (TZ 114039/L11766; see *Chap. 12*) was also found.

The overlying loci L11757, L11756, L11748 and L11750 formed a rather calcareous, loose layer, which contained some pieces of red clay. In two of these layers, fragments of a broken bone lid (TZ 113876/L11748; see *Chap. 15*) and a flint scraper (TZ 113731/L11748; see *Chap. 12*) were found. The surface layers comprised L11735 and L11742, and contained a lamp fragment dating to the early Hellenistic period (TZ 114340/L11742; see *Chap. 10*).

### 3.3.2. Interpretation

The two installations Inst11755 and Inst11762 both stood almost 1 m high and were therefore in a good

state of preservation; the wall of Inst11762 was sloping slightly inwards, which led to the supposition that Inst11762, and possibly also Inst11755, were vaulted. The deposits within the installations contained very few finds or ceramics and it was noteworthy that no bones were found in them. A large quantity of seeds, mostly wheat, barley and legumes were found, and in Inst11762 also a number of wild flower seeds. Due to these finds, as well as

the shape of the structures, it seems likely that they were used as storage silos for grain. The pottery in the immediate vicinity of the two structures dates almost exclusively to the Iron Age, though there was also a small number of Hellenistic sherds; the same is true for the very few sherds found within the structures. A fragment of a Hellenistic lamp that was built into wall W11763 gives a *terminus post quem* for this structure.



## 4. WALL W11186 AND ASSOCIATED STONE MASSIFS

### 4.1. Description

The large quarry stone wall (W11186), which is 2.5 m thick could be excavated over a length of c. 35 m and can be reconstructed over a total length of c. 50 m. This makes it a striking feature in Area II (*Fig. 0.4* and *Pl. 0.1*). The top and first few courses of wall W11186 were excavated in 2006, over a length of 35 m (Häser – Vieweger 2012, 264) (*Fig. 0.2*). The wall extends for about 50 m E–W across almost the entire Tall. It is broken off at the eastern edge of the Tall, in square AV 133, most probably as a result of a massive landslide that had occurred on this side of the Tall at an unknown time. In the west, the wall is most probably connected to stone massif Inst11953. At this point the wall must either have made a bend and continued southwards or southwestward, or perhaps the wall was only a northern wall without any others associated with it.

It has only been possible to excavate W11186 in Area II, i. e. along its E–W part. So far, it has not been detected anywhere else on the site, either by excavation or by the geomagnetic survey, which was carried out in 2014 (Rassmann – Reiter 2017, 193–196). With regard to the geomagnetic data, the low contrast of limestone was a serious limitation to the survey on various parts of the Tall. This becomes particularly clear in the areas around stone massif Inst11953: In the results of the geomagnetic survey, an extension of the outer eastern end of the massif was visible but the northern face of the massif – excavated in 2019 – was largely unclear in this image and could, if at all, only vaguely be guessed at (Rassmann – Reiter 2017, 194 fig. 3.55). Thus, neither the outlines of the western stone massif Inst11953 nor of the large wall W11186 were captured on the contour map drawn by Rassmann and Reiter (2017, 196 fig. 3.59).

The aim of the excavations in 2018/19 was not only to find the course of the wall but also to provide a description of its construction and chronological position. In order to investigate the construction of the wall on its outer face, a sounding was made in AV 129 directly against W11186 (see *Chap. 1.2*). The outer face of the wall was exposed to a depth of 25.39 BSL without having reached the foundation; the top of the wall was at about 21.59 BSL. The construction method of the wall

appeared to be uniform almost throughout the entire face (*Fig. 4.1*).

In the upper part of the wall, there were recognizable courses, consisting of alternating courses of smaller and larger stones ( $0.54 \times 0.36$  m). This more horizontal layering was only recognizable in the upper part of the wall; some of the larger stones were slightly worked, with some straight edges. Overall, in the lower part of the wall, smaller stones were used. Even if there was a tendency to different sizes of stone and intensity of the working of the stones, it is not possible to speak here of two phases of construction. The differences are too small for that, nor could they be observed on the inner face of the wall at least at this stage of excavation. The stones were mostly unworked boulders built in the dry masonry technique.

What was striking was a protrusion of masonry at about 4 m from the west in profile and visible from c. 23 BSL down to 25 BSL (*Fig. 4.1*): a line of stones emerged in an almost vertical line down to the bottom of the wall (as far as it was excavated). This vertical line coincided with the continuation of the edge of stone massif Inst11576 built against the south side of wall W11186; the protrusion of this edge of the wall is therefore very probably explained by the great pressure exerted by stone massif Inst11576 against the wall. In the area of this line some very large ( $0.80 \times 0.28$  m) lightly worked stones were observed.

Below this, at the height of c. 23.20 BSL the wall protruded by c. 0.30 m and forms a narrow ledge, which shows clearly on the plan (*Fig. 3.6*). This ledge and a similar ledge on the inside of the wall might indicate the foundations of the wall W11186. However, further excavations are needed to confirm to this.

A sounding was also laid out on the inner side of wall W11186 in AU 129 in order to investigate both the inner face of wall W11186 and the eastern wall face of stone massif Inst11576 and the connection between this and W11186 (*Fig. 4.2*). In a sounding c. 1.50 m wide W11186 could be investigated; the top on this side was found at c. 21.20 BSL and the bottom, as excavated, at c. 24.70 BSL. Again, the base of the wall could not be reached. The sug-

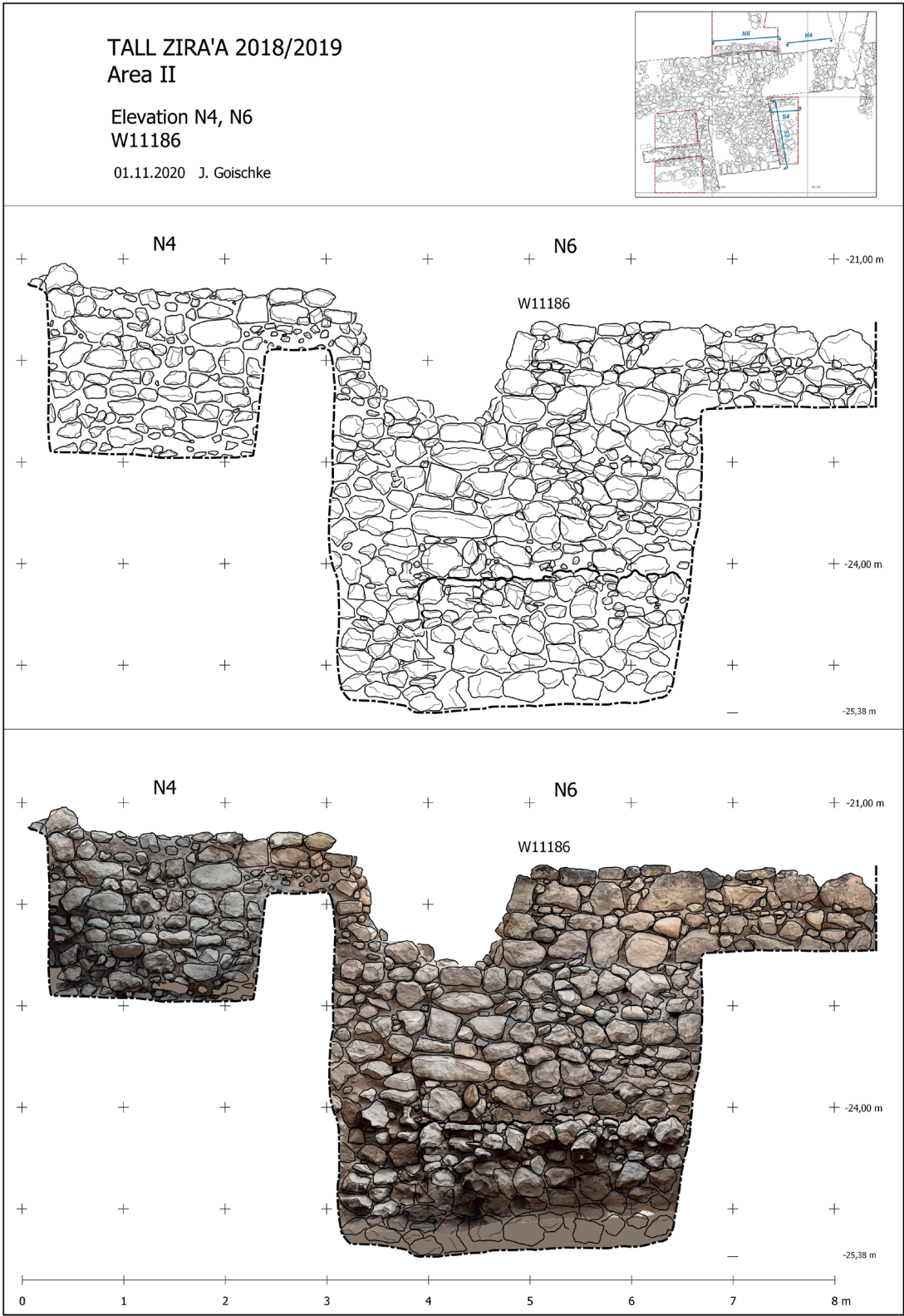


Fig. 4.1 View of the large wall W11186 from the north showing the outer face.

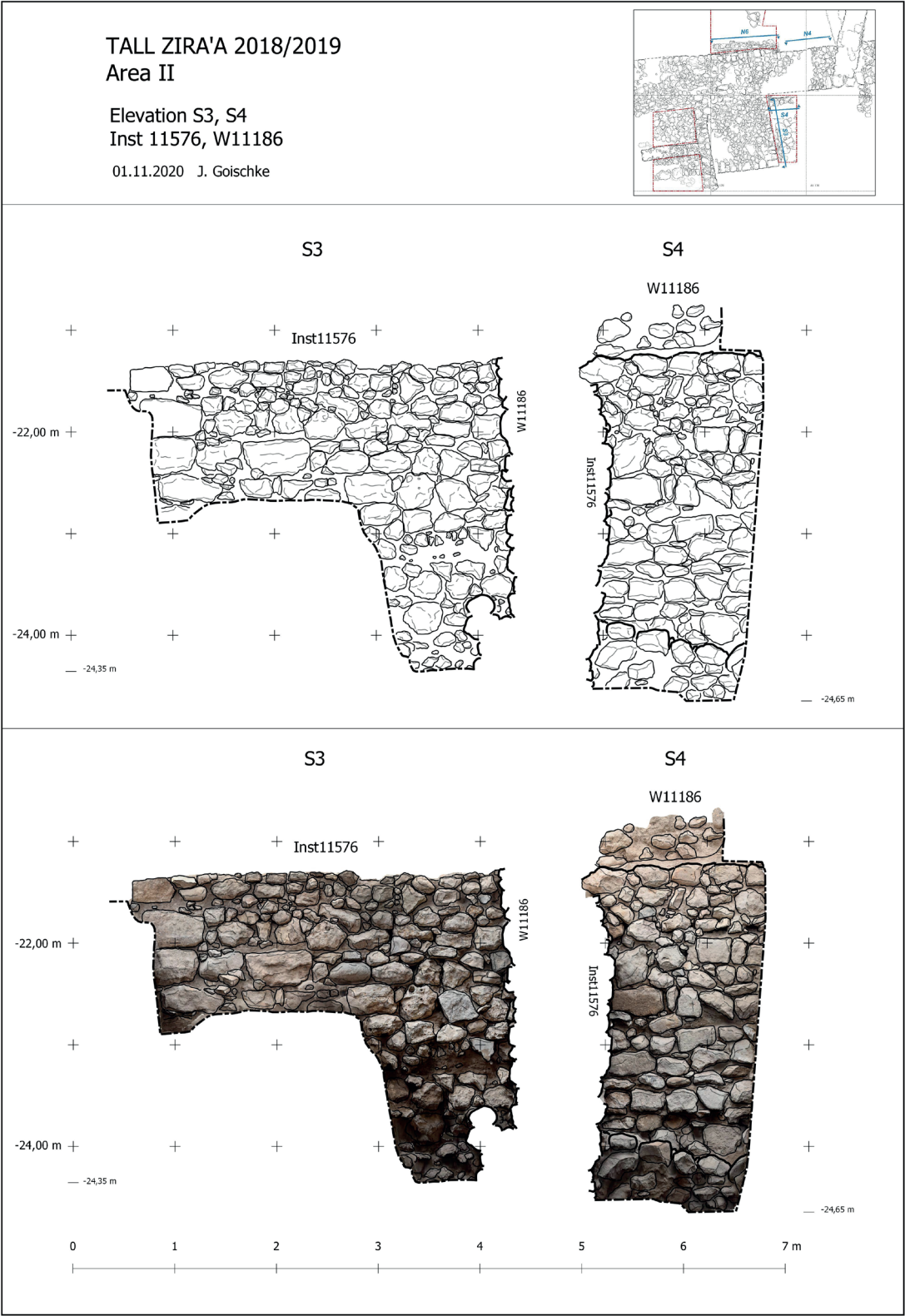


Fig. 4.2 View of the wall W11186 from the south showing the inner face (right), and view of the eastern face stone massif Inst11576; the white blank in the foreground (left) is Inst11930.

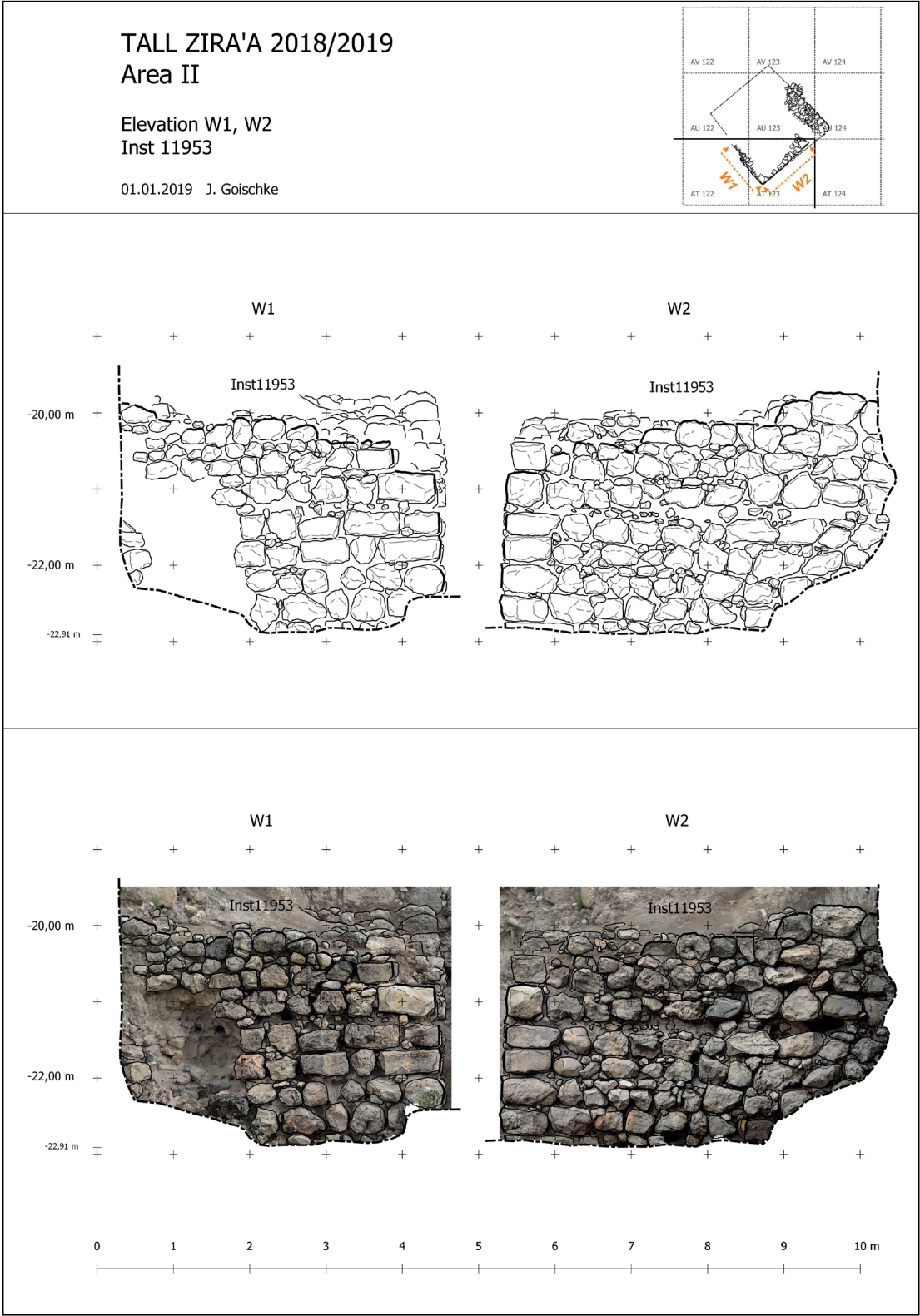


Fig. 4.3 Stone massif Inst11953 in Area I: on the left the southwestern face (W1), and on the right the northeastern face (W2).

gestion of two different building phases of W11186 that were observed on the outer face of the wall, but were not visible on the inner one, probably due to the fact that only a narrow section of the wall was examined. The inner face agrees in its structure and stone size with the description of the outer face. In the lower part, at the height of c. 24.00 BSL the stones of the wall step slightly forward and widen. On the plan, this protrusion of the wall in the lowermost layer was recognized as a parallel wall and was given its own installation number (Inst11993; see *Chap. 3.2.3*). It remains unclear at this point whether it was, in fact, a projection of wall W11186 or whether it was a separate wall placed parallel to W11186. What speaks for the first possibility is that there was a protrusion on the outer side of the wall, also at c. 24.00 BSL, so a similar one might be expected on the inside.

The deep sounding in AU 129 gave an insight into the stratigraphic relationship between wall W11186 and stone massif Inst11576 by showing that both structures were built at the same time, since they were bonded into each other. The highest elevation measured on the surface of stone massif Inst11576 was at c. 21.30 BSL, the maximum depth was at 24.35 BSL; so far, its foundations have not been reached. Stone massif Inst11576 was built into the inner, southern flank, almost in the middle of the preserved wall W11186. The stone massif was rectangular in shape, and was attested for a length of c. 6.70 m E–W, the western side of the stone massif has not been detected so far. The N–S length was c. 3.70 m along its eastern side.

The eastern face of the stone massif shows that it was built of irregular, mostly unworked boulders (maximum  $0.63 \times 0.33$  m) of various sizes, constructed in dry masonry technique (*Fig. 4.2*). The fill between the stones in the eastern face of the massif contained sandy and also ashy soil in some places. The cornerstones of the southeastern corner were remarkable because they were worked to form smooth bearing surfaces and straight corner edges. The cornerstones were also much larger than the rest of the stones used (up to 0.63 m long and 0.40 m high). Furthermore, they were set exactly on edge, no smaller stones or other filling material was used here. The careful layering of the cornerstones had structural reasons, because the massiveness of the stone massif had enormous weight, which could be dissipated and held by the exactly set corners. The execution of the masonry of the stone massif Inst11576 and its corners clearly corresponds to the

construction of the stone massif Inst11953 further to the west.

The stone massif Inst11953, situated in Area I, had already been excavated in 2009 in the course of the extension of the northern part of the Area I (squares AS–AT 119–123; Vieweger – Häser 2012, 263). It was not until 2019 that the profile of stone massif Inst11953 was recorded and described in detail, and a stone plan was prepared also in section (*Fig. 4.3*). In order to investigate the outline of the stone massif in plan, a trench was opened in quadrants AU 123/124. In this trench, the excavation exposed the northeastern side of the stone massif Inst11953, which ran parallel to its southwestern side. Only the uppermost layer was exposed and it was not possible to reach the top of the stone massif in the entire excavation trench, because it was partially covered by later overlying buildings (*Fig. 0.4*).

In order to investigate the southwestern and southeastern faces of stone massif Inst11953, the faces were cleaned. The area around Inst11953 was also cleaned and cleared of vegetation and washed-in material that covered the actual structures, however these interventions only revealed the structures excavated in 2011 to a limited extent. Given the state of preservation in 2019 it was difficult to decide whether stone massif Inst11953 had been previously excavated down to its foundations (*Figs. 4.4; 4.5; 4.6*) and equally, from the final aerial photos from the 2011 excavation season, it was just as difficult to decide whether the foundations had been reached; however, foundations are not mentioned in the previous publications (*Fig. 4.7*). Stone massif Inst11953 was preserved to a height of c. 2.30 m high, in nine courses. The lowest level preserved in 2019 was at 22.91 BSL (*Fig. 4.3*). The southwestern flank (W1) was exposed over a length of 4.10 m, the southeastern flank over a length of 5.1 m and the two sides join to form a right-angled corner. Inst11953 was a single-phase structure, since no variation in the type of stone setting was recognized in the masonry. It consisted of simple rubble stone masonry constructed largely of unworked boulders with a maximum size of  $0.90 \times 0.80$  m; no secondary basalt stones were used. Smaller unworked boulders were interspersed between larger boulders; fill material in the joints contained pottery and bone fragments. In the southwestern face (W1) there was a large gash that was created recently, either by erosion or vandalism. The elevation of W1 showed that a few of the stones in the wall were



Fig. 4.4 Southeastern (W2) face of stone massif Inst11953.



Fig. 4.5 Southwestern face (W1) of stone massif Inst11953.



Fig. 4.6 Stone massif Inst11953 from the south, in 2019, showing the well-constructed faces.



Fig. 4.7 Condition of the stone massif Inst11953 with surrounding architectural features in 2011, from the east.

slightly worked boulders. The heavily worked cornerstones, with precisely cut right-angled edges and flat straight bases were very noticeable. These cornerstones were carefully set on top of one another and five courses were preserved. The construction of this carefully set corner exactly matched that in stone massif Inst11930.

## 4.2. Interpretation

It has been shown that wall W11186 and stone massif Inst11576 were built at the same time, as the two structures were bonded together. Stone massif Inst11576, situated inside the wall, was rectangular in shape and solid. The wall and stone massif were over 3 m high, as excavated. Stone massif Inst11576 and stone massif Inst11953 in Area I showed strong similarities in their building technique; this was es-

pecially clear in the heavily worked cornerstones, which in both cases formed an exactly aligned, sharp corner; the style of rubble masonry and the stone sizes were also similar. Furthermore, it is clear from the general plan that wall W11186 runs towards Inst11953, though a connection between the wall and Inst11953 has not yet been proven by excavation. The striking similarity in the construction of the stone massifs, as well as their massiveness and state of preservation together with the preserved levels show that stone massif Inst11953, stone massif Inst11576 and wall W11186 were contemporary and belonged to the same structure. In the east, the wall breaks off at the edge of the Tall, where it is likely that it became the victim of a landslide on this side. So far, no deep trenches have been excavated on the eastern side of the Tall, which could give information on the construction of the wall and other possible stone massifs.

At present, there are very few indications about the chronology of this complex structure: Stone massif Inst11576 was built over by a phase which can only be demonstrated by wall W11784 (see *Chap. 3.2.1*) and which can only be roughly dated to the Hellenistic/early Roman period by the pottery found there, and a coin that dates to the time of Alexander Jannaeus. Above this were the two rooms in which the painted wall plaster was found and which can only be roughly dated to Hellenistic/Roman times by pottery finds (see *Chap. 3.1*). Wall W11186 was still in use when the two rooms were built since they used it as the northern wall. How high W11186 still stood at the time of the construction of the rooms must remain uncertain. This suggests that the wall and its stone massifs were most likely erected before the late Hellenistic period, but were still visible in this time. In the lower layers of the meticulously excavated stratigraphy in the deep sounding in AU 128, only Iron Age and Hellenistic pottery was found, and it was only further up, starting from Locus L11933 (around 22.70 BSL) that Hasmonean coins were found (see *Chap. 3.1*). The layers in the deep sounding in AV 129, however, were mixed: even in the lowest layers Iron Age, Hellenistic, and probably early Roman pottery was found. The stratigraphy in the deep soundings did not allow any more detailed chronological conclusions to be drawn about the construction of the wall and its stone massifs except that the intermixing, at least *intra muros*, could not have taken place later than Hellenistic times.

Regarding the chronological position of stone massif Inst11953 in relation to the structures excavated in Area I, it was stated in previous publications that the stone massif cut a dwelling house that

was in use from Stratum 16 (late MBA to LBA) up to Stratum 13 (Iron Age I; Soennecken 2017, 113, fig. 4.1.18). The stone massif Inst11953 also cut a floor (top: 21.99; bottom: 22.04 BSL) belonging to Stratum 11 (Iron Age IIB; Soennecken 2017, 567). This would imply that the massif was built after Stratum 11, and its foundations destroyed the earlier building down as far as Stratum 16.

What is noticeable and consistent in both areas is the almost total lack of structures from the Iron Age II; those in Area I were heavily disturbed, and those in Area II were completely destroyed except for the fortunate preservation of Building A on the very northern edge of the Tall.

No definitive statement can be made about the function of the wall W11186 and its stone massifs at present, since the continuation – if there was one – of the wall is still unknown. Whether the stone massifs function only as supports and/or also served as watchtowers is not known. Due to the unstable slope, which led to landslides on the west as well as on the east side of the Tall, it is possible that the construction functioned as a retaining wall to avoid landslides. Against this hypothesis is the fact that the stone massifs are located on the inside, or in the corner of the wall and therefore did not stabilize it from the outside. A function as a fortification, especially on the north side of the Tall, where the natural flank is inaccessible anyway cannot be excluded, but is questionable. A connection between the wall with its stone massifs and the artesian spring cannot be ruled out; it might be possible to see the wall as a protective structure for the drinking water. At the present time, assumptions aside, there is no strong archaeological evidence on which to base an interpretation and dating of the structure.

### 4.3. Bibliography

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## PLASTER AND WALL DECORATION

by Brita Jansen

### 5. PAINTED WALL PLASTER

#### *Introduction*

In the course of the 2018 season a large number of fragments of painted wall plaster were found. Most of them come from square AU 128, where the walls of Room K2 of a Byzantine house had been removed, and the remains of other walls were found. The wall plaster finds come from 13 different loci, ranging from a height of 21.61 m (lower edge L11584) to 20.92 m BSL (upper edge L11516; see *Chap. 3.1*).

In this report, the fragments found during the 2018 and 2019 seasons are presented in full in the catalogue. However, a final chronological and, above all, an art-historical classification cannot yet be made, on the one hand because the associated building structures have not yet been completely recorded, and on the other because there is currently a lack of sufficiently well documented reference sites. The number of preserved and published monuments with mural paintings in Transjordan has increased significantly in recent years, as the summaries of the current state of research show (Vibert-Guigue 2016; Vibert-Guigue 2018). However, these consist mainly of Nabatean decorations from residential buildings and tombs in southern Jordan, whereas in northern Jordan wall painting is known only as a feature of Roman tombs, not of residential buildings. For the time before the Nabateans settled in the Hellenistic period, only the palace fortress of 'Iraq el-Emir gives a small impression of the features of upscale residential architecture that were dependent on Greek art. In addition, the Hellenistic Naos of Jerash (Gerasa) also represents sacral architecture. In Roman times in Jordan, apart from the magnificent villas of ez-Zantur and other buildings in the vicinity of Petra, it is above all the tombs in the area of the Decapolis that are of interest in

terms of wall paintings. In neighbouring Cisjordan, the furnishings of the Hasmonean-Herodian palaces in particular are well published, but of various other Hellenistic and early Roman sites only individual finds from residential architecture or from tombs are known (Rozenberg 2018).

An art-historical classification of the fragments in question is also made difficult by the fact that in the region, as in large parts of the eastern Mediterranean, a preference for the so-called 'Hellenistic masonry style' persisted for a particularly long time. This term, or the 'structural style', is used to describe the imitation of an architectural composition of orthostats and ashlar, which can be either modelled three-dimensionally in stucco or simply painted on a wall. Where only small fragments with imitations of natural stone on a plain ground are preserved, without the possibility of reconstructing the entire decorative system, it is hardly possible to decide whether the decoration is Hellenistic or Roman without other indications.

With the comprehensive presentation of the finds from Tall Zar'a it is hoped that the discussion on the development of wall decorations in Transjordan of the Hellenistic-early Roman period will be promoted and other researchers encouraged to publish supposedly insignificant fragments not found in situ. One should, therefore, be aware of the provisional nature of the conclusions drawn here from the observations of the wall plaster pieces regarding the type of decorations and the character of the associated buildings. Further excavation seasons will hopefully provide important insights into the associated buildings, while the planned scientific investigations can clarify technical aspects such as those of knowledge transfer.

## 5.1. Location of the Finds and Premises for the Analysis

All finds are stray finds; no plaster was found still *in situ* on a wall. During the season, the pieces were excavated extremely carefully, so that even very small, inconspicuous fragments were recorded. It can therefore be assumed that a representative cross-section of the original furnishings of an unknown building is available, containing not only special coloured pieces but also unpainted or heavily worn fragments.

A total of about 4400 pieces were recovered, which have a surface area of about 19,400 cm<sup>2</sup>, i.e. just under 2.0 m<sup>2</sup>. The average size of the fragments is 4.4 cm<sup>2</sup>, which on the one hand shows the strong fragmentation, but on the other hand also testifies to the attention paid during the excavation, where many pieces of only 1–2 cm<sup>2</sup> size were recovered.<sup>8</sup> From the small size it can be concluded that the wall plaster pieces were not found directly at their original place of installation, but had probably moved around several times. This idea is also supported by the fact that fragments of painted wall plaster had already been found in earlier excavation seasons in Area II, and also very few pieces in Area I, which the excavator associates with contexts from early Roman times.<sup>9</sup> Superficial inspection of the finds from overlying layers in Area II shows that they correspond predominantly with the spectrum discussed here.

Obviously, the remains of wall decorations were widely dispersed in the ground and were

stirred up and spread about with the earth during reconstruction measures or levelling. A clear indication of this is a pink painted fragment of wall plaster from L11519 (TZ 113594), in which there is a small piece of black painted plaster contained in the earth plaster adhering to the back (*Pl. 5.1a–c*). The fragment, therefore, was in the earth that was used in the mortar mix. A small piece of painted plaster was also found in the earth used as a binding agent for wall W11521. However, there are also a number of larger fragments, several of which fit together (*Cat. 5.3.3.1.1*). It can be assumed that these were found closer to their original place of attachment.

In this investigation, it has not been possible to associate any of the decoration with a wall or a room. For this reason, all available indications must be followed up by which groups of fragments can be related to each other or a chronological differentiation can be achieved. The high degree of fragmentation makes it difficult to identify pieces belonging to a decoration. Fragments that fit together directly are extremely rare, so that only individual decorative elements can be identified, without being able to reveal the overall system. This is also made more difficult by the lack of relevant publications, for example, too few wall decorations are known from residential buildings to be able to deduce reliably an overall system from such small elements.

## 5.2. Technical Features

### 5.2.1. Mortar Composition

So far, no scientific investigations have been carried out on the fragments recovered. However, analyses of some samples are planned in order to obtain information on the composition and application of the mortar layers and the layer of paint. Since no microscopic observations have been made so far, only

observations that could be made with the naked eye are described here.

Overall, the mortar composition shows only minimal differentiation. It is always a dense, white lime mortar to which fine and medium sand has been added. Coarser sand or fine gravel can also be

8 For comparison, two complexes from the Roman city of Colonia Ulpia Traiana near Xanten (Germany) worked on by the author, where the average fragment size was 287 and 115 cm<sup>2</sup> respectively.

9 We would like to thank Jutta Häser for this information and the permission to view the pieces.

seen in most of the pieces. The additives can sometimes extend right up to the surface. Traces of fine organic temper in the form of plant fibres can be seen in most fragments. A lime slurry, that creates a particularly even ground for painting, has not been observed on any of the fragments. Only on a few pieces it can be seen that the plaster was applied in at least two layers. In these cases, the upper layer is denser, contains less coarse sand and partially detaches itself from the lower layer (*Pl. 5.1d. e; 5.14u*). Where such a division is visible, it is noted in the mortar description. However, there may also be fragments with a division between slightly coarser and slightly finer plaster that cannot be seen with the naked eye. Mortar layers that can be clearly differentiated, for example with different colours due to admixtures such as brick chippings or ash, were not observed. Therefore, based on the observations of the mortar, it is not possible to deduce indications of related fragment groups.

The thickness of the mortar can vary greatly within a single piece where unevenness in the substrate was being levelled out. For example, the thickness of the plaster is between 0.5 and 1.2 cm for a piece of TZ 113593 (*Pl. 5.1f*).

Interestingly, in some cases large sherds of ceramic vessels were integrated into the plaster. In a fragment from L11517 (TZ 113596; *Pl. 5.2a*) the sherd itself, a fragment of a ribbed water vessel, is still preserved. In another fragment, from L11522 (TZ 113598; *Pl. 5.2b. c*), the imprint of a comparable sherd is still clearly visible. Obviously, these fragments had been pressed into the lower layer of plaster to provide good adhesion as a base for another layer of plaster.

Remains of earth plaster are still preserved on the back of numerous fragments. This contains some lime and was, as can still be seen from the imprints, tempered with much organic material. It is also clear from other pieces where heavy imprints of plant fibres can be seen on the back of the lime mortar that they were originally applied to an earth plaster (*Pl. 5.1g*). The descriptions of the loci show that the wall plaster pieces were repeatedly found together with mud brick material. The remains of individual mud bricks can still be seen on one fragment of plaster (*Pl. 5.1h*). It can therefore be assumed that the majority of the plaster fragments found were originally placed on mud brick walls, which probably had stone bases (see *Chap 3.1*).

It is noticeable that some fragments show some curvature. This cannot always be determined with

certainty, because the surface as a whole is not completely flat. In the case of small fragments, it is difficult to judge whether the curvature was simply a result of the unevenness of the wall face. There are, however, a number of fragments where a curvature of the surface, which can sometimes also be seen on the back, can be clearly determined (*Cat. 5.1.1; 5.1.2; 5.1.6; 5.2; 5.3.3.1.5; 5.4.2; 5.4.4; 5.5.6; 5.5.8; 5.5.14.1; 5.7.2; 5.8.1.1*). Both vertical and horizontal curvatures were found, so that the corresponding decorations could have been placed in a niche or in a room with a barrel vault or dome. This is discussed in connection with the respective fragments. So far, the exposed floor plans of the Hellenistic period do not contain any structures that would suggest a niche or a round room. However, even within rectangular rooms, curves could easily have been created using mud bricks.

The surface of the plaster is mostly well smoothed, on one fragment (*Cat. 5.5.15.5*) the imprints of a smoothing trowel are visible. However, there are also some places, such as in the corners of rooms, where, as is known from other sites, smoothing was only carried out summarily. Also, on surfaces that were secondarily reworked, the surface is often very uneven.

### 5.2.2. Preparation for Painting

On one piece (*Cat. 5.1.4; Pl. 5.4d*), pale black lines on a white background can be seen, partly painted over by the decoration. It is possible that these are preliminary drawings which indicate the outline of the pattern to be applied afterwards. Two fragments (*Cat. 5.5.11.3 and 5.5.12; Pl. 5.13e*) still show the impressions of strings which were slightly pressed into the still damp plaster. These were used to create horizontal lines which the painter could use as a guide for the arrangement of the decoration. An incised preliminary drawing is preserved on a single piece (*Cat. 5.5.14.1; Pl. 5.14a*).

### 5.2.3. Application of the Colours

So far no investigations have been carried out on the pigments, so that here too only naked-eye observations have been made. Thus, it is also not possible to judge whether the paint was applied *al secco* or

*al fresco*, as possible binders are not visible to the unaided eye.

The colour spectrum used includes white, rose, red, yellow, black, grey, green and blue. The latter, which is certainly Egyptian blue, occurs only on a single piece (*Cat. 5.8.3; Pl. 5.16l*). It is noticeable that some colours, especially yellow and green, are very grainy-pastose. Although, in the case of the yellow, there are also some fragments on which the colour is mixed thinly and spread smoothly. It can also be observed that the green colour was often applied over a grey background (e.g. *Cat. 5.5.13; Pl. 5.13j*). Presumably, the grey undercoat influenced the effect of the paint.

### 5.3. Wall Decorations

The fragments of painted plaster are probably mainly remains of wall plaster. There are no clear indications of ceiling plaster, such as impressions of the base material of the roof construction. Some pieces (*Cat. 5.4.1b; Pl. 5.2d*) with only a roughly smoothed surface, which is left white, could belong to outside plaster or to an unpainted interior wall. All other wall plaster pieces show remnants of coloured designs. Smooth-surfaced, monochrome white fragments can also be associated, at least in part, with the coloured decorations. The decorations are only painted on smooth surfaces, there is no evidence that details were carved or sculptured, nor are there any fragments of stucco decoration.

#### 5.3.1. Basis for the Cataloguing

Individual decorative elements can be found over many loci in the square, so that they cannot easily

#### 5.2.4. Repairs

Some fragments show two superimposed layers of paint. This is evidence of repainting. Thin layers of mortar, some of which reach onto painted surfaces, also show that repairs were made in the plastered rooms, but these are not always associated with repainting. The superimposition of two layers of paint becomes very clear in the fragments of *Cat. 5.3.3.1.1 (Pls. 5.2e, f and 5.6c)*, of which an above-average amount of surface area has been preserved on pieces that fit together. Here, the first layer of paint shows a white-ground decoration with wavy stripes in red and black. One area of the painting was covered with a thin layer of mortar. A second coat of paint was applied on top of this, which is inspired in its motif by the first. However, the execution is clearly different, the paint is more thinly mixed and the stripes are closer together, so that less of the white background is visible. Nevertheless, it is clear that an attempt was made to imitate the original decoration in order to conceal the repair, which only affected a section of the surface.

be identified as belonging to a decoration system. Since the composition of the mortar also does not offer any reliable criteria for assigning different decorative elements to a particular wall or building, a subdivision according to other criteria had to be made first.

In the catalogue, the fragments are therefore classified by decorative elements. These are divided into groups according to iconographic aspects, mainly different elements that can be interpreted as imitations of ambitious architecture. These include various types of imitation of natural stones, but also monochrome fields and parts of architectural friezes. The transitions between different decorative elements can be recognized in individual fragments. However, such connections are too limited to reconstruct entire decorative systems with certainty. For this reason, the assumed coherence of various decorative elements is not considered in the classification of the catalogue, but possible links are mentioned in each case.

## 5.3.2. Decorative Elements

### 5.3.2.1. Architectural Frieze

A number of fragments from different loci stand out due to a curvature of the surface and relatively fine painting in black and white (*Cat. 5.1.1; Pl. 5.3*). On a total of 16 fragments a surface of c. 79 cm<sup>2</sup> is still preserved. Of these, one set of six and two sets of two fragments fit together. An easily recognizable central motif is a white stripe on a black background, on which thin black lines are applied diagonally. From this stripe, wider white strokes run off to one side. In one case, it looks as if such lines are running off on both sides; on one side, however, they have faded so much that this cannot be determined with certainty. The orientation of the strokes varies. The motif is interpreted as a highly stylized representation of a simple braided band (‘guilloché’) with a dentil in a diagonal view. This interpretation is based on the general popularity of this motif, although it was usually painted in more detail.

Another motif apparently followed immediately: on five matching fragments (*Cat. 5.1.5; Pl. 5.3c, d*) with the representation of a cymation on a light yellow background, a projection of the black surface with the diagonally running white lines is still visible. Thus, the following arrangement can be reconstructed here: A simple black and white braided band is bordered at the bottom by a dentil. This is followed by a white and a black line and a light yellow area on which an Ionian cymation is painted in black and white, which still merges into the two separating lines. On the light yellow surface, there is another painting in white and black, which is barely visible, but which was probably also an element of an architectural decoration.

Further fragments (*Cat. 5.1.2*), some of them with very faded white painting on a black background, could still be part of the frieze. A neighbouring decoration could include fragments (*Cat. 5.1.4; Pl. 5.4c–e*), which in one case show a transition from a black- and white-painted area to a red area, and in another a tongue-like decoration, ranging from a white to a black area, separated by a rose and a white line. On the white surface there are vertical black strokes, which could be from a preliminary drawing.

Black painting on a white background (*Cat. 5.1.3; Pl. 5.4a, b*) could also be part of an architectural decoration, but this cannot be defined

further. Other fragments of suspected cymatia or other elements on a rose, white or red background (*Cat. 5.1.6 or 5.1.7; Pl. 5.4f–k*) suggest that the motif was used in different variants or at different stages of construction of the building. Another striking feature is a series of yellow-ground fragments (*Cat. 5.1.8; Pl. 5.4l–n*) with finely divided painting in white, black and red, the pattern of which cannot be determined. One fragment (TZ 113596; *Pl. 5.4n*) with one white and one black line running diagonally from a black to a yellow surface could be from the representation of a column or a pilaster. On the black surface, remains of green paint can still be seen.

### 5.3.2.2. Figural (?) Representation

A single piece painted in black and white can probably be interpreted as a figurative representation (*Cat. 5.2; Pl. 5.3j*). Here, an elongated, rounded form is painted on the black ground with white brushstrokes 0.3–0.7 cm wide, which on one side ends in a narrow, rounded line. A single black dot is painted approximately in the middle of the rounded form. The painting is interpreted as the head of a bird pointing to the right, the base of whose neck is still preserved. The black dot forms the eye, the white line represents the beak, the tip of which is broken off. The white colour is sometimes very thin, heavily diluted with water, so that the black background shimmers through.

The surface of the fragment is clearly curved. This suggests that it is associated with the architectural decoration (*Cat. 5.1.1; Pl. 5.3*), with which it also has the colouring and a fleeting style of painting in common.

### 5.3.2.3. Imitations of Decorative Stones

The largest group of fragments belongs to the decorations that imitate natural stone (*Cat. 5.3*). In the catalogue they are divided into three large groups which differ in their painting technique.

#### *Speckled Decoration: Red Marbling on Yellow Ground (Cat. 5.3.1; Pl. 5.5a–f)*

A particularly large number of fragments of this decoration have been found (1588 frgs., 4865 cm<sup>2</sup>).

They form the largest group after monochrome white pieces and account for a good quarter of all fragments in terms of number and surface area. This decoration was probably recorded relatively accurately, as it is usually recognizable even on small fragments. However, only monochrome yellow pieces (*Cat. 5.4.4*) could still come from the edge of this decoration or monochrome black pieces (*Cat. 5.4.2*) from the adjacent black area.

The decoration consists of a yellow area with red decoration which borders on a plain black area. The boundary between the two colours is covered by a white line, which is sometimes applied only thinly. All pieces together, 140 cm of the boundary line are preserved, but no corners or intersections. Due to single red splashes on the black ground it is clear that – at least partially – the black area was below the yellow-ground one. The sequence of the painting process was that first the yellow, then the black colour was painted on. Then the marbling was applied to the yellow ground and finally a white line was drawn as a boundary line. Some fragments clearly originate from the corners of a room, where the marbling is not continued to the end of the wall, so that small areas remain monochrome yellow.

There is no further indication of the decorative scheme, especially not as to whether it is a strip or a field. Clear evidence for a field is missing because no corners were found. If one were to assume a strip, it could have had a height of just under 20 cm according to the ratio of the preserved area to the preserved border. However, this can only serve as a very rough indication.

The kind of marbling created by the red spots on the yellow ground is striking and comes closest to Barbet's category „type 5 imitations de porphyre, mouchetés“, in her classification of marble imitations in antique mural painting, although she points out that the Tall Zar'a pieces with their fleeting style of painting are rather different.<sup>10</sup>

Comparative pieces with a „decoration mouchetée“ listed in the „decors antique“ database show rather isolated spots that were made with a dabbed-

on brush. On the pieces from Tall Zar'a, however, there are no clear traces of a brush anywhere, as is the case with other decorations or with the white accompanying line. The spots are very different in size from those on the database, and frayed at the edges. Within larger stains there are areas with thinner and thicker paint, which could not have been produced with a brush, so a utensil made of a different material must have been used, which could absorb the liquid paint and release it again. This may have been a cloth, a bundle of textile, leather strips or a sponge. The areas with thicker applications of paint are likely to be the points where the utensil was lifted away from the wall at the end of a stroke.

Since in some places the paint looks as if it has been ‚pulled out‘, it can be assumed that the decoration was applied by rolling an object soaked in paint. This was done in diagonal movements from bottom to top, whereby the slipping of the wet utensil can cause the ‚pulled‘ spots mentioned above. Using this kind of rolling technique in modern apartment buildings, for example in Berlin, a design was often created on the lower part of stairwells in a rational and effective manner, which on the one hand satisfies aesthetic demands, but on the other hand also satisfies practical considerations, as dirt stains are less noticeable on such a pattern and it is therefore well suited for heavily used areas such as stairwells. Such decorations are made with balls of soft leather straps.<sup>11</sup>

A directly comparable design is not known from antique wall paintings. Only one wall from the Casa dell'Alcova in Herculaneum, which is decorated with paintings of the third and fourth style, has a similar decoration in the plinth area. Directly above the floor there are longitudinal rectangular fields separated by red stripes. The light-ground fields are painted with red spots. These were created with a sponge soaked in paint, which was obviously rolled or wrapped in an oblique direction from bottom to top.<sup>12</sup> Mulliez cites this wall as the only documented example of the use of sponges in mural paint-

10 According to an email from A. Barbet dated 08.04.2020. Barbet is sincerely thanked for the information as well as for the reference to the 'decors antiques' database that she set up, which has an extensive stock of photos of wall painting decorations that can be accessed via the homepage of the École normale supérieure (ENS), Paris.

11 In our own test with a bundle of leather straps purchased in a hardware store, a result was obtained that only approximately corresponds to the appearance of the pieces examined. Somewhat more similar is the wall design in a Berlin apartment building, which was created in the 1950s.

12 Mulliez 2014, 157–158 fig. 94. The author's assumption that the pattern was not produced by dabbing, as is usual

ing, for which, however, he cites literary evidence from Pliny (Nat. Hist. 9, 148), according to whom, among three types of sponges there is one from which brushes are made.

### *Spotted Decorations (Cat. 5.3.2; Pl. 5.5g–j)*

The second form of imitation of natural stone is more common, made with splashes of one or two colours on a single or two-coloured background. Such a decoration is often found in the plinth area of decorated walls of Roman times.<sup>13</sup> The splashes may have been applied with a brush or bare fingertips (Mulliez 2014, 155–156).

Among the fragments from Tall Zar'a there are mainly grey or black background areas with splashes of red and white. In some cases the background is already two-coloured, so there are green-ground areas in addition to grey-ground with splashes, and the transition between the two colours can be rounded or angular (*Cat. 5.3.2.2; Pl. 5.5h. i*). It does not look as if an incrustation with differently coloured stone slabs is meant here, but rather stone types which are naturally multi-coloured.

However, there are also some fragments where, clearly, two different sprayed decorations are combined (*Cat. 5.3.2.1; Pl. 5.5g*). These are green- and pink-ground surfaces, each with many fine black splashes. The two surfaces are separated by a black stripe which is slightly curved. At first glance, it appears as if this line is in the shape of a segment of a circle, so that one could assume a pink circle inscribed in a green surface. However, the curvature of the line is too imprecise, and it could simply be a slightly crooked horizontal separation.

### *Decorations with Wavy Lines (Cat. 5.3.3)*

A third type of imitation of natural stone is represented in different variants. Their common element is that the decoration consists of lines applied in waves or zigzag, which are diagonally applied from top to bottom in a loose brushwork pattern and partly overlapping each other. The most common is a variation with red and black lines on a white back-

ground, and the largest complex of matching pieces bears this design (*Cat. 5.3.3.1.1; Pl. 5.6; 5.7*). In addition, as mentioned above (*Chap. 5.2.4*), a second layer of paint has been preserved on these pieces, which must have come from a partial repair in the room. The first layer of paint has red and black strokes on a white background, and the traces of individual brush fibres are often visible, especially on the black strokes. The second layer of paint shows a slightly different version of the same type of decoration. Other pieces show the transition from the white-ground decoration with red and black wavy lines to a black area or black stripe.

Another variant shows zigzag lines in red on a pink background (*Cat. 5.3.3.2; Pl. 5.8*), which are mostly drawn relatively carefully, but sometimes there are also splashes of paint on and next to the zigzag lines. No overlapping lines can be seen here. The decoration is bordered by a black area or a black stripe, from which it is separated by a white line.

In another decoration a red and a light yellow field adjoin each other (*Cat. 5.3.3.3; Pl. 5.9*). Green stripes are painted across both fields in wavy lines. On individual fragments, where only parts of the red area are preserved, the pattern was initially interpreted as a vegetal decoration. However, the overall view of the preserved fragments makes it clear that this is probably also a variant of the imitation of natural stone, even if its colouring can hardly have been based on a natural model. However, the decoration is only preserved on very washed-out, partially sintered pieces, so that it cannot be fully assessed. The fragments of *Cat. 5.7.11* and *Cat. 5.7.12* may also originate from similar imitations of natural stone.

According to Barbet, the present decorations can be classified as 'imitations de marbres en zigzag'.<sup>14</sup> This pattern is a simple decoration of parallel wavy lines. The decorations of Tall Zar'a have only the wavy or zigzag lines in common, they are not parallel here. No exactly matching decorations are known. The most comparable are imitations of alabaster used in the Alexandrian variant of the 'masonry style' and therefore used in Alexandrian-influenced decorations of Hasmonean-Herodian buildings (see *Chap. 5.4.3.4*). All in all, representa-

in modern wall designs, but by wrapping, results from the analysis of the photograph.

13 For the Hellenistic period, the descriptions are usually too imprecise to identify a comparable spray pattern.

14 So in an email of 04/08/2020.

tion of natural stone was probably intended, even if the colouration is far from a possible model.

#### 5.3.2.4. Monochrome Fields (*Cat. 5.4*)

Among the groups of monochrome surfaces, white is the largest, i.e. where no paint was applied to the smoothed white plaster base (*Cat. 5.4.1*: 1389 frgts., 4981 cm<sup>2</sup>). Among them are also fragments that are significantly coarser and probably originate from exterior plaster. But this large proportion of well-smoothed fragments show that even within the coloured walls larger sections were left white. This is indicated by the transitions mentioned below. However, that some walls were left completely white cannot be ruled out with certainty.

Monochrome black fragments have also been found in larger numbers (*Cat. 5.5.2*: 294 frgts., 1158 cm<sup>2</sup>). Obviously, they are mostly from intermediate strips, one fragment was clearly placed near a corner of a room. The monochrome yellow fragments (*Cat. 5.4.4*: 163 frgts., 533 cm<sup>2</sup>) could at least partially belong to the red spotted decoration (*Cat. 5.3.1*), which often did not reach the corners of the room. Pink pieces (*Cat. 5.4.6*: 130 frgts., 432 cm<sup>2</sup>) could also belong to other decorations, especially *Cat. 5.5.11*.

Relatively few monochrome red fragments have been found (*Cat. 5.4.5*: 82 frgts., 276 cm<sup>2</sup>). Presumably they are more likely to have come from intermediate stripes than from monochrome fields. For the green (*Cat. 5.4.7*: 16 frgts., 29 cm<sup>2</sup>) and grey pieces (*Cat. 5.4.3*: 3 frgts., 8 cm<sup>2</sup>) the small number does not allow any conclusions to be drawn.

#### 5.3.2.5. Borders between Different Decorations (*Cat. 5.5*)

Numerous fragments come from the transition between different decorations, although they cannot always be determined. In the case of simple stripes drawn on a single or two-coloured background, they may be dividing lines between fields or details within surfaces.

Various fragments show a black surface or a black stripe, which is separated by a white line from another decoration. It can therefore be assumed that black separating or border stripes were common. Beside these stripes, the beginnings of other decorations can also be seen, sometimes two different

decorations adjoin each other. Examples of individual decorations besides black stripes are *Cat. 5.5.3* (*Pl. 5.10e, f*) with a pink area painted in green, and *Cat. 5.5.5* (*Pl. 5.11a*) with a field painted red and light orange. In addition, the transition to a plain red area occurs more frequently (*Cat. 5.5.9*; *Pl. 5.11i–l*).

Some fragments on which, besides the white-bordered black stripe, two decorations directly adjoin each other are interesting. For example, in *Cat. 5.5.1* (*Pl. 5.10a–c*), in addition to the border strip, the beginnings of a yellow area painted in white and red and a grey area with fine white splashes can be seen. It is noticeable that the transition is diagonal to the course of the black strip. Various pieces in *Cat. 5.5.4* (*Pl. 5.10g, h*) also show an oblique course of the separation between two decorations, in this case a rose surface with wavy line in red (see *Cat. 5.3.3.2*) and a grey surface with fine white speckles (see *Cat. 5.3.2*). The orientation of the dividing line varies in its alignment.

On the one hand, these fragments prove that the two forms of natural stone imitations *Cat. 5.3.2* and *Cat. 5.3.3* were combined. On the other hand, the oblique transitions show that not only rectangular blocks were represented. Another fragment (*Cat. 5.5.6*; *Pl. 5.11b*) also shows an oblique transition between two decorations with spray or wave decoration, which in this case are separated by a black line. However, since no angles are preserved, no rectangles standing on a corner can be reconstructed and the exact arrangement remains unclear.

The transition from red to black, separated by a white line, is particularly common in striped decorations (*Cat. 5.5.9*; *Pl. 5.11i–l*). But there is also the transition from red to white with a black line (*Cat. 5.5.10*; *Pl. 5.12a–d*).

Also striking are a number of fragments with a pink background (*Cat. 5.5.11*; *Pl. 5.12e–m*), in which there is also a transition to white with a black line in between, but above all many fragments with black lines on the pink background. These run partly perpendicularly, partly obliquely to the direction of the ground stroke, partly parallel strokes can be seen. A pattern cannot be reconstructed. However, on a single fragment (*Cat. 5.5.11.1*; *Pl. 5.12e*) a corner is preserved, which shows that a pink area is limited to two sides adjoining each other at right angles, in one case by a white line and then a black area or stripes, in the other in the reverse arrangement. This was probably the border of a pink field, which was to be given a three-dimensional effect with the black and white lines. On other fragments,

too, black and white strokes can be seen, in some cases also a transition to yellow (*Cat. 5.5.11.4; Pl. 5.12n. o*).

Yellow or green areas are also bordered by parallel black and white lines of different widths and arrangements (*Cat. 5.5.12 and 5.5.13; Pl. 5.13*). It is possible that these represented not only the separations between painted ashlars, but also details such as a raised panel and a drafted margin.

#### 5.3.2.6. Parts of Garlands? (*Cat. 5.6.1; Pl. 5.14q. r*)

A total of seven fragments, which fit together in a group of four and a group of two, show a decoration in green and white on a rose-coloured background, which could possibly be interpreted as part of a garland or a wreath of leaves.

#### 5.3.2.7. Insecure Classification (*Cat. 5.7*)

In this category, decorations are listed for which an interpretation is suggested but cannot be proven with certainty. These include fragments with paintings in yellow, rose and black (*Cat. 5.7.3; Pl. 15a–f*), which could be an imitation of natural stone, but which can no longer be evaluated due to their poor state of preservation.

#### 5.3.2.8. Miscellaneous (*Cat. 5.8*)

Finally, the fragments whose decoration cannot be interpreted are listed. Among them, the most striking are the pink-ground pieces with very fine black and white painting (*Cat. 5.8.1; Pl. 5.16d. e*). The only fragment that bears some Egyptian blue paint should be emphasized, even if the decoration can no longer be identified (*Cat. 5.8.3; Pl. 5.16l*).

## 5.4. Chronological and Art Historical Classification<sup>15</sup>

### 5.4.1. Relative Sequence

Decorations of Hellenistic or Roman mural painting can usually be dated on the basis of iconographic and stylistic comparisons. However, due to the heavy fragmentation of the pieces from Tall Zar'a and the lack of sufficient publications for the region, it is very difficult to obtain reliable information from the material for a chronological classification of the painting and the associated buildings.

On the basis of the stratigraphy, a relative sequence of different decorative elements can initially be determined. The most widespread form of decoration, the red spotted natural stone imitation on a yellow background (*Cat. 5.3.1; Pl. 5.5a–f*), is also the one that is still found in the deepest layers of trench AU 128 (see *Chap. 3.1*). The lowest layer (L11584), in which a fragment with this decoration was found, lay directly on the floor F11597/F11566. Above this, further fragments come from almost all loci. Comparable pieces had also been

found in earlier excavations 2006–2009 and 2011 in the layers from the early Roman period onwards. The large number of fragments (1126 frags. with a total surface area of 0.52 m<sup>2</sup>) indicates that larger areas were decorated with this type of painting than other types, while the small size of the pieces recovered (on average 4.2 cm<sup>2</sup>) indicates that these pieces were particularly affected by upheavals in the soil.

This also applies to the other decorations. However, a temporal relation can be seen among the different decorations. For example, fragments of the architectural frieze painted in black and white (*Cat. 5.1.1; Pl. 5.3*) were found from L11561 upwards. From these layers on, the pink-ground pieces were also found (*Cat. 5.5.11; Pl. 5.12e–m*). Architectural decoration in other colours (*Cat. 5.1.5–5.1.8; Pls. 5.3c. d and 5.4f–n*) was only found from L11562 onwards, but the quantities here are smaller overall (see *Pl. 0.2*).

15 The dating approaches dealt with here are those that are possible independently of the evaluation of stratified finds. Notes resulting from the analysis of the stratigraphy are included in *Chap. 5.5*.

It is striking, then, that all other decorations which might have belonged to a decoration in the 'structural style' (*Cat.* 5.3.2 and 5.3.3) appear uniformly from L11554 and L11563 upwards. Larger fragments as well as groups of several matching pieces (*Cat.* 5.3.3.1; *Pl.* 5.6) were also found here, so that it can be assumed that the fragments had not moved very far from their original place of attachment.

As a rough generalization it can be assumed that the painting with the red spotted natural stone imitation on a yellow background is one of the oldest finds here (*Group A*). But due to the heavy intermixing of the layers in the fill of the two rooms (see *Chap.* 3.1.2), it was not possible to determine with certainty whether the finds were in their original chronological sequence or not. Therefore, only divisions into groups are made here for the time being. A second group comprises the black and white architectural elements (*Group B*) and a third one finally the elements from various other natural stone imitations (*Group C*). Within the last group there is a greater diversity, so that it can be assumed that not all fragments belong to one complex, but similar decorations were used over a longer period of time or in different rooms.

## 5.4.2. Comparisons for Decoration Elements

Since no complete decoration systems can be reconstructed, no general comparisons with other monuments are possible, which would allow a stylistic and chronological classification. In contrast, individual characteristic decorative elements promise better prospects. Two types of decoration stand out among the fragments from Tall Zar'a as being rather unusual for Hellenistic and Roman wall paintings. These are two types of natural stone imitations that were created in a relatively simple way, one with a speckled decoration and one with wavy lines.

### 5.4.2.1. Speckled Decoration: Red Marbling on Yellow Ground (*Cat.* 5.3.1; *Pl.* 5.5a–f)

The most common form of imitation of natural stones found among the pieces shows spots of red paint on a yellow background, for which the author is not aware of any published comparative examples. However, similar unpublished pieces from Gerasa (Jerash) and Gadara (Umm Qays) are known. Due to the rather inconspicuous decoration, it is quite possible that fragments of similar decorations have also been recovered in other places, but they have not been presented in publications or even further investigated.

#### *Gerasa*

The fragments of wall plaster found in the excavations in the northwest quarter of Gerasa were recently dealt with in a doctoral thesis (Thomsen 2019).<sup>16</sup> There, too, no wall plaster pieces were found *in situ*, so that assigning the fragments to buildings or phases of use remains speculative. For the investigation of the finds from Tall Zar'a, a number of fragments found in the fill of a cistern are of interest. This 14.8 x 7.2 m cistern, located at the highest point of the hill, was investigated in excavation sections A and S. Radiocarbon analysis show that the cistern was constructed in the 1<sup>st</sup> cent. CE. According to the material contained, it was filled in in the late 3<sup>rd</sup> and 4<sup>th</sup> cent. CE. Since other architectural elements were found in addition to fragments of painted plaster, the excavators assume that a richly furnished building stood above the cistern in Roman times, the remains of which, together with material from elsewhere, formed the later fill of the cistern (Kalaitzoglou et. al. 2016). In section S, which was laid out in 2016, fragments of wall plaster were found in various features, in which spotted painting in dark red was applied to a yellow or pink background, which is very similar to the decoration at Tall Zar'a.<sup>17</sup> In some cases,

16 According to the author, the spectrum of fragments found ranges from Roman to Middle Islamic times. In addition to the presentation of representative pieces in an extensive catalogue, the results of scientific investigations are also presented. The author is sincerely thanked for the opportunity to view the unpublished thesis.

17 Locus with yellow-ground pieces: J16-Sb-22; loci with pink-ground pieces: J16-Sb-8, J16-Sb-22, J16-Sb-23, J16-Sc-12, J16-Scd-13, J16-Sd-22, J16-Se-22.

these pieces were associated with fragments of wall plaster in which an imitation of stone blocks was also indicated plastically, by incisions highlighted with a red line indicating the border between two blocks. In other cases, raised plaster surfaces were also preserved that bent at right angles and can be understood as a raised panel of an ashlar. According to Thomsen, the combination of plastically represented ashlars with a raised panel and surfaces with a painted imitation of a natural stone supports a dating of the fragments to the late Hellenistic and early Roman period, and she suggests a dating in the 1<sup>st</sup> cent. BCE in reference to the Herodian palaces of Masada or the Hellenistic Naos of Gerasa (Thomsen 2019, 33). This would make them the oldest evidence of residential buildings in Jerash. For the pieces from the Tall Zar'a, however, these comparisons cannot provide any reliable dating information.

### *Gadara*

The second place with comparable decorations is even closer. In neighbouring Gadara, fragments of wall plaster with red spotted decoration on a yellow background have been found in two places. The first is in Area 44 at the western edge of the Acropolis Hill, where remains of residential buildings dating from late Hellenistic to Roman times have been uncovered (Kerner 2002, 128 f.).<sup>18</sup> Parts of a stucco decoration in relief with a Lesbian cymation were found. In addition, there were fragments of white-ground painting with black and red lines and, separated from these by a black line, a yellow field with dark red spots of paint, which was interpreted as an imitation of marble. The motif is basically the same as the decoration at Tall Zar'a, but the design is clearly different. The red colour in Area 44, Gadara, is much darker and more solidly mixed, the painting is more dense and smaller. It is unclear whether it was created using the same technique as the decoration discussed here. It is noticeable that the profiled stucco cornice was also subsequently covered by a similar painting. Thus, the decoration did not belong to the first decoration of the house. Details of the excavation have not been published, so that there are no reliable indications of dating.

It can be added, however, that together with the fragments mentioned above, pieces of marble slabs were also found, which testify to the decoration of the associated house. This house extended over at least four rooms with a courtyard and, according to the excavator, probably belonged to the wealthy part of the settlement.

The second location in Gadara cannot be associated with remains of residential buildings. In Area 37, Section 4.3, at the northeast tower of the Hellenistic fortification wall, fragments of painted wall plaster were found in loci 29, 35 and 46 during the 2003 season under the direction of Jansen (Jansen 2020, 44–46). In loci 35 and 46, there were pieces with red spotted painting on a yellow background, which corresponds to the decoration from Tall Zar'a. In locus 29, there were also remains of a curved border between two heavily washed out fields, which probably also showed an imitation of natural stone (the rounding was drawn with a compass), monochrome red fragments with drafted edges arranged at right angles, and a fragment with the transition from a red to a black painting. In locus 35, there were also monochrome pink and monochrome black pieces. Thus, the pieces of the red spotted natural stone imitation on a yellow background appear at Tall Zar'a, just as at Gerasa, together with fragments of plastically worked ashlar imitations.

All loci in Area 37 at Gadara can be dated to the Hellenistic period. These are the earliest layers, which were formed after the construction of the fortification wall in front of the gate wall next to the northeast tower. The wall, which can be dated to the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE (Jansen 2020, 117 f.), was built on the exposed bedrock. The area of the foundation was normally then filled in after the construction. This can also be assumed here, where the rock is very uneven (Jansen 2020, pl. 106). Ashlar layer IX of the gate wall corresponds to the uppermost foundation layer, which is also the layer under the passage of gate 3. Locus 35, i.e. the lowest one, where the decorated pieces were found, goes against the ashlar layer IX of the gate wall, and was probably filled in directly after the construction of the wall (Jansen 2020, pl. 104b).

It follows that the painted wall plaster pieces must have come from a house that had already been destroyed before the wall was built, possibly in

18 Many thanks to Susanne Kerner for the opportunity to view wall plaster finds from her excavation at Gadara.

preparation for the major construction project. Because, even if a residential building had been erected immediately after the construction of the fortification, it certainly would not have been directly outside the gate. Rather, the fragments must have been in a levelling layer when the wall was built. The mural decoration was therefore most probably created in the first quarter of the 2<sup>nd</sup> cent. BCE at the latest. It is also possible, however, that it belongs to the Ptolemaic phase of the 3<sup>rd</sup> cent. BCE. At least three small pieces of faience, which were also found in locus 35, indicate this (Jansen 2020, 45). Based on the findings from Gadara, clear indications of the dating of the pieces from the Tall Zar'a can be deduced.

#### 5.4.2.2. Decorations with Wavy Lines (*Cat. 5.3.3; Pl. 5.6–5.9*)

The decoration with wavy lines painted in different colours on top of each other, is also rather unusual in its specific form. The only possible comparison is with a decoration from the earlier shrine at Omrit (Galilee), which is dated to the 1<sup>st</sup> cent. BCE (Rozenberg 2018, 142). One block shows rose lines and light green-blue diagonal lines on a white background. However, whether the painting is painted in wavy lines as at Tall Zar'a cannot be seen on the published photo. Nevertheless, the fragment from Omrit remains the closest parallel at present, while marble imitations in Western tradition or alabaster imitations in Alexandrian tradition differ significantly in motif.

### 5.4.3. Art Historical Classification

#### 5.4.3.1. Reconstruction of Decoration Systems

The fragments preserved do not allow the reconstruction of complete decoration systems. However, almost all elements can be associated with painting in the so-called 'Hellenistic masonry style' or 'structural style', which may have existed in vari-

ous forms in the area over several decades. These include various coloured fields and those with imitation of natural stones, which may have been painted on as plinths or as alternating ashlar. Unfortunately, it is not possible to assign them to a pedestal or orthostat zone. The elements of architectural decoration, i.e. dentil, woven band and cymatia, could have been inserted as a frieze ('Deckschicht') into the layers of painted ashlar or could have served as the upper end of a colonnade structure in an upper zone. Since the development of Hellenistic painting in the region is still so poorly known, no more concrete proposals for a reconstruction can be made. In addition to these general statements on the totality of the finds, the following will attempt to record particularities of the groups assumed on the basis of the stratigraphy.<sup>19</sup> However, only a part of the recorded fragments can be discussed here, since the decoration cannot be determined with sufficient certainty and premature conclusions should be avoided. The ongoing excavations at the site may complete the picture in the coming years.

#### 5.4.3.2. Group A

As can be seen from the stratigraphic distribution, the red spotted decoration on a yellow ground (*Cat. 5.3.1; Pl. 5.5a–f*) may have been part of the earliest painting. In addition, in the two loci L11584 and L11596, there were also monochrome white fragments (*Cat. 5.4.1*) as well as the transition from red to black (*Cat. 5.5.10.2; Pl. 5.12a–d*) and from red to white (*Cat. 5.5.15.5*), and in one case a black line runs across the white surface (*Cat. 5.5.10.3; Pl. 5.12d*). In addition, fragments of rose areas with black or green painting are striking (*Cat. 5.5.3, 5.7.4; Pls. 5.10e, f and 5.15g*). While the latter decoration is difficult to interpret due to its poor state of preservation, the other fragments indicate a field or stripe structure with monochrome red and white or red-spotted yellow areas bordered by black stripes. All of these decorations are painted on a smooth ground, and no incisions are visible.

On the basis of this observation, a date in the middle of the 1<sup>st</sup> cent. CE. would be reasonable, since in Transjordan in this period painting on a

19 The division into phases results from the stratigraphically based relative chronology, see *Chap. 5.4.1*. These are only very rough indications, since the decorations listed cannot

be assigned to specific buildings or to definite construction phases.

plain ground replaced the previously common form of decoration of not only painted but also plastically modelled ashlar (Vibert-Guigue 2018, 122). However, the comparison mentioned above with a clearly identical decoration on a fragment from Gadara now provides a stratigraphically based indication of a much earlier date. That piece probably belonged to the decoration of a building from the late 3<sup>rd</sup> or early 2<sup>nd</sup> cent. BCE (*Chap. 5.4.2.1*). The great similarity of the decoration, which was probably made by the same workshop both in Gadara and Tall Zar'a, and also with an only slightly different version known from Gerasa, can only be explained by a simultaneous dating of the finds.

The question is, therefore, whether during the Hellenistic period, in addition to the common 'masonry style' with reliefs, the variant that was only painted was also common in Transjordan. It should be noted, however, that finds of painted wall plaster here only begin with the palace fortress of Qasr al-'Abd at 'Iraq el-Emir. The unfinished building, erected around 175 BCE, is a unique example of Hellenistic palace architecture in the Middle East. There are also elements of a typical Hellenistic decoration with elements in the 'structural style', in which fields left white are bordered by red and yellow stripes, which are supposed to represent the edges of ashlar with a raised panel. The borders between the stripes are indicated by carvings. Remains of stucco coverings with imitations of column flutes have also been found (Vibert-Guigue 2016, 331, fig. 2). In the immediate vicinity of Qasr al-'Abd a number of well-equipped houses in the Hellenistic style were built between 175 and 100 BCE. In the so-called 'plaster house' in particular, fragments of painted wall plaster were found which can be classified in three categories according to Groot (Groot 1980). The most common is the 'relief style', in which parts of the wall are raised and designed like masonry ashlar including decorative zones. The 'incised-line style' divides the wall into different sections, separated by scored lines, while the 'zone style' is only separated by different colours. The latter style, to which the pieces from Tall Zar'a probably correspond best, is preserved at 'Iraq el-Emir in the smallest number.

A fragment from Hellenistic Pella (Tabaqāt Fahl) also shows that purely painted architectural imitations on a plain ground were probably already common in the region in the 2<sup>nd</sup> cent. BCE. The publication of the excavation mentions numerous fragments of plaster painted in red, green and white,

which were found in the late Hellenistic destruction debris (McNicoll 1992, 109–111). For stylistic reasons, a dating to the 2<sup>nd</sup> cent. BCE is suggested for a fragment depicted only in a black and white photograph (McNicoll 1992, pl. 79a). The photograph shows the corner of a field bordered by a wide strip framed by white lines. This is followed by a strip on which a stylized Ionian cymation is drawn in light strokes.

According to Eristov and Vibert-Guigue (Eristov – Vibert-Guigue 2018, 104 f.; Vibert-Guigue 2016, 338), the plain wall zones of the late Hellenistic naos of Jerash, painted with coloured ashlar imitations, are an example of the increasing popularity of illusory architecture at the end of the 1<sup>st</sup> cent. BCE.

For a purely painted version of the 'masonry style', the Alexandrian variant could also have been influential, that 'exhibits a tendency towards flat pictorial features, as opposed to relief decoration' (Rozenberg 2013, 168). But also a Hellenistic decoration in the Macedonian Amphipolis shows a decoration in which an ashlar masonry is imitated in purely graphic terms (Touratsoglou 2000, fig. 435).

The aforementioned fragment from Gadara was found together with a fragment from a red field with obliquely bevelled edges. And the examples from Jerash had also shown that there, plastically imitated and only painted imitations of built architecture were used side by side. Whether these are from specific sections of a wall, deliberately designed plain or in relief, or from different rooms, cannot be determined at present. On the whole, however, the concept of differently coloured surfaces separated by black or other coloured stripes, which were probably intended to represent a large-format masonry wall, can easily be associated with the typical decorative form of the 'Hellenistic masonry style', as it was spread throughout the Hellenistic world. However, the extent to which there was a division into different zones of a decoration system cannot be concluded from the existing fragments.

Although the juxtaposition of monochrome fields and those imitating natural stone is in line with common practice, the type of representation consisting of red specks on a yellow background has so far been without parallel, apart from the aforementioned fragments from Gadara and Gerasa. The method of production has already been discussed above (*Chap. 5.3.2.3*). Usually, the multi-coloured designs are associated with imitations of marble or alabaster. The present decoration cannot be said to

represent any specific type of stone. Possibly a local hard limestone was being imitated, as it was used in Hellenistic Gadara for decorative architecture. It has slightly reddish-orange spots and is of a much higher quality than the stone used for the Hellenistic fortification.<sup>20</sup> Presumably, the decoration was intended to imitate a wall of large-format ashlar made from high-quality limestone. In connection with decorations from Priene, Wartke pointed out that Hellenistic wall decorations did not yet include incrustations, i.e. facing with slabs of coloured stone, as in the 1<sup>st</sup> Pompeian style which was a later development, but rather was an imitation of walls clad with multicoloured stone blocks (Wartke 1977, 50 f.). This made it possible to give even simple interior walls, such as the mud brick walls on stone foundations assumed here, the appearance of walls made of solid limestone.

#### 5.4.3.3. Group B

From L11561 upwards, fragments appeared which probably belong to an architectural frieze in black and white (*Chap. 5.3.2.1; Pl. 5.3*). In the same complex – apart from the elements already known from Group A – monochrome fragments in white (*Cat. 5.4.1*), black (*Cat. 5.4.2*) and yellow (*Cat. 5.4.4*) were found, as well as the transitions from red to black (*Cat. 5.5.9; 5.5.10.2; Pl. 5.11i–l*) with a white line in between and from green to yellow with a black line (*Cat. 5.5.15.3; Pl. 5.14m–o*).

The architectural frieze is of particular significance, which probably shows a woven band and a dentil followed by an Ionian cymation on a yellow ground. Painted architectural friezes are an elementary part of many decorations of the Hellenistic masonry style from Greece to Egypt, where they usually adorn the so-called 'Deckschicht'. However, architectural friezes also occur in Hellenistic painting as a single decorative element to separate larger areas with different painting. For example, in the dome of the tomb of Kasilak (Bulgaria), which is dated to the middle of the 3<sup>rd</sup> cent. BCE (Meyboom 2014), an architectural frieze separates two zones of large-format figurative painting. The order of the

elements – woven band, dentil, cymation – corresponds exactly with the one assumed here. Stylistically, however, the painting differs significantly from that at Tall Zar'a, where the representation is very summary and strongly stylized.<sup>21</sup>

The fact that there may be white stripes on both sides of the simple woven band, which are interpreted as a representation of a dentil cut, shows that the understanding of the motif has been lost and that it is now only used as an ornamental motif. The following cymation is painted in white and black on a yellow background and may have had a plastic effect in its original state, albeit also in a very simplified form. In contrast, the representation of the woven band and dentil cut appears rather two-dimensional, even if the oblique arrangement means a perspective representation.<sup>22</sup>

While the architectural frieze in the tomb in Kasilak is painted on the flat wall, a similar decoration in the 'bathhouse' in Petra consists of a mixture of sculpturally formed and painted elements (Vibert-Guigue 2016, 333f.; Barbet 1995, 383–387, fig. 6–8). The walls of the round room show a cornice of architrave, frieze and dentil above the lateral niches at the transition to the dome. While dentil, cymation and profiles are plastically formed in stucco, other elements such as Ionian and Lesbian cymatia are painted in colour. The building, dated to the middle of the 1<sup>st</sup> cent. BCE, could also represent a parallel for Tall Zar'a in terms of its basic form as the fragments found here have a distinct curvature and probably also come from a round room. Whether this also suggests a possible interpretation of the corresponding space at Tall Zar'a as part of a bath remains questionable, even if the presumed pool fragments could support such an interpretation; this is discussed further in *Chap. 6.2*.

Regarding the vaulting and the colouring, a single fragment belongs to the architectural frieze, which was probably from a representation of a bird and is thus the only possibly figurative representation found here (*Cat. 5.2; Pl. 5.3*). How the bird is connected to the frieze remains unclear. But the unnatural colouring in black and white clearly places it in context with the frieze, especially since the surface of the fragment is also curving. Birds are

20 The statement is based on personal observation.

21 Thus, as mentioned above, it resembles the representation of the shadow of a dentil rather than the dentil itself (McKenzie 2007, fig. 182 f.).

22 It may be possible to derive the colouring and manner of representation from similar motifs in Hellenistic pebble mosaics.

the most frequently depicted animals in late Hellenistic-Roman wall painting and are also found in various contexts both in Herodian buildings (Rozenberg 2018, 153) and in Nabatean Petra (Vibert-Guigue 2018, 131; Vibert-Guigue 2016, 336), where they appear, as at Beida, in connection with idyllic landscapes (Vibert-Guigue 2017, fig. 3). On the whole, however, figurative representations are very rare in the region, except in funerary contexts. In older Hellenistic wall decorations, birds appear sporadically, such as in the dromos of a tomb of the Kurgan of the Pontic Vasjurina mountain dated in the late 4<sup>th</sup>/early 3<sup>rd</sup> cent. BCE (Moritz 2006, 146, pl. 48). There, a wall arrangement of panel strips, orthostats and ashlar is completed by a sima with dentil, cymation, lion gargoyle and antefixes. On two of the antefixes sit parallel birds depicted in profile, which enliven the representation and enhance the plastic impression. The Tall Zar'a bird could have been integrated into the decoration in a similar way. However, the poor state of preservation and the uncertain interpretation of the piece prevent further conclusions.

#### 5.4.3.4. Group C

As elements of a third group, the various imitations of natural stones, which are represented using splashed or wave decorations, were seen as the most important. While spray decoration is too long-lasting and widespread to be used for dating, the motif formed by wavy lines is more striking. As it is different from typical marble and alabaster imitations, it is difficult to classify it stylistically, even if its character is closer to that of alabaster imitations, such as those found in the Hasmonean palace

of Jericho (late 2<sup>nd</sup> cent. BCE) or on fragments of wall plaster from the Jewish Quarter in Jerusalem (late 1<sup>st</sup> cent. BCE; Rozenberg 2018 fig. 1. 10). The next closest comparison was a decoration from Omrit dated in the 1<sup>st</sup> cent. BCE (see *Chap. 5.4.2.2*).

What is striking about various decorations from Group C, both those with natural stone imitations and those with black stripes on monochrome rose, is that the transition between different decorations is diagonal. A division into lozenges might be deduced from this, as is the case in decorations at Tel Anafa (Kidd 2018, fig. 2) and on the Hellenistic naos at Jerash.

#### 5.4.3.5. Potential Influences

At various places in the Levant, such as the Seleucid Tel Anafa (Kidd 2018, 29), in Nabatean Petra (Kolb 2001, 444) or the Hasmonean palaces of Judea (Rozenberg 2013, 168), clear influences from Alexandrian architecture can be seen, but since there are no finds from similar residential architecture in northern Jordan, only tomb decoration can be used to assess such influence there. Investigations of the fragments from Tall Zar'a have shown that Alexandrian influence may also be present here, but that individual elements of the decorations may have been taken directly from other regions of the Hellenistic world. On the other hand, the appearance of marble imitations with wavy lines in Group C could possibly be associated with a Hasmonean influence. Further investigations and a greater knowledge of monuments are desirable in order to better understand the spread and development of Hellenistic wall painting in the region in general and the position of the paintings from Tall Zar'a in particular.

## 5.5. Conclusions

The most reliable indication for dating the painted wall plaster from Tall Zar'a seems to be the comparison of a decoration of Group A (*Cat. 5.3.1; Pl. 5.5a–f*) with a fragment from Gadara, whose deposition must have taken place before the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE. The similarly painted building at Tall Zar'a can thus be roughly dated to the late 3<sup>rd</sup> or early 2<sup>nd</sup> cent. BCE, making the mural painting finds presented here the oldest published finds of Hellenistic mural painting from Transjordan.

The conclusions from the stratigraphic analysis (*Chap. 4*) do not contradict this assumption, but neither can they justify a very precise dating. Only one coin can be assigned to a locus which also contained wall plaster pieces. This coin, from L11565, can only be dated with uncertainty to the Hellenistic period (*Chap. 18; Cat. 18.13*). On the other hand, coins from two loci below the floor F11597/F11566, on which the layers containing the plaster fragments were resting, can be determined more precisely. These include two coins from L11878 (*Cat. 18.5 and 18.8*), which can generally be dated to Hellenistic times, and a coin from Alexander Jannaeus (*Cat. 18.19*) from L11781. It is thus certain that the deposition of the wall plaster fragments in the layers above the floor can only have taken place at or after the time of Alexander Jannaeus. However, the building which they had adorned had probably already been derelict for a while by the time the plaster fell and had perhaps been levelled for new construction, because the fragments were small and widely scattered. The painting could, therefore, have been applied quite some time prior to the reign of Alexander Jannaeus.

For the other groups only a relative chronology can be determined, apart from the decoration *Cat. 5.3.3.1* for which the somewhat uncertain comparison with a decor from Omrit suggests that it still falls into the 1<sup>st</sup> cent. BCE (*Chap. 5.4.2.2*).

The fragments of wall plaster that have been found bear witness to a colourful decoration of a still largely unknown building, which was probably renewed or added to over many decades. Thus, it can be assumed that there was a continuity of upscale housing in this area of the Tall over a long period of time, for only in such an environment could one

imagine pictorial furnishing of this quality. It is true, however, that the individual elements indicate that the painting was executed using a rational, easy-to-create technique. And the more sophisticated details such as the black and white architectural friezes are not particularly faithful to detail, but rather are painted in a stylized, volatile manner. Also missing are special elements such as stucco decoration or raised cuboid mirrors, and for the colours, cheaper materials were probably preferred, only one fragment shows painting with Egyptian blue.

Nevertheless, it can be seen that the owners were familiar with superior interior decoration in the usual Hellenistic 'structural style', and tried to upgrade their building, even if it was a simple construction with mud brick walls on stone plinths, by simulating a large-format ashlar masonry.

And it is clear that there were painters present at Tall Zar'a who were familiar with the techniques and the spectrum of Hellenistic wall designs. Due to the lack of publications, however, it is not yet possible to judge whether, for example, the discrepancies or inaccuracies in the architectural frieze are to be interpreted as a sign of provinciality or whether they depend on the significance of the building or room. The question of stronger Greek-Macedonian or Alexandrian influences can also be assessed only provisionally. The emergence of more variants of natural stone imitation in Group C, especially those with wavy lines that resemble Alexandrian-style decorations in Hasmonean palaces, could indicate that a Hasmonean influence became visible in the 1<sup>st</sup> cent. BCE.

Based on these considerations, it seems safe to assume that the oldest wall decorations (end of the 3<sup>rd</sup>/beginning of the 2<sup>nd</sup> cent. BCE) were commissioned by a high-ranking person who was familiar with Greek-Macedonian art and domestic culture. The fact that the inhabitants of Tall Zar'a had access to luxury goods of Mediterranean provenance is shown by fragments of West Slope Style and other imported ceramics, as well as by stamped amphora handles dating back to the 2<sup>nd</sup>, possibly even 3<sup>rd</sup> cent. BCE, which testify to Greek-influenced table culture at the site. The lagynoi from Tall Zar'a point to a Ptolemaic tradition,<sup>23</sup> and the

23 Kenkel 2020, 17–19 (on imported pottery), 19–21 (on amphora stamps), 43 (on lagynoi), 114 (conclusions).

glass finds also indicate a certain proportion of Hellenized inhabitants with the necessary financial means.<sup>24</sup>

At nearby Gadara, finds from the so-called rubbish heap on the southern edge of the Acropolis hill testify to a Greek-influenced, upscale lifestyle in the 3<sup>rd</sup> cent. BCE (Hoffmann 2002, 101). From other locations at Gadara, too, the excavations have repeatedly uncovered remains of Rhodian wine amphorae, imported Attic pottery and Boeotian tanagra figurines, which provide evidence about the inhabitants and their status. Among them were isolated finds that probably originated in the Ptolemaic phase, such as faience, a fragment of a porphyry bowl and an Egyptian ceramic sherd with a warrior depiction (Jansen 2020, fig. 17d).

The fragment of wall plaster found at Gadara in front of a city wall gate, as explained above, probably comes from a building that stood on the settlement hill before the construction of the Seleucid fortress, possibly in the Ptolemaic period, i. e. in the 3<sup>rd</sup> cent. BCE. What the character of the settlement was at that time is not known. A Byzantine source refers to Gadara as Macedonian Apoikia. According to the report of Polybios (Histories V 71,3) Gadara was a well-fortified city when it was attacked and first taken by Antiochos III in 218 BCE. However, archaeological research has not found any fortress from Ptolemaic times. According to Dijkstra (2005) Hellenistic Gadara could well be the successor of the Bronze and Iron Age settlement at Tall Zar'a.

If it now becomes clear that both places had upscale residential buildings in pre-Seleucid times in Greek-Macedonian style, which were also equipped by one and the same painter's workshop, this sheds

a completely new light on the common history of the two places. Only a member of the Greek-Macedonian elite, who certainly held one of the higher ranks in the military organization, could be considered as a resident of such houses. But the relationship between these two settlements, at Tall Zar'a and on the higher plateau, remains to be clarified in further research.

On the basis of the finds of wall paintings it can be assumed that the significance of the Tall did not cease with the construction of the Seleucid fortress at Gadara in the 2<sup>nd</sup> cent. BCE. At least in Area II there were still upper-class residential buildings with colourful paintings. According to the stratigraphic analysis, this also applies to the Hasmonean phase, during which the settlement obviously still enjoyed a certain prosperity. This might have been due to the fact that Gadara was situated at the northern edge of the Hasmonean Empire, which had powerful enemies in the north, including the Nabateans and later the Armenian King Tigranes. Possibly at that time Tall Zar'a, and not Gadara, which was destroyed during its conquest by Alexander Jannaeus, formed a military base for the Hasmonean rulers. This is also supported by the fact that hardly any finds from the Hasmonean period are known from Gadara and Flavius Josephus mentions that Pompeius rebuilt Gadara, which had been destroyed by the Jews (Ios. Ant. Iud. XIV 75; Ios. Bell. Iud. I,7,7).

The question of whether the painted decorations (at least from Groups B and C) as well as the unpainted fragments of a possible basin (*Chap. 6*) formed parts of a private bath, that would have benefited from the reliable water supply at Tall Zar'a, must remain unanswered for the time being.

24 After the examination of the glass finds by Hoss (Hoss 2020, 258), who proposes the identification of these wealthy Hellenized inhabitants as mercenaries.

## 5.6. Catalogue<sup>25</sup>

### 5.1 Architectural decor

#### 5.1.1 Parts of an architectural frieze in black and white (*Pl. 5.3a. b. e–i*)

*Decoration:* A white stripe (1.0–6; approx. 0.6 cm) runs on a brownish black (3–11–10) background. On top of this are painted black lines (0.2 cm wide, 1.3–1.5 cm long), which run on some fragments from top right to bottom left, on others the other way round. Broad white strokes (0.5–0.8 cm wide, up to 2.0 cm long) run off the stripe, which reach diagonally onto the black surface. These strokes are partly very faded, but at least on some pieces you can see that there were some on both sides of the white stripe. In these cases, their alignment is mirror-like to the white line.

*Interpretation of the decoration:* The decoration can be interpreted as a highly simplified version of an interwoven band ('guilloche'), followed by a likewise highly stylized dentil at least on one side, possibly on both sides.

*Observations on the painting:* On one piece (TZ 113596), the black surface is still preserved 4.5 cm up to a ledge. The sequence of painting was first the continuous white line, then the oblique shorter white lines and finally the narrow black lines.

*Particularities of the shape:* The surface is curved in two directions. So the pieces probably come from a niche in the transition to the ceiling or from a dome. On one fragment the surface rises slightly towards an edge (from a room corner/transition to the ceiling or a ledge?).

*Constitution of the plaster:* Dense, fine white mortar with fine, medium and coarse sand, lime inclusions, traces of fine organic temper (0.7–1.0 cm); the surface is even, but not well smoothed; the back is mostly relatively smooth and also curved.

*Total quantity, size of the surface, length of decor:* 16 frgts., 79 cm<sup>2</sup>, 35.5 cm

*Locus, find number, quantity, size of the surface, length of decor:*

- 11517, TZ 113596: 2 frgts., 19 cm<sup>2</sup>, 3 cm
- 11519, TZ 113594: 1 frgt., 6 cm<sup>2</sup>, 2 cm
- 11523, TZ 113037: 1 frgt., 9 cm<sup>2</sup>, 3.5 cm
- 11554, TZ 113593: 10 frgts. (6 fitting together; 2 fitting together), 33 cm<sup>2</sup>, 21 cm
- 11561, TZ 113595: 2 frgts. (fitting together), 12 cm<sup>2</sup>, 6 cm

#### 5.1.2 Parts of different architectural decorations in black and white

*Decoration:* Fragments of unknown decorations in black and white:

a.<sup>26</sup> White stripe (0.9–1.0 cm) on black ground (6 frgts., 18 cm<sup>2</sup>, length of the stripe 9 cm); section of a white stripe, partly on top of the black ground, and partly sloping diagonally downwards from it are white strokes (1 frgt., 7 cm<sup>2</sup>); remains of finer painting in white on black ground, and partly fine black, curved strokes on white background (TZ 113593, 4 frgts., 12 cm<sup>2</sup>).

b. Different, unknown white paintings on black background (TZ 113594).

c. Section of a white line (0.5 cm wide, still 1.4 cm long), beside it unknown white decoration on black (TZ 113596).

*Interpretation of the decoration:* The fragments could belong to a frieze or to other elements, such as a cy-mation.

*Particularities of the shape:* One fragment (TZ 113593) has a curvature.

*Constitution of the plaster:* Dense, white mortar with fine, medium and coarse sand and fine gravel, traces of fine organic temper (0.6 cm). The surface is even, but not well smoothed.

*Total quantity and size of the surface:* 19 frgts., 56 cm<sup>2</sup>

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 1 frgt., 3 cm<sup>2</sup>
- 11519, TZ 113594: 7 frgts., 16 cm<sup>2</sup>
- 11554, TZ 113593: 11 frgts., 37 cm<sup>2</sup>

#### 5.1.3 Parts of other decorations in black and white

##### 5.1.3.1 Black painting on white (*Pl. 5.4a. b*)

*Decoration:* Unknown decoration of black (grey) lines on white background:

a. White (remaining, 0.6 cm) – black line (0.7 cm) – white stripe (2.2 cm) – black (remaining, 0.3 cm). On the last part of black, a grey painting comes off on the white stripes. It is a segmental stripe, the inner field is partly filled in lighter grey. The grey colour is probably a strongly washed out black (TZ 113596).

b. Black line patterns on white background: 1. black area or stripes (remaining, 0.6 cm) – white (2.2 cm) – black, faded or white-painted stripe (remaining, 0.6 cm). A black line connects the two black areas

25 The descriptions of the colours are partly specified in brackets by the numbering according to the Michel colour guide – 38<sup>th</sup> edition (2011).

26 Various elements that are assigned to one decoration are indicated in this catalogue with letters.

vertically and partly passes over to them. Approx. 0.2 cm next to the first black area, another black line runs diagonally up to the side. A small remainder of another black line is still visible on the other side at a distance of 1.8 cm. – 2. On a white ground runs a diagonal black line, from which another line comes off in a slightly acute angle. In the angle the beginning of another line can be seen.

*Interpretation of the decoration:* a. Could be part of a border; b. could be part of an architectural decoration or a preliminary drawing.

*Constitution of the plaster:* a. Two mortar layers can be distinguished: 1. fine, dense, white mortar (0.2 cm); 2. Dense, white mortar with fine, medium and coarse sand, traces of fine organic temper (0.5 cm). The back is even.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 1 frgt., 6 cm<sup>2</sup>

- 11554, TZ 113593: 3 frgts. (2 fitting together), 8 cm<sup>2</sup>

### 5.1.3.2 White painting on black

*Decoration:* Pieces of an unknown white decoration on black background: a. black with a thick white blob (1 frgt., 24 cm<sup>2</sup>); b. Black with roughly drawn white stripes (approx. 0.5 cm), no fixed border between the areas, further painting is not visible (1 frgt., 22 cm<sup>2</sup>). The surface is strongly abraded.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 11 frgts., 74 cm<sup>2</sup>

### 5.1.4 Parts of architectural decorations in black and white next to a red area (Pl. 5.4c–e)

*Decoration:* Fragments of unknown decorations in black, white and red:

a. Vertical white stripe (1.8 cm) on a black background, on which are three curved strokes in black. On one side there are minimal remains of red paint, on the other a green dot on the black background, partly painted over by the white line. (11554, TZ 113593: 1 frgt., 4 cm<sup>2</sup>).

b. 1. frgt. (12 cm<sup>2</sup>): black area (remaining, 2.8 cm) – thinly painted white stripe (0.5 cm) – rose stripe (0.5 cm) – white area (remaining, 0.5 cm). There were probably two layers of painting: first the black area was painted and at the edge white over black. Then vertical black lines (0.2–0.4 cm) were drawn, which reach onto the white surface and another 1.1 cm onto the black surface. Then the rose line was drawn and a tongue-shaped white area, which reaches from the rose line over the black area. On top of this, very thin black strokes were drawn around the white area, two curved lines also run over it. – 2. frgt. (5 cm<sup>2</sup>): black area (remaining, 1.1 cm) – white line (about 1.0 cm) – area with rose, white and black colour. Thick white

blob of paint over the black area and the white stripe. (11554, TZ 113593: 2 frgts., 17 cm<sup>2</sup>).

c. Red – white line – black with painting in white (11517, TZ 113596: 1 frgt., 4 cm<sup>2</sup>).

*Interpretation of the decoration:* It could be part of an architectural decoration.

*Observations on the painting:* The green dot on a. indicates that there was a green area above. The vertical black lines on b. could have served as a preliminary drawing.

*Particularities of the shape:* TZ 113596: The surface is uneven.

*Constitution of the plaster:* Dense, white mortar with fine, medium and coarse sand, traces of fine organic temper (0.4–0.7 cm). – a. Imprints of plant fibres on the back of 2 fragments, obviously earth plaster followed. – c. The back is relatively even, there was clearly another layer of mortar underneath.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 1 frgt., 4 cm<sup>2</sup>

- 11554, TZ 113593: 3 frgts., 21 cm<sup>2</sup>

### 5.1.5 Parts of architectural decorations in black and white and on yellow background (Pl. 5.3c. d)

*Decoration:* Black with white painting (remaining, 0.5 cm) – white (0.6 cm) – black (0.6 cm) – light yellow/ochre (6-0-3; approx. 2.7 cm preserved). On this background is an almost circular painting (inside white, outside black); next to it on the one side are fan-shaped black and white lines, on the other side the beginning of a white line is still to be seen, which first follows the form of the circle and then separates itself from it in a curved way.

On the black surface are still remains of painting in white, these could be similar to the white strokes in group 5.1.1.

*Interpretation of the decoration:* The round painting might be interpreted as part of an Ionian cymation. The black area with white painting could correspond to the “dentil” of group 5.1.1.

*Observations on the painting:* Very well smoothed, fine colour application.

*Constitution of the plaster:* Dense, white mortar with fine, medium and coarse sand, traces of fine organic temper (0.7–0.8 cm). The back is relatively even, obviously there was another layer of mortar underneath.

*Locus, find number, quantity, size of the surface:*

- 11519, TZ 113594: 5 frgts. (fitting together), 20 cm<sup>2</sup>

### 5.1.6 Parts of architectural decorations in different colours on curved plaster (Pl. 5.4f. g)

*Decoration:* Parts of architectural decoration

a. Black stripe or area (remaining, 1.0 cm) – rose (17-10-2) area, colour not quite uniform, on it painting

in white, black and red (11-17-6): An approximately circular white line (0.2–0.4 cm wide, diameter of the circle approx. 2.5 cm) encloses a red field. Before applying the red paint, a black circle was inscribed on the white one, which is still partially visible at the edge, making the red appear darker in places. Through this a plastic effect is achieved, so that the inside of the circle appears like a bulging surface. Next to the circle there are several white lines (0.2–0.5 cm), which are partly chipped off (TZ 113594).

b. White (remaining, 0.5 cm) – black (remaining, 1.7 cm) with roundish painting in white, grey and ochre; round white structure on black background (TZ 113596).

*Interpretation of the decoration:* Parts of Ionian cymatia.

*Particularities of the shape:* a. The surface is clearly curved, so that the piece could have been placed in a round room or niche; b. the surface is curved in the other direction so that the piece could have been placed in the upper part of a niche; the surface is smoothed but a little uneven.

*Constitution of the plaster:* b. Dense, white mortar with fine and medium sand, some traces of fine organic temper (0.8 cm). The back is relatively even, obviously there was another layer of mortar underneath.

*Locus, find number, quantity, size of the surface:*

a. 11554, TZ 113594: 2 frgts., 21 cm<sup>2</sup>

b. 11517, TZ 113596: 3 frgts., 13 cm<sup>2</sup>

### 5.1.7 Parts of architectural decorations in different colours (Pl. 5.4h–k)

*Decoration:*

a. On a white background there is a roundish red (13-16-8) structure and a heavily washed out line in yellow (TZ 113592).

b. White (remaining, 0.2 cm) – black line (0.6 cm) – ochre (6-0-6) with painting in white. White strokes (approx. 0.6 cm wide, 2.5 cm long) go diagonally from the black line (distance approx. 0.2–0.3 cm) (TZ 113596).

c. Red (remaining, 1.5 cm) – fine black line (0.2 cm) – yellow (1.4 cm) – grey line (0.7 cm) – yellow (remaining, 0.5 cm); red (remaining, 0.4 cm) – yellow (remaining, 2.1 cm) (between an originally black line?). The yellow area is painted with black lines (0.5 cm wide) (TZ 113596).

d. Yellow with unknown painting in red and black (TZ 113037).

e. On red (17-4-7) ground are remains of painting in black and white. A thin black line might have served as a preliminary drawing. Partly above it is a roundish painting in black, next to it the beginning of white painting (TZ 113596).

*Observations on the painting:* a. The colours are grainy-pastose.

*Constitution of the plaster:* a. Dense, white mortar with fine and medium sand, traces of fine organic temper (0.7 cm). The back is relatively even, obviously there was another layer of mortar underneath. The surface is not well smoothed. – b. Two mortar layers can be distinguished: 1. Very dense, white mortar (0.2 cm); 2. dense, white mortar (0.7 cm). The surface is well smoothed. – d. Dense, white mortar with fine, medium and coarse sand (0.5 cm). The back is relatively even, obviously there was another layer of mortar underneath.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 5 frgts., 37 cm<sup>2</sup>

- 11562, TZ 113592: 1 frgt., 12 cm<sup>2</sup>

### 5.1.8 Parts of architectural decoration on yellow background (Pl. 5.4l–n)

*Decoration:*

a. On yellow (6-0-6) background painting with fine strokes in black, white and red.

b. Black with unknown painting in green (remaining, 1.8 cm) – yellow (9-5-5; remaining, 1.6 cm) with two parallel, diagonally aligned strokes in black (0.3 cm) and white (0.4) (TZ 113596).

*Interpretation of the decoration:* a. Since a triangle is formed from the white lines, it is probably not an imitation of marble, but elements of an architectural decoration. – b. The lines could be lines in an architectural design, such as dividing lines between two sections of a pilaster or column.

*Observations on the painting:* Well-smoothed in the area of the yellow colour. Less smooth in the area of the black colour, perhaps because of a corner of the room? – b. is possibly combined with Cat. 5.7.1.

*Constitution of the plaster:* The back is relatively even, obviously there was another layer of mortar underneath. The surface is well smoothed, but washed out.

*Total quantity and size of the surface:* 6 frgts., 35 cm<sup>2</sup>

*Locus, find number, quantity, size of the surface:*

a. 11517, TZ 113596: 1 frgt., 3 cm<sup>2</sup>

- 11519, TZ 113594: 1 frgt., 15 cm<sup>2</sup>

- 11554, TZ 113593: 3 frgts., 7 cm<sup>2</sup>

b. 11517, TZ 113596: 1 frgt., 10 cm<sup>2</sup>

### 5.2 Figural (?) representation (Pl. 5.3j)

*Decoration:* Figural (?) painting in white on black background (3-11-10). The form is painted cursorily with brushstrokes 0.3–0.7 cm wide. A black dot is painted on the white.

*Interpretation of the decoration:* Probably the neck and head of a bird turned to the right. The tip of the beak is broken off.

*Particularities of the shape:* The surface is clearly curved, so that the piece could have been placed in a round room or niche.

*Constitution of the plaster:* Dense, fine white mortar with fine, medium and coarse sand, lime inclusions, traces of fine organic temper (0.6–0.8 cm); the surface is even and quite well smoothed, horizontal smoothing traces are visible; the back is mostly smooth and also curved.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 1 frgt., 8 cm<sup>2</sup>

## 5.3 Imitations of natural stones

### 5.3.1 Speckled decoration: Red 'marbling' on yellow ground (*Pl. 5.5a–f*)

*Decoration:* Fields with red speckled painting on a yellow (6–0.6) ground, next to a black area below accompanied by a white line.

*Total quantity and size of the surface:* 1226 frgts., 5190 cm<sup>2</sup>, 140 cm line preserved (average size 4,2 cm<sup>2</sup>).

a. Part of the marbled area: red speckled painting on a yellow ground (1158 frgts., 4865 cm<sup>2</sup>).

b. Red speckled painting on a yellow ground – rudiment of a white stripe (9 frgts., 40 cm<sup>2</sup>, 20 cm line preserved).

c. Red speckled painting on a yellow ground – white stripe (0.7–1.2 cm) – rudiment of a black area (up to 1.3 cm preserved), (59 frgts., 285 cm<sup>2</sup>, 120 cm line preserved).

*Interpretation of the decoration:* Imitation of an undefined type of natural stone (limestone?).

*Observations on the painting:* On one piece from L11554, there is still a fine black line on the marbled surface, partly above and partly below the red painting. The sequence of painting was: yellow surface, black surface, marbling in red, white line. Small red splashes on black show that the black surface was below the marbled surface. Black and yellow are very well smoothed, the white is partly a bit translucent. The painting of the mottles is done by some unknown device slightly diagonal from bottom right to top left.

*Constitution of the plaster:* Dense, white mortar with fine, medium and coarse sand (0.4 cm); surface slightly wavy uneven, but relatively well smoothed; back relatively smooth, further mortar layer followed.

*Locus, find number, quantity, size of the surface, length of decor:*

a. 11516, TZ 113597: 37 frgts., 160 cm<sup>2</sup>

- 11517, TZ 113596: 100 frgts., 380 cm<sup>2</sup> (partly from the edge)

- 11519, TZ 113594: 250 frgts., 1500 cm<sup>2</sup>

- 11522, TZ 113598: 63 frgts., 294 cm<sup>2</sup>

- 11523, TZ 113037: 34 frgts., 117 cm<sup>2</sup>

- 11552, TZ 113599: 37 frgts., 192 cm<sup>2</sup>

- 11554, TZ 113593: 276 frgts., 980 cm<sup>2</sup>

- 11561, TZ 113595: 150 frgts., 380 cm<sup>2</sup> (partly beside it up to 3 cm only yellow)

- 11562, TZ 113592: 41 frgts., 160 cm<sup>2</sup>

- 11563, TZ 113036: 26 frgts., 50 cm<sup>2</sup>

- 11584, TZ 113603: 15 frgts., 100 cm<sup>2</sup>

- 11596, TZ 113602: 9 frgts., 46 cm<sup>2</sup>

- box without number: 120 frgts., 506 cm<sup>2</sup>

b. 11523, TZ 113037: 1 frgt., 2 cm<sup>2</sup>, 1.5 cm

- 11552, TZ 113599: 5 frgts., 25 cm<sup>2</sup>, 12 cm

- 11561, TZ 113595: 1 frgt., 4 cm<sup>2</sup>, 2 cm

- 11584, TZ 113603: 2 frgts., 9 cm<sup>2</sup>, 4.5 cm

c. 11516, TZ 113597: 7 frgts., 57 cm<sup>2</sup>, 18 cm

- 11517, TZ 113596: 4 frgts., 32 cm<sup>2</sup>, 13 cm

- 11519, TZ 113594: 15 frgts., 58 cm<sup>2</sup>, 22 cm

- 11522, TZ 113599: 5 frgts., 20 cm<sup>2</sup>, 9 cm

- 11523, TZ 113037: 1 frgt., 3 cm<sup>2</sup>, 2 cm

- 11552, TZ 113599: 1 frgt., 4 cm<sup>2</sup>, 2 cm

- 11554, TZ 113600: 6 frgts., 20 cm<sup>2</sup>, 10 cm

- 11561, TZ 113595: 10 frgts., 40 cm<sup>2</sup>, 21 cm

- 11562, TZ 113592: 3 frgts., 9 cm<sup>2</sup>, 4 cm

- box without number: 7 frgts., 42 cm<sup>2</sup>, 19 cm

### 5.3.2 Decorations with splashes

This group includes several decorations in which the imitation of a decorative stone is formed from splashes of colour.

*Total quantity and size of the surface:* 65 frgts., 631.5 cm<sup>2</sup> (average size: 9.7 cm<sup>2</sup>)

#### 5.3.2.1 Green area with splashes next to a rose area with splashes (*Pl. 5.5g*)

*Decoration:* Light green (39-7-3) background with many very fine black splashes next to rose (17-2-3) background with very fine black splashes. The two areas are separated by a curved black stripe.

a. On one fragment, a curved black line (1.0 cm) separates the green area from a rose area (remaining, 2.0 cm), on both areas many fine black dots are sprayed.

b. Light green with very fine black splashes; rose with very fine black splashes.

c. Light green background with fine black splashes.

*Interpretation of the decoration:* The splashes are intended to imitate the grain of a natural stone. It is not clear whether the curvature in the black stripe can be seen as a segment of a circle. It could also be an irregularity of an otherwise straight line due to its position in a corner of a room or near the floor.

*Observations on the painting:* On the black stripe is a splash of white paint running down into the green

field. This makes it clear that the rose field was above the green one and that white paint followed above.

*Particularities of the shape:* The surface is slightly convex, but this may be due to the assumed position in the corner of the room (to the floor?).

*Constitution of the plaster:* Dense white mortar (0.4–0.8 cm); on some pieces you can see that the uppermost mortar (0.1 cm) was applied in a separate layer. The surface is very uneven and not well smoothed, sometimes it is clear that the plaster comes from a corner of a room. The back is relatively smooth. Imprints of organic material indicate that earth-plaster followed.

*Total quantity and size of the surface:* 16 frgts., 114,5 cm<sup>2</sup>

*Locus, find number, quantity, size of the surface:*

- a. 11517; TZ 113596: 13 frgts., 109 cm<sup>2</sup>
- b. 11519, TZ 113594: 3 frgts., 4 cm<sup>2</sup>
- c. 11554, TZ 113593: 1 frgt., 1,5 cm<sup>2</sup>

### 5.3.2.2 Grey and green area with splashes (Pl. 5.5h. i)

*Decoration:*

- a. Grey with fine white splashes next to green with white splashes. The transition between the two areas is right-angled (TZ113592).
- b. Grey (2-39-8) background with fine splashes in red (17-10-6) and many fine splashes in white.
- c. Grey (2-39-9) background, next to it a roundish green (39-7-7) area, above all fine red and white splashes, one thick white splash.
- d. Black (3-11-10) background with very fine white lines on it and a green, diagonal line (0.1 cm wide, 1.6 cm long). Above all these are many fine white and some fine red splashes.

*Interpretation of the decoration:* The splashes are intended to imitate the grain of a natural stone. The differences in the colour of the background may refer to different colours of the stone rather than to an incrustation.

*Observations on the painting:* The white colour is mixed more thickly than the red and was applied first on all pieces.

*Constitution of the plaster:* 1. Slightly yellowish white mortar with fine and medium sand (0.4 cm) 2. dense, white mortar with fine and medium sand, traces of fine organic temper (0.4–0.9 cm), total to 1.4 cm. The surface is even and well smoothed, the back is uneven, traces of organic material can be seen, probably from earth plaster.

*Locus, find number, quantity, size of the surface:*

- a. 11562, TZ 113592: 1 frgt., 6 cm<sup>2</sup>
- b.–d. 11554, TZ 113593: 3 frgts., 40 cm<sup>2</sup>

### 5.3.2.3 Black area with splashes

*Decoration:* Black-grey background with fine red and white splashes. On one piece an almost completely faded remain of a white stripe (1.2 cm) is still visible, on three pieces the transition to a white area or stripe (remaining, 1.3 cm; TZ 113598).

*Interpretation of the decoration:* The splashes are intended to imitate the grain of a natural stone.

*Observations on the painting:* The black is partly painted over rose.

*Constitution of the plaster:* 1. Very dense white mortar (0.2–0.4 cm), this layer separates easily from the next one, 2. dense white mortar with fine sand, traces of organic temper. The surface is mainly well smoothed. On the reverse side are imprints of organic material, obviously followed by an earth plaster.

*Total quantity and size of the surface:* 31 frgts., 317 cm<sup>2</sup> (average size: 10.2 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 8 frgts., 77 cm<sup>2</sup>
- 11519, TZ 113594: 3 frgts., 12 cm<sup>2</sup>
- 11522, TZ 113598: 20 frgts., 151 cm<sup>2</sup>

### 5.3.2.4 Grey area with splashes next to yellow area (Pl. 5.5j)

*Decoration:* Grey (2-11-7) with many very fine white splashes and single black and red splashes. On a fragment the beginning of a yellow area or stripe can be seen, perpendicular to it the beginning of a black strip or area (remaining, 0.5 cm). At a distance of approx. 2.5 cm parallel to it is an irregular, thin, black line. It is not clear whether this is an intentional decoration or paint that dripped down. On another piece there is also a fine black line that ends on the preserved surface.

*Interpretation of the decoration:* The splashes are intended to imitate the grain of a natural stone. The presence of yellow and black areas indicates that the decoration is in the form of fields.

*Constitution of the plaster:* 1. Very dense white mortar (0.2 cm), 2. dense white mortar with fine and medium sand, traces of organic temper (0.8 cm). The surface is mainly well smoothed. On the reverse side are imprints of organic material, obviously followed by an earth plaster.

*Locus, find number, quantity, size of the surface:*

- 11522; TZ 113598: 9 frgts., 72 cm<sup>2</sup>

### 5.3.2.5 Other decorations with splashes

- a. White area (remaining, 0.4 cm) – grey-black (3-11-9) area (remaining, 2.6 cm), splashes in red.
- b. Black (remaining, 0.5 cm) – grey with fine splashes of thin white paint. From the black surface red colour is coming down.

*Interpretation of the decoration:* The splashes are intended to imitate the grain of a natural stone.

*Constitution of the plaster:* a. Dense white mortar with fine, medium and coarse sand, traces of organic temper (1.0 cm). The surface is uneven, but partly smoothed. On the reverse side individual imprints of organic material. – b. Mortar in two layers, which are easily separated from each other: 1. dense, white mortar with fine and medium sand, 2. dense, white mortar with fine, medium and coarse sand and lime inclusions (up to 1.1 cm). Remains of earth plaster adhering to the back.

*Locus, find number, quantity, size of the surface:*

a. 11563, TZ 113036: 1 frgt., 60 cm<sup>2</sup>

b. 11554, TZ 113593: 4 frgts., 22 cm<sup>2</sup>

### 5.3.3 Decorations with wavy lines

This group includes various decorations in which wavy lines are applied in one or two colours on different coloured backgrounds, probably to imitate the veining of marble or alabaster.

#### 5.3.3.1 White background with wavy painting in red and black

*Decoration:* Wavy red strokes are painted on a white ground, above which black stripes are painted with a fleeting brushstroke, which also run in a zigzag pattern. The strokes are distributed without pattern. This type of painting exists in several, slightly different versions.

*Total quantity and size of the surface:* 54 frgts., 925 cm<sup>2</sup>, 38 cm (average size: 17 cm<sup>2</sup>)

##### 5.3.3.1.1 White with red and black painting (Pl. 5.6)

A larger group of related, partly fitting fragments with two superimposed decoration variants. Most are fitting parts of two larger pieces.

*Decoration:*

1. layer: At first, wide red (17-10-3) curved zigzag strokes (up to 4.0 cm wide) are painted on a white ground in wavy lines. Thin black strokes are applied on top of these, with the brush only loosely applied. The traces of individual brush fibres can be clearly seen.

2. layer: Also here, firstly wavy red, then black lines were painted on. But the strokes are set closer together, so that hardly anything of the white background remains visible. Moreover, the colours seemed to have been more diluted. The strokes are wider, the painting looks more like a watercolour and is somewhat darker overall.

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster.

*Observations on the painting:* Part of the surface has a second layer of painting, presumably as a repair. For

this purpose, a thin layer of mortar has been applied to the original surface with decoration 1 and painted with decoration 2. The type of decoration was approximated to the first layer. Under the newly applied layer there are still traces of the old painting. On one fragment is a splash of green paint. This indicates that the decoration could not have been applied to the upper part of the wall, but that a green zone followed above. *Particularities of the shape:* On the three matching fragments it can be seen that the decoration was over a repair near one corner of the room. It gives the impression that this edge was slightly curved. But it can also be an unevenness; all in all the edge is not very carefully worked, and mortar was spread over the surface after it was painted. The aforementioned green splash argues against placing it at the top of a wall, so it is more likely to be a corner of a room or the transition from the wall to the floor.

*Constitution of the plaster:* Dense white mortar with fine, medium and coarse sand, some fine gravel, fine lime inclusions and traces of organic temper (1.2–1.3 cm); towards the edge below, more white mortar with many traces of organic temper (up to 8.2 cm). In the area of the repair there is another fine layer of mortar on the surface, which runs out towards the old surface. The surface is not well smoothed, and is partly smeared with mortar.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 14 frgts., 521 cm<sup>2</sup> (in one case 11, in another 3 frgts. fit together) (average size: 37.2 cm<sup>2</sup>)

##### 5.3.3.1.2 White with black and red painting next to black (Pl. 5.7a, b)

*Decoration:* White with wavy painting in black and red next to black area or stripe (remaining, 0.7 cm)

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster. The transition to a black surface or stripes is probably a vertical separation.

*Observations on the painting:* The red (17-4-7) is very densely painted with clear boundaries, the grey (2-0-7, but partly lighter) is painted over it with heavily diluted colour. Sometimes only the traces of individual fibres of a very wide brush are visible.

*Constitution of the plaster:* 1. Very dense white mortar (0.2 cm), 2. dense white mortar with fine and medium sand and some fine gravel (0.9 cm). The surface is well smoothed, but irregular, possibly because of a position in the corner of a room. The back is relatively smooth, partial impressions of organic material, presumably followed by earth plaster.

*Locus, find number, quantity, size of the surface, length of decor:*

- 11519, TZ 113594: 5 frgts., 140 cm<sup>2</sup>, 12 cm

**5.3.3.1.3 White with red and grey painting (Pl. 5.7c)**

*Decoration:* White with wavy painting in red and grey (washed out black?).

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster.

*Observations on the painting:* On one fragment first the red and then the grey is painted on, on the other fragment it is the other way round.

*Constitution of the plaster:* 1. Very dense, white mortar (0.2 cm), 2. dense, white mortar with fine sand, traces of organic temper (total 0.5 cm) The surface is well smoothed in one fragment, in the other the mortar has not been applied accurately. On the back are imprints of organic temper.

*Locus, find number, quantity, size of the surface:*

- 11522, TZ 113598: 2 frgts., 12 cm<sup>2</sup>

**5.3.3.1.4 White with red and black painting (Pl. 5.7d)**

*Decoration:* White with wavy painting in red and black

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster.

*Constitution of the plaster:* 1. very dense, white mortar with fine sand (0.3–0.6 cm), 2. dense, white mortar with fine and medium sand and traces of organic temper (up to 1.2 cm in total) The surface is predominantly well smoothed. On the back are remains of earth plaster with much organic temper.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 17 frgts., 134 cm<sup>2</sup>

**5.3.3.1.5 White with red and black painting next to black (Pl. 5.7f, g)**

*Decoration:* Black area or stripe (remaining, 4.2 cm, of which 0.9 cm are painted over in white) – slightly yellowish white (1-13-6) background with curved brush strokes (0.6–1.0 cm wide) in light red (17-4-3) and black, painted in zigzag lines offset to each other from top to bottom.

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster next to a black zone

*Observations on the painting:* The red and black colour is applied slightly diluted with a dense brush stroke, individual fibres are not visible. The strongly faded white line, which still extends over the black area, is applied after the marbling.

*Particularities of the shape:* A slight horizontal curvature is noticeable.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, traces of fine organic temper (0.5–0.9 cm).

*Locus, find number, quantity, size of the surface, length of decor:*

- 11519, TZ 113594: 2 frgts., 20 cm<sup>2</sup>, 4 cm

- 11554, TZ 113593: 9 frgts. (twice are two pieces fitting together), 78 cm<sup>2</sup>, 19 cm

**5.3.3.1.6 White with red and black painting next to black (Pl. 5.7e)**

*Decoration:* Black field or stripe (remaining, 1.1 cm, of which 0.8 cm are painted over in white) – white stripe (1.4 cm in total) – white background with wavy lines in red and black.

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a heavily veined marble or an alabaster.

*Observations on the painting:* The red stripes are painted over the black ones.

*Constitution of the plaster:* 1. Very dense white mortar (0.2 cm), only detectable in one fragment, 2. dense white mortar with fine and medium sand, traces of organic temper, lime inclusions. The surface is slightly uneven but well smoothed. On the back are imprints of organic material.

*Locus, find number, quantity, size of the surface, length of decor:*

- 11562, TZ 113592: 5 frgts., 20 cm<sup>2</sup>, 3 cm

**5.3.3.2 Rose with red painting next to black area or stripe (Pl. 5.8)**

*Decoration:* Black (remaining, up to 4.0 cm) – white line (1.3–1.6 cm, reaches partially onto the black surface) – rose with wavy or zigzag lines in red (0.6–2.0 cm wide)

*Interpretation of the decoration:* The painting can be interpreted as an imitation of a precious stone, a veined marble or an alabaster.

*Observations on the painting:* The brush stroke is drawn from top to bottom. The transition to the black surface runs in one piece at a slight angle to the basic coating direction. The white dividing line to the black area is partly rather grey. – Beside the red lines are single red splashes of paint, over the whole painting are some white splashes.

*Particularities of the shape:* On one fragment (TZ 113598), the mortar protrudes on one side, the surface is very irregular. In the right angle to the edge the beginning of black is still visible. Presumably the fragment originates from a corner of a room, and the border of the black area was horizontal.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, traces of organic temper (0.5–1.1 cm); single fragments show that the upper 0.3 cm are more dense and applied as a single layer. The surface is partly slightly uneven, partly very well smoothed. The back is partly very uneven with small

undulations, partly relatively smooth, so that a further layer of mortar can be assumed.

*Total quantity and size of the surface:* 31 frgts., 204 cm<sup>2</sup>, 23 cm (average size: 6.6 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface, length of decor:*

- 11517, TZ 113596: 1 frgt., 24 cm<sup>2</sup>
- 11522, TZ 113598: 8 frgts., 60 cm<sup>2</sup>, 9 cm
- 11523, TZ 113037: 4 frgts., 43 cm<sup>2</sup>, 8 cm
- 11552, TZ 113599: 3 frgts., 33 cm<sup>2</sup>, 6 cm
- 11554, TZ 113593: 12 frgts., 26 cm<sup>2</sup>
- 11562, TZ 113592: 2 frgts., 13 cm<sup>2</sup>
- box without number: 1 frgt., 5 cm<sup>2</sup>

### 5.3.3.3 Red and light yellow with green painting (Pl. 5.9)

*Decoration:* Red (17-10-7) area (remaining, 10.3 cm) next to a light yellow (9-5-3) area (about 8.1 cm). There are wavy green lines (1.0–1.2 cm wide) on both surfaces.

*Interpretation of the decoration:* The wavy decoration probably represents the imitation of a decorative stone.

*Observations on the painting:* The green colour is heavily abraded, so that the colour tone can no longer be determined. The yellow background in some areas is rather rose. The orientation of the surface smoothing is in different directions, so it is not possible to judge whether the separation between the red and the light yellow field was vertical or horizontal.

*Constitution of the plaster:* 1. very dense white mortar with fine and medium sand (0.3 cm), 2. dense white mortar with fine and medium sand, traces of organic temper (0.3–0.9 cm). The mortar evens out the unevenness of the substrate. On the back are remains of earth plaster with much organic temper. The surface is uneven, not well smoothed. There are traces of a toothed chisel. On the surface are firmly adhering deposits (sinter?).

*Total quantity and size of the surface:* 41 frgts., 474 cm<sup>2</sup> (average size: 11.6 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 35 frgts., 411 cm<sup>2</sup> (According to the find label the frgts. come from the northern part of the locus)
- box without number: 6 frgts., 63 cm<sup>2</sup>

## 5.4 Monochrome fields

### 5.4.1 White (Pl. 5.2a. b. d)

*Decoration:* White surfaces are usually not painted, but consist of the smoothed top layer of mortar. Only very roughly smoothed surfaces can be separated from

less well smoothed surfaces. The latter may also have been exterior plaster.

*Interpretation of the decoration:* The fragments might be white areas of an otherwise colourful decoration or belong to a wall that was merely plastered but unpainted, such as an exterior wall.

*Total quantity and size of the surface:* 1389 frgts., 4981 cm<sup>2</sup> (average size 3,6 cm<sup>2</sup>)

a. Fragments with smoothed surface

*Particularities of the shape:* Some frgts. probably came from corners of rooms.

*Constitution of the plaster:* Dense white mortar with fine and medium sand and traces of organic temper (0.4–0.8 cm).

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 13 frgts., 45 cm<sup>2</sup>
- 11517, TZ 113596: approx. 100 frgts., 400 cm<sup>2</sup>
- 11519, TZ 113594: approx. 350 frgts., 1450 cm<sup>2</sup>
- 11522, TZ 113598, 215 frgts., 708 cm<sup>2</sup>
- 11552, TZ 113599: 8 frgts., 28 cm<sup>2</sup>
- 11554, TZ 113593: approx. 300 frgts., 900 cm<sup>2</sup>
- 11561, TZ 113595: approx. 150 frgts., 400 cm<sup>2</sup>
- 11562, TZ 113592: approx. 130 frgts., 450 cm<sup>2</sup>
- 11563, TZ 113036: 9 frgts., 24 cm<sup>2</sup>
- 11584, TZ 113603: 4 frgts., 16 cm<sup>2</sup>
- 11596, TZ 113602: 7 frgts., 40 cm<sup>2</sup>
- box without number: 90 frgts., 304 cm<sup>2</sup>

b. Fragments with unsmoothed surface

*Observations on the painting:* The upper layer of plaster is only roughly smoothed and shows no fine plaster layer or painting.

*Constitution of the plaster:* Mortar applied in several thick layers. Inside, large sherds of water vessels are inserted as plaster base. These are partly still preserved (TZ 113596) or impressions of them can be seen (TZ 113598, TZ 113602). One fragment (TZ 113595) consists of a very light plaster and shows an edge, it probably comes from the ceiling.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 2 frgts., 105 cm<sup>2</sup>
- 11522, TZ 113598: 1 frgt., 24 cm<sup>2</sup>
- 11555, TZ 113265: 8 frgts., 50 cm<sup>2</sup>
- 11561, TZ 113595: 1 frgt., 12 cm<sup>2</sup>
- 11596, TZ 113602: 1 frgt., 25 cm<sup>2</sup>

### 5.4.2 Black

*Decoration:* Monochrome black area.

*Interpretation of the decoration:* The black areas probably belong mainly to intermediate stripes.

*Observations on the painting:* Partly heavily abraded. A fragment (TZ 113596) shows traces of a repair; it is heavily smeared with mortar.

*Particularities of the shape:* One fragment (TZ 113599) is curved.

*Constitution of the plaster:* 1. Dense white mortar with fine, medium and coarse sand (0.4–1.5 cm), 2. partial application of earth plaster (remaining up to 1.2 cm). The surface is partly heavily abraded. One fragment (TZ 113598) clearly originates from the corner of a room. *Total quantity and size of the surface:* 294 frgts., 1158 cm<sup>2</sup> (average size: 3,9 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 38 frgts., 160 cm<sup>2</sup>
- 11517, TZ 113596: 41 frgts., 142 cm<sup>2</sup>
- 11519, TZ 113594: 30 frgts., 140 cm<sup>2</sup>
- 11522, TZ 113598: 10 frgts., 100 cm<sup>2</sup>
- 11523, TZ 113037: 8 frgts., 16 cm<sup>2</sup>
- 11552, TZ 113599: 4 frgts., 24 cm<sup>2</sup>
- 11554, TZ 113593: 84 frgts., 354 cm<sup>2</sup>
- 11561, TZ 113595: 16 frgts., 36 cm<sup>2</sup>
- 11562, TZ 113592: 41 frgts., 121 cm<sup>2</sup>
- 11563, TZ 113036: 3 frgts., 11 cm<sup>2</sup>
- box without number: 19 frgts., 54 cm<sup>2</sup>

### 5.4.3 Grey

*Observations on the painting:* The surface is very heavily abraded.

*Constitution of the plaster:* Dense white mortar (0.3 cm), another layer probably followed.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 3 frgts., 8 cm<sup>2</sup>

### 5.4.4 Yellow

*Decoration:* Monochrome yellow (9-5-6) area.

*Interpretation of the decoration:* The fragments can come from different decorations, both from fields and intermediate strips.

*Observations on the painting:* Some fragments show a well-smoothed colour application, others are granular-pastose. In the latter case the surface is a bit rough. In one fragment, which probably formed the transition to the ceiling, the surface is not completely painted. On another fragment is an elongated, thin, black drop of paint (TZ 113596).

*Particularities of the shape:* Some fragments show a slight curvature.

*Constitution of the plaster:* A double layer can be observed on some pieces: 1. dense white mortar with fine sand (0.2 cm), 2. dense white mortar with some traces of fine organic temper (0.8 cm). The back is relatively smooth, probably followed by another layer of mortar.

*Total quantity and size of the surface:* 163 frgts., 533 cm<sup>2</sup> (3.3 cm<sup>2</sup> average size)

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 12 frgts., 38 cm<sup>2</sup>
- 11517, TZ 113596: 32 frgts., 168 cm<sup>2</sup>
- 11519, TZ 113594: 20 frgts., 58 cm<sup>2</sup>

- 11552, TZ 113599: 2 frgts., 3 cm<sup>2</sup>
- 11554, TZ 113593: 48 frgts., 120 cm<sup>2</sup>
- 11561, TZ 113595: 3 frgts., 10 cm<sup>2</sup>
- 11562, TZ 113592: 46 frgts., 136 cm<sup>2</sup>

### 5.4.5 Red

*Decoration:* Monochrome red in slightly different versions. The colour of the fragments of TZ 11360 is 17-11-15.

*Interpretation of the decoration:* The fragments can come from fields or intermediate stripes.

*Constitution of the plaster:* 1. very dense white mortar (0.2 cm), 2. dense white mortar (0.6 cm) (TZ 113596)

*Total quantity and size of the surface:* 82 frgts., 276 cm<sup>2</sup> (average size: 3.7 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113592: 4 frgts., 15 cm<sup>2</sup>
- 11517, TZ 113596: 35 frgts., 118 cm<sup>2</sup>
- 11522, TZ 113598: 10 frgts., 52 cm<sup>2</sup>
- 11552, TZ 113593: 13 frgts., 38 cm<sup>2</sup>
- 11554, TZ 113600: 10 frgts., 25 cm<sup>2</sup>
- box without number: 10 frgts., 28 cm<sup>2</sup>

### 5.4.6 Rose (Pl. 5.1a)

*Decoration:* Monochrome rose (7-10-2), not quite uniform.

*Interpretation of the decoration:* The fragments can come from different fields or intermediate stripes.

*Observations on the painting:* On two fragments are elongated, thin splashes of black paint. The surface is not well smoothed, the colour is pastose.

*Constitution of the plaster:* Dense white mortar with lots of fine, medium and coarse sand, few traces of organic temper (0.8 cm). The mortar is finer in the upper area (1 mm). In one fragment (TZ 113594) a small piece of black painted wall plaster is enclosed in the mortar. The back is relatively smooth, probably followed by another layer.

*Total quantity and size of the surface:* 130 frgts., 432 cm<sup>2</sup> (average size: 3,3 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 14 frgts., 40 cm<sup>2</sup>
- 11517, TZ 113596: 17 frgts., 94 cm<sup>2</sup>
- 11519, TZ 113594: 68 frgts., 234 cm<sup>2</sup>
- 11554, TZ 113593: 22 frgts., 40 cm<sup>2</sup>
- 11561, TZ 113595: 4 frgts., 10 cm<sup>2</sup>
- 11562, TZ 113592: 5 frgts., 14 cm<sup>2</sup>

### 5.4.7 Green

*Decoration:* Monochrome green (7-38-3)

*Interpretation of the decoration:* The fragments can come from different fields or intermediate stripes.

*Observations on the painting:* The green colour is applied to a grey undercoat. The colour is grainy pastose. *Constitution of the plaster:* 1. very dense white mortar (0.1 cm), 2. dense white mortar. The back is relatively smooth, probably followed by another layer.

*Total quantity and size of the surface:* 16 frgts., 29 cm<sup>2</sup>  
*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113592: 1 frgt., 1 cm<sup>2</sup>
- 11519, TZ 113594: 2 frgts., 2 cm<sup>2</sup>
- 11562, TZ 113592: 13 frgts., 26 cm<sup>2</sup>

## 5.5 Limiting lines

In this category, various elements are grouped together that originate from a transition between two types of decoration, between two fields with the same decoration or of limitations within a field. The latter can imitate three-dimensional boundaries such as raised panels or bevelled edges of ashlars.

### 5.5.1 Grey area with splashes next to other decorations (Pl. 5.10a–c)

*Decoration:*

- a. Black (remaining, 1.1 cm) – white line (1.7 cm) – grey with some fine white splashes. A yellow area starts diagonally with remains of white (?) and pink paint.
- b. Black-grey with transition to yellow-grey field: Black with white and red splashes (remaining, 2.9 cm) – the end of a white line (? heavily washed out, ca. 1.0 cm) – area with unidentifiable painting in yellow, grey and black. The boundary between yellow and grey runs diagonally. Above it is a volatile black brushstroke.
- c. Transition to pink area? Pink (remaining, 0.3 cm) – thin, irregular, grey line (0.1 cm) – black-grey with white and red splashes.
- d. Black-grey with a few fine white and red splashes – beginning of a faded white stripe (remaining, 0.8 cm wide).

*Interpretation of the decoration (a. and b.):* The black area, accompanied by a white line, should be the rest of an intermediate stripe. The diagonal transition from the yellow to the grey area could be the beginning of a diagonal transition between two coloured fields. Thus the yellow-ground field would probably be diamond-shaped and lying inscribed in a grey field (a.), in b. the other way round. The fragments could be related to decoration 3.2.3.

*Observations on the painting:* The yellow colour is slightly grainy-pastose.

*Constitution of the plaster:* dense white mortar (0.5–1.2 cm). The surface is well smoothed. The back is

slightly sloping, it obviously compensates for an unevenness in the surface of the wall.

*Locus, find number, quantity, size of the surface, length of decor:*

- a. 11522, TZ 113598: 1 frgt., 22 cm<sup>2</sup>
- b. 11523, TZ 113037: 18 frgts., 85 cm<sup>2</sup>

### 5.5.2 White-grounded area with unknown decoration next to rose area (Pl. 5.10d)

*Decoration:* Rose (remaining, 2.8 cm) – black line (0.7–0.9 cm) – white (remaining, 1.0 cm) with unknown painting in red.

*Interpretation of the decoration:* It could be a border of a white area with wave-like painting in red and black (see decoration group 5.3.3.1).

*Observations on the painting:* With the larger piece the line probably runs diagonally.

*Constitution of the plaster:* Dense white mortar with fine, medium and coarse sand, traces of organic temper (1.0 cm).

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 2 frgts., 11 cm<sup>2</sup>

### 5.5.3 Rose-grounded area with unknown decoration in green next to black area (Pl. 5.10e, f)

*Decoration:* a. Black (remaining, 3.0 cm) – white line (0.9 cm) – rose (13-0-3) with remains of green painting; b. black (remaining, 0.9 cm) – white line (1.3 cm) – rose (remaining, 1.5 cm) with remains of green painting

*Interpretation of the decoration:* It could be a border of a decoration like 5.3.3.3.

*Observations on the painting:* The surface is heavily washed out.

*Constitution of the plaster:* 1. Dense white mortar with fine and medium sand, 2. remains of earth plaster with much organic temper.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 1 frgt., 30 cm<sup>2</sup>
- 11584, TZ 113603: 1 frgt., 9 cm<sup>2</sup>

### 5.5.4 Transition between grey area with splashes and rose area next to black and other transitions (Pl. 5.10g–k)

*Decoration:*

- a. Black (remaining, 3.8 cm) – white (0.2 cm) – rose (remaining, 3.2 cm) with wavy painting in red or diagonally separated grey area with fine speckles. Over the transition from rose/grey to black a now heavily faded white stripe (1.5 cm) was originally painted.

- b. Black (remaining, 1.0 cm) – white stripe (1.6 cm) – rose with red painting and grey area diagonally set off from it.
- c. Pink (remaining, 3.9 cm) with wavy red painting – diagonal transition to light grey with white and red splashes.
- d. Different shades of grey, obviously set off against each other at an angle.
- e. Green with splashes in red and white.
- f. Bright yellow (5-13-5) with unclear transition to red – grey – red.
- g. Red – black line (?) – yellow.

*Interpretation of the decoration:* There are transitions between fields with splashed decoration and fields with wavy painting, i.e. between two different forms of imitation of decorative stones. These fields are bordered by a black stripe or field accompanied by a white line. The transition between these fields is not perpendicular to this stripe, but diagonal. Probably an imitation of incrustation plates, which were triangular or diamond-shaped. a.–c. probably belong to *Cat.* 5.3.3.2.

*Observations on the painting:* a. there was perhaps also a white line across the transition from the grey to the rose area originally, which has now faded. The colours are very badly washed out and difficult to see.

*Constitution of the plaster:* 1. Very dense white mortar (0.2 cm), 2. dense white mortar (total 0.5–0.9 cm). Remains of earth mortar with much organic temper. The surface is partly well smoothed, partly uneven. Deposits of sinter.

*Locus, find number, quantity, size of the surface:*  
- 11516, TZ 113597: 10 frgts., 161 cm<sup>2</sup>

### 5.5.5 Red and light orange painting next to black (*Pl.* 5.11a)

*Decoration:* Black (remaining, 3.2 cm) – white (0.2–0.5 cm) – grey – red next to light orange painting, which extends to the black.

*Interpretation of the decoration:* Boundary of a field with imitation of a decorative stone?

*Observations on the painting:* The painting is very carelessly executed. The light orange colour is grainy-pastose.

*Constitution of the plaster:* 1. Very dense, white mortar (0.2 cm), 2. dense, white mortar with fine and medium sand, traces of organic temper (1.0 cm). The surface is well smoothed but carelessly painted.

*Locus, find number, quantity, size of the surface:*  
- 11517, TZ 113596: 1 frgt., 24 cm<sup>2</sup>

### 5.5.6 Transition between two areas with imitation of natural stones (*Pl.* 5.11b)

*Decoration:* A black line (0.6 cm) runs diagonally to the base coat direction and separates two different areas. The larger field (remaining, 3.2 cm) shows red (13-17-8) and green (39-7-7) painting on a rose background (13-16-5). The other field is predominantly green-ground (36-2-6), a small section is grey. There are individual fine red splashes on it as well as white splashes, some of which can also be seen on the black line and the rose-ground area.

