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Tall Zirā'a

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Final Report

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Late Bronze Age (Strata 16-14)

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LIST OF ABBREVIATIONS

Abbreviated Journals and Series

AA	Archäologischer Anzeiger	IAA	Israel Antiquity Authority
AAJ	Annual of the Department of Antiquities	JASc	Journal of Archaeological Science
ActaPraehistA	Acta praehistorica et archaeologica	JGS	Journal of Glass Studies
ADPV	Abhandlungen des Deutschen Palästina-Vereins	JRA	Journal of Roman Archaeology
AF	Archäologische Forschungen	KölnMusB	Kölner Museums-Bulletin
AJA	American Journal of Archaeology	MedA	Mediterranean Archaeology
AM	Athener Mitteilungen	OrA	Orient-Archäologie
BAH	Bibliothèque archéologique and historique	QDAP	The Quarterly of the Department of Antiquities in Palestine
BaM	Baghdader Mitteilungen	PF	Pergamenische Forschungen
BarIntSer	British Archaeological Reports. International Series	REA	Revue des études anciennes
BCH	Bulletin de correspondance hellénique	ReiCretActa	Rei Cretariae Romanae Fautorum acta
BIFAO	Bulletin de l'Institut français d'archéologie orientale	StBiFranc	Studium biblicum Franciscanum. Liber Annuus
DaM	Damaszener Mitteilungen	TRAC	Theoretical Roman Archaeology Conference
DOP	Dumbarton Oaks Papers	UPA	Universitätsforschungen zur Prähistorischen Archäologie
EtTrav	Études et travaux	ZPE	Zeitschrift für Papyrologie and Epigraphik
FiE	Forschungen in Ephesos		
GlasBeograd	Glasnik. Srpsko arheološko društvo (Journal of the Serbian Archaeological Society)		

General Abbreviations

c.	circa	Fig./Figs.	figure/figures
cf.	confer	max.	maximum
Chap./Chaps.	chapter/chapters	MNE	Maximum Number of Examples
Diss.	Dissertation	no./nos.	number/numbers
ed./eds.	editor/editors	Pl./Pls.	plate/plates
e.g.	example given	Tab.	table
est.	estimated	TZ	Tall Zirā'a
etc.	et cetera		

Abbreviations used in the catalogues

D	Diameter	L	Length
FM	Furumark Motif	Th	Thickness
FT	Furumark Type	W	Width
g	Gram	Wall Th	Wall Thickness
H	Height		

Abbreviated Periods

Paleol.	Paleolithic	Rom.	Roman
Neol.	Neolithic	E Rom.	Early Roman
Chalcol.	Chalcolithic	L Rom.	Late Roman
BA	Bronze Age	Byz.	Byzantine
EBA	Early Bronze Age	Isl.	Islamic
MBA	Middle Bronze Age	E Isl.	Early Islamic
LBA	Late Bronze Age	L Isl.	Late Islamic
IA	Iron Age	Um.	Umayyad
IA I	Iron Age I	Abb.	Abbasid
IA II	Iron Age II	Maml.	Mamluk
IA IIC	Iron Age IIC	Ayy.	Ayyubid
Hell.	Hellenistic	Ottom.	Ottoman

Abbreviations for ware groups used by A. Schwermer

HM Buff	Handmade Buff	WM Buff P	Wheel made Buff Polished
HM R2B	Handmade Red to Brown	WM R2B P	Wheel made Red to Brown Polished
HM GW	Handmade Grain Washed		
HM P	Handmade Polished	WM Brick-Red	Wheel made Brick-Red
HM NP	Handmade Net Pattern	WM Coarse	Wheel made Coarse
HM S	Handmade Smooth	WM Eggshell	Wheel made Eggshell
HM Combed	Handmade Combed	WM BP	Wheel made Black Polished
HM Kh Kerak	Handmade Khirbet Kerak	ChocWh	‘Chocolate-on-White’
HM Metallic	Handmade Metallic	WM WP	Wheel made White Polished
HM Coarse	HM Coarse	WM WSl	Wheel made White Slip
WM C Buff	Wheel made Common Buff	CP 6	Cooking Pot 6
WM C R2B	Wheel made Common Red to Brown	CP 5	Cooking Pot 5
		CP 3	Cooking Pot 3
WM S Buff	Wheel made Smooth Buff	Wh Sl (Cyp)	Cypriot White Slip
WM S R2B	Wheel made Smooth Red to Brown	Base Ring I (Cyp)	Cypriot Base Ring
		Myc III	Mycenaean

PREFACE

by D. Vieweger/J. Häser



Fig. 0.1 Tall Zirā'a. View from east to west. Photograph taken in 2011 (Source: APAAME, David Kennedy).

When the German engineer G. Schumacher explored Transjordan in 1885, Tall Zirā'a was among his discoveries¹. He was the first European since the time of the Crusaders to enter the region. However, after thousands of years of prosperity, the valley had changed dramatically during the Ottoman period. The bedouins told Schumacher that the wādī had declined to become a "popular shelter for all sorts of refugees and criminal scum".

Except for a few sugar mills, operated by water power, there were only a few small hamlets. A water flow of about 0.75 m³ per second flowed through the Wādī al-ʿArab in June 1885, and the Wādī az-Zaḥar added the same amount of spring water. C. Steuernagel wrote:

"Where the valley widens and the water becomes shallow, there are large numbers of trout that are easy to catch. Once while bathing, Schumacher saw a black water snake, almost a metre long. These are said to be very common here and are highly dreaded"².

The archaeologist N. Glueck visited Tall Zirā'a in 1942. He reported the

"singularly imposing and completely isolated hill of Tall Zera'ah (...)"³

and mentioned a water source on the plateau of the tall as the

"result of a natural siphon phenomenon leading the underground flow of the water from the high-

1 Schumacher 1890, 110. 142 f. Schumacher visited Tall Zirā'a and described remains of rectangular buildings. His observations are published by C. Steuernagel (1926, 81).

2 Steuernagel 1926, 80. Citation is given in English translation; cf. also Schumacher 1890, 142 f. For Schumacher's travels see in general: Schumacher 1886.

3 Glueck 1951a, 182 Fig. 71.

er level of the hills beyond down to below the bottom and, as through a pipe piercing its center, up to the top of Tall Zera‘ah”.

Although the tall⁴ had already attracted attention due to its location and imposing appearance, no intensive research was conducted at this time, because of the hill’s location close to the border of Israel in the west (c. 7 km) and Syria in the north (c. 14 km). During the foundation of the State of Israel in 1948 and again during the Six Day War in 1967, the western part of the Wādī al-‘Arab was declared by the Jordanians as a military zone. A passage which had been open in all directions for millennia was thus essentially cut off from sections of its surroundings. The territory around Gadara and the Wādī al-‘Arab, in the triangle where Jordan, Syria and Israel meet, became the north-westernmost corner of the Hashemite Kingdom, and there was not even a paved road to the tall.

Also the construction of the Wādī al-‘Arab Dam in 1978 did not make a significant difference to the *status quo*. The archaeologists who investigated the area within the scope of a rescue survey prior to the dam construction did not appreciate the archaeological potential of the tall, which majestically overlooked the future reservoir.

Another period of time passed until the Oslo Peace Agreement was ratified in 1993, but it was only after the peace treaty between Jordan and Israel, which King Hussein and Prime Minister Yitzhak Rabin signed on October 26, 1994, that the area again became accessible to the public.

D. Vieweger, director of the Biblical Archaeological Institute Wuppertal (BAI) and since 2005 also of the German Protestant Institute of Archaeology (GPIA), travelled many times through the north-western part of Jordan between 1998 and 2000, exploring the area for a suitable tall site, which would serve as an authoritative chronological record for the region’s long and important cultural history. He found it in the Wādī al-‘Arab.

Tall Zirā‘a is located in the middle of the Wādī al-‘Arab (Figs. 0.1 and 0.2), was continuously occupied for at least 5,000 years, and offers an unique insight into the way of life of the region’s people. Its outstanding archaeological significance results from the artesian spring in its centre, which creat-



Fig. 0.2 Map showing the area around Tall Zirā‘a (P. Leiverkus Source: BAI/GPIA).

ed optimal settlement conditions over thousands of years. For this reason, Tall Zirā‘a offers an unusual opportunity to compile a comparative stratigraphy for northern Jordan from the Early Bronze Age to the Islamic period, while also making it possible to trace cultural developments in urban life, handicrafts and the history of religion over long periods. Moreover, here it is possible to study abundant remains from the Biblical periods in a broad cultural and historical context.

As mentioned above, a major trade route passed through the valley, connecting Egypt in the south with the Syrian-Mesopotamian region in the north. The Wādī al-‘Arab also connects the Jordan Valley to the Mediterranean coast via the northern Jordan ford at Ġisr al-Maġāmi‘ (Gešer), as well as the plains of Jezreel and Tall al-Ḥiṣn (Beth Shean) to the eastern Jordanian highlands. It was possible to climb from the Jordan Valley, at some 290 m below sea level, to the fertile and very early populated Irbid-Ramtha basin, which lies around 560 m above sea level. Direct routes led from the Irbid-Ramtha basin to Dimašq (Damascus) in the north, Baġdād in the east, and Amman in the south. Because the

4 The Arabic word ‘tell’ or ‘tall’ as well as the Hebrew word ‘tel’ will be written in this publication in the standard literary Arab version ‘tall’ or ‘Tall NN’.

Yarmuk Valley to the north and the Wādī Ziqlāb in the south are too steep and narrow to serve as major transport routes, the Wādī al-‘Arab played a prominent geopolitical role. Not surprisingly, economic success and the hard work of residents across the millennia have left a profusion of traces in the valley. More than 200 sites of human habitation, from the very earliest settlements to the Islamic period, provide an eloquent testimony to the history of this region: settlements, channels, water mills, cisterns, oil presses, wine presses, watchtowers and grave sites.

Tall Zirā‘a offered good living conditions for a settlement. The artesian spring offered an unfailing water supply, and the hill provided security. The tall rises impressively (depending on the direction) between 22–45 m above ground. As the only prominent natural elevation in the lower Wādī al-‘Arab, Tall Zirā‘a dominates the valley. From here one cannot only see Gadara, but also easily monitor the narrow entrance of the wādī to the west.

The adjacent fertile wādī ensured adequate nourishment, with potentially arable land in the western and central valley, terraced slopes and spurs suited for rainfed agriculture in the east, as well as the wādī slopes that are suitable for grazing small livestock, forming a broad semicircle from the east and south to the west. As a result of his observations, D. Vieweger decided to implement preliminary investigations here from 1998 to 2000.

The ‘Gadara Region Project’ was launched in 2001 by the Biblical Archaeological Institute Wuppertal (BAI), Germany. In the first season, the surface of Tall Zirā‘a was explored⁵, the tall was accurately surveyed, and more than 22,000 pottery sherds and many other finds were systematically collected and analysed. The survey findings helped to formulate the objectives of the excavation program, and to select suitable areas (residential, religious, administrative and craft production) for investigation.

The first excavation season on the tall was in 2003. The team was financed by the ‘Society of Friends of the BAI Wuppertal’ and travelled by Volkswagen bus from Wuppertal to Amman via Turkey and Syria, under the direction of D. Vieweger. An Ottoman period house inside the Gadara/Umm Qēs archaeological site was used both as liv-



Fig. 0.3 Tall Zirā‘a and its geographic location (P. Leiverkus
Source: BAI/GPIA).

ing and working quarters; it was in a state of very poor repair at that time, but has been systematically restored during later seasons, providing modern bathroom and kitchen facilities. The results of the first season on Tall Zirā‘a were so promising that the ‘Gadara Region Project’ was inaugurated, with a planned timeframe of between ten to twenty years.

In 2004, the Biblical Archaeological Institute Wuppertal (BAI) under the directorship of D. Vieweger, and the German Protestant Institute of Archaeology (GPIA) in Amman (which also served as the research unit for the German Archaeological Institute [DAI]), under the directorship of J. Häser, agreed to a close partnership, which ensured ongoing archaeological and interdisciplinary collaboration for the remainder of the archaeological seasons. The German Protestant Institute of Archaeology in Jerusalem (GPIA), run by D. Vieweger since 2005, also joined the work in 2006. The cooperation with the GPIA Amman was confirmed by the new directors of the institute, F. Kenkel, from 2013 to 2016, and by K. Schmidt since autumn 2016.

⁵ See *Vol. I, Chap. 2*. For this survey see also Vieweger et al. 2003, 191–216.

During the course of the subsequent 18 seasons, twenty-five strata in three areas have been uncovered, and several scientific processes and archaeological experiments have been carried out; archaeological surface surveys were also completed for the area surrounding Tall Zirā'a, the Wādī al-ʿArab, and the Wādī az-Zaḥar.

The slopes of Wādī al-ʿArab from Tall Zirā'a upwards to the region of Šēdūr and Dōqara, and the region around the Wādī al-ʿArab Dam were surveyed in 2009; large parts of this region had not been studied in detail before. In total, 78 locations were documented, 30 of which were previously unknown. The survey was continued until 2012. All in all 327 sites were registered which cover an area from Tall Zirā'a to North Šūna.

All finds were stored at the excavation house in Umm Qēs. Some of the more important finds were exported to the Biblical Archaeological Institute Wuppertal (BAI) and restored by M. Blana; they were returned to the 'Department of Antiquities of Jordan' (DoA) over several stages, with the final delivering to Jordan in the spring of 2015. Furthermore, more than 50 objects discovered during the project are on display in the Jordan Museum in Amman.

Excavation results have been presented as articles in several journals, together with separate publications and dissertations⁶. In addition, the Tall Zirā'a website provides information about current activities on and around the tall in German and English⁷.

After 18 intensive seasons of work researching the tall and its environment, it was decided to interrupt excavation and survey activities in order to publish a complete record of the results thus far. To this end, it was decided that from 2012 until 2020 work would be comprised of study seasons in the excavation house at Umm Qēs, to process data and

results gathered to date (for the excavations carried out see the film in *App. 0.1*).

A total of nine volumes are planned on the following topics:

Volume 1: Introduction.

Aims of the 'Gadara Region Project'; Tall Zirā'a and the Wādī al-ʿArab; Research History of Tall Zirā'a; the 2001 Tall Zirā'a Survey; Scientific Methods; Framework of Archaeological Work on Tall Zirā'a.

Volume 2: Early and Middle Bronze Age (Strata 25–17)

Volume 3: Late Bronze Age (Strata 16–14)

Volume 4: Iron Age and Persian Period (Strata 13–9)

Volume 5: Hellenistic to Umayyad Period (Strata 8–3). Stratigraphy

Volume 6: Hellenistic to Umayyad Period (Strata 8–3). Ceramic, Glass and Metal Finds

Volume 7: Abbasid to Ottoman Period (Strata 2–1)

Volume 8: Wādī al-ʿArab Survey

Volume 9: Archaeometry

All nine volumes will be published online in English, in order to make the results free of charge and accessible to a wide audience. In addition to this, publishing online enables the 3D-images and reconstructions, together with digital films, to be included with the material, which can thus be integrated and used interactively. Furthermore, an online publication will enable the attachment of original data from the excavations, such as plans and database

6 See e.g. Vieweger et al. 2002a, 12–14; Vieweger et al. 2002b, 157–177; Vieweger et al. 2003, 191–216; Vieweger et al. 2016, 431–441; Vieweger 2003a, 10; Vieweger 2003b, 459–461; Vieweger 2007, 497–502; Vieweger 2010, 755–768; Vieweger 2013, 231–242; Häser et al. 2016a, 121–137; Häser et al. 2016b, 497–507; Häser – Vieweger 2005, 135–146; Häser – Vieweger 2007, 526–530; Häser – Vieweger 2009, 20–23; Häser – Vieweger 2012a, 693–696; Häser – Vieweger 2012b, 251–268; Häser – Vieweger 2014, 640; Häser – Vieweger 2015, 20–23; Vieweger – Häser 2005, 1–30; Vieweger – Häser 2007a, 1–27; Vieweger – Häser 2007b, 147–167; Vieweger – Häser 2009, 1–36; Vieweger – Häser 2010, 1–28; Vieweger – Häser 2015; Vieweger – Häser 2017a; Vieweger – Häser 2017b; Kenkel 2012; Kenkel 2013a, 1–24; Kenkel 2013b, 301–308; Kenkel 2016, 765–781; Kenkel – Vieweger 2014, 12; Schwermer 2014; Gropp 2013; Lehmann – Schulze 2015, 28–30; Schulze et al. 2014, 13; Soennecken – Leiverkus 2014, 14; Soennecken – Leiverkus 2016, 509–518; Soennecken 2017.

7 For an overview of publications see www.tallziraa.de.

extracts, which would be otherwise impossible. These additional documents will be published in German and will provide professional researchers with the ability to access the primary data itself, not only as they are interpreted.

The exhibition ‘Tall Zirā’a - Mirror of Jordan’s History’ presented in the Jordan Museum in Amman and the Museum of Jordanian Heritage in Irbid in 2019 and 2020 highlighted various results of the excavations of this important site. An accompanying catalogue with introductory chapters and descriptions of all exhibited finds has been published as well⁸.

General remarks regarding systems and processes used within the publications follow herewith:

- The Israel or Palestine Grid 1923 is the basis for the geographical grid system used for the project. It was first used in autumn 2001 for 5 m x 5 m squares on Tall Zirā’a, and was consequently applied for excavation and survey work alike (see *Vol. 1, Chap. 4.1.*).
- Citation styles are based on the directives provided by the German Archaeological Institute (DAI), but have been adapted to the conventions of English language publications.
- In order to minimise 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 system of the ‘Deutsche Morgenländische Gesellschaft’, based on the directives of TAVO (see the Tübinger Bibel-atlas).
- For detailed explanations of the chronology of the Southern Levant in the scope of the history of Egypt, Syria and Mesopotamia, see Vieweger 2012, 459–507 (*Vol. 1, Chap. 4.3.*).
- In this report the name of the site is called *Tall Zirā’a*. Other transcriptions are e.g.: *Tell Zer’ah* (MEGA Jordan; Jadis; Kerestes et al. 1977/1978; Glueck 1951a; Glueck 1951b); *Tell Zer’a* (Reicke – Rost 1979); *Tell Zara’a*/*Tell Zara’a* (Schumacher 1890 and Steuernagel 1926); *Tell Zira’a* (Hanbury-Tenison 1984).
- All dimensions in the catalogues as well as in the figure captions are given as cm, if not otherwise stated.

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This thesis is only a small piece of a large jigsaw puzzle that is still missing many additional pieces. Some of them are already there, others are still in the process of development—only if many ex-

9 Soenneken 2017 <<http://elpub.bib.uni-wuppertal.de/servlets/DocumentServlet?id=7401>>

perts in different fields cooperate and combine their knowledge, a clearer picture of the history of Tall Zirā'a will emerge. I am grateful for having been able to contribute a piece to this puzzle.

Wuppertal/Jerusalem 2022

All find and context photos are used with the kind permission of BAI/GPIA. All GIS plans were made by K. Soennecken with the help of P. Leiverkus. All architectural plans were made by K. Soennecken with the help of D. Vieweger and the graphic realization by M. Voigt-Werling (the copyright is transferred to BAI/GPIA). Editing of the photos, complex plans as well as reconstructions were done by K. Soennecken. Images from publications are reproduced in an abbreviated form according to the bibliography. The photos and drawings of the cylinder seal catalogue are not listed: The copyright for all photos is with BAI/GPIA; all drawings were done by E. Brückelmann.

INTRODUCTION

by K. Soennecken/D. Vieweger

Middle and Late Bronze Age (Strata 16–14)

The present volume is the third in a series of nine planned volumes of the final report regarding the excavations on Tall Zirā‘a carried out by D. Vieweger and J. Häser. This volume provides the results of the investigations of the transition from Middle to Late Bronze Age¹, a landslide that occurred during the Late Bronze Age I and the four different phases of a rich Late Bronze Age II city, i.e. the Strata 16–14.

So far on Tall Zirā‘a, three areas (I–III) have been opened, each serving different aims. In Area I we explored residential areas, especially the living quarters and working areas of the tall’s artisans. In Area II we focused mainly on administrative buildings, and in Area III on prestigious buildings from the Roman and Byzantine era. The Middle and Late Bronze Age strata were reached only in Area I on Tall Zirā‘a.

Stratum	Temporal Classification	Area I	Area II	Area III
16	MB IIB/LB I	x	/	/
15	LB repair layer	x	/	/
14 d	LB II 4th Phase	x	/	/
14 c	LB II 3th Phase	x	/	/
14 b	LB II 2nd Phase	x	/	/
14 a	LB II 1st Phase	x	/	/
13	IA I	x	/	/

Tab. 0.1 Overview of Strata 16–13.

1 For a typology of Middle to Late Bronze Age cooking pots see *Vol. 2, Chapter 4.3.* by Andrea Schwermer.

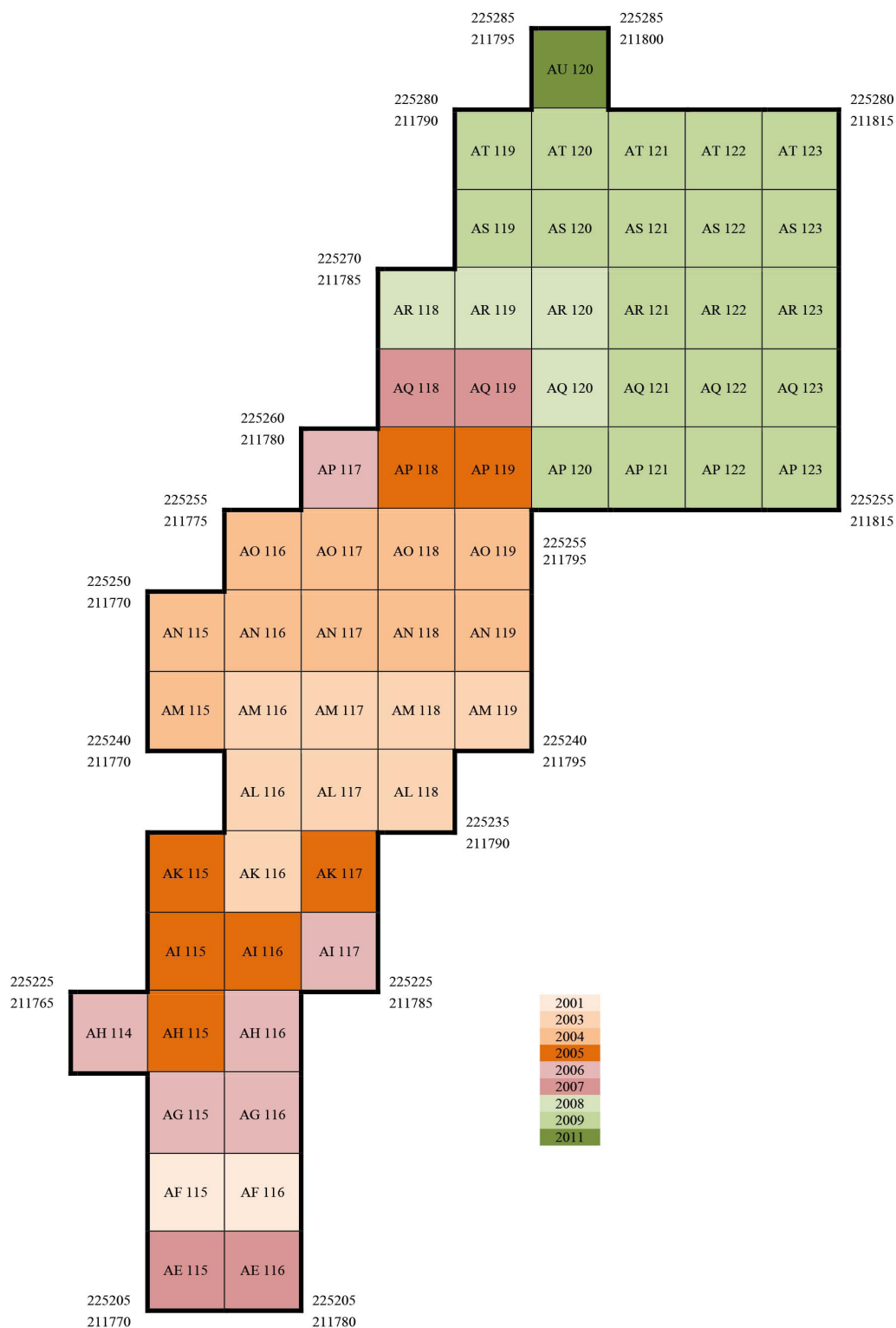


Fig. 0.4 Plan of the squares in Area I (Source: BAI/GPIA).

The Transition from Middle Bronze Age IIC to Late Bronze Age I (1630–1500 BC; Strata 16–15)

During the time of the last Middle Bronze Age stratum at the Tall Zīrā'a (Stratum 16), a landslide destroyed the western area of the settlement. The triggers for the landslide were probably an earthquake or heavy rain, however, in all probability the cause of the landslide was the collapse of calcareous sinter caves² beneath the settlement layers. The inhabitants of the hill, however, were obviously unwilling to leave the western part of the tall unused. Therefore, they put a great deal of effort into carefully rebuilding the lost area. The excavations unearthed several backfill layers with a total height of at least 4.5 m. Here, the residents heaped up layers of earth, each 30–45 cm in height, then sealing the layer of earth with stone paving. They repeated this process at least seven times to restore the area lost by the landslide. We have not reached the base of these backfill layers.

The Late Bronze Age (1500/1450–1200/1150 BC; Stratum 14)

The catastrophic landslide provoked a sharp break in the settlement history on Tall Zīrā'a towards the end of the Middle Bronze Age. However, the remaining architecture of Stratum 16, the refilling layers of Stratum 15 and the rebuilding of the settlement of Stratum 14 were strongly connected with respect to structure as well as to function. Therefore, the description of the Bronze Age strata has been divided at this point and the last Middle Bronze Age Stratum 16 will be discussed together with the Late Bronze Age Strata 15 and 14 in this volume of this publication series (for the other Early and Middle Bronze Age Strata 25–17 see *Vol. 2*).

- 2 The natural hill under the settlement layers of the tall was built up by the artesian spring itself. The spring water carried dissolved minerals and lime that were deposited when the minerals precipitated out. Rock was laid down in a series of crust-like coatings on the slopes of the hill, eventually growing into a circular hill with a roughly horizontal



Fig. 0.5 The excavated fill layers in Area I after the devastating landslide (Source: BAI/GPIA).

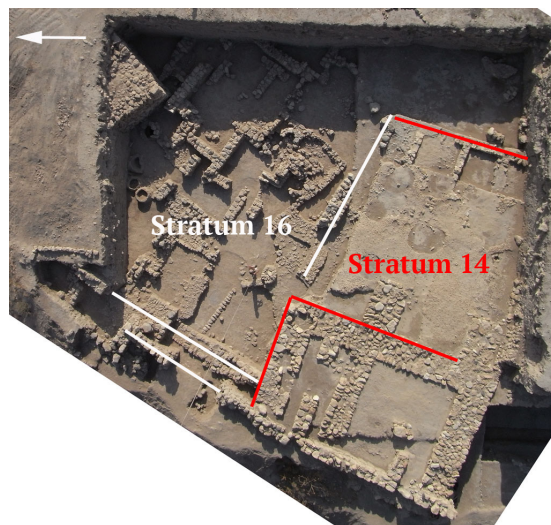


Fig. 0.6 Strata 16 and 14 (Source: BAI/GPIA).

surface. However, the sedimentary rock is soft and contains large caves with stalactites and stalagmites. It is possible that shortly before 1500 BC such cavities collapsed due to the weight of the settlement layers above, or because of an earthquake, resulting in the devastating landslide. Cf. *TZ Vol. 1, Chap. 1.2.2*.

The Transition from Late Bronze Age to Iron Age I

On Tall Zirā'a, as on other sites in the southern Levant, a significant material cultural change took place during the transition from Late Bronze Age to Iron Age I. The facts on the ground demonstrate the Late Bronze Age decline of a highly developed and urban centre of a city-state settlement changes into a smaller and less densely populated rural village.

The descriptions of the individual strata in *Vol. 3* and *Vol. 4* all follow the same five-step pattern:

- 1) A short comprehensive introduction with a GIS map of the tall and an overall map of the area to include the context numbers and complex names. The individual contexts (walls, floors, pits etc.) are colour-coded³. The complexes are labelled by capitals (A, B, C, ...) from north to south and from west to east.
- 2) Description of the individual complexes. First the complex is roughly described, naming the squares it covers.
- 3) Description of the individual rooms, which are labelled by numbers (A 1, A 2, ...), again from north to south and from west to east. A room constitutes an enclosed area and can be either an interior space or a yard. If any finds could not be positively attributed to a specific room but only to a square they are listed outside of the map and are discussed either separately or in conjunction with the room to which they most likely belonged.
- a) In this description, the rooms' boundaries as well as the architecture in their respective area (walls) are characterized. Unless stated otherwise, wherever the term "wall" appears in the text, it means the foundation of a wall. This generally consisted of several layers of stone. The overlying brickwork was usually built from mud bricks of which hardly any have survived. Finds from walls are described in the context of each respective wall's stratum as the building of a wall provides a

terminus ad quem, even though it is possible that older material from an earlier stratum was built into it.

- b) After that, installations are described, (i.e. features that are neither a wall nor fill layer and were used to serve a specific everyday purpose) such as ovens, silos, etc.

A "context" denotes a coherent area (i.e. a find context within one square, usually a wall, an installation, an oven, soil, or a floor). In some cases, a find was given a context number but this practice of documentation was only common during the first years of excavation. All maps and pictures of complexes and contexts are pointed north⁴.

- c) These are followed by the fill layers that can be attributed to a specific room. It can either be a filling layer between two floor levels, collapse debris of the roof or the walls, a floor, paving, or an area that was intentionally levelled when a new stratum was created. Since these can only occasionally be positively differentiated, "fill layer" is chosen as the generic term and, if possible, further specified in the text. The fill layers lying above a stratum's floors are also included as the finds enclosed belong to this stratum. Fill layers of an aggregate bed are a different matter. They only occur in Stratum 15 and are intentionally raised layers of soil and pavement-like layers. It is exactly this type of fill layer that illustrates the downside of continuous settlement: frequently, a clear distinction between individual phases or strata was impossible, and only the finds contained in the fill layers gave evidence of a change from one stratum to the next. Likewise, many pits of younger strata disturbed contexts of older ones.
- d) After that, selected or relevant finds are described. Finds are labelled with a six-digit number, the prefix "TZ", and a three-digit extension (e.g. TZ 001234-001). In an appendix, all finds of a specific stratum are listed and briefly described in catalogues—

3 Contexts that are collapsed walls are marked on the map only if they could be conclusively assigned.

4 Context numbers in Area I consist of one to four digits, in Area II of five digits (starting with 10000). In addition,

some contexts that are located in the area excavated by K. Vriezen in the squares AF 115–116 are labelled with a letter plus two digits (e.g. W 13).

subdivided into catalogues of metal, faience, glass, glazed pottery, stone, worked bone, ceramics and cylinder seal finds. Finds are described in the context of the stratum where they were discovered, even if they might be dated to an earlier or later period.

4) The description of a complex is rounded off,

if possible, by a reconstruction and an overall interpretation of the complex.

5) At the end of each complex, there is a short table listing all contexts pertaining to this complex. It is a condensed version of the detailed table of contexts and only states whether there are any finds in any particular context.

Context No.	Square	Context	Complex	Artefacts		Ecofacts
				Ceramic	Others	
1237	AP 118	Fill layer	B 1	✓	-	✓
1238	AP 118	Fill layer	B 1	✓	-	✓
3344	AR 119	Wall	B 1/2	✓	-	✓
3339	AR 119	Fill layer	B 2	✓	✓	✓

Tab. 0.2 Example of a short table.

The finds are categorized into artefacts (i.e. objects processed or made by man, and ecofacts⁵; organic material, components of the natural surroundings [e.g. unprocessed animal bones]). The artefacts are once more subdivided into ceramics and others, to include processed animal bones.

From our homepage⁶, detailed tables of the contexts (one per stratum and sorted by context num-

bers) and sub-tables of the finds (sorted by find numbers) can be downloaded. To simplify matters, the find numbers in the tables are given without extensions—these can be found in the respective texts. These texts provide information on the respective square, complex, context description, and interpretation of each context along with a listing of its finds.

5 For a definition, see: Vieweger 2012, 103.

6 A complete documentation of all contexts and finds of the

Strata 16–14 is available in German. The URL is: www.tallziraa.de

Befund	Quadrant	Komplex	Beschreibung			Bemerkung			Interpretation	
37	AM 116	E 5/6	Gleichmäßige Steinansammlung mittlerer Größe, mit Lehmenschlüssen.						Mauer	
38	AM 116	E 5	Unbehauene Steine, evt. Fortsetzung aus AM 117.						Versturz	
39	AM 116	E 5	Große Steine.						Mauer	
59	AM 116	E 6	Befund wird gebildet aus 39 und 52.			14 a			Mauer	
	Material	Fundnr	Ansprache	Anzahl	Warengruppe	Bemerkungen	Datierung	Dekor	Textur	Typ
	Keramik	1179	Ollampe	1	WM C Buff		SB EZ		Medium	
			Krater	1	WM C R2B-c		EZ II		Coarse	Randlippe
			Krug	1	WM C Buff-c		MB SB EZ		Coarse	Henkel
			Krug/Kanne	1	WM C Buff		EZ		Medium	Randlippe
			Kochtopf	1	CP 5		MB SB		Coarse	Randlippe
60	AM 116	E 7	Grau-braune lockere Erde außerhalb der Stadtmauer.			14 a			Erdbefund	
61	AM 116	E 6	Verlängerung der Mauer 39.						Mauer	
62	AM 116	E 7	Lehmige Erde.			14 a			Erdbefund	
77	AM 116	E 5/6	Befund ist identisch mit 37.						Mauer	
78	AM 116	F 1	Ansatz einer Feldsteinmauer.						Mauer	
	Material	Fundnr	Ansprache	Anzahl	Warengruppe	Bemerkungen	Datierung	Dekor	Textur	Typ
	Keramik	1377	Krug	1	WM C R2B		MB SB EZ		Medium	Henkel
			Krug	1	WM C Buff		MB SB EZ		Medium	Bauchscherbe mit Henkelansatz
	Stein/Mineral	1391	Abschlag/Werkzeug	2						
79	AM 116	E 6	Verschobener Mauerteil der Mauer 39.			14 a			Mauer/Versturz	
80	AM 116	E 7	Steilhang unterhalb der Stadtmauer			14 a			Erdbefund	
	Material	Fundnr	Ansprache	Anzahl	Warengruppe	Bemerkungen	Datierung	Dekor	Textur	Typ
	Keramik	1187	Schale	1	WM R2B P-f		SB		Medium	Randlippe
			Teller	1	HM GW		FB		Medium	Randlippe
			Schale/Teller	1	HM GW	sehr harter Brand	FB	Wash-Dekor	Medium	Randlippe
			Schale	1	WM C R2B-f		SB		Medium	Randlippe
			Schale/Teller	1	HM GW	außen und innen roter Überzug	FB III	Wash-Dekor und Bemalung	Fine	Randlippe
84	AL 116	H 6	Steinansammlung und darunter befindliche			14 a			Versturz	

Fig. 0.7 Excerpt of a detailed table (Source: BAI/GPIA).

The column of the ceramics only lists the diagnostic finds (such as rim sherds or decorated sherds) and no body sherds. The bone finds often lack a description and a definite number since their state of preservation frequently rendered them both uncountable and indescribable. When evaluating the bone finds, only the definable ones were taken into account. Flint objects are given the general term

“flint/tool” in the tables⁷. At the end of each subchapter, a short interpretive overall description of the respective stratum is given. This addresses the stratum’s pattern of settlement, its architecture, notable complexes, crafts and trade, unusual small finds, ceramics and bones, as well as elaborates on radiocarbon dating.

7 A detailed evaluation of this type of finds is being conducted by Benjamin Schröder (forthcoming).

1. THE TRANSITION FROM MIDDLE TO LATE BRONZE AGE

1.1. The Transition from Middle to Late Bronze Age in the Southern Levant

by D. Vieweger/K. Soennecken¹

The chronology of the Middle and Late Bronze Age in the southern Levant traditionally follows that of Egypt². This is due to Egypt's relationship and influence on its vassal city states to the north-east, 'Canaan'; an approach that is not beyond any doubt. During the 12th Dynasty, the Egyptians regained a stronger hold on the southern Levant both overland, coming from the south, and in the coastal region, which they could access either by land or by sea.

During Egypt's Second Intermediate Period this hold loosened again. It was replaced by the 'Amorite Koine' and finally, during the Hyksos era, by the 'Pax Amurritica', which also included Lower Egypt. The end of the reign of the Hyksos marked the dawning of the New Kingdom, which is considered to be the Late Bronze Age in the Levant. This chronology is roughly illustrated in the following classification.

Egypt ³	Southern Levant	
Middle Kingdom 1987–1759 BC 11th–12th Dynasty Mentuhotep II (11th Dynasty) united Egypt	Middle Bronze Age IIA 1950–1750 BC	1950–1550 BC
Second Intermediate Period 1759–1529 BC 13th–17th Dynasty	Middle Bronze Age IIB 1750–1630 BC 'Amorite Koine'	
Hyksos Era 1637–1529 15th Dynasty (16th Dynasty)	Middle Bronze Age IIC 1630–1550 BC 'Pax Amurritica'	
Beginning of New Kingdom Kamose, End of Hyksos Era and early 18th Dynasty 1545–1457 BC Kamose to Hatshepsut	Late Bronze Age IA	1550–1400 BC
New Kingdom (18th Dynasty) 1457–1353 BC Thutmose III to Amenhotep III	Late Bronze Age IB	

Tab. 1.1 Transition from the Middle to the Late Bronze Age in the southern Levant (Source: BAI/GPIA).

¹ See: Vieweger 2019c, I 187–201.

² At the transition from the Middle Bronze Age to the Late Bronze Age, no clear shift in material culture can be seen; the division is due to the parallelization with the Egyptian dynasties. Therefore, it seems possible to speak of a transition period „Middle Bronze Age IIC/Late Bronze Age IA“

instead of the Late Bronze Age IA. See: Gonen 1992a, 216: LB I (MB IIC/LB I) 1550–1400 BC; LB IIA 1400–1300 BC; LB II B 1300–1200/1150 BC. Kamlah 2004, 104 classifies slightly modified: LB I 1550–1450; LB IIA 1450–1300 “Amarna period” and LB IIB 1300–1200 BC.

³ Cf. Vieweger 2012, 472–476.

1.1.1. The Middle Bronze Age (1630–1550 BC) – the Epoch of the Hyksos

The Hyksos came from Asia and ruled Egypt as kings of the 15th and the 16th Dynasty (1637–1529 BC). They brought important technological innovations to Egypt, such as the horse-drawn chariot, the composite bow, and probably the sickle sword and the socketed axe too.

During the 14th Dynasty, the father (whose name is unknown) of King Nehesi founded the city of Tall ad-Dab'a (Avaris) as his new royal capital. As dynastic deity, he worshipped the northern Syrian weather god Baal-Zaphon/Baal-Hadad in his Asian manifestation (synonymous with the Egyptian god Seth). From then on, other Canaanite gods were also officially worshipped in Egypt. This practise can only be explained by the immigration of Asian people into the Nile River delta.

Presumably the Hyksos dynasty's accession to power was based on a prolonged Asian infiltration. They took advantage of the gradual decline of Egypt's influence and founded their own empire consisting of several federate states, which they ruled similar to a feudal system.

Most of the Asians populating the eastern delta were probably west Semitic Amorites, many of whom had immigrated from the southern Levant and from the Syrian coastal region. The Amorite elites from these regions will have been instrumental in the rise of the 15th Dynasty in Egypt⁴. Most of the Hyksos kings still known today have Amorite names.

In Egypt, the Hyksos empire stretched as far south as Hermopolis. It goes without saying that, true to a 'well-established Egyptian fashion', they also exerted their economic and military power to the southern Levant and particularly the coastal plain. In spite of this, however, their dominion did not include the southern Levant.

During the 15th Dynasty in Egypt (1637–1529 BC), many similarities between the material culture of Avaris and that of the southern Levant are apparent. The overall political and socio-economic climate allowed an amazing phase of stability and peace ('Pax Amurritica') in the Levant and in Lower Egypt. This led to safe, long-distance trade relations and remarkable prosperity in the entire region⁵. This assessment is illustrated by an abundance of Cypriote and Mycenaean objects found in Amorite graves from this period. Among the types of pottery, the appearance of the 'Chocolate-on-White' ware is remarkable. It was produced in the Jordan Valley, from where it was exported as far as the Dimašq (Damascus) area, the coastal plain, and to Tall ad-Dab'a (Avaris). The 'Chocolate-on-White' ware (*Fig. 1.2*) is usually considered a temporal marker for the transition from the Middle Bronze Age IIC to the Late Bronze Age.

The close trade relations within the Amurritic world, which now included Lower Egypt and Cyprus in addition to the Levant and Mesopotamia, is

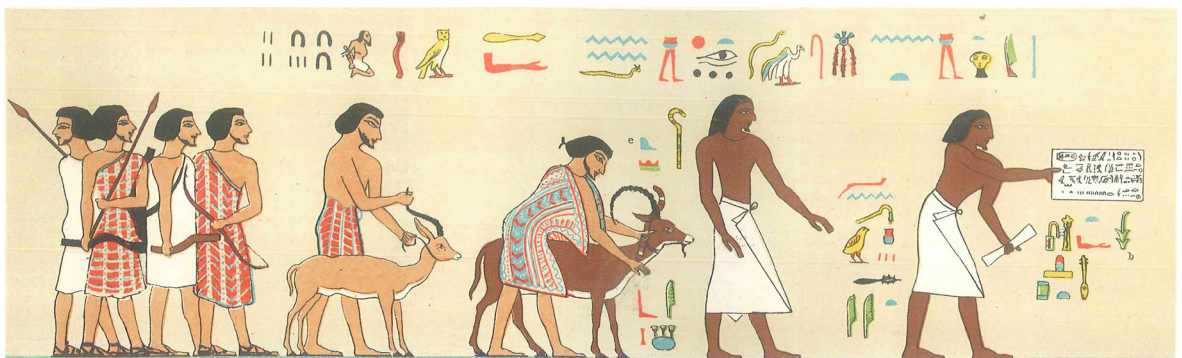


Fig. 1.1 Egyptian mural painting from a grave in Beni Hasan (Source: Wilkinson 1878, Pl. XII).

4 Bietak 1997.

5 Oil and wine were delivered from the southern Levant, esp. to Tall ad-Dab'a (Avaris). Cf. Bietak 1997, 87–139.



Fig. 1.2 Middle Bronze Age jug made from 'Chocolate-on-White' ware (Source: BAI/GPIA).

illustrated by a find from Tall Zirā'a (*Fig. 1.3*). It is a 1.3 cm high scarab with the inscription of A-wsr-re, the Hyksos ruler Apepi (c. 1590–1550 BC)⁶.

It was not only south Levantine pottery industry that was able to produce export products as their stone industry imitated Egyptian alabaster products as well as scarabs with technical perfection and developed stone and plaster processing in their own style.

In the southern Levant, more and more people from Syria settled, as indicated by craftsmanship and burial rites. Scarabs were often found at sites of the southern Levant⁷.



Fig. 1.3 Scarab with inscription of A-wsr-re from Tall Zirā'a TZ 009055-001 (Source: BAI/GPIA).

Due to the 'Pax Amurritica', the construction of urban defences, which had been pursued for centuries, did not come to a complete standstill, but it was not enforced with the same vehemence⁸. Chariots and well-trained archers were increasingly used to protect the Middle Bronze Age cities. It was a golden age for palace and temple architecture, and the urban lifestyle reached a sustainable peak.

The end of the Middle Bronze Age IIC is marked by the collapse of the Hyksos reign in Egypt.

6 Find No. TZ 009055-001.

7 Eggler – Keel 2006.

8 During the Middle Bronze Age IIC cities like Tall Balāṭa (Shechem), Šilo and Hebron were walled in. Cf. Burke 2008.

1.1.2. Late Bronze Age IA—the Egyptian Takeover of the Southern Levant (1550–1457 BC)

During the 17th Dynasty (1606–1539 BC) native pharaohs had regained the reign in Thebes. Already Kamose (1545–1540 BC) took action against the Hyksos, but could not drive King Apepi away and take the capital Tall ad-Dab‘a (Avaris) which was defended by him. Only Ahmose I (1539–1514 BC), his brother, the first pharaoh of the 18th Dynasty, finally succeeded in eliminating the foreign rule of the Hyksos in 1529 BC in Middle and Lower Egypt. He not only drove the Hyksos out of the eastern delta, but also advanced to Sharuhēn⁹ in the southern Levant and provided the city with an Egyptian garrison.

Several Middle Bronze Age cities were destroyed during the upheavals in the southern Levant¹⁰. It is unclear, however, whether these destructions are to be attributed to the attacking Egyptians, the retreating Hyksos, or rivalries between the city-states. However, Ahmose I and his successors left the feudal system created by the Hyksos in place. They integrated the feudal lords, who in the meantime had become city kings, into their empire as vassals.

The victory over the Hyksos and their regained control of Nubia, with its rich gold deposits, created the conditions for the reunification of Upper and Lower Egypt and the subsequent grand rise to a world empire. From Thebes, where the priesthood had its main place of worship and where the military leadership was located, the reorganization of Egypt’s administration and the military expansion of the empire was organized.

In the north of Syria, the rise of a new great power (the Mitanni Empire) was already foreseeable during this period. Already Thutmose I (1493–1481 BC) is said to have fought against it and according to the testimony of his grandson Thutmose III, he erected a stela on the west bank of the Euphrates. There is no comparable report about Thutmose II (1481–1479 BC) and his wife, Queen Hatshepsut (1479–1457 BC). Hatshepsut’s husband died early, whereupon she took over the official duties and finally declared herself to be pharaoh. Possibly, some of her successes were later credited to Thutmose III (1479–1425 BC).

9 Sharuhēn is most likely to be identified as Tall al-Fār‘a (South) – alternatively: Tall al-‘Ağgūl. For the discussion see Weippert 2010, 95 n. 68.

10 Although there was some destruction during this transitional period and it took until the end of the Late Bronze Age for most of the cities to be rebuilt, it seems that the

number of cities did not decrease during the Late Bronze Age. But most of them had fewer inhabitants. The reason for the reduction in population is unknown; more people may have been forced into a nomadic lifestyle, which may have been a result of a drier climate. See: Gonen 1992a, 216 f.; Weippert 1988, 268; Strange 2001, 314.

1.1.3. Late Bronze Age IB—the Egyptian Display of Power in the Southern Levant (1457–1400 BC)

Until the reign of Thutmose III (1479–1425 BC) the Mitanni extended their influence in Syria. At the height of their power under King Shaushtatar (about 1430 BC), the Hurrian Empire ruled a large part of Syria, Mesopotamia and the south-east of Anatolia. The Mitanni empire thus extended from the Mediterranean Sea in the west to the Zagros Mountains in the east.

Thutmose III reacted to the expansion not only with campaigns in order to deter his enemies in the north. At the same time, he succeeded in forcing the southern Levant firmly under his control. This area served him strategically as a secure location for the conflicts with the Mitanni empire over central and northern Syria¹¹. The decisive battle against the Levantine rulers at Tall al-Mutasallim (Megiddo) in 1457 BC went down in history, not only because Thutmose III triumphed over a large coalition of Syrian princes but also because he reported his military tactics in detail.

The liberation of Egypt from the hands of the Asian Hyksos had turned into a systematic annexation of foreign territories. Thutmose III thus manifested his strategic ambitions and the newly awakened self-confidence of Egypt.

Henceforth, the southern Levant was firmly under Egyptian control. Thutmose III rejoiced: Rṯnw (pronounced: Retschenu) “is under my soles”¹². The way across the Syrian land bridge to the ‘trial of strength’ with the Mitanni empire was now open to him. Consequently, he conducted another fifteen Asian campaigns. In doing so, he extended the Egyptian hegemony to the north. This also had economic reasons. He controlled important ports on the northern Levantine coast and from there brought timber to Egypt.

Another important victory achieved by Thutmose III in 1446 BC was at the ‘Juniper Hill’ west of Aleppo. In its consequence he moved his grandfather’s victory stele from the western to the eastern bank of the Euphrates near Carchemish. Despite continued fighting, Egypt seems to have succeeded in gaining a permanent foothold only in south Syrian cities. The central and northern areas of Syria were still fought over between the Mitanni and the Egyptians. During one of the campaigns by Amenhotep II (1427–1401 BC), the son of Thutmose III, he also defeated uprisings of local princes in the Jezreel plain and in the northern coastal plain¹³.

Egyptian access to the southern Levant during the Late Bronze Age I meant, the local elites had to come to terms with the new Egyptian rulers or the local elites were replaced. The economy of the conquered territories was refocused towards Egyptian needs¹⁴. In the event of conflict, the Egyptians intervened militarily, which resulted in looting, destruction or deportation of the inhabitants of the affected areas.

Administratively, the province of Canaan was governed by a Gaza-based governor (Rābiṣu). Jaffa and Tall al-Ḥiṣn (Beth Shean) were also under direct Egyptian control, as was Yeno’am in Transjordan¹⁵. Further north, governor’s residences were established in Damascus and Simyra¹⁶. In general, the remaining local rulers’ seats, in which mostly hereditary dynasties ruled, were assigned to the Egyptian administrators. An oath of allegiance and regular tribute payments bound the local princes to the Egyptian administrators¹⁷, who were entitled to give instructions to the local elite. The Egyptian provincial centres received taxes in the form of payments in kind. Additional tributes were sent directly to Egypt.

11 Leonard 1989, 13; Ahlström 1993, 218; Hasel 1998, 117; Killebrew 2005, 51–92; Morris 2005.

12 Gebel-Barkal-Stele; as cited by Weippert 2010, 105.

13 9th regnal year of Amenophis II – Text no. 41 in Weippert 2010, 114–122.

14 Bunimovitz 1989; Bunimovitz 1995, 323–326; Ilan 1995, 315; Dever 1998, 112.

15 Gonen 1992a, 213.

16 Probably to be identified with Tell Kazel on the Mediterranean coast between Byblos in the south and Arwad in the north.

17 Redford 1992, 148–155. 200.

However, it can be assumed that Transjordan was not dominated as much as Cisjordan by Egyptian rulers, and the confrontations between the major powers in the south and north also had less of an im-

pact on Transjordan, which is located further away from the major central connecting axes¹⁸. Without written sources, one can only guess how this affected the political organization in Transjordan.

1.1.4. Development of Different Features

1.1.4.1. Urban Development and Architecture

During the Late Bronze Age, a new type of settlement pattern developed, which was based on the main transit roads. New urban centres were built along these roads, whereas in the more remote areas of the mountainous countryside the urban centres declined¹⁹. However, the Late Bronze Age cities generally did not reach the size and splendour of their Middle Bronze Age predecessors²⁰.

Architecturally, the Late Bronze Age represents a continuation of traditions from the Middle Bronze Age, although some places show Egyptian influences. In residential development the courtyard house remained the typical element, even though residential and craft workshops were now united under one roof²¹. Public buildings such as administrative centres or palaces are rarely found in smaller towns or villages outside the big cities²².

Egyptian characteristics that cannot be explained by local building traditions are, for example, walls made of bricks that do not rest on a stone base. This type of construction is often associated with square (or rectangular) ground plans. They usually have outer walls that are 20–30 m long and up to 2.5 m thick, and thinner inner walls. As was the typical courtyard house commonly used in the region: a courtyard surrounded by smaller rooms and with a kind of staircase as central feature of this type of construction²³.

As for sacral architecture, traditions of the Middle Bronze Age lived on and only a small number of temples in Egyptian style were built²⁴. Predominant was the nave temple, even if it was occasionally modified and was now no longer a single room but subdivided²⁵. The local Migdal type continued to be used in the Late Bronze Age and was still in use in the Iron Age I. Open cult sites were also maintained and were partly in use from the Middle to the end of the Late Bronze Age (e.g. Hazor, Area F)²⁶.



Fig. 1.4. Temple in Stratum 14 a on Tall Zirā'a (Source: BAI/GPIA).

18 Kamlah 2004, 106.

19 Gonen 1992a, 21; Ahlström 1993, 220; Bunimovitz 1994, 179–202.

20 Bunimovitz 1995, 324.

21 Weippert 1988, 270.

22 E.g. in Hazor and Megiddo.

23 Weippert 1988, 273.

24 Weippert 1988, 276. Examples of Egyptian influence can be found in Tall al-Ḥiṣn (Beth Shean) and Tall ad-Duwēr (Lachish).

25 Weippert 1988, 279 f.

26 Weippert 1988, 281.

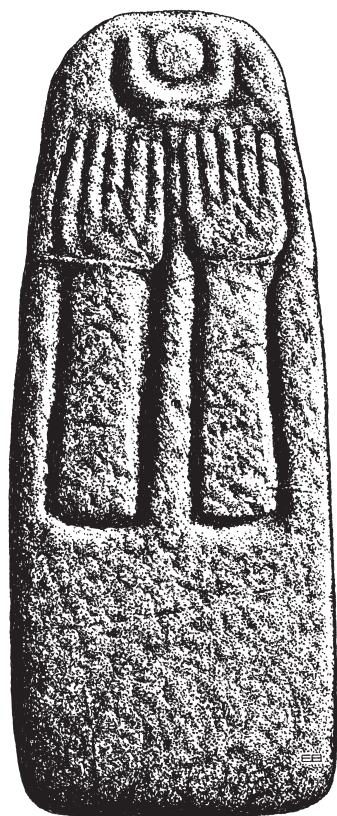


Fig. 1.5 Stela from Hazor (Source: E. Brückelmann/BAI).

A lively trade and a certain prosperity can also be observed in architecture and burial rites; in some cases, Middle Bronze Age traditions were continued (architecture, use of ancient necropolises and burial forms such as burials in caves). At the same time, however, many innovations and above all, Egyptian influences (especially in the coastal plain) can be observed (architecture, individual burials in grave pits and use of anthropoid sarcophagi to preserve the body, art)²⁷.

Obviously the 'rulers' of that time (city kings, princes etc.) either came from Egypt or were strongly oriented towards the Egyptian ways of life and styles²⁸. In spite of the strong influences from Egypt in the south and the Hittites in the north²⁹, the

culture in the southern Levant remained Canaanite throughout the Late Bronze Age³⁰. J. Strange interprets the finds of the (so far only) native script in the temple of Tall Dēr 'Allā as an indication that at least here, a limited freedom from Egyptian dominance may have prevailed. Two letter fragments from Ṭabaqāt Faḥl (Pella), which were inscribed with cuneiform script and dated between 1550 and 1450 BC, indicates cuneiform script was known here³¹.

From the Middle to the Late Bronze Age a radical change in fortification occurred³². The fortifications disappeared for the most part and no defensive structures could be identified. Either because the population was too poor or because fortifications were forbidden by the Egyptians³³. Only a few public buildings from the Late Bronze Age are known. They are mostly temples. Furthermore, there were administrative buildings (seat of the governor), built either in the Middle Bronze Age style of a courtyard house (but with reinforced and stable walls—common in Mesopotamia) or in the Egyptian style³⁴. In the Middle Bronze Age, several palaces in the shape of courtyard houses existed (such as in Tall Waqqāš [Hazor]) but from the Late Bronze Age only one known is located in Tall al-Mutasallim (Megiddo)³⁵. In residential development, there seem to have been only few changes from the Middle to the Late Bronze Age (best example is Megiddo)³⁶.

1.1.4.2. Pottery and Small Finds

Late Bronze Age pottery is often based on Middle Bronze Age forms which were continued³⁷. At the same time, however, the production of pottery deteriorated due to use of poorer clays, decreasing ability to use potter's wheels, less hard firing techniques. Within the Late Bronze Age, the most significant changes can be seen in the transition from the Late Bronze Age I to the Late Bronze Age II. In many regions, one can observe that less importance was given to qualitative pottery production. This may be due to the fact that other materials

27 Gonen 1992a, 240 f.

28 Weippert 1988, 269 f.

29 Nakhai 2001, 121.

30 Gonen 1992a, 211; Kenyon 1967, 193.

31 Strange 2001, 314.

32 Gonen 1992a, 217.

33 Gonen 1992a, 218.

34 Gonen 1992a, 219.

35 Gonen 1992a, 220.

36 Gonen 1992a, 221.

37 Weippert 1988, 335.

came to the forefront in the production of tableware, such as metals or faience³⁸.

Of course, technically and artistically high-quality fine wares continued to exist, but not to the same extent as before; this may be due to the fact that fine goods were essentially only intended for the richer upper class³⁹. As a rule, the fine goods were imported and only consumer goods were produced locally. M. Weippert describes the Late Bronze Age as a time „of the gradual dissolution of the firmly established Middle Bronze Age world“, but he does not want this to be understood as a „decline“, but as a „colourful“ period, which was characterised by manifold influences and corresponding innovations⁴⁰. The vessel shapes are similar throughout the area⁴¹. A high proportion of imported pottery (Cyprus, Mycenae, Syria and Egypt) indicates a lively trade and a certain prosperity⁴².

Imported Mycenaean pottery can be found in almost all Late Bronze Age towns in the Levant and especially in the towns along the coast and in the valleys. This is mainly fine pottery and some figurines⁴³. Presumably, however, this pottery was imported by Cypriot traders and did not arrive there directly⁴⁴.



Fig. 1.6 Sherd of White Slip milk bowl imported from Cyprus TZ 021290-011 (Source: BAI/GPIA).



Fig. 1.7 Spindle flask imported from Cyprus (Source: BAI/GPIA).

1.1.4.3. Trade and Craftsmanship

During the Late Bronze Age there was lively international trade throughout the entire Eastern Mediterranean. With Akkadian as *lingua franca*, this exchange was encouraged and a complex system of trade contacts and political relations developed.

In the southern Levant, trade occurred mainly with Mycenaean Greece and Cyprus and to a lesser extent with Syria and Egypt⁴⁵. Cyprus also played a major role in the import of copper (before mining at Timna and Feinan) was revived by the Egyptians at the end of the Late Bronze Age and flourished in the Iron Age I⁴⁶.

Apart from exchanging “gifts” between the rulers, as known from the Amarna letters (Egypt was

38 Kenyon 1967, 202.

39 Weippert 1988, 340.

40 Weippert 1988, 335.

41 Gonen 1992a, 232.

42 Gonen 1992a, 236; Kamlah 2004, 106 f.

43 Yasur-Landau 2010, 194.

44 Yasur-Landau 2010, 195.

45 Weippert 1988, 318–322.

46 Gonen 1992a, 247; Vieweger 2004, 117.

highly demanded as a supplier of gold, but not only goods, also craftsmen etc. were exchanged), it is likely that an extensive minor trade took place which led to a spread of various myths and legends.

The need, at least of the elites, to express their position and wealth was not indicated merely by exquisite commercial goods but also with other prestigious objects. This also promoted local craftsmanship and developed high-quality processing of various materials such as: from metal to glass, and faience to wool, and bone. Imitations of imported goods can be found in all areas⁴⁷.

The Late Bronze Age can be seen as a direct continuation of the Hyksos period to include: Loyalties to the Hyksos were transferred to the pharaohs of the New Kingdom; Gaza became the headquarters of the Egyptian administration⁴⁸. City-states developed, which generally had a certain autonomy as long as they acknowledged the Egyptian sovereignty, paid tribute and fulfilled their obligations. If not, they had to reckon with punitive expeditions. Often the sons of city-state kings were trained at the court in Egypt and then sent home⁴⁹. However, the Egyptian influence was mainly limited to the coastal plain of Cisjordan and considerably less in Transjordan.

47 Panitz-Cohen 2014, 541–560.

48 Other bases were Dēr al-Balah, Jaffa, Tall al-Mutasallim (Megiddo), Tall al-Ḥiṣn (Beth Shean), Tall Yarmūt (Yar-

mut), Tēl Mor, Tall ad-Duwēr (Lachish), Tēl Āfēk.

49 Aharoni 1984, 155.

1.2. The Transition from Middle to Late Bronze Age on Tall Zirā'a

by K. Soennecken

Several settlements dating from the Late Bronze Age (c. 1550–1200/1150 BC) are known on the Tall Zirā'a. To date, two Late Bronze Age occupation layers (Strata 15 and 14) can be retraced in the entire area, judging from their different architectural orientations. A third stratum (Stratum 16) marks the transition from Middle to Late Bronze Age and thus reflects the earliest Late Bronze Age settlement layer. Stratum 16 is marked by considerable destruction from later times as well as a massive landslide. The settlement in the area's northern part remains intact and underwent hardly any change; while the largest part of its southern area was almost completely destroyed. Obviously a settlement area was needed, so the entire area of the landslide was meticulously refilled. These backfill layers constitute Stratum 15.

On top of them, a city wall, a temple, and several living quarters were erected. These constitute a settlement in Stratum 14. There is a ¹⁴C sample from debris of the city wall's collapse that was dated to a period between 1450 and 1300 BC with a probability of 95.4 % providing a *terminus ante quem* for the wall's erection. The massive architecture, the extraordinary finds, and the high percentage of imported pottery from Cyprus and Mycenaean Greece (c. 5 %) are indicative of the great importance of this Late Bronze Age city. Its wealth and its far-reaching trade connections are reflected in the multifaceted finds. It is therefore highly probable that we are looking at the centre of a city-state.

1.2.1. The Transition from Middle to Late Bronze Age (Stratum 16)

by K. Soennecken

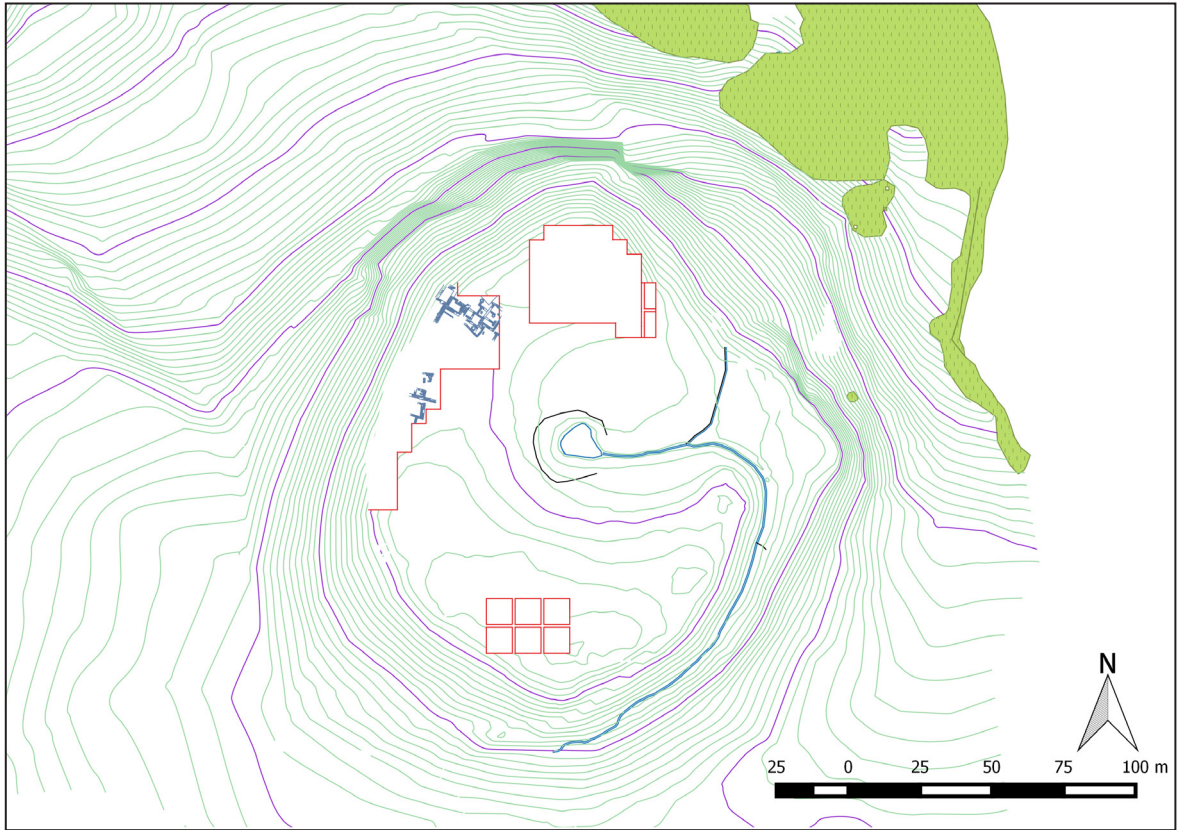


Fig. 1.8 Plan of Tall Zirā'a with Stratum 16 (Source: BAI/GPIA).

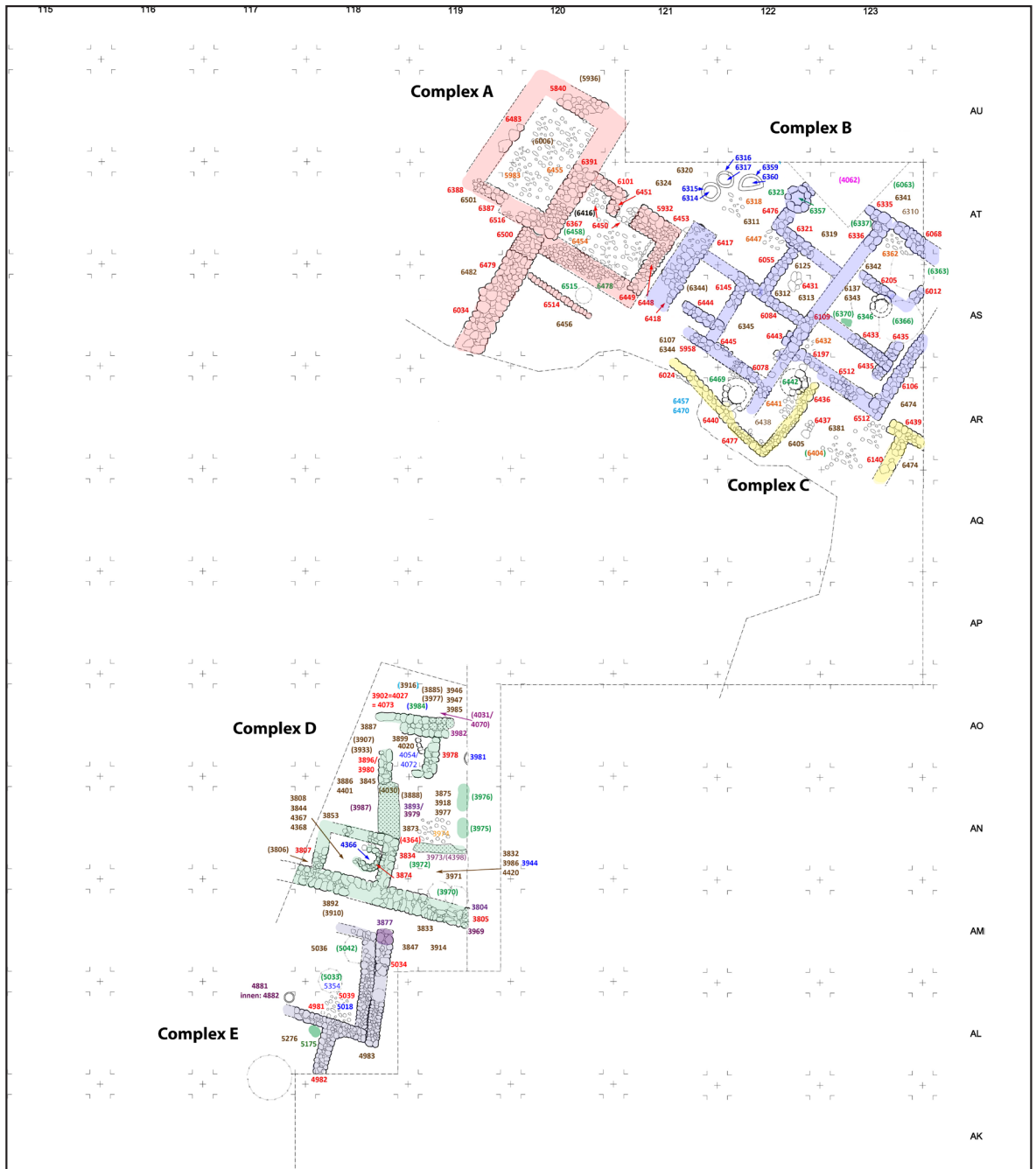


Fig. 1.9 Architectural plan of Area I with context numbers of Stratum 16 (Source: BAI/GPIA).

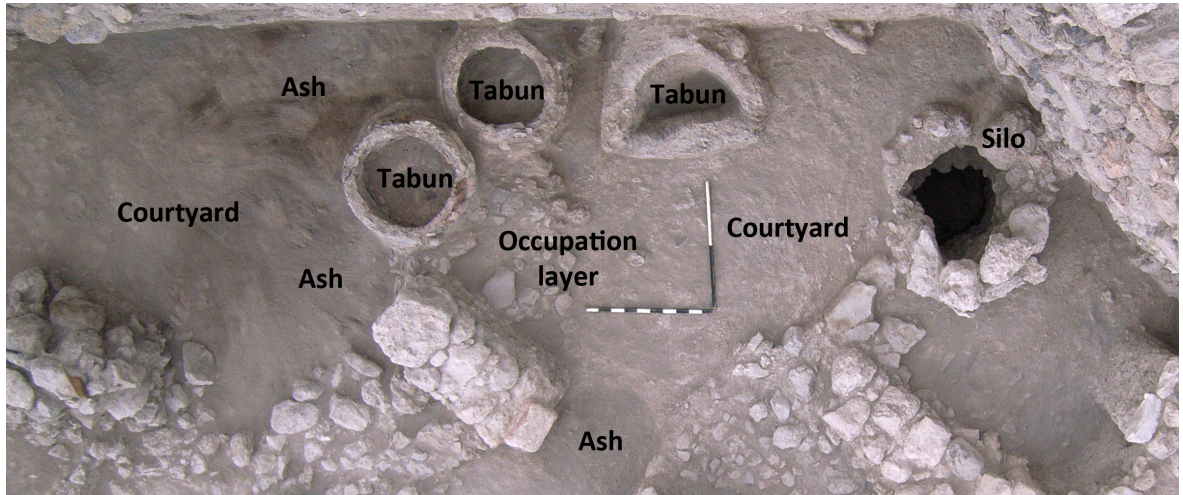


Fig. 1.11 Overview of Complex A 2/B 1 (Source: BAI/GPIA).

This area, especially the occupation layer 6324, yielded a large number of finds to include: a lenticular spindle-whorl made of limestone TZ 019093-001, rubbing stones, an iron ring, the fragment of a quern, iron nodules, flint, a metal fragment of uncertain function (exterior white from lime, interior bronze or copper), a krater TZ 021629-001, a handle made of a sheep bone TZ 019314-001 as well as a large number of animal bones from cattle, sheep, goat, domestic pig, and fallow deer. These finds suggest that the area was used for work and domestic purposes.

The tabun 6315 has a diameter of 80 cm and consists of three layers: lime and mud on the outside, ceramic sherds in the middle, and an interior layer of fired clay. The fill consists of ashy soil. It is adjacent to tabun 6316, which is constructed similarly but only measures 50 cm in diameter. Its fill, too, consists of ashy soil with cooking pot sherds. Both tabuns were simultaneously used. Next to them is tabun 6359 with a diameter of 1 m. Only the northern half of this tabun exists and its ashy fill contains cooking pot sherds. Context 6318 is an occupational floor/paving (finds: rubbing stone, ceramics). At its eastern boundary, silo 6232 is located, with a diameter of c. 1 m (with fill 6357).



Fig. 1.12 Limestone spindle-whorl TZ 019093-001 (Source: BAI/GPIA).



Fig. 1.13 Bone handle TZ 019314-001 (Source: BAI/GPIA).



Fig. 1.14 Krater TZ 021629-001 (Source: BAI/GPIA).

Area A 3 is located outside on the slope and comprises the backfill layers 6482 and 6501 to the west of the wall 6034/6479/6500, which runs from the north-east to the south-west.

Room A 4, like A 1, is confined by wall 6391 (in the west), while its north—north-east boundaries are 6036/6101, 6451, 5932 and 6453 with a central entrance 6450, and 6448 in the south-east.



Fig. 1.15 Entrance 6450 viewed from the north to the south (Source: BAI/GPIA).

The room's south-west border cannot be clearly identified. It was either constituted by 6449, 6454, and 6478, in which case the enclosed area would have measured 3.5 m x 2 m (see reconstruction 1, *Fig. 1.16*), or by the (single-row) wall 6514 and 6479 and 6500. If so, 6454 (astragalus TZ 019540-001, olive pits) does not constitute the remains of a

foundation but the paving of the interior room (see reconstruction 2, *Fig. 1.17*). In this case, the room would have measured 3.5 m x 4 m. There is a backfill layer (6416) in the interior room (which, however, also belongs to Strata 15 and 14); the entrance area consists of flat cobble stones 6450. Pit 6458 probably belongs to Stratum 14.

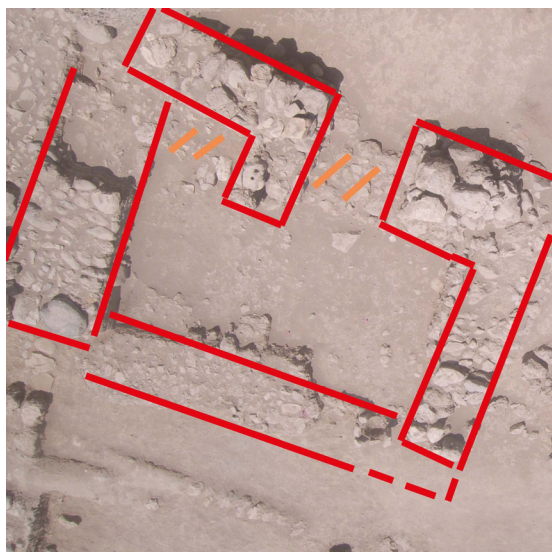


Fig. 1.16 Reconstruction 1 (Source: BAI/GPIA).

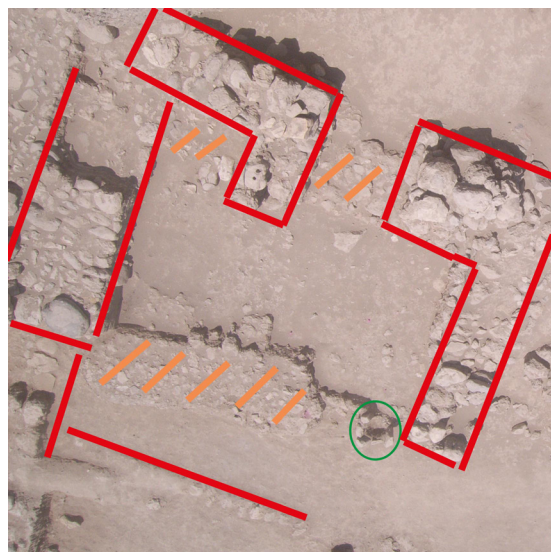


Fig. 1.17 Reconstruction 2 (Source: BAI/GPIA).

Room A 5 comprises the area south of Room A 4, bounded by 6514 in the northeast, 6479 and 6034 (basalt stone TZ 018285-001, clay loom weight TZ 019300-001) in the west and to the south, the fill layer is visible in profile underneath Complex D from Stratum 14. This area was probably used as a yard.

The fill layer 6456 (make-up palette TZ 019040-001, metal figurine TZ 019116-001; casting residue TZ 019117-001; 11 rubbing stones, four quern fragments; flint objects, two iron nodules, shell and snail; ceramic finds) also belongs to this area.



Fig. 1.18 Basalt stone TZ 018285-001 (Source: BAI/GPIA).



Fig. 1.19 Make-up palette TZ 019040-001 (Source: BAI/GPIA).



Fig. 1.20 Bronze arm of a figurine TZ 019916-001 (Source: BAI/GPIA).



Fig. 1.21 Casting residue/melting drop TZ 019117-001 (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
5840	AU 120	Wall	A 1	✓	-	-
5983	AU 120	Pavement; possibly floor level/occupation layer	A 1	-	-	-
6006	AU 120	Fill layer	A 1	✓	✓	✓
6367	AT 120	Wall	A 1	-	-	-
6387	AT 119	Wall	A 1	-	-	-
6388	AT 119	Wall	A 1	✓	✓	-
6391	AT 120	Wall	A 1	-	✓	-
6455	AT 120	Pavement	A 1	-	✓	-
6483	AU 120	Wall	A 1	-	-	-
6516	AT 120	Wall	A 1	-	-	-
6324	AT 121	Fill layer/possibly floor level?	A 2	✓	✓	✓
6314	AT 122	Fill of 6315	A 2/B 1	✓	✓	✓
6315	AT 122	Tabun/oven	A 2/B 1	-	-	-
6316	AT 122	Tabun/oven	A 2/B 1	-	-	-
6317	AT 122	Fill of 6316	A 2/B 1	✓	-	✓
6318	AT 122	Floor level/occupation layer	A 2/B 1	✓	✓	✓
6320	AT 121	Part of tabuns 6315 and 6316	A 2/B 1	✓	✓	✓
6323	AT 122	Pit/silo	A 2/B 1	-	-	-
6357	AT 122	Silo fill	A 2/B 1	✓	✓	✓
6359	AT 122	Tabun/oven	A 2/B 1	-	-	-
6360	AT 122	Fill of 6359	A 2/B 1	✓	-	-

6482	AS 120	Fill layer	A 3	✓	✓	✓
6501	AT 120	Fill layer	A 3	✓	✓	-
5932	AT 121	Wall	A 4	✓	✓	-
6101	AT 121	Wall	A 4	-	-	-
6448	AS 121	Wall	A 4	-	-	-
6449	AS 121	Wall	A 4	-	-	-
6450	AT 121	Pavement/entrance	A 4	-	✓	-
6451	AT 120	Wall	A 4	-	-	✓
6453	AT 121	Collapse of wall 5932	A 4	-	-	-
6454	AT 121	Wall? Pavement?	A 4	✓	✓	✓
6478	AS 121	Silo	A 4	-	-	-
6500	AS 120	Wall	A 4	-	-	-
6514	AS 120	Wall	A 4	-	-	-
6515	AS 120	(Ash) pit	A 4	-	-	-
6034	AS 119	Wall with clay plaster	A 5	✓	✓	✓
6456	AS 120	Fill layer	A 5	✓	✓	-
6479	AS 120	Wall? Pavement?	A 5	-	-	-

Tab. 1.2 Stratum 16, contexts of Complex A (Source: BAI/GPIA).



Fig. 1.23 Weight stone TZ 019108-001 (Source: BAI/GPIA).



Fig. 1.24 Clay loom weight TZ 019301-001 (Source: BAI/GPIA).

Room B 3, measuring 3 m x 3 m, is bounded by the walls 6476, 6321, 6336, and 6335. The pit 6323/6357 in wall 6476 is a disturbance from later times. The room's northern corner was destroyed by the foundation of the tower 4062. The fill layer in the interior area is 6319.

B 4 denotes the outdoor area to the north-east of Complex B, bounded by tower 4062 in the north-west, and by wall 6335 and 6068 in the south-west. The appertaining fill layers are 6341 and 6310 (one complete bronze needle TZ 019129-001, one iron nodule, few ceramic finds, among them two oil lamps).



Fig. 1.25 Needle TZ 019129-001 (Source: BAI/GPIA).

Room B 5 is bounded by the walls 6145, 6418, and 5958. The interior wall 6444 divides the room into a larger area in the northeast (2 m x 2 m) and a small-

er one in the southwest (0.5 m x 2 m). 6344 is the fill layer and contains, among others, the following finds: ceramics (these, however, strongly mixed); fragment of a rubbing stone TZ 019048-001; complete rubbing stone TZ 019049-001; basalt lid TZ 019052-001; foot of a mortar bowl TZ 019071-001; three iron nodules; charcoal; raw material/bitumen TZ 019176-001; flint object; basalt plate with flattened base TZ 019286-001; snail and bones (of those, 17 % cattle, 1.4 % horse/donkey/mule, the others sheep or goat).



Fig. 1.26 Basalt rubbing stone TZ 019049-001 (Source: BAI/GPIA).



Fig. 1.27 Bowl with flattened base TZ 019286-001 (Source: BAI/GPIA).

B 6 shares wall 6321 with B 3, wall 6055 with B 2, wall 6084 with B 8, and wall 6109 with B 10. In the eastern area, the course of the wall was reconstructed. The assemblage of stones 6431 in the centre of the room is collapse debris. 6125, 6312, and 6313

are fill layers in the interior, which measures 2 m x 3 m. These fill layers contained bones, flint objects, two rubbing stones, and mixed ceramics (among them two matching fragments of a baking tray TZ 021567-001).



Fig. 1.28 Two fragments of a baking tray TZ 021567-001 (Source: BAI/GPIA).

Room B 7 measures 3 m x 3.5 m and shares wall 6336 with B 3, wall 6068 with B 4, and wall 6205 with B 9. Wall 6012 constitutes its eastern boundary. Its interior contains paving 6362 and the superincumbent fill layer 6342.

The square room B 8 measures 3.5 m x 3.5 m. It is bounded by the walls 6084, 6145, 6445, 6078 (quern and rubbing plate), and 6443. Of these, wall 6084 is shared with room B 6 and wall 6145 with room B 5. Inside of the room, there is fill layer 6345 (fragment of a quern TZ 019067-001, rubbing stone

TZ 019070-001, rubbing stone TZ 019086-001; iron nodule, flint; many bones, 20.9 % of them cattle, 3.5 % pig, 0.9 % fallow deer, all others sheep or goat; ceramics both cooking pot ware and an assortment of open and closed vessels, jars, bowls, some ornamented pieces, no imports).

Room B 9 covers an area of 4 m x 2.5 m. It is bounded by the walls 6205 in the northeast, and 6433/ (6473) and 6435 (ceramics, including bowl TZ 021784-003, which was secondarily used as an oil lamp, and beer jug TZ 021784-004) in the southwest; its north-west boundary has been reconstructed. Wall 6435 was attached to wall 6433. To the north-east, silo 6346 was attached to wall 6205 (outside diameter 120 cm, inside diameter 70 cm). The fill layers inside B 9 are 6137 and 6343. Context 6137 yielded the following finds: several bones; metal (unclear function), several fragments of querns; an ashlar-shaped rubbing stone TZ 018903-001 and a lower grinding stone TZ 018910-001; one sherd of a glass vessel TZ 019008-001; ceramics: a balanced assortment of open and closed vessels, cooking pots, and lids, one body sherd of a 'Chocolate-on-White' ware bowl).

The finds inside sediment 6343 were: four rubbing stones; mortar TZ 019285-001; three spindle-whorls TZ 019097-001, 019306-001, and 021647-001; flint; iron nodule; antler of a red deer TZ 019316-001; a complete glass bead TZ 019321-001 and a glass fragment TZ 019320-001; shell; snail; bones including object TZ 019547-001 (possibly a spoon or a spatula); the ceramic finds included a 'Chocolate-on-White' ware bowl/plate TZ 021636-001; a jar with bichrome painting TZ 021659-003, and a miniature bowl TZ 021679-020; here, too, an assortment of open and closed vessels and cooking pots.



Fig. 1.29 Beer jug TZ 021784-004 (Source: BAI/GPIA).



Fig. 1.30 Bone spatula TZ 019547-001 (Source: BAI/GPIA).

Room B 10 measures 2 m x 5.5 m and is defined by the walls 6109, 6433, 6197, 6512, and 6106. Flooring/paving 6432 runs up to wall 6109 and consists of small, regouted pebbles.

The rooms B 7, 9, and 10 may have once constituted one large room that was subdivided into smaller units at a later date.

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
6311	AT 122	Fill layer	B 1/B 2	✓	✓	✓
6417	AS 121	Wall	B 2	✓	-	✓
6447	AT 122	Pavement	B 2	-	-	-
6321	AT 122	Wall	B 2/B 3/B 6	-	✓	-
6145	AS 122	Wall	B 2/B 5	-	-	-
6055	AS 122	Wall	B 2/B 6	✓	-	-
6319	AT 123	Fill layer	B 3	✓	✓	✓
6476	AT 122	Wall	B 3	-	-	-
6335	AT 123	Wall	B 3/B 4	-	-	-
6336	AT 123	Wall	B 3/B 7	-	-	-
6310	AT 123	Fill layer	B 4	✓	✓	✓
6341	AT 123	Fill layer	B 4	-	-	-
6068	AT 123	Wall, probably to be linked to Contexts 5911 and 6012	B 4/B 7	✓	-	-
5958	AS 121	Wall	B 5	-	-	-
6418	AS 121	Wall	B 5	-	-	-
6444	AS 121	Wall	B 5	-	-	-
6344	AS 121	Fill layer	B 5/C 1	✓	✓	✓
6125	AS 122	Fill layer	B 6	✓	✓	✓
6312	AS 122	Fill layer	B 6	✓	✓	✓
6313	AS 122	Fill layer	B 6	✓	-	-
6431	AS 122	Collapse	B 6	-	-	-
6109	AS 122	Wall	B 6/B 10	-	-	-
6084	AS 122	Wall	B 6/B 8	-	-	-
6012	AS 123	Wall	B 7	-	-	-
6342	AT 123	Fill layer	B 7	✓	✓	✓

6362	AT 123	Pavement	B 7	-	-	-
6078	AR 122	Wall	B 8	-	✓	-
6131	AR 121	Collapse	B 8	-	-	-
6345	AS 122	Fill layers	B 8	✓	✓	✓
6445	AS 121	Wall	B 8	-	-	-
6443	AS 122	Wall	B 8/B 10	-	-	-
6137	AS 123	Fill layer	B 9	✓	✓	✓
6343	AS 123	Fill layer	B 9	✓	✓	✓
6346	AS 123	Silo	B 9	-	-	-
6433	AS 123	Wall	B 9/B 10	-	-	-
6434	AS 123	Collapse	B 9/B 10	-	-	-
6435	AR 123	Wall	B 9/B 10	✓	✓	✓
6205	AT 123	Wall	B 7/B 9	-	✓	-
6106	AR 123	Wall	B 10	✓	✓	-
6197	AS 122	Collapse	B 10	-	-	-
6432	AS 122	Pavement	B 10	-	-	-
6512	AR 123	Wall	B 10	-	-	-

Tab. 1.3 Stratum 16, Contexts of Complex B (Source: BAI/GPIA).

1.2.1.3. Complex C

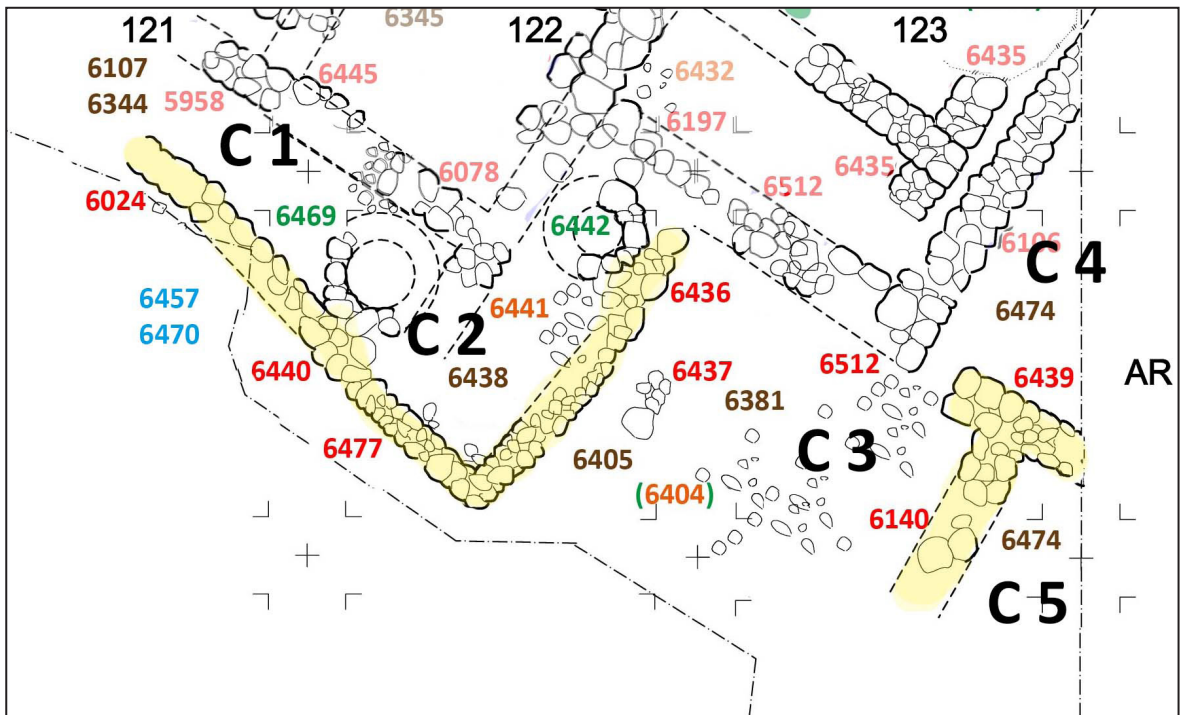


Fig. 1.31 Stratum 16, Complex C (Source: BAI/GPIA).

The complex comprises a wall corner south of Complex B that is divided into the areas C 1 and C 2. To its east, there is a yard (C 3), and east of that, another wall corner (C 4).

Room C 1 is bounded by the walls 6042 and 5440 and contains the pit/silo 6469 and fill layers 6107 and 6344. The finds from 6107 are: bones, flint, metal (needle fragment TZ 018679-001), a lot of cooking pottery, some open vessels (including the rim of an eggshell bowl TZ 018679-001), some closed vessels (including the neck of a bottle, or maybe part of a zoomorphic, possibly imported vessel TZ 021508-003).

Separated from C 1 by the pit 6469, but presumably forming part of the same room, room C 2 follows in the east. It is bounded by the walls 6477 and 6436 and contains the pit/silo 6442 (dm 90 cm) and the remains of a paving 6441: the fill layer is 6438 (stone tile TZ 019056-001; flint; bones; ceramics consisting of an assortment of open and closed vessels and cooking pots).



Fig. 1.32 Stone tile TZ 019056-001 (Source: BAI/GPIA).

C 3 is an open area, a yard, of c. 5 m x 5 m. The fill layers are 6381 (rubbing stone; stone tile TZ 019081-001; iron nodule; flint; shell; very large number of bones; ceramics: ‘Chocolate-on-White’ ware jar TZ 021691-001, lid, pedestal of a chalice TZ 021691-026, otherwise mixed) and 6405 (iron nodule; flint; bones as in sediment 6381; ceramics including the bottom of a “Syrian bottle” TZ 021721-002—an import that is very rare in this region). Inside this area there are the pavement remains 6404 with remnants of a cooking pit (many cooking pots, kraters, oil lamp TZ 021720-003).



Fig. 1.33 Stone tile TZ 019081-001 (Source: BAI/GPIA).



Fig. 1.34 Pedestal of chalice TZ 021691-026 (Source: BAI/GPIA).

It is hard to pin down the section C 4 located in the corner between Complexes B and C—presumably it used to be an interior room with the fill layer 6474 (burnt olive pits, flint, bones).

C 5 is a wall corner, formed by the walls 6140 (orientation north-east—south-west) and 6439 (orientation north-west—south-east). Unfortunately, the fill layer was not regarded separately; thus here, too, the fill layer is labelled 6474 (see C 4).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
6457	AR 121	Layer of backfill	C	✓	✓	✓
6470	AR 121	Layer of backfill	C	✓	-	✓
6024	AS 121	probably wall	C 1	-	-	-
6107	AS 121	Fill layer	C 1	✓	✓	✓
6440	AR 122	Wall	C 1	-	-	-
6469	AR 122	Pit	C 1	-	-	-
6436	AR 122	Wall	C 2	-	-	-
6438	AR 122	Fill layer	C 2	✓	✓	✓
6441	AR 122	Pavement	C 2	-	-	-
6442	AR 122	Silo	C 2	-	-	-
6477	AR 122	Wall	C 2	-	-	-
6437	AR 122	Collapse? Wall?	C 2/C 3	-	-	-
6381	AR 123	Fill layer	C 3	✓	✓	✓
6404	AR 122	Pit/pavement	C 3	✓	-	✓
6405	AR 122	Fill layer	C 3	✓	✓	✓
6439	AR 123	Wall	C 4/C 5	-	-	-
6474	AR 123	Fill layer	C 4/C 5	✓	✓	✓
6140	AQ 123	Collapse, part of wall 6439	C 5	-	-	-

Tab. 1.4 Stratum 16, Contexts of Complex C (Source: BAI/GPIA).

1.2.1.4. Complex D

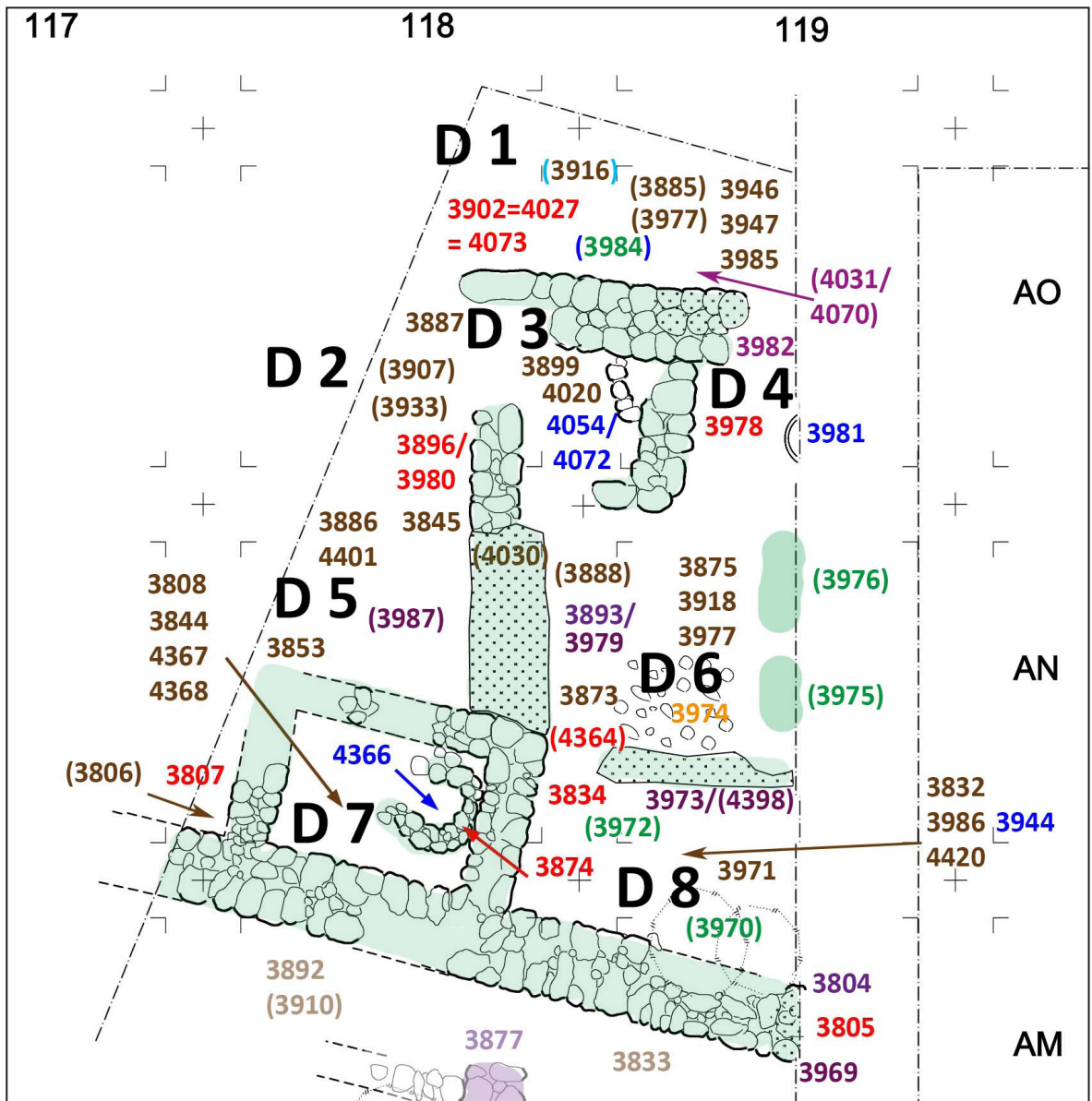


Fig. 1.35 Stratum 16, Complex D (Source: BAI/GPIA).

Complex D comprises the Squares AO 117–119, AN 117–119, and parts of AM 117–119. To the west and the north, it is bounded by the area affected by the landslide. To the east, the entire expanse has not been excavated, and wall 3805 forms its boundary to the south. This wall is built of large boulders, double-row, and runs obliquely from Squares AM and AN 118 into Square AM 119. In between the boulders (particularly in the east, contexts 3804 and 3969), remains of the rising mud brick wall could be

detected. A room (D 7) that would probably have to be reconstructed in a rectangular shape is attached to context 3805, measuring 3 m x 2 m and constituted by the walls 3834 and 3807 (possibly appended at a later date). It contains a stone oven (context 3874, diameter 1 m, filled up with 4366). The fill layers in this section are: 3808 (rubbing stone TZ 012771-001), 3844, 4367, and 4368. The ceramics are mixed and also include fine ware.

The wall 3834 is extended towards the north by the mud brick wall 3979 and the double-row boulder wall 3980 (= 3896) and separates the rooms D 5 and D 6. The fill layers west of this extension reach to the beginning of the infill layers (D 5): 3845 and 3853 (collapse debris of the mud brick walls or parts of the collapsed roof), 3886 (possibly floor), 3933, and 4401.

Further to the north-east, there is a wall corner that will have been originally connected to wall 3980, made up by the wall 4073 (= 4027/3902) (mud bricks on top of wall context 3982), running east-west, and wall 3978, running north-south. Nestled in this wall corner there is a tabun 4054/4072. The flooring belonging to this room is probably Context 4020; north and west of 4073 there are more fill layers (outside): floor level of the yard 3887 (tabun fragments), 3946, 3947, and 3985. To the east of the wall corner, remains of a tabun/oven 3981 are discernible in the eastern section.



Fig. 1.36 Stratum 16, Complex D, aerial view with rooms D 5 and 7 and mud brick wall 3979 (Source: BAI/GPIA).

Surrounded by the architecture described, an area/yard (D 6) spreads out towards the east that is void of any architecture or installations; sediments: 3875 (collapse debris of mud bricks?), 3918 (flooring?), 3977 (shell pendant TZ 013102-001; arrowhead TZ 013150-001; shell TZ 013820-001; fragment of bowl or grinder TZ 014282-001); disturbed by the Iron Age I pits 3975 and 3976.



Fig. 1.37 Arrowhead TZ 013150-001 (Source: BAI/GPIA).



Fig. 1.38 Bowl or grinder TZ 014282-001 (Source: BAI/GPIA).

To the south, remnants of the paving 3974 made of small cobbles have survived; they run up to the mud brick wall 3973. Room D 8 is defined by this mud brick wall, wall 3834 in the west, and wall 3805 in the south. It contains the fill layers 3832 (possible layer on top of the floor), 3971 (tabun fragments), 3986, sediment with fireplace 3944 (ashes and tabun fragments were found), and 4420, disturbed by the Iron Age II pits 3970 and 3972. The entire Complex D can be reconstructed as a courtyard house.

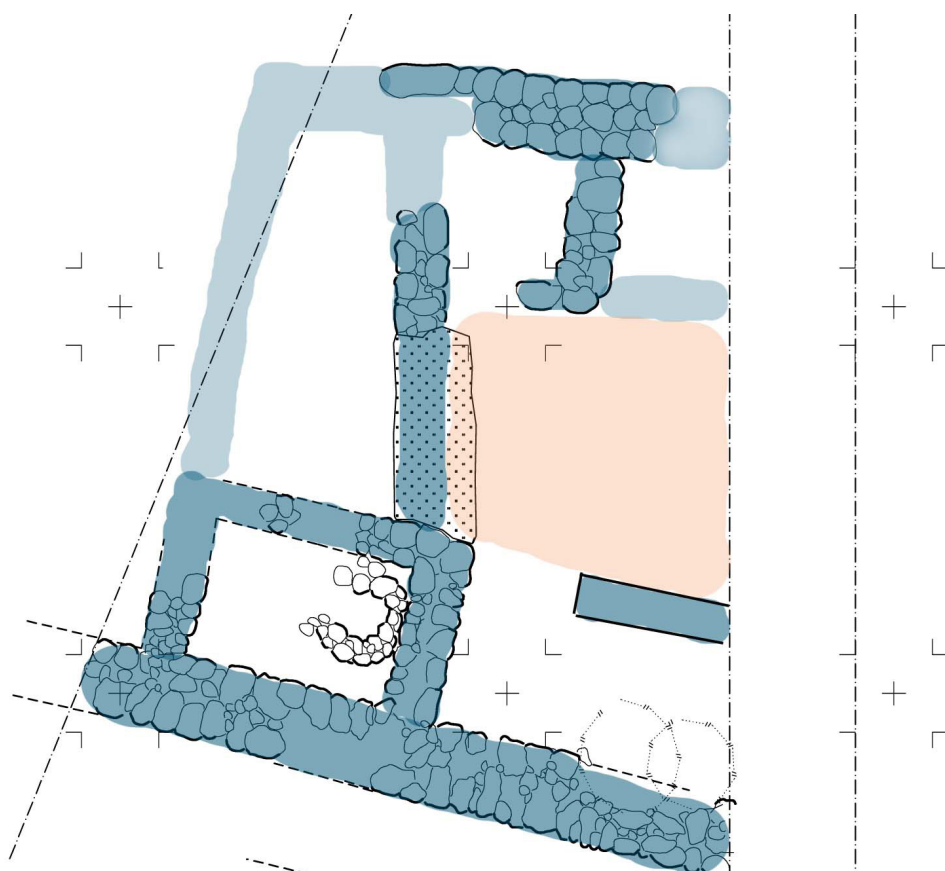


Fig. 1.39 Stratum 16, Complex D, reconstruction (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
3885	AO 118	Fill layer/pit	D 1	✓	✓	✓
3916	AO 118	Fill layer/partly layer of backfill	D 1	✓	-	✓
3946	AO 119	Fill layer	D 1	✓	-	-
3947	AO 119	Fill layer/floor level of courtyard ?	D 1	-	-	-
3977	AN 119	Fill layer/floor level/occupation layer	D 1	✓	✓	✓
3984	AO 119	Ash pit	D 1	-	-	✓
3985	AO 119	Fill layer	D 1	✓	-	-
4031	AO 119	Mudbrick collapse?	D 1/D 4	✓	-	✓
4070	AO 119	Mudbrick collapse?	D 1/D 4	✓	-	-
3907	AO 118	Fill layer	D 2	-	-	-

3933	AN 118	Fill layer	D 2	✓	-	✓
3887	AO 118	Fill layer	D 2/D 3	✓	-	✓
3896	AO 118	Wall	D 2/D 3	-	-	-
3980	AN 118	Wall	D 2/D 3	-	-	-
3845	AN 118	Fill layer/mudbrick collapse	D 2/D 5	-	-	-
3886	AN 118	Fill layer/floor level?	D 2/D 5	✓	✓	✓
3899	AO 118	Fill layer	D 3	-	-	-
4020	AO 118	Mudbrick collapse? Floor level?	D 3	✓	✓	-
4054	AO 118	Corresponds to 4072 (tabun)	D 3	-	-	-
4072	AO 119	Tabun	D 3	✓	-	✓
3902	AO 118	Mudbrick wall on stone foundation	D 3/D 4	-	-	-
3978	AN 118	Wall	D 3/D 4	-	-	-
3982	AO 119	Mudbrick wall	D 3/D 4	-	-	-
4027	AO 118	Foundation of mudbrick wall	D 3/D 4	-	-	-
4073	AO 119	Foundation of mudbrick wall 3982	D 3/D 4	-	-	-
3981	AO 119	Tabun/oven	D 4	-	-	-
3823	AN 118	Collapse	D 5	✓	✓	✓
3853	AN 118	Fill layer/mudbrick collapse	D 5	✓	-	✓
3893	AN 118	Mudbrick wall	D 5	-	-	-
3979	AN 118	Mudbrick wall	D 5	✓	-	✓
3987	AN 118	Mudbrick collapse	D 5	✓	-	✓
4401	AN 118	Fill layer	D 5	✓	-	✓
3834	AN 118	Wall	D 5/D 7/D 8	✓	-	✓
3888	AN 118	Fill layer/mudbrick collapse	D 5/D 6	✓	-	✓
4030	AN 118	Fill?	D 5/D 6	-	-	-
3873	AN 118	Pit? Collapse?	D 6	✓	✓	✓
3875	AN 118	Fill layer/mudbrick collapse	D 6	-	-	-
3918	AN 119	Fill layer/floor level?	D 6	✓	✓	✓
3974	AN 119	Pavement? Courtyard?	D 6	✓	-	✓
3807	AM 118	Wall	D 7	✓	-	✓
3808	AN 118	Fill layer	D 7	✓	✓	✓
3844	AN 118	Fill layer	D 7	✓	-	✓

3874	AN 118	Oven with fire place	D 7	-	-	✓
4364	AN 119	Collapse	D 7	✓	-	✓
4366	AN 118	Fire place	D 7	✓	✓	✓
4367	AN 118	Fill layer	D 7	✓	-	-
4368	AN 118	Fill layer	D 7	✓	✓	✓
3804	AM 118	Mudbrick collapse	D 7/D 8	✓	-	✓
3805	AM 118	Wall	D 7/D 8	✓	-	✓
3832	AN 118	Layer above floor level?	D 8	✓	-	✓
3944	AN 119	Fill layer/fire place	D 8	✓	✓	✓
3969	AM 119	Mudbrick wall	D 8	-	-	-
3971	AN 119	Fill layer	D 8	✓	✓	✓
3973	AN 119	Mudbrick wall	D 8	-	-	-
3986	AN 119	Fill layer/floor level?	D 8	✓	-	✓
4398	AN 119	Mudbrick collapse	D 8	-	-	✓
4420	AN 119	Fill layer	D 8	✓	-	✓

Tab. 1.5 Stratum 16, Contexts of Complex D (Source: BAI/GPIA).

1.2.1.5. Complex E

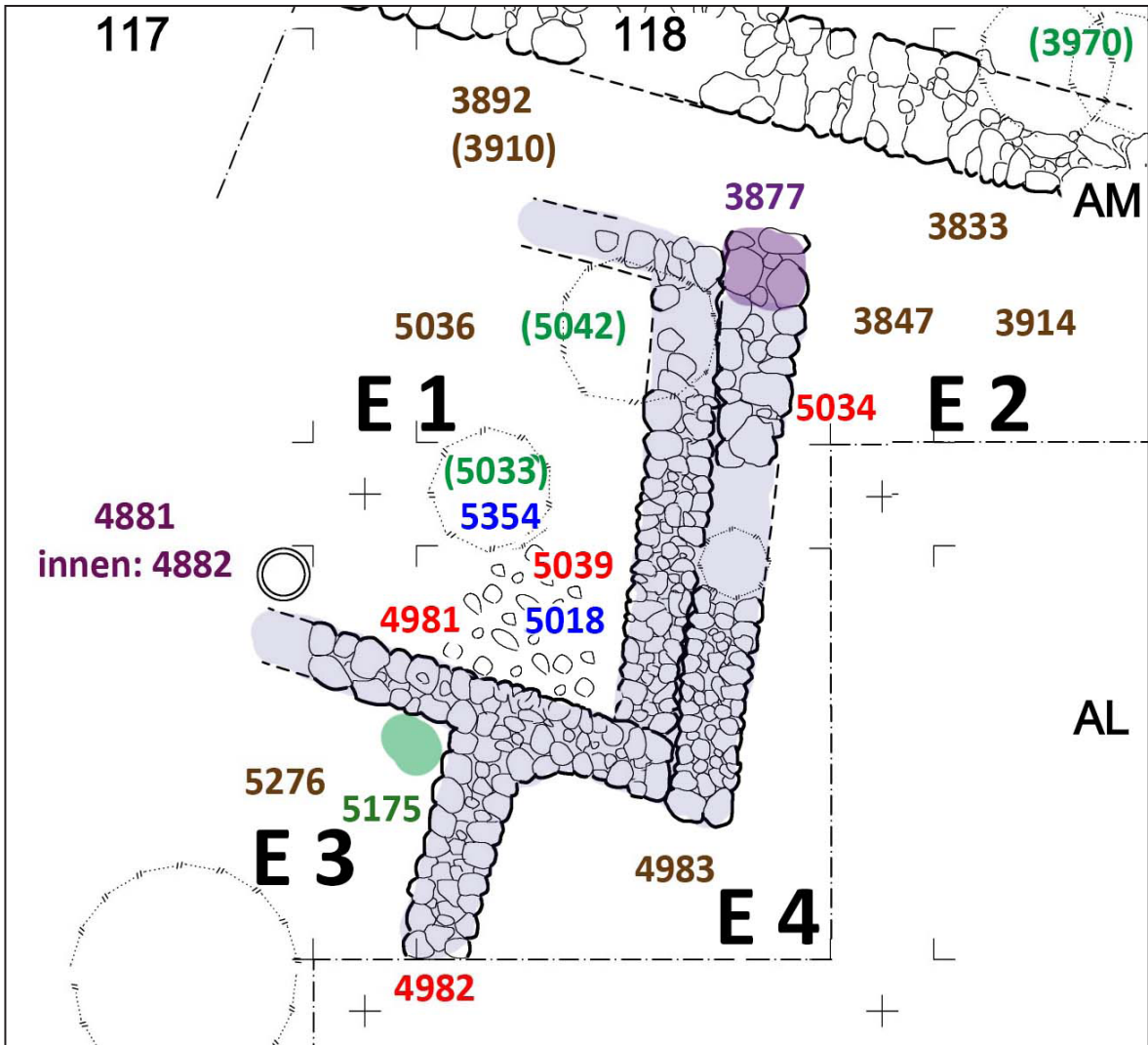


Fig. 1.40 Stratum 16, Complex E (Source: BAI/GPIA).

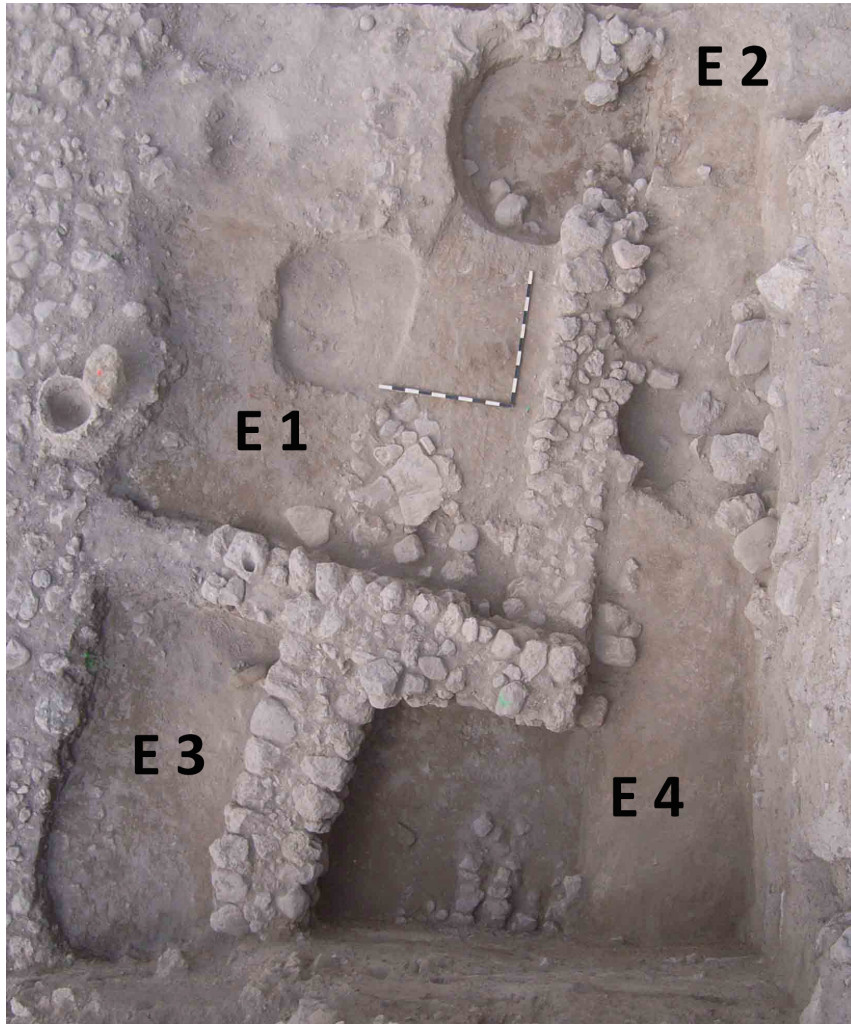


Fig. 1.41 Complex E, overview photo (AL 118) without wall 5034 (Source: BAI/GPIA).

The southernmost excavated complex of the stratum is located in the Squares AL 118 and parts of AM 118 and 119. It consists of a wall corner open to the west with attaching wall 4982, orientation north—south (find in the wall: roof roller TZ 015365-001). The wall is double-row, built of unhewn stones (size c. 20–40 cm), and also connects to the double-row wall 4981. Built into the wall, a fragment of a quern TZ 015624-001 was found.

Wall 5039 adjoins 4981 and was thus probably attached at a later date (its lower edge being about 10–20 cm higher than the lower edge of 4981). The western border of room E 1 probably fell victim to the landslide. The estimated room dimensions are 5 m x 5 m. Inside the room, there was a (water) basin made of limestone with a diameter of c. 60 cm (4881), backfill 4882 yielded a bone and

Early Bronze Age ceramics, which probably ended up there when the landslide was backfilled. To the east, wall 5034 (fragment of a sandstone bowl TZ 015676-001), running parallel to 5039, is attached; presumably it is part of the adjacent building.



Fig. 1.42 Roof roller TZ 015365-001 (Source: BAI/GPIA).



Fig. 1.43 Sandstone bowl TZ 015676-001 (Source: BAI/GPIA).

North of wall 4981, Context 5018 is an oval accumulation of cobbles that measures *c.* 1 m in length and *c.* 75 cm in width. Presumably, these are the remains of a pavement. Clay residues and tabun fragments as well as a broken stone plate, surrounded by a circle of smaller cobbles, are moreover indicative of a fireplace. The ceramics discovered were exclusively jars.

Cooking pots in the sediment as well as pits and a circular ash pit 5354 (dm *c.* 25 cm) give further evidence of a cooking area. In the northern section of wall 5039, there is pit 5042, which seems to be partly incorporated into the wall—maybe wall 5039 was fortified by wall 5034 and then no longer necessary. Initially, Context 3877 (mud brick collapse debris) was presumably the superstructure of wall 5034.

The rooms E 2 to E 4 constitute the outdoor area around room E 1 and are devoid of any architectural remains. One notable find is the figurine of a dog TZ 015311-001, found in sediment 5276 in E 3. Unfortunately, this figurine was part of the backfill and not *in situ*. Finds from room E 4 and its backfill layer 4983, were: two complete rubbing stones (including TZ 015960-001 with finger depressions), two lower grinding stones (including TZ 016067-001, spherical with flat bottom and impact marks), weight stone (TZ 015395-001), and nine flint objects (TZ 016152-001).



Fig. 1.44 Rubbing stone TZ 015960-001 (Source: BAI/GPIA).



Fig. 1.45 Theriomorphic figurine TZ 015311-001 (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
3892	AM 118	Fill layer	E 1	✓	✓	✓
3910	AM 117	Fill layer	E 1	✓	✓	✓
4881	AL 117	Water basin	E 1	-	-	-
4882	AL 117	Fill of water basin	E 1	✓	-	✓
5018	AL 118	Fire place?	E 1	✓	✓	✓
5036	AL 118	Fill layer	E 1	✓	✓	✓
5039	AL 118	Wall	E 1	✓	-	✓
5042	AL 118	Pit?	E 1	✓	✓	✓

5354	AL 118	Fire place	E 1	✓	-	✓
4981	AL 118	Wall	E 1/E 3	✓	✓	✓
3833	AM 119	Fill layer	E 2	✓	✓	-
3847	AM 119	Fill layer	E 2	✓	✓	✓
3877	AM 119	Mudbrick collapse	E 2	✓	-	-
3914	AM 119	Fill layer	E 2	✓	-	✓
5034	AL 118	Two walls running side by side (one is renamed 5039, the eastern one remains 5034)	E 2/E 4	✓	✓	✓
4962	AL 118	Collapse	E 3	✓	✓	✓
5175	AL 118	Pit	E 3	✓	✓	✓
5276	AL 118	Layer of backfill/fill layer	E 3	✓	✓	✓
5294	AL 118	Fill layer	E 3	✓	-	-
4982	AL 118	Wall	E 3/E 4	✓	✓	-
4983	AL 118	Fill layer	E 4	✓	✓	✓

Tab. 1.6 Stratum 16, Contexts of Complex E (Source: BAI/GPIA).

1.2.2. Stratum 15: The Landslide and the Reconstruction

by K. Soennecken/D. Vieweger

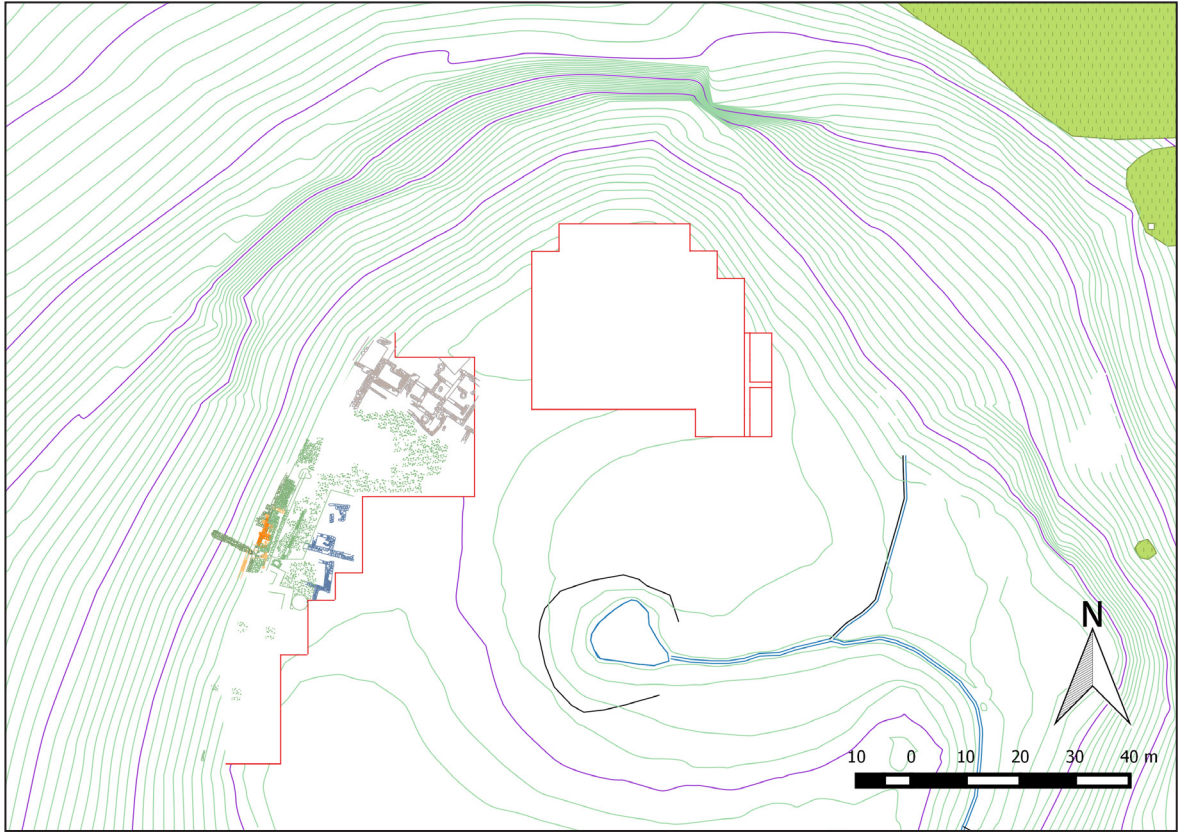


Fig. 1.46 Plan of the Tall Zira'a with Strata 16 and 15 (Source: BAI/GPIA).