*Interpretation of the decoration:* It is clearly the transition between two fields with imitations of decorative stones. The green-ground decoration belongs to group 5.3.2.2.

*Observations on the painting:* The rose-ground field initially bordered directly on the green-ground field. The black line was subsequently painted onto the rose background. The green colour is grainy-pastose and partly flaked off, partly applied only very thinly.

*Particularities of the shape:* The surface is slightly curved, but due to its small size it is not possible to determine whether the wall as a whole was curved or whether it is just an irregularity.

*Constitution of the plaster:* Dense, white mortar (0.6 cm).

*Locus, find number, quantity, size of the surface:*  
- 11554, TZ 113593: 2 frgts. (fitting together), 11 cm<sup>2</sup>

### 5.5.7 Transitions between different decorations (*Pl.* 5.11c–g)

*Decoration:*

- a. Grey with speckles next to pink: grey line (0.8 cm) – rose with painting in red (remaining, 1.5 cm), the grey line runs diagonally to the direction of the base coating.
- b. Black (remaining, 0.5 cm) – white line (0.4 cm) – rose (remaining, 3.2 cm) with painting in green.
- c. White (remaining, 0.3 cm) – black (0.5 cm); strongly abraded at right angles to this, grey (remaining, 0.8 cm to the edge) and rose field with a green painting.
- d. Rose with painting in red – diagonal transition to a grey stripe (? very washed out), then green. Exact boundaries are not recognizable. Over grey and green red and very fine white splashes.
- e. Green (remaining, 1.1 cm) – diagonal transition to grey (remaining, 1.7 cm). There were a great many, very fine red and white splashes over both surfaces.

*Interpretation of the decoration:* The fragments probably originate from the transitions between panels imitating natural stone in different ways. a. is probably associated with decoration 5.3.3.2. – b. could belong to 5.3.3.3. and 5.5.3. – d. could belong to 5.3.2.1, 5.3.2.3 and 5.3.3.2. – e. could belong to 5.3.2.2.

*Constitution of the plaster:* 1. Very dense, white mortar (0.3 cm), 2. dense, white mortar with fine, medium and coarse sand (0.9 cm), sometimes thinner and with the addition of earth plaster (0.7 cm). The surface is mainly well smoothed. Sintering deposits on the surface.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 26 frgts., 224 cm<sup>2</sup>

### 5.5.8 Yellow – black with dots (*Pl. 5.11h*)

*Decoration:* Black (3-11-10; remaining, 19 cm) – light yellow (6-0-3; remaining, 0.8 cm). On the yellow and on the black a small green dot each (39-3-3; 0.2 cm), on black another red dot (0.1 cm).

*Interpretation of the decoration:* splashed decoration? Since many black pieces with similar surface (*Cat. 5.4.2, Cat. 5.5.12*) do not have splashes of paint, the black surface might have been below a splashed surface.

*Particularities of the shape:* horizontal curvature.

*Constitution of the plaster:* 1. Dense white mortar with fine and medium sand, lime inclusions, traces of organic temper (0.4–1.5 cm), 2. earth plaster with little medium and coarse sand, individual limestone chippings, traces of organic temper (up to 3.8 cm preserved). At one point the upper plaster becomes very thin, obviously an unevenness in the lower earth plaster is compensated for here. The surface is very heavily abraded.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 3 frgts., 88 cm<sup>2</sup>

### 5.5.9 Red area next to black area (*Pl. 5.11i–l*)

*Decoration:* Red area (remaining, 2.3 cm) – white line (1.2–1.3 cm) – black area (remaining, 2.7 cm).

*Interpretation of the decoration:* Horizontal (?) separation of panels or bands.

*Observations on the painting:* On one fragment (TZ 113593) the white line is only 0.7 cm wide and it is on the black surface.

*Constitution of the plaster:* Dense white mortar with many traces of fine organic temper (min. 0.5 cm). The surface is well smoothed, only the red is partly a little bit uneven.

*Total quantity, size of the surface, length of decor:* 35 frgts., 376 cm<sup>2</sup>, min. 113 cm (average size: 10.7 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface, length of decor:*

- 11517, TZ 113596: 3 frgts., 12 cm<sup>2</sup>, 8 cm

- 11519, TZ 113594: 10 frgts., 35 cm<sup>2</sup>, 17 cm

- 11522, TZ 113598: 5 frgts., 29 cm<sup>2</sup>, 9 cm

- 11523, TZ 113037: 1 frgt., 6 cm<sup>2</sup>

- 11552, TZ 113599: 11 frgts., 56 cm<sup>2</sup>

- 11554, TZ 113600: 8 frgts., 44 cm<sup>2</sup>, 11 cm

- 11561, TZ 113595: 17 frgts., 60 cm<sup>2</sup>, 26 cm

- 11562, TZ 113592: 5 frgts., 21 cm<sup>2</sup>, 9 cm

- 11563, TZ 113036: 5 frgts., 88 cm<sup>2</sup>, 19 cm

- box without number: 10 frgts., 25 cm<sup>2</sup>, 14 cm

### 5.5.10 Red area next to white area

#### 5.5.10.1 Red – black – white (*Pl. 5.12a–c*)

*Decoration:* Red (remaining, 3.3 cm) – black line (1.1 cm) – white (remaining, 0.9 cm)

*Interpretation of the decoration:* Horizontal (?) separation of panels or bands. On one piece (TZ 113598) possibly an oblique boundary.

*Observations on the painting:* The black colour is applied thinly and reaches over the red surface. Part of the white colour reaches a little bit over the black stripe; therefore, a white painted surface followed, not one that was only left white. The red surface is well smoothed.

*Total quantity, size of the surface, length of decor:* 35 frgts., 138 cm<sup>2</sup>, 55.5 cm

*Locus, find number, quantity, size of the surface, length of decor:*

- 11517, TZ 113596: 6 frgts., 29 cm<sup>2</sup>, 10 cm

- 11519, TZ 113594: 8 frgts., 30 cm<sup>2</sup>, 15 cm

- 11522, TZ 113598: 3 frgts., 20 cm<sup>2</sup>, 8 cm

- 11554, TZ 113600: 6 frgts., 30 cm<sup>2</sup>, 10 cm

- 11561, TZ 113595: 9 frgts., 20 cm<sup>2</sup>, 8 cm

- 11562, TZ 113592: 1 frgt., 2 cm<sup>2</sup>, 1 cm

- box without number: 2 frgts., 7 cm<sup>2</sup>, 3.5 cm

#### 5.5.10.2 Red – black

*Decoration:* Red next to black.

*Locus, find number, quantity, size of the surface, length of decor:*

- 11584, 113603: 1 frgt., 5 cm<sup>2</sup>, 3 cm

#### 5.5.10.3 Red – white – black – white (*Pl. 5.12d*)

*Decoration:* Red (remaining, 1.7 cm) – white (0.6 cm) – black line (0.3 cm) – white (remaining, 0.5 cm).

Above this, a coarse white brush stroke is drawn out of the white, which obscures everything.

*Interpretation of the decoration:* unknown.

*Constitution of the plaster:* Dense white mortar with fine and medium sand and traces of organic temper (0.7 cm). The back is smooth, another layer probably followed. The surface is well smoothed.

*Locus, find number, quantity, size of the surface:*

- 11596, TZ 113602: 1 frgt., 4 cm<sup>2</sup>

### 5.5.11 Rose panel with black lines – white – black/rose – black – white – yellow

*Total quantity and size of the surface:* 56 frgts., 222 cm<sup>2</sup>.

**5.5.11.1 Corner of a rose panel (Pl. 5.12e)**

*Decoration:* T-shaped panel boundary: black (0.1 cm) – white (1.0 cm) – above this, vertical subdivision between a black field (at least 0.5 cm) and a rose field (at least 1.6 cm), with a white stripe (1.0 cm) between them, which is continued on the other white stripe. From the black field one line passes to the rose field.

*Interpretation of the decoration:* A rose-coloured panel, bordered by black and white lines, is to be assumed. The differently coloured and wide strokes are probably intended to create the three-dimensional impression of a raised surface. It is uncertain what colour the neighbouring surfaces had, since the remains of the black may belong to a dividing line.

*Constitution of the plaster:* Dense, white mortar (0.5 cm), earth plaster (1.5 cm).

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 1 frgt., 9 cm<sup>2</sup>

**5.5.11.2 Rose with black stripes (Pl. 5.12f–i)**

*Decoration:* Monochrome rose-coloured ground with black lines (0.5–0.9 cm) parallel, oblique or perpendicular to the direction of the base coating.

*Interpretation of the decoration:* The black lines could be dividing lines between different pink areas or lines that indicate an internal division of a field, such as a raised panel.

*Constitution of the plaster:* Dense, white mortar (0.8 cm). On the back imprints of organic temper, which probably come from an earth plaster.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 4 frgts., 20 cm<sup>2</sup>

- 11519, TZ 113594: 1 frgt., 1 cm<sup>2</sup>

- 11554, TZ 113593: 2 frgts., 13 cm<sup>2</sup>

- 11561, TZ 113595: 1 frgt., 3 cm<sup>2</sup>

- 11562, TZ 113592: 6 frgts., 15 cm<sup>2</sup>

**5.5.11.3 Rose with black and white stripes (Pl. 5.12j–m)**

*Decoration:* Monochrome rose-coloured ground with black and white lines in various configurations.

*Interpretation of the decoration:* The black and white lines could be dividing lines between different pink areas or lines that indicate an internal division of a field, such as a raised panel.

*Observations on the painting:* On e. is the imprint of a string under the white stripe.

a. Black (remaining, 0.4 cm) – pink (2.6 cm) – black (remaining, 0.3 cm), fine black splash, thick white splashes.

b. Black line (0.6–0.8 cm) on rose background.

c. Rose (remaining, 1.2 cm) – black line (0.8 cm) – rose (0.4 cm) – white (remaining, 0.2 cm).

d. Light red (15-0-3, remaining, 2.6 cm) – black line (0.3 cm) – white (painted on, probably from a line) (remaining, 0.4 cm).

e. Black (remaining, 0.2 cm) – white, thinly applied stripe (1.0) – rose (remaining, 2.0 cm) (2 frgts., 7 cm<sup>2</sup>).

f. Black (remaining, 1.5 cm) – white line (0.5 cm) – pink (remaining, 0.6 cm) (1 frgt., 4 cm<sup>2</sup>).

g. Black (remaining, 0.5 cm) – white (1.1 cm) – pink (remaining, 0.3 cm) (1 frgt., 3 cm<sup>2</sup>).

h. Like e. without cord impression (4 frgts., 24 cm<sup>2</sup>).

i. Black (remaining, 0.6 cm) – white (0.4–0.5 cm) – rose (0.9 cm) – black (0.6 cm) – rose (remaining, 0.9 cm) (1 frgt., 7 cm<sup>2</sup>).

j. Rose (remaining, 0.4 cm) – black (0.7 cm) – rose (0.9 cm) – white (remaining, 0.1 cm) (1 frgt., 7 cm<sup>2</sup>).

k. White (remaining, 0.2 cm) – black (0.7 cm) – rose (remaining, 0.9 cm) (1 frgt., 1 cm<sup>2</sup>).

l. Black (remaining, 0.8 cm) – rose (remaining, 2.1 cm) (3 frgts., 10 cm<sup>2</sup>).

m. White (remaining, 0.3 cm) – rose (remaining, 1.7 cm).

n. White (remaining, 0.2 cm) – rose (remaining, 3.9 cm), the white line reaches 0.5 cm onto the rose surface.

o. Rose (remaining, 0.5 cm) – black line (0.5 cm) – white (remaining, 0.9 cm) (1 frgt., 4 cm<sup>2</sup>).

p. Rose (remaining, 0.4 cm) – white line (0.4 cm) – black (remaining, 0.4 cm) (1 frgt., 2 cm<sup>2</sup>).

*Total quantity and size of the surface:* 28 frgts., 119 cm<sup>2</sup>

*Locus, find number, quantity, size of the surface:*

a.–c. 11517, TZ 113596: 13 frgts., 60 cm<sup>2</sup>

d. 11519, TZ 113594: 1 frgt., 4 cm<sup>2</sup>

e.–m. 11554, TZ 113593: 14 frgts., 49 cm<sup>2</sup>

n.–p. 11562, TZ 113592: 1 frgt., 6 cm<sup>2</sup>

**5.5.11.4 Rose with black and white stripes next to yellow (Pl. 5.12n. o)**

*Decoration:*

a. Rose (13-0-3, remaining, 2.0 cm) – black (0.7 cm) – white (0.5 cm) – yellow (remaining, 0.2 cm).

b. Yellow (remaining, 0.6 cm) – black line (0.7 cm) – rose (2.0 cm) (slightly yellow at the margin).

c. Rose (remaining, 1.1 cm) – black line (0.7–0.8 cm) – yellow (remaining, 1.1 cm).

*Interpretation of the decoration:* Boundary between a rose and a yellow panel.

*Constitution of the plaster:* a., c. dense, white mortar (0.6–0.7 cm). The back side is relatively smooth, another layer probably followed.

*Locus, find number, quantity, size of the surface:*

a. 11517, TZ 113596: 2 frgts. (fitting together), 12 cm<sup>2</sup>

b. 11554, TZ 113593: 2 frgts., 12 cm<sup>2</sup>

c. 11562, TZ 113592: 8 frgts., 18 cm<sup>2</sup>

### 5.5.12 Yellow surface, bordered by white and black stripes (*Pl. 5.13a–g*)

#### *Decoration:*

- a. Yellow (remaining, 2.9 cm) – black line (0.6–1.0 cm) – white line (0.7–1.7 cm) – black line (0.5–0.7 cm) – white (remaining, 0.3 cm).
- b. Yellow (remaining, 1.1 cm) – white stripe (1.1 cm) – black (remaining, 1.0 cm).
- c. Yellow (9-5-7; remaining, 1.9 cm) – black (remaining, 0.1 cm).
- d. Yellow-ochre (9-5-6; remaining, 0.9 cm) – black line (0.6 cm) – yellow-ochre (remaining, 0.2 cm).

*Interpretation of the decoration:* It could be the border of a yellow panel adjacent to a white panel or a white dividing line. The stripes could be an imitation of a three-dimensional design of ashlar with raised panels.

#### *Observations on the painting:*

- a. The black stripes do not separate the yellow and white areas exactly, but are partially shifted to one of the two.
- b. The boundary between the two surfaces was indicated by a cord imprint, the watery white line was drawn afterwards and only very imprecisely across the boundary.
- c. The yellow colour is slightly grainy.

#### *Constitution of the plaster:*

- a. 1. Very dense white mortar (0.2 cm), 2. Dense white mortar (0.6 cm).

c. Dense white mortar with fine and medium sand, few fine traces of organic temper (0.6 cm). The back side is relatively smooth, another layer probably followed.

*Total quantity and size of the surface:* 14 frgts., 77.5 cm<sup>2</sup>

#### *Locus, find number, quantity, size of the surface:*

- a. 11517, TZ 113596: 4 frgts., 16 cm<sup>2</sup>
- 11519, TZ 113594: 1 frgt., 3 cm<sup>2</sup>
- 11522, TZ 113598: 4 frgts., 33 cm<sup>2</sup>
- 11554, TZ 113593: 1 frgt., 6 cm<sup>2</sup>
- b. 11554, TZ 113593: 2 frgts., 9 cm<sup>2</sup>
- c. 11517, TZ 113596: 1 frgt., 5 cm<sup>2</sup>
- 11554, TZ 113593: 1 frgt., 4 cm<sup>2</sup>
- d. 11519, TZ 113594: 1 frgt., 1.5 cm<sup>2</sup>

### 5.5.13 Green surface, bordered by white and black stripes (*Pl. 5.13h–o*)

#### *Decoration:*

- a. Green (7-39-6; remaining, 2.1 cm) – black line (0.6–1.0 cm) – white line (0.9–1.0 cm) – black line (0.6–0.7 cm) – white (remaining, 0.6 cm).
- b. Green (remaining, 1.7 cm) – black line (0.6–1.1 cm) – white line (1.1 cm) – black (remaining, 0.2 cm).
- c. Green (remaining, 0.2 cm) – white line (0.9 cm) – black line (0.8 cm) – white (remaining, 0.9 cm).

d. Green (39-7-6; remaining, 0.6 cm) – white line (min. 0.5 cm; the line continued over the black area, but washed out there) – black (remaining, 0.5 cm).

e. Green (7-38-7; remaining, 2.4 cm) – washed out black line – white (remaining, 2.3 cm).

*Interpretation of the decoration:* It could be the border of a green panel adjacent to a white panel or a white dividing line. The stripes could imitate a three-dimensional design of ashlar with raised panels.

#### *Observations on the painting:*

- a. The colours are very heavily washed out. At the margin of the green area a little rose colour can be seen, which may have been originally painted over in green. On one fragment, the stripes run diagonally to the direction of the base coating.
- b. Not all stripes are preserved on all fragments. On two fragments the black stripe right next to the green area is slightly shifted onto the white stripe.
- c. At the margin of the green area a little rose colour can be seen, which may have been originally painted over in green.
- d. The transition between the fields is vertical.
- e. The green colour is applied to a grey undercoat. Two layers of paint are visible in the green area. The lower one has a white surface. Mortar has been applied on top of this, which runs out in the white area.

#### *Constitution of the plaster:*

a., c. Dense white mortar (0.6 cm). The back side is relatively smooth, another layer probably followed. The surface is well smoothed.

e. Dense white mortar (0.2 cm), leaks, 1. Painted surfaced on dense white mortar with fine, medium and coarse sand and traces of organic temper (0.4 cm). The surface is partly well smoothed, partly very uneven (room corner?).

*Total quantity and size of the surface:* 20 frgts., 116 cm<sup>2</sup>

#### *Locus, find number, quantity, size of the surface:*

- a. 11516, TZ 113597: 1 frgt., 7 cm<sup>2</sup>
- 11517, TZ 113596: 1 frgt., 20 cm<sup>2</sup>
- b. 11562, TZ 113592: 13 frgts., 63 cm<sup>2</sup>
- c. 11517, TZ 113596: 1 frgt., 4 cm<sup>2</sup>
- d. 11554, TZ 113593: 2 frgts. (fitting together), 2 cm<sup>2</sup>
- e. 11554, TZ 113600: 2 frgts., 20 cm<sup>2</sup>

### 5.5.14 Black and white stripes

This group includes fragments showing either white stripes on black background or black stripes on white background. In some cases, the relationship can no longer be determined.

*Total quantity and size of the surface:* 64 frgts., 314 cm<sup>2</sup>

**5.5.14.1 Black with white stripes (Pl. 5.14a)***Decoration:*

- a. Black (remaining, 3.0 cm) – white stripe (1.1 cm) – black (remaining, 1.7 cm), with white stripe vertically on top (at least 1.1 cm wide, 1.4 cm long).
- b. Black (remaining, 0.3 cm) – white stripe (1.3 cm) – black (remaining, 0.2 cm).

*Interpretation of the decoration:* It could be a transition between two panels, but may also be related to the architectural decor.

*Observations on the painting:*

- a. The dividing line between the black and the white surface was pre-scored.
- b. The dividing line was probably perpendicular to the direction of the base coating.

*Particularities of the shape:* The largest piece shows a slight curvature.

*Constitution of the plaster:* Dense white mortar (0.7 cm). The surface is badly washed out and sintered.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 6 frgts., 60 cm<sup>2</sup>

**5.5.14.2 White with black stripes (Pl. 5.14b–d)***Decoration:*

- a. White over black (remaining, 0.4 cm) – white (0.9 cm) – white over black (remaining, 0.2 cm), with a black line perpendicular to it (0.3 cm).
- b. White painted over black (0.5 cm) – black (0.7 cm) – white (1.1 cm) – black (remaining, 0.1 cm).
- c. White (remaining, 0.1 cm) – black (0.7 cm) – white (1.5 cm) – black (remaining, 0.7 cm).
- d. White with a diagonal black line (0.8 cm). Black at a distance of 0.7 cm.

*Interpretation of the decoration:* It can be a transition between two panels, but may also be related to the architectural decor.

*Constitution of the plaster:*

- a., b. Surface not well smoothed.
- c. 1. Very dense white mortar (0.3 cm), 2. Dense white mortar (in total 0.9 cm). The surface is well smoothed. The back is relatively smooth, probably followed by another layer.
- d. The black line runs diagonally to the basic coating direction.

*Locus, find number, quantity, size of the surface:*

- a., b. 11554, TZ 113593: 6 frgts., 10 cm<sup>2</sup>
- c. 11552, TZ 113598: 3 frgts., 12 cm<sup>2</sup>
- d. 11517, TZ 113596: 1 frgt., 2 cm<sup>2</sup>

**5.5.14.3 Black – white – black**

*Decoration:* Black (remaining, 0.6 cm) – white stripe (0.9–1.7 cm) – black (remaining, 0.5 cm).

*Constitution of the plaster:* Dense white mortar (0.6 cm). Surface partly well smoothed, partly washed out.

*Locus, find number, quantity, size of the surface:*

- 11519, TZ 113594: 2 frgts., 10 cm<sup>2</sup>
- 11554, TZ 113593: 2 frgts., 7 cm<sup>2</sup>

**5.5.14.4 Black-grey – white**

*Decoration:* Monochrome black-grey with part of white stripe.

*Constitution of the plaster:* Dense white mortar with fine and sporadic coarse sand, traces of organic temper (0.5 cm).

*Locus, find number, quantity, size of the surface:*

- 11522, TZ 113598: 9 frgts., 30 cm<sup>2</sup>

**5.5.14.5 Black – white***Decoration:*

- a. White (remaining, 2.5 cm) – black (remaining, 1.2 cm).
- b. White – black from different contexts.

*Constitution of the plaster:*

- a. Dense white mortar with few fine and medium sand, traces of organic temper (0.5 cm). Remains of earth plaster on the back.

*Total quantity, size of the surface and length of decor:* 35 frgts., 183 cm<sup>2</sup>, 49 cm

*Locus, find number, quantity, size of the surface, length of decor:*

- a. 11519, TZ 113594: 6 frgts., 23 cm<sup>2</sup>, 7 cm
- b. 11516, TZ 113597: 7 frgts., 42 cm<sup>2</sup>, 11 cm
- 11517, TZ 113596: 7 frgts., 28 cm<sup>2</sup>, 4 cm
- 11523, TZ 113037: 1 frgt., 9 cm<sup>2</sup>, 3 cm
- 11561, TZ 113594: 9 frgts., 40 cm<sup>2</sup>, 12 cm
- 11562, TZ 113592, 1 frgt., 20 cm<sup>2</sup>, 4 cm
- 11563, TZ 113036: 1 frgt., 4 cm<sup>2</sup>, 2 cm
- box without number: 3 frgts., 17 cm<sup>2</sup>, 6 cm

**5.5.15 Stripes and transitions in different colours**

The group includes fragments of transitions between different colours, sometimes with several stripes next to each other.

*Interpretation of the decoration:* Probably transitions between different panels.

**5.5.15.1 Different stripes in red, rose, yellow, green, black and white (Pl. 5.14e, f)***Decoration:*

- a. Yellow (remaining, 0.7 cm) – rose (0.3–0.8 cm) – black (0.7 cm) – rose (remaining, 0.3 cm) (5 frgts., 12 cm<sup>2</sup>).
- b. Red (remaining, 1.0 cm) – black (0.6 cm) – yellow (remaining, 1.8 cm) (4 frgts., 12 cm<sup>2</sup>, 7 cm).
- c. Rose (remaining, 0.4 cm) next to red (remaining, 3.3 cm), the border runs diagonally (2 frgts., 12 cm<sup>2</sup>).
- d. Yellow (remaining, 3.8 cm) – black (remaining, 0.7 cm) (2 frgts., 12 cm<sup>2</sup>).

- e. Red (remaining, 2.0 cm) – yellow (remaining, 1.2 cm) (9 frgts., 12 cm<sup>2</sup>, 9 cm).
- f. Green (remaining, 1.0 cm) – black (1.0 cm) – yellow (remaining, 0.5 cm) (1 frgt., 5 cm<sup>2</sup>).
- g. Yellow (remaining, 0.5 cm) – white (0.5 cm) – black (0.5 cm) – white (remaining, 0.4 cm) (1 frgt., 2 cm<sup>2</sup>).
- h. Yellow (remaining, 1.5 cm) – oblique black line (0.9 cm) – yellow (0.5 cm) (1 frgt., 5 cm<sup>2</sup>).
- i. Yellow with horizontal black line (3 frgts., 6 cm<sup>2</sup>).

*Observations on the painting:*

b. The painting is partly very clear, partly very washed out.

e. The painting is very washed out.

*Locus, find number, quantity, size of the surface:*

- 11519, TZ 113594: 28 frgts., 78 cm<sup>2</sup>

### 5.5.15.2 Different stripes in red, rose, yellow, black and white (Pl. 5.14g–l)

*Decoration:*

- a. Yellow (remaining, 0.1 cm, unclear line) – white (0.4 cm) – black (0.7 cm) – white (0.5 cm) – light yellow-ochre (0.6 cm) – red (remaining, 0.3 cm).
- b. Yellow (remaining, 1.8 cm) – white (0.2 cm) – red (remaining, 0.6 cm, partly white above).
- c. Black (remaining, 0.6 cm) – fine rose line (17-10-1; 0.2 cm) – white, slightly yellowish (remaining, 0.4 cm).
- d. Rose (17-10-2; remaining, 0.6 cm) – light yellow (1-5-6; 0.8 cm) – white (remaining, 0.3 cm).
- e. Red (only a minimal amount left) – light yellow-ochre (6-0-5; 1.1 cm) – black line (very faded; 0.7 cm) – light yellow-ochre (remaining, 0.5 cm).
- f. Light yellow (9-5-2; remaining, 1.2–1.4 cm) – black line (0.7 cm) – light yellow (remaining, 0.6 cm).
- g. Yellow (remaining, 1.6 cm) – fine rose line (0.1 cm) – black (0.2 cm).

*Observations on the painting:* e. two longish red splashes on black and yellow.

*Constitution of the plaster:*

- a. Dense white mortar (0.6 cm), applied in two layers. Impressions of organic temper on the back.
- b. Dense white mortar with fine and medium sand (0.2–0.3 cm). The surface is well smoothed. The back is straight, another layer probably followed.
- e. 1. Dense white mortar with fine, medium and some coarse sand (0.2 cm), 2. dense white mortar (0.5 cm). The mortar layer is probably broken off and originally continued. The surface is well smoothed but partly washed out.

*Locus, find number, quantity, size of the surface:*

- a. 11517, TZ 113596: 2 frgts., 10 cm<sup>2</sup>
- b. 11517, TZ 113596: 1 frgt., 3 cm<sup>2</sup>
- c. 11519, TZ 113594: 1 frgt., 2 cm<sup>2</sup>
- d. 11554, TZ 113593: 1 frgt., 2 cm<sup>2</sup>
- e. 11554, TZ 113593: 1 frgt., 10 cm<sup>2</sup>

f., g. 11562, TZ 113592: 7 frgts., 15 cm<sup>2</sup>

### 5.5.15.3 Different stripes in green, yellow and black (Pl. 5.14m–o)

*Decoration:*

- a. Green (remaining, 2.9 cm) – yellow (remaining, 0.9 cm), on it black line, which does not quite extend to the green.
- b. Green (remaining, 0.7 cm, of which 0.2 cm painted over in black) – yellow (very heavily washed out, remaining, 1.3 cm).
- c. Green (remaining, 1.0 cm) – black line (0.9 cm) – yellow (remaining, 0.4 cm); plus 1 frgt. monochrome green.

*Observations on the painting:*

- a. A lower layer of paint (white) is visible on one piece.
- b. The yellow colour is heavily chipped off.

*Constitution of the plaster:*

- a. Dense white mortar with traces of organic temper (0.4–0.6 cm). The surface is not well smoothed and is heavily abraded. Smooth back with impressions of organic temper.
- b. Dense white mortar (remaining, 0.3 cm).

*Locus, find number, quantity, size of the surface:*

- a. 11517, TZ 113596: 22 frgts., 140 cm<sup>2</sup>
- b. 11522, TZ 113598: 1 frgt., 1.5 cm<sup>2</sup>
- c. 11561, TZ 113595: 6 frgts., 20 cm<sup>2</sup>

### 5.5.15.4 Red – yellow (Pl. 5.14p)

*Decoration:* Red (remaining, 1.2 cm) – yellow (remaining, 1.7 cm).

*Observations on the painting:* The border between the two colours is very unclear.

*Constitution of the plaster:* 1. Dense white mortar (0.2 cm), 2. dense white mortar with fine and medium sand (0.7 cm). Remains of earth plaster on the back.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 2 frgts. (fitting together), 19 cm<sup>2</sup>

### 5.5.15.5 Red – white

*Decoration:* Red (remaining, 3.8 cm) – white (remaining, 0.4 cm).

*Constitution of the mortar:* Dense white mortar (0.4 cm). Surface well smoothed, but at one point there is a small bump, with the trace of a smoothing trowel. The surface is difficult to clean, probably because of sinter deposits.

*Locus, find number, quantity, size of the surface:*

- 11596, TZ 113602: 2 frgts., 16 cm<sup>2</sup>

## 5.6 Parts of garlands?

### 5.6.1 Rose with decoration in green and white (Pl. 5.14q. r)

*Decoration:*

- Firstly a white oval is painted on a rose background (approx. 4 by 5 cm), from which white lines run outwards. On the oval there are 5 dark green spots, on one of them a thickly applied white stain comes off.
- On a rose background, the beginning of a round form in white, from which a white line is drawn diagonally. Next to it, the base of a green painting is still visible.

*Interpretation of the decoration:* It can be assumed that it is the representation of a garland or a wreath of leaves.

*Observations on the painting:* The white colour is applied very diluted. Also the rose colour is rather thin, while the green is grainy-pastose.

*Constitution of the plaster:* Dense white mortar with fine and medium sand. The surface is well smoothed. There are deposits on the surface, which might be sinter. The back is smooth, so that another layer can be assumed.

*Locus, find number, quantity, size of the surface:*

11516, TZ 113597: 7 frgts. 30 cm<sup>2</sup> (4 respectively 2 frgts. fit together)

## 5.7 Insecure classification

### 5.7.1 Black with curvy line in green (Pl. 5.14s)

*Decoration:* On black (3-11-10) ground diagonal, slightly curved green line (39-0-3?).

*Interpretation of the decoration:* The decoration cannot be identified with certainty. In comparison to the green painting on red ground (Cat. 5.3.3.3) it could be an imitation of the veining of a precious stone, or otherwise a floral painting. Possibly combined with Cat. 5.1.8.

*Particularities of the shape:* The piece shows a vertical vaulting as well as a minimal horizontal vaulting, so it could come from a niche in the transition to the ceiling or from a dome.

*Constitution of the plaster:* Dense white mortar with fine and medium sand and relatively many traces of organic temper. The surface is even, but fine sand can be seen on the surface. The back is irregular, the layer underneath was not well smoothed.

*Locus, find number, quantity, size of the surface:*

- 11516, TZ 113597: 1 frgt., 6 cm<sup>2</sup>
- 11554, TZ 113593: 2 frgts., 21 cm<sup>2</sup>

### 5.7.2 Black with white splashes (Pl. 5.14t-v)

*Decoration:* On a monochrome black background there are single white splashes.

*Interpretation of the decoration:* It is not clear whether the paint splashes are intentionally applied or originate from areas higher up. Therefore, an interpretation as a speckled decoration is uncertain.

*Particularities of the shape:* A horizontal curvature is visible in one piece, the surfaces are otherwise irregular.

*Constitution of the plaster:* 1. Dense, white mortar with fine and medium sand and traces of organic temper (0.8–1.2 cm), 2. earth plaster (remaining, 0.7 cm). The surface is not well smoothed, fine sand is visible on the surface.

*Locus, find number, quantity, size of the surface:*

11554, TZ 113593: 6 frgts., 88 cm<sup>2</sup>

### 5.7.3 Rose and yellow ground with painting in black, yellow, rose and white (Pl. 5.15a-f)

*Decoration:*

- Rose background with large areas painted in yellow, above it curved, partly wavy black strokes.
- Different paintings in rose, yellow and white: yellow, on top of it a curved part of an unknown painting in rose; rose (remaining, 2.2 cm) – white line (0.2 cm) – light yellowish-rose (remaining, 0.5 cm); rose – white (0.1 cm) – rose.
- Grey (remaining, 1.2 cm) – yellow (0.4 cm) – white line (0.3 cm), partly chipped off – rose (remaining, 2.5 cm) with remnants of yellow, on top of that the beginning of curved black painting.
- On rose background is a no longer identifiable painting in yellow (5-11-7) and black. Black, curved strokes (0.6–1.0 cm) may separate different fields.

*Interpretation of the decoration:* It could be the imitation of a precious stone, veined marble or alabaster.

*Observations on the painting:* The surface is heavily washed out, especially in the yellow area, so the decoration is hardly visible. The colour is grainy-pastose, on one fragment there is a spot of white colour.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, traces of organic temper (0.5–0.9 cm). On the back are remains of earth plaster with much organic temper (TZ 113594).

*Total quantity and size of surface:* 104 frgts., 376 cm<sup>2</sup> (average size: 3.6 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 14 frgts., 90 cm<sup>2</sup>
- 11519, TZ 113594: 16 frgts., 55 cm<sup>2</sup>
- 11562, TZ 113592: 9 frgts., 30 cm<sup>2</sup>
- b. 11562, TZ 113592: 4 frgts., 12 cm<sup>2</sup>
- c. 11522, TZ 113599: 1 frgt., 9 cm<sup>2</sup>
- d. 11554, TZ 113593: 60 frgts., 180 cm<sup>2</sup>

### 5.7.4 Rose with black painting (Pl. 5.15g)

*Decoration:* On a rose (13-16-3) background there is a painting in black: two strokes (0.5 cm) form an angle; from the longer preserved side two more parallel strokes go off. On the other side there are two leaf-shaped structures of different sizes.

*Interpretation of the decoration:* Part of an architectural decoration?

*Observations on the painting:* The colour is grainy-pastose.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, occasional fine gravel (at the back), traces of organic temper. On the back imprints of much organic temper. The surface is relatively well smoothed.

*Locus, find number, quantity, size of the surface:*

11596, TZ 113602: 1 frgt., 12 cm<sup>2</sup>

### 5.7.5 Fragment with reworked decoration (Pl. 5.15h)

*Decoration:* Lower layer: black (remaining, 2.9 cm) – white (remaining, 1.2 cm). A thin layer of mortar is spread over it, which runs out in the area of the black surface. On top of it, red and black (?) paint.

*Interpretation of the decoration:* The fragment could belong to Cat. 5.3.3.1.1, which shows a similar rework. Then the upper painting would belong to a wave-like imitation of a precious stone.

*Observations on the painting:* The painting has been reworked.

*Constitution of the plaster:* Dense white mortar (0.6–0.9 cm). On the back there are imprints of much organic temper, so that it can be assumed that an earth plaster followed.

*Locus, find number, quantity, size of the surface:*

11517, TZ 113596: 1 frgt., 20 cm<sup>2</sup>

### 5.7.6 Rose with painting in black next to white with painting in red (Pl. 5.15i)

*Decoration:* Rose (remaining, 1.4 cm) – black line (1.1 cm) – white (remaining, 1.6 cm) with painting in red. On the rose background there is a black line that runs diagonally downwards and a longish splash of black paint that also runs diagonally.

*Interpretation of the decoration:* unknown (related to Cat. 5.5.11?).

*Observations on the painting:* The surface is very irregular, at one point it protrudes far out; there are alternating coating directions.

*Constitution of the plaster:* Dense white mortar (0.6–0.9 cm). On the back there are imprints of much or-

ganic temper, so that it can be assumed that an earth plaster followed.

*Locus, find number, quantity, size of the surface:*

11517, TZ 113596: 1 frgt., 10 cm<sup>2</sup>

### 5.7.7 Red – black (with painting in white?) (Pl. 5.15j)

*Decoration:*

a. Black (3-7-10, remaining, 0.9 cm), on it painting in white (?) – red (17-3-8; remaining, 2.1 cm) (2 frgts., 6 cm<sup>2</sup>).

b. Black (remaining, 0.3 cm) – red (remaining, 1.4 cm). The border runs slightly diagonally vertical (1 frgt., 2 cm<sup>2</sup>).

*Interpretation of the decoration:* Unknown (related to Cat. 5.1.1?).

*Constitution of the plaster:* Dense white mortar (0.4–0.5 cm). At one point there are irregularities in the mortar, otherwise it is very well smoothed. The back is relatively smooth, probably followed by another layer of mortar.

*Locus, find number, quantity, size of the surface:*

11554, TZ 113593: 3 frgts., 8 cm<sup>2</sup>

### 5.7.8 Black-gray with splashes or lines in red, rose and white

*Decoration:*

a. Black-grey (remaining, 3.0 cm) – rose line (0.2 cm) – black (remaining, 0.7 cm), painted in white (?).

b. Black-grey with single red splashes.

c. Black-grey with a touch of red, some black and white splashes of colour.

d. grey (remaining, 0.3 cm) – white line (0.3 cm) – grey (remaining, 2.2 cm), on which is the beginning of a broad (1.6 cm) red brush stroke.

*Interpretation of the decoration:* related to Cat. 5.3.2?

*Constitution of the plaster:* Dense white mortar. Surface is well smoothed, but washed out. Sinter deposits.

*Locus, find number, quantity, size of the surface:*

11516, TZ 113597: 4 frgts., 19 cm<sup>2</sup>

### 5.7.9 Green with unknown decoration (Pl. 5.16a)

*Decoration:* On a green (7-39-3) ground a roundish painting with a black line (0.3 cm) outside and a white line (0.6 cm) inside. Next to it are leaf-shaped white strokes.

*Interpretation of the decoration:* It could be a part of an architectural decoration, such as a cymation (related to Cat. 5.5.13?).

*Particularities of the shape:* A curvature is possible, the surface is slightly uneven.

*Constitution of the plaster:* Dense white mortar with fine and medium sand and few traces of organic temper (0.9 cm). The back is relatively smooth, probably followed by another layer.

*Locus, find number, quantity, size of the surface:*

11562, TZ 113592: 2 frgts. (fitting together), 6 cm<sup>2</sup>

### 5.7.10 Black with white (Pl. 5.16b. c)

*Decoration:*

a. Black (remaining, 0.1 cm) – white stripe (1.2 cm) – white on black (? right-angled white line?).

b. Black (remaining, 0.5 cm) – white line (0.3 cm), from which a curved white line emerges. Inside the round structure is another white line on a black background.

*Interpretation of the decoration:* a. T-shaped field corner (?).

b. Beginning of a round structure, e. g. a cymation?

*Constitution of the plaster:* Dense white plaster (0.6 cm).

*Locus, find number, quantity, size of the surface:*

11562, TZ 113592: 2 frgts., 4.5 cm<sup>2</sup>

### 5.7.11 Red orange with painting in black and grey

*Decoration:*

a. Red-orange (13-17-6) background. At first wavy lines (1.0 cm) in black, above that irregular lines in grey.

b. Red-orange with wavy (?) applied black lines.

*Interpretation of the decoration:* unknown (related to Cat. 5.3.3?).

*Observations on the painting:* The colour is slightly granular-pastose.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, impression of a larger piece of gravel (?) (0.7–1.2 cm), impressions of organic temper on the back.

*Locus, find number, quantity, size of the surface:*

11522, without number: 4 frgts., 20 cm<sup>2</sup>

### 5.7.12 Yellow with decoration in red, rose, green, grey, black and white

*Decoration:* On yellow ground (between 6-0-6 and 13-5-3) paintings in the colours mentioned.

*Interpretation of the decoration:* Imitation of a natural stone?

*Observations on the painting:* The yellow and green are grainy pastose.

*Constitution of the plaster:* Dense white mortar with fine and medium sand (0.4 cm), sometimes with a fur-

ther layer (up to 1.0 cm in total), which runs out at an inclination.

*Locus, find number, quantity, size of the surface:*

11522, without number: 18 frgts., 113 cm<sup>2</sup>

## 5.8 Miscellaneous

### 5.8.1 Rose with unknown decoration

Various rose-ground decorations whose interpretation or context is no longer recognizable.

#### 5.8.1.1 Rose with black and white painting (Pl. 5.16d. e)

*Decoration:* On a rose-coloured ground there are fine, curved, black strokes, up to four of which start from a common point. As far as can be seen, they each border on a white line (0.7–0.9 cm), which runs diagonally or perpendicular to the direction of the rose colour. On the other side of the white stripe, a red (13-11-6) area follows inexactly. One fragment still has white paint next to the black line.

*Interpretation of the decoration:* Unknown.

*Observations on the painting:* With the rose-coloured painting the brush stroke is visible.

*Particularities of the shape:* The surface is slightly curved.

*Constitution of the plaster:* 1. Very dense white mortar (0.2 cm), 2. dense white mortar (0.6 cm). The surface is relatively smooth.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 19 frgts., 30 cm<sup>2</sup>

- 11562, TZ 113592: 1 frgt., 3 cm<sup>2</sup>

#### 5.8.1.2 Black next to rose with black and white painting (Pl. 5.16f)

*Decoration:* Black area (remaining, 1.8 cm) – rose (remaining, 3.0 cm; imprecise dividing line), a slightly curved black line (0.3 cm), the beginning of another black line and white painting in broad brush strokes (up to 1.2 cm).

*Interpretation of the decoration:* Unknown, possibly part of architectural decoration.

*Observations on the painting:* Well-smoothed in the area of rose, not in black. The white colour is slightly grainy-pastose.

*Constitution of the plaster:* 1. Very dense white mortar (0.3 cm), 2. dense white mortar with fine and medium sand and medium gravel, traces of organic temper (total up to 1.3 cm). The back is irregular.

*Locus, find number, quantity, size of the surface:*

- 11522, TZ 113598: 1 frgt., 15 cm<sup>2</sup>

### 5.8.1.3 Black next to rose with white stripes (Pl. 5.16g)

*Decoration:* Black area or stripes (remaining, 0.3 cm) – rose area (17-10-2; remaining, 2.8 cm), with white line (0.5 cm wide, remaining, 2.2 cm long). The white line runs vertically from the black area and has a thickened end towards it. From a second white line at a distance of 1.3 cm only very faint traces are visible. On a second fragment a white line with the beginning of a widened end and a part of another white line at a distance of 0.9 cm can be seen.

*Interpretation of the decoration:* Unknown.

*Observations on the painting:* The white colour is partly chipped off.

*Constitution of the plaster:* Dense white mortar with fine and medium sand, fine traces of organic temper. The surface is well smoothed.

*Locus, find number, quantity, size of the surface:*

- 11562, TZ 113592: 2 frgts., 9 cm<sup>2</sup>

### 5.8.1.4 Rose ground with decoration in black, white and green (Pl. 5.16h)

*Interpretation of the decoration:* Unknown.

*Observations on the painting:* Colours very heavily washed out.

*Constitution of the plaster:* Dense white mortar (0.6 cm).

*Locus, find number, quantity, size of the surface:*

- 11519, TZ 113594: 1 frgt., 5 cm<sup>2</sup>

### 5.8.1.5 Rose ground with decoration in black and white

*Interpretation of the decoration:* Unknown.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 5 frgts., 26 cm<sup>2</sup>

### 5.8.2 Green with decoration in black and white (Pl. 5.16i–k)

*Decoration:*

a. 1. Painting layer white, 2. painting layer green with remains of black.

b. Green with black lines.

c. Green (remaining, 2.3 cm) – rose at the edge of a black line (0.3 cm) – white (remaining, 2.1 cm).

d. Green (39-7-6) with unknown decoration in white and black.

*Observations on the painting:* The green colour is heavily washed out.

*Constitution of the plaster:* a. 1. Dense white mortar (0.2 cm), 2. previous surface, dense white mortar (0.5 cm).

*Locus, find number, quantity, size of the surface:*

a.–c. 11519, TZ 113594: 19 frgts., 91 cm<sup>2</sup>

d. 11554, TZ 113593: 12 frgts., 30 cm<sup>2</sup>

### 5.8.3 ‘Egyptian blue’ next to black (Pl. 5.16l)

*Decoration:* ‘Egyptian blue’ (remaining 0.3 cm) – black (remaining 1.2 cm).

*Observations on the painting:* The surface is relatively even, but not smoothed. The paint is very thick.

*Constitution of the plaster:* Very dense white mortar (0.2 cm), a second layer followed.

*Locus, find number, quantity, size of the surface:*

- 11562, TZ 113592: 1 frgt., 3 cm<sup>2</sup>

### 5.8.4 Green with painting in black (Pl. 5.16m)

*Decoration:*

a. Black (remaining, 0.7 cm) – green (remaining, 1.1 cm). From the black a faded black line (0.5 cm wide, 1.0 cm long) leads to the green area.

b. Black (remaining, 1.2 cm) – green (remaining, 0.5 cm). From the black, an unknown structure descends onto the green surface.

*Constitution of the plaster:* Dense white mortar (1.0 cm)

*Locus, find number, quantity, size of the surface:*

- 11562, TZ 113592: 2 frgts., 4 cm<sup>2</sup>

### 5.8.5 Red and rose with painting in green

*Decoration:*

a. Red (remaining, 0.8 cm) – rose (remaining, 1.8 cm) with unknown painting in green.

b. Rose with unknown painting in green.

*Constitution of the plaster:*

a.1. Very dense white mortar, 2. dense white mortar. The surface is heavily washed out.

b. 1. Very dense white mortar with fine and medium sand (0.3–0.4 cm), 2. light greyish white mortar with fine and medium sand applied in different thicknesses (0.2–0.8 cm) The surface is irregular, probably from the corner of a room.

*Locus, find number, quantity, size of the surface:*

a. 11517, TZ 113596: 2 frgts., 6 cm<sup>2</sup>

b. 11519, TZ 113594: 1 frgt., 20 cm<sup>2</sup>

### 5.8.6 Grey-green next to white (Pl. 5.16n)

*Decoration:* Grey-green (remaining, 3.3 cm) – white (remaining, 2.5 cm).

*Constitution of the plaster:* 1. Partly an upper mortar layer, slightly porous but smoothed (up to 0.2 cm), 2. dense white mortar with traces of organic temper (0.5 cm). The back is relatively smooth, another layer of mortar probably followed.

*Locus, find number, quantity, size of the surface:*

- 11517, TZ 113596: 2 frgts., 30 cm<sup>2</sup>

### 5.8.7 Yellow – black

*Decoration:* Bright yellow area and not quite clear transition to black: Purple (only small attachment) – black (0.5 cm) – purple (23-11-3; 0.5 cm) – yellow (13-5-7; remaining, 2.5 cm). Above the transition from purple to yellow was probably a white line (0.5 cm). The alignment of the dividing line is uncertain.

*Constitution of the plaster:* Dense white mortar (0.5–1.2 cm).

*Locus, find number, quantity, size of the surface:*

- 11522, TZ 113598: 2 frgts., 15 cm<sup>2</sup>

### 5.8.8 Various multi-coloured paintings

*Decoration:*

a. Light grey background with green decoration (9 frgts., 37 cm<sup>2</sup>).

b. Oblique border between grey and rose, painted red and green on it (1 frgt., 4 cm<sup>2</sup>).

c. Yellow ochre with paintings that are no longer recognizable in white, green, black and red (9 frgts., 42 cm<sup>2</sup>).

*Constitution of the plaster:* a. Dense white mortar with fine and medium sand, traces of organic temper, lime inclusions (1.2 cm). On the back are remains of earth plaster. The surface is not well smoothed and is heavily abraded.

*Locus, find number, quantity, size of the surface:*

- 11554, TZ 113593: 19 frgts., 83 cm<sup>2</sup>

## 5.7. Distribution of the decorations according to loci:

**11516:** 5.3.1; 5.3.3.1.4; 5.4.1; 5.4.2; 5.4.4; 5.4.5; 5.4.6; 5.4.7; 5.5.3; 5.5.4; 5.5.7; 5.5.13; 5.5.14.1; 5.5.14.5; 5.5.15.4; 5.6; 5.7.1; 5.7.8.

**11517:** 5.1.1; 5.1.2; 5.1.3.1; 5.1.4; 5.1.6; 5.1.7; 5.1.8; 5.3.1; 5.3.2.1; 5.3.2.3; 5.3.3.1.1; 5.3.3.2; 5.3.3.3; 5.4.1; 5.4.2; 5.4.4; 5.4.5; 5.4.6; 5.5.2; 5.5.5; 5.5.9; 5.5.10.1; 5.5.11.2; 5.5.11.3; 5.5.11.4; 5.5.12; 5.5.13; 5.5.14.2; 5.5.14.5; 5.5.15.2; 5.5.15.3; 5.7.3; 5.7.5; 5.7.6; 5.8.5; 5.8.6.

**11519:** 5.1.1; 5.1.2; 5.1.5; 5.1.8; 5.3.1; 5.3.2.1; 5.3.2.3; 5.3.3.1.2; 5.3.3.1.5; 5.4.1; 5.4.2; 5.4.4; 5.4.6; 5.4.7; 5.5.9; 5.5.10.1; 5.5.11.2; 5.5.11.3; 5.5.12; 5.5.14.3; 5.5.14.5; 5.5.15.1; 5.5.15.2; 5.7.3; 5.8.1.4; 5.8.2; 5.8.5.

**11522:** 5.3.1; 5.3.2.3; 5.3.2.4; 5.3.3.1.3; 5.3.3.2; 5.4.1; 5.4.2; 5.4.5; 5.5.1; 5.5.9; 5.5.10.1; 5.5.12; 5.5.14.4; 5.5.15.3; 5.7.3; 5.7.11; 5.7.12; 5.8.1.2; 5.8.7.

**11523:** 5.1.1; 5.3.1; 5.3.3.2; 5.4.2; 5.5.1; 5.5.9; 5.5.14.5.

**11552:** 5.3.1; 5.3.3.2; 5.4.1; 5.4.2; 5.4.4; 5.4.5; 5.5.9.

**11554:** 5.1.1; 5.1.2; 5.1.3.1; 5.1.3.2; 5.1.4; 5.1.6; 5.1.8; 5.2; 5.3.1; 5.3.2.1; 5.3.2.2; 5.3.2.5; 5.3.3.1.5; 5.3.3.2; 5.4.1; 5.4.2; 5.4.3; 5.4.4; 5.4.5; 5.4.6; 5.5.6; 5.5.8; 5.5.9; 5.5.10.1; 5.5.11.1; 5.5.11.2; 5.5.11.3; 5.5.11.4; 5.5.12; 5.5.13; 5.5.14.2; 5.5.14.3; 5.5.15.2; 5.7.1; 5.7.2; 5.7.3; 5.7.7; 5.8.1.1; 5.8.1.5; 5.8.2; 5.8.8.

**11555:** 5.4.1.

**11561:** 5.1.1; 5.3.1; 5.4.1; 5.4.2; 5.4.4; 5.4.6; 5.5.9; 5.5.10.1; 5.5.11.2; 5.5.14.5; 5.5.15.3.

**11562:** 5.1.7; 5.3.1; 5.3.2.2; 5.3.3.1.6; 5.3.3.2; 5.4.1; 5.4.2; 5.4.4; 5.4.6; 5.4.7; 5.5.9; 5.5.10.1; 5.5.11.2; 5.5.11.3; 5.5.11.4; 5.5.13; 5.5.14.5; 5.5.15.2; 5.7.3; 5.7.9; 5.7.10; 5.8.1.1; 5.8.1.3; 5.8.3; 5.8.4.

**11563:** 5.3.1; 5.3.2.5; 5.4.1; 5.4.2; 5.5.9; 5.5.14.5.

**11584:** 5.3.1; 5.4.1; 5.5.3; 5.5.10.2.

**11596:** 5.3.1; 5.4.1; 5.5.10.3; 5.5.15.5; 5.7.4.

**box without number:** 5.3.1; 5.3.3.2; 5.4.1; 5.4.2; 5.4.5; 5.5.9; 5.5.10.1; 5.5.14.5.

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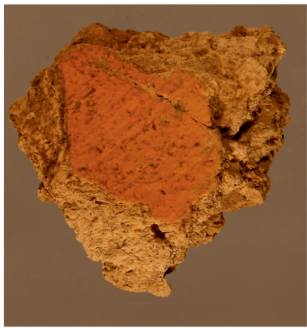
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Plate 5.1: Composition of the mortar: inclusion of painted wall plaster fragment (a-c). Detail of the mortar structure (d-f). Back with imprints of organic leaning (g); remains of mud bricks (h), scale 1:1

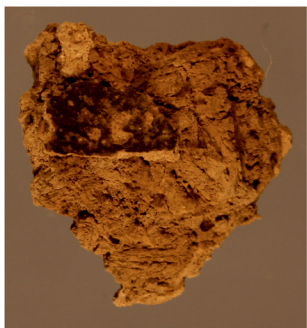
a.



b.



c.



TZ 113594

d.



TZ 113594

e.



TZ 113598

f.



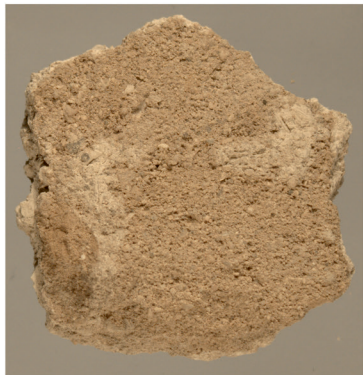
TZ 113593

g.



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h.

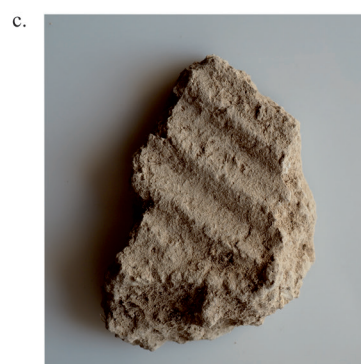
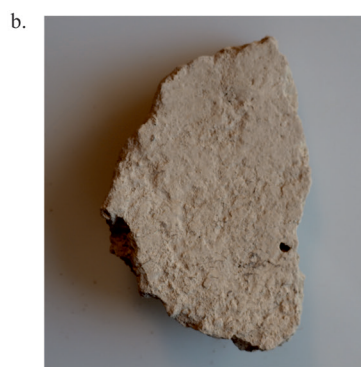


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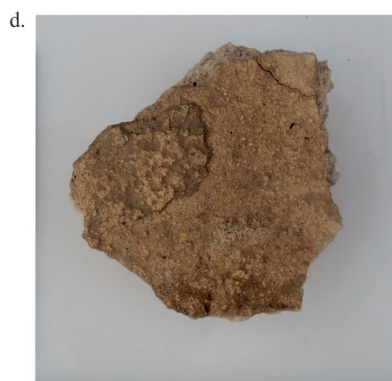
Plate 5.2: Inclusions of sherds in the mortar (a-c). Coarse unpainted plaster (d), scale 1:2. Painted plaster with second painting layer (e-f), not to scale



TZ 113596



TZ 113598



TZ 113602

0 5 cm



TZ 113596



TZ 113596

Plate 5.3: Architectural decor: *Cat. 5.1.1* (a. b. e-i); *Cat. 5.1.5* (c. d); *Cat. 5.2* (j), scale 1:2

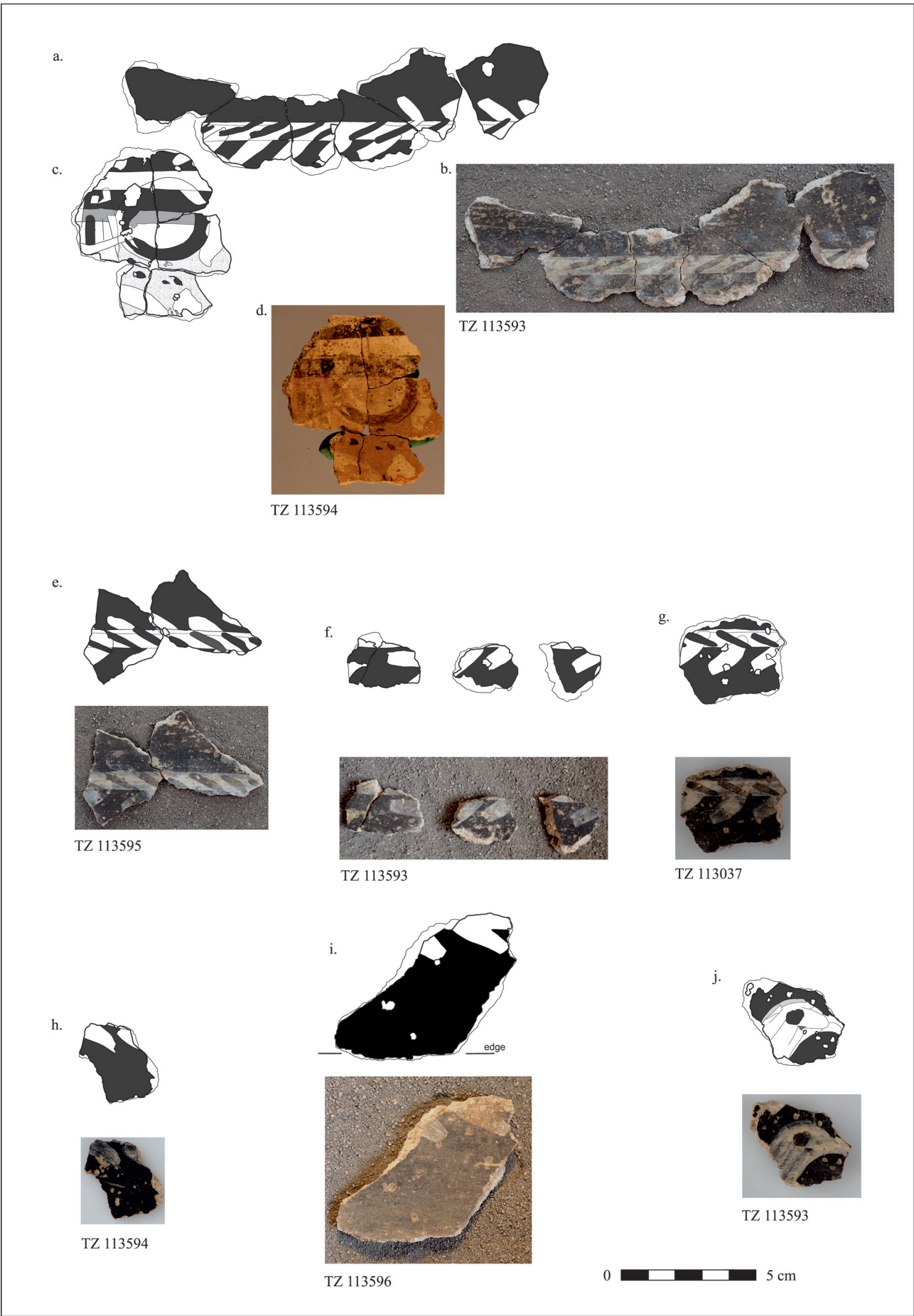


Plate 5.4: Architectural decor: *Cat. 5.1.3* (a. b); *Cat. 5.1.4* (c-e); *Cat. 5.1.6* (f. g); *Cat. 5.1.7* (h-k); *Cat. 5.1.8* (l-n), scale 1:2

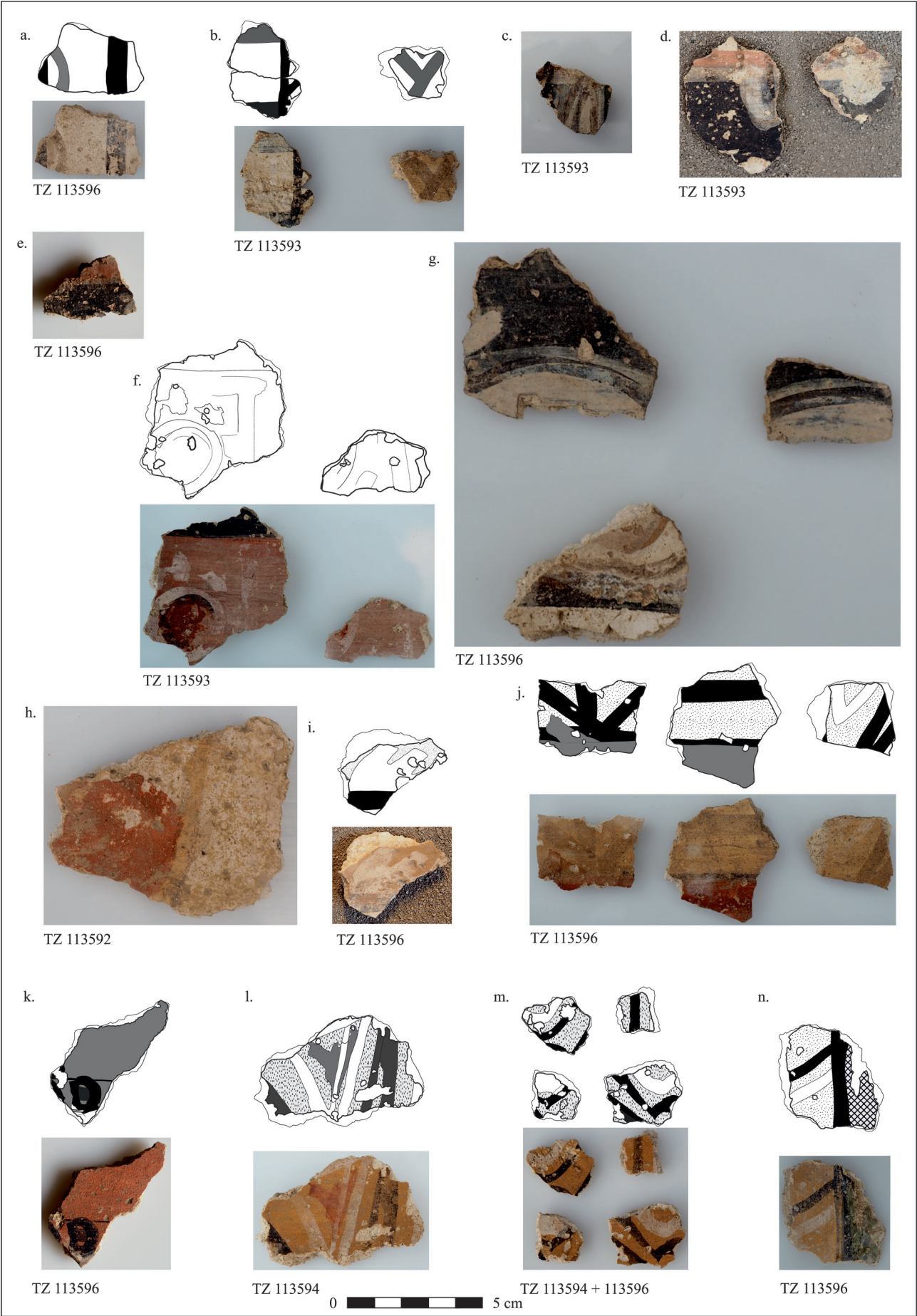
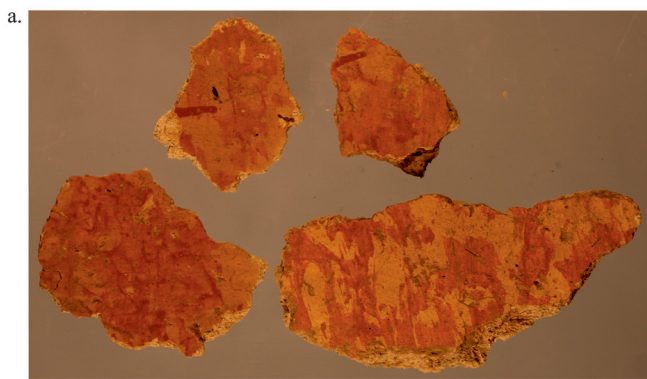


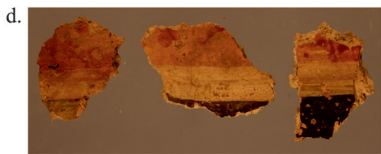
Plate 5.5: Imitations of natural stones: *Cat. 5.3.1* (a-f); *Cat. 5.3.2* (g-j), scale 1:2



TZ 113594



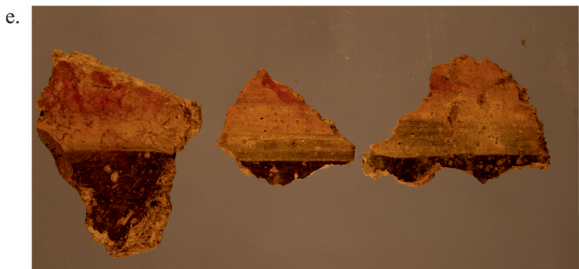
TZ 113600



TZ 113594



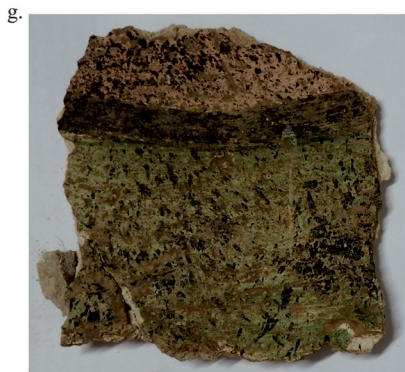
TZ 113593



TZ 113594



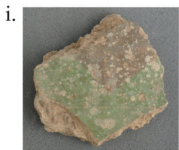
TZ 113600



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TZ 113593



TZ 113592



TZ 113598

0  5 cm

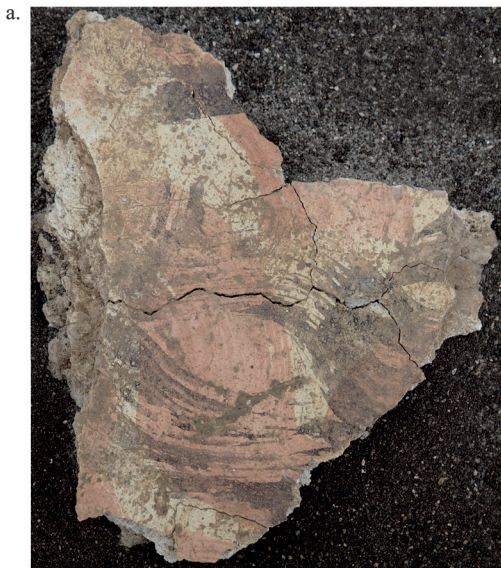


TZ 113596

0 5 cm



TZ 113596



TZ 113594



TZ 113594



TZ 113598



TZ 113597



TZ 113592



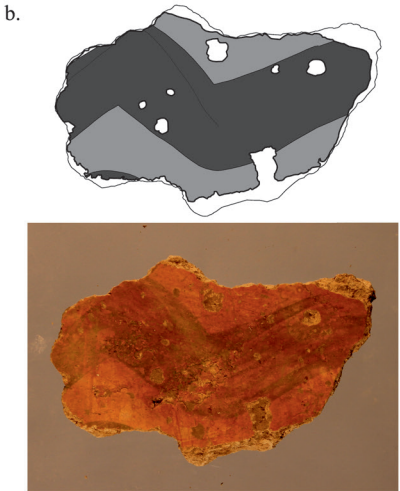
TZ 113594



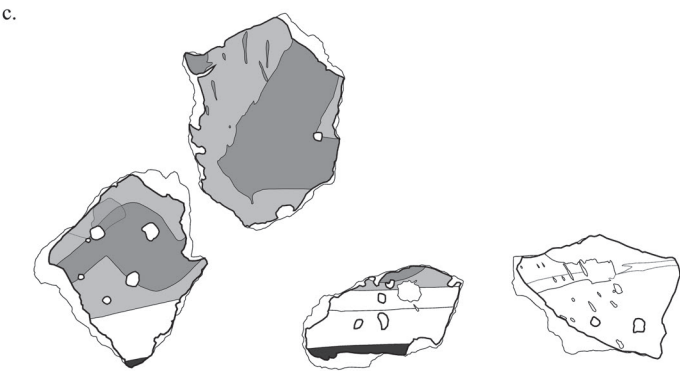
TZ 113593



TZ 113598

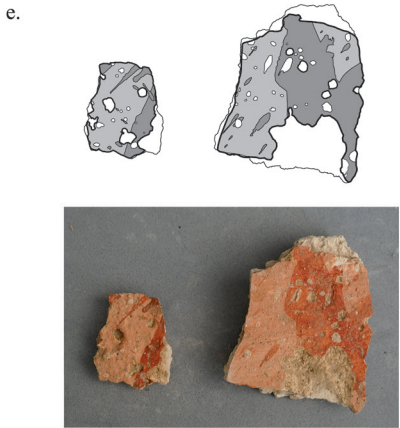


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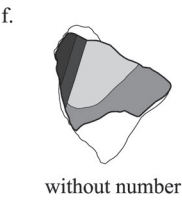


TZ 113599

TZ 113598



TZ 113592



without number

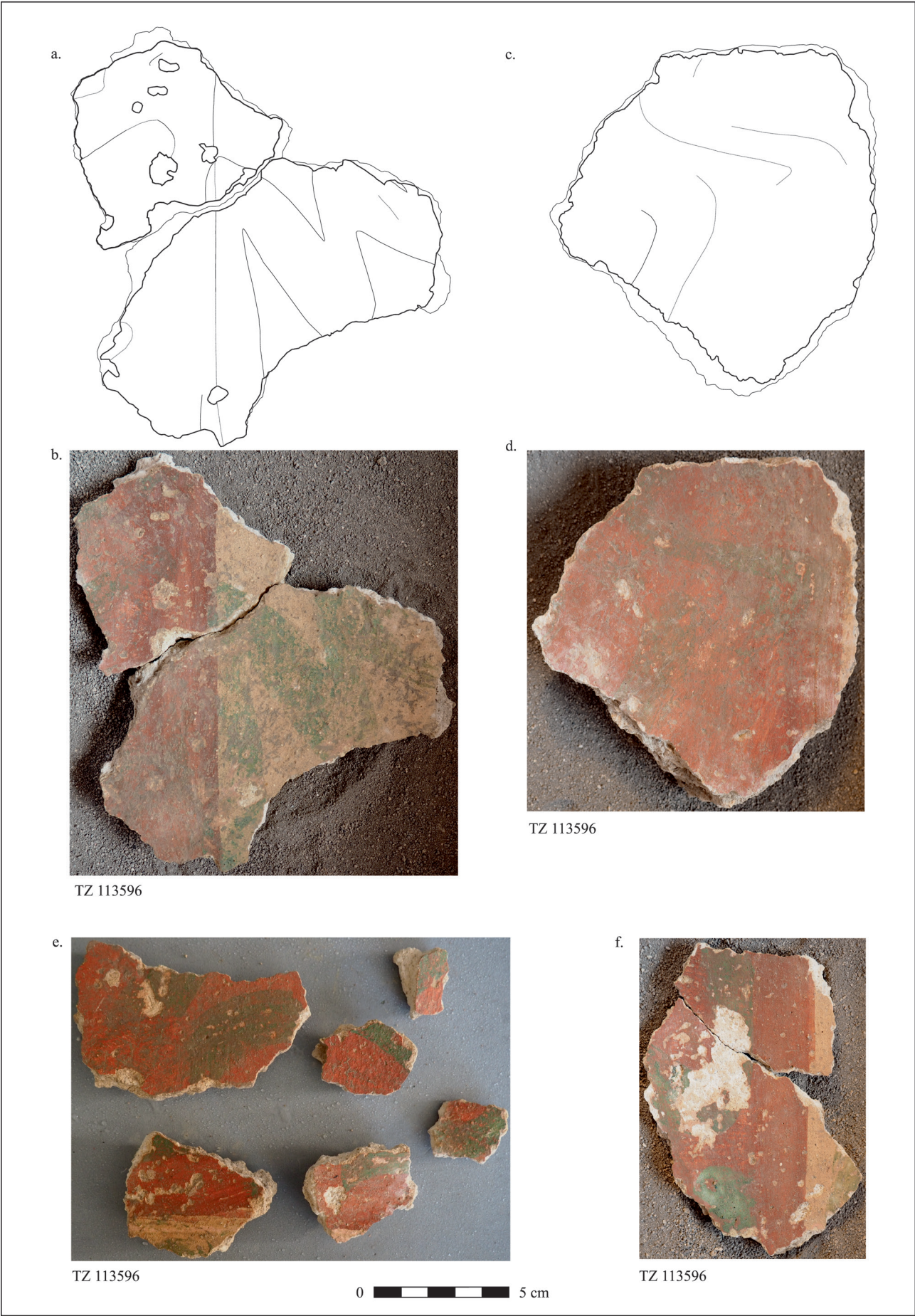
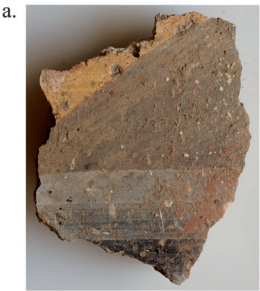


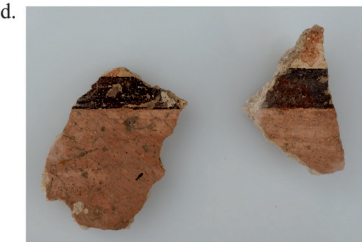
Plate 5.10: Transitions between different decorations: *Cat. 5.5.1* (a-c); *Cat. 5.5.2* (d); *Cat. 5.5.3* (e, f); *Cat. 5.5.4* (g-k), scale 1:2



TZ 113598



TZ 113598



TZ 113596



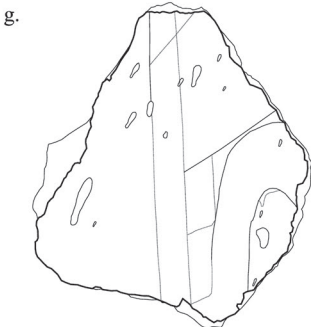
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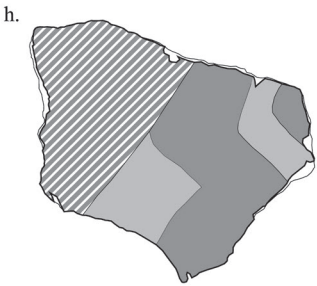
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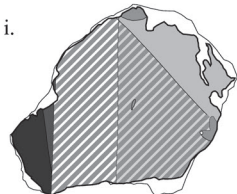
TZ 113603



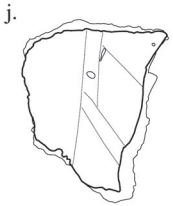
TZ 113597



TZ 113597



TZ 113597

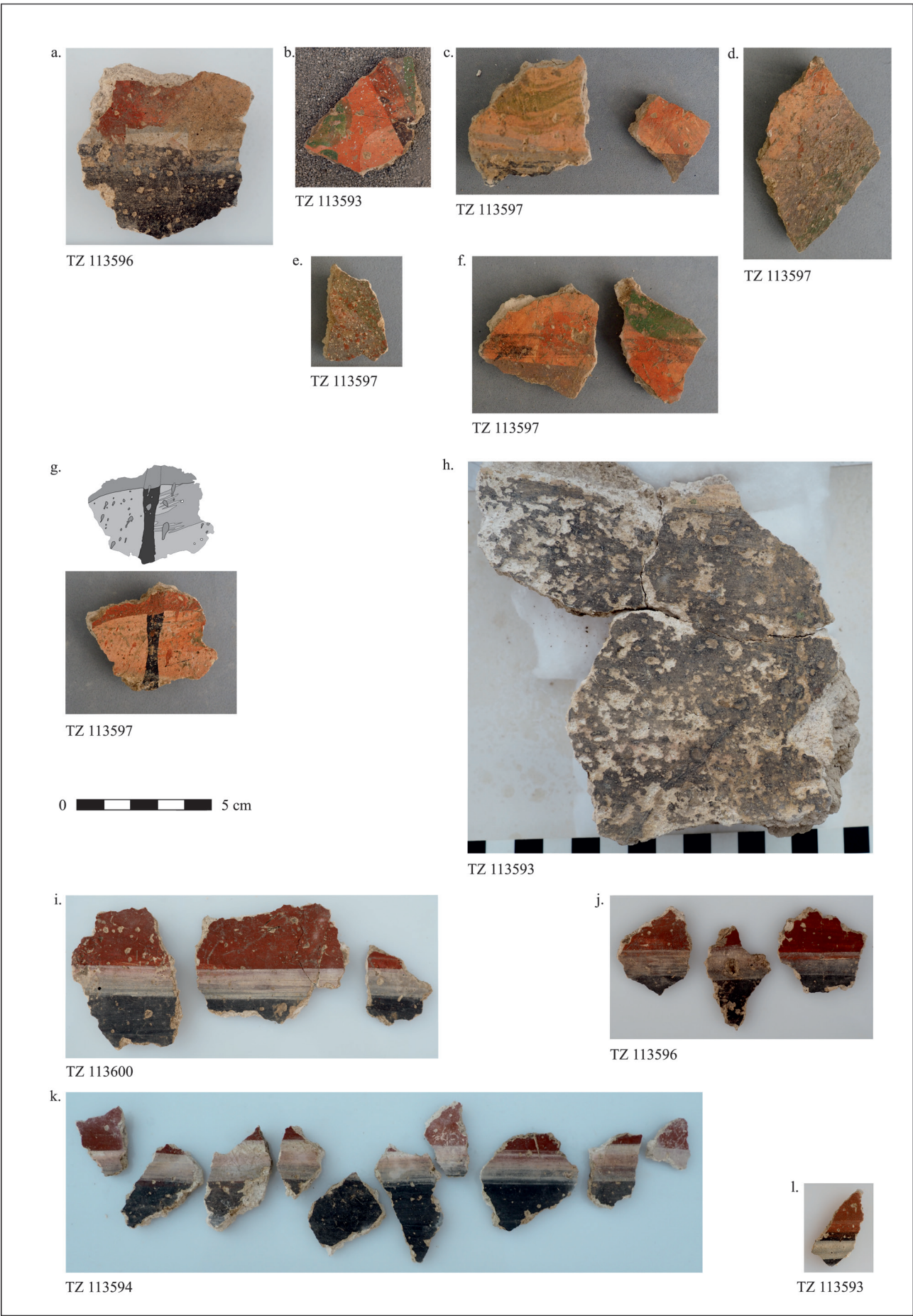


TZ 113597



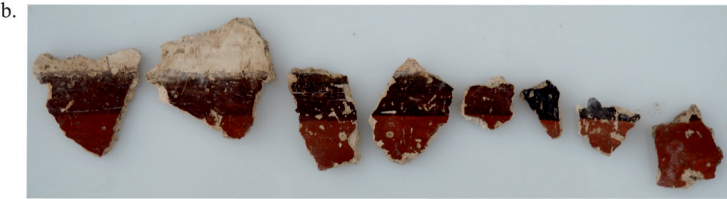
TZ 113597

Plate 5.11: Transitions between different decorations: *Cat. 5.5.5* (a); *Cat. 5.5.6* (b); *Cat. 5.5.7* (c-g); *Cat. 5.5.8* (h); *Cat. 5.5.9* (i-l), scale 1:2

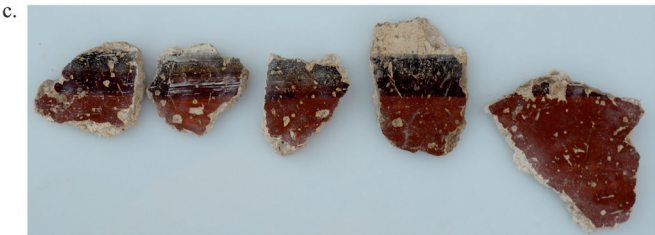




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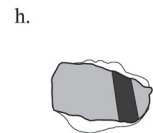
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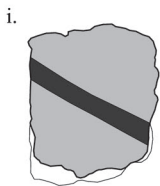
TZ 113600



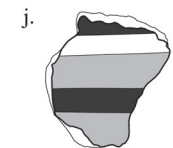
TZ 113592



TZ 113593



TZ 113593



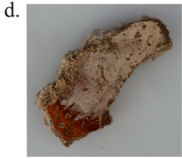
TZ 113593



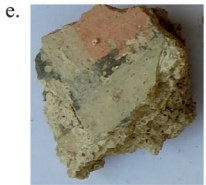
TZ 113594



TZ 113592



TZ 113602



TZ 113593

0 5 cm



TZ 113596



TZ 113596



TZ 113596



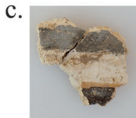
TZ 113592



TZ 113596



TZ 113598



TZ 113594



TZ 113593



TZ 113593



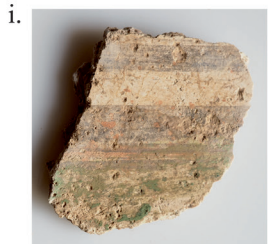
TZ 113596



TZ 113594



TZ 113597



TZ 113596



TZ 113592

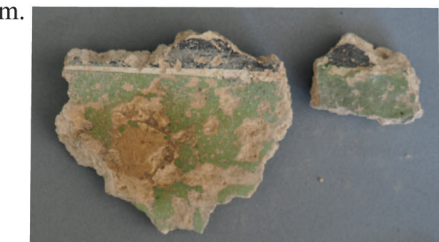
k.



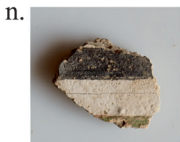
TZ 113592



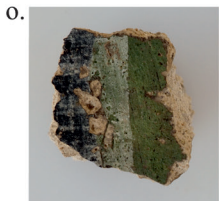
TZ 113592



TZ 113592



TZ 113596



TZ 113593

Plate 5.14: Limiting lines: *Cat. 5.5.14.1* (a); *Cat. 5.5.14.2* (b-d); *Cat. 5.5.15.1* (e-f); *Cat. 5.15.2* (g-l); *Cat. 5.15.3* (m-o); *Cat. 5.15.4* (p). Part of garlands? *Cat. 5.6* (q, r). Unsecure classification: *Cat. 5.7.1* (s); *Cat. 5.7.2* (t-v), scale 1:2





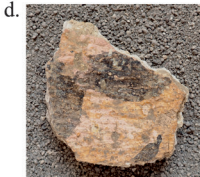
TZ 113592



TZ 113596



TZ 113592



TZ 113596



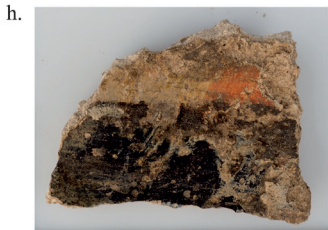
TZ 113599



TZ 113594



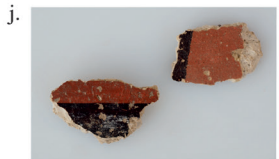
TZ 113602



TZ 113596

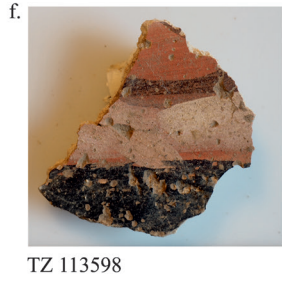
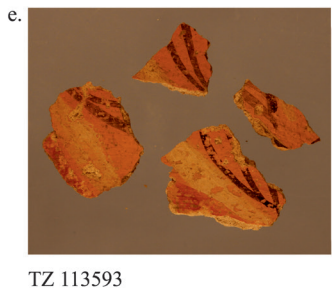
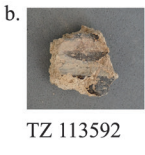


TZ 113596



TZ 113593

Plate 5.16: Unsecure classification: *Cat. 5.7.9* (a); *Cat. 5.7.10* (b. c). Miscellaneous: *Cat 5.8.1.1* (d. e); *Cat. 5.8.1.2* (f); *Cat. 5.8.1.3* (g); *Cat. 5.8.1.4* (h); *Cat. 5.8.2* (i-k); *Cat. 5.8.3* (l); *Cat. 5.8.4* (m); *Cat. 5.8.6* (n), scale 1:2



0 5 cm





## 6. UNPAINTED PLASTER FRAGMENTS

Besides the painted plaster from square AU 128, a smaller number of fragments of unpainted plaster were found in the 2019 season in the neighbouring

square AU 129. They all come from the area immediately adjacent to the 'stone massif' (Inst11576) attached to the wall W11186 (see *Chap. 4*).

### 6.1. Description (*Pl. 6.1 a–g*)

Given the shape of both the surface and the back of the plastering, which is curved in different directions, it is evident that it was not on a flat surface. The pieces show clearly that there were at least three different phases of use. The changes made to the plastering went far beyond minor repairs. These pieces could not have come from a wall, and the alterations to them significantly changed their shape.

The largest piece, which consists of two superimposed layers, still retains some of the original shape. It is clear that the lower layer was applied to a smoothed surface, now only preserved in negative, which was presumably the original surface

of use. According to this, it was a rounded structure with an almost flat bottom, from which a side section led off at a rounded right angle. About 5 cm above the bottom, a narrow groove (about 9 cm wide, 2 cm deep) opened into the side section. If one interprets the round structure as a kind of basin, the groove could be an inflow. This shape can only be inferred from the back of the lower plaster layer with which it is lined. With a second layer of plaster, however, the assumed inflow is covered and thus rendered useless, and the interior angle in the round structure (the assumed basin) is reduced.

### 6.2. Dating, Function and Conclusions

The largest piece was found together with seven other fragments in L11747, and a larger number of pieces came from the layer immediately below (L11838). The stratigraphy (see *Chap. 3.2.3*) provides a rough dating for the fragments. Two coins found in the immediate vicinity date to the Hasmonean period: a coin of Alexander Jannaeus was found (see *Chap. 18: Cat. 18.18*) in L11772, which lies just below the loci with fragments of plaster; and in L11837, which is contemporary with L11838, there was a coin which can generally be dated to the Hasmonean period (*Cat. 18.24*). Thus, it is probable that the plaster pieces fell to the ground in Hasmonean times or a little later. Therefore, the original basin, which shows at least two transformations, is likely to have been made in Hasmonean times at the latest.

If the 'basin' is assumed to have originated in the Hasmonean period, an interpretation as a Jewish ritual bath has to be considered. Since the shape

of the assumed basin cannot be reconstructed with certainty, an interpretation is also only possible with some reservations. A basin with an inflow or overflow is assumed, which was closed off later. Little is known about the size and depth of the basin, the preserved part is rather shallow. One possible interpretation is that it was a flat-bottomed, rounded water basin with an inflow channel that was closed off in the second recognizable phase. However, that the plaster fragment belonged to a water basin cannot be reliably proven for the time being, as the plaster has not yet been analysed for hydraulic properties. Aggregates to make the plaster water-resistant, such as brick chippings or ash that are normally clearly visible if they are present, have not been identified. Nevertheless, until the planned scientific investigation can be carried out, it cannot be ruled out that the plaster had hydraulic properties.<sup>27</sup>

Mikvahs, Jewish ritual baths, usually consist of basins at least 1.4 m deep with steps embedded

27 A water channel made of white, hydraulic mortar is also known from Petra (Schmid 2008, 364).

in it. The piece found could not have come from this type of basin shape. However, a combination of two basins connected to each other to facilitate the exchange of water is quite common for the Hasmonean period (Hoss 2007, 56–57). Such a system is preserved in the first Hasmonean palace of Jericho, ascribed to John Hyrkanos I, where two ritual baths lie directly next to each other and are connected by a pipe (Netzer 1999, 8–12). Since the opening in one of the baths exits in the area of the stairs, it lies here only slightly above one of the steps. It is therefore possible that the shallow channel on the object from Tall Zar'a could have formed the connection between two basins, in a form for which there is, however, no direct comparison so far.

However, the shallow form of the fragment could speak against an interpretation as a ritual bath, and other possibilities can also be considered. For example, it could be a basin in a garden or a tub in a private bathroom, as was common in more sophisticated houses of the Hellenistic period (Trümper 2010). In combination with the painted fragments of wall plaster (*Chap. 5*), the latter assumption gains a certain probability. The decorations of Phase B, with elements of architectural friezes (*Chaps. 5.3.2.1 and 5.4.3.3*), came from a

round room, if not a niche, given the distinct curvature of their surface. As mentioned above, a similar arrangement of an architectural frieze in a round room is known, among others, from the bathhouse in Petra. It would, therefore, be worth considering the possibility of associating the basin with a private bath in the Hellenistic tradition. In these buildings, round rooms are interpreted as sweat baths (Trümper 2010, 532). Buildings with such a *sudatorium* usually have rooms with bathtubs, also in the form of a bath suite. In Trümper's study, a room in the large peristyle house (LHSB) at Tel Anafa is mentioned as a special form for „hybrids of cleansing and relaxing bathing forms“ (Trümper 2010, 533), which is dated to the third or fourth quarter of the 2<sup>nd</sup> cent. BCE. Room 16 at Tel Anafa had a heated pool, only 0.03 m to 0.13 m deep, which could not be used for immersion, but at best for pouring water over oneself standing up. The walls were decorated in relief in the ‚Hellenistic masonry style‘ (Kidd 2018; Rozenberg 2018, 141; Berlin 1997, 29).

Since there is no evidence of a heating system at Tall Zar'a and the hydraulic capabilities of the plaster have not yet been investigated, the interpretations must remain speculative until further investigations can provide new evidence.

## 6.3. Catalogue

**Cat. 6** Fragments of unpainted, white plaster, which, based on their shape, were not attached to a wall and comprised several layers (*Pl. 6*)

*Description:*

a. Two superimposed layers of plaster are preserved, each with a smoothed surface, presumably there was another layer beneath them. The lower preserved layer of plaster was applied in a rounded shape with an almost flat bottom and a side with a rounded corner almost at right angles. About 5 cm from the bottom there was a round depression (about 9 cm wide, 2 cm deep). The layer of plaster with which the angle is coated is of varying thickness. With the second layer of plaster, the alterations are reinforced again, so that the angle of inclination is reduced.

b. Unpainted fragments with up to three layers of plaster.

*Interpretation:* a. The fragment may have been part of a basin that was renovated twice. The first surface, which is no longer preserved, may have had an inflow which was covered over by the first renewal (the lower preserved layer) and thus became unusable.

*Observations on the surface:* The surface is somewhat irregular, but smoothed. On the surface are single longish incisions. It is not clear whether this is intentional graffiti, such as numbers or letters.

*Particularities of the shape:* a. see description, b. the surface is curved in different directions, the curvature being different for each layer.

*Constitution of the plaster:* a. 1. Dense, white mortar with fine, medium and a little coarse sand, very few traces of organic temper (0.7–2.2 cm), 2. dense, white mortar with traces of organic temper, small clay inclusions (0.7–3.9 cm). The curved surfaces are smoothed. The back is levelled well, so it can be assumed that there had been a further smoothed layer of plaster. – b. 1. dense, white mortar with fine, medium and a little coarse sand, very few traces of organic temper (0.7–1.1 cm), 2. dense, white mortar with traces of organic temper, small clay inclusions (0.3–1.6 cm), 3. dense white mortar with more traces of organic temper (up to 1.4 cm preserved). The back is partly smooth, so that a further plaster layer can be assumed, partly irregular.

*Total quantity and size of surface:* 37 frgts., 678 cm<sup>2</sup>  
(average size: 18.3 cm<sup>2</sup>)

*Locus, find number, quantity, size of the surface:*

- a. 11747, TZ 113747: 1 frgt., 340 cm<sup>2</sup>, up to 6 cm thick  
b. 11741, TZ 113868: 1 frgt., 10 cm<sup>2</sup>

- 11747, TZ 113747: 7 frgts., 140 cm<sup>2</sup>

- 11777, TZ 114716, TZ 114726: 4 frgts. (2 fitting together), 53 cm<sup>2</sup>

- 11838, TZ 113822, TZ 113869: 24 frgts., 135 cm<sup>2</sup>

## 6.4. Bibliography

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S. G. Schmid, *The Hellenistic Period and the Nabateans*, in: R. B. Adams (ed.), *Jordan. An Archaeological Reader* (2008) 353–411

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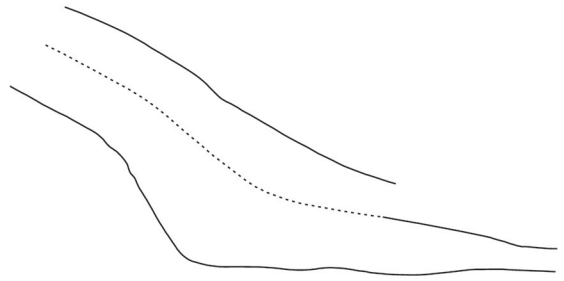
M. Trümper, *Bathing Culture in Hellenistic Domestic Architecture*, in: S. Ladstätter – V. Scheibelreiter (eds.), *Städtisches Wohnen im östlichen Mittelmeerraum 4. Jh. v. Chr.–1. Jh. n. Chr.* (Wien 2010) 529–572

Plate 6.1: Fragments of unpainted plaster, scale 1:3

a.

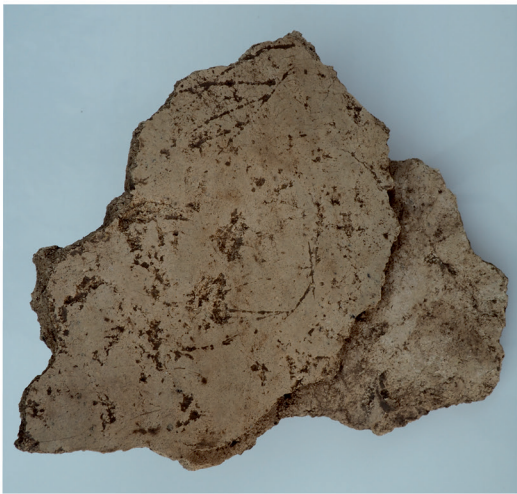


b.

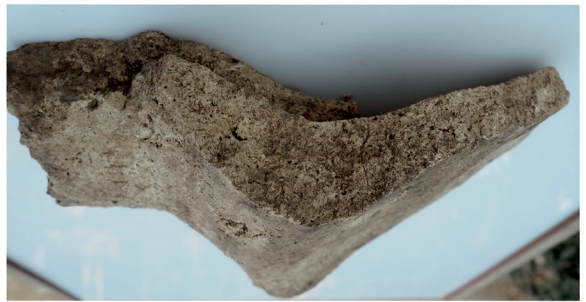


0  5 cm

c.



e.



f.



d.



g.



TZ 113050-001





## POTTERY

### 7. POTTERY FROM BUILDING A (IRON AGE AND LATER)

by Samar Shammas (with a contribution by Bettina Springer-Ferazin)

#### 7.1. Introduction

In this chapter the Iron Age and some later pottery material, discovered in Building A, will be discussed. The material is divided according to the sequence of phases in the building, namely Phases 1, 2, and 3 (see *Chap. 1.3*). The relative chronological classification of the Iron Age pottery is based on the sequence of the stratigraphic layers of Building A and on comparisons with pottery from other sites, though depending mainly on the material sequence excavated at Tell Abu al-Kharaz (Fischer 2013, 516: tab. 83). The chronological terms used for the Iron Age periods here are based on the chronological table published in *The Ancient Pottery of Israel and its Neighbors*, but with some minor changes (Gitin 2015, 794 chronological table).<sup>28</sup> In this chapter, Gitin's "Neo-Babylonian period (586–539 BCE)" is joined with the Iron Age IIC (700–586).<sup>29</sup> Gitin argues the absence of "586 BCE Neo-Babylonian destruction levels" in Transjordan and suggests that the date of the Iron Age IIC at Transjordanian sites should be 732–586/533 BCE (Gitin 2015, 3). The pottery that falls into the Persian period is often difficult to identify or to distinguish from the pottery of both the Iron Age IIC and the Hellenistic period. Therefore, specimens possibly dating to the Persian

period might be discussed as well in this chapter as in *Chap. 8*; Springer-Ferazin (*Chap. 8*) also uses the chronology of Gitin 2015. Against this background, the chronological division of the ceramic sequence at Tall Zar'a is as follows:

Iron Age IIA (1000–900 BCE)  
 Iron Age IIB (900–700 BCE)  
 Iron Age IIC (700–586/533 BCE)  
 Persian (539–332 BCE).

Furthermore, in each phase the material is classified depending on typological features and the function of the vessels, starting with open vessels and ending with closed ones.

Certain loci from Phases 1 and 2 include pottery fragments that date to later periods, mainly Hellenistic (early Hellenistic and late Hellenistic/Hasmonean; Gitin 2015, 794 chronological table). This material is detailed in the catalogue (*Chap. 7.7*) therefore only the most important Hellenistic sherds will be mentioned here.

The fabric and the various wares of the pottery are presented briefly, with pictures, in a separate appendix (see *Chap. 7.8*).

28 This chronology is mainly based on the chronological table published in *The Encyclopedia of Archaeological Excavations in the Holy Land* (Volume 4, 1529: Chronological tables).

29 This time period (586–535 BCE) is labelled as "Iron Age III" by Nigro 2014, tab. 1.

## 7.2. Pottery from Building A, Phase 1

The pottery from this phase is mixed, containing late Iron Age as well as Hellenistic material. Around one third of it is dated with certainty to the Iron Age period, but with no further specification, one third can be dated to the late Iron Age (Iron Age IIC/Persian) and to the Hellenistic period, and the last third of the material was undefinable. Most of the Hellenistic fragments were found in L11899, and some sherds were found in L11864 and L11896 (see *Chaps. 1.3.1* and *7.7*). The discussion will focus mainly on the Iron Age material.

### 7.2.1. Plates

Plates (TZ 102125-004, TZ 102125-010) belong to the so called fish-plates or saucers and, according to Springer-Ferazin, they date to the Hellenistic period (see *Chap. 7.7*).

### 7.2.2. Bowls

In total, nine rim fragments of bowls were found, two of which can be dated to the Hellenistic period: TZ 102125-006 and TZ 102125-013 (see *Chap. 7.7*). Except for rim TZ 102125-009/L11899 (*Pl. 7.1c*) the date of which is indeterminable, the rest of the fragments can be dated to the Iron Age, mostly to the Iron Age IIB and IIC. A few fragments are very small and thus cannot be securely assigned to the Iron Age. However, most of these rims display some typical Iron Age characteristics. For example, TZ 102076-007/L11864 (*Pl. 7.1a*) belongs to a typical Iron Age hemispherical bowl with simple rim and traces of burnishing on both surfaces (Herr 2015, 281–282). Comparable bowls come from Tell Abu al-Kharaz phases XII and X (Fischer 2013, figs. 21:1, 69:3) and from Tell Hesban stratum 16B (Iron Age IIB) (Sauer – Herr 2012, fig. 2.27:5). Another fragment (TZ 102125-016/L11899; *Pl. 7.1d*) has a simple, round and slightly everted rim and a layer of a red slip was applied to the beige surface, which is also common in Iron Age bowls. Moreover, the fabric is one of the common wares frequently found in the Iron Age at Tall Zar'a (pinkish and beige fabric: Ware 31).

A very identifiable piece is the rim TZ 102213-002/L12021 (*Pl. 7.1e*), which has a triangular-shaped, internally thickened rim. Comparisons come from Tell Abu al-Kharaz phases XII (850–800 BCE) and XV (732–600 BCE) (Fischer 2013, figs. 79:2, 387:2, Table 83). The form of TZ 102341-002/L11636 (*Pl. 7.1f*) is uncommon in the Iron Age, however the curves and thickness of its profile makes it comparable to bowls of the transitional Iron Age IIB/Persian at Tell Hesban stratum 16A (7<sup>th</sup>–5<sup>th</sup> cent. BCE; Sauer – Herr 2012, 118, fig. 2.35:13).

### 7.2.3. Kraters

Three small rim sherds (TZ 102076-003, -005, -006, -011/L11864; TZ 102125-020/L11899; TZ 102125-021/L11899; *Pl. 7.1h–j*) probably belong to kraters of the holmouth types, which are common krater forms dating to the Iron Age II (Herr 2015, 282–283); all rims are thickened and everted. Parallels are found at Tell es-Sa'idiyeh (Herr 2015, fig. 2.6.5) dating to the Iron Age IIB, at Tell Abu al-Kharaz phases XIII and XIV, which date to the 2<sup>nd</sup> half of the Iron Age IIB (770–730 BCE; Fischer 2013, figs. 405:1, 407: 1–4), and at Tell er-Rumeith in strata VIIIB and VI (Barako – Lapp 2015, fig. 3.16: 2–5).

### 7.2.4. Cooking Pots

Six rim fragments that belong to cooking pots were found in Phase 1 and date to the Iron Age. They belong to subtypes 1a and 3b, which are discussed below with Phase 2 cooking pots (see *Chap. 7.3.4*). Two of these sherds are ridged rims (TZ 102076-002/L11864; TZ 102125-018/L11899; *Pl. 7.1k, l*). They both belong to subtype 1a and date to the Iron Age IIB. Comparisons come from Tell Deir 'Alla phase L (Herr 2015, 2.6.7:4), Tell Abu al-Kharaz phase XIII (Fischer 2013, fig. 439: 1–2) and from Pella (McNicoll et al. 1982, pl. 124:8).

The other four sherds are simple rims (TZ 102096-004/L11896; TZ 102125-005, -008, -015/L11899; *Pl. 7.1m–p*) and belong to subtype 3b (see *Chap. 7.3.4*); a further parallel to this rim

shape comes from Tell Abu al-Kharaz phase XIII (Fischer 2013, fig. 439:6). A close parallel to the slightly everted rim of TZ 102096-004 also comes from Tall Zar'a (Schwermer 2015, Appendix 1, 47: TZ 3770-011). It is worth mentioning that the rim diameters of two pots from Tall Zar'a (TZ 102125-005, -008; *Pl. 7.1n, o*) are relatively small (13 cm and 16 cm respectively), therefore these sherds probably belong to a cooking jug rather than the usual pot (Fischer 2013, fig. 343; Schwermer 2015, 159: TZ 3120-001).

### 7.2.5. Jars

About half of the jar sherds found in Phase 1 are later than the Iron Age IIC (dating to the Persian or Hellenistic period; see *Chap. 7.7*) whereas four rim sherds (TZ 102125-002, -012/L11899; TZ 102096-002, -003/L11896; *Pl. 7.2a–d*) date to the Iron Age. Unfortunately, it is only possible to recognize that these sherds belong to the group of medium-sized jars, but not to define the exact form of these jars. One fragment is round and thickened on the exterior (TZ 102125-012; *Pl. 7.2b*) and another is a triangular (hammerhead) rim with ridges on the upper part of the neck (TZ 102125-002; *Pl. 7.2a*). This form is common in the Iron Age II, and such rims are typical in Transjordan from the Iron Age IIA (Herr 2015, 284); examples are found of jars of type 2 from Tell er-Rumeith strata VII, VIIB and VI (Barako – Lapp 2015, 81, fig. 3.22), from Tell es-Sa'idiyeh phase VI (second half of 8<sup>th</sup> cent.; Herr 2015, fig. 2.6.9:6), from phase XIV (770–730 BCE) at Tell Abu al-Kharaz (Fischer 2013, fig. 429: 6) and from the “Ammonite” citadel at Tell el-'Umeiri, which dates to the Iron Age II (Lawlor 1991, fig. 3.12:7).

A straight rim thickened on the exterior (TZ 102096-003; *Pl. 7.2d*) is close to the jars of type 1 from Tell er-Rumeith (Barako – Lapp 2015, fig. 3.20) but those examples are slightly more rounded than the Tall Zar'a example; another parallel comes from Pella and dates to the Iron Age II (McNicoll et al. 1982, pl. 124:4). The last sherd in this category (TZ 102096-002; *Pl. 7.2c*) is simple and everted. This rim cannot be identified securely, as it could also be the rim of a big jug (Fischer 2013, figs. 411:1 and 416:9).

### 7.2.6. Jugs

Two body fragments (TZ 102125-019/L11899; TZ 102213-003/L12021; *Pl. 7.2e, f*) that belong to jugs or juglets come from Phase 1, both are neck and shoulder sherds of pinkish clay and without any surface treatment. Because of their fabric (Ware 30 and 38 respectively) it is possible to date them to the Iron Age, but no comparisons can be determined and there is no further information.

### 7.2.7. Coloured Fragments

The two body fragments, TZ 102096-007/L11896 and TZ 102341-004/L11636 (*Pl. 7.2g, h*), have painted stripes on the surface. Due to its light brown clay fabric (Ware 30), TZ 102096-007 (*Pl. 7.2g*) can most likely be attributed to the Iron Age. There is a reddish-brown horizontal band painted on the burnished surface. The other coloured sherd (TZ 102341-004; *Pl. 7.2h*) is undefinable and it could be related to the Chocolate-on-White Ware of the Late Bronze Age.

## 7.3. Building A, Phase 2

### 7.3.1. Plates

Only three sherds from plates were found in Phase 2. Two of these, TZ 102097-003/L11898 and TZ 102216-007/L12019 (*Pl. 7.3a and b*) are very small and, therefore, it is impossible to define the exact form of vessel to which they belong. Sherd TZ 102097-003 (*Pl. 7.3a*) is a fragment of a simple round rim, while the other rim fragment (TZ 102216-007; *Pl. 7.3b*) has a triangular form.<sup>30</sup> Because of the form of the rims as well as the light brown fabrics (Ware 18 and 30 respectively), these sherds are dated to the Iron Age. It is, unfortunately, neither possible to be more specific with the date nor can comparisons be determined.

The third sherd (TZ 102061-009/L11854) is the lower part of a saucer.<sup>31</sup> The vessel is made of a whitish-grey clay (Ware 09), with a dripping glaze applied to the outer surface and a red slip covering the inner surface (*Pl. 7.14k*). Berlin (2015, 634) defines this kind of saucer with a central depression, partly or completely slipped and found at coastal Palestinian sites, as local imitations of Attic fish-plates, which start to appear at the beginning of the Hellenistic period. Examples similar to the sherd from Tall Zar'a come from Tel Dor phases VA and IVB, which date from the middle of the 4<sup>th</sup> to the 3<sup>rd</sup> cent. BCE (Berlin 2015, pl. 6.1.2: 4, 7, Tab. 6.1.2). This sherd was found in Building A, Phase 2, Room 2 (Locus 11854), from which many pottery fragments date to later periods (to the late Iron Age/Persian (?) and to the Hellenistic period).

### 7.3.2. Bowls

Nine fragments are recognized as coming from small or open bowls. These are fragments of rims, which are relatively small, except for a base sherd (TZ 102259-003/L12111; *Pl. 7.3k*), which might also be identified as krater base. A comparable bowl base was found in Gezer (Herzog – Singer-Avitz 2015, fig. 2.4.1:8).

All the fragments of bowls are very small, making it difficult to interpret the shape of their body; nevertheless, it is possible to say that most of the bowls are hemispherical. The exceptions are a vessel to which the rim fragment (TZ 102216-003/L12019; *Pl. 7.3h*) with a slight carination under the rim belongs and two sherds (TZ 102331-002/L12175; TZ 102279-002/L11706; *Pl. 7.3i, j*), which seem to have had straight (vertical or oblique) walls. A typical Iron Age form in this group is TZ 102036-003/L11824 (*Pl. 7.3c*); it has a rectangular, thickened and slightly inverted rim, with traces of burnishing on both surfaces. Comparisons from Transjordan come from Tell er-Rumeith stratum VIB and date to the second part of the Iron Age IIB (Barako – Lapp 2015, fig. 3.5: 46, 51, 53), from stratum 17b at Tell Hesban, dating to the Iron Age IIA–B (Sauer – Herr 2012, fig. 2.24: 3, 6), and from Pella (McNicoll et al. 1982, fig. pl. 126:10).

One incomplete bowl (TZ 102290-002/L12133; *Pl. 7.3d*) has a triangular inverted rim. According to Herr, such bowls date to the Iron Age IIB and they were still present at Tell Hesban and Tell es-Sa'idiyeh after the end of the 8<sup>th</sup> cent. BCE (Iron Age IIC; Herr 2015, 282, fig. 2.6.2:14).

Fragment (TZ 102216-010/L12019; *Pl. 7.3e*) is a rim sherd of a large open bowl with bar handles (rim dia. 35 cm). The bowl is made of a pinkish-beige clay without any surface treatment (Ware 38). The bar handle is relatively small and round. A comparison for this type of bowl with these handles comes from Tell Abu al-Kharaz phase XIV (770–730 BCE) (Fischer 2013, fig. 87:1). Although the form of both rims and handles are comparable, the one from Tell Abu al-Kharaz is burnished and is notably smaller than TZ 102216-010. Another example from Tell Abu al-Kharaz was found in phase XII, which dates to the transitional Iron Age IIA/B (850–800 BCE; Fischer 2013, fig. 149:4, Tab. 83). Another comparison comes from Tell er-Rumeith stratum VIIIB, which dates to the first half of the Iron Age IIB (9<sup>th</sup> cent. BCE; Barako – Lapp 2015, 73, Tab. 2.3; fig. 3.9:4).

30 This sherd could also belong to a large open bowl.

31 In her discussion of early examples of these vessel types, Berlin uses the term saucer for locally made ones in order

to distinguish them from the imported Attic examples, for which she reserves the term fish-plate (Berlin 2015, 634 and no. 2).

### 7.3.3. Kraters

All the kraters from Phase 2 are also holemouth with everted rims, apart from TZ 102114-003/L11922 (*Pl. 7.4i*), which has an inverted rim (see *Chap. 7.2.3*). There are 11 fragments: 10 rims and one broken base. Only one rim fragment (TZ 101935-005/L11668; *Pl. 7.4e*) has two handles and a simple straight rim with traces of a slip on the outer surface. The shape of this rim is very close to some other cooking pots known from Tall Zar'a itself;<sup>32</sup> the nature of the ware, which is clearly common ware (Ware 31), and in some cases the surface treatment, can be the only difference between the two pot types. Tell Abu al-Kharaz in phase XII and XIV has examples that also have a slip on the outer surface (Fischer 2013, figs. 122:8, 150:1, 195:3). Krater TZ 102259-002/L12111 (*Pl. 7.4b*) has a simple, straight rim (without handles).

In many cases the rims are round, thickened on the exterior, and slightly everted (see *Pl. 7.4*). One piece stands out because of its decoration: TZ 102061-006/L11854 (*Pl. 7.4d*) has an engraved line on the shoulder, for which there is a parallel from Tell er-Rumeith stratum VI dating to the 8<sup>th</sup> cent. BCE (Barako – Lapp 2015, fig. 3.17:5). As mentioned above, a krater with inverted rim was found in Phase 2 (TZ 102114-003/L11922; *Pl. 7.4i*). The rim is thickened on the exterior, is of a triangular shape and has a slight carination on the shoulder. Parallels come from Tell es-Sa'idiyeh level VI and they date to the first half of the 8<sup>th</sup> cent. BCE (Herr 2015, fig. 2.6.5: 4; Barako – Lapp 2015, 73: Tab. 3.2). A significant krater rim is TZ 102114-004/L11922 (*Pl. 7.4j*): it is flattened and thickened on the exterior, and the neck is covered with horizontal incised lines; very close comparisons come from Tell er-Rumeith that date to the 9<sup>th</sup> and 8<sup>th</sup> cent. BCE (Barako – Lapp 2015, 80, fig. 3.18), other parallels come from Tall Irbid Tomb B (Dajani 1966, pls. XXXIV:1–2, XXXVIII: T.B.1–2). The shape of the base sherd TZ 102061-007/L11854 (*Pl. 7.4k*) suggests that it belongs to a krater, though it could also be the base of a big jug.

### 7.3.4. Cooking Pots

The predominant vessel type from Phase 2 loci is the cooking pot. Around 17 sherds of cooking pots were discovered in this phase (TZ 101924-002/L11691; TZ 101947-004, -006, -007/L11671; TZ 102020-002, -003/L11733; TZ 102036-004/L11824; TZ 102060-002/L11853; TZ 102216-004, -008/L12019; TZ 102272-002/L12072; TZ 102290-003/L12133; TZ 102310-004/L12166; TZ 102331-003/L12175; *Pls. 7.5* and *7.6a–c*).

Unfortunately, none of them is complete or even semi-complete, so it is impossible to describe the body shape of these cooking pots. All sherds are only rim sherds or parts of the upper body. In one example, two handles of the pot are also preserved (TZ 101924-002; *Pl. 7.5k*). Three of these cooking pot fragments date to the Hellenistic period (TZ 101924-004; TZ 101924-005; TZ 101982-002; see *Chap. 7.7*), while the form and fabric imply that the rest of the sherds date to the Iron Age.

From the rims it is possible to recognize four main rim types for the cooking pots in this phase, with some variations (or sub-types):

Type 1 (TZ 101947-004, -006; TZ 102290-003; TZ 102331-003; TZ 102216-008; *Pl. 7.5a–e*) rims are straight or slightly inverted, are rounded followed by a small edge directly under the rim. Type 1 is divided into 1a (TZ 101947-004, -006; TZ 102290-003; TZ 102331-003; *Pl. 7.5a–d*) and 1b (TZ 102216-008; *Pl. 7.5e*) depending on the angle of orientation of the rim.

Type 2 (TZ 101947-007; TZ 102020-002; TZ 102272-002; *Pl. 7.5f–h*) is similar to Type 1 with the difference that in Type 2 the space between the rim and the edge is much wider. Type 2 is divided into 2a (TZ 101947-007; *Pl. 7.5f*) and 2b (TZ 102020-002 and TZ 102272-002; *Pl. 7.5g, h*) depending on the angle of the rim. Herr reports that ridged rims, like the examples in Type 1 and Type 2, are typical in the Iron Age IIB in Transjordan (2015, 283). These two types of cooking pots are the predominant ones at Tall Zar'a during the Iron Age II (Schwermer 2015, Appendix 1, 59–64). Comparisons from other sites in Transjordan come from the Iron Age II level at Pella (McNicoll et al. 1982, pl. 124:8), many examples from Tell er-Ru-

32 See, for example, Type 2 kraters of Tell er-Rumeith that are very close to the Type 1 cooking pots discovered at the same site (Barako – Lapp 2015, 80).

meith dating from the late 9<sup>th</sup> to the 8<sup>th</sup> cent. BCE (Barako – Lapp 2015, figs. 3.14 and 3.15), Tell Abu al-Kharaz phase XIII (early 8<sup>th</sup> cent.; Fischer 2013, fig. 439:1) and from Tell el-‘Umeiri phase 4 (late 8<sup>th</sup> or early 7<sup>th</sup> cent.; Herr 1989, 302, fig. 19.4: 22).

Type 3 (TZ 102020-003; TZ 102310-004; TZ 101924-002; TZ 102216-004; TZ 102036-004; *Pls. 7.5i–k* and *7.6a–b*) includes rims that have a triangular or round form. These rims are straight or slightly inverted. Because examples of Type 3 are heterogenous, they are divided into 4 subtypes. Subtypes 3a (TZ 102020-003; TZ 102310-004; *Pl. 7.5i, j*) and 3d (TZ 102036-004; *Pl. 7.6b*) are distinctive from the rest by having a shallow groove on the top of the rim. Parallels for pots of this type are found in Tell Hesban (Sauer – Herr 2012, fig. 2.22:2), Tell es-Sa‘idiyeh (Herr 2015, fig. 2.6.7:5), Pella (McNicoll et al. 1982, pl. 124:5) and from phase XIV at Tell Abu al-Kharaz (Fischer 2013, fig. 442: 5–8). In subtypes 3b (TZ 101924-002; *Pl. 7.5k*) and 3c (TZ 102216-004; *Pl. 7.6a*), the rims are triangular in form and externally thickened.

Only one rim sherd is assigned here to Type 4 (TZ 102060-002; *Pl. 7.6c*) and it is an unusual shape. It is everted and has traces of a slip on the surface, which is uncommon for cooking ware. Moreover, such a clearly everted rim fits better with kraters, yet its fabric (Ware 25) is predominant for cooking pots at Tall Zar‘a; it has a dark grey core with reddish bands in the inner and outer surfaces and contains a large amount of shiny white inclusions.

Two rim sherds, one of them with a handle, apparently belong to the same cooking pot that dates to the early Hellenistic period (TZ 101924-004; TZ 101924-005). They were found in L11691, which was located in the southern part of this building (Room 1). The vessel is made of the same fabric (JOP) as most of the Hellenistic cooking pots found at the site (see *Chap. 7.7.2*).

### 7.3.5. Jars

Jar rims TZ 101931-005; TZ 101935-002, -003, -004; TZ 101947-003; TZ 102097-002; TZ 102174-002; TZ 102216-002 (*Pl. 7.6d–k*), as well as a pointed jar base TZ 101931-003 (*Pl. 7.6l*) were found in loci L11694, L11668, L11671, L11898, L11912, and L12019, that belong to Phase 2, Room 1 (see *Chap. 1.3.2*). Only fragments of the upper parts of

these jars are preserved. Therefore, it is not possible to define the exact shape and size of the vessels. Nevertheless, many of the rim forms belong to common forms of mid-sized jars typical of the Iron Age pottery traditions (see Amiran 1969, pls. 77–80).

It is interesting to note that in this repertory of jars, found within Phase 2 of Building A and especially in Room 1, a clear differentiation between the jars from the Iron Age IIB and the subsequent periods (Iron Age IIC/Persian) can be recognized, which is particularly obvious in the whitish clay (Ware 09), which was probably fired at a high temperature and which does not occur before the Iron Age IIC and Persian period. These examples and the majority of the ceramic material that came from Room 2 can be dated to the Iron Age IIC or Iron Age/Persian, that means not earlier than the beginning of the 7<sup>th</sup> cent. BCE.

Four of these rims (TZ 101935-004; TZ 101947-003; TZ 102174-002; TZ 101935-003; *Pl. 7.6e–g, i*) are externally thickened, slightly everted or straight, with a ridge on the middle of the neck. Examples of such jars that date to later than the 8<sup>th</sup> cent. BCE come from Tell Hesban (Sauer – Herr 2012, fig. 2.29: 6, 8–9, 12–13) and from Tell er-Rumeith (Barako – Lapp 2015, fig. 3.22: 11–22, 3.23).

Four other rims (TZ 101931-005; TZ 101935-002; TZ 102097-002; TZ 102216-002; *Pl. 7.6d, h, j–k*) are round, externally thickened and slightly everted, with a straight, simple and relatively long neck. Comparisons can be found at Tell er-Rumeith stratum VI (Barako – Lapp 2015, fig. 2.21: 30–37). One rim from this phase was found in Room 2 (L11727) and dates to the early Hellenistic (TZ 101982-003; see *Chap. 7.7.2*).

The only lower part of a jar of this phase is a pointed base TZ 101931-003 (*Pl. 7.6l*), a parallel comes from Tel ‘Ira in the Negev and dates to the Iron Age IIC (Beit-Arieh – Freud 2015, fig. 3.4.6:7).

### 7.3.6. Jugs

#### *Decanters*

Two almost complete decanters (TZ 113372-001; TZ 113492-001; *Pl. 7.7a–b*) were found in loci L11585 and L11691, that can be attributed to Phase 2 of Building A. Decanter TZ 113372-001 (*Pl. 7.7a*) has a kettle rim, and TZ 113492-001

(*Pl. 7.7b*) has a slightly everted rim and ends with a small edge. Both vessels have low ring bases and a single handle. A layer of red slip was applied to their outer surfaces and on TZ 113372-001, the slip was also applied on the inner surface of the rim down to the beginning of the neck. Moreover, it is worth noting that both vessels are made of the same light brown fabric (Ware 30).

A comparison for TZ 113372-001 comes from Tell Abu al-Kharaz phase XIV (Fischer 2013, fig. 419:9), which dates to the second half of the Iron Age IIB (770–730 BCE) (Fischer 2013, 516: Tab. 83). The rim profile of TZ 113492-001 (*Pl. 7.7b*) can also be dated to the Iron Age IIB, but probably slightly earlier than the first one; parallels to this rim are also found at Tell Abu al-Kharaz phase XIII (Fischer 2013, fig. 168:2) and from Tell er-Rumeith stratum VIB (Barako–Lapp 2015, fig. 3.31: 9); both comparisons date to the 8<sup>th</sup> cent. BCE.

## 7.4. Building A, Phase 3

### 7.4.1. Bowls

The seven bowl fragments (TZ 102202-005/L12015; TZ 102245-003/L12076; TZ 102246-005/L12083; TZ 102262-002, -003/L12113; TZ 102324-007, -013/L12164; *Pl. 7.9a–g*) vary in their overall form. Some examples are hemispherical with simple, straight rims (TZ 102245-003; *Pl. 7.9a*), other examples have simple, inverted (TZ 102324-013; *Pl. 7.9g*) or everted rims (TZ 102202-005; *Pl. 7.9b*).

TZ 102262-002 (*Pl. 7.9d*) has a triangular, everted rim and there is a slight carination on the body above the base; similar examples are found at Tell Abu al-Kharaz phase XIII (Fischer 2013, fig. 394: 2–4). Important comparisons for TZ 102324-007 (*Pl. 7.9f*) that have a thin everted rim are found at Tell er-Rumeith and date from the late 10<sup>th</sup> to the early 8<sup>th</sup> cent. BCE (Barako – Lapp 2015, fig. 3.8: 1–7).

Chronologically, the most significant bowl rim is TZ 102246-005 (*Pl. 7.9c*), with two deep incisions under its slightly inverted, flattened rim; it is comparable to an example from Tell Abu al-Kharaz found in Area I phase XIII (early 8<sup>th</sup> cent.; Fischer 2013, fig. 25:1), and one from Tell Hesban stratum 16b that dates to the Iron Age IIB (8<sup>th</sup>–7<sup>th</sup> cent.) (Sauer – Herr 2012, fig. 2.27.4). The earliest known bowls with such incisions below the rim are from

Some other jug fragments were found: three rims (TZ 101924-003; TZ 102056-002; TZ 102272-004; *Pl. 7.8a–c*) and two bases (TZ 101931-004; TZ 102310-003; *Pl. 7.8d, e*). Two of these rims (TZ 101924-003; TZ 102272-004; *Pl. 7.8a, c*) are simple and everted, while the third (TZ 102056-002; *Pl. 7.8b*) is a flaring rim, burnished on the inner surface, which could belong to a jug or maybe to a flask (see Gitin 2015, Photo 4.1.1:8). Both base sherds belong to juglets, one is a curved base and the other is lightly pointed and could thus belong to a dipper juglet.

### 7.3.7. Coloured Fragment (vessel shape undefinable)

One body sherd (TZ 102272-003; *Pl. 7.8f*) has a coloured decoration of reddish-brown and black. It dates to the Iron Age.

the Iron Age I and they become more common at Tell es-Safi and in the Judean lowlands during the Iron Age IIA (Gitin 2015, 260, pl. 2.5.1: 19–21). From the examples from Tall Zar‘a and Tell Abu al-Kharaz, it is possible to propose that they continued to appear in the Iron Age IIB, in Transjordan, but were smaller and without burnishing or a slip layer.

### 7.4.2. Cups/Mugs

TZ 102248-003 (*Pl. 7.9h*) is part of a mug which is missing its lower part. It has a single, round section handle and probably a pinched (or irregular oval) rim, the neck and the rim are straight. There are vertical lines on the outer surface resulting from stroke burnishing, which occurs below the end of the neck. Herr indicates that such mugs belong to the Iron Age pottery repertoire (Herr 2015, 282). In Transjordan, early examples come from tombs in Madaba and date to the Iron Age IIA (Herr 2015, 282, pl. 2.6.3:1–2), while the youngest examples date to the Iron Age IIC and occur at Buseira (Ben-nett 1975, fig. 5:16), Tell el-‘Umeiri (Herr 1989, fig.

19.10:10, 19.16.23; Lawlor 1991, fig. 3.15: 8-9) and Tell Hesban (Herr 2015, 282).

The only appearance of such mugs during the Iron Age IIB in Transjordan seems to be restricted to our example from Tall Zar'a, an example from Jawa (Sauer – Herr 2012, 148; Daviau 1993, fig. 5:1) and a comparable mug found at Tell Abu al-Kharaz phase XIV, which dates to the second half of the Iron Age IIB (770–730 BCE; Fischer 2013, fig. 205: 11).

It is worth mentioning that the stroke burnishing technique applied to the mug from Tall Zar'a is uncommon, the outer surface of other mugs is usually slipped.

### 7.4.3. Kraters

The variety of forms of the kraters from this phase do not differ significantly from the kraters found in the previous phases at Tall Zar'a. The majority of the kraters come from Phase 3. (TZ 102202-003, -006/L12015; TZ 102245-005/L12076; TZ 102246-007/L12083; TZ 102248-007, -008, -009, -010/L12082; TZ 102262-003/L12113; TZ 102289-004/L12135; TZ 102311-002/L12165; TZ 102324-002, -011/L12164; *Pl. 7.10*).

Two bases (TZ 102245-005; TZ 102324-011; *Pl. 7.10k, m*) probably belong to kraters, both bases are low ring bases with a concavity in the centre. Similar examples were found at Tell Abu al-Kharaz phases XIV (770–730 BCE) and XIII (Fischer 2013, figs. 405:1 and 406:2).

### 7.4.4. Cooking Pots

Cooking pots (TZ 102202-007/L12015; TZ 102245-004/L12076; TZ 102246-004, -006/L12083; TZ 102248-006/L12082; TZ 102262-004/L12113; TZ 102311-004/L12165; TZ 102324-004, -005, -008, -014, -015/L12164; TZ 102298-004/L12139; *Pls. 7.11* and *7.12a*) are of the same types as those found in Phase 2 (*Chap. 7.3.5*) as are their variants. However, Type 3 (*Chap. 7.3.5*) seems to be the most favoured form of cooking pot in Phase 3. On one of the pot handles (TZ 102324-004, *Pl. 7.11d*) two depressions are recognizable as intentionally made finger impressions; parallels for this example are found at Tell Abu al-Kharaz Area 7 phase XIII

(early 8<sup>th</sup> cent. BCE), though those have only one depression (Fischer 2013, figs. 162:1 and 176:4).

### 7.4.5. Jars

Seven jar rims (TZ 102202-002, -004/L12015; TZ 102248-005/L12082; TZ 102289-003/L12135; TZ 102298-005/L12139; TZ 102311-003/L12165; TZ 102324-006/L12164; *Pl. 7.12b–h*) and one flat base fragment (TZ 102324-010/L12164; *Pl. 7.12i*), which most likely belongs to a jar, were found in Phase 3. As in Phases 1 and 2, the rims are externally thickened, and are straight or slightly everted (except for one case with an inverted rim: TZ 102202-002; *Pl. 7.12h*), with relatively long necks. These forms predominate in this phase, there being only two examples of a jar with a ridged rim (TZ 102298-005, TZ 102311-003; *Pl. 7.12f–g*).

### 7.4.6. Jugs

Two decanters, an upper part of a jug, incomplete juglet, and two fragments (TZ 102245-002/L12078; TZ 102246-002/L12083; TZ 102248-004/L12082; TZ 102289-002, -005/L12135; TZ 102298-002/L12139; *Fig. 0.5*; *Pls. 7.12j*; *7.13a–e*) were found belonging to Phase 3. The most interesting vessel is the lower part of a decanter with strainer (or strainer jug; TZ 102289-002; *Fig. 0.5* and *Pl. 7.12j*). The rim, most of the neck and the single handle are missing. This jug has a ring base, the convex centre of which protrudes slightly beyond the outer ring, and a strainer with large spout. The outer surface is covered with a red slip applied on a fine beige clay (Ware 31). The shape of the body of this decanter as well as its large spout, low ring base and the red slip, make it very similar to an example from Hazor dating to the 8<sup>th</sup> cent. BCE. (Ben-Tor – Zarzeczki-Peleg 2015, fig. 2.2.17:18). Parallels for such jugs with strainers from Transjordan come from Pella (McNicoll et al. 1982, pl. 126:1) and from Tell er-Rumeith, dating to the Iron Age IIA and IIB (Barako-Lapp 2015, fig. 3.31: 1–3), as well as an early example from Tell Abu-al-Kharaz phase IX (Iron Age IB; Fischer 2013, fig. 411:5).

The second decanter is almost complete, only the rim is missing (TZ 102298-002; *Fig. 0.5* and *Pl. 7.13a*). The body form is comparable to the pre-

vious two decanters, as is the form of the handle. The ring base is also similar but is higher in this example than in the previous two. Additionally, this decanter, TZ 102298-002, has a decorative band on the shoulder consisting of incised horizontal lines. Furthermore, unlike the first two decanters, the greyish-brown surface is left untreated. Its fabric (Ware 01) also differs from the other two (both are made of Ware 30) and the sections (the walls) are noticeably thinner. This decanter can also be compared to the one from Tell Abu al-Kharaz found in phase XIV (770–730 BCE; Fischer 2013, fig. 419:9).

Another incomplete juglet is TZ 102246-002 (*Pl. 7.13b*). The rim and part of the neck are missing. The body is covered with vertical lines made by the stroke burnishing technique applied on the orange surface. Close parallel comes from Tell Abu al-Kharaz phase XIV (770–730 BCE; Fischer 2013, fig. 206:5). The light colour of the surface and this type of vertical burnishing were common during the Iron Age II (Tappy 2015, 194). Earlier examples for this technique were found at Tell Abu al-Kharaz phase XII (2<sup>nd</sup> half of 9<sup>th</sup> cent. BCE; Fischer 2013, fig. 112:5). The last incomplete jug (TZ 102245-002; *Pl. 7.13c*) is an upper part of a big jug with a simple everted rim, a ridge on the neck and a single handle on which there are two vertical incised lines. The form is close to an early jug from Tell Abu al-Kharaz Phase IX (Fischer 2013, fig. 410:1). In the

jug from Tell Abu al-Kharaz the handle starts from the rim while in the Tall Zar'a jug (TZ 102245-002) it starts below the rim. Another parallel comes from an unstratified context in Tell er-Rumeith (Barako – Lapp 2015, fig. 3.30:17).

The rim TZ 102248-004 (*Pl. 7.13d*) is most likely part of pilgrim flask or a decanter such as the example from Tell Abu al-Kharaz phase XIV (770–730 BCE) and a similar spout comes from phase XII (Fischer 2013, figs. 112:4 and 199).

#### 7.4.7. Strainer?

TZ 102248-002/L12082 (*Pl. 7.13f*) is a straight rim and part of a broken handle. The funnel-like shape as well as the surviving part of a hole in the centre of the object suggests that it served as strainer. It could have been used as a separate object or it could have been attached to another vessel, such as a krater.

#### 7.4.8. Coloured Fragments

Three body fragments (TZ 102246-003 -008/L12083; TZ 102298-003/L12139; *Pl. 7.13g–i*) have reddish-brown or brown bands.

## 7.5. Conclusions

There was relatively little material from Phase 1 and in many cases it was mixed with late Iron Age and probably Persian and Hellenistic material (mostly in L11899). Most of the Iron Age pottery from Phase 1 can be attributed to the Iron Age IIB with a high degree of certainty, along with a bowl sherd (TZ 102341-002/L11636, *Pl. 7.1f*) that could date to the Iron Age IIC (7<sup>th</sup>–6<sup>th</sup> cent. BCE.).

Phase 2 includes material that dates to the second half of the Iron Age IIB (8<sup>th</sup> cent. BCE). However, in a few loci, mainly those located in Rooms 1 and 2, in the north-eastern part of Building A, Hellenistic sherds such as the saucer mentioned above (TZ 102061-009; *Pl. 7.14k*) from L11854 are found mixed with Iron Age IIB fragments (see *Chap. 1.3.23*). Hellenistic fragments were also found in L11727 in Room 2 and L11691 in Room 1. The Iron Age material is clearly contemporaneous with the material of phases XIV (770–730 BCE) and XIII at Tell Abu al-Kharaz (Fischer 2013, 516: tab. 83) and with Tell er-Rumeith stratum VIB, that dates to the second half of the Iron Age IIB (Barako – Lapp 2015, 73: tab. 3.2), and therefore to the 8<sup>th</sup> cent. BCE. Consequently, this is also the time-frame for Phase 2.

Moreover, these mixed contexts, with Iron Age as well as Hellenistic material from Rooms 1 and 2, also include particular whitish jar sherds (see *Chap. 7.3.5*). The developed firing technique (higher firing temperature than in the previous periods), and their ware (Ware 09) suggest that they

should date to later than the Iron Age IIB (later than 8<sup>th</sup> cent. BCE), but earlier than the Hellenistic period (i.e. Iron Age IIC or Persian). Unfortunately, no further information is available, nevertheless, it is possible to suggest that this material dates to the Persian period. This issue should become clearer in future excavation seasons. The mixed material in this northeastern part of Building A Phase 2 was probably the result of rebuilding or destruction in later periods that damaged the Phase 2 construction.

The pottery attributed to Phase 3 is slightly earlier than Phase 2, none of the loci shows mixed material. In Phase 3 the material is also contemporaneous to the Phase XIV (770–730 BCE) and XIII (early 8<sup>th</sup> cent. BCE) at Tell Abu al-Kharaz (Fischer 2013, 516: tab. 83). However, the greater part of the ceramic material shows parallels to material from Tell Abu al-Kharaz Phase XIII. Therefore, Phase 3 points to the late 9<sup>th</sup> and to the 8<sup>th</sup> cent. BCE.

The nature of the pottery from all the phases, which consists of table ware, kraters, cooking pots and middle-sized jars, implies that the contexts in which it was found are contexts where household activities were practised. This fits with the overall interpretation of Building A as a dwelling.

Finally, it is worth noting that the Iron Age pottery material from Tall Zar'a is closely related to the material from other sites in Transjordan, such as Tell Deir 'Alla and Tell el-'Umeiri, but this relationship is especially clear with Tell Abu al-Kharaz and Tell er-Rumeith.