Stratum 15 is characterized by measures that were carried out to repair and rebuild the western slope of the tall. This section seems to have been of great importance to its inhabitants since they put considerable efforts into its reconstruction, as evidenced by backfill layers that rise to a final height of at least 4.50 m. Each of them consists of a layer of soil, 30–45 cm high, upon which a stone pavement was

laid. At least eight, in some places as much as ten, of these layers could be verified. The findings show a representative sample of the previous strata. The ceramics in particular largely consist of Early and Middle Bronze Age material (more than 75 %). Presumably, the building material was carried up the tall from its bottom.

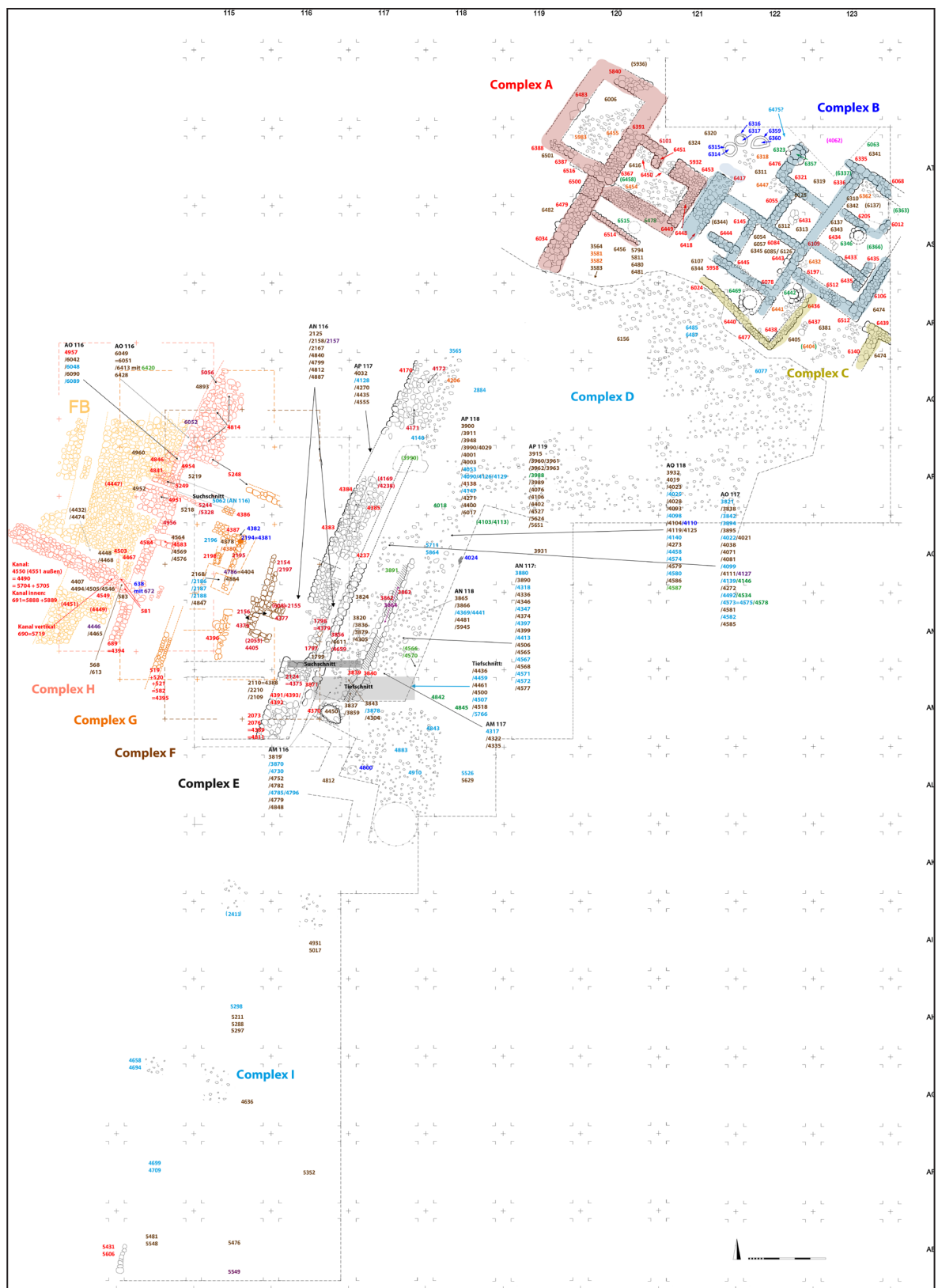


Fig. 1.47 Architectural plan of Area I Stratum 15 with context numbers (Source: BAI/GPIA).



Fig. 1.48 Stratium 15, the excavated backfill layers in Area I, a) uppermost stone paving, b) the individual backfill layers; retention wall on the small picture detail (Source: BAI/GPIA).

A certain amount of time must have passed between the individual fills as remains of small constructions and of tabuns were found. An estimated period of one year was allowed for the material to solidify. On the western side of the slope, the backfill layers were supported by a retention wall.

Additionally, an almost 5 m thick fortification wall was erected and a drainage channel installed (Complexes E–H). As most of these complexes

intertwine both vertically and horizontally, the individual complexes were color-coded and spatially separated. For example, in the architectural plan the topmost Complex E is marked in black; followed by the underlying Complex F in brown etc. down to the Early Bronze Age glacis (in yellow), into which the drainage channel in Complex H had been constructed.

1.2.2.1. Complex D

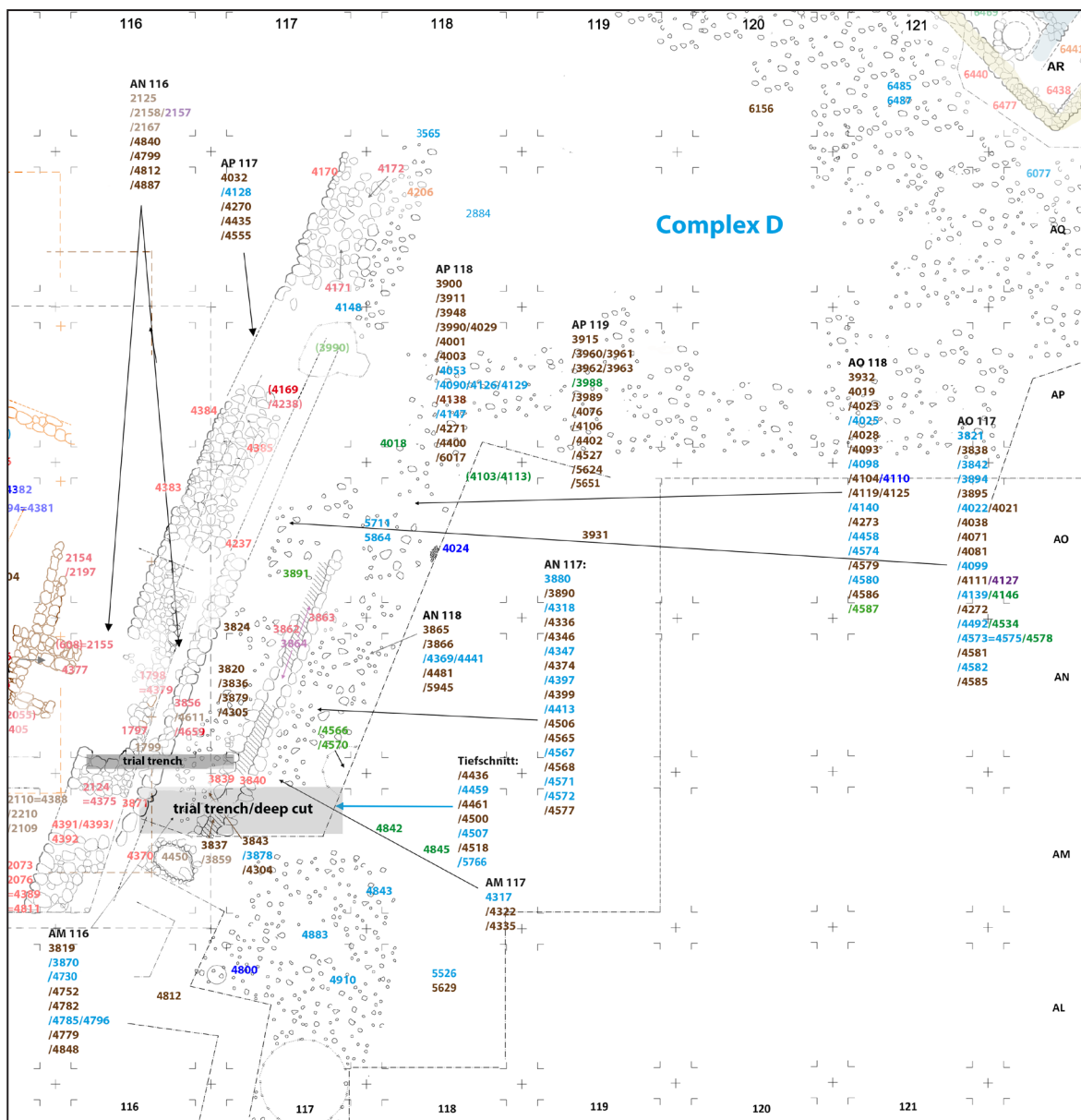


Fig. 1.49 Stratum 15, Complex D (Source: BAI/GPIA).

Complex D comprises all fill layers situated in the Squares AR to AL (the southern Squares AK to AE are treated as the separate Complex I as it was impossible to identify any kind of construction pertaining to the fill layers. These fill layers consist of a sequence of fill layers and stone layers—no architecture but a few fire places and pits that indicate an extended period of either use or construction. This area is devoid of architectural remains. There are two

noteworthy fire places/tabuns: 4024 in AO 118 and 4800 in AL 116. Also, the occasional pit was found: 4018, 4103, 4113, 4146, 4534, 4570, 4566, 4578, 4587, 4842, and 4845 as well as the pits 3891 and 3988 which cannot be clearly identified as belonging to either Complex D or E. Remnants of a layer of limestone (Context 4127) were detected in AO 117. A surprisingly large number of spindle whorls were found, many of them made of limestone.



Fig. 1.50 Overview of spindle whorls from Stratum 15 (Source: BAI/GPIA).

Noteworthy finds from the fill layers are:

In AN 117: rim of chalice TZ 005605-001 from Context 3820; cylindrical agate bead TZ 013882-001 from Context 4336; worked bone (possibly a flute) TZ 013422-001 from Context 4346; two basalt rubbing stones TZ 014230-001 and 014235-001 from Context 4347; flint tools TZ 013871-001 and ring-shaped basalt weight TZ 014284-001 from Context 4399; bottom of chalice TZ 006204-006, fragment of a baking tray TZ 006233-002, link of a shell necklace TZ 013824-001, biconically pierced limestone spindle whorl TZ 014286-001, and whetstone TZ 014234-001 from Context 4413; bead of black-and-white mottled glass TZ 014170-001 and almost circular limestone hinge stone TZ 014263-001 from Context 4506; several rubbing stones and limestone spindle whorl TZ 014365-001 from Context 4565; limestone spindle whorl TZ 014367-001 from Context 4568; limestone spindle whorl TZ 014364-001 from pit 4570.



Fig. 1.51 Chalice TZ 005605-001 (Source: BAI/GPIA).



Fig. 1.52 Bead TZ 013882-001 (Source: BAI/GPIA).



Fig. 1.53 Worked bone TZ 013422-001 (Source: BAI/GPIA).



Fig. 1.54 Flint tools TZ 013871-001 (Source: BAI/GPIA).



Fig. 1.55 Whetstone TZ 014234-001 (Source: BAI/GPIA).



Fig. 1.56 Glass bead TZ 014170-001 (Source: BAI/GPIA).



Fig. 1.57 Hinge stone TZ 014263-001 (Source: BAI/GPIA).



Fig. 1.58 Spindle whorl TZ 014365-001 (Source: BAI/GPIA).

In AN 118: fragment of an iron needle TZ 012882-001 (probably intruded) and a basalt spindle whorl TZ 013432-001 from Context 3865; barrel-shaped agate bead TZ 018604-001 from Context 5945.



Fig. 1.59 Spindle whorl TZ 013432-001 with grooves on its flat side, radiating from the centre hole (Source: BAI/GPIA).



Fig. 1.60 Bead TZ 018604-001 (Source: BAI/GPIA).

In AM 115: discoid basalt spindle whorl TZ 015436-001 and basalt weight stone TZ 015782-001 from fill layer 4848.



Fig. 1.61 Spindle whorl TZ 015436-001 (Source: BAI/GPIA).



Fig. 1.62 Weight stone TZ 015782-001 (Source: BAI/GPIA).

In AM 117: bone awl TZ 012867-001 from Context 3878; limestone hinge stone TZ 014265-001 and basalt hinge stone TZ 014266-001 from Context 4459 (trial trench).



Fig. 1.63 Awl TZ 012867-001 (Source: BAI/GPIA).

In AM 118: limestone hinge stone TZ 015616-001 and faience sherd TZ 016436-001 from Context 4843.



Fig. 1.64 Hinge stone TZ 015616-001 (Source: BAI/GPIA).

In AO 117: bone with cut marks TZ 012865-001 from pit 3891; circular basalt hinge stone TZ 013382-001 from Context 4021; shoe-shaped basalt rubbing stone TZ 013378-001 from Context 4038; rim of a bowl of Khirbet Kerak ware TZ 005826-001 from Context 4071; bottom of the basalt bowl with foot-ring TZ 013324-001 and an ashlar-shaped hammer stone made of flint TZ 014411-001 from Context 4111; cylindrical agate bead TZ 013883-001 and turquoise glass bead TZ 013910-001 from Context 4272; two limestone hinge stones TZ 014336-001 and 014349-001, a limestone spindle whorl TZ 014368-001, and a basalt hammer stone TZ 014342-001, which was put to secondary use as a weight stone, from Context 4575.



Fig. 1.65 Bone with cut marks TZ 012865-001 (Source: BAI/GPIA).



Fig. 1.66 Spindle whorl TZ 014368-001 (Source: BAI/GPIA).



Fig. 1.67 Hammer stone TZ 014342-001 (Source: BAI/GPIA).

In AO 118: bottle TZ 005763-001 from Context 4019; baking tray TZ 005871-001 from Context 4104; complete carnelian bead TZ 013152-001 from Context 4125.



Fig. 1.68 Bottle TZ 005763-001 (reconstructed) (Source: BAI/GPIA).



Fig. 1.69 Balance weight TZ 013221-001 (Source: BAI/GPIA).



Fig. 1.70 Carnelian beads TZ 013255-001 (Source: BAI/GPIA).

In AP 118: shell pendant TZ 013103-001, semi-circular basalt rubbing stone TZ 013319-001 and rim/wall of a basalt TZ 013323-001 from Context 4053; flint hammer stone TZ 014415-001 from Context 4126.



Fig. 1.71 Hammer stone TZ 014415-001 (Source: BAI/GPIA).



Fig. 1.72 Bottom of chalice TZ 005778-001 (Source: BAI/GPIA).

In AP 119: chalice with burn marks on its bottom TZ 005778-001 from Context 3988; truncated cone basalt rubbing stone TZ 013428-001 from Context 3989.

In AQ 122: limestone spindle whorl TZ 018981-001 and 75 objects made of flint.

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
2884	AQ 118	Layer of backfill	D	-	-	-
3565	AR 118	Pavement/layer of backfill	D	-	-	-
3819	AM 116	Fire place/layer of backfill	D	✓	-	✓
3820	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
3821	AO 117	Pavement/layer of backfill	D	✓	-	✓
3838	AO 117	Pavement/layer of backfill	D	✓	✓	✓
3842	AO 117	Pavement/layer of backfill	D	-	-	-
3865	AN 118	Fill layer/layer of backfill	D	✓	✓	✓
3866	AN 118	Fill layer/layer of backfill	D	✓	✓	✓
3870	AM 116	Pavement/layer of backfill	D	✓	✓	-
3878	AM 117	Pavement/layer of backfill	D	✓	✓	✓
3880	AN 117	Pavement/layer of backfill	D	✓	✓	✓
3890	AN 117	Fill layer/layer of backfill	D	✓	-	-

3894	AO 117	Pavement/layer of backfill	D	✓	-	✓
3895	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
3900	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
3911	AP 118	Fill layer/layer of backfill	D	-	✓	-
3915	AP 119	Fill layer/layer of backfill	D	✓	-	✓
3931	AO 119	Fill layer/layer of backfill	D	✓	-	✓
3932	AO 118	Fill layer/layer of backfill	D	✓	-	-
3948	AP 118	Fill layer/layer of backfill	D	-	✓	-
3960	AP 119	Fill layer/layer of backfill	D	-	-	-
3961	AP 119	Fill layer/layer of backfill	D	✓	-	-
3962	AP 119	Fill layer/layer of backfill	D	-	-	-
3963	AP 119	Fill layer/layer of backfill	D	✓	-	-
3989	AP 119	Fill layer/layer of backfill	D	✓	✓	✓
3990	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
4001	AP 118	Fill layer/layer of backfill	D	✓	✓	-
4003	AP 118	Fill layer/layer of backfill	D	✓	-	✓
4018	AP 118	Pit	D	✓	✓	✓
4019	AO 118	Fill layer/layer of backfill	D	✓	-	✓
4021	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4022	AO 117	Pavement/layer of backfill	D	-	-	-
4023	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4024	AO 118	Fire place	D	✓	✓	-
4025	AO 118	Pavement/layer of backfill	D	✓	✓	✓
4028	AO 118	Fill layer/layer of backfill	D	-	-	-
4029	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
4032	AP 117	Fill layer/layer of backfill	D	✓	✓	✓
4038	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4053	AP 118	Pavement/layer of backfill	D	✓	✓	✓
4071	AO 117	Fill layer/layer of backfill	D	✓	-	✓
4076	AP 119	Fill layer/layer of backfill	D	✓	-	✓
4081	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4090	AP 118	Pavement/layer of backfill	D	-	-	-
4093	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4098	AO 118	Pavement/layer of backfill	D	-	-	-

4099	AO 117	Pavement/layer of backfill	D	-	-	-
4103	AO 118	Pit	D	✓	-	✓
4104	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4106	AP 119	Fill layer/layer of backfill	D	✓	✓	✓
4110	AO 118	Ash layer	D	-	-	-
4111	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4113	AO 118	Pit	D	-	-	-
4119	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4125	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4126	AP 118	Pavement/layer of backfill	D	✓	✓	✓
4127	AO 117	Layer of chalk	D	-	-	-
4128	AP 117	Pavement/layer of backfill	D	✓	✓	✓
4129	AP 118	Pavement/layer of backfill	D	✓	✓	✓
4138	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
4139	AO 117	Pavement/layer of backfill	D	✓	✓	✓
4140	AO 118	Pavement/layer of backfill	D	✓	-	✓
4146	AO 117	Pit	D	✓	-	-
4147	AP 118	Pavement/layer of backfill	D	✓	✓	-
4148	AP 117	Pavement/layer of backfill	D	✓	✓	✓
4270	AP 117	Fill layer/layer of backfill	D	✓	✓	✓
4271	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
4272	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4273	AO 118	Fill layer/layer of backfill	D	✓	-	✓
4304	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4317	AM 117	Pavement/layer of backfill	D	-	✓	✓
4318	AN 117	Pavement/layer of backfill	D	-	✓	✓
4322	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4335	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4336	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4346	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4347	AN 117	Pavement/layer of backfill	D	✓	✓	-
4369	AN 118	Pavement/layer of backfill	D	✓	-	-
4374	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4397	AM 117	Pavement/layer of backfill	D	✓	✓	✓

4399	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4400	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
4402	AP 119	Fill layer/layer of backfill	D	✓	✓	✓
4413	AN 117	Pavement/layer of backfill	D	✓	✓	✓
4435	AP 117	Fill layer/layer of backfill	D	✓	✓	✓
4436	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4441	AN 118	Pavement/layer of backfill	D	✓	-	✓
4458	AO 118	Pavement/layer of backfill	D	✓	-	✓
4459	AM 117	Pavement/layer of backfill	D	✓	✓	✓
4461	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4481	AN 118	Fill layer/layer of backfill	D	✓	-	-
4492	AO 117	Pavement/layer of backfill	D	✓	✓	✓
4500	AM 117	Fill layer/layer of backfill	D	✓	-	✓
4506	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4507	AM 117	Pavement/layer of backfill	D	✓	✓	-
4518	AM 117	Fill layer/layer of backfill	D	✓	✓	✓
4527	AP 119	Fill layer/layer of backfill	D	✓	✓	-
4534	AO 117	Pit	D	-	-	-
4555	AP 117	Fill layer/layer of backfill	D	✓	-	-
4565	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4566	AN 117	Pit	D	✓	✓	✓
4567	AN 117	Pavement/layer of backfill	D	-	-	-
4568	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4570	AN 117	Pit	D	✓	✓	-
4571	AN 117	Pavement/layer of backfill	D	-	✓	✓
4572	AN 117	Pavement/layer of backfill	D	-	-	✓
4573	AO 117	Pavement/layer of backfill	D	✓	✓	✓
4574	AO 118	Pavement/layer of backfill	D	✓	✓	✓
4575	AO 117	Pavement/layer of backfill	D	✓	✓	✓
4577	AN 117	Fill layer/layer of backfill	D	✓	✓	✓
4578	AO 117	Pit	D	✓	-	✓
4579	AO 118	Fill layer/layer of backfill	D	✓	✓	✓
4580	AO 118	Pavement/layer of backfill	D	-	-	-
4581	AO 117	Fill layer/layer of backfill	D	✓	✓	✓

4582	AO 117	Pavement/layer of backfill	D	-	-	-
4585	AO 117	Fill layer/layer of backfill	D	✓	✓	✓
4586	AO 118	Fill layer/layer of backfill	D	✓	-	✓
4587	AO 118	Pit	D	✓	✓	✓
4730	AM 116	Pavement/layer of backfill	D	✓	-	✓
4752	AM 116	Fill layer/layer of backfill	D	✓	✓	✓
4779	AM 116	Fill layer/layer of backfill	D	✓	✓	✓
4782	AM 116	Fill layer/layer of backfill	D	✓	✓	✓
4785	AM 116	Pavement/layer of backfill	D	✓	✓	-
4796	AM 116	Pavement/layer of backfill	D	-	-	-
4799	AM 116	Fill layer/layer of backfill	D	✓	-	-
4800	AL 116	Fire place	D	✓	✓	✓
4812	AL 116	Fill layer/layer of backfill	D	✓	-	-
4842	AM 118	Pit	D	✓	-	-
4843	AM 118	Pavement/layer of backfill	D	✓	✓	✓
4845	AM 118	Pit	D	✓	✓	✓
4848	AM 115	Fill layer/layer of backfill	D	✓	✓	✓
4883	AL 117	Pavement/layer of backfill	D	✓	-	-
4910	AL 117	Pavement/layer of backfill	D	-	✓	✓
5062	AN 116	Pavement/layer of backfill	D	✓	✓	✓
5526	AL 118	Fill layer/layer of backfill	D	✓	✓	✓
5624	AP 119	Fill layer/layer of backfill	D	✓	✓	✓
5629	AL 118	Fill layer/layer of backfill	D	✓	✓	✓
5651	AP 119	Fill layer/layer of backfill	D	✓	✓	✓
5711	AO 118	Pavement/layer of backfill	D	✓	-	✓
5766	AM 117	Pavement/layer of backfill	D	✓	✓	-
5864	AO 118	Pavement/layer of backfill	D	✓	✓	✓
5945	AN 118	Fill layer/layer of backfill	D	✓	✓	✓
6017	AP 118	Fill layer/layer of backfill	D	✓	✓	✓
6077	AQ 122	Pavement/layer of backfill	D	✓	✓	✓
6156	AR 120	Fill layer/layer of backfill	D	-	-	-
6485	AR 121	Pavement/layer of backfill	D	-	-	-
6487	AR 121	Pavement/layer of backfill	D	✓	-	✓
3824	AN 117	Fill layer/layer of backfill	D/E	✓	-	-

3836	AN 116	Pavement/layer of backfill	D/E	✓	-	-
3837	AM 117	Fill layer/layer of backfill	D/E	✓	✓	✓
3843	AM 117	Fill layer/layer of backfill	D/E	✓	✓	✓
3879	AN 116	Fill layer/layer of backfill	D/E	✓	-	✓
3891	AO 117	Pit	D/E	-	✓	-
3988	AP 119	Pit	D/E	✓	-	-
4169	AP 117	Wall/collapse	D/E	✓	✓	✓
4305	AN 117	Fill layer/layer of backfill	D/E	✓	✓	✓
4840	AN 116	Fill layer	D/E	✓	-	✓
4887	AN 116	Fill layer/layer of backfill	D/E	✓	✓	✓
6475	AT 122	Pavement/layer of backfill	D?	✓	✓	✓

Tab. 1.7 Stratum 15, Contexts of Complex D (Source: BAI/GPIA).

1.2.2.2. Complex E

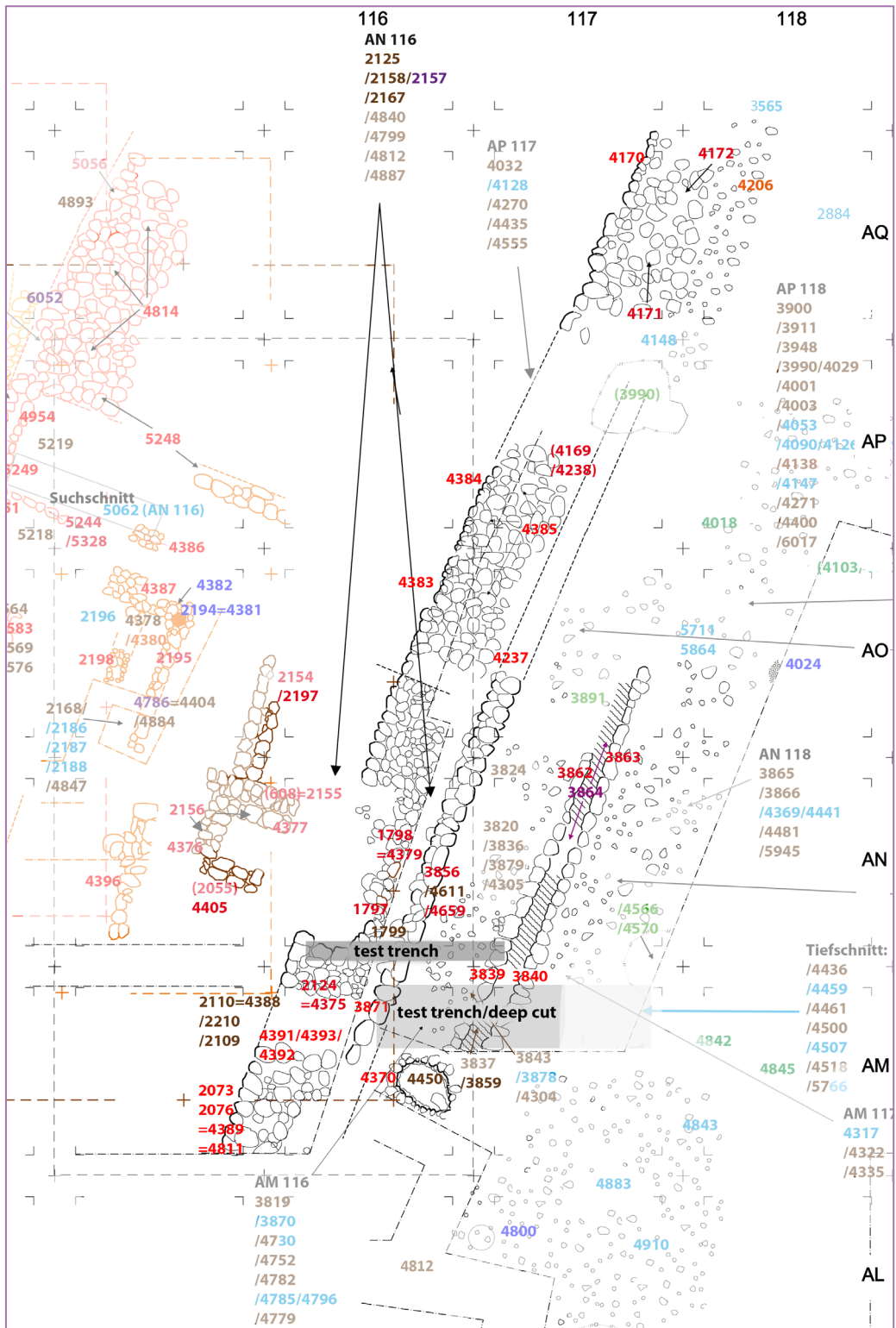


Fig. 1.73 Stratum 15, Complex E (Source: BAI/GPIA).

This complex denotes the retention wall of the backfill layers, the massive fortification wall, and the drainage channel inside a section of Complex D. The area comprises the Squares AL–AG

116–118. The retention wall of the backfill layers is a double-row wall of boulders that is *c.* 1 m thick and preserved up to the height of 1.30 m (3856/3871/4237/4659).



Fig. 1.74 Overview of the retention wall (after the backfill layers were removed in summer 2009) (Source: BAI/GPIA).



Fig. 1.75 Retention wall in AM-AO 116-118 view from east to west (Source: BAI/GPIA).

The fortification wall, made of unhewn boulders, is about 2.5 m thick and has been preserved over a length of *c.* 30 m⁵⁰. The following finds are note-

worthy: clay loom weight TZ 008610-001 and fragment of a stone tile TZ 008681-001 from Context 2073 in AM 116.

50 Fig. 1.76 shows only the northern and southern parts of the fortification wall. The middle part was removed.



Fig. 1.76 Overview of the fortification wall (after removal of the retention wall in the spring 2011)
(Source: BAI/GPIA).

Complex E marks the conclusion of the backfilling work. The Complexes F, G, and H constitute earlier phases of these operations. The channel was constructed and continuously used into Stratum 14⁵¹.

The area around the water channel in AM 117 yielded three basalt rubbing stones TZ 012767-001, 013521-001, and 013524-001 from Context 3840.

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
1797	AM/AN 116	Wall	E	-	-	-
1798	AN 116	Wall	E	-	-	-
1799	AM/AN 116	Fill layer	E	-	-	-
2073	AM 116	Wall	E	✓	✓	✓
2076	AM 116	Wall	E	✓	-	-
2109	AM 116	Layer of clay/fill layer	E	-	-	-
2110	AM 116	Fill of water channel	E	✓	-	✓
2124	AN 116	Water channel/wall	E	✓	-	-
2125	AN 116	Fill layer	E	✓	-	-
2157	AN 116	Charcoal/ash pit	E	-	-	✓
2158	AN 116	Fill layer	E	✓	✓	-

51 A detailed description of the channel will be given under Stratum 14, Complex F.

2167	AN 116	Fill layer	E	✓	✓	✓
2197	AN 116	Wall	E/F	-	-	-
2210	AM 116	Fill layer/layer of backfill	E	-	-	-
3839	AM 117	Water channel	E	-	-	-
3840	AM 117	Water channel	E	-	✓	-
3856	AN 116	Wall	E	✓	✓	✓
3859	AM 117	Fill layer/layer of backfill	E	-	-	-
3862	AN 117	Water channel	E	-	-	-
3863	AN 117	Water channel	E	-	-	-
3864	AN 117	Fill of water channel	E	✓	-	✓
3871	AM 116	Wall	E	-	-	-
4170	AQ 117	Wall	E	✓	✓	✓
4171	AP 117	Wall	E	-	-	-
4172	AQ 117	Wall	E	✓	✓	✓
4206	AQ 117	Pavement	E	✓	-	-
4237	AO 117	Wall	E	-	-	-
4238	AP 117	Wall	E	-	-	-
4370	AM 117	Pit	E	-	-	-
4375	AN 116	Wall	E	✓	✓	✓
4379	AN 116	Wall	E	-	-	-
4383	AN 116	Wall	E	-	-	-
4384	AO 116	Wall	E	-	-	-
4385	AO 116	Wall	E	-	-	-
4388	AM 116	Layer of backfill	E	-	-	-
4389	AM 116	Wall	E	✓	-	✓
4391	AM 116	Wall	E	-	-	-
4392	AM 116	Wall	E	✓	-	✓
4393	AM 116	Wall	E	-	-	-
4405	AN 116	Wall	E/F	-	-	-
4450	AM 117	Fill layer	E	✓	✓	✓
4611	AN 116	Fill layer	E	✓	✓	✓
4659	AN 116	Wall	E	✓	✓	-
4811	AL 116	Wall	E	-	-	-

Tab. 1.8 Stratum 15, Contexts of Complex E (Source: BAI/GPIA).

1.2.2.3. Complex F

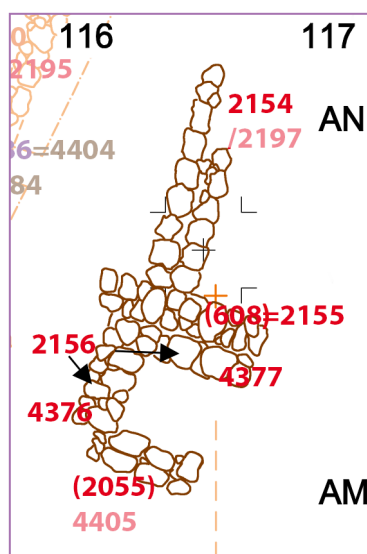


Fig. 1.77 Stratum 15, Complex F (Source: BAI/GPIA).

Complex F consists of wall 2154, running from the north to the south at a distance of 2.5 m and adjoining wall 2155 that runs in an east-westerly direction, and the U-shaped wall complex made up by Contexts 2055, 2156, 4377, and 4376. The latter are temporary structures, only used for a short period of time, that formed part of the repair works in this area after the landslide. They were probably only built to retain the backfill layers and served no further purpose. One noteworthy find is that of the fragment of a basalt stone vessel that was discovered in Context 2156.



Fig. 1.78 Overview of wall corner, Contexts 2055, 2156, 4377, and 4376 (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
2055	AM 118	Fill layer/collapse	F	✓	-	✓
2154	AN 116	Wall	F	-	-	-
2155	AN 116	Wall	F	-	-	-
2156	AN 116	Wall	F	✓	✓	✓
4376	AN 116	Wall	F	-	-	-
4377	AN 116	Wall	F	-	-	-

Tab. 1.9 Stratum 15, Contexts of Complex F (Source: BAI/GPIA).

Complex G is similar to Complex F in that its walls, too, were primarily built with the purpose of supporting the backfill layers. Here, however, the remains

of a fireplace were found (Contexts 4382; 2194 = 4381), indicating that the individual building phases will have extended over longer periods of time.



Fig. 1.80 Fire place in AN 116 (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
519	AM 115	Wall	G	-	-	-
520	AM 115	Wall	G	-	-	-
521	AM 115	Wall	G	-	-	-
582	AM 115	Wall	G	-	-	-
2168	AN 116	Fill layer	G	✓	✓	✓
2186	AN 116	Layer of backfill	G	-	-	-
2187	AN 116	Pavement/layer of backfill	G	-	-	-
2188	AN 116	Fill layer/layer of backfill	G	-	-	-
2194	AN 116	Pavement/fire place	G	✓	✓	✓
2195	AN 116	Wall	G	-	-	-
2196	AN 116	Layer of backfill	G	-	-	-

2198	AN 116	Wall	G	-	-	-
4378	AN 116	Fill layer	G	✓	-	-
4380	AN 116	Floor level	G	✓	-	-
4381	AN 116	Fire place	G	-	-	-
4382	AN 116	Fire place	G	-	-	-
4386	AO 116	Wall	G	-	-	-
4387	AO 116	Wall	G	-	-	-
4395	AM 115	Wall	G	-	-	-
4396	AM 116	Wall	G	-	-	-
4404	AM 116	Ash layer	G	-	-	-
4786	AN 116	Ash layer	G	-	-	-
4847	AN 116	Fill layer	G	-	✓	-
4884	AN 116	Fill layer	G	✓	-	✓
5248	AO 116	Wall	G/H	-	-	-

Tab. 1.10 Stratum 15, Contexts of Complex G (Source: BAI/GPIA).

1.2.2.5. Complex H

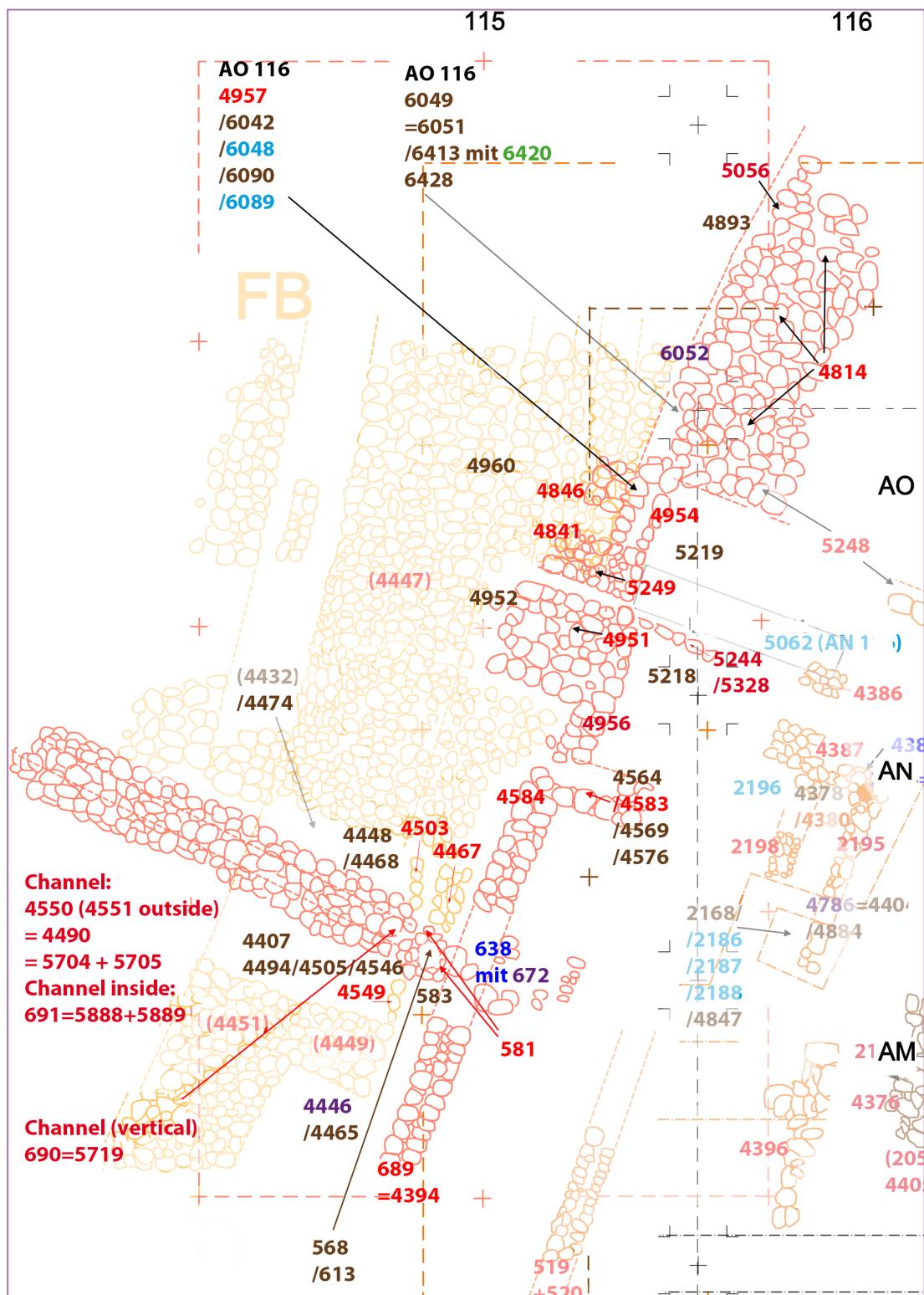


Fig. 1.81 Stratum 15, Complex H (Source: BAI/GPIA).

Complex H marks the beginning of the backfill layers. The outer retention wall running in a north-south direction (consisting of Contexts 5056, 4814 in the north in AP and AO 116 and 4584, 4394 in the south in AN and AM 115) is situated above the Early Bronze Age glacis. Built into this glacis runs a drainage channel (Contexts 4550, 4551, 4490, 5704, 5705, 691, 5888, 5889, 690, 5719, 4549 in AN 115 and 114) with a width of *c.* 1 m and a length of *c.* 5 m. At its eastern end, there is an access or maintenance duct (Context 581, backfill of the duct = 568

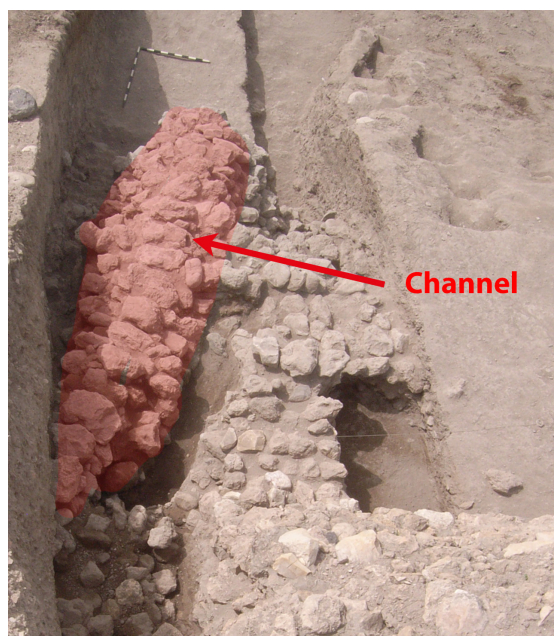


Fig. 1.82 Overview of the large channel (facing west) (Source: BAI/GPIA).

and 613). This channel served as drainage for the rain water collecting on the surface. Farther north, there were two further, small channels (Contexts 4956, 4583, 4584 and Contexts 5249, 4951, 5244, 5328).

Noteworthy finds are two limestone spindle whorls TZ 019098-001 from Context 6413 and TZ 019099-001 from Context 6428 in AO 116.

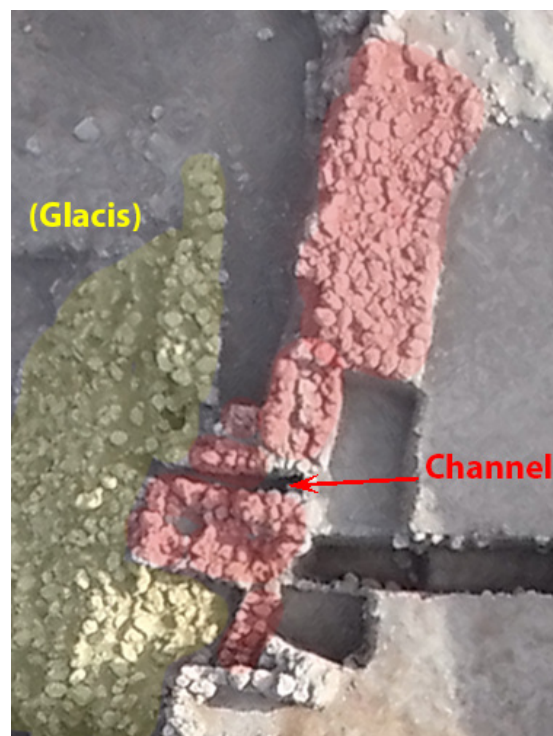


Fig. 1.83 Overview of the northern part of Complex H with one of the two small channels (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
6042	AO 116	Fill layer	D/H	✓	-	-
6048	AO 116	Pavement/layer of backfill	D/H	-	-	-
6089	AO 116	Pavement/layer of backfill	D/H	-	-	-
6090	AO 116	Fill layer/layer of backfill	D/H	✓	✓	-
568	AM 115	Fill layer	H	-	-	-
581	AM 115	Channel	H	✓	-	✓
583	AM 115	Fill layer	H	-	-	-

613	AM 115	Fill layer	H	-	-	-
638	AM 115	Layer of chalk	H	✓	-	-
672	AM 115	Pottery	H	✓	-	-
689	AM 115	Wall/channel	H	✓	-	-
690	AM 115	Channel	H	✓	-	-
691	AM 115	Layer of backfill	H	✓	-	-
4394	AM 115	Wall	H	-	-	-
4407	AM 115	Fill layer	H	✓	✓	✓
4446	AM 115	Ash layer	H	✓	-	-
4448	AN 115	Fill layer/layer of backfill	H	✓	-	-
4465	AM 115	Fill layer	H	✓	-	✓
4468	AN 115	Fill layer	H	-	-	✓
4474	AN 115	Fill layer	H	✓	✓	✓
4490	AM 115	Channel	H	✓	✓	-
4494	AM 115	Fill layer	H	✓	✓	-
4505	AM 115	Fill layer	H	✓	-	✓
4546	AM 115	Fill layer	H	✓	-	✓
4550	AN 115	Channel	H	-	-	-
4551	AN 115	Channel	H	-	-	-
4564	AN 116	Fill layer	H	✓	✓	✓
4569	AN 116	Fill layer	H	✓	✓	✓
4576	AN 116	Fill layer	H	✓	-	✓
4583	AN 116	Wall/channel	H	-	-	-
4584	AN 116	Wall/channel	H	-	-	-
4814	AO 116	Wall	H	-	-	-
4841	AN 116	Wall	H	-	-	-
4846	AO 116	Wall	H	-	-	-
4893	AO 116	Fill layer	H	✓	-	✓
4951	AO 116	Wall/channel	H	-	-	-
4952	AO 116	Fill layer	H	✓	✓	✓
4954	AO 116	Wall	H	-	-	-
4956	AN 116	Wall/channel	H	-	-	-
4957	AO 116	Wall	H	✓	-	-
4960	AO 116	Fill layer	H	✓	✓	-

5056	AP 116	Wall	H	-	-	-
5218	AN 116	Fill layer	H	✓	✓	✓
5219	AN 116	Fill layer	H	✓	✓	✓
5244	AN 116	Wall/channel	H	-	-	-
5249	AN 116	Wall/channel	H	-	-	-
5328	AN 116	Wall/channel	H	-	-	-
5704	AN 115	Channel	H	-	-	-
5705	AN 114	Channel	H	-	-	-
5719	AN 115	Channel	H	-	-	-
5888	AN 114	Channel	H	✓	-	✓
5889	AN 114	Channel	H	-	-	-
6049	AO 116	Fill layer	H	✓	-	✓
6051	AO 116	Fill layer	H	✓	-	-
6052	AO 116	Mudbrick	H	-	-	-
6413	AO 116	Fill layer	H	✓	✓	✓
6420	AO 116	Pit	H	-	✓	-
6428	AO 116	Fill layer	H	✓	✓	✓
4451	AM 115	Wall	H (FB)	-	-	-
4467	AN 115	Wall	H (FB)	-	-	-
4503	AN 115	Wall	H (FB)	-	-	-
4549	AM 115	Wall	H (FB)	-	-	-

Tab. 1.11 Stratum 15, Contexts of Complex H (Source: BAI/GPIA).

1.2.2.6. Complex I

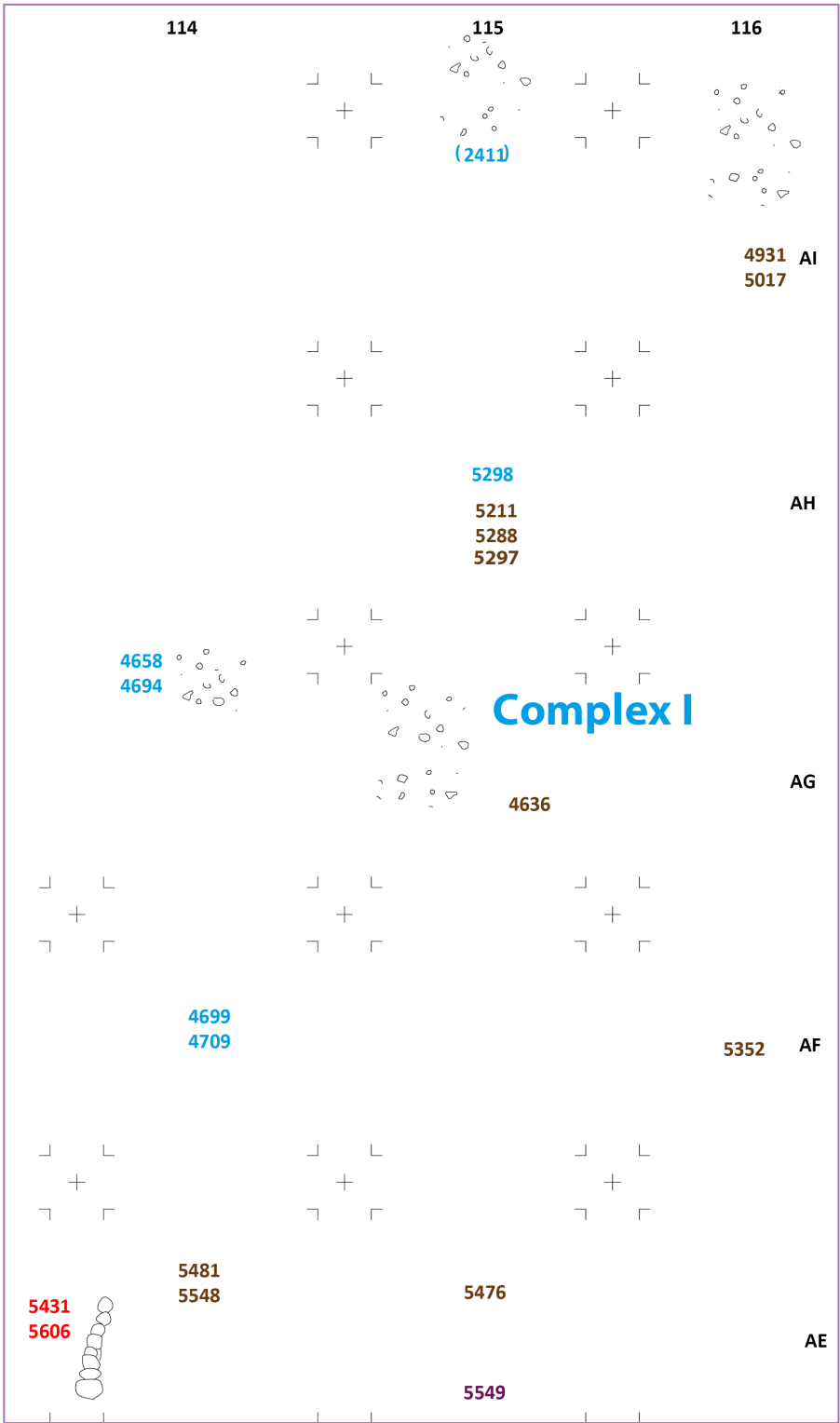


Fig. 1.84 Stratum 15, Complex I (Source: BAI/GPIA).

Complex I comprises all layers of backfill in Squares AK to AE (comparable to Complex D in Squares AR–AL). The backfill layers consist of a sequence of fill layers and stone layers—there were no wall structures or installations, aside from a single-row wall in AE 114 (Contexts 5431 and 5606).



Fig. 1.85 Rubbing stone TZ 015689-001 (Source: BAI/GPIA).

Noteworthy finds are:

In AE 114: discoid rubbing stone TZ 015689-001 from Context 5606.

In AH 115: silver pendant TZ 015347-001 from Context 5211 and a sample of charcoal TZ 007402-001 from Context 5288.

In AI 116: spoon-shaped piece of limestone (possibly a wedge or a latch) TZ 015422-001 from Context 4931.



Fig. 1.86 Limestone tool TZ 015422-001 (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
4636	AG 115	Fill layer/layer of backfill	I	✓	-	-
4658	AG 114	Pavement/layer of backfill	I	✓	✓	✓
4694	AG 114	Pavement/layer of backfill	I	✓	-	✓
4699	AF 114	Pavement/layer of backfill	I	✓	-	-
4709	AF 114	Pavement/layer of backfill	I	✓	✓	-
4931	AI 116	Fill layer/layer of backfill	I	✓	✓	✓
5017	AI 116	Fill layer/layer of backfill	I	-	-	-
5211	AH 115	Fill layer/layer of backfill	I	✓	✓	✓
5288	AH 115	Fill layer/layer of backfill	I	-	-	✓
5297	AH 115	Fill layer/layer of backfill	I	✓	✓	✓
5298	AH 115	Pavement/layer of backfill	I	✓	✓	✓
5352	AF 116	Fill layer/layer of backfill	I	✓	✓	✓
5431	AE 114	Wall	I	✓	✓	-
5476	AE 115	Fill layer/layer of backfill	I	✓	✓	-
5481	AE 114	Fill layer/layer of backfill	I	✓	✓	✓
5548	AE 114	Fill layer/layer of backfill	I	✓	✓	✓
5549	AE 115	Fill layer/layer of backfill	I	-	✓	-
5606	AE 114	Wall	I	-	✓	-

Tab. 1.12 Stratum 15, Contexts of Complex I (Source: BAI/GPIA).

1.3. Catalogue of Finds: Middle to Late Bronze Age (Strata 16–15)

1.3.1. Catalogue of Metal Finds: Strata 16–15

by K. Soennecken

In the strata of the Middle and Late Bronze Ages on Tall Zirā'a, 26 metal finds were documented. With respect to the metal classification, the following should be noted:

- Cu₂Sn bronze is being defined from an Sn content of 1.0 % as the metal's malleability decreases with a Sn content of 1.3 % or higher. Thus, the production of bronzes with an intentionally low Sn content seems reasonable.
- Regarding the metal classification of the metal objects from Tall Zirā'a based on data relevant for XRF-spectroscopy: All specifications are given in ppm (10.000 ppm = 1.0 %). Cu contents exceeding 100 % are not realistic and must be due to the calibration of the instrument being used and to object-related measuring errors. All data cited in this chapter taken from M. Schulze 2014.
- Values <10 ppm are defined as being below the limit of detection (<LOD).

In order to ascertain the metals' provenance, numerous archaeometrical examinations were performed and published in M. Schulze 2014, esp. 121–123.

The archaeometric examinations illustrate that half of the samples can be linked to material from the Wādī Fēnān or Timna respectively and half can be linked to material from Cyprus. The same analyses could not be attributed to any specific copper mining area.

TZ 012882-001

Area I; Square AN 118; Complex D; Context 3865

Description: Point of a needle

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 1.5; D (max.) 1.1

Weight: 3.5 g

Material: Iron

TZ 012885-001

Area I; Square AN 118; Complex D; Context 3866

Description: Function uncertain; band-shaped fragment

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 2; B 1.0; H 0.5

Weight: 1.4 g

Material: Tin bronze. Analysis: Cu 924458; Sn 13995; Pb 25; As 275; Zn <NWG; Fe 8212; Ag 53

TZ 012886-001

Area I; Square AN 118; Complex D 2/D 5; Context 3886

Description: Amorphous fragment

Figure Reference: —

Date of Context: MB/LB

Dimensions: L 1.2; W 0.9; D (max.) 1.4

Weight: 1.7 g

Material: Tin bronze. Analysis: Cu 917720; Sn 35730; Pb 127; As 372; Zn <NWG; Fe 23774; Ag <NWG

TZ 013021-001

Area I; Square AM 117; Complex E; Context 3840

Description: Fragment of a knife or dagger? Broken platelet; tapering to one side; cutting edge?

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 1.3; W 1.5; H 0.3

Weight: 1.1 g

Material: Tin bronze. Analysis: Cu 591424; Sn 63381; Pb 10081; As 65; Zn 850; Fe 5209; Ag <NWG

TZ 013023-001

Area I; Square AP 118; Complex D; Context 3948

Description: Round shaft of a nail; fragment

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 7.8; D (max.) 1.5

Weight: —

Material: Iron

TZ 013121-001

Area I; Square AP 117; Complex D/E; Context 4169

Description: Slag; fragment cylindrical with spherical bulges

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 3.2; D (max.) 1.7

Weight: —

Material: Iron?

TZ 014184-001

Area I; Square AN 118; Complex D 7; Context 4368

Description: Awl or needle; fragment

Figure Reference: —

Date of Context: MB/LB

Dimensions: L 3.3; D (max.) 0.36

Weight: 1 g

Material: Copper. Analysis: Cu 511717; Sn 4462; Pb 104; As 717; Zn <NWG; Fe 16068; Ag 33

TZ 015193-001

Area I; Square AL 118; Complex E 2/E 4; Context 5034

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: MB/LB

Dimensions: —

Weight: —

Material: Tin bronze. Analysis: Cu 982389; Sn 19664; Pb 265; As 233; Zn <NWG; Fe 6571; Ag 28

Reference: For lead isotope ratio see Schulze 2014, chart 11-2 (sample 4-10) and Fig. 5-10. 5-11

TZ 015225-001

Area I; Square AM 116; Complex D; Context 4752

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 1.2; W 0.9

Weight: 3 g

Material: Copper. Analysis: Cu 759998; Sn 94; Pb 170; As 3541; Zn <NWG; Fe 37244; Ag 61

TZ 015247-001

Area I; Square AM 116; Complex D; Context 4785

Description: Nail; object complete

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 5.6; W 2.4

Weight: 23.1 g

Material: Iron

TZ 015284-001

Area I; Square AN 116; Complex D; Context 5062

Description: Nail; head and part of the shank preserved

Figure Reference: —

Date of Context: LB Rep

Dimensions: L 1.4; D (max.) 3

Weight: 8.2 g

Material: Iron

TZ 015347-001

Area I; Square AH 115; Complex I; Context 5211

Description: Fragment of coin-shaped silver; probably pendant?

Figure Reference: Fig. 1.87

Date of Context: LB Rep

Dimensions: L 1.6; W 1.3

Weight: 1.75 g

Material: Silver



Fig. 1.87 Fragment of coin-shaped silver TZ 015347-001 (Source: BAI/GPIA).

TZ 017267-001

Area I; Square AL 118; Complex E 3; Context 5276

Description: Function uncertain; fragment of a flat metal sheet

Figure Reference: —

Date of Context: MB/LB

Dimensions: L 2.2; W 2; H 0.17

Weight: 1.8 g

Material: Copper. Analysis: Cu 805006; Sn 66; Pb 382; As 111; Zn <NWG; Fe 14567; Ag 19

TZ 018679-001

Area I; Square AS 121; Complex C 1; Context 6107

Description: Fragment of a needle?

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 1; D (max.) 5

Weight: 0.1 g

Material: Copper. Analysis: Cu 1050103; Sn <NWG; Pb <NWG; As 3436; Zn <NWG; Fe 9388; Ag 193. Intensities for the point measurements using μ -XRF in cps: Cu 2576,23; Sn 0.62; Pb 1.61; Zn 0

TZ 018716-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 2.6; W 1.8; H 1.3

Weight: 10.7 g

Material: Copper. Analysis: Cu 950404; Sn 55; Pb 20; As 3217; Zn <NWG; Fe 50137; Ag 28

TZ 019116-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Figurine, anthropomorphic; left arm with cone preserved

Figure Reference: Fig. 1.20; 1.88

Date of Context: MB/LB/Rep

Dimensions: L 8; H 4.5

Weight: —

Material: Bronze/copper

Reference: Tall Waqqāš (Hazor) **LB IIA**: Negbi 1989, 349, Pl. CCCXL, 12. 13.



Fig. 1.88 Arm of figurine made from bronze and silver TZ 019116-001 (Source: BAI/GPIA).

TZ 019117-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Casting residue / melting drop

Figure Reference: Fig. 1.21; 1.89

Date of Context: MB/LB/Rep

Dimensions: D (max.) 1.05

Weight: 2.7 g

Material: Tin bronze. Analysis: Cu 1141626; Sn 20336; Pb 651; As 158; Zn <NWG; Fe 16850; Ag 50

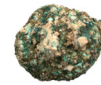


Fig. 1.89 Casting residue / melting drop TZ 019117-001 (Source: BAI/GPIA).

TZ 019122-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 1.5; B 1; H 1

Weight: —

Material: Tin bronze. Analysis: Cu 561329; Sn 9631; Pb 215; As 2317; Zn <NWG; Fe 20314; Ag 36

TZ 019123-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Shaft of an awl or a needle

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 4.1; D (max.) 0.8

Weight: 7.5 g

Material: Copper. Analysis: Cu 868365; Sn 504; Pb 149; As 2543; Zn <NWG; Fe 33635; Ag <NWG

TZ 019124-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Point of a needle; fragment

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 3.8; D (max.) 0.3

Weight: —

Material: Copper. Analysis: Cu 599232; Sn 3669; Pb 353; As 1038; Zn <NWG; Fe 10556; Ag 34

Reference: For lead isotope ratio see Schulze 2014. chart 11-2 (sample 4-17) and Fig. 5-10. 5-11

TZ 019125-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Fragment; thick plate, maybe end of an axe?

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 3.2; W 3.3; H 0.9

Weight: 29 g

Material: Copper. Analysis: Cu 695805; Sn <NWG; Pb <NWG; As 658; Zn <NWG; Fe 28393; Ag 12

TZ 019127-001

Area I; Square AT 121; Complex A 2; Context 6324

Description: Ring; object almost completely preserved; two non-fitting fragments, but from the same object

Figure Reference: Fig. 1.90

Date of Context: MB/LB/Rep

Dimensions: D (max.) 5; D opening 4

Weight: 12.7 g

Material: Iron

Reference: Megiddo tombs **LB II**: Guy – Engberg 1938, 172 fig. 176.7



Fig. 1.90 Two fragments of an iron ring TZ 019127-001 (Source: BAI/GPIA).

TZ 019128-001

Area I; Square AT 121; Complex A 2; Context 6324

Description: Fragment of an awl or needle; rods outside white (lime); inside bronze or copper

Figure Reference: —

Date of Context: MB/LB/Rep

Dimensions: L 3.2; D (max.) 0.45

Weight: —

Material: Bronze/Copper. Analysis: Cu 78; Sn 10; Pb 15; As <NWG; Zn <NWG; Fe 4258; Ag <NWG⁵²

TZ 019129-001

Area I; Square AT 123; Complex B 4; Context 6310

Description: Needle; completely preserved eyelet on the upper side

Figure Reference: Fig. 1.25; 1.91

Date of Context: MB/LB/Rep

Dimensions: L 12.3; D (max.) 0.5

Weight: 3.5 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Ḥiṣn (Beth Shean) **LB IB – LB IIA**: Yahalom-Mack 2007a, 612 Fig. 9.3; Tell el-Ajjūl (Gaza) **MB IIC-LB IA**, Petrie 1931, Pl. XVI, 10–15.



Fig. 1.91 Bronze needle or awl TZ 019129-001 (Source: BAI/GPIA).

TZ 019130-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Fragment; open earring

Figure Reference: Fig. 1.92

Date of Context: MB/LB/Rep

Dimensions: D (max.) 1.8; D (opening) 1.3

Weight: 3.3 g

Material: Bronze/copper

Reference: Megiddo tombs **MB II/LB II**: Guy – Engberg 1938, 177 fig. 178.2

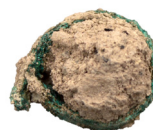


Fig. 1.92 Fragment of bronze earring TZ 019130-001 (Source: BAI/GPIA).

52 Unfortunately only the lime coat was measured, not the metal fragment.

TZ 019131-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Shaft of an awl or a needle; ragment,

Figure Reference: Fig. 1.93

Date of Context: MB/LB/Rep

Dimensions: L 7.1; D (max.) 0.25

Weight: —

Material: Bronze/copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Hiṣn (Beth Shean) **LB IB–LB IIA**: Yahalom-Mack 2007a, 612 Fig. 9.3; Tell el-Ajjūl (Gaza) **MB IIC–LB IA**, Petrie 1931, Pl. XVI, 10–15.



Fig. 1.93 Shaft of a bronze awl or needle TZ 019131-001
(Source: BAI/GPIA).

1.3.2. Catalogue of Faience, Glass and Glazed Pottery Finds (Stratum 16–15)

by K. Soennecken

1.3.2.1. Introduction

The following catalogue contains all faience, glass and glazed pottery finds. Often a concrete distinction between faience and glass could hardly be made. The difference in composition between the two is not much (both consist of quartz/silica, soda and lime, although in different proportions of the mixture). However, the difference is in the processing and especially in the firing process as glass is fully melted while faience is merely sintered and has a glazed surface. Glazed pottery, in turn, consists of a glaze applied to ceramics as a carrier material⁵³.

Particularly with regard to beads, the overwhelming majority of which no longer had their original glaze and whose original surface was often completely eroded, it is possible that some pieces described under glass are actually made of faience.

Also, the original colours of the beads could rarely be indicated due to their state of preservation.

Parallels for these faience and glass beads have been found throughout the Late Bronze Age Levant. Mostly, they are in a poor state of preservation⁵⁴.

1.3.2.2. Faience Finds

In Stratum 15 only one faience find has been listed:

TZ 013910-001

Area I; Square AO 117; Complex D; Context 4272

Description: Turquoise bead, completely preserved

Figure Reference: Fig. 1.94

Date of Context: Stratum 15/LB/Rep

Dimensions: H 0.2; D (max.) 0.3; D (opening) 0.1

Weight: —

Material: Faience

Reference: Uluburun shipwreck **LB II**; Ingram 2005, 18, Tab. 2.1.1



Fig. 1.94 Faience bead TZ 013910-001 (Source: BAI/GPIA).

1.3.2.3. Glass Finds

In Strata 16 and 15 nine glass finds were listed; among them were six beads (two barrel-shaped, one roller-shaped, one spherical and one platelet pearl/spacer bead). Glass bead TZ 018809-001 seems to be a modern intrusion—the same can be the case with TZ 019008-001.

TZ 014170-001

Area I; Square AN 117; Complex D; Context 4506

Description: Spherical bead; completely preserved

Figure Reference: Fig. 1.56; 1.95

Date of Context: LB/Rep

Colour: Black-white marbled

Dimensions: H 0.8; D (max.) 0.96; D (opening) 0.3

Weight: —



Fig. 1.95 Glass bead TZ 014170-001 (Source: BAI/GPIA).

TZ 016637-001

Area I; Square AL 118; Complex E 1; Context 5042

Description: Fragment of a bead

Figure Reference: —

Date of Context: Stratum 16; MB/LB

Colour: Turquoise

Dimensions: —

Weight: 2 g

⁵³ Moorey 1994, 189; Wartke 2002, 402 f.; Ingram 2005, 5.85.

⁵⁴ Ingram 2005, 22. 60.

TZ 016649-001

Area I; Square AH 115; Complex I; Context 5297

Description: Fragment of a roller-shaped bead

Figure Reference: —

Date of Context: LB/Rep

Colour: —

Dimensions: L 1.3; D (max.) 0.4; D (opening) 0.2

Weight: —

TZ 018809-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Oval glass bead; completely preserved; contains small bubbles; not pierced; irregular scoring lines

Figure Reference: —

Date of Context: MB/LB/Rep; modern intrusion

Colour: Pink; transparent

Dimensions: L 2.5; W 1.5; H 1.5

Weight: —

TZ 019008-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Body sherd of a vessel

Figure Reference: —

Date of Context: MB/LB/Rep; modern intrusion

Colour: Olive green-yellow; transparent

Dimensions: W 2.9; H 3.1; Th (wall) 0.2

Weight: —

TZ 019320-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Fragment; function uncertain

Figure Reference: —

Date of Context: MB/LB/Rep

Colour: Light blue

Dimensions: L 1.2; W 0.5

Weight: —

TZ 019321-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Barrel-shaped banded bead; completely preserved

Figure Reference: —

Date of Context: MB/LB/Rep

Colour: Whitish-beige

Dimensions: L 0.98; D (max.) 0.6; D (opening) 0.1

Weight: —

TZ 019324-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Barrel-shaped bead; completely preserved

Figure Reference: —

Date of Context: MB/LB/Rep

Colour: Dark blue with white thread decor

Dimensions: L 0.9; D (max.) 0.7

Weight: —

TZ 019537-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Two fragments of a platelet bead

Figure Reference: —

Date of Context: MB/LB/Rep

Colour: Turquoise

Dimensions: L 2.9; W 1.6; H 1.2

Weight: —

1.3.2.4. Glazed Pottery Finds

In Stratum 15 only one piece of glazed pottery has been listed:

TZ 016436-001

Area I; Square AM 118; Complex D; Context 4843

Description: Very small body sherd; interior not preserved, exterior pale blue

Figure Reference: —

Date of Context: LB/Rep

Dimensions: L 1.5; W 1.4; H 0.6

Weight: —

Material: Glazed pottery

1.3.3. Catalogue of Stone Finds: Strata 16–15

by H.-M. Jakubik/B. Schröder/K. Soennecken

1.3.3.1. Terms and Types

In the following documentation, more than 12,000 stone artefacts found on the Tall Zirā'a between 2001 and 2011 are categorized according to their respective fields of application:

- architecture
- household/craft
- food production
- personal items
- warfare
- cultic items
- flint flakes/tools

Furthermore, there will be the category of ecofacts, which show no visible trace of workmanship.

Classifications have been prepared for the following types⁵⁵: hinge stones, weight stones/loom weights, hammer stones, spindle whorls, rubbing stones, balance weights, hygiene cutlery, beads, game pieces, and sling stones⁵⁶.

Detailed typologies exist for the bowls, plates, mortar bowls, mortars, beakers/cups, and basins and also for the querns and lower grinding stones⁵⁷.

A particular group of Early Roman limestone vessels was typologized according to the classification by J. Cahill⁵⁸ and will not be included in the following compilation. It is presented in a separate catalogue in Volume 5 of the final publication.

The flint objects will be presented in detail by B. Schröder⁵⁹.

Every allocation was based on purely morphological criteria and mainly serves to describe an object on the macroscopic level. Unless specifically defined otherwise, an object's raw material was of no importance here.

In the following, the terms applied to the different groups of objects will be defined.

As expected, most of the stone finds belong to the categories 'Food production' and 'Household/Craft'.

The most common raw materials for the production of the stone artefacts were basalt and limestone. Furthermore, there were objects made of silica pebbles, marble, granite, sandstone, soapstone, carnelian, calcite, pumice stone, chalk and agate. A special group are the finds made of flint/silex.

Although, compared with limestone, basalt is much harder to work on, its hardness and its durability in particular made this raw material favored for the production of tools and representative or cultic objects. The porosity of its surface made basalt suitable for grinding and grating. In contrast, limestone was easier to handle and thus popular for pierced objects⁶⁰.

Category Architecture

Architectural element

Hinge stone

Hinge stones are basalt stones or limestones that have been worked either rather crudely or hardly at all. Their sizes varied substantially. The majority of hinge stones are spherical to ovoid or cuboid; quite often there are hybrid forms with both straight and rounded opposite sides. Less frequently, they are ring-shaped, and the pin had pierced at least part of the stone. Undressed stones that could only be identified as hinge stones by their pertinent trough, or those which did not conform to any regular shape in spite of having been superficially worked are correspondingly termed irregular.

Type 1 cuboid

Type 1.1 with straight angles

Type 1.2 with rounded angles

Type 1.3 with rounded and straight angles

Type 2 cubic

Type 3 spherical section

Type 4 ovoid

Type 5 ring

Type 6 irregular

55 The following classifications and definitions were established by J. Häser, H.-M. Jakubik and B. Schröder.

56 Schröder forthcoming.

57 Jakubik 2013; Jakubik 2016.

58 Cahill 1992.

59 Schröder forthcoming.

60 Jakubik 2013, 32; Jakubik 2016, 83–87; Vieweger 2019a, 58.

Lime Plaster

Mosaic

Tessera

Tile

Category Household/Craft

Axe

Basin

Only a few specimens of basins are among the finds on the Tall Zīrā'a. A rough classification based on a basin's contact area (flat base, flattened or slightly convex base, irregular base) and its plan view (rectangular, oval, circular) is possible.

Type 1 basin with flat base

Type 1A rectangular in plan view

Type 1B oval in plan view

Type 2 basin with flattened or slightly convex base

Type 2A rectangular in plan view

Type 2B oval in plan view

Type 3 basin with irregular base

Type 3A oval in plan view

Type 3B circular in plan view

Beaker

The beakers/cups are being subsumed in one separate group of vessels. In the broadest sense, they can be described as steep, deep bowls with a solid base.

Beaker/Cup

Bowl

Bowls are defined as vessels with an open top and generally regular walls that slope down towards the vessel's centre. A bowl's wall thickness is almost or completely uniform down to the vessel's base and often even to its centre.

Type 1 everted bowl with standing base

Type 1A circular or oval in plan view

Type 1A1 flattened or slightly convex base

Type 1A2 disc base

Type 1A3 flat base

Type 1A4 ring base

Type 1B rectangular in plan view

Type 2 pedestal bowl

Type 2A goblet

Type 2B chalice

Type 2C block bowl

Type 3 tripod bowl

Type 3A freestanding tripod bowl

Type 3B tripod bowl with cross-bars

Type 4 quadruped bowl

Type 5 carinated bowl

Casting mould

Cup

Hammer stone

The initial material from which hammer stones are made are small flint nodules that, due to their size, sit comfortably in the workman's hand and thus constitute a simple tool, e.g. for chopping or hewing organic matter. The abrasions caused by these activities gradually change the nodules' spherical shape on several sides. This process takes place in progressing, specific stages of wear. Moreover, different flake scars can be observed, at least some of which can be interpreted as intentional. On the basis of these characteristics and starting with their initial shape, the hammer stones are first characterized as 'spherical' with or without flake scars. Discernible flat signs of wear or fragmentations modify the initial shape into, e.g. spherical sections, ovoid variants or even ashlar-shaped or cuboid forms. In cases where the nodules have been chipped into a wedge-like shape these modifications can be interpreted as functional areas. Sometimes there is also the possibility that the chipping was carried out in order to improve the tool's handling.

Type 1 spherical

Type 1.1 regular

Type 1.2 with reduction

Type 1.3 sharpened

Type 1.3.1 sharpened with ridge

Type 1.3.2 sharpened without ridge

Type 2 spherical section

Type 2.1 hemisphere

Type 2.2 double section

Type 3 ovoid

Type 3.1 regular

Type 3.2 with reduction

Type 4 cubic

Type 5 cuboid

Type 6 trapezoid

Type 7 pestle

Type 8 irregular

Inlay

Knob

Lid

Lock/Wedge

Miniature vessel

Mug with handle

Plate

Plates have a significantly less pronounced trough than bowls. Their most obvious difference, however, is that the diameter of plates in proportion to their rim height is considerably larger. The relation of rim height to diameter is often about 1:6.

Type 1 plate with flattened or slightly convex base

Type 1A circular or oval in plan view

Type 1B rectangular in plan view

Type 2 plate with ring base

Type 3 with legs

Potter's wheel (Lower/Upper part)

Roof roller

Scraper

Spindle whorl

Due to the comparative evenness attendant to the axially symmetrical shape of a spindle whorl, these objects can be typologized on the basis of their respective profile. Simple forms with a unilateral outward bulge opposite a flat surface range from conical to convex, while those that are regularly shaped both-way along the centre perforation range from discoidal and lenticular to biconvex and biconical. The type of perforation (cylindrical, conical, or biconical) is no distinguishing criterion. The stone spindle whorls were made of limestone or alabaster, some of them also of basalt, soapstone, or some rock containing chloride.

Type 1 conical

Type 2 discoidal

Type 3 convex

Type 4 lenticular

Type 5 cylindrical

Type 6 spherical

Type 7 flat at the upper outer rim and elevation in the middle

Type 8 biconical

Stand

Stopper

Table

Vessel

Weight stone/ Loom weight

Weight stones can be distinguished from balance weights by their larger weight and size. They are primarily used for weighing down objects, for instance at a loom. As stone objects they must moreover be distinguished from the loom weights made of clay as these two groups may differ both with respect to the material they consist of and to their shape. Morphologically, the ring-shaped weight stones/loom weights are predominant; they, in turn, have to be subdivided into several subcategories of perforated objects. Unperforated objects exhibit a circumferential necking instead and can either be spool-shaped, cylindrical, discoidal, or pyramidal. At least some of the spool-shaped and the cylindrical objects may also have served as a hammer- or axe-like tool. In the same manner, functional overlapping between the smaller ring-shaped weight stones and spindle whorls cannot be ruled out.

Type 1 ring-shaped

Type 1.1 large $dm > 15$

Type 1.1.1 outline round

Type 1.1.2 outline oval

Type 1.1.3 outline triangular

Type 1.1.4 outline rectangular

Type 1.1.5 outline irregular

Type 1.2 small $dm < 15$

Type 1.2.1 outline round

Type 1.2.2 outline oval

Type 1.2.3 outline triangular

Type 1.2.4 outline rectangular

Type 1.2.5 outline irregular

Type 2 spool-shaped

Type 3 cylindrical

Type 4 discoidal with necking

Type 5 pyramidal with necking

Whetstone

Category Food Production

Lower grinding stone

Type 1 lower grinding stone with flat contact area

Type 1a lower grinding stone, oval base with evenly worked curves, no lips.

Type 1b lower grinding stone, flat contact area for secure support, varying base shapes, cross-sections, and

curvatures

- Type 1c* lower grinding stone, flat contact area for secure support, flat grinding surface, strong curvature and high outside pitch
- Type 1d* lower grinding stone, box-like shape, excellent static stability
- Type 1e* lower grinding stone, flat and angular shape, varying base shapes, optimal static stability
- Type 1f* lower grinding stone, box-like shape; similar to *Type 1d*, but shaped like a saddle grinding stone
- Type 2* lower grinding stone with curved bottom
- Type 2a* lower grinding stone, convex bottom, was lowered into the ground for adequate stability
- 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
- Type 3* lower grinding stone with unilateral rim bulge
- Type 3a* lower grinding stone, distinctive rim section (saddle grinding stones), bottom with strong curvature, was lowered into the ground for adequate stability
- Type 3b* lower grinding stone, distinctive rim section on at least one side of the grinding surface
- Type 4* lower grinding stone with circumferential rim ridge
- Type 4a* lower grinding stone, grinding surface with small rim; unlike *Type 1d*, chunky shape and stronger curvature of the side areas
- Type 4b* lower grinding stone, round shape grinding surface with circumferential, elevated rim

Mortar

In the broadest sense, mortars are vessels that have been only roughly hewn on the outside while the working surface on the inside is worked more carefully, independent of the vessel's outer contours.

- Type 1* mortar in upright size
- Type 2* mortar in flat size
- Type 3* block mortar

Mortar bowl

The category of mortar bowls comprises an intermediate form between a bowl, whose regular walls have been carefully wrought both inside and outside, and a mortar, whose inside is usually the only part that is more or less elaborately formed. In contrast to a bowl, however, a mortar bowl's walls are usually thicker and less even, they grow even thicker towards the vessel's base, and thus its inner profile is not consistent with its outer contour.

- Type 1* everted mortar bowl with standing-base
- Type 1A* circular or oval in plan view
- Type 1A1* flattened or slightly convex base
- Type 1A2* flat base
- Type 1A3* ring base
- Type 1A4* disc base
- Type 1A5* concave disc base
- Type 1B* rectangular in plan view
- Type 1B1* flattened or slightly convex base
- Type 1B2* flat base
- Type 1B3* ring base
- Type 2* upright mortar bowl with standing-base
- Type 2A* circular or oval in plan view
- Type 2A1* straight walls
- Type 2A1a* flat base
- Type 2A1b* flattened or slightly convex base
- Type 2A1c* ring base
- Type 2A2* convex walls
- Type 2A2a* flat base
- Type 2A2b* flat base with concave underside
- Type 2A2c* flattened or slightly convex base
- Type 2A2d* ring base
- Type 2B* rectangular in plan view
- Type 2B1* flat base
- Type 2B2* flattened or slightly convex base
- Type 3* pedestal mortar bowl
- Type 4* tripod mortar bowl

Type 5 *quadraped mortar bowl*

Oil press

Olynthus mill

Pompeian mill

Quern

Type 1 *quern, loaf-shaped, various shapes*

Type 1a *quern, loaf-shaped, front and rear side curvatures identical, frequently abrasions on front and rear edge*

Type 1b *quern, loaf-shaped, front and rear areas elliptical, sometimes also tapered, compact appearance*

Type 1c *quern, loaf-shaped (similar to Type 1a), front and rear side curvatures identical, section almost semicircular*

Type 1d *quern, less pronounced loaf shape, almost triangular section, steep pitch of front and rear sides, almost symmetrical*

Type 1e *quern, loaf-shaped with broad base, shape of section is between Type 1a and Type 1c*

Type 1f *quern, loaf-shaped, elongated, tapered end sections with flat closing-off*

Type 1g *quern, less pronounced loaf shape, similar to Type 1a but significantly less pronounced bulge*

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*

Type 2 *quern with different front and rear side curvatures*

Type 2a *quern, distinctively different front and rear side curvatures (high pitch/almost acute-angled), very different from loaf shape, elongated and flat design*

Type 2b *quern, different front and rear side curvatures, similar to Type 2a, acute-angled section but significantly less pronounced*

Type 3 *quern, flat and broad shape*

Type 3a *quern, flat and broad shape, frequently stress marks on both longitudinal edges*

Type 3b *quern, very flat and broad shape, similar to Type 3a but upper surface more level both lengthwise and crosswise*

Type 3c *quern, flat and broad shape, similar to Type 3b but higher arch and lower breadth*

Type 4 *quern with oval or circular base*

Type 4a *quern, oval to circular base, very high arch and chunky design*

Type 4b *quern, almost circular base, similar to Type 4a but significantly flatter arch.*

Special type quern with gripping ridge

Rotating quern

Rubbing stone

In accordance with the relatively broad definition of this type of objects, there is a wide variety of shapes. Most of the rubbing stones are made of basalt and the eponymous rubbing surfaces are usually clearly recognizable. Apart from these, limestones and pebbles also belong to this category while it must be kept in mind that the latter cannot always be clearly distinguished from ecofacts. In some cases they were nevertheless included as smooth and regularly shaped pebbles which can be used for polishing ceramics without showing any obvious signs of wear.

Against this backdrop, the typification purely on the basis of visual criteria includes both natural forms and those that have been artificially shaped, either on purpose or by abrasion. Simple and frequently occurring basic forms are either spherical/ovoid or edged and cuboid; moreover, they comprise the conical or truncated basalt tools which most likely served as pestles for mortar bowls. In addition, prism-shaped, shoe-shaped, or loaf-shaped specimens were also formed either in the course of frequent application or specifically for easy handling. The same applies to discoidal or barrel-shaped objects. The separate category "pestles" comprises a smaller number of oblong to conical stones that rest comfortably in the hand and show traces of wear so that it can be assumed that they served as pestles. A few larger (ovoid to loaf-shaped) objects that, due to their size, can hardly be used one-handed, were also categorized as rub-

bing stones provided that they were not classified as querns and yet possessed a rubbing surface.

- Type 1* *spherical*
- Type 2* *spheric section*
 - Type 2.1* *hemispherical*
 - Type 2.2* *double section*
- Type 3* *ovoid*
- Type 4* *pyramidal*
- Type 5* *conical*
 - Type 5.1* *conical outline is more or less round*
 - Type 5.2* *conical section outline is more or less round*
- Type 6* *cuboid*
- Type 7* *cubic*
- Type 8* *cylindrical*
 - Type 8.1* *roller-shaped*
 - Type 8.2* *barrel*
- Type 9* *trapezoid*
- Type 10* *prism-shaped*
 - Type 10.1* *rectangular prism*
 - Type 10.2* *oblique prism*
- Type 11* *spool-shaped*
- Type 12* *discoidal*
 - Type 12.1* *outline round*
 - Type 12.2* *outline oval*
- Type 13* *pestle*
- Type 14* *shoe-shaped*
 - Type 14.1* *wedgewise*
 - Type 14.2* *bevelled cone*
- Type 15* *loaf-shaped*
- Type 16* *triangular*

Category Personal Items

Balance weight

Balance weights are distinguished from the larger weight stones in that they are more delicate stone artifacts measuring less than 10 cm in diameter. They were used for weighing objects on a pair of scales. According to their shape, they were classified into six different types.

- Type 1* *cubic*
- Type 2* *conical*
- Type 3* *spheric section*
- Type 4* *biconical*
- Type 5* *lenticular*
- Type 6* *pyramidal*

Bead

The beads were classified according to their shape. All of these objects have been pierced for being threaded on a string. Some of them consist of a more precious material such as carnelian, agate, or chloride-containing rock while others are made of limestone or, in isolated cases, sandstone, basalt, and serpentinite. Apart from spherical, discoidal, and ring-shaped beads there are those that are drop-shaped, poppy seed-shaped, biconical, cylindrical, or barrel-shaped. They are complemented by a few isolated shapes.

- Type 1* *spherical*
- Type 2* *drop-shaped*
- Type 3* *poppy seed shaped*
- Type 4* *biconical*
- Type 5* *cylindrical*
- Type 6* *discoidal*
- Type 7* *ring-shaped*
- Type 8* *barrel-shaped*

Button

Cosmetic bowl

Cosmetic palette

Game board

Game piece

The game pieces constitute a smaller group of more delicate stone objects that have been hewn with varying degrees of meticulousness. They comprise spherical, hemispherical, ovoid, or discoidal specimens with a maximum diameter of 3 cm.

- Type 1* *spherical dm 2–3 cm*
- Type 2* *hemispherical*
- Type 3* *ovoid*
- Type 4* *discoidal*
 - Type 4.1* *round outline*
 - Type 4.2* *oval outline*
- Type 5* *conical*

Handle

Hygiene cutlery

All objects belonging to this category were made of coarse-pored pumice stone. This material is highly malleable and traces of wear or abrasion are particularly visible. As a result, these tools are very often fragmented. Their classification is similar to that of the rubbing stones although with a more limited variance of types. In some cases, the tools have been

pierced for being hung on a piece of string. One pyramidal type also has a gripping lug at its top end.

- Type 1* ovoid
- Type 2* cuboid
- Type 3* discoidal
 - Type 3.1* round
 - Type 3.2* ovoid
- Type 4* pyramidal
- Type 5* conical
- Type 6* shoe-shaped

Miniature axe
Miniature vessel
Pendant
Seal
Signet ring
Small stone ring
Stamp

Category Warfare

Ballistic stone
Knob (war chariot)
Macehead
Sling stone

Sling stones are stones that have been hewn, with a diameter ranging from approximately 3 to 6 cm. Their weight ranges from about 50 to 200 grams. The objects are usually spherical or ovoid. There are also a few irregular or fragmented objects that have been included in the category of sling stones because of their external treatment, even though their rather coarse workmanship as well as their proportions make them quite distinct from the carefully worked spherical and ovoid game pieces.

- Type 1* spherical
- Type 2* ovoid
- Type 3* irregular

Category Cultic Items

Altar
Cultic stone (Mazzebe)
Figurine - anthropomorph
Figurine - theriomorph
Incense burner
Kernos stone

Category Ecofacts

Ecofact
Iron nodule
Raw material

Category Flint: Flakes and Tools

Ad-hoc-tool
Blade
Bladelet
Borer
Burin
Chip
Chopper (flint)
Core
Cutting tool
Dagger
Drill
Harvesting knife
Knife
Large blade
Multifunctional tool
Pick
Projectile
Retouched or non-retouched flake
Scraper (flint)
Sickle blade
Tabular scraper (flint)

1.3.3.2. Catalogue of Stone Finds: Strata 16–15

Architecture

Architectural element

TZ 018285-001

Area I; Square AS 119; Complex A 5; Context 6034
Description: Rectangular in plan view; irregularly hewn; completely preserved. Architectural element?

Type: —

Figure Reference: Fig. 1.18; 1.96

Date of Context: MB/LB I/Rep

Dimensions: L 40; W 35; H 15

Weight: —

Material: Basalt



Fig. 1.96 Architectural element made from basalt TZ 018285-001 (Source: BAI/GPIA).



Fig. 1.97 Hinge stone made from limestone TZ 014263-001 (Source: BAI/GPIA).

Hinge stone

TZ 013382-001

Area I; Square AO 117; Complex D; Context 4021
Description: Hinge stone; completely preserved; circular in plan view
Type: Hinge stone type 1.3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: H 7.1; D (max.) 11.2; D (trough) 6.7; trough approx. 2.5 deep
Weight: 1187 g
Material: Basalt

TZ 014263-001

Area I; Square AN 117; Complex D; Context 4506
Description: Hinge stone with rectangular outline
Type: Hinge stone type 1.3
Figure Reference: Fig. 1.57; 1.97
Date of Context: LB I/Rep
Dimensions: L 10; W 9; H 6.4; D (trough) 6; trough approx. 2.5 deep
Weight: 873 g
Material: Limestone

TZ 014265-001

Area I; Square AM 117; Complex D; Context 4459
Description: Hinge stone; triangular in plan view; roughly hewn
Type: Hinge stone type 1.3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 19; W 18; H 7; D (trough) 8; trough 2 deep
Weight: 2100 g
Material: Limestone

TZ 014266-001

Area I; Square AM 117; Complex D; Context 4459
Description: Hinge stone, completely preserved; circular in plan view; convex upper side; bottom side flat; shallow troughs on both sides
Type: Hinge stone type 3
Figure Reference: Fig. 1.98
Date of Context: LB I/Rep
Dimensions: H 5.5; D (max.) 9.5; troughs approx. 0.5 and 0.8 deep
Weight: 886 g
Material: Basalt



Fig. 1.98 Hinge stone made from basalt TZ 014266-001
(Source: BAI/GPIA).

TZ 014330-001

Area I; Square AN 117; Complex D; Context 4568
Description: Fragment of a hinge stone; irregular shaped; topside flat with conical trough

Type: Hinge stone type 4

Figure Reference: Fig. 1.99

Date of Context: LB I/Rep

Dimensions: L 17.5; W 25.5; H 7; D (trough) 8; trough 2.8 deep

Weight: 4900 g

Material: Limestone



Fig. 1.99 Hinge stone made from limestone TZ 014330-001
(Source: BAI/GPIA).

TZ 014332-001

Area I; Square AN 117; Complex D; Context 4568

Description: Fragment of a hinge stone; oval in plan view; topside flat with conical trough; roughly worked

Type: Hinge stone type 1.3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 18; W 22.5; H 8.1; D (trough) 7; trough 2 deep

Weight: 3800 g

Material: Limestone

TZ 014336-001

Area I; Square AO 117; Complex D; Context 4575

Description: Fragment of a hinge stone; roughly worked

Type: Hinge stone type 1.3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.5; W 9.9; H 3.4; trough approx. 1 deep

Weight: 389 g

Material: Limestone

TZ 014348-001

Area I; Square AO 117; Complex D; Context 4585

Description: Two fitting fragments of a hinge stone; oval in plan view; in the middle a conical trough (diameter 9 cm, depth 3.5 cm) with a 1 cm high pin in the middle; roughly worked

Type: Hinge stone type 1.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 29; W 21; H 12.5

Weight: 5500 and 3300 g

Material: Limestone

TZ 014349-001

Area I; Square AO 117; Complex D; Context 4575
Description: Two fitting fragments of a completely preserved hinge stone; in plan view approx. rectangular; flat upper side; bottom side convex; in the middle a cone-shaped hollow; roughly worked

Type: Hinge stone type 1.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 33; W 21; H 8.5; D (trough) 9; trough 2.5 deep

Weight: 5500 and 3500 g

Material: Limestone

TZ 015616-001

Area I; Square AM 118; Complex D; Context 4843
Description: Hinge stone with irregular shape; completely preserved; round traces of abrasion of a hinge

Type: —

Figure Reference: Fig. 1.64; 1.100

Date of Context: LB I/Rep

Dimensions: L 28; W 18; H 6.5; D (trough) 9.5; trough 4.5 deep

Weight: —

Material: Limestone



Fig. 1.100 Hinge stone made from limestone TZ 015616-001 (Source: BAI/GPIA).

TZ 015658-001

Area I; Square AN 116; Complex E; Context 4659
Description: Fragment of a hinge stone with cone-shaped trough

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 18; D (max.) 29; D (opening) 18; D (trough) 18

Weight: —

Material: Limestone

TZ 015676-001

Area I; Square AL 118; Complex E 2/E 4; Context 5034

Description: Fragment of a small hinge stone; outer edge roughly worked; inside with an 8 cm deep, smoothed trough

Type: Hinge stone type 1.1

Figure Reference: Fig. 1.101

Date of Context: MB/LB

Dimensions: L 12.7; W 15; H 13

Weight: 1956 g

Material: Sandstone



Fig. 1.101 Fragment of a hinge stone made from sandstone TZ 015676-001 (Source: BAI/GPIA).

Tessera

TZ 013387-001

Area I; Square AM 117; Complex D/E; Context 3837

Description: White tessera

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 2.5; W 2.5; H 2.1

Weight: 32 g

Material: Limestone

Tile

TZ 008681-001

Area I; Square AM 116; Complex E; Context 2073

Description: Fragment of a tile

Type: —

Figure Reference: —

Date of Context: LB I/Rep
Dimensions: L 2.9; W 2.4; H 0.9
Weight: 14 g
Material: Marble

TZ 013209-001

Area I; Square AP 118; Complex D; Context 4138
Description: Fragment of a tile
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.8; W 11.3; H 3
Weight: 603 g
Material: Limestone

TZ 013424-001

Area I; Square AM 117; Complex E 1; Context 3910
Description: Fragment of a tile/intarsia; red colored upper side; round segment
Type: —
Figure Reference: —
Date of Context: MB/LB
Dimensions: L 20; W 7; H 4
Weight: 461 g
Material: Sandstone

TZ 013437-001

Area I; Square AO 118; Complex D; Context 4119
Description: Fragment of a tile; whitish-grey marble; surface carefully smoothed or corrugated
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 16.5; W 13; H 1.5
Weight: 575 g
Material: Marble

TZ 014362-001

Area I; Square AN 117; Complex D; Context 4568
Description: Fragment of a tile; remnants of mortar at the backside
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.6; W 9.9; H 2.5
Weight: 528 g
Material: Marble

TZ 014363-001

Area I; Square AN 117; Complex D; Context 4568

Description: Fragment of a tile
Type: —

Figure Reference: —

Date of Context: LB I/Rep
Dimensions: L 12; W 9.7; H 2.3
Weight: 570 g
Material: Marble

TZ 019056-001

Area I; Square AR 122; Complex C 2; Context 6438
Description: Fragment of a tile without original rim; smooth upper side, bottom side irregular
Type: —
Figure Reference: Fig. 1.32; 1.102
Date of Context: MB/LB I/Rep
Dimensions: L 9; W 7; H 2.6
Weight: 296 g
Material: Marble



Fig. 1.102 Fragment of a marble tile TZ 019056-001 (Source: BAI/GPIA).

TZ 019081-001

Area I; Square AR 123; Complex C 3; Context 6381
Description: Fragment of a tile without original rim; top- and underside evenly flat
Type: —
Figure Reference: Fig. 1.33; 1.103
Date of Context: MB/LB I/Rep
Dimensions: L 10; W 8.9; H 4.3
Weight: 717 g
Material: Marble



Fig. 1.103 Fragment of a marble tile TZ 019081-001 (Source: BAI/GPIA).

Household/Craft

Bowl

TZ 012853-001

Area I; Square AP 118; Complex D; Context 3900
Description: Rim to base of a freestanding tripod bowl; sloping wall; circular in plan view; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: Fig. 1.104

Date of Context: LB I/Rep

Dimensions: L 11.2; W 9.5; H 8.8; D (max.) 23

Weight: 502 g

Material: Basalt



Fig. 1.104 Fragment of a basalt bowl TZ 012853-001 (Source: BAI/GPIA).

TZ 013324-001

Area I; Square AO 117; Complex D; Context 4111

Description: Fragment of a bowl with ring base; circular/oval in plan view

Type: Bowl type 1A4

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 10.4; W 6.9; H 4

Weight: 318 g

Material: Basalt

TZ 013330-001

Area I; Square AQ 117; Complex E; Context 4172

Description: Bowl; fragment; sloping wall; circular/oval in plan view; marks of one leg/foot preserved

Type: Bowl type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 6.4; W 4.8; H 3.9

Weight: 155 g

Material: Basalt

TZ 013537-001

Area I; Square AN 117; Complex D; Context 4346

Description: Rim of a bowl

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.3; W 5.5; H 3.2

Weight: 217 g

Material: Basalt

TZ 014252-001

Area I; Square AM 117; Complex D; Context 4518

Description: Bowl; fragment of base; slightly sloping walls; flat base

Type: Bowl type 1A1

Figure Reference: Fig. 1.105

Date of Context: LB I/Rep

Dimensions: L 17.5; W 13.5 H 8; D (base) 22; Th (wall) 2.3

Weight: 1630 g

Material: Basalt



Fig. 1.105 Base fragment of a basalt bowl TZ 014252-001
(Source: BAI/GPIA).



Fig. 1.106 Wall fragment of a basalt bowl TZ 014259-001
(Source: BAI/GPIA).

TZ 014257-001

Area I; Square AM 117; Complex D; Context 4518

Description: Fragment of a bowl; semi-finished; all sides only roughly worked

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11.2; W 12.6; H 4.4

Weight: 886 g

Material: Basalt

TZ 014258-001

Area I; Square AM 117; Complex D; Context 4518

Description: Possibly foot of a bowl in plan view acute-angled at one side; round at the other side

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 6; W 7; H 5

Weight: 240 g

Material: Basalt

TZ 014259-001

Area I; Square AM 117; Complex D; Context 4518

Description: Wall fragment of a bowl; shape not determinable; only roughly worked, burn marks

Type: —

Figure Reference: Fig. 1.106

Date of Context: LB I/Rep

Dimensions: L 7.5; W 9.2; H 2.2

Weight: 320 g

Material: Basalt

TZ 015393-001

Area I; Square AH 115; Complex I; Context 5298

Description: Bowl; completely preserved; sloping wall; circular in plan view; flat base

Type: Bowl type 1A3

Figure Reference: Fig. 1.107

Date of Context: LB I/Rep

Dimensions: H 4.7; D (max.) 4.6; D (opening) 4.6

Weight: —

Material: Limestone

Reference: Sparks 2007, 128 Fig. 48, 2



Fig. 1.107 Small limestone bowl TZ 015393-001 (Source: BAI/GPIA).

Hammer stone

TZ 014342-001

Area I; Square AO 117; Complex D; Context 4575

Description: Hammer stone, secondary use as weight stone or possibly arrow shaft straightener

Type: Hammer stone type 4

Figure Reference: Fig. 1.67; 1.108

Date of Context: LB I/Rep

Dimensions: L 8.1; W 7.8; H 6.5

Weight: 703 g

Material: Basalt



Fig. 1.108 Hammer stone made from basalt TZ 014342-001
(Source: BAI/GPIA).

TZ 014357-001

Area I; Square AN 117; Complex D; Context 4577

Description: Ovoid hammer stone

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 6; W 3.3; H 3.1

Weight: 327 g

Material: Flint/silex

TZ 014358-001

Area I; Square AN 117; Complex D; Context 4568

Description: Fragment of a hammer stone; oval in plan view

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11.4; W 11.3; H 5

Weight: 685 g

Material: Flint/silex

TZ 014359-001

Area I; Square AN 116; Complex H; Context 4569

Description: Ovoid hammer stone

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.4; W 6.4; H 5.2

Weight: 357 g

Material: Flint/silex

TZ 014360-001

Area I; Square AN 117; Complex D; Context 4577

Description: Spherical hammer stone; completely preserved

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 6.9

Weight: 415 g

Material: Flint/silex

TZ 014410-001

Area I; Square AP 117; Complex D; Context 4128

Description: Spherical hammer stone; slightly flattened on several sides

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 6.8

Weight: 577 g
Material: Flint/silex

TZ 014411-001

Area I; Square AO 117; Complex D; Context 4111
Description: Hammer stone; ovoid to cuboid nodule
Type: Hammer stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.6; W 7; H 6.3
Weight: 610 g
Material: Flint/silex

TZ 014415-001

Area I; Square AP 118; Complex D; Context 4126
Description: Hammer stone; cuboid; completely preserved
Type: Hammer stone type 4
Figure Reference: Fig. 1.71; 1.109
Date of Context: LB I/Rep
Dimensions: L 7.2; W 6.6; H 5
Weight: 416 g
Material: Flint/silex



Fig. 1.109 Hammer stone made from flint/silex TZ 014415-001
 (Source: BAI/GPIA).

TZ 014417-001

Area I; Square AP 117; Complex D; Context 4435
Description: Hammer stone; complete; spherical; flattened on several sides
Type: Hammer stone type 1.1
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: D (max.) 6.8
Weight: 360 g
Material: Flint/silex

TZ 016036-001

Area I; Square AL 118; Complex D; Context 5526
Description: Fragment of a hammer stone; one half preserved; flat tee at the bottom
Type: Hammer stone type 2.1
Figure Reference: Fig. 1.110
Date of Context: LB I/Rep
Dimensions: H 4.1; D (max.) 7.9
Weight: 286 g
Material: Flint/silex



Fig. 1.110 Hammer stone made from flint/silex TZ 016036-001
 (Source: BAI/GPIA).

TZ 016059-001

Area I; Square AL 118; Complex D; Context 5526

Description: Fragment of a spherical hammer stone

Type: Hammer stone type 2.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.4; W 4; H 4.6

Weight: —

Material: Flint/silex

TZ 016067-001

Area I; Square AL 118; Complex E 4; Context 4983

Description: Spherical hammer stone; one side flat and with impact points

Type: Hammer stone type 1.2

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 8.2; W 7.5; H 6

Weight: 539 g

Material: Flint/silex

TZ 018990-001

Area I; Square AS 119; Complex A 5; Context 6034

Description: Hammer stone; completely preserved; ovoid; smooth; artificial or ecofact; banded: gray, light brown, dark brown

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 9.2; W 6.9; H 5.5

Weight: —

Material: Flint/silex

TZ 018991-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Hammer stone; completely preserved; irregular shape; relatively flat at the bottom side, with possible impact marks; artificial or ecofact

Type: Hammer stone type 8

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 12; W 7.5; H 7.3

Weight: 812 g

Material: Flint/silex

TZ 017553-001

Area I; Square AM 117; Complex D; Context 5766

Description: Hammer stone; fragment; about a quarter of a larger silex tuber; on one side knocked off, on another side rather rounded by several cuts (here also possibly impact marks)

Type: —

Figure Reference: Fig. 1.111

Date of Context: LB I/Rep

Dimensions: D (max.) 11.1

Weight: 1117 g

Material: Flint/silex



Fig. 1.111 Fragment of a hammer stone made from flint/silex TZ 017553-001 (Source: BAI/GPIA).

TZ 019022-001

Area I; Square AT 119; Complex A 1; Context 6388

Description: Hammer stone; completely preserved; silex-tuber; flattened on several sides

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: D (max.) 6.8

Weight: —

Material: Flint/silex

TZ 019289-001

Area I; Square AS 120; Complex A 3; Context 6482

Description: Hammer stone; completely preserved; cuboid; sides slightly straightened

Type: Hammer stone type 4

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 5.3

Weight: —

Material: Flint/silex

Lid**TZ 013444-001**

Area I; Square AO 118; Complex D; Context 4119

Description: Lid? Intarsia? Oval in plan view; very flat

Type: —

Figure Reference: Fig. 1.112

Date of Context: LB I/Rep

Dimensions: L 1.7; W 1.5; H 0.18

Weight: 0.9 g

Material: Limestone

Reference: Lachish LB IIIA/B: Sass 2004a, 1454, fig. 23.2



Fig. 1.112 Lid (?) made from limestone TZ 013444-001 (Source: BAI/GPIA).

TZ 017877-001

Area I; Square AN 118; Complex D; Context 5945

Description: Lid or game piece; round outline; flat

Type: Game piece type 4.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 1.4; D (max.) 4.2

Weight: 39 g

Material: Basalt

TZ 019052-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344

Description: Fragment; secondary used as lid; oval in plan view; handle on the upper side

Type: —

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 9.9; W 8.1; H 4.8

Weight: 375 g

Material: Basalt

TZ 019092-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Fragment of a lid with slightly oval cross-section

Type: —

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 6.4; W 4.7; H 1.3

Weight: 68 g

Material: Quartz stone / marble

TZ 019097-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Fragment of a lid; circular in plan view; the upper side with an elevation about 0.5 cm from the edge; bottom side flat

Type: —

Figure Reference: Fig. 1.113

Date of Context: MB/LB I/Rep

Dimensions: H 0.6; D (max.) 5

Weight: 3.3 g

Material: Alabaster



Fig. 1.113 Fragment of a lid made from alabaster TZ 019097-001 (Source: BAI/GPIA).

Lock/Wedge**TZ 015422-001**

Area I; Square AI 116; Complex I; Context 4931

Description: Tool, possibly lock or wedge; rectangular in plan view; edges well rounded; tapering to a longitudinal side; oval on the other side

Type: —

Figure Reference: Fig. 1.86; 1.114

Date of Context: LB I/Rep

Dimensions: L 6.8; W 1.7; H 1.9

Weight: —

Material: Limestone



Fig. 1.114 Lock or wedge (?) made from limestone TZ 015422-001 (Source: BAI/GPIA).

Roof roller

TZ 015365-001

Area I; Square AL 118; Complex E 3/E 4; Context 4982

Description: Roof roller, completely preserved

Type: —

Figure Reference: Fig. 1.42; 1.115

Date of Context: MB/LB I

Dimensions: L 41; W 25; H 13

Weight: —

Material: Limestone

Reference: Tall Waqqās (Hazor) **IA**: Yadin et al 1960, Plate XX.4; **IA IIC**: Ebeling 2012, 554 f., fig. 11.8.7



Fig. 1.115 Roof roller made from limestone TZ 015365-001
(Source: BAI/GPIA).

Spindle whorl

TZ 013336-001

Area I; Square AP 117; Complex D; Context 4148

Description: Discoidal spindle whorl; completely preserved; biconically pierced; flaking due to heat

Type: Spindle whorl type 2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 2.4; D (max.) 4.2; D (opening) 1.2

Weight: 46 g

Material: Limestone

TZ 013432-001

Area I; Square AN 118; Complex D; Context 3865

Description: Spindle whorl; convex; completely preserved; cylindrically pierced; on the flat side notches starting from the perforation

Type: Spindle whorl type 3

Figure Reference: Fig. 1.59; 1.116

Date of Context: LB I/Rep

Dimensions: H 1.1; D (max.) 2.6; D (opening) 0.4

Weight: 12.3 g

Material: Basalt



Fig. 1.116 Spindle whorl made from basalt TZ 013432-001
(Source: BAI/GPIA).

TZ 014286-001

Area I; Square AN 117; Complex D; Context 4413

Description: Fragment of a discoidal spindle whorl; biconically pierced; flat notches on both sides starting from the perforation

Type: Spindle whorl type 2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 1.9; max. D (max.) 6; D (opening) 0.7

Weight: 48.9 g

Material: Limestone

TZ 014364-001

Area I; Square AN 117; Complex D; Context 4570

Description: Two fitting fragments of a discoidal spindle whorl; two drillings visible on the bottom side: one drilled through; the other one not finished; bottom side smooth, on the upper side slightly rough

Type: Spindle whorl type 2

Figure Reference: Fig. 1.117

Date of Context: LB I/Rep

Dimensions: H 2.2; D (max.) 8.3; D (opening) 0.7

Weight: 134 g

Material: Limestone



Fig. 1.117 Spindle whorl made from limestone TZ 014364-001
(Source: BAI/GPIA).

TZ 014365-001

Area I; Square AN 117; Complex D; Context 4565

Description: Discoidal spindle whorl; biconically pierced; circular in plan view; the upper side slightly convex; bottom side flat

Type: Spindle whorl type 2

Figure Reference: Fig. 1.58; 1.118

Date of Context: LB I/Rep

Dimensions: H 2; D (max.) 6.5; D (opening) 0.9

Weight: 90.5 g

Material: Limestone



Fig. 1.118 Spindle whorl made from limestone TZ 014365-001
(Source: BAI/GPIA).

TZ 014367-001

Area I; Square AN 117; Complex D; Context 4568

Description: Fragment of a spherical spindle whorl; biconically pierced

Type: Spindle whorl type 6

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 2.1; D (max.) 3.1; D (opening) 0.7

Weight: 12.2 g

Material: Limestone

TZ 014368-001

Area I; Square AO 117; Complex D; Context 4575

Description: Spindle whorl; biconically pierced

Type: Spindle whorl type 8

Figure Reference: Fig. 1.66; 1.119

Date of Context: LB I/Rep

Dimensions: H 1.8; D (max.) 3.3; D (opening) 0.9

Weight: 17.3 g

Material: Limestone



Fig. 1.119 Spindle whorl made from limestone TZ 014368-001
(Source: BAI/GPIA).

TZ 015436-001

Area I; Square AM 115; Complex D; Context 4848

Description: Discoidal spindle whorl

Type: —

Figure Reference: Fig. 1.61; 1.120

Date of Context: LB I/Rep

Dimensions: L 2.7; H 0.7; D (opening) 0.8

Weight: —

Material: Basalt



Fig. 1.120 Discoidal spindle whorl made from basalt TZ 015436-001 (Source: BAI/GPIA).

TZ 018981-001

Area I; Square AQ 122; Complex D; Context 6077

Description: Fragment of a discoidal spindle whorl; biconically pierced; concentric circles incised on both sides; traces of use or manufacture

Type: Spindle whorl type 2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 1.4; D (max.) 4.3; D (opening) 0.36

Weight: 15.6 g

Material: Limestone

TZ 019093-001

Area I; Square AT 121; Complex A 2; Context 6324

Description: Lenticular spindle whorl; biconically pierced; carefully smoothed; completely preserved

Type: Spindle whorl type 4

Figure Reference: Fig. 1.12; 1.121
Date of Context: MB/LB I/Rep
Dimensions: H 1.1; D (max.) 3.6; D (opening) 0.7
Weight: 18.4 g
Material: Limestone



Fig. 1.121 Lenticular spindle whorl made from limestone TZ 019093-001 (Source: BAI/GPIA).

TZ 019098-001

Area I; Square AO 116; Complex H; Context 6413
Description: Fragment of a spherical spindle whorl; cylindrical and oblique pierced
Type: Spindle whorl type 6
Figure Reference: Fig. 1.122
Date of Context: LB I/Rep
Dimensions: H 1.9; D (max.) 4.6; D (opening) 0.8
Weight: 605 g
Material: Limestone



Fig. 1.122 Fragment of a spindle whorl made from limestone TZ 019098-001 (Source: BAI/GPIA).

TZ 019099-001

Area I; Square AO 116; Complex H; Context 6428
Description: Lenticular spindle whorl; biconically pierced; completely preserved
Type: Spindle whorl type 4
Figure Reference: Fig. 1.123
Date of Context: LB I/Rep
Dimensions: H 1.6; D (max.) 4.4; D (opening) 1
Weight: 26.2 g
Material: Limestone



Fig. 1.123 Lenticular spindle whorl made from limestone TZ 019099-001 (Source: BAI/GPIA).

Weight stone/Loom weight

TZ 009155-001

Area I; Square AN 116; Complex G; Context 2168
Description: Fragment of an ovoid weight stone
Type: Weight stone/Loom weight type 1.2.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: H 4.8; D (max.) 12.3; D (opening) 3.3
Weight: 633 g
Material: Basalt

TZ 014284-001

Area I; Square AN 117; Complex D; Context 4399
Description: Ring-shaped weight stone; completely preserved
Type: Weight stone/Loom weight type 1.2.2
Figure Reference: Fig. 1.124
Date of Context: LB I/Rep
Dimensions: H 4.5; D (max.) 12; D (opening) 2.2
Weight: —
Material: Basalt



Fig. 1.124 Ring-shaped weight stone made from basalt TZ 014284-001 (Source: BAI/GPIA).

TZ 014331-001

Area I; Square AN 117; Complex D; Context 4568

Description: Weight stone; completely preserved; rectangular in plan view; rounded corners; in the middle conically pierced from two sides; topside convex; underside flat, but not completely

Type: Weight stone/Loom weight type 1.2.4

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 14.7; W 12.1; H 5.2; D (opening) 3

Weight: 1321 g

Material: Basalt

TZ 014337-001

Area I; Square AO 117; Complex D; Context 4585

Description: Fragment of a ring-shaped weight stone; oval in plan view; upper and bottom side slightly convex

Type: Weight stone/Loom weight type 1.2.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 10; W 5.8; H 3.6

Weight: 291 g

Material: Basalt

TZ 015395-001

Area I; Square AL 118; Complex E 4; Context 4983

Description: Fragment of ring-shaped weight stone; biconically perforated

Type: —

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 7.6; W 4.1; H 2

Weight: —

Material: Limestone

TZ 015572-001

Area I; Square AN 116; Complex H; Context 5219

Description: Ring-shaped weight stone; completely preserved; irregular; conical from two sides, acentrally pierced

Type: Weight stone/Loom weight type 1.2.5

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 15; W 13.2; H 3.6; D (opening) 2.8

Weight: 911 g

Material: Basalt

TZ 015654-001

Area I; Square AM 116; Complex D; Context 4782

Description: Ring-shaped weight stone; completely

preserved; pierced conically from two sides in the middle

Type: Weight stone/Loom weight type 1.1.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 6; D (max.) 17

Weight: 2500 g

Material: Basalt

TZ 015660-001

Area I; Square AL 118; Complex E 3; Context 5276

Description: Ring-shaped weight stone; completely preserved; oval in plan view; biconically pierced

Type: Weight stone/Loom weight type 1.2.2

Figure Reference: Fig. 1.125

Date of Context: MB/LB I

Dimensions: H 3.6; D (max.) 12.5; D (opening) 1.5

Weight: 750 g

Material: Limestone



Fig. 1.125 Ring-shaped weight stone made from limestone TZ 015660-001 (Source: BAI/GPIA).

TZ 015682-001

Area I; Square AM 115; Complex D; Context 4848

Description: Fragment of ring-shaped weight stone; conically pierced from two sides; carefully smoothed

Type: Weight stone/Loom weight type 1.2.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 4.7; D (max.) 9.6; D (opening) 1.1

Weight: 465 g

Material: Basalt

TZ 015782-001

Area I; Square AM 115; Complex D; Context 4848

Description: Weight stone; completely preserved; rectangular in plan view; corners rounded off; one

side slightly beveled; pierced conically from two sides

Type: Weight stone/Loom weight type 1.2.4

Figure Reference: Fig. 1.62; 1.126

Date of Context: LB I/Rep

Dimensions: L 15; W 15; H 5.5; D (opening) 3.4

Weight: 1878 g

Material: Basalt



Fig. 1.126 Weight stone/loom weight made from basalt TZ 015782-001 (Source: BAI/GPIA).

TZ 015852-001

Area I; Square AM 116; Complex D; Context 4782
Description: Fragment of weight stone; irregularly shaped; approx. rectangular; pierced conically and centrally from two sides; original form not determinable

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.5; W 7.6; H 2.1

Weight: 252 g

Material: Basalt

TZ 015946-001

Area I; Square AF 114; Complex I; Context 4709
Description: Fragment of ring-shaped weight stone; roughly worked; pierced conically from two sides
Type: Weight stone/Loom weight type 1.2.1

Figure Reference: Fig. 1.127

Date of Context: LB I/Rep

Dimensions: H 5.8; D (max.) 14.5

Weight: 668 g

Material: Limestone



Fig. 1.127 Fragment of weight stone/loom weight made from limestone TZ 015946-001 (Source: BAI/GPIA).

TZ 015981-001

Area I; Square AN 116; Complex D; Context 5062

Description: Fragment of weight stone; rectangular in plan view; corners rounded off; pierced in the middle from two sides in a conical shape; just one half preserved

Type: Weight stone/Loom weight type 1.1.4

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 16; W 8.4; H 6

Weight: 1090 g

Material: Limestone

TZ 019033-001

Area I; Square AO 116; Complex H; Context 6428

Description: Small fragment of weight stone

Type: Weight stone/Loom weight type 1.2.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 2.6; D (max.) 4.9; D (opening) 2

Weight: 38 g

Material: Limestone

TZ 019036-001

Area I; Square AO 116; Complex H; Context 6428

Description: Fragment of weight stone; oval in plan view; upper and bottom sides convex

Type: Weight stone/Loom weight type 1.1.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 12.1; W 11.7; H 6.3

Weight: 1200 g

Material: Basalt

TZ 019053-001

Area I; Square AT 120; Complex A 1; Context 6391

Description: Weight stone; completely preserved;

oval in plan view; upper and bottom side convex; biconically pierced

Type: Special form

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 18; W 10.8; H 5.6

Weight: 1374 g

Material: Basalt

TZ 019055-001

Area I; Square AT 120; Complex A 1; Context 6455

Description: Weight stone; completely preserved; biconically perforated; oval in plan view; roughly worked on the top; bottom side flat with traces of friction

Type: Weight stone/Loom weight type 1.2.2

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 15; W 10.5; H 6.7; D (opening) 3.1

Weight: 1660 g

Material: Basalt

TZ 019108-001

Area I; Square AT 122; Complex B 2/B 3/B 6; Context 6321

Description: Disc-shaped weight stone; semi-finished; circular in plan view; biconical troughs with impact marks on both sides; no perforation

Type: Weight stone/Loom weight type 1.2.1

Figure Reference: Fig. 1.23; 1.128

Date of Context: MB/LB I/Rep

Dimensions: H 3.6; D (max.) 12.7; D (trough) 5

Weight: 531 g

Material: Basalt



Fig. 1.128 Fragment of a disc-shaped weight stone made from basalt TZ 019108-001 (Source: BAI/GPIA).

Whetstone

TZ 014234-001

Area I; Square AN 117; Complex D; Context 4413

Description: Oval whetstone or possibly arrow shaft straightener; completely preserved; there is a wide well smoothed notch on one side

Type: —

Figure Reference: Fig. 1.55; 1.129

Date of Context: LB I/Rep

Dimensions: L 6.8; W 4.7; H 1.9

Weight: 104 g

Material: Basalt



Fig. 1.129 Oval whetstone or arrow shaft straightener made from basalt TZ 014234-001 (Source: BAI/GPIA).

Food Production

Lower grinding stone

TZ 013506-001

Area I; Square AL 118; Complex E 3/E 4; Context 4982

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved and roughly worked; upper side with burn marks

Type: Lower grinding stone type 2a

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 14.6; W 8.2; H 4.8

Weight: 878 g

Material: Basalt

TZ 014096-001

Area I; Square AN 117; Complex D; Context 4336
Description: Lower grinding stone; fragment; rectangular in plan view; upper side slightly concave with wide edge at one side; bottom side convex and only roughly worked

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 33.5; W 31; H 10

Weight: 12900 g

Material: Basalt



Fig. 1.130 b Lower grinding stone made from basalt TZ 014100-001 (Source: BAI/GPIA).

TZ 014099-001

Area I; Square AM 117; Complex D; Context 4459
Description: Lower grinding stone; fragment; oval in plan view; edge at one side; exterior side roughly worked

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 41; W 20; H 19

Weight: 15400 g

Material: Basalt

TZ 014101-001

Area I; Square AN 117; Complex D; Context 4336
Description: Lower grinding stone; fragment; oval in plan view; bottom side flat

Type: Lower grinding stone type 1f

Figure Reference: Fig. 1.131

Date of Context: LB I/Rep

Dimensions: L 29.6; W 14.5; H 13.5

Weight: 23800 g

Material: Basalt

TZ 014100-001

Area I; Square AQ 117; Complex E; Context 4172
Description: Lower grinding stone; fragment; rectangular in plan view; upper side with edge at one side; rounded corners

Type: Lower grinding stone type 3b

Figure Reference: Fig. 1.130

Date of Context: LB I/Rep

Dimensions: L 46; W 43; H 13.5

Weight: 33800 g

Material: Basalt



Fig. 1.131 Lower grinding stone made from basalt TZ 014101-001 (Source: BAI/GPIA).



Fig. 1.130 a Lower grinding stone made from basalt TZ 014100-001 (Source: BAI/GPIA).