## 7.6. Iron Age Pottery Plates

### 7.6.1 Phase 1

#### *Bowls*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.1a	TZ 102076-007	11864	Open bowl rim, light reddish-brown clay, traces of burnishing on both surfaces	Common ware	11
7.1b	TZ 102076-004	11864	Bowl rim, pinkish-beige clay	Common ware	31
7.1c	TZ 102125-009	11899	Bowl rim, irregular diameter, pinkish-beige clay	Common ware	09
7.1d	TZ 102125-016	11899	Bowl rim, beige clay, red slip on both surfaces	Fine ware	31
7.1e	TZ 102213-002	12021	Bowl rim, internally thickened, beige clay	Common ware	17
7.1f	TZ 102341-002	11636	Bowl rim, ridged, greyish-beige clay	Common ware	17
7.1g	TZ 102341-003	11636	Bowl rim, beige clay	Common ware	18

#### *Kraters*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.1h	TZ 102076-003, 005, 006, 011	11864	Krater rim, externally thickened, light brown clay	Common ware	26
7.1i	TZ 102125-020	11899	Krater rim, everted and externally thickened, beige clay	Common ware	30
7.1j	TZ 102125-021	11899	Krater rim, everted and externally thickened, beige clay	Common ware	30

#### *Cooking Pots*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Type 1a</b>					
7.1k	TZ 102076-002	11864	Pot rim, straight and ridged, dark brown clay	Cooking ware	06
7.1l	TZ 102125-018	11899	Pot rim, ridged, greyish-brown clay	Cooking ware	50
<b>Type 3b</b>					
7.1m	TZ 102096-004	11896	Pot rim, slightly everted, dark brown clay	Cooking ware	06
7.1n	TZ 102125-005	11899	Pot rim, straight, light brown clay	Cooking ware	06
7.1o	TZ 102125-008	11899	Pot rim, brown clay	Cooking ware	06
7.1p	TZ 102125-015	11899	Pot rim and handles, light brown clay	Cooking ware	25



TZ 102076-007



TZ 102076-004



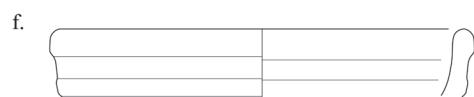
TZ 102125-009



TZ 102125-016



TZ 102213-002



TZ 102341-002



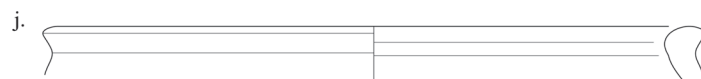
TZ 102341-003



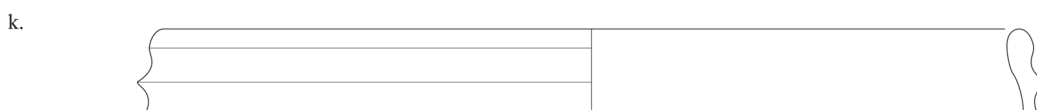
TZ 102076-003, -005, -006, -011



TZ 102125-020



TZ 102125-021



TZ 102076-002



TZ 102125-018



TZ 102096-004



TZ 102125-005



TZ 102125-008



TZ 102125-015

0  5 cm

*Jars*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.2a	TZ 102125-002	11899	Jar rim, triangular, ridge under the rim, beige clay	Common ware	—
7.2b	TZ 102125-012	11899	Jar rim, externally thickened and ridged, beige clay	Common ware	28
7.2c	TZ 102096-002	11896	Middle jar rim, slightly everted, light brown clay	Common ware	23
7.2d	TZ 102096-003	11896	Jar rim, externally thickened, beige clay	Common ware	01

*Jugs*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.2e	TZ 102125-019	11899	Juglet shoulder, light pink clay	Common ware	30
7.2f	TZ 102213-003	12021	Juglet neck and shoulder, pinkish-beige clay	Fine ware	38

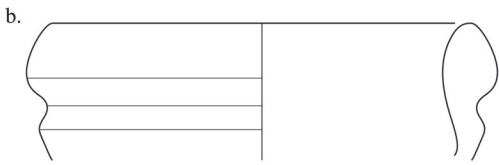
*Coloured fragments*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.2g	TZ 102096-007	11896	Body sherd, beige clay, lightly burnished, horizontal reddish-brown band	Common ware	30
7.2h	TZ 102341-004	11636	Body sherd, light brown clay, burnished white slip, two horizontal brown bands, (Chocolate-on-White Ware?)	Common ware	36

Plate 7.2: Phase 1. Jars (a-d); jugs (e. f); coloured fragments (g. h), scale 1:2



TZ 102125-002



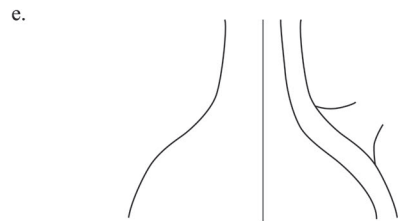
TZ 102125-012



TZ 102096-006



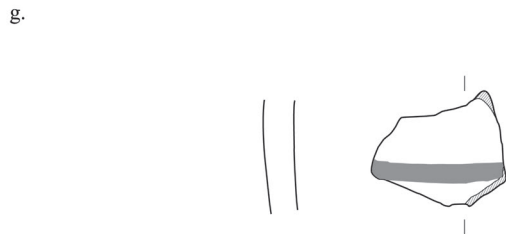
TZ 102096-003



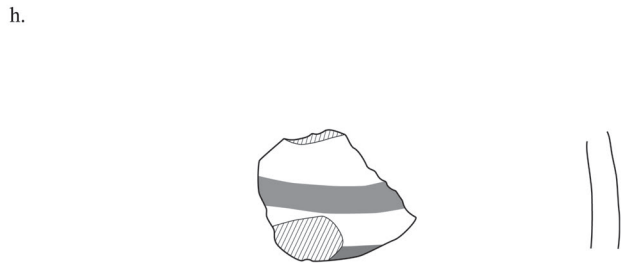
TZ 102125-019



TZ 102213-003



TZ 102096-007



TZ 102341-004

0 5 cm

## 7.6.1 Phase 2

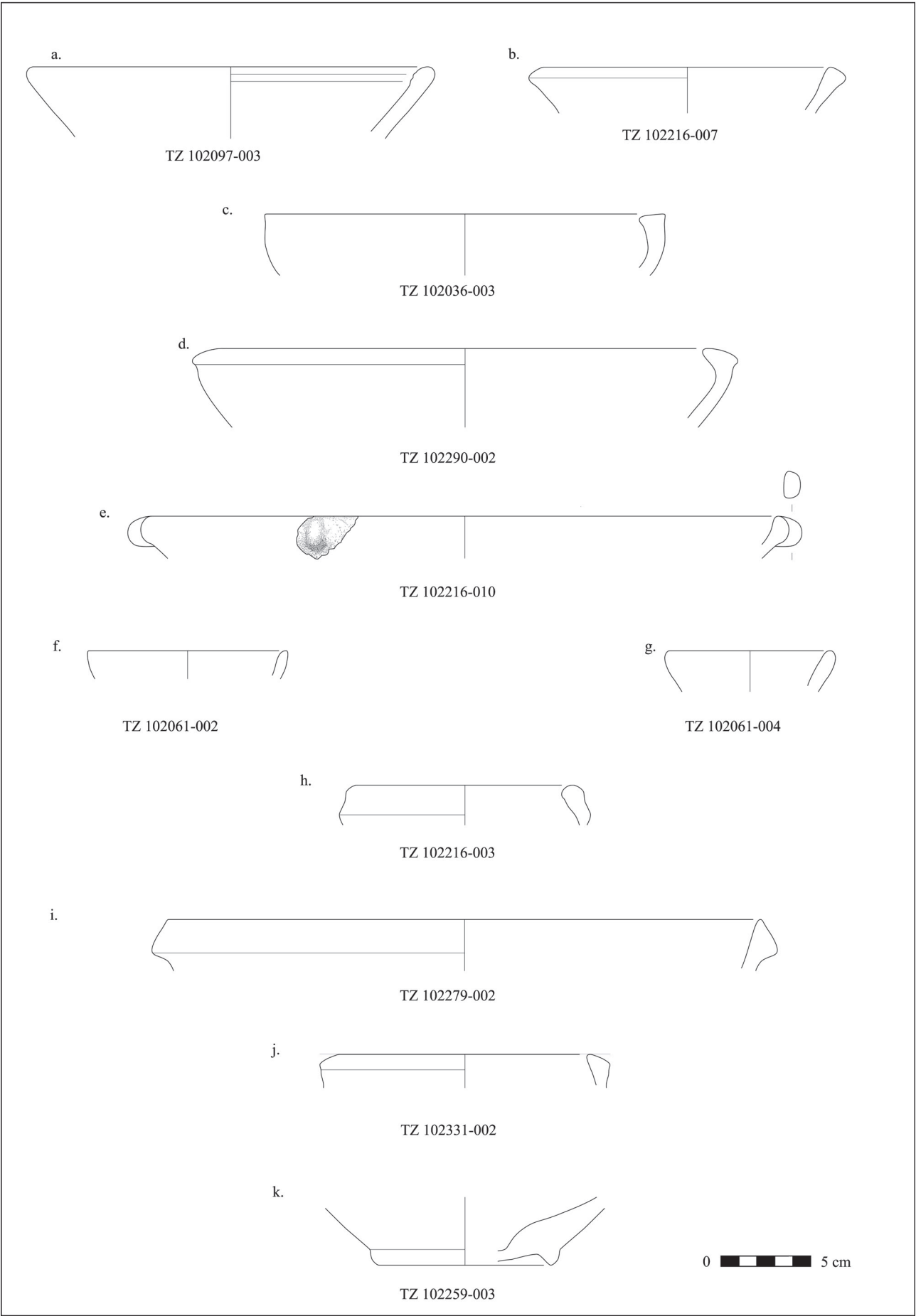
*Plates*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.3a	TZ 102097-003	11898	Plate rim, beige clay	Common ware	18
7.3b	TZ 102216-007	12019	Plate rim, triangular, pinkish-beige clay	Common ware	30

*Bowls*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.3c	TZ 102036-003	11824	Open bowl rim thickened on the interior, pinkish-beige clay, traces of burnishing on the rim and inner surface	Common ware	29
7.3d	TZ 102290-002	12133	Inverted, bowl rim thickened on the interior, pink clay	Common ware	51
7.3e	TZ 102216-010	12019	Open bowl rim, bar handles, pinkish-beige clay	Common ware	38
7.3f	TZ 102061-002	11854	Bowl rim, pinkish-beige clay, reddish slip on the rim and outer surface	Fine ware	10
7.3g	TZ 102061-004	11854	Slightly everted bowl rim, brownish-grey clay	Common ware	04
7.3h	TZ 102216-003	12019	Inverted bowl rim, pink clay	Common ware	34
7.3i	TZ 102279-002	11706	Open bowl rim, triangular form, externally thickened, pinkish-beige clay	Common ware	50
7.3j	TZ 102331-002	12175	Slightly inverted bowl rim, triangular form, brown clay	Common ware	30
7.3k	TZ 102259-003	12111	Bowl base (?), greyish-beige clay	Common ware	30

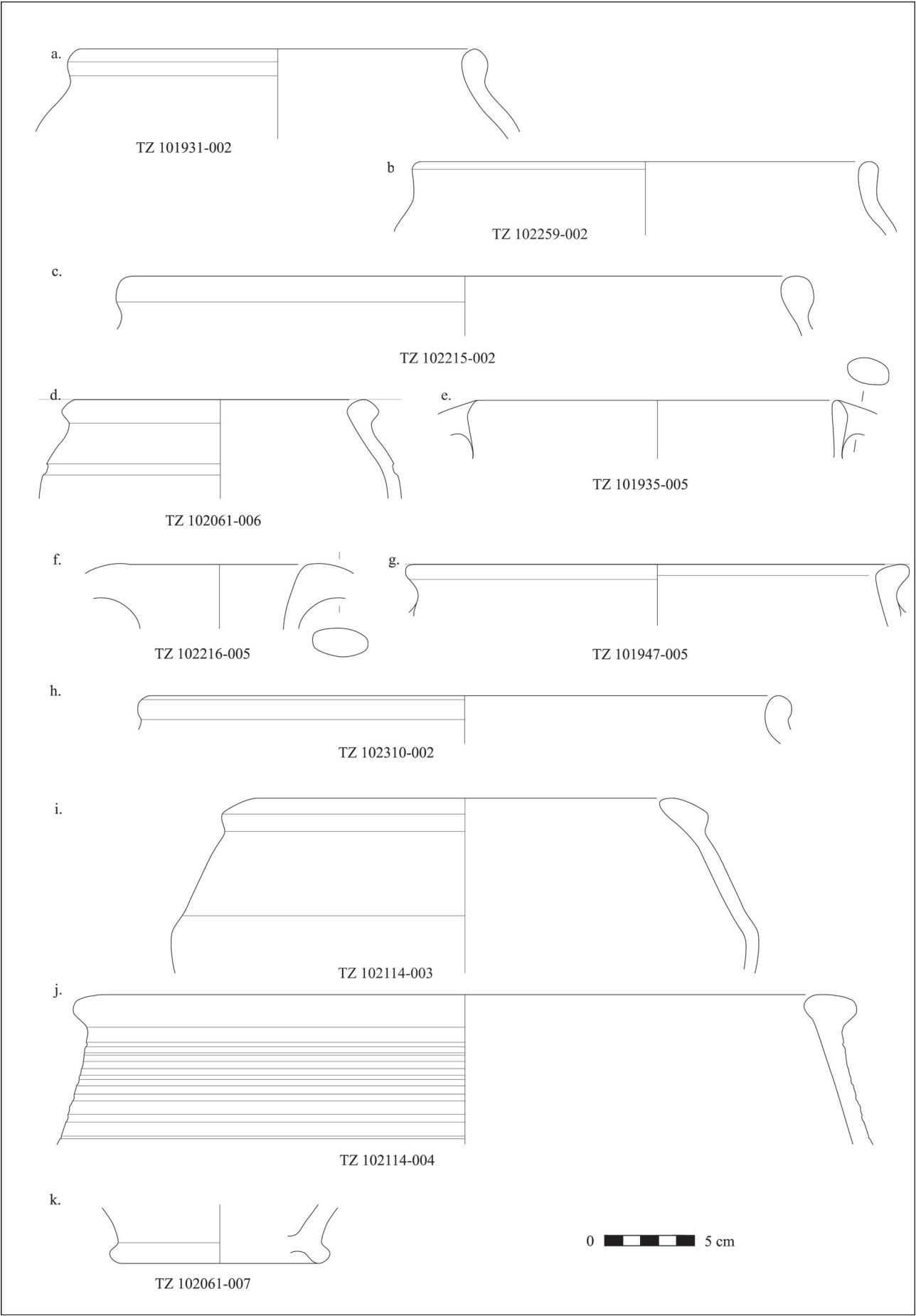
Plate 7.3: Phase 2. Plates (a. b); bowls (c-k), scale 1:3



*Kraters*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.4a	TZ 101931-002	11694	Krater simple rim, brown clay	Common ware	50
7.4b	TZ 102259-002	12111	Krater straight rim, pink clay	Common ware	31
7.4c	TZ 102215-002	12033	Krater rim, round, externally thickened, pinkish-beige clay	Common ware	30
7.4d	TZ 102061-006	11854	Krater rim, round and externally thickened, groove on the neck, light brown clay, traces of red slip on the rim	Common ware	30
7.4e	TZ 101935-005	11668	Krater simple rim, two single handles, pink clay, red slip on the outer surface	Common ware	31
7.4f	TZ 102216-005	12019	Krater simple rim, two single handles, pinkish-beige clay	Common ware	49
7.4g	TZ 101947-005	11671	Krater everted rim, beige clay	Storage ware	18
7.4h	TZ 102310-002	12166	Krater rim, round, externally thickened, light orange clay	Common ware	24
7.4i	TZ 102114-003	11922	Krater inverted rim, externally thickened, brownish-orange clay	Storage ware	35
7.4j	TZ 102114-004	11922	Krater flattened rim, externally thickened, horizontal grooves on the neck, greyish-beige clay	Storage ware	15
7.4k	TZ 102061-007	11854	Krater ring base, grey clay	Common ware	30

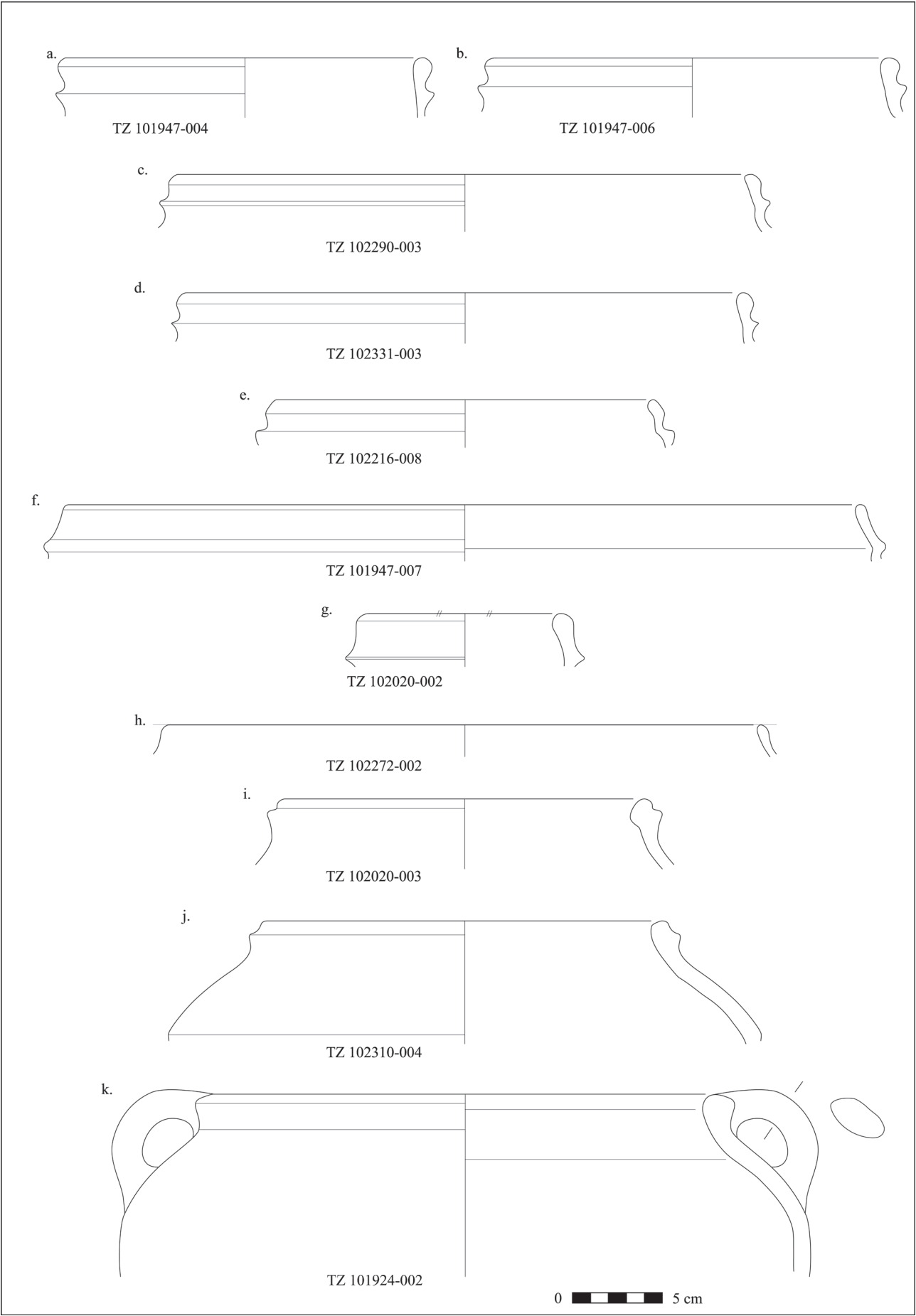
Plate 7.4: Phase 2. Kraters, scale 1:3



*Cooking pots*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Type 1a</b>					
7.5a	TZ 101947-004	11671	Pot rim, straight, edge under the rim, brown clay	Cooking ware	25
7.5b	TZ 101947-006	11671	Pot rim, slightly inverted, edge under the rim, brown clay	Cooking ware	06
7.5c	TZ 102290-003	12133	Pot rim, inverted, edge under the rim, brown clay	Cooking ware	25
7.5d	TZ 102331-003	12175	Pot rim, slightly inverted, pointed edge under the rim, brown clay	Cooking ware	25
<b>Type 1b</b>					
7.5e	TZ 102216-008	12019	Pot rim, inverted, edge under the rim, brown clay	Cooking ware	25
<b>Type 2a</b>					
7.5f	TZ 101947-007	11671	Pot rim, inverted, small edge under the rim, brown clay	Cooking ware	06
<b>Type 2b</b>					
7.5g	TZ 102020-002	11733	Pot rim, round, inverted, pointed edge under the rim, brown clay	Cooking ware	06
7.5h	TZ 102272-002	12072	Pot rim, inverted, reddish-brown clay	Cooking ware	26
<b>Type 3a</b>					
7.5i	TZ 102020-003	11733	Pot rim, round, ridged, inverted, dark brown clay	Cooking ware	25
7.5j	TZ 102310-004	12166	Pot rim, ridged, slightly inverted, light brown clay	Cooking ware	26
<b>Type 3b</b>					
7.5k	TZ 101924-002	11691	Pot rim, round, with two single handles, light brown clay	Cooking ware	25

Plate 7.5: Phase 2. Cooking pots, scale 1:3



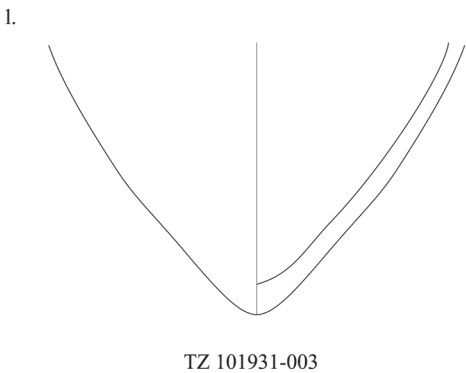
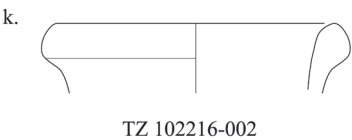
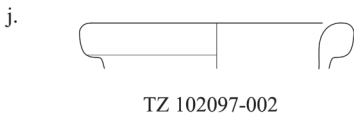
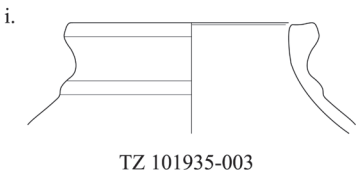
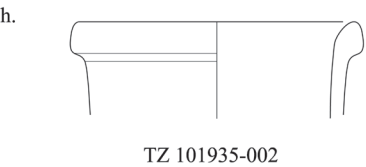
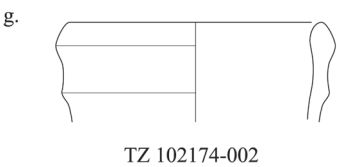
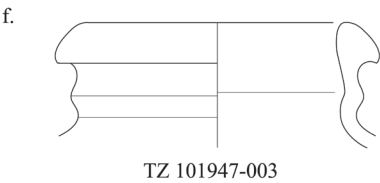
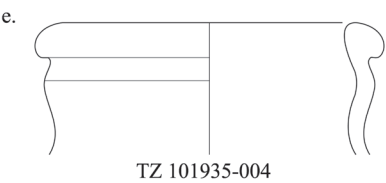
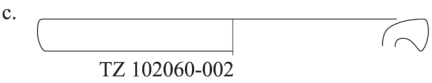
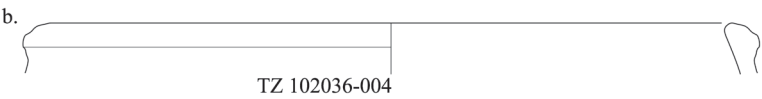
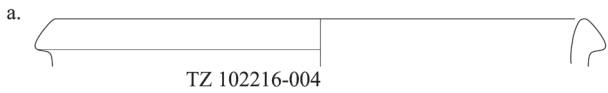
*Cooking pots (continued)*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Type 3c</b>					
7.6a	TZ 102216-004	12019	Pot rim, triangular, externally thickened, brown clay	Cooking ware	26
<b>Type 3d</b>					
7.6b	TZ 102036-004	11824	Pot rim, triangular, slightly inverted, reddish-brown clay	Cooking ware	25
<b>Type 4</b>					
7.6c	TZ 102060-002	11853	Pot rim, everted, brown clay, traces of slip on the inner surface	Cooking ware	25

*Jars*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.6d	TZ 101931-005	11694	Jar rim, round, externally thickened, slightly everted, beige clay	Common ware	17
7.6e	TZ 101935-004	11668	Jar rim, rolled over and thickened, low ridge on the neck, beige clay	Common ware	51
7.6f	TZ 101947-003	11671	Jar rim, triangular, rolled over and thickened, edge on the neck, beige clay	Common ware	30
7.6g	TZ 102174-002	11912	Jar rim, straight, simple, small ridge on the neck, pinkish-beige clay	Common ware	49
7.6h	TZ 101935-002	11668	Jar rim, slightly everted, externally thickened, light beige clay	Common ware	09
7.6i	TZ 101935-003	11668	Jar rim, slightly everted, externally thickened, ridged on the neck, reddish-brown clay	Common ware	34
7.6j	TZ 102097-002	11898	Jar rim, round, externally thickened, beige clay	Common ware	18
7.6k	TZ 102216-002	12019	Jar rim, round, externally thickened, slightly everted, beige clay	Common ware	30
7.6l	TZ 101931-003	11694	Pointed base of (middle) jar, pink clay	Common ware	16

Plate 7.6: Phase 2. Cooking pots (a-c); jars (d-l), scale 1:3

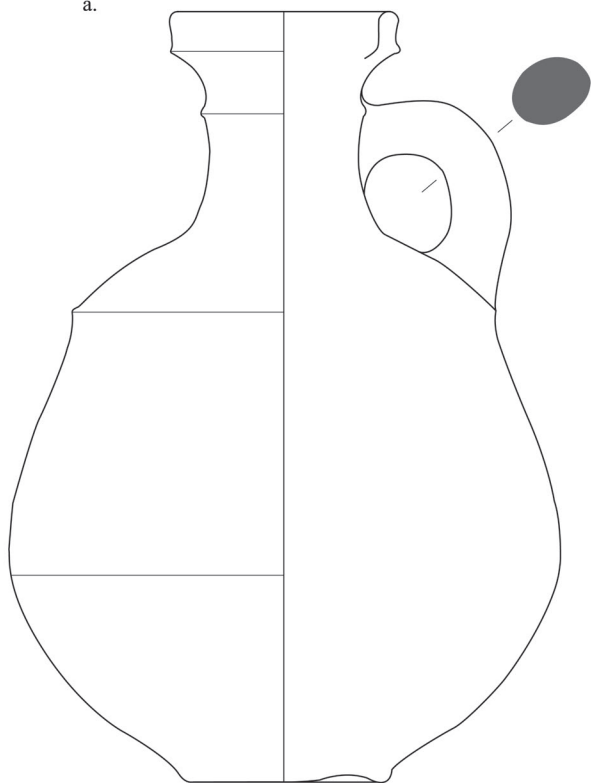


0  5 cm

*Jugs*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Decanters</b>					
7.7a	TZ 113372-001	11585	Decanter, kettle rim, single handle, low ring base, brownish-red clay, red slip on the surface and the inner surface of the rim	Common ware	30
7.7b	TZ 113492-001	11691	Decanter, slightly everted rim, single handle, low ring base, brownish-red clay, slip on the outer surface	Common ware	30

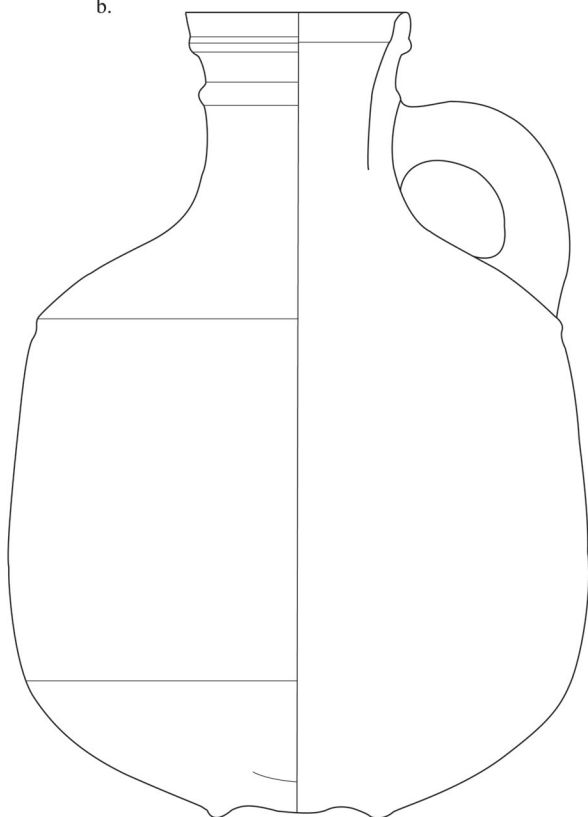
a.



TZ 103372-001



b.



TZ 103492-001



Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Jugs' fragments</b>					
7.8a	TZ 101924-003	11691	Everted jug rim, beige clay	Common ware	05
7.8b	TZ 102056-002	11856	Flaring rim, probably of a flask, burnishing traces on the inner surface, brown clay	Common ware	01
7.8c	TZ 102272-004	12072	Everted juglet rim, beige clay	Common ware	28
7.8d	TZ 101931-004	11694	Curved base, probably of a juglet, pinkish-beige clay	Common ware	30
7.8e	TZ 102310-003	12166	Pointed base of a (dipper) juglet, beige clay	Common ware	30

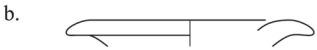
*Coloured fragment*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.8f	TZ 102272-003	12072	Body fragment, beige clay, decorated with two horizontal reddish-brown and black lines	Common ware	30

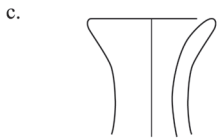
Plate 7.8: Phase 2. Jugs (a-e); coloured fragments (f. g), scale 1:2



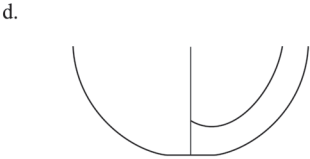
TZ 101924-003



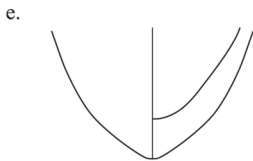
TZ 102056-002



TZ 102272-004



TZ 101931-004



TZ 102310-003



TZ 102272-003

0  5 cm

### 7.6.1 Phase 3

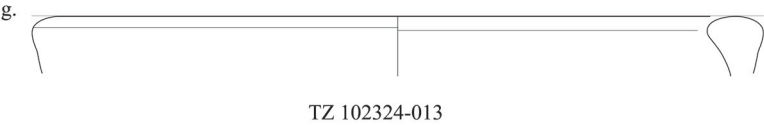
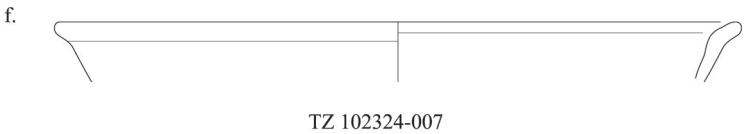
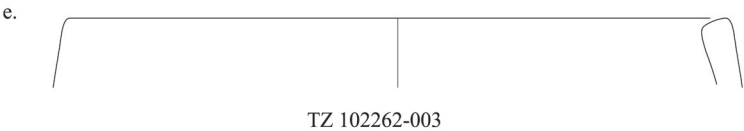
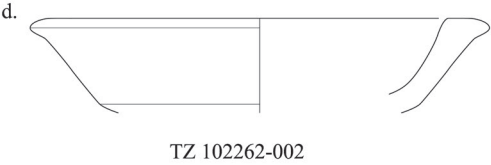
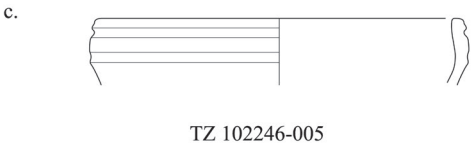
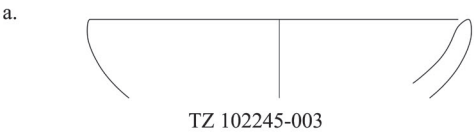
#### *Bowls*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.9a	TZ 102245-003	12076	Bowl simple straight rim, hemispherical form, beige clay	Common ware	17
7.9b	TZ 102202-005	12015	slightly everted, externally thickened rim of bowl, burnished on both surfaces, light brown clay	Common ware	30
7.9c	TZ 102246-005	12083	Slightly inverted flattened rim of bowl, two deep grooves below the rim, light red clay	Common ware	30
7.9d	TZ 102262-002	12113	Everted triangular bowl rim, carination near the base, greyish-brown clay, brown slip on both surfaces	Common ware	30
7.9e	TZ 102262-003	12113	Slightly inverted rim of bowl, rectangular rim, brown clay	Common ware	30
7.9f	TZ 102324-007	12164	Simple everted rim of bowl, beige clay	Common ware	18
7.9g	TZ 102324-013	12164	Slightly inverted rim of bowl, round, interiorly thickened, pink clay, red slip on the rim	Common ware	30

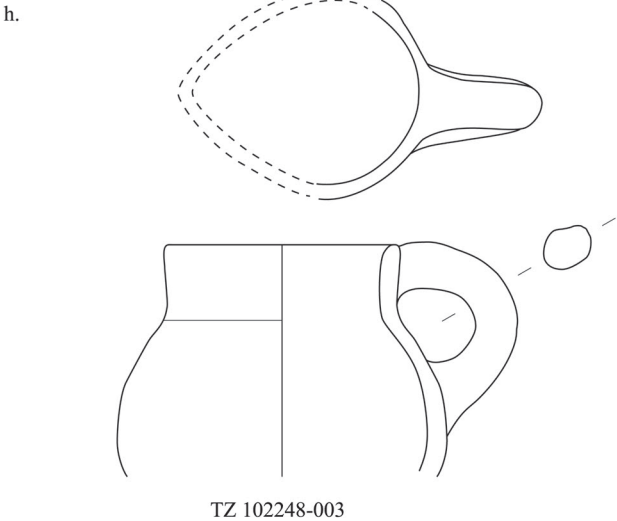
#### *Cups/Mugs*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.9h	TZ 102248-003	12082	Upper part of a mug, straight simple rim (or pinched rim), single handle, pink clay, vertical stroke burnishing on the body, starts below the neck	Common ware	38

Plate 7.9: Phase 3. Bowls (a-g), scale 1:3. Mug (h), scale 1:2



0  5 cm

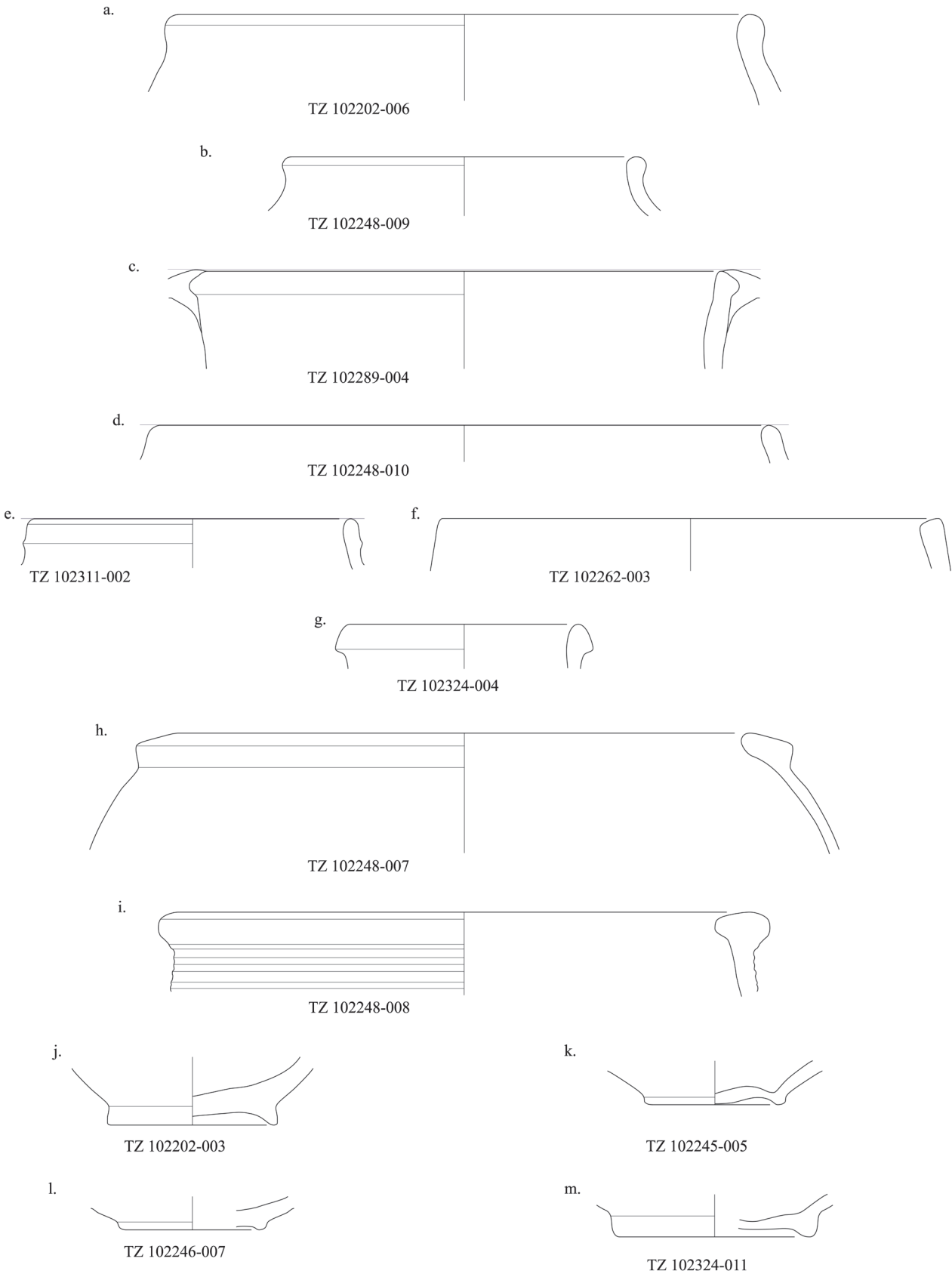


0  5 cm

*Krater*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.10a	TZ 102202-006	12015	Simple straight, round, rim of krater, pink clay	Common ware	35
7.10b	TZ 102248-009	12082	Simple straight, round, rim of krater, pink clay	Common ware	50
7.10c	TZ 102289-004	12135	Slightly everted krater rim, rectangular, with two single handles, pink clay	Common ware	Ware 1-2 (Kenkel 2012)
7.10d	TZ 102248-010	12082	Simple slightly inverted krater rim, greyish-brown clay	Common ware	56
7.10e	TZ 102311-002	12165	Slightly inverted krater rim, with small ridge, light red clay	Common ware	38
7.10f	TZ 102262-003	12113	Inverted rectangular krater rim, brown clay	Common ware	30
7.10g	TZ 102324-002	12164	Straight krater rim, triangular, externally thickened, beige clay	Common ware	30
7.10h	TZ 102248-007	12082	Inverted krater rim (holemouth), externally thickened, pink clay	Common ware	04
7.10i	TZ 102248-008	12082	Krater flattened rim, externally and interiorly thickened, horizontal grooves on the neck, brown clay	Storage ware	15
7.10j	TZ 102202-003	12015	(Probably) krater base, ring base with slight concavity in the centre, greyish-beige clay, traces of reddish-brown slip on the outer surface	Common ware	30
7.10k	TZ 102245-005	12076	(Probably) krater base, ring base with clear concavity in the centre, beige clay, thin reddish-brown slip on the outer surface	Common ware	30
7.10l	TZ 102246-007	12083	(Probably) krater base, ring base with light concavity, light brown clay, burnishing on the outer surface	Common ware	30
7.10m	TZ 102324-011	12164	(Probably) krater base, ring base, pinkish-beige clay	Common ware	38

Plate 7.10: Phase 3. Krater, scale 1:3

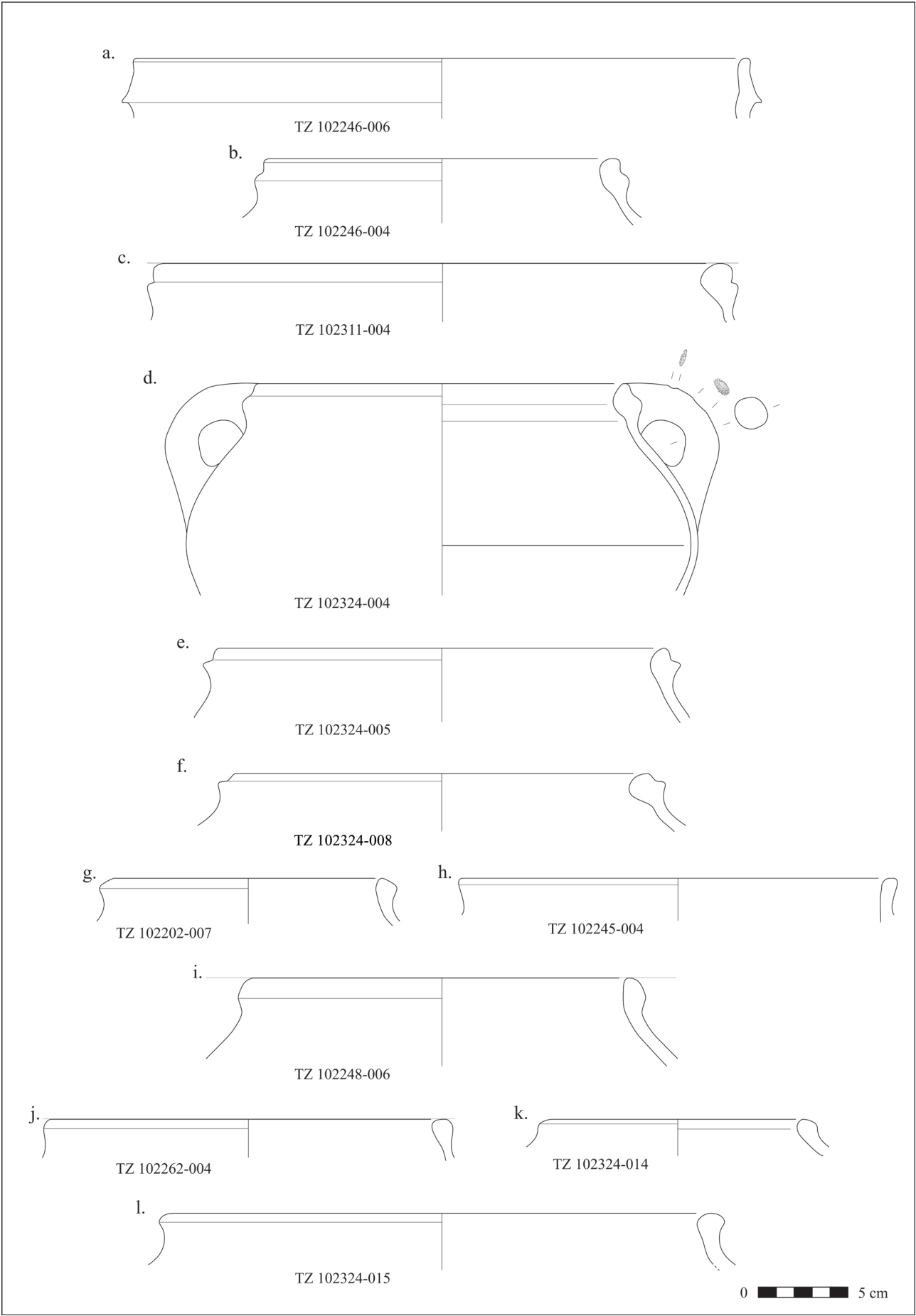


0 5 cm

*Cooking pots*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Type 2b</b>					
7.11a	TZ 102246-006	12083	Pot rim, straight, pointed edge under the rim, reddish-brown clay	Cooking ware	25
<b>Type 3a</b>					
7.11b	TZ 102246-004	12083	Pot rim, ridged, slightly inverted, light brown clay	Cooking ware	25
7.11c	TZ 102311-004	12165	Pot rim, round, ridged, slightly inverted, reddish-brown clay	Cooking ware	26
7.11d	TZ 102324-004	12164	Pot rim, ridged, slightly inverted, two handles, two fingerprint impressions on one handle, reddish-brown clay	Cooking ware	38
7.11e	TZ 102324-005	12164	Pot rim, ridged, straight, dark brown clay	Cooking ware	26
7.11f	TZ 102324-008	12164	Pot rim, round, ridged, slightly inverted, reddish-brown clay	Cooking ware	25
<b>Type 3b</b>					
7.11g	TZ 102202-007	12015	Pot rim, rectangular, slightly everted, dark brown clay	Cooking ware	25
7.11h	TZ 102245-004	12076	Pot rim, rectangular, straight, dark brown clay	Cooking ware	06
7.11i	TZ 102248-006	12082	Pot rim, round, straight, brown clay	Cooking ware	26
7.11j	TZ 102262-004	12113	Pot rim, round, slightly inverted, dark brown clay	Cooking ware	25
7.11k	TZ 102324-014	12164	Pot rim, round, inverted, brown clay	Cooking ware	25
7.11l	TZ 102324-015	12164	Pot rim, round, straight, light brown clay	Cooking ware	26

Pl. 7.11: Phase 3. Cooking pots, scale 1:3



*Cooking pots*

Plate	Find number	Locus	Description	Ware Type	Ware number
<b>Type 3d</b>					
7.12a	TZ 102298-004	12139	Pot rim, triangular, grooved, reddish-brown clay	Cooking ware	25

*Jars*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.12b	TZ 102202-004	12015	Slightly everted jar rim, externally thickened, beige clay, traces of slip on the rim	Common ware	09
7.12c	TZ 102248-005	12082	Straight jar rim, externally thickened, pinkish-beige clay	Common ware	09
7.12d	TZ 102289-003	12135	Straight jar rim, externally thickened, light red clay	Common ware	01
7.12e	TZ 102324-006	12164	Straight jar rim, externally thickened, pink clay	Common ware	31
7.12f	TZ 102298-005	12139	Jar rim, triangular, rolled over, and externally thickened, pointed ridge on the neck, greyish-beige clay	Common ware	18
7.12g	TZ 102311-003	12165	Straight jar rim, round and externally thickened, ridge on the short neck, grey clay	Common ware	30
7.12h	TZ 102202-002	12015	Inverted jar rim, triangular, externally thickened, beige clay	Common ware	28
7.12i	TZ 102324-010	12164	Flat base probably of a jar, pink clay	Storage ware	15

*Jugs*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.12j; Fig. 0.5	TZ 102289-002	12135	Decanter with strainer, incomplete, single handle, low ring base, the convex centre of which protrudes beyond outer ring, fine beige clay, red slip on the surface	Common ware	31

Plate 7.12: Phase 3. Krater (a), jars (b-h), jug (i), scale 1:3

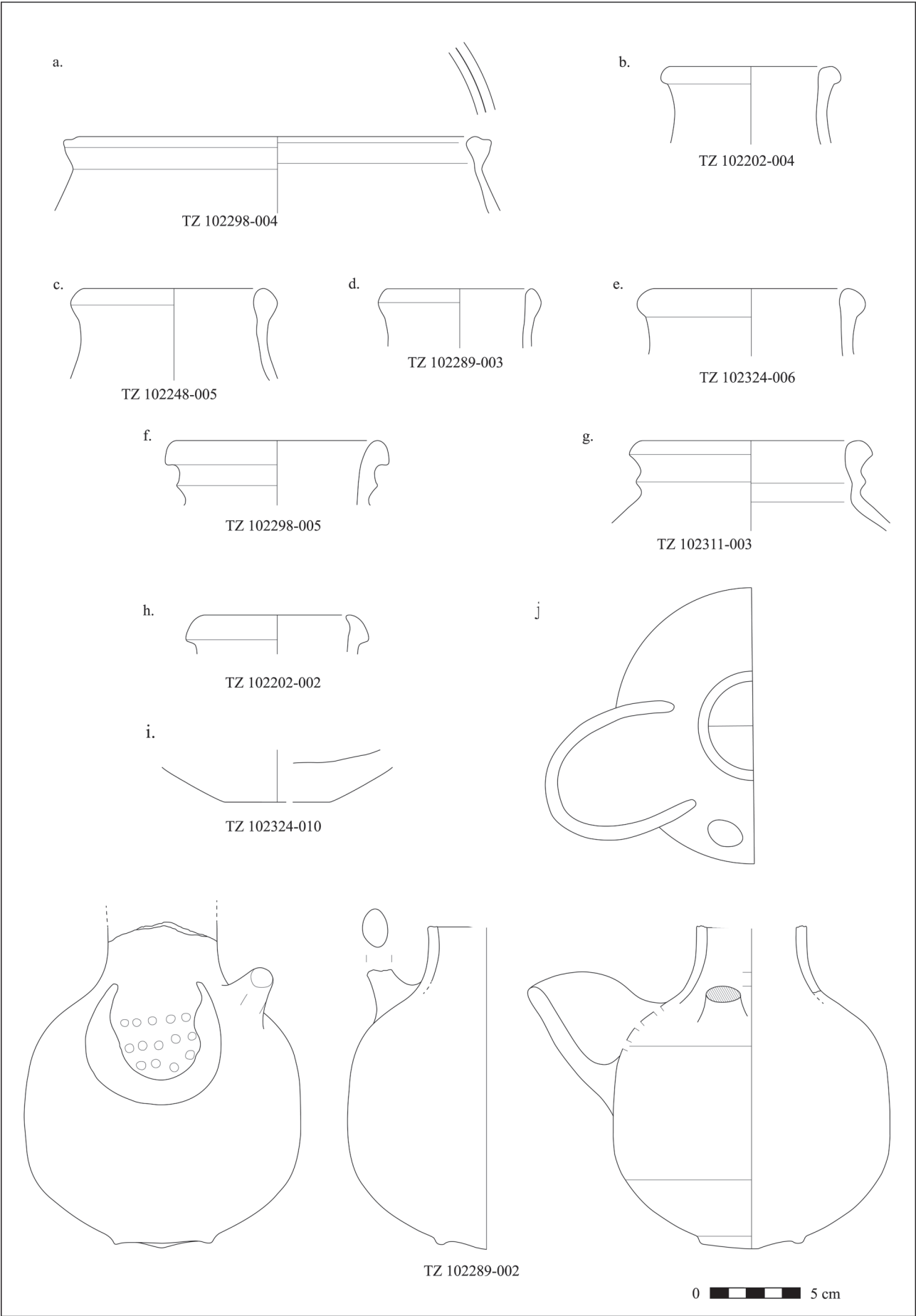


Plate	Find number	Locus	Description	Ware Type	Ware number
7.13a; <i>Fig. 0.5</i>	TZ 102298-002	12139	Decanter, rim is missing, single handle, low ring base with convex centre, thin parallel incised lines on the shoulder, greyish-brown clay	Common ware	01
7.13b	TZ 102246-002	12083	Incomplete ovoid juglet, single handle, curved base, vertical stroke burnishing on the body, fine light orange clay	Fine ware	01
7.13c	TZ 102245-002	12078	Upper part of a big jug, slightly everted rim, small ridge under the rim, single handle carries two horizontal deep incisions, beige clay	Common ware	30
7.13d	TZ 102248-004	12082	Ridged Kettle rim of flask or a decanter, black clay	Common ware	01
7.13e	TZ 102289-005	12135	Base of a jug, curved and narrow, beige clay	Common ware	---

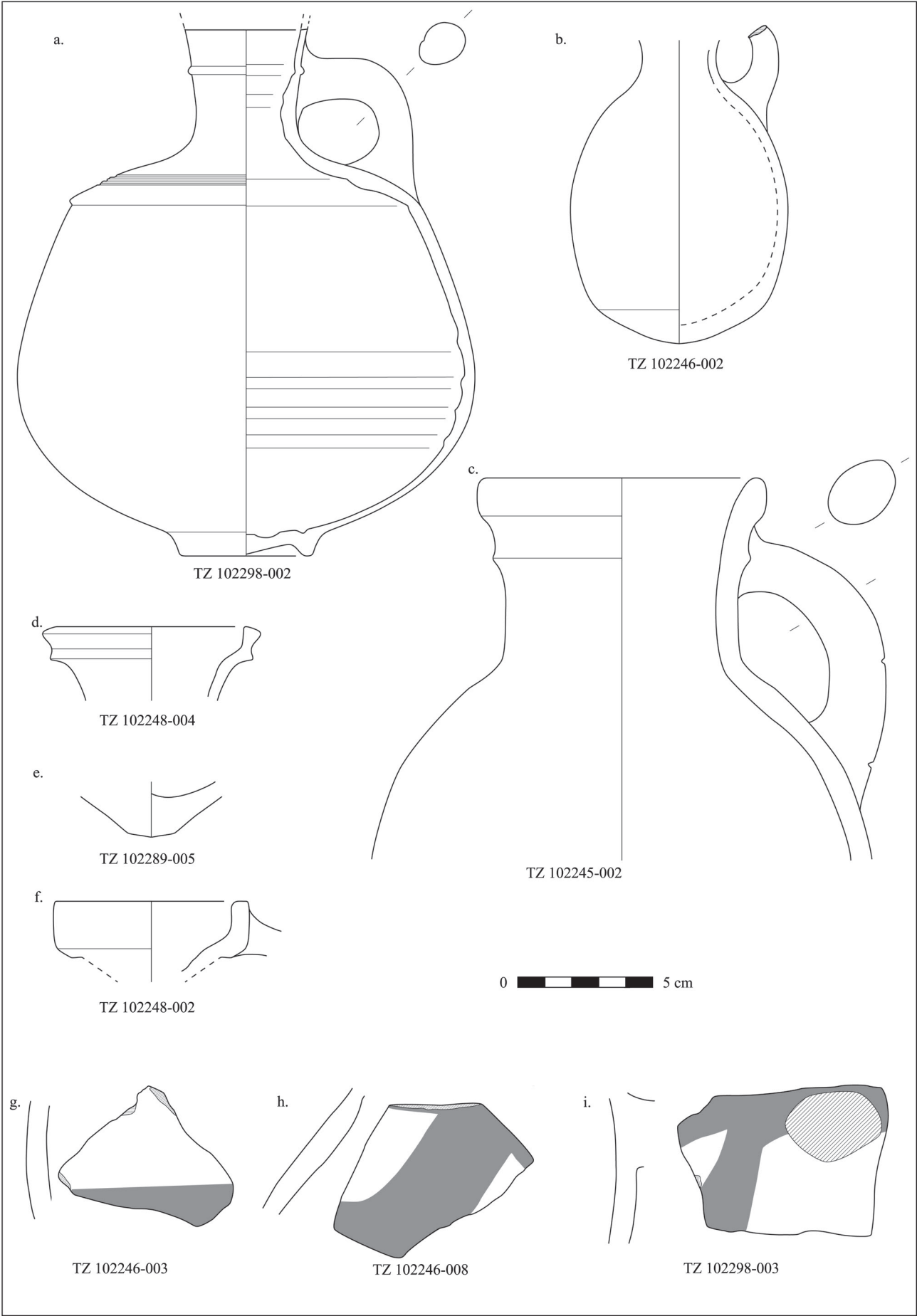
*Strainer*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.13f	TZ 102248-002	12082	Probably a strainer, straight rim with single handle, traces of holes in the centre of this object, pinkish-beige clay	Common ware	01

*Coloured fragments*

Plate	Find number	Locus	Description	Ware Type	Ware number
7.13g	TZ 102246-003	12083	Body fragment, decorated by thick oblique and horizontal band of reddish-brown, light brown clay	Common ware	29
7.13h	TZ 102246-008	12083	Body fragment, decorated by horizontal band of reddish-brown, beige clay	Common ware	30
7.13i	TZ 102298-003	12139	Shoulder fragment, broken single handle, light-brown clay, decorated with oblique brown bands	Common ware	30

Plate 7.13: Phase 3. Jugs (a-e); strainer ? (f); coloured fragments (h-i), scale 1:2



## 7.7. Catalogue of Hellenistic Pottery

by Bettina Springer-Ferazin

### 7.7.1. Building A, Phase 1

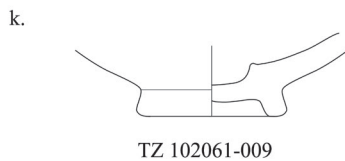
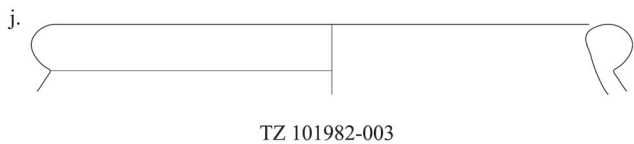
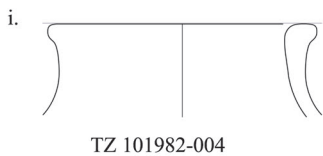
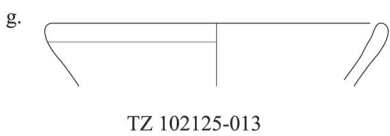
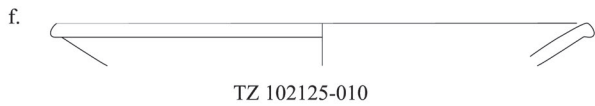
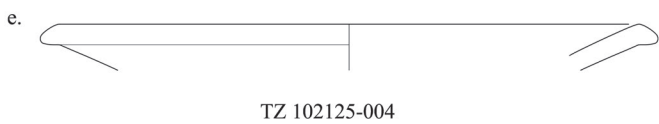
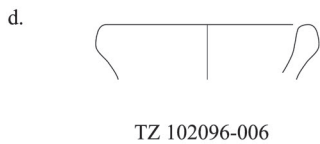
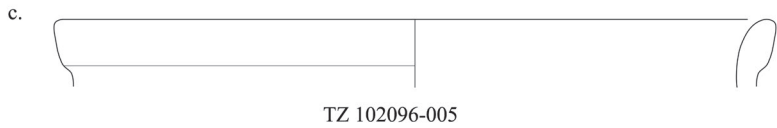
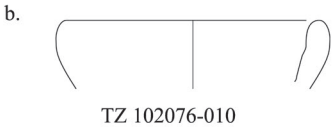
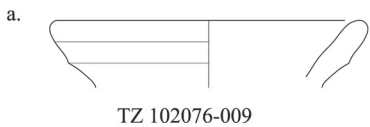
L11864: TZ 102076	<p>Total number of diagnostic fragments: 7 (Hellenistic: 2, Iron Age: 5)</p> <p>TZ 102076-009 (<i>Pl. 7.14a</i>): The shape of rim fragment is comparable to Hellenistic amphorae of the type Am2, found at Tall Zar'a (Kenkel 2012, Pl. 37, Group 7, Am2).</p> <p>TZ 102076-010 (<i>Pl. 7.14b</i>): The fragment belongs to a thick-walled bowl with rounded rim, a so-called Echinus bowl; Hellenistic comparisons can be found at Tall Zar'a (Kenkel 2012, Pl. 14, Group 6, Sa1.2, Sa1.3, Sa1.7).</p>
L11896: TZ 102096	<p>Total number of diagnostic fragments: 6 (Hellenistic: 2, Iron Age: 4)</p> <p>TZ 102096-005 (<i>Pl. 7.14c</i>): belongs to a vessel with a rather large opening (28 cm). The shape of the rim is comparable to Hellenistic amphorae from Tall Zar'a (Kenkel 2012, Pl. 37, Group 7, Am2).</p> <p>TZ 102096-006 (<i>Pl. 7.14d</i>): probably belonged to a medium-sized jug with red slip on its surface. Although no direct comparison was found, the fabric makes a Hellenistic date likely.</p>
L11899: TZ 102125	<p>Total number of diagnostic fragments: 20 (Hellenistic: 7, Iron Age: 12, Indeterminable: 1)</p> <p>TZ 102125-004 (<i>Pl. 7.14e</i>) and TZ 102125-010 (<i>Pl. 7.14f</i>): fragments of plates with everted wall and down-turned rim and relatively rounded lip.</p> <p>TZ 102125-004 (common ware) shows red slip on the inner surface and the rim, while TZ 102125-010 is a fine ware fragment with an even red slip. Plates of this type are referred to as local imitations of fish-plates (Sauer – Herr 2012, 209). They are Hellenistic and produced with different variations of the rim.<sup>33</sup></p> <p>TZ 102125-006: bowl with everted wall and round, simple rim; fabric seems Hellenistic; a similar bowl (also in diameter) was documented at Tall Zar'a (Kenkel 2012, Taf. 29, Group 1, Sü7).</p> <p>TZ 102125-013 (<i>Pl. 7.14g</i>): fragment (fine ware) with a small diameter is probably a cup; there is no surface treatment; Hellenistic comparisons can be found at Tell Hesban (Sauer – Herr 2012, 227, Fig. 3.13, 8).</p> <p>TZ 102125-007 and TZ 102125-003: belong to amphorae with round, slightly thickened rim. The fabrics and the shape are Hellenistic (Kenkel 2012, Pl. 38, Group 7, Am5.3).</p> <p>TZ 102125-011: fragment of a storage ware pithos with thickened, bulging rim. Dia. remarkably small (16 cm); rim form maybe comparable to Hellenistic pithos from Tall Zar'a (Kenkel 2012, Pl. 45, Group 9, Pi2).</p>

33 For TZ 102125-004, compare: Sauer – Herr 2012, Fig. 3.9, 3 or Fig. 3.11, 14; for TZ 102125-010: Kenkel 2012, Pl. 15, Group 7, Sa2.5.

## 7.7.2. Building A, Phase 2

L11727: TZ 101982	<p>Total number of diagnostic fragments: 3 (Hellenistic: 3)</p> <p>TZ 101982-002 (<i>Pl. 7.14h</i>): rim of cooking pot with outwardly bent rim; fabric group: JOP, therefore Hellenistic; comparisons: late 3<sup>rd</sup> to early 1<sup>st</sup> cent. BCE (Berlin 2015, Pl. 6.1.9, Fig. 11).</p> <p>TZ 101982-004 (<i>Pl. 7.14i</i>): rim of common ware jar with round lip and narrow neck; fabric seems Hellenistic; comparisons: late Hellenistic to early Roman vessel from Tall Zar'a (Kenkel 2012, Pl. 39, Group 7, Am10).</p> <p>TZ 101982-003 (<i>Pl. 7.14j</i>): rim of common ware jar with round, thickened lip and narrow, short neck; fabric seems Hellenistic; comparisons: Hellenistic to early Roman (Kenkel 2012, Pl. 38, Group 7, Am6.4a. Am6.4e).</p>
L11691 TZ 101924	<p>Total number of diagnostic fragments: 4 (Hellenistic: 2, Iron Age: 2)</p> <p>TZ 101924-004 and TZ 101924-005: Rim fragments of kitchen ware; fabric group: JOP, hence Hellenistic/Roman; shape of TZ 101924-004 is a cooking pot with handles; lip similar to cooking pots from Tall Zar'a (see Kenkel 2012, Pl. 24, Group 5, Kt2.1); for shape of TZ 101924-005 (cooking pot) compare Kenkel 2012, Pl. 24, Group 5, Kt1.</p>
L11854 TZ 102061	<p>Total number of diagnostic fragments: 8 (Hellenistic: 2, Iron Age: 5, Indeterminable: 1)</p> <p>TZ 102061-008: rim fragment of common ware bowl; Hellenistic; comparable to bowls from Tall Zar'a (Kenkel 2012, Pl. 29, Group 1, Sü9).</p> <p>TZ 102061-009 (<i>Pl. 7.14k</i>): base fragment of local saucer (see <i>Chap. 7.3.1</i>).</p>

Plate 7.14: Hellenistic pottery, Building A/1 (a-g); Building A/2 (h. i), scale 1:3



# 7.8. Appendix: Preliminary Identification of Iron Age Pottery Fabrics at Tall Zar‘a

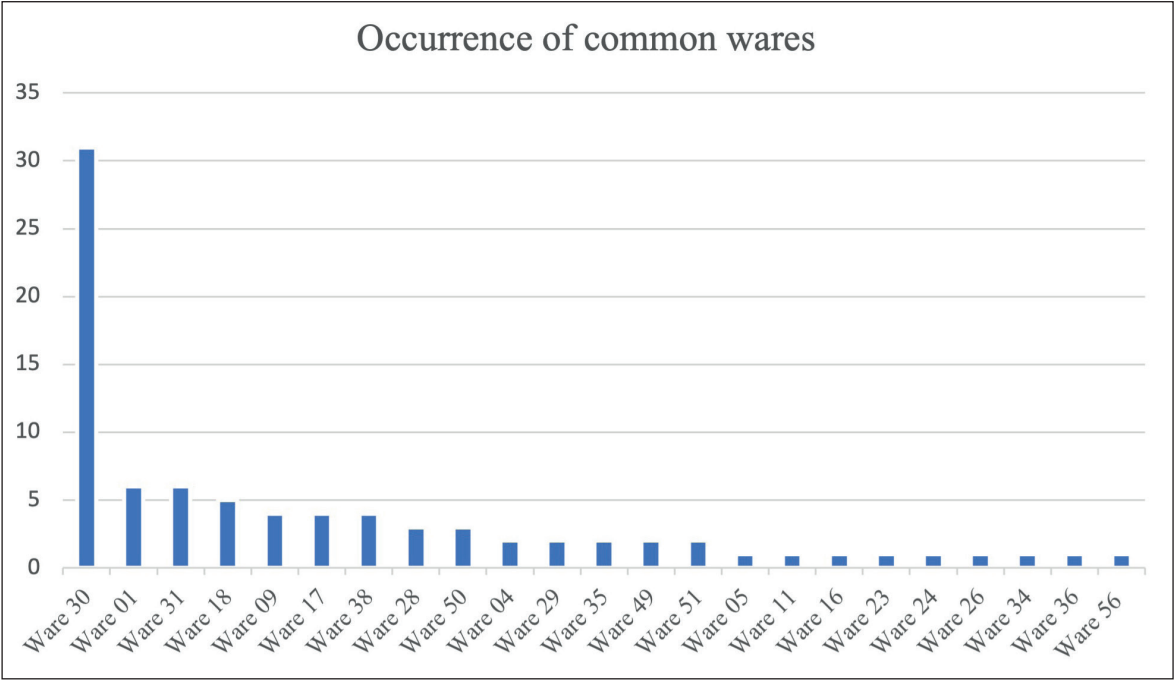
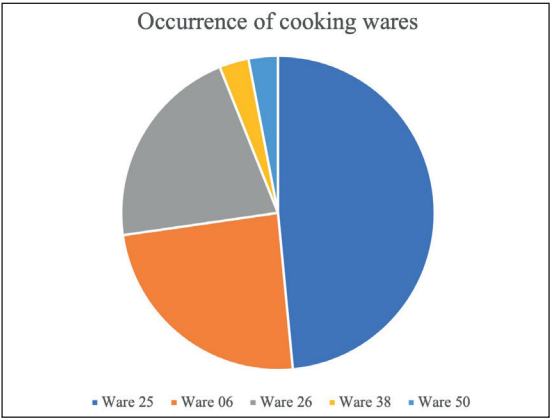
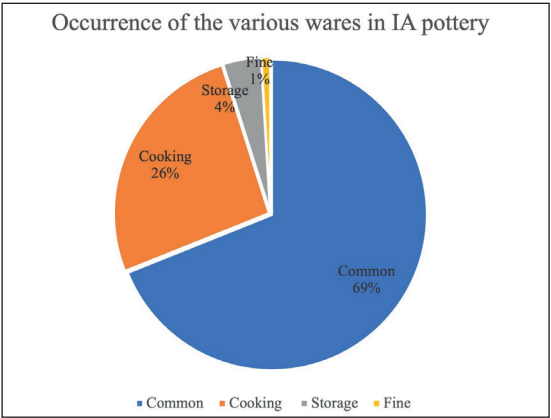
by Samar Shammās






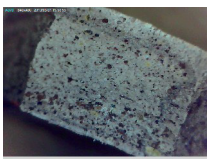



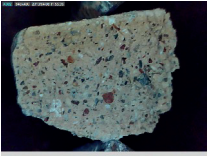
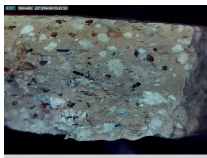










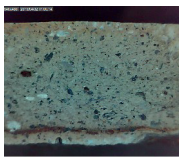

During the 2019 season, samples of the various fabrics were taken, mainly from non-diagnostic, but some diagnostic sherds, found in the 2018 and 2019 seasons, as well as from previously excavated stratified material from the Tall, which were labelled with the abbreviation: “Prev. Ex.” after the pottery find number.





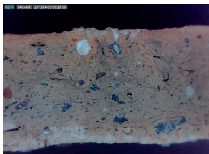


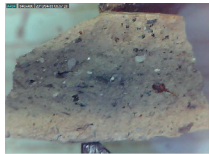



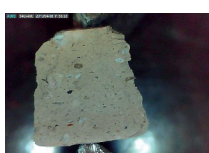


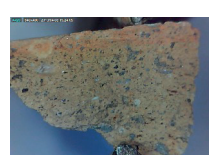
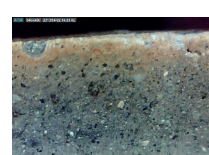

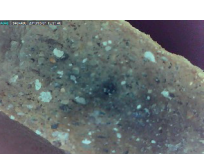



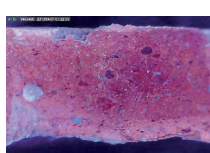


A fresh section was made of each sherd in order to understand the clay fabric and its temper. Photos of these sections were made using a handheld digital microscope (see below). The various wares



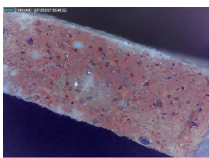

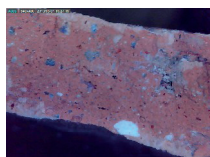

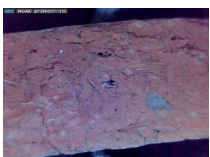



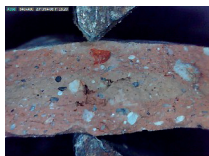
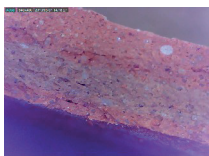

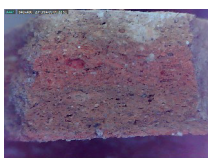
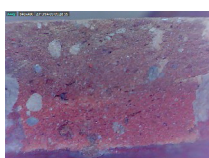



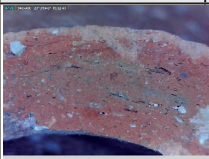






are categorized and classified in groups according to the texture of their clay, the shape and intensity of their temper, and the colour of the section.










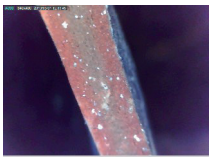
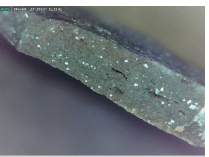
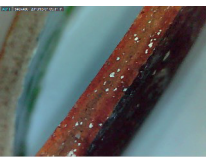
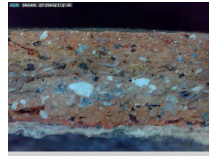
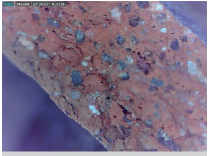
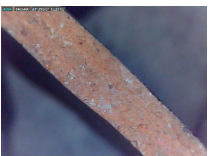



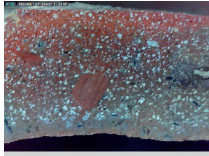





After observing the Iron Age pottery material from the 2018 and 2019 seasons, it was possible to determine that 69% of the diagnostic sherds belong to the group of common wares. Ware 30 seems to be the predominant fabric among the common ware vessels, whereas wares 25 and 06 are the most favoured for the cooking pots.

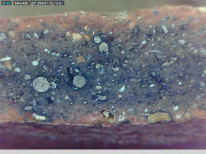
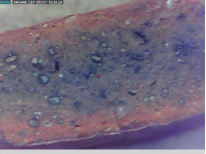



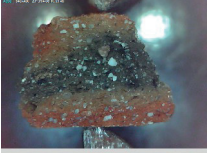


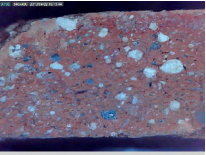





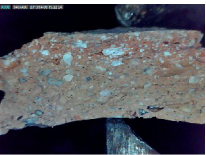

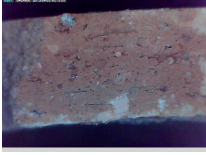

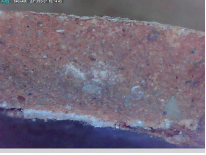







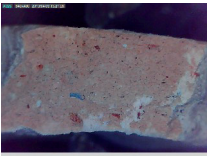





Beige and Light Brown Wares				
Ware 04 (Common)				
				
TZ 101997-g		TZ 101997-h		
Ware 09 (Common)				
				
TZ 101959-001-l	TZ 101997-1f	TZ 101997-f	TZ 101997-q	
Ware 15 (Storage)		Ware 24 (Storage)	Ware 17 (Common) finer than Ware 18	
				
TZ 113344-101866	TZ 101969-001-p	TZ 102000-f	TZ 4522-44 Prev. Ex.	
Ware 18 (common)				
				
TZ 101959-i	TZ 101969-001-i	TZ 101997-1i	TZ 6623-41 Prev. Ex.	
Ware 19 (Common)		Ware 51 (common) finer than Ware 23	Ware 23 (Common)	
				
TZ 2658-16 Prev. Ex.	TZ 101997-p	TZ 101997-1q	TZ 101997-t	
Ware 28 (Common)		Ware 29 (Common-Cooking)		
				
TZ 101997-1h	TZ 102003-d	TZ 101969-001-h	TZ 102003-c	TZ 3452-2 Prev. Ex.

Ware 30 (Common-Cooking)			
			
TZ 101959-001-e	TZ 101959-d	TZ 101959-g	TZ 101969-001-j
			
TZ 101969-001-k	TZ 101969-001-n	TZ 102065-a (cooking)	TZ 102066-b
			
TZ 101997-1d	TZ 101997-g	TZ 6103-3 Prev. Ex.	TZ 6111-4 Prev. Ex.
Ware 32 (Common)		Ware 39 (Common)	
			
TZ 101969-001-g	TZ 101969-001-o	TZ 5067-15 Prev. Ex.	TZ 102000-c
Ware 40 (Storage)		Ware 43 (Common)	
			
TZ 101959-c	TZ 101997-j	TZ 101959-001-n	TZ 101997-n
Reddish Clay Wares			
Ware 12 (Common, Reddish clay 1)		Ware 27 (Common-Storage)	
			
TZ 101959-001-a	TZ 101997-1k	TZ 101997-1l	TZ 101997-1

Ware 36 (Common, Reddish clay 2)		Ware 37 (Ware , Reddish clay 3)		
				
TZ 101959-001-f	TZ 101997-y	TZ 101997-o		
Ware 38 (Common-Cooking, Reddish clay 4)		Ware 47 (Common-Storage) coarser than Ware 38		
				
TZ 101959-001-g	TZ 101997-u	TZ 102000-a	TZ 101969-001-q	TZ 102066-a
Pinkish/Red and Beige Wares				
Ware 10 (Common)			Ware 13 (Common)	
				
TZ 101969-001-a	TZ 101997-1x	TZ 3408-14 Prev. Ex.	TZ 101997-m	
Ware 21 (common)				
				
TZ 101959-001-c	TZ 102069-a	TZ 102069-b	TZ 101997-1b	
Ware 16 (Common)		Ware 14 (Fine)	Ware 31 (Common)	
				
TZ 101959-001-b	TZ 101931-3	TZ 101924-3	TZ 101969-001-e	TZ 6623-63 Prev. Ex.
Ware 35 (Storage)	Ware 54 (Common)	Orange Gray Ware		
		Ware 42 (Common-Storage)		
				
TZ 101924-11691b	TZ 101997-1e	TZ 101959-f	TZ 101969-001-d	

Brownish-Gray Cooking Ware				
Ware 06 (Cooking)				
				
TZ 101997-1o	TZ 102000-b	TZ 4522-2 Prev. Ex.	TZ 113590-101866	
Mixed Wares				
Ware 01 (mixed)				
				
TZ 101921-7	TZ 101959-001-k	TZ 101959-a	TZ 101997-a	
				
TZ 101997-b	TZ 101997-c	TZ 101997-e	TZ 102003-b	
Ware 02 (Cooking)		Ware 03 (Fine)		
				
TZ 101969-001-f	TZ 102000-d	TZ 101997-d	TZ 102000-e	
Ware 05 (Common)				
				
TZ 101959-001-d	TZ 101959-001-i	TZ 101924-11691a		
Ware 07 (Common)		Ware 34 (Common) coarser than Ware 07		
				
TZ 101997-1m	TZ 101997-k	TZ 101997-1a	TZ 101997-1r	TZ 102003-a

Ware 08 (Storage)		Ware 11 (Fine)	Ware 20 (Common-Cooking)
			
TZ 101997-1t	TZ 101997-r	TZ 101924-11691c	TZ 101997-1j
Ware 22 (Common)	Ware 25 (Cooking)		Ware 50 (Common) close to Ware 25
			
TZ 101997-1p	TZ 2608-1 Prev. Ex.	TZ 6645-31 Prev. Ex.	TZ 2608-5 Prev. Ex.
Ware 26 (Common-Cooking)			
			
TZ 101969-001-c	TZ 101969-001-m	TZ 101997-w	TZ 101997-z
			
TZ 2789-16 Prev. Ex.	TZ 5098-4 Prev. Ex.	TZ 6845-32 Prev. Ex.	TZ 20124-37 Prev. Ex.
Ware 33 (Common)			
			
TZ 101959-001-h	TZ 101997-1u	TZ 101997-s	
Ware 44 (Common)	Ware 45 (Common)	Ware 46 (Common)	
			
TZ 101959-001-j	TZ 101959-h	TZ 101959-001-m	TZ 101959-b

Ware 48 (Common)			Ware 49
			
TZ 101959-j	TZ 101959-k	TZ 3313-1 (2) Prev. Ex.	TZ 4456-11 Prev. Ex.
Ware 52 (Common)	Ware 55 (Common-Storage)	Ware 56 (Common)	
			
TZ 101997-1c	TZ 101969-001-b	TZ 102066-c	

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## 8. POTTERY FROM TRENCH AU 128 (HELLENISTIC AND EARLY ROMAN PERIOD)

by Bettina Springer-Ferazin

### 8.1. Introduction

The Hellenistic and Roman pottery of Tall Zar'a has previously been studied intensively by Frauke Kenkel (Kenkel 2012) and this study is based on her publication. Comparisons were primarily drawn with the material presented by her in 2012, but also included material from other sites in Transjordan, Cisjordan and the Eastern Mediterranean.

The following study uses the differentiation between fabric groups and ware groups to describe the pottery. Fabric groups describe the quality of the burned clay with its distinct tempering (for fabric groups by Kenkel, see Kenkel 2012, 31–38, catalogue II–XIV, plates 65–66). Ware groups are used to determine the context in which the pottery was used; the following groups can be differentiated: 1) kitchen ware made of coarse fabric, used for the preparation of food and liquids; most of the shapes comprise cooking pots, bowl, casseroles and lids. 2) Common ware made of semi-coarse to fine-grained fabrics for use as tableware in everyday life and for storage purposes; usually not decorated; the most common shapes are medium- to large-sized bowls, jugs, jars and amphorae, of which most can be identified at Tall Zar'a as table amphorae and amphorae for local trade. 3) Fine ware made of semi-coarse to fine-grained fabrics for use as tableware on special occasions; usually glazed and/or decorated; the predominant shapes are small- to medium-sized bowls, plates and jugs.

Most fabrics are distinctive to a certain ware group, especially those which comprise kitchen ware of a particularly coarse fabric. But some (semi-coarse to fine-grained) fabric groups can occur among both common ware and fine ware (for example fabric groups S, F and L). The fabric groups defined by Kenkel 2012 (31–38, catalogue

II–XIV and pl. 65–66) were re-evaluated in the course of this study.<sup>34</sup> Some fabric groups defined by Kenkel were combined into new fabric groups, when a clear distinction between the different fabrics was not possible. This occurred for the fabric group “JOP”, which combines Kenkel’s groups J, O and P, which are used to describe three similar, medium-coarse fabrics from which brown to red kitchen ware is made.

The fabric groups are still being analysed. Therefore, the following text will only mention fabric groups occasionally, and mostly when the fabric group is distinctive for the Hellenistic and Roman periods. The fabric group JOP is significant for Hellenistic/Roman “kitchen ware” made of coarse fabric for cooking and storage, most of the shapes comprise cooking pots, bowls, casseroles and lids. The fabric group BSU, which is predominant among Hellenistic/Roman fine wares, is found mostly in small- to medium-sized fine ware; predominant shapes are bowls, plates and small jugs.

Among the ceramics, some pieces of Eastern Sigillata A, here called ESA were identified.<sup>35</sup> ESA is a type of fine ware pottery that occurs in the eastern Mediterranean from about the middle of the 2<sup>nd</sup> cent. BCE to the 2<sup>nd</sup> and 3<sup>rd</sup> cent. CE. The pottery is common in the 1<sup>st</sup> cent. BCE and the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE. The fabric, glaze and shapes of ESA are very distinct and, therefore, pieces of ESA pottery can be recognized easily. The fabric is very fine-grained, beige to pink and the surface is treated with an orange to red or brown glaze of high quality. Shapes are elaborate and can be described using the catalogue of shapes presented by Hayes in 1985. Numerous pieces of ESA were found at Tall Zar'a and ESA is one of the most common imports at Tall Zar'a (Kenkel 2012, 73).

34 I am indebted to Eva Strothenke-Koch for her support with regard to the re-evaluation of the ware groups.

35 For ESA in general see Hayes 1985; for ESA on Tall Zar'a see Kenkel 2012, 70–73.

The chronology applied here is based on Kenkel 2012 and Gitin 2015. Kenkel's classification is based on attribution to the Hellenistic, Hellenistic-Roman and Roman periods (Kenkel 2012, 15–20 and catalogue XV–CIV). Gitin 2015 gives exact dates for his chronology, such as Persian (539–332 BCE), early Hellenistic (332–167 BCE), late Hellenistic/Hasmonean (167–37 BCE). The following study will follow Kenkel's classification with the addition of the group "early Hellenistic" for the last third of the 4<sup>th</sup> cent. BCE and early 2<sup>nd</sup> cent. BCE and the group "early Roman" which falls in the time-frame of the late 1<sup>st</sup> cent. BCE and the early 1<sup>st</sup> cent. CE. Additionally, when comparisons are given, centuries will be named to help to evaluate the chronology.

It should be noted that the attribution of sherds to a particular period is sometimes ambiguous, as certain wares and forms have long running times. In addition, there is the general problem that Persian pottery has been less extensively studied quantitatively than Hellenistic and Roman pottery, which makes the unequivocal identification of Persian

pottery difficult, especially the white-beige amphorae made of fabric group FL, as for example TZ 102129-004 (*Chap. 9*). Therefore, in this chapter, as well as in *Chap. 7*, the pottery of the Persian period is discussed.

A few pieces belong to the Iron Age and were identified with the help of Samar Shammās. The description of the pieces varies in detail and is linked to different factors. Individual pieces of Iron Age pottery that are particularly significant have been discussed in more detail in *Chap. 7*; for less distinct pieces, only a reference or the short labelling as Iron Age has been included here.

In the following, the material is presented by locus and find number (TZ-number). Not every piece of pottery found within a locus is mentioned below. Pieces without clear dating, shape or comparison have not been included. The extension numbers are only mentioned starting from 002. Also, the total number of diagnostic fragments found within a locus is given to be able to evaluate the quantitative significance of the dated pottery.

## 8.2. Catalogue

L11516: TZ 101801 and TZ 101814	<p>Total number of diagnostic fragments: 20  Undiagnostic fragments: 40 (TZ 101814) and 177 (TZ 101801)</p> <p>TZ 101801-002: rim fragment of common ware vessel, rather thick-walled, with slightly outwardly bent rim and thickened, round lip; shape: big bowl (dia. 30 cm); Hellenistic/Roman, see Kenkel 2012, Pl. 29, Group 1, Sü6.</p> <p>TZ 101801-004 (<i>Pl. 8.1a</i>): rim fragment of common ware amphora with outwardly bent, oval thickened rim and round lip; Hellenistic/Roman, see Kenkel 2012, Pl. 37, Group 7, Am2.</p> <p>TZ 101801-005 (<i>Pl. 8.1b</i>): rim fragment of fine ware vessel; shape: juglet (dia. 3.6 cm) with funnel-shaped rim; surface: red, dull glaze on the outside and about 1 cm from the rim on the inside; comparisons can be found among Hellenistic shapes as well as in the Iron Age and Persian period, see Kenkel 2012, Pl. 48, Group 3, Pk1. Pk2; Berlin 2015, Pl. 6.1.18, Fig. 12 (2<sup>nd</sup> and early 1<sup>st</sup> cent. BCE); Sauer – Herr 2012, 200, Fig. 3.7. 10).</p> <p>TZ 101801-008 (<i>Pl. 8.1c</i>): rim fragment of common ware vessel; shape most probably lid with round, simple lip; Hellenistic/Roman, see Kenkel 2012, Pl. 47, Group 10, De2.</p> <p>TZ 101801-009 (<i>Pl. 8.1d</i>): rim fragment of common ware amphora with straight neck, thickened rim and a prominent ridge on the neck; Hellenistic/Roman; the ridge indicates a date in the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE (Kenkel 2012, 228). Comparisons for the shape, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p> <p>TZ 101801-011, TZ 101801-017 (<i>Pl. 8.1e.f</i>): rim fragment of cooking pot with rather straight neck and round lip (in case of TZ 101801-017 on the outside with small bulge); fabric group: JOP, hence Hellenistic/Roman; for TZ 101801-011: shape can be dated to 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE (see Kenkel 2012, Pl. 24, Group 5, Kt3. Kt5. Kt7); for TZ 101801-017 a somewhat earlier date is likely.</p> <p>TZ 101801-013 (<i>Pl. 8.1g</i>): rim fragment of common ware vessel, made of Grey Ware; shape: jar/jug with big diameter (30 cm). For comparison see vessel from Tel Kedesh (Stone 2012, Pl. 4.29, Fig. 1-3), which dates between the 3<sup>rd</sup> to mid- 2<sup>nd</sup> cent. BCE (Stone 2012, 243).</p> <p>TZ 101801-014 (<i>Pl. 8.1h</i>): rim fragment of common ware vessel; shape: lid with round lip, on the inside thickened; date: Hellenistic/Roman, see Kenkel 2012, Pl. 14, Group 10, De3.2.</p> <p>TZ 101801-015 (<i>Pl. 8.1i</i>): rim fragment of fine ware jug with neck bulge and spout; Hellenistic; probably dates in the 1<sup>st</sup> cent. CE (Berlin 2006, 57) Various comparisons can be found at Tall Zar'a and Gamla. (Kenkel 2012, Pl. 19, Group 29, Tg8.5; Berlin 2006, 59, Pl. 2.30, Fig. 12-14. 16).</p> <p>TZ 101801-016: body fragment of common ware amphora with straight neck and a prominent ridge on the neck. The ridge on the amphora indicates a date in the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE (Kenkel 2012, 228). Comparisons for the shape, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p> <p>TZ 101814-002: rim fragment of common ware amphora with outwardly bent, oval, thickened rim and round lip; Hellenistic/Roman, see Kenkel 2012, Pl. 37, Group 7, Am2.</p>
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	<p>TZ 101814-004: rim fragment of cooking pot with profiled lip; belongs to typological group of cooking pots with 2-fold/3-fold profiled lip, partly triangular thickened; different variations of this shape occur among the TZ corpus; fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012 Pl. 24, Group 5, Kt9.</p> <p>TZ 112875, TZ 112876: two body fragments of a fine ware vessel with relief decoration; probably moulded; both pieced belong to the same vessel; fabric group: BSU; surface: without treatment; decoration: relief palmette leaves, positioned on the shoulder of the vessel; shape of the vessel: juglet; shape and general look of the decoration can be compared to a 2<sup>nd</sup> cent. BCE vessel from 'Akko, but various differences must be kept in mind (the position of the decoration, the fabric group: Ephesian gray ware; the surface treatment: black slip) (Berlin – Stone 2016, 171, Fig. 9.15.17).</p>
L11517: TZ 101802	<p>Total number of diagnostic fragments: 14 Undiagnostic fragments: 211</p> <p>TZ 101802-002 and TZ 101802-013 (<i>Pl. 8.1j. k</i>): rim fragment of common ware amphora with straight neck, triangular thickened rim, which is slightly overhanging, and a prominent ridge on the neck. Common shape at TZ; Hellenistic/Roman; the ridge indicates a date in the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE (Kenkel 2012, 228). Comparisons for the shape, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p> <p>TZ 101802-003 (<i>Pl. 8.1l</i>): rim fragment of common ware vessel; shape: jug or jar with outwardly bent, short rim and overhanging lip; somewhat comparable to Kenkel 2012, Pl. 33, Group 5, Kru6 (probably early Roman); also: Sauer – Herr 2012, Pl. 3.19, Fig. 6 (early Roman II–III).</p> <p>TZ 101802-006 (<i>Pl. 8.1m</i>): rim fragment of fine ware plate with outwardly bent rim and down-turned lip (fish-plate); fabric group: BSU; surface: inside and outside red-brown glaze, dull, thick; comparable finds from Tall Zar'a and Tell Hesban; date: 2<sup>nd</sup>–1<sup>st</sup> cent. BCE; see Kenkel 2012, Pl. 15, Group 7, Sa2.6 or Sauer – Herr 2012, Pl. 3.19, Fig. 6 (early Roman II–III).</p> <p>TZ 101802-007: body fragment, partially glazed; outside ribbed; fabric group: BSU, hence probably Hellenistic.</p> <p>TZ 101802-010 (<i>Pl. 8.1n</i>), TZ 101802-008, TZ 101802-011: rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman. For date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>TZ 101802-012: rim fragment of common ware bowl with round, simple lip and bent walls (Wandknick); surface: inside: beige-orange, burnished, outside: burnished until about 2 cm under the lip; Iron Age date due to burnished surface treatment.</p> <p>TZ 101802-014 (<i>Pl. 8.1o</i>): rim fragment of amphora with ribbed outside walls and angular thickened rim, retracted on the inside; documented previously on Tall Zar'a and dated to the late 3<sup>rd</sup> to early 4<sup>th</sup> cent. CE (Kenkel 2012, 210); for shape, see Kenkel 2012, Pl. 34, Group 5, Kru 12.3.</p> <p>TZ 101802-015 (<i>Pl. 8.1p</i>): body fragment of Grey Ware vessel with black, satin-glossy glaze (on the outside only); the state of preservation of the glaze varies and suggests that a painted layer was added on top of the glaze. The black glaze and additional painted layer suggest that</p>

	the piece belongs to the so-called west-slope-ware with white painted slip-decoration; pottery of this type is of similar date to ESA, starting from the middle of the 2 <sup>nd</sup> cent. BCE until 3 <sup>rd</sup> quarter of the 1 <sup>st</sup> cent. BCE (Kenkel 2012, 93); only a few pieces have been identified at Tall Zar'a and the nearby city of Gadara (Kenkel 2012, Pl. 7, Group 3, Was1; Konrad 2013, 123, Pl. 7, Fig. G1. H1).
L11519: TZ 101815	<p>Total number of diagnostic fragments: 19 Undiagnostic fragments: 224</p> <p>TZ 101815-002 (<i>Pl. 8.1g</i>): rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold profiled lip, sometimes triangularly thickened; different variations of this shape appear; probably dates last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3).</p> <p>TZ 101815-003: rim fragment of kitchen ware cooking pot with slightly oblique neck, globular body and cover fold; fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 25, Group 5, Kt16 (or Pl. 27, Group 6, Kok1).</p> <p>TZ 101815-004 (<i>Pl. 8.1r</i>), TZ 101815-006, TZ 101815-010: various rim fragments of common ware amphorae with straight neck; Hellenistic/Roman; comparisons can be found in the material from Tall Zar'a presented by Kenkel 2012: TZ 101815-004 (Kenkel 2012, Pl. 41, Group 7, Am23.1a); TZ 101815-006 (Kenkel 2012, Pl. 41, Group 7, Am23.2b); TZ 101815-010 (Kenkel 2012, Pl. 41, Group 7, Am23.2a).</p> <p>TZ 101815-007, TZ 101815-011, TZ 101815-005 (<i>Pl. 8.2a</i>): various rim fragments of common ware amphorae with triangular thickened rim; Hellenistic/Roman; comparisons can be found in the material from Tall Zar'a Kenkel 2012: TZ 101815-007 (Kenkel 2012, Pl. 42, Group 7, Am23.3); TZ 101815-011 (Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.4); TZ 101815-005 (Kenkel 2012, Pl. 42, Group 7, Am23.5e).</p> <p>TZ 101815-008 (<i>Pl. 8.2b</i>): rim fragment of common ware pithos with somewhat triangular thickened rim and retracted/drawn in neck; Hellenistic, see Kenkel 2012, Pl. 45, Group 9, Pi3.</p> <p>TZ 101815-009 (<i>Pl. 8.2c</i>): rim fragment of common ware amphora with outwardly bent, oval thickened rim and round lip; Hellenistic/Roman, see Kenkel 2012, Pl. 37, Group 7, Am2.</p> <p>TZ 101815-012 (<i>Pl. 8.2d</i>): rim fragment of common ware bowl with thickened, edgy rim and offset body; comparable pieces for the shape can be found in the Persian and Byzantine period; however, the fabric suggests a date in Persian/Hellenistic times (Stone 2012, Pl. 2.9, Fig. 4, second row, Figure 1; see also: Kenkel 2012, Pl. 22, Group 3, Kas16).</p> <p>TZ 101815-016 (<i>Pl. 8.2e</i>): base fragment of common ware bowl or cup with foot ring; fabric group: BSU, hence Hellenistic; for comparisons of shapes from Tall Zar'a see Kenkel 2012, Pl. 17, Group 20, Sa15.11-12.</p> <p>TZ 101815-017 (<i>Pl. 8.2f</i>): rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; for date (1<sup>st</sup>-4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>TZ 101815-018: rim fragment of common ware amphora with cover fold; rim is simple and rounded, walls are straight; Hellenistic/Roman (compare: Kenkel 2012, Pl. 39, Group 7, Am8.1).</p>

L11522: TZ 101821 and TZ 101841	<p>Total number of diagnostic fragments: 9 Undiagnostic fragments: 53 (TZ 101821) and 64 (TZ 101841)</p> <p>TZ 101821-002 (<i>Pl. 8.2g</i>): rim fragment of bowl with outwardly turned, wide rim, (bowl with angular bent rim and protruding lip); for comparison see Kenkel 2012, Pl. 15, Group 10, Sa5: date is 3<sup>rd</sup> cent. BCE to 3<sup>rd</sup> cent. CE.</p> <p>TZ 101821-003: rim fragment of Iron Age bowl; comparable pieces come from Southern Palestine (Amiran 1969, 51, Pl. 11, Fig. 2. 53, Pl. 12, Fig. 4 as well as Gitin 2015, 149, Pl. 2.2.1, Fig. 30).</p> <p>TZ 101821-004 (<i>Pl. 8.2h</i>): body fragment of fine ware vessel with high-quality, red, satin-glossy glaze both inside and outside; shape: vessel with carination; maybe a jug; fabric group: BSU; maybe belongs to ESA (date of ESA on Tall Zar'a: 2<sup>nd</sup> half 2<sup>nd</sup> cent. BCE to end of 1<sup>st</sup> cent. CE) (Kenkel 2012, 72).</p> <p>TZ 101821-005 (<i>Pl. 8.2i</i>): rim fragment of fine ware vessel; bowl with bent walls (Wandknick); fabric group: BSU; surface: thick, red-orange, satin-glossy glaze on the in- and outside; maybe ESA-bowl; shape can be dated Hellenistic/Roman (1<sup>st</sup> cent. BCE and 1<sup>st</sup> cent. CE) (Kenkel 2012, Pl. 10, Group 7, ETS9.2; also see Konrad 2013, Pl. 11, Fig. 4).</p> <p>TZ 101821-006 (<i>Pl. 8.2j</i>): body fragment of a fine ware vessel with relief decoration; fabric group: BSU; surface inside and outside: thick, high-quality, red glaze; decoration: convex, curved lines; shape cannot be determined; fragment may belong to Hellenistic relief bowls; for relief bowls from Tall Zar'a, see Kenkel 2012, Pl. 7, Group 4; date: 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE.</p> <p>TZ 101841-002: rim fragment of common ware vessel (bowl) with round, simple lip; surface: outside: beige-orange, burnished, inside: burnished until about 1 cm under the lip; Iron Age.</p> <p>TZ 101841-003 (<i>Pl. 8.2k</i>): rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, triangular thickened; different variations of this shape appear; probably dates to the last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE.</p> <p>TZ 101841-004 (<i>Pl. 8.2l</i>): rim fragment of common ware vessel, rather thick-walled, with slightly outwardly bent rim and thickened lip; shape: big bowl (dia. 22 cm); Hellenistic/Roman, see Kenkel 2012, Pl. 29, Group 1, Sü10.</p> <p>TZ 101841-005 (<i>Pl. 8.2m</i>): rim fragment of kitchen ware with rather straight neck and round lip, on the outside slightly thickened; shape can be dated 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE, see Kenkel 2012, Pl. 24, Group 5, Kt3. Kt5. Kt7.</p>
L11523: TZ 101807	<p>Total number of diagnostic fragments: 4 Undiagnostic fragments: 15</p> <p>TZ 101807-002 (<i>Pl. 8.2n</i>): rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; for date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>TZ 101807-003 (<i>Pl. 8.2o</i>): rim fragment of kitchen ware cooking pot with outwardly bent rim and cover fold; shape similar to casseroles from Tall Zar'a (Kenkel 2012, Pl. 21, Group 3, Kas1-6); maybe early Hellenistic or even Persian.</p> <p>TZ 101807-005 (<i>Pl. 8.2p</i>): rim fragment of common ware pithos with somewhat triangular thickened rim and retracted neck; Hellenistic, see Kenkel 2012, Pl. 45, Group 9, Pi3.</p>

<p>L11552: TZ 101831</p>	<p>Total number of diagnostic fragments: 8 Undiagnostic fragments. 99</p> <p>TZ 101831-002 (<i>Pl. 8.2g</i>): rim fragment of common ware jar/pithos with narrow hole-like mouth and slightly thickened lip; very long tradition of the shape (Hellenistic to Byzantine), see Kenkel 2012, Pl. 45, Group 9, Pi4 and Pi5.</p> <p>TZ 101831-003 (<i>Pl. 8.2r</i>): rim fragment of amphora with ribbed outside walls and angular thickened rim, on the inside retracted; comparable objects come from Tall Zar'a, and were attributed to the late 3<sup>rd</sup> to early 4<sup>th</sup> cent. CE (Kenkel 2012, 210); for shape, see Kenkel 2012, Pl. 34, Group 5, Kru 12.2.</p> <p>TZ 101831-004: rim fragment of common ware amphora with thickened rim and round lip; Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 38, Group 7, Am6; the shape also occurs among Persian pottery from Tel Kedesh (Stone 2012, Fig. 2.3. 3-4).</p> <p>TZ 101831-006, TZ 101831-009: rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, sometimes triangularly thickened; different variations of this shape appear; probably dates last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3). Very similar is fragment TZ 101831-005 (<i>Pl. 8.2s</i>); fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 24, Group 5, Kt12.</p> <p>TZ 101831-007: rim fragment of kitchen ware cooking pot with slightly oblique neck, globular body and cover fold; fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 25, Group 5, Kt16 (or Pl. 27, Group 6, Kok1).</p> <p>TZ 101831-008 (<i>Pl. 8.2t</i>): rim fragment of thin-walled cooking pot with slightly inwardly curved walls and simple, round lip; fabric group: JOP, hence Hellenistic/Roman; shape dates to 3<sup>rd</sup> cent. BCE to 1<sup>st</sup> cent. CE; see Kenkel 2012, Pl. 24, Group 5, Kt8.</p>
<p>L11554: TZ 101833</p>	<p>Total number of diagnostic fragments: 15 Undiagnostic fragments: 306</p> <p>TZ 101833-002 (<i>Pl. 8.3a</i>): rim fragment of fine ware plate with outwardly bent rim and down-turned lip (fish-plate); fabric group: BSU; surface: inside and outside orange-red glaze, dull, thick; comparable pieces come from Tall Zar'a and Tell Hesban and date: 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE (Kenkel 2012, Pl. 15, Group 7, Sa2.6; Sauer – Herr 2012, Pl. 3, 11).</p> <p>TZ 101833-003, TZ 101833-015: rim fragments of kitchen ware with two-times/2-fold bulged rim (one bulge on the lip/thickened lip and another bulge a little lower, on the neck); the shape is typical for Iron Age and can be compared to cooking pots from Tall Zar'a (Schwermer 2015, KtEz2, 50-69; Vieweger-Häser 2017, 107, Pl. 2.6); the shape of the pots most likely continues into the Persian and Hellenistic period at Tall Zar'a.</p> <p>TZ 101833-004 (<i>Pl. 8.3b</i>): rim fragment of cooking pot with two-times bulged rim; the shape and fabric are typical for the Iron Age period; for comparison of the shape, see Schwermer 2015, KtEz5a, 81, Fig. 1.3.4.7.</p> <p>TZ 101833-007 (<i>Pl. 8.3c</i>): rim fragment of common ware jar/pithos with narrow, hole-like mouth and thickened lip; long tradition of the shape (Hellenistic to Byzantine), see Kenkel 2012, Pl. 45, Group 9, Pi4 and Pi5.</p> <p>TZ 101833-008 (<i>Pl. 8.3d</i>): rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, partly triangular thickened; probably dates to last quarter</p>

	<p>of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3).</p> <p>TZ 101833-009 (<i>Pl. 8.3e</i>): rim fragment of kitchen ware with rather straight neck and round lip; fabric group: JOP, hence Hellenistic/Roman; shape can be dated to 1<sup>st</sup> cent. BCE to 1<sup>st</sup> cent. CE, see Kenkel 2012, Pl. 24, Group 5, Kt7.1.</p> <p>TZ 101833-010 (<i>Pl. 8.3f</i>): rim fragment of cooking pot with cover fold and outwardly bent rim; shape: casserole; comparison: Kenkel 2012, Pl. 21, Group 3, Kas1. Kas2; Berlin 2006, 42, Fig. 2.16.11. 43, Fig. 2.17.15-16.</p> <p>TZ 101833-011: rim fragment of thin-walled cooking pot with slightly inwardly curved walls and simple, round lip; fabric group: JOP, hence Hellenistic/Roman; shape dates to 3<sup>rd</sup> cent. BCE to 1<sup>st</sup> cent. CE; see Kenkel 2012, Pl. 24, Group 5, Kt8.</p>
L11561: TZ 101846	<p>Total number of diagnostic fragments: 29 Undiagnostic fragments: 628</p> <p>TZ 101846-004 (<i>Pl. 8.3g</i>), TZ 101846-007, TZ 101846-008 (<i>Pl. 8.3h</i>): rim fragments of amphorae with ribbed outside walls and angular thickened rim, retracted on the inside; documented on Tall Zar'a before and dated to the late 3<sup>rd</sup> to early 4<sup>th</sup> c. CE (Kenkel 2012, 210); for shape, see Kenkel 2012, Pl. 34, Group 5, Kru12.2.</p> <p>TZ 101846-006: rim fragment of common ware amphora with triangular thickened rim; Hellenistic/Roman, see Kenkel 2012, Pl. 42, Group 7, Am23.5c 2012.</p> <p>TZ 101846-009: rim fragment of common ware amphora with straight neck, Hellenistic/Roman; for comparisons from Tall Zar'a, see Kenkel 2012, Pl. 41, Group 7, Am23.1a.</p> <p>TZ 101846-013, TZ 101846-015: rim fragments of common ware vessels; shape: similar to Iron Age cooking pots with bulging rim, as found at Tall Zar'a (Schwermer 2015, KtEz2b.4, 59-60).</p> <p>TZ 101846-017 (<i>Pl. 8.3i</i>): rim fragment of fine ware bowl with curved walls and round lip (Hellenistic Echinus-bowl); brown to red-brown glaze both inside and outside; date: 3<sup>rd</sup>–1<sup>st</sup> cent. BCE; for comparisons, see Kenkel 2012, Pl. 14, Group 6, Sa1.8. Sa1.15.</p> <p>TZ 101846-018 (<i>Pl. 8.3j</i>): rim fragment of common ware amphora with thickened rim and round lip; Hellenistic/Roman; for shape, see Kenkel 2012, Am6; with regard to the shape a date in the Persian period may also be possible (see Stone 2012, Fig. 2.3. 3-4).</p> <p>TZ 101846-019 (<i>Pl. 8.3k</i>): rim fragment of common ware vessel; shape: most probably lid with round, simple lip; Hellenistic to Roman; for comparisons, see Kenkel 2012, Pl. 47, Group 10, De2.</p> <p>TZ 101846-020: rim fragment of common ware vessel, rather thick-walled, with slightly outwardly bent rim and thickened, round lip; shape: big bowl (dia. 28 cm); date: Hellenistic/Roman, see Kenkel 2012, Pl. 29, Group 1, Sü6; Sü10.</p> <p>TZ 101846-021 (<i>Pl. 8.3l</i>): base fragment of fine ware vessel with profiled stand ring; surface: thick, high-quality, red glaze; sharp edges and the surface treatment suggest ESA; fabric group: BSU; date of ESA: 180 BCE to 70 CE; especially common in 1<sup>st</sup> cent. BCE and 1<sup>st</sup> cent. CE; compare: Kenkel 2012, Pl. 9, Group 7: ESA, ETS1.2; Konrad 2013, Pl. 11, Fig. 12.</p>

	<p>TZ 101846-022 (<i>Pl. 8.3m</i>): rim fragment of fine ware vessel; bowl with bent walls (Wandknick) and incised decoration (Kerbdekor); fabric group: BSU; surface: thick, red-orange, satin-glossy glaze both inside and outside; ESA-bowl; somewhat similar vessel can be dated 80 BCE to 50 CE (Kenkel 2012, Pl. 10, Group 7, ETS9.2; also see Konrad 2013, Pl. 11, Fig. 4).</p> <p>TZ 101846-024: rim fragment of common ware jar/pithos with narrow mouth and thickened lip; this form has a long tradition and runs from the Hellenistic to Byzantine period, see Kenkel 2012, Pl. 45, Group 9, Pi4 and Pi5.</p> <p>TZ 101846-025 (<i>Pl. 8.3n</i>): rim fragment of common ware vessel; shape: jug or jar with outwardly curved, short rim and angular thickened lip; comparable to pieces from Tall Zar'a (Kenkel 2012, Pl. 33, Group 5, Kru6) which date to the Hellenistic/early Roman period.</p> <p>TZ 101846-026 (<i>Pl. 8.3o</i>): rim fragment of kitchen ware cooking pot with outwardly bent rim and cover fold; fabric group: JOP, hence Hellenistic/Roman, 2<sup>nd</sup> cent. BCE to 2<sup>nd</sup> cent. CE; for comparable shapes from Tall Zar'a, see Kenkel 2012, Pl. 21, Group 3, Kas1–6.</p> <p>TZ 101846-029, TZ 101846-035 (<i>Pl. 8.3p. q</i>): rim fragment of kitchen ware cooking pot with straight or slightly oblique neck, globular body and cover fold; fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 25, Group 5, Kt16 (or Pl. 27, Group 6, Kok1). Fragment TZ 101846-035 is probably Roman, because it shows a vertical neck, while TZ 101846-029 with oblique neck is probably Hellenistic (Kenkel 2012, 172).</p> <p>TZ 101846-030 (<i>Pl. 8.3r</i>), TZ 101846-032: rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; comparable pieces from Tall Zar'a date from the 1<sup>st</sup> to 4<sup>th</sup> c. CE (Kenkel 2012, Pl. 25, Group 5, Kt18).</p> <p>TZ 101846-033: rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, sometimes triangular thickened; different variations of this shape appear; probably dates last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf. 1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3). Very similar are fragments TZ 101846-034 and TZ 101846-031; for comparisons, see Kenkel 2012, Pl. 24, Group 5, Kt12.</p>
<p>L11562: TZ 101848</p>	<p>Total number of diagnostic fragments: 4 Undiagnostic fragments: 112</p> <p>TZ 101848-002: rim fragment of cooking pot with 2-fold/bulged rim (one bulge on the lip/thickened lip and another, smaller bulge lower); the shape and fabric are typical for the Iron Age; for comparison, see Schwermer 2015, KtEz2b.1, 54, Fig. 3; the shape probably continues into the Persian and Hellenistic times at Tall Zar'a.</p> <p>TZ 101848-003 (<i>Pl. 8.4a</i>): rim fragment of common ware vessel, rather thick-walled, with slightly outwardly bent rim and thickened, round lip; shape: big bowl (dia. 28 cm); Hellenistic/Roman; for comparisons, see Kenkel 2012, Pl. 29, Group 1, Sü6; Sü10.</p> <p>TZ 101848-004: rim fragment of common ware amphora with straight neck; Hellenistic/Roman; for comparison, see Kenkel 2012, Pl. 41, Group 7, Am23.2a.</p> <p>TZ 101848-005 (<i>Pl. 8.4b</i>): base fragment of fine ware vessel with profiled stand ring; surface: thick, high-quality, red glaze; sharp edges and the surface treatment suggest ESA; fabric group: BSU; date of ESA: 180 BCE–70 CE; especially common in 1<sup>st</sup> cent. BCE and 1<sup>st</sup> cent. CE; for shape, compare: Kenkel 2012, Pl. 9, Group 7: ESA, ETS1.2; Konrad 2013, Pl. 11, Fig. 12.</p>

L11563: TZ 101847	<p>Total number of diagnostic fragments: 3 Undiagnostic fragments: 96</p> <p>TZ 101847-002 (<i>Pl. 8.4c</i>): rim fragment of amphora with angular, outwardly turned rim; straight walls; shape probably dates Hellenistic/Roman; somehow similar is an amphora in Kenkel 2012, Pl. 37, Group 7, Am1 (Graeco-italic).</p> <p>TZ 101847-004: fragment of kitchen ware lid with thin, oblique walls; fabric group: JOP, hence Hellenistic/Roman; compare Kenkel 2012, Pl. 27, Group 7, KDe1. KDe8.3.</p>
L11564: TZ 101855	<p>Total number of diagnostic fragments: 7 Undiagnostic fragments: 153</p> <p>TZ 101855-002 (<i>Pl. 8.4d</i>): rim fragment of amphora with ribbed outside walls and angular thickened rim, retracted on the inside; documented on Tall Zar'a before and dated to the late 3<sup>rd</sup> to early 4<sup>th</sup> cent. CE (Kenkel 2012, 210); for shape, see Kenkel 2012, Pl. 34, Group 5, Kru 12.2.</p> <p>TZ 101855-003 (<i>Pl. 8.4e</i>): rim fragment of common ware amphora with straight neck, triangular thickened rim, which is slightly overhanging, and a prominent ridge on the neck. Common shape; Hellenistic/Roman; the ridge indicates a date in the 1<sup>st</sup>–2<sup>nd</sup> cent. CE (Kenkel 2012, 228). Comparisons for the shape, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p> <p>TZ 101855-004: rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; For date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>TZ 101855-005 (<i>Pl. 8.4f</i>): base fragment of kitchen ware lid (not the base of a vessel, because of irregular shape); fabric group is similar to JOP, hence Hellenistic/Roman; for shape, compare Kenkel 2012, Pl. 27, Group 7, KDe6.1-2.</p> <p>TZ 101855-006 (<i>Pl. 8.4g</i>): rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with two-times or three-times profiled lip, sometimes triangularly thickened; different variations of this shape appear; probably dates to last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf. 1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3).</p> <p>TZ 101855-007 (<i>Pl. 8.4h</i>): fine ware body fragment with decoration; fabric group: BSU, hence Hellenistic/Roman; surface outside: thick, orange-red glaze, hence maybe ESA; no surface treatment inside, which suggests a closed vessel, maybe a juglet; decoration: incised ovals (Kerbdekor); if piece belongs to ESA, the fragment dates to late Hellenistic/early Roman (general date of ESA on Tall Zar'a: 2<sup>nd</sup> half 2<sup>nd</sup> cent. BCE to end of 1<sup>st</sup> cent. CE; Kenkel 2012, 72).</p>
L11565: TZ 101856	<p>Total number of diagnostic fragments: 15 Undiagnostic fragments: 264</p> <p>TZ 101856-004: rim fragment of common ware amphora with thickened rim and round lip; Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 38, Group 7, Am6.</p> <p>TZ 101856-007: rim fragment of kitchen ware with 2-fold/bulged rim (one bulge on the lip/thickened lip and another, smaller bulge a little lower); small diameter, hence maybe belongs to jar or jug; the rim as well as the fabric is typical for Iron Age; for comparison from Tall Zar'a, see Schwermer 2015, KtEz2, 50-69.</p>

	<p>TZ 101856-008 (<i>Pl. 8.4i</i>): rim fragment of common ware amphora with triangular thickened rim; Hellenistic/Roman, see Kenkel 2012, Pl. 42, Group 7, Am23.3d.</p> <p>TZ 101856-009: rim fragment of cooking pot with 2-fold/bulged rim (one bulge on the lip/thickened lip and another, smaller bulge a little lower); shape and fabric are typical for Iron Age; for comparison from Tall Zar'a, see Schwermer 2015, KtEz5a, 81, Fig. 1.3.4.7.</p> <p>TZ 101856-010 (<i>Pl. 8.4j</i>): rim fragment of fine ware bowl/so-called Echinus-bowl with fine fabric (BSU), curved walls and round lip (Hellenistic Echinus-bowl); thick, satin-glossy, orange-red glaze on both inside and outside; 3<sup>rd</sup>-1<sup>st</sup> cent. BCE, see Kenkel 2012, Pl. 14, Group 6, Sa1.8. Sa1.15.</p> <p>TZ 101856-012 (<i>Pl. 8.4k</i>), TZ 101856-014: rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, sometimes triangularly thickened; different variations of this shape appear; probably dates to last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf. 1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3). Very similar are fragments TZ 101856-011 and TZ 101856-013; fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 24, Group 5, Kt12.</p>
L11578: TZ 101892	<p>Total number of diagnostic fragments: 5 Undiagnostic fragments: 53</p> <p>TZ 101892-002 (<i>Pl. 8.4l</i>): base fragment of pithos with stand ring; a Byzantine piece is very comparable, the fabric, however, is Hellenistic/Roman (Kenkel 2012, Pl. 46, Group 9, Pi17.2).</p> <p>TZ 101892-003 (<i>Pl. 8.4m</i>): rim fragment of common ware amphora with outwardly bent, oval thickened rim and round lip; Hellenistic/Roman, see Kenkel 2012, Pl. 37, Group 7, Am2.</p> <p>TZ 101892-004 (<i>Pl. 8.4n</i>): rim fragment of common ware vessel; shape: jug or jar with outwardly curved, short rim and angular thickened lip; comparable to pieces from Tall Zar'a, Kenkel 2012, Pl. 33, Group 5, Kru6 (date: late Hellenistic/early Roman) for the shape of the lip, see Kenkel 2012, Pl. 30, Group 2, Kra2.</p> <p>TZ 101892-005: body fragment with painted decoration; motif: 1 horizontal line on neck, 2 oblique lines on shoulder; shape: most probably a jug; style of decoration and fabric indicate the piece dates to the Iron Age.</p> <p>TZ 101892-006: rim fragment of kitchen ware with rather straight neck and round lip, on the outside slightly thickened; fabric group: JOP, hence Hellenistic/Roman; shape can be dated 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE, see Kenkel 2012, Pl. 24, Group 5, Kt3. Kt5. Kt7.</p>
L11584: TZ 101865	<p>Total number of diagnostic fragments: 18 Undiagnostic fragments: 345</p> <p>TZ 101865-003 (<i>Pl. 8.4o</i>): rim fragment of juglet in fine ware (dia. 4 cm); shape: straight walls and round lip; fabric group: BSU; surface: no treatment; 3<sup>rd</sup> to 1<sup>st</sup> cent. BCE, previously documented at Tall Zar'a (see Kenkel 2012, Pl. 19, Group 26, Tg4.1).</p> <p>TZ 101865-004 (<i>Pl. 8.4p</i>) and TZ 101865-005: rim fragment of common ware amphora with straight neck, a slightly overhanging triangular thickened rim, and a prominent ridge on the neck; the shape is common among amphorae from the Hellenistic and Roman period, the ridge indicates a date in the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE (Kenkel 2012, 228), for comparisons of the shape, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p>

	<p>TZ 101865-009 (<i>Pl. 8.4q</i>): rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; for date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>Various fragments of cooking pots:          TZ 101865-011, TZ 101865-010, TZ 101865-016: rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, sometimes triangular thickened; different variations of this shape exist; the pieces probably date to the last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3). Fragments TZ 101865-007, TZ 101865-013 and TZ 101865-008 are similar; Hellenistic/Roman; best comparison Kenkel 2012, Pl. 24, Group 5, Kt9. Kt12.</p> <p>TZ 101865-012: rim fragment of kitchen ware cooking pot with outwardly bent rim and cover fold; fabric group: JOP, hence Hellenistic/Roman, shape dates 2<sup>nd</sup> cent. BCE to 2<sup>nd</sup> cent. CE; for comparison, see Kenkel 2012, Pl. 21, Group 3, Kas1-6.</p> <p>TZ 101865-014: bottom fragment of common ware closed vessel; outside is ribbed; fabric group: BSU, hence Hellenistic; for comparisons of shape from Tall Zar'a, see Kenkel 2012, Pl. 34, Group 5, Kru18. Kru20.</p> <p>TZ 101865-015: rim fragment of amphora with ribbed outside walls and edgy/angular thickened rim, on the inside retracted; documented on Tall Zar'a before and dated to the late 3<sup>rd</sup> until early 4<sup>th</sup> cent. CE (Kenkel 2012, 210). For comparisons for the shape, see Kenkel 2012, Pl. 34, Group 5, Kru12.2.</p> <p>TZ 101865-017: fragment of kitchen ware lid; rather thin-walled with outwardly curved rim; fabric group: JOP, hence Hellenistic/Roman; compare Kenkel 2012, Pl. 27, Group 7, KDe1. KDe8.3.</p> <p>TZ 101865-019: rim fragment of common ware vessel; shape: jug or jar with outwardly curved, short rim and angular thickened lip; comparable to pieces from Tall Zar'a of late Hellenistic/early Roman date (Kenkel 2012, Pl. 33, Group 5, Kru6; for the shape of the lip, see: Kenkel 2012, Pl. 30, Group 2, Kra2).</p>
L11596: TZ 101868	<p>Total number of diagnostic fragments: 7          Undiagnostic fragments: 141</p> <p>TZ 101868-005 (<i>Pl. 8.4r</i>), TZ 101868-007: rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold lip, sometimes triangular thickened; different variations of this shape appear; probably dates to last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf. 1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3).</p> <p>TZ 101868-006 (<i>Pl. 8.4s</i>): rim fragment of cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; for date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see comparisons from Tall Zar'a (Kenkel 2012, Pl. 25, Group 5, Kt18).</p>

L11597: TZ 101876	<p>Total number of diagnostic fragments: 9 Undiagnostic fragments: 174</p> <p>TZ 101876-002: rim fragment of cooking pot with two-times bulged rim (one bulge on the lip/thickened lip and another bulge a little lower, on the neck); the shape and fabric is typical for the Iron Age; for comparison of the shape, see Schwermer 2015, KtEz2, 50-69.</p> <p>TZ 101876-003 (<i>Pl. 8.4t</i>): rim fragment of open vessel; common ware; shape of the rim is comparable to a Hellenistic-Roman pithos (Kenkel 2012, Pl. 45, Group 9, Pi3.2).</p> <p>TZ 101876-004 (<i>Pl. 8.4u</i>): rim fragment of common ware amphora with straight neck, triangular thickened rim, which is slightly overhanging, and a prominent ridge on the neck. Common shape in the Hellenistic/Roman period; the ridge indicates a date in the 1<sup>st</sup> to 2<sup>nd</sup> cent. CE (Kenkel 2012, 228). Comparisons for the shape are found at Tall Zar'a, see Kenkel 2012, Pl. 42, Group 7, Am23.3 and Am23.5.</p> <p>TZ 101876-005: rim fragment of kitchen ware with rather straight neck and round lip, on the outside slightly thickened; fabric group: JOP, hence Hellenistic/Roman; shape can be dated 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE (see Kenkel 2012, Pl. 24, Group 5, Kt3. Kt5. Kt7).</p> <p>TZ 101876-006 (<i>Pl. 8.4v</i>): rim fragment of kitchen ware cooking pot with thickened, profiled rim, straight, offset neck and rounded body walls; fabric group: JOP, hence Hellenistic/Roman; for date (1<sup>st</sup>–4<sup>th</sup> cent. CE) and shape, see Kenkel 2012, Pl. 25, Group 5, Kt18.</p> <p>TZ 101876-008 (<i>Pl. 8.4w</i>): rim fragment of common ware vessel; shape: plate or shallow bowl or – most probably – lid with round, simple lip; Hellenistic to Roman; see Kenkel 2012, Pl. 47, Group 10, De2.</p> <p>TZ 101876-009 (<i>Pl. 8.4x</i>): rim fragment of an Echinus-bowl with fine ware; shape: curved walls and round lip; thick, orange-red, satin-glossy glaze both inside and outside; 3<sup>rd</sup>–1<sup>st</sup> cent. BCE; see Kenkel 2012, Pl. 14, Group 6, Sa1.8. Sa1.15.</p> <p>TZ 101876-010 (<i>Pl. 8.4y</i>): rim fragment of cooking pot with profiled lip; belongs to group of cooking pots with 2-fold/3-fold two-times or three-times profiled lip, sometimes triangular thickened; different variations of this shape appear; probably dates to last quarter of 1<sup>st</sup> cent. CE to 2<sup>nd</sup> half 3<sup>rd</sup> cent. CE (Adan-Bayewitz 1993, Taf. 1A, 6; Kenkel 2012, Pl. 23, Group 4, Gb1.2. Gb1.3).</p>
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Plate 8.1: Pottery from trench AU 128, scale 1:3

a.



TZ 101801-004

b.



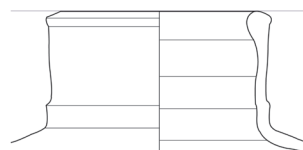
TZ 101801-005

c.



TZ 101801-008

d.



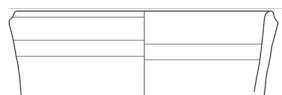
TZ 101801-009

e.



TZ 101801-011

f.



TZ 101801-017

g.



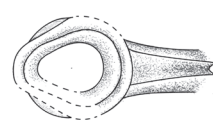
TZ 101801-013

h.



TZ 101801-014

i.

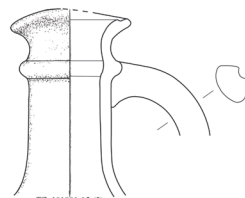


TZ 101801-015

j.



TZ 101802-002



k.



TZ 101802-013

l.



TZ 101802-003

m.



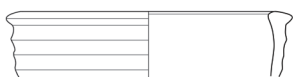
TZ 101802-006

n.



TZ 101802-010

o.



TZ 101802-014

p.



TZ 101802-015

q.



TZ 101815-002

r.



TZ 101815-004

0 5 cm

Plate 8.2: Pottery from trench AU 128, scale 1:3

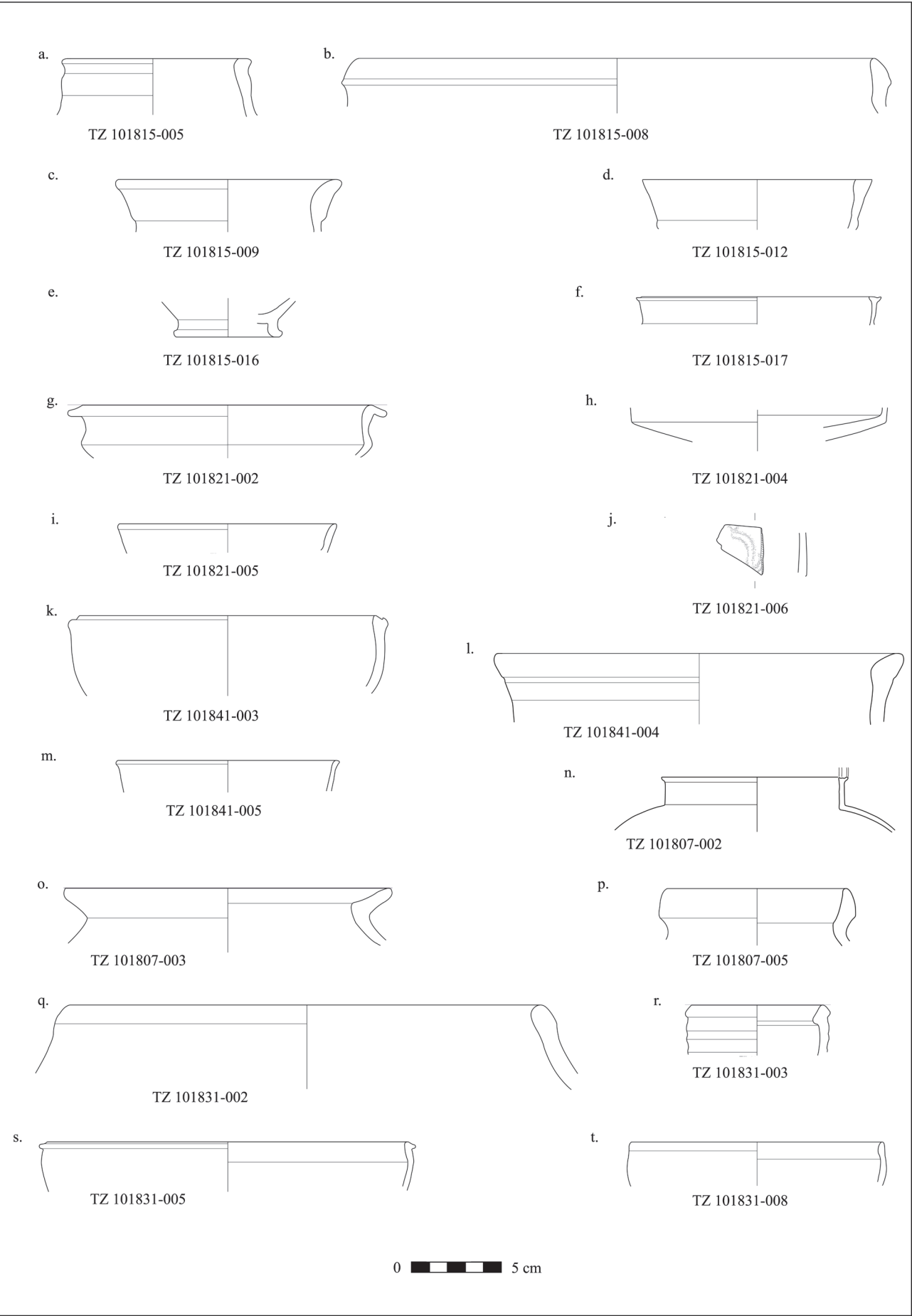


Plate 8.3: Pottery from trench AU 128, scale 1:3

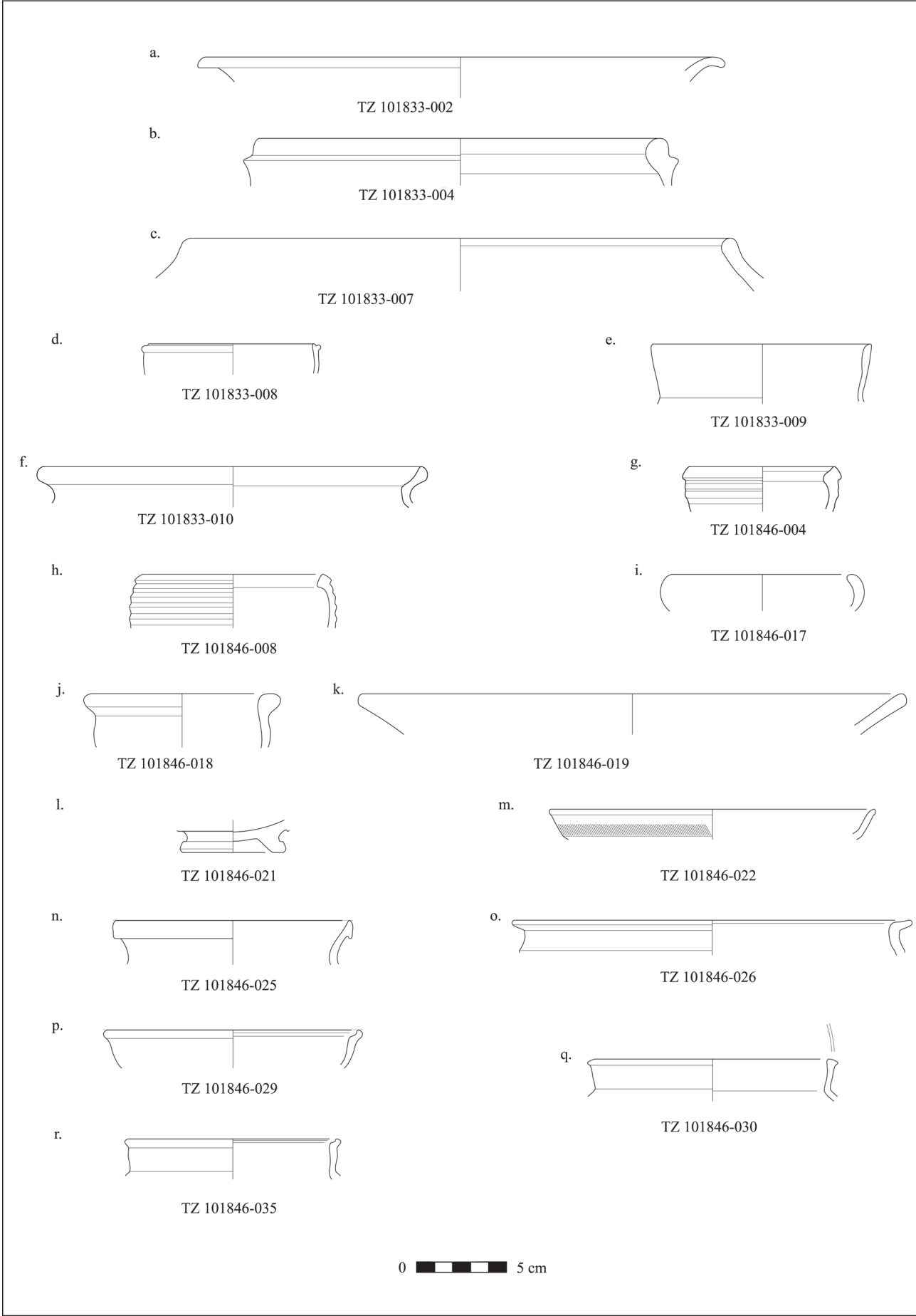
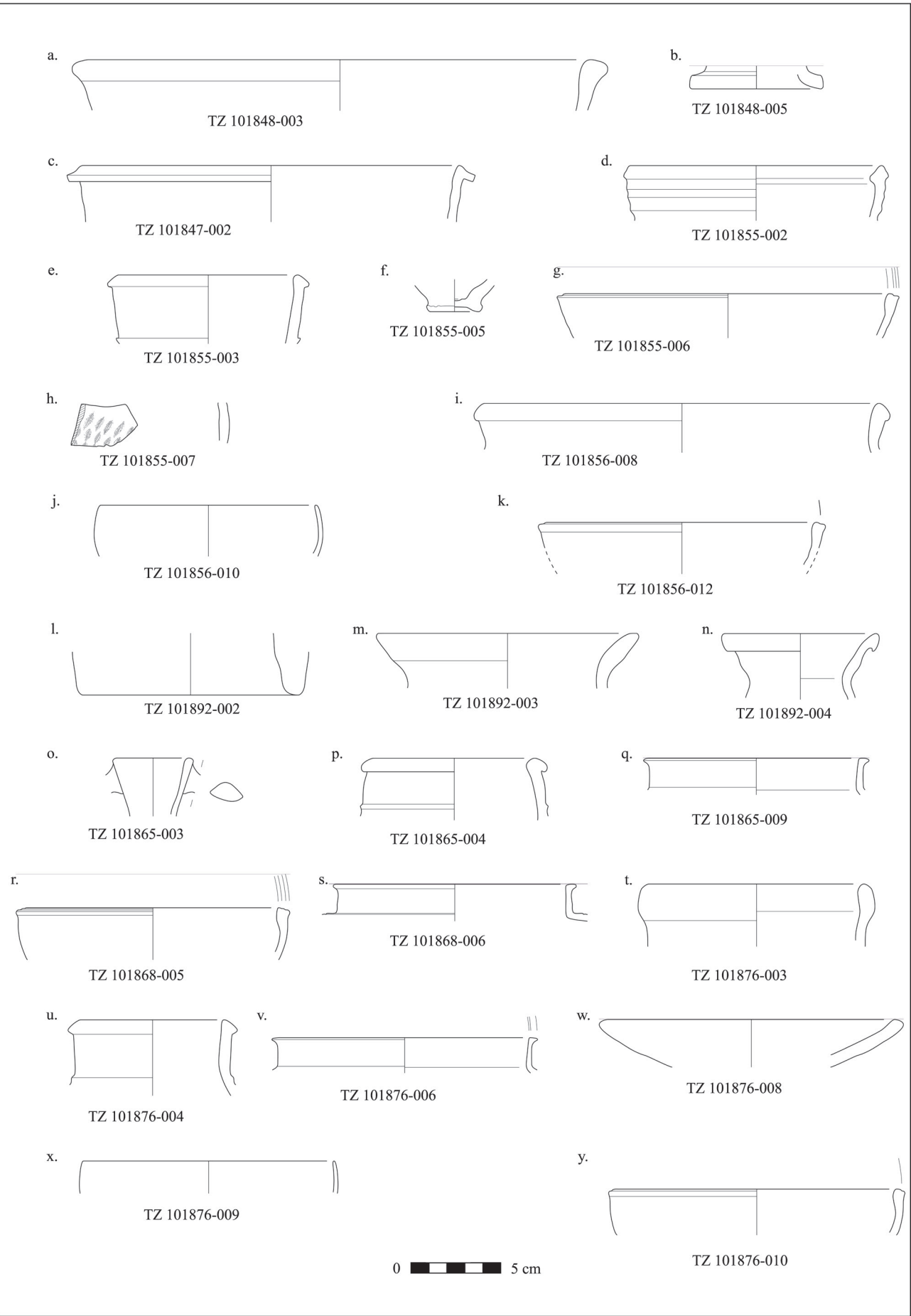


Plate 8.4: Pottery from trench AU 128, scale 1:3







## 9. POTTERY FROM TRENCHES AV 129, AU 129 AND AU 131

by Bettina Springer-Ferazin and Samar Shammās

This chapter presents the ceramic evidence of selected loci from Trenches AV 129, AU 129 and AU 131. In *Chaps. 7* and *8*, the ware groups (kitchen ware, fine ware, common ware), shapes and fabric groups (pre-Hellenistic by S. Shammās and Hellenistic/Roman by B. Springer-Ferazin based on Kenkel 2012) are described and the chronology has been established.

These selected loci are mostly mixed contexts, where Iron Age pottery was found mixed with later material dating mainly to the Hellenistic period with a few pieces from the Persian or early Roman period. Trench AV 129 lies immediately outside the great wall W11186 and Trenches AU 129 and AU 131 lie inside it.

Although, most of the sherds are very fragmentary and thus difficult to date, it is possible to determine that some examples date to the Iron Age I, as is the case in the loci L12016, L12160, L 12161, L12169; additionally the painted fragments of TZ 102140 are also most likely to date as early as the Iron Age IB (see below), which is earlier than the Iron Age material from Building A, Phases 2 and 3, discussed in *Chaps. 7.3* and *7.4*.

As in *Chap. 8*, the pottery is presented below in tabular form, by locus and TZ-number; extension numbers are only mentioned starting from 002. The overall number of diagnostic sherds per locus is given, and then subdivided into the different periods. As far as it was possible, all diagnostic pieces were determined; most of them were listed individually with their find number, but in some cases they were only recorded in the counts. Where a sherd could not be assigned unambiguously to a chronological group, it was sometimes assigned to two periods (e.g. Persian/Hellenistic).

Within the paragraphs, the ceramic pieces are ordered according to period. The material is briefly introduced with a discussion of the form and comparisons and possible date – when it was possible to establish one. Not every fragment from the locus is described and pieces that could not be identified with certainty, with no clear date, shape, comparison, or further information are labelled as indeterminable. Undiagnostic sherds are not chronologically classified and only a count is given.