TZ 014197-001

Area I; Square AN 117; Complex D; Context 4506

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved; upper side flat

Type: Lower grinding stone type 2a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 18.6; W 19.5; H 5.5

Weight: 2615 g

Material: Basalt

TZ 014222-001

Area I; Square AN 117; Complex D; Context 4413

Description: Lower grinding stone; fragment; oval or nearly rectangular in plan view; bottom side flattened/slightly convex

Type: Lower grinding stone type 1b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9; W 11; H 3.8

Weight: 563 g

Material: Basalt

TZ 014227-001

Area I; Square AN 117; Complex D; Context 4413

Description: Lower grinding stone; fragment; bottom side flattened/slightly convex and roughly worked; upper side slightly concave; few burn marks

Type: Lower grinding stone type 1b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 18; W 15; H 6.5

Weight: 2365 g

Material: Basalt

TZ 014249-001

Area I; Square AO 117; Complex D; Context 4139

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved and only roughly worked; upper side flat with burn marks

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 16; W 15; H 7.5

Weight: 1915 g

Material: Basalt

TZ 014250-001

Area I; Square AM 116; Complex D; Context 3870

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved and only roughly

worked; upper side flat

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 22.7; W 29; H 10

Weight: 6700 g

Material: Basalt

TZ 014269-001

Area I; Square AO 117; Complex D; Context 4139

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved and only roughly worked; upper side flat

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 16.5; W 13; H 6.2

Weight: 2327 g

Material: Basalt

TZ 014273-001

Area I; Square AP 117; Complex D; Context 4148

Description: Lower grinding stone; fragment; oval in plan view; bottom side curved and only roughly worked; upper side flat and smooth

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 30; W 20; H 9

Weight: 5400 g

Material: Basalt

TZ 014293-001

Area I; Square AN 117; Complex D; Context 4413

Description: Lower grinding stone; fragment; oval in plan view; loaf-shaped; bottom side flat; upper side convex

Type: Lower grinding stone type 1b

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 19.5; W 29.5; H 13

Weight: 10300 g

Material: Basalt

TZ 014294-001

Area I; Square AM 117; Complex D; Context 4461

Description: Lower grinding stone; fragment; bottom side flat

Type: Lower grinding stone type 1c

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 17; W 19.5; H 8.2

Weight: 2540 g

Material: Basalt

TZ 014325-001

Area I; Square AN 115; Complex H; Context 4474

Description: Lower grinding stone; fragment; rectangular in plan view; rounded corners, upper side flat; bottom side flattened/slightly convex and roughly worked

Type: Lower grinding stone type 1d

Figure Reference: Fig. 1.132

Date of Context: LB I/Rep

Dimensions: L 51; W 30; H 15.8

Weight: 44600 g

Material: Basalt

Reference: Tell Abū al-Kharaz: Fischer 2006b, 161 Fig. 185, 3



Fig. 1.132 Lower grinding stone made from basalt TZ 014325-001 (Source: BAI/GPIA).

TZ 014350-001

Area I; Square AN 117; Complex D; Context 4568

Description: Lower grinding stone; fragment; oval in plan view; rounded corners, upper side flat; bottom side flattened/slightly convex and uneven

Type: Lower grinding stone type 1d

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 17.5; W 25; H 13

Weight: 5700 g

Material: Basalt

TZ 014355-001

Area I; Square AO 117; Complex D; Context 4575

Description: Lower grinding stone; fragment; oval in plan view; upper side concave with edge at one side; bottom side convex

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 37; W 30; H 14

Weight: 14100 g

Material: Basalt

TZ 015789-001

Area I; Square AN 116; Complex D; Context 5062

Description: Lower grinding stone; fragment; upper side flat with edge at one side; bottom side convex and burnished; solid support

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 14.3; W 22.6; H 5.1

Weight: 3039 g

Material: Basalt

TZ 015996-001

Area I; Square AL 118; Complex E 3/E 4; Context 4982

Description: Lower grinding stone; fragment; oval in plan view; concave upper side; 8 cm wide edge at the preserved narrow side; bottom side convex

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB I

Dimensions: L 35.8; W 30; H 12

Weight: 32000 g

Material: Basalt

TZ 018001-001

Area I; Square AT 121; Complex A 4; Context 5932

Description: Lower grinding stone; fragment; bottom side convex

Type: Lower grinding stone type 2a

Figure Reference: Fig. 1.133

Date of Context: LB I/Rep/LB II

Dimensions: L 40; W 36; H 8

Weight: —

Material: Basalt



Fig. 1.133 Lower grinding stone made from basalt TZ 018001-001 (Source: BAI/GPIA).

TZ 018910-001

Area I; Square AT 123; Complex B 9; Context 6137
Description: Lower grinding stone; fragment; upper and bottom side flat
Type: Lower grinding stone type 1b
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 13; W 10; H 5.8
Weight: 845 g
Material: Basalt

TZ 018958-001

Area I; Square AR 122; Complex B 8; Context 6078
Description: Lower grinding stone; fragment; oval in plan view; upper side flat; bottom side convex; burn marks
Type: Lower grinding stone type 3a
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 18; W 13; H 9
Weight: 3864 g
Material: Basalt

TZ 019051-001

Area I; Square AO 116; Complex H; Context 6413
Description: Lower grinding stone; fragment; upper side flat and smooth; bottom side convex and accurately worked
Type: Lower grinding stone type 2b
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 18; W 15; H 7.5
Weight: 2360 g
Material: Basalt

Mortar

TZ 012816-001

Area I; Square AN 118; Complex D; Context 3866
Description: Fragment of a mortar; rim and wall; circular/oval in plan view; upright size
Type: Mortar type 1
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 22; W 8.2; H 12; D (max.) 28; D (opening) 20
Weight: 2900 g
Material: Basalt

TZ 015639-001

Area I; Square AN 116; Complex H; Context 5218
Description: Mortar; completely preserved; oval in plan view; roughly worked; bottom side flat; exterior side not smoothed; grinding marks; flat size
Type: Mortar type 2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 19; W 16; H 9.5; D (max.) 19; D (opening) 9
Weight: 4400 g
Material: Basalt

TZ 015778-001

Area I; Square AN 116; Complex D/E; Context 4887

Description: Mortar; completely preserved; oval in plan view; depression with grinding marks; bottom side convex; block size

Type: Mortar type 3

Figure Reference: Fig. 1.134

Date of Context: LB I/Rep

Dimensions: L 12; W 8.7; H 14.6

Weight: 2800 g

Material: Basalt

Reference: Sparks 2007, 138 Fig. 53, 2.



Fig. 1.134 Mortar made from basalt TZ 015778-001 (Source: BAI/GPIA).

TZ 019285-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Mortar; irregular shape; completely preserved; round depression; upright size

Type: Mortar type 1

Figure Reference: Fig. 1.135

Date of Context: MB/LB I/Rep

Dimensions: L 34; W 29.5; H 16; D (opening) 20

Weight: 21000 g

Material: Basalt



Fig. 1.135 Mortar made from basalt TZ 019285-001 (Source: BAI/GPIA).

Mortar bowl

TZ 008982-001

Area I; Square AN 116; Complex F; Context 2156

Description: Mortar bowl; fragment; rim to base; sloping wall; circular in plan view; flattened/slightly convex base; roughly worked

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 16.6; W 12.6; H 13; D (opening) 34;

Th (wall) 4

Weight: 1500 g

Material: Basalt

TZ 013323-001

Area I; Square AP 118; Complex D; Context 4053

Description: Fragment of a mortar bowl; rim and sloping wall; circular in plan view; bottom side unworked or secondary knocked off; burn marks

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 17.7; W 14.1; H 6.5; D (max.) 30

Weight: 1237 g

Material: Basalt

TZ 013326-001

Area I; Square AN 119; Complex D 6; Context 3918

Description: Fragment of a mortar bowl; rim to base; sloping wall; circular in plan view; flattened/ slightly convex base

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 15.2; W 9.6; H 2.8; D (max.) 42; D (opening) 38

Weight: 945 g

Material: Basalt

TZ 013335-001

Area I; Square AP 118; Complex D; Context 3911

Description: Fragment of a mortar bowl; rim and sloping wall; circular in plan view

Type: Mortar bowl type 1A

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 14; W 10.4; H 9; D (max.) 40; D (opening) 36; Th (wall) 5.9

Weight: 1611 g

Material: Basalt

TZ 013357-001

Area I; Square AP 118; Complex D; Context 4147

Description: Fragment of a tripod bowl

Type: Mortar bowl type 4

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 20; W 10; H 10; D (max.) 25; D (opening) 20; Th (wall) 3.5

Weight: 1560 g

Material: Basalt

TZ 013438-001

Area I; Square AP 119; Complex D; Context 4106

Description: Fragment of a mortar bowl

Type: Mortar bowl type 4

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 3.7; W 7.7; H 6.3

Weight: 256 g

Material: Basalt

TZ 013495-001

Area I; Square AO 118; Complex D 3; Context 4020

Description: Fragment of a mortar bowl; circular/ oval in plan view; flattened/ slightly convex; rim to base preserved

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 16; W 14.7; H 6.8

Weight: 2000 g

Material: Basalt

TZ 013499-001

Area I; Square AP 118; Complex D; Context 4001

Description: Rim fragment of a mortar bowl; circular in plan view

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.7; W 5.2; H 6.5; D (max.) 25

Weight: 290 g

Material: Basalt

TZ 014339-001

Area I; Square AN 117; Complex D; Context 4568

Description: Mortar bowl; completely preserved; steep and straight wall; circular in plan view; flat base

Type: Mortar bowl type 2A1b

Figure Reference: Fig. 1.136

Date of Context: LB I/Rep

Dimensions: H 8.3; D (max.) 13.1; D (opening) 10

Weight: 2400 g

Material: Basalt



Fig. 1.136 Mortar bowl made from basalt TZ 014339-001
(Source: BAI/GPIA).

TZ 015592-001

Area I; Square AN 116; Complex H; Context 5219
Description: Mortar bowl; fragment; rim to base; sloping wall; circular in plan view; flattened/slightly convex base; roughly worked

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 13.6; W 11.4; H 7.8; D (max.) 14; D (opening) 14

Weight: 547 g

Material: Limestone

TZ 019044-001

Area I; Square AR 121; Complex E 2/E 4; Context 6457

Description: Fragment of a mortar bowl; rim to base; sloping wall; circular in plan view; flattened/slightly convex base

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: L 11.1; W 7.8; H 5.6; D (max.) 22; D (opening) 22; Th (wall) 2.3

Weight: 451 g

Material: Basalt

TZ 019071-001

Area I; Square AS 121; Complex B 5; Context 6344
Description: Fragment of mortar bowl; rectangular leg/foot with remains of wall

Type: Mortar bowl type 4

Figure Reference: —

Date of Context: MB/LB I/Rep

Dimensions: H 11.2; Th (wall) 3.5

Weight: 1127 g

Material: Basalt

TZ 019286-001

Area I; Square AS 121; Complex B 5; Context 6344
Description: Mortar bowl; fragment of semi-finished product; rim to base; sloping wall; circular in plan view; width of rim 4 cm; depression (approximately 2 cm) at one side; disc base

Type: Mortar bowl type 1A4

Figure Reference: Fig. 1.27; 1.137

Date of Context: MB/LB I/Rep

Dimensions: H 5.6; D (max.) 34; D (base) 21; rim 4

Weight: 13200 g

Material: Basalt

Reference: Sparks 2007, 134 Fig. 51, 4.



Fig. 1.137 Fragment of a semi-finished mortar bowl made from basalt TZ 019286-001 (Source: BAI/GPIA).

Quern**TZ 013206-001**

Area I; Square AP 118; Complex D; Context 4138
Description: Fragment of quern; saddle-shaped; secondary use as lower grinding stone

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 18; W 14; H 5.7

Weight: 1927 g

Material: Basalt

TZ 013207-001

Area I; Square AP 118; Complex D; Context 4138
Description: Fragment of quern; flat and broad shape

Type: Quern type 3c

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.5; W 13.5; H 6.2

Weight: 857 g

Material: Basalt

TZ 013214-001

Area I; Square AO 117; Complex D; Context 4139
Description: Fragment of quern; different front and rear side curvature

Type: Quern type 2a

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7; W 12.7; H 4.6

Weight: 528 g

Material: Basalt

TZ 013215-001

Area I; Square AO 117; Complex D; Context 4139

Description: Fragment of quern

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5.2; W 4.7; H 3.6

Weight: 162 g

Material: Basalt

TZ 013320-001

Area I; Square AN 119; Complex D 6; Context 3918

Description: Quern; different front and rear side curvature; extremely abraded

Type: Quern type 2b

Figure Reference: Fig. 1.138

Date of Context: MB/LB

Dimensions: L 38.4; W 11; H 5.5

Weight: 2347 g

Material: Basalt

Reference: Tell Abū al-Kharaz: Fischer 2006b, 161 Fig. 185, 2.



Fig. 1.138 Quern made from basalt TZ 013320-001 (Source: BAI/GPIA).

TZ 013381-001

Area I; Square AO 117; Complex D; Context 4038

Description: Fragment of quern; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.5; W 11; H 4.5

Weight: 698 g

Material: Basalt

TZ 013429-001

Area I; Square AO 117; Complex D; Context 3895

Description: Quern; completely preserved; oval in plan view; flat shape

Type: Quern type 4b

Figure Reference: Fig. 1.139

Date of Context: LB I/Rep

Dimensions: L 25.5; W 11.5; H 7

Weight: 2525 g

Material: Basalt

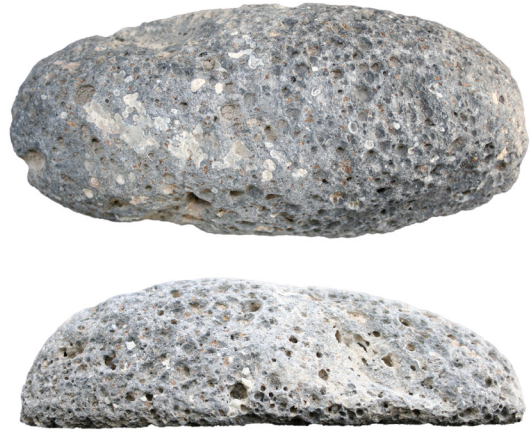


Fig. 1.139 Quern made from basalt TZ 013429-001 (Source: BAI/GPIA).

TZ 013430-001

Area I; Square AO 118; Complex D; Context 4023

Description: Quern; fragment; flat and broad shape; slightly saddle-shaped, boundary areas abraded

Type: Quern type 3a

Figure Reference: Fig. 1.140

Date of Context: LB I/Rep

Dimensions: L 29; W 16.5; H 6.5

Weight: 4898 g

Material: Basalt



Fig. 1.140 Quern made from basalt TZ 013430-001 (Source: BAI/GPIA).

TZ 013493-001

Area I; Square AP 118; Complex D; Context 4029
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 15.5; W 17; H 7.8
Weight: 2010 g
Material: Basalt

TZ 013518-001

Area I; Square AM 117; Complex E; Context 3840
Description: Quern; fragment; completely ragged
Type: —
Figure Reference: Fig. 1.141
Date of Context: LB I/Rep
Dimensions: L 23.7; W 13; H 9
Weight: 3000 g
Material: Basalt



Fig. 1.141 Quern made from basalt TZ 013518-001 (Source: BAI/GPIA).

TZ 013522-001

Area I; Square AM 117; Complex D; Context 4304
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 5.2; W 7.2; H 6.1
Weight: 301 g
Material: Basalt

TZ 013523-001

Area I; Square AM 117; Complex D; Context 4304
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8.7; W 13.7; H 5.2
Weight: 729 g
Material: Basalt

TZ 013525-001

Area I; Square AM 117; Complex D; Context 4304
Description: Quern; fragment; flat and broad shape; bottom side slightly convex; upper side damaged or not finally worked
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8.5; W 13.5; H 3.9
Weight: 587 g
Material: Basalt

TZ 013532-001

Area I; Square AN 117; Complex D/E; Context 4305
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11; W 14; H 7.7
Weight: 1573 g
Material: Basalt

TZ 013533-001

Area I; Square AN 117; Complex D; Context 4346
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 12.6; W 8.8; H 4.7
Weight: 628 g
Material: Basalt

TZ 013534-001

Area I; Square AN 117; Complex D; Context 4346
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 10.5; W 10.5; H 5.3
Weight: 687 g
Material: Basalt

TZ 013546-001

Area I; Square AN 117; Complex D; Context 4318
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 19; W 15; H 4.3

Weight: 1741 g
Material: Basalt

TZ 013547-001

Area I; Square AN 117; Complex D; Context 4318
Description: Quern; fragment; circular in plan view; bottom side convex
Type: Quern type 4b
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 23.3; W 15.5; H 8.2
Weight: 4408 g
Material: Basalt

TZ 013549-001

Area I; Square AN 117; Complex D; Context 4318
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.3; W 12.8; H 4.3
Weight: 633 g
Material: Limestone

TZ 013551-001

Area I; Square AN 117; Complex D; Context 4318
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 7.9; W 10.5; H 5.3
Weight: 747 g
Material: Basalt

TZ 014217-001

Area I; Square AN 117; Complex D; Context 4318
Description: Quern; fragment; flat and broad shape; oval in plan view; upper side slightly concave; bottom side convex; saddle-shaped
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 24.8; W 14.3; H 5.3
Weight: 2464 g
Material: Basalt

TZ 014221-001

Area I; Square AN 117; Complex D; Context 4413
Description: Quern; fragment; loaf-shaped; large pores
Type: Quern type 1g

Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8.5; W 10.5; H 5.5
Weight: 432 g
Material: Basalt

TZ 014226-001

Area I; Square AN 117; Complex D; Context 4397
Description: Quern; fragment; flat and broad shape; bottom side with burn marks
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 13; W 12.5; H 6.5
Weight: 1172 g
Material: Basalt

TZ 014228-001

Area I; Square AN 117; Complex D; Context 4413
Description: Quern; fragment; loaf-shaped; upper side flattened; bottom side highly convex; burn marks
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 12; W 11.7; H 6.5
Weight: 1035 g
Material: Basalt

TZ 014232-001

Area I; Square AN 117; Complex D; Context 4413
Description: Quern; fragment; rounded shape
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.2; W 9.2; H 6
Weight: 511 g
Material: Basalt

TZ 014237-001

Area I; Square AO 117; Complex D; Context 4492
Description: Quern; fragment; flat and broad shape
Type: Quern type 3b
Figure Reference: Fig. 1.142
Date of Context: LB I/Rep
Dimensions: L 16; W 17; H 5.5
Weight: 2264 g
Material: Basalt
Reference: Franken 1992, 88 Fig. 5-11, 8.



Fig. 1.142 Fragment of a quern made from basalt TZ 014237-001 (Source: BAI/GPIA).

TZ 014244-001

Area I; Square AO 117; Complex D; Context 4492
Description: Quern; complete; oval in plan view; upper side irregular
Type: Quern type 4a
Figure Reference: Fig. 1.143
Date of Context: LB I/Rep
Dimensions: L 29; W 20; H 10.3
Weight: 4687 g
Material: Basalt



Fig. 1.143 Quern made from basalt TZ 014244-001 (Source: BAI/GPIA).

TZ 014248-001

Area I; Square AP 118; Complex D; Context 4400
Description: Quern; fragment; loaf-shaped; soft curvature
Type: Quern type 1e
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11; W 10.3; H 4
Weight: 395 g
Material: Basalt

TZ 014251-001

Area I; Square AN 117; Complex D; Context 4347
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 12; W 9.5; H 5.7
Weight: 866 g
Material: Basalt

TZ 014253-001

Area I; Square AM 117; Complex D; Context 4507
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 18; W 13.5; H 10
Weight: 2960 g
Material: Basalt

TZ 014254-001

Area I; Square AM 117; Complex D; Context 4507
Description: Quern; fragment; loaf-shaped; upper and bottom side convex
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 10; W 17; H 9
Weight: 1720 g
Material: Basalt

TZ 014256-001

Area I; Square AN 117; Complex D; Context 4506
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8; W 14; H 6.8
Weight: 1113 g
Material: Basalt

TZ 014260-001

Area I; Square AM 117; Complex D; Context 4518
Description: Quern; fragment; slightly rectangular in plan view; rounded edges; upper side convex; bottom side flat and knocked off
Type: Quern type 1e
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 6.5; W 9.5; H 3.8
Weight: 408 g
Material: Basalt

TZ 014261-001

Area I; Square AM 117; Complex D; Context 4518
Description: Quern; fragment; loaf-shaped
Type: Quern type 1e
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8.5; W 6; H 8.6

Weight: 528 g
Material: Basalt

TZ 014271-001

Area I; Square AN 119; Complex D 8; Context 3971
Description: Quern; complete; different front and rear side curvature; extremely abraded
Type: Quern type 2b
Figure Reference: —
Date of Context: MB/LB I
Dimensions: L 16.5; W 16.5; H 7.2
Weight: 2464 g
Material: Basalt

TZ 014274-001

Area I; Square AO 117; Complex D; Context 4139
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 12; W 12.8; H 5
Weight: 864 g
Material: Basalt

TZ 014275-001

Area I; Square AN 117; Complex D; Context 4347
Description: Quern; fragment; outer face abraded; burn marks
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.5; W 13.5; H 3.5
Weight: 624 g
Material: Basalt

TZ 014276-001

Area I; Square AN 117; Complex D; Context 4347
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 10.4; W 8.6; H 6.5
Weight: 520 g
Material: Basalt

TZ 014296-001

Area I; Square AN 117; Complex D; Context 4399
Description: Quern; fragment; loaf-shaped; upper side highly convex, bottom side flat
Type: Quern type 1d
Figure Reference: —

Date of Context: LB I/Rep
Dimensions: L 8.3; W 7.7; H 7.9
Weight: 1720 g
Material: Basalt

TZ 014327-001

Area I; Square AN 117; Complex D; Context 4571
Description: Quern; fragment; flat and broad shape; upper side with secondary depression (later maybe used as vessel)
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 14.7; W 20.3; H 6.6; D (depression) 7; H (depression) 1.5
Weight: 2683 g
Material: Basalt

TZ 014333-001

Area I; Square AN 117; Complex D; Context 4566
Description: Quern; fragment; loaf-shaped; upper side extremely convex; bottom side flat
Type: Quern type 1f
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 18.5; W 11.8; H 6
Weight: 1622 g
Material: Basalt

TZ 014338-001

Area I; Square AO 117; Complex D; Context 4575
Description: Quern; fragment; different front and rear side curvature
Type: Quern type 2a
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 8.1; W 11.7; H 6
Weight: 809 g
Material: Basalt

TZ 014340-001

Area I; Square AO 118; Complex D; Context 4587
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 12.8; W 13.9; H 6.5
Weight: 1442 g
Material: Basalt

TZ 014347-001

Area I; Square AO 117; Complex D; Context 4573
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: Fig. 1.144
Date of Context: LB I/Rep
Dimensions: L 23.8; W 14.5; H 7
Weight: 3412 g
Material: Basalt
Reference: Franken 1992, 88 Fig. 5-12, 5.



Fig. 1.144 Quern made from basalt TZ 014347-001 (Source: BAI/GPIA).

TZ 014351-001

Area I; Square AN 117; Complex D; Context 4565
Description: Quern; fragment; loaf- and saddle-shaped; boundary areas highly abraded
Type: Quern type 1g
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 17.5; W 15.5; H 5.8
Weight: 1970 g
Material: Basalt

TZ 014458-001

Area I; Square AN 116; Complex E; Context 3856
Description: Quern; fragment; loaf- and saddle-shaped; boundary areas highly abraded
Type: Quern type 1h
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11; W 9; H 5.6
Weight: 720 g
Material: Basalt

TZ 015624-001

Area I; Square AL 118; Complex E 1/E 3; Context 4981
Description: Quern; fragment; loaf-shaped
Type: Quern type 1c
Figure Reference: —
Date of Context: LB I
Dimensions: L 17; W 14.5; H 8.1
Weight: 2631 g
Material: Basalt

TZ 015649-001

Area I; Square AN 116; Complex E; Context 4611
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 20; W 18; H 7.7
Weight: 3618 g
Material: Basalt

TZ 015657-001

Area I; Square AM 115; Complex D; Context 4848
Description: Quern; fragment; flat and broad shape; rectangular in plan view; rounded corners; upper side convex; bottom side outwards slightly curved
Type: Quern type 3b
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 19.5; W 15; H 5.5
Weight: 2350 g
Material: Basalt

TZ 015669-001

Area I; Square AM 118; Complex D; Context 4843
Description: Quern; fragment; loaf-shaped; upper side highly convex, bottom side flat
Type: Quern type 1c
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 16.5; W 14.7; H 8.7
Weight: 3254 g
Material: Basalt

TZ 015806-001

Area I; Square AM 116; Complex D; Context 4752
Description: Quern; fragment; flat and broad shape; small fragment of rim
Type: Quern type 3b
Figure Reference: —
Date of Context: LB I/Rep

Dimensions: L 7.1; W 8.2; H 4.2
Weight: 345 g
Material: Basalt

TZ 015850-001

Area I; Square AL 118; Complex E 3; Context 4962
Description: Quern; fragment; loaf-shaped
Type: Quern type 1d
Figure Reference: —
Date of Context: MB/LB I
Dimensions: L 15; W 12; H 6.2
Weight: 1402 g
Material: Basalt

TZ 018885-001

Area I; Square AR 122; Complex B 8; Context 6078
Description: Quern; fragment; loaf-shaped
Type: Quern type 1c
Figure Reference: —
Date of Context: LB I
Dimensions: L 6.4; W 6.7; H 6.2
Weight: 324 g
Material: Basalt

TZ 018901-001

Area I; Square AS 123; Complex B 9; Context 6137
Description: Quern; fragment; loaf-shaped
Type: Quern type 1e
Figure Reference: Fig. 1.145a. b
Date of Context: LB I/Rep/LB II
Dimensions: L 27; W 15; H 6.5
Weight: 3496 g
Material: Basalt



Fig. 1.145a Fragment of quern made from basalt TZ 018901-001 (Source: BAI/GPIA).



Fig. 1.145b Fragment of quern made from basalt TZ 018901-001 (Source: BAI/GPIA).

TZ 018902-001

Area I; Square AS 123; Complex B 9; Context 6137
Description: Quern; fragment; flat and broad shape
Type: Quern type 3a
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 12.5; W 9.1; H 8.9
Weight: 1043 g
Material: Basalt

TZ 018906-001

Area I; Square AS 123; Complex B 9; Context 6137
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 11.1; W 7.3; H 6.5
Weight: 721 g
Material: Basalt

TZ 019025-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Quern; fragment; different front and rear side curvature
Type: Quern type 2a
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 10.5; W 8.3; H 7.6
Weight: 744 g
Material: Basalt

TZ 019047-001

Area I; Square AO 116; Complex H; Context 6420

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11.2; W 7.4; H 6.5

Weight: 432 g

Material: Basalt

TZ 019067-001

Area I; Square AS 122; Complex B 8; Context 6345

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 13.8; W 12.5; H 5.6

Weight: 1272 g

Material: Basalt

TZ 019079-001

Area I; Square AS 121; Complex A 2; Context 6324

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 16; W 14.3; H 7.5

Weight: 2813 g

Material: Basalt

TZ 019103-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 16.7; W 13.8; H 5.9

Weight: 1593 g

Material: Basalt

TZ 019105-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Quern; fragment; flat and broad shape

Type: Quern type 3a

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 11.8; W 16.7; H 8

Weight: 1928 g

Material: Basalt

TZ 019107-001

Area I; Square AS 123; Complex B 7/B 9; Context 6205

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 15.5; W 14.4; H 6

Weight: 1418 g

Material: Basalt

TZ 019287-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 32; W 14.5; H 7.3

Weight: 5038 g

Material: Basalt

Rubbing stone**TZ 012767-001**

Area I; Square AM 117; Complex D/E; Context 3837

Description: Rubbing stone; completely preserved; triangular in plan view; on the top very convex; bottom side slightly convex and slightly flattened to the right long side

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.3; W 5.1; H 6.1

Weight: 487 g

Material: Basalt

TZ 012768-001

Area I; Square AO 117; Complex D; Context 3838

Description: Fragment of disc-shaped rubbing stone; oval in plan view

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5.2; W 7.3; H 1.2

Weight: 123 g

Material: Basalt

TZ 012771-001

Area I; Square AN 118; Complex D 7; Context 3808

Description: Fragment of rubbing stone; oval in plan view; upper side slightly convex; underside flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 5.1; W 6

Weight: 135 g

Material: Basalt

TZ 012799-001

Area I; Square AN 118; Complex D 6; Context 3873

Description: Ovoid rubbing stone; completely preserved; beveled on one side; underside slightly curved

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 8.6; W 5.5; H 5

Weight: 357 g

Material: Basalt

TZ 012800-001

Area I; Square AM 117; Complex D/E; Context 3843

Description: Disc-shaped rubbing stone; completely preserved; bottom side slightly convex

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 12; W 11; H 4.1

Weight: 839 g

Material: Basalt

TZ 012854-001

Area I; Square AO 117; Complex D/E; Context 3891

Description: Rubbing stone; completely preserved; oval in plan view; bottom side irregularly shaped

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.5; W 6; H 4.2

Weight: 267 g

Material: Limestone

TZ 013211-001

Area I; Square AP 117; Complex D; Context 4128

Description: Rubbing stone; fragment; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 6.6; W 8.9; H 5.4

Weight: 449 g

Material: Basalt

TZ 013218-001

Area I; Square AP 118; Complex D; Context 4138

Description: Rubbing stone; fragment; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5; W 4.5; H 3.4

Weight: 127 g

Material: Basalt

TZ 013220-001

Area I; Square AP 118; Complex D; Context 4138

Description: Rubbing stone or possibly ecofact? Complete; oval in plan view; elevation triangular; bottom side slightly curved outwards; in general more irregular shape; possibly natural

Type: Rubbing stone type 15

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.4; W 7.4; H 3.8

Weight: 285 g

Material: Basalt

TZ 013319-001

Area I; Square AP 118; Complex D; Context 4053

Description: Rubbing stone; complete; semicircular in cross section; in longitudinal section convex; flattened on one side

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 14.7; W 8.5; H 5.4

Weight: 905 g

Material: Basalt

TZ 013321-001

Area I; Square AM 117; Complex E 1; Context 3910

Description: Rubbing stone; complete; oval in plan view; slightly convex upper and bottom side

Type: —

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 10.7; W 6.7; H 3.9

Weight: —

Material: Basalt

TZ 013337-001

Area I; Square AO 118; Complex D; Context 4104
Description: Rubbing stone; fragment; circular in plan view; upper and bottom side flat; two friction surfaces

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 5.2; D (max.) 8.8

Weight: 535 g

Material: Basalt

TZ 013344-001

Area I; Square AM 117; Complex E 1; Context 3910
Description: Rubbing stone; complete; discoidal; oval in plan view; edge convex; two friction surfaces

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 11.1; W 9.4; H 1.8

Weight: 322 g

Material: Basalt

TZ 013345-001

Area I; Square AP 118; Complex D; Context 4129
Description: Rubbing stone; fragment; cuboid; rounded corners

Type: Rubbing stone type 10.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.3; W 8.1; H 4.3

Weight: 433 g

Material: Basalt

TZ 013378-001

Area I; Square AO 117; Complex D; Context 4038
Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 14.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 6; W 5.5; H 4.9

Weight: 238 g

Material: Basalt

TZ 013379-001

Area I; Square AP 118; Complex D; Context 4018
Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 13.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 4.4; D (max.) 4.2

Weight: 110 g

Material: Basalt

TZ 013428-001

Area I; Square AP 119; Complex D; Context 3989

Description: Rubbing stone; complete; truncated conical, upper side only slightly convex

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 5.1; D (max.) 5

Weight: 201 g

Material: Basalt

TZ 013433-001

Area I; Square AO 118; Complex D; Context 4119

Description: Possibly rubbing stone; complete; oval in plan view; on the upper and bottom side convex; natural shaped; on one side chipped off

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 23; W 18; H 8

Weight: 4700 g

Material: Limestone

TZ 013446-001

Area I; Square AM 118; Complex E 1; Context 3892

Description: Rubbing stone; complete; oval in plan view; stretched convex in longitudinal section

Type: Rubbing stone type 15

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 10.4; W 7.6; H 6.5

Weight: 823 g

Material: Basalt

TZ 013519-001

Area I; Square AM 117; Complex D; Context 4304

Description: Rubbing stone; complete; trapezoid

Type: Rubbing stone type 9

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.6; W 6.8; H 3.7

Weight: 492 g

Material: Basalt

TZ 013521-001

Area I; Square AM 117; Complex E; Context 3840

Description: Rubbing stone; ovoid; complete

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 8.1; W 5; H 3.8

Weight: 291 g

Material: Basalt

TZ 013524-001

Area I; Square AM 117; Complex E; Context 3840

Description: Rubbing stone; complete; trapezoid

Type: Rubbing stone type 9

Figure Reference: Fig. 1.146

Date of Context: LB I/Rep

Dimensions: L 7.7; W 6.1; H 4.9

Weight: 429 g

Material: Basalt



Fig. 1.146 Rubbing stone made from basalt TZ 013524-001
(Source: BAI/GPIA).

TZ 013526-001

Area I; Square AN 117; Complex D/E; Context 4305

Description: Rubbing stone; fragment; discoidal; upper and bottom side slightly convex

Type: Rubbing stone type 12

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.2; W 4.2; H 2.9

Weight: 166 g

Material: Basalt

TZ 013540-001

Area I; Square AN 117; Complex D; Context 4374

Description: Rubbing stone; fragment; oval in plan view; upper side convex; bottom side flat

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5.5; W 7.8; H 4.7

Weight: 225 g

Material: Limestone

TZ 013548-001

Area I; Square AN 117; Complex D; Context 4318

Description: Possibly rubbing stone; fragment; oval in plan view; upper side convex; bottom side flat

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11.8; W 4.8; H 6.2

Weight: 448 g

Material: Limestone

TZ 014230-001

Area I; Square AN 117; Complex D; Context 4347

Description: Rubbing stone; complete; approx. spherical, rather irregular; two friction surfaces

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.1; W 6.2; H 7.4

Weight: 519 g

Material: Basalt

TZ 014231-001

Area I; Square AN 117; Complex D; Context 4413

Description: Rubbing stone; fragment; circular to oval plan view; upper side slightly convex; bottom side flat

Type: —

Figure Reference: —

Date of Context: LB I/Rep
Dimensions: L 11; W 8; H 5
Weight: —
Material: Limestone

TZ 014233-001

Area I; Square AN 117; Complex D; Context 4413
Description: Rubbing stone; fragment; original shape not determinable; outsides well smoothed
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 6.1; W 6; H 7.1
Weight: —
Material: Basalt

TZ 014235-001

Area I; Square AN 117; Complex D; Context 4347
Description: Rubbing stone; complete; discoidal; oval in plan view; friction surfaces on both sides
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.6; W 6.7; H 3.1
Weight: 360 g
Material: Basalt

TZ 014272-001

Area I; Square AP 118; Complex D; Context 4400
Description: Rubbing stone; fragment; oval in plan view; upper and bottom side convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 5; W 8; H 3.9
Weight: 205 g
Material: Basalt

TZ 014277-001

Area I; Square AN 117; Complex D; Context 4347
Description: Rubbing stone; fragment; oval to circular in plan view; upper side convex; bottom side flat; all sides smoothed
Type: Rubbing stone type 12
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 4.3; W 5; H 4.5
Weight: 164 g
Material: Basalt

TZ 014328-001

Area I; Square AO 117; Complex D; Context 4581
Description: Rubbing stone; complete; ovoid; upper side beveled; bottom side convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.5; W 7.1; H 6.1
Weight: 676 g
Material: Basalt

TZ 014329-001

Area I; Square AO 118; Complex D; Context 4579
Description: Rubbing stone; fragment; oval in plan view; upper side convex; bottom side flat
Type: Rubbing stone type 15
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 7.6; W 5; H 6
Weight: —
Material: Basalt

TZ 014334-001

Area I; Square AN 117; Complex D; Context 4568
Description: Rubbing stone; complete; oval in plan view; convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 13; W 7.3; H 9.2
Weight: 1543 g
Material: Basalt

TZ 014341-001

Area I; Square AN 117; Complex D; Context 4577
Description: Rubbing stone; complete; discoidal; oval in plan view
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 13.8; W 9.5; H 4.8
Weight: 1058 g
Material: Basalt

TZ 014343-001

Area I; Square AO 117; Complex D; Context 4575
Description: Rubbing stone; fragment; oval in plan view; upper side convex; bottom side slightly convex
Type: —
Figure Reference: —

Date of Context: LB I/Rep
Dimensions: L 11.3; W 8.8; H 5.8
Weight: 811 g
Material: Basalt

TZ 014344-001

Area I; Square AN 117; Complex D; Context 4577
Description: Rubbing stone; fragment; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 4.2; W 4.1; H 3.4
Weight: 93 g
Material: Basalt

TZ 014345-001

Area I; Square AN 116; Complex H; Context 4569
Description: Rubbing stone; fragment; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 4.6; W 6.3; H 5
Weight: 190 g
Material: Basalt

TZ 014346-001

Area I; Square AN 117; Complex D; Context 4568
Description: Rubbing stone; complete; discoidal; oval in plan view
Type: Rubbing stone type 13.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 4.5; W 3.7; H 2.1
Weight: —
Material: Basalt

TZ 014352-001

Area I; Square AN 117; Complex D; Context 4565
Description: Rubbing stone; complete; discoidal; in plan view crescent-shaped
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 18; W 8.4; H 4
Weight: —
Material: Basalt

TZ 014353-001

Area I; Square AN 117; Complex D; Context 4565
Description: Rubbing stone; complete; roller-shaped; upper side flat and roughly worked; bottom side

convex with friction surface
Type: Rubbing stone type 8.1
Figure Reference: Fig. 1.147
Date of Context: LB I/Rep
Dimensions: H 7.8; D (max.) 6.5
Weight: 577 g
Material: Basalt



Fig. 1.147 Rubbing stone made from basalt TZ 014353-001
 (Source: BAI/GPIA).

TZ 014354-001

Area I; Square AN 117; Complex D; Context 4565
Description: Rubbing stone; complete; rectangular in plan view; rounded corners; upper side slightly convex; bottom side flat; burn marks
Type: Rubbing stone type 12
Figure Reference: Fig. 1.148
Date of Context: LB I/Rep
Dimensions: L 11.8; W 8.7; H 4.8

Weight: 669 g
Material: Basalt



Fig. 1.148 Rubbing stone made from basalt TZ 014354-001
(Source: BAI/GPIA).

TZ 014356-001

Area I; Square AN 117; Complex D; Context 4565
Description: Rubbing stone; complete; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 7.5; W 6.2; H 5.1
Weight: 314 g
Material: Flint/silex

TZ 014361-001

Area I; Square AN 117; Complex D; Context 4577
Description: Rubbing stone; fragment; cuboid; rounded corners
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.3; W 5.1; H 3.9

Weight: 367 g
Material: Flint/silex

TZ 014366-001

Area I; Square AN 117; Complex D; Context 4568
Description: Rubbing stone; complete; oval in plan view; upper and bottom side slightly convex; a friction surface on the bottom side
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 4; W 3.4; H 2.1
Weight: 43 g
Material: Basalt

TZ 014745-001

Area I; Square AG 114; Complex I; Context 4658
Description: Rubbing stone; complete; oval in plan view; upper side convex and beveled to the narrow side; bottom side flat
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 6.3; W 4.8; H 4.3
Weight: 190 g
Material: Pebble

TZ 015573-001

Area I; Square AN 116; Complex H; Context 5219
Description: Rubbing stone; fragment; rectangular in plan view; rounded corners; upper side clearly convex; bottom side flat
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.4; W 11.6; H 8
Weight: —
Material: Basalt

TZ 015576-001

Area I; Square AL 118; Complex E 3; Context 5276
Description: Rubbing stone; fragment; discoidal; oval in plan view; all sides well smoothed
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: MB/LB I
Dimensions: L 9.6; W 8.5; H 3.6
Weight: 398 g
Material: Basalt

TZ 015577-001

Area I; Square AL 118; Complex E 1; Context 5042

Description: Rubbing stone; complete; in plan view almost circular; slightly convex upper side; flat bottom side; slightly cut off on one side

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 8.6; W 7.9; H 2.8

Weight: 284 g

Material: Basalt

TZ 015678-001

Area I; Square AN 116; Complex H; Context 5218

Description: Rubbing stone; complete; irregular to ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 4.4; W 4.1; H 3.3

Weight: 92 g

Material: Basalt

TZ 015689-001

Area I; Square AE 114; Complex I; Context 5606

Description: Rubbing stone; complete; discoidal

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.9; W 6.7; H 2.7

Weight: 205 g

Material: Basalt

TZ 015715-001

Area I; Square AM 116; Complex D; Context 4782

Description: Rubbing stone; fragment; oval in plan view; upper and bottom side convex

Type: —

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.1; W 8.6; H 5

Weight: 595 g

Material: Basalt

TZ 015721-001

Area I; Square AL 118; Complex E 4; Context 4983

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 4.9; W 3; H 2.6

Weight: 63 g

Material: Basalt

TZ 015735-001

Area I; Square AM 115; Complex D; Context 4848

Description: Rubbing stone; complete; conical; upper side convex; bottom side uneven; no friction surfaces

Type: Rubbing stone type 5.1

Figure Reference: Fig. 1.149

Date of Context: LB I/Rep

Dimensions: H 4.6; D (max.) 6.1

Weight: 220 g

Material: Basalt



Fig. 1.149 Rubbing stone made from basalt TZ 015735-001
(Source: BAI/GPIA).

TZ 015736-001

Area I; Square AM 115; Complex D; Context 4848
Description: Rubbing stone; fragment; two fitting fragments; in plan view oval; upper side slightly curved outwards; bottom side flat, at the broader end impact traces; secondary use as a hammer stone (?)
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 11.5; W 6.1; H 3.1
Weight: 319 g
Material: Basalt

TZ 015745-001

Area I; Square AL 118; Complex E 3; Context 55
Description: Rubbing stone; complete; circular in plan view; upper and bottom side slightly convex
Type: Rubbing stone type 12.1
Figure Reference: —
Date of Context: MB/LB I
Dimensions: H 2.7; D (max.) 4.5
Weight: 75 g
Material: Basalt

TZ 015746-001

Area I; Square AG 114; Complex I; Context 4658
Description: Rubbing stone; complete; conical; upper side convex; bottom side slightly convex
Type: Rubbing stone type 5.1
Figure Reference: Fig. 1.150a. b
Date of Context: LB I/Rep
Dimensions: H 5.4; D (max.) 4.8
Weight: 203 g
Material: Basalt



Fig. 1.150a Rubbing stone made from basalt TZ 015746-001
 (Source: BAI/GPIA).



Fig. 1.150b Rubbing stone made from basalt TZ 015746-001
 (Source: BAI/GPIA).

TZ 015763-001

Area I; Square AM 116; Complex D; Context 4752
Description: Rubbing stone; fragment; upper side strongly convex; bottom flat
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 9.9; W 6; H 10.1
Weight: 551 g
Material: Basalt

TZ 015770-001

Area I; Square AM 116; Complex D; Context 4782
Description: Rubbing stone; complete; elongated; narrow sides convex; upper side slightly convex; bottom side flat; one outside straight, the other angular
Type: Rubbing stone type 13
Figure Reference: Fig. 1.151a. b
Date of Context: LB I/Rep
Dimensions: L 14.8; W 5.7; H 3.6
Weight: 516 g
Material: Basalt



Fig. 1.151a Rubbing stone made from basalt TZ 015770-001
 (Source: BAI/GPIA).



Fig. 1.151b Rubbing stone made from basalt TZ 015770-001
(Source: BAI/GPIA).

TZ 015802-001

Area I; Square AM 116; Complex D; Context 4752
Description: Rubbing stone; fragment; discoidal; oval in plan view; upper side and bottom side slightly convex

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.7; W 9; H 2.7

Weight: 319 g

Material: Basalt

TZ 015841-001

Area I; Square AL 118; Complex E 1; Context 5042
Description: Rubbing stone; complete; spherical section; convex upper side; flat bottom side with friction marks as well as at the straight side surface

Type: Rubbing stone type 2

Figure Reference: Fig. 1.152a. b

Date of Context: MB/LB I

Dimensions: L 7; W 6.1; H 4.9

Weight: 370 g

Material: Basalt



Fig. 1.152a Rubbing stone made from basalt TZ 015841-001
(Source: BAI/GPIA).



Fig. 1.152b Rubbing stone made from basalt TZ 015841-001
(Source: BAI/GPIA).

TZ 015845-001

Area I; Square AM 116; Complex D; Context 4782
Description: Rubbing stone; complete; discoidal; upper and bottom side slightly convex

Type: Rubbing stone type 12.1

Figure Reference: Fig. 1.153a. b

Date of Context: LB I/Rep

Dimensions: H 4.1; D (max.) 9

Weight: 437 g

Material: Basalt



Fig. 1.153a Rubbing stone made from basalt TZ 014845-001
(Source: BAI/GPIA).



Fig. 1.153b Rubbing stone made from basalt TZ 014845-001
(Source: BAI/GPIA).

TZ 015909-001

Area I; Square AE 114; Complex I; Context 5548
Description: Rubbing stone; complete; in plan view on a narrow side rectangular; rounded corners; on the other narrow side triangular; in longitudinal section irregularly triangular
Type: —
Figure Reference: Fig. 1.154
Date of Context: LB I/Rep
Dimensions: L 9.3; W 7.5; H 5.5
Weight: 602 g
Material: Basalt



Fig. 1.154 Rubbing stone made from basalt TZ 015909-001
(Source: BAI/GPIA).

TZ 015960-001

Area I; Square AL 118; Complex E 4; Context 4983
Description: Rubbing stone; complete; oval in plan view; slightly convex upper side with two small troughs; bottom side slightly convex
Type: —
Figure Reference: —
Date of Context: MB/LB I
Dimensions: L 7.3; W 4.4; H 2.2
Weight: —
Material: Limestone

TZ 016022-001

Area I; Square AN 116; Complex D; Context 5062
Description: Rubbing stone; complete; in plan view approx. circular; upper side slightly convex; bottom side flat and another side flattened; each one with friction marks
Type: Rubbing stone type 4
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: H 5.4; D (max.) 7.4
Weight: 444 g
Material: Flint/silex

TZ 016054-001

Area I; Square AN 116; Complex D/E; Context 4887
Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side flat with traces of friction
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 6; W 4.6; H 3.8
Weight: 144 g
Material: Silicate stone

TZ 018016-001

Area I; Square AU 120; Complex A 1; Context 6006
Description: Rubbing stone; complete; cuboid; convex upper side; flat bottom side; longitudinal section slightly trapezoidal; rounded corners
Type: Rubbing stone type 9
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 10.1; W 10.3; H 7.6
Weight: 1188 g
Material: Basalt

TZ 018851-001

Area I; Square AS 121; Complex C 1; Context 6107

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 4.6; W 4; H 2.9

Weight: 76 g

Material: Basalt

TZ 018903-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Rubbing stone; complete; cuboid; convex upper side; one long side slightly beveled

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 10.3; W 8.8; H 5.6

Weight: 817 g

Material: Basalt

TZ 018923-001

Area I; Square AS 122; Complex B 6; Context 6125

Description: Rubbing stone; complete; conical; oval in plan view; convex upper side

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 5.7; W 5.2; H 6.3

Weight: 275 g

Material: Basalt

TZ 018944-001

Area I; Square AS 122; Complex B 6; Context 6125

Description: Rubbing stone; complete; oval in plan view; very convex upper side; flat bottom side with friction marks

Type: Rubbing stone type 3

Figure Reference: Fig. 1.155

Date of Context: LB I/Rep/LB II

Dimensions: L 7.7; W 6; H 6.6

Weight: 362 g

Material: Limestone



Fig. 1.155 Rubbing stone made from limestone TZ 018944-001
(Source: BAI/GPIA).

TZ 019026-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Rubbing stone; complete; oval in plan view; convex upper side; bottom side slightly convex; thorough processed; underside as friction surface, possibly also upper side; slight marks on the narrower end

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 7.5; W 5.9; H 4.1

Weight: 278 g

Material: Basalt

TZ 019030-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Rubbing stone; complete; conical; convex bottom side; a long side flattened and also used as a friction surface

Type: Rubbing stone type 5.2

Figure Reference: Fig. 1.156

Date of Context: LB I/Rep/LB II

Dimensions: H 7; D (max.) 4.8

Weight: 247

Material: Basalt



Fig. 1.156 Rubbing stone made from basalt TZ 019030-001
(Source: BAI/GPIA).

TZ 019032-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; discoidal; approx. circular in cross section; flat bottom side
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 11.9; W 10.7; H 2.5
Weight: 540 g
Material: Basalt

TZ 019035-001

Area I; Square AO 116; Complex H; Context 6428
Description: Rubbing stone; complete; oval in plan view; upper and bottom sides flat; but no friction surfaces recognizable; possibly natural
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: —
Weight: 58 g
Material: Silicate stone

TZ 019037-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; cuboid; rounded corners; slightly convex upper side; flat bottom side
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 11; W 8.3; H 5.5
Weight: 870 g
Material: Basalt

TZ 019038-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; oval in plan view; convex upper side; bottom side flat
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 8.6; W 7.1; H 4.9
Weight: 1134 g
Material: Basalt

TZ 019039-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; fragment; oval in plan view; convex upper side; bottom side convex; edge curved outwards
Type: Rubbing stone type 12.1
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 8.1; W 7; H 5
Weight: 444 g
Material: Basalt

TZ 019042-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; oval in plan view; convex upper side; bottom side flat

Type: Rubbing stone type 12.1
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 7.8; W 7.1; H 3.5
Weight: 299 g
Material: Basalt

TZ 019045-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; conical; oval in plan view; slightly convex bottom side
Type: Rubbing stone type 5.1
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: H 6.5; D (max.) 5.4
Weight: 287 g
Material: Basalt

TZ 019046-001

Area I; Square AO 116; Complex H; Context 6413
Description: Possible fragment of a rubbing stone; burn marks
Type: —
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: L 7.8; W 14; H 4.4
Weight: 647 g
Material: Basalt

TZ 019048-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344
Description: Rubbing stone; fragment; oval in plan view; beveled upper side; flat bottom side
Type: —
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 8.4; W 7.4; H 4.8
Weight: 449 g
Material: Basalt

TZ 019049-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344
Description: Rubbing stone; complete; conical; circular in plan view; bottom side slightly convex
Type: Rubbing stone type 5.2
Figure Reference: Fig. 1.157
Date of Context: LB I/Rep/LB II
Dimensions: H 5.9; D (max.) 5.2

Weight: 211 g
Material: Basalt



Fig. 1.157 Rubbing stone made from basalt TZ 019049-001
 (Source: BAI/GPIA).

TZ 019063-001

Area I; Square AT 122; Complex A 2/B 1; Context 6357
Description: Rubbing stone; fragment; oval in plan view; beveled upper side; flat bottom side; friction surface
Type: Rubbing stone type 13
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 11.7; W 7.2; H 5.3
Weight: 699 g
Material: Limestone

TZ 019073-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Rubbing stone; complete; oval in plan view; triangular in longitudinal section; bottom side convex

Type: Rubbing stone type 10.2

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 8.5; W 6,7; H 5

Weight: 409 g

Material: Basalt

TZ 019075-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Rubbing stone; complete; conical; flat bottom side

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 7.1; D (max.) 7

Weight: 489 g

Material: Basalt

TZ 019077-001

Area I; Square AT 121; Complex A 2/B 1; Context 6320

Description: Rubbing stone; complete; cuboid; rounded corners; convex upper side; bottom side convex and pulled up on a narrow side

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 9.5; W 7; H 6.7

Weight: 697 g

Material: Limestone

TZ 019078-001

Area I; Square AR 123; Complex C 3; Context 6381

Description: Rubbing stone; complete; conical; upper side flattened and in general slightly inclined; bottom side convex

Type: Rubbing stone type 5.2

Figure Reference: Fig. 1.158

Date of Context: LB I/Rep/LB II

Dimensions: H 6.3; D (max.) 5.2

Weight: 270 g

Material: Basalt



Fig. 1.158 Rubbing stone made from basalt TZ 019078-001 (Source: BAI/GPIA).

TZ 019083-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Rubbing stone; complete; ovoid; several friction marks visible

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 7.8; W 6.4; H 6

Weight: 437 g

Material: Basalt

TZ 019085-001

Area I; Square AT 121; Complex A 2; Context 6324

Description: Rubbing stone; complete; ovoid; form very even, friction marks visible

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 8; W 5.9; H 4.7

Weight: 327 g

Material: Basalt

TZ 019086-001

Area I; Square AS 122; Complex B 8; Context 6345

Description: Rubbing stone; fragment; conical; bottom side slightly convex and slightly cut off

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 6.4; D (max.) 5.1

Weight: 241 g

Material: Basalt

TZ 019087-001

Area I; Square AT 121; Complex A 2; Context 6324
Description: Rubbing stone; complete; ovoid; friction surface

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 6; W 4.6; H 4.3

Weight: 1671 g

Material: Flint/silex

TZ 019088-001

Area I; Square AS 123; Complex B 9; Context 6343
Description: Rubbing stone; complete; conical; bottom side slightly convex; top almost flat

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 4.1; D (max.) 5.2

Weight: 161 g

Material: Basalt

TZ 019090-001

Area I; Square AS 123; Complex B 9; Context 6343
Description: Rubbing stone; complete; discoidal; plan view round; edge convex, strikingly flat

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 1.6; D (max.) 10.6

Weight: 283 g

Material: Basalt

TZ 019094-001

Area I; Square AT 122; Complex A 2/B 1; Context 6318

Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 7.2; W 6.4; H 4

Weight: 257 g

Material: Flint/silex

TZ 019096-001

Area I; Square AT 121; Complex A 2; Context 6324
Description: Rubbing stone; complete; plunger; round in plan view; bottom side slightly convex

Type: Special form

Figure Reference: Fig. 1.159

Date of Context: LB I/Rep/LB II

Dimensions: H 4.6; D (max.) 4.3

Weight: 179 g

Material: Limestone



Fig. 1.159 Rubbing stone made from limestone TZ 019096-001
 (Source: BAI/GPIA).

TZ 019104-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 7.5; D (max.) 6.3

Weight: 358 g

Material: Flint/silex

TZ 019106-001

Area I; Square AS 120; Complex A 5; Context 6456

Description: Rubbing stone; fragment; circular in plan view; upper and bottom side flat with friction surfaces

Type: Rubbing stone type 8.2

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 6; D (max.) 8

Weight: 435 g

Material: Basalt

TZ 019112-001

Area I; Square AS 123; Complex B 9; Context 6343

Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex

Type: —

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 18; W 15.5; H 7

Weight: 2100 g

Material: Basalt

TZ 019114-001

Area I; Square AT 122; Complex D; Context 6475
Description: Rubbing stone; complete; conical; bottom side convex
Type: Rubbing stone type 5.1
Figure Reference: —
Date of Context: LB I/Rep
Dimensions: H 6.2; D (max.) 5.6
Weight: 272 g
Material: Basalt

TZ 019292-001

Area I; Square AS 120; Complex A 3; Context 6482
Description: Rubbing stone; complete; spherical section; upper and bottom side convex
Type: Special form
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 9.1; W 8.4; H 4.4
Weight: 613 g
Material: Basalt

TZ 019298-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Rubbing stone; complete; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB I/Rep/LB II
Dimensions: L 4.7; D (max.) 2.9
Weight: 65 g
Material: Basalt

Personal Items

Balance weight

TZ 013221-001

Area I; Square AP 117; Complex D; Context 4128
Description: Balance weight; completely preserved
Type: —
Figure Reference: Fig. 1.69; 1.160
Date of Context: LB I/Rep
Dimensions: L 3.6; W 3.1
Weight: —
Material: Pebble



Fig. 1.160 Balance weight TZ 013221-001 (Source: BAI/GPIA).

Bead

TZ 013152-001

Area I; Square AO 118; Complex D; Context 4125
Description: Bead; completely preserved
Type: Bead type 6
Figure Reference: Fig. 1.161
Date of Context: LB I/Rep
Dimensions: H 0.3; D (max.) 0.8; D (opening) 0.1
Weight: —
Material: Carnelian



Fig. 1.161 Carnelian bead TZ 013153-001 (Source: BAI/GPIA).

TZ 013255-001

Area I; Square AP 117; Complex D; Context 4148
Description: 4 ring-shaped beads; completely preserved. 1 fragment of a ring-shaped bead, 2 cup-shaped beads
Type: —
Figure Reference: Fig. 1.70; 1.162
Date of Context: LB I/Rep
Dimensions: —
Weight: —
Material: Carnelian



Fig. 1.162 Carnelian beads TZ 013255-001 (Source: BAI/GPIA).

TZ 013882-001

Area I; Square AN 117; Complex D; Context 4336

Description: Bead; completely preserved; roller-shaped

Type: Bead type 8

Figure Reference: Fig. 1.52; 1.163

Date of Context: LB I/Rep

Dimensions: L 3.25; D (max.) 0.72; D (opening) 0.34

Weight: —

Material: Agate



Fig. 1.163 Agate bead TZ 013882-001 (Source: BAI/GPIA).

TZ 013883-001

Area I; Square AO 117; Complex D; Context 4272

Description: Bead; completely preserved; roller-shaped; one opening smoothed off, the other one rounded off

Type: Bead type 8

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: —

Weight: —

Material: Agate

TZ 014216-001

Area I; Square AN 117; Complex D; Context 4506

Description: Fragment of an ovoid bead; vertical-conically pierced from two sides; on the outside four vertical, roughly carved grooves

Type: Bead type 2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 3; D (max.) 2.5; D (opening) 0.6

Weight: 11.6 g

Material: Limestone

TZ 017320-001

Area I; Square AM 116; Complex D; Context 4782

Description: Bead; completely preserved; discoidal; circular in plan view

Type: Bead type 6

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 0.4; D (max.) 0.7; D (inside opening) 0.26 cm

Weight: < 1 g

Material: Carnelian

TZ 018604-001

Area I; Square AN 118; Complex D; Context 5945

Description: Bead; completely preserved; barrel-shaped; slanted inwards on the narrow sides; green

Type: Bead type 8

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 2.4; D (max.) 1.3; D (inside opening) 0.4

Weight: 6.4 g

Material: Agate

Cosmetic palette**TZ 019040-001**

Area I; Square AS 120; Complex A 5; Context 6456

Description: Cosmetic palette; fragment; discoidal; oval in plan view; black-gray-white stone

Type: —

Figure Reference: Fig. 1.19; 1.164

Date of Context: LB I/Rep/LB II

Dimensions: L 6.9; W 7.5; H 1.1

Weight: 170 g

Material: Granite



Fig. 1.164 Cosmetic palette made from granite TZ 019040-001 (Source: BAI/GPIA).

Game piece

TZ 013349-001

Area I; Square AM 117; Complex E 1; Context 3910

Description: Game piece; complete; discoidal; friction surface; white

Type: —

Figure Reference: —

Date of Context: MB/LB I

Dimensions: H 2.1; D (max.) 5

Weight: —

Material: Alabaster

TZ 019050-001

Area I; Square AT 121; Complex A 4; Context 6454

Description: Game piece; complete; thoroughly worked

Type: —

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 2.65

Weight: —

Material: Basalt

Warfare

Sling stone

TZ 013333-001

Area I; Square AQ 117; Complex E; Context 4172

Description: Sling stone; complete; ovoid

Type: Sling stone type 2

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 4.8; W 3.8; H 3.2

Weight: 93 g

Material: Basalt

Cultic Items

Incense burner

TZ 015742-001

Area I; Square AM 116; Complex D; Context 4782

Description: Incense vessel; fragment of bowl; sloping wall; circular in plan view; flat and smooth base; upper side with burnished depression; knock-

ed off rims of former bowl

Type: Bowl type 1A3

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 4.6; D (max.) 8.8

Weight: 465

Material: Basalt



Fig. 1.165 Incense burner made from basalt TZ 015742-001
(Source: BAI/GPIA).