## 9.1. Trench AV 129

L11809 TZ 101997	<p>Total number of diagnostic fragments: 15 (Iron Age: 8, Persian/Hellenistic: 7) Undiagnostic: 175</p> <p>Iron Age: TZ 101997-002 (<i>Pl. 9.1a</i>): bowl. TZ 101997-007 (<i>Pl. 9.1b</i>): burnished bowl, probably dates to the Iron Age IIB (see <i>Chap. 7.3</i> bowl no. TZ 102036-003.) TZ 101997-004 (<i>Pl. 9.1c</i>) of Type 2b, TZ 101997-006 (<i>Pl. 9.1d</i>) Type 1a, TZ 101997-014 (<i>Pl. 9.1e</i>) Type 3: Iron Age IIB cooking pot with ridged rim (see <i>Chap. 7.3.4</i>). TZ 101997-015 (<i>Pl. 9.1f</i>): jar rim, probably Iron Age.</p> <p>Persian/Hellenistic: TZ 101997-003 (<i>Pl. 9.1g</i>): base fragment of fish-plate with characteristic round deepening/recess/indentation on the inside. Surface: red and dark brown glaze both inside and outside, poorly preserved; fabric group: BSU, hence Hellenistic, local fish-plate imitation; for comparisons from Tall Zar'a, Tel Anafa, Pella and Tell Hesban, see: Kenkel 2012, Pl. 15, Group 7, Sa2.8-9; Berlin 2015 Pl. 6.1.2, Fig. 5, 15–16; Sauer – Herr 2012, Fig. 3.11. 18–22. TZ 101997-005 (<i>Pl. 9.1h</i>): rim of Echinus bowl with curved walls; surface: inside fully glazed, outside semi-glazed; glaze: red brown (inside), reddish orange (outside); Hellenistic, for comparisons from Tall Zar'a and Tel Kedesh, see Kenkel 2012, Pl. 14, Group 6, Sa1.1-17 and Stone 2012, Fig. 3.5.3. TZ 101997-008 (<i>Pl. 9.1i</i>): rim fragment of amphora with thickened rim, Hellenistic (Kenkel 2012, Pl. 37, Group 7, Am2.2). TZ 101997-009 (<i>Pl. 9.1j</i>): rim fragments of jars/amphorae with round, thickened lip and curved neck; maybe Hellenistic, but could also be of earlier date (Persian). TZ 101997-010 (<i>Pl. 9.1k</i>): rim of pot or vessel with outwardly curved rim; comparison for shape can be found at Tel Kedesh (Hellenistic) (Stone 2012, Fig. 4.29.4). TZ 101997-011 (<i>Pl. 9.1l</i>): rim fragment of amphora with thickened rim and cover fold on the inside, best comparable to a Persian period utility vessel from Tel Kedesh, see Stone 2012, Fig. 2.9. 2 (middle). TZ 101997-012 (<i>Pl. 9.1m</i>): rim fragment of jar or deep bowl with outwardly bent, thickened lip; comparable pieces have yet not been identified.</p>
L11861: TZ 102062	<p>Total number of diagnostic fragments: 25 (Persian/Hellenistic/early Roman: 13, Iron Age: 8, Indeterminable: 4) Undiagnostic: 238</p> <p>Iron Age: TZ 102062-021 (<i>Pl. 9.2a</i>): bowl rim. TZ 102062-023 (<i>Pl. 9.2b</i>): bowl rim. TZ 102062-006 (<i>Pl. 9.2c</i>): rim of a burnished bowl. TZ 102062-013 (<i>Pl. 9.2d</i>): cooking pot of Type 2b (see <i>Chap. 7.3.4</i>). TZ 102062-017 (<i>Pl. 9.2e</i>): cooking pot rim probably belongs to Type 2b (see <i>Chap. 7.3.4</i>). TZ 102062-019 (<i>Pl. 9.2f</i>): rim, which most likely belongs to an Iron Age big jug or a small jar.</p> <p>Persian to Hellenistic/early Roman TZ 102062-025, -016 and -002 (<i>Pl. 9.2g–i</i>): rims of cooking pots, fabric group: JOP, hence Hellenistic; common vessel type in 2<sup>nd</sup> cent. BCE – 1<sup>st</sup> cent. CE, e. g. at Tall Zar'a (Kenkel 2012, Pl. 24, Group 5, Kt7.1, Kt7.2).</p>

	<p>TZ 102062-026 and -010 (<i>Pl. 9.2j. k</i>): rims of cooking pots, fabric group: JOP, hence Hellenistic; shape comparable to cooking pot from Tall Zar'a, 3<sup>rd</sup> cent. BCE to 1<sup>st</sup> cent. CE (Kenkel 2012, Pl. 24, Group 5, Kt8).</p> <p>TZ 102062-014 (<i>Pl. 9.2l</i>): rim fragment of amphora with bulging rim, Hellenistic to Roman (Kenkel 2012, Pl. 39, Am20) or: rim fragment of jar with narrow mouth, Persian to Hellenistic, see comparison from Tel Kedesh (Stone 2012, Fig. 2.3.4, Fig. 4.5.1).</p> <p>TZ 102062-015 (<i>Pl. 9.2m</i>): rim of Hellenistic jar with angular thickened rim, see comparison from Tell Hesban (Sauer – Herr 2012, Fig. 3.2.4, Fig. 3.2.6).</p> <p>TZ 102062-022 (<i>Pl. 9.2n</i>): rim of storage jar, whitish beige fabric group FL, Hellenistic or even Persian due to the fabric (for shape, see Stone 2012, Fig. 4.2)</p> <p>TZ 102062-011 (<i>Pl. 9.2o</i>): fragment of thin-walled kitchen ware, probably Hellenistic; shape maybe a lid (Kenkel 2012, Pl. 27, Group 7, KDe8).</p> <p>TZ 102062-005 (<i>Pl. 9.2p</i>): rim fragment of Echinus bowl, Hellenistic. Common vessel type, see numerous comparisons from Tall Zar'a, Tell Hesban and Tel Kedesh (Kenkel 2012, Pl. 14, Group 6, Sa1.1-17; Sauer – Herr 2012, Fig. 3.8 (mostly late Hellenistic, Hasmonean), Stone 2012, Fig. 3.5.3).</p> <p>TZ 102062-009 and -012 (<i>Pl. 9.2q. r</i>): rims of amphorae with thickened rim and narrow, curved neck; Hellenistic (see Kenkel 2012, Pl. 37, Group 7, Am2.1-4).</p> <p>TZ 102062-003 (<i>Pl. 9.2s</i>): rim of small juglet with outwardly bent rim; probably early 2<sup>nd</sup> – early 1<sup>st</sup> cent. BCE according to parallels from Tel Kedesh (Berlin 2015, Pl. 6.1.18, Fig. 1).</p>
L11893: TZ 102099	<p>Total number of diagnostic fragments: 13 (Persian/Hellenistic/early Roman: 5, Iron Age: 8) Undiagnostic: 167</p> <p>Iron Age:</p> <p>TZ 102099-003 (<i>Pl. 9.3a</i>): body fragment with red slip decoration; Iron Age</p> <p>TZ 102099-005 (<i>Pl. 9.3b</i>): rim of Iron Age krater; comparisons to this rim form are common from Iron Age IB to IIC (see Fischer 2013, figs. 400:7, 402:1, 406:7, 407:4).</p> <p>TZ 102099-006 (<i>Pl. 9.3c</i>): rim of Iron Age medium-sized jar.</p> <p>TZ 102099-008 (<i>Pl. 9.3d</i>): rim of Iron Age IIB cooking pot of Type 2a (see <i>Chap. 7.3.4</i>).</p> <p>TZ 102099-009 (<i>Pl. 9.3e</i>): base sherd, probably, of an Iron Age decanter.</p> <p>TZ 102099-011 (<i>Pl. 9.3f</i>): Iron Age IIB cooking pot (see <i>Chap. 7.3.4</i>).</p> <p>TZ 102099-014 (<i>Pl. 9.3g</i>): rim fragment of bowl; Iron Age.</p> <p>Persian/Hellenistic/early Roman:</p> <p>TZ 102099-002 (<i>Pl. 9.3h</i>): rim fragment of fish-plate, slip: brown to black, high-quality; fabric group: BSU, local, hence local fish-plate imitation; comparisons can be found at Tell Hesban, mostly 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE (Sauer – Herr 2012, Fig. 3.9.1-3, 209-214) and Tall Zar'a, see Kenkel 2012, Pl. 15, Group 7, Sa2.7, Sa.24.</p> <p>TZ 102099-010 (<i>Pl. 9.3i</i>): rim of cooking pot, fabric group is similar to JOP, hence Hellenistic or even Persian; for shape, see Kenkel 2012, Pl. 25, Group 5, Kt.1811, Kt18.2.</p> <p>TZ 102099-013 (<i>Pl. 9.3j</i>): rim of cooking pot, Hellenistic/early Roman; for shape, see Kenkel 2012, Pl. 24, Group 5, Kt7.1, Kt7.2, hence 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE (Kenkel 2012, 169).</p> <p>TZ 102099-004 (<i>Pl. 9.3k</i>): base fragment of vessel with foot ring and round walls, most likely a bowl; fabric group: FL, indicates Persian or Hellenistic date; comparable bowls from Tel Kedesh (Stone 2012, Fig. 4.20.8).</p>

L11907 TZ 102129	<p>Total number of diagnostic fragments: 8 (Iron Age: 4, Persian:2, Hellenistic/Roman: 1, Indeterminable: 1) Undiagnostic: 124</p> <p>Iron Age: TZ 102129-006 (<i>Pl. 9.4a</i>): rim fragment of bowl with rounded walls and round lip; Iron Age (for comparisons see for example the form in Amiran 1969, Pl. 63, Fig. 5). TZ 102129-003 and -005 (<i>Pl. 9.4b. c</i>): probably rims of Iron Age jars. TZ 102129-008 (<i>Pl. 9.4d</i>): rim of cooking pot with ridged rim; Iron Age II A/B of Type 3a; for comparisons from Tall Zar'a, see <i>Chap. 7.3.4</i> and Schwermer 2015, 81, KtEZ5a, Fig. 1–7.</p> <p>Persian: TZ 102129-004 (<i>Pl. 9.4e</i>): rim fragment of jar with whitish beige fabric; fabric group: FL, indicates Persian or Hellenistic date; for shape compare with vessels from Tel Kedesh (Stone 2012, Fig. 5.6, Fig. 5.7.3). TZ 102129-007 (<i>Pl. 9.4f</i>): rim fragment of jar with thickened, round lip and narrow, long neck; Persian or late Iron Age; for comparisons, see Stone 2012, Fig. 2.3.4.</p> <p>Hellenistic/Roman: TZ 102129-002 (<i>Pl. 9.4g</i>): rim fragment of cooking pot (casserole); fabric group: JOP, hence Hellenistic/Roman; for shape, see Kenkel 2012, Pl. 21, Group 3, Kas2. The shape appears from 1<sup>st</sup> cent. BCE to 3<sup>rd</sup> cent. CE (Kenkel 2012, 154-155).</p>
L11917: TZ 102141	<p>Total number of diagnostic fragments: 4 (Iron Age: 4) Undiagnostic: 51</p> <p>Iron Age: TZ 102141-002 and -005 (<i>Pl. 9.4h. i</i>): rim fragments of bowls with round lip and rounded walls; Iron Age II (see e.g. Amiran 1969, Pl. 63, Fig. 5). TZ 102141-004 (<i>Pl. 9.4j</i>): body fragment with washed surface and painted decoration. TZ 102141-003 (<i>Pl. 9.4k</i>): base fragment with red slip layer, comparable base with slip from Tell Abu al-Kharaz (Phase XIII, early 8<sup>th</sup> cent.) of a Phoenician jug (Fischer 2013, fig. 170:1).</p>
L11979: TZ 102163	<p>Total number of diagnostic fragments: 7 (Iron Age: 1, Persian/Hellenistic: 6) Undiagnostic: 69</p> <p>Iron Age: TZ 102163-006 (<i>Pl. 9.4l</i>): rim fragment of bowl with rounded walls; surface on the outside is burnished; a comparison from Tell er-Rumeith dates to the Iron Age IIA (Barako – Lapp 2015, 75, fig. 3.1:3).</p> <p>Persian/Hellenistic: TZ 102163-005 (<i>Pl. 9.4m</i>): fragment of large jar; Hellenistic; for comparison, see Tel Kedesh (Stone 2012, Fig. 5.6). TZ 102163-003 (<i>Pl. 0.1 and 9.4n</i>): another rim fragment of large jar with thickened rim; shape slightly different from TZ 102163-005; probably Persian or Hellenistic (Stone 2012, Fig. 2.1.5 or Fig 2.9.1, first row, vessel on the right side). TZ 102163-008 (<i>Pl. 9.4o</i>): rim fragment of amphora with thickened rim; compare Hellenistic amphorae from Tall Zar'a (Kenkel 2012, Pl. 38, Group 7, Am 5, Am6). TZ 102163-007 (<i>Pl. 9.4p</i>): rim fragment of cooking pot; fabric group: JOP, hence probably Hellenistic; for shape, see: Kenkel 2-012, Pl. 25, Group 5, Kt16.3 TZ 102163-004 (<i>Pl. 9.4q</i>): body fragment with relief decoration; motif: probably palm leaves, which are common for Hellenistic relief bowls (e.g. from Tall Zar'a: Kenkel 2012, Pl. 7, Group 4); surface treatment: glazed (brownish-red) both inside and outside; good quality.</p>

	TZ 102163-002 ( <i>Fig. 0.5 and Pl. 9.4r</i> ): reconstructed vessel: large jar with thickened rim and short neck; fabric: whitish beige; fabric group FL; Persian to Hellenistic; compare jars from Tel Kedesh (Stone 2012, Fig. 2.1.5, Fig. 3.8.1 top right); and Dor, 3 <sup>rd</sup> and 2 <sup>nd</sup> cent. BCE (Berlin 2015, Pl. 6.1.13, Fig. 2).
L12013 TZ 102199	<p>Total number of diagnostic fragments: 4 (Iron Age: 3, late Hellenistic/Roman: 1) Undiagnostic: 35</p> <p>Iron Age: TZ 102199-003 and -004 (<i>Pl. 9.5a. b</i>): body fragments with painted decoration. It is impossible to determine the body shape. However, such decoration of paralleled lines is common in jugs and small amphorae of the Iron Age (see, for example, Ben-Tor – Zarzecki-Peleg 2015, figs. 2.2.14: 2, 5, 12; Fischer 2013, fig. 409: 2–3).</p> <p>Late Hellenistic/Roman: TZ 102199-005 (<i>Pl. 9.5c</i>): foot rim of a plate or flat bowl with circle imprint decoration on the inside. The foot shows several small steps. The surface shows high-quality brown slip. Fragment of Eastern Sigillata Type A (ESA) pottery, 2<sup>nd</sup> cent. BCE to 1<sup>st</sup> cent. CE (Kenkel 2012, 72); for comparisons, see ESA pottery (imprint decoration: Konrad 2013, 120, Pl. 4, Fig. 30; shape: Hayes 1985, Pl. 1, Fig. 9).</p>
L12016 TZ 102208	<p>Total number of diagnostic fragments: 11 (Iron Age: 7, Hellenistic/early Roman: 4) Undiagnostic: 45</p> <p>Iron Age: TZ 102208-007 (<i>Pl. 9.5d</i>): rim and handles of Iron Age jug. TZ 102208-003 (<i>Pl. 9.5e</i>): rim of large common ware bowl with thickened rim (especially thickened on the inside as a cover fold); similar bowls have been documented at Tell Abu al-Kharaz phase XIV (Fischer 2013, fig. 191:6). TZ 102208-012 (<i>Fig. 0.5 and Pl. 9.5f</i>): reconstructed common ware vessel: large jug with trefoil mouth; probably Iron Age I; see comparison from Hazor (Amiran 1969, Pl. 84, Fig. 1) and from Tell Abu al-Kharaz phase IX (Fischer 2013, fig. 410:1).</p> <p>Hellenistic/early Roman: TZ 102208-002 (<i>Pl. 9.5g</i>): rim of common ware amphora with thickened rim; probably Hellenistic (Kenkel 2012, Pl. 38, Group 7, Am6.4c. Am6.4e). TZ 102208-004 (<i>Pl. 9.5h</i>): rim of storage vessel with triangular thickened rim and offset, narrow neck; somewhat comparable to Hellenistic/early Roman pithos from Tall Zar'a (Kenkel 2012, Pl. 45, Group 9, Pi6). TZ 102208-005 (<i>Pl. 9.5i</i>): rim of bowl with slightly angular walls and round lip; comparable to late Hellenistic/early Roman bowl from Tell Hesban (Sauer – Herr 2012, Pl. 3.7, Fig 29). TZ 102208-010 (<i>Pl. 9.5j</i>): rim of storage jar with round, thickened rim; probably 3<sup>rd</sup>–2<sup>nd</sup> cent. BCE (Berlin 2015, 658, Pl. 6.1.12, Fig. 2).</p>
L12119: TZ 102285	<p>Total number of diagnostic fragments: 3 (Iron Age: 2, Hellenistic:1) Undiagnostic: 18</p> <p>Iron Age: TZ 102285-002 (<i>Pl. 9.6a</i>): rim with handles of cooking pot</p> <p>Hellenistic: TZ 102285-004 (<i>Pl. 9.6b</i>): rim of fish-plate; surface inside and outside shows high-quality, thick, black glaze; comparisons e.g. at Tell Hesban and Tel Kedesh, which date to the 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE (Sauer – Herr 2012, Pl. 3.11, Fig. 9,10,11,13,15; see also: Stone 2012, Fig. 4.21.3–4).</p>

L12025: TZ 102232	<p>Total number of diagnostic fragments: 3 (Iron Age: 3)</p> <p>Iron Age: TZ 102232-003 and -004 (<i>Pl. 9.6c. d</i>): Iron Age body fragments of vessels with painted decoration. The surface of TZ 102232-004 is covered with an orange slip. TZ 102232-002 (<i>Pl. 9.6e</i>): rim of a common ware bowl with round, slightly thickened lip; because of its fabric, this fragment probably dates to the Iron Age. It could be compared to bowls from Tell er-Rumeith stratum VIIB (Barako – Lapp 2015, fig. 3.8:5) and Tell Abu al-Kharaz phase XII (Fischer 2013, fig. 393:9), both date to the second half of the 9<sup>th</sup> cent. BCE (Iron Age IIA/IIB to early Iron Age IIB).</p>
L12126: TZ 102283	<p>Total number of diagnostic fragments: 3 (Iron Age: 2, Hellenistic: 1) Undiagnostic: 22</p> <p>Iron Age: TZ 102283-004 (<i>Pl. 9.6f</i>): rim of a cooking pot with the typical edge close to the rim; comparable Iron Age cooking pots from Tall Zar'a, see Schwermer 2015, 73, KtEZ3a.3, Fig. 5.</p> <p>Hellenistic: TZ 102283-003 (<i>Pl. 9.6g</i>): rim of a common ware bowl; somewhat comparable to a bowl from Tall Zar'a (Kenkel 2012, Pl. 29, Group 1, Sü10.2). The shape has a long tradition from Hellenistic to Byzantine times, therefore an unambiguous distinction is difficult to make (Kenkel 2012, 196).</p>
L12127: TZ 102295	<p>Total number of diagnostic fragments: 10 (Late Bronze Age: 1, Iron Age: 4, Hellenistic/Roman: 4, Indeterminable: 1) Undiagnostic: 43</p> <p>Late Bronze Age: TZ 102295-011 (<i>Pl. 9.6h</i>): body fragment with decoration; so-called “milk bowl”, Late Bronze Age (see Yon 1981, 40: “Bol à lait”).</p> <p>Iron Age: TZ 102295-007 and -008 (<i>Pl. 9.6i. j</i>): body fragments with decoration; because of their fabric, they probably date to the Iron Age. TZ 102295-005 (<i>Pl. 9.6k</i>): rim bowl of the Iron Age; parallels come from Tell er-Rumeith and date to the Iron Age II (Barako – Lapp 2015, fig. 3.1: 2, 7, 8, 12).</p> <p>Hellenistic/Roman: TZ 102295-004 (<i>Pl. 9.6l</i>): rim fragment of jar (dia. 28 cm) with round, thickened and outwardly bent rim; comparable to Hellenistic/Roman bowl from Tall Zar'a (Kenkel 2012, Pl. 29, Group 1, Sü9). TZ 102295-006 (<i>Pl. 9.6m</i>): shape generally comparable to TZ 102315-002 and most likely Hellenistic. TZ 102295-009 (<i>Pl. 9.6n</i>): cooking pot with triangular thickened rim; maybe comparable to early Roman cooking pots from Tall Zar'a (Kenkel 2012, Pl. 25, Group 5, Kt20). TZ 102295-010 (<i>Pl. 9.6o</i>): cooking pot with triangular rim, similar in shape to TZ 102295-009, but not comparable to cooking pots Kt20 from Tall Zar'a.; probably Hellenistic.</p>

L12136: TZ 102300	<p>Total number of diagnostic fragments: 2 (Iron Age: 1, early Roman: 1) Undiagnostic: 3</p> <p>Iron Age: TZ 102300-003 (<i>Pl. 9.7a</i>): rim (probably) of large open bowl.</p> <p>Early Roman: TZ 102300-002 (<i>Pl. 9.7b</i>): rim fragment of jar with straight rim and round lip, on the inside thickened; there is a comparable vessel from Tell Hesban, of early Roman date (1<sup>st</sup> cent. CE; Sauer – Herr 2012, Pl. 3.16, Fig. 12).</p>
L12159: TZ 102315	<p>Total number of diagnostic fragments: 2 (Iron Age: 1, Hellenistic: 1) Undiagnostic: 13</p> <p>Iron Age: TZ 102315-002 (<i>Pl. 9.7c</i>): rim of a cooking pot with a relatively unusual form; because of its triangular shape it could be attributed to Type 3c (see <i>Chap. 7.3.4</i>).</p> <p>Hellenistic: TZ 102315-003 (<i>Pl. 9.7d</i>): rim of a common ware amphora with double-bulged rim; the wall is vertical and suggests a date in the late 2<sup>nd</sup> cent. BCE (Kenkel 2012, Pl. 37, Group 7, Am3 and p. 217).</p>
L12160: TZ 102314	<p>Total number of diagnostic fragments: 2 (Iron Age: 2) Undiagnostic: 14</p> <p>Iron Age: TZ 102314-002 (<i>Pl. 9.7e</i>): rim fragment of cooking pot, Iron Age (probably Iron Age I); for comparison, see Schwermer 2015, 45, KtEZ1, Fig. 7. TZ 102314-003 (<i>Pl. 9.7f</i>): rim fragment of, probably, small open bowl with slightly s-curved rim; a comparison comes from Tell Abu al-Kharaz phase XII (Fischer 2013, fig. 393: 9).</p>
L12161: TZ 102313	<p>Total number of diagnostic fragments: 2 (Iron Age: 2) Undiagnostic: 27</p> <p>Iron Age: TZ 102313-002 (<i>Pl. 9.7g</i>): rim of Iron Age krater (dia. 32 cm); triangular thickened rim; it is comparable to an example found in Building A Phase 3 at Tall Zar'a (see <i>Chap. 7.4.3</i>) and to kraters from Tell Abu al-Kharaz phases XII (Iron Age IIA/B) and XIV (Iron Age IIB) (Fischer 2013, figs. 35:2, 64:4). TZ 102313-003 (<i>Pl. 9.7h</i>): body fragment with decoration, common in Iron Age I (see Mazar 2015, figs. 1.1.22, 1.1.23:5).</p>
L12168: TZ 102332	<p>Total number of diagnostic fragments: 1 (Iron Age: 1) Undiagnostic: 20</p> <p>Iron Age: TZ 102332-002 (<i>Pl. 9.7i</i>): rim fragment of small jug with funnel mouth (or very small bowl); possibly dates to the Iron Age (Ware 31).</p>

L12169: TZ 102327	<p>Total number of diagnostic fragments: 4 (Iron Age: 3, Hellenistic: 1)</p> <p>Iron Age: TZ 102327-002 (<i>Pl. 9.7j</i>): A broken base fragment probably belongs to a krater. TZ 102327-004 (<i>Pl. 9.7k</i>): rim fragment of cooking pot, characteristic ridged rim shape, with two concentric circles incised below the rim; Iron Age, probably IA or IB, (see, for example, comparisons from Megiddo VI and Hazor XI–XII, Amiran 1969, 227, pl. 75: 1–5). TZ 102327-005 (<i>Pl. 9.7l</i>): body fragment of cooking pot with grooved, applied clay band.</p> <p>Hellenistic: TZ 102327-003 (<i>Pl. 9.7m</i>): rim fragment of amphora with round, thickened, outwardly curved rim and narrow neck; probably Hellenistic; comparable to a rim fragment from Tell Hesban which is particularly common in the late Hellenistic/Hasmonean times (Sauer – Herr 2012, Pl. 3.3 Fig. 2).</p>
L12170: TZ 102326	<p>Total number of diagnostic fragments: 2 (Hellenistic: 2)</p> <p>Undiagnostic: 36</p> <p>Hellenistic: TZ 102326-002 and -003 (<i>Pl. 9.7n. o</i>): may belong to the same vessel (rim and base fragment): a jug with outwardly bent rim and round, simple lip; see comparable fragments of jugs from Tall Zar'a (Kenkel 2012, Pl. 33, Group 5, Kru1. Kru9).</p>

## 9.2. Trench AU 129

L11738 TZ 101971	<p>Total number of diagnostic fragments: 2 (Hellenistic: 1, Indeterminable: 1)</p> <p>Undiagnostic: 3</p> <p>Hellenistic: TZ 101971-002 (<i>Pl. 9.8a</i>): rim fragment of jug with round, thickened rim; late 4<sup>th</sup> to early 1<sup>st</sup> cent. BCE; for shape, see comparison from Tell el-Ful (Berlin 2015, Pl. 6.1.17, Fig. 2).</p>
L11764 TZ 101992	<p>Total number of diagnostic fragments: 4 (Iron Age: 1, Persian/Hellenistic: 2, Indeterminable: 1)</p> <p>Undiagnostic: 40</p> <p>Iron Age: TZ 101992-004 (<i>Pl. 9.8b</i>): rim fragment of cooking pot with ridge under the rim, belongs to Type 1a (see <i>Chap. 7.3.4</i>); compare also Schwermer 2015, 54–55, KtEZ2b.1, 59–60, KtEZ2b.4.</p> <p>Hellenistic: TZ 101992-006 (<i>Pl. 9.8c</i>): rim fragment of cooking pot; fabric group: JOP, hence Hellenistic; for shape, compare Kenkel 2012, Pl. 24, Group 5, Kt5, Kt6, Kt7. TZ 101992-005 (<i>Pl. 9.8d</i>): rim fragment of vessel with thickened, offset rim; likely a rim fragment of an amphora/amphoriskos; most likely Hellenistic, but could also be Persian (for Hellenistic comparison, see amphoriskos from Tel Kedesh, Berlin 2015, 665, Pl. 6.1.18, Fig. 16 (2<sup>nd</sup> – early 1<sup>st</sup> cent. BCE)).</p>

L11782: TZ 102051	<p>Total number of diagnostic fragments: 13 (Iron Age: 7, Hellenistic: 5, Indeterminable: 1) Undiagnostic: 146</p> <p>Iron Age: TZ 102051-002 (<i>Pl. 9.8e</i>): body fragment with painted brown decoration, belongs to a flask of the 10<sup>th</sup> and early 9<sup>th</sup> cent. BCE; a comparison comes from Tell Far'a north (Tappy 2015, 194, pl. 2.3.11:1). TZ 102051-007 (<i>Pl. 9.8f</i>): rim of cooking pot; Iron Age of Type 2a (see <i>Chap. 7.3.4</i>); compare also Schwermer 2015, 54, KtEZ2b.1, Fig. 1–2. TZ 102051-008 and -011 (<i>Pl. 9.8g. h</i>), and probably TZ 102051-015 (<i>Pl. 9.8i</i>): are rims of Iron Age kraters. TZ 102051-012 (<i>Pl. 9.8j</i>): upper part of a bowl, most probably belongs to the Iron Age (Ware 33). TZ 102051-014 (<i>Pl. 9.8k</i>): Iron Age cooking pot probably attributed to Type 3b (see <i>Chap. 7.3.4</i>)</p> <p>Hellenistic: TZ 102051-009 and -010 (<i>Pl. 9.8l</i>): two fragments of the same vessel; rim of cooking pot with handles; fabric group: JOP, hence Hellenistic; for shape, compare Kenkel 2012, Pl. 25, Group 5, Kt18. TZ 102051-005 (<i>Pl. 9.8m</i>): rim fragment of bowl with s-curved walls and outwardly bent rim; Hellenistic; comparable to bowl from Tall Zar'a (Kenkel 2012, Pl. 29, Group 1, Sü11.1) and other sites such as Samaria and Tel Anafa (Berlin 2015, Pl. 6.1.4, Fig. 4 and 6 (3<sup>rd</sup> to early 1<sup>st</sup> cent. BCE)). TZ 102051-003 (<i>Pl. 9.8n</i>): the general shape is similar to TZ 102051-005, but walls are steeper; most probably Hellenistic. TZ 102051-004 (<i>Pl. 9.8o</i>): rim fragment of thin-walled amphora with straight neck and offset rim section; comparisons at Tall Zar'a date to the Hellenistic (Kenkel 2012, Pl. 37, Group 7, Am4). TZ 102051-013 (<i>Pl. 9.8p</i>): rim fragment of amphora with triangular thickened rim; Hellenistic; for comparison from Tall Zar'a see Kenkel 2012, Pl. 42, Group 7, Am23.3, from Tel Anafa, see Berlin 2015, Pl. 6.1.5, Fig. 3 (2<sup>nd</sup> cent. BCE).</p>
L11837: TZ 101991	<p>Total number of diagnostic fragments: 4 (Iron Age: 1, Hellenistic: 3)</p> <p>Iron Age: TZ 101991-003 (<i>Pl. 9.9a</i>): rim fragment of vessel with round, thickened rim; probably an Iron Age bowl (Ware 22).</p> <p>Hellenistic: TZ 101991-004 (<i>Pl. 9.9b</i>): rim fragment of common or fine ware vessel; surface: red-brown to dark-brown glaze; fabric group: BSU, hence Hellenistic; for shape, compare Kenkel 2012, Pl. 15, Group 9, Sa4.2, shape dated to between the 4<sup>th</sup> to 2<sup>nd</sup> cent. BCE (Kenkel 2012, 119). TZ 101991-005 (<i>Pl. 9.9c</i>): rim fragment of Echinus bowl; Hellenistic (Kenkel 2012, Pl. 14, Group 6, Sa1.8, Sa1.13, Sa1.18). TZ 101991-002 (<i>Pl. 9.9d</i>): rim fragment of table amphora with bulged rim; for shape and date, see Kenkel 2012, 134–135, Pl. 18, Group 25, Tg3.3, mostly 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE, but also 3<sup>rd</sup> cent. BCE and 1<sup>st</sup> cent. CE.</p>

L11933: TZ 102112	<p>Total number of diagnostic fragments: 2 (Persian/Hellenistic: 2) Undiagnostic: 42</p> <p>Hellenistic: TZ 102112-002 (<i>Pl. 9.9e</i>): rim fragment of jar; maybe Persian or more likely Hellenistic; see comparison from Tel Kedesh (Stone 2012, Fig. 2.1.1-3). TZ 102112-003 (<i>Pl. 9.9f</i>): base fragment of fine ware vessel (bowl) with foot stand; surface: red-brown to orange-brown glaze; outside: semi-glazed; fabric group: BSU, hence Hellenistic.</p>
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### 9.3. Trench AU 131

L11765: TZ 102000	<p>Total number of diagnostic fragments: 1 (Iron Age: 1) Undiagnostic: 42</p> <p>Iron Age: TZ 102000-002 (<i>Pl. 9.9g</i>): base fragment of closed vessel; outside burnished.</p>
L11766: TZ 102011	<p>Total number of diagnostic fragments: 10 (Early Bronze Age: 1, Iron Age: 8, Indeterminable: 1) Undiagnostic: 154</p> <p>Middle Bronze Age: TZ 102011-007 (<i>Pl. 9.9h</i>): rim fragment of pot or jar with applied clay decoration.</p> <p>Iron Age: TZ 102011-003 (<i>Pl. 9.9i</i>): base fragment with thickened foot ring. TZ 102011-006 and -004 (<i>Pl. 9.9j. k</i>): base fragments of Iron Age kraters. TZ 102011-010 (<i>Pl. 9.9l</i>): rim of cooking pot close to Type 1a (see <i>Chap. 7.3.4</i>). TZ 102011-002 (<i>Pl. 9.9m</i>): rim fragment, probably, of medium-sized jar. TZ 102011-008 (<i>Pl. 9.9n</i>): rim fragment of common ware vessel (probably jar or pot); fabric: whitish beige Ware 18 and therefore probably late Iron Age. TZ 102011-005 (<i>Pl. 9.9o</i>): rim of jar with thickened, round rim. TZ 102011-009 (<i>Pl. 9.9p</i>): rim of cooking pot, dates to the Iron Age IIA, 10<sup>th</sup> century BCE (see Lehmann 2015, pl. 2.1.2: 3).</p>
L11886: TZ 102079	<p>Total number of diagnostic fragments: 8 (Iron Age: 8) Undiagnostic: 203</p> <p>Iron Age: TZ 102079-003 (<i>Pl. 9.10a</i>): rim of Iron Age krater. TZ 102079-005 (<i>Pl. 9.10b</i>): cooking pot; probably Iron Age IIB (related to Type 2b, see <i>Chap. 7.3.4</i>). TZ 102079-007 (<i>Pl. 9.10c</i>): cooking pot with handles; Iron Age TZ 102079-008 and -009 (<i>Pl. 9.10b. d. e</i>): body fragments with painted decoration, Iron Age, the first fragment has a yellow slip layer, dates probably to IA/IIA.</p>
L11889: TZ 102093	<p>Total number of diagnostic fragments: 3 (Iron Age: 2, Indeterminable: 1) Undiagnostic: 31</p> <p>Iron Age: TZ 102093-002 (<i>Pl. 9.10f</i>): Low ring base fragment, probably belongs to Iron Age krater (Ware 30).</p>

L11928: TZ 102101	<p>Total number of diagnostic fragments: 2 (Iron Age: 1, Persian/Hellenistic (?): 1) Undiagnostic: 23</p> <p>Iron Age: TZ 102101-003 (<i>Pl. 9.10g</i>): body fragment with painted decoration.</p> <p>Persian/Hellenistic (?): TZ 102101-002 (<i>Pl. 9.10h</i>): rim fragment of jug with concave neck; could be dated to the Persian Period because of its fabric (Ware I-09), which is predominant in late Iron Age material. However, the form of this fragment could be compared to Hellenistic amphora rims (2<sup>nd</sup> cent) (Berlin 2015, Pl. 6.1.5, Fig. 1-2; Stone 2012, Fig. 3.3.2).</p>
L11945: TZ 102121	<p>Total number of diagnostic fragments: 3 (Iron Age: 2, Hellenistic: 1) Undiagnostic: 20</p> <p>Iron Age or earlier: TZ 102121-004 (<i>Pl. 9.10i</i>): body fragment with plastic decoration. TZ 102121-002 (<i>Pl. 9.10j</i>): rim fragment of jug or jar; because of its fabric (Ware 30), can be dated to the Iron Age.</p> <p>Hellenistic: TZ 102121-003 (<i>Pl. 9.10k</i>): rim fragment of jar with round, thickened rim; the extremely thin wall around the neck is comparable to a Hellenistic jar from Tel Dor, 3<sup>rd</sup> to 2<sup>nd</sup> cent. BCE (Berlin 2015, 658, Pl. 6.1.12).</p>
L11962: TZ 102156	<p>Total number of diagnostic fragments: 30 (Iron Age: 4, Hellenistic/early Roman: 24, Indeterminable: 2) Undiagnostic: 201</p> <p>Iron Age: TZ 102156-007 (<i>Pl. 9.10l</i>): rim fragment of bowl, surface burnished. TZ 102156-013 (<i>Pl. 9.10m</i>): rim fragment of juglet with a single handle. TZ 102156-019 (<i>Pl. 9.10n</i>): rim fragment of holemouth probably of a jar; it could date to the Iron Age (Ware 18). Examples of holemouth jars can be found during the Iron Age IIC (7<sup>th</sup>–6<sup>th</sup> cent. BCE) (Amiran 1969, 424, photo. 249, pl. 82: 4–5, 8–11).</p> <p>Hellenistic: TZ 102156-003 (<i>Pl. 9.11a</i>): rim fragment of Echinus bowl; Hellenistic; surface: brown to dark brown glaze, inside and outside; fabric group: BSU; for comparisons, see Berlin 2015, 645, Pl. 6.1.3, Fig. 1, Fig. 7-11. TZ 102156-009, -012 and -015 (<i>Pl. 9.11b–d</i>): rim fragments of amphorae with bulging, thickened rim and straight neck; shape is Hellenistic to early Roman, but the vertical rims are especially common in the 2<sup>nd</sup> cent. BCE (Kenkel 2012, 217; see comparisons in Kenkel 2012, Pl. 37, Group 7, Am3). TZ 102156-005, -006, -008 and -010 (<i>Pl. 9.11e–h</i>): rims of Hellenistic amphorae with oval to triangular thickened rim; comparable to amphorae from Tall Zar'a (Kenkel 2012, Pl. 38, Group 7, Am5). TZ 102156-011 (<i>Pl. 9.11i</i>): rim fragment of amphora with thin walls and offset rim; see late Hellenistic to Roman comparisons in Kenkel 2012, Pl. 37, Group 7, Am4.2, Am4.3; 217. TZ 102156-027, -028, -031 and -032 (<i>Pl. 9.11j–m</i>): rim fragments of cooking pots with short neck, outwardly bent rim and wide body; fabric group: JOP, hence Hellenistic; shape is comparable to Kt8 in Kenkel 2012, 3<sup>rd</sup> cent. BCE to 1<sup>st</sup> cent. CE (Kenkel 2012, 169, Pl. 24, Group 5, Kt8).</p>

	<p>TZ 102156-021 (<i>Pl. 9.11n</i>): rim fragment of Hellenistic fish-plate; surface: inside and outside: dark brown glaze of high quality; note: the rim is sharply edged; this is maybe sign of a relatively young date (early to middle Hellenistic); for comparison of the shape, see Stone 2012, Fig. 4.21, Fig. 4 (date: Hell2).</p> <p>TZ 102156-030, -026, -029, -025, -033 and -034 (<i>Pl. 9.11o–t</i>): rims of cooking pots; fabric group: JOP, hence Hellenistic; for shape, see Kenkel 2012, Pl. 25, Group 5, Kt.16, Pl. 24, Group 5, Kt2.1. Kt5.1, Kt.7.1.</p> <p>TZ 102156-022 and -002 (<i>Pl. 9.11u. v</i>): rim fragments of amphorae/jars with short neck and angular thickened rim; maybe best comparable to Hellenistic amphoras of the type Am6.4 in Kenkel 2012, Pl. 38, Group 7, Am6.4; later date may also be possible</p> <p>Unknown:</p> <p>TZ 102156-020: body fragment of vessel with characteristic, fine, light-grey fabric and dark grey glaze on the outside; vessel was apparently deformed after production on the wheel; the fragment was inventoried because of its significant shape, fabric and surface treatment; two similar fragments, but with incised or molded decoration, were inventoried in 2018 at Tall Zar'a (TZ 102016-003 (AV 129) and TZ 102162-002 (AU 130); no comparison has been found yet, the date is therefore unclear.</p>
L11964: TZ 102140	<p>Total number of diagnostic fragments: 12 (Iron Age: 12) Undiagnostic: 180</p> <p>Iron Age:</p> <p>TZ 102140-002 (<i>Pl. 9.12a</i>): Iron Age krater.</p> <p>TZ 102140-004 (<i>Pl. 9.12b</i>): rim of cooking pot, related to Type 1a (see <i>Chap. 7.3.4</i>).</p> <p>TZ 102140-010 (<i>Pl. 9.12c</i>): base of tripod bowl, Iron Age IB to IIA (for shape see, for example, Amiran 1969, pl. 101:11)</p> <p>TZ 102140-009 and -011 (<i>Pl. 9.12d. e</i>): small body sherds with painted decoration.</p> <p>TZ 102140-012, -013, and -014 (<i>Pl. 9.12f–h</i>): these sherds most probably belong to the same vessel, probably a krater or small jar; Iron Age IB (see Mazar 2015, pl. 1.1.19: 2; Herr 2015, pl. 1.3.7: 8; Fischer 2013, fig. 422:7).</p>
L11965: TZ 102143	<p>Total number of diagnostic fragments: 4 (Iron Age: 3, Persian/Hellenistic: 1) Undiagnostic: 75</p> <p>Iron Age:</p> <p>TZ 102143-004 (<i>Pl. 9.12i</i>): rim fragment of Iron Age IIB cooking pot, Type 2b (see <i>Chap. 7.3.4</i>; see also Schwermer 2015, Appendix 1, 58: TZ 4522-002).</p> <p>TZ 102143-002 (<i>Pl. 9.12j</i>): rim of cooking pot, related to Type 3b (see <i>Chap. 7.3.4</i>).</p> <p>Hellenistic/Persian:</p> <p>TZ 102143-005 (<i>Pl. 9.12k</i>): rim fragment of common ware vessel, maybe a bowl, with inclined walls; reddish slip both inside and outside; bowls with inclined walls are documented since 5<sup>th</sup> and 4<sup>th</sup> cent. BCE, but most common in Hellenistic (3<sup>rd</sup> and 2<sup>nd</sup> cent. BCE) (Kenkel 2012, 119-120, Pl. 15, Group 9, Sa4).</p>

L11980: TZ 102157	<p>Total number of diagnostic fragments: 5 (Iron Age: 4, Hellenistic: 1) Undiagnostic: 95</p> <p>Iron Age: TZ 102157-002 (<i>Pl. 9.12l</i>): rim fragment of cooking pot with thickened, offset rim. TZ 102157-003 (<i>Pl. 9.12m</i>): rim fragment of large open vessel with outwardly bent, s-curved rim and thickened lip; see, for example, parallels from Tell er-Rumeith (Barako – Lapp 2015, fig. 3.8: 1–7). TZ 102157-004 (<i>Pl. 9.12n</i>): body sherd with painted decoration (brown horizontal lines). TZ 102157-006 (<i>Pl. 9.12o</i>): rim fragment of a bowl; burnished outside.</p> <p>Hellenistic: TZ 102157-007: body sherd with semi-glazing; fabric group: BSU, hence Hellenistic.</p>
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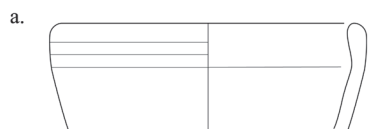
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Plate 9.1: Pottery from trench AV 129, L11809: Iron Age (a-f), Persian/Hellenistic (g-m), scale 1:3



TZ 101997-002



TZ 101997-007



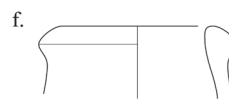
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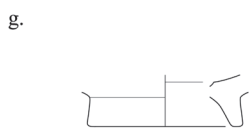
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TZ 101997-015



TZ 101997-003



TZ 101997-005



TZ 101997-008



TZ 101997-009



TZ 101997-010



TZ 101997-011



TZ 101997-012

0  5 cm

Plate 9.2: Pottery from trench AV 129, L11861: Iron Age (a-f), Persian/ Hellenistic to early Roman (g-s), scale 1:3

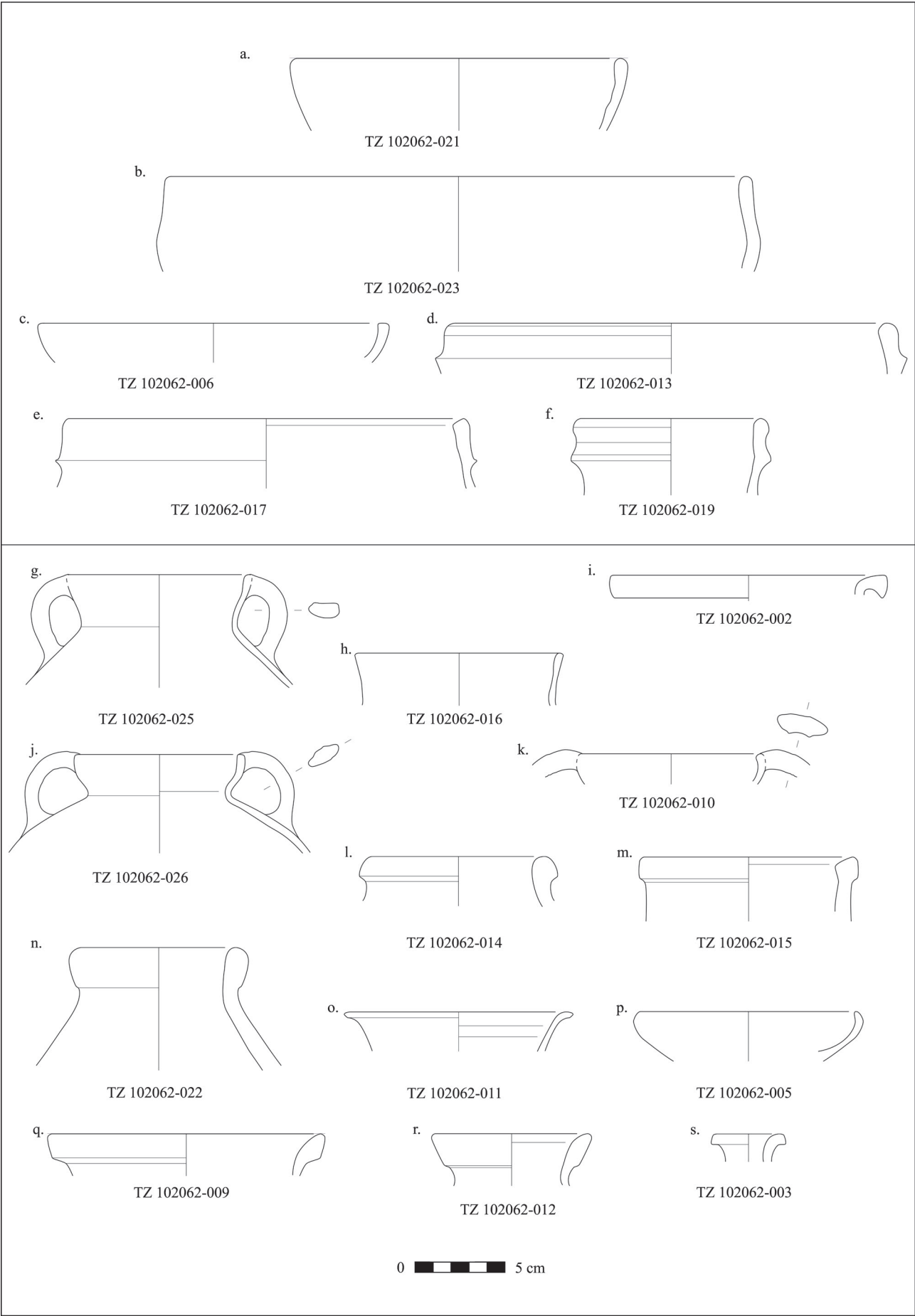


Plate 9.3: Pottery from trench AV 129, L11893: Iron Age (a-g), Persian/Hellenistic to early Roman (h-k), scale 1:3

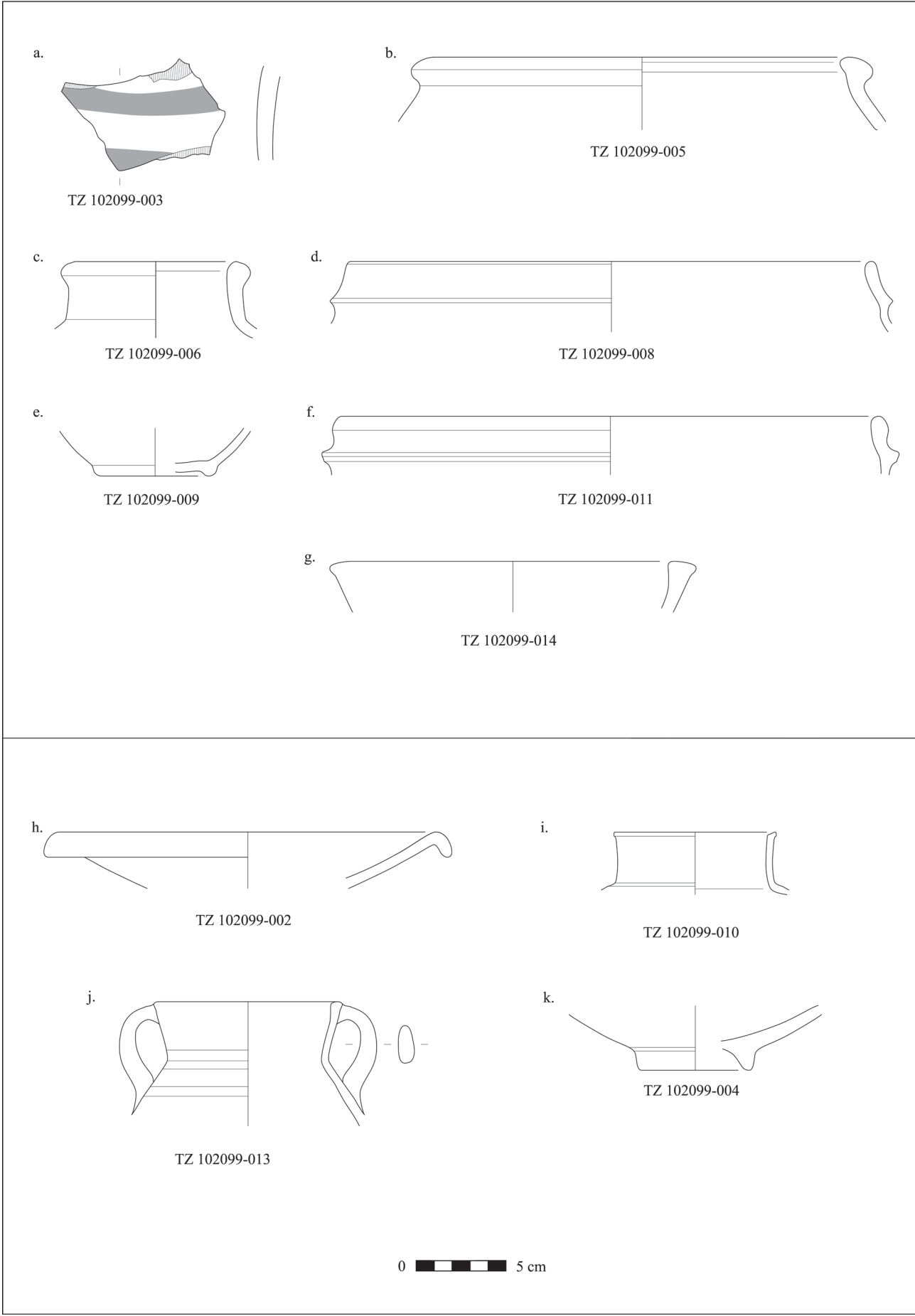


Plate 9.4: Pottery from trench AV 129, L11907: Iron Age (a-d), Persian/Hellenistic to Roman (e-g); L11917: Iron Age (h-k); L11979: Iron Age (l), Persian/Hellenistic (m-r), scale 1:3

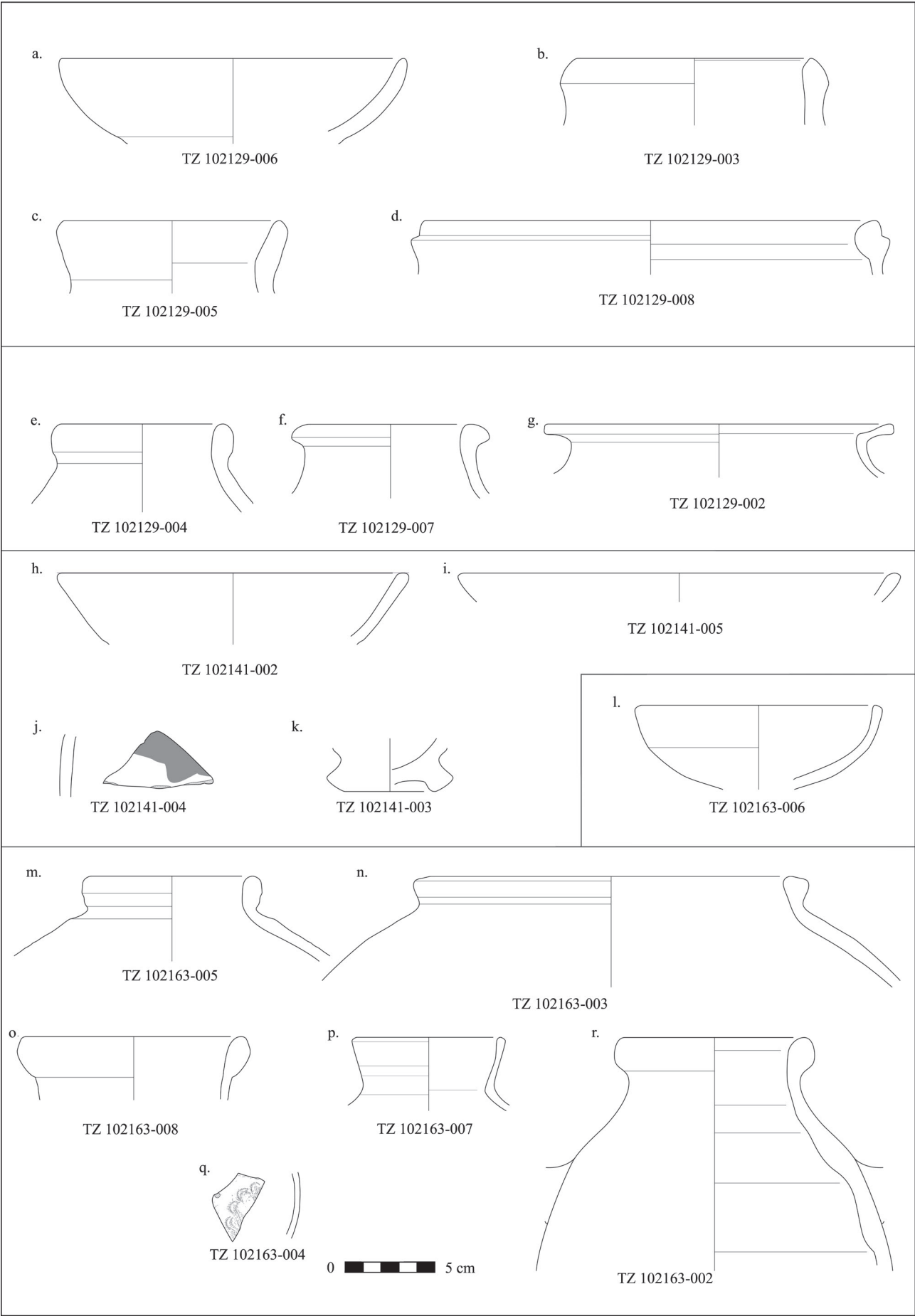


Plate 9.5: Pottery from trench AV 129, L12013: Iron Age (a. b), late Hellenistic (c); L12016: Iron Age (d-f), Hellenistic/early Roman (g-j), scale 1:3

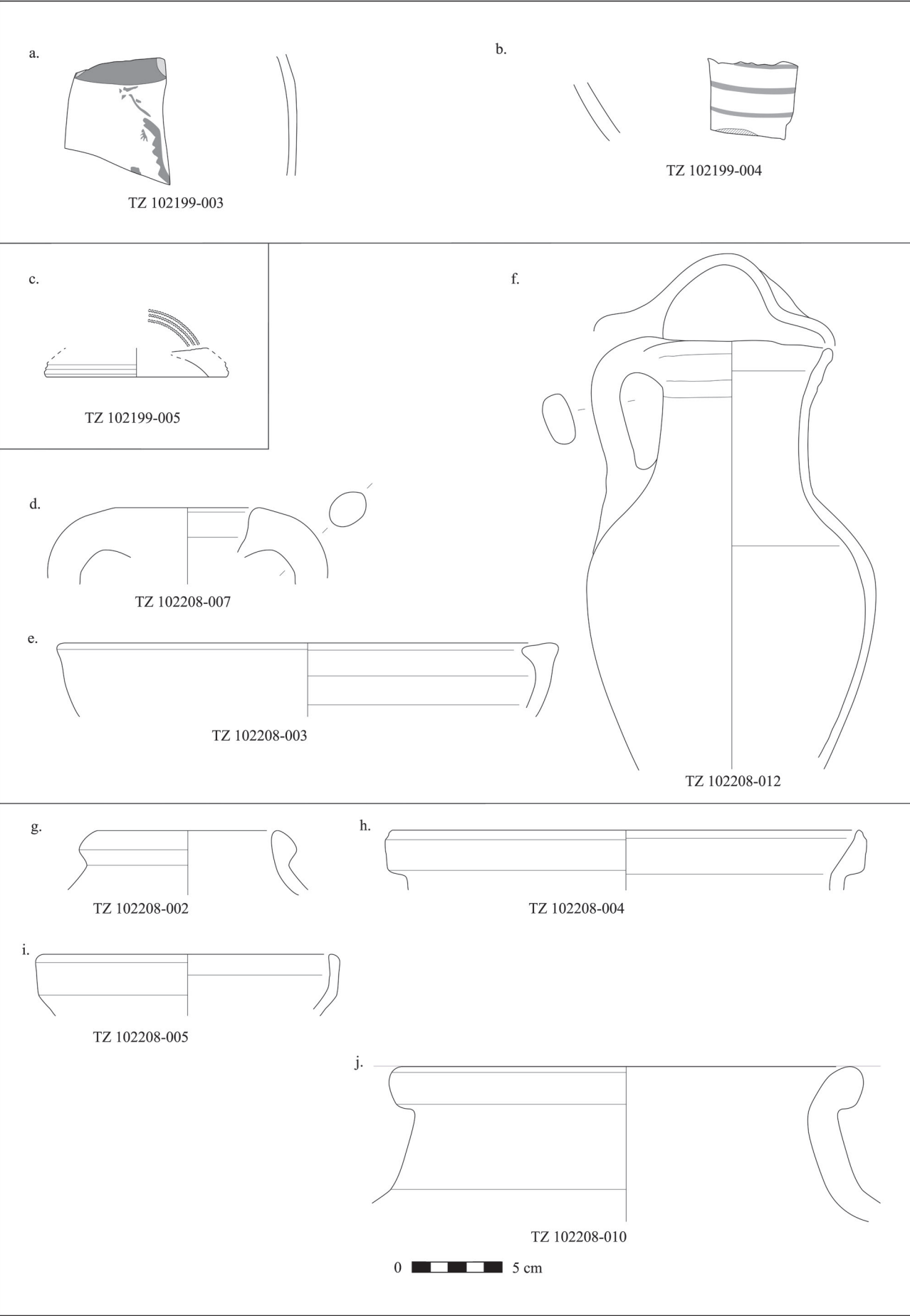


Plate 9.6: Pottery from trench AV 129, L12119: Iron Age (a), Hellenistic (b); L12025: Iron Age (c-e); L12126: Iron Age (f) Hellenistic (g), scale 1:3. L12127: Late Bronze Age (h) scale 1.1, Iron Age (i-k), Hellenistic/Roman (l-o), scale 1:3

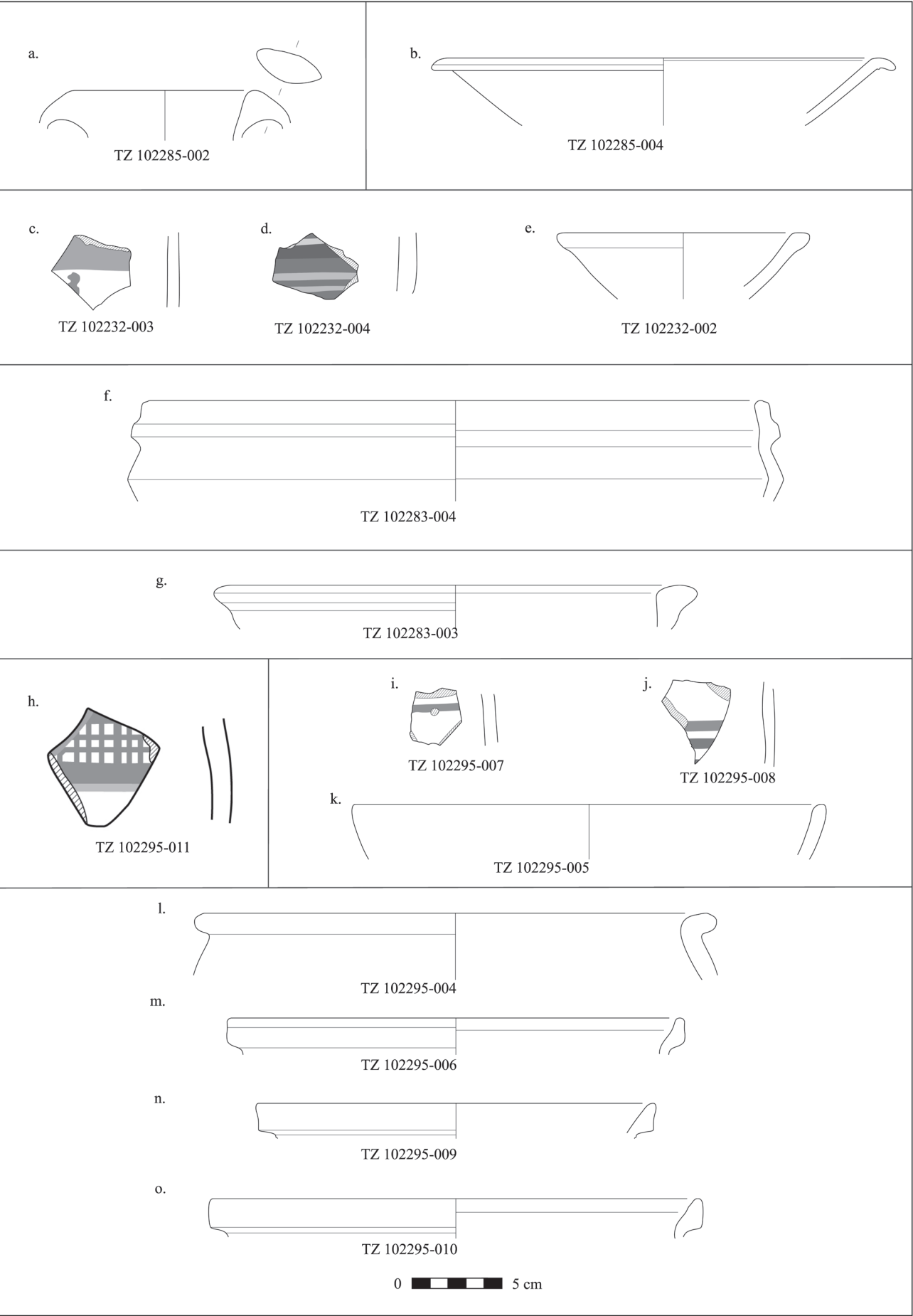


Plate 9.7: Pottery from trench AV 129, L12136: Iron Age (a), early Roman (b); L12159: Iron Age (c), Hellenistic (d); L12160: Iron Age (e. f); L12161: Iron Age (g. h), L12168: Iron Age (i); L12169: Iron Age (j-l), Hellenistic (m); L12170: Hellenistic (n. o), scale 1:3

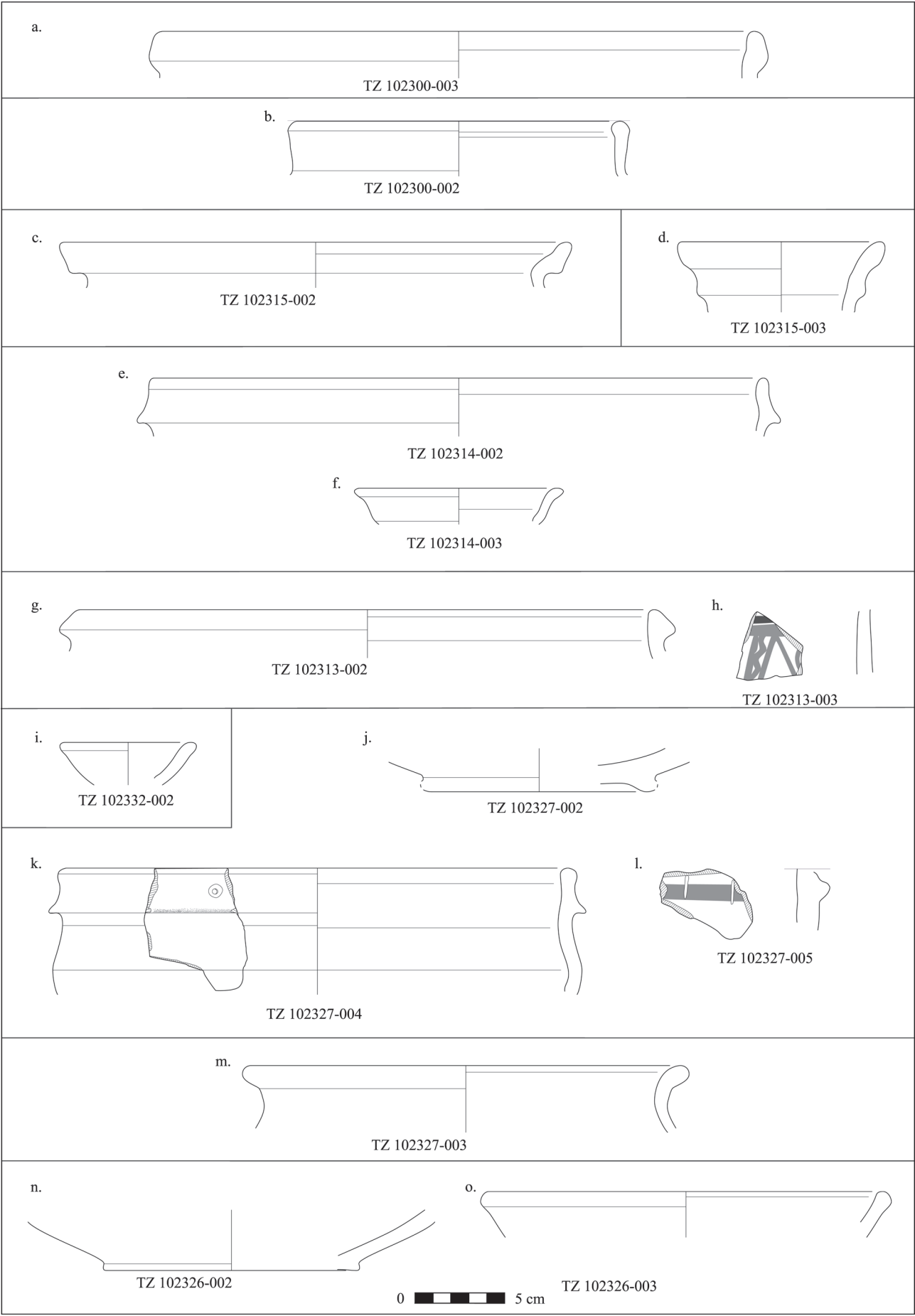


Plate 9.8: Pottery from trench AU 129, L11738: Hellenistic (a); L11764: Iron Age (b), Hellenistic (c. d); L11782: Iron Age (e-k), Hellenistic (l-p),scale 1:3

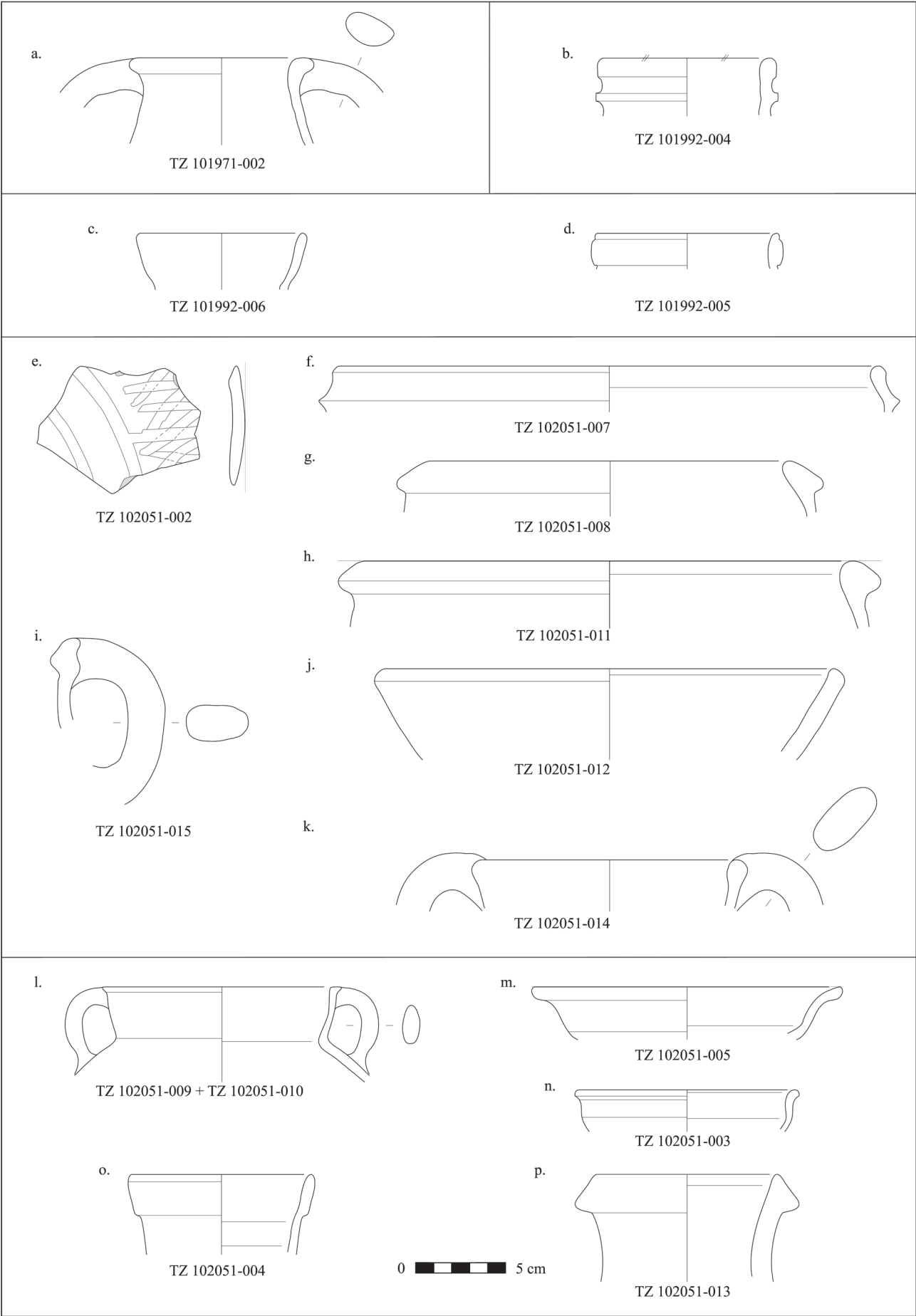


Plate 9.9: Pottery from trench AU 129, L11837: Iron Age (a), Hellenistic (b-d); L11933: Hellenistic (e. f); Pottery from trench AU 131, L11765: Iron Age (g); L11766: Middle Bronze Age (h), Iron Age (i-p), scale 1:3

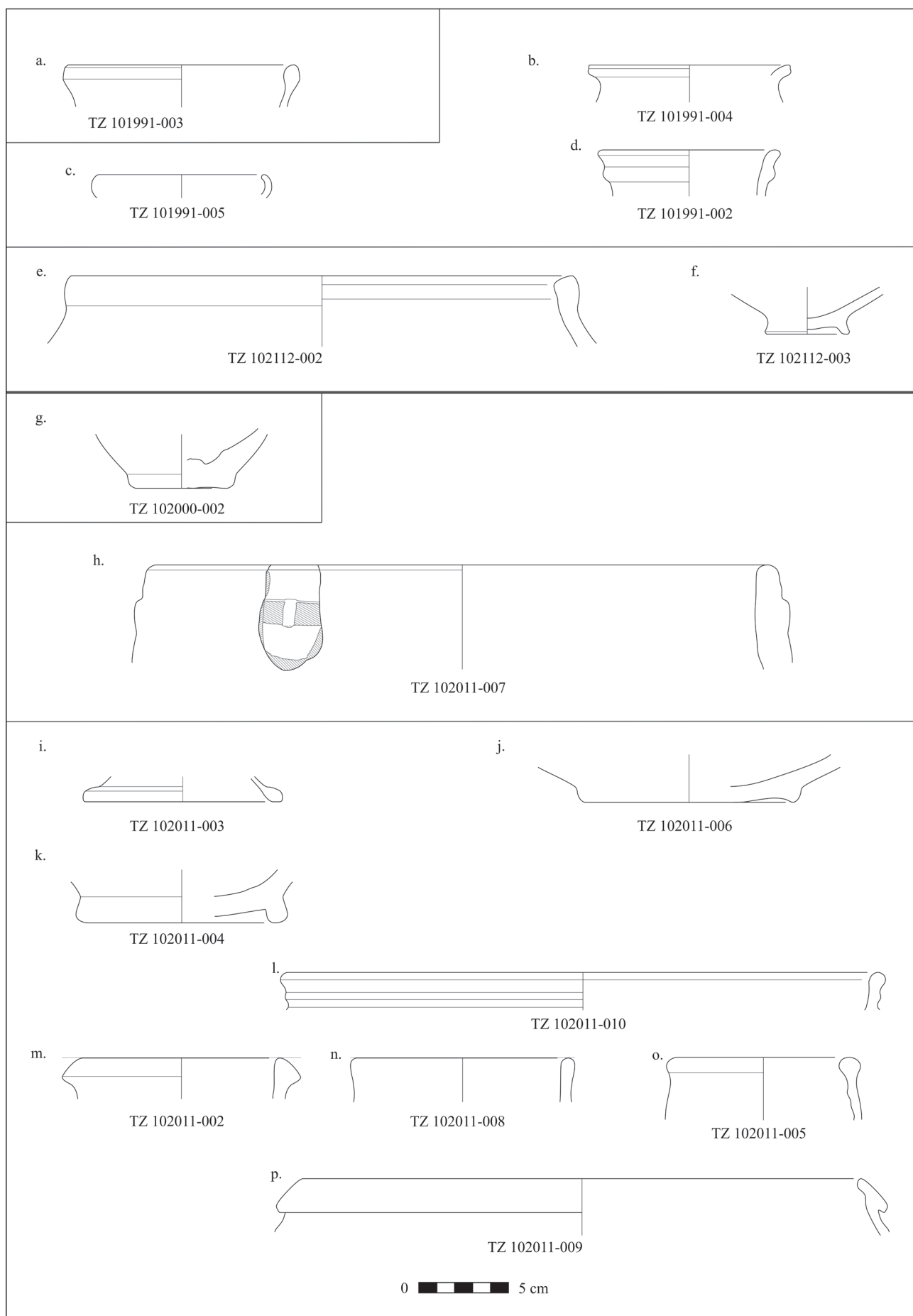
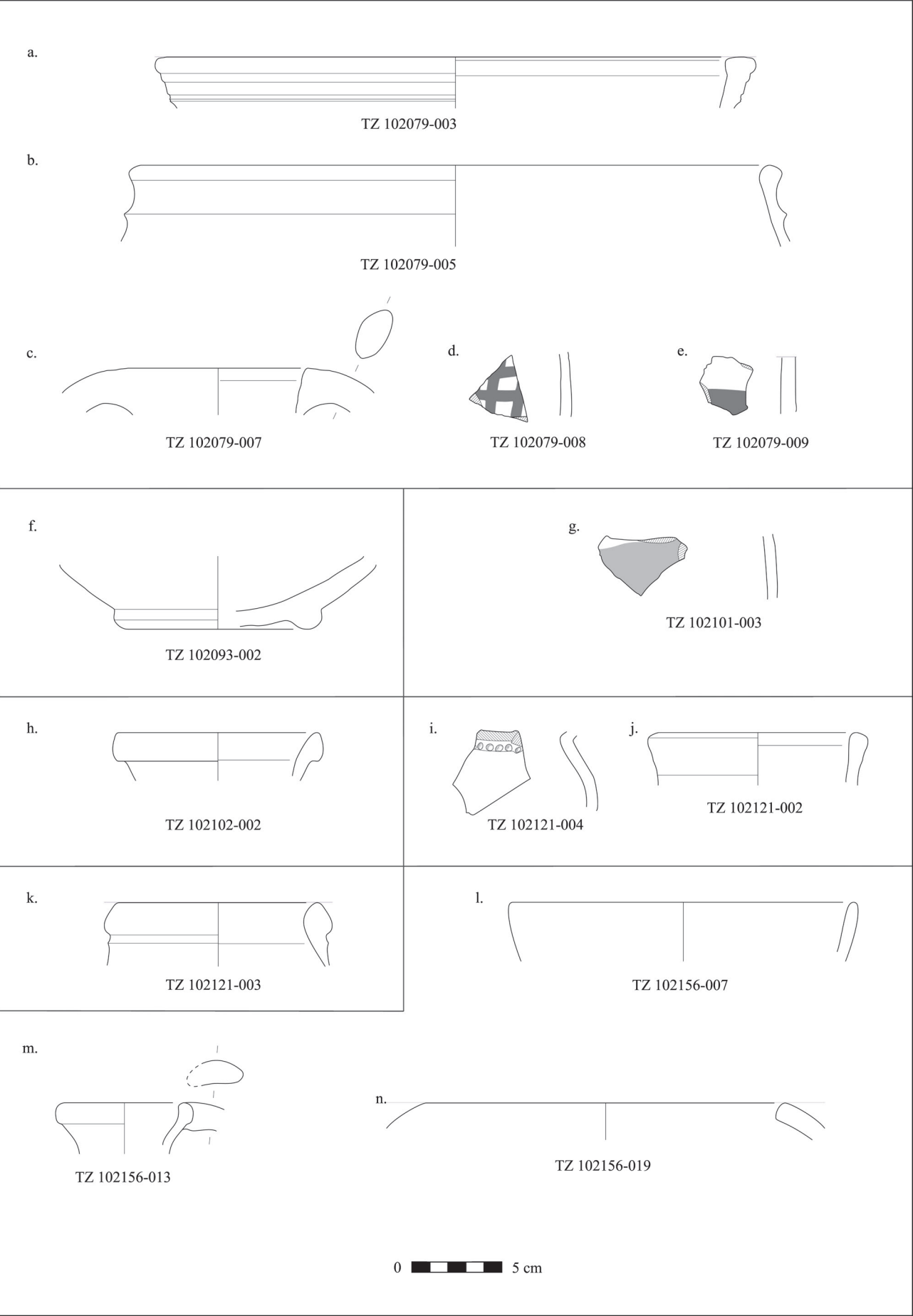


Plate 9.10: Pottery from trench AU 131, L11886: Iron Age (a-e); L11889: Iron Age (f); L11928: Iron Age (g), Persian/Hellenistic (?) (h); L11945: Iron Age (i. j), Hellenistic (k); L11962: Iron Age (l-n), scale 1:3



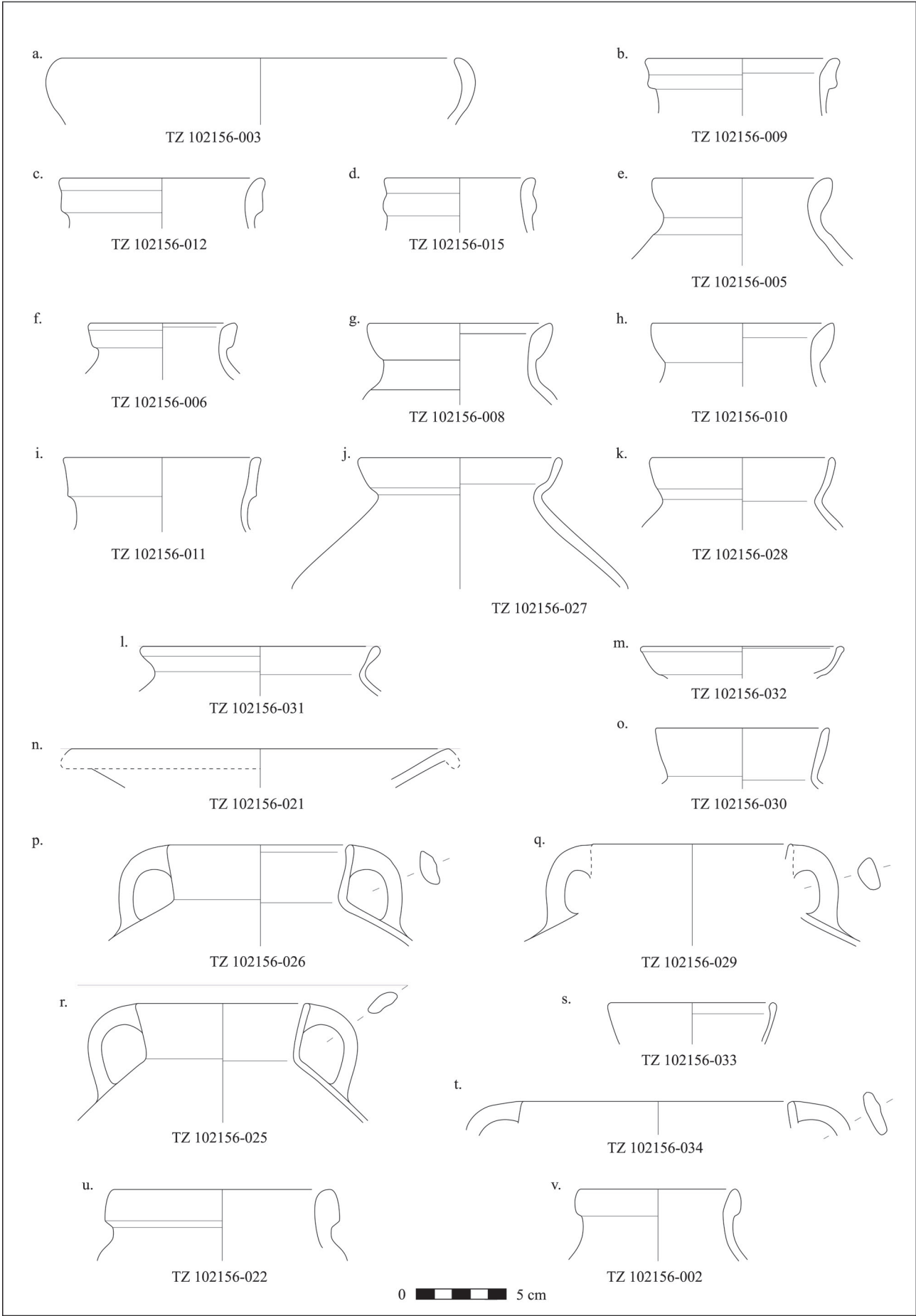
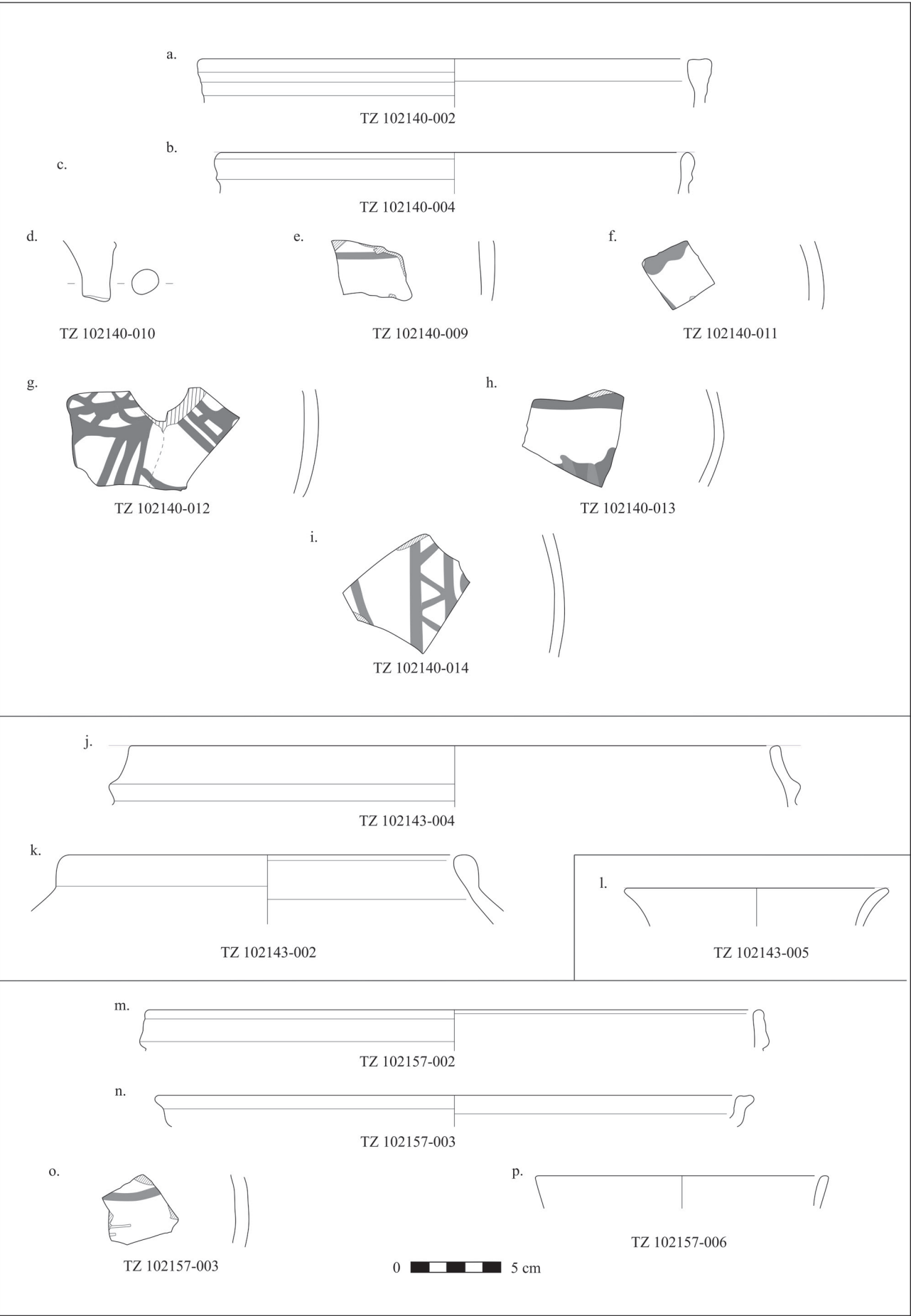


Plate 9.12: Pottery from trench AU 131, L11964: Iron Age (a-i); L11965: Iron Age (j. k), Hellenistic/Persian (l); L11980: Iron Age (m-p), scale 1:3







## 10. LAMPS

by Eva Strothenke-Koch

### 10.1. Open Lamps (*Cat. 10.1–10.12*)

In total, the 2018 and 2019 excavations in Area II on Tall Zar'a brought twelve fragments of open lamps to light. Two of these fragments may belong either to open saucer lamps or be parts of simple bowls (*Cat. 10.3; Pl. 10.1c* and *Cat. 10.4; Pl. 10.1d*).

Generally, these kinds of lamps are wheel-made. First the bowl or saucer was modelled and then the spouts were formed by indenting or pinching the rim. Overall, it is quite difficult to date saucer lamps as they did not change fundamentally between the 2<sup>nd</sup> millennium BCE<sup>36</sup> and the Hellenistic period, when they went out of use (Cytryn-Silverman 2010, 131). The first – and only – categorical change concerning oval or round saucer lamps happened in the Hellenistic period. Sussman defines three groups of Hellenistic saucer lamps (Sussman 2007). Her type I still resembles the Iron Age and Persian period predecessors. Given the small number of lamps in this type I group, it seems quite probable that, in fact, it simply represents some old pieces that survived into Hellenistic contexts. Equally, this group could also be the continuation of the traditions of well-established workshops.<sup>37</sup> Indeed, in the Hellenistic period saucer lamps with channel spouts are more common than in earlier periods. The rim is pinched so much that the lips are almost touching (Sussman type II) or even pressed together (type III). Thereby, the lamp becomes almost triangular in shape (Sussman 2007, 90–93 fig. 11.59:1 and 11.59:2–3). During the Mamluk period, the V-shaped spouts

reappear (making it even more difficult to distinguish them from their earlier predecessors and to date them at all) ('Amr 1986, 159–160 and Rosenthal – Sivan 1978, 79 nos. 329 f.), and open lamps are sometimes glazed (Cytryn-Silverman 2010, pl. 9.33,1). Glazed specimens are not present in the 2018 and 2019 Tall Zar'a corpus of saucer lamps but nevertheless, it cannot be ruled out that the one or another unglazed fragment may be from the medieval period.<sup>38</sup>

The fragments in the finds material from Tall Zar'a show more or less V-shaped spouts without touching lips. Whilst *Cat. 10.1 (Pl. 10.1a); 10.2 (Pl. 10.1b); 10.6 (Pl. 10.1f); 10.8 (Pl. 10.1h); 10.10 (Pl. 10.2a)* have quite clear V-shaped spouts, *Cat. 10.7 (Pl. 10.1g)* and *10.9 (Pl. 10.1i)* offer more rounded and less pinched spouts. Due to the fragmentary preservation of the fragments it is difficult to find good comparisons among the examples given by Sussman. With regard to the design of the spouts and the slightly out-turned rims, two seven-spouted saucer lamps of the Iron Age I–II (1200–586 BCE) (Sussman 2007, 385 no. 1450. 1451), as well as some single lamps from the early Bronze Age to the Iron Age II that do not have closely pinched spouts like the fragments from Tall Zar'a, provide possible comparisons in Sussman's catalogue.<sup>39</sup> Bailey presents several saucer lamps from Cyprus and Al Mina, that are in the British Museum collection. They also have a closely pinched wick-rest. They are dated to the 6<sup>th</sup> to 4<sup>th</sup> cent. BCE by their find con-

36 From the beginning of the Bronze Age (3<sup>rd</sup> millennium BCE), saucers and bowls were wheel-thrown. Only those from earlier periods are normally handmade. In the Middle Bronze Age, the lamps are more open with a simple and straight rim. But finally, from the Late Bronze Age to the Hellenistic period they did not change noticeably. For the appearance of saucer lamps from the Bronze Age see the plates in chronological order of Sussman 2007. Sussman presents 1.585 saucer lamps registered by the Israel Antiquities Authority from 1948 to 1990 (see also p. 4 f.). See also Kennedy 1963, 70 and Rosenthal – Sivan 1978, 75–77.

37 See Sussman 2007, 90: "Were such lamps still on sale at the beginning of the Hellenistic period 4<sup>th</sup>/3<sup>rd</sup> cent. BCE?". In total, only three specimens out of 79 belong to Sussman's Hellenistic type I (see Sussman 2007, 395–405).

38 See the short commentary on the dating problem at the end of this abstract.

39 See for example Sussman 2007, no. 875 (Jericho; Late Bronze Age II/Iron Age I); no. 926 (Tel Eton; Iron Age I); no. 935 (Tel Eton; Iron Age I); no. 1044 (Tel Eton; Iron Age IIA–B); even possible: box-shaped lamps like no. 111–175 (Early to Middle Bronze Age).

text.<sup>40</sup> At Tel Anafa, saucer lamps appear in Middle Bronze Age to Persian/pre-Hellenistic strata (Dobbins 2012, 116–118 fig. 1 pl. 1).

Kenkel presents one piece of a saucer lamp from Tall Zar'a that she dates to the 4<sup>th</sup> to 3<sup>rd</sup> cent. BCE, but she also concedes that this kind of lamps is quite common for the 5<sup>th</sup> to 4<sup>th</sup> cent. in the region (Kenkel 2012, 264 pl. 49 La1). This lamp belongs to Kenkel's light buff, medium tempered fabric S/L. The fragments *Cat. 10.1–10.12* are all of a light buff to pinkish buff fabric that can be assigned relatively securely to Kenkel's group S, which is dated essentially to the Hellenistic period (Kenkel 2012, 35).

At Ramla the fragments of saucer lamps correspond quite well to the examples from Tall Zar'a. Cytryn-Silverman dates them, based on their accompanying finds and parallels from other sites, to the Mamluke period with the possibility of continuing on during the whole Ottoman period.<sup>41</sup>

To conclude, due to the fragmentary preservation of the fragments and the long duration of production with only marginal changes in the appearance of open saucer lamps, it is almost impossible to date them on their own terms, without the ref-

erence to stratigraphically closed contexts. But by taking the fabric of the fragments into account, and comparing them to the assessments and observations of Kenkel and Berlin, a date from the late Iron Age to the early Hellenistic period (5<sup>th</sup> to 1<sup>st</sup> cent. BCE) for *Cat. 10.1–10.12* seems feasible (Kenkel 2012; Berlin 2015). However, a Mamluke or Ottoman date must also be considered as illustrated by the material from Ramla, which is also very similar to the fragments from Tall Zar'a. Therefore, we must draw the conclusion that the dating of such small fragments as those from the 2018 and 2019 excavations at Tall Zar'a using internal arguments alone is not sufficient. *Cat. 10.3* was found in locus L11902, a locus interpreted as pit fill, that had many finds which can be dated to the 2<sup>nd</sup> cent. BCE. The finds and the stratigraphy fit with the assumption of a late Iron to early Hellenistic date of that specific fragment (see *Chap. 1.2* and *Chap. 18: Cat. 18.2*). Though still with some reservations, the similarity in fabric and design to *Cat. 10.1–10.12*, in addition to Kenkel's assessments (see above), may help point to a general Iron Age/Hellenistic date for that group of lamps from Tall Zar'a.

## 10.2. Hellenistic Wheel-made Lamps (*Cat. 10.13–10.15*)

*Cat. 10.13–10.15* represent locally or regionally produced wheel-made lamps. It is quite clear that this type of lamp goes back to its Greek forerunners. Their typology has been extensively studied, for example at Corinth (Broneer 1930, 45 pl. 3, 120), Athens<sup>42</sup> and Olynth (Robinson 1952, 336–391 pl. 146 f.) and they are dated to between the late 5<sup>th</sup> and the early 3<sup>rd</sup> cent. BCE (Sussman 2009, 15). At Tel Anafa, the wheel-made lamps with rounded shoulder are seen as a local imitation of Greek imports, though the production centre has not been found. Their fabric, described by Dobbins (2012, 124–126 fig. 2), is very similar to the fabric of the fragments found on Tall Zar'a. Dobbins suggests a 4<sup>th</sup> to 3<sup>rd</sup> cent. BCE date

for the lamps (Dobbins 2012, 124 f.). Kenkel dates the examples from Tall Zar'a, which she also recognized as regional productions, to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE (Kenkel 2012, 264–266). In general, this type of lamp was enormously popular across the whole Mediterranean during the Hellenistic period. Therefore, it was produced in various workshops, where they evolved from their Greek prototypes, and a long duration of production is to be expected.<sup>43</sup>

Whilst the Greek items were made of a very fine, pinkish buff fabric with a shiny or matt slip, the regionally produced specimen are of a semi-fine fabric, pinkish-buff to orange- or yellow-buff in colour and very often without slip (Kenkel 2012,

40 Bailey 1975, Q488–Q493 (Cyprus; 5<sup>th</sup> to 4<sup>th</sup> century BCE). Q504–Q505 (Al Mina; 6<sup>th</sup> to 5<sup>th</sup> cent. BCE).

41 Cytryn-Silverman 2010, 131–132, fig. 9.47–50 pl. 9.33,1; 9.34,1–2; p. 137 (the find spots square S-2, A-3 and A-19).

42 Howland 1958, Agora type 24C pl. 37, 261–265 (end of 5<sup>th</sup> to early 4<sup>th</sup> cent. BCE); 25A pl. 38, 271. 287–290. 292 (mid 4<sup>th</sup> to early 3<sup>rd</sup> cent. BCE); Bailey 1975, 29 f. pl. 18, Q77. 78.

43 To give a few examples: Waagé 1934, 58 f. pl. 7, 1924 (Antioch on the Orontes; early 3<sup>rd</sup> cent. BCE); Crowfoot et al. 1957, fig. 85, 2 (Samaria; 5<sup>th</sup> to 3<sup>rd</sup> cent. BCE); Hayes 1980, pl. 4, 24 f. 28. 37 (Egypt; 2<sup>nd</sup> half of 4<sup>th</sup> to early 3<sup>rd</sup> cent. BCE).

264 f. La2. La3). *Cat. 10.13–10.15* (Pl. 10.2d–f) are also made of a pinkish to yellowish buff and semi-fine fabric and therefore most likely regionally made. The fabric can be compared to Kenkel's fabric S. The surface of *Cat. 10.13–10.15* has only a thin, matt wash in light buff with no black or brownish black slip, like Kenkel's examples (Kenkel 2012, 264 f.; p. XCI La2). Every piece has remains of lamp black at the wick hole, a definite indicator of usage.

The shape of this group of lamps is standardized, but Sussman has noted some differences which give some indication of chronology (Sussman 2009, 14). The fragments *Cat. 10.13–10.15* are obviously of the same variant as far as their preservation allows a conclusion based on their shape. The body is glob-

ular with a wide central filling hole surrounded by a simple groove that divides the filling hole from the shoulder. The base is flat. The nozzle appears quite solid and it is a rectangular shape in profile. It is approximately 2.0 to 3.0 cm long and was attached onto a wheel-thrown body. Because of that, nozzles of this type are often found because they easily burst off the body (see *Cat. 10.13; 10.14*). Kenkel has two types of nozzles in her group 2: firstly a heavy one, triangular in profile with a flat top (Kenkel La2. La3) and secondly a more slender one that is also attached a little bit deeper at the receptacle (Kenkel La4. La6. La7). The latter is classified as a "neo-Babylonian lamp" by Sussman (Sussman 2009, 20). The three pieces presented here belong to the first nozzle type.

### 10.3. Hellenistic Mould-made Lamps (*Cat. 10.16–10.30*)

Mould-made lamps of the Hellenistic period are represented by one almost completely preserved example (*Cat. 10.16; Pl. 10.3a*), six fragments of nozzles (*Cat. 10.17–20* and *10.28–29; Pls. 10.3b–c; 10.4a–b; 10.5a–b*) and seven small shoulder fragments (*Cat. 10.21–27; Pl. 10.4c–i*). Except for two fragments (*Cat. 10.28–29*) all examples are made of a very fine grey fabric. Kenkel does not exclude the possibility that vessels and lamps made of grey fabrics might be imported (Kenkel 2012, 35) and additionally, Sussman believes that the clay for the grey fabric was not available, for example, in Palestine. Nevertheless, given the high number of products in grey fabrics, she proposes that the questions of the place of manufacture should be reconsidered (Sussman 2009, 15). The provenance of the mould-made lamps (regionally made or imports from afar) cannot, therefore, be answered here. *Cat. 10.29* and *Cat. 10.28* are made of a light grey and orange buff, semi-fine fabric. The surface is covered with a red to reddish-brown slip.

Lamp *Cat. 10.28* (Pl. 10.5a) belongs to a group with a compressed lamp body. Viewed from the top, the receptacle is more oval than round. This shape is quite common for lamps with side lugs that widen the body on one or both sides of the lamp. At the crack on the left shoulder, traces of a further dec-

oration are fairly visible. It might be a fragment of an s-coil at the transition to the lower body of the lamp.<sup>44</sup> Such lamps are dated to the 3<sup>rd</sup> to 1<sup>st</sup> cent. BCE (Sussman 2009, 32–41). The shoulder is decorated with radial lines which surround the filling hole in packages of four lines. A leaf-shaped object decorates the nozzle. It is flanked by two inwardly and one outwardly rolled coils on both sides (seven-frond palmette). This decoration is comparable to a decoration documented by Sussman that is also connected to lamp bodies with side projections (Sussman 2009, 31 fig 15, 1). Another exact parallel in terms of shape is presented by Dobbins among the lamps from Tel Anafa (Dobbins 2012, fig. 2 L65). This specimen shows a relief decoration with an eros on the shoulder. This kind of decoration can be excluded for lamp *Cat. 10.28*. Dobbins dates the lamp L65 from Tel Anafa to the 3<sup>rd</sup> cent. BCE. The decoration of *Cat. 10.28* with simple radial lines in combination with a palmette on the top of the nozzle is found on another piece from Tel Anafa (Dobbins 2012, fig. 4 L130 pl. 7 L128. L130). Although the appearance of the palmette does not correspond exactly to *Cat. 10.28*, the decoration of the shoulder also has radial lines. L128 and 130 from Tel Anafa are dated from the middle of the 2<sup>nd</sup> cent. BCE on. The longitudinal profile of *Cat. 10.28* is comparable

44 See for example here *Cat. 10.25–27* as well as Sussman 2009, 37 fig. 19.

to Kenkel's La15. La15 also shows a side projection but the nozzle is not decorated (Kenkel 2012, pl. 51 La15).

*Cat. 10.25–27* show remains of the s-coil shaped side projection on the lower part of the shoulder. For *Cat. 10.25* (*Pl. 10.4g*) parallels dating to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE are known from Jaffa, Bet Guvrin and Beth-Shean compiled by Sussman (2009, nos. 226–230), as well as at several other sites like Tel Anafa (Weinberg 1971, 105 pl. 18 B1), Tarsus (Goldman 1950, 88 f. (group IV) fig. 94 no. 39 [middle of 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE]) and on Cyprus (Oziol 1977, pl. 8, 115–117). At Tarsus, the comparable specimen comes from the “Hellenistic-Roman Unit” that is dated to the middle of the 2<sup>nd</sup> to the end of the 1<sup>st</sup> cent. BCE. At Antioch, one lamp of the same type is dated a little earlier by Waagé. (Waagé 1948, 17 “type 9d” [225 to 175 BCE]). Another comparison comes from Dor, which is again dated to the late Hellenistic period (Rosenthal-Heginbottom 2015, pl. 6.2.13, 7). The piece from Dor shows the same decoration as *Cat. 10.25* (*Pl. 10.4g*) with the radial lines, the s-coil and two interlace decorative lines at the transition from shoulder to nozzle. *Cat. 10.27* (*Pl. 10.4i*) also has a coil-shaped side projection but the shoulder is decorated by triangular-shaped leaves. Decorations like this are known from Samaria (Reisner – Fisher – Lyon 1924, fig. 191, 1460, 12a), Cyprus (Oziol 1977, pl. 7, 114, 116), Geva (Sussman 2009, no. 267) and Pella (McNicol 1992, pl. 81, 1) as well as from Tirat Yehuda, where its production is attested (Sussman 2009, 56–58 no. 269, 271). *Cat. 10.27* comes from the fill of a pit (loci L11531/L11588/L11589/L11657) that included a lot of pottery and animal bones (see *Chap. 1.1*). Beside a stamped amphora handle that dates to 207–202 BCE (see *Chap. 11: Cat. 11.1*), a coin of Antiochos IV (175–164 BCE) (see *Chap. 18: Cat. 18.1*) comes from the same locus as the lamp fragment *Cat. 10.27* (L11588). Therefore, a date of the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE, or probably even one decade earlier, seems more probable for that piece than a dating to the Roman period as indicated by the parallel from Tel Anafa (Dobbins 2012, pl. 11 L214).

A decoration similar to that on fragment *Cat. 10.25* (*Pl. 10.4g*) is also documented from the workshop at Tirat Yehuda (Sussman 2009, 56 fig.

32A no. 270). The coil on the side projection runs out in two simple lines. Unfortunately, the fragment from Tall Zar'a is so small that it is not possible to reconstruct the appearance of the decoration. Besides special decoration patterns, Sussman emphasizes another interesting speciality of the workshop at Tirat Yehuda as well as for the workshop at Samaria: The wick hole is separated by two or three grooves on the top of the nozzle and grooves are also applied at the transition between the nozzle and the filling hole.<sup>45</sup> Perhaps the decoration of *Cat. 10.18* (*Pl. 10.3c*) goes back to this habit of decoration. On this fragment, there are incised lines on the whole top of the nozzle for which there is no exact comparison so far. In fact, this decoration gives the nozzle a very different appearance, that is more bulging and swollen than the nozzles of *Cat. 10.16–17*; *10.19–20*, with their clean and slender appearance. *Cat. 10.18* resembles Kenkel La8 in its overall shape, but the decoration on the shoulder resembles La10 of the same group.<sup>46</sup> Kenkel's group 3 is dated to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE.

The fragments *Cat. 10.21–24* (*Pl. 10.4c–f*) also have the same shoulder decoration as Kenkel La10. Because of the small size of the fragments, the allocation of *Cat. 10.21–24*<sup>47</sup> to a lamp-group is unsure. They equally belong to the same type of lamp as *Cat. 10.25* (Kenkel's group 5). Only the shoulder is preserved which shows a medium deep relief decoration with radial lines surrounding the filling hole. The characteristic s-coil is not preserved but it is possible that the fragments come from the part of the lamp which shows only the radial lines. All in all, lamps with radial decoration – with or without s-coil-shaped side projections – are the most common type of mould-made lamps of the Hellenistic period. In the British Museum, two fragments from Cyprus show the same simple decoration with radial lines in combination with applied knot-like lugs. They are dated to the late 3<sup>rd</sup> to early 2<sup>nd</sup> cent. BCE with some hesitation (Bailey 1975, 229 f. pl. 99 no. Q501. Q503).

In contrast to *Cat. 10.18*, the fragments *Cat. 10.16* (*Pl. 10.3a*) and *Cat. 10.29* (*Pl. 10.5b*) have a long and slender nozzle. *Cat. 10.16* is decorated with a line of arrowheads flanked by two elevated lines.<sup>48</sup> The shoulder is decorated by radial

45 See Sussman 2009, fig. 32 A and nos. 270, 271, 274, 277, 278, 281, 283.

46 Kenkel 2012, pl. 50 La8. La10 (group 3: “Hellenistische Radiallampen”).

47 *Cat. 10.21* and *10.22* were found in the same context which makes it highly likely that they are part of the same lamp.

48 For the decoration see Sussman 2009, fig. 15, 10.

lines that begin at the nozzle with a ladder-motif and end at the back of the lamp with an interlace-pattern. Around the filling hole a line with hanging circles is applied. The base is not decorated. There are several comparisons for this type of lamp that all date between the late 3<sup>rd</sup> to the 1<sup>st</sup> cent. BCE.

*Cat. 10.29*, which is produced in an orange buff, semi-fine fabric and a matt red slip, has just a single short incised line on top of the nozzle at the filling hole. The same line is documented with Kenkel's La15 from Tall Zar'a, but that example is made of grey fabric (Kenkel 2012, pl. 51 La15).<sup>49</sup> Sussman also gives several examples in grey fabric with a short incised line on top of the nozzle. They all date to the 2<sup>nd</sup> to 1<sup>st</sup> cent. BCE.<sup>50</sup>

A comparable specimen for *Cat. 10.19–20* is documented at Samaria (Crowfoot et al. 1957, fig. 1, 3 f., 369 f.). Additionally, a good comparison from Tall Zar'a is presented by Kenkel with La18. This piece is also produced in a grey fabric, like *Cat. 10.19–20*, and has nearly the same relief decoration on the shoulder.<sup>51</sup> Kenkel dates her group 6 to the 1<sup>st</sup> cent. BCE and sees it as being like Broneer type XVIII (Kenkel 2012, 270).

Due to the size of the fragment, it is not definite that *Cat. 10.30* (*Pl. 10.5c*) is part of a lamp. The preserved relief decoration on the shoulder is irregular but it might belong to simple elevated lines. The fabric accords to the fine grey fabric of the fragments presented above.

## 10.4. Herodian Lamps (*Cat. 10.31–10.34*)

One specific group of lamps that all have the same fabric as well as shape and decoration are summarized with the term “Herodian lamp”. Due to their uniform appearance, they are easily recognizable.<sup>52</sup> As they are known to have been produced in the region of Palestine the term “Palestine lamps” is also found in the literature (Smith 1961, 53). The name “Herodian lamp” derived from the observation that these lamps were only produced for a relatively short time during the reign of the Herodian dynasty.<sup>53</sup> The fabric is light buff to orange-buff and the surface bears a thin red or orange-red slip (*Cat. 10.31–34*, *Pl. 10.5d–g*). The characteristics of the shape are the spatulated nozzle attached to a circular oil reservoir with an accented and inwardly turned rim around the filling hole. Multiple nozzles or handles are relatively rare and thus are not seen as a special characteristic of “Herodian lamps”, according to Smith.<sup>54</sup> Decoration in form of concentric circles or incised lines on top of the nozzle

occur on some examples. Two fragments from Tall Zar'a show this kind of decoration (*Cat. 10.31–32*); on the two other fragments (*Cat. 10.33–34*) it is not possible to tell whether the top of the nozzle was decorated or not.

Smith distinguishes two types of “Herodian lamps” based on certain peculiarities (Smith 1961, 60–62 fig. 1–2). The fragments from Tall Zar'a presented here are of the second type with a circular wick hole and a slightly spatulated nozzle. In addition, the decoration with concentric circles flanked by lines of dots on top of the nozzle, like on *Cat. 10.31* (*Pl. 10.5d*) and *Cat. 10.32* (*Pl. 10.5e*), is also typical of the second type.<sup>55</sup>

Regarding the archaeological evidence already used for dating the whole type, Smith developed the chronological sequence of the two types (Smith 1961, 62–65). He concluded that type 1 was exclusively in use between 37 BCE and 35 CE. Then a transitional period (35–50 CE) followed. During

49 Kenkel 2012, pl. 51 La15.

50 See Sussman 2009, nos. 212. 214. 226. 230. 237. 240. 241. 242. 252. 254.

51 Kenkel 2012, 270 pl. 51 La18.

52 Kennedy places this kind of lamp to his group 3 (Kennedy 1963, 71 f. pl. 20 no. 487). For further references see Rosenthal – Sivan 1978, 81; Hayes 1980, 13 f. pl. 7 nos. 49–54; Dobbins 2012, 167 f. pl. 12 L276–L282 and many more.

53 The term “Herodian” should not be reduced to a dating of that type of lamp only to the reign of Herod the Great

(37–4 BCE). Rather, it describes the “entire Herodian dynasty” as Smith already concluded. See Smith 1961, 53 with note 1 and for the dating of that group between 37 BCE to 135 CE cf. Smith 1961, 54–60. On the nomenclature of that group see also Dobbins 2012, 167 note 71.

54 Smith 1961, 54. Hayes gives an example with handle, see Hayes 1980, pl. 7 no. 49 (North-Palestine; mid 1<sup>st</sup> cent. CE).

55 Smith 1961, 62: “Frequently – about forty percent of the time – lamps of this group are decorated with incised lines and/or concentric circles on the nozzle.”

that time type 2 evolved from type 1 until it was solely used from 50 to 135 CE.<sup>56</sup> Smith's dating was based on the data available in 1961 and at the end of his article he stated that new archaeological evidence might allow more refinements. Indeed, questions concerning the first appearance of this type of lamp, its chronology as well as its disappearance are still under discussion.<sup>57</sup>

From the Royal Ontario Museum, Hayes presents lamps that provide good comparisons for the

fragments from the Tall Zar'a on basis of their shape of nozzle and decoration.<sup>58</sup> Hayes dates them to the 1<sup>st</sup> cent. CE (Hayes 1980, 13 f.). From Tel Anafa, Dobbins gives seven examples of "Herodian lamps" that he dates between the 1<sup>st</sup> cent. BCE and the first quarter of the 1<sup>st</sup> cent. CE (Dobbins 2012, 167–168, pl. 12 nos. L276–L282). From Tall Zar'a several examples of "Herodian lamps" are already known, and Kenkel's La32 and 35 are two exact parallels for the fragments *Cat. 10.31* and *Cat. 10.32*.<sup>59</sup>

## 10.5. Roman Mould-made Lamps (*Cat. 10.35–10.39*)

*Cat. 10.35* (*Pl. 10.6a*) belongs to a mould-made lamp with elaborate relief decoration on the shoulder. Unfortunately, the fragment is very small but nevertheless a leaf pattern and regularly applied dots are detectable. This decoration is comparable to one piece from Tall Zar'a presented by Kenkel (2012, pl. 57 La63), which has a dot-pattern on the shoulder and wavy lines at the transition to the nozzle as well as to the handle. *Cat. 10.35* is probably one of these parts from a comparable lamp. La63 belongs to Kenkel's group 14 that marks the transition from the Roman to the Byzantine period (3<sup>rd</sup> to 5<sup>th</sup> cent.) (Kenkel 2012, 285). Kenkel observed that the quality of the mould – and therefore the quality and accuracy of the relief decoration – declines over time of its use. As the relief decoration of *Cat. 10.35* is of good quality, a 3<sup>rd</sup> or 4<sup>th</sup> cent. CE date is proposed. A coin from the same locus as the lamp fragment (L11516) is dated to the mid-4<sup>th</sup> cent. and three other coins are also attributed to the late Roman period (see *Chap. 18: Cat. 18.31* as well as *Cat. 18.30; 18.33; 18.34*).

The preservation of *Cat. 10.36* (*Pl. 10.6b*) is relatively poor. Only a small section of the upper part of the shoulder is preserved. The surface is

very worn but the remains of the relief decoration are still discernable; an egg and dart pattern is visible surrounding the discus. The discus itself seems to be undecorated. The lamp can be assigned to Loeschke type VIII or Broneer type XXV and XXVI.<sup>60</sup> Production of lamps with comparable decoration are attested in the Levant by Bailey and he gives some examples that are now in the British Museum and that were found at Salamis or Curium on Cyprus. He suggests a late 1<sup>st</sup> to early 2<sup>nd</sup> cent. date (Bailey 1988, 280 pl. 58 Q2298–Q2300). Similar lamps are also known from Tarsus. Most of them show a relief-decorated discus, and the decoration of lamp no. 275 from Tarsus is nearly the same as the decoration of *Cat. 10.36* from Tall Zar'a.<sup>61</sup> From Tall Zar'a, three lamps of the same style are presented by Kenkel. They also show the egg and dart pattern around the discus. Kenkel dates the lamps between the second half of the 1<sup>st</sup> and the 3<sup>rd</sup> cent. CE (Kenkel 2012, 282–284 pl. 56 La50. La57. La58). At Gadara, one fragment of a shoulder with similar decoration around the discus is presented by da Costa.<sup>62</sup> From Pella, two fragments are published in Smith – McNicoll (Smith – McNicoll 1992, pl. 87, 2 f.).

56 Smith could only refer to the known data. Rosenthal – Sivan state 15 years later that obviously both types occur at the same time (see Rosenthal – Sivan 1978, 80).

57 For example, Loffreda 2002, 93–95 and Rosenthal – Sivan 1978, 80.

58 Hayes 1980, 13 f. pl. 7 nos. 49–54. Whilst nos. 49. 51. 54 have the same type of nozzle, including the decoration, as *Cat. 10.31* and *10.32*, nos. 52 and 53 only have a thin incised line on top of the nozzle. No. 50 belongs to Smith's type 1.

59 Kenkel 2012, 276–278 La32–La41 (pl. 54) and note 1330 with further fragments.

60 Loeschke 1919, 31–55 type VIII and Broneer 1930, 83–88 (type XXV and XXVI) fig. 40 pl. 11 no. 556; 12 nos. 598. 600. 603.

61 For the discus see Goldman 1950, 96 ("group XVIII") fig. 103 f.; for the comparison with Tall Zar'a see Goldman 1950, fig. 104 no. 275.

62 Weber – Hoffmann 1990, 335 fig. 8, 2 (end of 1<sup>st</sup> cent. to 3<sup>rd</sup> cent. CE; the lamps are presented by da Costa).

*Cat. 10.37 (Pl. 10.6c)* probably also belongs to Loeschke type VIII with the same decoration around the discus as *Cat. 10.36* and comparable to Q2298 in the British Museum in terms of the decoration, fabric and surface treatment (Bailey 1988, pl. 58 Q2298).

The reconstruction of *Cat. 10.38 (Pl. 10.6d)* is nearly impossible due to its preservation. Kenkel's La50 might again be a good comparison for the decoration around the discus.<sup>63</sup> The whole discus of

*Cat. 10.38* is lost, only a small part of the one filling hole on the discus is partly preserved. The fabric is light buff, very fine tempered with no visible inclusions. The surface is covered by a thin grey to black slip.

*Cat. 10.39 (Pl. 10.6e)* is a base fragment of a round lamp with a short nozzle. As far as the poor preservation allows a reconstruction, one can suggest that this fragment belongs to a rounded discus lamp of the Roman period.<sup>64</sup>

## 10.6. Lamps of the North Jordan Type (*Cat. 10.40–10.41*)

A fragment of a lamp body with fish-bone pattern on the shoulder might belong to the so-called "North Jordan type" (Kenkel 2012, 293–295). Kenkel distinguishes between two variants.<sup>65</sup> Due to the appearance of the shoulder and its decoration, we can identify *Cat. 10.40 (Pl. 10.6f)* as Kenkel's variant B (see Kenkel 2012, pl. 60 La88. La89). This variant is mould made, it shows the fish-bone pattern on the shoulder and a small, uplifted handle. The entire form can be reconstructed as pear-shaped with a peaked nozzle. Kenkel dates lamps of this type to the 5<sup>th</sup> to 6<sup>th</sup> cent. CE on the basis of finds from Gadara, Abila and Pella etc.<sup>66</sup> A later dating is suggested by Rosenthal – Sivan: They present a complete lamp with fish-bone pattern on the shoulder and a horizontal handle with palm-branch decoration. The base is marked by concentric circles, as is seen on *Cat. 10.40* as well (Rosenthal – Sivan 1978, 138 no. 573). Rosenthal – Sivan think that a dating to the 6<sup>th</sup> cent. might be too early and they suggest a 7<sup>th</sup>/8<sup>th</sup> cent. CE date (Rosenthal – Sivan 1978, 137). Nevertheless, they also concede a long period of use.<sup>67</sup> By taking the 6<sup>th</sup> cent. CE as starting point for these lamps, the previous publications just mentioned all neglect the 3<sup>rd</sup>/4<sup>th</sup> cent. CE date of Crowfoot at Samaria. But in any case, Crowfoot

sees this kind of lamp running until the Islamic period (Crowfoot et al. 1957, 376 no. 8 fig. 89,8). Another quite similar type from Northern Palestine to *Cat. 10.40* is presented by Kennedy (Kennedy 1963, 77 f. pl. 23 no. 533). He also gives two further examples, from Beth She'arim and Beth-Shean (Kennedy 1963, 77 note 44 and 45). Kennedy dates this kind of lamp to the 4<sup>th</sup> to 5<sup>th</sup> cent. CE. A similar lamp from a tomb at Pella is dated to the same period. This piece shows a more reduced and elongated nozzle, that separates it from the round body of the lamp (Smith 1973, 218, pl. 83 no. 150).

Given all the comparanda mentioned above and their dating to between the 3<sup>rd</sup> and the 8<sup>th</sup> cent. CE, the chronological correlation of *Cat. 10.40* is not as secure as the parallels from Tall Zar'a originally suggested by Kenkel (2012, pl. 60). Without taking the find context and the accompanying finds into account, an accurate and satisfying dating is not possible, from the author's point of view. The fact that the nozzle is not preserved means we cannot be sure that *Cat. 10.40* is part of a pear-shaped lamp with fish-bone decoration, a type which is usually dated relatively late. The fragment could also be part of a lamp with an elongated nozzle that is dated earlier, probably to the 3<sup>rd</sup> to 4<sup>th</sup> cent. CE.<sup>68</sup>

63 Kenkel 2012, pl. 56 La50 (similar decoration around discus; Tall Zar'a; 2<sup>nd</sup> half of 1<sup>st</sup> cent. to 3<sup>rd</sup> cent. CE).

64 For example like Kenkel 2012, pl. 56 (group 14; 3<sup>rd</sup> to 5<sup>th</sup> cent. CE).

65 Kenkel 2012, 294: variant A shows a straight-cut nozzle, oval shape and a flat handle; variant B has a triangular nozzle and an oval shape.

66 Kenkel 2012, 294 (Tall Zar'a); Fuller 1987, 125 f. (Abila); Smith 1973, pl. 65, Abb. 225, 239/255, 253 (Pella); da

Costa 2010, 75 f. (Pella); Weber – Hoffmann 1990, fig. 8,4 (Gadara).

67 Rosenthal – Sivan 1978, 137: "From the parallels (...), the lamps are seen to have been in use over a long period of time, commencing in the sixth century A.D. and continuing well into the early Islamic period."

68 See again Crowfoot et al. 1957, 376 no. 8 fig. 89,8 as well as Weber – Hoffmann 1990, 333 f. fig. 8, 4 (the lamps are presented by da Costa).

*Cat. 10.41 (Pl. 10.6g)*, is a fragment of a slightly horizontally erected handle that might have belonged to the same type of lamp as *Cat. 10.40*. With

two lamps from Tall Zar'a presented by Kenkel there might be two parallels dating to the 3<sup>rd</sup> to 5<sup>th</sup> cent. CE (Kenkel 2012, pl. 57 La63. La67).

## 10.7. Lamp of the Late Roman to Early Byzantine Period (*Cat. 10.42*)

The identification of *Cat. 10.42 (Pl. 10.7a)* is unsure due to its poor preservation. The decoration of the shoulder and the two stepped circles that surround the filling hole is comparable to some specimens from Kenkel's group 14 (Kenkel 2012, 285–287 pl. 57 La59. La62. La67. La68). La68 and La62 in particular show the same radial lines on the shoul-

der and the double surrounded filling hole. Unfortunately, *Cat. 10.42* gives no hint as to the design of the nozzle so that a secure allocation to group 14 is not possible. Other comparable examples are given by Sauer and Herr from Tell Hesban that date to the 3<sup>rd</sup> to 4<sup>th</sup> cent. CE (Sauer – Herr 2012, 484 fig. 3,97, 10. 11. 15).

## 10.8. Uncertain

The fragment *Cat. 10.43 (Pl. 10.7b)* is relatively unspecific despite its unique look in comparison to all the previous lamp fragments. Unfortunately, the preservation is very poor and the pattern of elongated tongues around the filling hole is only vaguely visible. The tongues are not filled. This decoration distinguishes *Cat. 10.43* from the previously presented fragments, which all have incised lines on the shoulder that create filled tongues or lines (Kenkel 2012, 266–267 pl. 50 La8–La10). Without comparisons reconstruction and dating are impossible, but taking the black slipped surface into account it is more likely to be Hellenistic than Roman.

A similar decoration with elongated tongues on the shoulder occurs on two fragments that obviously belong together even if they are not joining (*Cat. 10.44; Pl. 10.7c*). They are made of a light buff, well-tempered fabric. The surface is not slipped or otherwise treated. Regarding the fabric and following Kenkel's suggestion (see above), a regional origin for these fragments can be considered. With some caution a Hellenistic or early Roman dating is suggested here. Kenkel gives one example from the Tall Zar'a with similar decoration (Kenkel 2012, pl. 56 La58).

There are some small fragments which cannot be identified at all. Despite the fact that the pieces clearly come from lamps, it is impossible to figure out to which kind of lamp they might belong. First of all, fragment *Cat. 10.45 (Pl. 10.7d)*: a shoulder fragment in a light buff fabric without any further decoration or surface treatment preserved. The shoulder fragment *Cat. 10.46 (Pl. 10.7e)* is made of a light buff, well levigated fabric with a partly glossy black slip. The surface is slightly abraded but on the shoulder, there are thin lines/coils preserved which can be interpreted as part of branches. A dating of that small fragment is nearly impossible, but the black slip points more to a Hellenistic than Roman date. And lastly, *Cat. 10.47 (Pl. 10.7f)* cannot be dated securely. It is a base made of a fine grey fabric, tempered with a lot of very fine white inclusions; a surface treatment is not preserved but the remains of a relief decoration attest its fabrication in a mould. No comparison was found for the uncommon relief decoration. Regarding the grey fabric, a Hellenistic date is proposed but it cannot be verified. Three coins (see *Chap. 18: Cat. 18.3; 18.16; 18.29*) and one amphora fragment with stamped handle (see *Chap. 11: Cat. 11.9*) from the same locus (L12011) are dated to the Hellenistic period.

## 10.9. Catalogue

## Open Lamps

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.1	11622	TZ 113259-001	lamp	pottery	-	figt. of open lamp; part of rim at spout, blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	late Iron Age to early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (more closed than TZ 113259-001, 4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1a
10.2	11568	TZ 113051-001	lamp	pottery	-	figt. of an open lamp; part of rim at V-shaped spout, blackened; slightly footed base fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; at surface thin slip in clay colour, matt	late Iron Age to early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1b
10.3	11902	TZ 114250-001	lamp	pottery	-	figt. of an open lamp; rim, blackened fabric: pinkish buff, medium tempered with fine white inclusions, medium sized grey, red and brown inclusions; surface untreated	late Iron Age to early Hellenistic period	The identification as figt. of an open lamp is based on only a small, relatively undiagnostic piece. Nevertheless, the remains of the lamp black strengthen the identification as a figt. of a lamp. But it could also be a figt. of a small bowl.	Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1c
10.4	11736	TZ 114338-001	lamp	pottery	-	figt. of an open lamp; rim, blackened fabric: pinkish buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface untreated	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1d

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.5	11736	TZ 114338-002	lamp	pottery	-	frgt. of an open lamp; rim, blackened fabric: pinkish buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface untreated	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar 'a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1e
10.6	11714	TZ 114339-001	lamp	pottery	-	frgt. of an open lamp; part of rim at V-shaped spout, blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar 'a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1f
10.7	11742	TZ 114340-001	lamp	pottery	-	frgt. of an open lamp; rim with two (?) spouts, rounded fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar 'a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1; Gitin 2015, 249 pl. 2.4.18, 7	10.1g
10.8	12026	TZ 114382-001	lamp	pottery	-	frgt. of an open lamp; part of rim at V-shaped spout, blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar 'a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1h
10.9	12085	TZ 114396-001	lamp	pottery	-	frgt. of an open lamp; part of rim at spout, slightly blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar 'a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.1i

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.10	12160	TZ 114605-001	lamp	pottery	-	frgt. of an open lamp; part of rim at the spout, slightly blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.2a
10.11	12165	TZ 114606-001	lamp	pottery	-	frgt. of an open lamp (?); part of rim fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	5 <sup>th</sup> to 1 <sup>st</sup> cent. BCE		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent. BCE) and recently Kenkel 2020, 100 pl. 1.39 La1	10.2b
10.12	11763	TZ 114840-001	lamp	pottery	-	frgt. of an open lamp; part of rim at the spout, slightly blackened fabric: pinkish buff, core grey buff, medium tempered with fine white inclusions, medium-sized grey, red and brown inclusions; surface not slipped and rough	early Hellenistic period		Berlin 2015, 629–671 pl. 6.1.22, 1–5 (4 <sup>th</sup> to 1 <sup>st</sup> cent. BCE); Kenkel 2012, 264 p. XCI pl. 49 LA1 (Tall Zar' a; mainly 5 <sup>th</sup> to 4 <sup>th</sup> cent.) and recently Kenkel 2020, 100 pl. 1.39 La1	10.2c

### *Hellenistic Wheel-made Lamps*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.13	11581	TZ 113267-001	lamp	pottery	dia. of wick hole 0.9	fully preserved nozzle of a wheel-made lamp, length of nozzle c. 2 cm, undecorated fabric: orange buff, fine tempered by very fine inclusions of less than 0.1 mm, similar to Kenkel fabric S; surface partly with light buff wash, thin and matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 264 f. pl. 49 La 2. La3 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 100 pl. 1.39 La2. La3; Dobbins 2012, L30–L35 (Tel Anafa; 4 <sup>th</sup> to 3 <sup>rd</sup> cent. BCE)	10.2d
10.14	11550	TZ 112924-001	lamp	pottery	dia. of wick hole 0.9	fully preserved nozzle of a wheel-made lamp, length of nozzle c. 2.0 cm, undecorated fabric: orange buff, fine tempered by very fine inclusions of less than 0.1 mm, similar to Kenkel fabric S; surface partly with light buff wash, thin and matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 264 f. pl. 49 La 2. La3 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 100 pl. 1.39 La2. La3	10.2e

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.15	11594	TZ 113196-001	lamp	pottery	H 3.8; L 7.7; dia. of wick hole 0.9; dia. of filling hole 2.2; dia. of base 2.2	nearly fully preserved lamp, complete base and approx. half of the upper part at shoulder, nozzle fully preserved; simple base with slightly accented foot, round body and slender nozzle, undecorated but blackened (lamp black) fabric: orange buff, fine tempered by very fine inclusions of less than 0.1 mm, similar to Kenkel fabric S; surface partly with light buff wash, thin and matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 264 f. pl. 49 La 2. La3 (Tall Zar'a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 100 pl. 1.39 La2. La3	10.2f

### *Hellenistic Mould-made Lamps*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.16	11572	TZ 113200-001	lamp	pottery	H 3.7; L 13.2; dia. of filling hole 2.2; dia. of wick hole 1.8	nozzle fully preserved, shoulder and base (50%); nozzle surrounded by slightly elevated thick rim; on upper part of the nozzle fishbone pattern, flanked by elevated thin lines; on transition from nozzle to shoulder again thin fishbone pattern and on the shoulder simple lines in relief, radial around the filling hole, at the back of the lamp more fishbone pattern; directly around the filling hole row with hanging circles (egg and dart pattern); base not decorated fabric: grey, very fine, hard fired; surface shows black to grey-black slip, matt	2 <sup>nd</sup> cent. BCE to 1 <sup>st</sup> cent. CE		Kenrick 2000, 242 fig 3r. 4, 27 (decoration on shoulder different; Bait Nawashi; 2 <sup>nd</sup> cent. BCE to 1 <sup>st</sup> cent. CE); Waagé 1934, pl. 7, 179. 1835. 1925 (complete lamp shape) (Antioch; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE); Sussman 2009, no. 135. 178 (2 <sup>nd</sup> to 1 <sup>st</sup> cent.); decoration on top of nozzle see Sussman 2009, fig. 15, 10; McNicoll 1992, 116 pl. 81, 2 (2 <sup>nd</sup> cent. BCE or even earlier)	10.3a
10.17	11907	TZ 114248-001	lamp	pottery	dia. of wick hole 1.6	nozzle and small part of filling hole preserved; around wick hole slightly elevated rim; nozzle only structured by lines; at transition to shoulder radial relief lines start; filling hole surrounded by elevated rim fabric: grey, very fine, hard fired; surface shows remains of black to grey-black slip, matt, but mostly worn and lost	1 <sup>st</sup> cent. BCE to end of 1 <sup>st</sup> cent. CE	associated find: coin (TZ 114204), dating broadly to the Hellenistic period (see <i>Chap. 18</i> )	Kenkel 2012, pl. 51 La17 (similar longitudinal profile) La18 (relief decoration) (Tall Zar'a; 1 <sup>st</sup> cent. BCE to end of 1 <sup>st</sup> cent. CE) and recently Kenkel 2020, 102 f. pl. 1.40 La17. La18	10.3b

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
<b>10.18</b>	11550	TZ 113087-001	lamp	pottery	dia. of wick hole 1.2	nozzle and part of shoulder preserved (c. 30%); nozzle decorated with lines, big wick hole surrounded by a thick rim; on shoulder relief decoration, on transition from nozzle to shoulder four lines surround the filling hole, on the preserved part of shoulder the adjacent lines run against the former ones; base undecorated but slightly convex fabric: grey, very fine, very few extremely fine white inclusions visible by naked eye; surface with remains of black slip, matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE	for decoration of shoulder see also <i>Cat. 10.23</i>	Kenkel 2012, 266 f. pl. 50 La8. La10 (Tall Zar'a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 101 f. pl. 1.40 La8. La10; Rosenthal-Heginbottom 2015, pl. 6.2.13, 7 (Dor; late Hellenistic)	10.3c
<b>10.19</b>	11608	TZ 113145-001	lamp	pottery	dia. of wick hole 1.3; dia. of filling hole 2.2	nozzle, upper half until filling hole preserved, on the upper side of the nozzle and on the shoulder around the filling hole flat relief decoration fabric: grey, very dense and fine, only extremely fine white inclusions, hard fired; surface untreated	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 270 pl. 51 La18 (1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 103 pl. 1.40 La18	10.4a
<b>10.20</b>	11592	TZ 113379-001	lamp	pottery	dia. of wick hole 1.2	nozzle, upper half until filling hole preserved; on the shoulder around the filling hole flat relief decoration, string-like lines running side by side fabric: grey, very dense and fine, no inclusions visible by naked eye, hard fired; surface untreated	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 270 pl. 51 La18 (1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 103 pl. 1.40 La18; Sauer – Herr 2012, fig. 3.97:1 (Hesban; 2 <sup>nd</sup> to mid 1 <sup>st</sup> cent. BCE)	10.4b

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.21	11572	TZ 113171-001	lamp	pottery	dia. of filling hole 1.9	shoulder of lamp; shoulder decorated by radial lines that surround the filling hole in a medium deep relief, three lines close together (three-pack); around filling hole elevated rim, separated from radial lines on shoulder Fabric: grey, very dense and fine, a few extremely fine white mineral inclusions, hard fired; surface untreated; partly blackened (lamp black)	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 266–267 pl. 50 La8 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 101 pl. 1.40 La8; or probably Kenkel 2012, 269 pl. 51 La15 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE), recently Kenkel 2020, 102 pl. 1.41 La 15; probably Rosenthal-Heginbottom 2015, pl. 6.2.13, 7 (Dor; late Hellenistic); Rosenthal – Sivan 1978, 13 no. 13 (mid 2 <sup>nd</sup> to mid 1 <sup>st</sup> cent. BCE)	10.4c
10.22	11572	TZ 113176-001	lamp	pottery	dia. of filling hole 1.9	shoulder of lamp; shoulder decorated by radial lines that surround the filling hole in a medium deep relief; around filling hole elevated rim, separated from radial lines on shoulder fabric: grey, very dense and fine, a few extremely fine white mineral inclusions, hard fired; surface remains between relief lines of black slip, matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE	for decoration see also <i>Cat. 10.21</i> , found in the same context, probably belonging to one lamp, frags. not joining	Kenkel 2012, 266–267 pl. 50 La8 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 101 pl. 1.40 La8; or probably Kenkel 2012, 269 pl. 51 La15 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE), recently Kenkel 2020, 102 pl. 1.41 La 15; probably Rosenthal-Heginbottom 2015, pl. 6.2.13, 7 (Dor; late Hellenistic)	10.4d
10.23	11592	TZ 113281-001	lamp	pottery	dia. of filling hole 2	shoulder of lamp; shoulder decorated by radial lines that surround the filling hole in a medium deep relief, a second bunch of lines running against them; around filling hole elevated rim, separates from radial lines on shoulder Fabric: grey, very dense and fine, a few extremely fine white mineral inclusions, hard fired; on surface no remains of black slip preserved	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE	for decoration of shoulder see <i>Cat. 10.18</i>	Kenkel 2012, 266 pl. 50 La10 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) or recently Kenkel 2020, 102 pl. 1.40 La10	10.4e

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.24	11500	TZ 112827-001	lamp	pottery	dia. of filling hole 2.2	shoulder with rest of filling hole (10%); relief decoration on shoulder, simple lines; around filling hole elevated thin rim fabric: grey, fine with a few very small white inclusions; on surface fair remains of greyish black slip, matt			Kenkel 2012, 266–267 pl. 50 La8 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) and recently Kenkel 2020, 101 pl. 1.40 La8; or probably Kenkel 2012, 269 pl. 51 LA15 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE), recently Kenkel 2020, 102 pl. 1.41 La 15; probably Rosenthal-Heginbottom 2015, pl. 6.2.13, 7 (Dor; late Hellenistic)	10.4f
10.25	11594	TZ 113314-001	lamp	pottery	-	shoulder and adjacent small part of nozzle; radial lines around filling hole and s-coil at the lower part of the shoulder, at transition from shoulder to nozzle two lines of interlace decoration preserved fabric: grey, very dense and fine, a few extremely fine white mineral inclusions, hard fired; surface untreated; partly blackened (lamp black)	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 269 pl. 51 LA15 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE), recently Kenkel 2020, 102 pl. 1.41 La 15; Rosenthal-Heginbottom 2015, pl. 6.2.13, 7 (Dor; late Hellenistic); Sussman 2009, no. 226–230 (Bet Guvrin Beth-Shean and Jaffa; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE); Dobbins 2012, fig. 4 L127 (Tell Anafa; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE); Rosenthal – Sivan 1978, 13 no. 13 (mid 2 <sup>nd</sup> to mid 1 <sup>st</sup> cent. BCE)	10.4g
10.26	11500	TZ 112826-001	lamp	pottery	-	frgt. of shoulder with part of rim of filling hole; relief decoration on shoulder, several lines preserved, flanking a coil; around filling hole thin elevated rim fabric: grey, fine; on surface black slip in between the lines preserved, matt	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, 266–267 pl. 50 La11 (Tall Zar' a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) or recently Kenkel 2020, 102 pl. 1.40 La11; Saly 1988, pl. 8 f. (Petra; 1 <sup>st</sup> cent. BCE to mid of 1 <sup>st</sup> cent. CE); Rosenthal – Sivan 1978, 13 no. 13 (mid 2 <sup>nd</sup> to mid 1 <sup>st</sup> cent. BCE)	10.4h

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.27	11588	TZ 113143-001	lamp	pottery	-	part of shoulder and lower body; decoration on shoulder, triangular leaf in low relief; at transition to lower body simple coil  fabric: grey, very fine without inclusions visible to naked eye; surface with shiny slip, black	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE	associated finds in pit: coin of Antiochos IV (175–164 BCE) (TZ 113118; see <i>Chap. 18, Cat. 18.1</i> ) and stamped amphora-handle dating to 207–202 BCE (TZ 113050; see <i>Chap. 11, Cat. 11.1</i> )	Rosenthal-Heginbottom 2015, pl. 6.2.13:8 (Akko; late Hellenistic); Kenkel 2012, 267 pl. 50 La11 (similar coil; Tall Zar'a; 2 <sup>nd</sup> cent. BCE to mid of 1 <sup>st</sup> cent. CE); Dobbins 2012, pl. 11 L214 (Tel Anafa; Roman); Sussman 2009, no. 267. 269. 271 (Geva and Tirat Yehuda; Hellenistic); McNicoll 1992, pl. 81, 1 (Pella; 2nd cent. BCE or earlier)	10.4i
10.28	11500	TZ 112801-001	lamp	pottery	dia. of wick hole 1.8	part of shoulder and filling hole (35%); lower body, base and nozzle; decoration on shoulder, lines in relief, at transition to the nozzle and on the nozzle mirrored three coils, inwardly rolled up and flanking a leaf-like object; base undecorated  fabric: grey-buff, relatively fine with a few extremely fine white inclusions, hard fired; surface on upper part of lamp brown to dark brown slip, fairly shiny, lower part only with small remains of slip, accidentally applied	2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE		Kenkel 2012, pl. 51 La15 (similar in shape and decoration of shoulder; Tall Zar'a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE) or recently Kenkel 2020, 102 pl. 1.41 La15; Sussman 2009, fig. 15, 1 (comparable decoration of nozzle). no. 154 f. (similar decoration of nozzle; Akko; 3 <sup>rd</sup> to 2 <sup>nd</sup> cent. BCE); Dobbins 2012, fig. 2 L65 pl. 19 L65. L93 (Tel Anafa; late 3 <sup>rd</sup> cent. BCE) and fig. 4 L130 (Tel Anafa; middle of 2 <sup>nd</sup> cent. BCE)	10.5a
10.29	12006	TZ 114409-001	lamp	pottery	dia. of wick hole 1.6	nozzle with complete wick hole and very small part of filling hole (>3%); around wick hole thin rim, slightly elevated; on upper part of nozzle incised line and around filling hole obviously two incised lines  fabric: orange buff; tempered by small white inclusions; on surface red slip, matt; at point of nozzle remains of lamp black	2 <sup>nd</sup> and 1 <sup>st</sup> cent. BCE	The allocation of the figt. is not easy due to its poor preservation. It might belong to Kenkels group 5 or 6 but not in the typical grey fabric.	probably like Kenkel 2012, pl. 51 La15 (grey fabric) or pl. 51 La17 (grey fabric and floral motif on nozzle). La18 (grey fabric) (Tall Zar'a; 2 <sup>nd</sup> cent. BCE to end of 1 <sup>st</sup> cent. CE); or recently Kenkel 2020, 102f. pl. 1.41 La15. La17. La18; Sussman 2009, nos. 212. 214. 226. 230. 237. 240. 241. 242. 252. 254 (2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE)	10.5b

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.30	11990	TZ 114279-001	lamp	pottery	dia. of wick hole 1.6	figt. of shoulder, rim of filling hole (< 5%); relief decoration on shoulder, fairly identifiable, probably floral ornaments (?) fabric: grey, fine; on surface a few remains of black slip			similar to Kenkel 2012, pl. 56 La51 (Tall Zar'a; 2 <sup>nd</sup> half of 1 <sup>st</sup> century to 3 <sup>rd</sup> cent. CE) or recently Kenkel 2020, 107 pl. 1.44 La 51	10.5c

### *Herodian Lamps*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.31	11608	TZ 113209-001	lamp	pottery	dia. of hole at nozzle 1.3	nozzle and small part of body of a so-called Herodian lamp: angularly expanded nozzle, blackened; upper part of nozzle decorated by two double circles, framed by lines of small incised triangles; bottom undecorated fabric: red, fine and dense, fine white inclusions; remains of a very thin brownish-ochre slip, matt	end of 1 <sup>st</sup> cent. BCE until 2 <sup>nd</sup> cent. CE		Kenkel 2012, p. XCV pl. 54 La32. La35 (Group 10; "frühromisch") or recently Kenkel 2020, 104 f pl. 1.43 La32. La35; Hayes 1980, 13 f. pl. 7 nos. 49. 51. 54 (1 <sup>st</sup> cent. CE); Dobbins 2012, 167 f. pl. 12 nos. L276–L282 (1 <sup>st</sup> cent. BCE to 1 <sup>st</sup> quarter of 1 <sup>st</sup> cent. CE)	10.5d
10.32	11500	TZ 112849-001	lamp	pottery	dia. of hole at nozzle 1.2	nozzle of a so-called Herodian lamp; angularly expanded nozzle, blackened; upper part of nozzle decorated by two double circles, accompanied by line of dots fabric: red, fine and dense, fine white inclusions; thin brownish-ochre slip, matt	end of 1 <sup>st</sup> cent. BCE until 2 <sup>nd</sup> cent. CE		Kenkel 2012, p. XCV pl. 54 La32. La35 (Group 10; "frühromisch") or recently Kenkel 2020, 104 f pl. 1.43 La32. La35; Hayes 1980, 13 f. pl. 7 nos. 49. 51. 54 (1 <sup>st</sup> cent. CE); Dobbins 2012, 167 f. pl. 12 nos. L276–L282 (1 <sup>st</sup> cent. BCE to 1 <sup>st</sup> quarter of 1 <sup>st</sup> cent. CE)	10.5e
10.33	11525	TZ 112862-001	lamp	pottery	dia. of wick hole 1.5	nozzle of a so-called Herodian lamp; angularly expanded nozzle fabric: red, fine and dense, fine white inclusions; slip not preserved	end of 1 <sup>st</sup> cent. BCE until 2 <sup>nd</sup> cent. CE		Kenkel 2012, p. XCV pl. 54 La32. La35 (Group 10; "frühromisch") or recently Kenkel 2020, 104 f pl. 1.43 La32. La35; Hayes 1980, 13 f. pl. 7 nos. 49. 51. 54 (1 <sup>st</sup> cent. CE); Dobbins 2012, 167 f. pl. 12 nos. L276–L282 (1 <sup>st</sup> cent. BCE to 1 <sup>st</sup> quarter of 1 <sup>st</sup> cent. CE)	10.5f

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.34	11503	TZ 112848-001	lamp	pottery	dia. of wick hole 1.3	nozzle of a so-called Herodian lamp; angularly expanded nozzle, slightly blackened fabric: red, fine and dense, fine white inclusions; thin brownish-ochre slip, matt	end of 1 <sup>st</sup> cent. BCE until 2 <sup>nd</sup> cent. CE		Kenkel 2012, p. XCV pl. 54 La32. La35 (Group 10; “frühromisch”) or recently Kenkel 2020, 104 f. pl. 1.43 La32. La35; Hayes 1980, 13 f. pl. 7 nos. 49. 51. 54 (1 <sup>st</sup> cent. CE); Dobbins 2012, 167 f. pl. 12 nos. L276–L282 (1 <sup>st</sup> cent. BCE to 1 <sup>st</sup> quarter of 1 <sup>st</sup> cent. CE)	10.5g

### *Roman Mould-made Lamps*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.35	11516	TZ 112850-001	lamp	pottery	-	figt. of shoulder; relief decorated, elevated dots, encircled by wavy lines and leaf patterns fabric: red, fine and hard fired; surface red slip, matt	3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE	Due to the good condition and the accuracy of the relief decoration a dating to the 3 <sup>rd</sup> /4 <sup>th</sup> century CE is proposed (see Kenkel 2012, 285).	Kenkel 2012, 286 pl. 57 La63 (Tall Zar’a; 3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE) or recently Kenkel 2020, 108 pl. 1.45 La63	10.6a
10.36	12091	TZ 114514-001	lamp	pottery	W 5.2	figt. of lower part of shoulder and upper part of lower body of a discus lamp; relief decoration fairly worn, on the highest point of shoulder egg and dart pattern; concave discus fabric: light buff, medium-fine tempered with small white and brown inclusions; on surface no slip preserved	2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE		Kenkel 2012, pl. 56 La50. La57. La58 (Tall Zar’a; 2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE) or recently Kenkel 2020, 107 f. pl. 1.44 La50. La57. La58; Bailey 1988, Q2298–Q2300 (Cyprus; late 1 <sup>st</sup> to early 2 <sup>nd</sup> cent. CE); Loeschke Type VIII; Goldman 1959, “Group XVIII” (Iarsus; 1 <sup>st</sup> to early 3 <sup>rd</sup> cent. CE); Kennedy 1963, 73–75 pl. 22 no. 507. 508 (2 <sup>nd</sup> and 3 <sup>rd</sup> cent. CE); Weber – Hoffmann 1990, fig. 8, 2 (Gadara; 2 <sup>nd</sup> third of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE); Smith – McNicoll 1992, pl. 87, 2–3 (Pella; 1 <sup>st</sup> or 2 <sup>nd</sup> cent. CE)	10.6b

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.37	11517	TZ 114692-001	lamp	pottery	-	figt. of lamp, shoulder; traces of flat relief decoration on upper part of shoulder detectable, egg and dart pattern fabric: grey, very fine; no surface treatment	2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE		Kenkel 2012, pl. 56 La50, La57, La58 (Tall Zar'a; 2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE) or recently Kenkel 2020, 107 f. pl. 1.44 La50, La57, La58	10.6c
10.38	11500	TZ 112845-001	lamp	pottery	-	figt. of shoulder; relief decorated, around filling hole or discus (?) egg and dart pattern, followed by an elevated line, surrounding the shoulder (?) and an unidentifiable pattern fabric: grey, fine; on surface black slip, matt	Roman period (?)	Due to the poor preservation it is not clear if the piece belongs to a lamp with wide filling hole or to a lamp with decorated discus	Kenkel 2012, pl. 56 La50 (similar decoration around discus; Tall Zar'a; 2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE) or recently Kenkel 2020, 107 pl. 1.44 La50	10.6d
10.39	11867	TZ 114249-001	lamp	pottery	dia. base 3.4	figt. of base not decorated fabric: grey buff, medium fine tempered by fine white and grey inclusions; surface not treated, just remains of lamp black	3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE	The figt. is poorly preserved; at one point the transition to the nozzle (or to the handle?) is detectable. Therefore, an allocation to a round discus lamp of the Roman period is suggested.	probably like Kenkel 2012, Gruppe 14 pl. 56 (Tall Zar'a; 3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE)	10.6e

### *Lamps of the North Jordan Type*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.40	11528	TZ 113306-001	lamp	pottery	dia. base 3.0; dia. filling hole 2.6	base, nearly fully preserved, shoulder and short handle, entire form pear-shaped; base undecorated but surrounded by a thin line; on shoulder fish-bone pattern, around filling hole three lines, elevated fabric: reddish buff, very fine with only the finest mineral inclusions not visible to naked eye; at bottom small remains of reddish-brown slip, matt; on surface of upper part slip not preserved	A dating from the 3 <sup>rd</sup> to the 7 <sup>th</sup> cent. CE is possible.		Kenkel 2012, 295 pl. 60 La88, La89 (5 <sup>th</sup> to 6 <sup>th</sup> cent. CE, probably 7 <sup>th</sup> cent. CE) and recently Kenkel 2020, 111 pl. 1.47 La88, La89; Rosenthal – Sivan 1978, 138 no. 573 (7 <sup>th</sup> /8 <sup>th</sup> cent. CE); Smith 1973, 218, pl. 83 no. 150 (4 <sup>th</sup> to 5 <sup>th</sup> cent. CE); Kennedy 1963, 77 f. pl. 22 no. 533 (4 <sup>th</sup> /5 <sup>th</sup> cent. CE); Crowfoot 1957, 376 no. 8 fig. 89,8 (Samaria; 3 <sup>rd</sup> /4 <sup>th</sup> cent. until the Islamic period)	10.6f

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.41	12091	TZ 114514-002	lamp	pottery	-	frgt. of handle, undecorated fabric: light buff, medium-fine tempered; no surface treatment	3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE		probably of a mould-made lamp of the Roman period, like Kenkel 2012, pl. 57 La63. La67 (Tall Zar'a; 3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE) and recently Kenkel 2020, 108 f. pl. 1.45 La63. La67	10.6g

### *Lamps of the Late Roman to Early Byzantine Period*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.42	11534	TZ 113260-001	lamp	pottery	dia. of filling hole 1.8	shoulder of lamp, rest of filling hole (15%); on shoulder lines in relief surrounding the filling hole, filling hole itself surrounded by two stepped circles fabric: light buff, fine with a few small inclusions; on surface remains of brown slip, matt	3 <sup>rd</sup> to 5 <sup>th</sup> cent. CE		Kenkel 2012, 287 pl. 57 La59. La62. La67. La68 (Tall Zar'a; late Roman/early Byzantine period) or recently Kenkel 2020, 108 f. pl. 1.45 La62. La67. La68; Sauer – Herr 2012, 484 fig. 3.97, 10. 11. 15 (Tell Hesban; 3 <sup>rd</sup> to 4 <sup>th</sup> cent. CE).	10.7a

### *Uncertain*

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
10.43	11598	TZ 113173-001	lamp	pottery	-	part of shoulder and lower body of mould-made lamp; shoulder decorated by pattern of unfilled and elongated tongues fabric: light buff, fine with a few small to fine white inclusions, even fewer finest black and brown inclusions; on surface remains of black and brown slip, irregularly applied, matt	probably Hellenistic (??)		Kenkel 2012, 266 f. pl. 50 LA11 (Tall Zar'a; 2 <sup>nd</sup> to 1 <sup>st</sup> cent. BCE)	10.7b
10.44	11522	TZ 112875-001 + TZ 112 876-001	lamp	pottery	-	two figs., not joining but definitely belonging to one piece; shoulder and part of lower body; relief decoration on shoulder, egg and dart pattern fabric: brown buff, medium-fine tempered; outer surface not treated	probably Hellenistic or early Roman	probably belonging to a round discus lamp of the Roman period; around discus hollow egg and dart pattern; due to poor preservation it is not clear if this is a discus lamp or not	Kenkel 2012, pl. 56 La58 (similar decoration around discus; Tall Zar'a; 2 <sup>nd</sup> half of 1 <sup>st</sup> cent. to 3 <sup>rd</sup> cent. CE) or Kenkel 2020, 108 pl. 1.44 La58	10.7c

Cat.	Locus	Find number	Object	Material	Dia. (cm)	Description	Date	Comments	Comparisons	Plate
<b>10.45</b>	11981	TZ 114251-001	lamp	pottery	-	figt. of a shoulder of a mould-made lamp; not decorated fabric: brown buff, medium-fine tempered; surface not treated				10.7d
<b>10.46</b>	12043	TZ 114345-001	lamp	pottery	-	figt. of shoulder and concave discus; relief decorated, on shoulder incised coils; on discus decoration unidentifiable fabric: light buff, fine tempered; on surface remains of black and glossy slip	probably Hellenistic (?)	The light buff fabric in combination with a glossy black slip points to the Hellenistic period because in Roman times red slip becomes more popular.		10.7e
<b>10.47</b>	12011	TZ 114425-001	lamp	pottery	dia of base (?) 1.2	base of a mould-made lamp; relief decorated, with thin lines; in the middle of the base depression fabric: grey, fine; surface not treated		quite uncommon base of a lamp, no known comparand		10.7f

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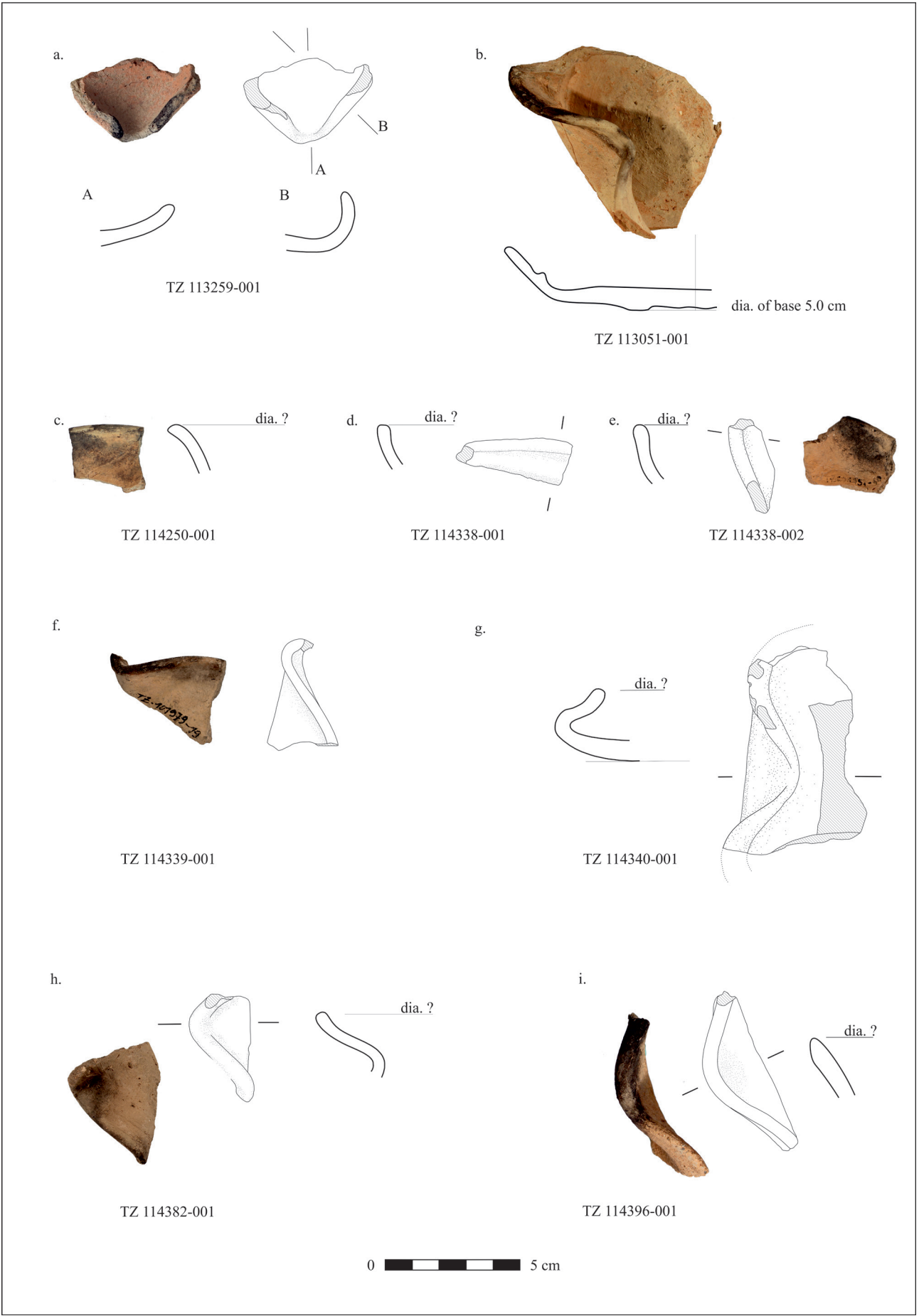


Plate 10.2: Open lamps (a-c); Hellenistic wheel made lamps (d-f), scale 1:2

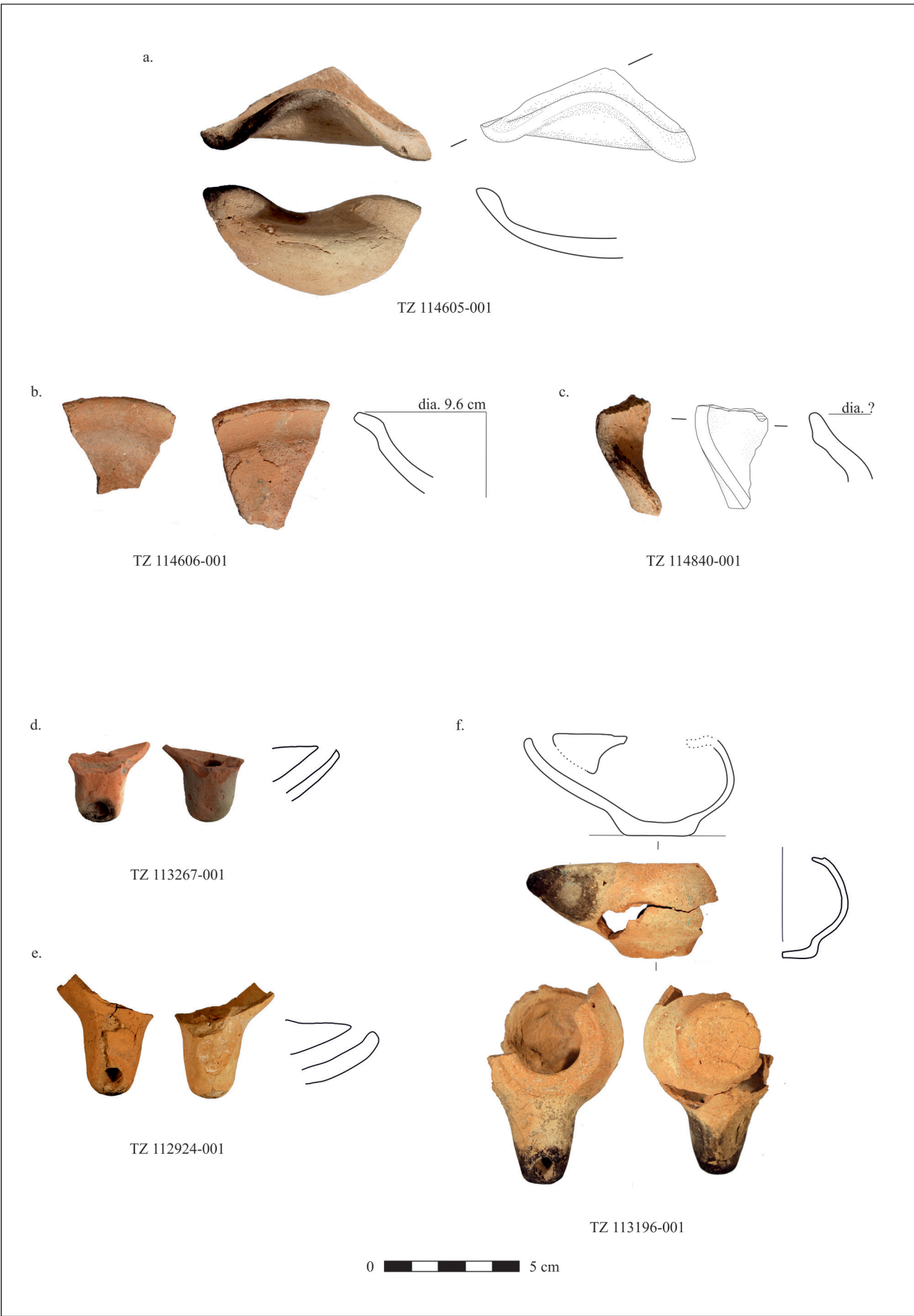


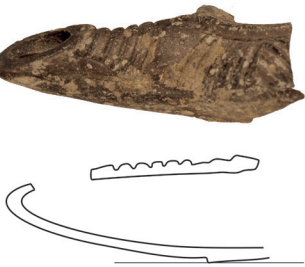
Plate 10.3: Hellenistic mould made lamps, scale 1:2



TZ 113200-001



TZ 114248-001

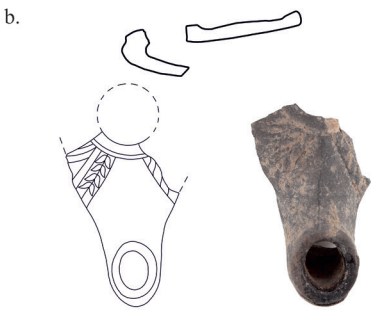


TZ 113087-001

Pl. 10.4: Hellenistic mould made lamps. Scale 1:2



TZ 113145-001



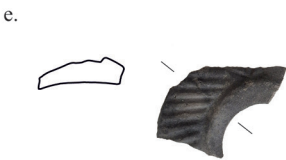
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TZ 113171-001



TZ 113176-001



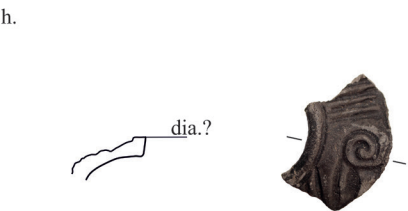
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TZ 112827-001



TZ 113314-001



TZ 112826-001



TZ 113143-001

Plate 10.5: Hellenistic mould made lamps (a-c); Herodian lamps (d-g), scale 1:2

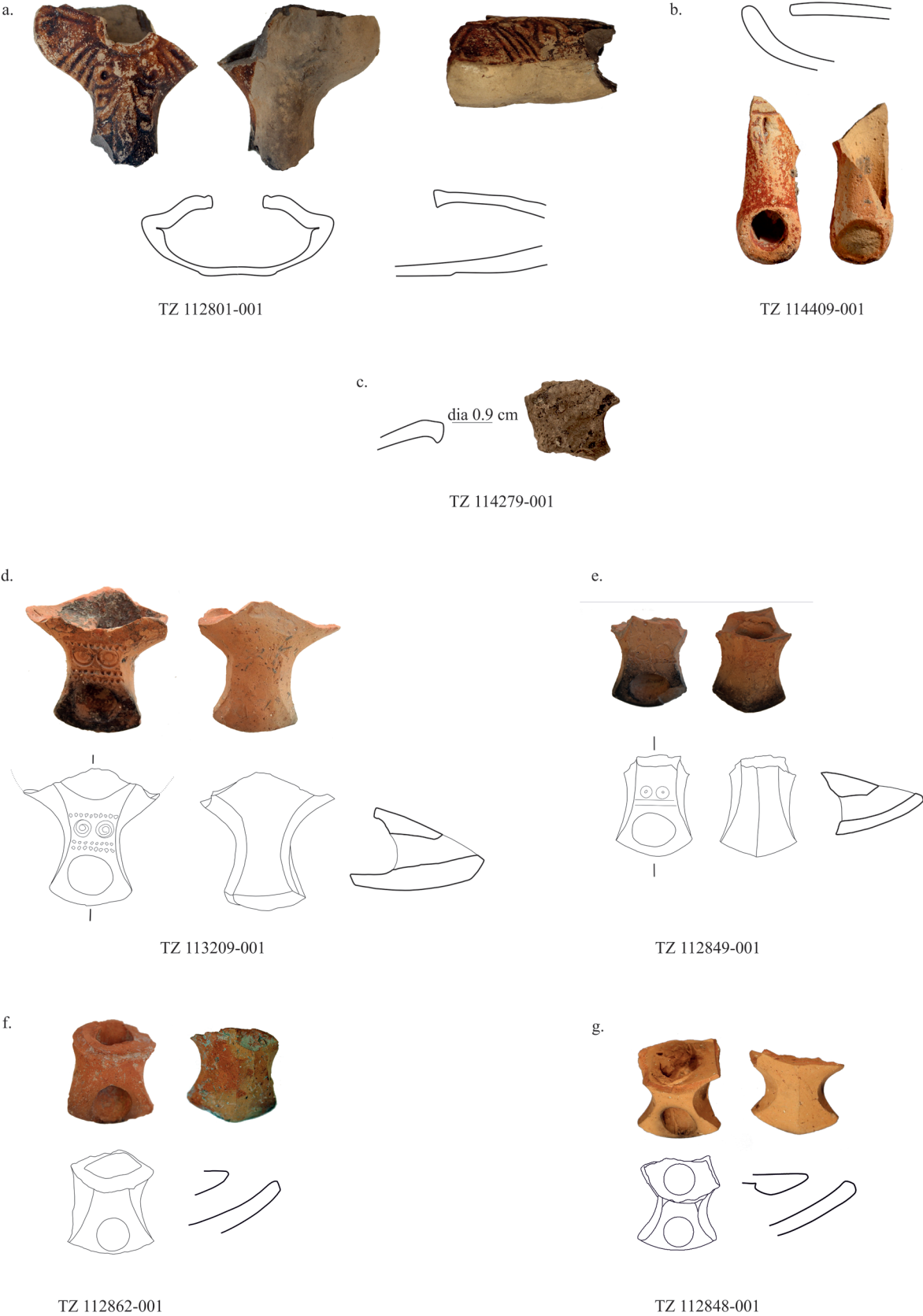


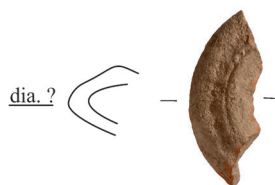
Plate 10.6: Roman mould made lamps (a-e); lamps of the north Jordan style (f-g), scale 1:2

a.



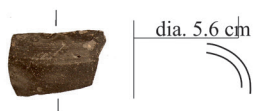
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b.



TZ 114514-001

c.



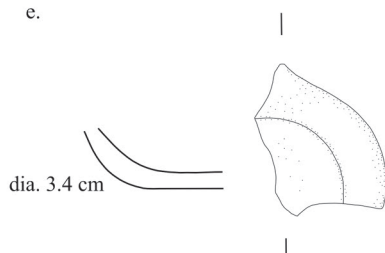
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d.



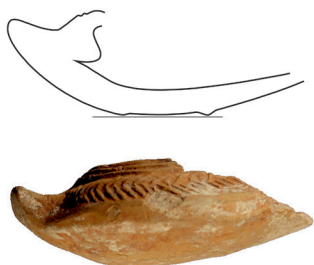
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e.



TZ 114249-001

f.



TZ 113306-001

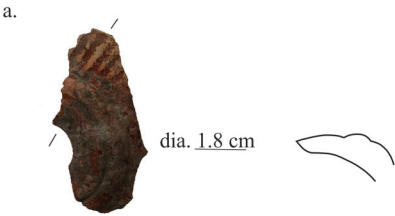
g.



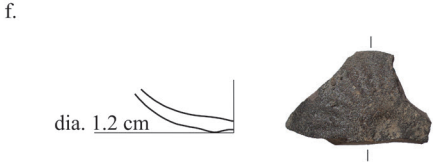
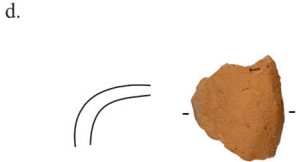
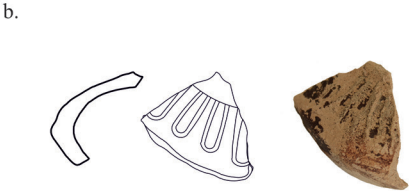
TZ 114514-001

0 5 cm

Plate 10.7: Lamps of the late Roman to early Byzantine period (a); Uncertain (b-f), scale 1:2



TZ 113260-001





## 11. AMPHORA STAMPS

by Eva Strothenke-Koch

### 11.1. Description and Interpretation

During the excavations of 2018 and 2019 on Tall Zar'a twelve stamps were documented on fragments of amphora handles.<sup>69</sup> Only two fragments also have the rim of the amphora (*Cat. 11.1* and *11.9*); for eleven fragments the longitudinal handle-profile is documented as far as it can be reconstructed.

One fragment of a double pair handle probably comes from Kos (?) (*Cat. 11.12*) whilst eleven stamps (*Cat. 11.1–11*) are likely to be of Rhodian provenance given the names of fabricants or eponyms on the stamps, and also because of their pinkish-buff, fine fabric typical of Rhodian amphorae.<sup>70</sup> At least eight fragments can be dated more or less exactly to one of the seven periods of amphora production on Rhodes.<sup>71</sup> The inscriptions of three stamps are illegible or cannot be reconstructed properly (*Cat. 11.7*; *11.10*; *11.11*). Most of the stamps can be assigned to the Rhodian production periods III and IV (205–146 BCE; *Cat. 11.2–5*).

On the stamp *Cat. 11.1* (*Pl. 11.1a*), the name of the official is not fully legible, but it is quite possibly Σώστρατος.<sup>72</sup> That it is the name of an eponym is indicated by “ἐπι”. Σώστρατος was active at the end of period II (Börker 1974, 35 no. 5). In the second line the name of the month Ἀγρίνιος can be reconstructed. The handle was found in a pit, accompanied by a lot of pottery and a coin that can be attributed to Antiochos IV (175–164 BCE; see *Chaps. 1.1* and *18*; *Cat. 18.1*).

*Cat. 11.2* (*Pl. 11.1b*) bears a stamp of the fabricant Ἀμύντας who was active in period III and/or period IV in Rhodes (Jöhrens 1999, 69). The wreath is a frequent attribute but is especially common on stamps of Ἀμύντας.<sup>73</sup> The fabricant Ἀμύντας appears very often with the eponym stamps of Aristomachos I, Athanodotos, Nikasagoras I, Symmachos and Xenophon on amphorae. These eponyms can be placed in the last years of period III and at the beginning of period IV. A quite similar stamp of Amyntas was found on a fully preserved amphora in a grave at Nea Paphos on Cyprus (Barker 2004, 80 fig. 12). The stamp occurs there with one of the eponym Xenophon, which is a very frequent combination and allows a dating of the amphora at Nea Paphos to 164–162 BCE (Finkielsztejn 2001, 192). Regarding the placement of the letters and the attribute, it is almost the same as the stamp on the handle from Tall Zar'a. A closer look at the letter A shows a difference in style. Whilst the horizontal line of the A on the stamp from Nea Paphos is straight, the line on the stamp from Tall Zar'a is flexed, and in addition, the end points of each letter have serifs. The letters on the stamp from Nea Paphos do not have any at all. Quite how these refinements might be used as dating references is unknown at this point. A stamp at Tel Michal shows all the same specialities as the stamp from the Tall Zar'a (Ariel 2006, 89 no. 1).

69 This chapter deals solely with the amphora-stamps from Tall Zar'a found during the excavations of 2018 and 2019. All the other Hellenistic pottery material, including the amphorae, are presented by Bettina Springer-Ferazin in this volume.

70 For the petrographic and chemical composition of the Rhodian amphora fabric see Whitebread 1995, 51–67 as well as Rasmussen – Lund 2004, 325–327.

71 At this point, only brief reference is made to the “high and low chronology” of the Rhodian production periods. Use of the later, so-called “high chronology”, was led by Grace (Grace–Savvatiou-Petropoulakou 1970, 277–382; Grace 1985, 1–54). Empereur followed this scheme (Empereur 1990, 199–209). Finkielsztejn dated the periods generally

slightly earlier due to numerous finds mainly from cities in Israel and the entire eastern Mediterranean area (“low chronology”; Finkielsztejn 2001, 229–233). A clearly arranged table of periods can be found in Jöhrens 2013, 54 Tab. 1 and Măndescu 2016, Tab. 2. Regarding the chronology, the author follows the period classification according to Finkielsztejn (Finkielsztejn 2001).

72 See the index in Finkielsztejn 2001, 225 and Ariel 2000, 271 f. Nr. 14.

73 Jöhrens 1999, 63 Nr. 163 and Börker 1974, Nr. 23 (Seleukia at the Tigris); 29 (Babylon). For the date of the eponym Aristomachos see also Grace – Savvatiou-Petropoulakou 1970, 314 no. E37.

On *Cat. 11.3 (Pl. 11.c)* the stamp of the fabricant *Λινοῦ* can be clearly read. The combination of the fabricants name and the bunches of grapes is very common (Măndescu 2016, 368 f. pl. 4 F17–F19). The productive period of *Λινοῦ* is dated between 205 and 161 BCE thanks to the frequent combination of his stamp with the stamps of several eponyms.<sup>74</sup> Furthermore, his productive period seems also to cover the period between 145 and 121 BCE because of the use of the grape-motif, which was very common especially during period V (Zajcev 2005, Abb. 3 D4-2). Such a long production time for a single fabricant might be possible. But it is more probable that the stamps belong to two different fabricants with the same name: one working in the first half and the other one working in the second half of the 2<sup>nd</sup> cent. (see Măndescu 2016, 368–369). Măndescu assigns the stamp with grapes to the younger *Λινοῦ* working between 145 and 121 BCE (period V). Two examples from Kaunos show only one bunch of grapes at the end of the fabricant's name (Schmaltz 2016, 314–315 KA735. KA736).

The inscription of *Cat. 11.4 (Pl. 11.1d)* is hard to read, but *ΣΥ* is legible at the beginning and *XOY* at the end of the second line. Therefore, the name of the eponym *Σύμμαχος* is proposed. Finkielsztejn assigns *Σύμμαχος* to period IV (Finkielsztejn 2001, 124 Tab. 6). Börker groups the eponym to period III,<sup>75</sup> whilst Grace states more precisely that Symmachos can be dated between 188 and 182 BCE (Grace – Savvatiannou-Petropoulakou 1970, 295 note 1). At Kaunos, there is one two-lined stamp with the name of *Σύμμαχος* documented. It dates to period IIIId (Schmaltz 2016, 199 KA 476). The reading of the first line remains open. It could correspond to one example from Seleukia on the Tigris, so one might reconstruct *Ἐπ' ἱερέως* (Börker 1974, 39 no. 18). For the third line a reference to the month must be expected. In this case it could be the

month *Διοσθίου* or *Δαλίου*. The stamp of *Σύμμαχος* is very often associated with the stamp of *Αμύντας* (cf. TZ 113203-001).<sup>76</sup> Though the fabric of this piece differs from the typical Rhodian fabric there is no doubt that it is imported from Rhodes – on the assumption that the name *Σύμμαχος* is identified correctly.<sup>77</sup>

In contrast to *Cat. 11.4*, the inscription of *Cat. 11.5 (Pl. 11.e)* can be read properly. *Πανσανία(ς)* is the name of the eponym. *Πανσανίας* is a very frequent eponym's name so that it is difficult to date the handle without the corresponding stamp of the fabricant. At least three different *Πανσανίας* are known, which can all be identified as priests of Helios (see Grace – Savvatiannou-Petropoulakou 1970, 304 no. E12). One of them was already active at the beginning of period II, the middle one in the second half of period II and the youngest *Πανσανίας* was priest in period IV. As the longitudinal profile of the handle from Tall Zar'a shows clearly a right-angled bend, the attribution to the oldest *Πανσανίας* can be excluded because at that time the profiles of Rhodian amphora handles were curved (Grace 1963, fig. 1). Therefore, a dating to the end of period II as well as to period IV is possible based on the shape of the handle. But in addition, the arrangement and style of the letters of the stamp from Tall Zar'a are almost exactly identical to those on a handle at the National Museum of Athens. Jöhrens assigns this stamp to the *Πανσανίας* of period IV.<sup>78</sup> On the Tall Zar'a stamp the name of the month *Πάναμος* can be reconstructed as well.<sup>79</sup> *Πάναμος* is the first month in the Rhodian calendar and is the main production time of amphorae (Römer-Strehl et al. 2011, 152).

Stamp *Cat. 11.6 (Pl. 11.2a)* has the eponyms name *Ἀρατοφάνης* which can be attributed to period II/III, but in fact it is possible to date it exactly to 108 BCE (period V; see Börker – Burow 1998, 13). Though we know stamps of a fabricant named *Ἀρατοφάνης* from Tarsus (Turkey), Tel Anafa (Isra-

74 Buzoianu 1992, 150 no. 356; Irmia 2005, 337 No. 25; Nicolaou 2005, 186 no. 475 f.

75 Börker 1974, 35 no. 5. 18. 23. 27 (fabricant-stamps associated to the eponym Symmachos).

76 Finkielsztejn 2001, 122. The two handles *Cat. 11.2* and *Cat. 11.4* cannot be of the same vessel because of their different fabric. For the connection of fabricant and eponym see also Börker 1974, 40 no. 23.

77 The fabrics of Rhodian amphorae differs slightly. See for example the products of *Ἱεροτέλης* (Finkielsztejn 2001,

47) and cf. the analyses by J. Lund and K. L. Rasmussen (Rasmussen – Lund 2004).

78 Jöhrens 1999, 81 (period IV: c. 175 to 146 BCE). At Beirut one stamp of Pausanias, dating to 152 BCE, could be identified as well (Aubert 2004, 32–36 Tab. 1).

79 Jöhrens 1999, 80 f. no. 212. The NA has to be fully reconstructed but in fact no other reading is really possible.

el) and Samaria (Israel),<sup>80</sup> the identification as eponym on the presented stamp is secure due to the *ἐπὶ* in front of the name. In total, two officials with the name Ἀρατοφάνης are known. One of them was one of the seven priests of Helios between 182 and 176 BCE.<sup>81</sup> Another Ἀρατοφάνης can be dated to the year 108 BCE (Ariel – Finkielsztejn 1994, 194 SAH 16). Comparison with a stamp from Tel Anafa which shows exactly the same arrangement of letters in the three lines, makes assigning it to Ἀρατοφάνης II (108 BCE) seem reasonable.<sup>82</sup> Like the stamp from Tel Anafa, a Rhodian month is mentioned on the piece from Tall Zar'a. On *Cat. 11.6* we can read Σμίνθιος, the ninth month of the Rhodian calendar (Römer-Strehl et al. 2011, 151 f.).

Due to the fragmentary preservation of *Cat. 11.7* (*Pl. 11.2b*) the inscription is illegible. The depiction of Helios on amphora stamps begins as early as period I and continues until period IV. Concerning the profile of the handle, indeed a dating to period I or II seems possible as the handle profile changed from curved to right-angled before the last quarter of the 3<sup>rd</sup> cent. (Grace 1963, 322–324 fig. 1). Nevertheless, the handle profile is not fully preserved so that such an early dating must remain a careful suggestion.

The first letters on the stamp *Cat. 11.8* (*Pl. 11.2c*) are nicely imprinted and perfectly readable. Unfortunately, the following letters are missing but nevertheless, the name can be reconstructed securely as Ἀτταλος. This fabricant is not attested very often but it is known by two stamps from the Athenian Agora as well as from examples such as those from Samaria and Olbia (See Clarke 2002, 278 f.; Levi 1964, nos. 224–225; Reisner – Fisher – Lyon 1924, no. 19). There are two types of stamps documented: one with and one without rectangular frame. The specimen presented here has a frame around the inscription.

Stamp *Cat. 11.9* (*Pl. 11.2d*) shows the name of Μίδαξ. Μίδαξ is known as a fabricant on Rhodes

who was working in the 3<sup>rd</sup> quarter of the 2<sup>nd</sup> cent. BCE (Ariel – Finkielsztejn 1994, SAH 34. SAH 74. SAH 89). The bunch of grapes as well as the *caduceus* are frequent attributes. Exactly the same stamp was found on a fully preserved amphora in a Hellenistic grave at Nea Paphos on Cyprus (Barker 2004, 79 fig. 10). The stamp of Midas occurs here in combination with the eponym Anaxiboulos (between 141/140 and 138/137 BCE). Furthermore, there are also six stamp impressions preserved at Kaunos which might be of the same stamp.<sup>83</sup>

The fragments *Cat. 11.10* (*Pl. 11.3a*) and *Cat. 11.11* (*Pl. 11.3b*) are almost impossible to read or to reconstruct. The poor preservation of *Cat. 11.10* does not allow any reconstruction. Based on the fabric, a Rhodian provenance is probable. *Cat. 11.11* has a round stamp with a rose in the centre. This kind of stamp begins in period II. The inscription is fairly legible, but the letters cannot be combined conclusively. The first part could be reconstructed as: Philodamos, Sodamos, Sosidamos, Eudamos, Archidamos, Aristodamos or others – all from different production periods on Rhodes. The last letters might be reconstructed as the month Agrianios.

The overall dating of the twelve stamps presented here corresponds to the finds of amphora stamps from Tall Zar'a already published by Kenkel in 2012.<sup>84</sup> Kenkel assigned all her examples to periods II to V. (Kenkel 2012, 64). That there is a clear majority of Rhodian stamps indicates strong trading relations with Rhodes during the 2<sup>nd</sup> cent. BCE. If we take into account that four stamps can be dated to the 1<sup>st</sup> half of the cent. (*Cat. 11.2–5*), only one before that time (*Cat. 11.1*) and one piece dates securely to the 2<sup>nd</sup> half of the 2<sup>nd</sup> cent. (*Cat. 11.9*), we might infer that there was a peak in the trade with Rhodes during the 1<sup>st</sup> half of the 2<sup>nd</sup> cent.<sup>85</sup> If we also add the previously published Rhodian stamps from Tall Zar'a, we can complete the picture with

80 Grace 1950, 143 no. 49 (Tarsus); Reisner – Fisher – Lyon 1924, 311 no. 11 and Crowfoot 1957, 380 (Samaria) and for Tel Anafa see Ariel – Finkielsztejn 1994, 194 SAH 15.

81 Jöhrens 1999, 55 no. 138 and p. 68 no. 177 (period III). Börker dates one Helios priest with the same name to the last decade of the 3<sup>rd</sup> cent. BCE (see Börker 1974, 35 no. 4 and p. 43 no. 33 with reference to Grace see Börker 1974, 33 note 10).

82 See the stamp from Tel Anafa: Ariel – Finkielsztejn 1994, 194 SAH 16.

83 Schmaltz 2016, 316 f. KA 739–KA744 (period V).

84 Kenkel 2012, pl. 8 f. presents in total 16 amphora-handles. Fourteen of them are more or less well legible. They are added to *Tab. 11.1* that compiles all names of fabricants, eponyms and months that occur on amphora stamps at the Tall Zar'a (see below *Tab. 11.1*). In 2020 Kenkel publishes the amphora-stamps with marginal changes in respect of the dating (see. Kenkel 2020, 19–21).

85 Fragment *Cat. 11.6* is excluded as it either dates to period III or period V.

five stamps dating to the 1<sup>st</sup> half of the 2<sup>nd</sup> cent. BCE, three stamps that can be dated earlier but were still in use during the 1<sup>st</sup> half of the 2<sup>nd</sup> cent. and two from the second half of the 2<sup>nd</sup> cent. (Kenkel 2020, 19–21). This result corresponds to the general domination of sea trade of Rhodes until the 2<sup>nd</sup> half of the 2<sup>nd</sup> cent. BCE.<sup>86</sup> But this observation needs to be confirmed or refuted by the pottery material (see *Chap. 8*). Furthermore, a total of only eleven Rhodian amphora stamps – most of them from pits and none of which can be directly connected with architectural structures – plus 14 legible stamps published by Kenkel, are not sufficient to formulate extensive theories on the general topic of the trading practices of the inhabitants of Tall Zar‘a during the decades of the Hellenistic period.

If we look at the number of stamps from different fabricants and eponyms, we can reconstruct a possible minimum and maximum number of amphorae at Tall Zar‘a based on the finds from 2001 to 2011 and 2018/2019. In so far as the ten eponym-stamps can be combined with every fabricant-stamp, we count a minimum of ten amphora. If we assume that we only have one handle of every amphora that ever came up on Tall Zar‘a, then we get to a result of 18 amphorae based on the eponyms and fabricants’ names. In addition, the three stamps with the remains only of months that normally come together with eponyms’ names increase the number to a minimum of 13 and a maximum of 21 amphorae. And finally, four stamps cannot be read at all so that it is not clear if they are of an eponym or a fabricant.<sup>87</sup> These pieces increase the number at last to a maximum of 25 amphorae.

Regardless of the fact that this simple counting does not take into account the context in which any of the fragments were found and depends purely on the number of fragments, even a count of a maximum 25 amphorae is not very much if we assume an active trade. In the end, there remains the question that Kenkel had already posed at the end of her remarks on Rhodian amphorae from Tall Zar‘a in 2012: Did the amphorae come directly to Tall Zar‘a, filled with their original contents; or did they arrive as reused containers after having been emptied at their first port of call, probably somewhere on the coast.<sup>88</sup>

Nevertheless, in addition to the 16 examples presented by Kenkel, 25 stamped Rhodian amphora handles are now known from Tall Zar‘a and 23 stamps can be read properly (see *Tab. 11.1*). They document clearly either a direct affiliation of the Tall with the Greek-dominated trading network, via Palestine and the Syrian coast, or at least with a trading connection to cities that were themselves incorporated in the supra-regional trading network with the Greek islands during the 2<sup>nd</sup> half of the 3<sup>rd</sup> and the 2<sup>nd</sup> cent. BCE. Basically, the corpus from Tall Zar‘a reflects the image that has already been developed in nearby Gadara as well as in the area of Palestine and Jordan and the whole Mediterranean (Jöhrens 2013, 53 with note 6). For example, at Gadara the majority of Rhodian amphorae are also from the 2<sup>nd</sup> half of the 3<sup>rd</sup> and the 2<sup>nd</sup> cent. BCE (Jöhrens 2013, 54. 94; Hoffmann 2000, 187 f.). Looking at the amount of amphorae marked with Rhodian stamps, the lively trade with Rhodes seems gradually to have dried up at the end of the 2<sup>nd</sup> cent. BCE (Jöhrens 2013, 54. 94).

86 See for example Lawall et al. 2000, 388 and Lund 1999, 199.

87 Kenkel 2012, Ram15. Ram16 and *Cat. 11.10* and *Cat. 11.11* here.

88 See also Kenkel 2012, 65 f. with further considerations on the ethnic and religious composition of the population at or close to Tall Zar‘a based on the existence of imported Greek amphorae.

	Fabricant (F); Eponym (E); Month (M)	Reference
Αμύντας	F	<i>Cat. 11.2</i> ; Kenkel 2012, RAm7
Αρατοφάνης	E	<i>Cat. 11.6</i>
Αριστείδας	E	Kenkel 2012, RAm1
Ἄτταλος	probably F	<i>Cat. 11.8</i>
Αὐτοκράτης	E	Kenkel 2012, RAm2
Ἑρμίας	F	Kenkel 2012, RAm8
Λινοῦ	F	<i>Cat. 11.3</i>
Μίδας	F	<i>Cat. 11.9</i> ; Kenkel 2012, RAm9
Πανσανίας	E	<i>Cat. 11.5</i> ; Kenkel 2012, RAm4
Πυθόδωρος	E	Kenkel 2012, RAm5
Σωσικλῆς	F	Kenkel 2012, RAm10
Σώστρατος	E	<i>Cat. 11.1</i>
Σύμμαχος	E	<i>Cat. 11.4</i>
Τεισαμενός	E	Kenkel 2012, RAm6
Ξενοφῶν	E	Kenkel 2012, RAm3
Πάναμος	M	<i>Cat. 11.5</i>
Δάλιος	M	<i>Cat. 11.4 (?)</i> ; Kenkel 2012, RAm11. RAm12
Θεσμοφόριος	M	Kenkel 2012, RAm13
Διοσθύου	M	<i>Cat. 11.4 (?)</i>
Σμινθίος	M	<i>Cat. 11.6</i> ; Kenkel 2012, RAm14
Ἀγριάνιος	M	<i>Cat. 11.1</i> ; <i>Cat. 11.11</i>

Tab. 11.1 Names of fabricants, eponyms and months (that occur on Tall Zar'a)

## 11.2. Catalogue

Cat.	Locus	Find number	Object	Material	size of stamp (in cm)	Description	Date	Comparisons	Plate
11.1	11588	TZ 113050-001	frgt. of Rhodian amphora: rim with handle, stamped	pottery	H 1.7, L 4.7	clay: pinkish buff (2.5 YR 7/6) <sup>89</sup> , very finely levigated, without inclusions visible to naked eye, very dense, with no voids, hard fired <sup>90</sup> surface: light buff to yellowish buff slip (c. 5 YR 7/4 or 5 YR 8/4) stamp: long-rectangular; poorly imprinted, fragmentary [E]ΠΙΣΘ[ΣΤ]Π[Α]ΤΟ[Υ] [Ι]ΑΓΓΙΑΝ[ΟΥ]	end of period II (207–202 BCE)	Finkelsztejn 2001, 225 (207–202; period III); Ariel 2000, 271 f. Nr. 14 (240–205; period II); Finkelsztejn 1993, 136	11.1a
11.2	11591	TZ 113203-001	handle of Rhodian amphora, right-angled bended and stamped	pottery	H 1.7, preserved L 3.2	clay: pinkish buff (2.5 YR 7/6), very finely levigated, without inclusions visible to naked eye, very dense, with no voids, hard fired surface: light buff to yellowish buff slip (5 YR 7/4 or 5 YR 8/4) stamp long-rectangular; imprint unsteady, left side illegible; right end laurel wreath with loose-hanging ribbons; beside the stamp round-shaped imprint AMYNTA, followed by a wreath	205/198 to 175/161 BCE (period III) / 174/160–146 BCE (period IV)	Măndescu 2016, 36 f. pl. 4 F02; Ariel 2006, 89 no. 1 (190–176 BCE; Tel Michal); Römer-Strehl et al. 2011, 153, 160 Kat. No. 11 (without wreath); Baker 2004, 80 fig. 12 (164–162 BC; Nea Paphos); Jöhrens 1999, 69 (period IV); Ariel 1990, 42, S 96, 99–101 (Jerusalem); Kenkel 2012, 59 pl. 8 fig. 9 RAm7 with further examples.	11.1b
11.3	11595	TZ 113283-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	H 1.5, L 3.7	clay: pinkish buff (2.5 YR 7/6), very finely levigated, without inclusions visible to naked eye, very dense, with no voids, hard fired surface: light buff to yellowish buff slip (c. 5 YR 7/4 or 5 YR 8/4) stamp long-rectangular; deeply imprinted and completely preserved ΛΙΝΟΥ, flanked by two bunches of grapes	205/198–175/161 BCE (period III) or 145–121 BCE (period V)	Măndescu 2016, 368 f. pl. 4 F17–F19; Schmaltz 2016, 314 KA735; p. 315 KA 736 (period IV); Irmia 2005, 337 No. 25; Nicolaou 2005, 186 No. 475 f. (period III); Jöhrens 2001, no. 226 (period IV); Buzoianu 1992, 150 no. 356	11.1c

89 The colour references in this catalogue are given according to the Munsell Soil Color Chart.

90 For the petrographic and chemical composition of the Rhodian amphorae fabric see Whitebread 1995, 51–67.

Cat.	Locus	Find number	Object	Material	size of stamp (in cm)	Description	Date	Comparisons	Plate
11.4	11505	TZ 113318-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	H 1.8, L 4.3	clay: reddish brown fabric; very few small white and dark mineral inclusions, very dense with no voids, hard fired surface: untreated stamp: long-rectangular; poorly imprinted, nearly completely preserved, but illegible [---]   ΣΥ[MMA]XOY   Δ[---]IOY	198 to 163 BCE (period IIIb/period IV)	Finkielsztejn 2001, 124 tab. 6 (IV)	11.1d
11.5	11591	TZ 113204-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	preserved H 1.9, preserved L 4.0	clay: pinkish buff (2.5 YR 7/6), very finely levigated, without inclusions visible to naked eye, very dense, with no voids, hard fired surface: light buff to yellowish buff slip (5 YR 7/4 or 5 YR 8/4) stamp: long-rectangular; poorly imprinted, lower part only preserved fragmentarily ΕΠΙΠΑΥ   ΣΑΝΙΑ   ΠΑΙΝ[AMOY	174/160 to 146 BCE (period IV)	Jöhrens 1999, 81 (period IV: ca. 175–146 BCE); Kenkel 2012, pl. 62 fig. 6 RAm4 (only two lines, without name of month)	11.1e
11.6	11513	TZ 112808-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	H 1.8, L 4.5	clay: pinkish buff (2.5 YR 7/6), very finely levigated, without inclusions visible to naked eye, very dense, without any voids, hard fired surface: light buff to yellowish buff slip (c. 5 YR 7/4 or 5 YR 8/4) stamp: long-rectangular; deeply imprinted, completely preserved, but small imperfection in the middle ΕΠΙΠΑΤΟ   ΦΑΝ [HΣ]   ΣΜΙΝΘΙΟ[Y]	c. 108 BCE (?); (but also possible: 182–176 BCE or even 210–200 BCE)	Jöhrens 1999, 55 no. 138 und p. 68 no. 177 (period III); Börker – Burow 1998, 13; Ariel – Finkielsztejn 1994, 194 SAH 15 (Tel Anafa); Ariel – Finkielsztejn 1994, 194 SAH 16 (108 BCE); Grace 1950, 143 no. 49 (Tarsus); Crowfoot 1957, 380 (Samaria); Reisner – Fisher – Lyon 1924, 311 no. 11	11.2a

Cat.	Locus	Find number	Object	Material	size of stamp (in cm)	Description	Date	Comparisons	Plate
11.7	11588	TZ 113106-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	H 2.0	clay: pinkish buff (2.5 YR 7/6), very finely levigated, without inclusions visible to naked eye, very dense, with no voids, hard fired surface: light buff to yellowish buff slip (c. 5 YR 7/4 or 5 YR 8/4) <sup>91</sup> stamp: rectangular (or even square) with dotted line; imprinted deeply; surface flaked off so that the inscription is illegible but the depiction of Helios can be vaguely discerned. inscription with two or three lines (?); on the lowest line a T is observable	Hellenistic; precise dating not possible		11.2b
11.8	11818	TZ 102016-002	handle of Rhodian amphora, right-angled bend and stamped		H 1.8	clay: orange-buff fabric (2.5 YR 7/6), finely levigated, with no visible inclusions, very dense without voids, hard fired surface: light buff slip (5 YR 7/4 or 5 YR 8/4) stamp: rectangular; almost one half preserved (?); imprinted; with rectangular frame AT(T) [ - - ]	2 <sup>nd</sup> quarter of 2 <sup>nd</sup> cent. BCE	Clarke 2002, 278 f. JK SH.10 (2 <sup>nd</sup> quarter of 2 <sup>nd</sup> cent. BCE); Ariel 1990, no. S333	11.2c
11.9	12011	TZ 102200-002	figt. of Rhodian amphora: rim with handle, right-angled bend, stamped	pottery	H 1.2; L 4.4	clay: buff fabric (2.5 YR 7/6), very well levigated, without inclusions visible to naked eye, very dense with no voids, hard fired surface: light buff to yellowish buff slip (5 YR 7/4 or 5 YR 8/4) fully preserved stamp, rectangular in shape; on right side of the inscription bunch of grapes and below lying caduceus MIAA[Σ]	c. 145–109 BCE (period V)	Barker 2004, 79 fig 10; Ariel – Finkielsztejn 1994, SAH 34, SAH 74, SAH 89; Kenkel 2012, 60 pl. 8 fig. 9 RAm9 with further references	11.2d
11.10	11923	TZ 102085-001	handle of Rhodian amphora, right-angled bend and stamped	pottery	H c. 3.2; preserved L 3.4	clay: buff fabric (2.5 YR 7/6), very well levigated, without inclusions visible to naked eye, very dense with voids, hard fired surface: light buff to yellowish buff slip (5 YR 7/4 or 5 YR 8/4) <sup>92</sup> remains of a stamp, surface badly flaked off; inscription has two or three lines (?), illegible	Hellenistic; precise dating not possible		11.3a

91 See Finkielsztejn 2001, 43–44.

92 See Finkielsztejn 2001, 43–44.

Cat.	Locus	Find number	Object	Material	size of stamp (in cm)	Description	Date	Comparisons	Plate
11.11	11903	TZ 102116-002	handle of Rhodian amphora, right-angled bend and stamped	pottery	Dia. 3.2	clay: buff fabric (c. 2.5 YR 7/6), very well levigated with no inclusions, very dense without voids, hard fired surface: light buff to yellowish buff slip (5 YR 7/4 or 5 YR 8/4) <sup>93</sup> stamp: almost completely preserved; round; with inscription around a central rose (T)OAAAMOY ATPIA(NIOU) (?)	after 240 BCE (period II)		11.3b
11.12	11973	TZ 02150-002	Koan amphora: pair-handle, broken; stamped on each pair	pottery	each H 1.3; L 5.0	fabric (?) two stamps, one on each pair; rectangular shape; fully preserved. The inscription is fairly illegible (on the sketch!). Despite all lines being clearly visible, a conclusive arrangement of letters cannot be made (?).			11.3c

93 See Finkielsztejn 2001, 43–44.

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a. dia. 12 cm

TZ 113050-001

b.

TZ 113203-001

c.

TZ 113283-001

d.

TZ 113318-001

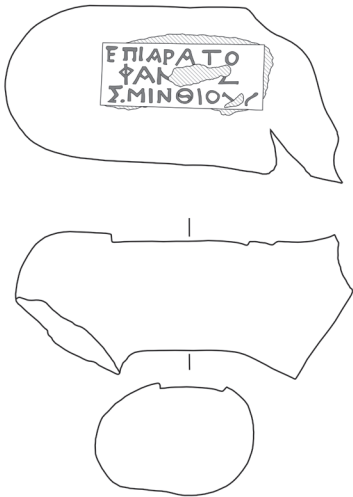
e.

TZ 113204-001

0 5 cm

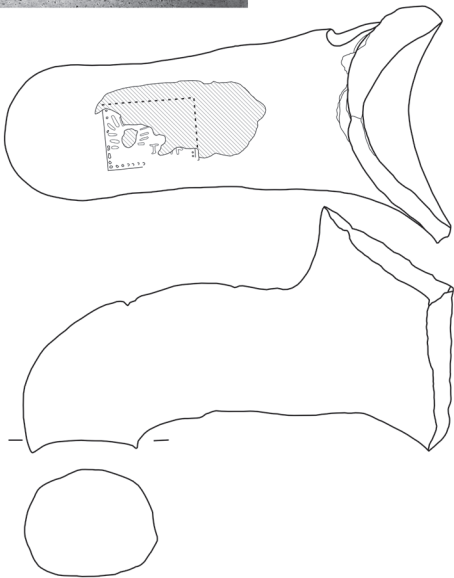
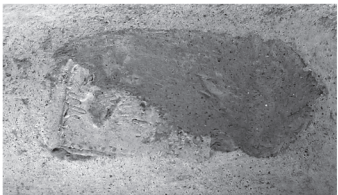
Plate 11.2: Amphora stamps, scale 1:2 (photos without scale)

a.



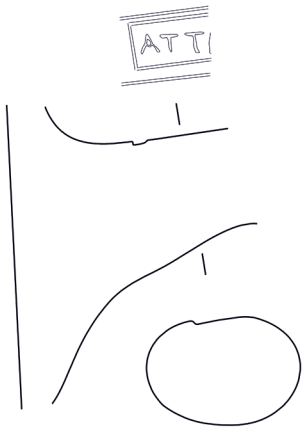
TZ 112808-001

b.



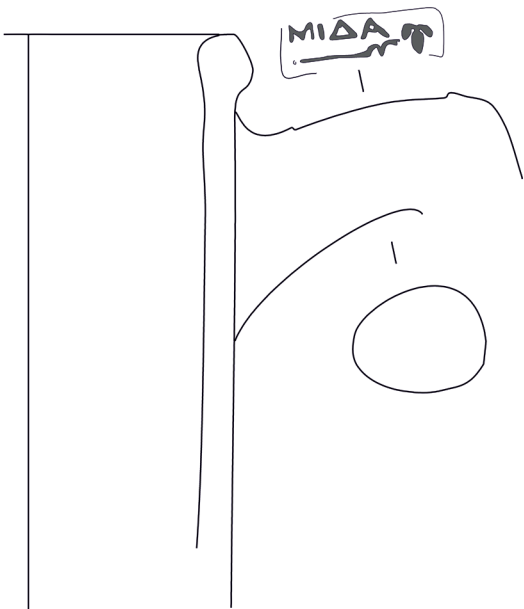
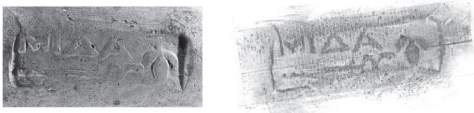
TZ 113106-001

c.



TZ 112016-002

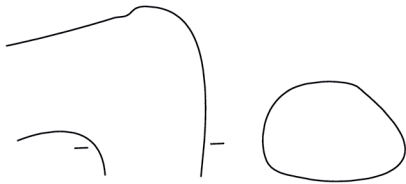
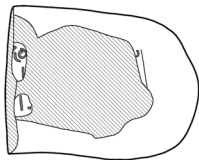
d.



TZ 112200-002

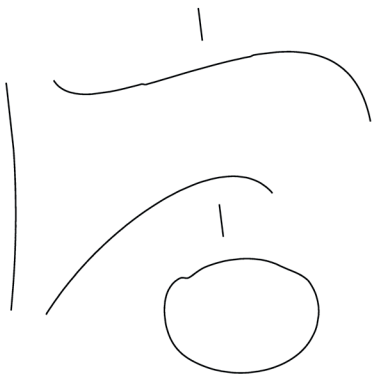
Plate 11.3: Amphora stamps, scale 1:2 (photos without scale)

a.



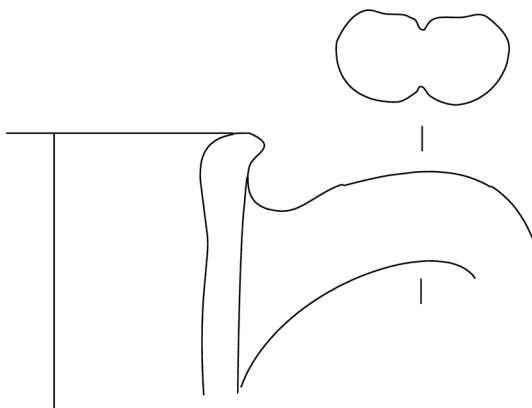
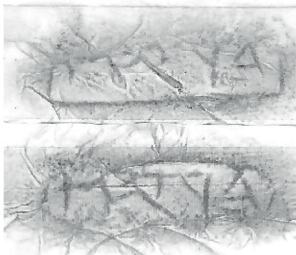
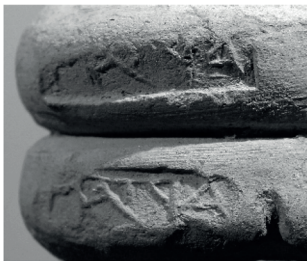
TZ 112085-001

b.



TZ 112116-002

c.



TZ 112016-002





## OBJECTS AND ARTEFACTS

### 12. STONE OBJECTS

by Hans-Martin Jakubik and Benjamin Schröder

#### 12.1. Introduction

Stone objects found during the previous excavations on Tall Zar'a (2001–2011) were categorized according to their types of application (Vieweger 2019, 53): architecture, household/craft, food production, personal items, warfare, cultic items and flint flakes/tools. In addition, there is the category of ecofacts, which show no visible traces of workmanship.

A detailed explanation of the typologies for these categories was presented by Jakubik for the bowls, plates, mortar bowls, mortars, beaker/cups and basins (Jakubik 2016) and also for the querns and lower grinding stones (Jakubik 2013). Further classifications for some categories have been made by Schröder for the following types: hinge stones, weight stones/loom weights, hammer stones, spindle whorls, balance weights, hygiene cutlery, beads, game pieces and sling stones. The description of these detailed typologies and classifications can be found in Vieweger (2019, 53–58). A detailed description of the flint objects will be presented by Schröder. The remaining stone objects are not classified.

An initial examination of the stone objects found during the 2018 and 2019 excavations showed that the established typologies and classifications could be used for the objects found during these recent seasons. Newly added to the household/craft category are the classifications hammer, drill socket and rubbing stone, and to the personal items category, the classification stamp seal.

Every typological assignment was based on purely morphological criteria and serves mainly to describe an object on the macroscopic level. Unless specifically defined otherwise, the raw material of an object was not relevant here. Use-wear analyses were conducted on some of the stone objects (*Chap. 19*).

Furthermore, it should be noted that most of the objects were found in a more or less fragmentary state. For some artefacts it was not possible to assign a designation or function.

Using the typologies and classifications mentioned above (Vieweger 2019, 53–58) the following stone objects, found in 2018 and 2019, were listed according to the categories defined (including the quantity of finds):<sup>94</sup>

94 Not included in this contribution are six Roman chalkstone vessels (see *Chap. 13*).

## 12.2. Categories<sup>95</sup>

### 12.2.1. Architecture

#### *Architectural element*

Total number: 8 objects, 3 of which are completely preserved (TZ 114048-001/L11733; TZ 114410-001/L11821, *Pl. 12.1a*; TZ 114352-001/L12017; TZ 114757-001/L12108, *Pl. 12.1b*; TZ 114479-001/L12128, *Pl. 12.2a*; TZ 114758-001/L12148, *Pl. 12.1c*; TZ 114610-001/L12175)

#### *Hinge stone*

Total number: 4 objects, 1 of which is completely preserved

Type 2: cuboid (TZ 114276-001/L11862, *Pl. 12.2b*)

Type 5: ring (TZ 113452-001/L11633)

Type 6: irregular (TZ 113182-001/L11581, *Pl. 12.2c*)

#### *Mosaic*

Total number: 4 objects, all of which are completely preserved

#### *Tile*

Total number: 14 objects, none of which is completely preserved (TZ 113450-001/L11600, *Pl. 12.2d*; TZ 114663-001/L12146; TZ 114545-001/L12148)

### 12.2.2. Household/Craft

#### *Basin*

Total number: 6 objects, none of which is completely preserved

Type 1B: basin with flat base, oval in plan view (TZ 114569-001/L12146, *Pl. 12.3a*)

Type 2B: basin with flattened/slightly convex base, oval in plan view (TZ 114567-001/L12165, *Pl. 12.3b*)

Type 3A: basin with irregular base, oval in plan view (TZ 114597-001/L12036)

Unclassified: TZ 114596-001/L12175 (*Pl. 12.3c*)

#### *Bowl*

Total number: 29 objects, 1 of which is completely preserved

Type 1A: everted bowl, circular or oval in plan view (TZ 114526-001/L12015, *Pl. 12.3d*)

Type 1A1: everted bowl, circular or oval in plan view, flattened or slightly convex base (TZ 112928-001/L11557, *Pl. 12.3e*)

Type 1A3: everted bowl, circular or oval in plan view, flat base (TZ 114040-001/L11814, *Pl. 12.3f*)

Type 1A4: everted bowl, circular or oval in plan view, ring base (TZ 113449-001/L11600, *Pl. 12.3g*)

Type 3A: tripod bowl, free-standing tripod bowl (TZ 113277-001/L11591; TZ 113465-001/L11641, *Pl. 12.4a*; TZ 113522-001/L11691, *Pl. 12.4b*; TZ 114481-001/L12076)

Type 5: carinated bowl (TZ 113456-001/L11600, *Pl. 12.4c*)

#### *Casting mould*

Total number: 1 object, one half completely preserved (TZ 113366-001/L11631, *Pl. 17.2b*; see *Chap. 17.2*)

#### *Drill socket*

Total number: 1 object, completely preserved (TZ 113722-001/L11671, *Pl. 12.5a*)

#### *Hammer*

Total number: 1 object, hammerhead completely preserved (TZ 114503-001/L12076, *Pl. 12.5b*)

95 The finds included in the catalogue are listed in brackets, for selection criteria see *Chap. 12.5*.

*Hammer stone*

Total number: 17 objects, 13 of which are completely preserved

Type 1.1: spherical, regular (TZ 113026-001/L11550, *Pl. 12.5c*)

Type 1.2: spherical, with reduction (TZ 112861-001/L11508, *Pl. 12.5d*)

Type 1.3.1: spherical, sharpened with ridge (TZ 114158-001/L11898; TZ 114423-001/L11935, *Pl. 12.5e*)

Type 2.2: spherical section, double section (TZ 114199-001/L11938, *Pl. 12.5f*)

Type 3.1: ovoid, regular (TZ 112892-001/L11503)

Type 3.2: ovoid, with reduction (TZ 113286-001/L11622)

Type 4: cubic (TZ 112810-001/L11186; TZ 114502-001/L12085)

*Lid*

Total number: 2 objects, both completely preserved (TZ 113457-001/L11600; TZ 113431-001/L11677)

*Plate*

Total number: 10 objects, none of which is completely preserved

Type 1A: plate with flattened or slightly convex base, circular or oval in plan view (TZ 113035-001/L11552, *Pl. 12.5g*)

Type 1B: plate with flattened or slightly convex base, rectangular in plan view (TZ 114524-001/L11285, *Pl. 12.5h*; TZ 114088-001/L11733, *Pl. 12.5i*; TZ 114497-001/L12017)

Type 2: plate with ring base (TZ 113434-001/L11600, *Pl. 12.6a*)

*Rubbing stone*

Total number: 5 objects, completely preserved

Type 1: spherical (TZ 114507-001/L12083, *Pl. 12.6b*)

Type 8.2: barrel (TZ 114619-001/L12012, *Pl. 12.6c*)

Type 10.2: prism-shaped, oblique prism (TZ 113519-001/L11699, *Pl. 12.6d*)

Type 14.2: shoe-shaped, bevelled (TZ 114623-001/L12162)

Special Type: cuboid, a clearly carved hand grip (TZ 114531-001/L12133, *Pl. 12.6e*)

*Spindle whorl*

Total number: 5 objects, all completely preserved (see *Chap. 16*)

Type 3: conical (TZ 114560-001/L12155, *Pl. 16.1f*)

Type 4: globular to doughnut-shaped (TZ 114077-001/L11814)

Type 5: conical (TZ 113418-001/L11641, *Pl. 16.1e*)

Type 7: flat at the upper outer ring and elevation in the middle (TZ 114197-001/L11782, *Pl. 16.1d*)

*Weight stone/Loom weight*

Total number: 8 objects, one of which is completely preserved (see *Chap. 16*)

Type 1.1.1: ring shaped, large dia. > 15 cm, outline round (TZ 113479-001/L11592, *Pl. 16.3f*)

Type 1.1.2: ring shaped, large dia. > 15 cm, outline oval (TZ 114213-001/L11860)

Type 1.2.1: ring shaped, small dia. < 15 cm, outline round (TZ 113205-001/L11591, *Pl. 16.3e*)

Type 1.2.5: ring shaped, small dia. < 15 cm, outline irregular (TZ 113057-001/L11604)

Type 4: discoidal with necking (TZ 113461-001/L11600)

*Whetstone*

Total number: 1 object, completely preserved (TZ 113873-001/L11738, *Pl. 12.6f*)

## 12.2.3. Food Production

*Lower grinding stone*

Total number: 35 objects, 4 of which are completely preserved

Type 1a: lower grinding stone with flat contact area, oval base with evenly worked curves, no lips (TZ 113023-001/L11581, *Pl. 12.6g*; TZ 113743-001/L11903)

Type 1b: lower grinding stone, flat contact area for secure support, varying base shapes, cross sections and curvatures (TZ 113032-001/L11548; TZ 114171-001/L11898; TZ 114543-002/L12015)

Type 1c: lower grinding stone, flat contact area for secure support, flat grinding surface, strong curvature and high outside pitch (TZ 113024-001/L11561, *Pl. 12.6h*)

Type 1d: lower grinding stone, box-like shape, excellent static stability (TZ 113183-001 and -002/L11609, *Pl. 12.6i*; TZ 114603-001/L12144)

Type 1e: lower grinding stone, flat and angular shape, varying base shapes, optimal static stability (TZ 114226-001/L11899; TZ 114602-001/L12167, *Pl. 12.7a*)

Type 2a: lower grinding stone with curved/convex bottom, was lowered into the ground for adequate stability (TZ 113454-001/L11585, *Pl. 12.7b*; TZ 113455-001/L11636; TZ 113742-001/L11726; TZ 114584-001/L12164)

Type 2b: lower grinding stone, only roughly worked bottom curvature, grinding surface mainly flat, similar to Type 2a, but stronger curvature, was lowered into the ground for adequate stability (TZ 113186-001/L11610)

Type 3a: lower grinding stone with unilateral rim bulge, distinctive rim section (saddle grinding stones), bottom with strong curvature, was lowered into the ground for adequate stability (TZ 114275-001/L11903, *Pl. 12.7c*)

Type 3b: lower grinding stone, distinctive rim section on at least one side of the grinding surface (TZ 113184-00/L11559, *Pl. 12.7d*; TZ 114523-001/L12082; TZ 114532-001/L12088)

Special Type: lower grinding stone, flat base, oval in plan view, “opening” at the distal end (TZ 114549-001/L11913, *Pl. 12.7e*; see *Chap. 19*)

## Mortar

Total number: 9 objects, 3 of which are completely preserved

Type 1: mortar in upright size (TZ 113456-002/L11600, *Pl. 12.8a*; TZ 114548-001/L12165)

Type 2: mortar in flat size (TZ 113373-001/L11656; TZ 113987/L11815, *Pl. 12.8b*)

## Mortar bowl

Total number: 11 objects, one of which is completely preserved

Type 1A1: everted mortar bowl, circular or oval in plan view, flattened or slightly convex base (TZ 113157-001/L11596; TZ 114516-001/L12076, *Pl. 12.8c*)

Type 1A3: everted mortar bowl, circular or oval in plan view, ring base (TZ 113039-001/L11552, *Pl. 12.8d*)

Type 2A1c: upright mortar bowl, circular or oval in plan view, straight walls, ring base (TZ 113432-001/L11600, *Pl. 12.8e*)

Type 2A2a: upright mortar bowl, circular or oval in plan view, convex walls, flat base (TZ 113328-001/L11528, *Pl. 12.8f*)

Type 2B2: upright mortar bowl, rectangular in plan view, flattened or slightly convex base (TZ 113316-001/L11637, *Pl. 12.8g*)

Type 4: tripod mortar bowl (TZ 114493-001/L11706, *Pl. 12.8h*; TZ 114579-001/L12142)

## Olynthus mill

Total number: 6 objects, 1 upper part completely preserved (TZ 112879-001/L11528, *Pl. 12.9a*; TZ 114283-001/L11972, *Pl. 12.9b*; TZ 114601-001/L12152)

## Quern

Total number: 45 objects, 6 of which are completely preserved

Type 1a: quern, loaf-shaped, front and rear side curvatures identical, many abrasions on front and rear edge (TZ 114316-001/L11895, *Pl. 12.9c*; TZ 114322-001/L11974; TZ 114321-001/L12057)

Type 1c: quern, loaf-shaped (similar to Type 1a), front and rear side curvatures identical, section almost semicircular (TZ 113808-001/L11706; TZ 114499-001/L12017, *Pl. 12.9d*; TZ 114534-001/L12132; TZ 114551-001/L12162)

Type 1d: quern, less pronounced loaf shaped, almost triangular section, steep pitch of front and rear sides, almost symmetrical (TZ 113463-001/L11585, *Pl. 12.9e*, TZ 114274-001/L11898; TZ 114595-001/L12164)

Type 1e: quern, loaf-shaped with broad base, shape of section is between Type 1a and Type 1c (TZ 113093-001/L11515, *Pl. 12.9f*)

Type 1g: quern, less pronounced loaf shape, similar to Type 1a but significantly less pronounced bulge (TZ 114271-001/L11988)

Type 1h: quern, less pronounced loaf shape, front and rear side curvatures almost identical, similar to Type 1a and Type 1g but less pronounced bulge with horizontal parts on its upper side (TZ 112919-001/L11541, *Pl. 12.9g*)

Type 2b: quern, different front and rear side curvatures, acute-angled section less significantly pronounced (TZ 114543-001/L12015; TZ 114498-001/L12108, *Pl. 12.9h*)

Type 3a: quern, flat and broad shape, frequently stress marks on both longitudinal edges (TZ 113464-001/L11656, *Pl. 12.10a*; TZ 114585-001/L12176, *Pl. 12.10b*)

Type 3b: quern, flat and broad shape, similar to Type 3a but upper surface more level both lengthwise and crosswise (TZ 113034-001/L11521; TZ 114533-001/L12093, *Pl. 12.10c*)

Type 4b: quern, oval to circular base, flat arch (TZ 113201-001/L11620, *Pl. 12.10d*)

Special Type: TZ 114501-001/L12022, *Pl. 12.10e*

### *Rubbing stone*

Total number: 74 objects, 58 of which are completely preserved

Type 1: spherical (TZ 114613-001/L12057)

Type 2.2: spheric section, double section (TZ 113168-001/L11609, *Pl. 12.10f*)

Type 3: ovoid (TZ 113380-001/L11651; TZ 114737-001/L11994; TZ 114622-001/L12007, *Pl. 12.10g*; TZ 114521-001/L12019)

Type 4: pyramidal (TZ 112805-001/L11516; TZ 114617-001/L12076, *Pl. 12.10h*)

Type 5: conical (TZ 114572-001/L12162)

Type 5.1: conical, conical outline is more or less round (TZ 113055-001/L11580, *Pl. 12.10i*)

Type 5.2: conical, conical section outline is more or less round (TZ 112807-001/L11517; TZ 113056-001/L11582, 1; TZ 114393-001/L12057)

Type 6: cuboid (TZ 113031-001/L11550; TZ 113478-001/L11680; TZ 113948-001/L11816, *Pl. 12.10j*; TZ 114159-001/L11854; TZ 114581-001/L12175)

Type 7: cubic (TZ 114073-001/L11856; TZ 114611-001/L12164, *Pl. 12.10k*; TZ 114615-001/L12196)

Type 8: cylindrical (TZ 114513-001/L12076)

Type 8.1: roller-shaped (TZ 114525-001/L12162)

Type 10.1: prism-shaped, rectangular prism (TZ 113433-001/L11600)

Type 12: discoidal (TZ 114391-001/L11576)

Type 13: pestle (TZ 114621-001/L12103)

Type 14.1: shoe-shaped, wedge-wise (TZ 114557-001/L12162; TZ 114395-001/L11898, *Pl. 12.10l*)

Type 14.2: shoe-shaped, bevelled (TZ 114392-001/L11864; TZ 114624-001/L12085)

Type 15: loaf-shaped (TZ 114618-001/L12016, *Pl. 12.10m*; TZ 114500-001/L12095; TZ 114511-001/L12108; TZ 114558-001/L12164)

Special Type: TZ 114041-001/L11813

Unclassified: TZ 114490-001/L12108

## 12.2.4. Personal Items

### *Bead*

Total number: 9 objects, 6 of which are completely preserved

Type 2: drop-shaped (TZ 114278-001/L11689)

Type 4: biconical (TZ 113526-001/L11701, *Pl. 12.11a*)

Type 7: ring-shaped (TZ 114477-001/L12071, *Pl. 12.11b*)

Type 8: barrel-shaped (TZ 112894-001/L11541, *Pl. 12.11c*)

### *Game piece*

Total number: 17 objects, 16 of which are completely preserved

Type 1: spherical D 2–3 cm (TZ 113058-001/L11606, *Pl. 12.11d*)

Type 2: hemispherical (TZ 113025-001/L11588)

Type 3: ovoid (TZ 114039-001/L11766, *Pl. 12.11e*)

Type 4.1: discoidal, round outline (TZ 112907-001/L11528)

Type 4.2: discoidal, oval outline (TZ 114553-001/L11899, *Pl. 12.11f*)

### *Stamp seal*

Total number: 1 object, completely preserved (TZ 114329/L11898; see *Chap. 17.4, Pl. 17.3a*)

### 12.2.5. Warfare

#### *Sling stone*

Total number: 26 objects, 25 of which are completely preserved

Type 1: spherical (TZ 112912-001/L11508, *Pl. 12.11g*; TZ 114466-001/L11899)

Type 2: ovoid (TZ 112896-001/L11541, *Pl. 12.11h*; TZ 114207-001/L11898; TZ 114422-001/L11899)

Type 3: irregular (TZ 114512-001/L11974)

### 12.2.6. Flint: Flakes and Tools

#### *Flakes*

Total number: 24 objects

#### *Tools*

Total number:

13 blades (TZ 113301-001 and TZ 113301-002/L11514, *Pl. 12.12a*; TZ 114705-001/L12048, *Pl. 12.12b*)

7 sickles (TZ 113721-001/L11711; TZ 114459-001/L11893, *Pl. 12.12c*; TZ 114703-001/L12011)

1 scraper (TZ 113731-001/L11748, *Pl. 12.12d*)

1 borer (TZ 113942-001/L11810, *Pl. 12.12e*)

1 burin (TZ 114706-001/L11864, *Pl. 12.12f*)

The other flint objects are broken parts, which cannot be assigned to a tool type.

### 12.2.7. Ecofacts

#### *Ecofact*

Total number: 30 objects including flint (TZ 114612-001/L12175; TZ 114700-001/L11733)

#### *Iron noodle*

Total number: 8 objects

#### *Raw material*

Total number: 9 objects (TZ 114629-001/L12164, *Pl. 12.12g*)

Concentrations of stone finds were observed in the following loci: L11500, L11515, L11550, L11898, L11974, L12076, L12085, L12093, L12108, L12148, L12162 and L12164. Most of the stone finds belong to the food production and household/craft categories.

### 12.3. Material, manufacturing and function

The most common raw materials used to make the stone objects found in 2018/2019 were basalt (73%) and limestone (12.5%). Some objects were made of pebbles (4%) and marble (4%). In a small number of cases, granite, sandstone, steatite, carnelian, calcite, pumice stone, chalk and agate were used. A special group are the finds made of flint.

Although, compared with limestone, basalt is much harder and less workable, its hardness and durability in particular made this the preferred raw material for the production of tools and highly esteemed objects for representative purposes. The porosity of its surface makes basalt suitable for grinding and grating. In contrast, limestone was easier to handle and thus popular for pierced objects (Jakubik 2013, 32; Jakubik 2016, 83–87; Vieweger 2019, 58).

Both raw materials were available in sufficient quantities in the area around the Tall Zar'a.

Some finds from the 2001–2011 excavation seasons suggest that stone artefacts were normally produced on Tall Zar'a. When procuring the raw materials, the craftsmen used, at least in part, pieces of basalt boulders found in the local surroundings. This is clear from the many partly finished items (Jakubik, 2013, 34; Jakubik 2016, 77 f.) and the result of mineralogical investigations with qualitative and quantitative X-ray phase analysis (Jakubik 2013, 32 f. and Appendix C and Jakubik 2016, 70 f. and Appendix 3),<sup>96</sup> though it cannot be excluded that some of the objects may have been acquired from other regions. There is no evidence from X-ray analysis yet for the findings from 2018–2019, but it is likely that local stone sources and imported material were also used in this repertoire.

Undoubtedly the querns, lower grinding stones and most of the stone vessels found in 2018–2019, like those of the 2001–2011 excavations, were primarily used for the preparation or manufacture of food, pigments or minerals. Furthermore, some stone vessels were definitely used only for presentation. Apart from that, it must be assumed that some of the particularly carefully manufactured vessels

might have been previously used in representative contexts.<sup>97</sup>

The use made of the stone finds is apparent from their designation, though for some of them, additional explanations are appropriate. Furthermore, Meller has performed use-wear analysis on 26 stone objects, which provides detailed information on the function of these specimens (see *Chap. 19*).

- “Rubbing stones” in the food production category were – like querns, lower grinding stones and most of the stone vessels – primarily intended for preparation or manufacture of food, pigments or minerals. In the household/craft category they were used for abrading (TZ 114531-001), smoothing (TZ 114623-001), polishing (TZ 113519-001 and TZ 114507-001) and pecking (TZ 114619-001).

- “Spindle whorls” and “Weight stones/Loom weights” were most likely used in connection with the production of textiles, as weights for weighting down objects or for other functions (see *Chaps. 16 and 19*).

- “Hinge stones” were used as door hinges for stabilisation on the ground during opening or closing of doors.

- “Olynthus mills” were bar or lever mills (consisting of an upper and lower part) for grinding grain.

- “Drill sockets” held the upper end of the shaft of a bow drill, which was used to perforate stones for jewellery, spindle whorls, gaming pieces and possibly to drill holes into ceramic to mend vessels (Daviau 2003, 93). The drill socket from Tall Zar'a (TZ 113722-001) found in 2019 is pestle-shaped with a depression at one end.

- Specific functions of “Flint blades” are difficult to ascertain. Occasionally, general use as a knife for slicing and cutting is suspected. “Flint sickles” were primarily used as harvesting tools for reaping grasses. Other recognized functions are the cutting of canes and reeds, woodworking and perhaps even hoeing or digging. “Flint scrapers” probably served for a general range of domestic tasks. They were often used to shear wool or to scrape reeds. “Flint bor-

96 The mineralogical investigations were carried out by Friedrich-Wilhelms-Universität Bonn (Harald Euler and Hans-Henning Friedrich).

97 See therefore Buchholz 1963, 59, 62–67; Buchholz 1999, 152; Elkowicz, 2012, 141–142; Gronenborn 1995, 50–52;

Jakubik 2013, 24–26; Jakubik 2016, 82–87; Meurers-Balke – Lüning 1990, 90; Nunn 2006, 17; Sparks 2007, 127–132; Squitieri 2017, 175; Wefers 2012, 31–32; Wenzel 2010, 402 fig. 123.

ers” were commonly used for piercing or producing holes in materials like stone, ceramics, wood and bone. Some of them were used in combination with bow drills. “Flint burins” are pointed tools with a

chisel-like end and were probably used for a whole range of tasks in the manufacture and processing of objects made of various materials (Rosen 1997, 64, 55–58; 68–71; 74 f.; 100).

## 12.4. Chronological classification

The chronological classification of the stone objects described above on the basis of their type, distribution frequency, production method or other characteristics is, with a few exceptions, generally extremely difficult.<sup>98</sup> This can be explained by the fact that, because of extended useful life stone objects and the longevity of the individual types on Tall Zar‘a and in the entire southern Levant, they have only very limited potential for dating the stratigraphy of a settlement. Another factor

that complicates the exact dating of the artefacts is that the material used for their production is relatively weather-resistant. The artefacts could, therefore, be left exposed for long periods or even moved several times without any lasting changes to their shape. Thus, the only means of classifying the artefacts chronologically relies on the dating of the settlement’s layers and phases in which the individual finds were made. (Jakubik 2013, 58 f.; Jakubik 2016, 58 f.).

98 See therefore Lapp 2015, 291; Petit 1999, 145; Daviau 2002, 116; Sparks 2007, 6. Olynthus mills began in the 5<sup>th</sup> cent. BCE (Batz 1994, 97). Stone seals can be well dated on the basis of style, iconography and typology (see *Chap. 17.4*)

## 12.5. Catalogue of stone finds

The following catalogue contains the stone artefacts from the 2018 and 2019 excavations, which were selected according to the following criteria:

- All stone objects found *in situ* and within significant contexts.
- Stone objects because of their good state of preservation or implications about function and technology.
- Supplementary stone objects that describe all types not mentioned so far, with at least one significant specimen. Other important finds without their own type classification also belong to this section.

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11186	TZ 112810-001	hammer stone	flint			6.4	6.4	403	completely preserved, cubic	hammer stone Type 4	—	Mazar – Rotem 2012, 375 fig. 9.11-9	
11285	TZ 114524-001	plate	basalt	17.8	11.5	5		1550	figt. of corner, rectangular in plan view; flattened base	plate Type 1B	—	Jakubik 2016, 31 fig. 28	12.5h
11503	TZ 112892-001	hammer stone	pebble	6.8	6.2	4.4		217	completely preserved; ovoid	hammer stone Type 3.1	—	—	
11508	TZ 112861-001	hammer stone	flint			4.5	5.4	188	completely preserved; spherical, striking face (chipping)	hammer stone Type 1.2	—	—	12.5d
11508	TZ 112912-001	sling stone	pebble				4.4	89	completely preserved; spherical	sling stone Type 1	—	—	12.11g
11514	TZ 113301-001	blade	flint	5.7	2.1	0.9		10.1	completely preserved; beige	without type	—	—	12.12a
11514	TZ 113301-002	blade	flint	4.2	1.5	1.6		3	fragmented; beige	without type	—	—	12.12a
11515	TZ 113093-001	quern	basalt	8.6	12	6.9		1102	fragmented; loaf-shaped with broad base	quern Type 1e	—	Fischer 2013, 340 fig. 352.2; Yahalom- Mack – Panitz- Cohen 2009, 730 fig. 14.5.11; Yahalom- Mack – Mazar 2006, 489 fig. 13.6.3	12.9f
11516	TZ 112805-001	rubbing stone	basalt	6.1	5.8	5.8		379	completely preserved; pyramidal	rubbing stone Type 4	—	Ben-Tor et al. 2012, pl. CV:4.11	
11517	TZ 112807-001	rubbing stone	basalt			6.6	6.9	503	completely preserved; conical	rubbing stone Type 5.2	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4d; 726 fig. 14.4.19	
11521	TZ 113034-001	quern	basalt	16.5	18.3	5		1721	fragmented; flat and broad shape	quern Type 3b	—	Fischer 2013, 340 fig. 110.5; Yahalom- Mack – Mazar 2006, 489 fig. 13.6.1; Lapp 2015, 292 fig. 10.1:4	
11528	TZ 112879-001	olynthus mill	basalt	36	36	13		24600	completely preserved upper part of mill	without type	re-used in Byzantine wall.	Baatz 1994, 98 photo 4; Stern 1978, pl. 44, 5	12.9a

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11528	TZ 112907-001	game piece	flint			1.9	3.6	38	completely preserved; flat shape with a natural groove	game piece Type 4.1	—	—	
11528	TZ 113328-001	mortar bowl	basalt	15	11.2	8.5	22	1205	fragmented; rim to base; upright size; convex walls; circular in plan view; flat base; Dia. opening: 19 cm	mortar bowl Type 2A2a	—	Yadin et al. 1961, pl. CCCLIX, 23; Lapp 2015, 298 fig. 10.4.3	12.8f
11541	TZ 112894-001	bead	carnelian	0.8			0.6	0.4	completely preserved; barrel-shaped	bead Type 8	—	Golani 2009, 622 fig. 11.3.31	12.11c
11541	TZ 112896-001	sling stone	basalt				5.1	82	completely preserved; round to oval	sling stone Type 2	—	—	12.11h
11541	TZ 112919-001	quern	basalt	4.5	10	4.4		324	fragmented; less pronounced loaf shape; front and rear side curvatures identical	quern Type 1h	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5.10; Lapp 2015, 292 fig. 10.1.3	12.9g
11548	TZ 113032-001	lower grinding stone	basalt	16.7	10.8	2.9		355	fragmented; oval in plan view, flat contact area	lower grinding stone Type 1b	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.4.24	
11550	TZ 113031-001	rubbing stone	basalt	7.2	6.1	4.4		347	completely preserved; strongly pronounced grinding surface	rubbing stone Type 6	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4.27	
11550	TZ 113026-001	hammer stone	flint				4.4	150.5	completely preserved; multiple scars; bright, smooth cortex	hammer stone Type 1.1	—	—	12.5c
11552	TZ 113039-001	mortar bowl	basalt	18.7	14	6.8	28	1409	fragmented; rim to base; sloping wall; circular in plan view; ring base; Dia. base: 22.0 cm	mortar bowl Type 1A3	—	Daviau 2002, 234 fig. 2.79.2; Fischer 2013, fig. 341.6	12.8d
11552	TZ 113035-001	plate	basalt	13.8	12.5	4.6		724	fragmented; rim to base; circular in plan view; slightly convex base; Dia. opening: 14 cm	plate Type 1A	—	Jakubik 2016, 30 fig. 27	12.5g
11557	TZ 112928-001	bowl	basalt	12.2	11.8	6.2	30	965	fragmented; rim to base; circular in plan view; slightly convex base; Dia. opening: 28 cm	bowl Type 1A1	—	Dever 1986, pl. 57, no. 15	12.3e

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11559	TZ 113184-001	lower grinding stone	basalt	44	34	16.5		32300	fragmented; distinctive rim section on at least one side of the grinding surface	lower grinding stone Type 3b	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:3; 489 fig. 13.6:5	12.7d
11561	TZ 113024-001	lower grinding stone	basalt	26	23.5	8		7400	fragmented; flat contact area; flat grinding surface; strong curvature and high outside pitch	lower grinding stone Type 1c	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:18	12.6h
11576	TZ 114391-001	rubbing stone	basalt			4.8	10.7	779	completely preserved; flat shape; cuboid	rubbing stone Type 12	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4:27	
11580	TZ 113055-001	rubbing stone	basalt			6.9	5.8	285	completely preserved, conical	rubbing stone Type 5.1	—	Ben-Tor et al. 2012: pl. CV: 3; Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:16	12.10i
11581	TZ 113182-001	hinge stone	limestone	31	22	43		28100	fragmented; almost rectangular shape	hinge stone Type 6	—	—	12.2c
11581	TZ 113023-001	lower grinding stone	basalt	44	36	6		13900	completely preserved; flat contact area; oval in plan view; no lips	lower grinding stone Type 1a	—	Fischer 2013, 188 fig. 180:9	12.6g
11582	TZ 113056-001	rubbing stone	basalt			6.2	6.2	367	completely preserved, conical	rubbing stone Type 5.2	—	Ben-Tor et al. 2012: pl. CV:3; Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:16	
11585	TZ 113454-001	lower grinding stone	basalt	54	29	16.5		33600	completely preserved; bottom side convex; no lips; nearly box-like shape	lower grinding stone Type 2a	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:3	12.7b
11585	TZ 113463-001	quern	basalt	15.7	12.7	10.5		3492	fragmented; steep curvature on both sides; cross section almost triangular and symmetrical	quern Type 1d	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:7	12.9e
11588	TZ 113025-001	game piece	basalt			0.6	1.4	1.3	completely preserved; chalky cortex; hemispherical	game piece Type 2	—	—	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11591	TZ 113205-001	weight stone	basalt			3.1	11.7	598	completely preserved; small diameter; round shape; Dia. opening: 2.9 cm	weight stone Type 1.2.1	see <i>Chap. 16</i> and <i>19</i>	—	
11591	TZ 113277-001	bowl	basalt	26	13.8	11.7	28	2902	fragmented; rim to base, sloping wall; circular in plan view, one angular foot/leg preserved	bowl Type 3A	—	Hirschfeld – Amir 2007, 184 fig. 4.11, 1	
11592	TZ 113479-001	weight stone/ loom weight	basalt	12.4	6	1.6		941	fragmented; ring-shaped, diameter larger than 15 cm, with constriction	weight stone/ loom weight Type 1.1.1	see <i>Chap. 16</i>	—	
11596	TZ 113157-001	mortar bowl	basalt			4.2	10.6	583	nearly completely preserved; rim slightly damaged in a few places; sloping wall; circular in plan view; flattened/slightly convex base	mortar bowl Type 1A1	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6.3; 484 fig. 13.5.14	
11600	TZ 113433-001	rubbing stone	basalt	9.3	6.7	6.5		602	completely preserved; prism-shaped (rectangular); clearly recognizable grinding surface	rubbing stone Type 10.1	—	Ben-Tor et al. 2012, pl. CV.22; Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4.24	
11600	TZ 113450-001	tile	marble	14.1	12.2	2.2		738	fragmented, light gray, streaky grain	without type	—	—	12.2d
11600	TZ 113457-001	lid	basalt			1.9	7.3	170	completely preserved; discoid and flat; carefully worked.	without type	—	—	
11600	TZ 113461-001	weight stone/ loom weight	basalt	7.8	7.7	7.5		817	fragmented; disc-shaped (oval) with constriction	weight stone / loom weight Type 4	—	—	
11600	TZ 113432-001	mortar bowl	basalt			5	10.3	680	nearly completely preserved; rim slightly damaged in a few places; everted version; straight wall; circular in plan view; ring base	mortar bowl Type 2A1c	—	Squitieri 2017, 78 fig. 5.17c	12.8e

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11600	TZ 113456-002	mortar	basalt	38	32	21		33300	completely preserved; upright size, oval in plan view; inner surface carefully worked	mortar Type 1	—	Yahalom-Mack – Mazar 2006, 484, fig 13.5:17; Squitieri 2017, 78 fig. 5.17a; Fischer 2013, 340 fig. 352:1	12.8a
11600	TZ 113456-001	bowl	basalt	16	14.2	11.6	32	977	fragmented; carinated wall; circular in plan view	bowl Type 5	—	Jakubik 2016, 30 fig. 26	12.4c
11600	TZ 113449-001	bowl	basalt	15.4	13.6	6.4	24	930	fragmented; sloping wall; circular in plan view; ring base	bowl Type 1A4	—	Yadin et al. 1961, pl. CCVI, 3; Lapp 2015, 297 fig. 10.3:2	12.3g
11600	TZ 113434-001	plate	basalt	21.2	14.5	11.8	32	2847	fragmented; rim to base; ring base	plate Type 2	—	Dever 1986, pl. 61, no 3; Squitieri 2017, 67 fig. 5.13a	12.6a
11604	TZ 113057-001	weight stone / loom weight	basalt				7.6	160	fragmented; broken through in the middle; Dia. opening: 1.2 cm	weight stone / loom weight Type 1.2.5	—	—	
11606	TZ 113058-001	game piece	basalt				1.7	8	completely preserved; spherical	game piece Type 1	—	—	12.11d
11609	TZ 113168-001	rubbing stone	basalt	4.5	7.8	5.4		325	fragmented; broken off in the middle; spherical section; carefully worked	rubbing stone Type 2.2	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:9	12.10f
11609	TZ 113183-002	lower grinding stone	basalt	42	30	16.5		26400	fragmented; box-like shape; flat contact area	lower grinding stone Type 1d	belongs to quern TZ 113183-001.	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:18	12.6i
11610	TZ 113186-001	lower grinding stone	basalt	33.5	23.5	12		9100	fragmented; curved bottom; strong curvature; bottom side only roughly worked; grinding surface flattened	lower grinding stone Type 2b	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:6	
11620	TZ 113201-001	quern	basalt	17.2	15.2	7.7		2645	completely preserved; circular to oval base; flat arch	quern Type 4b	—	Jakubik 2013, 50 fig. 81	12.10d
11622	TZ 113286-001	hammer stone	basalt	10	7	8		774	completely preserved; ovoid with reduction	hammer stone Type 3.2	—	—	
11631	TZ 113366-001	mould	steatite	12.6	7.5	1.8			—	without type	see <i>Chap. 17.3</i>	—	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11633	TZ 113452-001	hinge stone	basalt	17.8	13.2	12.2		3133	fragmented; ring-shaped	hinge stone Type 5	—	—	
11636	TZ 113455-001	lower grinding stone	basalt	54.5	28.5	10.2		33600	completely preserved; bottom side high convex; extremely abraded; no rim bulge	lower grinding stone Type 2a	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:6	
11637	TZ 113316-001	mortar bowl	basalt	12.1	8.5	8.5		976	fragmented; rim to base; upright version; rectangular in plan view; flattened/ slightly convex base	mortar bowl Type 2B2	—	Lapp 2015, 300 fig. 10.5:1	12.8g
11641	TZ 113418-001	spindle whorl	soapstone			1.9	2.4	15	completely preserved; drilled vertically evenly round (Dia.: 0.7 cm); cylindrical to conical shape; flattened on one side	spindle whorl Type 5	—	—	
11641	TZ 113465-001	bowl	basalt			13.5	32.5	8600	only slightly fragmented; sloping wall; round in plan view; three feet/legs completely preserved, a small chunk chipped out of the wall; bowl bottom inclined, as one foot is longer than the other two; Dia. opening: 28 cm	bowl Type 3A	—	Ray 2001, 125 fig. 9.11:6; Johnson 2006, 657 fig. 22.2:4	12.4a
11651	TZ 113380-001	rubbing stone	pebble			3.8	5.5	143	completely preserved; ovoid	rubbing stone Type 3	—	Ben-Tor et al. 2012, pl. CV: 9; Yahalom- Mack – Panitz- Cohen 2009, 725 photo 14.4f; 726 fig. 14.4:23	
11656	TZ 113373-001	mortar	basalt	20.2	15.7	8		2130	fragmented; flat size; convex wall; circular in plan view; flattened base	mortar Type 2	—	Daviau 2002, 241 fig. 2.93:3; Fischer 2013, 240 fig. 220:5	
11656	TZ 113464-001	quern	basalt	16	14	6.8		2199	fragmented; flat and broad shape; saddle-shaped; front and rear side abraded	quern Type 3a	—	Fischer 2013, 340 fig. 110:5; Yahalom- Mack – Mazar 2006, 489 fig. 13.6:1; Lapp 2015, 292 fig. 10.1:4	12.10a

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11671	TZ 113722-001	drill socket	pebble or soapstone	5.5	4.3			159	completely preserved; truncated or pyramidal; bottom side carefully flattened with central drill hole (depth: 0.7 cm; Dia.: 1.4 cm); slightly quadratic in plan view; in places black overlay	special type	see <i>Chap. 19</i>	Daviau 2002, 224 fig. 2.50.3; Schmidt forthcoming	12.5a
11677	TZ 113431-001	lid	calcite			4	7.7	437	completely preserved; disc-shaped with flattened underside	without type	—	—	
11680	TZ 113478-001	rubbing stone	basalt	5.6	6	7.3		437	completely preserved; cuboid, carefully worked	rubbing stone Type 6	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4.27	
11689	TZ 114278-001	bead	carnelian	1.7	0.8			1.3	fragmented; drop-shaped	bead Type 2	—	—	
11691	TZ 113522-001	bowl	basalt			12.5	27.2	5400	almost completely preserved; one little piece from wall chipped; three feet/legs preserved; Dia. opening: 23.5 cm	bowl Type 3A	see <i>Chap. 19</i>	Lamprichs 2007, 551 pl. 5.01; Yadin et. al. 1958, pl. CXLVII, 26; Fischer 2013, 241 fig. 222	12.4b
11699	TZ 113519-001	rubbing stone	basalt			4.6	8.3	246	completely preserved; prism-shaped, heavily rubbed, small depression at the rear end	rubbing stone Type 10.2	see <i>Chap. 19</i>	—	12.6d
11701	TZ 113526-001	bead	carnelian	1.7	0.7			1.2	completely preserved; biconical	bead Type 4	—	—	12.11a
11706	TZ 113808-001	quern	basalt	18.6	6.8	7.2		1292	fragmented; two broken parts; loaf-shaped; cross section nearly semicircular	quern Type 1c	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5.6	
11706	TZ 114493-001	mortar bowl	basalt	13.8	11.4	13.5		1840	fragmented; one foot/leg and fragment of base preserved; cross section of foot/leg round; strong grinding marks	mortar bowl Type 4	—	Daviau 2002, 551 pl. 5.02; Squitieri 2017, 77 fig. 5.16a	12.8h

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11711	TZ 113721-001	sickle	flint	5.4	3.9	1.6		31.5	bilateral dorsal retouched; working edge on the left; very pronounced sickle sheen; palpable abrasion; slightly patinated	morphologically assignable as "Large Geometric" sickle element. See therefore Rosen 1997, 50–56; 135 tab. 6.1	corresponding types range from the later Middle Bronze Age to the Iron Age	Rosen 1997, 56 Fig. 3.16:5–6	
11726	TZ 113742-001	lower grinding stone	basalt	49.5	28.5	11		18900	completely preserved; rectangular in plan view; bottom side slightly curved	lower grinding stone Type 2a	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:6	
11733	TZ 114048-001	architectural element	basalt	17.5	13.5	6.4		1900	completely preserved; roughly worked; trapezoid in plan view; broken off at one longitudinal side; strong burning marks at one end	without type	—	—	
11733	TZ 114088-001	plate	basalt	15.7	11.9	6		1486	frgt. of edge; rectangular in plan view; flattened base; some places with burn marks	plate Type 1B	see <i>Chap. 19</i>	Jakubik 2016, 31 fig. 28	12.5i
11733	TZ 114700-001	ecofact	flint			2.1	10.8	136	two joining frgts.	without type	—	—	
11738	TZ 113873-001	whetstone	basalt	5.7	5.2	4.5		172	completely preserved; cuboid with rounded edges; indentation on the top and on one long side; evenly arched on all surfaces; underside also slightly arched	without type	—	—	12.6f
11748	TZ 113731-003	scraper	flint	4.3	2.9	0.7		9.1	fragmented; basal-medial flake; left-lateral dorsally retouched	without type	—	—	12.12d
11766	TZ 114039-001	game piece	basalt	2.5	2.1	1.6		11.8	completely preserved; ovoid; evenly shaped/ polished	game piece Type 3	—	—	12.11e

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11782	TZ 114197-001	spindle whorl	soapstone			0.5	1.9	2.3	completely preserved; flattened on one side; ivory-coloured	spindle whorl Type 7	see <i>Chap. 16</i>	—	
11810	TZ 113942-001	borer	flint	3.3	2.2	0.7		5.8	completely preserved; drill or ad hoc tool? Reddish brown	without type	—	—	12.12e
11813	TZ 114041-001	rubbing stone	pebble	6.1	6.2	3.5		285	completely preserved; in top view trapezoid; yellow-brown with all-round clear grinding surfaces and a polished surface; the wider longitudinal edge is shiny	special type	—	—	
11814	TZ 114040-001	bowl	basalt	10.9	9.2	6.8	26	258.2	fragmented, sloping wall; round in plan view; flat base	bowl Type 1A3	—	Yadin et al. 1958, pl. LIX, 14	12.3f
11814	TZ 114077-001	spindle whorl	limestone			1.1	3.5	16.6	completely preserved; lenticular in profile; Dia. opening: 0.7 cm	spindle whorl Type 4	—	—	
11815	TZ 113987-001	mortar	basalt			8.5	41	28800	completely preserved; flat size; regularly round depression with polished grinding surface (depth: max. 9 cm); exterior side roughly worked; partially sintered; Dia. opening: 28.2 cm	mortar Type 2	—	Daviau 2002, 241 fig. 2.93:3; Fischer 2013, 240 fig. 220:5	12.8b
11816	TZ 113948-001	rubbing stone	basalt	8.7	7.9	6		699	completely preserved; clearly defined all-round grinding surfaces; rectangular to cubic; „upper side“ broken off in places; the opposite grinding surface has a central roughening (Dia. approx. 3 cm; impact marks?)	rubbing stone Type 6	probably secondary use as a hammer stone?	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4:27	12.10j

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11821	TZ 114410-001	architectural element	marble	29.5	15	5		5400	rectangular frgt. of a plate when viewed from above; back side smooth, face side has three parallel grooves / depressions; rim or edge recognizable	without type	„modified stone cladding“	—	12.1a
11854	TZ 114159-001	rubbing stone	basalt	9.3	8	5.3		757	fragmented; constant cuboid; one end broken off; fracture irregular and rough	rubbing stone Type 6	see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4:27	
11856	TZ 114073-001	rubbing stone	basalt			4.4	5	237	completely preserved; quadrangular shape; regular and nearly smooth grinding surfaces; extreme burning marks	rubbing stone Type 7	see <i>Chap. 19</i>	Ben-Tor et al. 2012, pl. CV:16; Yahalom- Mack – Panitz- Cohen 2009, 725 photo 14.4a; 726 fig. 14.4:1	
11860	TZ 114213-001	weight stone / loom weight	basalt				10,4	512	fragmented; outline oval; bottom side largely straight, upper side irregularly convex—various partly rubbed breaks	weight stone / loom Weight Type 1.1.2	secondary use as a rubbing stone? see <i>Chap. 16</i>		
11862	TZ 114276-001	hinge stone	basalt	34.5	26.5	20.5		24800	nearly completely preserved with a small cut-out, cubic; nearly right angled on one side; Dia. (depression): 14.5 cm; depth (depression): max. 7.5 cm	hinge stone Type 2	—	—	12.2b
11864	TZ 114392-001	rubbing stone	basalt	5.5	5.8			247.5	completely preserved; bevelled cone; grinding surface with central and round depression without visible marks	rubbing stone Type 14.2	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:15	
11864	TZ 114706-001	burin	flint	4	1.8	0.7		4.3	fragmented; trapezoid in cross section; straight profile	without type	—	—	12.12f

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11893	TZ 114459-001	sickle	flint	5.8	2.8	0.6		11.1	medial blade fgt./sickle segment; retouched bilaterally; working edge denticulated laterally; pronounced sickle sheen, especially ventrally; retouched/straightened dorsally at both ends; profile straight to slightly concave; cross section triangular symmetrical to trapezoid; bulb removed by reduction; beige	without type	—	—	12.12c
11895	TZ 114316-001	quern	basalt	27	11.5	5.8		1930	completely preserved; loaf-shaped; front and rear side curvatures identical; slightly saddle-shaped	quern Type 1a	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:6	12.9c
11898	TZ 114158-001	hammer stone	flint			7.3	9	656	fragmented; irregular concentric fracturing and adjacent very flat fracture surface	hammer stone Type 1.3.1	see <i>Chap. 19</i>	—	
11898	TZ 114171-001	lower grinding stone	basalt	17.2	9.5	9.5		1700	fragmented; grinding surface concave; rough or irregular breaking edge; bottom flat and roughly worked	lower grinding stone Type 1b	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.4:24	
11898	TZ 114207-001	sling stone	limestone	6.4	5.5	3.8		148.4	completely preserved; ovoid; surface chipped in one spot	sling stone Type 2	—	—	
11898	TZ 114274-001	quern	basalt	33.5	17.4	12.5		10400	completely preserved; large and very heavy; grinding surface still unworked	quern Type 1d	semi-finished product, see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:7	
11898	TZ 114395-001	rubbing stone	basalt	7.5	4.8	4.1		249	completely preserved; quadrangular in plan view; longitudinal section wedge-shaped	rubbing stone Type 14.1	see <i>Chap. 19</i>	—	12.10l

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11898	TZ 114329-001	stamp seal	probably steatite	3.5			3.4	38.2	completely preserved; regularly tapered; upper area horizontal perforated; bottom side (stamp) with picture of two caprines flanking a tree	special type	see <i>Chaps. 17.4</i> and <i>19</i>	Schmidt forthcoming, see footnote 1	
11899	TZ 114226-001	lower grinding stone	basalt	17.2	15.4	8.3		3115	fragmented; flat and angular shape; possibly rectangular in plan view; optimal static stability	lower grinding stone Type 1e	—	Jakubik 2013, 55 fig. 92	
11899	TZ 114422-001	sling stone	basalt		4.1	3.4		45	completely preserved; ovoid	sling stone Type 2	—	—	
11899	TZ 114466-001	sling stone	basalt				4.7	96	completely preserved; nearly spherical; only roughly worked	sling stone Type 1	—	—	
11899	TZ 114553-001	game piece	pebble	3	2.6	1.4		16	nearly completely preserved; smooth/glossy polished	game piece Type 4.2	—	—	12.11f
11903	TZ 113743-001	lower grinding stone	basalt	15	13.4	4.5		1047	fragmented; flat contact area; oval in plan view	lower grinding stone Type 1a	—	Fischer 2013, 188 fig. 180:9	
11903	TZ 114275-001	lower grinding stone	basalt	26	23	10.5		5700	fragmented; flat contact area; grinding surface saddle-shaped; wide margin (9 cm)	lower grinding stone Type 3a	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:5	12.7c
11913	TZ 114549-001	lower grinding stone	limestone	32.5	27	13.5		15700	fragmented; flat base; oval in plan view	special type	see <i>Chap. 19</i>	Daviau 2002, 253 fig. 2.121:1	12.7e
11935	TZ 114423-001	hammer stone	flint				7.6	568	completely preserved; spherical, sharpened with ridge; three significant impacts	hammer stone Type 1.3.1	—	—	12.5e
11938	TZ 114199-001	hammer stone	iron noodle	6.3	7.1			455.1	completely preserved; spherical section; function as tapping and rubbing stone	hammer stone Type 2.2	—	Mazar – Rotem 2012, 375 fig. 9.11:2,6	12.5f
11972	TZ 114283-001	olynthus mill	basalt	20.5	23	4		4180	figt. of lower part of an olynthus mill; regular V-like grooves	without type	—	—	12.9b

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
11974	TZ 114512-001	sling stone	basalt or limestone	5.3	4.4	4		79.9	fragmented; irregular shape; some outer layer chipped off	sling stone Type 3	—	—	
11974	TZ 114322-001	quern	basalt	8.6	7.5	5.3		578	fragmented; loaf-shaped; broken through lengthwise and crosswise	quern Type 1a	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:6	
11988	TZ 114271-001	quern	basalt	5	6.7	4.2		194	fragmented; not very pronounced loaf shape and bulge	quern Type 1g	—	Yahalom-Mack – Mazar 2006, 489 fig. 22.6:9	
11994	TZ 114737-001	rubbing stone	uncertain	9.5	6.7	6.2		736	completely preserved; ovoid with a flattened bottom side; almost completely coated with corroded metallic material containing iron; reddish to yellowish and occasionally discoloured greenish; reference to depositional conditions	rubbing stone Type 3	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4f; 726 fig. 14.4:23	
12007	TZ 114622-001	rubbing stone	basalt	7.2	5.2	4.1		245	completely preserved; ovoid; bottom side particularly rubbed smooth	rubbing stone Type 3	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4f; 726 fig. 14.4:23	12.10g
12011	TZ 114703-001	sickle	flint	4.4	1.4	0.8		4.1	fragmented; basal medial sickle blade; profile straight; cross section wedge-shaped; working edge left lateral, dorsally denticulated; slight sickle sheen on both sides; dorsal reduction	without type	—	—	
12012	TZ 114619-001	rubbing stone	basalt	6.5	6.3			438	completely preserved; roller-shaped; clear depressions on three sides; upper and bottom sides have hollows approx. 0.4 cm deep	rubbing stone Type 8.2	see <i>Chap. 19</i>	—	12.6c

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12015	TZ 114526-001	bowl	basalt	6.7		2.4	20	35	figt. of rim; circular in plan view; sloping wall; base cannot be determined	bowl Type 1A	—	—	12.3d
12015	TZ 114529-001	rubbing stone	basalt			2.3	4.8		fragmented; surface rounded; three waste edges; one of them seems to be a grinding area	without type	—	—	
12015	TZ 114543-001	quern	basalt	8.4	8.5	5.4		498	fragmented; slightly loaf-shaped; different front and rear side curvatures	quern Type 2b	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:1	
12015	TZ 114543-002	lower grinding stone	basalt	10.2	6.7	2.7		215	small figt. of end section; flat contact area	lower grinding stone Type 1b	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.4:24	
12016	TZ 114618-001	rubbing stone	basalt	9.5	6.5	4.9		454	completely preserved; loaf-shaped; rectangular in plan view; cross section trapezoid; bottom side with grinding surface; heavily rubbed and darkened	rubbing stone Type 15	—	—	12.10m
12017	TZ 114352-001	architectural element	basalt	30	16.2	9		4822	used as wall stone; further function as work stone cannot be confirmed	without type	found during dismantling of wall.	—	
12017	TZ 114497-001	plate	basalt	11.6	21.3	6.7		2350	fragmented; rim to base, rectangular in plan view; flattened base; carefully worked	plate Type 1B	—	Jakubik 2016, 31 fig. 28	
12017	TZ 114499-001	quern	basalt	12.1	9.9	6.2		1146	fragmented; same curvature on both sides; cross section nearly semicircular	quern Type 1c	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:6	12.9d
12019	TZ 114521-001	rubbing stone	basalt	6.7	9.7	6.5		636	fragmented; ovoid; one half preserved; smooth upper and bottom side	rubbing stone Type 3	see Chap. 19	Ben-Tor et al. 2012, pl. CV: 9; Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4f; 726 fig. 14.4:23	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12022	TZ 114501-001	quern	basalt	16.2	9.4	7.3		1894	fragmented; strong curvature on both longitudinal sides; upper side flat and straight; with grip edge	special type	see <i>Chap. 19</i>		12.10e
12036	TZ 114597-001	basin	basalt	22	19.5	7.2		1593	nearly completely preserved; oval in plan view; base irregular; only roughly worked; depth depression: 3 cm	basin Type 3A	see <i>Chap. 19</i>	Yahalom-Mack – Mazar 2006, 484 fig. 13.5:15	
12048	TZ 114705-001	blade	flint	4.2	10.7	0.8		6.1	medial-distal frgt. of an edge blade; in particular left-sided whitish, chalky cortex; cross section trapezoid; profile straight to slightly concave; retouched dorsally on the right side; beige to brown	without type	—	—	12.12b
12057	TZ 114321-001	quern	basalt	35.5	13.6	7		3845	completely preserved; loaf-shaped; front and rear side curvatures identical; poorly saddle-shaped	quern Type 1a	see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:6	
12057	TZ 114393-001	rubbing stone	basalt			4.7		239	completely preserved; conical; conical section outline is more or less round	rubbing stone Type 5.2	—	—	
12057	TZ 114613-001	rubbing stone	basalt	8	8.3			916	completely preserved; spherical; one side flattened	rubbing stone Type 1	—	—	
12071	TZ 114477-001	bead	soapstone			0.6	0.8	0.5	completely preserved; ring-shaped; circulating groove-like depression; partly polished; grey to black	bead Type 7	—	—	12.11b
12076	TZ 114481-001	bowl	basalt	13.1	13.9	9.1	24	1110	frgt. of rim, wall and one leg/foot; sloping wall; circular in plan view	bowl Type 3A	—	Fischer 2013, 241 fig. 222	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12076	TZ 114503-001	hammer	basalt	10.4	8.5	7.6		1110	completely preserved; carefully worked; longitudinal section mushroom-shaped; constriction on three sides for fixation	special type	see <i>Chap. 19</i>	—	12.5b
12076	TZ 114513-001	rubbing stone	basalt	5.5	6.7			394	completely preserved; cylindrical; nearly complete polished by abrasion	rubbing stone Type 8	—	—	
12076	TZ 114516-001	mortar bowl	basalt	26	15.5	12.5	26		fragmented; sloping wall; round in plan view; base flattened and thick	mortar bowl Type 1A1	see <i>Chap. 19</i>	Bennett – Bienkowski 1995, 306 fig. 9.17.3; Lapp 2015, 300 fig. 10.5.1	12.8c
12076	TZ 114617-001	rubbing stone	basalt	5.7	5.5	4.7		256	completely preserved; irregular or pyramidal shape	rubbing stone Type 4	—	Ben-Tor et al. 2012, pl. CV 4: 11	12.10h
12082	TZ 114523-001	lower grinding stone	basalt	13.5	23.7	8.4		2742	fragmented; bottom side convex; distinctive rim section at one side of grinding surface	lower grinding stone Type 3b	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6.5	
12083	TZ 114507-001	rubbing stone	pebble		4.3		5.6	164	completely preserved; spherical; bottom side smooth; no definite grinding marks	rubbing stone Type 1	see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4c, b; 726 fig. 14.4.2–8	12.6b
12085	TZ 114624-001	rubbing stone	basalt	5.2	4.1	4.1		135.8	completely preserved; shoe-shaped; very rounded; bottom side and one long side (grinding surfaces) heavily abraded	rubbing stone Type 14.2	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4.16	
12085	TZ 114502-001	hammer stone	flint				5.9	254.1	completely preserved; cuboid	hammer stone Type 4	—	Mazar – Rotem 2012, 375 fig. 9.11.9	
12088	TZ 114532-001	lower grinding stone	basalt	21.5	12.9	9.8		3056	fragmented; bottom side high convex; distinctive rim section at one side of grinding surface	lower grinding stone Type 3b	—	Mazar 2006, 489 fig. 13.6.5	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12093	TZ 114533-001	quern	basalt	15.8	15.5	6.8		2728	fragmented; flat and broad shape; upper surface level both lengthwise and crosswise	quern Type 3b	—	Fischer 2013, 340 fig. 110.5; Yahalom-Mack – Mazar 2006, 489 fig. 13.6.1; Lapp 2015, 292 fig. 10.1.4	12.10c
12095	TZ 114500-001	rubbing stone	basalt	15	10.6	5.7		1496	completely preserved; loaf-shaped; pronounced grinding surface	rubbing stone Type 15	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4.22	
12103	TZ 114621-001	rubbing stone	basalt	10.1	4.3	3.6		250.1	completely preserved; roller-shaped, but one end much narrower; one long side slightly flattened (grinding surface?)	rubbing stone Type 13	—	—	
12108	TZ 114490-001	rubbing stone	pebble	11.7	7.4	7.8		802	completely preserved; shape irregular; possibly striking marks at one end; flat area on one side for grinding	without type	—	—	
12108	TZ 114498-001	quern	basalt	19.5	11.4	5.7		1456	fragmented; different front and rear side curvatures; not very pronounced loaf-shaped	quern Type 2b	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6.1	12.9h
12108	TZ 114511-001	rubbing stone	basalt	11.7	6.6	4		451	fragmented; bottom side with grinding surface; otherwise natural finish	rubbing stone Type 15	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4.22	
12108	TZ 114757-001	architectural element	limestone	42	32	20		29900	fragmented; upper side with depression (depth: 3 cm; Dia.: 8 cm) and two adjacent small channels	without type		—	12.1b
12128	TZ 114479-001	architectural element	sand stone	3.6	6.3			61.4	figt.; structure plaster-shaped; groove-like depression; bordered by two semicircular lines; inside coloured or painted dark red; rear side unworked	without type		—	12.2a
12132	TZ 114534-001	quern	basalt	10.2	8.2	8.6		1078	fragmented; heavy layout; loaf-shaped; cross section nearly semicircular	quern Type 1c	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5.6;	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12133	TZ 114531-001	rubbing stone	pumice stone/scoria	10	7.6	5		146	completely preserved; macropore; cuboid in plan view; with clearly carved out hand grip	special type	see <i>Chap. 19</i>	Lapp 2015, 307 fig. 10.9.1; Schmidt forthcoming; Yahalom-Mack – Mazar 2006, 493 photo 13.34	12.6e
12142	TZ 114579-001	mortar bowl	basalt	14	11.1	10.5		937	fragmented; one foot/leg and rest of base and wall preserved; sloping wall; round in plan view; diameter not measurable	mortar bowl Type 4	—	Lapp 2015, 296 fig 10.2.3; Johnson 2006, 657 fig. 22.2.4	
12144	TZ 114603-001	lower grinding stone	basalt	27.5	29	8.7		11600	fragmented; flat contact area; box-like shape	lower grinding stone Type 1d	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5.18	
12146	TZ 114663-001	tile	marble	11.8	8.7	1.7		410.6	fragmented; sintered; slightly bevelled edge area recognizable	without type	—	—	
12146	TZ 114569-001	basin	basalt	18.5	16.5	9.6		3235	fragmented; rim to base; oval in plan view; flat base	basin Type 1B	—	Daviau 2002, 253 fig. 2.121:1	12.3a
12148	TZ 114545-001	tile	marble			2		164.5	fragmented; roughly worked	without type	—	—	
12148	TZ 114758-001	architectural element	limestone	43.5	35.5	17		36800	nearly completely preserved; libation stone; rectangular in plan view; circular groove on the upper surface (Dia. circle: 26 cm; width of groove: 2 cm; depth of groove: 1 cm) with a drain on one side	without type	—		12.1c
12152	TZ 114601-001	olynthus mill	basalt	20.5	18	10		5400	corner frgt. of upper half; funnel clearly recognizable	without type	—	—	
12155	TZ 114560-001	spindle whorl	soapstone			0.7	2.4	5.4	completely preserved; convex shape; cylindrical pierced; Dia. opening: 0.7 cm	spindle whorl Type 3	—	Cimadevilla 2012, fig. 12.2.3	

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12162	TZ 114525-001	rubbing stone	pebble	9.2	3.8	2.9		37	nearly completely preserved; slightly chipped at one end; oblong; grinding surface at bottom side glossy polished	rubbing stone Type 8.1	—	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:9	
12162	TZ 114551-001	quern	basalt	9.4	8.9	5.8		820	fragmented; loaf-shaped; same curvature on both sides; nearly semi-circular in cross section	quern Type 1c	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:6	
12162	TZ 114557-001	rubbing stone	basalt	8.8	7.3	4.6		451	completely preserved; trapezoid in plan view; wedge-shaped in longitudinal section; bottom side is particularly polished as grinding surface	rubbing stone Type 14.1	—	—	
12162	TZ 114572-001	rubbing stone	basalt	6.5	5.1	4.2		198	completely preserved; primary shape truncated conical; one longitudinal side flattened	rubbing stone Type 5	—	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4:d; 726 fig. 14.4:19	
12162	TZ 114623-001	rubbing stone	pebble	5.6	4.2	3.7		108	completely preserved; bevelled cone; highly regular shape	rubbing stone Type 14.2	see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 726 fig. 14.4:16	
12164	TZ 114558-001	rubbing stone	basalt			3.7	5.9	184.5	highly fragmented; loaf-shaped	rubbing stone Type 15	—	—	
12164	TZ 114584-001	lower grinding stone	basalt	30.2	21.5	9.7		4986	fragmented; three adapting parts; convex bottom side	lower grinding stone Type 2a	—	Yahalom-Mack – Mazar 2006, 489 fig. 13.6:6	
12164	TZ 114595-001	quern	basalt	19	11	6.3		2126	completely preserved; small model; loaf-shaped; triangular cross section; nearly rectangular in plan view with rounded edges	quern Type 1d	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5:7	
12164	TZ 114611-001	rubbing stone	basalt	5.5	5.6	5.6		305	completely preserved; cuboid; grinding surface strongly abraded and dark coloured	rubbing stone Type 7	—	Ben-Tor et al. 2012; pl. CV: 1,6; Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4a; 726 fig. 14.4:1	12.10k

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12164	TZ 114611-002	hammer stone	flint	7.3	4.8				fragmented; one half preserved		—	—	
12164	TZ 114629-001	raw material	chloride			0.8	1.7	2.4	amorphous state; surface evenly white and partially glossy	without type	—	—	12.12g
12165	TZ 114548-001	mortar	basalt	33	31	13.8		7400	fragmented; irregular in plan view; extreme curvature; high version (upright size); Dia. opening: 19 cm	mortar Type 1	see <i>Chap. 19</i>	Lamprichs 2007, 570 pl. 24.01; Fischer 2013, 340 fig. 352.1	
12165	TZ 114567-001	basin	basalt	14.3	14.2	8.7		2410	fragmented; flattened base; oval in plan view	basin Type 2B	—	Jakubik 2016, 54 fig. 58	12.3b
12167	TZ 114602-001	lower grinding stone	basalt	28	32.5	12.5		11600	fragmented; flat and angular shape; possibly rectangular in plan view; optimal static stability	lower grinding stone Type 1e	—	Yahalom-Mack – Panitz-Cohen 2009, 730 fig. 14.5.24	12.7a
12175	TZ 114581-001	rubbing stone	basalt	7.5	5.5	5.4		381	fragmented; cuboid; one longitudinal side broken off; rubbing surfaces clear on all sides	rubbing stone Type 6	see <i>Chap. 19</i>	Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4e; 726 fig. 14.4.27	
12175	TZ 114596-001	basin	basalt	24	17	5.3		3669	fragmented; flat depression (1 cm); oval in plan view; slightly convex base	without type	probably a half-finished product	—	12.3c
12175	TZ 114610-001	architectural element	granite	9.7	9.2	7.3		382	fragmented; one surface worked flat	without type	—	—	
12175	TZ 114612-001	ecofact	flint		2.6		5.1		heavily pitted; one side glossy polished; other sides natural	without type	probably used as stone tool	—	
12176	TZ 114585-001	quern	basalt	29.3	17.2	9.5		4800	completely preserved; flat and broad shape; grinding surface slightly saddle-shaped	quern Type 3a	see <i>Chap. 19</i>	Fischer 2013, 340 fig. 110.5; Yahalom-Mack – Mazar 2006, 489 fig. 13.6.1; Lapp 2015, 292 fig. 10.1.4	12.10b

Locus	Find number	Object	Material	L (cm)	Wth (cm)	H (cm)	Dia. max. (cm)	Weight (gr.)	Description	Type	Comments	Comparisons	Plate
12196	TZ 114615-001	rubbing stone	basalt	5.1	4.5	4.2		117	completely preserved; cuboid	rubbing stone Type 7	—	Ben-Tor et al. 2012, pl. CV: 1,6; Yahalom-Mack – Panitz-Cohen 2009, 725 photo 14.4a; 726 fig. 14.4:1	

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a.



TZ 114410-001

b.



TZ 114757-001

c.

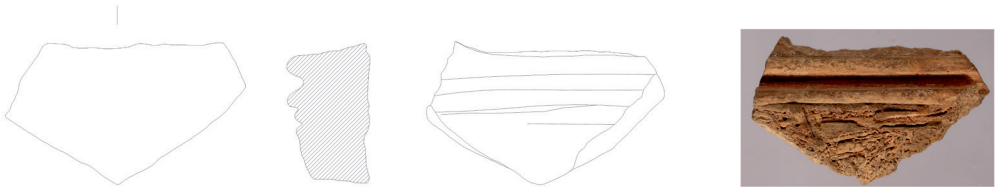


TZ 114758-001

0  5 cm

Plate 12.2: Architectural elements (a), scale 1:2. Hinge stones (b. c), scale 1:5. Tile (d), scale 1:2.

a.



TZ 114479-001 0 5 cm

b.



TZ 114276-001

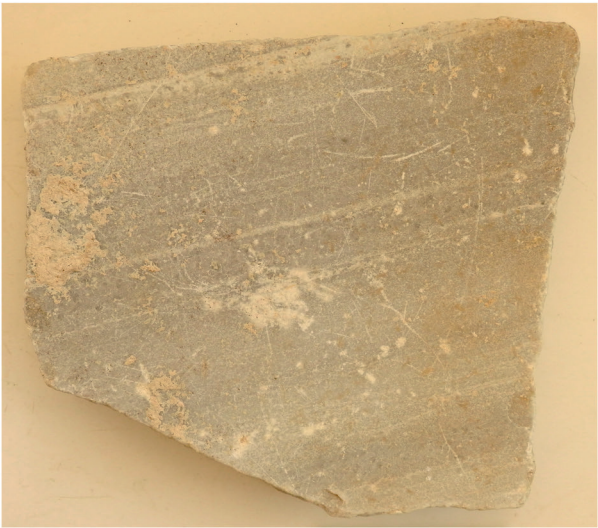
c.