Flints: Flakes and Tools

Flakes/Tools; Date of Context MB/LB I (Stratum 16)

TZ 012774-001; 2 flakes, 1 sickle blade; Area I; AM 119; Complex E 2; Context 3833

TZ 012778-001; 1 knife; Area I; AM 119; Complex E 2; Context 3847

TZ 012780-001; 1 sickle blade; Area I; AN 118; Complex D 5; Context 3823

TZ 012861-001; 1 blade; Area I; AO 118; Complex D 1; Context 3885

TZ 013140-001; 1 sickle blade; Area I; AO 118; Complex D 3; Context 4020

TZ 013150-001; 1 arrowhead; Area I; AN 119; Complex D 6; Context 3977



Fig. 1.166 Flint arrowhead TZ 013150-001 (Source: BAI/GPIA).

TZ 013841-001; 1 blade; Area I; AN 118; Complex D 7; Context 4368

TZ 013845-001; 1 tabular scraper; Area I; AN 118; Complex D 7; Context 4366

TZ 013846-001; 1 blade; Area I; AN 118; Complex D 7; Context 4368

TZ 013848-001; 1 projectile; Area I; AN 118; Complex D 7; Context 4368

TZ 016151-001; 1 blade; Area I; AL 118; Complex E 3/E 4; Context 4982

TZ 016152-001; 1 blade, 6 flakes; Area I; AL 118; Complex E 4; Context 4983

TZ 016161-001; 1 blade, 3 flakes; Area I; AL 118; Complex E 1; Context 5018

TZ 016163-001; 5 flakes; Area I; AL 118; Complex E 2/E 4; Context 5034

TZ 016165-001; 1 sickle blade, 2 blades, 16 flakes; Area I; AL 118; Complex E 1; Context 5036

TZ 016168-001; 1 sickle blade, 1 flake, 1 flakelet; Area I; AL 118; Complex E 1; Context 5042

TZ 016209-001; 7 flakes; Area I; AL 118; Complex E 3; Context 5175

TZ 016242-001; 3 blades, 1 borer, 15 flakes; Area I; AL 118; Complex E 3; Context 5276

Flakes/Tools; Date of Context MB/LB I/Rep (Stratum 16, also Stratum 15)

TZ 018312-001; 1 flake; Area I; AR 123; Complex B 10; Context 6106

TZ 018394-001; 1 flake, 1 blade; Area I; AS 123; Complex B 9; Context 6137

TZ 018517-001; 1 flake, 1 chip; Area I; AS 122; Complex B 6; Context 6125

TZ 018527-001; 1 blade; Area I; AS 121; Complex C 1; Context 6107

TZ 018541-001; 6 flakes, 2 chips; Area I; AS 122; Complex B 6; Context 6125

TZ 019209-001; 1 core, 3 sickle blades, 5 blades, 2 knives, 20 flakes, 5 chips; Area I; AT 122; Complex B 1/B 2; Context 6311

TZ 019210-001; 1 blade; Area I; AS 122; Complex B 6; Context 6312

TZ 019211-001; 1 projectile, 1 flake; Area I; AT 122; Complex A 2/B 1; Context 6318

TZ 019212-001; 1 blade, 2 flakes; Area I; AT 123; Complex B 3; Context 6319

TZ 019214-001; 1 harvesting knife, 1 blade, 2 flakes; Area I; AT 121; Complex A 2; Context 6324

TZ 019224-001; 1 blade; Area I; AT 123; Complex B 7; Context 6342

TZ 019225-001; 2 sickle blades, 1 bladelet; Area I; AS 123; Complex B 9; Context 6343

TZ 019226-001; 2 blades, 2 fitting fragments of a dagger, 6 flakes, 1 chip; Area I; AS 121; Complex B 5/C 1; Context 6344

TZ 019227-001; 1 harvesting knife, 1 sickle blade, 2 blades; Area I; AS 122; Complex B 8; Context 6345

TZ 019235-001; 1 chip; Area I; AT 122; Complex A 2/B 1; Context 6357

TZ 019243-001; 1 harvesting knife, 1 sickle blade, 3 blades, 5 flakes; Area I; AR 123; Complex C 3; Context 6381

TZ 019249-001; 1 knife, 1 projectile, 2 blades, 6 flakes; Area I; AR 122; Complex C 3; Context 6405

TZ 019261-001; 1 flake; Area I; AR 123; Complex B 9/B 10; Context 6435

TZ 019262-001; 1 blade, 3 flakes; Area I; AR 122; Complex C 2; Context 6438

TZ 019263-001; 1 bladelet, 2 flakes; Area I; AT 121; Complex A 4; Context 6454

TZ 019264-001; 1 blade, 1 bladelet, 1 flake; Area I; AS 120; Complex A 5; Context 6456

TZ 019265-001; 1 sickle blade, 1 blade, 1 flake, 1 chip; Area I; AR 121; Complex C; Context 6457

TZ 019270-001; 3 flakes, 1 chip; Area I; AR 123; Complex C 4/C 5; Context 6474

Flakes/Tools; Date of Context LB I/Rep (Stratum 15)

TZ 008684-001; 1 blade, 1 flake; Area I; AM 116; Complex E; Context 2073

TZ 009000-001; 2 flakes; Area I; AN 116; Complex E; Context 2158

TZ 009002-001; 2 flakes; Area I; AN 116; Complex F; Context 2156

TZ 009133-001; 1 flake; Area I; AN 116; Complex E; Context 2167

TZ 009138-001; 1 sickle blade, 1 flake; Area I; AN 116; Complex E; Context 2167

TZ 009139-001; 3 blades, 1 ad-hoc-tool, 1 flake; Area I; AN 116; Complex G; Context 2168

TZ 009141-001; 2 blades; Area I; AN 116; Complex G; Context 2168

TZ 009142-001; 1 blade; Area I; AN 116; Complex G; Context 2194

TZ 012776-001; 1 knife, 2 blades, 3 flakes; Area I; AM 117; Complex D; Context 3878

TZ 012777-001; 1 flake; Area I; AM 117; Complex D/E; Context 3843

TZ 012779-001; 1 chip; Area I; AO 117; Complex D; Context 3838

TZ 012783-001; 1 blade; Area I; AN 117; Complex D; Context 3820

TZ 012860-001; 1 blade; Area I; AO 117; Complex D; Context 3838

TZ 012862-001; 4 flakes; Area I; AN 117; Complex D; Context 3880

TZ 012880-001; 1 bladelet; Area I; AP 118; Complex D; Context 3911

TZ 012881-001; 1 blade; Area I; AN 117; Complex D; Context 3880

TZ 013130-001; 3 blades, 2 sickle blades, 1 burin, 1 tabular scraper, 5 flakes; Area I; AP 118; Complex D; Context 4053

TZ 013131-001; 2 blades, 1 sickle blade; Area I; AP 117; Complex D; Context 4032

TZ 013132-001; 1 large blade, 1 blade, 1 tabular scraper, 1 ad-hoc-tool; Area I; AP 117; Complex D; Context 4128

TZ 013136-001; 1 blade; Area I; AP 118; Complex D; Context 3990

TZ 013138-001; 1 sickle blade, 2 flakes; Area I; AN 117; Complex D; Context 3880

TZ 013141-001; 1 blade, 2 flakes; Area I; AP 118; Complex D; Context 4018

TZ 013142-001; 2 blades, 2 sickle blades, 1 chip; Area I; AO 118; Complex D; Context 4024

TZ 013143-001; 1 blade; Area I; AO 118; Complex D; Context 4025

TZ 013146-001; 1 sickle blade; Area I; AO 118; Complex D; Context 4104

TZ 013147-001; 1 blade; Area I; AP 118; Complex D; Context 4053

TZ 013148-001; 1 flake; Area I; AP 118; Complex D; Context 3990

TZ 013258-001; 1 projectile, 1 flake; Area I; AP 117; Complex D; Context 4148

TZ 013266-001; 2 blades; Area I; AP 117; Complex D/E; Context 4169

TZ 013267-001; 1 blade; Area I; AQ 117; Complex E; Context 4170

TZ 013268-001; 1 borer, 1 bladelet, 1 multifunctional tool, 4 flakes; Area I; AP 117; Complex D; Context 4148

TZ 013271-001; 1 blade; Area I; AP 117; Complex D/E; Context 4169

TZ 013836-001; 2 blades, 1 projectile, 1 flake; Area I; AM 117; Complex D; Context 4436

TZ 013840-001; 1 blade; Area I; AP 119; Complex D; Context 4402

TZ 013844-001; 1 blade, 1 knife, 1 projectile, 3 flakes; Area I; AN 117; Complex D; Context 4347

TZ 013847-001; 1 blade; Area I; AP 118; Complex D; Context 4400

TZ 013849-001; 4 blades, 2 projectiles, 1 chip; Area I; AN 117; Complex D; Context 4336

TZ 013850-001; 7 blades, 4 flakes; Area I; AN 117; Complex D; Context 4413

TZ 013851-001; 1 blade, 4 flakes; Area I; AN 117; Complex D; Context 4346

TZ 013852-001; 1 flake; Area I; AN 117; Complex D; Context 4374

TZ 013854-001; 1 sickle blade, 1 flake; Area I; AP 118; Complex D; Context 4126

TZ 013856-001; 1 blade, 2 bladelets; Area I; AM 117; Complex D; Context 4304

TZ 013857-001; 4 blades, 1 sickle blade, 5 flakes; Area I; AN 117; Complex D; Context 3880

TZ 013859-001; 5 blades, 1 tabular scraper, 1 chip; Area I; AN 117; Complex D/E; Context 4305

TZ 013862-001; 1 flake; Area I; AP 118; Complex D; Context 4271

TZ 013863-001; 1 blade, 1 tabular scraper; Area I; AM 116; Complex D; Context 3870

TZ 013865-001; 1 sickle blade; Area I; AO 117; Complex D; Context 4272

TZ 013868-001; 2 blades, 1 sickle blade, 2 flakes; Area I; AN 117; Complex D; Context 4318

TZ 013870-001; 1 blade, 1 sickle blade, 1 knife; Area I; AP 117; Complex D; Context 4270

TZ 013871-001; 3 blades, 2 sickle blades, 1 burin, 4 flakes, 1 uncertain; Area I; AN 117; Complex D; Context 4399

TZ 013876-001; 1 blade; Area I; AM 117; Complex D; Context 4335

TZ 013877-001; 1 blade, 1 tabular scraper; Area I; AM 117; Complex D; Context 4317

TZ 013981-001; 1 blade, 1 flake; Area I; AM 117; Complex D; Context 4436

TZ 013982-001; 1 sickle blade, 1 ad-hoc-tool; Area I; AM 115; Complex H; Context 4407

TZ 013983-001; 2 blades, 1 flake; Area I; AN 117; Complex D; Context 4506

TZ 013986-001; 2 flakes; Area I; AP 119; Complex D; Context 4527

TZ 013989-001; 1 blade, 1 bladelet, 1 flake; Area I; AM 117; Complex D; Context 4518

TZ 013993-001; 2 blades; Area I; AM 117; Complex D; Context 4461

TZ 013995-001; 1 blade; Area I; AM 115; Complex H; Context 4494

TZ 013996-001; 1 flake; Area I; AM 115; Complex H; Context 4407

TZ 013997-001; 1 flake; Area I; AM 115; Complex H; Context 4490

TZ 013998-001; 1 blade, 2 flakes; Area I; AN 115; Complex H; Context 4474

TZ 013999-001; 2 bladelets, 1 projectile, 1 flake; Area I; AP 117; Complex D; Context 4435

TZ 014298-001; 1 blade, 1 sickle blade, 1 flake; Area I; AM 117; Complex D; Context 4461

TZ 014370-001; 1 blade, 1 borer, 1 flake; Area I; AN 117; Complex D; Context 4565

TZ 014371-001; 9 blades, 3 sickle blades, 1 large blade, 1 borer, 13 flakes; Area I; AN 117; Complex D; Context 4568

TZ 014372-001; 1 blade, 1 flake; Area I; AN 117; Complex D; Context 4571

TZ 014373-001; 5 blades, 1 tabular scraper, 3 flakes; Area I; AO 117; Complex D; Context 4573

TZ 014374-001; 4 blades, 6 flakes; Area I; AO 118; Complex D; Context 4574

TZ 014375-001; 2 blades, 9 flakes; Area I; AO 117; Complex D; Context 4575

TZ 014376-001; 1 sickle blade, 2 flakes; Area I; AO 117; Complex D; Context 4575

TZ 014377-001; 1 blade, 2 flakes, 1 chip; Area I; AO 117; Complex D; Context 4585

TZ 014626-001; 1 ad-hoc-tool; Area I; AN 116; Complex E; Context 4611

TZ 014996-001; 1 sickle blade; Area I; AM 116; Complex D; Context 4752

TZ 014997-001; 1 blade; Area I; AM 116; Complex D; Context 4752

TZ 015012-001; 2 blades, 1 sickle blade, 1 ad-hoc-tool, 3 flakes; Area I; AM 116; Complex D; Context 4782

TZ 015022-001; 1 blade, 1 tabular scraper, 6 flakes; Area I; AM 116; Complex D; Context 4782

TZ 015023-001; 1 flake; Area I; AN 116; Complex E; Context 4375

TZ 016104-001; 1 blade, 6 flakes; Area I; AM 116; Complex D; Context 4779

TZ 016105-001; 1 flake; Area I; AM 116; Complex D; Context 4782

TZ 016109-001; 3 flakes; Area I; AL 116; Complex D; Context 4800

TZ 016118-001; 1 large blade, 6 flakes; Area I; AM 118; Complex D; Context 4843

TZ 016119-001; 1 blade, 1 flake; Area I; AN 116; Complex G; Context 4847

TZ 016120-001; 1 projectile; Area I; AM 115; Complex D; Context 4848

TZ 016126-001; 1 blade, 2 flakes, 1 chip; Area I; AN 116; Complex G; Context 4884

TZ 016127-001; 1 blade, 1 bladelet, 2 projectiles, 14 flakes; Area I; AN 116; Complex D/E; Context 4887

TZ 016132-001; 1 chip; Area I; AL 117; Complex D; Context 4910

TZ 016141-001; 1 blade; Area I; AO 116; Complex H; Context 4952

TZ 016145-001; 1 blade, 2 flakes; Area I; AO 116; Complex H; Context 4960

TZ 016180-001; 1 blade; Area I; AN 116; Complex D; Context 5062

TZ 016226-001; 1 blade, 1 sickle blade, 1 bladelet, 1 flake, 1 chip; Area I; AN 116; Complex H; Context 5218

TZ 016227-001; 1 projectile, 1 flake; Area I; AN 116; Complex H; Context 5219

TZ 016251-001; 1 sickle blade; Area I; AH 115; Complex I; Context 5297

TZ 016267-001; 1 borer, 2 flakes; Area I; AF 116; Complex I; Context 5352

TZ 016287-001; 1 blade, 2 flakes; Area I; AE 114; Complex I; Context 5431

TZ 016295-001; 2 flakes; Area I; AE 115; Complex I; Context 5476

TZ 016300-001; 1 chip; Area I; AE 114; Complex I; Context 5481

TZ 016308-001; 1 chip; Area I; AE 114; Complex I; Context 5548

TZ 017391-001; 1 sickle blade, 17 flakes; Area I; AL 118; Complex D; Context 5629

TZ 017392-001; 1 blade, 36 flakes; Area I; AP 119; Complex D; Context 5651

TZ 017394-001; 2 blades, 2 flakes; Area I; AL 118; Complex D; Context 5526

TZ 017642-001; 1 sickle blade, 2 flakes; Area I; AM 117; Complex D; Context 5766

TZ 018319-001; 1 flake; Area I; AP 118; Complex D; Context 6017

TZ 018348-001; 2 blades; Area I; AO 116; Complex D/H; Context 6090

TZ 018356-001; 3 blades, 12 flakes, 2 chips; Area I; AN 118; Complex D; Context 5945

TZ 018360-001; 1 projectile, 4 flakes, 3 chips; Area I; AN 118; Complex D; Context 5945

TZ 018368-001; 1 blade, 1 uncertain (possibly fragment of rubbing stone), 27 flakes; Area I; AQ 122; Complex D; Context 6077

TZ 018384-001; 1 blade, 1 sickle blade, 1 projectile, 2 flakes; Area I; AO 118; Complex D; Context 5864

TZ 018387-001; 1 blade, 1 burin, 7 flakes; Area I; AO 118; Complex D; Context 5864

TZ 018420-001; 4 flakes; Area I; AQ 122; Complex D; Context 6077

TZ 018471-001; 1 projectile, 3 flakes; Area I; AO 118; Complex D; Context 5864

TZ 018488-001; 1 bladelet, 4 flakes; Area I; AO 118; Complex D; Context 5864

TZ 019253-001; 5 blades, 1 bladelet, 2 borer, 1 core, 38 flakes, 17 chips; Area I; AO 116; Complex H; Context 6413

TZ 019255-001; 10 flakes; Area I; AO 116; Complex H; Context 6420

TZ 019260-001; 3 blades, 1 sickle blade, 1 tabular scraper, 70 flakes, 21 chips; Area I; AO 116; Complex H; Context 6428

TZ 019266-001; 1 flake; Area I; AO 116; Complex H; Context 6413

TZ 019271-001; 5 flakes; Area I; AT 122; Complex D; Context 6475

Ecofacts

Ecofact

TZ 013544-001

Area I; Square AN 117; Complex D; Context 4374
Description: Ecofact; fragment; rod-shaped; in plan view oval; on the upper and bottom side an elevated wave decor

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5.3; W 2; H 1.3

Weight: 26 g

Material: Silicate stone

TZ 013121-001

Area I; Square AP 117; Complex D/E; Context 4169

Description: Uncertain; fragment; cylindrical with spherical bulges

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 3.2; D (max.) 1.7

Weight: —

Material: Flint/silex

Iron nodule

TZ 012891-001

Area I; Square AN 119; Complex D 6; Context 3918

Description: Iron nodule; fragment; two halves

Figure Reference: —

Date of Context: MB/LB I

Dimensions: D (max.) 3.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 013123-001

Area I; Square AM 117; Complex E; Context 4450

Description: Iron nodule; complete

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 5.1; D (max.) 3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 013125-001

Area I; Square AO 117; Complex D; Context 4081

Description: Iron nodule; complete; ovoid

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 3.9

Weight: 59.5 g

Material: Hematite (Fe₂O₃)

TZ 013126-001

Area I; Square AO 118; Complex D; Context 4093

Description: Iron nodule; complete; ovoid

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 3.3; W 2.5; H 1.7

Weight: 24 g

Material: Hematite (Fe₂O₃)

TZ 014174-001

Area I; Square AN 117; Complex D; Context 4318

Description: Iron nodule; fragment; two fitting halves

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 4.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014178-001

Area I; Square AN 118; Complex D 5; Context 4401

Description: Iron nodule; fragment; spherical

Figure Reference: —

Date of Context: MB/LB I

Dimensions: H 3.1; D (max.) 4.7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014182-001

Area I; Square AN 117; Complex D; Context 4397

Description: Iron nodule; complete; ovoid

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: H 4.4; D (max.) 6

Weight: 225 g

Material: Hematite (Fe₂O₃)

TZ 016309-001

Area I; Square AE 115; Complex I; Context 5549

Description: Iron nodule; eleven fragments

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: —

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016395-001

Area I; Square AM 118; Complex D; Context 4843

Description: Iron nodule; complete

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 10; W 8.6; H 6.2

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016406-001

Area I; Square AM 118; Complex D; Context 4845

Description: Iron nodule; complete

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 6.1

Weight: —

Material: Hematite (Fe₂O₃)

TZ 017372-001

Area I; Square AP 119; Complex D; Context 5624

Description: Iron nodule; complete; spherical

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: D (max.) 4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019132-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344

Description: Iron nodule; complete; spherical

Date of Context: LB I/Rep/LB II

Dimensions: L 10.1; W 10; H 7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019133-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344

Description: Iron nodule; complete; twin tuber

Figure Reference: —

Date of Context: LB I (also LB Repair layer and MB/LB II)

Dimensions: H 11.1; D (max.) 7.1

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019135-001

Area I; Square AT 120; Complex A 3; Context 6501

Description: Iron nodule; fragment; spherical

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 7.4; W 5.7; H 4.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019136-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Iron nodule; complete; irregular shape

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 6.8; D (max.) 3.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019137-001

Area I; Square AT 121; Complex A 2; Context 6324

Description: Iron nodule; hemispherical fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 4.8; D (max.) 7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019139-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Iron nodule; hemispherical fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 2; D (max.) 4.2

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019140-001

Area I; Square AT 123; Complex B 4; Context 6310

Description: Iron nodule; fragment; strongly weathered

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 3.3; W 2.8; H 1.1

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019141-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Iron nodule; fragment; two halves

Date of Context: LB I/Rep/LB II

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019142-001

Area I; Square AT 123; Complex B 4; Context 6310
Description: Iron nodule; fragment; one quarter preserved

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 4.2; W 2.8; H 1.7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019144-001

Area I; Square AT 121; Complex A 2; Context 6324
Description: Iron nodule; fragment; ovoid

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 4.5; W 3; H 3.4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019145-001

Area I; Square AS 123; Complex B 9; Context 6343
Description: Iron nodule; hemispherical fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 1.1; D (max.) 4.2

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019146-001

Area I; Square AS 119; Complex A 5; Context 6034
Description: Iron nodule; complete; spherical

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 8.6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019147-001

Area I; Square AS 120; Complex A 5; Context 6456
Description: Iron nodule; fragment; ovoid

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 5.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019148-001

Area I; Square AS 120; Complex A 4; Context 6456
Description: Iron nodule; fragment; ovoid

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 2.7; D (max.) 5.7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019149-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344

Description: Iron nodule; fragment; irregular shape

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 4.6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019150-001

Area I; Square AS 122; Complex B 8; Context 6345

Description: Iron nodule; fragment; irregular shape

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 4.1

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019151-001

Area I; Square AR 122; Complex C 3; Context 6405

Description: Iron nodule; hemispherical fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 1.6; D (max.) 4.7

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019152-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Iron nodule; complete; spherical

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 2.9; D (max.) 3.8

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019153-001

Area I; Square AT 122; Complex B 1/B 2; Context 6311

Description: Iron nodule; complete; spherical

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: D (max.) 3.4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019154-001

Area I; Square AS 120; Complex A 4; Context 6456

Description: Iron nodule; fragment; ovoid

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 1.7; D (max.) 2.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019155-001

Area I; Square AS 120; Complex A 4; Context 6456

Description: Iron nodule; fragment; ovoid

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: H 1.2; D (max.) 3.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 019156-001

Area I; Square AR 123; Complex C 3; Context 6381

Description: Iron nodule; fragment; crumbs

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 5.7; H 1.6

Weight: —

Material: Hematite (Fe₂O₃)

Raw material**TZ 014092-001**

Area I; Square AN 118; Complex D; Context 3866

Description: Raw material; amorphous fragment

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9.3; W 6; H 3.5

Weight: —

Material: Alabaster

TZ 014369-001

Area I; Square AN 117; Complex D; Context 4568

Description: Raw material; amorphous fragment

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 1.4; W 1.3; H 0.8

Weight: —

Material: Copper ore

TZ 015447-001

Area I; Square AL 118; Complex E 3; Context 5276

Description: Raw material; ovoid with a slight co-

nical friction surface

Figure Reference: —

Date of Context: MB/LB I

Dimensions: L 8.6; W 5.8; H 6

Weight: —

Material: Silicate stone

TZ 015477-001

Area I; Square AE 114; Complex I; Context 5481

Description: Raw material; amorphous fragment

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: —

Weight: —

Material: Flint/silex

TZ 016015-001

Area I; Square AM 116; Complex D; Context 4752

Description: Raw material; irregularly shaped

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 7.9; W 6.6; H 5.3

Weight: 392 g

Material: Flint/silex

TZ 016068-001

Area I; Square AL 118; Complex E 4; Context 4983

Description: Fragment of flint/silex nodule

Figure Reference: —

Date of Context: MB/LB

Dimensions: L 11.4; W 9.3; H 8.2

Weight: 809 g

Material: Flint/silex

TZ 019058-001

Area I; Square AT 121; Complex A 4; Context 6450

Description: Raw material; two amorphous fragments

Figure Reference: —

Date of Context: LB I/Rep/LB II

Weight: —

Material: Quartz stone

TZ 019091-001

Area I; Square AS 122; Complex B 8; Context 6345

Description: Raw material; amorphous fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 4.2

Weight: —

Material: Quartz stone

TZ 019176-001

Area I; Square AS 121; Complex B 5/C 1; Context 6344

Description: Raw material; amorphous fragment

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: —

Weight: —

Material: Bitumen

Uncertain
TZ 013127-001

Area I; Square AO 118; Complex D; Context 4104

Description: Uncertain; fragment

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 9; W 6.6; H 5.6

Weight: —

Material: Flint/silex

TZ 014229-001

Area I; Square AN 117; Complex D; Context 4413

Description: Shape and function unclear; fragment; possibly semi-finished product of a quern; oval in plan view; upper and bottom side flat; only roughly worked

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11; W 9; H 4.7

Weight: 653 g

Material: Basalt

TZ 014245-001

Area I; Square AN 117; Complex D; Context 4318

Description: Uncertain; fragment; oval in plan view; friction marks; upper side slightly concave and abraded; bottom side flat and abraded

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 24; W 17; H 8

Weight: 3800 g

Material: Uncertain

TZ 014282-001

Area I; Square AN 119; Complex D 1; Context 3977

Description: Function uncertain; possibly fragment of a bowl or grinder? rim to base; sloping wall; circular/oval in plan view; rest of base preserved; exterior side rough; upper part partially broken off

Figure Reference: Fig. 1.38

Date of Context: MB/LB

Dimensions: H 17; D (max.) 35

Weight: —

Material: Silicate stone

TZ 015465-001

Area I; Square AL 118; Complex E 1; Context 5042

Description: Function unclear (bowl or raw material); fragment; bowl-shaped; blackened by fire; lower sector chipped

Figure Reference: Fig. 1.167

Date of Context: MB/LB I

Dimensions: L 4.8; W 4.4; H 2.5

Weight: —

Material: Basalt



Fig. 1.167 Bowl-shaped basalt object TZ 015465-001 (Source: BAI/GPIA).

TZ 015818-001

Area I; Square AM 116; Complex D; Context 4752

Description: Shape and function unclear; fragment; irregularly shaped

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 11.3; W 7.3; H 3

Weight: —

Material: Basalt

TZ 018176-001

Area I; Square AS 123; Complex B 9; Context 6137

Description: Function uncertain; complete; strongly weathered block-shaped limestone; on the upper part with elongated irregular recess (20 cm x 6 cm x 3 cm)

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 53; W 35; H 20

Weight: —

Material: Basalt

TZ 019043-001

Area I; Square AO 116; Complex H; Context 6413

Description: Shape and function unclear; fragment; possibly rest of a lower grinding stone

Figure Reference: —

Date of Context: LB I/Rep

Dimensions: L 12.5; W 12.5; H 7

Weight: 1314 g

Material: Basalt

TZ 019070-001

Area I; Square AS 122; Complex B 8; Context 6345

Description: Uncertain; complete; triangular in plan view; pulled up at two corners. Possibly rubbing stone

Figure Reference: —

Date of Context: LB I/Rep/LB II

Dimensions: L 10.4; W 8.3; H 2.7

Weight: —

Material: Basalt

1.3.4. Catalogue of Bone Finds: Strata 16–15

by K. Soennecken

The bone finds on the Tall Zirā'a were evaluated and published by N. Benecke⁶¹.

Looking at the animal bones found in Stratum 16, it can be noted that out of a total of 1,506 bones, only 1.33 % were from wild animals and 15.4 % from work animals. Of the farm animals, 80.01 % come from sheep or goats, 15.33 % from cattle and 4.66 % from domestic pigs. Compared to the previous Stratum 17, there is a decrease in wild animals and domestic pigs. Cattle appear in two categories, as they could be used as farm animals as well as work animals.

Purpose	Animal species	Number of bones
Farm animals		
Meat, eggs, milk, fat, skin, bones, wool	Sheep	110
	Goat	82
	Sheep or goat	993
	Cattle	227
	Domestic pig	69
	total	1481
Wild animals		
Meat, fat, skin, bones, antlers	Gazelle	8
	Fallow deer	9
	Wild pig	-
	Fish	3
	total	20
Work animals		
Guard animals, means of transport	Dog	3
	Cattle	227
	Horse/donkey /mule	2
	Horse	-
	Donkey	-
	total	232

Tab. 1.13 Identifiable bone material from Stratum 16: animal species and number (Source: BAI/GPIA).

The composition of the animal bone material from Stratum 15 does not provide any surprising finds: Out of a total of 970 bones, only 1.34 % come from wild animals and 15.05 % from work animals. Of the farm animals, 73.61 % come from sheep or goats, 14.72 % from cattle and 11.67 % from domestic pigs. This means that the composition of Stratum 15 is almost the same as of Stratum 16. The evaluation for stratum 15 is not very meaningful for the time of the construction of stratum 15 due to the material from earlier settlement phases used in the filling layers.

Purpose	Animal species	Number of bones
Farm animals		
Meat, eggs, milk, fat, skin, bones, wool	Sheep	47 (619 Sheep or goat)
	Goat	34 (619 Sheep or goat)
	Cattle	140
	Domestic pig	111
	total	951
Wild animals		
Meat, fat, skin, bones, antlers	Gazelle	6
	Fallow deer	7
	Wild pig	-
	Fish	-
	total	13
Work animals		
Guard animals, means of transport animals	Dog	2
	Cattle	140
	Horse/donkey /mule	1
	Horse	-
	Donkey	3
	total	146

Tab. 1.14 Identifiable bone material from Stratum 15: animal species and number (Source: BAI/GPIA).

61 Benecke 2019, 493–568.

Among the single bone finds, seven objects are particularly noteworthy:

TZ 012865-001

Stratum 15; Area I; Square AO 117; Complex D/E; Context 3891

Description: Bone with incised marks (probably metacarpus of sheep or goat)

Figure Reference: Fig. 1.65; 1.168

Date of Context: LB/Rep

Dimensions: L 8.7; W 1.3

Weight: —

Reference: Tall al-Mutasallim (Megiddo) **IA I:** Sass – Cinamon 2006, 421 Fig. 18, 45; Sasson 2013, 1167 fig. 27, 27



Fig. 1.168 Metacarpus of sheep or goat with cut marks
TZ 012865-001 (Source: BAI/GPIA).

TZ 012867-001

Stratum 15; Area I; Square AM 117; Complex D; Context 3878

Description: Elongated bone with point; awl

Figure Reference: Fig. 1.63; 1.169

Date of Context: LB/Rep

Dimensions: L 7.8; D (max.) 1.4

Weight: —

Reference: Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1477 fig. 23, 27



Fig. 1.169 Bone awl TZ 012867-001 (Source: BAI/GPIA).

TZ 013422-001

Stratum 15; Area I; Square AN 117; Complex D; Context 4347

Description: Hollowed out bone with one hole at the lower end and six holes at the preserved upper end, always two of them underneath each other. A third hole is cut above; flute

Figure Reference: Fig. 1.53; 1.170

Date of Context: LB/Rep

Dimensions: L 7.4; D (max.) 1.7

Weight: —

Reference: TZ 017479-001 (**MB**); TZ 017204-001 (**LB**); Tall al-Mutasallim (Megiddo) **EB II/MB I/MB II:** Loud 1948, Pl. 286, 1. 7; Braun 1999, 100 f.; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1500 fig. 23, 32



Fig. 1.170 Bone with several holes maybe used as flute
TZ 013422-001 (Source: BAI/GPIA).

TZ 019313-001

Stratum 16; Area I; Square AT 122; Complex B 2/B 3/B 6; Context 6321

Description: Animal not identifiable, large tubular bone diaphysis; round; upper side convex, under-side flat; spindle whorl

Figure Reference: —

Date of Context: MB/LB

Dimensions: H 0.6; D (max.) 2.5

Weight: 1.9 g

Reference: Tall al-Qādī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147, fig. 2.122

TZ 019314-001

Stratum 16; Area I; Square AT 121; Complex A 2; Context 6324

Description: Sheep, metatarsus, distal piece; hole in the centre, not all the way through; fragment of a handle or flute/whistle

Figure Reference: Fig. 1.13; 1.171

Date of Context: MB/LB

Dimensions: L 9.2; W 2.4; D (hole) 0.6

Weight: 18.4 g

Reference: Tall al-Mutasallim (Megiddo) **IA I:** Sas-

son 2013, 1167, fig. 27.27; Tall Waqqāš (Hazor) **IA II C** (Str. VIII): Yadin et al. 1960, pl. CV.34, photo CLXVI.10



Fig. 1.171 Handle or flute/whistle made from bone TZ 019314-001 (Source: BAI/GPIA).

TZ 019540-001

Stratum 16; Area I; Square AT 121; Complex A 4; Context 6454

Description: Sheep, left talus; sanded off on one side; knucklebones; astragal

Figure Reference: —

Date of Context: MB/LB

Dimensions: L 3.3; W 2.0; H 1.5

Weight: 4.9 g

Reference: Hübner 1992b, 43–45; Tall al-Mutasalim (Megiddo) **IA II**: Sass 2000, 395 Fig. 12, 32

TZ 019547-001

Stratum 16; Area I; Square AS 123; Complex B 9; Context 6343

Description: Sheep, Metacarpus distal; on the „inner side“ the bone is hollowed out, so that a groove has formed in the tube; spatula

Figure Reference: Fig. 1.30; 1.172

Date of Context: MB/SB

Dimensions: L 5.9; W 1.6; H 1

Weight: 4.9 g

Reference: —



Fig. 1.172 Bone tool TZ 019547-001 (Source: BAI/GPIA).

1.3.5. Catalogue of Ceramic Finds: Strata 16–15

by A. Schwermer

1.3.5.1. Introduction

For the reasons expounded above, Strata 16 and 15 do not contain finds from chronologically consecutive phases. With only a few squares excavated, Stratum 16 constitutes the transition from Middle Bronze Age II to Late Bronze Age as reflected in the ceramic finds that can be stratified with certainty. Following a massive landslide, Stratum 15 was artificially rebuilt to more than four metres high with soil from earlier settlement layers. This fill almost exclusively contains ceramics from the Early and Middle Bronze Age. Thus, it is Stratum 14 (with its four transformation phases) that “reconnects” with Stratum 16 with regard to its architectural structures and the inventory they held. It is this stratum that comprises the ceramic repertoire which is characteristic of the Late Bronze Age with its variety and magnificent decorations⁶².

The following account is based on the ceramic finds that can be dated to their respective temporal context with a high level of probability. Sherds that originated from these strata but were found in other contexts were disregarded, as were the remains of vessels from later periods that were moved into the Late Bronze Age layers during the course of massive interventions taking place mainly in classical times. However, due to its singular circumstances, Stratum 15 forms an exception. As a result of severe interventions described above, the sherds that can indisputably be classed as Late Bronze Age constitutes less than six percent of the ceramic assemblage⁶³.

The tables in this chapter show a representative selection of ceramic finds for each of the two strata. First, the open vessel types (bowls, kraters), then the closed forms (jugs), and finally other ceramic objects (mainly oil lamps, individual forms, and sherds that were further worked on) and decorat-

ed specimens are described. Within the individual groups of vessel types, the items are roughly sorted according to their dimensions. For almost every sherd depicted, there are two or more reference examples from other sites in northern Jordan and specifically in Israel and Palestine. Usually, sites belonging to the same regional context as Tall Zirā’a are very similar to the forms found here. Occasionally, more distant sites are also included.

In order to form conclusions based on quantities, this chapter also provides statistics on several of the individual types of vessels to include their dimensions and their types of clays. Given the destruction of the original find layer/horizon of Stratum 15, no statements can be made regarding the lines of development in the ceramics of the two strata, and neither do comparisons make much sense. In this respect, this chapter is different from those dealing with the Early and Middle Bronze Age ceramics⁶⁴.

The statistics are almost exclusively based on the rim sherds found in the respective stratum because they allow a reasonably accurate identification of the types of vessels. In cases where the rim sherds are either very small or chipped off just below the rim it may not be possible to clearly identify the type of vessel⁶⁵. For statistical purposes, those sherds were evenly distributed among the comparable forms⁶⁶.

Only a very small number of complete or reconstructible vessels are amongst the finds. These finds consist mostly of smaller jugs, bowls, and miniature vessels and were excavated on the tall. Sometimes also larger vessels could be reconstructed when a sherd reached from the rim lip to the base of the vessel or when many matching parts of a vessel were found.

62 Cf. Chap. 2.3.8.

63 This number is only based on the rim sherds, s. the following paragraph.

64 Cf. Schwermer 2019, Chap. 1.2.2.5, 2.2.2.5 and 3.2.2.5.

65 Cf. also Mullins 2007, 392: „Even so, every archaeologist

must live with the reality of occasional misidentification, especially when fragments are small.“

66 On the procedure, cf. also Schwermer 2019, Chap. 1.2.2.5, 74 f.

Stratum	Vessels			Percentage of total sherds ⁶⁷
	(nearly) complete	Half preserved	Rim to base	
16	2 (1 juglet, 1 miniature vessel)	2 (1 juglet, 1 jar)	5 (4 bowls, 1 baking tray)	0.95 %
15	1 (bottle/flask)	5 (2 bowls, 1 krater, 1 bottle/ flask, 1 oil lamp)	31 (16 bowls, 8 platters, 3 baking trays, 1 jar/jug, 3 oil lamps)	1.96 %
Σ resp. Ø	3	7	35	1.65 %

Tab. 1.15 Completely extant vessels or vessels of reconstructable shape in Strata 16 and 15 (Source: A. Schwermer).

So far, a detailed typologization exists only on cooking pots⁶⁸. All other types of vessels have therefore been roughly classified, mainly on the basis of their dimensions.

As from the Middle Bronze Age on both production method and clay composition of most of the prehistoric utilitarian pottery are largely the same. A vessel's outer design is often the only clue to its chronological classification. If the rim pieces are very small it is sometimes difficult to place them within a specific era. In order not to distort the statistics of the overall sherd finds, these ambiguous specimens are always attributed to the stratum of their respective discovery. All data are gathered in order to discover developments and trends relating to the production and usage of potteries rather than to describe the exact *status quo* of an individual sherd⁶⁹.

1.3.5.2. Vessel Types

Distribution

The more than 800 rim sherds from Stratum 16 were most likely from their original stratigraphical context, and the almost 1,900 rim sherds from Stratum 15 are distributed among the following types of vessels:

- bowls
- platters
- kraters
- cooking vessels
- baking trays
- pithoi
- jars/jugs⁷⁰
- holemouth
- bottles/flasks
- oil lamps
- others.

In concrete terms, this means:

⁶⁷ According to Tab. 1.16.

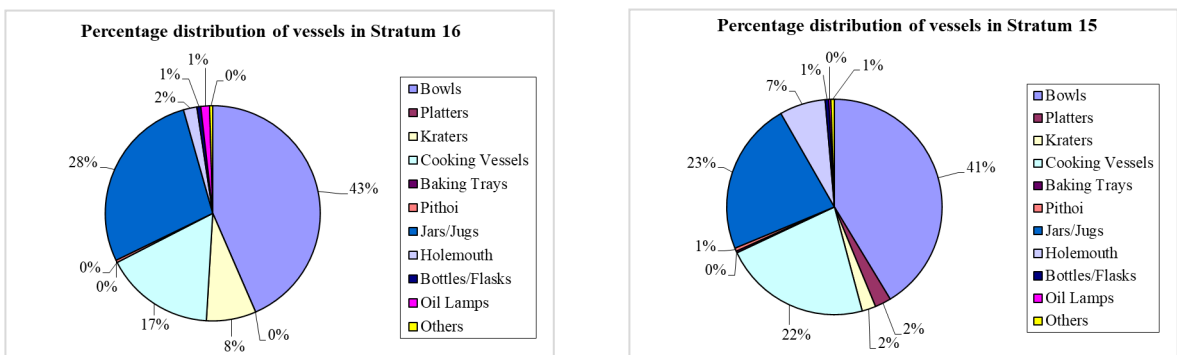
⁶⁸ Schwermer 2014. See also *Chap. 2.3.10*.

⁶⁹ See also Maeir 2007, 243.

⁷⁰ On the differentiation of closed vessels, cf. the paragraph „Dimensions“.

Vessel Types	Stratum 16	Stratum 15	Σ
Bowls	366	779	1145
Platters	---	46	46
Kraters	63	39	102
Cooking Vessels	139	418	557
Baking Trays	---	5	5
Pithoi	3	9	12
Jars/Jugs	234	433	667
Holemouth	17	130	147
Bottles/Flasks	5	10	15
Oil Lamps	11	6	17
Others	4	10	14
Σ	842	1885	2727

Tab. 1.16 Numeral distribution of the rim sherds to the different types of vessels in the Strata 16 and 15 (Source: A. Schwermer).



Graph 1.1 Percentage distribution of the rim sherds to the different types of vessels in the Strata 16 and 15 (Source: A. Schwermer)

The share of **bowls** in the overall repertoire of vessels is almost identical in the transition stratum from Middle to Late Bronze Age (44 %) and the repair Stratum 15 (42 %). It is thus, more than twice the share of the three Middle Bronze Age Strata 19 to 17 taken together. However, with a 32 % noticeable increase already emerged in the youngest Middle Bronze Age stratum⁷¹.

At 17 %, the share of **cookware** in Stratum 16 is markedly below that of the Middle Bronze Age (almost 26 %) ⁷². In Stratum 15 it is 22 % and thus only slightly inferior to that of the Early Bronze Age strata (24 %) ⁷³. This does not come as a surprise as the fill material of this stratum mainly comes from Early Bronze Age contexts.

71 Cf. Schwermer 2019, Chap. 3.2.2.5, Graph 3.1 and Tab. 3.53.

72 Cf. Schwermer 2019, Chap. 3.2.2.5, Graph 3.1 and Tab. 3.53. This percentage is still markedly higher than that of

the Tall al-Hiṣn (Beth Shean), where the overall share of cookware in the Late Bronze Age strata makes up an average of approximately 7 %. (Mullins 2007, 391, Table 5.1)

73 Cf. Schwermer 2019, Chap. 1.2.2.5, Graph 1.1.

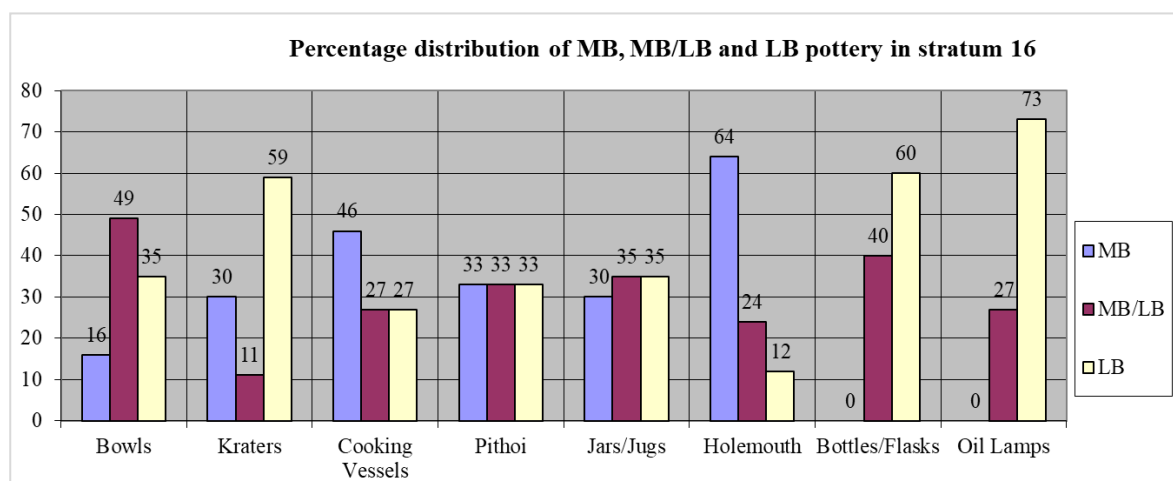
The percentage of the increase of bowls described above goes hand in hand with a decline of the share of **closed types of vessels** (particularly **jars/jugs**) to 28 % in Stratum 16, which had averaged 43 % in the three Middle Bronze Age Strata 19 to 17. A closer look at the individual strata, however, reveals that the findings for Stratum 16 are at least close to a logical continuation of a tendency that had already been incipient then⁷⁴: The share of jars/jugs is 50 % in Stratum 19, 44 % in Stratum 18, 33 % in Stratum 17, and 28 % in Stratum 16⁷⁵.

In Stratum 15, the share of jars/jugs and holemouth jars is approximately 30 % and thus markedly higher than that of the Early Bronze Age strata (22 %)⁷⁶. This may be due to the fact that a substan-

tial part of the sherds found in the repair layer originated from Middle Bronze Age contexts where the percentage of closed types of vessels is very high.

Holemouth jars and platters—Early Bronze Age “markers”—occur only rarely or not at all in Stratum 16. As one would expect, Stratum 15 contains a high percentage of Early Bronze Age vessels which presents a larger number.

A differentiated look at **Stratum 16** (*Graph 1.2*), which marks the transition from Middle to Late Bronze Age, is instructive. For almost all types of vessels, the forms that can be indisputably dated to the Late Bronze Age are predominant whereas this clearly does not apply to the holemouth jars⁷⁷.



Graph 1.2 Percentage distribution of MB, MB/LB and LB pottery in Stratum 16 (Source: A. Schwermer).

A differentiated look at the ceramic finds from the repair Stratum 15 (*Graph 1.3*) particularly reveals the predominance of Early Bronze Age sherds and the very small share of Late Bronze Age finds. The

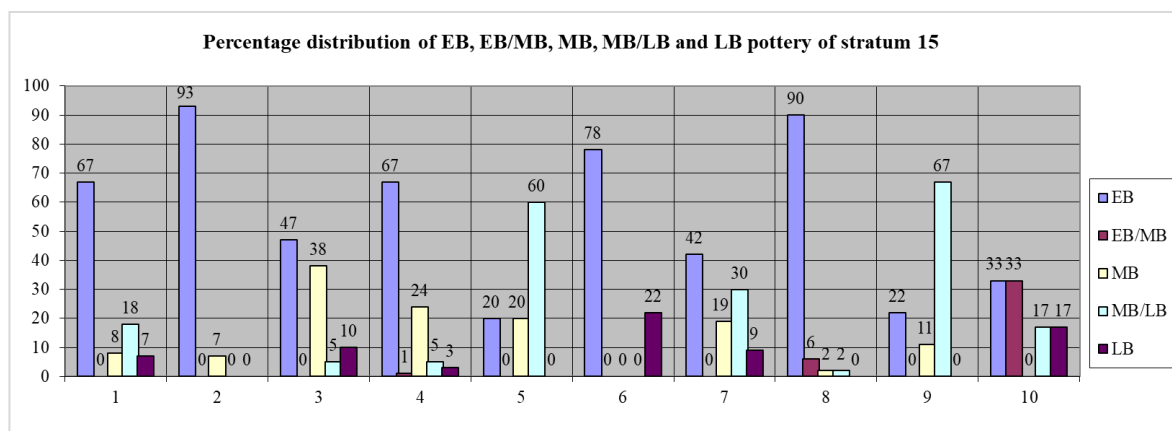
latter is only higher when it comes to types of vessels that barely or only occasionally occur in the earlier eras.

⁷⁴ Cf. Schwermer 2019, Chap. 3.2.2.5, 354.

⁷⁵ In Stratum 14, the share further declines to 19 % (cf. *Chap. 2.3.9, Tab. xx*). It can be assumed that it was somewhere between 28 % and 19 % in the destroyed Late Bronze Age context.

⁷⁶ Cf. Schwermer 2019, Chap. 1.2.2.5, 75, Graph 1.1 and Tab. 1.35.

⁷⁷ For the Tall Zirā'a, the cooking pots type MB/LB mainly date to the Late Bronze Age (cf. Schwermer 2014, 233, and Schwermer 2019, Chap. 4.3.4).



Graph 1.3 Percentage distribution of EB, EB/MB, MB, MB/LB and LB pottery in Stratum 15 (Source: A. Schwermer).

Dimensions

The two following tables (*Tab. 1.17* and *1.18*) present the overall scopes of the wall thicknesses and of the opening diameters of the different types of vessels. In order to make up for possible errors of measurement, we also included the range within which 80 %, and thus the large majority, of the vessels can be found.

The wall thicknesses of the individual types of vessels from Stratum 16 are only marginally differ-

ent from those of the Middle Bronze Age strata⁷⁸. The decrease of the average wall thickness of the cooking pots by 3 mm is due to the fact that the chunky Middle Bronze Age type of cooking pot⁷⁹ is complemented by the more refined cooking vessels of the types MB/LB⁸⁰ and LB⁸¹. As is to be expected, the wall thicknesses of the vessels from the repair layer exceed those of the vessels from Stratum 16 and are more or less in line with those from the Early Bronze Age strata⁸².

Stratum 16: Vessel Types	Wall Thickness (in cm)		
	Extreme Values	80 % of the Vessels	Average ⁸³
Bowls	0.20–1.60	0.40–0.90	0.60
Kraters	0.50–1.50	0.60–1.10	0.90
Cooking Vessels	0.40–2.00	0.50–1.50	0.90
Pithoi	1.30–1.60	1.30–1.60	1.50
Jars and Jugs	0.25–1.80	0.40–0.80	0.60
Holemouth	0.40–1.30	0.50–0.90	0.70
Bottles and Flasks	0.25–0.60	0.25–0.60	0.50

Tab. 1.17 Wall thickness of the different types of vessels in Stratum 16 (Source: A. Schwermer).

⁷⁸ Cf. Schwermer 2019, Chap. 3.2.2.5, 354 f. with Tab. 3.5.4.

⁷⁹ Cf. Schwermer 2014, Chap. 4.2, and Schwermer 2019, Chap. 4.2.

⁸⁰ Cf. Schwermer 2014, Chap. 4.3, and Schwermer 2019, Chap. 4.3.

⁸¹ Cf. Chap. 2.3.10.

⁸² Cf. Schwermer 2019, Chap. 1.2.2.5, Tab. 1.36.

⁸³ Rounded mean value of all sherds.

Stratum 15: Vessel Types	Wall Thickness (in cm)		
	Extreme Values	80 % of the Vessels	Average ⁸⁴
Bowls	0.25–6.00	0.50–1.40	1.00
Platters	0.80–2.30	0.90–2.00	1.30
Kraters	0.65–2.30	0.70–1.60	1.10
Cooking Vessels	0.40–2.40	0.75–1.40	1.10
Baking Trays	1.10–2.70	1.10–2.70	1.60
Pithoi	1.00–1.90	1.10–1.70	1.40
Jars and Jugs	0.20–1.70	0.50–1.20	0.80
Holemouth	0.55–2.05	0.80–1.50	1.10
Bottles and Flasks	0.20–0.80	0.30–0.50	0.40

Tab. 1.18 Wall thickness of the different types of vessels in Stratum 15 (Source: A. Schwermer).

With their tendency towards larger orifices in the open types of vessels (bowls and kraters), which will continue in the following eras, the rim diameters of the vessels found in Stratum 16 largely conform to those from the Middle Bronze Age strata⁸⁵. The fact that the cooking pots have a significantly smaller orifice than the finds from the subjacent Strata 17 to 19 can be explained by the singular shape of the straight-walled Middle Bronze Age cooking pot⁸⁶, which only constitutes 46 % of all

cooking pot finds in Stratum 16⁸⁷.

Apart from small deviations, the vessels from the repair layer (Stratum 15) have roughly the same opening diameters as those from the Early Bronze Age strata⁸⁸. The average opening diameter of the cooking pots is about 5 cm wider because of the usually large straight-walled Middle Bronze Age cooking pot, which constitutes one fifth of the entire cooking pot repertoire in this stratum.

Stratum 16: Vessel Types	Opening diameter (in cm)		
	Extreme Values	80 % of the Vessels	Average ⁸⁹
Bowls	6–45	12–30	20.6
Kraters	15–36	18–32	25.1
Cooking Vessels	12–50	16–36	25.2
Pithoi	18–26	18–26	21.3
Jars and Jugs	5–28	8–16	12.2
Holemouth	10–40	12–22	17.8
Bottles and Flasks	2–4	2–4	3.0

Tab. 1.19 Opening diameters of the different types of vessels in Stratum 16 (Source: A. Schwermer).

84 Rounded mean value of all sherds.

85 Cf. Schwermer 2019, Chap. 3.2.2.5, 354 f. with Tab. 3.5.5.

86 Cf. Schwermer 2014, Chap. 4.2, and Schwermer 2019, Chap. 4.2

87 Cf. *Graph 1.2*.

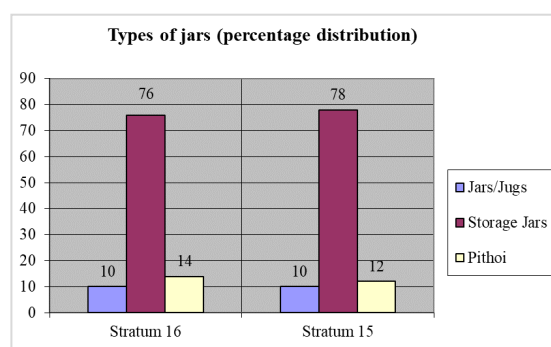
88 Cf. Schwermer 2019, Chap. 1.2.2.5, Tab. 1.37.

89 Rounded mean value of all sherds.

Stratum 15: Vessel Types	Opening diameter (in cm)		
	Extreme Values	80 % of the Vessels	Average ⁹⁰
Bowls	6–70	14–40	26.3
Platters	24–64	30–50	41.6
Kraters	18–52	20–40	31.3
Cooking Vessels	8–54	12–34	19.0
Baking Trays	30–40	30–40	32.0
Pithoi	19–40	26–36	29.8
Jars and Jugs	4–30	8–20	13.6
Holemouth	10–25	10–20	15.2
Bottles and Flasks	1.3–6	1.8–6	3.4

Tab. 1.20 Opening diameters of the different types of vessels in Stratum 15 (Source: A. Schwermer).

With regard to the **jars**, the question arises whether their different forms of appearance, along with the concomitant specific functions, can be ascertained simply by looking at their respective openings. When applying the criteria developed for the Middle Bronze Age jars and jugs from the Tall al-Ḥiṣn (Beth Shean)⁹¹, the following is the distribution of jars/jugs and storage jars within the Strata 16 and 15 of the Tall Zirā'a.



Graph 1.4 Percentage distribution of the different jar types according to the criteria from Tall al-Ḥiṣn (Beth Shean) in the Strata 16 and 15 of Tall Zirā'a (Source: A. Schwermer).

91 According to Maeir 2007, 264 f.:

Type of vessel	Diameter (in cm)	Additional Criterion
Pithos	> 15	thick vessel body
Storage Jar	9–14	
Jar/Jug	< 7–8	thin vessel wall

On the possibilities and limitations of this approach, cf. in more detail Schwermer 2019, Chap. 3.2.2.5.

90 Rounded mean value of all sherds.

About three-fourths or nearly four-fifths, respectively, of the jars would be allocated to the category of storage jars, which were used for storing medium-sized quantities of supplies for probably a limited period of time. On the basis of a broad definition of pithoi, 10 % or 12 %, respectively, of the vessels would have served to store larger quantities for longer periods of time. Small jars and jugs, however, in which liquids were only briefly deposited and/or immediately distributed would have accounted for 10 %. Compared to the findings for the Middle Bronze Age strata, the share of storage jars among the closed vessels has increased whereas that of the jars/jugs has halved⁹².

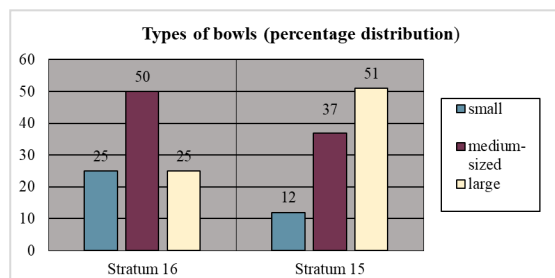
The **bowls**, which are open vessels, could be similarly categorized. The following is the classification applied to the bowls:

Category	Diameter (in cm)
large bowl (bowl)	> 25
medium sized bowl	15–25
small bowl	< 15

Tab. 1.21 Classification of bowls (Source: A. Schwermer).

The smaller bowls that could hold servings for a single eater could possibly also be used for ladling soup or porridge from a larger vessel. In the large bowls, dishes could be mixed thoroughly and maybe larger pieces of meat could be cut. The large and the medium-sized bowls could be used for transporting provisions like grains from the storage location to the area used for food preparation and cooking.

According to the criteria listed above, the following distribution for the Strata 15 and 16 ensues:



Graph 1.5 Percentage distribution of the different bowl types in the Strata 16 and 15 of Tall Zīrā'a according to the criteria listed above (Source: A. Schwermer).

92 Cf. Schwermer 2019, 355 with Graph 3.2.

When comparing the findings for the two strata, a significant difference leaps to the eye. While the large bowls in Stratum 16 only constitute a fourth of the total of bowls, they amount to more than 50 % in Stratum 15. This number would be even larger if the platters, whose rims diameter averages 41 cm, were included. The high proportion of large bowls in Stratum 15 is again due to a high percentage of Early Bronze Age sherds material in this stratum⁹³. In Stratum 16, the share of large bowls is only half of that in Stratum 15 while there are twice as many small bowls indicating people living during the transition from the Middle to the Late Bronze Age had completely changed dietary habits compared to the inhabitants of the Early Bronze Age settlement on Tall Zīrā'a.

Among the 369 sherds attributable to bowls from Stratum 16, 17 (equivalent to 4.6 %) indisputably come from carinated bowls which are the more refined type of bowls which is characteristic of the Middle and Late Bronze Age. The share of carinated bowls is actually larger but it cannot be accurately ascertained as the break lines of most of the sherds is located above the carination, therefore, is no longer verifiable.



Fig. 1.173 Photo and drawing of a carinated bowl sherd from Stratum 16 (TZ 021704-003) (Source: A. Schwermer and BAI).

93 In the Early Bronze Age Strata 25 to 21, the distribution is almost identical: 12 % of small bowls, 38 % of medium-sized bowls, and 50 % of large bowls.

Ware Categories

Except for the imported pottery from Mycenae and Cyprus as well as a few other categories, the ceramic ware categories occurring in the Late Bronze

Age strata have already been described in detail in Vol. 2⁹⁴.

In the following table, they are summarized and amended where necessary:




Designation	Characteristics	Chronology
HM Buff (Handmade Buff)	Hand-built beige-coloured to light brown ware, at its core light grey to dark grey clay with medium-fine to coarse temper, sometimes glimmer particles. Moderately hard to hard firing.	EB
HM R2B (Handmade Red to Brown)	Hand-built red to russet ware, at its core light grey to dark grey clay with medium-fine to coarse temper, sometimes glimmer particles. Moderately hard to hard firing.	EB
HM GW (Handmade Grain Washed)	Hand-built beige-coloured to light reddish ware, at its core usually grey clay with a large share of medium to coarse mineral temper. Red to brown slip with visible drawing marks. Hard firing.	EB
HM P (Handmade Polished)	Hand-built reddish brown ware with polished russet slip, at its core sometimes beige-grey, slightly poriferous clay with a large share of fine to medium-fine temper. Moderately hard to hard firing.	EB
HM NP (Handmade Net Pattern)	Hand-built light brown to light red ware, at its core sometimes grey clay with a large share of fine to medium fine mineral temper. On its surface, a dull, in some places polished, slip with a painted net pattern.	EB
HM S (Handmade Smooth)	Hand-built fine, light ware, at its core beige-coloured clay with very fine mineral temper. Velvety-smooth surface, occasional slip, visible drawing marks. Moderately hard firing.	EB
HM Combed (Handmade Combed)	Hand-built beige-coloured, brownish, or red ware, at its core light grey to dark grey clay with medium-fine to coarse temper. On its surface, parallel incisions as if drawn with a comb, often set at right angles with each other so as to form squares. Moderately hard to hard firing.	EB
HM Kh Kerak (Handmade Khirbet Kerak)	Hand-built ceramic with a black slip on one side and a red, very shiny one on the other. At its core reddish to dark grey clay with coarse temper and easily visible mineral particles. Moderately hard firing.	EB III

94 Cf. Schwermer 2019, Chap. 1.2.2.5, 2.2.2.5 and 3.2.2.5 (including figures).



In Stratum 16, which is dated to the transition from the Middle to the Late Bronze Age, and in the Repair Stratum 15, imported ware practically does not occur. This changes

in the Late Bronze Age Stratum 14 (cf. Chap. 2.3.9). For the sake of clarity and in order to avoid doubling all ware categories relevant for this volume are pooled in this table. This is indicated in Chap. 2.3.9.