TZ 113182-001

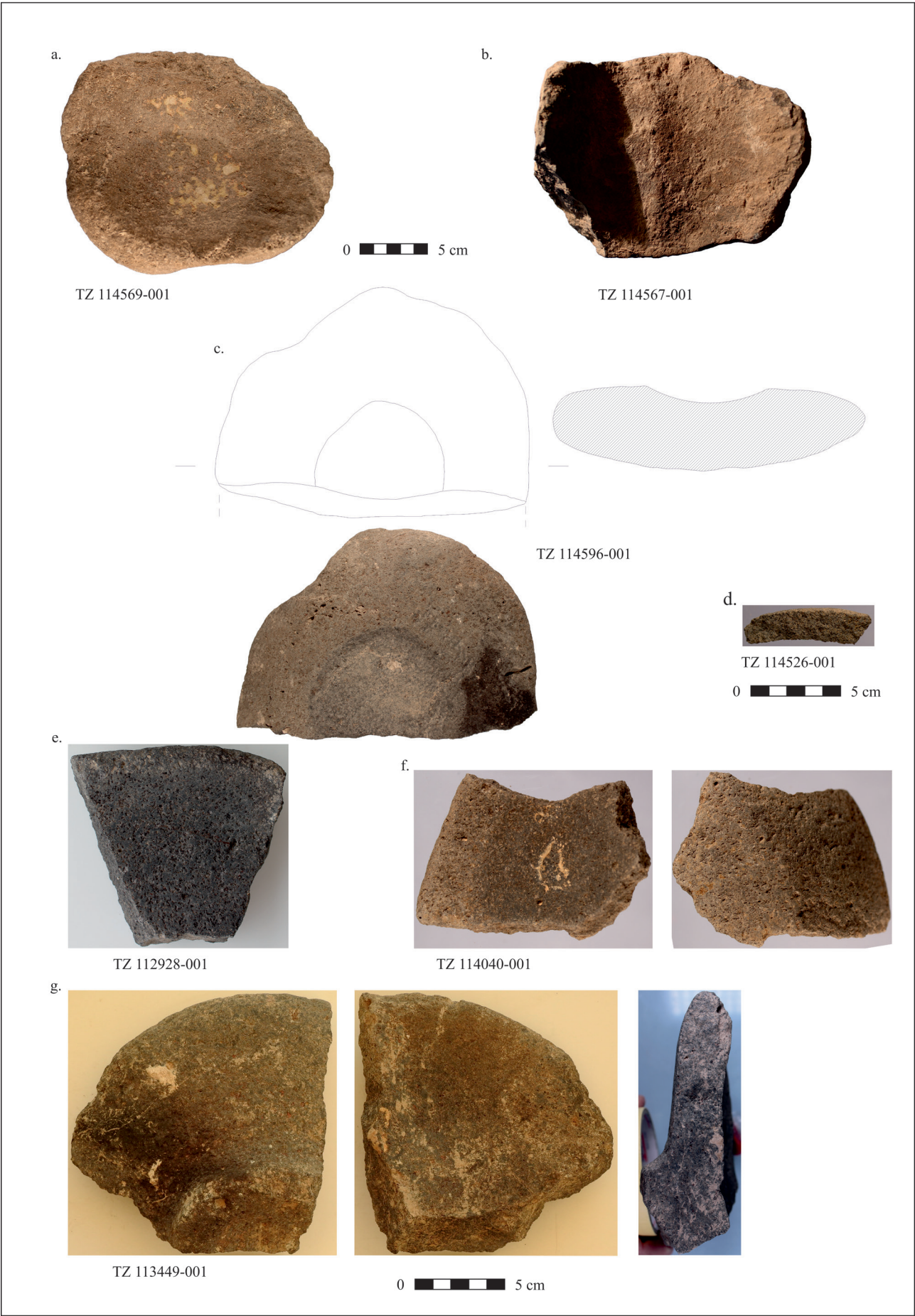
0 10 cm

d.



TZ 113450-001 0 5 cm

Plate 12.3: Basins (a-c), scale 1:4. Bowls (d-f), scale 1:3.

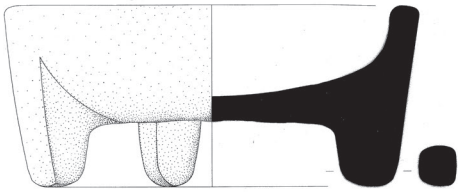
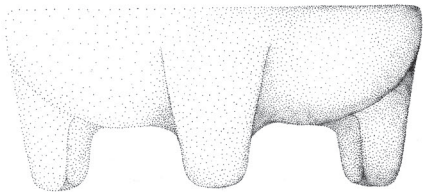


a.



TZ 113465-001

b.



TZ 113522-001

c.



TZ 113456-001

Plate 12.5: Drill socket (a); hammer (b); hammer stones (c-f), scale 1:2. Plates (g-i), scale 1:5.



Plate 12.6: Plate (a); rubbing stones (b-e); whetstone (f), scale 1:3. Lower grinding stones (g-i; i with quern), scale 1:5.



Plate 12.7: Lower grinding stones, scale 1:5.

a.



TZ 114602-001

b.



TZ 113454-001

c.



TZ 114275-001

e.



TZ 114549-001

d.



TZ 113184-001

0 10 cm

Plate 12.8: Mortars (a. b); mortar bowls (c-h), scale 1:5.

a.



TZ 113456-002

b.



TZ 113987-001



c.



TZ 114516-001

d.



TZ 113039-001

e.



TZ 113432-001

f.



TZ 113328-001

g.



TZ 113316-001

h.



TZ 114493-001

0 10 cm

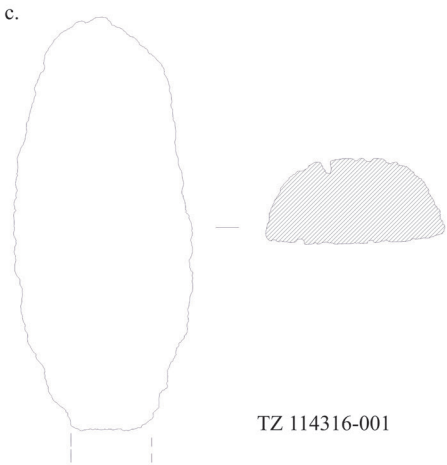
Plate 12.9: Olynthus mills (a. b); querns (c-h), scale 1:5.



TZ 112879-001



TZ 114283-001



TZ 114316-001



TZ 114499-001



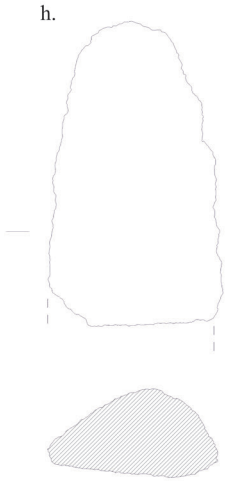
TZ 113463-001



TZ 113093-001



TZ 112919-001



TZ 114498-001

Plate 12.10: Querns (a-e), scale 1:5. Rubbing stones (f-m), scale 1:2.

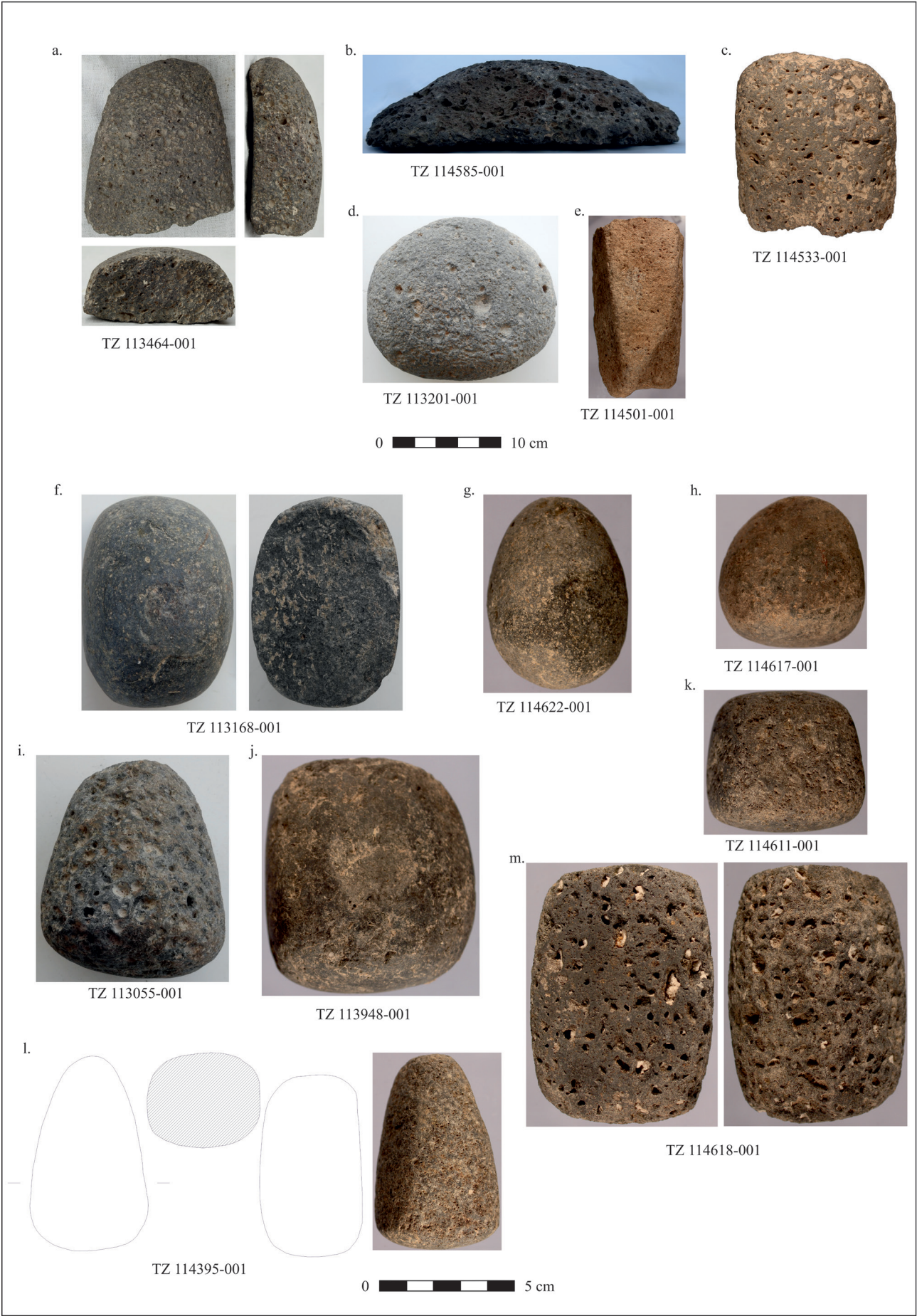


Plate 12.11: Beads (a-c), scale 3:1. Game pieces (d-f), scale 2:1. Sling stones (g, h), scale 1:1.



TZ 113526-001



TZ 114477-001



TZ 112894-001

0  2 cm



TZ 113058-001



TZ 114039-001



TZ 114553-001

0  2 cm



TZ 112912-001



TZ 112896-001

0  5 cm

Plate 12.12: Flint tools (a-f); ecofacts (g, h), scale 1:1.

a.



TZ 113301-001 + TZ 113301-002

b.



TZ 114705-001

c.



TZ 114459-001

d.



TZ 113731-003

e.



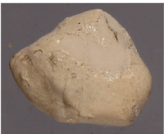
TZ 113942-001

f.



TZ 114706-001

g.



TZ 114629-001

0 5 cm





## 13. EARLY ROMAN CHALKSTONE VESSELS

by Friederike Schöpf

Over 90 fragments of chalkstone vessels were found at Tall Zar'a during the excavation seasons 2001–2011 (Häser – Vieweger 2014; Häser – Vieweger

2015; Vieweger – Häser 2014). Eight more finds of the same material from the 2018–2019 field work seasons will be discussed here.

### 13.1. Chalkstone Vessels in their Historical Context

Chalkstone vessels were registered and described for the first time in the 19<sup>th</sup> cent. during archaeological work in Jerusalem, but only during the excavations in the Old City of Jerusalem carried out in the late 1960s, did chalkstone vessels become of scholarly interest (Gibson 2003, 287). Excavations in recent years have uncovered chalkstone vessels at over 250 sites in Cisjordan and parts of Transjordan (for a detailed distribution map, see Adler 2016, Fig. 4).

The vessel types can be roughly distinguished between those made on a lathe, and those that are hand-carved objects. The lathe-turned vessels are further subdivided in ones made on a large lathe and those made on a small lathe. The vessels made on a small lathe include bowls, goblets, stoppers and lids. Vessels made on large lathe are the so-called *qalal*, krater and jugs. Hand-carved objects can be differentiated by the treatment of the outer walls, either polished or chisel-marked. Chisel-marked vessels are usually mugs, pitchers and bowls. Polished objects are mainly bowls, polished mugs are rare (Gibson 2003, 291–292), but appear in the assemblage of chalkstone vessels of Tall Zar'a.

These vessels are primarily associated with the needs of Jewish purity regulations (Adler 2014, 76; Magness 2011, 71–72; Regev 2000a, 181), and can be dated from the 2<sup>nd</sup> half of the 1<sup>st</sup> cent. BCE onwards. The earlier assumption by scholars, that these vessels went out of use after 70 CE, relied on the fact that most of the excavated material came from Jerusalem and major sites in Judea and Galilee, which were destroyed by the Romans in 70 CE. Due to extensive archaeological work in Galilee and Golan, their dating can be extended to the late 1<sup>st</sup> cent. CE and early 2<sup>nd</sup> cent. CE, and in Sepphoris even to the 3<sup>rd</sup> cent. CE (Miller 2016). Chalkstone vessels are widely distributed in the regions of Judea, Galilee, and Golan, and can be found in cit-

ies as well as rural settlements. In the Galilee and Golan alone, 65 sites with chalkstone vessel finds are attested. Fewer finds are known from the coastal plain, Idumaea and Transjordan. In Samaria, chalkstone vessels were found only in Samaria-Sebaste itself and at Khirbet el-Hammam. The distribution pattern of chalkstone vessel clusters in areas with mainly Jewish inhabitants. The archaeological evidence from the excavated sites indicates that smaller chalkstone vessels were distributed in domestic areas, mainly in private households (Adler 2016, 240–242; Berlin 2005, 430; Reed 2003, 384). However, in the well-known Jewish diaspora communities, such as in Asia Minor, Greece, Italy and North Africa, such vessels seem to be absent.

The appearance of a large number of those vessels in the mainly non-Jewish area of Gadara therefore needs further contextualization. In general, the late Hellenistic and early Roman periods in the Near East are characterized by frequently shifting powers and changing influences. In Roman times, Tall Zar'a was part of the hinterland of the growing Decapolis city of Gadara (Kenkel 2012, 3–4). The *chora* of Gadara was separated from Jewish Galilee by the natural border of the River Jordan. During the Hellenistic period, Gadara was already a Seleucid stronghold. The Hasmonean Alexander Jannaeus had temporarily taken Gadara in 98 BCE after a siege, but could only incorporate the city into his domain in 83 BCE. Historical accounts mention Gadara again in connection to the conquest of Pompey in 64 BCE, and its subsequent integration into the Province of Syria.

In 30 BCE, Octavian granted Herod the Great, as the Roman client king of Judea, the cities that had been taken by Pompey, including Gadara, Hippos, Samaria, Gaza, and Ashkelon. After the death of Herod, Gadara again became part of the Province

of Syria (Smallwood 1976, 14–110). Generally, as a Decapolis city, Gadara was mostly opposed to Hasmonean and Herodian rule, and so one would not expect to find a significant Jewish community there (Schäfer 2010, 93–95). With these historical facts in mind, the material finds of Tall Zar'a are outstanding and their function and production in this region needs to be discussed.<sup>99</sup>

Chalkstone vessels are closely associated by scholars with the Jewish society of the eventful late Hellenistic and early Roman periods, that developed new religious and cultic ideas, which even culminated in new regulations in the Jewish law (*halakhah*). Especially concerns regarding ritual purity became a driving force in Jewish community life during this time. Later rabbinical sources described it as the time when “purity burst out in Israel” (Babylonian Talmud, Tractate Shabbat 13a) or even stated that “the impurity of the knife’s blade was more difficult for them than loss of life” (Palestinian Talmud, Tractate Yoma 1.12). Material culture, as well as written sources, underlines the importance of purity regulations in the domestic setting, even by people without frequent access to the Jerusalem temple. A state of ritual impurity could be caused by defilement through childbirth, skin diseases, genital discharges, and corpse impurity (mainly defined in Leviticus 11–15, Numbers 19). In everyday life, the procedure of eating and praying was generally influenced by obligations of ritual purity, since it was associated with sacrificial rituals in the temple, which required a certain state of ritual purity (Flusser 2009; Haber 2008, 201; Miller 2015; Regev 2000, 201).

Whereas during the excavations in the Jewish Quarter in Jerusalem in the 1970s, chalkstone vessels were found only in the immediate vicinity of the temple in structures that were used from the reign of Herod (37–4 BCE) until the destruction of the temple in 70 CE (Magen 2002, IX), in recent excavations, primarily in Galilee and Golan, chalkstone vessels are concentrated in domestic contexts (Adler 2016, 240–242; Berlin 2005, 430; Reed 2003, 384).

The textual evidence for the interpretation of the vessels derives mainly early Tannaitic writings, like the Mishna and Tosefta, which date to slightly after the actual use of the vessels, to the 3<sup>rd</sup> cent. CE.

Those rabbinical sources emphasize that vessels made from stone, dung, and unfired clay (כלי אדמה, כלי אבנים, כלי גללים) were not liable to defilement in a religious sense (Magen 2002, 138–147).

Therefore, stone vessels could offer the opportunity to store food and liquids in a safe way. Moreover, dining together as a family or group that included impure members would be possible, since stone vessels were not liable to defilement. The transfer of impurity through sharing the table, food, liquids and vessels could be avoided (Regev 2000b, 230; Sanders 1990, 145).

In an archaeological context, the chalkstone vessels appear mainly in areas inhabited by Jews and are contemporary with ritual stepped pools and certain pottery types. All these items reflect, according to Berlin (Berlin 2013), a typical ‘household Judaism’. In the case of certain pottery, Berlin describes a typology that is typical for sites in the Hasmonean kingdom.

Throughout the expanding Hasmonean kingdom, household items were produced with identical typological features. Large storage jars, for instance, have rims with wide, flat bands, whether they are found in Judea or the Gaulanitis. Cooking pots are manufactured with high canted necks, oil lamps and small bowls follow the same characteristics. Despite the identical typology of the vessels, they were produced in different manufacturing centres with local clay. The household items produced were of high quality. However, the vessels had no external decoration. The synchronized production of household items, independent of place and region throughout the Hasmonean kingdom, is understood by Berlin as leading the way to a unified identity. According to her view, it was crucial for the transformation from ‘Judean’ to ‘Jew’ (Berlin 2013, 168–170).

Chalkstone vessels must be interpreted in the light of this development, that tended to a lifestyle which reflected the religious identity of the people. Even though the pottery was not directly connected to purity regulations, the specific types and undecorated vessel reflect the urge to be separate from the non-Jewish communities, that were understood as ‘impure’ (Alon 1977, 167–168, 180). However, there could have been practical reasons to prefer locally produced ‘Jewish’ pottery. Regarding the

99 A dissertation on the subject is currently being prepared by the author.

pottery development in Galilee during the early Roman period, Leibner emphasizes, that in non-Jewish settlements considerable quantities of Kefar Hananya ware was found—a ware associated with Jewish pottery workshops. The general avoidance of imported goods could be also explained by a higher taxation during the establishment of the *Provincia Iudaea* in 6 CE (Leibner 2009, 337).

The chalkstone vessels known and published to date from the Transjordan sites of Callirhoë ('Ain az-Zāra), Machaerus (Mukāwir) and Mt. Nebo, can be easily explained by the fact that these settlements and forts were built as Hasmonean and Herodian possessions and were in direct contact with Judea, and Jerusalem in particular. Other sites with these kinds of vessels also occur in the western part of Transjordan,

in the area once known as Perea, for instance, settlements like Tell Hesban, Khirbet al-Mukhayyat and Tell Abu Sarbut near the Dead Sea. The site of Tall Zar'a, in northern Transjordan, has an unusual position, as it is not connected to the Jewish settlements in Perea. Moreover, Tall Zar'a was a village or rural settlement during the Roman period, yet fragments of around 90 chalkstone vessels have been identified. From nearby Gadara, it is known that trade between the Jewish Galilee and the Decapolis flourished, despite revolts and political tensions (Weber 2007, 460). For Gerasa, by contrast, the textual evidence provided by Josephus tells us about a Jewish community inside the city in early Roman times, yet only one stone mug is listed by the excavators (Lichtenberger – Raja 2015, 494–495).

## 13.2. Distribution, Typology, and Manufacturing Technique

The assemblage of chalkstone vessels from Tall Zar'a is very varied. Whether or not those vessels also found their way into non-Jewish households is a wider question that will not be discussed here. The objects include hand-carved mugs and bowls and lathe-turned wares with delicate decoration. The chalkstone will be chemically analysed to identify the quarry for the material, but for now, the question of whether the vessels were locally produced or were imported goods must remain unanswered.

From Transjordan, only the chalkstone vessels found in Callirhoë, Machaerus and Mt. Nebo, as Hasmonean and Herodian outposts of Judea, have been analysed and compared to the ones found in Jerusalem and Hizma (Magen 2000, 157–158). Deines, moreover published the finds of Khirbet Umm ed-Dananir, which included 25 hand-carved and lathe-turned chalkstone vessels from a Herodian domestic building, and four fragments from Tell Nimrin (Deines 1993, 154–155). The material from Tell Abu Sarbut, located near the Dead Sea, will be published by Boertien (forthcoming). A standard work on chalkstone vessels is still one of the earliest monographs by Magen published 1988 in Hebrew and reissued 2002 in English (Magen 2002). Magen deals mainly with the finds from Jerusalem and the production site of Hizma. In Cahill's work on the finds of the City of David assemblage, she studied not only the early Roman chalkstone vessels found in the excavations but enlarged her work with the objects dating to the Persian and Hellenistic peri-

ods. Her work presented a more detailed typology and incorporated finds, which are lacking in the assemblages studied by Magen (Cahill 1992). Those two publications are still the main reference for the typology of chalkstone vessels, although new types could be identified from the numerous excavations in recent years.

In order to describe the main features of the vessels from Tall Zar'a, the works of Magen and Cahill will be used, as well as Gibson's publication on the chalkstone vessels of Gamla (Gibson 2016). The assemblage of Tall Zar'a consist of lathe-turned and hand-carved chalkstone vessels. The different techniques and working processes are known from archaeological evidence from workshops, found around Jerusalem and the Galilee.

The main material used was soft white chalk, which occurs naturally on the surface in the region between Jerusalem and the Dead Sea, and partly in the Shefela, Samaria, Galilee and Transjordan (Deines 1993, 48–49). Those chalk layers (*huwwar*) suitable for the production of chalkstone vessels lay above the lower *kakula* rock, which is reddish in colour and was used for the production of building material and *ossuaries* (Magen 2002, 1, 116). Gadara, for example, sits on top of a limestone plateau which covers a layer of soft chalk stone (Weber 2002, 31). The softness of the material made a random extraction possible. The stone blocks were extracted using hammers, chisels and pickaxes. These were used to dig trenches around three sides of a

block, and the block could be then extracted with an angle on the fourth side (Magen 2002, 17). Despite the natural softness of this kind of stone, the raw material for the vessel was still soaked in water to simplify the working process and increase the flexibility of the stone. The main types then produced were the hand-carved mugs and pitchers. The workshops in the area around Jerusalem and Galilee had differing technical approaches for finishing at least hand-carved vessels (Reed 2003, 388). The vessels were either worked with a chisel on the outside and inside, or had their core removed by a lathe. Still, both methods were finished with the characteristic chisel marks on the outside of the vessel, combining vertical and horizontal lines. The difference on the inside is particularly hard to distinguish, since the hand-carved vessels from the Jerusalem area workshops are also polished smooth on the inside, as are the Galilean ones.

The small lathe to produce the bowl-shaped lathe-turned vessels found in Tall Zar'a were most probably a wooden construction, in which the roughly worked stone was glued to one spindle and held by an opposing spindle. The stone could then be turned, and the outer surface was worked with a knife by hand to smoothen the material and to produce the form. The inner core was more difficult to remove, a sharp knife helped to cut between the core and the surface towards the bottom. By enlarging the space between the outer wall and the remaining core, the craftsman would work down to the bot-

tom of the vessel and would finally remove the core when only a small connection between core and vessel was left. This working stage was the most difficult one and most of the wasters found in the workshops by archaeologists were vessels broken during this process (Magen 2002, 116–128). No regional differences occur in the use of this technique.

Regarding the material and techniques of the chalkstone vessels in Tall Zar'a, no differences from the ones found in Jerusalem and Galilee can be detected. However, a closer look reveals some irregularities regarding the known typology. For instance, typical forms of lathe-turned bowls were sometimes produced by the hand-carving technique (TZ 114475-001/L12011, *Pl. 13f*).

Since both typology and material characteristics are the same for all production sites, chemical differences are the only way to distinguish between the different sources of the stone. The isotope composition of chalkstone in Judea is different from that of chalkstone in Galilee; however, chalkstone from quarries within the same area often have the same isotope composition. Isotope analysis, therefore, makes it possible to distinguish between vessels deriving from Galilee and Judea (Adler 2020, 2, 4, 13).

At Tall Zar'a, whereas the chalkstone vessels found in the earlier excavations were both hand-carved and lathe-turned (around 30 lathe-turned objects and 60 hand-carved objects), those from the 2018 and 2019 seasons are only hand-carved wares.

### 13.3. Typology of the Objects

#### 13.3.1. Open Hand-carved vessels (*Pl. 13a. b*)

Only two hand-carved vessels, TZ 112809-001/L11500 (*Pl. 13a*) and TZ 112832-001/L11502 (*Pl. 13b*), can be identified as open vessels, and interpreted either as mugs, pitchers or small bowls. According to Cahill's typology, the difference between a mug and a pitcher is that there is a spout on the rim of the pitcher. Both vessel types can have one to two lug handles. These vessels are usually cylindrical, with a flat base and slightly incurving sides, as well as bearing the typical chisel marks (Cahill 1992, 210). Magen lists all those vessels as "cups" without further distinction between pitchers and mugs (Magen 2002, 71).

The fragments presented here consist of only the base with parts of the outer wall. In the typology developed for Tall Zar'a, the fragments belong to the Type I.B. Form 1. OV, polished mugs and pitchers. The polished outer walls still show irregular chiselling marks in a non-decorative manner on both vessels. Generally, the bases are worked unevenly, on the inside of TZ 112832-001, the core removal traces are still visible. Additionally, the surface on the inside is slightly damaged. TZ 112809-001 has some discolouration on the outside (7.5YR 8/4).

The mugs and pitchers are often described in the publications without specifically mentioning the decoration of the outer walls. However, comparable finds stem from Jerusalem, where polished mugs were found in the assemblage from the Mount Zion excavations by Broshi in the 1970s and later described as polished examples by Gibson (Gibson 2003, 292). A published object from Jericho is interesting because of its early dating: one complete, polished, hand-carved mug was found in the Hasmonean Twin Palaces, dating to the reign of Salome Alexandra (76–67 BCE, Bar Nathan-Gärtner 2013, 210, Pl. 9.1:1). The form can be compared to Cahill's type 2.a., chisel-marked vessels (Cahill 1992, 210, fig. 20).

#### 13.3.2. Hand-carved Mugs and Pitchers (*Pl. 13c. d*)

Two fragments, TZ 113096-001/L11550 (*Pl. 13c*) and TZ 113375-001/L11629 (*Pl. 13d*), can be iden-

tified as hand-carved mugs or pitchers. The form is identical to the polished mugs and pitchers described above, but due to their decoration have their own type: I.A. Form 1.OV.

Fragment TZ 113096-001 is a rim sherd with a fragmentary handle attached. Hand-carved on the inside and outside and well-polished, only slight vertical chisel marks are visible. Especially the inside is very well and smoothly polished. The lug handle (7.2 cm) is attached directly on the rim. The polished outside without decorative chisel marks is unusual for this type. The very soft chalkstone has traces of yellow-brown veins and some black spots.

Only the lug handle remains of fragment TZ 113375-001 (7.1 x 4.2 cm). One side has regular horizontal chisel marks, the other has irregular sloping marks. The round hole in the handle measures c. 2.0 cm in diameter. The rest of the attached body sherd is well polished on the inside, the outside shows horizontal chisel marks. Generally, the handle is well worked. Reddish brown veins occur in the rather hard and reddish chalk material.

#### 13.3.3. Hand-carved Bowls (*Pl. 13e. f*)

Two hand-carved bowls can be identified in the assemblage, TZ 113077-001/L11590 (*Pl. 13e*) and TZ 114475-001/L12011 (*Pl. 13f*). TZ 114475-001 stands out due to its unusual form and an inscription on the bottom. Only half of object TZ 113077-001 is preserved, including the wall from rim to base and a broken handle.

The object TZ 113077-001 is listed as Type I.B. Form 2.OVa, bowls with rectangular handles, in the Tall Zar'a typology. The handle is attached on the rim. Some chisel marks are still visible, mainly in the region of the rim and towards the bottom. The rim is smoothed out and straight. The bowl is polished inside and outside. The walls run straight towards a flat base. Many small holes are visible on the inside and bottom. The very soft chalk material has some yellow-brown to red spots, but no veins. The form of the handle as well as the polished outside are unusual for this type. The form is comparable to the

flat-based bowls with bar handles (Cahill:1992, 212, Figure 20.9: type 2.a.ii.A2), Magen's Type II.B.i. Form 1, and Gibson's Type 2C for Gamla.

Object TZ 114475-001 is unique in the assemblage, since it combines the technique of a hand-carved bowl with the typical form of a hemispherical lathe-turned bowl, according to the known typologies. In the Tall Zar'a typology it is described as Type I.A. Form 2. OVc, hemispherical hand-carved bowls. The form follows Cahill's Type I.a.i.I and Magen's Type I.1.A. This kind of hemispherical bowl has slightly incurved walls which are well polished and have decorative incised lines underneath the rim. Vessel TZ 114475-001 is almost completely preserved and well-worked. The chisel marks are running in a sloping manner, different from the typical horizontal and vertical patterns presented above. The first row of chisel marks starts close under the rim, c. 2.0 cm long. The second row follows underneath, max. 4.5 cm long, and is only hardly visible. The bowl has a ring base, the transition between body and base is marked by a 1.0-cm-wide depression. Above the depression, there is an incised line, c. 0.5 cm wide, only covering half of the object. Presumably, it was not applied intentionally. There are yellow liquid-like splashes all over the outside of the vessel, probably a decoration or a yellow wash. The infolded rim is marked by an incision on the inside, 1.5 cm below the rim. There is grey sedimentation on the inside. On the bottom of the base, an incised decoration or inscription might represent the Hebrew letter ק (quf) in a circle. The Aramaic word קרבן (*qorbān*), starting with a ק (quf) means offering or gift. One core found in the Temple Mount excavations in Jerusalem (Mazar 1969, pl. 45:5) bears this inscription together with two incised birds, the typical animal offering of a person with unusual seminal flow or for a woman who just gave birth (Magen 2002, 79, Lev. 12:8, 15:14). Similar inscriptions are documented on ossuaries,

the bone boxes of that time (Magen 2002, 78–79). In the Mishna, Rabbi Judah is cited saying “One who finds a vessel on which was written a kof, it is korban” (Mishna Ma'aser Sheni 4:11).

Down-sloping chisel marks also appear on hand-carved bowls found in Gamla (Gibson 2016, Type 2A, 55, Fig. 9.2:55). At Gamla, orange paint is also attested on lathe-turned vessels near the base (Gibson 2016, 60). There is one comparison for the special form of the bowl in the material from Capernaum, but with a flat base. The hand-carved bowl found in Capernaum has incised lines around the rim and on the body, while the outer surface is polished (Deines 1993, 151, Abb. 33). The bowl from Tall Zar'a could, therefore, combine forms and decorations typical for vessels from the Galilee.

### 13.3.4. Fragments

Two pieces, TZ 113047-001/L11605 and TZ 113363-001/L11656 are too fragmentary to identify a particular vessel type. It even remains uncertain whether they are belonging to the group of early Roman chalkstone vessels. TZ 113047-001, the fragment of a base, is made of hard limestone. The hard material has many enclosures, traces of different qualities and, additionally, strong grey and brown sedimentations and grey veins. It could be the base of a hand-carved bowl. Since the quality of the material and the rough working manner would be more likely on a regular stone tool or vessel, the interpretation as a chalkstone vessel remains uncertain. The fragment of a handle, TZ 113363-001, is made of hard reddish material, probably chalk mixed with a red stone material, including black spots. Like TZ 113047-001, the fragment was roughly worked and was made of an unusual hard stone material.

### 13.4. Conclusions

The comparisons with objects and types from Jerusalem, Judea, Galilee and Gamla suggest, that the chalkstone vessels from Tall Zar'a derived from workshops located both in and around Jerusalem and in Galilee and the Golan. Some of the fragments have their own characteristics, therefore further analysis and research must investigate the possibility of a local production, regional quarries, and a specific style, which has no comparisons yet.

Generally, the Roman architectural remains of Tall Zar'a, Area II, are hard to identify since they are largely built over and disturbed by the Byzantine building activity (Häser – Vieweger 2014, 264–265). The early Roman settlement probably had a rural character. However, its closeness to the Decapolis city of Gadara would have given this small-scale settlement regular access to imported wares and contact with different groups. This is reflected in the imported pottery, coming as far as from Africa, Asia Minor, Rhode and Cyprus, which are attested (Kenkel 2012, 39), whereas the Jewish communities in Galilee abstained from objects which were connected to the Roman presence in the region. Interestingly, Berlin noticed in her work on Hellenistic and Roman pottery in Galilee, that the imported Eastern Terra Sigillata wares disappear in Jewish villages at the very same time that chalkstone vessels were introduced. The coincidence between the new need of purity, new local pottery workshops and the consideration that 'gentile' products could be impure

seems to be inescapable (Berlin 2011, 85; Berlin 2013, 154–157). However, in Jerusalem, imported fine wares, chalkstone vessels and ritual stepped pools have been found together in priestly and elite household from the 1<sup>st</sup> cent. CE. Therefore, there seemed to be no contradiction in using fine imported table wares and locally produced chalkstone vessels at the same time. As pointed out, in Tall Zar'a, imported fine wares have been found along with chalkstone vessels and local pottery from Galilee (Kenkel 2012, 161; Kenkel 2016, 767–771). Other than the rural society in Judea, the region of Tall Zar'a was heavily influenced by the Decapolis city of Gadara and Roman-affiliated society in general. However, in the case of Tall Zar'a, the question remains as to whether we are dealing with a Jewish settlement in the late Hellenistic and early Roman periods, open minded towards Roman influence, or with a Jewish minority incorporated in a non-Jewish rural society. Be that as it may, from the finds, we can consider a Jewish community who was aware of current purity regulations and the related material culture. To what extent this material was used to claim a Jewish identity in the diverse environment of a Decapolis city, is a question for further research.

However, the outstanding case of Tall Zar'a regarding this find group could shed new light on distribution patterns of material culture in northern Transjordan during the late Hellenistic and early Roman periods.

### 13.5. Catalogue

Locus	Find number	Object	Material	Size (cm)	Weight (gr.)	Description	Date	Comments	Comparisons	Plate
11500	TZ 112809-001	chisel-marked vessel / open, hand-carved vessel	chalk	H 10.1; L 8.0; Wth 3.8; Dia. 7.5	242.0	fragmentary base; chisel marks on the outside; polished walls	early Roman		Cahill 1992, fig. 20	13a
11502	TZ 112832-001	chisel-marked vessel / open hand-carved vessel	chalk	H 9.6; L 9.7; Wth 3.0; Dia. 9.4	261.0	fragmentary base; chisel marks on the outside; polished walls	early Roman		Cahill 1992, fig. 20	13b
11550	TZ 113096-001	mug / pitcher	chalk	H 9.0; L 6.1; Dia. 12.0	90.0	body sherd with handle frgt.; walls polished	early Roman	very soft chalk; lacking chisel marks unusual for this type	Cahill 1992, fig. 20: 1–6; Magen 2002, fig. 2.33	13c
11590	TZ 113077-001	bowl, hand-carved	chalk	H 7.3; L 11.0; Wth 7.8; Dia. 10.0	277.0	half the object; polished walls; fragmentary handle	early Roman	very soft chalk	Cahill 1992, fig. 20.9	13e
11605	TZ 113047-001	vessel frgt.	limestone	H 7.0; L 7.1; Dia. 12.0	124.0	fragmentary base; handmade		probably not part of the find group		
11629	TZ 113375-001	mug / pitcher	chalk	H 7.1; L 4.2	60.0	lug handle with chisel marks; well worked	early Roman		Cahill 1992, fig. 20.2–4; Magen 2002, fig. 2.33	13d
11656	TZ 113363-001	vessel frgt.	chalk	H 4.5; L 3.0; Wth 1.8	33.0	handmade handle		hard chalk, probably not part of the find group		
12011	TZ 114475-001	bowl, hand-carved	chalk	H 10.0; L 13.1; Dia. 10.0	707.0	hemispherical bowl; hand-carved with a ring-base; chisel marks	early Roman	nearly complete inscription	Cahill 1992, fig. 16: 2–6; Magen 2002, fig. 3.13: 1–3.	13f

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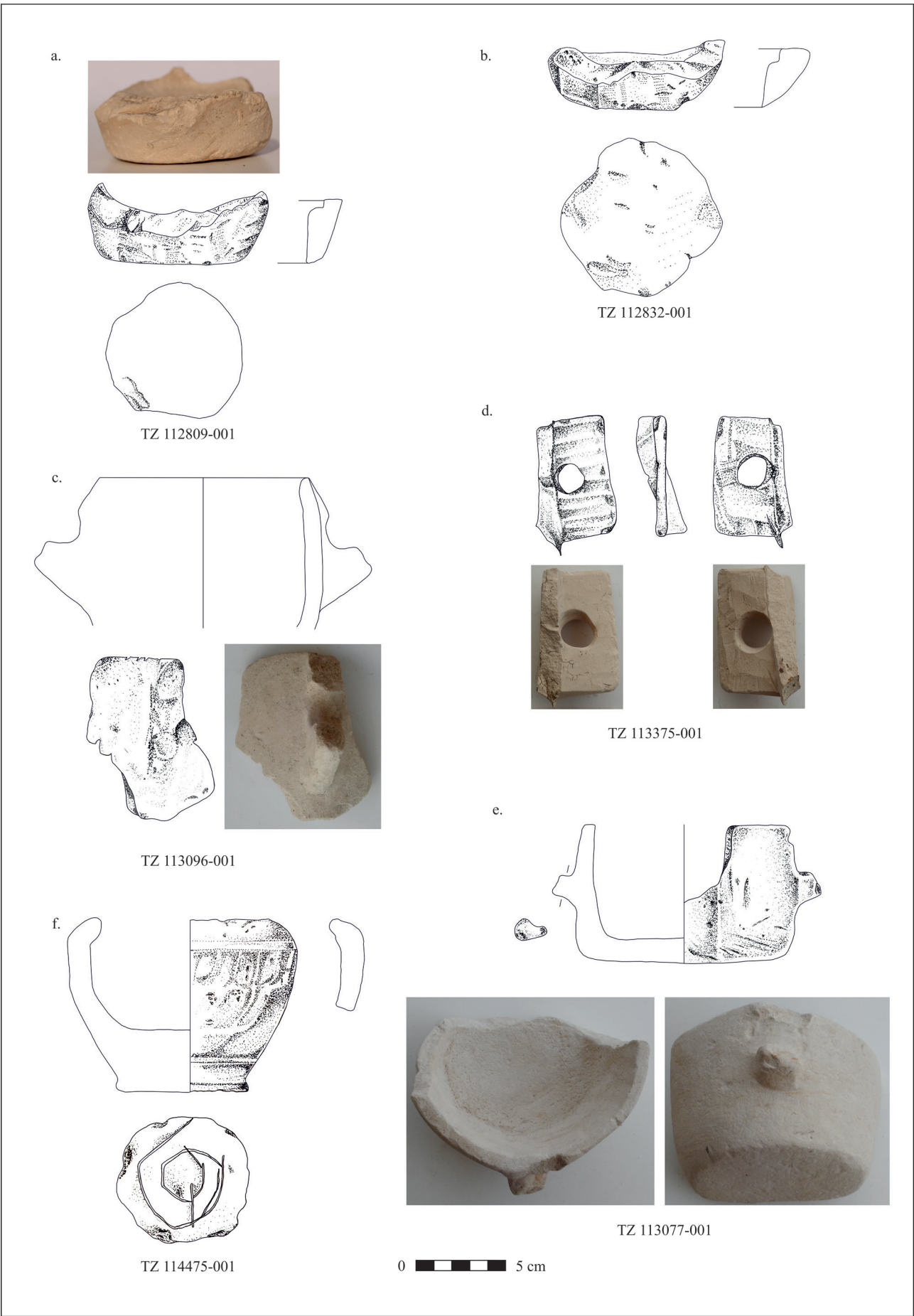
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Plate 13.1: Open hand-carved vessels (a-b); mugs and pitchers (c-d); hand-carved bowls (e-f), scale 1:3





## 14. METAL FINDS

by *Hélène Blitte*

During the 2019 season, 50 metal finds were discovered. They correspond to a wide range of objects from the Iron Age to the early Islamic period that are usually found on this kind of Tall site. They can be classified into four main categories:

- personal accessories
- hardware

- weapons
- unidentified.

All 50 objects are included in the catalogue at the end of the chapter. Interesting ones are described below in more detail, including parallels with other sites in Transjordan and Cisjordan.

### 14.1. Personal accessories

Personal accessories is a category that is commonly present in settlement contexts. Nine objects can be attributed to this category. They are all made of copper alloy and represent different personal belongings such as adornments, textile tools and cosmetic utensils.

Only a few adornment pieces were found during the 2019 season, and these include two hollow cone-shaped pendants. The larger one (TZ 114194-001/L11899; *Pl. 14.1a*) is plain and has a perforation on the top to allow a bronze wire to pass through to form a suspension loop. Despite its very corroded state, it seems that this pendant was cast. It was found on an Iron Age II B floor (see *Chap. 1.3*). The smaller pendant (TZ 114177-001/L11923; *Pl. 14.1b*) was also cast, decorated with five engraved parallel lines and has an integrated suspension ring on the top. In the literature, such pendants are named as bells, despite the lack of clappers for most of them (Golani 2013, Ray – Bishah 2009). This is the case for the examples from Tall Zar‘a. TZ 114194-001 and TZ 114177-001 correspond to Golani’s Type I.6 (Golani 2013, 154). They may have been part of horse gear, as known in Assyria for example (Curtis – Reade 1995, 166) or have been sewn onto clothes. Several authors also mention the use of this kind of object in cultic celebrations (Ray – Bishah 2009, 299) as well as their role as an amulet for children, as in Ancient Egypt (Petrie 1914, 28, 124). They are frequent in archaeological contexts from the Iron Age to the Byzantine period. It seems that the type of the suspension (integrated loop or extra wire) is not proper to one or another period so there is no possibility of dating the bells through this criterion. Such pendants dated to the Iron Age have been found at Lachish (7<sup>th</sup>–6<sup>th</sup> cent. BCE), Timna’ (Tel

Batash; 7<sup>th</sup> cent. BCE) and Megiddo (9<sup>th</sup>–8<sup>th</sup> cent. BCE) (Golani 2013, 159–160). Later examples, from the Roman to the Islamic period, have been found at Tell Hesban (Ray – Bishah 2009, 301) and at Salamis (Chavane 1975, 147–148).

Cosmetic utensils are also among the metal finds from Tall Zar‘a. A spatula fragment (TZ 114139-001/L11923; *Pl. 14.1c*) has been identified, consisting of a shaft with a trapezoidal section and a flattened, ovoid end. The shaft of this example is finely decorated with engraved parallel lines and a diagonal cross. This kind of instrument was probably used to prepare cosmetics such as kohl, however, they were not used to apply the kohl. Comparable spatulas with an ovoid flattened end have been found at Tell Hesban (Ray – Bishah 2009, 203). A range of other utensils for applying make-up, such as kohl sticks, are also often found in the Levant; one fragment of a rod with a bulbous head can be identified as such (TZ 114488-001/L12139; *Pl. 14.1d*). Kohl sticks are attested in the archaeological record from the Late Bronze Age (Lachish, Tomb 216, Tufnell 1958, 82) to the Islamic period, and are still in use today. Such artifacts were also found at Tell el-‘Umeiri (Herr et al. 2000, 212; Herr et al. 2014, 400) and Tell Hesban (Ray – Bishah 2009, 209).

Four artifacts can be defined as textile tools: two needles, a garment pin and a fibula. The needles (TZ 114098-001/L11857 and TZ 114342-001/L12016) both consist of a thin metal rod with a pointed end and a single eye. The form of needles does not vary through time so these examples may have been used during any period of occupation at the site. This kind of copper alloy needle is widely known and has been identified at sites across the

region, like at Tell Hesban (Ray –Bishah 2009, 181). The garment pin (TZ 114224-001/L11916; *Pl. 14.1e*) is characterized by a hook sitting on top of a thin shaft. This tool was probably used to knot textile fibers to make a network pattern. The context of its discovery dates this artifact to the Hellenistic period (see *Chap. 1.2*). A fragment of a fibula bow (TZ 114457-001/L12013; *Pl. 14.1f*) was also found. It belongs to a triangular fibula with bugles, type III 3 or III 4 in Stronach's typology (Stronach 1959, 194). This type of fibula is typical for the Sy-

## 14.2. Hardware

Hardware, with 22 finds, is the dominant category and includes nails, cutlery, tools, implements, fittings, locks, etc. Most of the objects belonging to this group are made of iron and cannot be dated precisely. Nails and spikes are well represented (6 items) as well as flat bars (6 items) and rings

### 14.3. Weapons

Three artifacts can be identified as weapons, more exactly as projectile points. They are made of iron and belong to two different periods of the occupation of the site.

TZ 113810-001/L11754 (*Pl. 14.2a*) and TZ 113759-001/L11703 (*Pl. 14.2b*) are both flat, narrow, leaf-shaped points with a tang and are – because of this combination – very typical for the Iron Age period. Similar examples have been found at Tell el-‘Umeiri (Herr et al. 2002, 223), Tell Abu al-Kharaz (Fischer 2013, 244–245) and Timna‘ (Tel Batash; Mazar – Panitz-Cohen 2001, 221). According to Mazar and Panitz-Cohen, “the leaf-shaped and ovoid iron arrowheads are the most common types in the Iron Age throughout Israel” (Mazar – Panitz-Cohen 2001, 222). Thus it is not surprising to find this type of iron arrowhead in Transjordan during the same period.

TZ 113711-001/L11625 (*Pl. 14.2c*) has a tang and a square section, corresponding to a type of projectile point known in the Roman Empire during the 2<sup>nd</sup> and 3<sup>rd</sup> cent. CE (Malloy 1993, 21, 137 a–d). The square head seems to be a particularity of Roman casting of weapons, as Petrie had already noted at the beginning of the 20<sup>th</sup> cent. (Petrie 1917, 35).

ro-Palestinian region during the Iron Age and the Achaemenian period (7<sup>th</sup>–4<sup>th</sup> cent. BCE). This type of triangular fibula is, for example, known from Tell el-‘Umeiri (Herr et al. 2000, 209).

Finally, a broken pin (TZ 114473-001/L12085; *Pl. 14.1g*) is part of this group. Its shaft is straight and one end has a fine point. A small piece of metal sheet is wrapped around the shaft on the upper third of the artifact. It is unclear if this pin was used for clothes or for the hair. To my knowledge, no similar example has been found in the area.

(4 items). Apart from some tools and knives that are clearly identified, the exact function of the objects in this category cannot really be defined. Nevertheless, it is likely that they were used in different pieces of wood furniture, like chests or doors for example, or might be also part of horse gear.

Whether these three points were arrowheads or javelin heads is not clear. According to Kohl, javelin heads measure between 4 and 10 cm (Kohl 2007, 153). De Maigret, however, defines any projectile point with a length inferior to 11 cm as an arrowhead (Drews 1993, 187 about De Maigret 1976) and Cross and Milik consider projectile points with a blade length up to 6 cm as arrowhead (Cross – Milik 1956, 19). On artifacts similar to the ones from Tall Zar‘a, Drews states that the shape of the points is also a determining feature, so he defines these kinds of projectiles as javelin heads, since they are not barbed (Drews 1993, 189). Yet other criteria have to be taken into account to decide if these projectile points were thrown or thrust, such as the weight of the head or the length of the shaft. Without having complete objects, including the shaft, the type of artifact cannot be identified with certainty, as Falk emphasizes: “the size of the head is generally used as an arbitrary means of classification” (Falk 2014, 520). For these reasons, the term projectile point has been chosen here to keep it neutral.

In addition, a small flat blade of copper alloy (TZ 114489-001/L12012; *Pl. 14.2d*) with tang and broken tip could be also identified as a weapon

since both sides of it are sharpened and its cross section is lentoid. It might be a small dagger or more likely a projectile point. Even though its tang

seems not to be in the middle of the blade, the absence of a thicker back means it cannot be defined as a knife.

## 14.4. Unidentified

Fourteen finds are not significant enough to be identified or classified in a specific category. However, some items draw our attention because of their particular shape.

TZ 114414-001/L12026 (*Pl. 14.2e*) is an oval and open object of copper alloy with a stem with a D-shape section. It has a triangular end that is flat and embossed with a row of three points and another three points in no particular order. This piece might be part of an adornment or belong to a wooden artifact as decoration. It was found in a Hellenistic context.

TZ 113750-001/L11712 and TZ 113754-001/L11703 are small lumps of copper alloy that could be casting scraps.

TZ 114193-001/L11899 (*Pl. 14.2f*) consists of a small convex crescent of copper alloy (1.2 cm) with a hole in the middle that could have been drilled to hang a suspension system. It might be a piece of a pendant similar to the type I.4b identified by Golani (Golani 2013, 261, 22). The context of discovery of this artifact places it in the Iron Age IIB (see *Chap. 1.3*).

TZ 114246-001/L11961 (*Pl. 14.2g*) is a piece of copper alloy sheet wrapped on itself with one end flattened and the other end squeezed. It might be a damaged tool or a type of nail used for wooden objects.

## 14.5. Conclusions

All these finds point to continuous settlement and use of the site of Tall Zar'a from the Iron Age to Islamic period. The discovery of weapons attests to

periods of conflict in the area, especially during the Iron Age and the Roman occupation, whereas personal accessories are testimonies of daily activities.

## 14.6. Catalogue

Locus	Find number	Object	Material	Size (cm)	Weight (gr)	Description	Date	Comments	Comparisons	Category	Plate
11625	TZ 113711-001	projectile point	iron	a: L 3.4, Dia. 0.4 (head 0.6); b: L 4.9, 1.1 × 1.7 (middle section)	a: 2.23 b: 14.12	corroded, pointed head with tang, square section	Roman (2 <sup>nd</sup> –3 <sup>rd</sup> cent. CE)	broken in 2 pieces (head and tang)	Malloy 1993, 21	weapon	14.2c
11669	TZ 113712-001	ring	iron	Dia. 4.5, Th. 0.7	15.71	corroded, complete with a small clasp, plain, irregular thickness, possibly round section		buckle?		hardware	
11717	TZ 113748-001	figts.	copper alloy	a: L 1.1, Wth 1.1, Th. 0.1; b: L 1.3, Wth 1.0, Th. 0.1; c: L 1.4, Wth 0.5, Th. 0.1	a: 0.38 b: 0.30 c: 0.14	irregular figts., very thin, flat. Frgt. c is slightly bent				unidentified	
11712	TZ 113749-001	figt.	copper alloy	L 1.4, Wth 1.2, Th. 0.1	0.50	trapezoidal, very thin				unidentified	
11712	TZ 113750-001	lump	copper alloy	L 1.0, Wth 1.0, Th. 0.7	2.90	shapeless		casting scrap?		unidentified	
11703	TZ 113754-001	lump	copper alloy	L 2.2, Wth 1.7	8.35	ovoid, bulged, irregular surface		casting scrap?		unidentified	
11703	TZ 113755-001	rod figt.	copper alloy	Dia. 0.5	0.22	spherical section				unidentified	
11703	TZ 113759-001	projectile point	iron	L 5.9, Wth 1.2; blade: Th. 0.5; tang: L. 2.0, Dia. 0.6.	5.79	flat, leaf-shaped with tang, narrow, tip broken	Iron Age		Ray et al. 2009, 157; Herr et al. 2002, 223	weapon	14.2b
11718	TZ 113762-001	nail	iron	L 3.9, Dia. 0.5	2.60	corroded, slightly bent, possible flattened head				hardware	
11754	TZ 113810-001	projectile point	iron	L 7.5, W 0.3–1.4, Th. 0.3; tang: L 1.5, Dia. 0.5	9.01	complete, flat, leaf-shaped with tang, narrow	Iron Age		Ray et al. 2009, 157; Herr et al. 2002, 223	weapon	14.2a
11753	TZ 113821-001	bar	copper alloy	a: L 7.8, Wth 1.8, Th. 0.3; b: L 2.3, Wth 1.2, Th. 0.2	a: 15.76 b: 1.25	corroded, rectangular, flat, broken				hardware	

Locus	Find number	Object	Material	Size (cm)	Weight (gr)	Description	Date	Comments	Comparisons	Category	Plate
11781	TZ 113956-001	bar	iron	L 6.4, Wth 2, Th. 0.6	23.72	corroded, rectangular, flat, broken				hardware	
11817	TZ 113957-001	nail	iron	L 3.5, Dia. 0.6	3.60	corroded, 90° bent like, possible flattened head				hardware	
11846	TZ 114064-001	spike	iron	L 7.1, shaft: 1 × 0.7; head: Dia. 2.6	27.28	corroded, tip broken, straight		+ small corroded frags.		hardware	
11881	TZ 114096-001	nail	iron	L 5.5, Dia. 0.5	7.88	corroded, straight, broken				hardware	
11878	TZ 114097-001	frags.	copper alloy	-	1.30	shapeless				unidentified	
11857	TZ 114098-001	needle	copper alloy	L 5.7, Dia. 0.2	1.35	straight, thin, eye broken			Ray et al. 2009, 181	personal accessories	
11861	TZ 114137-001	ring	iron	Dia. 3.6–3.8, Th. 0.6	7.44	corroded, plain, oval section		broken in 2 pieces. Horse gear?		hardware	
11923	TZ 114139-001	spatula	copper alloy	L 4.6 (shaft 2, head 2.5), Wth 1.3, grip: Th. 0.2, spatula: Th. 0.1	2.61	ovoid flattened end, decorated shaft with engraved parallel lines and a cross, shaft with trapezoidal section		for cosmetic	Ray et al. 2009, 203	personal accessories	14.1c
11893	TZ 114175-001	nail	iron	L: 5.6, Dia. 0.7	4.79	corroded, straight				hardware	
11923	TZ 114177-001	pendant/bell	copper alloy	Dia. 1.5, H 1.5	2.95	hemispherical, cast, suspension loop, decorated with five parallel lines	from the Iron Age to Islamic period		Ray et al. 2009, 301 6/8; Golani 2013, fig. 22–26	personal accessories	14.1b
11874 Surface	TZ 114183-001	key	iron	L 4.3, Dia. 1.1, head: Wth 1.9, key: Wth 1.5	7.97	complete, oval bow, collar, rectangular bit at right angle to the stem with one pointed tooth, stem with circular section	modern	for a casket?		hardware	



Locus	Find number	Object	Material	Size (cm)	Weight (gr)	Description	Date	Comments	Comparisons	Category	Plate
11981	TZ 114247-001	bar	iron	L 11.9, Wth 1.4, Th. 0.5	31.18	corroded, rectangular, flat, end 90° bent				hardware	
11952	TZ 114302-001	rod frgt.	copper alloy	L 2.9, Dia. 0.3-0.5	1.83	corroded, thicker part, round section		possible cosmetic kohl stick (middle part of the stick)		unidentified	
12055	TZ 114337-001	ring	iron	Dia. 4.1, Th 0.2	6.42	corroded, plain with rectangular flat section		broken in 2 pieces		hardware	
12016	TZ 114342-001	needle	copper alloy	L 4.7, Dia. 0.2	0.39	complete, straight, very thin, ovoid eye (L 0.5)			Ray et al. 2009, 181	personal accessories	
11903	TZ 114344-001	rod frgt.	copper alloy	L 0.9, Dia 0.3	0.17	corroded, thin, round section				unidentified	
12011	TZ 114347-001	bar	iron	a: L 4.9, Wth 1.7, Th. 0.8-1.2 b: L 4, Wth 1.7, Th 0.7-0.9	a: 22.14 b: 13.60	heavily corroded, rectangular, flat, a: grip?		broken in 2 pieces		hardware	
12011	TZ 114348-001	plate with nail?	iron	L 4.2, Wth 3.7, Th. 0.7 (middle), 1.0 (edge)	28.42	square piece of metal, rounded edge, nail stuck in it		stuck in wooden artifact?		hardware	
12011	TZ 114349-001	strike plate (lock)	copper alloy	L 7.8, Wth 6.9, Th. 0.1	26.60	rectangular thin plate, one hole in each corner, L-shape opening (keyhole) in the middle		broken in 4 pieces.		hardware	
11969	TZ 114370-001	plate with nail	iron	plate: L 5.8, Wth 2.6, Th. 0.5; nail: L 2.6, Dia. 0.7	plate: 20.14; nail: 2.50	corroded, rectangular plate; nail broken, originally stuck in the plate		stuck in wooden artifact. Decoration? Functional piece?		hardware	
12072	TZ 114404-001	blade point	iron	L 4.8, Wth 0.2-0.9, Th. 0.3	2.51	corroded, narrow with tip		possible knife	Ray et al. 2009, 159	hardware	



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Plate 14.1: Personal accessories, scale 1:1

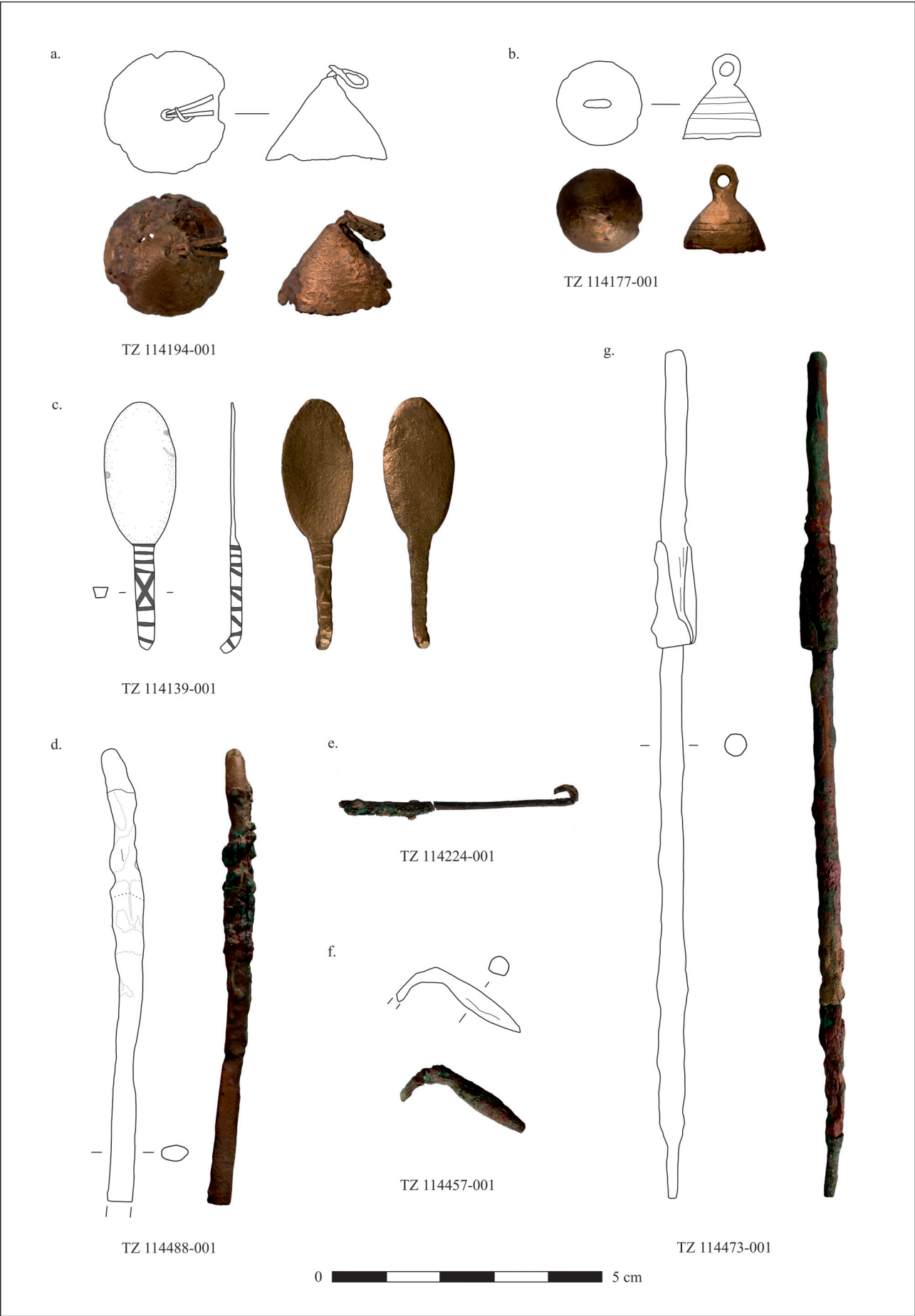
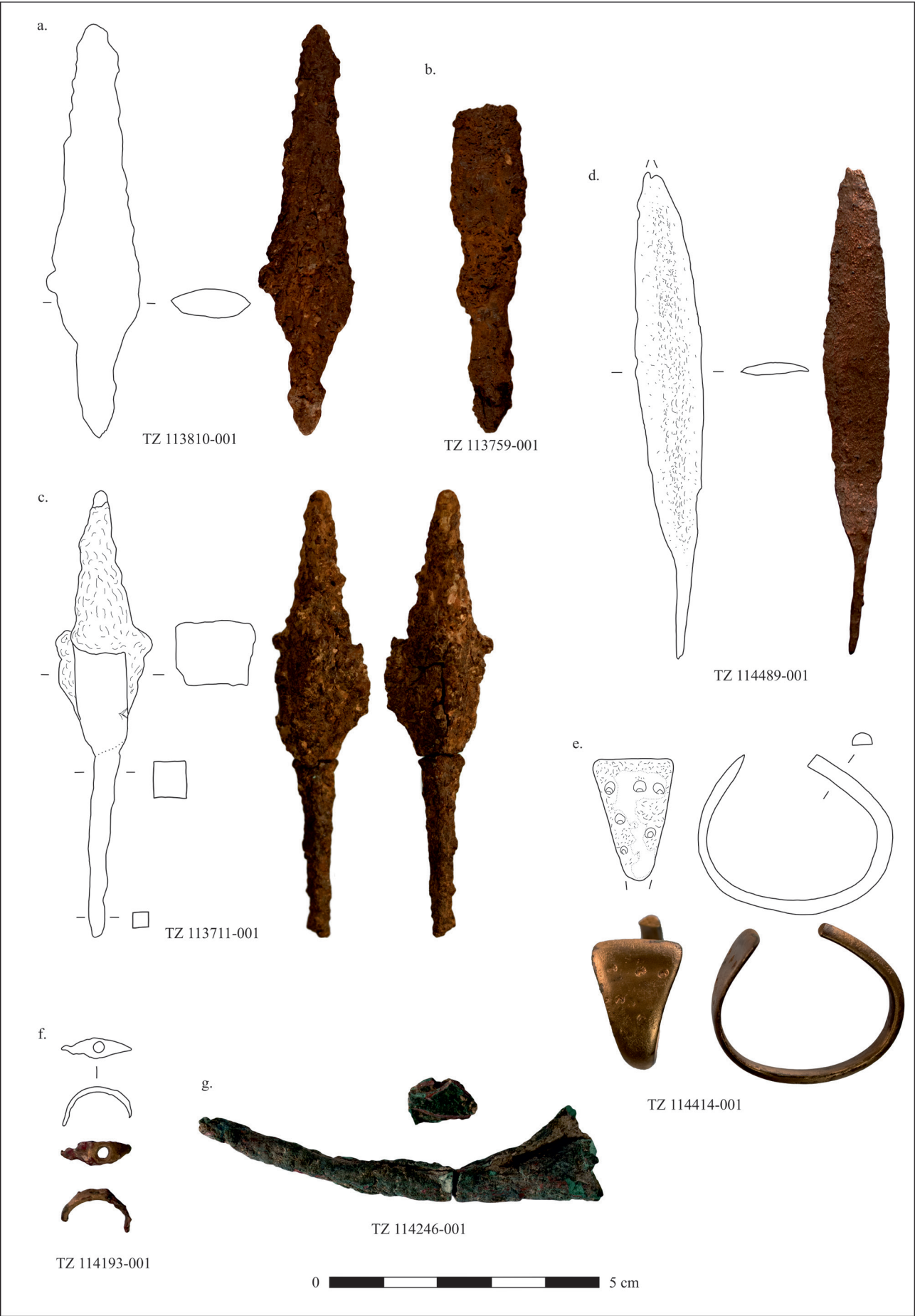


Plate 14.2: Weapons and unidentified, scale 1:1







## 15. BONE ARTEFACTS

by Katharina Schmidt

Most of the worked bone fragments presented in this section are tentatively designated as tools. So far, neither use analyses nor zoological studies have been carried out on the objects, but they will be the focus of further investigations.

Bone was an important raw material and was used to produce various types of objects. It was an abundant material readily available from animals that were consumed and, therefore, bone had little commercial value. Furthermore, the material was

easy to work and very versatile in its use (Horwitz et al. 2006, 169). Among the finds discussed here are tools, lids and edges of containers and pallets, and game pieces, which are mostly only minimally carved. The overall shape of the bone is in most cases still intact, the surfaces of all the pieces are smoothed, and sometimes holes are drilled to attach mountings, thus it is likely that most of the objects were used as tools.

### 15.1. Lids and Rims of Pallets

TZ 113802/L11748 + TZ 113876/L11756 (*Pl. 15.1a*) is a round, flat bone disc that has a circle and dot pattern along the edge. The back is untreated, so that the bone structure of the piece is clearly visible; no perforations are visible for fastening a lid to the container. Most likely, the object served as a cover that sat flat on the container and was probably fixed in some alternative manner. A similar lid to TZ 113802-001/TZ 113876-001, but made of ivory, is known from Tell Hesban. This piece also has no perforations, but it is only half the size and has a floral decoration (stratum 15, Hellenistic; Kotter – Ray 2009, 145, fig. 9.28, 5). Two fragmented ivory lids were found at Tell es-Sa'idiyeh, one reconstructed as a lid without perforations, the other with two perforations for fixing the lid to the vessel (Pritchard 1980, figs. 3:8 and 10). A bone lid without perforations, 3 cm in diameter and with a rosette pattern, was found at Tawilan (Bienkowski 1995, 301: 11). Pyxides with lids were also found at Ugarit, but with a floral pattern and perforated

handles (Schaeffer 1932, plate VIII: 2). The circle and dot pattern is widespread both chronologically and regionally and occurs in the Iron Age, the Hellenistic and later periods in the Levant (Ayalon 2006, 667–671).

TZ 115053-001/L11987 (*Pl. 15.1b*) is made of a scapula or pelvis, and has incised petal designs on both sides. The flat shape of the object is determined by the shape of the bone. One edge is rounded, the other side is broken. The object could have been a lid, or part of a flat pallet, but because of its flat shape, its use as a scraper or spatula is also possible. The petal design is a common decoration on bone and ivory lids, and pyxides (see above). TZ 114972-002/L11896 (*Pl. 15.1c*) might also have served as a lid or pallet because of its deliberately shaped edge; however its use as another type of tool is also possible. Bone fragment TZ 114972-003/L11896 (*Pl. 15.1d*), which was found in the same context, probably belonged to the same object.

## 15.2. Game Pieces/Inlays

TZ 114328-001 (*Pl. 15.2a*) and TZ 114328-002/L11974 (*Pl. 15.2b*) are rounded, flat, bone objects which were both found in the same context. They could have served as game pieces or inlays. Similar

objects are known from Buseira, which were interpreted as inlays for furniture (Bienkowski 2002, 357, pl. 10.5 [Iron Age II]).

## 15.3. Astralagus with Perforations

Among the finds from the Tall Zar'a 2018/19 seasons there was only one perforated knucklebone (TZ 115010-001/L11934, *Pl. 15.2c*). This piece has three round, regular perforations which pierce the whole object. A very similar knucklebone, which is somewhat smaller but also with three perforations, was found at Tell el-'Umeiri (Iron Age I; Clark 2007, 387, A000031). An astragalus with four perforations comes from Beth-Shean (layer P-7-P8a, Iron Age period; Yahalom-Mack – Mazar 2006, 497–498, photo 13.40), and also from Buseira (Bienkowski 2002: 361–362 pl. 10.15). An astragalus with a sin-

gle round hole was excavated in an Iron Age II context in Area I at Tall Zar'a (Soenneken 2017, 484, Fig. 4.1.565), and another at Tell er-Rumeith (Lapp et al. 2015, 337, Fig. 11.11 No. 2, 3). Animal ankle bones are found frequently, but their precise function remains unclear in most cases. It has been suggested that they were used as game pieces (with and without perforation) and in religious rituals such as divination (Daviau 2002, 164; Clark 2007, 369). They occur in all periods, from the Early Bronze Age onwards, and are still used in modern times and therefore cannot provide chronological markers.

## 15.4. Miscellaneous Bone Tools

All the bone objects included in this chapter have ground and polished surfaces and thus functioned as tools in the widest sense. The long bones TZ 114501-001/L11989 (*Pl. 15.2d*), TZ 115013-001/L12155 (*Pl. 15.2e*) and TZ 114974-001/L11903 (*Pl. 15.3a*) show fine grinding and polishing marks, but no cut marks are visible. Comparable finds for the long bones TZ 115013-001 and TZ 114974-001 come for example from Tell el-'Umeiri and date to the Persian period (Clark 2007, 392, A000061, A000042). TZ 114974-001/L11903 (*Pl. 15.3a*) has a rounded perforation on the upper side and most likely served as a handle for a tool. A comparable bone handle with a round bronze cone still set in it was found in an Iron Age II context at Tall Zar'a, Area I (Soenn-

ecken 2017, 646, Fig. 4.1.803). TZ 114952-001/L11925 (metatarsal bone; *Pl. 15.3b*) also has two round perforations at one end, indicating its use as a handle for a tool.

TZ 114979-001/L12011 (*Pl. 15.3c*) is a flat and broad bone that has been heavily smoothed and polished on all sides. The size and shape could indicate its use as a spatula.

The bone tools TZ 114874-001/L12053 (*Pl. 15.3d*), TZ 115012-001/L12013 (*Pl. 15.4a*), TZ 114990-001/L11882 (*Pl. 15.4b*), TZ 114501-001/L11989 (*Pl. 15.4c*), TZ 114501-001/L11989 (*Pl. 15.4d*) and TZ 114972-001/L11989 (*Pl. 15.4c*), and TZ 114993-001/L11940 (no picture) can all not be determined further.

## 15.5. Catalogue

Locus	Find number	Object	Material	L (cm)	Th. (cm)	Wth (cm)	Description	Comparisons	Plate
11934	TZ 115010-001	gaming piece; tool	astragalus	4.5	2.5	3.0	complete; pierced with 3 perforations (Dia: 0.5 cm) on one side; parallel polishing marks on the edges	Tell el- Umeiri: Clark 2007, 387, A000031 Beth-Shean: Yahalom-Mack – Mazar 2006, 497–498, photo 13.40 Buseira: Bienkowski 2002, 361–362 pl. 10.15 Tell er-Rumeith: Lapp et al. 2015, 337 fig. 11.11 no. 2, 3 Tall Zar'a: Soenneken 2017, 484, fig. 4.1.565	15.2c
11974	TZ 114328-001	gaming piece; inlay	bone	2.4		0.3	intact; round, flat; heavily polished	Buseira: Bienkowski 2002, 357, pl. 10.5	15.2a
11974	TZ 114328-002	gaming piece; inlay	bone	2.4		0.3	intact; round, flat; heavily polished	Buseira: Bienkowski 2002, 357, pl. 10.5	15.2b
12053	TZ 114874-001	tool	horn/antler/ tusk	6.5	2.8	2	broken; heavily polished; regular, parallel incisions		15.3d
12013	TZ 115012-001	tool	epiphysis	2.5	2.5	1.8	two frags. of one or two epiphyses, not joining; polishing marks on the surface		15.4a
11925	TZ 114952-001	tool	metatarsal bone	6.8	1.2	max. 2.3	complete, metatarsal bone with a smoothed end, at the other end two rounded perforations of different sizes; reverse is polished		15.3b
11882	TZ 114990-001	tool	phalange	2.8	0.9	0.6	broken at one end; phalange; polished on every side		15.4b
12011	TZ 114979-001	tool	bone	8.9	0.7	max 1.7	broken at one end; flat bone; smoothed on all sides		15.3c
11903	TZ 114974-001	tool	long-bone	12.5	3.0	max. 5.2	broken at one end; fine grinding marks; round perforation on one end		15.3a
12155	TZ 115013-001	tool	long-bone	20.00		max 6.00	complete; fine grinding marks	Tell el- Umeiri: Clark 2007, 392, A000061, A000042	15.2e
11989	TZ 114501-001	tool	long-bone	7.80		3.2	broken; fine grinding marks	Tell el- Umeiri: Clare 2007, 392, A000061, A000042	15.2d
11940	TZ 114993-001	tool	bone	8.7	0.9	3.3	frag.; cutting marks; highly polished	Tell el- Umeiri: Clark 2007, 392, A000061, A000042	
11896	TZ 114972-001	tool	bone	4.3	3	0.8	complete; polished		15.4e
11987	TZ 115053-001	palette? lid?	bone, scapula or pelvis?	5.5	1.0	3.4	frag. of a scapula or pelvis; ground and polished, both sides incised with petal design		15.1b

Locus	Find number	Object	Material	L (cm)	Th. (cm)	Wth (cm)	Description	Comparisons	Plate
11896	TZ 114972-002	palette? lid?	bone	6.0	2.5	0.7	figt., one edge ground to form a rounded edge, rest is broken		15.1c
11896	TZ 114972-003	tool	bone	6.0	2.3	1.0	figt.; ground; polished		15.1d
11748 11756	TZ 113802-001/ TZ 113876-001	lid	bone	Dia.max. 8.0		1.0-0.5	completely preserved, broken in seven pieces; almost round; flat; surface ground, and flat with regular circle-and-dot design at regular intervals along the edge; width varies; on the reverse bone structure is visible, not carved or flattened	Tell Hesban: Kotter – Ray 2009, 145, fig. 9.28, 5; Tell es-Sa'idiyeh: Pritchard 1985, fig 3: 8, 10 Tawīlān: Bienkowski 1995, 301: 11 Ugarit: Schaeffer 1932, pl. VIII: 2	15.1a

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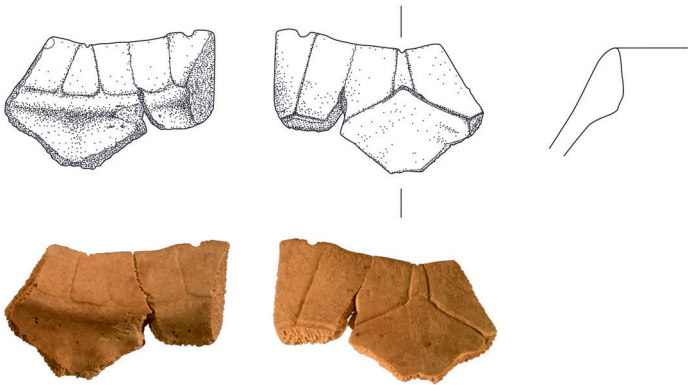
N. Yahalom-Mack – A. Mazar, Various finds from the Iron Age II strata in areas P and S, in: A. Māzār (ed.), *Excavations at Tel Beth-Shean. 1989–1996, The Beth-Shean Valley Archaeological Project publication 1* (Jerusalem 2006) 468–522

a.



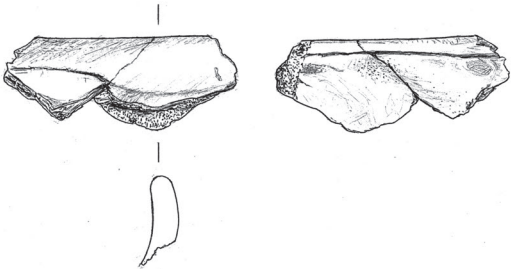
TZ 113876-001+TZ 113802-001

b.



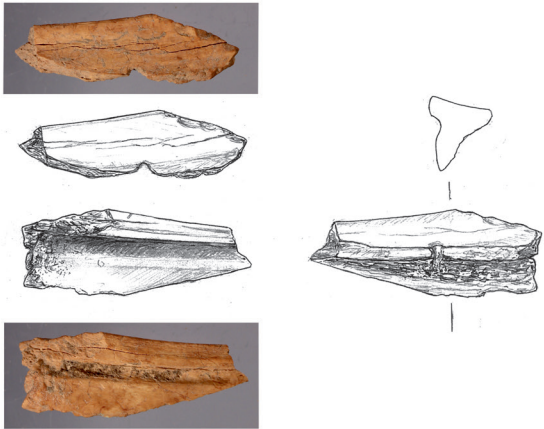
TZ 115053-001

c.



TZ 114972-002

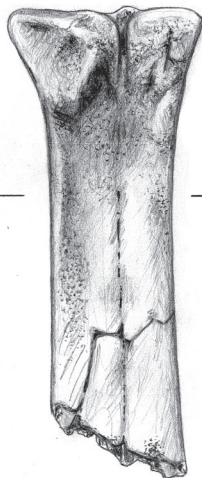
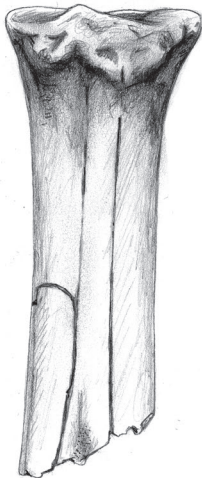
d.



TZ 114972-003

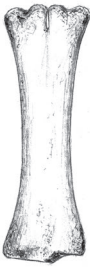


a.



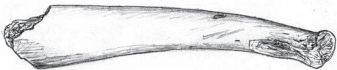
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b.



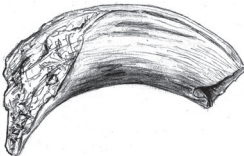
TZ 114952-001

c.

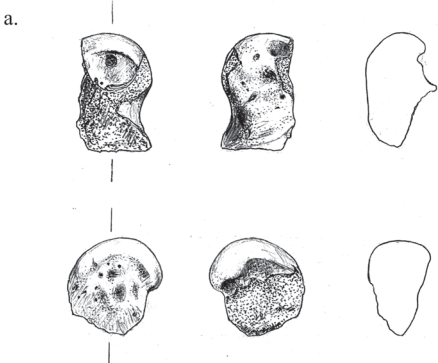


TZ 114979-001

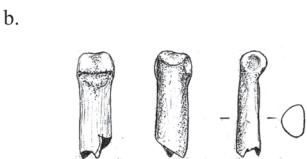
d.



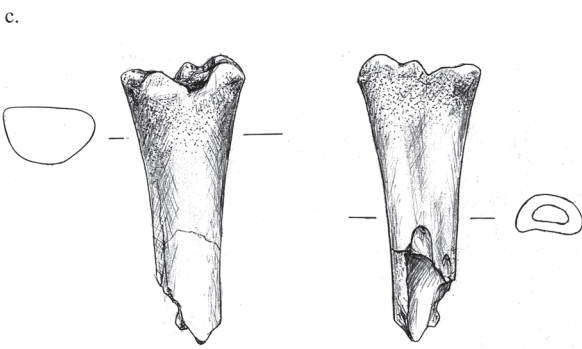
TZ 114874-001



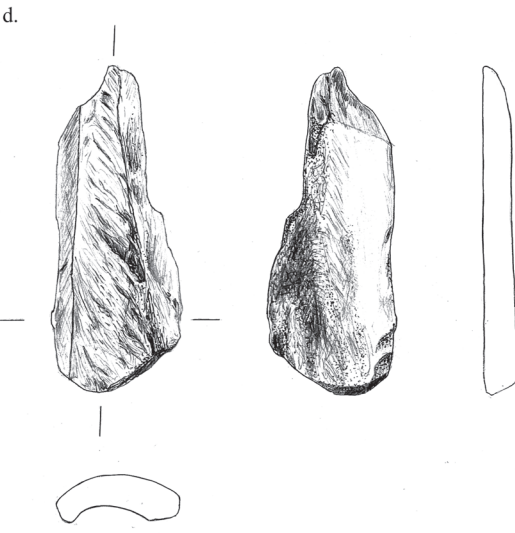
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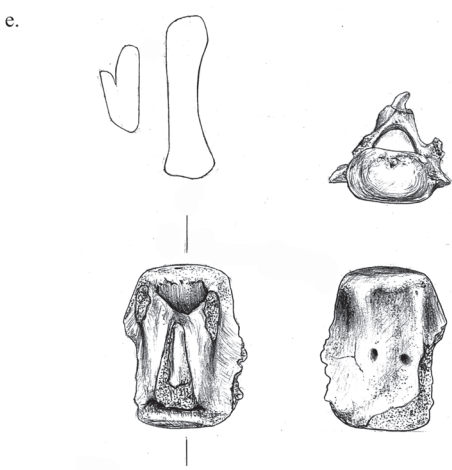
TZ 114990-001



TZ 114501-001



TZ 114501-001



TZ 114972-001



## 16. TEXTILE TOOLS

by Katharina Schmidt

The textile tools found during the excavations in 2018–20 19 at Tall Zar'a include loom weights, spindle whorls and a weaving pattern spatula, but no spindles or needles could be identified or recognized as such. Loom weights and spindle whorls were particularly numerous. Textile production in

Iron Age Transjordan was comprehensively investigated by Boertien (2013), to which reference is made throughout this contribution. Barber also published a general comprehensive study in 1991, which also serves as a general reference for textile production.

### 16.1. Spindle Whorls

Spinning is the process of extracting and twisting fibres into an endless thread called yarn, which can then be used for weaving. The spindle is the rod on which the yarn is wound during the spinning process, and the spindle whorl weights the spindle, acting as a flywheel to improve rotation (Boertien 2013, 40, 43; Daviau 2002, 183). Spindle whorls usually come in different shapes, sizes and weights, and are made of different materials such as stone, ceramic, bone, ivory, metal, glass or wood. The major characteristic is their round shape and central perforation. The diameter and weight of spindle whorls is important as they relate directly to the type of yarn being spun as well as to its thickness and strength. Therefore, a whorl with a wider diameter results in a loose thread with less twist, often significantly thicker; in contrast a small, fast spindle whorl results in a tightly spun, finer yarn (Boertien 2013, 43–44 with further literature). It has been suggested that lighter whorls could have been used for wool, while heavier whorls could have been used for plant fibres. Barber (1991, 52) pointed out that a light whorl is needed for short fibres and a heavy whorl, weighing around 100–150 gr or more, is needed for longer fibres such as linen or hemp and long wool.<sup>100</sup> Spindle whorls are ubiquitous but cannot be dated on the basis of their typology or material (Boertien 2013, 44).

The spindle whorls excavated at Tall Zar'a are made of stone and ceramic. The pieces made of ceramic are all reworked sherds and comprise the three discoid whorls TZ 113874-001/L11835,

TZ 113860-001/L11838 and TZ 114222-001/L11937 (*Pl. 16.1a–c*). TZ 113874-001 stands out because this object has two round perforations. Double-perforated discs are known from Pella (McNicoll 1992, pl. 46: 2) and from Tell el-Fukhar (Westergaard Jensen 2015: 213: 5). Ceramic discs with one perforation were found at Tell el-Fukhar (Westergaard Jensen 2015, 210: 4–8; 212: 1–2; 213: 3, 6) and date to the Iron Age and Hellenistic period, and at Jawa (Tall Ġāwa; Iron Age; Daviau 2002, 258 Fig. 2.144:1–7), and Tell er-Rumeith (Boertien 2015, 261, fig. 8.2: 1–3).

The two doughnut-shaped whorls, TZ 112913-001/L11585 (reddish stone) and TZ 114077-001/113418 (limestone), find a comparison in shape and weight with a whorl made of basalt from Tell er-Rumeith (Boertien 2015, 216 fig. 8. 1, 273; stratum VIB?, 770–740 BCE). Three basalt and three limestone rings are reported from Jawa (Daviau 2002, 189), which might have served as spindle whorls. Whether the small and light stone ring TZ 114197-001/L11782 (*Pl. 16.1d*) was also used as a spindle whorl is not clear. Parallels, though larger in size, can be found at Beth-Shean which are made of gypsum (Yahalom-Mack – Mazar 2006, 475 fig. 13.3: 9; 476: no. 5; photo 12. 12) (stratum S-1, Iron Age II).

The conical spindle whorls from Tall Zar'a TZ 113418-001/L11641 (*Pl. 16.1e*), and TZ 114560/L12155, (*Pl. 16.1f*) are made of different types of stone and are very light. Comparisons, although heavier, come, for example, from Tell Deir 'Alla (van

100 See for further literature Boertien 2013, 44, 232.

der Kooij – Ibrahim 1989, 101: 145, 101, 102) dating to the Iron Age II period. They were also found at Jawa (Daviau 2002, 259 fig. 2. 149:1–2). Some of the spindle whorls from Tell er-Rumeith are similar-

ly light in weight as those from Tall Zar'a (Boertien 2015, 260 fig. 8. 1: 5. 7. 8). Closely comparable pieces from Tell Hesban date to the Roman period and later (Platt – Ray 2009, 173: fig. 11.5:8–11).

## 16.2. Loom Weights

Weights used to stretch the warp threads on a loom are called loom weights. Loom weights were applied on warp-weighted looms, which were used to weave cloth and mats. A warp-weighted loom was made of an upper beam which was supported by two vertical side beams. The warp threads would hang between these two side beams and were held tight by the loom weights (Barber 1991, fig. 3.24; Boertien 2013, 69–71). A warp-weighted loom required a set of at least ten loom weights (Boertien 2013, 313). The number could vary greatly and depended on various factors such as material and fineness of the fabric to be woven. Loom weights are often found lined up in debris, which shows that they were in use on a loom.

Loom weights come in different shapes and were made from different materials, such as unfired clay, ceramic, stone and lead. They have a single hole in the middle through which they were hung on the warp thread. The shape and weight of loom weights has varied over time (Boertien 2013, 71). For the Iron Age II in Transjordan, the average weight usually ranges between 300–400 gr, though in the Jordan Valley this weight is higher and averages around 460 gr. In the course of time, the weight of loom weights generally decreases; in the Hellenistic period the average weight is around only 73 gr (Boertien 2013, 255).

Among the finds from Tall Zar'a, unfired clay loom weights are the majority. Particularly common were doughnut-shaped weights, followed by pyramidal ones. Some of the loom weights from the site were uncovered in groups, for example, the doughnut-shaped weights from Room 1 in Building A, Phase 2 (Building A/2), or the pyramidal weights found in the deep trench AV 129.

### *Doughnut-shaped Loom Weights*

Doughnut-shaped loom weights are c. 1.00–2.00 cm wider in diameter than in height. Such weights made of unfired clay are common in Trans-

jordan from the Iron Age (9<sup>th</sup> cent. BCE) to the Persian period (5<sup>th</sup> cent. BCE; Boertien 2013, 258). The doughnut-shaped loom weights described here comprise the 'classical' doughnut-shape (26 pieces) as well as a group of spherical doughnut-shaped weights (3 pieces), and a group of bi-conical weights (2 pieces).

26 doughnut-shaped loom weights made of unfired clay were found lying in a row in Room 1 in Building A/2 next to the wall W11690, and therefore belonged to the same loom (see *Chap. 1.3.2*; in L11687: TZ 113578, TZ 113713, TZ 113546, TZ 113570, TZ 113575, TZ 113566, TZ 113567, TZ 113569, TZ 113577, TZ 113544, TZ 113547, TZ 113542, TZ 113576, TZ 113545, TZ 113548, TZ 113550, TZ 113572, TZ 113543, TZ 113551, TZ 113571, TZ 113574, TZ 113565, TZ 113541, TZ 113549, in L11671. TZ 113713 and in L11691 TZ 113444; *Pl. 16.1g–j*; *16.2a–d*). These weights are all approx. 2 cm wider than high, resulting in the significant doughnut shape. The maximum diameter is 9.80 cm, the minimum diameter 7.40 cm, the total weight of all loom weights is 6112.00 gr, the average per weight is 235.08 gr. The perforation is round and ranges from a diameter of 1.30 to 2.30 cm. Some perforations are off-centre rather than in the middle of the object. The weights are of a similar shape and size, and the consistency of the clay is also very alike. The 26 loom weights are reminiscent of the pieces found at Tell er-Rumeith (Boertien 2015, 265 fig. 8. 7) in layer VI/ VII (9<sup>th</sup> and 8<sup>th</sup> cent. BCE), and their average weight is 243 gr — very close to that of the pieces from Tall Zar'a (Boertien 2015, 266). The looms from Khirbat al-Mudayna (Iron Age IIC) are of a comparable average weight (248 gr) and size (Boertien 2013, 201–202 Fig. 8, 17; 203 Fig. 8, 18; 207 Fig. 8, 23). At Jawa, similar loom weights were found, but somewhat larger in size and weight (Daviau 2002, 194–196, 260 pic. 2.150:1–7), this also applies to those from Tell el-Mazar, stratum VI–III (8<sup>th</sup>–6<sup>th</sup> cent. BCE; Boertien 2013, 183. 169 pic. 7.19; Yassine 1988, 85 pl. 18: 1–3), and Tell Deir

‘Alla (van der Kooij – Ibrahim 1989, 98 pic. 68). Also worth mentioning are the loom weights from Tell Abu al-Kharaz, which are comparable to those at Tall Zar‘a, as indeed is the entire inventory of the room where the loom was located (phase XIV, Iron Age IIB; Fischer 2013, 206 pic. 187A). Chronologically, the doughnut-shaped weights fit well into the range of objects dating from the 9<sup>th</sup> to 6<sup>th</sup> cent. BCE.

The closest comparisons to the Tall Zar‘a doughnut-shaped loom weights come from the highlands of Transjordan, from sites like Tell er-Rumeith and Khirbat al-Mudayna. Generally, woollen textiles were produced using lighter loom weights, because wool needs a lighter weight than any other natural fibre to stretch the warp (Boertien 2015, 267). According to Boertien (2015, 266–267), the average weight during the Iron Age II in the highlands was usually between 300 and 400 gr, which is lower than in the Jordan Valley (see above). Thus, the processing of wool in the highlands was given preference over the processing of plant fibres (Boertien 2015, 267 footnote 9 with further literature). In the Jordan Valley, flax seeds have been excavated at Tell Deir ‘Alla, phase IX (Iron Age IIB), and evidence for hemp fibre was also found (van der Kooij – Ibrahim 1989, 34–36). It is, therefore, very likely that in Building A2 (House with the Loom) woollen cloth was produced.

TZ 113823-001, TZ 113824-001/L11838 (*Pl. 16.2e. f*) and TZ 113858-001/L11839 are spherical doughnut-shaped loom weights. With a diameter between 9.30 and 10.20 cm, and a maximum and minimum weight of 598 gr and 324 gr respectively, these loom weights are larger than the doughnut-shaped loom weights discussed above. These spherical doughnut-shaped weights were all found in the same context, and thus most likely belonged to the same loom, however, no further loom weights were found. The comparison for this specific type of weight comes from Tell el-Mazar (stratum III, stratum II, 7<sup>th</sup>–5<sup>th</sup> cent. BCE; Boertien 2013, 168 fig. 7.18; 176 fig. 7.27).

TZ 114401-001/L12075, TZ 114445-001/L11706 and TZ 114189-001/L11932 (*Pl. 16.2g–i*) are bi-conical loom weights, which, like the doughnut-shaped weights, occur throughout the Iron Age and the Hellenistic period. The weight of these loom weights varies, with TZ 114189-001 weighing 134.30 gr and TZ 114401-001 weighing only 55.26 gr. There is a bi-conical loom weight from Tell al-Fukhar from the Hellenistic period (Westergaard Jensen 2015, 355, pl. 212, 3), but that piece

is much larger than those from Tall Zar‘a. Found together with TZ 114189-001 in the fill of silo Inst11755, L11932 (see *Chap. 3.3*) was the cylindrical weight TZ 114188-001/L11932, which, because of its larger size and weight is likely to be older than TZ 114189-001.

### *Cylindrical–spherical Loom Weights*

Three cylindrical loom weights were uncovered at Tall Zar‘a. TZ 114186-001/L11889 (*Pl. 16.2j*), TZ 114187-001/L11889 and TZ 114188-001/L11932 (*Pl. 16.2k*) are of similar size, c. 5 x 6 cm, and weight, taking into account that TZ 114187-001 is broken. Comparable loom weights of the same type (combination of cylindrical and spherical shape) come from Tell el-Mazar, stratum III (late 7<sup>th</sup> cent. to 500 BCE), though these are slightly larger and heavier (Boertien 2013, 168 fig. 7.18). They continue into the Persian period with a slightly smaller size and lighter weight (stratum II; Boertien 2013, 176 fig. 7.27). All cylindrical loom weights were found together in the fill of silo Inst11755 (see *Chap. 3.3*); here also the bi-conical weight (TZ 114189-001) was uncovered (see above). All of these weights were probably part of the same loom (see *Chap. 1.3.2*).

### *Spherical Loom Weights*

Five spherical loom weights were identified with diameters of between 3.00 and 6.80 cm, and weighing between 15 and 193 gr (TZ 113441-001/L11675; TZ 114755-001/L11814; TZ 114206-001/L11895, *Pl. 16.2l*; TZ 114284-001/L11924, *Pl. 16.2m*; TZ 114729/L11924). TZ 113441-001 is the only fired loom weight, whether accidentally or not cannot be decided. Small, spherical loom weights are common in the Hellenistic period and were also found at Tell el-Mazar, stratum I (Boertien 2013, 180 fig. 7.3.2; 255).

### *Pyramidal Loom Weights*

Seven loom weights of unfired clay belong to the group of pyramidal loom weights: TZ 113859-001/L11710 (*Pl. 16.3a*), TZ 113885-001 and TZ 113886-001/L11809 (*Pl. 16.3b*), TZ 113967-001/L11817, TZ 113965-001 (*Pl. 16.3c*), TZ 113966-001 and

TZ 113969-001/L11818 (see *Chap. 1.2*). Their height is between 9 and 10 cm and the average weight is 327 gr.

At Tell el-Mazar comparable pyramidal loom weights to those at Tall Zar'a occur starting from the Persian period (stratum II)/ early Hellenistic period (stratum I, 4<sup>th</sup> cent. BCE), however their weight is about half or less than of the ones found at Tall Zar'a (147 gr) (Boertien 2013, 180–186). A closely comparable, unburnt pyramidal loom weight from Tell el-Fukhar dates to the Iron Age IIC, but its weight is not mentioned in the publication (Westergaard Jensen 2015, 353, pl. 211, 6). At Tell er-Rumeith one closely comparable, unburnt pyramidal loom weight was excavated dating to the Iron Age IIB (stratum VIB, c. 770–730 BCE; Boertien 2015, 267, fig. 810); weighing only 179 gr, it is lighter than those from Tall Zar'a. Other pyramidal loom weights from Jordan have been found at Pella, of Hellenistic date (McNicoll 1992, pl. 79b). At Tell Hesban, pyramidal loom weights were found in layers of stratum 13 (120–193 CE) and stratum 14 (63 BCE to 130 CE; no weights given), indicating

that this shape continued on into the Roman period (Platt–Ray 2009, 182–186).

In summary, pyramidal loom weights from the Iron Age IIB are generally uncommon (Boertien 2015, 267), but they become more abundant in the Iron Age IIC (7<sup>th</sup> and 6<sup>th</sup> cent. BCE), and Persian period (5<sup>th</sup> cent. BCE), a tendency that can be observed across the entire southern Levant (Boertien 2013, 257). The best comparisons for the pyramidal loom weights from Tall Zar'a point to the period between the Iron Age IIC and the Hellenistic period. However, the weights of Tall Zar'a are much heavier and thus differ significantly from any other comparable loom weights. The difference in weight could also be the result of a different weaving technique or a variation in the layout of the loom.

The seven pyramidal loom weights were found in very close proximity to one another (L11710, L11809, L11817, L11818 in AV 129) and therefore would most likely have belonged to the same loom. Locus L11818 contained a stamped amphora handle dating to the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE (see *Chap. 11: Cat. 11.8*).

### 16.3. Spatulas

Spatulas were used to separate threads to weave different coloured patterns while the fabric was on the loom. Spatulas are very thin, pointed tools made of bone (animal ribs) with an elongated and flat shape, about 10.0 to 16.0 cm long, 1.5 to 2.0 cm wide and 0.1 to 0.2 cm thick. Most spatulas have a sharply pointed end and their surfaces are very smooth (Cecchini 2000, 223; Boertien 2013, 72). Spatulas differ from shuttles in their form, as spatulas are straight and pointed, whereas shuttles are waisted or have an opening at one end to hold the thread.

Such spatulas are common in the Iron Age but at Tell Abu al-Kharaz they already occur in the Early Bronze Age (Fischer 2013, 292–293). Bienkowski (1995, 83) indicates that spatulas in Transjordan have been found from the Bronze Age to the Hel-

lenistic period; at Tell Hesban, they range from the Iron Age through the late Islamic period (14<sup>th</sup>–15<sup>th</sup> cent.; Platt – Ray 2009, 176). Spatulas are, therefore, not distinctive chronological markers.

TZ 114980-001/L12011 (*Pl. 16.3d*) can be identified as a spatula on the basis of its pointed end and its thinness. The piece has a particular style of pointed end which does not find close comparisons. Similar finds come from Tell er-Rumeith (Boertien 2015, 268 fig. 8.11: a–c; 269 fig. 8.12), Tell Hesban (Platt – Ray 2009, 177: fig. 11.8: 2, 3) and Tawīlān (Iron Age/ Persian; Bienkowski 1995, 83–84; 299 fig. 9.10:14; 340 fig. 9. 57). Unfortunately, spatula TZ 114980-001 does not come from any context that could be associated with other objects of textile processing.

## 16.4. Stone Rings

TZ 113205/L11591 (*Pl. 16.3e*), TZ 113479-001/L11592 (*Pl. 16.3f*), TZ 114213-001/L11860 (*Pl. 16.3g*) and TZ 114173-001/L11890 (*Pl. 16.3h*) can be attributed to the group of stone rings. Stone rings are ascribed various uses, which are often based solely on morphology and therefore often remain vague. Among the others, stone rings were often seen in connection with textile processing, which is why they are also listed in this chapter, in addition to *Chap. 12*: Daviau (2002, 203–206) suggested that smaller stone rings (8–12 cm) could have served as loom weights. In contrast, the larger stone rings, measuring 14–24 cm, could have served different purposes such as weights or net sinkers, a purpose also mentioned by Westergaard Jensen (2015, 360).

A useful way to identify the usage of stone rings is use-wear analysis. Use-wear analysis on TZ 113205-001 by Meller (see *Chap. 19*) has revealed that this doughnut-shaped stone ring was

most probably used as the fly wheel of a pump-drill or crank-drill or the spacer of the bearing of a potter's wheel. It has turning grooves, and such traces would not originate from use as a loom weight. The best comparison for the shape of TZ 113205-001 comes from Tell el-Fukhar, dating to the Iron Age or Hellenistic period (Westergaard Jensen 2015, 360, pl. 216, 8, 9).

No use-wear analysis has been carried out on TZ 113479-001, TZ 114213-001 and TZ 114173-001. TZ 113479-001 finds its best morphological comparisons among the medium and large stone rings from the Iron Age at Tall Jawa (Daviau 2002, 261 fig. 2.158, 2.159, 2.161:3). At Tell el-Mazar, a number of stone rings were found, which were made of gypsum and limestone dating to the late Iron Age and Persian period (Boertien 2013, 161–164). The stone rings TZ 114213-001 and TZ 114173-001 are too fragmented to draw comparisons. TZ 113205-001 and TZ 113479-001 were found together in pit 11505/1595/11591 along with finds dating to between 205 and 146 BCE (see *Chap. 1.1*).

## 16.5. Catalogue

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wh (cm)	Comments	Comparisons	Plate
11585	TZ 112913-001	spindle whorl	stone/reddish	4.1	1.4					complete; globular to doughnut-shaped, central round perforation	Tell Rumeith: Boertien 2015, 216 fig. 8.1, 273	
11641	TZ 113418-001	spindle whorl	stone/white	2.4	1.9	0.7	15.00			complete; conical rounded; central regular perforation	Deir Alla: van der Kooij/Ibrahim 1989, 101: 145, 101, 102; Tell Jawa: Daviau 2002, 259: fig. 2.149:1-2; Tell Rumeith: Boertien 2015, 260, fig. 8.1: 5, 7, 8; Tell Hesban: Platt-Ray 2009, 173: fig. 11.5:8-11	16.1e
11671	TZ 113713-001	loom weight	clay, unbaked	6.40			128.00			heavily fragmented; doughnut-shaped	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar, Boertien 2013: 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.1g
11675	TZ 113441-001	loom weight	clay, burnt	3.00	1.90	0.9	15.00			slightly broken, spherical	Khirbat al-Mudaya: Boertien 2013, 180, fig. 7.3.2	
11687	TZ 113541-001	loom weight	clay, unbaked	9.80	8.40	c. 2.00	621.00			complete; doughnut-shaped	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.1h
11687	TZ 113542-001	loom weight	clay, unbaked	7.70	6.40		209.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.1i

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11687	TZ 113543-001	loom weight	clay, unbaked	8.30	5.90	1.60	273.00			fragmented; doughnut-shaped	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113544-001	loom weight	clay, unbaked	7.50	6.00	1.60	228.00			fragmented; doughnut-shaped	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113545-001	loom weight	clay, unbaked	8.00	6.50	1.70	253.00			complete; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113546-001	loom weight	clay, unbaked	6.70	4.60	1.60	191.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11687	TZ 113547-001	loom weight	clay, unbaked	7.50	6.50	1.70	233.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113548-001	loom weight	clay, unbaked	8.00	6.00	2.00	293.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.1j
11687	TZ 113549-001	loom weight	clay, unbaked	9.90	6.10	2.30	343.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.2a
11687	TZ 113550-001	loom weight	clay, unbaked	8.10	4.80	1.80	228.00			complete; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.2b

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11687	TZ 113551-001	loom weight	clay, unbaked	8.30	5.80	2.20	225.00			complete; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113565-001	loom weight	clay, unbaked	8.60	6.20	2.30	366.00			broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.2c
11687	TZ 113566-001	loom weight	clay, unbaked	7.40	5.40	1.90	266.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	16.2d
11687	TZ 113567-001	loom weight	clay, unbaked	7.40	5.00	1.80	181.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11687	TZ 113569-001	loom weight	clay, unbaked	7.40	6.40	1.80	163.00			complete; doughnut-shape; the perforation is not centered	Tell el Rumeith: Boertien 2015: 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113570-001	loom weight	clay, unbaked	7.30	5.40	1.80	210.00			slightly broken; doughnut-shape; perforation is slightly off-centre	Tell el Rumeith: Boertien 2015: 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113571-001	loom weight	clay, unbaked	8.30	5.80	c. 2.00	247.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015: 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113572-001	loom weight	clay, unbaked	8.10	6.20	2.10	291.00			broken; doughnut-shape	Tell el Rumeith: Boertien 2015: 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	With (cm)	Comments	Comparisons	Plate
11687	TZ 113574-001	loom weight	clay, unbaked	8.40	6.80	2.20	258.00			broken; doughnut-shape; perforation slightly off- center	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113575-001	loom weight	clay, unbaked	7.30	6.20	1.50	235.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113576-001	loom weight	clay, unbaked	7.80	4.60	1.40	163 frag.			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11687	TZ 113577-001	loom weight	clay, unbaked	7.40	5.50	1.90	167.00			slightly broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wh (cm)	Comments	Comparisons	Plate
11687	TZ 113578-001	loom weight	clay, unbaked	6.30	4.60	2.00	116 frag.			broken; doughnut-shape	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11691	TZ 113444-001	loom weight	clay, unbaked							broken; doughnut-shape		
11706	TZ 114445-001	loom weight	clay, unbaked	6.00	3.00	1.30	90.67			bi-conical		16.2h
11710	TZ 113859-001	loom weight	clay, unbaked		5.00		265.00	8.9	6.0	complete; pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	16.3a
11733	TZ 113968-001	loom weight	clay, unbaked		2.70		46.60	5.0	3.2			
11782	TZ 114197-001	spindle whorl/ ring	stone/gypsum?	1.9	0.5		2.33			complete; irregular ring, rounded on both sides; tool marks visible on surface	Beth-Shean: Yahalom-Mack-Mazar 2006, 475: fig. 13.3: 9, 476: no. 5, photo 12.12	16.1d
11809	TZ 113885-001	loom weight	clay, unbaked	5.80			209.67			broken; pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	
11809	TZ 113886-001	loom weight	clay, unbaked			0.90	303.88	9.5	5.2	complete; pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	16.3b
11814	TZ 114755-001	loom weight	clay, unbaked	5.70	4.60	1.60	56.00			spherical	Boertien 2013, 180, fig. 7.3.2	
11814	TZ 114077-001	spindle whorl	limestone	3.5	1.1	0.7	16.64			complete; globular to doughnut-shaped, central round perforation; see <i>Chap. 12</i>	Tell Rumeith: Boertien 2015, 216 fig. 8.1, 273	

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11817	TZ 113967-001	loom weight	clay, unbaked				319.00	9.7	5.5	four figts. of a pyramidal weight	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	
11818	TZ 113965-001	loom weight	clay, unbaked			1.20	406.00	9.8	6.1	almost complete, pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	16.3c
11818	TZ 113966-001	loom weight	clay, unbaked			1.60	346.00	8.6	6.4	almost complete, pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	
11818	TZ 113969-001	loom weight	clay, unbaked		3.50		113.00	6.5	5.3	fragmented; pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	
11835	TZ 113874-001	spindle whorl	ceramic	3.8	0.7	0.8	11.43			complete; discoid, irregularly rounded; two round perforations, centred	Pella: Mc Nicoll 1992, pl. 46: 2; Tell el Fukhar: Westergaard Jensen 2015, 213: 5	16.1a
11838	TZ 113823-001	loom weight	clay, unbaked	9.30	7.00		556.00			spherical to doughnut-shaped; small perforation max. 1 cm		16.2e
11838	TZ 113824-001	loom weight	clay, unbaked	10.20	7.20		324.00			spherical to doughnut-shaped; small perforation max. 1 cm		16.2f
11838	TZ 113860-001	spindle whorl	ceramic	4.5	0.6		7.95			fragmented; discoid, almost rounded; central perforation; traces of fire on one side	Tell el Fukhar: Westergaard Jensen 2015, 210: 4-8, 212: 1-2, 213: 3, 6; Tell Jawa: Daviau 2002, 258: fig. 2.144:1-7; Tell Rumeith: Boertien 2015, 261, fig. 8.2: 1-3	16.1b
11839	TZ 113858-001	loom weight	clay, unbaked	10.10	5.90	1.00	598.00			spherical to doughnut-shaped; small perforation max. 1 cm		

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
11857	TZ 114723-001	loom weight	clay, unbaked		7.30		199.45		5.3	fragmented; pyramidal	Tall al Fukhar: Westergaard Jensen 2015, pl. 211, 6; Tell el-Rumeith: Boertien 2015, 267, fig. 810; Tell el Mazar: Boertien 2013, 184, 180 fig. 7.32	
11889	TZ 114186-001	loom weight	clay, unbaked				188.40	5.5	5.6	complete; cylindrical-spherical	Tell el Mazar: Boertien 2013, 168 fig. 7.18m; 176 fig. 7.27	16.2j
11889	TZ 114187-001	loom weight	clay, unbaked				104.56	5.2	5.8	broken; cylindrical-spherical	Tell el Mazar: Boertien 2013, 168 fig. 7.18m; 176 fig. 7.27	
11895	TZ 114206-001	loom weight	clay, unbaked	6.80			193.00			spherical	Boertien 2013, 180, fig. 7.3.2	16.2l
11895	TZ 114739-001	loom weight	clay, unbaked		8.00	2.80	332.00	8.7		heavily fragmented		
11924	TZ 114284-001	loom weight	clay, unbaked	9.70	6.60		479.75			spherical		16.2m
11924	TZ 114729-001	loom weight	clay, unbaked							heavily fragmented, probably spherical		
11929	TZ 114381-001	loom weight	stone, basalt		5.90	4.70	510.00	10.9	6.0	fragmented; doughnut-shaped stone ring	Tell el Fukhar: Westergaard Jensen 2015, pl. 216, 8, 9; Tall Jawa: Daviau 2002, 261 fig. 1.157-4; Tell Mazar: Boertien 2013, 163 fig. 7.9 no. 334	
11932	TZ 114188-001	loom weight	clay, unbaked				266.73	5.9	6.3	complete; cylindrical-spherical	Tell el Mazar: Boertien 2013, 168 fig. 7.18m; 176 fig. 7.27	16.2k
11932	TZ 114189-001	loom weight	clay, unbaked	5.80	4.50		134.30			Intact; bi-conical	Tell al-Fukhar: Westergaard Jensen 2015, 355, pl. 212, 3	16.2i
11937	TZ 114222-001	spindle whorl	ceramic	4.3	0.7	0.4	8.41			fragmented; discoid, almost rounded, heavily broken at the edges; central perforation	Tell el Fukhar: Westergaard Jensen 2015, 210: 4-8, 212: 1-2, 213: 3, 6; Tell Jawa: Daviau 2002, 258: fig. 2.144: 1-7; Tell Rumeith: Boertien 2015, 261, fig. 8.2: 1-3.	16.1c
12011	TZ 114980-001	spatula	bone		0.3		9.44	14	2.2	fragmented, matching frags.; carefully worked and smoothed; very flat; very pointed end, on the other side broken		16.3d
12075	TZ 114401-001	loom weight	clay, unbaked	5.20		1.10	55.26			50% preserved; bi-conical	Tell al-Fukhar: Westergaard Jensen 2015, 355, pl. 212, 3	16.2g
12076	TZ 114426-001	loom weight	clay, unbaked		4.70		226.40	7.3	5.3	heavily fragmented; most likely doughnut-shaped		

Locus	Find number	Object	Material	Dia. (cm)	Th.	Perf. (cm)	Weight (gr)	L (cm)	Wth (cm)	Comments	Comparisons	Plate
12155	TZ 114560-001	spindle whorl	stone/ soapstone	2.4	0.7	0.7	5.40			complete; conical, slightly flattened on one side; see <i>Chap. 12</i>	Deir Alla: van der Kooij/Ibrahim 1989: 101: 145, 101, 102; Tell Jawa: Daviau 2002, 259: fig. 2.149:1-2; Tell Rumeith: Boertien 2015, 260, fig. 8.1: 5, 7, 8; Tell Hesban: Platt – Ray 2009, 173: Fig.11.5:8-11	16.1f
12162	TZ 114571-001	loom weight	clay, unbaked	7.60	5.70		191.35			fragmented; doughnut- shaped		
12176	TZ 114722-001	loom weight	clay, unbaked	5.80		1.40	224.00		5.7	fragmented, doughnut- shaped	Tell el Rumeith: Boertien 2015, 265 fig. 8.7; Khirbat al-Mudayna: Boertien 2013, 202 fig. 8.17, 203 fig. 8.18, 207 fig. 8.23; Tell Abu al Kharaz: Fischer 2013, 206 fig. 187A; Tell Jawa: Daviau 2002, 260 fig. 2.150:1-7; Tell el Mazar: Boertien 2013, 169 fig. 7.19; Tell Deir Alla: van der Kooij/Ibrahim 1989, photo 68	
11591	TZ 113205-001	stone ring: fly wheel of a pump-âdrill or crank-drill; spacer of bearing of a potter's wheel	basalt	11.70	3.10		598.00			complete; doughnut- shaped	Tell el Fukhar: Westergaard Jensen 2015, pl. 216, 8, 9; Tall Jawa: Daviau 2002, 261 fig. 1.157:4 with the same diameter; Tell Mazar: Boertien 2013, 163 fig. 7.9 no. 334	16.3e
11592	TZ 113479-001	stone ring	basalt	16.00	10.60		941.00			broken; cylindrical stone ring		16.3f
11860	TZ 114213-001	stone ring	basalt	10.40	3.80		512.00			broken; irregular ring; bottom is straight, surface is slightly convex	Tall Jawa: Daviau 2002, 261 fig. 2.158, 2.159, 2.161:3	16.3g
11890	TZ 114173-001	stone ring	basalt	6.40	2.50		70.30			heavily fragmented part of a ring		16.3h

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Plate 16.1: Spindle whorls, scale 1:2 (a-c), scale 1:1 (d-f). Doughnut shaped loom weights (g-j), scale 1:3

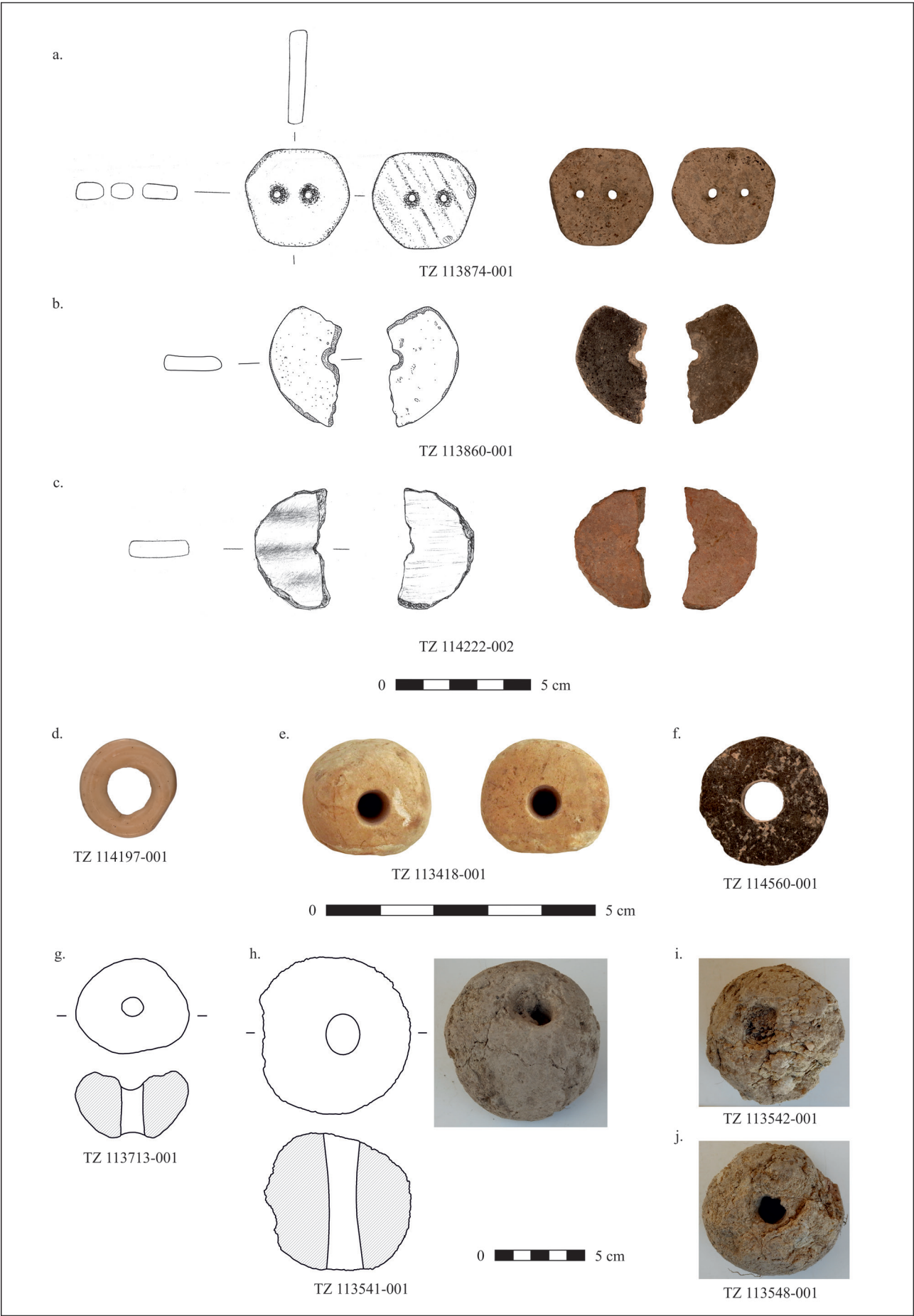


Plate 16.2: Loom weights: doughnut shaped (a-d), spherical doughnut-shaped (e, f), bi-conical (g-i), cylindrical-spherical (j, k), spherical (l, m), scale 1:3

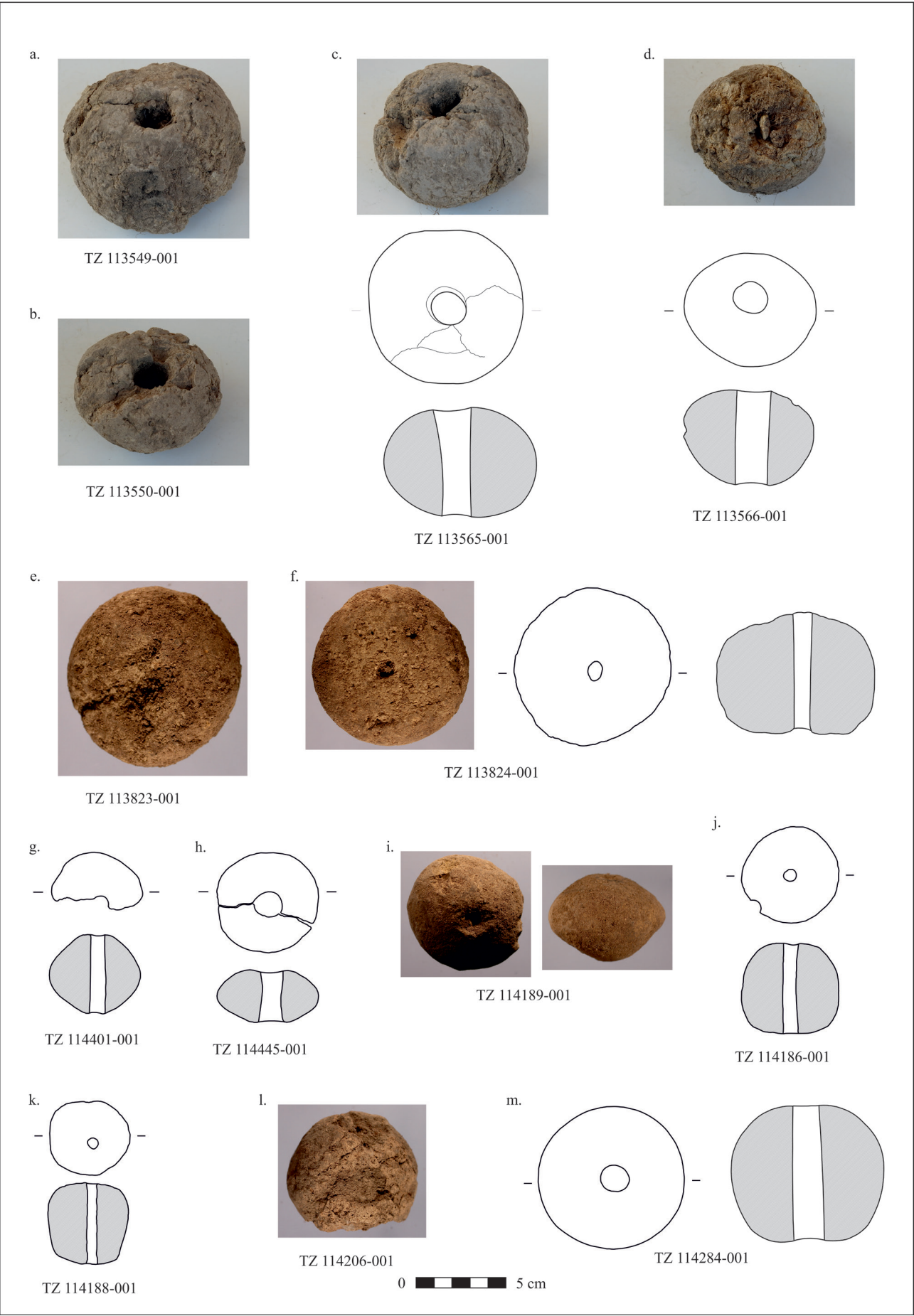
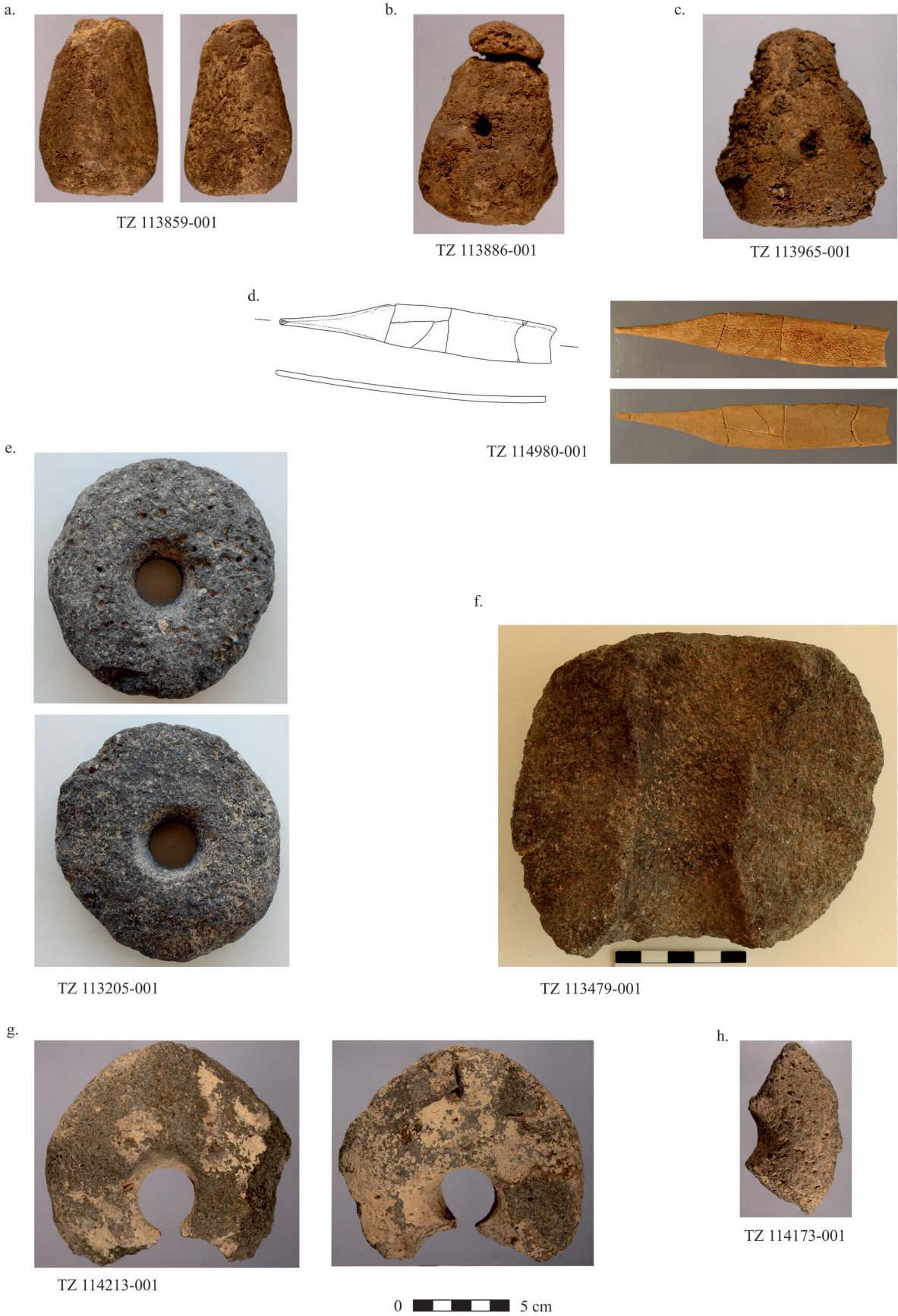


Plate 16.3: Loom weights: pyramidal (a-c). Spatula (d). Stone rings (e-h), scale 1:3





## 17. MISCELLANEOUS SMALL FINDS

by Katharina Schmidt

### 17.1. Terracotta Figurines

Three fragments of terracotta figurines were found during the 2018–2019 seasons at Tall Zar'a, two anthropomorphic heads (TZ 114202-001, *Pl. 17.1a*; TZ 114203-001, *Pl. 17.1b*), and one theomorphic head of a lion (TZ 112816-001, *Pl. 17.1c*). The terracotta figurines from Tall Zar'a were all made by employing a mould, although irregular impressions indicate that the objects were worked by hand in some parts. The use of a mould was a common technique for making terracotta figurines in the Hellenistic period. The figurines were made in two separate moulds, one for the front side and one for the back side (Higgins 1967, 1–3; 1970, 3–6; Thomson 1963, 38–39). Details such as the hair or face were often retouched and accentuated with a sharp tool (Erlich 2006, 616; see *Pl. 17.1a*). The figurine head TZ 114202-001/L11861 (*Pl. 17.1a*) is heavily worn, the face is blurred and the original surface is not preserved. This could indicate the use of a worn mould, something which can be observed among Hellenistic figurines from Beth-Shean (Erlich 2006, 619–622, no. 1–3). On the back side of the neck of head TZ 114202-001 there are traces of tool marks, which indicate that this side was additionally worked after moulding. Traces of tool marks can also be observed on TZ 114203-001/L11861 (*Pl. 17.1b*). Here the hair style is made by impressing a wedge-shaped tool creating impressions of different sizes. On the upper part of head TZ 114203-001 there are traces of the smoothing of the clay, probably in order to cover the seam line. On the inside of TZ 114203-001 and TZ 112816-001, there are traces of spreading the clay, most likely with a finger. The clay used to make TZ 114202-001 and TZ 114203-001 is of a similar well-levigated consistence and is also a similar orange colour with rounded red inclusions. The clay of TZ 112816-001 differs and has a much brighter colour. At this stage it is not yet possible to decide whether they were made of local clay.

Head TZ 114202-001 represents the head of a woman with a melon type of coiffure, fastened at the back of the head in a loose knot. The middle parting is still visible, no waves of the hair can be identified. The head is solid, and the neck shows

irregular impressions, which suggests that this part of the terracotta may have been formed by hand, or at least reworked (see description in *Cat.*). According to Thompson (1963, 38–39) the melon coiffure occurs in the late 3<sup>rd</sup> and 2<sup>nd</sup> cent. BCE. In general, the melon coiffure is not common among terracotta heads found in Cisjordan (Erlich 2006, 617); comparable female heads with this type of coiffure, however, come from Tel Dor, and date (using context and style) to the 2<sup>nd</sup> cent. BCE (Erlich 2010, 173: 16). Another closely comparable example comes from Beth-Shean and dates to the 2<sup>nd</sup> cent. BCE (Erlich 2006, 620 fig. 18.1: 2; 621 photo 18.2). That figurine, however, has a hollow head. According to Erlich (2006, 617), the rounded face and the specific hair style are reminiscent of heads of girls, such as “Tanagra” children, making it most likely that TZ 114202-001 is the head of a young girl. Another closely comparable figurine head, also in the Greek style, comes from Failaka/Ikaros (Mathiesen 1982, 42, fig. 28). This head also depicts a girl with melon coiffure. Like TZ 114202-001 it is solid and about the same size. The figurines from Ikaros can be attributed to the late 3<sup>rd</sup> to 2<sup>nd</sup> cent. BCE (Mathiesen 1982, 73). Based on style, TZ 114202-001 can be assigned to the late 3<sup>rd</sup> and 2<sup>nd</sup> cent. BCE, a dating also supported by the related finds in this context (see *Chap. 1.2*).

The face and parts of the hairstyle of TZ 114203-001 are preserved, but the surface is heavily worn. The piece has an elongated face, almond-shaped eyes and curls (see *Cat.*). It is not possible to decide whether the head is female or male, nor can the pose of the figure be determined. A comparison can be found with a female head from the collection at the British Museum (Acc. No. 1868,0110.696), most likely from Corfu and dated in the 2<sup>nd</sup> cent. BCE. In particular, the manner in which the curls were cut is very similar to TZ 114203-001, as is its elongated head. Comparisons for similar incisions can be found among terracotta figurines from the British Museum collection wearing thick, stippled wreaths, dating to the 3<sup>rd</sup> to 2<sup>nd</sup> cent. BCE (British Museum collection, Acc. No. 1948,0502.48, 1856,1001.40.a–

b). It is, however, unlikely that TZ 114203-001 had a wreath, as no traces of headgear are preserved. Earlier comparisons (5<sup>th</sup> cent. BCE) come from Sicily, however the way the locks were formed differs from TZ 114203-001 (Higgins 1969, 157: 1150: 161:1183, 1172). Among these early figurines the seated female figurine from Gela, in particular, shows similarities with TZ 114203-001 with regard to the detached hairstyle and the lack of headgear (Higgins 1969, 157: 1150). The orange colour of the clay is striking and clearly different from the lighter clay colour of the other two terracottas.

TZ 112816-001/L11500 (*Pl. 17.1c*) depicts the broken head of a lion, or perhaps of a dog (see *Cat.*). This head could have been part of a whole lion figure, or it may have been part of a figure showing Kybele with a lion at the side, riding on a lion or riding on a chariot pulled by lions, which is common in later iconographic depictions (Romano 1995, 22 with further literature). Comparisons for this type come, for example, from Gordion (Romano 1995, Pl. 18: 57). Stylistically, even a late Roman date

cannot be excluded (see therefore the dog's head from Beit Nattif, Lichtenberger 2016, 167).<sup>101</sup>

The two fragments of the anthropomorphic heads, TZ 114202-001 and TZ 114203-001, were found in the same context (L11861), in a deposit of the deep trench in AV 129 (see *Chap. 1.2*). They find their best stylistic comparisons in the late 3<sup>rd</sup>/2<sup>nd</sup> cent. BCE. The same deposit also contained a coin of Antiochus IV (175–164 BCE; see *Chap. 18: Cat. 18.2*). The accumulation of these finds in this locus were most probably deposited at the same time in the Hellenistic period, most likely in the 2<sup>nd</sup> cent. BCE. With regard to the terracotta figurines and moulds found in Failaka, Mathiesen (1982, 73) suggests that they could have been imported in ships that were also carrying Rhodian amphorae. A similar case could be supposed for the finds from Tall Zar'a (see *Chap. 11*). The head TZ 112816 comes from a mixed context at the surface. Since the figurines from Tall Zar'a were not found in an architectural context, considerations about their function cannot be made.

## 17.2. Glass Rod

TZ 112847-001/L11503 (*Pl. 17.2a*) is a broken glass rod of translucent dark blue colour. A large number of round bubbles are visible at the end, as well as horizontal streaks which result from drawing the viscous glass in two directions. Glass

rods were used for secondary glass production, for applying trail decorations. However, this kind of rod could also have been used as an applicator for cosmetics or medicines (Spear 2001, pl. 49: 636).

## 17.3. Mould

The mould TZ 113366-001/L11631 (*Pl. 17.2b*) is a flat cuboid, 1.8 cm high, made of steatite. The upper face is flattened and polished and has recesses for the objects to be cast as well as two peg holes. The lower face is only slightly worked. On diagonally opposite corners are two round holes. One corner is almost completely broken off, probably caused by drilling the hole, because a second hole (Dia. 1 cm) was drilled immediately next to it (1 cm away). The hole on the opposite corner is slightly broken and therefore not exactly round. The holes were need-

ed for the attachment of a second stone mould or plate, which would have been held in place by using a peg.<sup>102</sup> The two recessed shapes, which are engraved in the model area, each have an inflow, which are a max. of 0.4 cm wide. The recesses are not very deep, a max. of 0.2 cm, the objects to be produced were therefore very fine. One of the recesses is for a 7-cm-long pin with a widened end. The other shape describes a ring with an internal right-angled cross. This shape could have been used to make a pendant or patch that was later applied

101 I would like to thank Achim Lichtenberger for this reference.

102 For the casting process see Higgins 1961, 16.

to fabric. The liquid metal was poured directly into the openings – steatite is a very suitable heat-resistant material (Higgins 1961, 18). Higgins (1961, 18) points out that precious metal was rarely cast in moulds due to the loss of material; what material was poured into the mould by the Tall Zar‘a metalsmith has yet to be determined.

The best comparison comes from Tall Zar‘a itself, and comprises a slightly larger stone (not steatite) mould with two diagonal peg holes of the same

size, with recesses for different types of objects that date to the early Roman period (Häser – Schmidt 2019: 197, 56). At Ashdod, a ceramic jewellery mould was uncovered dating to the 1<sup>st</sup> cent. BCE (Dothan – Freedman 1967, 65 fig. 12, 6, pl. 10: 11). At Serepta, a stone mould from the Iron Age was found with recesses on both sides (Pritchard 1975, fig. 62: 5). At Samaria, two fragments of two different moulds were found (Crowford et al. 1957, 467: 2, 3).

## 17.4. Seals

### 17.4.1. Stamp Seal with Caprines

The stamp seal TZ 114329-001/L11898 (*Pl. 17.3a*) is conical and made of greenish-grey steatite, which is easy to work. The perforation must have been drilled from two sides, because the two holes do not join each other exactly (see *Pl. 17.3a* cross section). The pattern of the rounded scratch marks around the perforation suggests the use of a hand-held scoring device, made of metal (see *Chap. 19*). The perforation was intended for hanging the seal, and use-wear analysis shows that a band was pulled through the hole which would have been used for suspension or similar. Maybe it hung from the belt or garment of one of the household members; this underlines that seals were personal belongings (see *Chap. 19.4*).

The image on the seal depicts several caprines and a tree. Two caprines are standing on a baseline, flanking the central tree, which is indicated by fine, short, horizontal and vertical incised lines. These two caprines each face the tree and suckle their young. Above their backs are two smaller, striding caprines, one facing left and the other facing right. The whole image is made of notched triangular lines. The trunk of the tree is wide with parallel incised lines as interior detail and two branches form a V above it with the leaves of the tree indicated by simple vertical lines. The face and legs of the young animals and the herding animals are notched from simple, thin triangular lines.

The stylistic group of triangular notched seals occurs often in Trans- and Cisjordan, and also among seals from the Amuq-region (Meyer 2008, 29–30); it is also common on Neo-Assyrian and Neo-Babylonian cylinder seals from Mesopotamia (Boehmer 1975, 340–344).