HM Metallic (Handmade Metallic)	Hand-built fine beige-coloured to light brown or russet ware; grey clay with fine mineral temper and clearly visible lime particles at the core of thicker sherds.	EB
HM Coarse (HM Coarse)	Hand-built ochre to light brown or reddish ware, at its core light grey to dark grey clay with a lot of medium-sized to coarse temper particles which are clearly visible at the surface. Hard firing.	EB
WM C Buff (Wheel made Common Buff)	Wheel-thrown light ware. Beige-coloured, at its core also grey clay, with plenty of fine to medium-fine mineral temper which is usually also clearly visible on the outside. Moderately hard to hard firing.	MB, LB, IA
WM C R2B (Wheel made Common Red to Brown)	Wheel-thrown red to brown, at its core also light grey clay with plenty of fine to coarse mineral temper which is usually clearly visible on the outside. Moderately hard to hard firing.	MB, LB, IA
WM S Buff (Wheel made Smooth Buff)	Wheel-thrown fine and light-coloured ware with a soft and smooth surface, at its core beige-coloured clay with medium-fine mineral temper, which is partially visible at the surface. Moderately hard firing.	MB, LB, IA
WM S R2B (Wheel made Smooth Red to Brown)	Wheel-thrown fine and reddish-brown ware with a soft and smooth surface, at its core red to brown clay medium-fine mineral temper, which is partially visible at the surface. Moderately hard firing.	MB, LB, IA
WM Buff P (Wheel made Buff Polished)	Wheel-thrown ware made of beige clay, core also grey clay, with plenty of fine to medium-fine mineral temper that is usually clearly visible also on the outside. Moderately hard to hard firing. Thick beige-coloured slip. Moderately hard to hard firing.	MB, LB, IA
WM R2B P (Wheel made Red to Brown Polished)	Wheel-thrown ware consisting of beige-coloured, light to dark red, at its core also grey clay, with medium-fine to fine mineral temper. On the outside a polished light-red to red, thick slip. Moderately hard to hard firing.	MB, LB, IA
WM Brick-Red (Wheel made Brick-Red)	Wheel-thrown red ware made of brick-red clay (thicker sherds also with a core of brownish-red clay) with plenty of mineral temper that is also visible on the surface. Coarse outside without slip. Moderately hard to hard firing.	MB, LB, IA
WM Coarse (Wheel made Coarse)	Wheel-thrown coarse ware. Beige-coloured to reddish-brown clay with coarse mineral temper. The surface is sometimes rough and sometimes covered with a smooth slip. Moderately hard firing.	MB, LB, IA

<p>WM Eggshell (Wheel made Eggshell)</p>  <p>TZ 005566-018</p>	<p>Wheel-thrown very fine and light-coloured ware, at its core light red clay with a fine texture. Very thin walls. Beige-coloured smooth and soft slip. Hard firing.</p>	<p>LB</p>
<p>WM BP (Wheel made Black Polished)</p>  <p>TZ 003166-007</p>	<p>Wheel-thrown fine black ware. Grey to greyish-black clay with a fine texture. Glossy black slip, sometimes with decorative incisions. Hard firing.</p>	<p>LB (MB?)</p>
<p>ChocWh⁹⁵ (‘Chocolate-on-White’)</p>  <p>TZ 020742-002</p>	<p>Wheel-thrown white ware with reddish-brown painting. Beige to reddish clay with medium-fine mineral temper. Thick white, also glossy slip with reddish-brown stripes and geometrical forms. Hard firing. Finding places: Lebanon, Israel, Jordan and Palestine.</p>	<p>MB II/LB I</p>

95 A detailed study on ‘Chocolate-on-White’ ware can be found in Fischer 2006, 255-280.



WM WP⁹⁶ (Wheel made White Polished)	Wheel-thrown white smooth ware, at its core beige-coloured clay with a very fine mineral temper. Smooth, also glossy thick white slip applied on the potter's wheel. Hard firing.	MB II/LB I
WM WSI⁹⁷ (Wheel made White Slip)	Wheel-thrown whitish ware. Reddish brown, at its core light grey clay with fine mineral temper and separate larger temper particles. Thick whitish slip, sometimes with ornamental painting. Very hard firing.	MB II/LB I
CP⁹⁸ (Cooking pot wares):		
CP 6 (Cooking Pot 6)	Hand-built beige-brown to reddish ware, at its core beige-coloured/puce to grey/black clay with a large share of fine to coarse mineral temper which particularly contain angular crystalline embeddings, some of which are larger than 1 mm. Moderately hard to hard firing.	EB
CP 5 (Cooking Pot 5)	Hand-built, mostly coarse ware. Beige-brown to dark red clay that is beige-brown to black at its core and has plenty of fine to medium-sized mineral temper, particularly crystalline embeddings. Moderately hard firing. The material is often very poriferous and crumbles.	MB
CP 3 (Cooking Pot 3)	Beige to light brown clay that has plenty of medium-sized crystalline inclusions (feldspar, quartz, mica) at its core also grey. The surface is coarse and has only few visible lime particles. The firing is moderately hard to hard. The vessels are partially formed in a mould.	MB/LB – LB
Imports⁹⁹:		
Wh SI (Cyp) (Cypriot White Slip)   TZ 021290-011	Hand-built dark brown-red, grey or black clay with a thick white or light coloured slip. Brownish or red paint with geometric patterns. Hard firing with high temperature.	MB IIC – LB I

96 Also „White Ware“ (WW), cf. e.g. Maeir 2007, 287, and Mullins 2007, 398.

97 Also „Imitation/Pseudo Chocolate-on-White“ or „White Slip Decorated“, see Mullins 2007, 398.

98 For designation and numbering cf. Schwermer 2014, Chap. 5.1.

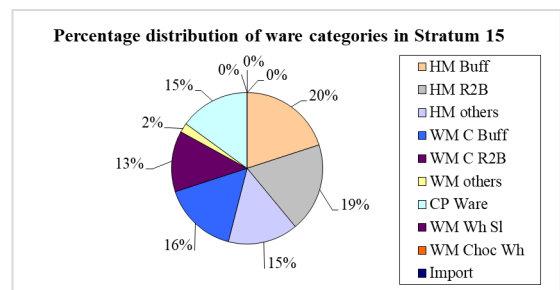
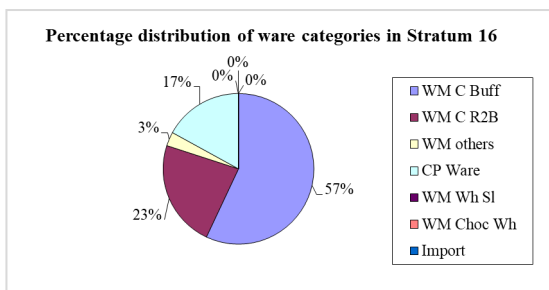
99 Cf. also *Chap. 2.3.7* and *Chap. 2.3.8*.

<p>Base Ring I (Cyp) (Cypriot Base Ring)</p>  <p>TZ 003470-005</p>	<p>Hand-built reddish-brown fine ware, at its core greyish-black clay with very fine texture. Thick red and smooth slip, tinted brownish-black. Very hard firing.</p>	<p>LB I–LB IIA</p>
<p>Myc III (Mycenaean)</p>  <p>TZ 020018-025</p>	<p>Wheel-thrown buff and well purified clay. The vessels have thin walls and a smooth, well polished slip, which is painted with different patterns, animals, plants or humans, mostly reddish-brown or black. Very hard firing.</p>	<p>LB IIA</p>

Tab. 1.22 Ceramic ware category groups of the Early, Middle and Late Bronze Ages and the Iron Age on Tall Zīrā'a (Source: A. Schwermer and BAI/GPIA).

Of the approximately thirty ceramic ware categories listed above, several are represented in the two strata with only very few specimens or not at all. Stratum 15 presents the largest variance of clay

types as the ceramic assemblage in this repair layer comprises sherds from the Early to the Late Bronze Ages.



Graph 1.6 Percentage distribution of ware categories in the Strata 16 and 15 (reduced version) (Source: A. Schwermer).

In both strata, the common ware¹⁰⁰ is the predominant ware category and it constitutes 80 % in Stratum 16 and 68 % in Stratum 15¹⁰¹. In this category, the buff pottery significantly outweighs the red to brown ware in Stratum 16, whereas in Stratum 15 the shares are more or less even. Imported ware is statistically irrelevant in Stratum 16 and, as to be expected, doesn't occur at all in Stratum 15. In Stratum 15, the share of cooking pot ware (15 %) is lower than that of cooking vessels (22 %), which is due to the fact that several holemouth jars made of ordinary clays were classed with the cooking pots due to their burn marks.

Usually the Middle and Late Bronze Age vessels were wheel-thrown. There are, however, some types of vessels that were crafted differently or by applying a combination of methods. Thus, the lower body of the cooking pots up to the carination was produced in a mould and the upper part including the rim lip was wheel-thrown. Finally the two parts were assembled and the "seam" was carefully closed. In most cases, special forms such as miniature vessels, baking plates, or more rectangular large basins were entirely crafted by hand¹⁰².

Ware categories of the different types of vessels

In both strata, the bowls are the type of vessels presenting the widest variance of ware categories. In Stratum 16, more than 90 % of them are made of

buff and reddish common ware, just like the other types of vessels. In Stratum 15, this percentage is smaller due to the broader distribution of Early Bronze Age bowls. Generally, the buff ware is far more abundant than the reddish one although to a lesser extent in Stratum 15.

As expected, the large platters that are characteristic of the Early Bronze Age only occur in Stratum 15 and are almost entirely handcrafted. Here, the buff common ware is again predominant, followed by the surface-treated ware categories HM Grain Washed, HM Polished, and HM Net Pattern. Only 7 % of the platters were made of reddish common ware (HM Red to Brown).

All of the kraters from Stratum 16 were crafted of the two main ware categories (i.e. the buff and the red to brown clays) 70 % of them consisting of the buff clay. When regarding Stratum 15, distinctions need to be made as the wheel-thrown Middle and Late Bronze Age kraters are distributed exactly like the ones in Stratum 16. Among the Early Bronze Age kraters, however, these are made of reddish clay are predominant¹⁰³.

About three fourths of the jugs/jars from Stratum 16 were made of the buff common ware and one fourth of red to brown clay. In Stratum 15, the Early Bronze Age jugs/jars present a broader variance with respect to the clays used and their processing. The vessels crafted on the potter's wheel are once more almost entirely made of the buff and the red to brown common ware with the former being clearly predominant although not to the same extent as in Stratum 16.

100 Here the ware categories are defined solely on the basis of their clays and, if applicable, their slip. Common wares could thus have ornamental paintings, which would make them stand out (see p. 175–180).

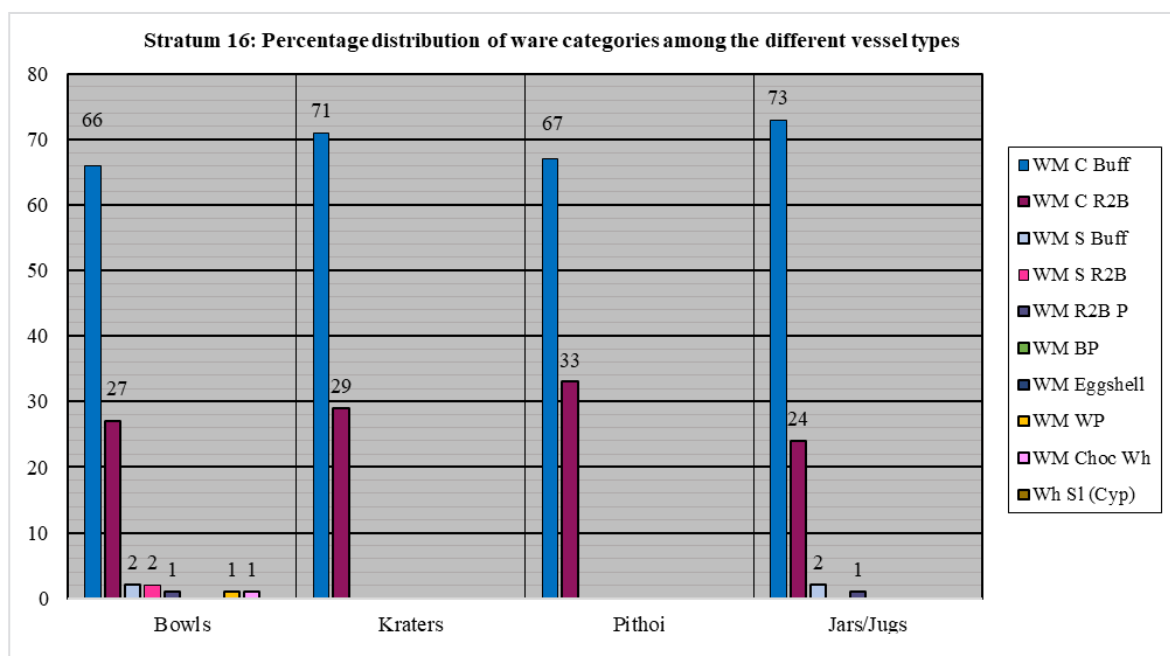
101 For the Late Bronze Age strata of the Tall al-Ḥiṣn (Beth Shean) the share of common wares is given as 68 %. (Mullins 2007, 392).

102 Cf. also Mullins 2007, 393.

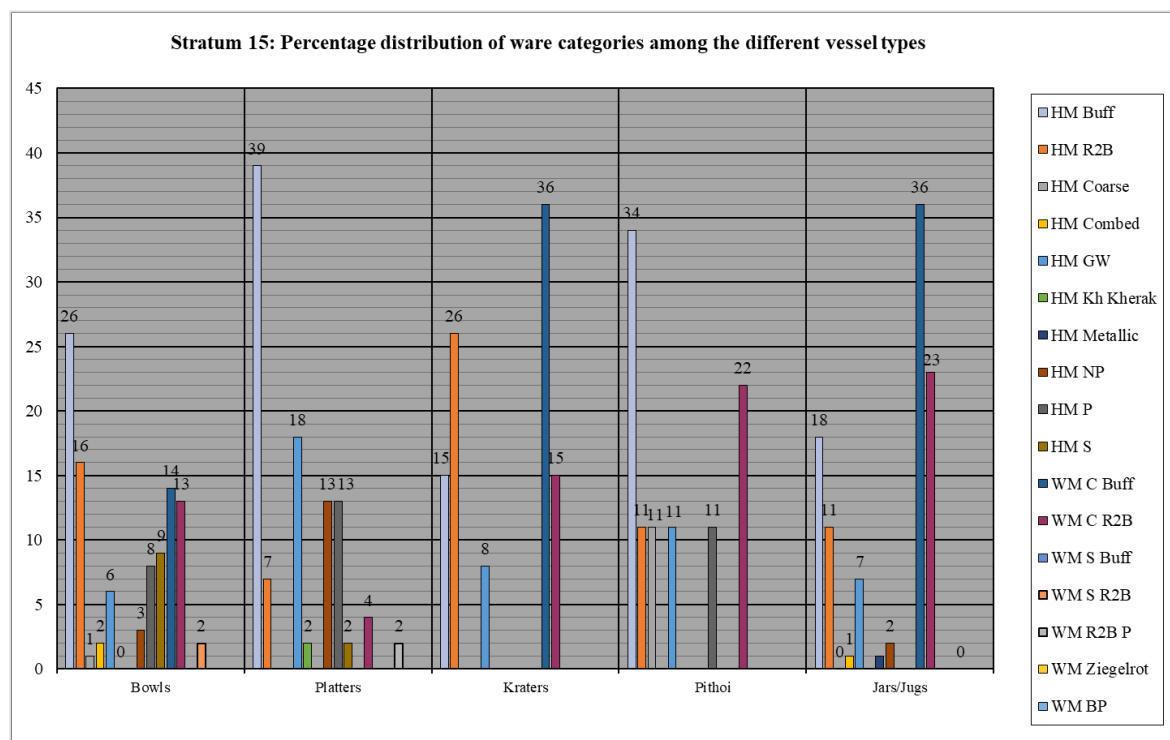
103 This does not correspond to the findings in the Early Bronze Age Strata 25 to 22. (cf. Schwermer 2019, 85 f. and Graph 1.14). In the transition strata towards the Middle Bronze Age, the Early Bronze Age kraters made of buff and those consisting of reddish ware are evenly balanced (cf. Schwermer 2019, 203 f. and Graph 2.15).

	Stratum 16				Stratum 15				
	Bowls	Kraters	Pithoi	Jars/ Jugs	Bowls	Platters	Kraters	Pithoi	Jars/ Jugs
HM Buff					222	18	6	3	78
HM R2B					131	3	10	1	48
HM Coarse					8			1	2
HM Combed					14				3
HM GW					47	8	3	1	31
HM Kh Kherak					2	1			
HM Metallic					1				3
HM NP					26	6			9
HM P					71	6		1	
HM S					72	1			
WM C Buff	243	44	2	170	121		14		155
WM C R2B	98	18	1	56	112	2	6	2	101
WM S Buff	7			4	4				
WM S R2B	7				17				
WM R2B P	4			2		1			2
WM Ziegelrot									1
WM BP				1					1
WM Eggshell	1								
WM WP	4								
WM Choc Wh	4								
Wh Sl (Cyp)	1								

Tab. 1.23 Numeral distribution of ware categories among the different types of vessels in Strata 16 and 15 (Source: A. Schwermer).



Graph 1.7 Percentage distribution of ware categories among the different types of vessels in Stratum 16 (Source: A. Schwermer).

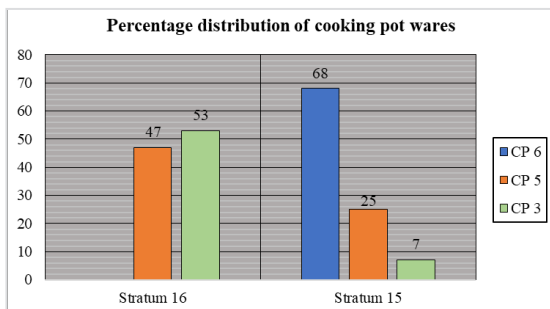


Graph 1.8 Percentage distribution of ware categories among the different types of vessels in Stratum 15 (Source: A. Schwermer).

The cooking pots need to be regarded separately as they were made of specific clay compounds that were exclusively used for this type of vessel, due to their specific function and the necessity of tolerating large differences in temperature¹⁰⁴.

In Stratum 16, the straight-walled cooking pots characteristic of the Middle Bronze Age that often seem to have been carelessly crafted from a coarse-grained clay (CP 5)¹⁰⁵, and those that were made of a material that was in use during the transitional period between the Middle and the Late Bronze Age and during the Late Bronze Age (CP 3)¹⁰⁶, are more or less evenly balanced. This, too, illustrates the transitional character of this stratum.

More than two-thirds of the cooking pot sherds found in Stratum 15, which had been destroyed by the landslide and refilled with material from older layers, were made of the material characteristic of Early Bronze Age cooking pots (CP 6). A fourth of the sherds belonged to the cooking pots characteristic of the Middle Bronze Age. Only 7 % of the sherds are made of the material representative of the Late Bronze Age (CP 3) and are thus indicative of the time horizon preceding the destruction of this stratum. These numbers again show quite plainly the extent of both the destruction of the original context and the subsequent repairs.



Graph 1.9 Percentage distribution of cooking pot wares in the Strata 16 and 15 (Source: A. Schwermer).

Decorations and Special Design

Decorations on vessels can either be incisions, indentations or three-dimensional applications, or ornamental paintings¹⁰⁷.

While incised and combed lines, indented dots and applied beads were quite popular during the Early and Middle Bronze Ages¹⁰⁸ and are thus relatively abundant in the Repair Stratum 15, their prevalence declines significantly in the course of the Late Bronze Age and can mainly be found as so-called “pot marks” on the handles of jars/jugs¹⁰⁹. This type of decoration is superseded by ornamental paintings during the Late Bronze Age. They are mainly applied on bowls, kraters, and jars/jugs¹¹⁰. Pursuant to their function and usage, cooking pots are never painted.

The following table shows the percentage of painted rim sherds among the total of rim sherds of the types of vessels described above. It should be noted that a vessel could obviously have been painted below the sherd’s break line which could yielding a higher percentage than the actual percentage ascertained¹¹¹. For purposes of comparison, the numbers of painted handles and body sherds were also determined.

104 Cf. in detail Schwermer 2014, Chap. 5, and Chap. 2.3.10.

105 Cf. Schwermer 2019, Chap. 4.2.

106 Cf. Schwermer 2019, Chap. 4.3, and Chap. 2.3.10.

107 On this, cf. also Chap. 2.3.7.

108 Cf. Schwermer 2019, 87. 205. 363 f.

109 Cf.. Mullins 2007, 395.

110 Cf. Chap. 2.3.8., Tab. 2.35.

111 On this, cf. the considerably higher numbers for the Tall al-Ḥiṣn (Beth Shean) in Mullins 2007, 395 with Table 5.3. The higher percentage of painted body sherds in Tab. 1.7 is also indicative.

	Stratum 16 ¹¹²		Stratum 15 ¹¹³	
	Quantity	Percentage	Quantity	Percentage
Bowls	13 (366)	3.6	29 (779)	3.7
Kraters	3 (63)	4.8	3 (39)	7.7
Jars/Jugs	17 (234)	7.3	22 (433)	5.1
Handles	21 (668)	3.1	20 (856)	2.3
Body sherds	67 (664)	10.1	86 (3,327)	2.6

Tab. 1.24 Number and percentage of painted rim sherds of bowls, kraters and jars/jugs, as well as painted handles and body sherds compared to the respective overall repertoire (in brackets) (Source: A. Schwermer).

In **Stratum 16**, the share of painted vessels is largest among the jars/jugs, followed by kraters and bowls. The percentage of painted handles is considerably below that of painted jars/jugs. This may be due to the fact that a vessel’s body was painted while still on the revolving potter’s wheel in order to ensure, for instance, the lines ran evenly and in parallel, whereas the handles were presumably applied only later.

Most of the paintings consist of simple horizontal stripes or, on the inside of bowls and on pilgrim flasks, of concentric circles. These stripes can vary in terms of thickness and are usually red, reddish-brown, brown, or black. During the Late Bronze Age, frequently two colours were applied (bichrome). Another common motif on kraters and jars/jugs are wavy lines and are usually in combination with simple straight lines. Furthermore there are triangles, checkerboard patterns, grid patterns, and ladder patterns¹¹⁴. All of these are also painted in the colour schemes described above.

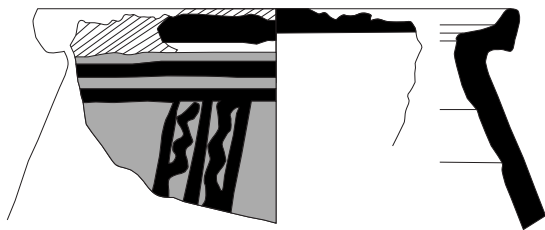


Fig. 1.174 TZ 020202-001 (Stratum 16) (Source: BAI/GPIA).

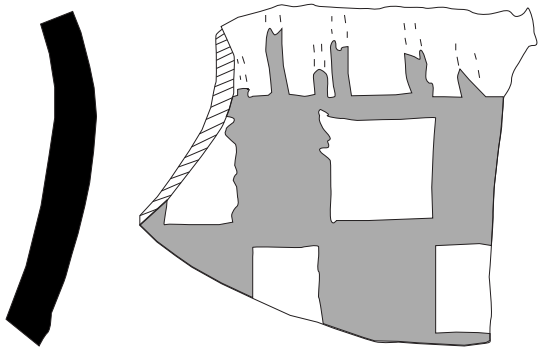


Fig. 1.175 TZ 021785-016 (Stratum 16) (Source: BAI/GPIA).

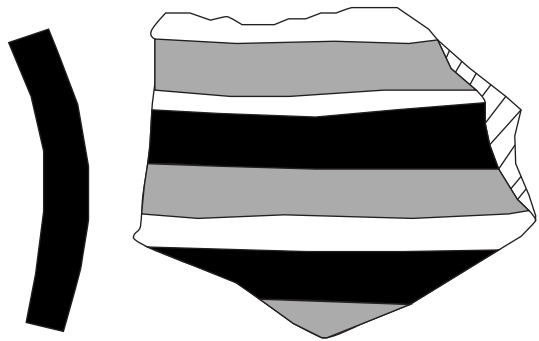


Fig. 1.176 TZ 021743-001 (Stratum 16) (Source: BAI/GPIA).

112 Excluding imported goods.
113 Excluding sherds of ceramic ware that are categorized by

their decorative painting, such as HM GW and HM NP.
114 Cf. Mullins 2007, 395.

Illustrations of plants, animals and humans are very rare¹¹⁵. However, several handles show a stylized date tree¹¹⁶. There is only one exception and that is the unique „Orpheus Jug“ from Stratum 14, which stands out with its illustrations of numerous animals and a lyre player (*Fig. 2.218–2.223*).

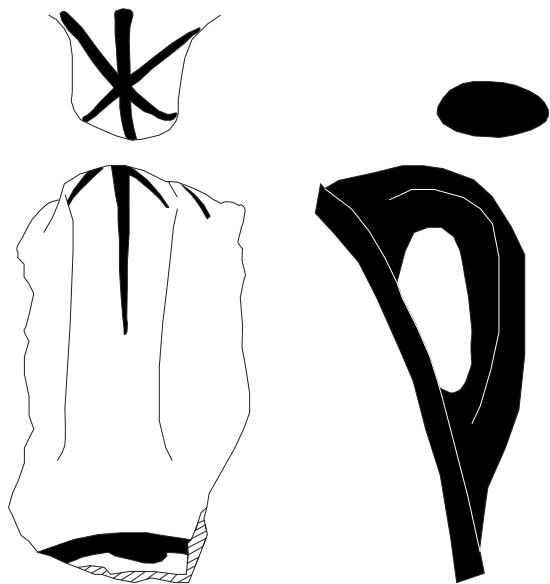


Fig. 1.177 Stylized date tree on the handle of a jar/jug (TZ 005667-014, Stratum 16)¹¹⁷ (Source: BAI/GPIA).

Three body sherds from different contexts have an unusual decoration. One of them is an applied flat clay bead that has been incised with some kind of fishbone pattern (TZ 021508-009). The sherd has strong interior burn marks. The second example is a sherd with a rather edged clay bead that was applied both horizontally and vertically and whose incisions may indicate a snake's body (TZ 021726-013). This could be a remnant of a vessel that served cultic purposes. The third sherd has two cascading rows of deep, almost vertical incisions on the vessel's neck or on the segue to its rim lip (TZ 020162-030). The types of decoration of all three sherds are more indicative of a Middle Bronze Age context.

115 Cf. Mullins 2007, 396. There is only one exception: the unique „Orpheus Jug“ from Stratum 14, which stands out with its illustrations of numerous animals and a lyre player (cf. Soenneken 2017, 295–297 and the detailed description on p. 329–331 (*Chap. 2.2.4*)).



TZ 021508-009



TZ 021726-013



TZ 020162-030

Fig. 1.178 Three body sherds from Stratum 16 with relief-like decorations¹¹⁸ (Source: A. Schwermer).

116 Cf. Choi 2016, 42–59.

117 Cf. Choi 2016, 49 Fig. II-7: (1a).

118 Cf. *Pl I.13*, 7–9.

In **Stratum 15**, the largest percentage of paintings was found on kraters, followed by jars/jugs and bowls¹¹⁹. Apart from the prevalent stripe pattern, especially the Early Bronze Age vessels also have larger, usually rather watery paintings. As expected, decorations in the form of incisions, indentations, and relief bands that are characteristic of Early and Middle Bronze Age pottery are more frequent in Stratum 15 than in Stratum 16¹²⁰.

Aside from the household vessels described above, Stratum 16 contained sherds of eleven oil lamps¹²¹, two of which were made of reddish-brown (WM C R2B) and nine of buff clay (WM C Buff). Furthermore, fragments of two pyxes (TZ 021773-004 and TZ 021796-004) and of two straight-walled vessels, presumably stands (TZ 021740-014 and TZ 021694-003), as well as remains of three baking trays¹²² (Fig. 1.179) and one beer jug (Fig. 1.180). Another noteworthy find is a funnel-like strainer with a very unusual shape (drawing Fig. 1.181)¹²³. This thick-walled (wall thickness 1.4 cm) and presumably handcrafted vessel has a tapered bottom with a pierced tip. The strainer's body has two parallel rows of holes, and a third one is located on the vessel's wall, which is slightly inclined inwards. The exact function of this vessel is unknown; possibly this strainer was a fixed component of a larger jar/jug and (similar to a tea strainer) and was used for preparing beverages with herbal ingredients, thus avoiding the tedious task of picking these out one by one afterwards.



Fig. 1.179 Baking tray (TZ 021567-001) from Stratum 16 (Source: BAI/GPIA).



Fig. 1.180 Sieve-like spout of a beer jug (TZ 021784-004) from Stratum 16 (Source: BAI/GPIA).

119 Not included are decorations such as the net pattern (HM NP), which counts as a ware category of its own because of its high prevalence (cf. Tab. 1.22).

120 For a more detailed description and elaboration, cf. Schwermer 2019, Chap. 1.2.2.5 and 3.2.2.5.

121 Cf. Tab. 1.16.

122 On the type of vessels „baking trays“, cf. Chap. 2.3.11 in this volume.

123 Cf. Pl. 1.13: 2.

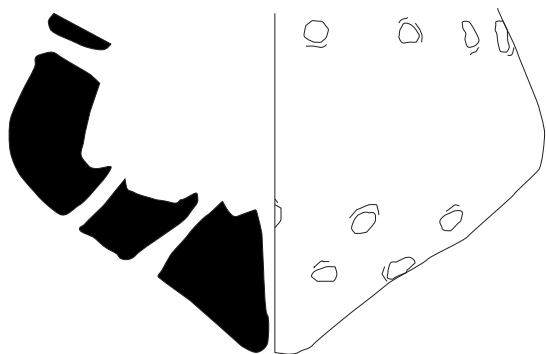


Fig. 1.181 Strainer (TZ 021637-001) from Stratum 16 (Source: BAI/GPIA).

Another noteworthy find is that of a small theriomorphic figurine in the shape of a dog (or donkey?). This may have been a toy but it could also have had a symbolic meaning or served as a totem¹²⁴.



Fig. 1.182 Theriomorphic figurine (TZ 015311-001) from Stratum 16 (Source: BAI/GPIA).

In **Stratum 15**, there were six oil lamps, one pyxis (TZ 021791-005), two basins (TZ 006012-093 and TZ 006818-008), and again the spout of a beer jug (TZ 006427-044). Also noteworthy is the unusual base of a bowl or krater, which is identical to two specimens that were found in Stratum 18. Possibly they all belonged to one vessel, and this sherd only ended up in Stratum 15 in the course of the repair works following the landslide.



Fig. 1.183 Loop base of a bowl/krater from Stratum 15, TZ 006464-013 (Source: BAI/GPIA).

Another category of ceramic finds are secondary objects made from broken and unusable ceramic vessels. These are primarily flat round ceramic discs, which were more or less carefully processed¹²⁵. While their exact function cannot be determined with certainty, they may have served as lids, stoppers, and the smaller ones also as tokens or counting devices¹²⁶, and the discs that are pierced at the centre can be identified as spindle-whorls.

In addition to 842 rim fragments, Stratum 16 contains 87 ceramic discs and five spindle-whorls. In Stratum 15, 55 ceramic discs and eleven spindle-whorls were found in addition to 1885 rim sherds.

¹²⁴ Cf. Gropp 2014, 191.

¹²⁵ Cf. *Pl. 1.14* (Stratum 16) and *Pl. 1.8* (Stratum 15).

¹²⁶ On the possible function of secondarily produced ceramic discs, see Genz 2002, 107 f., and Schwermer 2014, 281 f.

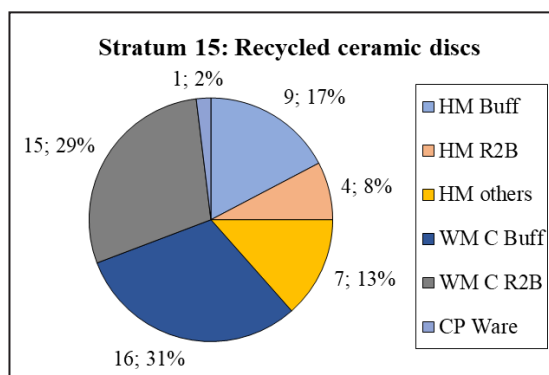
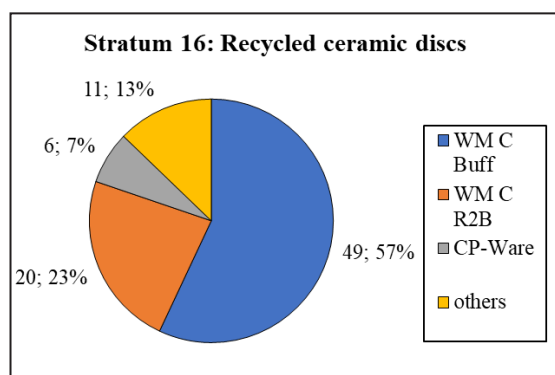
This confirms the assumption that from the Middle Bronze Age onwards, such secondary uses of ceramic vessels apparently increased in frequency¹²⁷.

In accordance with the findings concerning the ceramic vessels, the majority of the ceramic discs found in Stratum 16 can be assigned to the ware category WM C Buff with the remainder, like some examples from the cooking pot ware and others, have a reddish-brown colouring. In Stratum 15, contrary to the findings on the rim sherds¹²⁸, 62 % of the ceramic discs come from vessels produced on the potter's wheel. This, too, supports the thesis that this recycled ware was less common in the Early Bronze Age.

In Stratum 16, the wall thickness of these ceramic discs ranges from 0.5 cm to 3.1 cm (80 % of them are between 0.7 cm and 1.4 cm) with an average of 1.1 cm. This is more than the average wall

thickness of most types of vessels in this stratum¹²⁹. In Stratum 15, the wall thickness of the ceramic discs ranges between 0.3 cm and 2.1 cm (80 % between 0.7 cm and 1.4 cm) with an average of 1 cm. These averages are fairly consistent with the older Strata 25 to 17¹³⁰. It thus seems that only fragments with a wall thickness of about 1 cm were considered suitable for the production of such ceramic discs.

The diameters of all discs in Stratum 16 range from 1.6 cm to 12.5 cm (80 % of them are between 3 cm and 6 cm) with an average diameter is 4.5 cm. In Stratum 15, they range between 1.6 cm and 22 cm (80 % between 3.3 cm and 7 cm) with an average of 5.1 cm. These findings correspond almost exactly with those of the older strata¹³¹ and demonstrates the obviously existence of some sort of standardisation of this type of objects, concluding, their dimensions do not seem to be entirely arbitrary¹³².



Graph 1.10 Number and percentage of ceramic discs and their distribution among the different ware categories (Source: A. Schwermer).

127 Cf. Number of vessel sherds and secondarily produced ceramic discs in the Strata 27 to 17 (Schwermer 2019, 365, Tab. 3.58):

Strata	Quantity of vessel ceramics	Quantity of clay discs
25–22 (FB II/III)	755	30
21–20 (FB IV/MB I)	560	32
19–17 (MB II)	1233	154

128 Cf. *Graph 1.6*: 46 % of the rim sherds from Stratum 15 belonged to vessels made on the potter's wheel and can thus be assigned to the Middle Bronze Age at the earliest.

129 Cf. *Tab 1.17*.

130 Cf. Schwermer 2019, 88. 205. 365.

131 Cf. Schwermer 2019, 88. 205. 365.

132 Cf. Schwermer 2019, 365.

1.4. Conclusion

by K. Soennecken

1.4.1. Summary Stratum 16

So far, only a small part of the stratum has been excavated; however, the architecture (courtyard house) as well as the pottery and the small finds demonstrate this stratum was settled during the transition from the Middle to the Late Bronze Age I. This becomes particularly clear by examining the cooking pot typology¹³³, but also by radiocarbon data, which dates all five samples into the transition phase (TZ 014162-001; 014121-001; 019167-001;

014138-001; 014141-001)¹³⁴. The analysis results date the samples from Stratum 16 to the time between 1950 and 1620 BC. It should be noted that all samples are from burnt wood finds, as annual botanical remains (such as grains or seeds) were not present on the wall or their state of preservation did not permit analysis. Thus the radiocarbon data does not provide an absolute dating for the stratum, at most *a terminus post quem*.

Find-No.	Context	Square	Year	3 σ (99.7 %)	2 σ (95.4 %)	1 σ (68.2 %)	uncalibrated	Stratum	Dating
014162	3847	AM 119	2009	1921–1643 BC	1885–1691 BC	1877–1841 BC (21.9 %) 1821–1796 BC (13.7 %) 1782–1741 BC (26.6 %) 1711–1700 BC (6.0 %)	3465 \pm 35 BP	16	MB IIC/ LB I
014121 first sample	3979	AN 118	2009	2116–2098 BC (0.3 %) 2039–1751 BC (99.4 %)	2026–1871 BC (84.2 %) 1846–1812 BC (6.6 %) 1803–1777 BC (4.6 %)	1972–1882 BC	3570 \pm 35 BP	16	MB IIC/ LB I
014121 HS first examination				1889–1623 BC	1879–1837 BC (14.2 %) 1830–1657 BC (80.3 %) 1652–1645 BC (0.9 %)	1867–1848 BC (8.4 %) 1774–1687 BC (59.8 %)	3435 \pm 35 BP	16	MB IIC/ LB I

133 See: Schwermer 2014, 117–128.

134 Vieweger – Häser 2017, 252–265.

014121 second sample				2031–1743 BC	2011–2000 BC (1.6 %) 1977–1771 BC (93.8 %) 1796–1782 BC (6.6 %)	1947–1877 BC (52.1 %) 1841–1821 BC (9.6 %) 1796–1782 BC (6.6 %)	3550±35 BP	16	MB IIC/ LB I
014121 HS second examina- tion				2135–2079 BC (3 %) 2065–1760 BC (96.7 %)	2117–2098 BC (1.7 %) 2039–1874 BC (88.9 %) 1844–1816 BC (2.9 %) 1799–1779 BC (1.9 %)	2014–1998 BC (9.1 %) 1979–1892 BC (59.1 %)	3590±40 BP	16	MB IIC/ LB I I
019167	6311	AT 122	2013	1915–1639 BC	1882–1691 BC (95.4 %)	1876–1842 BC (19.8 %) 1820–1797 BC (11.6 %) 1781–1738 BC (27.2 %) 1714–1696 BC (9.6 %)	3460±35 BP	16	MB IIC/ LB I
014138	4398	AN 119	2009	1956–1642 BC	1911–1730 BC (88.7 %) 1721–1692 BC (6.7 %)	1879–1838 BC (24.2 %) 1829–1754 BC (44 %)	3485±40 BP	16	MB IIC/ LB I
014141	4364	AN 119	2009	1949–1684 BC	1907–1737 BC (91.5 %) 1716–1696 BC (3.9 %)	1879–1767 BC	3490±35 BP	16	MB IIC/ LB I
014141 HS				2023–1737 BC (99.2 %) 1715–1697 BC (0.5 %)	1949–1751 BC	1920–1871 BC (30.7 %) 1846–1811 BC (21.1 %) 1804–1776 BC (16.5 %)	3530±35 BP	16	MB IIC/ LB I

Tab. 1.25 Radiocarbon analyses from Stratum 16 (Source: BAI/GPIA).

Although the small finds and pottery display a rich spectrum, the low proportion of imported goods is striking. A distinction between the Middle Bronze Age IIB and the Middle Bronze Age IIC is not possible on the basis of pottery and small finds in the

northeast of the southern Levant, however, on the Tall Zirā‘a it is obvious that Stratum 16 is a remnant of the Middle Bronze Age IIC in transition to the Late Bronze Age I.

The end of the settlement in Stratum 16 was

caused by a devastating landslide, which can be proven over almost the entire Area I. The buildings described in Stratum 16 have been preserved, the rest of Area I seems to have dropped off to the west. The backfill is verifiable in all areas right up to the buildings. The actual extent of the destruction cannot be determined at this stage of the excavation. In the profiles at the eastern and southern ends of the excavation area, backfill can be seen and even a deep cut into the backfill did not reach the end of it.

The cause of this landslide cannot be conclusively determined, it is likely that earthquakes or heavy

rainfall led to a collapse of the sinter rock. The Complexes D and E from Stratum 16 seem to have been affected to such an extent by the landslide that their use was discontinued. In contrast hereto are the Complexes A to C in the north of the area, which underwent conversions and changes, continued to be used. As it seems unlikely that Complexes D and E were inhabited and used during the subsequent reconstruction or repair phase. So, for the sake of clarity, they are no longer listed in the general plan of Stratum 15, even if it is assumed Complexes D and E were still visible after the landslide.

1.4.2. Summary Stratum 15¹³⁵

Stratum 15 is characterized by reconstruction work, which had become necessary due to a severe landslide at the end of Stratum 16. Most of Area I had fallen victim to this (at least an area of 1500 m²) and only the northern area seems to have been habitable. In the course of the renovation works, a fortification wall was built and drainage channels were constructed.

The reason for this disaster is difficult to determine: There is no evidence of human destruction and it does not seem to have remained a singular event, as such a landslide occurred as well on the north-eastern side of the tall. However, based on the characteristics of the landslide on the eastern slope, it must be dated to the classical period (such as a Byzantine retaining wall was built on top of it).

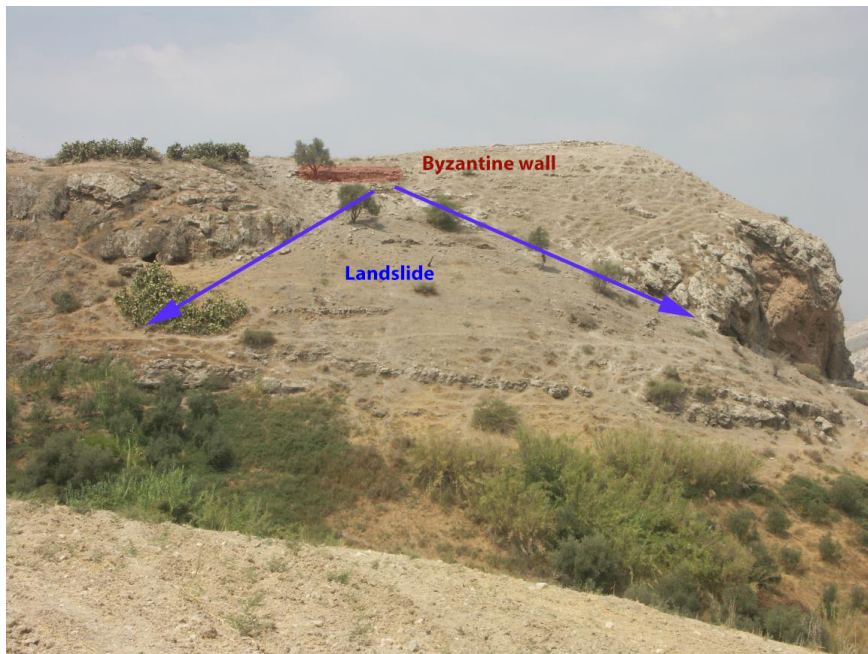


Fig. 1.184 Visible landslide on the eastern slope of the tall (Source: BAI/GPIA).

¹³⁵ The evaluation of this sub-chapter was carried out together with Prof. Vieweger. At this point I would like to thank

him for his cooperation and help. See also: Vieweger et al. 2016, 431–441.

Another possible cause seems to have been due to a large amount of water that accumulated in the tall caused by the artesian spring or heavy rainfall.

The channel systems that were built during the reconstruction and were used to drain the water out of the city may be an indication of problems with water drainage. One of these channels was even driven through the Early Bronze Age glacis. However, rainwater alone cannot have been the cause of the landslide. Rather, collapses of the natural caves in the tall (e.g. due to earthquakes) are presumed. The

natural sinter mound below the settlement layers was created by the artesian spring: the spring water brought minerals and lime with it, which sintered when the minerals, dissolved in water, were separated. These sinter layers took the form of crustal coatings on the slopes and grew into a round hill. The rock encloses caves, where partly stalactites and stalagmites were formed. Possibly, these were not stable enough to support the ever growing layers of settlement¹³⁶.

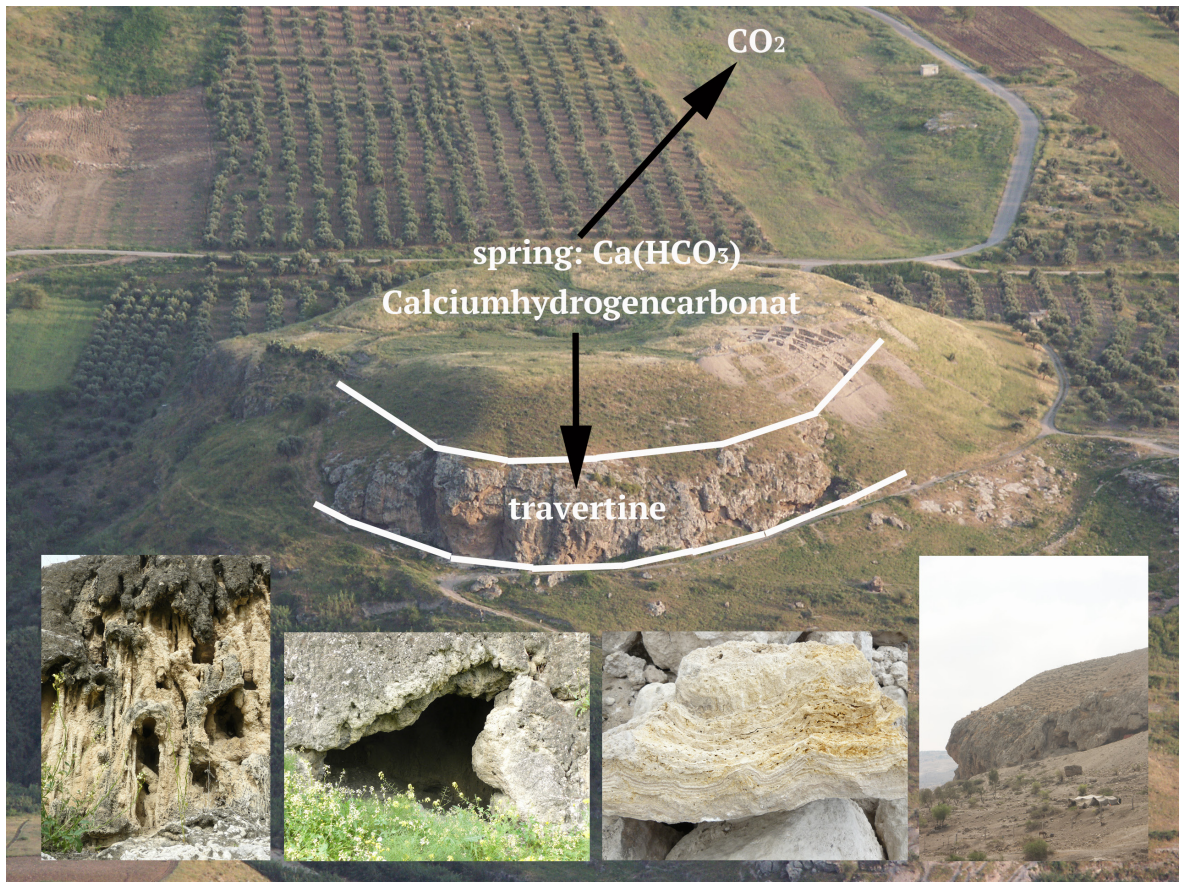


Fig. 1.185 Origin of the sinter rock including caves (Source: BAI/GPIA).

136 See also: Vieweger et al. 2016.

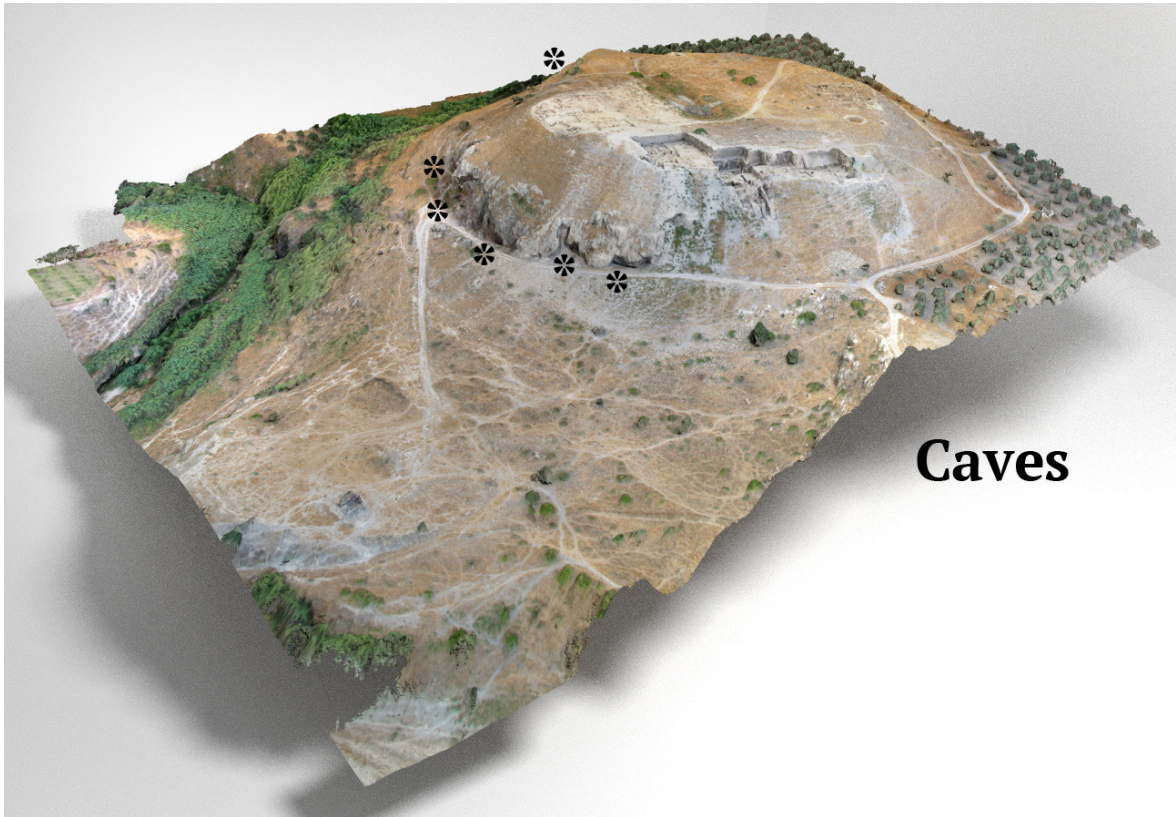


Fig. 1.186 3D-model of Tall Zirā'a seen from southwest (Source: BAI/GPIA).

Considering the radiocarbon dating, the samples from Stratum 15 are dated between 1690 and 1510 BC. The evaluated samples clearly show that the repairs were carried out with older material. As all samples from the tall come from burnt wood finds, this seems to be wood waste that is also filled in and has no constructive significance. The Early Bronze Age to Middle Bronze Age dates are also reflected

in the pottery repertoire. The only safe sample TZ 007402-001 comes from a fire place within the fill layer 5288, above a stone layer or fill layer. There is much to be said for the fact that the landslide took place around 1500 BC, that repairs started promptly and that the new Stratum 14 was rebuilt in a short time.

Find-No.	Context	Square	Year	3 σ (99.7 %)	2 σ (95.4 %)	1 σ (68.2 %)	uncalibrated	Stratum	Dating
014150	4025	AO 118	2009	1936–1692 BC	1900–1741 BC (94 %) 1710–1701 BC (1.4 %)	1880–1861 BC (12.5 %) 1853–1771 BC (55.7 %)	3495 \pm 30 BP	15	Construc-tional
009090 first examination	2194	AN 116	2006	unreliable result			13460 \pm 70 BP	15	Construc-tional
009090 second examination				3946–3659 BC	3941–3858 BC (22.4 %) 3816–3694 BC (71.8 %) 3679–3666 BC (1.1 %)	3889–3886 BC (1.9 %) 3798–3710 BC (66.3 %)	4995 \pm 35 BP	15	Construc-tional
007402	5288	AH 115 pit bellow	2005	1745–1497 BC	1690–1513	1658–1651 BC (3.7 %) 1645–1600 BC (32.1 %) 1586–1534 BC (32.4 %)	3325 \pm 35 BP	15	Construc-tional
014158	3897	AO 118 pit	2009	2023–1740 BC (99.4 %) 1712–1699 BC (0.3 %)	1956–1751 BC	1929–1872 BC (35.8 %) 1845–1813 BC (18.4 %) 1802–1777 BC (14 %)	3535 \pm 35 BP	15	Construc-tional

Tab. 1.26 Radiocarbon analyses from Stratum 15 (Source: BAI/GPIA).

An evaluation of the pottery as well as the small finds is problematic because the backfills contain material of the earlier strata¹³⁷. Noticeable is a large

number of spindle whorls, of which the largest part consists of limestone (in contrast to other periods, which show a greater diversity in material).

¹³⁷ The pottery of this layer consists largely of Early Bronze Age material and represents an average of the previous strata.

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2. THE LATE BRONZE AGE

Egypt ¹	Southern Levant	
Kamose, the end of the Hyksos and early 18th dynasty 1545–1457 BC Kamose to Hatshepsu	Late Bronze Age IA	1550–1400 BC
Middle 18th dynasty 1457–1353 BC Thutmose III. to Amenhotep III.	Late Bronze Age IB	
Late 18th dynasty Amarna period 1353–1295 BC Amenhotep IV. to Horemheb	Late Bronze Age IIA	1400–1200/1150 BC
19th dynasty 1295–1188 BC Ramesses I. to Tausret	Late Bronze Age IIB	
Early 20th dynasty 12th century BC	Iron Age IA	from 1200/1150 BC

Tab. 2.1 Chronology of the Late Bronze Age in Egypt and the southern Levant.

2.1. The Late Bronze Age in the Southern Levant (1550–1200/1150 BC)

by D. Vieweger/K. Soennecken

The Late Bronze Age was—according to M. Liverani—dominated by “great kings” and “little kings”². Great forces like the Egyptians, the Mitanni and the Hittites were grouped around the Levantine land bridge. The complex system of city-states and kingdoms of various sizes in Syria and the southern Levant formed a corridor which the political empires hoped to dominate with diplomacy, economic influence and military force in order to become

the sole great power in the eastern Mediterranean. Under these conditions, not only Syria but also the southern Levant were integrated into the eastern Mediterranean cultural area. They shared long-distance trade, culture and technological development with the surrounding areas.

During the Late Bronze Age, Egypt dominated the southern Levant. Therefore, the beginning of this epoch is traditionally not marked by cultural

¹ Vieweger 2019c I, 192. For the following see also: Vieweger 2019c I, 191–248.

² Liverani 1987, 66 f.

upheavals in the region itself, but rather by political events connected to Egypt³. In this sense, the early phase of the Late Bronze Age was the continuation of the Middle Bronze Age city-state culture, however, it was under Egyptian domination.

The end of the Late Bronze Age is also controversial. Whether one can speak of the Late Bronze Age III⁴ or of the Iron Age IA⁵, is a matter of perspective. During transitional periods, the survival of the previous cultural characteristics and the usually slow advance of new ones can always be expected. Depending on which observations are emphasized, the decisions will vary. One of the continuous features, extending from the Late Bronze Age to the early phase of the Iron Age, is the Egyptian domination which continued until the middle of the 12th century BC. Undoubtedly, Egyptian rule was then much less assertive and could no longer control the entire southern Levant. Also, the Canaanite culture along the coastal and Jezreel plains⁶ did not change much during that time. On the other hand, changes and upheavals are marked by the destruction of important Levantine sites (such as Tall Waqqāṣ [Hazor], Tall al-Mutasallim [Megiddo], Tall al-Ḥiṣn [Beth Shean], Tall Dēr ‘Allā, Tall Abū Ḥuwām, Bētīn [Bethel], Tall Ġazar [Gezer], Tall ar-Rumēla [Beth-Shemesh], Isdūd [Ashdod] and Tall Bait Mirsīm) and by the general collapse of the geopolitical system in the eastern Mediterranean in the decades

between 1200 and 1150 BC⁷. International trade went through a significant recession and major migratory movements brought new challenges⁸. If one continues to consider the non-simultaneity of the cultural development within the individual areas of the southern Levant (as in the southern or northern coastal plain, in the Jordan Valley, in the Cis- and Transjordanian mountain regions) and the dominant cultural agents there (Egyptians, local princes in autochthonous areas, the urban population of the former city-states or the Shasu [Š3šw]-nomads)⁹, then the transition from the Late Bronze Age to the Iron Age I can be calculated to 1200/1150 BC.

The discovered finds of written language from the Late Bronze Age speak ‘their own language’: besides the common use of Akkadian as *lingua franca* in the southern Levant (e.g. in trade, diplomacy and wisdom), these texts are enriched by Egyptian messages. Egyptian represents the influence of the pharaohs, Egyptian officials, the military, merchants and various private individuals with their inscriptions on scarabs, stelae and buildings. In contrast, the Proto-Canaanite inscriptions known from the Middle Bronze Age were now of minor importance. They occurred less frequently and then mostly in the private sphere (possession and founder inscriptions). A notable exception is found on the Sinai Peninsula.

2.1.1. The Late Bronze Age IIA—the Amarna Period (1400–1295 BC)

Only the pressure of the Hittites, who were native to Anatolia, on the Mitanni Empire gave the tense situation in the Levant a new twist. Under Thutmose IV. (1401–1391 BC) both parties (presumably) agreed on a *status quo* concerning their spheres of influence in Syria. This agreement was sealed with a diplomatic wedding. Thutmose IV married a daughter of the Mitanni king Artatama I whose

son, Amenhotep III (1391–1353 BC), adopted the political strategy of his father. In order to strengthen the connection between Egypt and the foreign royal houses, he also married several non-Egyptian (Mitanni) princesses¹⁰. Nevertheless, the power of the Mitanni crumbled, especially as Assur-uballit I (1356–1320 BC) freed his country Assur from the Mitanni dominance.

3 The structure of both the Middle Bronze Age and the Late Bronze Age IIA and IIB follow the chronology of Egypt.

4 Ussishkin 2004, 74 f.; Oren 2006, 263–275.

5 Mazar 1990, 290. 296.

6 Gonen 1992a, 211–257.

7 Ward – Joukowsky 1992, 1–28; Drews 1993, and Kille-

brew 2005, 33–49.

8 Sandars ²1985, 31–45; Bietak 1993, 292–306; Oren 2000; Killebrew 2005, 33–42.

9 Killebrew 2005, 33–49.

10 Also king Kadaschman-Enlil I of Babylon had given his sister to the Egyptian pharaoh as wife.



Fig. 2.1 Steatite scarab of Amenophis III (original Metropolitan Museum New York City; Source: E. Brückelmann/BAI).

Around the middle of the 14th century BC, the Mitanni Empire was conquered by the Hittite king Šuppiluliuma I (c. 1355–1320 BC). This brought about a dramatic change in the general political situation. Ra's Šamra (Ugarit), Byblos, Ḥalab (Aleppo) and Alalah (Alalakh) fell under Hittite influence. The 18th dynasty up to pharaoh Haremhab (1323–1295 BC) was consumed in defensive fights. Finally, only the area between Tall an-Nebī Mend (Kadesh) and the Beqa' plain could be kept¹¹.

In this precarious situation for Egypt in view of the Hittite grab for power, Amenhotep IV, who called himself Akhenaton (1353–1337 BC), entered the stage of world history. With his ideas he not only challenged the religious world of the Egyptians but also endangered the strength of his empire in foreign policy. Amenhotep IV turned against the traditional cults, especially the Amun priests of Thebes as well as their important economic position and financial privileges. However, the temples represented important economic, trade and power centres. The former leading officials in Thebes were replaced by representatives dedicated to the king coming from Memphis and the province¹².