The motif of the suckling mothers with their young can be found among numerous examples on seals from Cisjordan (Shuval 1990, 105–110), Northern Syria, Mesopotamia (Keel 1980, 89–140), and Egypt (Keel 1980, 54–89). Its development and meaning has been comprehensively discussed by Keel (1980). According to Keel (Keel et al. 2017, 476) the combination of suckling young, herd animals and trees, as found on TZ 114329-001, is unusual, because on other seals, scorpions are normally depicted rather than herding caprines. Depictions of lactating caprines can be traced back to a Northern Syrian/Palestinian tradition starting from the 13<sup>th</sup> cent. BCE. This motif is documented by examples from the early Iron Age in Palestine and somewhat later in northern Syria and was still being used in the 7<sup>th</sup> cent. BCE. With the beginning of the Assyrian influence, bovids replace caprines in the image. The representation of bovids, also lactating, are typical of the Mesopotamian tradition, whereas caprines are a Levantine tradition (Meyer 2008, 281–282). A comparable seal to TZ 114329-001 was found at Tell el-‘Umeiri (Iron Age III; Eggler et al. 2002, 287: 72; Eggler – Keel 2006, 349, 66), however, it is in a different style. Another parallel comes from the citadel in Amman (Iron Age I–IIB), which is of a similar size and simple conoid shape. The depiction and modelling of the herd animals above the back of the main animal is also very similar (Eggler – Keel 2006, 24–25, 24). An almost identical representation and modelling of a caprine with a thrown back head and parallel interior drawing lines is found on a stamp seal from Irbid (Iron Age IIA–B; Eggler – Keel 2006, 173: 4). Another comparison for the motif, but in a different style, is

a round stone seal from Jerusalem that dates from the Iron Age IB to the beginning of Iron Age IIA (Keel et al. 2017, 477: 442). On this seal, a caprine suckling its young, a herd animal and a tree are shown, however not in an antithetical group.

In summary, TZ 114329-001 finds comparisons with seals in Transjordan and in Cisjordan, both in terms of motif and style. Temporally, the motif of the suckling caprine is known since the Iron Age I, but at Tell el-'Umeiri it is found on a seal from an Iron Age III context. TZ 114329-001 was found in Phase 2 of Building A2, which dates to Iron Age IIB, so the seal fits well into the find context; whether it was an old piece cannot be determined (see *Chap. 1.3.2*).

### 17.4.2. Seal TZ 114134-001

The seal TZ 114134-001/L11882 (*Pl. 17.3b*) comprises a four-sided pyramid, with a broken, round perforation at its top. The object is made of hard-fired orange clay, which is strikingly finely levigated and therefore has no inclusions. In addition to the perforation, which is broken, there are two constrictions, the lower forms a deep V-shaped notch, the upper a very deep U-shaped notch. It is thus obvious that the seal was not only fastened using the round perforation at the top, but was carried for a long time by the wrapping of a thread at the upper end and then, probably for a short time (because

it was less worn out) it was fastened close to the stamp surface. This was most likely the case, due to the damage of the perforation. The sealing face consists of a recessed square frame within which three characters, possibly Greek, are inscribed. The characters are ca. 3 mm deep and up to 4 mm wide, but irregular. It is likely that the signs were carved in before firing. However, elongated scoring lines at the bottom of the characters on the stamp surface are clearly visible. This suggests that the stamp image was probably reworked either directly after firing or over time.

A number of clay and limestone seals from Transjordan were published by Kakish (2014), however, a chronological classification of most of these pieces was not established. The seals are made of clay and limestone, none of the published pieces can be directly compared to TZ 114134-001 but individual components are similar: the limestone rectangular stamp seal (no. IR 5601) at the Darat Saraya Museum in Irbid has the same pointed open bracket on the left side as seen on TZ 114134-001 (Kakish 2014, 24 fig. 11). Also the uneven line thickness of the incisions should be emphasized. The round seal JMN 921, which is in the Jordan Museum, has incised dots of the same size as those on TZ 114134-001 (Kakish 2014, 23 fig. 8). The orange colour and the fineness of the clay of TZ 114134-001, as well as its size, can be compared to a seal from Khirbet et-Tireh, which dates to the Byzantine period and is interpreted as a bread stamp (Al-Houdalieh 2016, 274 fig. 5).

## 17.5. Catalogue

Locus	Find number	Object	Material	L (cm)	Th. (cm)	Wth	Weight (gr)	Description (Dimensions in cm)	Comparisons	Date	Plate
11861	TZ 114202-001	figurine	ceramic	2.7	2.1	2.5		orange clay (5YR7/6), faded, fine clay with rounded red inclusions; head of female, perhaps a girl; rounded face with very blurred and worn eyes, nose and ears; the lips are thick and the mouth is straight; hair is worn in the melon-coiffure, the hair is fastened at the back of the head in a loose knot, only the middle parting is preserved; head is heavily worn, traces of tool marks visible on the back side in the area of the neck; the head is solid with a rounded hole at the broken part; cast in a double mould, solid; the neck at the back is retouched using a modelling-tool	Beth-Shean: Erlich 2006, 620 fig. 18.1: 2; 621 photo 18.2; Tel Dor: Erlich 2010, 173: 16; Failaka/Ikaros: Mathiesen 1982, 42 fig. 28	late 3 <sup>rd</sup> to 2 <sup>nd</sup> cent. BCE	17.1a
11861	TZ 114203-001	figurine	ceramic	3.1	2.0	1.6		orange clay (5YR6/8), fine clay with rounded red, and white inclusions, traces of shiny particles; head and parts of the neck of a female or male person, only the face, and parts of the head preserved; elongated face which is broken on the right; most of the eyes are broken, the preserved parts indicate big almond-shaped eyes; the nose is broken, but was wide; thick lips; the ears are broken; the coiffure is clearly separated from the face and consists of irregular wedge-shaped impressions which can be interpreted as curls, incised by a modelling tool; the hairstyle ends just below the ears; no attachment of headgear is visible; cast in a mould; hollow; inside traces of spreading the clay in mould; traces of smoothing on upper part of the head	British Museum collection (Acc. No. 1868,0110.696); Gela: Higgins 1969, 157: 1150	5 <sup>th</sup> cent. BCE; 3 <sup>rd</sup> to 2 <sup>nd</sup> cent. BCE	17.1b

Locus	Find number	Object	Material	L (cm)	Th. (cm)	Wth	Weight (gr)	Description (Dimensions in cm)	Comparisons	Date	Plate
11500	TZ 112816-001	figurine	ceramic	3.5	2.2	1.2		brownish clay (5YR6/4), fine, hard-fired; broken fragment of a head of a lion (or dog?); part of the mane, eyes and head preserved; the muzzle is broken off; upper side of the head furrowed, the eyes are round with pronounced bulges above the eyes; mane is drawn in vertical wavy lines; cast in mould; wall thickness irregular (0.4–0.6 cm); hollow; irregular strokes of a modelling tool	Gordon: Romano 1995, pl. 3: 5, 18: 57; Beit Natif: Lichtenberger 2016, 167	late 5 <sup>th</sup> cent. BCE late 3 <sup>rd</sup> – 2 <sup>nd</sup> cent. BCE	17.1c
11503	TZ 112847-001	rod	glass	2.5	0.4			dark translucent blue colour; not weathered; broken on one side; the original size can thus not be determined	Spear 2001, pl. 49: 636	early Roman?	17.2a
11631	TZ 113366-001	mould	steatite	12.6	7.5	1.8		flat; cuboid; surface with recesses and peg holes flattened and polished; reverse only slightly worked; two round holes on diagonal sides, one corner broken most probably as a result of drilling the hole; on surface two different, shallow (max. 0.2 cm) recesses for casting objects, one recess is for a pin 7.0 cm long, the other is a wheel with internal right-angled cross	Tall Zar' a: Häser-Schmidt 2019, 197: 56; Ashdod: Dothan-Freedman 1967, 65 fig. 12, 6, pl. 10: 11; Serepta: Pritchard 1975, fig. 62: 5; Samaria: Crowford–Crowford et al. 1957, 467: 2, 3	Roman	17.2b
11882	TZ 114134-001	stamp seal	ceramic	4.4	4.4	5.4		hard-fired ceramic (2.5YR 6/6-8); almost completely preserved, broken on one edge; stamping area almost completely preserved; originally pyramidal shape with four sides, pointed tip, which is broken off, but was previously pierced (Dia. 0.3 cm); sides are well smoothed and polished; 1.4 cm above the stamp surface sharp triangular constriction visible on all three preserved sides; 3.5 cm above the stamp area, a wide (0.4 cm), U-shaped, rounded constriction over the only preserved side; stamp image is max. 0.4 cm deep; image area is surrounded by a frame (Wth 0.5 cm), in which three characters are inserted; at the bottom of the characters and the frame elongated tool marks are visible	Transjordan: Kakish 2014, 23 fig. 8, 24 fig. 11; Khirbet et-Tireh: Al-Houdalieh 2016, 274 fig. 5		17.3b

Locus	Find number	Object	Material	L (cm)	Th. (cm)	Wth	Weight (gr)	Description (Dimensions in cm)	Comparisons	Date	Plate
11898	TZ 114329-001	stamp seal	steatite	Dia. bottom 3.4; Dia. top 2.1	4.4			<p>conoid, very regularly carved, surface smoothed; base with seal image slightly damaged; suspension conoid with round perforation (Dia. 1.1 and 1.2 cm), around perforation round scratch marks; stone shows crazing; greenish-grey colour</p> <p>Base: two caprines on a baseline flanking a tree indicated by fine, short incised horizontal and vertical lines; caprines each face tree and suckle their young; above their backs are two smaller, striding caprines one facing left, the other right; the heads of the two large caprines are slightly thrown back, muzzles directed upwards, front and hind legs are strongly angled; hooves of right animal drawn by two fine lines; U-shaped tails point downwards; muzzles and horns formed by simple lines, the fur is indicated by short scratch lines, which converge centrally into deep line; young animals extend their heads towards the udders of mothers; their front and hind legs are strongly angled</p>	<p>Tell el-'Umeiri: Eggler et al. 2002, 287: 72; Eggler-Keel 2006, 349: 66; Amman: Eggler-Keel 2006, 24–25, 24; Irbid: Eggler-Keel 2006, 173: 4</p>	Iron Age I-III	17.3a

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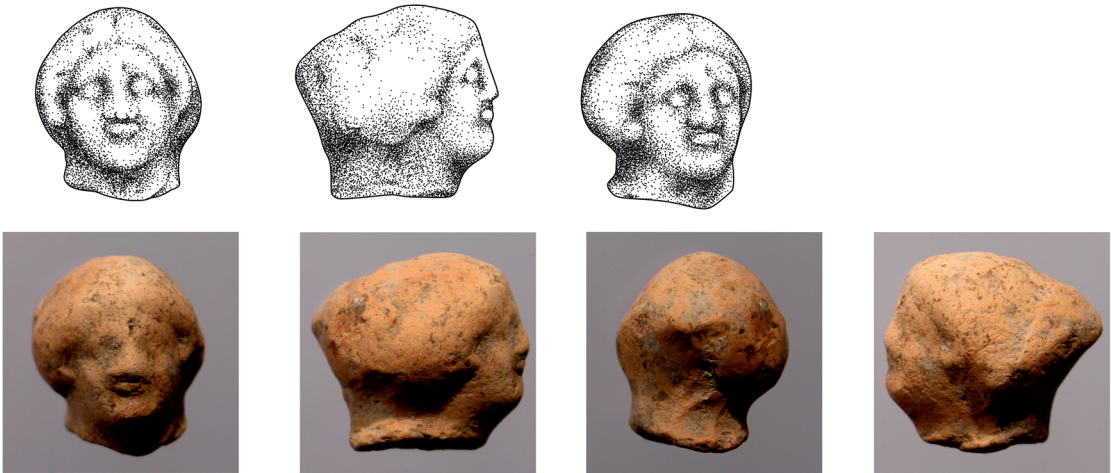
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a.



TZ 114202-001

b.



TZ 114203-001

c.



TZ 112816-001

Plate 17.2: Glass rod (a), scale 3:1. Mould (b), scale 1:2



TZ 114134-001

A horizontal scale bar starting at 0 and ending at 5 cm. The bar is divided into five equal segments by vertical lines. The segments alternate in color: black, white, black, white, and black.





## 18. COINS

by Achim Lichtenberger

### 18.1 Description and Interpretation

During the 2018–2019 excavations of the Gadara Region Project on Tall Zar'a, a total of 39 coins were recorded. With the exception of one silver denarius all of them were bronze coins. Most coins could be identified and at least attributed to a period; only five coins remained uncertain in their identifications. The chronological range of the coins is from Antiochos IV (175–164 BCE) to Valentinianus I (364–367 CE) with significant concentrations in the 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE. Although the total numbers are too small for a robust statistical analysis, some general observations are permissible.

The earliest coins relate to the Seleucid foundation phase of Gadara, which was most likely re-founded under Antiochos IV (Lichtenberger 2017). Several coins from this period come from royal or civic mints on the Phoenician coast, such as Tyre (*Cat. 18.1*) and Akko (Ptolemais) (*Cat. 18.3–4*). A considerable number of the worn coins were attributed to Hellenistic mints because of the fabric of the coins, without closer specification (*Cat. 18.5–16*). Several of them have bevelled edges or swollen flans, typical of Hellenistic coins in the region. Another concentration of find coins were Hasmonean/Herodian coins (*Cat. 18.17–28*). The earliest securely identified can be assigned to Alexander Jannaeus (103–76 BCE), who conquered Gadara.<sup>103</sup> It cannot be ruled out that among the unidentified wreath with script/cornucopiae coins (*Cat. 18.24–26*) there are also earlier coins of John Hyrcanus I (134–104 BCE), but it is clear that the majority of the Hasmonean/Herodian coins belongs to emissions of Alexander Jannaeus. During the rule of Herod the Great (37–4 BCE), Gadara belonged to his kingdom<sup>104</sup> and one coin stems from this ruler (*Cat. 18.28*). A denarius of Antoninus Pius (dated 158/159 CE) is the only coin so far found on Tall Zar'a made of precious metal and it is the only coin of the 1<sup>st</sup> to 3<sup>rd</sup> cent. CE found in the 2018–2019 excavations (*Cat. 18.29*).

Roman denarii are extremely rare in the region, and the find from Tall Zar'a is exceptional (Syon 2015, 63). Apart from the denarius, the Roman period is hardly represented, and only in late antiquity can activity be traced again in the 2018–2019 coin evidence from Tall Zar'a, as attested by the five 4<sup>th</sup> cent. CE coins (*Cat. 18.30–34*).

The coins from the previous 2003–2011 campaigns at Tall Zar'a were identified by Karsten Dahmen from the 'Münzkabinett' of the National Museums in Berlin. The coins are accessible in an online database (<http://muenzen.tallziraa.de/index.php> [accessed 22.04.2020]). There was a total of 115 coins (including 11 unidentified) and they provide a similar picture as the 2018–2019 material, with a concentration of Seleucid (n=1), other Hellenistic (n=11) and Hasmonean-Herodian (n=37) material with some earlier Ptolemaic (n=3) issues. The Roman period was also almost absent (n=3) and coins were only attested again from the end of the 3<sup>rd</sup> cent. CE up to the 6<sup>th</sup> cent. CE (n=48). The late Roman and Byzantine material forms the largest single group from the 2003–2011 excavations, being the result of the exploration of the late antique complex on Tall Zar'a (Rothe et al. 2014). But apart from this difference, the 2018–2019 material, with a concentration in the 2<sup>nd</sup> and 1<sup>st</sup> cent. BCE, fits well into the general numismatic profile of Tall Zar'a.

If we compare the situation of Tall Zar'a with that of Gadara (Umm Qays) we see a quite different picture: Among the 1408 coins excavated in Gadara between 1987 and 2000, Hans-Christoph Noeske identified: 0.9% Ptolemaic, 5.5% Seleucid and 2.6% Hasmonean/Herodian and Nabatean coins (Noeske 2013, 137). From the Roman period came 9.9% civic coins and 2.1% Roman Imperial coins. Late antiquity had 66.3% plus an additional 12.7% Islamic coins. Although the total number of find coins from Tall Zar'a is still too small for sta-

103 Ios. bell. Jud. 1.86; Ios. ant. Jud. 13.356.

104 Ios. bell. Jud. 1.396; Ios. ant. Jud. 15.217.

tistics, it is obvious that, compared to Gadara, the total number as well as the relative proportion of Hellenistic and Hasmonean/Herodian coins is very high whereas the number of Roman coins compared to Gadara is significantly lower. Also, the absence

of Islamic coins at Tall Zar'a is remarkable. This indicates that Tall Zar'a and Gadara did not have corresponding or synchronic settlement histories, and Tall Zar'a seems to have been busy during the Seleucid and Hasmonean periods.

## 18.2 Catalogue

### *Seleucid royal*

**18.1** TZ 113118-001/L11588 (*Pl. 18.1a*)  
Antiochos IV (175–164 BCE)  
Mint: Tyre  
AE 2.8 gr, 14 mm, 12 h, bevelled edges, central cavities  
Obv.: Head of Antiochos IV to r  
Rev.: Palm tree; BA[...] / [...]OY  
Ref.: SC II 1470.

**18.2** TZ 114093-001/L11861 (*Pl. 18.1b*)  
Antiochos IV (175–164 BCE)  
Mint: Ptolemais (Ake)  
AE 2.6 gr, 13/15 mm, 11 h, bevelled edges, central cavities  
Obv.: Radiate and diademed head of Antiochos IV to r  
Rev.: Artemis standing, facing, with torch in r hand and bow in l hand; ΒΑΣΙΛΕΩΣ / [AN]TIOX[OY]  
Ref.: SC II 1485.

**18.3** TZ 114361-001/L12011 (*Pl. 18.1c*)  
Tryphon (142–138 BCE)  
Mint: Uncertain mint in Northern Syria  
AE 3.2 gr, 16 mm, 12 h, bevelled edges, central cavities  
Obv.: Diademed head of Tryphon to r  
Rev.: Horned helmet of Tryphon [...]OKPA[...]; control inner l A[...]  
Ref.: SC II 2008, 2039–40.

### *Hellenistic civic*

**18.4** TZ 113342-001/L11635 (*Pl. 18.1d*)  
Mint: Akko (Ptolemais) (ca. 163–133 BCE)  
AE 2.8 gr, 14/16 mm, 12 h, bevelled edges  
Obv.: Jugate busts of Dioscouroi to r  
Rev.: Single cornucopia [...]A[...] / ΤΩ[...]  
Ref.: Kadman 1961, 94–97, No. 11. 13–27.

### *Hellenistic uncertain*

**18.5** TZ 114095-001/L11878 (*Pl. 18.1e*)  
Mint: Hellenistic  
AE 1.4 gr, 15 mm  
Obv.: Diademed head to r  
Rev.: worn  
Ref.: -

**18.6** TZ 114063-001/L11859 (*Pl. 18.1f*)  
Hellenistic  
Mint: ?  
AE 1.1 gr, 13 mm, bevelled edges  
Obv.: Head to r  
Rev.: worn  
Ref.: -

**18.7** TZ 112851-001/L11500 (*Pl. 18.1g*)  
Hellenistic  
Mint: ?  
AE 2.5 gr, 16 mm, bevelled edges, swollen flan (4 mm)  
Obv.: worn  
Rev.: worn  
Ref.: -

**18.8** TZ 112897-001/L11514 (*Pl. 18.1h*)  
Hellenistic  
Mint: ?  
AE 1.8 gr, 14 mm, bevelled edges, central cavities?, swollen flan (4 mm)  
Obv.: worn  
Rev.: worn  
Ref.: -

**18.9** TZ 114094-001/L11878 (*Pl. 18.2a*)  
Hellenistic  
Mint: ?  
AE 0.7 gr, 11 mm, swollen flan (3 mm)  
Obv.: worn  
Rev.: worn  
Ref.: -

**18.10** TZ 114204-001/L11907 (*Pl. 18.2b*)

Hellenistic?

Mint: ?

AE 1.8 gr, 15/18 mm, swollen flan (6 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.11** TZ 114253-001/L11950 (*Pl. 18.2c*)

Hellenistic?

Mint: ?

AE 1.1 gr, 12 mm, swollen flan (3 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.12** TZ 114254/L11961 (*Pl. 18.2d*)

Hellenistic?

Mint: ?

AE 1.1 gr, 11 mm, swollen flan (4 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.13** TZ 113085-001/L11565 (*Pl. 18.2e*)

Hellenistic?

Mint: ?

AE 1.2 gr, 9/11 mm

Obv.: worn

Rev.: worn

Ref.: -

**18.14** TZ 113872-001/L11838 (*Pl. 18.2f*)

Hellenistic?

Mint: ?

AE 3.4 gr, 17 mm, swollen flan (5 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.15** TZ 113958-001/L11781 (*Pl. 18.2g*)

Hellenistic?

Mint: ?

AE 1.8 gr, 14/17 mm, swollen flan (4 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.16** TZ 114360-001/L12011 (*Pl. 18.2h*)

Hellenistic?

Mint: ?

AE 1.5 gr, 16 mm, swollen flan (3 mm)

Obv.: worn

Rev.: worn

Ref.: -

*Hasmonean and Herodian***18.17** TZ 112921-001/L11541 (*Pl. 18.2i*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 2.6 gr, 15/17 mm, 6 h

Obv.: Paleo-Hebrew inscription in wreath: [...] *T* / [...] / *GDLWHB* / [...]

Rev.: Double cornucopiae with pomegranate

Ref.: TJC Group P.

**18.18** TZ 113878-001/L11772 (*Pl. 18.2j*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 2.2 gr, 14 mm, 11 h

Obv.: Paleo-Hebrew inscription in wreath: *YHWN* / [*T*]*NK*[...] / *LWHBR* / *YH*[...]

Rev.: Double cornucopiae with pomegranate

Ref.: TJC Group P.

**18.19** TZ 114608-001/L11781 (*Pl. 18.3a*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 2.6 gr, 14 mm, 6 h

Obv.: Paleo-Hebrew inscription in wreath: *YHWN* / *TNHNG* / *DWLWHB* / [...] *DM*

Rev.: Double cornucopiae with pomegranate

Ref.: TJC Group P.

**18.20** TZ 114762-001/L222191 (*Pl. 18.3b*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 1.5 gr, 11/14 mm, 7 h

Obv.: Paleo-Hebrew inscription in wreath: *YNTNH* / *KHNGDL* / *WHB* [...]

Rev.: Double cornucopiae with pomegranate

Ref.: TJC Group S.

**18.21** TZ 114176-001/L11933 (*Pl. 18.3c*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 1.9 gr, 13 mm, 6 h

Obv.: Paleo-Hebrew inscription in wreath

Rev.: Double cornucopiae with pomegranate

Ref.: TJC Group S.

**18.22** TZ 113961-001/L11812 (*Pl. 18.3d*)

Alexander Jannaeus (103–76 BCE)

Mint: Jerusalem

AE 1.6 gr, 13 mm, 12 h

Obv.: Anchor surrounded by a circle; *BAΣ*[...] *Δ*[...]

Rev.: Eight-pointed star in diadem

Ref.: TJC Group K.

**18.23** TZ 113284-001/L11596 (*Pl. 18.3e*)  
Alexander Jannaeus (78 BCE)  
Mint: Jerusalem  
AE 0.9 gr, 12/14 mm, 12 h  
Obv.: Anchor surrounded by a circle  
Rev.: Eight-pointed star surrounded by border of dots  
Ref.: TJC Group L.

**18.24** TZ 113833-001/L11837 (*Pl. 18.3f*)  
Hasmonean  
Mint: Jerusalem  
AE 1.5 gr, 13 mm, 11 h  
Obv.: Paleo-Hebrew inscription in wreath: [...] *KNHG* [...]  
Rev.: Double cornucopiae with pomegranate  
Ref.: TJC Groups A–G, I or P–V.

**18.25** TZ 113862-001/L11764 (*Pl. 18.3g*)  
Hasmonean  
Mint: Jerusalem  
AE 1.2 gr, 12 mm, 7 h  
Obv.: Paleo-Hebrew inscription in wreath  
Rev.: Double cornucopiae with pomegranate  
Ref.: TJC Groups A–G, I or P–V.

**18.26** TZ 114255-001/L11987 (*Pl. 18.3h*)  
Hasmonean  
Mint: Jerusalem  
AE 0.8 gr, 11/13 mm, 3 h?, overstrike?  
Obv.: Paleo-Hebrew inscription in wreath  
Rev.: Double cornucopiae  
Ref.: TJC Groups A–G, I or P–V.

**18.27** TZ 112887-001/L11527 (*Pl. 18.3i*)  
Hasmonean or Herodian  
Mint: Jerusalem  
AE 1.6 gr, 14 mm  
Obv.: worn  
Rev.: Anchor in circle  
Ref.: -

**18.28** TZ 114555-001/L12197 (*Pl. 18.3j*)  
Herod the Great (37–4 BCE)  
Mint: Jerusalem  
AE 1.2 gr, 15 mm, 11 h  
Obv.: Anchor  
Rev.: Double cornucopiae  
Ref.: TJC 59.

### *Roman*

**18.29** TZ 114480-001/L12091 (*Pl. 18.4a*)  
Antoninus Pius (158/159 CE)  
Mint : Rome

AR (denarius) 2.4 gr, 18 mm, 12 h  
Obv.: Laureate head of Antoninus Pius to r; ANTONI-  
NUS / AUG PIUS PP  
Rev.: Togate emperor sacrificing on altar to l; VOTA  
SOL / DEC II; in field: COS IIII  
Ref.: RIC III, 61 No. 291 var.

### *Late Roman*

**18.30** TZ 112837-001/L11516 (*Pl. 18.4b*)  
Constantius II (355–361 CE)  
Mint: ?  
AE 0.7 gr, 14/11 mm, broken  
Obv.: worn  
Rev.: Standing draped and cuirassed Constantius II, r  
arm outstretched with globe, in l spear; SPES[...]  
Ref.: RIC VIII.

**18.31** TZ 112844-001/L11516 (*Pl. 18.4c*)  
Constantius II (355–361 CE)  
Mint: ?  
AE 1.4 gr, 12 mm  
Obv.: worn  
Rev.: Standing draped and cuirassed Constantius II, r  
arm outstretched with globe, in l spear; [. ]P[...]  
Ref.: RIC VIII.

**18.32** TZ 113333-001/L11599 (*Pl. 18.4d*)  
Valentinianus I (364–367 CE)  
Mint: ?  
AE 2.4 gr, 16 mm, 12 h  
Obv.: Head of pearl-diademed Valentinianus to r; [...] / ANUS[...]  
Rev.: Emperor advancing r, dragging captive with  
r hand and holding standard in l; [GLORI]A RO /  
MANORUM  
Ref.: RIC IX.

**18.33** TZ 112835-001/L11516 (*Pl. 18.4e*)  
Late Roman  
Mint: ?  
AE 1.4 gr, 15 mm, 6 h  
Obv.: Bust to r  
Rev.: Standing draped and cuirassed figure, in l spear,  
r outstretched holding uncertain object  
Ref.: -

**18.34** TZ 112846-001/L11516 (*Pl. 18.4f*)  
Late Roman  
Mint: ?  
AE 0.3 gr, 7/9 mm, broken, double strike  
Obv.: Head to r  
Rev.: worn  
Ref.: -

*Uncertain***18.35** TZ 113368-002/L11644 (*Pl. 18.4g*)

Mint: ?

AE 0.3 gr, 1 mm, broken

Obv.: worn

Rev.: Head to l?

Ref.: -

**18.36** TZ 113877-001/L11809 (*Pl. 18.4h*)

Mint: ?

AE 0.6 gr, 14 mm, broken

Obv.: worn

Rev.: worn

Ref.: -

**18.37** TZ 114061-001/L11792 (*Pl. 18.4i*)

Mint: ?

AE 0.8 gr, 13 mm

Obv.: worn

Rev.: worn

Ref.: -

**18.38** TZ 114456-001/L12011 (*Pl. 18.4j*)

Mint: ?

AE 1.2 gr, 13/16 mm, swollen flan (3 mm)

Obv.: worn

Rev.: worn

Ref.: -

**18.39** TZ 114576-001/L12161 (*Pl. 18.4k*)

Mint: ?

AE 0.2 gr, 10 mm, broken

Obv.: worn

Rev.: worn

Ref.: -

## 18.3 Bibliography

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Pl. 18.1: Seleucid Royal (a-c) and Hellenistic (d-h) coins. Scale 2:1

a.



TZ 113118-001

b.



TZ 114093-001

c.



TZ 114361-001

d.



TZ 113342-001

e.



TZ 114095-001

f.



TZ 114063-001

g.



TZ 112851-001

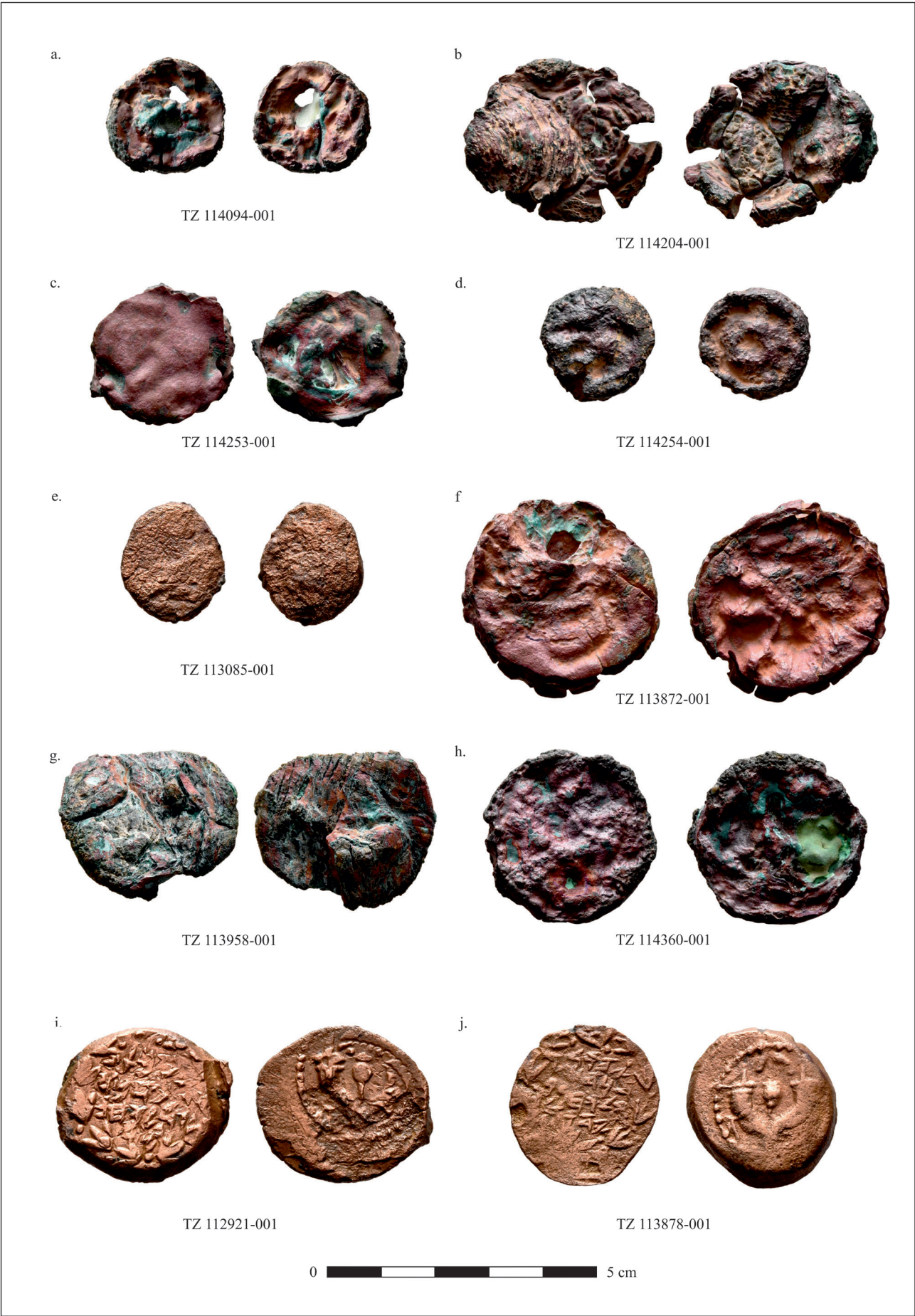
h.



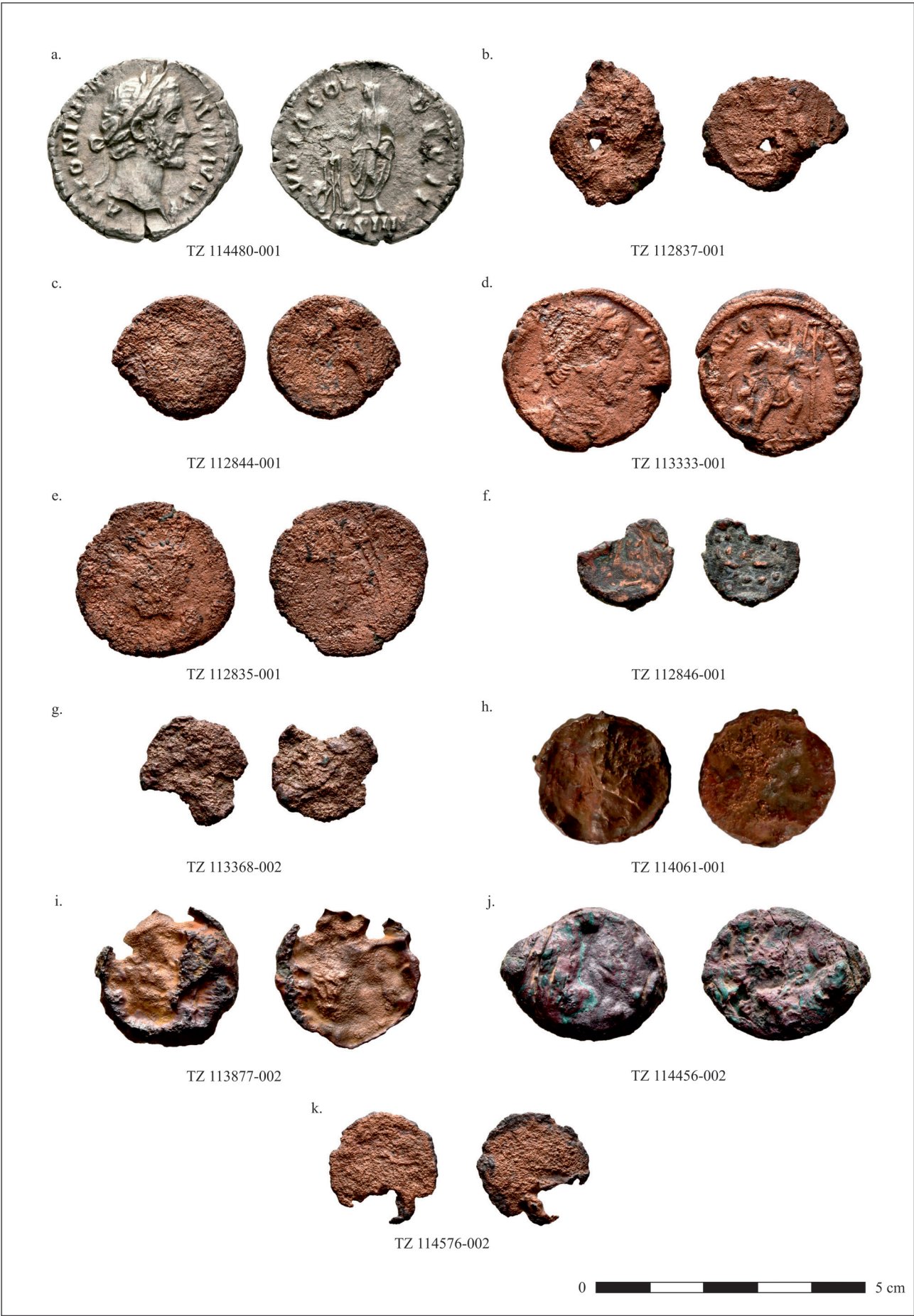
TZ 112897-001

0 5 cm

Pl. 18.2: Hellenistic (a-h), Hasmonean and Herodian (i-j) coins. Scale 2:1









## SCIENTIFIC STUDIES

### 19. USE-WEAR ANALYSIS ON GROUND-STONE TOOLS OF BUILDING A

by Birte Meller

This contribution focuses on ground-stone tools found during the 2018 and 2019 excavation seasons in the area of a destroyed Iron Age II building (Building A, Phase 2) in Area II.<sup>105</sup> A group of ground-stone tools was studied in order to reconstruct activity areas within the building, to make reference to the former household and to add additional aspects to their morphological-typological classification in terms of *chaîne opératoire* and function. Within a time frame that was shortened from six weeks to 10 days, these tools were analysed macroscopically and microscopically for traces of wear. Based on these traces it is possible (in optimal circumstances)

to gain insights about manufacture and use, as well as about maintenance and disposal.

The ground-stone tools examined consist of grinding ensembles, such as grinding stones and runners, pestles, rubbing stones and stone mortars, as well as other types of tools that can be addressed as multifunctional tools, such as hammer, rubbing stones or special items. Overall, the inventory covered a wide range of finds (see *Chap. 12*), which reflect a more general everyday orientation rather than any specialization in craftsmanship. However, since only a small number of objects has so far been examined, these results are provisional.

#### 19.1. Use-wear Analyses of Ground-stone Tools: an Overview

Use-wear analysis addresses the question of the specific features, or rather characteristic traces, which provide information on tool manufacture, use, maintenance and discard. As a research method in archaeology, it has been practised for rather a long time (Semenov 1964, Keeley 1980), though the focus was mainly on chipped stone (flint) and ground-stone tools have received less attention. From the early 1980s, terminology and analysis methods for chipped stone were firmly established (Hayden 1987; Hayden – Kamminga 1979). Research on ground-stone tools, on the other hand, only gained momentum in the 1990s and early 2000s, when attempts were made to standardize the methodology. A seminal contribution was that of Adams in her research on the ground-stone tools of the Native American archaeological record (Adams 1988; 1989), which resulted in the standardization of techniques and terms for the analysis of ground-stone tools (Adams 2002). A very good review of

today's approach and a more detailed history on use-wear analysis of ground-stone tools is given by Dubreuil et al. 2014.

The basis for use-wear analysis is the fact that the production and use of ground-stones usually results in a wear. This wear is defined as the progressive loss of substance from the surface due to the relative movement between it and another contact surface (Czichos – Habig 2003). Such progressive wear is most easily recognizable on grinding tools. This fact is used accordingly in use-wear analyses in order to identify patterns that have arisen during manufacture or use by applying macroscopic and microscopic examination methods. To make statements regarding actual use, the damage patterns caused by manufacturing techniques and post-deposition factors must be distinguished from the activities caused by use (Adams 1988, 1989, 2002; Adams et al. 2009; Dubreuil 2004; Hamon 2008).

105 Not included in this contribution are six Roman chalkstone vessels (see *Chap. 13*).

To define use-wear on ground-stone tools, four wear mechanisms can be identified (Adams et al. 2009, Adams 2014). They are important in order to identify and understand the formation of specific use-wear patterns on stone surfaces. These four are adhesive wear, abrasive wear, fatigue wear and tribochemical wear. These mechanisms are not mutually exclusive, nor are they independent of how they change surfaces. The four mechanisms interact and depending on the properties of the contact surfaces and the type of intermediate substances, one will become dominant over the others (Adams 1988, 1989, 1993, 2002; Adams et al. 2009).

These mechanisms provide a basis for being able to identify wear patterns without having to create an experimental example for every possible use situation. In the course of adhesive wear, residues often remain on the surface, e. g. during the grinding process. The more frequent the grinding process, the more visible the wear becomes. During cleaning by hand, loosened/rubbed-off tiny stones fragments that stick to fingers and hands are removed and fat adhering to fingers sticks to the stone, making it easier for grinding components to be held. As a rule, in the course of this wear and tear, components of the “counterpart” stick to the surface, which are then included in the analysis of the residues. However, they are easily destroyed by traces caused by fatigue wear. Fatigue wear arises when the contact surfaces are exposed to pressure or changing movement tension. In the course of this, elevations of the natural stone structure are crushed

or even collapse. The traces of fatigue wear are visible macroscopically as impact breaks or breaks of the natural stone-structure and can be identified at a low magnification of less than  $\times 100$ , like peck marks on hammer stones. Traces of abrasive wear are characterized by an adaptation of the surface through wear, i. e. a levelling through abrasion. As a result, the aggregates are rounded and striations and scratches are formed. The latter provide information on direction of movement of the performed action, as can be seen on arrow shaft smoothers.

Together, adhesive wear, fatigue wear and abrasive wear create an environment of chemical interactions resulting in tribochemical wear. This forms reaction products of films and oxides on the surface, which can be seen as sheen or polish (Czichos – Habig 2003). Further development of the gloss depends on the mineral composition and granularity of the rock, the type of contact surface and any intermediates as well as the duration and intensity of use (Dubreuil 2004; Procopiou et al. 1998). Ultimately it is back to residues, which may already be macroscopically recognizable on the surface. This creates residues of the components with which the tool came in contact. In addition to vegetable food residues, such as starch granules (like Ohalo II in Piperno et al. 2004) or phytoliths (Albert – Portillo 2005), these can also be mineral substances such as pigments (Sotiropoulou et al. 2010). In conclusion, wear patterns on stone tools are a combination of mechanical and chemical interactions (Adams et al. 2009; Witthoft 1967).

## 19.2. Analysis of Ground-stone Tools

Use-wear analysis of stone objects begins with the description of the original surface or the texture of the stone. In this way, the traces caused by manufacture and use can be illustrated and highlighted (Adams et al 2009, 45; Adams 2014, 130; Bofill 2012). Fractures are best suited here because they show the unchanged nature of the stone. In contrast, even apparently “natural” outer surfaces may have been changed during manufacture, such as a pecked millstone, which is artificially roughened to produce better friction, or in the case of stone vessels, such as mortars, where levelling due to manufacture creates a smooth surface. When a stone surface wears, the topography changes, so the most obvious visible

damage is the result of the last wear mechanism (Bofill et al. 2013).

Compared to chipped stone objects, ground-stone tools are larger and therefore require height-adjustable devices to examine the depths and widths of the worn areas. In order also to take into account the dimensions and the rough structure of the stone, binocular magnifications with relatively low power in the range of  $\times 20$  to  $\times 100$  are most commonly used. At magnifications above  $\times 100$ , a careful examination is required in order to be able to assess whether results from the tiny areas examined, showing the interactions of different wear mechanisms, can be extrapolated to the entire worn surface.

### 19.3. Method

The ground-stone tools for this study were first evaluated macroscopically in order to obtain a general description of the surfaces and to determine the distribution of use-wear on the tool. Regions of interests were marked in an overview sketch, as were the areas for the high-resolution macro photos using a Canon DS126621 and their picture-ID was noted. In addition to a Leica stereomicroscope (magnification up to x 60), two digital hand-held microscopes, a PCE-MM 200UV (x 80/ x 150) and a Dino Lite (x 50/ x 200), were available for optical analysis. In the first microscopic inspection, the Leica stereomicroscope was used at a magnification of x 10, or the DINO-Lite at a magnification of x 50. An overview of the entire area was produced, starting with the natural stone structure. This was followed by a second assessment at various

magnifications. After that, the tools were carefully cleaned only by hand using distilled water (*aqua destillata*). The filtered residues were kept separately for later analysis. The procedure of investigation of the ground-stone tool was then repeated as described. Due to lack of time, a second/third cleaning was not performed. Recognized use-wear traces and patterns were tabulated for further evaluation. The data were collected using Wright's 1992 stone reduction techniques and standardized terminology based primarily on the studies by Anderson et al. 1998, Adams 2002 and Adams et al. 2009. They are similar in the basics but different in detail so the admission criteria allow a differentiated description and evaluation. Any traces identified were compared with the author's own experimental reference collection.

### 19.4. Analysis of the Ground-stone Tools

A total of 26 stones were examined, the majority of which were made from basalt. Tools made of pebble stones, limestone, sandstone and pumice were also represented. The petrological identification by Jakubik – Schröder (*Chap. 12*), as far as their study went, was kept and was adjusted in terms of use-wear definition if necessary. The availability of raw material and raw material deposits was not taken into account here, but it should be noted that the majority of the stones are locally occurring rock.

Seventeen of the 26 objects were found within the building or in the layers of debris from the collapse, so it cannot be excluded that these may have been reused in a secondary context.<sup>106</sup> The remaining objects were found in the occupation layer and thus represent a snapshot at the time of the house collapse. Their location should reflect the area of their use and can provide further information about their former use (see *Chap. 1.3.2*).

In the case of the grinding stones, both the *in situ* examples and those from secondary contexts showed pecked regions, mainly towards the edges and they indicate the manufacture of the grinding

stone itself. Medium to heavily polished surfaces were visible towards the middle of the stones, indicating the active grinding surface. The degree of wear indicates the intensity of use. Grinding stone TZ 114274-001/L11898 (*Pl. 19.1a*) shows traces of manufacture rather than signs of wear, with only small wear facets. The quern was most likely still in the process of manufacture. The active surface of quern TZ 114321-001/L12057 is nearly flat with movement patterns in the form of intermittent striations, which show a sequence of forward and backward movement. For grinding stone TZ 114501-001/L12022 (*Pl. 19.1b*), the characteristics of the damage patterns on the active surfaces point to the processing (grinding) of grain or legumes based on the formations of plateaus and the rock grains with flaking and crushing marks (Adams 1988; Bofill 2012). The object also showed discolouration in the form of weathering and signs of multifunctional use. On the original back of the stone there was a concentrated area of pecking and abrading. The use-wear is typical of fatigue and abrasive wear (Adams 1993, 62; Adams 2002, 33), with the rock

106 E.g. the objects TZ 113734-001, TZ 113522-001, TZ 114073-001, TZ 114088-001, TZ 114501-001, TZ 114521-001, TZ 114548-001, TZ 114531-001, TZ 114158-001, TZ

114395-001, TZ 114581-001, TZ 114623-001, TZ 114274-001, TZ 114329-001, TZ 114619-001.

grains damaged by crushing, particles loosened through wear and striations indicating the sharpening of a rather hard material, perhaps the sharpening of a (metal) tool.

Also among the grinding ensembles is object TZ 114549-001/L11913 (*Pl. 19.1c*), a limestone basin, which was found in an installation or possibly installed secondarily in Room 4 of Building A, Phase 2 (see *Chap. 1.3.2*). Use-wear traces can be seen macroscopically and are due to the manufacture and the use of the item. The wear facets on the active surface correspond to a curricular movement sequence (Adams 2002, 103). Together with the ‘opening’ at the distal end, this could mean material was processed by a circular movement on the surface and could be removed more easily. The damage or opening at the distal end was carried out manually, and may be related to the primary use, or be the result of the secondary use as a building component. Microscopically there are clear striations in the area of the former grinding surface, which correspond with the macroscopic observations. Abrasion and fatigue wear in the form of rounded and loosened particles as well as cracks and pits were visible, indicating the use of rubbing stones or pestles. However, the detectable residues could also be due to the archaeological processing and storage – here further investigation is necessary. Nevertheless, in addition to these residues which found their way onto the stone (here especially insect legs and wings as well as plasticine), ancient remains were also documented. In two cases pollen was found after cleaning, in both cases most probably of pine. However, it is unclear whether it was of ancient origin or due to contamination during/after cleaning (Pedergana et al. 2016). All residues were kept for later analysis and should be evaluated with the assistance of archaeobotany in particular. Most of the other residues indicate a connection with, or are related to, the use of fire, or point to the components of the “counterpart” of a multi-tool in action and were found on most of the ground-stone tools which can be identified as handstones (Adams 2002, 148). Stone vessels and mortars showed no traces of fire, but bore some residues which are mostly connected to the processing of some kind of organic material (Adams et al 2009, 51).

The basalt slab TZ 114088-001/L11733 (*Pl. 19.2a*) shows not only various manipulations, but was used to hold some kind of organic and mineral material, which remained under a mineralized crust. At this stage of analysis, it seems that the residues most likely relate to the processing of

pigments with an organic binder (Bofill et al. 2013, 230). Traces of micro-fibres could be detected in the case of the basalt bowl TZ 113522-001/L11691 (*Pl. 19.2b*). Here, the inside showed a circular movement like stirring, which caused striations and an abraded texture (Adams 2002, 127). The movement pattern itself showed a slight imbalance to one side, indicating a repeated action. A similar pattern from circular movement could be seen inside the mortar TZ 114516-001/L12076 (*Pl. 19.2c*). The content processed here is more likely related to some kind of a fast repeated movement leaving a tribochemical wear film in the upper part of the inner bowl. The combination of striations, crushing marks and pounding strokes is most likely linked to the use of a pestle. Starch-like residue mixed with loose granulate indicates use in some kind of food processing. The same can be seen in the bowl of mortar TZ 114548-001 (*Pl. 19.2d*), where the impact of a possible use of a pestle also left flat peaks with flattening extending into the lower surfaces.

The handstones (Adams 2002, 148), mostly referred to as rubbing stones (see *Chap. 12*), show a variety of multi-tool use, which left various use-wear traces marking them as percussion tools (*Pl. 19.3a–b*). The edges showed macroscopic signs and microscopic traces of abrasion, crushing and pounding, while the surfaces also showed signs of grinding and sometimes had human-made depressions for better handling. The actual use of the tools can be suggested as hammer-, pecking-stones and/or anvils, or they could have been used as grinders or pestles. Most of the tools have at least two intensively used surfaces and crushing marks along the edges. Apart from their multi-purpose and intensive use, there is no uniformity. Also, all kinds of raw material such as basalt, granite, flint or even pebbles were used. Similar observations can be made at other archaeological sites, such as (at the Bronze Age site of) Wādī Fidan, Jordan (Abadi-Reiss et al. 2019, 155) or ‘Ain Asil, Egypt (Jeuthe 2019, 58). There, the pestles show use-wear traces that are similar to their counterparts from the Natufian, for example from Huzuq Musa in the Jordan Valley (Eitam 2019, 175). This example underlines the observation, made above, of the variety of uses within the big group of percussion tools: their use over an extremely long time-frame is only recently diminishing.<sup>107</sup> All the

107 Ebeling et al. 2019, fig 13 shows, for example, various ground-stone tools in backyards in modern-day Jordan.

objects in this group have an interesting story to tell, but some objects deserve a closer look. For one, there is the basalt hammerstone or pestle TZ 114503-001/L12076, the shape of which differs from that of the other handstones, like its longitudinal notch with a modified 3/4 groove at the upper end, which is definitely human made. The use-wear traces indicating crushing and grinding are mostly located at the distal end, but on the upper part also – these are connected to manufacturing: smoothing this bit with a polishing stone (Haury 1945, 130, Adams 2002, 163). Movement patterns are visible as striations and imply some kind of stirring, leaving a smooth surface by abrasive use-wear. The groove had some use-wear traces which were maximised toward its edges, implying a kind of (organic) attachment, hafting or handle. The surface has been darkened by a tribochemical film which suggests intensive contact. A similar but different film was observed at the sides of item TZ 114159-001/L11854 (*Pl. 19.3a*), where it is smooth and seems like a polish gained through a fast and steady use. The head part bears various impact fractures which are consistent with a battering movement – like a pestle or adze. Surprisingly, a shiny micro-polish was detected in a limited area, which most likely suggests contact with some kind of hard material (metal). However, the most plausible interpretation is that of a modern scratch.

The dark tribochemical film could also be found on the inner rim of a doughnut-shaped stone ring TZ 113205-001/L11591 (*Pl. 19.4a*; see *Chap. 16*). The simultaneous occurrence of turning grooves (*Drehriefen*) which are not connected to manufacture suggests a weight used in some kind of spinning movement, like the fly wheel of a pump-drill (Childe 1954, 191) or crank-drill (Beller et al. 2019, 125) or even a spacer used on the bearing of a potter's wheel,<sup>108</sup> rather than hanging as a loom weight.<sup>109</sup> Artefact TZ 113722-001/L11677 (*Pl. 19.4b*) can also be mentioned in connection with possible pump-drills. The tool is made from a pebble with a

flattened end and artificial hole marked with small and minor scoring marks. Patterns of circular movements could be due to either manufacture or use. Transversal scratches on one side could be the result of tilting or traces of cleaning after excavation. Micro-polish at various points of the pebble show contact with another component, while the area around the hole differs from the top and the sides. Here contact with some organic material is possible. The traces observed are consistent with an interpretation as a drill-socket of a pump-drill, which is used to allow a broad grip to apply downward pressure while drilling (Ilan 2016, 262). The different dimension of the drill components TZ 113205-001 and TZ 113722-001 make it unlikely that they are parts of the same implement. Also, the material which was perforated by TZ 113722-001 cannot (yet) be identified.

Returning to the group of the percussion tools, they are not only made of basalt, but flint and pebbles also were selected. Presumably the characteristics of the material facilitated the different tasks of the artefacts. TZ 114158-001/L11898 (*Pl. 19.3b*) is a hammerstone battered out of flint into its typically spheroid, slightly oval form. The use-wear traces here are hard to read, and most of them are caused by manufacture. Some small traces of possible use were spotted, but the almost total lack of impact traces<sup>110</sup> could indicate an unused tool or use as a weight (as suggested for similar stone objects from Tell Sheikh Hassan by Müller-Neuhof 2015).<sup>111</sup> In contrast, the surfaces of the other basalt, mostly cuboid, tools/handstones (*Pl. 19.3a and b*) indicate intensive and multiple tool use as hammer, anvil, abrader/smoothen and/or pounder.<sup>112</sup>

Like TZ 113722-001, other pebbles were also transformed into tools. Their main use seems connected with ceramic production; for object TZ 114507-001, use-traces and shiny areas make it likely that this was a smoothing stone (Hayes et al. 1981, 125). Use-wear traces show a few

108 Childe 1954, 201, but the micro-traces on the surfaces of the doughnut-shaped stone do not support this assumption.

109 For further discussion on the purpose of these tools, see Squitieri 2016, 156–157 and Squitieri 2019, 217.

110 It in no way corresponds to the observation of intensive use as hammers made by Abadi-Reiss et al. 2019, 156.

111 A tool to access bone marrow, as recently published by As-saf et al 2020, is also possible. At the Palaeolithic site of Qesem Cave, Cisjordan, at least ten such tools were found

with use-wear, abundant bone and fat residues indicating crushing of fresh bones by thrusting percussion. I am indebted to B. Schröder for this reference. The traces on object TZ 114158-001 should therefore be checked again, as the tool was only analysed with the hand-held microscopes.

112 E. g. the objects TZ 113419-001, TZ 114073-001, TZ 114159-001, TZ 114581-001, TZ 114619-001 and to a small extent TZ 114521-001.

striations visible on high spots, which seem highly polished. Pebble-tool TZ 114623-001/L12162 (*Pl. 19.3c*) lacks the clearly circumscribed, limited areas of shininess but is covered by some sort of slip (Schlicker). A use as pecking-polishing stone (Hayes et. al. 1981, 124) is possible. Frequent, minute striations on its surface run in all directions. The layer, visible as a reddish mass, covered the lower flat half of the stone. Microscopically, a mixture of Fe<sub>2</sub>-containing “pigments”, sand and other type of rock could be identified. The composition is similar to a slip for ceramics, or to ceramic temper. It would be exciting to compare the mixture with the ceramics of the site.

Another item which should be analysed further is tool TZ 114531-001/L12133 (*Pl. 19.4c*), made of pumice stone which is most likely an abrader or rubbing stone. The signs of use clearly show that a hard component was rubbed. The use-wear itself consists of abrasion and fatigue-wear in the form of extensive homogeneous and flat areas (plateaus) with a convex to flat cross section. The porous natural stone structure is clearly worn away. Movement markers in the form of striations show circular, but also forward and backward movements. Residues

on the stone structures indicate a counter-part made of stone, the residues of an applied material (such as wall plaster, stove) or the direct abrasion of a sandstone-like rock.

The highlight of the 2019 season was the very well-preserved stamp seal TZ 114329-001/L11898 (*Pl. 19.4d*) made from steatite (see *Chap. 17*). On the flat underside is an illustration of two standing caprines separated by a palm tree. The pattern takes the form of lenticular cuts and was made using hand-held tools. The traces along the edges suggest scoring using a metal device. Drilling by means of a (horizontal) drill, as suggested for other sealing stones (Anastasiadou 2018, 322), is rather unlikely. Adhesive wear or adhesions in the area of the stamp negative are of a clay-like substance, which may have acted as a sealing compound, as well as some modern plasticine. A perforation at the proximal end of the signet stamp is drilled biconically from both sides. The rounding on the outer edges shows tribochemical wear and the accompanying wear facets suggest that a band was once pulled through the hole, which would have been used for suspension or similar. Maybe it hung from the belt of the head of household.

## 19.5. Summary

Even if the ground-stone tools during this investigation have given no direct indications (yet) for textile working regarding the loom-weights in a row, the analyses have shown that there is a great potential in studying the use-wear on the ground-stone tools, both to establish their former function and for reconstructing the *chaîne opératoire*. Other objects from these seasons will be examined in future, and the traces observed will be verified more precisely with the aid of archaeological experiments.

The observations already draw a picture of a small working area, where various domestic activities were carried out. In addition to everyday food production, tool manufacture as well as construction measures are represented. The special find of the seal may be related to an activity in the house, but whether it was made in this location is another question. Further investigations of the ground-stone artefacts alongside other finds will further complete the picture of this residential unit and give us an insight into the life of the Iron Age settlement of Tall Zar'a.

## 19.6. Catalogue

\* Following here Jakubik/Schöder (supplement and functional addition in **bold under comments**), and Schmidt, small finds.

Locus	Find number	Object*	Material	L., Wth, H, Dia. (cm)	Weight (gr)	Description	Comments	Compari- sons	Plate
<b>Handstones</b> (Adams 2002, 148, Wright 1992)									
11699	TZ 113519-001	rubbing stone	basalt	H: 4.6; Dia. (max.): 8.3	246	completely preserved; prism-shaped, strong rubbed, small natural depression at the rear end some pecking marks visible on the edges, rather rough surface except for one smooth, flat side	<b>polisher abraded</b> multi tool use, use-wear traces of pecking, abrading, polishing and impact		19.3d
?	TZ 113734-001		<b>flint pebble</b>	H 4.2 Wth 1.8	?	natural pebble with rounded ends	<b>ecofact</b> a possible use as in terms of strike-a-light was excluded-		
11856	TZ 114073-001	rubbing stone	basalt	H: 4.4; Dia. (max.): 5.0	273	completely preserved; quadrangular shape; regular and nearly smooth grinding surfaces; extreme burning marks	pecking marks as well some impact and some abrasion in limited space, smooth surfaces		
11898	TZ 114158-001	hammerstone	flint	H: 7.3; Dia. (max.): 9	656	fragmented; irregular centric fracturing and adjacent very flat fracture surface	<b>weight</b> use-wear traces point to manufacture, lack of impact traces could indicate an unused tool or use as weight		19.3b
11854	TZ 114159-001	rubbing stone	basalt	L: 9.3; Wth: 8; H: 5.3	757	fragmented; constant cuboid; one end broken off; fracture irregular and rough	<b>pestle adze</b> tribochemical film at the sides of item gained through a fast and steady use. head part bears various impact fractures which are consistent with a battering movement.		19.3a
11898	TZ 114395-001	rubbing stone	basalt	L: 7.5; Wth: 4.8; H: 4.1	249	completely preserved; quadrangular in plan view; longitudinal section wedge-shaped	<b>pestle</b> combination of striations, crushing marks and pounding strokes along the edges		

Locus	Find number	Object*	Material	L, Wth, H, Dia. (cm)	Weight (gr)	Description	Comments	Compari- sons	Plate
12076	TZ 114503-001	hammerstone	basalt	L: 10.4; Wth: 8.5; H: 7.6	1110	completely preserved; carefully worked; longitudinal section mushroom-shaped; constriction on three sides for fixation	<b>pounder adze</b> use-wear traces indicating crushing and grinding are mostly located at the distal end; movement patterns visible as striations, implying stirring, leaving a smooth surface by abrasive use-wear; wear-traces in the groove imply an (organic) attachment, hafting or handle		
12083	TZ 114507-001	rubbing stone	pebble	H: 4.3; Dia. (max.): 5.6	164	completely preserved; spherical; bottom side smooth; no definite grinding marks	<b>polisher</b> use-wear traces show a few striations visible on high spots, which seem highly polished, and clearly restricted		
12019	TZ 114521-001	rubbing stone	basalt	L: 6.7; Wth: 9.7; H: 6.5	636	fragmented; ovoid; one half preserved; smooth upper and bottom side	abrasion and fatigue wear in the form of rounded and loosened particles; cracks and pits were visible		
12175	TZ 114581-001	rubbing stone	basalt	L: 7.5; Wth: 5.5; H: 5.4	381	fragmented; cuboid; one longitudinal side broken off; rubbing surfaces clear on all sides	<b>hammerstone anvil</b> wear-traces on the surface indicate intensive and multiple tool		
12012	TZ 114619-001	rubbing stone	basalt	L: 6.5; Wth: 6.3	438	completely preserved; roller-shaped; clear depressions on three sides; upper and bottom sides have hollows approx. 0.4 cm deep	<b>pecking-stone multifunctional tool (hammer, anvil, abrader), diverse traces of impact and artificial depressions (handholds?), traces of fire</b>		
12162	TZ 114623-001	rubbing stone	pebble	L: 5.6; Wth: 4.2; H: 3.7	108	completely preserved; bevelled cone; highly regular shape	<b>smoother</b> pecking-polishing; layer of a reddish slip covers 1/4 of the stone with striations running in all directions indicating a multiangled movement		19.3c

Locus	Find number	Object*	Material	L, Wth, H, Dia. (cm)	Weight (gr)	Description	Comments	Compari- sons	Plate
Netherstones (Adams 2002, 148, Wright 1992)									
11898	TZ 114274-001	quern	basalt	L: 33.5; Wth: 17.4; H: 12.5	10400r	completely preserved; large and very heavy; grinding surface still unworked; therefore, semi-finished product	manufacture use-wear traces, also little wear facets		19.1a
12057	TZ 114321-001	quern	basalt	L: 35.5; Wth: 13.6; H: 7	3845	completely preserved; loaf-shaped; front and rear side curvatures identical; poorly saddle-shaped	forward and backward movement pattern on the former active surface		
12022	TZ 114501-001	quern	basalt	L: 16.2; Wth 9.4; H: 7.3	1894	fragmented; strong curvature on both longitudinal sides; upper side flat and straight; with grip edge	patterns on the active surfaces refer to the food-processing. Traces of secondary use		19.1b
12176	TZ 114585-001	quern	basalt	L: 29.3; Wth: 17.2; H: 9.5	4800	completely preserved; flat and broad shape; grinding surface slightly saddle-shaped	forward and backward movement pattern on the former active surface		
12076	TZ 114516-001	mortar	basalt	L: 26; Wth: 15.5; H: 12.5; Dia. (max.): 26		fragmented; sloping wall; round in plan view; base flattened and thick	fast repeated movement leaving a tribochemical wear film and residues in the inner part		19.2c
12165	TZ 114548-001	mortar	basalt	L: 14.3; W: 14.2; H: 8.7	2410	fragmented; flattened base; oval in plan view	flat peaks with flattening and loose residue of stone particles		19.2d
Other stones (Wright 1992)									
11591	TZ 113205-001	weight stone/ loom weight	basalt	H: 3.1; Dia. (max.): 11.7; Dia. (opening): 2.9	598	completely preserved; small diameter; round shape	fly wheel turning grooves in the inner hole as well as a tribochemical wear film		19.4a
11691	TZ 113522-001	bowl	basalt	H: 12.5; Dia. (max.): 27.2; Dia. (opening): 23.5	5400	nearly completely preserved; one little piece from wall chipped; three feet/legs preserved	striation suggesting a circular movement and an abrasion texture with loose bits of stone grains		19.2b

Locus	Find number	Object*	Material	L., Wth, H, Dia. (cm)	Weight (gr)	Description	Comments	Compari- sons	Plate
11677	TZ 113722-001	drill socket	pebble/ soapstone	L: 5.5; Wth: 4.3	159	completely preserved; truncated or pyramidal; bottom side carefully flattened with centric drill hole (depth 0.7 cm; diameter 1.4 cm); slightly quadratic in plan view; in places black overlay	depression: circular movement pattern, transversal scratches on one, micro-polish and striations at various points of the pebble show contact with another component		19.4b
11733	TZ 114088-001	plate	basalt	L: 15.7; Wth: 11.9; H: 6	1486r	fragment of edge; rectangular in plan view; flattened base; some places with burn marks	different kinds of use- wear connected to both, manufacture and use; inner part with residues (pigments?)		19.2a
11898	TZ 114329-001	stamp seal	probably steatite	L: 3.5; Dia. (max.) 3.4	38.2		bottom side: lenticular cuts with metallic residues; hole: biconical drill, with wear facets and tribuchemical film		19.4d
12133	TZ 114531-001		pumice stone	L: 10; Wth: 7.6; H: 5	146	completely preserved; macropore; cuboid in plan view; with clearly carved out hand grip	abrader use-wear of abrasion and fatigue wear in the form of extensive homogeneous and flat areas (plateaus) with a convex to flat cross section		19.4c
11913 (AY 127)	TZ 114549-001	basin	limestone	L: 32.5; Wth: 27; H: 13.5	15700	fragmented; flat base; oval in plan view	grinding stone wear facets and striations on the active surface correspond to a curricular movement sequence; abrasion and fatigue wear in the form of rounded and loosened particles as well as cracks and pits		19.1c
12036	TZ 114597-001	basin	basalt	L: 22; Wth: 19.5; H: 7.2	1593	nearly completely preserved; oval in plan view; base irregular; only roughly worked; depth of depression 3 cm	movement pattern by striation (circular – manufacture?), signs of abrasion		

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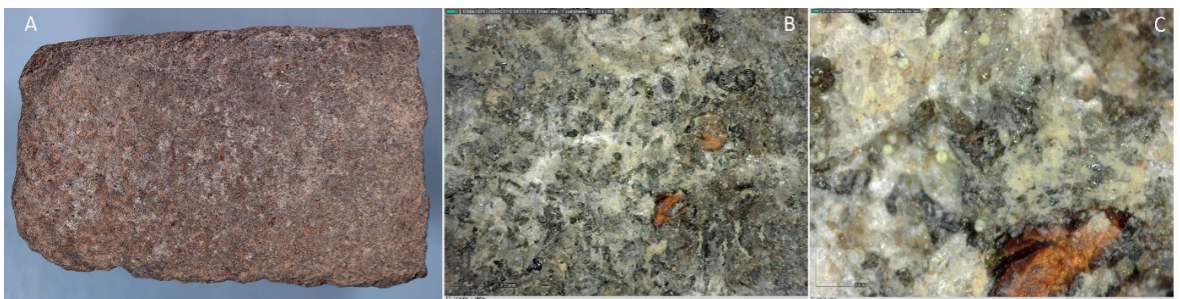
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Pl. 19.1: Querns



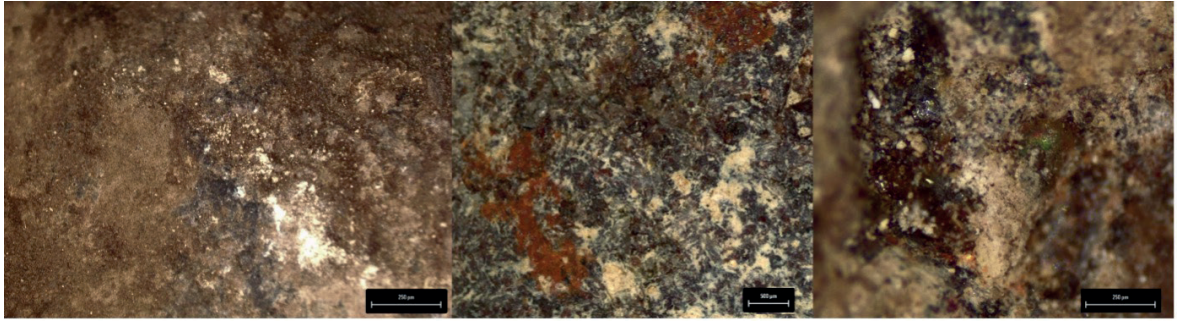
- a. TZ 114274-001. Macro-views of unfinished grinding surface with only (A) small wear facets, (B) modern impact and (C) traces of manufacture (macro)



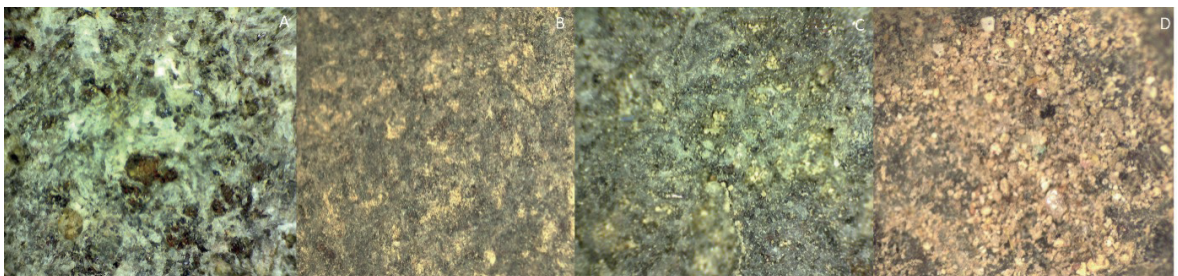
- b. TZ 114501-001. Active Surface with use-wear traces. Striations and residues, possible pine pollen (magnification from left to right x 50; x 200)



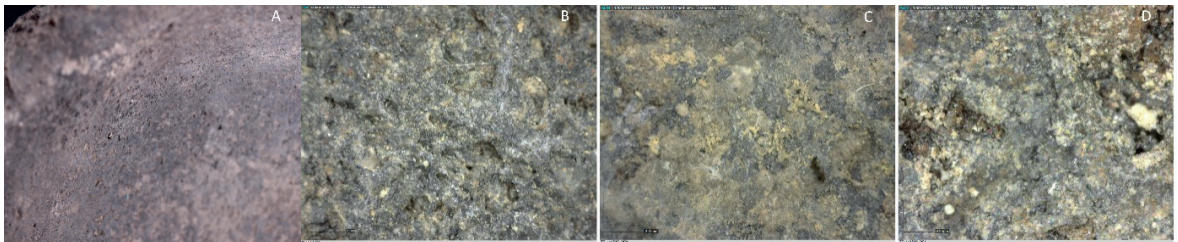
- c. TZ 114549-001. (A) Active surface with macroscopically visible traces of manufacture and use. (B/C) Striations, abrasion and fatigue wear in the form of rounded and loosened particles as well as cracks and pits and were observed microscopically (macro and magnification x 50)



- a. TZ 114088-001. Residue on ground-stone slap starch and fire traces as well as pigment as some kind of organic binder (magnification from left to right x 20, x 20, x 50)



- b. TZ 113522-001. First two slides: difference between (A) unused/manufactured and (B) active surface. (C) Striations showing movement pattern. (D) Concentration of residue and loose particles on the active surface (magnification from left to right x 60, x 20, x 60 x 10)

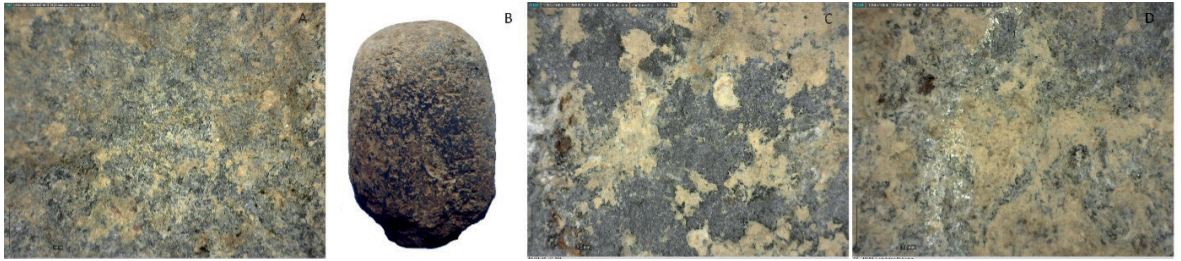


- c. TZ 114516-001. Use-wear traces observed were movement patterns indicated by scratches and striations. Within the bowl some residues were detected (magnification from left to right macro, x 50; x 50, x 200)

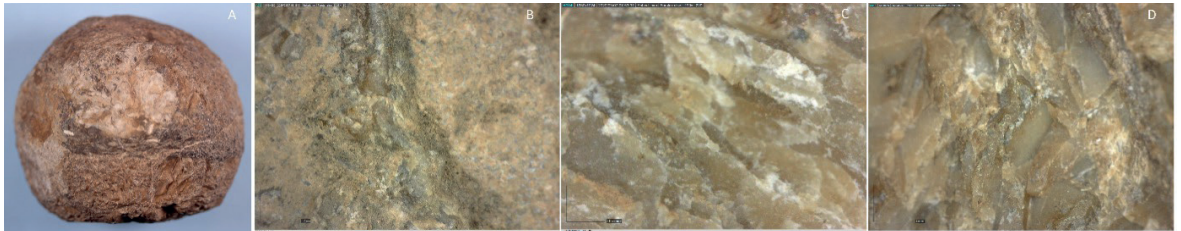


- d. TZ 114548-001. (A) Macro view inside bowl depression (basin) with tribochemical film in the upper part. (B) Macro with visible striations and various traces of impact and abrasion. (C) Used surface with striations, levelled rock grains and residues in x 50 magnification (macro und magnification x 50)

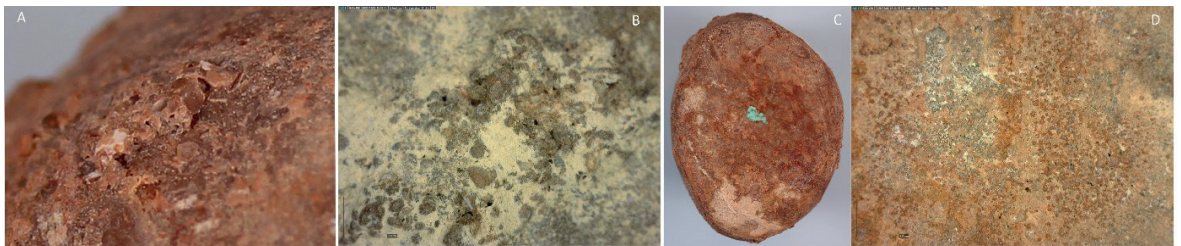
Pl. 19.3: Handstones



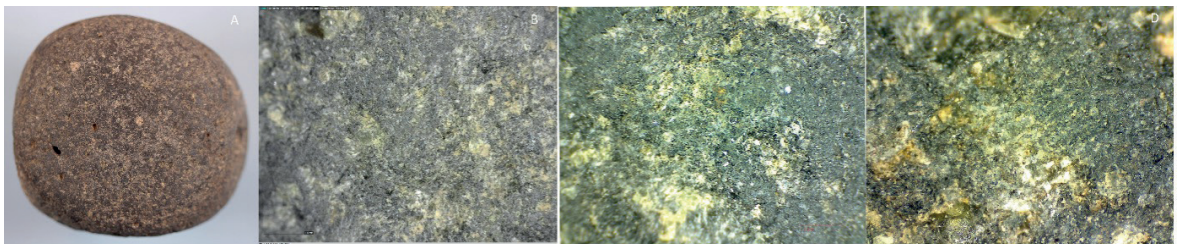
- a. TZ 114159-001. Handstone with (A) traces of impact at the top and (B) an extensive tribochemical film at the sides. (C) The polish is of a black smooth consistence and quite plan. (D) Overlying limited area of shiny micro-polish might rather be a modern scratch (magnification all x 50)



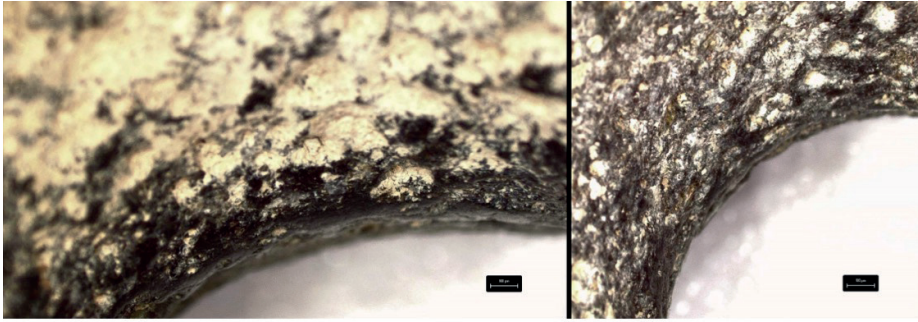
- b. TZ 114158-001. (A) Semi-circular hammerstone (Flint). (B) Most traces are due to manufacture, (C) some could be seen in as result auf battering, (D) some residues were observed – but could not yet be identified (magnification all x 50)



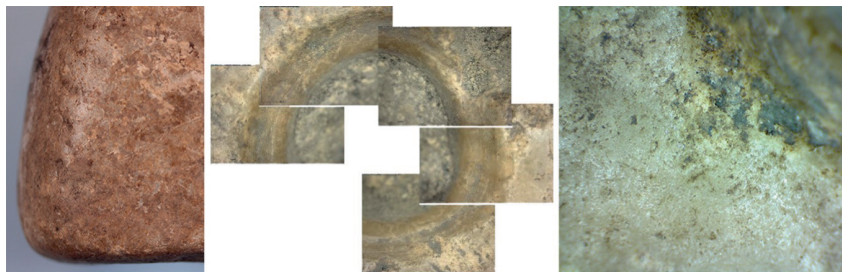
- c. TZ 114623-001. Pebble with some kind of (A) slip or (B) temper, which consists also pigments. (C/D) Striations mark the former movement, (C) while the green residue is modern Plasticine (macro and magnification x 50)



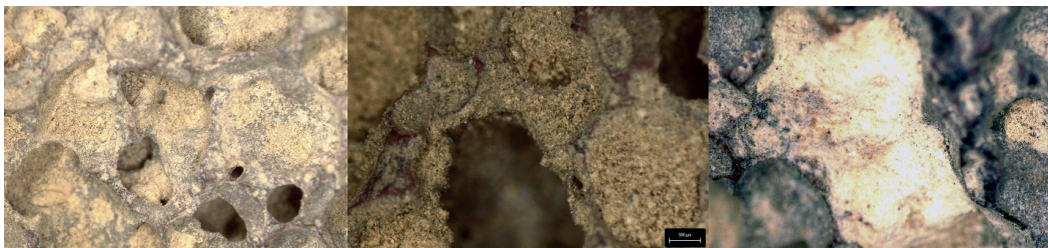
- d. TZ 113519-001. (A) Multifunctional handstone with a smooth flat side, the traces indicate (B) grinding/smoothing also (C/D) different kinds of pecking marks, which show difference in impact. Also some residue, here (B) some kind of collagen fibres (magnification from left to right x 50. x 50, x 80)



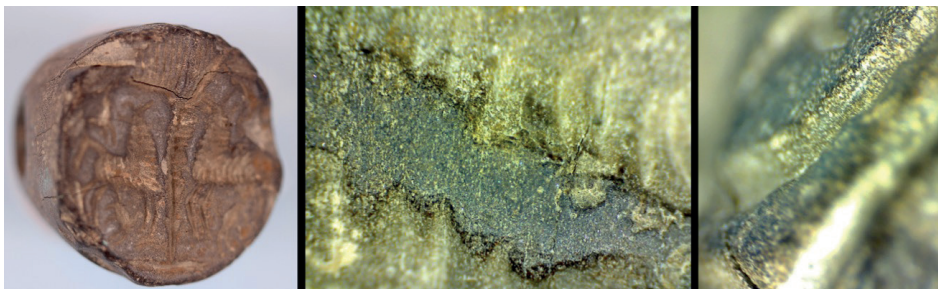
a. TZ 113205-001. Black band of tribochemical wear-film and turning grooves in the inner part of the donut-shaped stone



b. TZ 113722-001. Side of the artefact with polish and different kinds of scratches. View inside the artificial hole with the striations and distinguishable micro-polish



c. TZ 114531-001. The abrasion on the active surface. Striations are visible in all three pictures and showing a circular and back and forward movement (magnification from left to right x 10, x 20 and x 20)



d. TZ 114329-001. The illustration of the stamp seal. The cuts on the animal for example show the lenticular cuts and signs of the possible metal tool used (magnification from left to right x 80 and x 150)



## 20. ARCHAEOBOTANICAL FINDINGS

by Linda Olsvig-Whittaker

### 20.1. Introduction

This article reports on archaeobotanical analysis of 45 soil probe samples taken during the 2019 campaign at Tall Zar'a. The author previously conducted a pilot study of plant remains at Tall Zar'a (see Olsvig-Whittaker et al. 2017), but with samples that were not originally collected for archaeobotanical research, but were collected from small archaeological artifacts. This time, 45 soil samples were properly collected and stored in preparation for analysis, which took place in November 2019 and is presented in this paper.

Archaeobotany, the study of plant remains from archaeological sites, is an important and necessary branch of archaeology, and an integral part of archaeological projects only since the 1980's (Greig 1989). While in some cases, plant remains may persist due to the extreme dryness of conditions, in most cases what we can obtain in sites such as Tall Zar'a will be carbonized plant remains from de-

struction layers, *tawaben*, hearths or middens where ashes were deposited.

Most of the findings will be carbonized seeds. These may come either from agricultural and weed species or from natural vegetation – especially where dung was used as fuel. These can be extracted and identified under a microscope. From such carbonized macrofossils, we can learn which plants were raised or traded. Where dung was burned we may also have clues about natural vegetation.

Apart from the pilot study mentioned above, very little was known about the botanical remains in Tall Zar'a. The only plant artifact discovered until 2014 was a single olive pit found in dry sieving (TZ 310695-001, unpublished). The pilot study added eleven domestic and wild species to the list, and indicated a more serious project should be profitable (see *Tab. 20.2*).

## 20.2. Methods

### 20.2.1. Sample collection

Soil samples, approximately 1 kg in weight per sample, were collected at Tall Zar'a and stored in paper bags with information on the location and context of each sample. The samples were not random but collected from locations likely to produce seeds – ovens, hearths, storage areas, household floors, etc. These were brought to Amman and stored in crates until November 2019.

### 20.2.2. Extraction of plant materials

We used a simple washover hand method for this study partly because the equipment is inexpensive and also partly because this seems to handle the fragile carbonized seed remains more gently, in order to extract more remains. The methods used for this flotation work were modifications from the washover method described in Grieg (1989, 32–34) and in Campbell 2017. The equipment used were a 500 mm mesh sieve (standardized for soil analysis) and two buckets. The steps were as follows:

#### 20.2.3. Flotation

##### 20.2.3.1.

We began with the samples, which had all been stored in paper bags since the campaign (*Fig. 20.1*).

##### 20.2.3.2.

A sieve was placed over one bucket, while a second bucket was filled with water and a soil sample was added to the water (*Fig. 20.2*).

##### 20.2.3.3.

The soil sample was swirled by hand to separate the mineral and organic components (*Fig. 20.3*).



Fig. 20.1

##### 20.2.3.4.

The organic material was skimmed from the surface by using small cups, and poured over the sieve to isolate organic material (*Fig. 20.4*).

##### 20.2.3.5.

When it seemed most of the organic material was removed from the same, the remaining mineral soil and water were poured out into the garden.

##### 20.2.3.6.

When it seemed most of the organic material was removed from the same, the remaining mineral soil and water were poured out into the garden (*Fig. 20.5*).

##### 20.2.3.7.

The tray was permitted to sun dry in a windless location to avoid loss of samples material without damaging seeds (*Fig. 20.6*).

##### 20.2.3.8.

The dried samples were stored in small plastic containers labeled with the sample id and location information.



Fig. 20.2



Fig. 20.3



Fig. 20.4



Fig. 20.5



Fig. 20.6

### 20.2.3.9.

These samples were then boxed for later microscope analysis.

## 20.2.4. Microscope analysis

### 20.2.4.1.

The samples were examined on Petri plates under a Leica binocular microscope (LEICA S9i) with attached digital photography and computer screen options (Fig. 20.7).

Samples were scanned for seeds or other organic materials, which were removed with forceps and stored in Petrie plates labeled for sample and contents. Tentative identification was made and logged. Verification is carried out in the archaeobotanical laboratory of Prof. Ehud Weiss at Bar Ilan University, Israel.

## 20.2.5. Preservation

The samples will be stored in dry conditions at GPIA Jerusalem.



Fig. 20.7

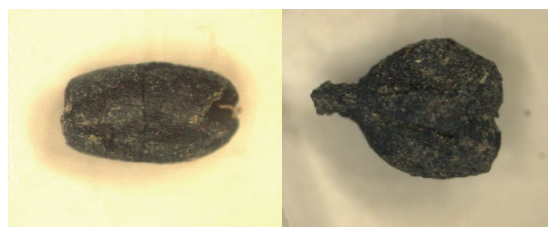


Fig. 20.8 Examples of carbonized seeds. Left: *Triticum turgidum*. Right: *Vitis vinifera*. (photographed by the author using the Leica binocular microscope)

## 20.3. Results

Find number	Locus	Latin name	organ	amount	Dating
113745-001	L11700			0	undetermined
113746-001	L11704			0	Iron Age II
113746-002	L11704	<i>Vitis vinifera</i>	pip	1	Iron Age IIB
114330-001	L11896	<i>Hordeum</i>			Iron Age IIB
114331-001	L11853			0	Iron Age IIB
114332-001	L11946	<i>Triticum turgidum subsp. parvicoccum</i>	grain	1	undetermined
114333-001	L11946	unidentifiable fragments			undetermined
114334-001	L11946			0	undetermined
114335-001	L11934	<i>Galium</i> sp. ( <i>Kolgyda</i> )	seed	1	Iron Age II/ Hellenistic
114335-001	L11934	<i>Triticum turgidum subsp parvicoccum</i>	grain	2	Iron Age II/ Hellenistic
114335-001	L11934	<i>Hordeum vulgare</i>	grain	2	Iron Age II/ Hellenistic
114335-001	L11934	<i>Vicia ervilia</i>	seed	3	Iron Age II/ Hellenistic
114335-001	L11934	<i>Lens culinaris</i>	seed	3	Iron Age II/ Hellenistic
114353-001	L11853			0	Iron Age IIB
114354-001	L11915	<i>Vitis vinifera</i>	pip	1	probably early Roman
114355-001	L12058	fragments			undetermined
114356-001	L11854			0	Iron Age IIB
114357-001	L11746			0	undetermined
114372-001	L12058	<i>Triticum</i> fragments		1	undetermined
114373-001	L12932	<i>Triticum</i> fragments			Iron Age
114374-001	L12058	<i>Hordeum</i> fragments			undetermined
114375-001	L11932	<i>Hordeum vulgare</i>	grain	2.5	Iron Age II
114375-001	L11932	<i>Triticum turgidum subsp parvicoccum</i>	grain	3	Iron Age II
114376-001	L12040	<i>Vicia</i> sp.	seed	1.3	undetermined
114376-001	L12040	<i>Brachypodium distachyon</i>	grain	1	undetermined
114377-001	L11854			0	Iron Age IIB
114378-001	L12058			0	undetermined
114435-001	L11945	<i>Hordeum vulgare</i>	grain	1	Iron Age II / Hellenistic
114436-001	L11945	cereal fragments ( <i>Hordeum</i> ?)			Iron Age II / Hellenistic
114437-001	L11945	<i>Hordeum</i> , <i>Triticum</i> and fragments			Iron Age II / Hellenistic
114438-001	L12069	<i>Lolium</i> sp.	grain	1	undetermined
114438-001	L12069	cereal fragments ( <i>Hordeum</i> ?)			undetermined
114439-001	L12069	<i>Hordeum</i>		1	undetermined
114440-001	L11934	<i>Hordeum</i> and <i>Triticum</i>		2	Iron Age II
114441-001	L11945	<i>Onosma aleppica</i>	achene	1	Iron Age II
114441-001	L11945	<i>Compositae</i> ?	cypsella	1	Iron Age II
114441-001	L11945	<i>Vicia</i> / <i>Lathyrus</i>	seed	2	Iron Age II

Tab. 20.1 List of identified seeds.

Find number	Locus	Latin name	organ	amount	Dating
114441-001	L11945	<i>Hordeum/ Triticum</i>	grain fragments	4	Iron Age II
114441-001	L11945	<i>Hordeum vulgare</i>	grain	3	Iron Age II
114441-001	L11945	<i>Triticum turgidum subsp parvicoccum</i>	grain	4	Iron Age II
114441-001	L11945	<i>Triticum</i> and fragments		1	Iron Age II
114442-001	L11915			0	Hellenistic/Roman
114444-001	L12069			0	undetermined
114559-001	L12150			0	undetermined

Tab. 20.1 List of identified seeds (continued).

20.4. Discussion

A comparison of the taxon list from the 2015 pilot study with the more extensive 2019 sampling shows strong similarities but some additional taxa in the later data set. *Hordeum* and *Triticum* are in both sets, as are *Vicia ervilla* (bitter vetch) and domestic grape. As noted in the publication of the pilot study, *Vicia ervilla* was commonly raised as a legume for food in ancient times although has since fallen out of use (Olsvig-Whittaker et al 2017). According to Zohary et al. (2012, 116) it was consumed as food only by the poorest classes. It was toxic in its natural state and required repeated leaching with water before it

could be eaten. However it was used as excellent fodder for livestock. Domestic grape (*Vitis vinifera*) was also found in both data sets, and we know that this area produced excellent grapes and wine.

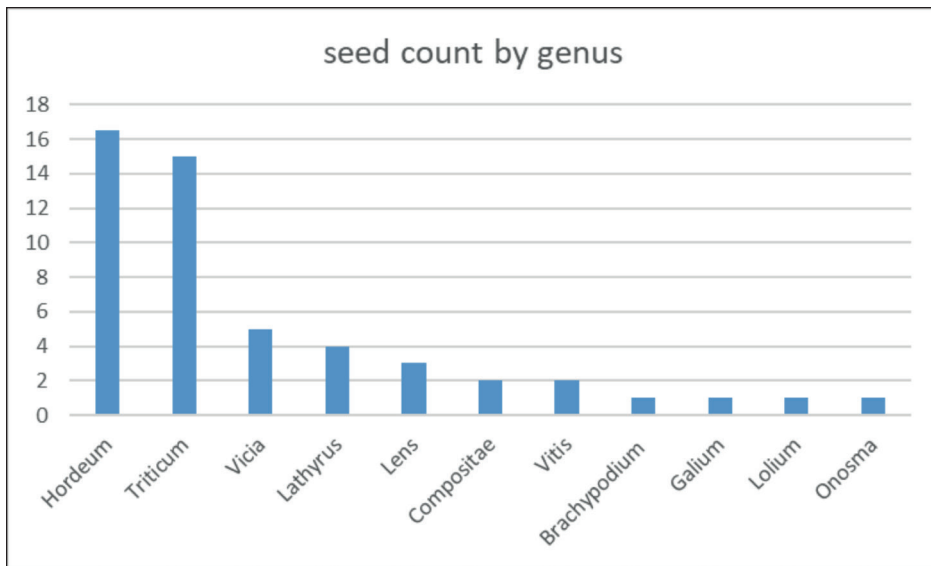
The 2019 data provide us with a limited ability to say something about abundances, although this is not an inherently quantitative sampling method (Histogram below). However, we do note that the most abundant seeds were those of the bread cereals barley and wheat; all the others were much rarer although the legumes (*Vicia*, *Lathyrus*, *Lens*) were the next most common. We can assume that

2015 list	2019 list	Taxon
	x	<i>Brachypodium</i>
x		<i>Ficus carica</i> (domestic fig)
	x	<i>Galium</i>
x		<i>Gynandrysis sp</i> (a wild iris-like geophyte)
x	x	<i>Hordeum vulgare</i> (domestic barley)
	x	<i>Lathyrus</i>
	x	<i>Lens</i>
	x	<i>Lolium</i>
x		<i>Olea europaea</i> (domestic olive)
	x	<i>Onosoma</i>
x	x	<i>Triticum aestivum</i> (common wheat)
x	x	<i>Vicia ervilia</i> (domestic bitter vetch)
x	x	<i>Vitis vinifera</i> (domestic grape)
x	x	unknown <i>Compositae</i> species (daisy, sunflower family)

Tab. 20.2 Comparison of the 2015 and 2019 samples

the data set represents food supply with some occasional weeds, and that the people of Tall Zar'a

seem to have subsisted largely on a diet of bread and legumes.



Tab. 20.3 Seed count by genus

## 20.5. Bibliography

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## 21. RADIOCARBON DATES

by Katharina Schmidt (based on the report by Alexander Cherkinsky)

The radiocarbon dates were determined at the Center for Applied Isotope Studies at the University of Georgia; the report on which this chapter is based was provided by A. Cherkinsky.

The uncalibrated dates quoted have been corrected for isotope fractionation, and were given in the report in radiocarbon year before 1950 (year

BP), using the  $^{14}\text{C}$  half-life of 5568 years. The dates have been calibrated into absolute years according to the calibration-curves in Stuiver – Reimer (1993, 215–230) with the calibration-programme CALIB 3.0. All data presented here are based on the analysis of charcoal samples due to the absence at the site of short-lived plant material, e. g. seeds.

### 21.1. Results

#### Lab. no. 45049

TZ 113508/L11694, charcoal

Radiocarbon Age BP 2520  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013):

68.3% (1 sigma): cal BCE 778–750 0.353

683–668 0.189

638–590 0.458

95.4% (2 sigma): cal BCE 789–739 0.318

687–664 0.158

646–549 0.523

Median Probability: -644

#### Lab. no. 45050

TZ 114483/L12133, charcoal

Radiocarbon Age BP 2580  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 799–782 1.000

95.4% (2 sigma): cal BCE 802–771 1.000

Median Probability: -791

#### Lab. no. 45051

TZ 114563/L12174, charcoal

Radiocarbon Age BP 2490  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 756–739 0.131

688–679 0.071

671–663 0.056

646–604 0.346

598–549 0.397

95.4% (2 sigma): cal BCE 769–726 0.182

721–702 0.038

696–540 0.780

Median Probability: -634

#### Lab. no. 45052

TZ 114400/L12032, charcoal

Radiocarbon Age BP 3050  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 1379–1343 0.465

1306–1267 0.535

95.4% (2 sigma): cal BCE 1395–1333 0.451

1326–1257 0.511

1248–1232 0.038

Median Probability: -1313

#### Lab. no. 45053

TZ 114565/L12159, charcoal

Radiocarbon Age BP 2910  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 1126–1049 1.000

95.4% (2 sigma): cal BCE 1193–1143 0.165

1131–1019 0.835

Median Probability: -1095

#### Lab. no. 45054

TZ 114564/L12169, charcoal

Radiocarbon Age BP 2920  $\pm$  20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 1188–1182 0.057

1157–1146 0.112

1128–1055 0.830

95.4% (2 sigma): cal BCE 1209–1041 1.000

Median Probability: -1114

**Lab. no. 45055**

TZ 113376/L11636, charcoal

Radiocarbon Age BP 2480 +/- 20

Calibration data set: intcal13.14c (Reimer et al. 2013)

68.3% (1 sigma): cal BCE 754–730 0.174

692–681 0.079

670–658 0.079

652–609 0.290

594–543 0.377

95.4% (2 sigma): cal BCE 766–536 0.996

f526–524

0.004

Median Probability: -640

## 21.2. Discussion

The absolute dating resulting from the radiocarbon analysis will be compared with the stratigraphic analysis of the layers and their chronological relationship based on the analysis of pottery and other individual finds. The probabilities of the values within the two standard deviations 1 sigma and 2 sigma sometimes vary significantly and thus have to be interpreted carefully.

Samples were taken from all three different phases of Building A in the northern part of the Tall. Sample *no. 45050* comes from Locus L12133 which was the fill of Inst11696 which is a hearth directly built on floor F11689 of Room 1 of Building A (see *Chap. 1.3*). At 95% confidence there is a 100% chance that the sample dates between 802–771 BCE.

The other sample (*no. 45049*) comes from a deposit in the same room (L11694) and falls, at a confidence of c. 50%, into the period between 656–549 BCE, but with a c. 30% chance of falling into the period between 789–739 BCE, which would be more compatible with the previous result.

Another sample (*no. 45055*) comes from the deposition layer (L11636) above the floor (F11665) of Phase 1 of Building A. At 95% confidence, there is a chance of almost 100% that the sample falls into the period between 766–536 BCE.

Sample *no. 45051* was taken from a deposition layer (L12174) near *tabun* 12167 from Room 1,

Phase 3 Building A. At 95% confidence, there is a 78% chance that the sample falls into the time span between 696–540 BCE. The data determined by the <sup>14</sup>C analyses deviate from the expected time span obtained by the relative chronological sequence.

Three samples were taken from the deep trench AV 129. Sample *no. 45054* was taken from F12169 (see *Chap. 1.2*), the lowest horizon excavated. At 95% confidence, there is a 100% chance that the sample falls into the period between 1209–1041 BCE. Sample *no. 45053* was excavated from L12159, which lies above F12169. The sample falls into a time span of between 1131–1019 BCE at 95% confidence with a chance of 84%. Both samples were taken from the lowest excavated layers of the deep trench and fall, with high probabilities, into the time frame 1209–1019 BCE.

Further up in the same deep trench AV 129, sample *no. 45052* was taken from L12032. Here the probability is not quite as high as for the first two samples. Thus, this sample falls into the period between 1326–1257 BCE with 95% confidence with a chance of c. 50%, and there is the likelihood of c. 45% that it falls into the period between 1395–1333 BCE. From a stratigraphic point of view sample *no. 45052* lies above samples *nos. 45054* and *45053* and hence should be younger, the C14 dates therefore reflect, like the pottery and small finds in trench AV129, that the deposits were mixed.

## 21.3. Bibliography

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Stuiver, M. – Reimer, P.J. 1993, Extended 14C data base and revised CALIB 3.014C age calibration program, Radiocarbon 35/1, 215–230

## SUMMARY

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## 22. CONCLUSIONS AND DISCUSSIONS

### 22.1. Iron Age Period

#### 22.1.1. Chronology

Here, only summarizing remarks are presented since the architectural remains have been described in detail in *Chaps. 1–4*. The Iron Age building structures excavated at Tall Zar'a in the 2018/19 seasons were limited to the north of Area II, or rather the edge of the Tall, and included Phases 1 to 3 in Building A and Phase 2 in Building B, which have not yet been fully excavated.

The division of the Iron Age occupation in Area II into three phases (Phases 1–3) is based on the architectural evidence discussed in *Chap. 1.3*, and thus on the relative chronological sequence of those layers. The absolute dating is based on the pottery analysis and on the few  $^{14}\text{C}$  samples that were obtained. In general, the pottery from the Iron Age periods at Tall Zar'a compares markedly well with that from Tell Abu al-Kharaz in the Jordan Valley and Tell er-Rumeith in the Transjordanian highlands. The pottery analysis clearly shows the close similarity of Phase 3 material with that from Tell Abu al-Kharaz phase XIV (770–730 BCE) and phase XIII (early 8<sup>th</sup> cent. BCE; Fischer 2013, 516: Tab. 83), however, with the greater number of parallels to be found among the phase XIII material. Thus, Phase 3 material at Tall Zar'a is slightly older than Phase 2 and points to the late 9<sup>th</sup> and to the 8<sup>th</sup> cent. BCE.

Regarding Phase 2, a  $^{14}\text{C}$  sample from a hearth points to the time between 802–771 BCE with 95% confidence. The pottery material is similar to the material of phases XIV (770–730 BCE) and XIII (early 8<sup>th</sup> cent. BCE) at Tell Abu al-Kharaz, but with significantly more pieces showing compatibility with phase XIV. Phase 2 thus points to the early to mid-8<sup>th</sup> cent. BCE, and reflects a slightly later date than Phase 3.

The Phase 1 building was only poorly preserved and has been heavily disturbed by later buildings.

Pottery was sparse compared to the assemblages of Phases 2 and 3 and can be attributed to the late Iron Age II B and II C (7<sup>th</sup>–6<sup>th</sup> cent. BCE), although later Persian and Hellenistic sherds were also found. The remains of Building A, Phase 1 thus roughly indicate a later date, from the late 8<sup>th</sup> to early 6<sup>th</sup> cent. BCE.

With respect to the stratigraphic sequence of the Iron Age established for Area I at Tall Zar'a, both Phase 3 and Phase 2 fall into Stratum 11 (900/830–800/750 BCE) and Phase 1 in Stratum 10 (800/750–520 BCE; Soenneken 2017, 670; TZ 1: Introduction, 240, tab. 4.1). The building structures of Phases 3 and 2 were erected directly above each other in most of the cases and follow the same orientation; they partly used the same walls. The few architectural remains of Phase 1 did not follow this orientation, which could indicate a hiatus between the construction of the early Phase 2 building and the Phase 1 building – at least at this particular spot.

#### 22.1.2. The architecture of the houses

The houses of all three phases shared similar construction methods and materials, and were consistent with what is known for the buildings of the same period in Area I (Stratum 11 and 10). The foundations were built of quarry stones, the superstructure consisted of mud bricks, since many broken mud bricks were found in the debris layers. The floors consisted mostly of beaten earth. Remains of collapsed roofs were not preserved. On the basis of the present evidence, it is not possible to prove that the houses had several storeys. Apart from the fireplaces there were no traces of fire in Buildings A and B debris, so that a

catastrophic fire is out of the question for the destruction of the houses, though an earthquake may have been responsible for the destruction of Building A, Phase 2. Given that the region is demonstrably much affected by earthquakes, this would be a possible scenario. In any case, the inhabitants of the house did not return after its collapse to retrieve their belongings, including the seal.

From the abundant inventory, in particular in Phase 2, it can be said that the buildings were clearly of domestic character and they provide a rich source of knowledge about everyday life. Thus, fire installations were present that served as hearths and the *tawabeen* were used for baking bread. Some areas of the houses certainly functioned as storage areas. For this purpose, there were various installations as well as a paved area that allowed the placing of storage jars or containers made of perishable material, such as basketry or leather. It is interesting that hardly any storage vessels were found in the ceramic material (see *Chap.* 7.8).

Other areas of the house were used for food processing and preparation, as evidenced by findings of various tools with corresponding use-wear. Also craft activities were carried out, which is attested by the abundance of specific tools. Especially prominent – at least in Phase 2 – was the processing of sheep and/or goat hair, which was spun and woven here, as evidenced by a number of loom weights (found lying in a row) belonging to a single loom and a spindle whorl. The stamp seal can be regarded as a personal belonging of a member of the household. It depicts two goats with their young flanking a tree and behind them is their herd, and thus must have been a reflection of the environment in which the inhabitants of Tall Zar'a lived, and which they therefore chose as seal motif. The well-preserved features of Building A, Phase 2 compare well with houses at Tell Abu al-Kharaz. The best parallel from there is house 1 in area 7 (phase XIV) together with its inventory, which abutted the south side of the city wall (Fischer 2013, 202–206, for the plan see Fig. 182C). Also, the basic structure of the house at Tell Abu al-Kharaz, with its central courtyard and

adjacent smaller rooms, some of which were also paved, finds good agreement with Building A, as do the type and dimensions of the walls, which also had a mud brick superstructure, and the beaten earth floor. The inventory, such as weaving tools, basalt tripod bowls, and the ceramic jars, decanters and cooking pots correspond very closely in type and composition to that from Tall Zar'a (Fischer 2013, 206, Fig. 187A).

### 22.1.3. Settlement structure

In Area II, the buildings of Phases 3 and 2 were only preserved at the edges of the Tall. The northern exterior walls of Building A (Fig. 22.1; Phase 3 and 2) ran in a slight curve, parallel to the edge of the Tall and formed the outer wall of the settlement. The urban plan of the settlement therefore consisted of a belt of houses along the edge of the mound, forming the perimeter wall.<sup>113</sup> At this stage it cannot be decided whether an additional fortification wall further outside on the edge of the Tall had existed, but which has not survived. The findings in Area I, Stratum 11 make this scenario unlikely, since an outer fortification wall is also absent here. According to the observations in Area I, it is likely that the settlement that lay within the wall was dense (Soenneken 2017, plan 563, explanations 564–614).

Comparisons with city plans of Iron Age II fortifications in Trans- and Cisjordan show that there are a number of different models of Iron Age II city layouts, however, all have a dense settlement within the enclosed area in common. With regard to settlements in Cisjordan, Herzog 1992 compiled typical settlement structures of the Iron Age II, and an essential factor was the outer contour. He distinguished between an “oval” settlement form, which follows the topography of the mound, and a “peripheral” settlement plan, which does not follow the natural edge of the terrain (Herzog 1992, 247–248).<sup>114</sup> These settlement patterns are also common in Transjordan. Tell Abu al Kharaz (Fischer 2013,

113 This type of town plan represents a continuation of the Late Bronze Age structure, Herzog 1992, 25.

114 Herzog 1992, 247 points out that the peripherally organized settlement is the most common and simplest city plan. Orthogonal settlement plans stand out from the landscape and thus have a monumental character. Herzog also establish-

es a relationship between the form of a settlement and its function. According to him, orthogonal structures possess a special “social, political or military importance” and are often part of an acropolis of a capital city or a fortress. In Cisjordan, oval settlement layouts are more common, for a summary overview, see Herzog 1992, 247–263.

489, fig. 449), Tall Jawa (Daviau 2003, 46, fig. 5.1), Tell el Balua (Worschech 1995, fig. 1) and Buseira (Bienkowski 2002, 40, fig. 1.2) for example follow an oval settlement structure and are adapted to the surrounding topography, while Tell er-Rumeith (Lapp 2015, 10 fig. 2.1), Lahun (Homès-Fredericq 1997, 69, fig. 46) and Ara'ir (Olávarri 1965) for example, have a typical rectangular peripheral enclosure.<sup>115</sup> The exemplary selection of settlements in Transjordan shows that the overall layout of the settlement is not limited to the specific geographical region.

Also with regard to the type of perimeter wall, different forms can be observed in the Iron Age II B period, which Herzog (1992, 269–271) grouped as a “peripheral belt of houses”, “casemate walls” and “massive walls”.<sup>116</sup> These different types of perimeter walls were also present at sites in Transjordan, often in relatively short chronological succession as seen clearly in the example of Tall Jawa and Khirbat al-Balu'a. At Tall Jawa, the Iron Age I (phase IX) wall is characterized by offsets and insets along its outer face and a rectangular massive tower outside the fortification on one of the sides. In the Middle Iron Age II (phase VIII, 10<sup>th</sup>–8<sup>th</sup> cent. BCE) a casemate wall is present in addition to a retaining wall which kept the sloping soil layers in place (Daviau 2003, 45–48). At Khirbat al-Balu'a, the Iron Age I city wall consisted of a single large wall while the Iron Age II city wall can be identified as a casemate system (Worschech 1995, 145, 146, fig. 1; Bramlett et al. 2020, 121).

The settlement outline and type of enclosure of Tall Zar'a in the Iron Age IIB corresponds to the typical oval shape that follows the natural topogra-

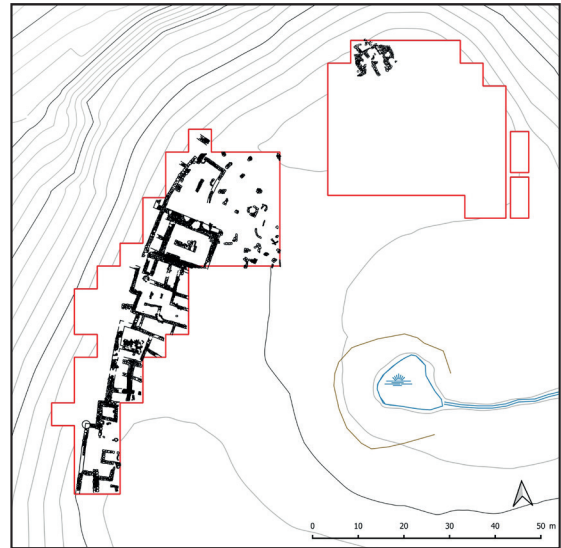


Fig. 22.1 Plan which shows Area I Iron Age plan (stratum 11) and Area II Iron Age plan (phase 2).

phy of the mound with a surrounding belt of houses forming the perimeter wall without any freestanding wall. A particularly close correspondence to the settlement structure can be found at Tell Abu al-Kharaz, especially in phase XIV, but also in phases XIII and XV. There, the city wall also ran along the edge of the Tall (by incorporating older parts of the Late Bronze Age casemate wall). The nuclei of settlements were dense and extended up to the city wall (Fischer 2013, 488–490, fig. 448–490).<sup>117</sup> Similarly, stratum VI at Megiddo was surrounded by a belt of houses without an additional wall; only later a massive offset and inset wall was added (Herzog 1992, 252, fig. 15).

115 The latter are often referred to as “fortresses” due to their shape and geographical location, which shows that suggestions with regard to the connection between the settlement layout and function were made, see Herr – Najjar 2008, 321; for Lahun see Homès-Fredericq 1997, 68.

116 For examples of these fortifications in Cisjordan, see in detail Herzog 1992, 269–271. For a detailed study on different types of enclosure walls, see Burke 2008.

117 The wall and buildings of phase XIV (Area 7) are particularly well preserved (Fischer 2013, fig. 182A). There, in quadrant XLII B, parts of an outer wall have survived that were part of a casemate wall built in the Late Bronze Age, but which continued to be used throughout the Iron Age (Fischer 2013, 190).

## 22.2. Hellenistic and early Roman period

### 22.2.1. Fortification

The formerly dense layout of the settlement of Phases 2 and 3 in Area II is only preserved at the edges of the Tall, the adjoining Iron Age buildings to the south were completely destroyed, being victims of large-scale reconstruction works in the Hellenistic period. The destruction of the Iron Age buildings can be traced throughout the excavated part of the Northern Area (AX 128/129, AW 128/129 and AV128/129) and the Western Area (AW126/127 and AV 126/127), as these areas were completely devoid of Iron Age structures. Interestingly, a similar situation was observed in Area I, where the northeastern quadrants AR–AT 123 of Area I are massively affected by the later destruction (Soenneken 2017, 563–564, 610).

The destruction of the Iron Age buildings must have taken place either in the Ptolemaic, Seleucid or Hasmonean period (see below). The aim of these works was to build or restore the large wall with attached stone massifs (W11186). For this purpose, first a massive trench was dug, to which the Iron Age buildings fell victim. The highly disturbed stratigraphic sequence is particularly evident in the deep soundings AV 129 and AU 129: In the lowest layers of both deep trenches (*intra-* as well as *extramuros*) pottery of the Late Bronze Age, Iron Age I and II as well as Hellenistic was found together. This level, however, lies 2.30 m lower than the floor level of Building A (Phase 3).<sup>118</sup> The strong mixing of layers could only have been formed by a later intervention in the features. The large wall (W11186) located in this area and the absence of Iron Age architectural structures in the Western and Northern Areas support this scenario.

For the approx. 2.5-m-thick wall that crosses Area II from west to east, an interpretation as a Hellenistic defence wall has been considered before (Vieweger – Häser 2013, 34–35). It was assumed that the stone massif, interpreted as a tower, in Area I also belonged to this “fortification” (see Chap. 4). More of the wall and another attached stone massif were excavated in Area II during the

2018 and 2019 seasons, so that a section of the wall approximately 35 m long has now been exposed. A connection between the wall and the stone massif in Area I seems likely.

The question of chronology has not yet been clarified conclusively, as the foundation of the wall has not been reached. Within the structures uncovered in quadrants AU 129 and AV 129, there has so far been no evidence of multiple phases; the wall and stone massifs were obviously built simultaneously in the areas that have been excavated (see Chap. 4).

In the deep sounding on both sides of the wall (AU 129 and AV 129), thick layers of earth were uncovered, which, on the basis of the material found, attest to a long use of the wall in Hellenistic times. In the *extra muros* layers (AV 129) a division into two parts was found (see Chap. 1.2.2). In the section, Pit11979 was visible (Fig. 1.6), which clearly cut into the deeper layers. The layers below the pit were horizontal and clearly separated by various conspicuous bands. The pottery from these lower layers (see Chap. 9.1) was a mix of Iron Age and Hellenistic sherds, and a fragment of a Bronze Age milk bowl was also found. Among the Hellenistic sherds were several pieces of fine pottery (echinus bowls, fish-plates, ESA). Overall, the Hellenistic pottery ranges from the 3<sup>rd</sup> cent. BCE to the late Hellenistic/early Roman period; it cannot be determined more precisely due to the long running times of certain forms. However, there were no pieces that are necessarily later than the late 2<sup>nd</sup> cent. BCE.<sup>119</sup>

The material from the fill of Pit11979 also contained Iron Age and Hellenistic finds and hardly differs from the spectrum of the lower layers. A coin of Antiochos IV (Cat. 18.2), as well as a coin dated generally to the Hellenistic period (Cat. 18.10) offer no further clues for a finer dating here. However, the analysis of the finds on the other side of the wall, in AU 129 (see Chap. 3.2.2), is helpful. No pottery finds have been datable from the lower layers. Strikingly, from the level of Inst11930 sev-

118 The distance between the deep sounding and Building A is almost 10 m; therefore, the large height difference cannot be explained by a long distance and height differences caused by the slope of the Tall.

119 An exception is a rim from L12136, which is considered here as a possible stray due to the otherwise cohesive picture.

eral coins were found that are either from the time of Alexander Jannaeus (*Cat. 18.18*; *Cat. 18.21*) or generally Hasmonean (*Cat. 18.24*; *Cat. 18.25*). The pottery sherds, which again include some pieces of Hellenistic fine pottery, can be dated to the early 1<sup>st</sup> cent. BCE (see *Chap. 7*).

### 22.2.2. Who built and who repaired the wall?

The historical background for the repair of the wall could be the time of the siege of Seleukeia Gadara.<sup>120</sup> As part of his expansion campaigns in Transjordan, Alexander Jannaeus besieged the city, which was situated on a hill within sight of Tall Zar'a (*Fig. 22.2*). It took over 10 months of siege before he was able to capture it, in 98 BCE (*Ios. Ant. Iud. XIII 356*). Gadara had been provided with a powerful fortification in Seleucid times, probably in the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE (Jansen 2020). The defence wall was closely oriented to military requirements and equipped with loopholes for bows and torsion catapults. Numerous finds of projectile balls testify to the fact that the towers were equipped with catapults for stone projectiles and thus corresponded to the standard of a defensive wall that had been built against the background of constant conflicts between the Ptolemies and the Seleucids (Jansen 2020, 122). The military equipment on the Hasmonean side was presumably much simpler, so they probably mainly used slingshots.<sup>121</sup> It was therefore not possible for the Hasmoneans to take the fortress by military means, which is why only the time-consuming method of starvation by siege was possible. For this, there had to be a station nearby from which the enclosed population could be monitored and at the same time the besiegers protected from counterattacks. Tall Zar'a offered particularly good conditions for this, since from here there was direct visual contact with the southern flank of the fortress of Gadara. The spring ensured the water supply, and access to the Jordan



Fig. 22.2 Presumed tower in Area I during excavation, the fortress hill of Seleukeia Gadara is in the background on the right.

Valley meant that supplies could also be brought in from Cisjordanian territory.

The wall uncovered in Area II was probably intended to protect the side directly opposite the besieged city. The stone massifs, which may have originally had a different function, may have served as watchtowers. It was probably possible to do without projecting towers to flank the curtain wall here, as no attacks with heavy siege equipment were to be expected.

There is thus much to suggest that Alexander Jannaeus chose Tall Zar'a for his military base during the siege of Gadara. This assumption is supported by the large number of coins. In addition to the six coins already mentioned (three of Alexander Jannaeus and three generally Hasmonean), four more (*Cat. 18.17*; *Cat. 18.20*; *Cat. 18.22–23*) of Alexander Jannaeus were found in Area II in the 2018/19 seasons, although one with a minting date of 78 BCE (*Cat. 18.23*) cannot date from the time of the siege. Also in the 2003 to 2011 seasons, a comparatively large number of coins of Alexander Jannaeus, 18 pieces, were found, out of a total of 104 identified coins (*Chap. 17*).<sup>122</sup> In comparison, Noeske (2013, 137–140) lists only 8 coins of Alex-

120 The name Seleukeia Gadara is used here for the fortress on the upper plateau.

121 Slingshots were the traditional weapons of the Hasmoneans (Shatzman 1991, 11–13), even if occasionally individual siege machines won in conquests were used (Shatzman 1991, 24). That the Hasmoneans also fought with sling-

shots during the conquest of Gadara, however, is shown by finds from the fill layers beneath the destruction layers of the city wall (Jansen 2020, 123).

122 Online database: <<http://muenzen.tallziraa.de/index.php>> (accessed 06.04.2021).

ander Jannaeus among 1408 identified coins from Seleukeia Gadara. The high number of coins of Alexander Jannaeus at Tall Zar'a could be related to the payment of mercenaries in connection with the siege of Gadara.

It should be added, however, that some of the coins could probably equally be connected with a second phase of Hasmonean presence in the region. This certainly applies to the coin of 78 BCE, because only a short time after the successful conquest of Seleukeia Gadara, Alexander Jannaeus had to withdraw from the Transjordanian region after a defeat by Obodas I in 93/92 BCE. Based on an inscription from Seleukeia Gadara, it can be assumed that the fortress, which had suffered some damage during the capture, had been repaired by the Seleucid Antiochos XII in 85/84 BCE to serve as a base for his war campaigns against the Nabataeans and the Hasmoneans (Jansen 2020, 47–50).<sup>123</sup> But this measure only helped the late Seleucids for a short time: one year later they were defeated by the Nabataeans at the battle of Kana. The Hasmoneans were then able to bring the region back under their rule in a second attempt in 83 BCE,<sup>124</sup> until it was taken over by Pompey in 64 BCE.

Thus, while for the second phase of Hellenistic use of the wall at Tall Zar'a, a connection with the siege of Seleukeia Gadara by Alexander Jannaeus is probable, it remains unclear in what context the wall was erected or at least by whom it was used in the first known Hellenistic phase. According to historical events, various occasions for the construction or repair of a defensive wall could be imagined. The region had been granted to the Ptolemaic rulers after the battle of Ipsos in 301 BCE, but it was repeatedly disputed by the Seleucids. In the account of the capture of Gadara by the Seleucids in 218 BCE, Ptolemaic Gadara is described as “the strongest place in the area” (Polybios, *Histories* V 71, 3). According to Polybios' account, the construction of

the siege works was enough to make the Gadarenes surrender their city. Archaeological research in Umm Qays has produced settlement finds from the 3<sup>rd</sup> cent. BCE, but no evidence of a fortification from the Ptolemaic period. Therefore, the assumption was made that the pre-Seleucid Gadara was not located on top of the plateau, corresponding to the predecessor of today's Umm Qays, but at Tall Zar'a (Dijkstra 2005; Jansen 2020, 9). It would therefore be worth considering whether the restoration of the wall at Tall Zar'a could be related to the Ptolemaic period – a Ptolemaic presence is supported by pottery and coin finds (Kenkel 2020, 114).<sup>125</sup> Thus, its construction or more likely its reuse would fall into the 3<sup>rd</sup> cent. BCE. If one assumes, however, that there was a Ptolemaic fortress on the upper hill of Umm Qays, which has not yet been found, the wall on Tall Zar'a could also be a Seleucid siege fortress. However, there is no mention of a longer siege in written sources.

After the capture of Gadara in 218 BCE, Antiochos III was once again defeated by the Ptolemies at the Battle of Raphia in 217 BCE, before finally taking the region in the Fifth Syrian War (202–198 BCE). But apparently the newly conquered Gadara was not immediately secured with a defensive wall, for the known fortress was not built until the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE (Jansen 2020, 117). This is possibly related to the fact that Antiochos III moved directly on with his army to Asia Minor and as far as Greece, where his campaign of conquest was finally stopped by the Romans and he had to renounce a large part of the Asia Minor territories. Only his successors, Seleucus IV or Antiochus IV, come into question as the builders of the fortress at Gadara. The dynastic names Seleukeia and Antiocheia, which are known for the site in addition to the Semitic name Gadara, could also go back to both of them (Weber 2002, 12–13).<sup>126</sup> With regard to the wall from Area II, it cannot be ruled out that

123 The inscription dates to the year 228 of the Seleucid counting (85/84 BCE).

124 In this context, a capture of Gadara is not explicitly mentioned, but archaeologically there is evidence of a second destruction of the fortress (Jansen 2020, 117).

125 There are three Ptolemaic coins listed in the database of the 2001–2011 seasons. Online database: <<http://muenzen.tallziraa.de/index.php>> (06.04.2021)

126 The name Seleukeia, which has been recorded in late antique sources, is now also attested by the inscription men-

tioned above (Jansen 2020, 47–50). The analysis of the inscription also provides an indication that the named Seleukeia did not correspond to the entire urban area of Gadara, but only to the walled area within a larger settlement. This fits with the assumption of Lichtenberger (2017, 10) that Gadara, like other later Decapolis towns, was founded alongside older settlements. He argues in favour of attributing the foundation to Antiochos IV, to whose time the introduction of the cult of Zeus Olympios also goes back.

it served as a garrison that was stationed on the Tall by Antiochos III for the initial protection of Gadara.

While the fortress of Seleukeia Gadara was built of very regular ashlar masonry, the building method of the wall at Tall Zar'a, with its construction of mostly unworked quarry stones (see *Chap. 4*), deviates significantly from this. This would argue against a dating to both the Seleucid and Ptolemaic periods, where a much more regular polygonal or ashlar construction would be expected (Hellmann 2010, 320–323). However, it cannot be ruled out that under special circumstances, such as when fortifications were built under great time pressure or only for temporary purposes, the construction method was less regular. It should also be noted that the sinter stone on the Tall was less suitable for the construction of regular ashlars than the soft limestone on the upper plateau. In addition, it can be assumed that the material of the demolished Iron Age buildings was reused. For the construction method, a comparison can be made with the nearby fortress on Jebel Sartaba, for which, however, a Hellenistic dating is also only generally assumed (Smith et al. 1983, 70–74).

The construction, presumably with inward-facing buttresses, also does not conform to Hellenistic fortifications, where outward-facing towers or bastions ensured the possibility of flanking the curtain wall. The untypical design and building method of the large wall could also be taken as a strong argument for the fact that the wall was built much earlier and was only re-used in the Hellenistic period. A final assessment of the wall in Area II will only be possible once further details have been clarified, e.g. whether an older construction was reused and how the ground plan can be reconstructed.

### 22.2.3. Hellenistic housing

From the Hellenistic period, traces of a two-phase residential building were found next to wall W11186, of which two rooms have been excavated so far. Immediately south of W11186, these two rooms were originally built of mud brick walls on stone plinths (see *Chap. 3.1*). A single wall from a previous construction phase is still preserved below the dividing wall between the two rooms. The dating of these rooms and the previous building is not certain. However, since they extend over the stone massif Inst11576, it is clear that they were

only built when this was no longer in use and was evidently partially demolished for the subsequent building development. Clues as to when the massif (Inst11576) was built over are provided by two coins of Alexander Jannaeus (*Cat. 18.15; Cat. 18.19*), which were found above the massif in the layers between the massif and the foundation level of the first building under the two rooms. Directly on the floor level of the rooms, a coin of Alexander Jannaeus from 78 BCE was found (*Cat. 18.23*), but also pottery that can be dated to the 3<sup>rd</sup>–4<sup>th</sup> cent. CE (see *Chap. 8*). Overall, the material shows a strong mixing of finds from the Iron Age to the late Roman period, which took place in this area after the rooms were destroyed and does not allow for a precise dating of the rooms.

Further clues to the dating and character of these buildings, as well as to other as yet unidentified buildings in the surrounding area, are provided by the painted wall decorations. Among the finds from this area, a large number of fragments of painted wall plaster stand out in particular. At first it was assumed that they came from the original furnishings of the two rooms, but it became apparent that this could not be the case, at least in part. For example, pieces of wall plaster were also found within the stone base of W11521, stuck in the clay used as a binder. They must therefore have come from a wall that was already destroyed at the time of the construction of W11521. This is supported by the fact that the fragment mentioned belongs to a group of wall plaster fragments (see *Chap 5: Cat. 5.3.1*) that also occurred in the lowest layers from which wall plaster fragments were recovered. Fragments with the corresponding type of decoration – an imitation of natural stone with red spots on a yellow background – are particularly small in size and widespread in Area II. It can be assumed that they were particularly affected by reconstruction and levelling measures after the destruction of the associated building. Which building they originally adorned cannot be assessed at present. Of particular importance, however, is the fact that a comparable decoration was found in the excavations in nearby Gadara (Umm Qays), which can be securely dated to the period around 200 BCE on the basis of the stratigraphy (see *Chap. 5.4.2.1*). It must have belonged to a building that had already been destroyed by the time the Hellenistic fortification of Seleukeia Gadara was built in the 2<sup>nd</sup> quarter of the 2<sup>nd</sup> cent. BCE. Due to the rarity of the motif – a slightly modified version of the decoration is known only

from Gerasa (see *Chap. 5.4.2.1*), which is, however, undated – and its striking similarity, it can be assumed that the painting was executed by the same workshop at both places. Even if the motif and its technique are still without published parallels, the known elements can be well connected with a decoration in the Hellenistic structural style, in which simple walls were made to look like ashlar walls made of high-quality materials through painting. The analysis of the painted wall plaster showed that there must have been some upscale residential architecture in this area for a long time. The building to which the oldest decorations belonged has not yet been identified. For other forms of painting, possibly from the 1<sup>st</sup> cent. BCE (see *Chap. 5.5*), it can be

assumed that they decorated the excavated building. Overall, therefore, it can be deduced that from around 200 BCE until probably the 1<sup>st</sup> cent. BCE, buildings here were equipped with coloured paintings of the kind found in the Greek-Macedonian cultural sphere, which were later also subject to influences from the Hasmonean-Herodian sphere. Whether some pieces of unpainted plaster (see *Chap. 6*), possibly from a basin, come from a bath of Greek tradition or – more likely – from a mikveh, cannot be decided with certainty for the time being. The composition of the plaster suggests a Jewish ritual bath, and the circumstances of the find (see *Chap. 3.2.3*; *6.2*) point to the time of Alexander Janneus, which may support such an interpretation.

### 22.3. Tall Zar‘a in its regional context, from Iron Age II to early Roman times

Tall Zar‘a is not the only site in the Wādī al-‘Arab that was settled in the Iron Age. A series of surveys carried out in this wadi confirm a large number of settlement sites dating from the Palaeolithic to the Ottoman period, which were also occupied in the Iron Age II.<sup>127</sup> Soennecken – Leiverkus (2021, 36) identified a minimum of 14 Iron Age IIB and a minimum of 3 Iron Age IIC settlement. Surveys were also carried out on the plateau in Gadara and the Yarmouk valley, where traces of occupation from the Lower Paleolithic to the present day were found.<sup>128</sup>

In Gadara (Umm Qays) itself, only very sparse remains of the Iron Age period have been recovered so far, which, according to Vriezen, represent the most ancient finds ever made within the settlement

of Gadara (Vriezen 2011, 69). Within the foundation layers of the large terrace, pottery sherds of the Iron Age II were identified, which were found together with Roman sherds in the same layer (Vriezen 2011, 68). Architectural remains of the Iron Age II have not yet been identified in Gadara, the presence of pottery sherds, however, shows that the site had not been uninhabited in the Iron Age II.

In the overall consideration of what is assumed to be a defensive wall with massifs and the remains of residential Hellenistic architecture, including finds from earlier campaigns, a fragmentary picture can be drawn of the development of this area of the Tall in the Hellenistic to early Roman period, in context with the development of Seleukeia Gadara.<sup>129</sup> It was not possible to clarify whether the wall was newly

127 The most recent survey took place from 2001 to 2011 as part of the “Gadara Region Project” and was led by K. Soennecken and P. Leiverkus. They investigated the entire Wādī al-‘Arab, the results of which are presented in Volume 8: The Wādī al-‘Arab Survey in the Tall Zira‘a final reports series. This survey was preceded in 1963–1966 by a survey led by S. Mittmann (see Mittmann 1970), and in 1983 by a survey supervised by J.W. Hanbury-Tenison, (see Hanbury-Tenison et al. 1984). In 1978, during the course of the construction of the Wādī al-‘Arab dam, a survey was carried out under the direction of the Department of Antiquities of Jordan and the Jordan Valley Authority

(see Kerestes et al. 1978); also in 2005 as part of the “West Irbid Survey”, L. El-Khoury surveyed the region, including the Wādī al-‘Arab (see El Khouri et al. 2006 and El-Khoury 2009). For a summary of all surveys in the Wādī al-‘Arab, see Soennecken – Leiverkus 2021, 14–17 with comprehensive maps and Vieweger – Häser 2017, 24–26.

128 Since 2010, C. Bührig (DAI) has been carrying out surveys of the Gadara plateau and the Yarmouk valley (see Moser – Bührig 2018); another survey of the plateau was carried out by N. Riedl (1998).

129 See Susan Schütz’s dissertation on the construction and use phases of the Hellenistic to early Roman period as well as

built during this phase or whether an older construction was reused. For a first phase of use or reuse in Hellenistic times, one can only broadly assume the Ptolemaic-Seleucid period. It is striking that there are already indications of upscale residential buildings in the middle Hellenistic phase, indicated on the one hand by the finds of painted plaster, which was common in elite residences in the Greek-Macedonian area, and on the other by the spectrum of pottery used, which included both imported fine wares and local imitations (see *Chap. 7–9*; Kenkel 2020, 114). Stamped amphora handles from the late 3<sup>rd</sup> and 2<sup>nd</sup> cent. BCE point to imported goods from Rhodes (see *Chap. 11*). Fragments of precious glass bowls found on the Tall also testify to a highly Hellenized and financially powerful population in the 3<sup>rd</sup>, but especially 2<sup>nd</sup> cent. BCE (Hoss 2020, 257–258). This could be an indication that members of the Greek-Macedonian elite lived here. In addition, there is a close relationship to Gadara, which had a comparable range of finds (Konrad 2013; Jöhrens 2013). In the case of the wall paintings, it can also be assumed that a painter's workshop was active both at Tall Zar'a and Gadara.

With the erection of the fortress at Seleukeia Gadara, which may have been accompanied by a new foundation by Seleukos IV or Antiochos IV, the focus seems to have shifted to the settlement on the plateau. Next to the fortress, which was probably occupied by a garrison, a cult site, which presumably already existed, was expanded into a large temple (Hoffmann 2013, 13–16).

Apparently, the Tall regained special importance when it was chosen by Alexander Jannaeus as a base for the siege of Seleukeia Gadara. The troops seemed to be stationed here and the presence of a higher level of leadership, if not Alexander Jannaeus himself, can be proven by coins, residential buildings and the possible presence of a mikvah (see above), which was common in palace fortresses of Hasmonean-Herodian times (Regev 2019).

While it is known that after the first conquest by Alexander Jannaeus, in 98 BCE, Seleukeia Gadara was restored once again as a fortress presumably by the last Seleucid Antiochos XII, this period at Tall Zar'a is currently still in the dark. For the period after the second conquest, in 83 BCE, however,

further building activity is evident at Tall Zar'a, which is again associated with colourfully decorated houses. Apparently, the Jewish king chose the Tall and not the site of Seleukeia Gadara for the establishment of his restored rule in the region. It is known that the Hasmoneans under Alexander Jannaeus and his successor Alexandra Salome secured the areas of Transjordan with fortresses (Shatzmann 1991, 92–94). Sites such as Machaerus show that safety was combined with elements of a visibly luxurious lifestyle. Hasmonean coins as well as a large number of glass vessels, which also conformed to Jewish purity rules, could be an additional indication of Jewish settlement on the Tall (Hoss 2020, 258).

Little is known from the time after the Jewish conquest of Seleukeia Gadara. It has been assumed that residents were sold into slavery or exiled, as is known from other cities (Weber 2002, 66). In 64 BCE, Hasmonean rule ended with its capture by Pompey, who, as Flavius Josephus reports, had the city, which had been destroyed by the Jews, rebuilt. At the same time, former citizens were recalled from exile. Possibly Seleukeia Gadara had lain partially abandoned during the reign of the Hasmoneans, while these latter were clearly present on the Tall. The sources are unclear about what happened to the Jewish inhabitants after Pompey's victory. The fact that the Gadarenes complained to the imperial legate in 21 BCE about the rule of Herod, to whose empire the city belonged from 30 to 4 BCE, could be a sign that there was not a large Jewish population in Gadara itself and that there was still resentment towards Jews (Weber 2002, 70).

With the death of Herod, Gadara was again placed under the governorship of the province of Syria. It recovered under Roman administration and, as part of the Decapolis, achieved increasing economic and urban prosperity (Weber 2002, 71–74; Hoffmann 2013, 19–22). At Tall Zar'a, the small number of Roman coins (see *Chap. 17*) suggests that the site lost its importance. On the other hand, a large number of chalkstone vessels speaks for the presence of Jewish settlers: eight pieces were found in the 2018/19 seasons, over 90 fragments in the seasons from 2001–2010 (see *Chap. 13*). The written sources on the first Jewish revolts also indicate

the presence of Jewish population units in the Gadara (Weber 2002, 71–72). If one takes the chalkstone vessels associated with the Jewish purity laws as an indicator, one could assume that a spatial separation

was carried out here and that Jewish settlers lived only on the Tall and not in the Decapolis city of Gadara itself, from where not a single chalkstone vessel is known so far.

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## APPENDIX

### LIST OF LOCI AND FINDNUMBERS

The finds of painted wall plaster are not included in this list and can be found in the descriptions in chapter 5.

Locus	Square	TZ Number	Number of Objects	Material	Object
10030	AV 129	102229	19	ceramic	
10030	AV 129	114819-001	5	bone	
10034	AV 129	102226	8	ceramic	
10084	AV 129	114675-001	1	shell	pendant
11186	AV 128	101972	11	ceramic	
11219	AU 132	114468-001	1	charcoal	
11261	AV 128	114593-001	1	metal	not defined
11285	AU 127	114524-001	1	stone	plate
11403	AY 128	113757-001	1	metal	
11418	AX 131	101952	92	ceramic	
11500	AV 128	112811-001	1	ceramic	bottle/jug
11500	AV 128	112812-001	1	ceramic	bottle
11500	AV 128	112813-001	1	stone	mortar
11500	AV 128	112815-001	1	metal	fitting
11500	AV 128	112816-001	1	ceramic	figurine
11500	AV 128	112819-001	1	stone	bead
11500	AV 128	112821-001	2	glass	
11500	AV 128	112826-001	1	ceramic	lamp
11500	AV 128	112827-001	1	ceramic	lamp
11500	AV 128	101800	1968	ceramic	
11500	AV 128	112831-001	1	metal	not defined
11500	AV 128	112809-001	1	stone	bowl
11500	AV 128	112801-001	1	ceramic	lamp
11500	AV 128	112804-001	1	shell	
11500	AV 128	112834-001	1	metal	nail
11500	AV 128	112803-001	1	ceramic	lamp
11500	AV 128	112836-001	1	metal	not defined
11500	AV 128	112806-001	1	stone	rubbing stone
11500	AV 128	112839-001	1	metal	not defined
11500	AV 128	112802-001	1	ceramic	
11500	AV 128	112840-001	1	snail	not defined
11500	AV 128	112841-001	1	metal	not defined
11500	AV 128	112842-001	1	metal	not defined
11500	AV 128	112845-001	1	ceramic	lamp
11500	AV 128	112849-001	1	ceramic	lamp

Locus	Square	TZ Number	Number of Objects	Material	Object
11500	AV 128	112851-001	1	metal	coin
11500	AV 128	112809-001		stone	
11500	AV 128	112905-001	1	stone	gaming piece
11500	AV 128	112914-001	1	glass	
11500	AV 128	112933-001	1	glass	
11500	AV 128	112935-001	1	glass	
11500	AV 128	112957-001	6	stone	
11500	AV 128	112958-001	1	stone	
11500	AV 128	112981-001		bone	
11500	AV 128	113017-001		bone	
11500	AV 128	113152-001	1	glass	
11501	AW 129	112990-001		bone	
11502	AX 128	112832-001	1	stone	bowl
11502	AX 128	112873-001	1	shell	not defined
11502	AX 128	101808	435	ceramic	
11502	AX 128	112869-001	1	metal	ring
11502	AX 128	112991-001		bone	
11502	AX 128	113005-001		bone	
11503	AX 128	112817-001	12	ceramic	lamp
11503	AX 128	112825-001	1	metal	nail
11503	AX 128	112847-001	1	glass	rod
11503	AX 128	112848-001	1	ceramic	lamp
11503	AX 128	112856-001	1	charcoal	
11503	AX 128	101809	338	ceramic	
11503	AX 128	112860-001	1	stone	rubbing stone
11503	AX 128	112892-001	1	stone	rubbing stone
11503	AX 128	112904-001	1	stone	iron raw material
11503	AX 128	112906-001	1	metal	not defined
11503	AX 128	112906-002	2	metal	not defined
11503	AX 128	112915-001	1	snail	not defined
11503	AX 128	112917-001	1	metal	not defined
11503	AX 128	113015-001		bone	
11504	AX 129	112855-001	1	charcoal	
11504	AX 129	113009-001		bone	
11505	AX 129	101810	427	ceramic	
11505	AX 129	112857-001	2	metal	needle
11505	AX 129	113010-001		bone	
11505	AX 129	113318-001	1	ceramic	amphora
11507	AV 128	101851-001	46	ceramic	
11507	AV 128	113239-001		bone	
11508	AV 129	113701-001	1	stone	raw material
11508	AV 129	112859-001	1	metal	not defined
11508	AV 129	112861-001	1	stone	rubbing stone
11508	AV 129	101812	76	ceramic	
11508	AV 129	112891-001	1	shell	not defined

Locus	Square	TZ Number	Number of Objects	Material	Object
11508	AV 129	101829	338	ceramic	
11508	AV 129	112909-001	1	metal	nail
11508	AV 129	112912-001	1	stone	sling stone
11508	AV 129	112918-001	1	charcoal	
11508	AV 129	112952-001	1	stone	
11508	AV 129	112973-001		bone	
11508	AV 129	113008-001		bone	
11508	AV 129	113154-002	1	glass	
11509	AW 129	112986-001		bone	
11510	AW 129	112865-001	1	metal	not defined
11510	AW 129	101813	188	ceramic	
11510	AW 129	113016-001		bone	
11511	AW 129	101819	77	ceramic	
11511	AW 129	112960-001	1	stone	blade
11511	AW 129	112966-001		bone	
11511	AW 129	113271-001	1	snail	
11513	AW 129	112871-001	1	glass	not defined
11513	AW 129	112872-001	1	metal	not defined
11513	AW 129	101820	243	ceramic	
11513	AW 129	112889-001	1	metal	nail
11513	AW 129	112890-001	1	metal	not defined
11513	AW 129	112971-001		bone	
11513	AW 129	112975-001		bone	
11514	AV 128	112880-001	1	snail	not defined
11514	AV 128	112881-001	1	charcoal	
11514	AV 128	112882-001	1	ceramic	lamp
11514	AV 128	112885-001	1	metal	nail
11514	AV 128	101826	573	ceramic	
11514	AV 128	112897-001	1	metal	coin
11514	AV 128	112903-001	1	glass	
11514	AV 128	112916-001	1	ceramic	not defined
11514	AV 128	113012-001		bone	
11514	AV 128	113301-001	1	stone	blade
11514	AV 128	113301-002	1	stone	blade
11515	AV 128	112945		stone	
11515	AV 128	112900-001	2	snail	
11515	AV 128	112900-002	2	snail	not defined
11515	AV 128	112936-001	1	stone	bowl
11515	AV 128	112940-001	1	stone	blade
11515	AV 128	101835	1545	ceramic	
11515	AV 128	112941-001	1	glass	bowl
11515	AV 128	112944-001	2	stone	flakes
11515	AV 128	112945-001	1	stone	blade
11515	AV 128	112946-001	1	stone	flakes
11515	AV 128	112947-001	6	glass	

Locus	Square	TZ Number	Number of Objects	Material	Object
11515	AV 128	112947-002	6	glass	
11515	AV 128	112947-003	6	glass	
11515	AV 128	112947-004	6	glass	
11515	AV 128	112947-005	6	glass	
11515	AV 128	112947-006	6	glass	
11515	AV 128	112961-001		bone	
11515	AV 128	112965-001		bone	
11515	AV 128	113020-001	1	metal	nail
11515	AV 128	113033-001	1	stone	grinding stone
11515	AV 128	112940-002	3	stone	flakes
11515	AV 128	112940-003	3	stone	
11515	AV 128	112944-002	4	stone	
11515	AV 128	113093-001	1	stone	grinding stone
11515	AV 128	113094-001	1	stone	rubbing stone
11515	AV 128	113121-001	1	metal	nail
11515	AV 128	113121-002	1	metal	needle
11515	AV 128	113121-003	1	metal	nail
11515	AV 128	113121-004	1	metal	nail
11515	AV 128	113124-001	2	stone	flakes
11515	AV 128	113269-001	3	glass	
11516	AU 128	112818-001	1	metal	nail
11516	AU 128	112820-001	1	metal	ring
11516	AU 128	101801	177	ceramic	
11516	AU 128	112829-001	1	metal	not defined
11516	AU 128	112830-001	1	metal	not defined
11516	AU 128	112805-001	1	stone	rubbing stone
11516	AU 128	112833-001	5	metal	not defined
11516	AU 128	112835-001	1	metal	coin
11516	AU 128	112837-001	1	metal	coin
11516	AU 128	112838-001	1	metal	ring
11516	AU 128	112843-001	7	glass	
11516	AU 128	112844-001	1	metal	coin
11516	AU 128	112850-001	1	ceramic	lamp
11516	AU 128	112866-001	1	metal	not defined
11516	AU 128	112867-001	7	metal	not defined
11516	AU 128	101814	40	ceramic	
11516	AU 128	112876-001	1	ceramic	jug
11516	AU 128	112884-001	1	metal	not defined
11516	AU 128	112846-001	1	metal	coin
11516	AU 128	112988-001		bone	
11516	AU 128	113151-001	1	glass	
11516	AU 128	113151-002	7	glass	
11517	AU 128	114692-001	1	ceramic	lamp
11517	AU 128	112823-001	1	metal	nail
11517	AU 128	112824-001	1	ceramic	lamp

Locus	Square	TZ Number	Number of Objects	Material	Object
11517	AU 128	101802	211	ceramic	
11517	AU 128	112828-001	1	metal	nail
11517	AU 128	112807-001	1	stone	rubbing stone
11517	AU 128	112987-001		bone	
11517	AU 128	113136-001	1	stone	grinding stone
11518	AU 128	112822-001	1	glass	
11518	AU 128	112858-001	1	metal	not defined
11518	AU 128	113253-001		bone	
11518	AU 128	113262-001	1	metal	not defined
11519	AU 128	112852-001	1	metal	not defined
11519	AU 128	112853-001	1	metal	not defined
11519	AU 128	101815	224	ceramic	
11519	AU 128	112992-001		bone	
11519	AU 128	113037-001		plaster	wall plaster
11519	AU 128	113155-001	1	glass	
11519	AU 128	113158-001	1	ceramic	
11521	AU 128	113980-001	2	stone	tile
11521	AU 128	114244-001	8	plaster	wall plaster
11521	AU 128	113034-001	1	stone	grinding stone
11522	AU 128	114698-001	1	plaster	wall plaster
11522	AU 128	114699-001	1	clay	
11522	AU 128	112864-001	1	metal	not defined
11522	AU 128	112870-001	1	metal	nail
11522	AU 128	101821	53	ceramic	
11522	AU 128	112875-001	1	ceramic	jug
11522	AU 128	101841-001	64	ceramic	
11522	AU 128	112942-001	1	glass	
11522	AU 128	113268-001	1	glass	
11523	AU 128	114696-001	1	plaster	wall plaster
11523	AU 128	114697-001	1	plaster	wall plaster
11523	AU 128	101807	15	ceramic	
11523	AU 128	112953-001	1	stone	flakes
11523	AU 128	113019-001		bone	
11524	AU 128	112899-001	1	shell	not defined
11524	AU 128	112922-001	2	glass	
11524	AU 128	112922-002	2	glass	
11524	AU 128	112972-001		bone	
11525	AU 129	112862-001	1	ceramic	lamp
11525	AU 129	112863-001	1	ceramic	lamp
11525	AU 129	112982-001		bone	
11526	AU 129	101823	57	ceramic	
11526	AU 129	112888-001	1	metal	nail
11526	AU 129	113014-001		bone	
11527	AV 128	101824	223	ceramic	
11527	AV 128	112874-001	1	metal	not defined

Locus	Square	TZ Number	Number of Objects	Material	Object
11527	AV 128	112886-001	1	metal	nail
11527	AV 128	112887-001	1	metal	coin
11527	AV 128	112911-001	1	metal	not defined
11527	AV 128	112970-001		bone	
11527	AV 128	112977-001		bone	
11527	AV 128	113191-001	1	ceramic	unguentarium
11527	AV 128	113191-002	1	ceramic	unguentarium
11527	AV 128	113263-001	1	shell	not defined
11528	AU 128	112877-001	1	glass	bead
11528	AU 128	112878-001	1	stone	rubbing stone
11528	AU 128	112879-001	1	stone	olynthian mill
11528	AU 128	101827	755	ceramic	
11528	AU 128	112907-001	1	stone	gaming piece
11528	AU 128	112910-001	1	ceramic	lamp
11528	AU 128	112968-001		bone	
11528	AU 128	112974-001		bone	
11528	AU 128	113097-001	1	stone	
11528	AU 128	113147-001	1	glass	
11528	AU 128	113185-001	1	stone	rubbing stone
11528	AU 128	113270-001	8	glass	
11528	AU 128	113273-001	1	glass	
11528	AU 128	113273-002	1	glass	
11528	AU 128	113273-003	1	glass	
11528	AU 128	113295-001	1	glass	
11528	AU 128	113295-002	1	glass	
11528	AU 128	113297-001	2	glass	
11528	AU 128	113297-002	1	glass	
11528	AU 128	113304-001	1	glass	bowl
11528	AU 128	113304-002	3	glass	
11528	AU 128	113306-001	1	ceramic	lamp
11528	AU 128	113327-001	1	stone	mortar
11528	AU 128	113328-001	1	stone	mortar bowl
11529	AW 128	112898-001	1	shell	pendant
11529	AW 128	112925-001	1	ceramic	
11529	AW 128	101828	58	ceramic	
11529	AW 128	113299-001	2	shell	
11531	AW 128	101816	560	ceramic	
11531	AW 128	112893-001	1	stone	gaming piece
11531	AW 128	112954-001	1	stone	flakes
11531	AW 128	112955-001	1	stone	blade
11531	AW 128	112979-001		bone	
11531	AW 128	112980-001		bone	
11531	AW 128	113013-001		bone	
11531	AW 128	113149-001	3	glass	
11531	AW 128	113153-001	3	glass	

Locus	Square	TZ Number	Number of Objects	Material	Object
11531	AW 128	113353-001	1	metal	not defined
11531	AW 128	113354-001	1	metal	nail
11533	AW 128	112983-001		bone	
11534	AX 129	112854-001	1	charcoal	
11534	AX 129	101811	139	ceramic	
11534	AX 129	113018-001		bone	
11534	AX 129	113260-001	1	ceramic	lamp
11534	AX 129	113288-001	1	stone	ecofact
11535	AX 128	101817	248	ceramic	
11535	AX 128	113011-001		bone	
11536	AX 128	113357-001	1	stone	mortar bowl
11538	AX 129	101877-001		ceramic	
11539	AX 129	112883-001	1	metal	not defined
11541	AV 128	112894-001	1	stone	bead
11541	AV 128	112895-001	1	metal	nail
11541	AV 128	112896-001	1	stone	sling stone
11541	AV 128	112901-001	1	metal	projectile point
11541	AV 128	112902-001	1	stone	bowl
11541	AV 128	112908-001	1	glass	
11541	AV 128	112919-001	1	stone	grinding stone
11541	AV 128	112921-001	1	metal	coin
11541	AV 128	112923-001	1	metal	nail
11541	AV 128	101830	403	ceramic	
11541	AV 128	112962-001		bone	
11541	AV 128	112967-001		bone	
11541	AV 128	113272-001	3	glass	
11542	AW 128	112929-001	1	ceramic	bottle/jug
11543	AW 128	112948-001	1	stone	not defined
11543	AW 128	101842	18	ceramic	
11543	AW 128	112996-001		bone	
11544	AW 126	101844	213	ceramic	
11544	AW 126	113001-001		bone	
11544	AW 126	113141-001	1	ceramic	unguentarium
11545	AX 129	113725-001	1	stone	sickle
11547	AW 128	101836	30	ceramic	
11548	AX 126	112949-001	1	ceramic	bowl
11548	AX 126	112951-001	3	metal	fitting
11548	AX 126	112951-002	3	metal	fitting
11548	AX 126	112951-003	3	metal	
11548	AX 126	101843	189	ceramic	
11548	AX 126	113032-001	1	stone	rubbing stone
11548	AX 126	113266-001	5	glass	
11548	AX 126	113266-002	4	glass	
11548	AX 126	113266-003	1	glass	
11549	AW 126	112939-001	1	stone	rubbing stone

Locus	Square	TZ Number	Number of Objects	Material	Object
11549	AW 126	101837-001		ceramic	
11549	AW 126	112964-001		bone	
11549	AW 126	113264-001	1	glass	
11550	AX 128	112924-001	1	ceramic	lamp
11550	AX 128	113003-001		bone	
11550	AX 128	113021-001	1	stone	ecofact
11550	AX 128	113022-001	1	stone	sling stone
11550	AX 128	113026-001	1	stone	rubbing stone
11550	AX 128	113031-001	1	stone	rubbing stone
11550	AX 128	101854	1235	ceramic	
11550	AX 128	113044-001	1	metal	nail
11550	AX 128	113064-001	1	shell	not defined
11550	AX 128	113078-001	1	shell	not defined
11550	AX 128	113082-001	1	metal	not defined
11550	AX 128	113087-001	2	ceramic	lamp
11550	AX 128	113087-002	2	ceramic	lamp
11550	AX 128	113089-001	1	metal	needle
11550	AX 128	113096-001	1	stone	beaker
11550	AX 128	113102-001	1	snail	not defined
11550	AX 128	113103-001	1	stone	ecofact
11550	AX 128	113108-001	1	metal	not defined
11550	AX 128	113120-001	1	metal	needle
11550	AX 128	113127-001	2	metal	nail
11550	AX 128	113127-002	2	metal	nail
11550	AX 128	113129-001	1	stone	flakes
11550	AX 128	113144-001	1	stone	ecofact
11550	AX 128	113156-001	2	glass	
11550	AX 128	113199-001	1	ceramic	unguentarium
11550	AX 128	113211-001	1	snail	not defined
11550	AX 128	113218-001	1	stone	blade
11552	AU 128	101831	99	ceramic	
11552	AU 128	112963-001		bone	
11552	AU 128	113035-001	1	stone	plate
11552	AU 128	113039-001	1	stone	mortar bowl
11552	AU 128	113261-001	1	glass	
11553	AV 128	101832	59	ceramic	
11553	AV 128	112978-001		bone	
11553	AV 128	113298-001	1	snail	not defined
11554	AU 128	112920-001	1	snail	not defined
11554	AU 128	101833	306	ceramic	
11554	AU 128	112930-001	1	glass	
11554	AU 128	112931-001	1	metal	not defined
11554	AU 128	112934-001	1	metal	nail
11554	AU 128	112938-001	1	glass	
11554	AU 128	112950-001	1	glass	

Locus	Square	TZ Number	Number of Objects	Material	Object
11554	AU 128	112985-001		bone	
11554	AU 128	113265-001		plaster	wall plaster
11554	AU 128	113265-002		plaster	wall plaster
11554	AU 128	113265-003		plaster	wall plaster
11554	AU 128	113265-004		plaster	wall plaster
11554	AU 128	113265-005		plaster	wall plaster
11554	AU 128	113265-006		plaster	wall plaster
11554	AU 128	113265-007		plaster	wall plaster
11555	AU 128	112937-001	3	glass	bowl
11555	AU 128	112937-002	3	glass	bowl
11555	AU 128	112937-003	3	glass	bowl
11555	AU 128	101838	156	ceramic	
11555	AU 128	112969-001		bone	
11556	AU 129	112932-001	1	stone	grinding stone
11556	AU 129	101879		ceramic	
11557	AU 129	112926-001	2	metal	nail
11557	AU 129	112926-002	2	metal	
11557	AU 129	112927-001	1	metal	blade
11557	AU 129	112927-002	1	metal	blade
11557	AU 129	101834	260	ceramic	
11557	AU 129	112927-003	1	metal	blade
11557	AU 129	112927-004	1	metal	blade
11557	AU 129	112928-001	1	stone	bowl
11557	AU 129	112928		stone	
11557	AU 129	112976-001		bone	
11558	AU 129	101839	162	ceramic	
11558	AU 129	113091-001	1	metal	not defined
11558	AU 129	113091-002	1	metal	
11558	AU 129	113091-003	1	metal	not defined
11558	AU 129	113091-004	1	metal	not defined
11558	AU 129	113252-001		bone	
11559	AU 129	101840	199	ceramic	
11559	AU 129	112999-001		bone	
11559	AU 129	113029-001	1	glass	
11559	AU 129	113184-001	1	stone	rubbing stone
11559	AU 129	113337-001	1	metal	nail
11560	AW 128	112943-001	1	metal	ring
11560	AW 128	101845	29	ceramic	
11560	AW 128	113007-001		bone	
11561	AU 128	101846	628	ceramic	
11561	AU 128	113024-001	1	stone	rubbing stone
11561	AU 128	113079-001	1	metal	not defined
11561	AU 128	113092-001	1	metal	not defined
11561	AU 128	113098-001	1	glass	
11561	AU 128	113105-001	1	metal	not defined

Locus	Square	TZ Number	Number of Objects	Material	Object
11561	AU 128	113146-001	1	metal	nail
11561	AU 128	113242-001		bone	
11561	AU 128	113300-001	1	stone	
11562	AU 128	114371-001	1	clay	
11562	AU 128	112997-001	1	metal	nail
11562	AU 128	112998-001		shell	not defined
11562	AU 128	101848	112	ceramic	
11563	AU 128	101847	96	ceramic	
11563	AU 128	113004-001		bone	
11563	AU 128	113036-001		plaster	wall plaster
11563	AU 128	113109-001	1	glass	
11564	AU 128	113090-001	1	glass	bottle
11564	AU 128	101855	153	ceramic	
11564	AU 128	113133-001	1	mud brick with plaster	not defined
11564	AU 128	113190-001	1	metal	ring
11565	AU 128	113084-001	3	glass	
11565	AU 128	113084-002	3	glass	
11565	AU 128	113084-003	3	glass	
11565	AU 128	113085-001	1	metal	coin
11565	AU 128	113088-001	1	snail	not defined
11565	AU 128	113101-001	1	faience	bead
11565	AU 128	113132-001	1	glass	
11565	AU 128	101856	264	ceramic	
11565	AU 128	113135-001	1	glass	
11568	AU 129	113051-001	2	ceramic	lamp
11568	AU 129	101874	40	ceramic	
11568	AU 129	113051-002	2	ceramic	lamp
11568	AU 129	113244-001		bone	
11569	AU 129	113907-001	3	bone	
11569	AU 129	101973	3	ceramic	
11571	AV 129	101899-001		ceramic	
11572	AW 128	113160-001	1	shell	
11572	AW 128	113169-001	1	metal	needle
11572	AW 128	113170-001	1	ceramic	
11572	AW 128	113171-001	1	ceramic	lamp
11572	AW 128	113176-001	1	ceramic	lamp
11572	AW 128	113178-001	1	glass	
11572	AW 128	113193-001	1	metal	not defined
11572	AW 128	113198-001	1	shell	
11572	AW 128	113200-001	1	ceramic	lamp
11572	AW 128	113228-001		bone	
11572	AW 128	101878	630	ceramic	
11572	AW 128	113257-001	1	shell	
11572	AW 128	113307-001	1	faience	bead
11573	AU 129	113163-001	1	shell	not defined

Locus	Square	TZ Number	Number of Objects	Material	Object
11573	AU 129	113164-001	1	glass	
11573	AU 129	113166-001	1	stone	rubbing stone
11573	AU 129	113247-001		bone	
11573	AU 129	101864	77	ceramic	
11575	AU 129	113192-001	1	metal	not defined
11575	AU 129	113195-001	1	shell	not defined
11575	AU 129	113235-001		bone	
11575	AU 129	101891	115	ceramic	
11575	AU 129	113255-001	1	glass	bead
11576	AU 129	114103-001	1	shell	
11576	AU 129	114391-001	1	stone	rubbing stone
11576	AU 129	102074	12	ceramic	
11576	AU 129	114838-001	3	bone	
11577	AU 129	113230-001		bone	
11577	AU 129	101885	60	ceramic	
11578	AU 128	101892	53	ceramic	
11579	AU 129	101896	69	ceramic	
11580	AW 127	101852	103	ceramic	
11580	AW 127	113055-001	1	stone	rubbing stone
11580	AW 127	113243-001		bone	
11581	AW 127	113023-001	1	stone	rubbing stone
11581	AW 127	101857	46	ceramic	
11581	AW 127	113053-001	1	shell	not defined
11581	AW 127	113083-001	1	shell	not defined
11581	AW 127	113095-001	1	stone	bowl
11581	AW 127	113104-001	1	snail	not defined
11581	AW 127	113159-001	1	glass	
11581	AW 127	113182-001	1	stone	hinge stone
11581	AW 127	113224-001		bone	
11581	AW 127	113267-001	1	ceramic	lamp
11582	AW 127	101853	32	ceramic	
11582	AW 127	101858	127	ceramic	
11582	AW 127	113056-001	1	stone	rubbing stone
11582	AW 127	113241-001		bone	
11584	AU 128	113065-001	6	glass	
11584	AU 128	113070-001	1	glass	
11584	AU 128	113072-001	1	glass	
11584	AU 128	113073-001	1	glass	
11584	AU 128	113074-001	1	glass	
11584	AU 128	101865	345	ceramic	
11584	AU 128	113142-001	1	bone	
11585	AX 128	113463	1	stone	grinding stone
11585	AX 128	113454-001	1	stone	rubbing stone
11585	AX 128	112913-001	1	stone	spindle whorl
11585	AX 128	101866-001		ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11585	AX 128	101866	19	ceramic	
11585	AX 128	113339-001	1	soil sample	
11585	AX 128	113340-001		ceramic	
11585	AX 128	113341-001	1	metal	ring
11585	AX 128	113344-001		ceramic	
11585	AX 128	113345-001		ceramic	
11585	AX 128	113356-001	1	stone	bowl
11585	AX 128	113372-001	1	ceramic	jug/amphora
11585	AX 128	113381-001	1	stone	ecofact
11585	AX 128	113396-001		bone	
11586	AW 129	113030-001	1	shell	not defined
11586	AW 129	113165-001	1	metal	ring
11586	AW 129	113167-001	1	metal	not defined
11586	AW 129	113222-001		bone	
11586	AW 129	101897-001		ceramic	
11586	AW 129	113348-001	1	ceramic	
11587	AV 128	113002-001		bone	
11587	AV 128	113006-001		bone	
11587	AV 128	113027-001	3	glass	
11587	AV 128	113027-002	3	glass	
11587	AV 128	113027-003	3	glass	
11587	AV 128	101850	472	ceramic	
11587	AV 128	101859	1069	ceramic	
11587	AV 128	113048-001	1	shell	not defined
11587	AV 128	113080-001	1	shell	not defined
11587	AV 128	113123-001	1	stone	flakes
11587	AV 128	113125-001	3	stone	flakes
11587	AV 128	113125-002	2	stone	
11587	AV 128	113123-002	1	stone	flakes
11588	AX 129	101849	1005	ceramic	
11588	AX 129	113000-001		bone	
11588	AX 129	113025-001	1	stone	gaming piece
11588	AX 129	113028-001	1	shell	not defined
11588	AX 129	113041-001	1	stone	
11588	AX 129	113042-001	1	shell	not defined
11588	AX 129	113049-001	4	glass	
11588	AX 129	113050-001	1	ceramic	amphora
11588	AX 129	113068-001	1	ceramic	lamp
11588	AX 129	113066-001	1	metal	not defined
11588	AX 129	113069-001	1	metal	awl
11588	AX 129	113106-001	1	ceramic	amphora
11588	AX 129	113107-001	1	metal	not defined
11588	AX 129	113110-001	1	stone	bowl
11588	AX 129	113111-001	1	metal	
11588	AX 129	113112-001	1	shell	pendant

Locus	Square	TZ Number	Number of Objects	Material	Object
11588	AX 129	113113-001	1	snail	not defined
11588	AX 129	113114-001	1	metal	needle
11588	AX 129	113115-001	1	metal	not defined
11588	AX 129	113116-001	1	glass	
11588	AX 129	113117-001	1	stone	ecofact
11588	AX 129	113118-001	1	metal	coin
11588	AX 129	113126-001	1	metal	not defined
11588	AX 129	113143-001	1	ceramic	lamp
11588	AX 129	113162-001	1	metal	ring
11588	AX 129	113188-001	1	ceramic	
11589	AX 128	101860	430	ceramic	
11589	AX 128	113043-001	4	stone	
11589	AX 128	113081-001	1	metal	nail
11589	AX 128	113100-001	1	charcoal	
11589	AX 128	113122-001	1	metal	ring
11589	AX 128	113128-001	2	metal	not defined
11589	AX 128	113128-002	2	metal	not defined
11589	AX 128	113225-001		bone	
11590	AX 128	101861	430	ceramic	
11590	AX 128	113046-001	1	charcoal	
11590	AX 128	113076-001	1	ceramic	jug
11590	AX 128	113077-001	1	stone	bowl
11590	AX 128	113086-001	1	glass	
11590	AX 128	113119-001	1	metal	not defined
11590	AX 128	113130-001	1	metal	nail
11590	AX 128	113130-002	1	metal	nail
11590	AX 128	113130-003	1	metal	
11590	AX 128	113130-004	1	metal	nail
11590	AX 128	113134-001	1	charcoal	
11590	AX 128	113227-001		bone	
11591	AW 129	113202-001	3	metal	
11591	AW 129	113202-002	1	metal	
11591	AW 129	113202-003	1	metal	
11591	AW 129	113203-001	1	ceramic	
11591	AW 129	113204-001	1	ceramic	
11591	AW 129	113205-001	1	stone	stone weight/loom weight
11591	AW 129	113206-001	2	metal	not defined
11591	AW 129	113215-001	1	snail	not defined
11591	AW 129	113216-001	1	stone	
11591	AW 129	113229-001		bone	
11591	AW 129	101880	470	ceramic	
11591	AW 129	113274-001	1	metal	nail
11591	AW 129	113276-001	1	metal	nail
11591	AW 129	113277-001	1	stone	bowl
11591	AW 129	113278-001	1	metal	nail

Locus	Square	TZ Number	Number of Objects	Material	Object
11591	AW 129	113280-001	1	metal	not defined
11591	AW 129	113285-001	1	stone	rubbing stone
11591	AW 129	113324-001	1	ceramic	
11592	AW 129	113535-001	2	metal	nail
11592	AW 129	113536-001	1	metal	not defined
11592	AW 129	113537-001	1	metal	nail
11592	AW 129	113540-001	1	metal	not defined
11592	AW 129	113538-001	1	metal	nail
11592	AW 129	113482-001	1	metal	
11592	AW 129	113479-001	1	stone	stone weight/loom weight
11592	AW 129	113137-001	1	metal	nail
11592	AW 129	113138-001	1	metal	nail
11592	AW 129	113139-001	1	stone	ecofact
11592	AW 129	113140-001	1	metal	hook
11592	AW 129	113249-001		bone	
11592	AW 129	101886	1124	ceramic	
11592	AW 129	113281-001	1	ceramic	
11592	AW 129	113282-001	1	metal	nail
11592	AW 129	113294-001	1	stone	ecofact
11592	AW 129	113350-001	1	metal	nail
11592	AW 129	113351-001	1	metal	not defined
11592	AW 129	113358-001	3	shell	
11592	AW 129	113369-001	1	metal	fitting
11592	AW 129	113370-001	1	metal	not defined
11592	AW 129	113379-001	1	ceramic	
11592	AW 129	113422-001	8	snail	not defined
11592	AW 129	113447-001	1	ceramic	
11593	AW 129	113497-001	1	metal	nail
11593	AW 129	113219-001		bone	
11593	AW 129	101875	260	ceramic	
11594	AW 129	101867	1409	ceramic	
11594	AW 129	113172-001	1	metal	
11594	AW 129	113174-001	1	metal	nail
11594	AW 129	113179-001	1	glass	
11594	AW 129	113179-002	1	glass	
11594	AW 129	113189-001	1	metal	nail
11594	AW 129	113196-001	1	ceramic	lamp
11594	AW 129	113196-002	1	ceramic	lamp
11594	AW 129	113197-001	1	metal	fitting
11594	AW 129	113212-001	1	snail	not defined
11594	AW 129	113213-001	1	stone	rubbing stone
11594	AW 129	113232-001		bone	
11594	AW 129	113314-001	1	ceramic	lamp
11594	AW 129	113326-001	2	shell	
11594	AW 129	113421-001	2	snail	not defined

Locus	Square	TZ Number	Number of Objects	Material	Object
11595	AW 129	113207-001	1	stone	
11595	AW 129	113208-001	1		
11595	AW 129	113214-001	1	snail	not defined
11595	AW 129	113217-001	1		
11595	AW 129	113248-001		bone	
11595	AW 129	101881	387	ceramic	
11595	AW 129	113279-001	1	stone	ecofact
11595	AW 129	113283-001	1	ceramic	amphora
11595	AW 129	113289-001	1	stone	ecofact
11595	AW 129	113290-001	1	snail	not defined
11595	AW 129	113302-001	1	ceramic	lamp
11596	AU 128	101868	141	ceramic	
11596	AU 128	113157-001	1	stone	mortar bowl
11596	AU 128	113245-001		bone	
11596	AU 128	113284-001	1	metal	coin
11597	AU 128	113061-001	3	glass	
11597	AU 128	113071-001	1	metal	not defined
11597	AU 128	101876	174	ceramic	
11597	AU 128	113180-001	1	glass	
11597	AU 128	113180-002	1	glass	
11597	AU 128	113246-001		bone	
11598	AU 128	101869	179	ceramic	
11598	AU 128	113173-001	1	ceramic	lamp
11598	AU 128	113175-001	1	glass	bead
11598	AU 128	113177-001	1	shell	pendant
11598	AU 128	113181-001	3	glass	
11598	AU 128	113181-002	1	glass	
11598	AU 128	113181-003	6	glass	
11598	AU 128	113303-001	2	snail	
11599	AU 129	113333-001	1	metal	coin
11599	AU 129	113334-001	1	glass	
11599	AU 129	113402-001		bone	
11600	AT 130	113449-001	1	stone	bowl
11600	AT 130	113450	1	stone	tile
11600	AT 130	113451-001	1	stone	rubbing stone
11600	AT 130	113456-001	1	stone	bowl
11600	AT 130	113453-001	1	stone	grinding stone
11600	AT 130	113459	1	stone	olynthian mill
11600	AT 130	113461	1	stone	stone weight/loom weight
11600	AT 130	113457-001	1	stone	lid
11600	AT 130	113456-002	1	stone	mortar
11600	AT 130	113305-001	1	glass	
11600	AT 130	101912	139	ceramic	
11600	AT 130	113428-001	1	ceramic	jug
11600	AT 130	113432-001	1	stone	mortar bowl

Locus	Square	TZ Number	Number of Objects	Material	Object
11600	AT 130	113433-001	1	stone	rubbing stone
11600	AT 130	113434-001	1	stone	plate
11600	AT 130	113435-001	1	stone	bowl
11601	AU 129	113336-001	1	metal	nail
11601	AU 129	113400-001		bone	
11604	AW 127	101862	266	ceramic	
11604	AW 127	113057-001	1	stone	stone weight/loom weight
11604	AW 127	113060-001	1	metal	nail
11604	AW 127	113226-001		bone	
11605	AW 127	101863	31	ceramic	
11605	AW 127	113045-001	1	glass	
11605	AW 127	113047-001	1	stone	bowl
11605	AW 127	113254-001		bone	
11606	AW 126	113531-001	1	ceramic	lamp
11606	AW 126	113038-001	1	stone	tile
11606	AW 126	113054-001	1	glass	
11606	AW 126	113058-001	1	stone	gaming piece
11606	AW 126	113059-001	1	metal	ring
11606	AW 126	113052-001	1	metal	not defined
11606	AW 126	113067-001	1	glass	not defined
11606	AW 126	113062-001	1	glass	vessel
11606	AW 126	113063-001	1	glass	vessel
11606	AW 126	113075-001	1	stone	ecofact
11606	AW 126	113099-001	1	metal	needle
11606	AW 126	113131-001	1	metal	nail
11606	AW 126	101870	393	ceramic	
11606	AW 126	113161-001	2	metal	nail
11606	AW 126	113161-002	2	metal	nail
11606	AW 126	113221-001		bone	
11607	AW 126	113040-001	1	stone	flakes
11607	AW 126	101871	110	ceramic	
11607	AW 126	113237-001		bone	
11607	AW 126	101871-002		ceramic	
11608	AW 126	101872	74	ceramic	
11608	AW 126	113145-001	2	ceramic	
11608	AW 126	113145-002	2	ceramic	lamp
11608	AW 126	113209-001	1	ceramic	lamp
11608	AW 126	113231-001		bone	
11609	AW 126	101873	29	ceramic	
11609	AW 126	113168-001	1	stone	rubbing stone
11609	AW 126	113183-001	1	stone	grinding stone
11609	AW 126	113223-001		bone	
11609	AW 126	113183-002		stone	rubbing stone
11610	AW 127	113460		stone	hinge stone
11610	AW 127	113186-001	1	stone	rubbing stone

Locus	Square	TZ Number	Number of Objects	Material	Object
11610	AW 127	113187-001	1	stone	olynthian mill
11610	AW 127	101904-001		ceramic	
11611	AW 128	113349-002	1	stone	flakes
11611	AW 128	113250-001		bone	
11611	AW 128	101888-001		ceramic	
11611	AW 128	113329-001		soil sample	
11611	AW 128	113330-001		soil sample	
11611	AW 128	113347	7	ceramic	
11611	AW 128	113349-001	1	stone	blade
11612	AV 128	101884	67	ceramic	
11613	AX 128	101887	91	ceramic	
11614	AW 128	113251-001		bone	
11614	AW 128	101883	90	ceramic	
11614	AW 128	113287-001	4	snail	
11616	AX 129	101893	104	ceramic	
11616	AX 129	113320-001	1	shell	not defined
11616	AX 129	113325-001	1	glass	
11616	AX 129	113415-001		bone	
11617	AW 126	113296-001	2	stone	flakes
11617	AW 126	101903-001		ceramic	
11619	AW 127	113234-001		bone	
11620	AW 127	113194-001	1	ceramic	
11620	AW 127	113201-001	1	stone	grinding stone
11620	AW 127	113210-001	2	shell	not defined
11620	AW 127	101882	539	ceramic	
11620	AW 127	113256-001	2	glass	
11620	AW 127	113275-001	1	stone	grinding stone
11621	AW 127	113233-001		bone	
11621	AW 127	101890	133	ceramic	
11621	AW 127	113258-001	1	glass	
11621	AW 127	113293-001	1	glass	
11622	AW 126	113220-001		bone	
11622	AW 126	101889	317	ceramic	
11622	AW 126	113259-001	1	ceramic	lamp
11622	AW 126	113286-001	1	stone	rubbing stone
11622	AW 126	113292-001	1	glass	
11625	AV 129	101942	196	ceramic	
11625	AV 129	113704-001	3	bone	
11625	AV 129	113705	56	bone	
11625	AV 129	113709-001	1	metal	not defined
11625	AV 129	113710-001	1	metal	not defined
11625	AV 129	113711-001	2	metal	projectile point
11625	AV 129	113751-001	1	metal	nail
11625	AV 129	113752-001	1	metal	nail
11625	AV 129	113773-001	28	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11625	AV 129	113774-001	16	bone	
11625	AV 129	113914-001	2	bone	bone with cutting marks
11627	AX 127	101944	52	ceramic	
11627	AX 127	114227-001	1	stone	rubbing stone
11628	AV 129	101940	24	ceramic	
11628	AV 129	113706-001	10	bone	
11629	AW 128	101902	70	ceramic	
11629	AW 128	113323-001	1	glass	
11629	AW 128	113375-001	1	stone	beaker
11629	AW 128	113407-001		bone	
11629	AW 128	113424-001	1	glass	bowl
11630	AX 129	101909	29	ceramic	
11630	AX 129	113319-001	7	metal	not defined
11630	AX 129	113321-001	1	metal	nail
11630	AX 129	113401-001		bone	
11631	AX 129	113488-001	1	metal	
11631	AX 129	101910	649	ceramic	
11631	AX 129	113355-001	1	metal	nail
11631	AX 129	113366-001	1	stone	mould
11631	AX 129	113367-001	1	metal	nail
11631	AX 129	113411-001		bone	
11632	AX 129	113475-001		stone	stone weight/loom weight
11633	AX 128	114577-001	1	soil sample	
11633	AX 128	113452-001	1	stone	hinge stone
11634	AV 128	113335-001	1	metal	not defined
11634	AV 128	101900	76	ceramic	
11634	AV 128	113406-001		bone	
11635	AX 128	113342-001	1	metal	coin
11635	AX 128	113343-001	1	metal	not defined
11635	AX 128	113346-001	1	snail	not defined
11635	AX 128	101905	354	ceramic	
11635	AX 128	113413-001		bone	
11636	AX 129	113455-001	1	stone	rubbing stone
11636	AX 129	113352-001	1	horn	
11636	AX 129	113362-001	1	charcoal	
11636	AX 129	113376-001	1	charcoal	
11636	AX 129	113409-001		bone	
11636	AX 129	113429-001		charcoal	
11637	AW 127	113238-001		bone	
11637	AW 127	101895	248	ceramic	
11637	AW 127	113308-001	1	shell	not defined
11637	AW 127	113309-001	1	shell	not defined
11637	AW 127	113310-001	1	shell	not defined
11637	AW 127	113311-001	1	shell	chain link
11637	AW 127	113312-001	1	shell	pendant

Locus	Square	TZ Number	Number of Objects	Material	Object
11637	AW 127	113313-001	1	stone	bowl
11637	AW 127	113315-001	1	shell	pendant
11637	AW 127	113316-001	1	stone	mortar bowl
11637	AW 127	113317-001	1	stone	grinding stone
11637	AW 127	113322-001	2	stone	flakes
11638	AW 127	101894	200	ceramic	
11638	AW 127	113398-001		bone	
11640	AW 126	101908	105	ceramic	
11640	AW 126	113403-001		bone	
11641	AW 126	113498-001	1	metal	fitting
11641	AW 126	113465-001	1	stone	bowl
11641	AW 126	113462-001	1	stone	grinding stone
11641	AW 126	101906	4	ceramic	
11641	AW 126	113359-001	1	glass	
11641	AW 126	113364-001	1	metal	pendant
11641	AW 126	113399-001		bone	
11641	AW 126	113418-001	1	stone	spindle whorl
11642	AW 126	101907	30	ceramic	
11642	AW 126	113410-001		bone	
11643	AW 126	113331-001		soil sample	
11643	AW 126	113332-001		soil sample	
11643	AW 126	113338-001	1	stone	not defined
11644	AW 126	101915	159	ceramic	
11644	AW 126	113365-001	1	metal	not defined
11644	AW 126	113368-001	1	metal	coin
11644	AW 126	113368-002	3	metal	coin
11644	AW 126	113408-001		bone	
11645	AW 127	113378-001	2	shell	
11645	AW 127	101916	136	ceramic	
11645	AW 127	113391-001		stone	flakes
11646	AW 126	101901	21	ceramic	
11646	AW 126	113397-001		bone	
11647	AW 126	101914	126	ceramic	
11647	AW 126	113414-001		bone	
11651	AW 129	113361-001	1	snail	not defined
11651	AW 129	113380-001	1	stone	rubbing stone
11651	AW 129	101913	346	ceramic	
11651	AW 129	113395-001		bone	
11651	AW 129	113419-001	1	metal	
11651	AW 129	113420-001	1	metal	
11651	AW 129	113425-001	1	snail	pendant
11653	AX 129	113377-001	1	shell	not defined
11654	AW 129	101911	203	ceramic	
11654	AW 129	113412-001		bone	
11655	AX 129	113394-001		bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11656	AX 129	113464-001	1	stone	grinding stone
11656	AX 129	113360-001	1	shell	
11656	AX 129	113363-001	1	stone	beaker
11656	AX 129	113373-001	1	stone	mortar bowl
11657	AX 129	113499-001	1	metal	
11657	AX 129	113511-001	1	stone	rubbing stone
11657	AX 129	113518-001	1	charcoal	
11657	AX 129	101918	216	ceramic	
11657	AX 129	113388-001		bone	
11657	AX 129	113436-001	1	stone	plate
11658	AW 129	113405-001		bone	
11658	AW 129	113426-001	1	shell	chain link
11658	AW 129	113427-001	1	stone	bead
11661	AV 129	113510-001	1	metal	not defined
11661	AV 129	113539-001	1	faience	bead
11661	AV 129	101921	87	ceramic	
11661	AV 129	113393-001		bone	
11662	AV 126	113476-001	1	stone	sling stone
11662	AV 126	101932	147	ceramic	
11662	AV 126	113383-001		bone	
11662	AV 126	113445-001	1	metal	raw material
11662	AV 126	113446-001	1	metal	not defined
11663	AX 129	113501-001	2	metal	
11663	AX 129	113502-001	1	metal	projectile point
11663	AX 129	101922	136	ceramic	
11663	AX 129	113390-001		bone	
11663	AX 129	113423-001	1	stone	flakes
11666	AW 129	113529-001	1	metal	
11666	AW 129	113530-001	3	metal	nail
11666	AW 129	113533-001	2	metal	ring
11666	AW 129	113528-001	1	metal	nail
11668	AY 128	101935	28	ceramic	
11668	AY 128	113776-001	3	bone	
11669	AX 127	101936	54	ceramic	
11669	AX 127	101936-002	1	ceramic	jug
11669	AX 127	113702-001	1	charcoal	
11669	AX 127	113712-001	1	metal	buckle
11669	AX 127	113719-001	1	stone	bowl
11669	AX 127	113775-001	10	bone	
11669	AX 127	101936	54	ceramic	
11670	AX 128	101938	70	ceramic	
11671	AY 128	101947-001	1	ceramic	
11671	AY 128	101947-002	1	ceramic	
11671	AY 128	113713-001	1	unbaked clay	loom weight
11671	AY 128	113722-001	1	stone	drill socket

Locus	Square	TZ Number	Number of Objects	Material	Object
11671	AY 128	113765-001	20	bone	
11671	AY 128	113785-001	2	bone	
11672	AY 128	101939	14	ceramic	
11673	AX 127	113734-001	1	stone	gaming piece
11673	AX 127	113763-001	38	bone	
11673	AX 127	113784-001	1	bone	
11675	AW 127	101920	138	ceramic	
11675	AW 127	113392-001		bone	
11675	AW 127	113441-001	1	ceramic	spindle whorl
11675	AW 127	113443-001	1	stone	ecofact
11676	AW 127	113496-001	1	stone	rubbing stone
11676	AW 127	101919	208	ceramic	
11676	AW 127	113389-001		bone	
11676	AW 127	113430-001	1	ceramic	jug
11677	AW 126	113431-001	1	stone	lid
11678	AW 126	101925	46	ceramic	
11678	AW 126	113386-001		bone	
11679	AW 127	101926	376	ceramic	
11679	AW 127	113387-001		bone	
11679	AW 127	113440-001	1	glass	bead
11680	AW 127	113478		stone	rubbing stone
11680	AW 127	101933	124	ceramic	
11680	AW 127	113382-001		bone	
11681	AW 127	101927	95	ceramic	
11681	AW 127	113437-001	1	stone	ecofact
11681	AW 127	113438-001	1	shell	not defined
11681	AW 127	113439-001	1	shell	chain link
11681	AW 127	113442-001	1	shell	not defined
11685	AW 127	101928	103	ceramic	
11685	AW 127	113385-001		bone	
11687	AX 128	113543-001	1	unbaked clay	loom weight
11687	AX 128	113544-001	1	unbaked clay	loom weight
11687	AX 128	113541-001	1	unbaked clay	loom weight
11687	AX 128	113548-001	1	unbaked clay	loom weight
11687	AX 128	113542-001	1	unbaked clay	loom weight
11687	AX 128	113576-001	1	unbaked clay	loom weight
11687	AX 128	113565-001	1	unbaked clay	loom weight
11687	AX 128	113571-001	1	unbaked clay	loom weight
11687	AX 128	113575-001	1	unbaked clay	loom weight
11687	AX 128	113577-001	1	unbaked clay	loom weight
11687	AX 128	113574-001	1	unbaked clay	loom weight
11687	AX 128	113578-001	1	unbaked clay	loom weight
11687	AX 128	113572-001	1	unbaked clay	loom weight
11687	AX 128	113549-001	1	unbaked clay	loom weight
11687	AX 128	113551-001	1	unbaked clay	loom weight

Locus	Square	TZ Number	Number of Objects	Material	Object
11687	AX 128	113566-001	1	unbaked clay	loom weight
11687	AX 128	113550-001	1	unbaked clay	loom weight
11687	AX 128	113570-001	1	unbaked clay	loom weight
11687	AX 128	113567-001	1	unbaked clay	loom weight
11687	AX 128	113547-001	1	unbaked clay	loom weight
11687	AX 128	113546-001	1	unbaked clay	loom weight
11687	AX 128	113569-001	1	unbaked clay	loom weight
11687	AX 128	113545-001	1	unbaked clay	loom weight
11687	AX 128	113448	32	ceramic	
11689	AX 128	114278-001	1	stone	bead
11691	AX 128	113492-001	1	ceramic	jug
11691	AX 128	113522-001	1	stone	bowl
11691	AX 128	101924	54	ceramic	
11691	AX 128	113404-001		bone	
11691	AX 128	113444-001	1	unbaked clay	spindle whorl
11693	AW 129	101934		ceramic	
11693	AW 129	113517-001	1	ceramic	lamp
11693	AW 129	113487-001	1	metal	
11693	AW 129	113490-001	1	metal	nail
11693	AW 129	113514-001	2	metal	nail
11693	AW 129	113468-001	1	charcoal	
11693	AW 129	113469-001	1	charcoal	
11693	AW 129	101923-001	227	ceramic	
11693	AW 129	101934-001		ceramic	
11694	AX 128	101931-001	56	ceramic	
11695	AX 129	113470-001	1	metal	nail
11695	AX 129	113481-001	1	metal	coin
11695	AX 129	113515-001	1	metal	projectile point
11695	AX 129	101930		ceramic	
11695	AX 129	101930	111	ceramic	
11695	AX 129	113384-001		bone	
11696	AX 128	113520-001	1	charcoal	
11696	AX 128	113521-001	1	charcoal	
11697	AX 129	113471-001	1	metal	blade
11697	AX 129	113512-001	1	metal	projectile point
11697	AX 129	101929	20	ceramic	
11697	AX 129	113416-001		bone	
11699	AX 128	113519-001	1	stone	rubbing stone
11699	AX 128	113519-002	1	stone	
11700	AX 128	101950	15	ceramic	
11700	AX 128	101950-002	1	ceramic	
11700	AX 128	113745-001	1	soil sample	
11700	AX 128	113745-002	1	soil sample	
11700	AX 128	113745-003	1	soil sample	
11700	AX 128	113909-001	8	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11701	AW 127	113526-001	1	stone	bead
11703	AW 129	113753-001	1	metal	nail
11703	AW 129	113754-001	1	metal	not defined
11703	AW 129	113758-001	1	metal	
11703	AW 129	113755-001	1	metal	needle
11703	AW 129	113759-001	1	metal	projectile point
11703	AW 129	113781-001	4	bone	
11703	AW 129	113787-001		bone	
11703	AW 129	113758		metal	
11703	AW 129	101948	188	ceramic	
11704	AY 128	113746-001	1	soil sample	
11704	AY 128	113746-002	1	soil sample	
11706	AX 127	113808-001	2	stone	grinding stone
11706	AX 127	114445-001	2	unbaked clay	loom weight
11706	AX 127	114493-001	1	stone	mortar bowl
11706	AX 127	102279	27	ceramic	
11707	AX 127	113756-001	1	metal	nail
11709	AY 128	113733-001	1	stone	rubbing stone
11710	AV 129	113764-001	12	bone	
11710	AV 129	113859-001	1	unbaked clay	loom weight
11710	AV 129	101949	24	ceramic	
11711	AW 129	113720-001	1	stone	rubbing stone
11711	AW 129	113721-001	1	stone	sickle
11711	AW 129	113721-002	1	stone	blade
11711	AW 129	113721-003	1	stone	not defined
11711	AW 129	113727-001	2	stone	flakes
11711	AW 129	113727-002	2	stone	flakes
11711	AW 129	113789-001		bone	
11711	AW 129	113853-001	1	charcoal	
11711	AW 129	101959	140	ceramic	
11712	AV 129	101961	120	ceramic	
11712	AV 129	113716-001	1	snail	
11712	AV 129	113717-001	1	snail	
11712	AV 129	113718-001	2		
11712	AV 129	113724-001	2	stone	raw material
11712	AV 129	113748-001	1	metal	fitting
11712	AV 129	113749-001	1	metal	
11712	AV 129	113750-001	1	metal	not defined
11712	AV 129	113788-001		bone	
11712	AV 129	113793-001	1	bone	
11712	AV 129	113794-001	1	bone	
11713	AX 128	113779-001	1	bone	
11713	AX 128	101960	10	ceramic	
11714	AW 129	113809-001	1	stone	rubbing stone
11714	AW 129	113813-001	1	shell	

Locus	Square	TZ Number	Number of Objects	Material	Object
11714	AW 129	113838-001	66	bone	bone with cutting marks
11714	AW 129	113855-001	1	charcoal	
11714	AW 129	113857-001	1	bone	
11714	AW 129	113925-001	22	bone	bone with cutting marks
11714	AW 129	114118-001	2	bone	bone with cutting marks
11714	AW 129	114323-001	1	clay	fragment of kiln
11714	AW 129	114339-001	1	ceramic	
11714	AW 129	101979-001	160	ceramic	
11717	AW 129	113735-001	1	stone	rubbing stone
11717	AW 129	113921-001	12	bone	bone with cutting marks
11717	AW 129	113998-001	20	bone	bone with cutting marks
11717	AW 129	114031-001	5	bone	bone with cutting marks
11717	AW 129	101968	27	ceramic	
11718	AW 129	113760-001	1	metal	nail
11718	AW 129	113762-001	1	metal	hook
11718	AW 129	113803-001	58	bone	bone with cutting marks
11718	AW 129	113804-001	2	horn	
11718	AW 129	113829-001	3	bone	
11718	AW 129	113830-001	1	metal	
11718	AW 129	113904-001	1	horn	
11718	AW 129	113905-001	21	bone	bone with cutting marks
11718	AW 129	101967	2	ceramic	
11718	AW 129	101967		ceramic	
11719	AY 128	113741-001	1	glass	vessel
11719	AY 128	113761-001	1	metal	
11720	AW 129	113730-001	1	stone	flakes
11720	AW 129	113730-002	1	stone	flakes
11720	AW 129	113740-001	1	snail	not defined
11720	AW 129	113819-001	1	stone	
11720	AW 129	113820-001	7	bone	bone with cutting marks
11720	AW 129	113820-002	1	bone	not defined
11720	AW 129	113898-001	12	bone	bone with cutting marks
11720	AW 129	101965	40	ceramic	
11722	AY 128	113797-001	3	glass	not defined
11722	AY 128	113805-001	1	snail	
11722	AY 128	113814-001	1	shell	
11722	AY 128	113867-001	2	bone	bone with cutting marks
11722	AY 128	113889-001	1	metal	not defined
11722	AY 128	113932-001	17	bone	bone with cutting marks
11722	AY 128	101976	40	ceramic	
11724	AY 128	113744-001	1	stone	rubbing stone
11724	AY 128	113826-001	1	mud brick	
11726	AX 128	113742-001	1	stone	rubbing stone
11727	AY 128	113927-001	10	bone	bone with cutting marks
11727	AY 128	101982	25	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11728	AV 129	113831-001	1	metal	nail
11728	AV 129	113835-001	1	glass	vessel
11728	AV 129	113891-001	2	bone	bone with cutting marks
11728	AV 129	113924-001	5	bone	bone with cutting marks
11728	AV 129	101990	39	ceramic	
11729	AW 129	113832-001	1	metal	not defined
11729	AW 129	113926-001	11	bone	bone with cutting marks
11729	AW 129	101981	22	ceramic	
11730	AW 129	113864-001	2	bone	bone with cutting marks
11730	AW 129	101983	25	ceramic	
11731	AV 129	113865-001	4	bone	bone with cutting marks
11731	AV 129	113890-001	2	bone	bone with cutting marks
11731	AV 129	101980	80	ceramic	
11733	AY 128	113968-001	1	unbaked clay	loom weight
11733	AY 128	113972-001	20	clay	
11733	AY 128	113976-001	40	clay	
11733	AY 128	113982-001	1	snail	
11733	AY 128	113991-001	1	mud brick	
11733	AY 128	113992-001	1	mud brick	
11733	AY 128	113993-001	1	clay	
11733	AY 128	113994-001	1	mud brick	
11733	AY 128	114013-001	5	bone	bone with cutting marks
11733	AY 128	114048-001	1	stone	architectural element
11733	AY 128	114088-001	1	stone	plate
11733	AY 128	114114-001	1	bone	
11733	AY 128	114700-001	2	stone	ecofact
11733	AY 128	102020	152	ceramic	
11734	AV 129	113935-001	3	bone	bone with cutting marks
11734	AV 129	114002-001	8	bone	bone with cutting marks
11734	AV 129	101993	46	ceramic	
11735	AU 131	101941	51	ceramic	
11735	AU 131	113726-001	1	stone	blade
11735	AU 131	113772-001	16	bone	
11735	AU 131	113825-001	1	soil sample	
11735	AU 131	113861-001	1	shell	
11736	AV 130	101951	106	ceramic	
11736	AV 130	114338-001	1	ceramic	lamp
11736	AV 130	114338-002	1	ceramic	lamp
11738	AU 129	113873-001	1	stone	whetstone
11738	AU 129	101971-001	3	ceramic	
11740	AU 131	101946	11	ceramic	
11740	AU 131	113769-001	2	bone	
11740	AU 131	113851-001	1	charcoal	
11741	AU 129	101945	81	ceramic	
11741	AU 129	113737-001	1	snail	

Locus	Square	TZ Number	Number of Objects	Material	Object
11741	AU 129	113768-001	2	bone	
11741	AU 129	113786-001	1	bone	
11741	AU 129	113795-001	1	bone	
11741	AU 129	113868-001	2	clay	
11742	AU 131	101953	16	ceramic	
11742	AU 131	113723-001	1	stone	bowl
11742	AU 131	113729-001	1	stone	flakes
11742	AU 131	113791-001	14	bone	
11742	AU 131	113792-001	12	bone	
11742	AU 131	113796-001	1	bone	
11742	AU 131	113850-001	1	charcoal	
11742	AU 131	113899-001	3	bone	bone with cutting marks
11742	AU 131	114340-001	1	ceramic	lamp
11743	AU 129	101954	9	ceramic	
11743	AU 129	113790-001	11	bone	
11744	AU 129	101955-001	24	ceramic	
11744	AU 129	113783-001	3	bone	
11745	AU 131	101956	47	ceramic	
11745	AU 131	113728-001	1	stone	
11745	AU 131	113780-001	13	bone	
11745	AU 131	113849-001	1	charcoal	
11746	AU 129	101957-001	1	ceramic	
11746	AU 129	114357-001	1	soil sample	
11747	AU 129	101958	186	ceramic	
11747	AU 129	113747-001	5	clay	
11747	AU 129	113747-002	2	clay	
11747	AU 129	113782-001	9	bone	
11747	AU 129	113806-001	1	glass	bead
11747	AU 129	113818-001	1	stone	raw material
11747	AU 129	113866-001	1	bone	bone with cutting marks
11747	AU 129	113897-001	10	bone	bone with cutting marks
11747	AU 129	113920-001	11	bone	bone with cutting marks
11748	AU 131	113731-001	1	stone	ecofact
11748	AU 131	113731-002	1	stone	flakes
11748	AU 131	113731-003	1	stone	scraper
11748	AU 131	113732-001	1	stone	
11748	AU 131	113739-001	1	shell	not defined
11748	AU 131	113801-001	12	bone	bone with cutting marks
11748	AU 131	113802-001	3	bone	
11748	AU 131	113842-001	1	charcoal	
11748	AU 131	101962	40	ceramic	
11749	AU 131	113738-001	1	shell	not defined
11749	AU 131	113843-001	1	charcoal	
11749	AU 131	114015-001	4	bone	bone with cutting marks
11749	AU 131	101963	10	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11750	AU 131	113798-001	1		
11750	AU 131	113800-001	1	stone	gaming piece
11750	AU 131	113799-001	52	bone	
11750	AU 131	113817-001	1	stone	gaming piece
11750	AU 131	113828-001	3	bone	
11750	AU 131	113845-001	1	charcoal	
11750	AU 131	101969	70	ceramic	
11751	AU 131	113846-001	1	charcoal	
11751	AU 131	113900-001	3	bone	
11751	AU 131	113901-001	10	bone	bone with cutting marks
11751	AU 131	101987		ceramic	
11751	AU 131	101987		ceramic	
11751	AU 131	101987	23	ceramic	
11753	AU 129	113807-001	1	stone	bead
11753	AU 129	113807-002	1	stone	ecofact
11753	AU 129	113815-001	1	stone	rubbing stone
11753	AU 129	113821-001	1	metal	blade
11753	AU 129	113915-001	8	bone	bone with cutting marks
11753	AU 129	113916-001	1	snail	
11753	AU 129	113922-001	13	bone	bone with cutting marks
11753	AU 129	101964	108	ceramic	
11753	AU 129	114727-001	3	mud brick	
11754	AU 130	113810-001	1	metal	projectile point
11754	AU 130	113908-001	18	bone	bone with cutting marks
11756	AU 131	113847-001	1	charcoal	
11756	AU 131	113871-001	1	shell	
11756	AU 131	113875-001	20	bone	
11756	AU 131	113876-001	3	bone	
11756	AU 131	113880-001	1	stone	
11756	AU 131	113880-002	1	stone	flakes
11756	AU 131	113940-001	1	stone	sling stone
11756	AU 131	113941-001	1	stone	not defined
11756	AU 131	101988	48	ceramic	
11757	AU 131	113848-001	1	charcoal	
11757	AU 131	113879-001	1	stone	flakes
11757	AU 131	113918-001	16	bone	bone with cutting marks
11757	AU 131	113919-001	1	stone	not defined
11757	AU 131	101986	62	ceramic	
11758	AU 131	113844-001	1	charcoal	
11758	AU 131	113912-001	7	bone	
11758	AU 131	101989	20	ceramic	
11759	AU 131	113896-001	10	bone	bone with cutting marks
11759	AU 131	101996	19	ceramic	
11760	AU 130	113703-001	1	charcoal	
11760	AU 130	113827-001	3	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11760	AU 130	113863-001	9	metal	not defined
11760	AU 130	101966	203	ceramic	
11761	AU 129	113913-001	8	bone	bone with cutting marks
11761	AU 129	101985	34	ceramic	
11763	AU 131	102087	38	ceramic	
11763	AU 131	114840-001	1	ceramic	
11764	AU 129	113862-001	1	metal	coin
11764	AU 129	113996-001	24	bone	bone with cutting marks
11764	AU 129	114003-001	16	bone	
11764	AU 129	101992	40	ceramic	
11764	AU 129	114725-001	6	clay	
11765	AU 131	113883-001	1	charcoal	
11765	AU 131	113953-001	1	snail	
11765	AU 131	114021-001	3	bone	bone with cutting marks
11765	AU 131	114022-001	1		
11765	AU 131	102000	25	ceramic	
11766	AU 131	113944-001	1	charcoal	
11766	AU 131	113985-001	1	stone	flakes
11766	AU 131	113997-001	20	bone	bone with cutting marks
11766	AU 131	114019-001	8	bone	bone with cutting marks
11766	AU 131	114029-001	1	bone	
11766	AU 131	114039-001	1	stone	gaming piece
11766	AU 131	114044-001	1	charcoal	
11766	AU 131	102011	154	ceramic	
11767	AV 129	101943	43	ceramic	
11767	AV 129	113700-001	1	glass	
11767	AV 129	113708-001	1	snail	
11767	AV 129	113715-001	2	metal	fitting
11767	AV 129	113767-001	6	bone	
11767	AV 129	113766-001	5	bone	
11767	AV 129	113777-001	4	bone	
11767	AV 129	113778-001	1	bone	
11768	AU 130	101937	77	ceramic	
11768	AU 130	113707-001	15	bone	
11768	AU 130	113714-001	2	shell	not defined
11768	AU 130	113770-001	1	bone	
11768	AU 130	113771-001	1	bone	
11769	AU 131	113936-001	1	charcoal	
11769	AU 131	102008	40	ceramic	
11770	AU 131	113887-001	1	charcoal	
11770	AU 131	113934-001	1	bone	
11770	AU 131	114004-001	23	bone	bone with cutting marks
11770	AU 131	102007	70	ceramic	
11771	AU 129	113884-001	1	charcoal	
11771	AU 129	114005-001	10	bone	bone with cutting marks

Locus	Square	TZ Number	Number of Objects	Material	Object
11771	AU 129	102004	16	ceramic	
11772	AU 129	113878-001	1	metal	coin
11772	AU 129	113946-001	1	stone	
11772	AU 129	114006-001	6	bone	
11772	AU 129	114714-001	1	stone	flakes
11772	AU 129	102013	45	ceramic	
11773	AU 131	113938-001	1	charcoal	
11773	AU 131	102001	11	ceramic	
11774	AU 131	114017-001	4	bone	bone with cutting marks
11775	AU 131	113882-001	1	charcoal	
11777	AU 129	113945-001	1	charcoal	
11777	AU 129	114014-001	8	bone	
11777	AU 129	114016-001	14	bone	
11777	AU 129	102002	72	ceramic	
11777	AU 129	114716-001	3	plaster	
11777	AU 129	114726-001	1	plaster	
11778	AU 130	102092	27	ceramic	
11778	AU 130	114744-001	11	mud brick	fragment of kiln
11781	AU 128	113956-001	1	metal	fitting
11781	AU 128	113958-001	1	metal	coin
11781	AU 128	113960-001	1	charcoal	
11781	AU 128	113974-001	2	mud brick	
11781	AU 128	114117-001	1	bone	bone with cutting marks
11781	AU 128	114608-001	1	metal	coin
11781	AU 128	114653-001	1	glass	vessel
11781	AU 128	102026	49	ceramic	
11781	AU 128	114776-001	31	bone	bone with cutting marks
11782	AU 129	114197-001	1	stone	spindle whorl
11782	AU 129	114211-001	1	stone	slings stone
11782	AU 129	114384-001	1	stone	bowl
11782	AU 129	114386-001	1	stone	tile
11782	AU 129	102051	156	ceramic	
11782	AU 129	114730-001	1	plaster	wall plaster
11783	AU 128	113975-001	1	mud brick	
11783	AU 128	113999-001	18	bone	bone with cutting marks
11783	AU 128	114636-001	4	glass	vessel
11783	AU 128	102018	45	ceramic	
11785	AU 131	114055-001	17	bone	
11785	AU 131	102022	10	ceramic	
11786	AU 131	114024-001	2	bone	
11786	AU 131	114042-001	1	charcoal	
11786	AU 131	102027	14	ceramic	
11787	AU 131	114043-001	1	charcoal	
11787	AU 131	102034	45	ceramic	
11788	AU 131	102040	58	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11789	AU 131	114082-001	1	stone	sling stone
11789	AU 131	114304-001	1	stone	raw material
11789	AU 131	102054	85	ceramic	
11789	AU 131	114774-001	20	bone	bone with cutting marks
11790	AU 131	114200-001	1	stone	bowl
11790	AU 131	102080	33	ceramic	
11790	AU 131	114790-001	6	bone	
11791	AU 130	114056-001	5	bone	
11791	AU 130	114078-001	1	snail	
11791	AU 130	114079-001	1	snail	
11791	AU 130	114092-001	1	metal	
11791	AU 130	114109-001	1	charcoal	
11791	AU 130	114112-001	2	bone	
11791	AU 130	114218-001	2	stone	flakes
11791	AU 130	114633-001	1	glass	vessel
11791	AU 130	102055	228	ceramic	
11791	AU 130	114738-001	1	soil sample	
11792	AU 128	114052-001	1	bone	
11792	AU 128	114059-001	1	snail	
11792	AU 128	114061-001	1	metal	coin
11792	AU 128	114083-001	1	snail	
11792	AU 128	114099-001	1	metal	nail
11792	AU 128	114102-001	1	metal	
11792	AU 128	114127-001	30	bone	bone with cutting marks
11792	AU 128	114168-001	2	glass	
11792	AU 128	114535-001	1	stone	rubbing stone
11792	AU 128	114535-002	1	stone	grinding stone
11792	AU 128	114542-001	1	stone	grinding stone
11792	AU 128	114635	1	glass	
11792	AU 128	114711-001	1	stone	sickle
11792	AU 128	114711-002	1	stone	flakes
11792	AU 128	102037	179	ceramic	
11792	AU 128	113988	4	clay	
11792	AU 128	114752-001	4	clay	fragment of kiln
11792	AU 128	114782-001	18	bone	bone with cutting marks
11793	AU 128	102033	33	ceramic	
11795	AU 128	114076-001	1	stone	bowl
11795	AU 128	114710-001	1	stone	flakes
11795	AU 128	102030	54	ceramic	
11795	AU 128	114781-001	14	bone	bone with cutting marks
11797	AU 128	114053-001	1	stone	ecofact
11797	AU 128	114095-001	1	metal	coin
11797	AU 128	114429-001	1	snail	
11797	AU 128	102050	42	ceramic	
11797	AU 128	114780-001	3	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11798	AU 128	114075-001	1	stone	not defined
11798	AU 128	114089-001	1	stone	grinding stone
11798	AU 128	114628-001	2	stone	tile
11798	AU 128	102029	110	ceramic	
11799	AU 128	114065-001	1	metal	not defined
11799	AU 128	114085-001	1	bone	
11799	AU 128	102048	41	ceramic	
11799	AU 128	114779-001	11	bone	bone with cutting marks
11801	AV 129	102014-001	7	ceramic	
11802	AW 129	113930-001	30	bone	bone with cutting marks
11802	AW 129	114708-001	1	stone	flakes
11802	AW 129	101994	74	ceramic	
11803	AW 129	101995-001	5	ceramic	
11803	AW 129	101995		ceramic	
11805	AW 129	102015	13	ceramic	
11806	AU 123	113892-001	1	glass	
11806	AU 123	114008-001	1	bone	
11806	AU 123	102005	11	ceramic	
11808	AW 129	114007-001	16	bone	
11808	AW 129	101999-001	4	ceramic	
11809	AV 129	113877-001	1	metal	coin
11809	AV 129	113885-001	1	unbaked clay	loom weight
11809	AV 129	113886-001	1	unbaked clay	loom weight
11809	AV 129	113893-001	1	metal	fitting
11809	AV 129	113894-001	1	metal	not defined
11809	AV 129	113895-001	3	bone	tooth
11809	AV 129	113928-001	1	stone	ecofact
11809	AV 129	113947-001	1	stone	
11809	AV 129	113949-001	1	snail	
11809	AV 129	113950-001	1	shell	
11809	AV 129	113951-001	1	stone	flakes
11809	AV 129	114000-001	157	bone	bone with cutting marks
11809	AV 129	114010-001	2	bone	
11809	AV 129	101997	175	ceramic	
11810	AW 129	101998-002		ceramic	
11810	AW 129	101998-001		ceramic	
11810	AW 129	113942-001	1	stone	drill
11810	AW 129	113943-001	1	stone	blade
11810	AW 129	113943-002	1	stone	flakes
11810	AW 129	114012-001	12	bone	bone with cutting marks
11810	AW 129	101998		ceramic	
11811	AU 123	114009-001	2	bone	
11811	AU 123	102006-001	5	ceramic	
11812	AU 123	113939-001	1	glass	vessel
11812	AU 123	113954-001	1	stone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11812	AU 123	113961-001	1	metal	
11812	AU 123	113963-001	1	metal	ring
11812	AU 123	114028-001	2	bone	
11812	AU 123	114030-001	1	bone	
11812	AU 123	114631-001	1	glass	vessel
11812	AU 123	114632-001	1	glass	vessel
11812	AU 123	114632-002	1	glass	vessel
11812	AU 123	114632-003	1	glass	vessel
11812	AU 123	114661-001	1	stone	tessera
11812	AU 123	102010	132	ceramic	
11813	AV 129	113995-001	101	bone	bone with cutting marks
11813	AV 129	114011-001	11	bone	bone with cutting marks
11813	AV 129	114026-001	4	bone	
11813	AV 129	114041-001	1	stone	rubbing stone
11813	AV 129	114667-001	1	snail	
11813	AV 129	114715-001	1	stone	flakes
11813	AV 129	102003-001	5	ceramic	
11814	AW 129	113978-001	1	stone	grinding stone
11814	AW 129	114018-001	10	bone	
11814	AW 129	114040-001	1	stone	bowl
11814	AW 129	114045-001	1	stone	mortar bowl
11814	AW 129	114046-001	1	stone	architectural element
11814	AW 129	114077-001	1	stone	spindle whorl
11814	AW 129	114113-001	2	bone	
11814	AW 129	114599-001	1	metal	not defined
11814	AW 129	114687-001	1	shell	
11814	AW 129	114709-001	1	stone	
11814	AW 129	102012	48	ceramic	
11814	AW 129	114755-001	5	unbaked clay	loom weight
11814	AW 129	114060-001	1	metal	projectile point
11815	AU 123	113964-001	1	stone	raw material
11815	AU 123	113977-001	1	stone	sling stone
11815	AU 123	113987-001	1	stone	mortar
11815	AU 123	114637-001	2	glass	
11815	AU 123	102021	196	ceramic	
11816	Aw 129	113948-001	1	stone	rubbing stone
11816	Aw 129	113955-001	1	metal	not defined
11816	Aw 129	114047-001	1	snail	pendant
11816	Aw 129	114712-001	1	stone	
11816	Aw 129	114713-001	1	stone	gaming piece
11816	Aw 129	102009	40	ceramic	
11817	AV 129	113957-001	1	metal	hook
11817	AV 129	113959-001	1	charcoal	
11817	AV 129	113967-001	4	unbaked clay	loom weight
11817	AV 129	113979-001	1	glass	vessel

Locus	Square	TZ Number	Number of Objects	Material	Object
11817	AV 129	113981-001	1	stone	flakes
11817	AV 129	113983-001	1	snail	
11817	AV 129	114087-001	1	bone	tooth
11817	AV 129	114217-001	1	stone	gaming piece
11817	AV 129	102017	79	ceramic	
11817	AV 129	114773-001	11	bone	bone with cutting marks
11818	AV 129	113965-001	1	unbaked clay	loom weight
11818	AV 129	113966-001	1	unbaked clay	loom weight
11818	AV 129	113969-001	1	unbaked clay	loom weight
11818	AV 129	113971-001	1	clay	
11818	AV 129	113984-001	1	snail	
11818	AV 129	114023-001	3	bone	
11818	AV 129	114068-001	1	stone	tile
11818	AV 129	114070-001	1	stone	rubbing stone
11818	AV 129	114086-001	1	stone	not defined
11818	AV 129	114128-001	53	bone	
11818	AV 129	114130-001	102	bone	bone with cutting marks
11818	AV 129	114131-001	1	bone	tooth
11818	AV 129	114450-001	2	stone	flakes
11818	AV 129	102016	257	ceramic	
11818	AV 129	114777-001	8	mud brick	
11819	AY 127	102031	12	ceramic	
11820	AU 123	114604-001	1	glass	bangle
11820	AU 123	102028-001	23	ceramic	
11821	AU 123	114308-001	1	stone	not defined
11821	AU 123	114410-001	1	stone	architectural element
11821	AU 123	114701-001	1	stone	flakes
11821	AU 123	102032	24	ceramic	
11822	AY 127	114020-001	3	bone	bone with cutting marks
11822	AY 127	114090-001	1	stone	rubbing stone
11822	AY 127	102019-001	3	ceramic	
11823	AY 127	114069-001	1	stone	rubbing stone
11823	AY 127	114116-001	11	bone	
11823	AY 127	102024	45	ceramic	
11824	AY 128	114025-001	4	bone	
11824	AY 128	114051-001	3	bone	
11824	AY 128	114666-001	2	snail	
11824	AY 128	102036	32	ceramic	
11825	AY 127	114660-001	1	glass	vessel
11825	AY 127	102039-001	6	ceramic	
11826	AY 127	114033-001	1	clay	
11826	AY 127	114033-002	1	clay	
11826	AY 127	114033-003	1	clay	
11826	AY 127	114033-004	1	clay	
11826	AY 127	114033-005	1	clay	

Locus	Square	TZ Number	Number of Objects	Material	Object
11826	AY 127	114033-006	1	clay	
11826	AY 127	114033-007	1	clay	
11826	AY 127	114050-001	1	stone	gaming piece
11826	AY 127	114520-001	1	clay	
11826	AY 127	102041-001	4	ceramic	
11827	AY 127	114035-001	1	clay	
11827	AY 127	114035-002	1	clay	
11827	AY 127	114037-001	1	clay	
11827	AY 127	114037-002	1	clay	
11827	AY 127	114058-001	3	bone	
11827	AY 127	114071-001	1	stone	rubbing stone
11827	AY 127	114074-001	1	stone	bowl
11827	AY 127	114115-001	5	bone	
11827	AY 127	102052	13	ceramic	
11828	AY 127	114573-001	4	clay	fragment of kiln
11828	AY 127	114778-001	20	bone	bone with cutting marks
11829	AU 130	113816-001	1	stone	sling stone
11829	AU 130	113902-001	14	bone	bone with cutting marks
11830	AU 123	114049-001	1	stone	Tessera
11830	AU 123	114057-001	1	bone	
11830	AU 123	114062-001	1	metal	not defined
11830	AU 123	114067-001	1	stone	plate
11830	AU 123	114135-001	3	bone	
11830	AU 123	114166-001	2	glass	vessel
11830	AU 123	102023	146	ceramic	
11832	AU 128	113836-001	1	stone	flakes
11832	AU 128	113839-001	1	charcoal	
11832	AU 128	113906-001	1	bone	tooth
11832	AU 128	101978	36	ceramic	
11832	AU 128	114717-001	4	clay	
11833	AU 128	113970-001	4	clay	
11833	AU 128	113970-002	2	clay	
11833	AU 128	113970-003	1	clay	
11833	AU 128	113973-001	9	mud brick	
11833	AU 128	114161-001	5	glass	vessel
11835	AU 130	101970	37	ceramic	
11835	AU 130	113840-001	1	charcoal	
11835	AU 130	113874-001	1	ceramic	button
11835	AU 130	113903-001	1	bone	bone with cutting marks
11836	AU 130	113841-001	1	stone	gaming piece
11836	AU 130	113870-001	1	charcoal	
11836	AU 130	113888-001	1	metal	ring
11836	AU 130	113923-001	25	bone	bone with cutting marks
11836	AU 130	113937-001	1	charcoal	
11836	AU 130	101974	11	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11836	AU 130	114753-001	1	soil sample	
11837	AU 129	113811-001	1	metal	not defined
11837	AU 129	113833-001	1	metal	coin
11837	AU 129	113834-001	1	clay	not defined
11837	AU 129	113856-001	1	charcoal	
11837	AU 129	101991	42	ceramic	
11838	AU 129	113822-001	1	plaster	
11838	AU 129	113823-001	1	unbaked clay	loom weight
11838	AU 129	113824-001	1	unbaked clay	loom weight
11838	AU 129	113837-001	14	bone	bone with cutting marks
11838	AU 129	113852-001	1	charcoal	
11838	AU 129	113860-001	1	ceramic	spindle whorl
11838	AU 129	113869-001	1	plaster	
11838	AU 129	113872-001	1	metal	coin
11838	AU 129	113911-001	17	bone	
11838	AU 129	113929-001	4	bone	bone with cutting marks
11838	AU 129	101977	98	ceramic	
11839	AU 129	113812-001	1	metal	not defined
11839	AU 129	113854-001	1	charcoal	
11839	AU 129	113858-001	1	unbaked clay	loom weight
11839	AU 129	113881-001	1	stone	rubbing stone
11839	AU 129	113917-001	11	bone	bone with cutting marks
11839	AU 129	113933-001	7	bone	
11839	AU 129	113952-001	1	stone	flakes
11839	AU 129	114001-001	18	bone	bone with cutting marks
11839	AU 129	113986-001	1	stone	ecofact
11839	AU 129	101984	47	ceramic	
11839	AU 129	114724-001	5	clay	fragment of kiln
11840	AW 129	113989-001	1	mud brick	
11840	AW 129	114066-001	1	stone	bowl
11840	AW 129	114552-001	1	stone	raw material
11840	AW 129	102038	12	ceramic	
11843	AY 128	113990-001	5	clay	
11843	AY 128	114027-001	2	bone	
11843	AY 128	114662-001	1	clay	
11843	AY 128	102025	88	ceramic	
11845	AY 128	114034-001	1	clay	
11845	AY 128	114034-002	1	clay	
11845	AY 128	114034-003	1	clay	
11845	AY 128	114034-004	1	clay	
11845	AY 128	114034-005	1	clay	
11845	AY 128	114034-006	1	clay	
11845	AY 128	114034-007	2	clay	
11845	AY 128	114036-001	1	clay	
11845	AY 128	114036-002	1	clay	

Locus	Square	TZ Number	Number of Objects	Material	Object
11845	AY 128	102126	8	ceramic	
11846	AW 129	114064-001	3	metal	not defined
11846	AW 129	114072-001	1	stone	rubbing stone
11846	AW 129	114081-001	1	stone	not defined
11846	AW 129	114124-001	20	bone	bone with cutting marks
11846	AW 129	114132-001	80	bone	bone with cutting marks
11846	AW 129	102045	188	ceramic	
11846	AW 129	114754-001	1	soil sample	
11847	AY 127	114084-001	2	bone	
11848	AY 127	114119-001	1	bone	
11848	AY 127	102057-001	4	ceramic	
11849	AY 127	114120-001	5	bone	bone with cutting marks
11849	AY 127	102042	3	ceramic	
11850	AU 123	102044	4	ceramic	
11851	AU 123	102043	16	ceramic	
11852	AU 123	114165-001	1	glass	vessel
11853	AY 128	114331-001	1	soil sample	
11853	AY 128	114353-001	1	soil sample	
11853	AY 128	102060	6	ceramic	
11854	AY 128	114106-001	1	charcoal	
11854	AY 128	114111-001	1	charcoal	
11854	AY 128	114126-001	25	bone	bone with cutting marks
11854	AY 128	114159-001	1	stone	rubbing stone
11854	AY 128	114356-001	1	soil sample	
11854	AY 128	114377-001	1	soil sample	
11854	AY 128	102061	60	ceramic	
11855	AY 128	102257	11	ceramic	
11856	AY 128	114038-001	1	clay	
11856	AY 128	114073-001	1	stone	rubbing stone
11856	AY 128	102056--2000		ceramic	
11856	AY 128	114122-001	3	bone	
11856	AY 128	102056	6	ceramic	
11857	AV 129	114098-001	1	metal	needle
11857	AV 129	114129-001	70	bone	bone with cutting marks
11857	AV 129	102067	71	ceramic	
11857	AV 129	114718-001	2	clay	
11857	AV 129	114723-001	5	unbaked clay	loom weight
11859	AU 123	114063-001	1	metal	coin
11859	AU 123	114164-001	1	glass	
11859	AU 123	102059	11	ceramic	
11859	AU 123	114985-001	1	bone	
11860	AU 123	114184-001	1	glass	
11860	AU 123	114213-001	1	stone	stone weight/loom weight
11860	AU 123	114215-001	1	stone	tile
11860	AU 123	114462-001	1	stone	tessera

Locus	Square	TZ Number	Number of Objects	Material	Object
11860	AU 123	102058	87	ceramic	
11860	AU 123	114842-001	2	bone	bone with cutting marks
11860	AU 123	114935-001	7	bone	
11861	AV 129	114093-001	1	metal	coin
11861	AV 129	114125-001	47	bone	
11861	AV 129	114137-001	1	metal	ring
11861	AV 129	114138-001	2	metal	not defined
11861	AV 129	114157-001	7	bone	
11861	AV 129	114170-001	1	snail	
11861	AV 129	114170-002	1	snail	
11861	AV 129	114182-001	1	metal	not defined
11861	AV 129	114202-001	1	ceramic	figurine
11861	AV 129	114203-001	1	ceramic	figurine
11861	AV 129	114208-001	1	stone	slings stone
11861	AV 129	114318-001	1	snail	
11861	AV 129	114318-002	1	snail	
11861	AV 129	114365-001	1	glass	
11861	AV 129	102062	238	ceramic	
11861	AV 129	114719-001	4	clay	
11861	AV 129	114720-001	1	clay	
11861	AV 129	114746-001	5	mud brick	
11861	AV 129	114747-001	8	clay	
11861	AV 129	114797-001	174	bone	bone with cutting marks
11861	AV 129	114797-002	4	bone	
11861	AV 129	114798-001	2	metal	not defined
11862	AY 128	114276-001	1	stone	hinge stone
11862	AY 128	102083	50	ceramic	
11862	AY 128	114825-001	23	bone	
11864	AX 128	114379-001	1	mud brick	
11864	AX 128	114392-001	1	stone	rubbing stone
11864	AX 128	114537-001	1	bone	
11864	AX 128	114706-001	1	stone	burin
11864	AX 128	102076	209	ceramic	
11864	AX 128	114948-001	15	bone	bone with cutting marks
11867	AV 129	114195-001	1	metal	blade
11867	AV 129	114249-001	1	ceramic	lamp
11867	AV 129	102089	16	ceramic	
11867	AV 129	114803-001	14	bone	bone with cutting marks
11867	AV 129	114964-001	12	bone	
11869	AX 127	102084	80	ceramic	
11869	AX 127	114836-001	3	bone	
11870	AX 129	114147-001	1	snail	
11870	AX 129	102081	35	ceramic	
11870	AX 129	114847-001	12	bone	
11871	AU 131	114143-001	1	snail	

Locus	Square	TZ Number	Number of Objects	Material	Object
11871	AU 131	114305-001	1	stone	sling stone
11871	AU 131	114306-001	1	bone	
11871	AU 131	102068	26	ceramic	
11872	AU 131	114105-001	1	charcoal	
11872	AU 131	102065	23	ceramic	
11872	AU 131	114837-001	8	bone	
11873	AU 131	114160-001	1	stone	sling stone
11873	AU 131	102063	13	ceramic	
11873	AU 131	114841-001	3	bone	
11874	AU 130	114108-001	1	charcoal	
11874	AU 130	114121-001	6	bone	
11874	AU 130	114136-001	1	snail	
11874	AU 130	114167-001	1	glass	
11874	AU 130	114183-001	1	metal	key
11874	AU 130	102047	74	ceramic	
11874	AU 130	114845-001	4	bone	
11875	AU 130	114104-001	1	charcoal	
11875	AU 130	114107-001	1	charcoal	
11875	AU 130	102046	118	ceramic	
11875	AU 130	114721-001	1	mud brick	
11875	AU 130	114731-001	5	clay	
11875	AU 130	114750-001	1	clay	
11875	AU 130	114751-001	10	metal	
11876	AU 128	114080-001	1	snail	
11876	AU 128	114133-001	4	bone	
11876	AU 128	114178-001	1	metal	not defined
11876	AU 128	102049	78	ceramic	
11876	AU 128	114827-001	17	bone	bone with cutting marks
11877	AU 129	114219-001	1	stone	sickle
11877	AU 129	102072	11	ceramic	
11878	AU 128	114091-001	7	metal	not defined
11878	AU 128	114094-001	1	metal	coin
11878	AU 128	114097-001	9	metal	not defined
11878	AU 128	114101-001	1	metal	not defined
11878	AU 128	114110-001	1	charcoal	
11878	AU 128	114142-001	1	glass	gaming piece
11878	AU 128	114148-001	1	shell	
11878	AU 128	114216-001	1	stone	raw material
11878	AU 128	102071	110	ceramic	
11878	AU 128	114760-001	1	stone	not defined
11878	AU 128	114795-001	73	bone	bone with cutting marks
11879	AU 128	102066	42	ceramic	
11880	AU 131	114141-001	1	stone	rubbing stone
11880	AU 131	114145-001	1	charcoal	
11880	AU 131	102064	26	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11880	AU 131	114844-001	9	bone	
11881	AU 128	114096-001	1	metal	projectile point
11881	AU 128	114100-001	1	metal	not defined
11881	AU 128	114123-001	5	bone	
11881	AU 128	102075	36	ceramic	
11882	AT 128	114134-001	1	mud brick	
11882	AT 128	114144-001	2	clay	
11882	AT 128	114146-001	1	charcoal	
11882	AT 128	114162-001	2	glass	vessel
11882	AT 128	102073	78	ceramic	
11883	AT 128	102070	35	ceramic	
11883	AT 128	114843-001	3	bone	bone with cutting marks
11884	AU 128	114140-001	1	metal	
11884	AU 128	114169-001	1	glass	
11884	AU 128	114181-001	7	metal	not defined
11884	AU 128	102069	24	ceramic	
11884	AU 128	114848-001	1	bone	
11884	AU 128	114938-001	5	bone	
11885	AU 126	114225-001	1	ceramic	button
11886	AU 131	114156-001	2	bone	
11886	AU 131	102079	203	ceramic	
11886	AU 131	114743-001	3	clay	
11886	AU 131	114839-001	4	bone	bone with cutting marks
11887	AU 131	102091	28	ceramic	
11888	AU 131	102086	82	ceramic	
11888	AU 131	114813-001	9	bone	bone with cutting marks
11889	AU 131	114186-001	1	unbaked clay	loom weight
11889	AU 131	114187-001	1	unbaked clay	loom weight
11889	AU 131	102093	31	ceramic	
11890	AT 128	114173-001	1	stone	stone weight/loom weight
11890	AT 128	114179-001	1	metal	not defined
11890	AT 128	102077	194	ceramic	
11890	AT 128	114775-001	1	stone	raw material
11890	AT 128	114791-001	3	bone	bone with cutting marks
11890	AT 128	114794-001	20	bone	bone with cutting marks
11890	AT 128	114933-001	8	bone	
11892	AT 128	114163-001	1	glass	vessel
11893	AV 129	114175-001	1	metal	
11893	AV 129	114191-001	1	charcoal	
11893	AV 129	114221-001	1	bone	tooth
11893	AV 129	114459-001	1	stone	sickle
11893	AV 129	114470-001	1	stone	sling stone
11893	AV 129	102099	167	ceramic	
11893	AV 129	114801-001	24	bone	bone with cutting marks
11893	AV 129	114808-001	34	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11895	AY 127	114206-001	1	unbaked clay	loom weight
11895	AY 127	114316-001	1	stone	grinding stone
11895	AY 127	114424-001	1	shell	
11895	AY 127	102120	35	ceramic	
11895	AY 127	114734-001	1	clay	
11895	AY 127	114739-001	5	unbaked clay	loom weight
11895	AY 127	114962-001	7	bone	bone with cutting marks
11896	AX 128	114330-001	1	soil sample	
11896	AX 128	102096	110	ceramic	
11896	AX 128	114971-001	35	bone	
11896	AX 128	114972-001	8	bone	gaming piece
11897	AX 128	102095	2	ceramic	
11898	AX 128	114158-001	1	stone	rubbing stone
11898	AX 128	114171-001	1	stone	rubbing stone
11898	AX 128	114207-001	1	stone	sling stone
11898	AX 128	114274-001	1	stone	grinding stone
11898	AX 128	114329-001	1	stone	
11898	AX 128	114395-001	1	stone	rubbing stone
11898	AX 128	102097	28	ceramic	
11898	AX 128	114950-001	2	bone	not defined
11899	AX 128	114193-001	1	metal	ring
11899	AX 128	114194-001	1	metal	
11899	AX 128	114196-001	1	metal	raw material
11899	AX 128	114226-001	1	stone	rubbing stone
11899	AX 128	114272-001	1	shell	
11899	AX 128	114301-001	1		
11899	AX 128	114314-001	1	snail	
11899	AX 128	114341-001	1	snail	
11899	AX 128	114422-001	1	stone	sling stone
11899	AX 128	114466-001	1	stone	sling stone
11899	AX 128	114553-001	1	stone	gaming piece
11899	AX 128	102125	190	ceramic	
11899	AX 128	114740-001	3	metal	slag
11899	AX 128	114741-001	1	clay	
11899	AX 128	114814-001	128	bone	
11900	AX 129	114172-001	1	stone	bowl
11900	AX 129	102105	111	ceramic	
11900	AX 129	114792-001	18	bone	bone with cutting marks
11901	AX 128	114417-001	1	stone	grinding stone
11901	AX 128	114492-001	5	clay	fragment of kiln
11901	AX 128	114522-001	1	stone	rubbing stone
11901	AX 128	102118	11	ceramic	
11901	AX 128	114800-001	3	bone	bone with cutting marks
11901	AX 128	114936-001	2	bone	
11902	AV 129	114223-001	1	charcoal	

Locus	Square	TZ Number	Number of Objects	Material	Object
11902	AV 129	114250-001	1	ceramic	lamp
11902	AV 129	114433-001	1	stone	flakes
11902	AV 129	114472-001	1	glass	
11902	AV 129	102119	55	ceramic	
11902	AV 129	114799-001	17	bone	bone with cutting marks
11903	AY 127	113743-001	1	stone	rubbing stone
11903	AY 127	114275-001	1	stone	rubbing stone
11903	AY 127	114327-001	1	stone	rubbing stone
11903	AY 127	114344-001	1	metal	needle
11903	AY 127	114432-001	1	glass	
11903	AY 127	102116	40	ceramic	
11903	AY 127	114733-001	1	mud brick	
11903	AY 127	114966-001	2	bone	
11903	AY 127	114974-001	1	bone	handle
11903	AY 127	114975-001	1	bone	
11903	AY 127	114976-001	22	bone	bone with cutting marks
11903	AY 127	114977-001	6	bone	not defined
11907	AV 129	114204-001	1	metal	coin
11907	AV 129	114248-001	1	ceramic	lamp
11907	AV 129	114262-001	1	stone	raw material
11907	AV 129	114324-001	1	stone	rubbing stone
11907	AV 129	102129	124	ceramic	
11907	AV 129	102129		ceramic	
11908	AV 129	114702-001	1	stone	
11908	AV 129	102135	40	ceramic	
11909	AV 129	114210-001	1	stone	sling stone
11909	AV 129	102136-001	6	ceramic	
11910	AW 129	114214-001	1	stone	tile
11910	AW 129	114471-001	1	stone	bowl
11910	AW 129	102134	109	ceramic	
11910	AW 129	114736-001	1	metal	
11910	AW 129	114887-001	5	bone	bone with cutting marks
11911	AY 127	114325-001	1	stone	rubbing stone
11912	AY 128	114300-001	1	snail	
11912	AY 128	102174-001	8	ceramic	
11913	AY 127	114549-001	1	stone	basin
11915	AX 128	114354-001	1	soil sample	
11915	AX 128	114442-001	1	soil sample	
11915	AX 128	114643-001	2	glass	vessel
11915	AX 128	102145	39	ceramic	
11915	AX 128	114817-001	8	bone	bone with cutting marks
11916	AV 129	114224-001	1	metal	needle
11916	AV 129	114245-001	1	metal	nail
11916	AV 129	114296-001	1	bone	
11916	AV 129	102142	135	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
11917	AV 129	114539-001	2	bone	
11917	AV 129	102141	51	ceramic	
11917	AV 129	114818-001	8	bone	bone with cutting marks
11917	AV 129	114924-001	6	bone	bone with cutting marks
11918	AX 128	102146	9	ceramic	
11918	AX 128	114880-001	8	bone	bone with cutting marks
11920	AW 129	114320-001	1	stone	grinding stone
11920	AW 129	114383-001	1	stone	grinding stone
11921	AY 127	102082	8	ceramic	
11922	AY 127	102114	18	ceramic	
11923	AV 129	114139-001	1	metal	spatula
11923	AV 129	114177-001	1	metal	
11923	AV 129	114192-001	1	metal	nail
11923	AV 129	114209-001	1	stone	sling stone
11923	AV 129	114220-001	2	snail	
11923	AV 129	114394-001	1	stone	sling stone
11923	AV 129	102085	135	ceramic	
11923	AV 129	114793-001	78	bone	bone with cutting marks
11924	AY 127	114205-001	1	stone	rubbing stone
11924	AY 127	114284-001	1	unbaked clay	loom weight
11924	AY 127	114729-001	8	unbaked clay	loom weight
11925	AV 129	114151-001	1	charcoal	
11925	AV 129	114154-001	1	charcoal	
11925	AV 129	102098	39	ceramic	
11925	AV 129	114784-001	16	bone	
11925	AV 129	114811-001	5	bone	
11925	AV 129	114951-001	5	bone	bone with cutting marks
11925	AV 129	114952-001	1	bone	not defined
11926	AU 128	114180-001	1	metal	not defined
11926	AU 128	114185-001	31	metal	
11926	AU 128	102110	22	ceramic	
11926	AU 128	114748-001	1	clay	fragment of kiln
11926	AU 128	114788-001	16	bone	
11927	AU 129	102103	40	ceramic	
11927	AU 129	114949-001	1	bone	
11928	AU 131	114149-001	1	charcoal	
11928	AU 131	102101	23	ceramic	
11929	AU 128	114174-001	1	stone	grinding stone
11929	AU 128	114201-001	1	stone	plate
11929	AU 128	114381-001	1	stone	stone weight/loom weight
11929	AU 128	102088	43	ceramic	
11931	AU 129	114155-001	1	charcoal	
11931	AU 129	102108	11	ceramic	
11932	AU 131	114188-001	1	unbaked clay	loom weight
11932	AU 131	114189-001	1	unbaked clay	loom weight

Locus	Square	TZ Number	Number of Objects	Material	Object
11932	AU 131	114373-001	1	soil sample	
11932	AU 131	114375-001	1	soil sample	
11932	AU 131	114458-001	1	stone	flakes
11932	AU 131	102090	30	ceramic	
11933	AU 129	114176-001	1	metal	coin
11933	AU 129	114212-001	1	stone	rubbing stone
11933	AU 129	102112	20	ceramic	
11933	AU 129	114787-001	4	bone	
11934	AU 131	114335-001	1	soil sample	
11934	AU 131	114440-001	1	soil sample	
11934	AU 131	114449-001	2	snail	
11934	AU 131	102109	197	ceramic	
11934	AU 131	114805-001	22	bone	bone with cutting marks
11934	AU 131	114806-001	22	bone	bone with cutting marks
11934	AU 131	114939-001	9	bone	
11935	AU 131	114229-001	1	snail	
11935	AU 131	114309-001	1	charcoal	
11935	AU 131	114423-001	1	stone	rubbing stone
11935	AU 131	102133	45	ceramic	
11936	AU 131	114153-001	1	charcoal	
11936	AU 131	102106	122	ceramic	
11936	AU 131	114810-001	1	bone	tooth
11937	AU 131	114222-001	1	ceramic	spindle whorl
11937	AU 131	114238-001	1	charcoal	
11937	AU 131	114368-001	1	plaster	wall plaster
11937	AU 131	114369-001	1	stone	sling stone
11937	AU 131	102122	130	ceramic	
11937	AU 131	114804-001	4	bone	bone with cutting marks
11938	AU 131	114150-001	1	charcoal	
11938	AU 131	114199-001	1	stone	rubbing stone
11938	AU 131	102102	68	ceramic	
11938	AU 131	114932-001	5	bone	
11939	AU 130	102123	40	ceramic	
11939	AU 130	114742-001	1	clay	fragment of kiln
11939	AU 130	114802-001	36	bone	
11940	AU 130	102104	48	ceramic	
11940	AU 130	114807-001	5	bone	
11941	AU 130	114152-001	1	charcoal	
11941	AU 130	114198-001	1	stone	rubbing stone
11941	AU 130	102100	75	ceramic	
11941	AU 130	114728-001	16	plaster	wall plaster
11941	AU 130	114785-001	2	bone	
11941	AU 130	114789-001	3	bone	
11942	AU 128	102111-001	6	ceramic	
11942	AU 128	114934-001	5	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11943	AU 128	114190-001	1	charcoal	
11943	AU 128	114452-001	1	metal	not defined
11943	AU 128	102113	61	ceramic	
11943	AU 128	114732-001	6	stone	raw material
11943	AU 128	114786-001	7	bone	bone with cutting marks
11943	AU 128	114809-001	24	bone	bone with cutting marks
11944	AU 129	102124	35	ceramic	
11944	AU 129	114812-001	13	bone	
11945	AU 131	114411-001	1		
11945	AU 131	114431-001	1	shell	
11945	AU 131	114435-001	1	soil sample	
11945	AU 131	114436-001	1	soil sample	
11945	AU 131	114437-001	1	soil sample	
11945	AU 131	114441-001	1	soil sample	
11945	AU 131	102121-001	20	bone	
11946	AU 130	114332-001	1	soil sample	
11946	AU 130	114333-001	1	soil sample	
11946	AU 130	114334-001	1	soil sample	
11946	AU 130	102187-001	7	ceramic	
11946	AU 130	114745-001	3	mud brick	
11948	AU 129	102115-001	6	ceramic	
11949	AU 128	102117-001	11	ceramic	
11950	AU 128	114253-001	1	metal	coin
11950	AU 128	114451-001	2	clay	fragment of kiln
11950	AU 128	102131	60	ceramic	
11951	AV 131	102127	52	ceramic	
11952	AU 129	114230-001	1	metal	needle
11952	AU 129	114231-001	1	metal	nail
11952	AU 129	114232-001	1	metal	needle
11952	AU 129	114297-001	1	stone	grinding stone
11952	AU 129	114302-001	1	metal	needle
11952	AU 129	114307-001	1	stone	raw material
11952	AU 129	114366-001	1	snail	
11952	AU 129	114402-001			
11952	AU 129	114476-001	1	stone	raw material
11952	AU 129	114669-001	2	snail	
11952	AU 129	114683-001	1	shell	pendant
11952	AU 129	102138	177	ceramic	
11952	AU 129	114920-001	95	bone	
11952	AU 129	114945-001	48	bone	bone with cutting marks
11955	AU 130	102169	16	ceramic	
11956	AU 130	114261-001	1	charcoal	
11956	AU 130	102162	12	ceramic	
11956	AU 130	114883-001	2	bone	
11957	AV 131	114691-001	1	snail	

Locus	Square	TZ Number	Number of Objects	Material	Object
11957	AV 131	102130	101	ceramic	
11957	AV 131	114815-001	4	bone	
11958	AV 130	102132	100	ceramic	
11959	AV 131	114310-001	1	ceramic	lid
11959	AV 131	102139	228	ceramic	
11959	AV 131	114940-001	15	bone	bone with cutting marks
11960	AV 130	102154	51	ceramic	
11961	AV 130	114246-001	2	metal	awl
11961	AV 130	114254-001	1	metal	coin
11961	AV 130	114266-001	1	stone	rubbing stone
11961	AV 130	114299-001	1	glass	vessel
11961	AV 130	114918-001	12	bone	bone with cutting marks
11962	AU 131	114234-001	1	charcoal	
11962	AU 131	102156	201	ceramic	
11962	AU 131	114902-001	3	bone	
11963	AU 131	114236-001	1	charcoal	
11963	AU 131	102158	15	ceramic	
11963	AU 131	114884-001	18	bone	
11963	AU 131	114953-001	5	bone	
11964	AU 131	114235-001	1	charcoal	
11964	AU 131	114625-001	1	stone	sling stone
11964	AU 131	102140	180	ceramic	
11964	AU 131	114946-001	78	bone	bone with cutting marks
11965	AU 131	114240-001	1	charcoal	
11965	AU 131	114265-001	1	stone	sling stone
11965	AU 131	102143	75	ceramic	
11965	AU 131	114816-001	21	bone	
11968	AX 129	114286-001	1	stone	grinding stone
11968	AX 129	114287-001	2	mud brick	
11968	AX 129	114311-001	1	glass	
11968	AX 129	102160	60	ceramic	
11969	AV 129	114242-001	1	charcoal	
11969	AV 129	114260-001	1	charcoal	
11969	AV 129	114343-001	1	metal	not defined
11969	AV 129	114370-001	2	metal	fitting
11969	AV 129	114453-001	1	metal	nail
11969	AV 129	102152	157	ceramic	
11969	AV 129	114830-001	45	bone	bone with cutting marks
11969	AV 129	114907-001	2	bone	bone with cutting marks
11969	AV 129	114913-001	4	bone	bone with cutting marks
11971	AX 129	114291-001	1	bone	
11971	AX 129	114317-001	1	stone	rubbing stone
11971	AX 129	102149	70	ceramic	
11971	AX 129	114910-001	1	bone	tooth
11971	AX 129	114967-001	10	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11972	AY 127	114283-001	1	stone	olynthian mill
11973	AW 129	114280-001	2	stone	raw material
11973	AW 129	114295-001	1	bone	bone with cutting marks
11973	AW 129	114303-001	3	snail	
11973	AW 129	114326-001	1	stone	bowl
11973	AW 129	114421-001	1	stone	rubbing stone
11973	AW 129	114504-001	1	stone	rubbing stone
11973	AW 129	102150	93	ceramic	
11973	AW 129	114749-001	1	mud brick	
11973	AW 129	114876	18	bone	bone with cutting marks
11973	AW 129	114908-001	1	bone	
11974	Ax 129	114281-001	1	stone	grinding stone
11974	Ax 129	114282-001	1	bone	bone with cutting marks
11974	Ax 129	114313-001	1	shell	
11974	Ax 129	114319-001	1	snail	
11974	Ax 129	114322-001	1	stone	grinding stone
11974	Ax 129	114328-001	1	bone	not defined
11974	Ax 129	114328-002	2	bone	not defined
11974	Ax 129	114350-001	1	metal	not defined
11974	Ax 129	114420-001	1	stone	grinding stone
11974	Ax 129	114430-001	2	shell	
11974	Ax 129	114434-001	1	stone	
11974	Ax 129	114454-001	1	metal	not defined
11974	Ax 129	114460-001	1	stone	flakes
11974	Ax 129	114512-001	1	stone	sling stone
11974	Ax 129	102161	86	ceramic	
11974	Ax 129	114891-001	18	bone	bone with cutting marks
11974	Ax 129	114960-001	10	bone	
11976	AX 129	114367-001	1	shell	
11976	AX 129	102166	17	ceramic	
11976	AX 129	114963-001	8	bone	bone with cutting marks
11979	AV 129	114258-001	1	charcoal	
11979	AV 129	114277-001	1	charcoal	
11979	AV 129	114285-001	1	metal	nail
11979	AV 129	114293-001	3	bone	
11979	AV 129	102163	69	ceramic	
11979	AV 129	114912-001	1	bone	
11980	AU 131	102157	95	ceramic	
11981	AV 130	114228-001	1	metal	ring
11981	AV 130	114228-002	1	metal	not defined
11981	AV 130	114233-001	9	metal	sickle
11981	AV 130	114241-001	1	charcoal	
11981	AV 130	114247-001	1	metal	nail
11981	AV 130	114251-001	1	ceramic	lamp
11981	AV 130	114264-001	1	stone	sling stone

Locus	Square	TZ Number	Number of Objects	Material	Object
11981	AV 130	114614-001	1	stone	rubbing stone
11981	AV 130	114684-001	1	shell	
11981	AV 130	102144	299	ceramic	
11981	AV 130	114909-001	8	bone	
11981	AV 130	114919-001	29	bone	
11982	AV 131	102164	42	ceramic	
11982	AV 131	114903-001	1	bone	
11983	AV 131	102165	50	ceramic	
11984	AV 131	102179	16	ceramic	
11984	AV 131	114959-001	3	bone	
11985	AU 131	114237-001	1	charcoal	
11985	AU 131	114252-001	2	stone	raw material
11985	AU 131	114263-001	1	stone	rubbing stone
11985	AU 131	114267-001	1	metal	fibula
11985	AU 131	114446-001	1	snail	
11985	AU 131	102151	273	ceramic	
11986	AU 131	114239-001	1	charcoal	
11986	AU 131	114273-001	1	stone	gaming piece
11986	AU 131	102159	170	ceramic	
11986	AU 131	114906-001	1	bone	
11986	AU 131	114921-001	11	bone	bone with cutting marks
11986	AU 131	114922-001	12	bone	bone with cutting marks
11987	AV 130	114255-001	1	metal	coin
11987	AV 130	114256-001	1	metal	nail
11987	AV 130	114257-001	1	metal	nail
11987	AV 130	114647-001	2	glass	not defined
11987	AV 130	102155	333	ceramic	
11987	AV 130	114914-001	1	bone	
11987	AV 130	114961-001	9	bone	
11988	AU 129	114271-001	1	stone	grinding stone
11988	AU 129	114312-001	1	faience	bead
11988	AU 129	102147	92	ceramic	
11988	AU 129	114944-001	36	bone	bone with cutting marks
11988	AU 129	114981-001	35	bone	
11989	AV 130	114243-001	1	charcoal	
11989	AV 130	114447-001	1	shell	
11989	AV 130	102148	58	ceramic	
11990	AV 130	114279-001	1	ceramic	lamp
11990	AV 130	102172	60	ceramic	
11990	AV 130	114915-001	2	bone	bone with cutting marks
11990	AV 130	114916-001	4	bone	
11990	AV 130	114917-001	31	bone	
11991	AV 130	114270-001	2	metal	dagger fragment
11991	AV 130	102168	65	ceramic	
11991	AV 130	114911-001	1	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
11992	AV 130	114268-001	1	metal	not defined
11992	AV 130	114288-001	1	bone	
11992	AV 130	102167	18	ceramic	
11992	AV 130	114947-001	5	bone	bone with cutting marks
11993	AU 129	114259-001	1	charcoal	
11994	AV 130	102171	18	ceramic	
11994	AV 130	114737-001	1	stone	rubbing stone
11994	AV 130	114904-001	1	bone	
11995	AU 129	114269-001	2	metal	not defined
11995	AU 129	114289-001	3	clay	fragment of kiln
11995	AU 129	114290-001	1	bone	
11995	AU 129	102180	100	ceramic	
11995	AU 129	114872-001	72	bone	bone with cutting marks
11995	AU 129	114873-001	78	bone	bone with cutting marks
11996	AV 130	102170	11	ceramic	
11997	AV 129	114363-001	1	shell	
11997	AV 129	102173	30	ceramic	
11997	AV 129	114905-001	1	bone	
11997	AV 129	114965-001	2	bone	
11998	AU 130	114364-001	1	shell	
11998	AU 130	102184	11	ceramic	
11998	AU 130	114954-001	4	bone	bone with cutting marks
11999	AU 130	114298-001	1	charcoal	
11999	AU 130	114509-001	1	stone	rubbing stone
11999	AU 130	102190-001	8	ceramic	
12000	AU 130	114292-001	2	bone	
12000	AU 130	102189	27	ceramic	
12000	AU 130	114886-001	14	bone	
12001	AU 130	102191	39	ceramic	
12001	AU 130	114890-001	2	bone	
12002	AV 129	102183	39	ceramic	
12002	AV 129	114882-001	16	bone	
12003	AV 129	102192	18	ceramic	
12004	AV 129	114469-001	3	glass	
12004	AV 129	102178	25	ceramic	
12004	AV 129	114970-001	3	bone	
12005	AV 131	102176	17	ceramic	
12006	AV 129	114409-001	1	ceramic	lamp
12006	AV 129	102186	32	ceramic	
12006	AV 129	114957-001	2	bone	
12006	AV 129	114973-001	6	bone	
12007	AV 129	114622-001	1	stone	rubbing stone
12008	AY 127	114294-001	3	bone	
12008	AY 127	102185	37	ceramic	
12008	AY 127	114889-001	5	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
12009	AU 123	114351-001	1	stone	mortar
12009	AU 123	102181	13	ceramic	
12010	AU 123	102196	13	ceramic	
12011	AX 129	114346-001	1	metal	not defined
12011	AX 129	114347-001	3	metal	not defined
12011	AX 129	114348-001	1	metal	buckle
12011	AX 129	114349-001	3	metal	fitting
12011	AX 129	114360-001	1	metal	coin
12011	AX 129	114361-001	1	metal	coin
12011	AX 129	114361-002	6	metal	slag
12011	AX 129	114388-001	1	stone	rubbing stone
12011	AX 129	114425-001	1	ceramic	lamp
12011	AX 129	114455-001	1	metal	nail
12011	AX 129	114456-001	1	metal	coin
12011	AX 129	114475-001	3	stone	beaker
12011	AX 129	114641-001	1	glass	not defined
12011	AX 129	114703-001	1	stone	sickle
12011	AX 129	102200	356	ceramic	
12011	AX 129	114826-001	14	bone	bone with cutting marks
12011	AX 129	114978-001	78	bone	bone with cutting marks
12011	AX 129	114979-001	1	bone	not defined
12011	AX 129	114978-002	3	bone	
12011	AX 129	114980-001	6	bone	not defined
12012	AY 127	114387-001	1	stone	rubbing stone
12012	AY 127	114489-001	1	metal	spatula
12012	AY 127	114619-001	1	stone	rubbing stone
12012	AY 127	102201	63	ceramic	
12012	AY 127	102213		ceramic	
12013	AV 129	114448-001	1	shell	
12013	AV 129	114457-001	1	metal	rod
12013	AV 129	102199	35	ceramic	
12014	AX 128	114665-001	1	clay	fragment of kiln
12014	AX 128	102203-001	3	ceramic	
12015	AX 128	114398-001	1	charcoal	
12015	AX 128	114526-001	1	stone	bowl
12015	AX 128	114529-001	1	stone	rubbing stone
12015	AX 128	114543-001	1	stone	grinding stone
12015	AX 128	114543-002	1	stone	rubbing stone
12015	AX 128	114682-001	1	shell	pendant
12015	AX 128	102202	64	ceramic	
12015	AX 128	114854-001	7	bone	bone with cutting marks
12015	AX 128	114855-001	6	bone	
12016	AV 129	114342-001	1	metal	needle
12016	AV 129	114598-001	1	stone	rubbing stone
12016	AV 129	114618-001	1	stone	rubbing stone

Locus	Square	TZ Number	Number of Objects	Material	Object
12016	AV 129	102208	45	ceramic	
12017	AX 128	114352-001	1	stone	architectural element
12017	AX 128	114497-001	1	stone	plate
12017	AX 128	114499-001	1	stone	grinding stone
12017	AX 128	102210	26	ceramic	
12017	AX 128	114824-001	111	bone	bone with cutting marks
12017	AX 128	114835-001	6	bone	
12018	AY 128	102212-001		ceramic	
12018	AY 128	114820-001	7	bone	bone with cutting marks
12019	AY 128	114380-001	3	mud brick	
12019	AY 128	114521-001	1	stone	rubbing stone
12019	AY 128	102216	66	ceramic	
12019	AY 128	114832-001	6	bone	bone with cutting marks
12019	AY 128	114863-001	1	bone	
12021	AX 129	114823-001	24	bone	bone with cutting marks
12022	AY 127	114501-001	1	stone	grinding stone
12022	AY 127	102214	9	ceramic	
12023	AY 128	102215	3	ceramic	
12024	AV 129	102209	5	ceramic	
12025	AV 129	102232	22	ceramic	
12026	AX 128	114382-001	1	ceramic	lamp
12026	AX 128	114414-001	1	metal	ring
12026	AX 128	102230	52	ceramic	
12026	AX 128	114877-001	34	bone	bone with cutting marks
12027	AW 128	102228	12	ceramic	
12028	AY 128	102239	11	ceramic	
12028	AY 128	114861-001	4	bone	
12030	AW 128	114678-001	1	shell	not defined
12031	AV 129	102237	6	ceramic	
12032	AV 129	114358-001	1	charcoal	
12032	AV 129	114400-001	1	charcoal	
12032	AV 129	114413-001	1	metal	not defined
12033	AX 128	102231	85	ceramic	
12034	AW 128	114878-001	12	bone	bone with cutting marks
12036	AY 127	114597-001	1	stone	basin
12037	AU 129	102188	20	ceramic	
12037	AU 129	102238	8	ceramic	
12037	AU 129	114881-001	8	bone	
12038	AV 129	114538-001	1	bone	
12038	AV 129	102182	7	ceramic	
12039	AU 123	102177	6	ceramic	
12040	AU 130	114376-001	1	soil sample	
12040	AU 130	102222-001	6	ceramic	
12041	AV 130	114428-001	1	shell	
12041	AV 130	102195	54	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
12041	AV 130	114982-001	8	bone	
12042	AU 123	102197	20	ceramic	
12042	AU 123	114885-001	2	bone	bone with cutting marks
12043	AU 130	114345-001	1	ceramic	lamp
12043	AU 130	102193	230	ceramic	
12044	AU 130	102220	9	ceramic	
12044	AU 130	114831-001	3	bone	
12045	AU 130	114362-001	2	metal	not defined
12045	AU 130	102217	135	ceramic	
12045	AU 130	114879-001	37	bone	bone with cutting marks
12046	AU 130	114336-001	1	charcoal	
12046	AU 130	102221	65	ceramic	
12046	AU 130	114834-001	15	bone	
12047	AU 129	102205	24	ceramic	
12048	AU 130	114705-001	1	stone	blade
12048	AU 130	102207	85	ceramic	
12048	AU 130	114822-001	31	bone	
12049	AU 130	102223	29	ceramic	
12049	AU 130	114735-001	3	clay	fragment of kiln
12049	AU 130	114864-001	2	bone	
12050	AU 130	114416-001	1	charcoal	
12050	AU 130	114536-001	1	stone	ecofact
12050	AU 130	102224	83	ceramic	
12051	AU 130	114412-001	1	metal	not defined
12051	AU 130	114626-001	1	stone	not defined
12051	AU 130	102234	63	ceramic	
12051	AU 130	114821-001	22	bone	bone with cutting marks
12053	AU 129	102206	55	ceramic	
12053	AU 129	114875-001	1	bone	tooth
12053	AU 129	114874-001	21	bone	
12054	AV 129	102194	44	ceramic	
12054	AV 129	114955-001	2	bone	bone with cutting marks
12055	AT 123	114337-001	2	metal	ring
12055	AT 123	114659-001	1	glass	vessel
12055	AT 123	102218	50	ceramic	
12056	AU 123	114427-001	1	glass	vessel
12056	AU 123	102198	41	ceramic	
12056	AU 123	114888-001	4	bone	bone with cutting marks
12057	AV 130	114321-001	1	stone	grinding stone
12057	AV 130	114393-001	1	stone	rubbing stone
12057	AV 130	114613-001	1	stone	rubbing stone
12057	AV 130	102219	24	ceramic	
12058	AU 130	114355-001	1	soil sample	
12058	AU 130	114372-001	1	soil sample	
12058	AU 130	114374-001	1	soil sample	

Locus	Square	TZ Number	Number of Objects	Material	Object
12058	AU 130	114378-001	1	soil sample	
12058	AU 130	102204	41	ceramic	
12059	AV 129	102263	25	ceramic	
12064	AU 124	114359-001	1	glass	
12064	AU 124	102211	50	ceramic	
12068	AU 130	114389-001	1	stone	grinding stone
12068	AU 130	114390-001	1	stone	not defined
12068	AU 130	114399-001	1	charcoal	
12068	AU 130	114415-001	1	charcoal	
12068	AU 130	114670-001	1	snail	
12068	AU 130	102236	155	ceramic	
12069	AU 130	114438-001	1	soil sample	
12069	AU 130	114439-001	1	soil sample	
12069	AU 130	114443-001	1	clay	
12069	AU 130	114444-001	1	soil sample	
12069	AU 130	102235	9	ceramic	
12069	AU 130	114850-001	2	bone	
12070	AU 130	102275	12	ceramic	
12070	AU 130	114865-001	4	bone	
12071	AX 129	114418-001	1	stone	bead
12071	AX 129	114419-001	1	metal	fitting
12071	AX 129	114477-001	1	stone	bead
12071	AX 129	102227	54	ceramic	
12072	AY 128	114403-001	1	metal	not defined
12072	AY 128	114404-001	1	metal	awl
12072	AY 128	114407-001	1	metal	needle
12072	AY 128	114408-001	1	bone	not defined
12072	AY 128	102272	14	ceramic	
12074	AY 128	102233-001	4	ceramic	
12075	AY 128	114401-001	1	unbaked clay	loom weight
12075	AY 128	102269	19	ceramic	
12075	AY 128	114986-001	7	bone	bone with cutting marks
12076	AY 128	114426-001	7	unbaked clay	loom weight
12076	AY 128	114481-001	1	stone	bowl
12076	AY 128	114503-001	1	stone	
12076	AY 128	114513-001	1	stone	rubbing stone
12076	AY 128	114516-001	1	stone	mortar bowl
12076	AY 128	114516		stone	
12076	AY 128	114617-001	1	stone	rubbing stone
12076	AY 128	102245	24	ceramic	
12077	AX 128	102270	75	ceramic	
12078	Av 129	102273	15	ceramic	
12078	Av 129	114869-001	3	bone	bone with cutting marks
12079	AV 130	102274-001	1	ceramic	
12079	AV 130	114937	22	bone	

Locus	Square	TZ Number	Number of Objects	Material	Object
12080	AV 129	102271	12	ceramic	
12080	AV 129	114857-001	9	bone	
12081	AV 129	114397-001	1	charcoal	
12081	AV 129	102243-001	7	ceramic	
12082	AY 127	114523-001	1	stone	rubbing stone
12082	AY 127	102248	72	ceramic	
12082	AY 127	114958-001	6	bone	bone with cutting marks
12083	AX 127	114406-001	1	metal	ring
12083	AX 127	114478-001	1	clay	lid
12083	AX 127	114487-001	4	metal	not defined
12083	AX 127	114507-001	1	stone	rubbing stone
12083	AX 127	102246	32	ceramic	
12083	AX 127	114866-001	15	bone	bone with cutting marks
12084	AW 129	114405-001	1	metal	not defined
12084	AW 129	102247	14	ceramic	
12085	AW 129	114396-001	1	ceramic	lamp
12085	AW 129	114465-001	1	charcoal	
12085	AW 129	114473-001	3	metal	not defined
12085	AW 129	114502-001	1	stone	rubbing stone
12085	AW 129	114508-001	1	stone	rubbing stone
12085	AW 129	114510-001	3	stone	grinding stone
12085	AW 129	114517-001	1	snail	
12085	AW 129	114518-001	1	stone	tessera
12085	AW 129	114527-001	1	stone	rubbing stone
12085	AW 129	114530-001	1	stone	mortar bowl
12085	AW 129	114550-001	1	stone	mortar
12085	AW 129	114624-001	1	stone	rubbing stone
12085	AW 129	114630-001	1	stone	rubbing stone
12085	AW 129	114676-001	1	shell	
12085	AW 129	114677-001	1	shell	
12085	AW 129	114680-001	1	shell	
12085	AW 129	102244	368	ceramic	
12085	AW 129	114828-001	70	bone	bone with cutting marks
12085	AW 129	114858-001	2	bone	
12085	AW 129	114896-001	40	bone	bone with cutting marks
12085	AW 129	114897-001	16	bone	bone with cutting marks
12085	AW 129	114968-001	26	bone	bone with cutting marks
12086	AV 129	102256	46	ceramic	
12087	AV 129	102267	11	ceramic	
12087	AV 129	114852-001	1	bone	
12088	AY 127	114532-001	1	stone	rubbing stone
12088	AY 127	102268	30	ceramic	
12089	AV 129	114664-001	2	unbaked clay	wall plaster
12089	AV 129	102265-001	3	ceramic	
12090	AV 131	102258	10	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
12091	AU 123	114480-001	1	metal	coin
12091	AU 123	114514-001	1	ceramic	lamp
12091	AU 123	102303	53	ceramic	
12091	AU 123	114514-002	1	ceramic	lamp
12093	AU 124	114461-001	1	stone	bowl
12093	AU 124	114491-001	1	stone	rubbing stone
12093	AU 124	114505-001	1	stone	not defined
12093	AU 124	114533-001	1	stone	grinding stone
12093	AU 124	114546-001	1	stone	olynthian mill
12093	AU 124	114642-001	1	glass	vessel
12093	AU 124	102240	233	ceramic	
12094	AU 123	114568-001	1	stone	grinding stone
12094	AU 123	114570-001	1	stone	plate
12094	AU 123	102306	13	ceramic	
12095	AU 124	114500-001	1	stone	rubbing stone
12095	AU 124	102225	80	ceramic	
12095	AU 124	114983-001	1	bone	bone with cutting marks
12096	AU 123	102241	22	ceramic	
12097	AV 130	114639-001	1	glass	
12097	AV 130	114640-001	1	glass	vessel
12097	AV 130	102255	19	ceramic	
12097	AV 130	114969-001	10	bone	
12098	AV 130	102252	14	ceramic	
12098	AV 130	114868-001	7	bone	
12099	AV 130	102251	5	ceramic	
12100	AU 123	102253	74	ceramic	
12100	AU 123	114956-001	1	bone	
12101	AV 130	102249-001	1	ceramic	
12102	AV 130	102250	11	ceramic	
12102	AV 130	114867-001	3	bone	
12103	AU 130	114621-001	1	stone	rubbing stone
12103	AU 130	102242	24	ceramic	
12104	AV 131	114385-001	1	stone	gaming piece
12104	AV 131	102254	49	ceramic	
12105	AU 122	102282	24	ceramic	
12106	AU 123	114657-001	1	glass	vessel
12106	AU 123	114681-001	1	shell	
12106	AU 123	102293	40	ceramic	
12107	AU 122	102281	11	ceramic	
12108	AU 124	114490-001	1	stone	rubbing stone
12108	AU 124	114498-001	1	stone	grinding stone
12108	AU 124	114511-001	1	stone	rubbing stone
12108	AU 124	102260-001	9	ceramic	
12108	AU 124	114757-001	1	stone	architectural element
12109	AU 124	102261	68	ceramic	

Locus	Square	TZ Number	Number of Objects	Material	Object
12110	AU 124	114506-001	1	stone	rubbing stone
12110	AU 124	114528-001	1	stone	gaming piece
12110	AU 124	102277	250	ceramic	
12111	AY 128	102259	5	ceramic	
12111	AY 128	114851-001	3	bone	
12113	AX 128	102262	13	ceramic	
12113	AX 128	114862-001	23	bone	
12115	AV 129	102264	8	ceramic	
12115	AV 129	114849-001	1	bone	bone with cutting marks
12116	AV 129	114464-001	1	soil sample	
12116	AV 129	102266	15	ceramic	
12118	AY 128	114672-001	4	snail	
12118	AY 128	114707-001	1	stone	blade
12118	AY 128	102287	74	ceramic	
12119	AV 129	102285	18	ceramic	
12120	AV 129	114704-001	1	stone	flakes
12120	AV 129	102284	21	ceramic	
12122	AY 128	114467-001	2	clay	
12122	AY 128	114494-001	1	stone	rubbing stone
12122	AY 128	114495-001	1	stone	basin
12122	AY 128	114496-001	1	stone	basin
12122	AY 128	114574-001	1	clay	fragment of kiln
12122	AY 128	114671-001	1	snail	
12122	AY 128	102276	98	ceramic	
12123	AY 128	102280	20	ceramic	
12123	AY 128	114984-001	1	bone	
12124	AY 128	114463-001	1	charcoal	
12125	AY 127	114541-001	1	stone	rubbing stone
12125	AY 127	114679-001	1	snail	
12125	AY 127	102288	39	ceramic	
12126	AV 129	102283	16	ceramic	
12127	AV 129	114482-001	1	charcoal	
12127	AV 129	102295	43	ceramic	
12128	AX 127	114479-001	1	stone	architectural element
12128	AX 127	102278	100	ceramic	
12128	AX 127	114892-001	3	bone	bone with cutting marks
12129	AX 128	102301-001	2	ceramic	
12131	AY 128	102299	11	ceramic	
12131	AY 128	114930-001	1	bone	
12132	AY 128	114474-001	1	unbaked clay	loom weight
12132	AY 128	114534-001	1	stone	grinding stone
12132	AY 128	102297	17	ceramic	
12133	AY 128	114483-001	1	charcoal	
12133	AY 128	114484-001	1	charcoal	
12133	AY 128	114485-001	1	charcoal	

Locus	Square	TZ Number	Number of Objects	Material	Object
12133	AY 128	114486-001	1	charcoal	
12133	AY 128	114531-001	1	stone	grinding tool
12134	AY 128	102296	13	ceramic	
12135	AX 128	102289	38	ceramic	
12136	AV 129	102300-001	3	ceramic	
12137	AV 129	102294	74	ceramic	
12137	AV 129	114894-001	38	bone	
12139	AY 128	114488-001	1	metal	awl
12139	AY 128	102298	26	ceramic	
12142	AU 123	114579-001	1	stone	mortar bowl
12142	AU 123	114651-001	3	glass	vessel
12142	AU 123	114652-001	1	glass	vessel
12142	AU 123	102317	77	ceramic	
12142	AU 123	114926-001	7	bone	bone with cutting marks
12143	AU 123	114656-001	1	glass	vessel
12143	AU 123	102302	13	ceramic	
12144	AU 123	114547-001	1	stone	rubbing stone
12144	AU 123	114603-001	1	stone	rubbing stone
12144	AU 123	114658-001	1	glass	vessel
12144	AU 123	102291	249	ceramic	
12146	AU 123	114515-001	1	metal	fitting
12146	AU 123	114566-001	1	stone	rubbing stone
12146	AU 123	114569-001	1	stone	basin
12146	AU 123	114578-001	1	stone	rubbing stone
12146	AU 123	114607-001	4	glass	bottle
12146	AU 123	114620-001	1	stone	rubbing stone
12146	AU 123	114648-001	2	glass	vessel
12146	AU 123	114663-001	1	stone	tile
12146	AU 123	102292	67	ceramic	
12146	AU 123	114929-001	5	bone	
12147	AU 123	114634-001	1	glass	vessel
12147	AU 123	114649-001	1	glass	not defined
12147	AU 123	102305	48	ceramic	
12148	AU 123	114540-001	1	ceramic	
12148	AU 123	114544-001	1	stone	ecofact
12148	AU 123	114545-001	1	stone	tile
12148	AU 123	114644-001	1	glass	not defined
12148	AU 123	114645-001	1	glass	vessel
12148	AU 123	114650-001	1	glass	not defined
12148	AU 123	102309	281	ceramic	
12148	AU 123	114758-001	1	stone	architectural element
12148	AU 123	114829-001	12	bone	
12148	AU 123	114927-001	5	bone	
12149	AU 122	114519-001	1	stone	sling stone
12149	AU 122	114627-001	1	stone	sling stone

Locus	Square	TZ Number	Number of Objects	Material	Object
12149	AU 122	102308	36	ceramic	
12150	AU 122	114559-001	1	soil sample	
12150	AU 122	114646-001	1	glass	
12150	AU 122	102307	199	ceramic	
12150	AU 122	114846-001	2	bone	
12150	AU 122	114925-001	1	bone	
12151	AU 123	102328-001	2	ceramic	
12152	AU 124	114601-001	1	stone	olynthian mill
12152	AU 124	102319-001	13	ceramic	
12153	AU 124	114586-001	1	stone	tessera
12153	AU 124	102322	30	ceramic	
12154	AU 124	114654-001	1	glass	not defined
12154	AU 124	114695-001	1	plaster	wall plaster
12154	AU 124	102323	76	ceramic	
12154	AU 124	114900-001	8	bone	bone with cutting marks
12155	AU 124	114560-001	1	stone	spindle whorl
12155	AU 124	114655-001	1	glass	vessel
12155	AU 124	114668-001	1	faience	bead
12155	AU 124	102321	94	ceramic	
12155	AU 124	114931-001	1	bone	
12156	AU 124	114600-001	1	stone	rubbing stone
12156	AU 124	102320	54	ceramic	
12157	AY 127	102316	9	ceramic	
12157	AY 127	114853-001	2	bone	
12158	AX 128	114575-001	5	clay	
12158	AX 128	114594-001	1	metal	not defined
12158	AX 128	114609-001	1	metal	not defined
12158	AX 128	114689-001	1	shell	
12158	AX 128	114690-001	1	snail	
12158	AX 128	114693-001	1	metal	nail
12158	AX 128	102312	33	ceramic	
12158	AX 128	114871-001	1	bone	
12158	AX 128	114942-001	12	bone	bone with cutting marks
12159	AV 129	114565-001	1	charcoal	
12159	AV 129	102315	13	ceramic	
12160	AV 129	114605-001	1	ceramic	
12160	AV 129	102314	14	ceramic	
12161	AV 129	114576-001	1	metal	
12161	AV 129	102313	27	ceramic	
12162	AX 128	114525-001	1	stone	rubbing stone
12162	AX 128	114551-001	1	stone	grinding stone
12162	AX 128	114557-001	1	stone	rubbing stone
12162	AX 128	114571-001	1	unbaked clay	loom weight
12162	AX 128	114572-001	1	stone	rubbing stone
12162	AX 128	114623-001	1	stone	rubbing stone

Locus	Square	TZ Number	Number of Objects	Material	Object
12162	AX 128	102304	46	ceramic	
12164	AX 128	114558-001	1	stone	rubbing stone
12164	AX 128	114561-001	1	charcoal	
12164	AX 128	114580-001	1	clay	
12164	AX 128	114584-001	3	stone	rubbing stone
12164	AX 128	114591-001	1	shell	
12164	AX 128	114595-001	1	stone	grinding stone
12164	AX 128	114611-001	1	stone	rubbing stone
12164	AX 128	114611-002	1	stone	rubbing stone
12164	AX 128	114629-001	1	stone	raw material
12164	AX 128	114673-001	1	snail	
12164	AX 128	102324	213	ceramic	
12164	AX 128	114860-001	3	bone	
12164	AX 128	114870-001	1	bone	tooth
12164	AX 128	114893-001	15	bone	
12164	AX 128	114898-001	14	bone	
12165	AY 128	114548-001	1	stone	mortar
12165	AY 128	114567-001	1	stone	basin
12165	AY 128	114606-001	1	ceramic	lamp
12165	AY 128	102311	19	ceramic	
12165	AY 128	114856-001	6	bone	
12166	AX 128	114674-001	1	shell	
12166	AX 128	102310	13	ceramic	
12167	AX 128	114602-001	1	stone	rubbing stone
12168	AV 129	114556-001	1	metal	
12168	AV 129	102332	20	ceramic	
12169	AV 129	114941-001	1	charcoal	
12169	AV 129	114564-001	1	charcoal	
12169	AV 129	102327	36	ceramic	
12169	AV 129	114943-001	3	bone	bone with cutting marks
12170	AV 129	102326	22	ceramic	
12173	AX 128	114582-001	1	stone	rubbing stone
12173	AX 128	114583-001	1	stone	not defined
12173	AX 128	114592-001	1	glass	
12173	AX 128	102325	60	ceramic	
12173	AX 128	114901-001	10	bone	
12174	AX 128	114562-001	1	charcoal	
12174	AX 128	114563-001	1	charcoal	
12175	AY 128	114581-001	1	stone	rubbing stone
12175	AY 128	114596-001	1	stone	basin
12175	AY 128	114610-001	1	stone	architectural element
12175	AY 128	114612-001	1	stone	ecofact
12175	AY 128	102331	21	ceramic	
12175	AY 128	114895-001	5	bone	bone with cutting marks
12176	AY 128	114585-001	1	stone	grinding stone

Locus	Square	TZ Number	Number of Objects	Material	Object
12176	AY 128	114722-001	7	unbaked clay	loom weight
12176	AY 128	102330	52	ceramic	
12176	AY 128	114928-001	6	bone	
12196	AU 124	114554-001	1	metal	
12196	AU 124	114615-001	1	stone	rubbing stone
12196	AU 124	114616-001	1	stone	rubbing stone
12196	AU 124	114685-001	1	shell	pendant
12196	AU 124	114686-001	1	shell	
12196	AU 124	114688-001	1	shell	
12196	AU 124	102318	159	ceramic	
12196	AU 124	114859-001	3	bone	bone with cutting marks
12196	AU 124	114899-001	15	bone	bone with cutting marks
12197	AU 124	114555-001	1	metal	coin
12197	AU 124	114588-001	2	stone	plate
12197	AU 124	114589-001	1	snail	
12197	AU 124	114590-001	1	shell	
12197	AU 124	114638-001	1	glass	vessel
12197	AU 124	114694-001	1	stone	rubbing stone
12197	AU 124	114759-001	2	stone	mortar
222191	surface 2	114756-001	1	stone	tile
222191	surface 2	114761-001	3	metal	fitting
222191	surface 2	114762-001	1	metal	coin
222191	surface 2	114763-001	2	plaster	wall plaster
222191	surface 2	114764-001	2	bone	
222191	surface 2	114765-001	1	shell	
222191	surface 2	114766-001	1	stone	bead
222191	surface 2	114767-001	1	stone	sickle
222191	surface 2	114768-001	1	glass	bowl
222191	surface 2	114769-001	1	stone	rubbing stone
222191	surface 2	114770-001	1	stone	raw material
222191	surface 2	114771-001	1	stone	tile
222191	surface 2	114772-001	1	stone	grinding stone
222191	surface 2	114783-001	1	stone	tile
222191	surface 2	114923-001	41	bone	bone with cutting marks







This book presents the results of the 2018 and 2019 excavation activities of the Gadara Region Project which was resumed in spring of 2018. The excavation and research seasons that have been conducted at Zirā'a since 2018 are dedicated to the settlement history of the Iron Age II to the Hellenistic period in Area II. With the continuation of the excavations, the intention was to gain further insight into the detailed chronological sequence of occupation at Zirā'a between the Iron Age II and the Hellenistic period, and in particular to follow up on that period in the northern area of the Tall, in Area II, which is the largest accumulation of building debris.

The present volume 9 »The 2018 and 2019 Excavation Seasons« represents an individual monograph of the Tall Zirā'a Publication Series.



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