Fig. 2.2 Amenhotep IV and Nefertiti (original Egyptian Museum Cairo, E 1559; Source: D. Vieweger).

Already in 1349 BC, Amenhotep IV founded the new capital Amarna ('Horizon of Aton') in honour of his god. This was located about halfway between Thebes in the south and Memphis in the north. In the eighth year of his reign the Egyptian court, the administration and the royal family moved to the new capital. The pharaoh could not have given a clearer sign of his religiously motivated upheaval in Egypt.

11 Cf. Weippert 2010, 92 n. 49.

12 The pharaoh and his main wife Nefertiti, whom in view of many pharaonic symbols of power is often ascribed a co-regency, declared the worship of Aton to be the state religion instead of the Egyptian pantheon. The pharaoh or

the divine family was the decisive mediator between god and people. Similar to the practice in ancient Egypt, they wanted to be considered as representatives of the god of the empire—without the mediation of other priests. With this, Akhenaton provoked profound inner conflicts in Egypt.

Also the archives with their foreign policy correspondence moved to the capital Amarna¹³. The correspondence was written in Akkadian. The Amarna letters make clear that the pharaohs were not really able to assert their claims to power over the territory they took up. The princes of Tall Waqqāš (Hazor), Tall al-Mutasallim (Megiddo), ‘Akka (Acre), Tall Balāta (Shechem), Tall Ġazar (Gezer), Jerusalem, Tall ad-Duwēr (Lachish) and ‘Asqalān (Ashkelon) lived in a time of permanent tension.

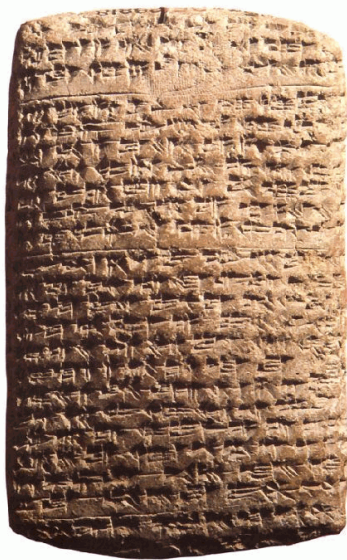


Fig. 2.3 Amarna letter EA 161, third of 14 letters from the correspondence between Aziru of Amurru (1340–1315 BC) and the Egyptian pharaoh (Source: Wiki Art. Aziru, in the public domain).

The successors of Amenhotep IV (1353–1337 BC), especially Seti I and Ramesses II, tried to make the ‘heretic king’ forgotten forever. They gave him and his capital city up to the *Damnatio memoriae* (condemnation of memory). Although Amenhotep IV had discriminated against and pushed back the priests and temples of the ‘old’ gods, he could not permanently shake the foundations of the Egyptian religion in the short time of his reign. Whether Akhenaton died a violent death in the 17th year of his reign remains mere supposition. His natural heir, Tutankhamun, was still a child when his father died¹⁴. The relatively short (not doubtlessly provable) reigns of Smenkhkara (1338–1336 BC), Tutankhamun (1336–1327 BC) and Ay II (1327–1323 BC) give reason to suspect that the domestic political conditions in Egypt at that time were not exactly stable.

Already under Smenkhkara and Tutankhamun the religious policy in Egypt changed. The ‘Restoration Stela’ of Tutankhamun, which was later usurped by Horemhab, openly proclaimed the return to the old gods. The royal couple left Amarna and replaced in its name the theophoric part of Aton by that of Amun who was completely rehabilitated. The pharaoh had the temples of the old gods restored in the whole country. The capital changed to Memphis and Thebes became the religious centre again.

For the Egyptians, it was high time to face the political realities in Asia. They had to confront, not necessarily the disputes in the southern Levant, but rather the powerful advance of the Hittites into Syria.

Horemheb (1323–1295 BC), a general of Tutankhamun, is considered the last representative of the 18th dynasty. He was a usurper and therefore not of pharaonic descent, but because of his energy he rose to his office. At first, he succeeded in conso-

13 It was not until around 1887 AD that parts of this clay tablet archive from the times of Amenhotep III and IV—the so-called Amarna Letters—were rediscovered in an administrative building, the ‘Place of the Letters of the Pharaoh’. These 380 clay tablets, abundantly described, belong for the most part to the former diplomatic correspondence; some contain texts of other genres (e.g. myths). They were apparently deliberately not taken or forgotten when the archives were moved from Amarna to Thebes. They are to

be regarded as only a small subset of the formerly existing archived collection of texts. According to J. A. Knudtson, the international correspondence was divided into the correspondence with great empires (Babylonia, Assyria, Mitanni, Arzawa, Alashia, and Hittite) and the correspondence with Egyptian vassals.

14 Kiya, a wife of Amenhotep IV, was the mother of Tutankhamun.

olidating the Egyptian conditions within the country, in particular through new officials who came from the army. Foresightedly, he built up Paramessu, another officer, as his deputy and later successor.

When he actually took the destiny of Egypt into his hands after Horemheb's death, he continued Horemheb's self-confident policy as Ramesses I (1295–1293 BC).

2.1.2. The Late Bronze Age IIB – the Time of the Ramessides (1295–1200/1150 BC)

But Ramesses I died very soon. Therefore, his son Seti I (1293–1279 BC) shaped the politics of the 19th dynasty. Immediately after taking office, he advanced into the Asian north, conquered Tall an-Nā'am (Jenoam), defeated the Shasu (Š3św) nomads and reached the Lebanese coast. Testimonies of this campaign are his victory stelae in Tall al-Ḥiṣn (Beth Shean), Tall aš-Šihāb and Šūr (Tyros). Two years later he attacked the Hittites, from whom he snatched the city of Tall an-Nebī Mend (Kadesh)¹⁵ and the vassal state of Amurru. With this accomplished, he secured for Egypt the important access to the Lebanese-Syrian port cities.

2.1.2.1. Ramesses II

Seti's son, Ramesses II (1279–1213 BC), continued his father's policy and moved to Asia in the fourth year of his reign (1276 BC). Whereby he forced the Middle Syrian Amurru under the Egyptian rule. The counterattack of the competing major power was not to be too long in coming. The decisive battle between Ramesses II and the Hittite king Muwatalli II (1285–1272 BC) took place the following year at Tall an-Nebī Mend (Kadesh).

The outcome of the battle of Tall an-Nebī Mend (Kadesh) brought great advantages for the Hittites, as the city was not retaken by the Egyptians and some tributary kings of Syria thereupon ended their tribute payments to Egypt. The Hittites even advanced south to the Egyptian province of Upe. One must therefore speak of a convincing victory of the Hittites in 1275 BC, which contradicts Egyptian propaganda.

However, the successes of Muwatalli II were considerably diminished only three years later. After his death, throne disputes in the inner circle of power of the Hittite ruling house transpired. When Muwatalli's successor Ḫattušili III dethroned the legitimate heir, his own nephew Urhi-Teshub, in a civil war. Urhi-Teshub fled to Egypt. Ḫattušili III demanded his extradition, but the Egyptians did not comply.

At the same time, the rise of the Assyrians threatened the Hittite power. Both challenges, the Assyrian threat coupled with a tense domestic political situation, forced the Hittite king unto a diplomatic reconciliation with his Egyptian rival.

The peace treaty was negotiated 16 years after the battle of Tall an-Nebī Mend (Kadesh) in 1259 BC between Ramesses II and Ḫattušili III. This peace treaty brought recognition of the political *status quo* in Syria as well as more than a hundred years of peace between the two empires. From then on, the correspondence between the royal courts took on a friendly tone. Ramesses II married two Hittite princesses in the following years. From this perspective, historians have agreed the battle between Ramesses II and Ḫattušili III was a 'draw', more from a review of the course of arms and less from the events on the battlefield of Tall an-Nebī Mend (Kadesh).

Ramesses II's long reign of 66 years provided Egypt with internal stability and a mostly successful expansion policy. The foundation of his new capital Pi-Ramesses and other monumental buildings is proof of Ramesses II success. The location of the new capital in the eastern Nile delta illustrates the new orientation of Egyptian (foreign) policy towards Asia.

15 Here too he erected a victory stela.

2.1.2.2. Merenptah and the earliest mention of Israel

The southern Levant was firmly in Egyptian hands under Ramesses II. Even under pharaoh Merenptah (1213–1203 BC), the son and successor of Ramesses II, this did not change. This is confirmed by texts such as the ‘Diary of a Border Official’¹⁶ and the ‘Israel Stela’¹⁷. Relations with the Hittite empire were friendly. Merenptah even supplied grain in 1209 BC, when the Hittites were suffering from a severe famine.

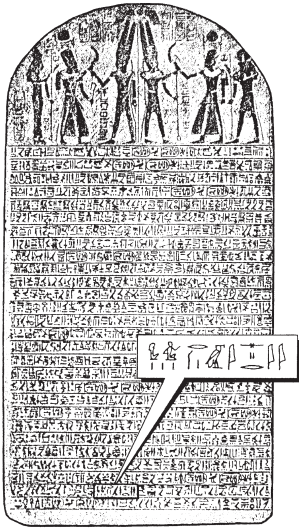


Fig. 2.4 The ‘Israel Stela’ of pharaoh Merenptah (original Egyptian Museum Cairo; Source: E. Brückelmann/BAI).

The stela of Merenptah makes clear that the phenomenon of Israel was known in Egypt at the end of the 13th century BC. Also Moab (time of Ramesses II) and Edom (time of Merenptah) are mentioned around this time. These names can be understood as harbingers of a new political order in the southern

Levant, as was indicated at the turn of the 1st millennium BC. It is obvious by the mention of Israel here was the eponym of a later Kingdom.

From the time of Merenptah, there were reports of a border official¹⁸ who recorded the border crossing of Shasu (Š3šw) nomads from Edom crossing into Egypt at the border fortress Tk̄w.

2.1.2.3. Ramesses III and the Sea Peoples

Under Ramesses III (1184–1153 BC) Egypt was challenged by new enemies. Already his predecessors Ramesses II (stela from Tanis) and Merenptah (1209 BC; Libya campaign in the 5th year of his reign) mentioned Sea Peoples at the side of their Libyan enemies¹⁹.



Fig. 2.5 Medinet Habu, Libyans defeated by Ramesses III; (Source: Nelson et al. 1930, Pl. 1.)

Around 1200 BC, such Sea Peoples groups including the Philistines, who are usually mentioned in biblical literature, crossed through the southern Hittite Empire. In a letter to the governor of Ra’s Šamra (Ugarit), the Hittite king Šuppiliuma II reported threatening actions of the Sea Peoples²⁰. Internal

16 It originates from the third year of Merenptah’s reign, 1211 BC. It is a note of a border official (according to A. Erman) or a school model text. Pap. Anastasi III, Rs. 6,1-5,9.

17 In the mortuary temple of pharaoh Merenptah a stela was found, which is dated to the 5th year of his reign (1209 BC). It is now in the Egyptian Museum in Cairo. The mention of Israel in line 27 is the earliest evidence of this name. The group referred to by this name is described as a tribe, in contrast to other names listed, and is thus expressly not described as a settled or urban entity (city, city-state, state, etc.).

18 It is a pupil’s manuscript from the 8th year of Merenptah’s

reign 1206 BC, which also contains sample letters. This makes an exact dating impossible. Pap. Anastasi VI 51–61.

19 In Karnak and Atrihis Merenptah had had a detailed report of his battle at Sais and listed the Shikulesch and the Shardana among the groups of Sea Peoples he had defeated.

The account of the Sea Peoples presented here follows the traditional reading of the written sources. For a current research overview see e.g. Killebrew – Lehmann 2013; Soennecken (forthcoming).

20 It was written after 1200 BC, found in Ra’s Šamra (Ugarit) and registered there under RS 34.129.

succession disputes, failed harvests and political unrest shook the great empire severely during the second half of the 13th century BC, which is why the attacks of the Sea Peoples hit the Hittites hard.

Many of the Sea Peoples tried to penetrate into Egypt. They attacked by sea and by land. Presumably they came from the Aegean, from the Balkans, and possibly from other parts of the Mediterranean area²¹ to reach the western Mediterranean area, Sy-

ria, the southern Levant and the eastern Nile Delta via Anatolia or Cyprus in several waves. Among the Israelites, it was thought that the Philistines came from Caphtor (Am. 9:7; Jer. 47:4). This is probably what the biblical scriptures called Crete.

Only Ramesses III (1184–1153 BC) was able to defeat the Sea Peoples in his 8th year of reign (1177 BC) in what he described as an extremely dramatic land and sea battle in the eastern Nile Delta.

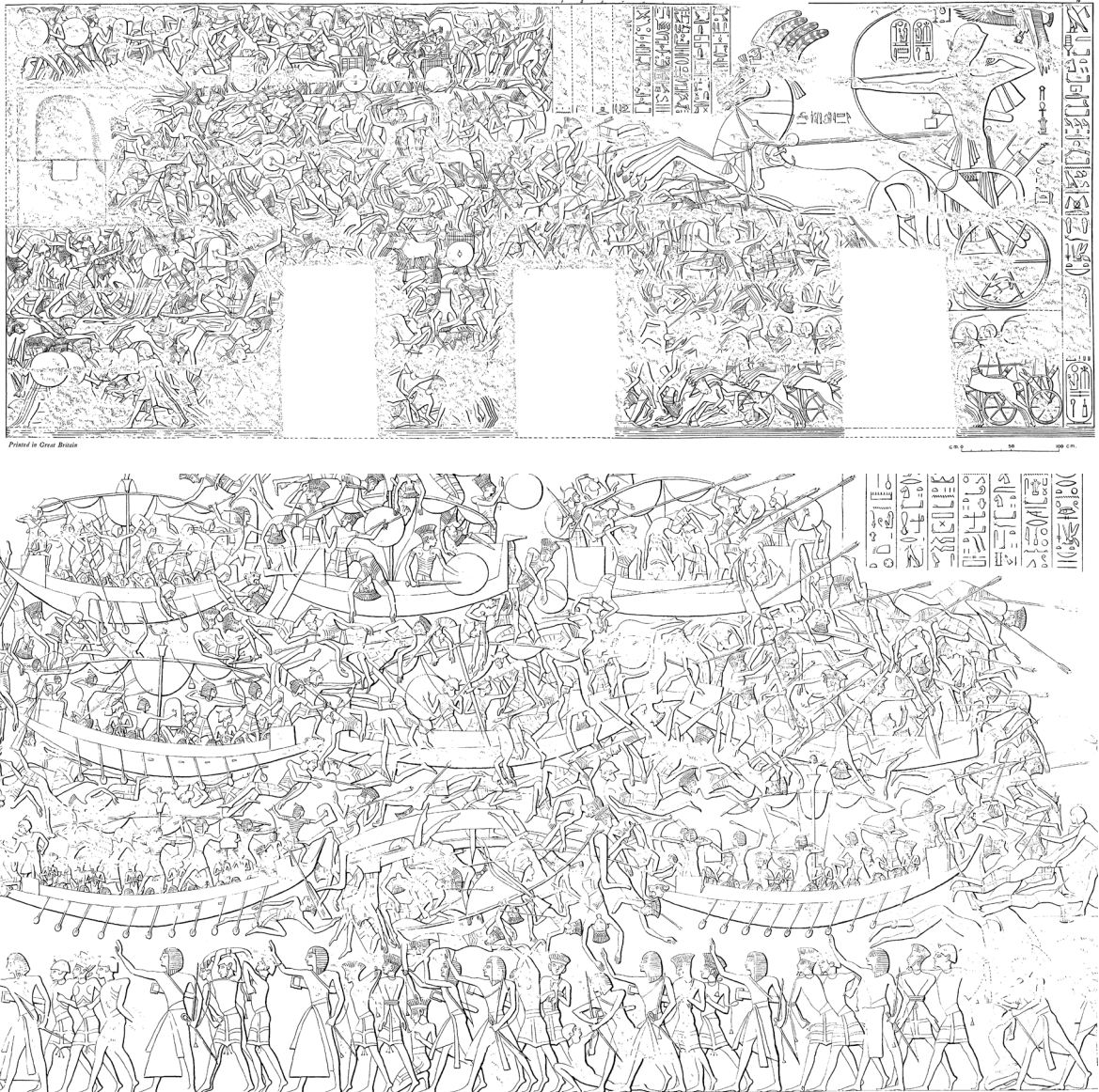


Fig. 2.6a. b Medinet Habu, excerpts from the land and sea battle of Ramesses III against the Sea Peoples (Source: Nelson et al. 1930, Pl. 32 and 37).

21 The reason for their departure is unknown.

Towards the end of the Late Bronze Age IIB, significant areas of the southern Levant, especially those near the coast, were affected by the invasion of the Sea Peoples. The Egyptians settled groups of Sea Peoples (in military colonies) there. Mentioned are Philistines (Plšt) and Tjeker (Tkr).

During the reign of Ramesses III, Egypt's influence in the southern Levant dwindled. However, this was not an abrupt event but a long, drawn-out process²². During the first half of the 12th century BC, Rameses III founded a temple to the god Amun in Gaza²³. In the southern coastal plain at Tall aš-Šerī'a (Stratum IX), in the Shephelah at Tall ad-Duwēr (Lachish; Stratum VI) and also in intersection of the Harod Pass and the Jordan valley at Tall al-Ḥiṣn (Beth Shean; Stratum Lower Level VI)²⁴, the Egyptian administration at the time of Ramesses III is still provable²⁵. Additionally, archaeological

finds of scarabs with the names of Egyptian rulers decrease after his reign. The route to the southern Levant, the 'Way of Horus', runs through the northern part of the Sinai Peninsula and was barely maintained during the 20th dynasty. Until the time of Ramesses VI (1143–1136 BC), official evidence of Egyptian influence is still sufficiently verifiable, as demonstrated by the base of a bronze statue from Tall al-Mutasallim (Megiddo) with the title of pharaoh, which was found in area CC, Stratum VIIA. After that, however, the Egyptians no longer played a decisive role in the southern Levant.

Soon after their arrival, the Sea Peoples pursued their own goals. A five-city alliance known as the Pentapolis (Ġazza [Gaza], Isdūd [Ashdod], Tall aš-Šāfī [Gat], 'Asqalān [Ashkelon] and Ḥirbat al-Muqanna' [Ekron]) as well as the centre of the Tjeker around Ḥirbat al-Burğ (Dor) developed into remarkable centres with a confident (trade) policy.

2.1.3. The Urban Society in the Late Bronze Age

2.1.3.1. Urban Development and Architecture

During the Late Bronze Age, the culture in the southern Levant did not develop uniformly²⁶. Natural regional subdivision of the area occurred, especially in the Egyptian spheres of influence that concentrated on the strategically important areas. This divided the region towards the end of the Late Bronze Age II into Egyptian dominated and autonomous areas (e.g. in the western and eastern mountainous countries).

At the beginning of the Late Bronze Age I, a new settlement pattern had developed in the southern Levant. After the extensive destruction around 1200/1150 BC, many cities were left in ruins and not rebuilt or were rebuilt on a much smaller scale.

The urban centres were mostly located along the main trade routes. The routes which were important to Egypt included the roads connecting the coastal plain and the Shephelah as well as the Jezreel valley and in the Upper Jordan Valley²⁷. The hill country and the Beersheba Basin, however, were only sparsely populated. In the hill country, Tall Dōtān, Tall Balāṭa (Shechem), Tall al-Fār'a (Tirzah), Bēṭīn (Bethel), Jerusalem and Ḥirbat Rabūd (possibly Debir)²⁸ were the main places. Large parts of the population probably changed back to a nomadic lifestyle²⁹, as extensive surveys in the 'hinterland' of the cities suggest³⁰. Only in the Late Bronze Age II did the number of settlements increase again³¹.

22 Weinstein 1992, 142–150.

23 Pap. Harris I, BM 9999, 9,1–3.

24 Mazar 2008, 1616–1622.

25 See e.g. the hieratic inscriptions on pottery vessels from Tall aš-Šerī'a (Stratum IX) and from Tall ad-Duwēr (Lachish) (Stratum VI); bronze fitting with a cartouche of Ramesses III from Tall ad-Duwēr (Lachish), cf. Higginbotham 2000.

26 Cf. esp. Sherratt 2014, 497–598; Panitz-Cohen 2014, 541–560.

27 Examples include Tall Waqqāš (Hazor), Tall al-Ḥiṣn (Beth Shean), Tall Balāṭa (Shechem), Tēl Āfēk (Aphek), Tall aš-Šāfī (Gat) and Tall ad-Duwēr (Lachish).

28 In the beginning of the settlement of this place in the Late Bronze Age, it was 2.5 ha in size and possibly walled. Ofer 1993b, 815.

29 Gonen 1984, 61–73; Gonen 1987, 83–100; Gonen 1992a, 215; Mazar 1990, 239 f.; Ahlström 1993, 220; Bunimovitz 1994, 1–20; Savage – Falconer 2003, 31–45.

30 Panitz-Cohen 2014, 541–560; Yener 2005.

Nevertheless, the Late Bronze Age centres generally did not reach the size of their Middle Bronze Age predecessor settlements³². Consequently, a noticeable decrease in the settled population compared to the Middle Bronze Age can be expected³³. The number and size of temples and public buildings also lagged behind those of the Middle Bronze Age IIB³⁴.

The architecture of the Late Bronze Age continued as well as many of the proven architectural forms of the Middle Bronze Age II. This applies to the construction of city walls and gates as well as to residential buildings. In these, living and working spaces were grouped around central courtyards. Their size, the construction of an upper floor and the care taken in their construction depended on the economic potential of their owners. In some houses, large silos were found for storing grain. Richer and poorer districts can be identified (e.g. in Tall Waqqāš [Hazor] and Tall al-Mutasallim [Megiddo]). Many cities had a sewerage system.

Public buildings, administrative centres or palaces can rarely be identified in the Late Bronze Age (e.g. in the large urban centres such as Tall Waqqāš [Hazor], Tall al-Mutasallim [Megiddo] and on Tall al-‘Aġġūl)³⁵. So-called ‘mansions’ can also be found in Isdūd (Ashdod), Tall al-Bātāš, Tall Bait Mirsīm and Tall ar-Rumēla (Beth-Shemesh)³⁶.

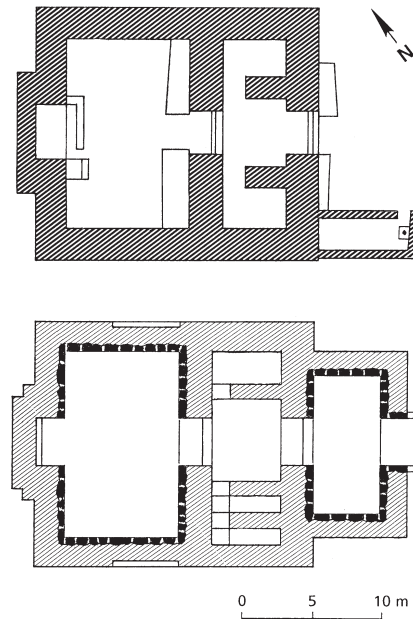


Fig. 2.7 Tall Waqqāš (Hazor), temple in Area H, Stratum 1b (Source: E. Brückelmann/BAI).

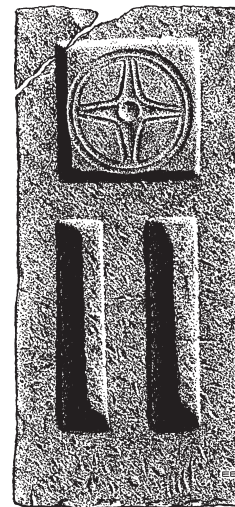


Fig. 2.8 Tall Waqqāš (Hazor), altar from a temple in Area H, Stratum 1a (Source: E. Brückelmann/BAI).

31 Bunimovitz 1995, 320–324; Killebrew 2005, 97.

32 Bunimovitz 1995, 324.

33 Gonen 1984, 61–73. According to Keel – Schroer 2011, 10, the total number of Late Bronze Age I settlements accounted for about one fifth and Late Bronze Age II for about one third of the former Middle Bronze Age IIB settlements.

34 The reasons for this are difficult to grasp. Discussed are dwindling natural resources in the face of a drier climate,

disputes among city-states, deportations to Egypt, Egyptian politics that foment and exploit rivalries between local princes, the Egyptian confiscation of farmland as well as high taxes and tributes. Knapp 1987, 25; Redford 1992, 169.

35 Oren 1992, 105–120; Zuckerman 2007, 3–32.

36 Ben-Dov 1992, 99–104; Oren 1992, 105–120; Daviau 1993; Panitz-Cohen 2006, 173–194.

This discrepancy may be explained by the fact that the elites lived up to their status at the expense of the urban underclass and the rural population⁴¹. However, it can also be noted that the wealth described above could only develop where the Egyptian administration and the trade connection to the ‘colonial motherland’ existed, while outside Egyptian power and control, people lived autonomously but also less luxuriantly⁴². In any case, the Egyptians could have confiscated arable land and, according to sources, severely damaged the local inhabitants through punitive expeditions.

The military presence of the Egyptians significantly increased during the 19th dynasty, especially in the southern and central coastline and in the Jezreel plain (Tall al-Ḥiṣn [Beth Shean]; buildings 1500 and 1700). New seats of governors as well as local princes connected with Egypt were established, e.g. in Dēr al-Balaḥ, Ġazza, Tall Murra (Tel Mor), Tall ad-Duwēr (Lachish), Yāfā, Tall al-Fār‘a (South), Tall aš-Šerī‘a (Stratum X), Ra’s al-‘Ain, Tēl Āfēḵ and Tall al-Ḥiṣn (Beth Shean); possibly also in Tall Ġazar (Gezer) and Tall al-Mutasallim (Megiddo).

For the Egyptian occupiers and their local helpers, the conditions were not safe. The architecture of the newly built fortifications⁴³ and fortress buildings⁴⁴ reveals a pronounced need for protection. In many cases (e.g. in Dēr al-Balaḥ, Tall Murra [Tel Mor], Tall al-Fār‘a [South], Tall aš-Šerī‘a [Stratum X], Ra’s al-‘Ain and Tall al-Ḥiṣn [Beth Shean]) Egyptian architectural forms were used, some of which resembled those from Tall al-Amarna⁴⁵. The Egyptian colonial power controlled the military and trade policy for the important areas to Egypt but could no longer control large areas of the southern Levant.

The east Jordanian highlands were only partially under Egyptian influence during the Late Bronze Age, because Egypt was primarily interested in the trade routes in the plains, the Upper Jordan Valley

and the north-west of Transjordan (i.e. the connection to Damascus). Thus, they kept the northern area with the trade route over to Tall Zirā‘a and through the fertile Irbid-Ramtha basin under their control. Egyptian and Egyptianizing trade goods can therefore be traced there.

The north (the area north of the Jabbok) was also heavily populated throughout the Late Bronze Age, while there were only a few cities in the southern area⁴⁶. In the central east Jordanian highlands, settlements only began to flourish more strongly towards the end of the Late Bronze Age⁴⁷, such as Ġabal al-Qal‘a (Amman Citadel), the temple at Amman City Airport, Tall Šāfūt, Saḥab, Tall al-‘Umērī and Al-Lahūn.

It should be added that a statue of Ramesses II from the temple of Luxor bears a list of Asian place and landscape names to include the toponym ‘Moab’. Whether this refers to the region of Transjordan or rather to the Syrian region is disputed⁴⁸. The east bank or the Jordan river was in Egypt at any rate. A campaign by Ramesses III in the 32nd year of his reign led the Egyptian ruler, among others, against the Shasu (Š3šw) nomads of Seir east of the Aravah⁴⁹.

2.1.3.2. International Relations and Trade

The opening of the Levant to the west began in the Middle Bronze Age II. During the Late Bronze Age, the world of the eastern Mediterranean coalesced. Egypt, Mesopotamia, Anatolia, the connecting Levantine land bridge, the Mycenaean world, Cyprus and Crete were in close political, economic and cultural interaction, and often in equally serious conflicts. The important power centres of Egypt, the empires of the Mitanni and the Hittites, as well as medium-sized and also peripheral kingdoms, princely courts and city-states of various sizes defined their contacts due to changing political interests in

41 Bunimovitz 1994, 10 f.; Bryan 1996, 33–79; Higginbotham 2000.

42 Bunimovitz 1995, 326.

43 Exterior wall up to 2.5 m thick.

44 Often a more or less square layout.

45 Brick buildings without stone foundations.

46 Herr – Najjar 2008, 311.

47 Herr – Najjar 2008, 311.

48 Gonen 1992a, 217; Weinstein 1981, 20; cf. Porter 2013, 60; Hasel 1998, 159–161. – In the 7th year of his reign Ramesses II moved against Moab (KRI II 171.08/180.07; Kitchen 1993–2008). Cf. Porter 2013, 60; Hasel 1998, 159–161, according to which the Mw-j-bw referred to was further north, namely in Syria.

49 Cf. Weippert 2010, 190–194.

the demand for international trade goods and sought the most advantageous ways for their own development of rule or autonomous existence. The economic interdependence in the 'Fertile Crescent' was just as complex as the political relations.

Byblos and Ugarit had well located and developed ports. The nautical skills of their sailors and the experienced merchants who settled there were of highest interest to the great powers⁵⁰. The alphabetical writing system that was invented in Ugarit and spread from there, was superior in many respects to the Akkadian that was commonly used until then.

The rise of Aegean and Cypriot trade throughout the eastern Mediterranean is remarkable. A significant increase in Mycenaean and Cypriot imports in Egypt and on the Levantine coast is particularly noticeable from the 14th century BC onwards. In contrast to the oriental influence in the Aegean Sea and Cyprus, this manifested the growing importance of the Cretan-Mycenaean and Cypriot cultural area for the Near East. However, the southern Levant was only an 'appendage' and the beneficiary of the far greater exchange of goods with Egypt and the Syrian trading metropolises Byblos and Ugarit.

International diplomacy and international trade were the two main channels for the movement of goods, people and ideas. Obviously, the conditions were favourable for all sides. Neither in Egypt and the Levant, nor in the Aegean region or Cyprus feared military adventures or possible foreign infiltration. The great geographical distance and the wide seas created a favourable climate for intensive contacts. The depictions of foreign peoples in private Theban tombs testify to the presence and possibly longer stays of Aegean officials at the Egyptian court. This is evidence for cultural contact at the highest political and social level. A similar assumption may be made for Egyptian officials.

A deeper insight into trade contacts and traded goods is provided by merchant ships that sank in

the Mediterranean: Around 1300 BC, the ship of Uluburun sank along the south-west of the Turkish coast. It was loaded with ox skin bars (copper bars in the shape of ox skins) and a multitude of smaller goods from Afghanistan, Egypt, Mesopotamia, Canaan and other places in the Middle East and was probably on its way to the Aegean Sea. In addition to these goods, organic materials were also loaded, such as almonds, figs, olives and pomegranates. Around 1200 BC, one ship sank off Cape Gelidonya⁵¹ and another sank at Cape Irai off the Greek coast⁵². These three give important indications of trade routes, including from Canaan to the west (presumably via Syria and Cyprus), possibly also from Egypt. These discoveries make it clear how varied trade was and that it also included many perishable (or subsequently processed) goods, and that the archaeology of a place can only grasp a small percentage of these imports and exports in the first place.

The pioneers of the Mediterranean trade had already explored the route across the Libyan Sea to Egypt and via Eastern Crete, Rhodes and Cyprus to the Levant during the Middle Bronze Age. They ventured on this dangerous journey probably less because of their thirst for discovery than for economic interests⁵³.

The Aegean region and Egypt did not possess sufficient metal deposits and were therefore dependent on imports. The scenic and economic differences between Egypt and the Aegean offered the best conditions for a profitable business with exotica, which aroused admiration at their destinations and generated high revenues. Precious raw materials such as gold, alabaster, amethyst, malachite, ivory and ostrich eggs as well as artefacts, especially scarabs and artistically crafted stone vessels, were exported from Egypt to the Aegean. From there came medicinal herbs, for which Crete was famous in ancient times, but also wine, oil, cosmetic substances, wood, textiles, clothes, pottery, jewellery, metal vessels and probably also weapons.

50 Gunneweg et al. 1987, 168–172; Mazar 1988, 224–226. The ports of Ugarit were also used by the Hittites since the 14th century BC, Knapp – Cherry 1994, 136.

51 Cline 2014, 73 f.

52 Cline 2014, 100.

53 See esp. Panagiotopoulos 2005, 34–49.

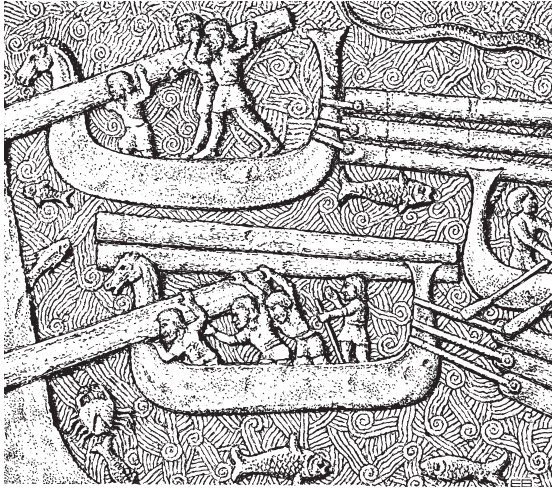


Fig. 2.11 Wood transport, relief from the palace of Sargon II, detail, original Louvre (Source: E. Brückelmann/BAI).

Cyprus supplied the highly coveted copper and its famous pottery. The island is therefore also mentioned in the Amarna Letters⁵⁴. Ugarit, Byblos and their neighbouring towns were trading centres for their vast ‘hinterland’, which reached as far as the Hittite, Mesopotamian and Urartian lands. They also provided the tin coming from the north for bronze production. The so-called spindle bottles belonged to the typical Syrian export pottery.

For the southern Levant, the anchorages staggered between Egypt and the Levant (at daily intervals) were the gateway to the international world (such as Ġazza, ‘Asqalān [Ashkelon], Mīnat Isdūd [Ashdod-Yam], Mīnat Rūbīn [Yavne-Yam], Yāfā and ‘Akka [Acre]). From here, mainly agricultural and livestock products were traded: grain, oil, wine, spices, resins, goats, sheep and cattle. These supplies were probably main tributes to the Egyptians.



Fig. 2.12 Anchor stones from the port area of Dor (Source: E. Brückelmann/BAI).

Mycenaean and Cypriot pottery was not only appreciated for its contents (perfumed oils, cosmetics, opiates, etc.)⁵⁵ but it soon acquired a special status in the Levant and in Egypt due to its unmistakable forms and its outstanding quality and painting. A large part of the pottery served as drinking vessels. Their prestige value was high and possession was therefore a question of social status. For this reason, Mycenaean and Cypriot vessels were also locally imitated. In individual cases, the outstanding skills of the imitators were so great that only modern archaeometric investigations can provide proof of origin beyond doubt.

In the middle of the 12th century BC, the import of Mycenaean pottery almost ceased and instead, Cypriot pottery was imported but only in the north (Tall al-Ḥiṣn [Beth Shean], Tall al-Qāḍī [Dan], Acre)⁵⁶. There is little evidence of Aegean influences in the Levant in the 12th century BC, neither in religion nor in everyday life⁵⁷. This can be attributed to the collapse of the urban centres in Greece and Cyprus at that time.

54 EA 33 to 40 discusses trade and political issues between Egypt and Alaschia (Cyprus). The island exported copper and wood in large quantities, which were exchanged for silver and “sweet oil” (EA 35 to 37). The king of Alaschia demanded the return of his messenger (EA 37 and 38), counter gifts to which he was entitled and the surrender of

a ship (EA 40).

55 On Cypriot ‘Base ring’-pottery see Chovanec et al. 2015, 175–189; Bunimovitz – Lederman 2016, 1552–1561.

56 Yasur-Landau 2010, 200.

57 Yasur-Landau 2010, 214.



Fig. 2.13 Late Bronze Age flask of the type 'Base ring'-pottery (Source: BAI/GPIA).



Fig. 2.14 Late Bronze Age bowl of the type 'Base ring'-pottery (Source: BAI/GPIA).

After a long break, the mining at Fēnān, which was only revived in the Late Bronze Age, later reached a new peak in the Iron Age Edom and led, comparable to Timna ('Sites 2, 30 and 212')⁵⁸, to the peak of copper production there⁵⁹.

2.1.3.3. Craftsmanship

With its fashionable characteristics and stylistic devices, the craft industry is the best symbol of the elites' desire to express political and/or economic power as well as their elevated social position through prestige goods and exquisite merchandise. Excellently produced textiles, incense or valuable objects made of metal, pottery, wood, stone, (semi)precious stones⁶⁰, ivory⁶¹, faience and glass represented wealth, honour and power. This idea not only shaped the furnishings of the rulers' residences in the great empires, but also the courts of the smaller kingdoms and even the princely courts on the peripheries, as well as the furnishings of urban elites ('sub-elites of consumers')⁶². Considerable parts of the settled population used imported pottery items, e.g. from Cyprus or Mycenae, as prestige goods. They thus symbolised their participation in the cultural *koiné*⁶³. This presupposed a highly developed craft in the processing of (precious) metals, glass, wool and faience, as well as in the fields of pottery, glyptic and carving⁶⁴. The imitation of imports occupied a wide range of crafts in the southern Levant⁶⁵.

Between the centres of power, not only were technologies, materials, and high-value trade goods exchanged, but also civil servants⁶⁶, doctors/healers, and entertainers.

Despite the mentioned flourishing of crafts, the quality of pottery used on a daily basis declined⁶⁷. It is unclear whether if this was due to increased competition with imported goods (which forced them to produce more quickly and cheaply) or foreign competitors were able to bring the coveted goods onto the market at affordable prices⁶⁸. Petrographic surveys, typological considerations and technological studies show that the mass production practised since the Middle Bronze Age IIB was abandoned, at least since the transition from Late Bronze Age I to

58 About sanctuary ('Site 200') see Chap. 4.4.5.3.

59 Rothenberg 1993, 1475–1486; Bienkowski 2008, 1854–1856.

60 Lapis lazuli was often used, sometimes also amber.

61 Important hoards of the Late Bronze Age originate from Tall al-Mutasallim (Megiddo) and Tall ad-Duwēr (Lachish; 'Fosse' temples).

62 Sherratt – Sherratt 1991, 351–386.

63 Panitz-Cohen 2014, 541–560; Feldman 2006.

64 Kohl 1987, 143–164; Leibowitz 1987, 3–24; Gonen 1992a, 211–257; Caubet 1998, 105–111; Moorey 2001, 1–14; Feldman 2006.

65 Prag 1985, 154–166; Bergoffen 2006, 331–338.

66 Caubet 1998, 105–111; Zaccagnini 1983, 245–264.

67 Amiran 1969, 125; Bienkowski 1986; Franken – London 1995, 214–222.

68 Panitz-Cohen 2006, 276–283.

II, in favour of local, small craft units with a forcibly greater variety of forms. Towards the end of the 19th dynasty, the Egyptians brought their own potters to the garrison towns, who produced Egyptian pottery moulds locally with Egyptian technology⁶⁹.

In the areas of the southern Levant dominated by Egypt, a certain homogeneity of the ‘Canaanite’ type spectrum was maintained throughout the entire Late Bronze Age, while in the autonomous and peripheral areas regional characteristics increasingly appeared⁷⁰. The cultural segmentation of the small regions was a harbinger of the Iron Age I.



Fig. 2.15 Bronze weights from Nimrud, 8th century BC (Original British Museum; Source: E. Brückelmann/BAI).

The bronze craft was widespread in the Late Bronze Age. Weapons ([crooks'] swords, daggers, etc.), tools (knives, axes, adzes, chisels, etc.), prestige goods (mirrors, wine sets, etc.), drinking vessels (e.g. jugs or rhyta), and ritual objects (e.g. statuettes of gods, miniature kettle carriages or stands for kettles) were found throughout the southern Levant.

Iron craftsmanship began in a modest way towards the end of the Late Bronze Age. Early evidence from the 13th century BC was found on the Tall an-Na'ām to the south of the Lake of Galilee.

2.1.3.4. Temple and Mortuary Cult

The temple construction continued traditions of the Middle Bronze Age II. These initially included the monumentally built so-called fortress temples, the Migdol temples, of which outstanding examples can be found in Ṭabaqāt Faḥl (Pella), Tall al-Muta-sallim (Megiddo) and Tall Balāṭa (Shechem). With some modifications they survived the entire Late Bronze Age and were even used until the Iron Age I (Megiddo) and II (Pella).

69 Knapp 1993; Cohen-Weinberger 1998, 406–412; Killebrew 2005, 79–80; Panitz-Cohen 2009, 186–196; Panitz-Cohen

2010.

70 Killebrew 2005, 11; Na'aman 1999, 31–37.



Fig. 2.16 Migdol temple at Ṭabaqāt Faḥl (Pella) (Source: D. Vieweger).

Also, the long-room temples built in the Syrian tradition continued to be used in the Late Bronze Age I, for example in Area H of Tall Waqqāṣ (Hazor). There, the temple entrance was ‘modernized’ by erecting orthostat stones and devices for wooden door jambs. In contrast to the Migdol temples during the Late Bronze Age, long-room temples were also founded at new locations, such as Tall Abū Ḥawām and Tall Mubārak (Tel Mevorakh). The long room temples were not oriented towards a certain direction. This does not mean, however, that their construction did not always correspond to the direction of local topographical or astronomical features.

Many buildings illustrate the new idea of dividing the inner sacred space. The long-space temples of Tall al-Mutasallim (Megiddo), Tall Waqqāṣ (Hazor), Tall Mūsā (Tel Kittan), Tall ad-Duwēr (La-

chish) and Tall al-Ḥiṣn (Beth Shean), which were tripled in the interior during the Late Bronze Age, obviously corresponded to complex theological ideas of their builders and followed the principle of staggered sanctity into the areas of the atrium, vestibule, antecella and cella. The latter could partly be designed as a podium or as a cult niche. The presumably transcendently presented gods could only be directly contacted there by the selected cult personnel. The non-uniform interior decoration indicates different liturgical procedures.

The religious worship at the open cult place (Bama) of Nahariyyā⁷¹ which also dates from the Middle Bronze Age, only survived into the early decades of the Late Bronze Age⁷².

71 Weippert 1988, 235 f. 281–284.

72 Cf. the Bama in Tall Waqqāṣ (Hazor), lower town, Area F.



Fig. 2.17 Shrine of Hathor in Timna, view to the Holy of Holies (Source: K. Soennecken).

The sanctuary of Hathor built by the Egyptians in the 13th century BC near the copper mines and smelting centres of Timna was taken over by the Midianites in the early Iron Age. Their row of maz-zahs stood in the left court area in front of the cult niche. Remains of wool and beads have been preserved from the Midianite roofing, which is why it is often misleadingly called a tent sanctuary and thus erroneously evokes associations with a change of location of this temple.

Egyptian influence in temple construction can be observed during the Late Bronze Age IIB, especially in Tall al-Ḥiṣn (Beth Shean; Stratum VI) and Tall ad-Duwēr (Lachish; Area P; Stratum VII). It is possible that the local elites here also adopted Egyptian customs⁷³ and dedicated their temples to Egyptian gods. Egyptianizing burial customs, such as the anthropoid pottery sarcophagi from the 13th century BC, represent this parallel in the area of the burial grounds⁷⁴.

⁷³ Bryan 1996, 33–79; Higginbotham 2000.

⁷⁴ Weinstein 1981, 17–22; Oren 1984, 37–56; 2006, 263–275; Gonen 1992a; Ahlström 1993, 251–253; Singer 1994, 284; Higginbotham 2000; Killebrew 2004, 342; 2005, 51–92;

Killebrew et al. 2006, 97–119. These were found e.g. in Tall al-Fār'a (South), Tall al-Ḥiṣn (Beth Shean), Tall ad-Duwēr (Lachish) and Dēr al-Balaḥ.



Fig. 2.18 Hathor Column in the temple of Hatshepsut (1479–1457 BC) in Thebes West (Source: D. Vieweger).

The multiple construction of pit or box graves in the coastal plain and in the valleys of the interior (e.g. in Tall al-‘Aġġūl, Dēr al-Balaḥ, Tall al-Fār‘a [South], Tall Abū Ḥuwām, ‘Akka [Acre], al-‘Affūla [Afula] and Tall as-Sa‘īdiya) was possibly also influenced by the (Egyptian) idea of preserving the human body. Often these burial sites were equipped with rich burial objects.

All in all, the burial sites of the southern Levant reflect a great variety of burial forms and probably different religious beliefs⁷⁵. The custom of multiple burials (families) in rock tombs with burial objects and regulated burial rites is documented often. In addition, niche graves, grave houses, Larnax and jug burials have been documented.

75 Gonen 1992a; Baker 2003.

2.2. The Late Bronze Age on Tall Zirā‘a

by K. Soennecken

After the extensive reconstruction work on the western slope, the city was rebuilt. The boundaries of the city do not appear to fundamentally change, as the location of the walls for the new city are similar to those of its predecessors. This becomes particularly clear in the area north of Complex I. The floor plans of the existing buildings continued to be used

with minimal changes as Complex D was built on top of Stratum 15 and fits into the existing structure. Based on the continuity of the settlement, one can assume that relatively little time passed from the landslide to the reconstruction of the city as well as the rebuild was performed by the same inhabitants.

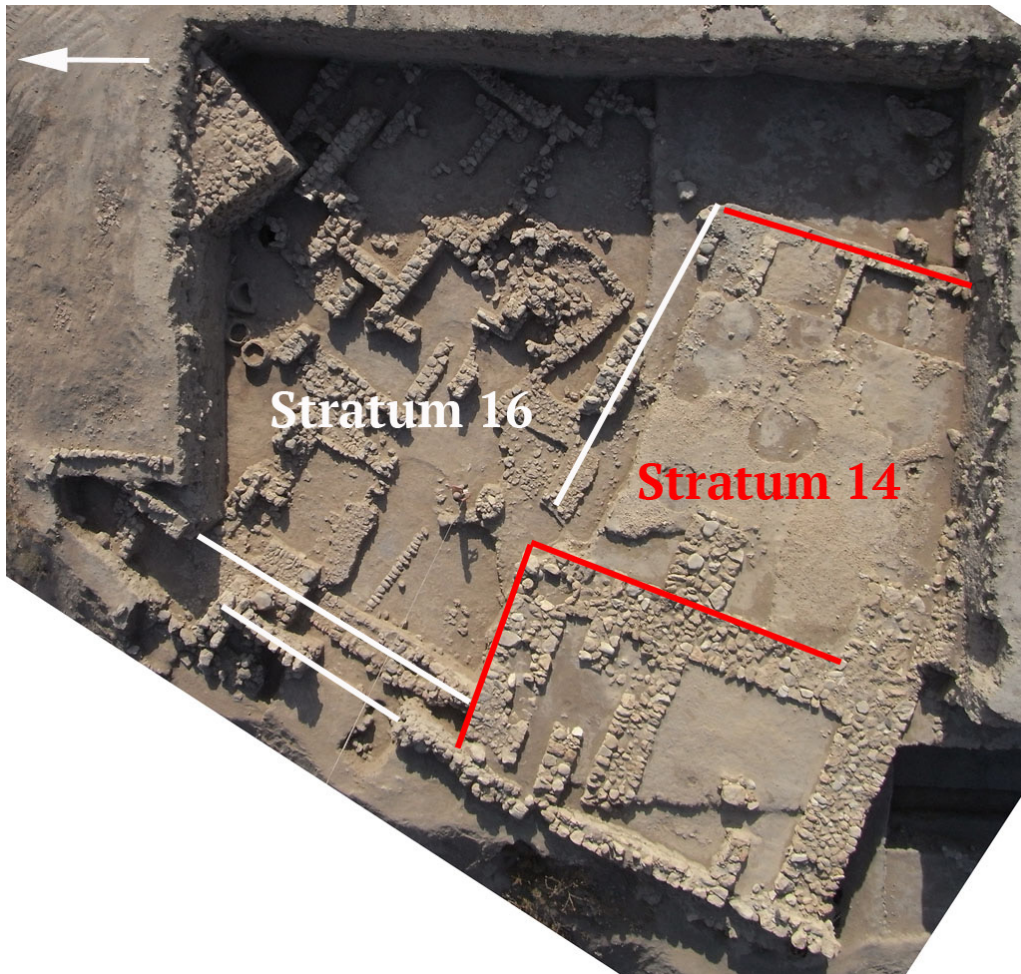


Fig. 2.19 Stratum 16 and 14 in the north of Area I (Source: BAI/GPIA).

Stratum 14 is divided into four phases, which are labeled d to a (d as the oldest and a as the youngest phase). These phases are characterized by modifi-

cations to individual complexes while retaining the larger architectural context.

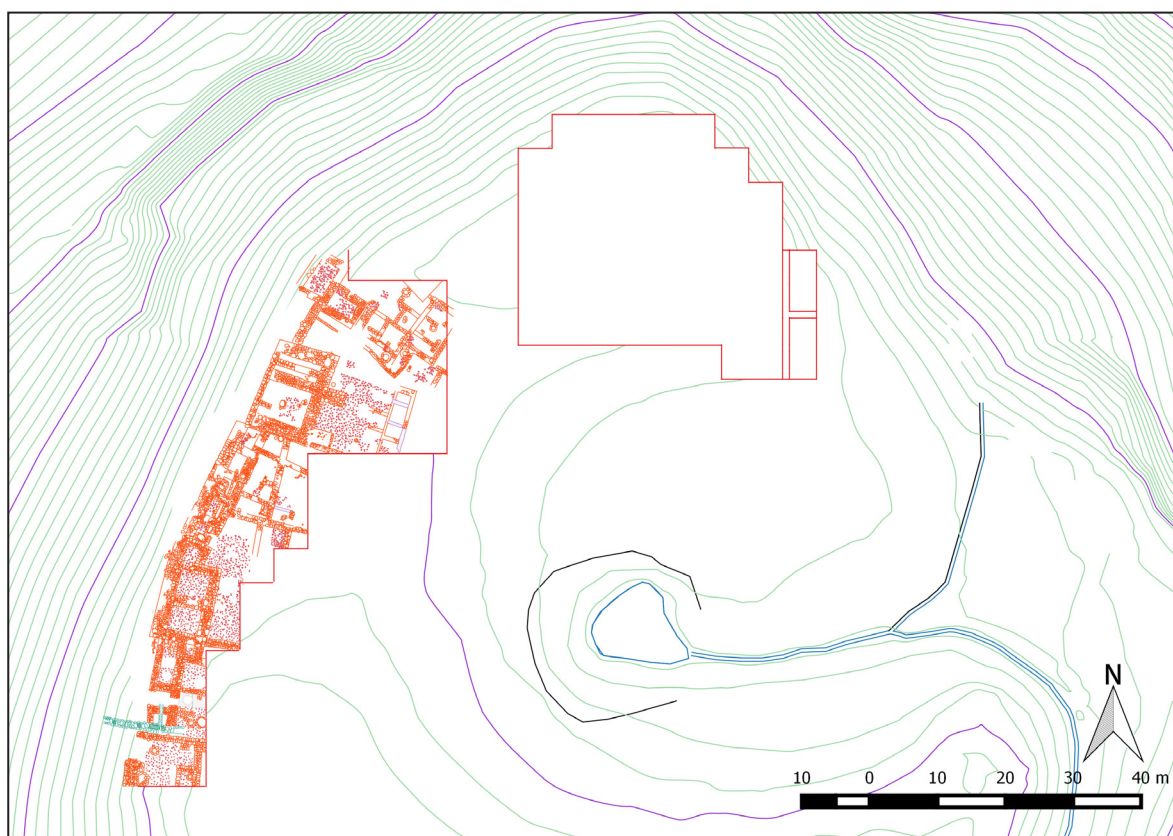


Fig. 2.20 Plan of the Tall Zirā'a with Stratum 14 d (Source: BAI/GPIA).

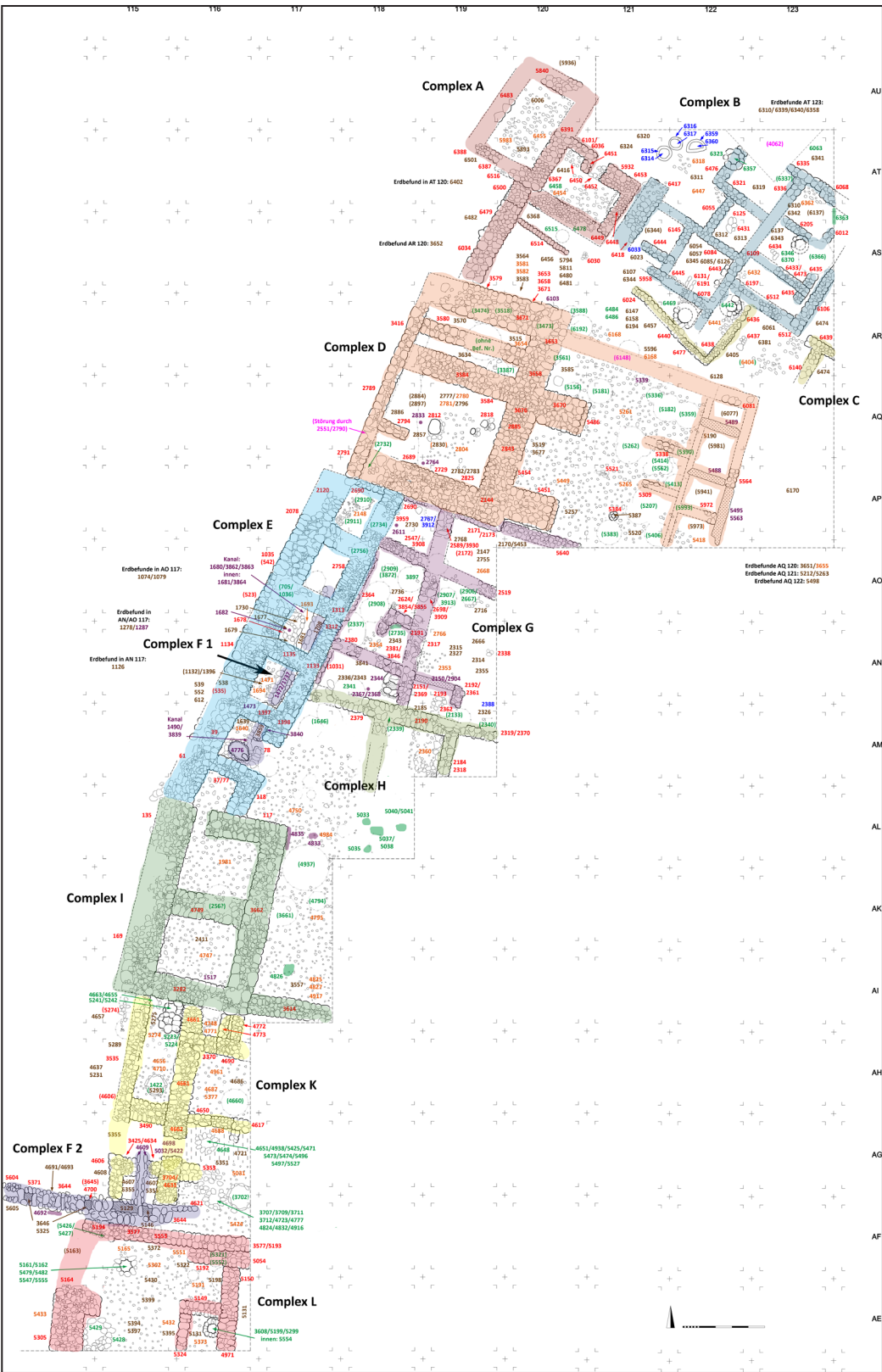


Fig. 2.21 Architectural plan with find numbers of Stratum 14 d, Area I (Source: BAI/GPIA).

2.2.1. Stratum 14 d

2.2.1.1. Complex A, B and C

The architecture in the northern part of Area I contains Complexes A, B and C, which have not changed when compared to Stratum 16 and 15. However,

minor alterations were discovered. Contexts that could not be clearly assigned to one of the phases of Stratum 14 are dealt with in 14 d.

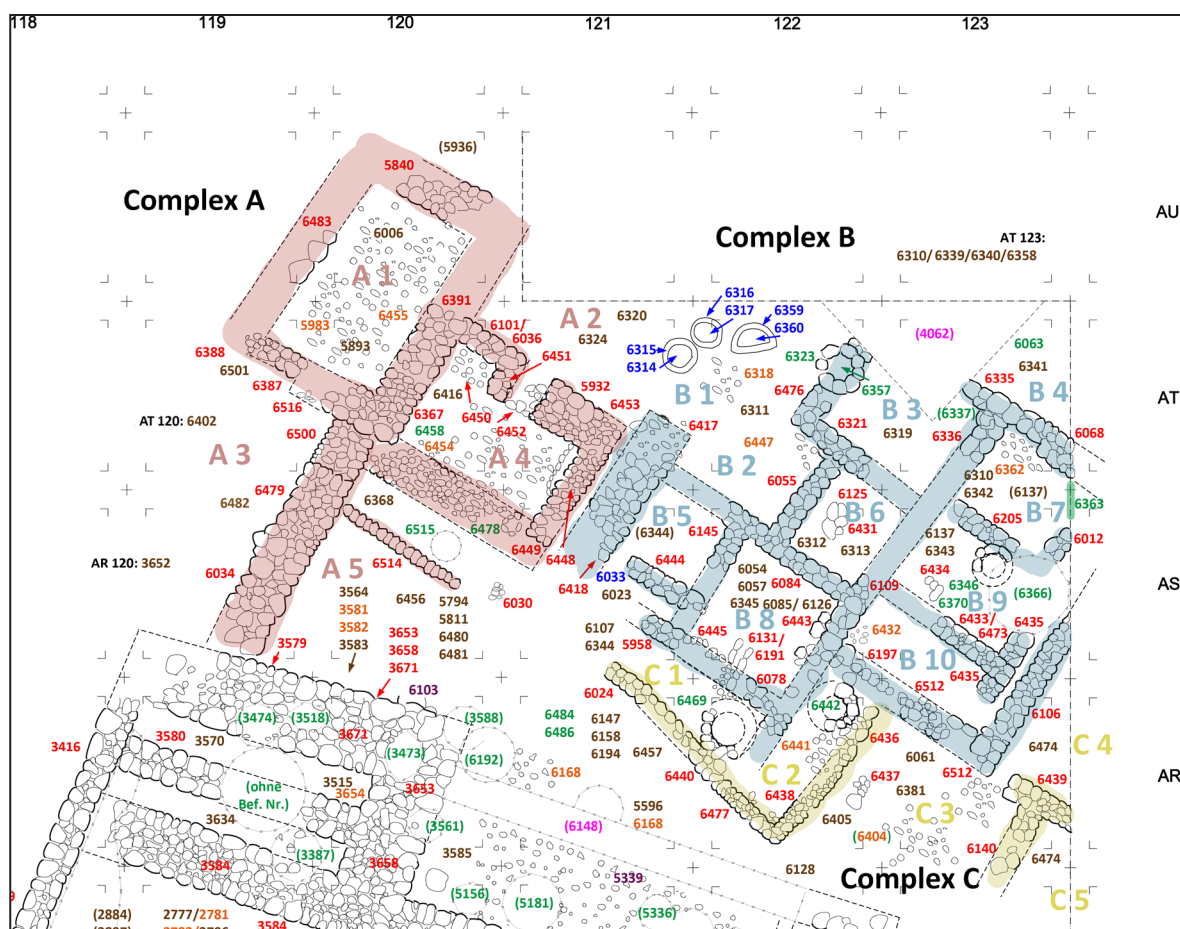


Fig. 2.22 Complexes A (red), B (blue) and C (yellow) in the north of Area I; walls (red); fill layers (brown); floors (orange); pits (green); ashes/tabuns (blue); special finds (violet); disturbances (pink) (Source: BAI/GPIA).

Changes in Complex A

In Complex A, there are no architectural changes; however, there are new fill layers and floors assigned to Stratum 14 d. In the room labeled A 1: new fill layers 5893 (floor) and 6402 (only 14 d) are located in Square AT 120. Finds in 6402 in-

clude: pottery (still many Middle Bronze Age forms); bones (15 % cattle, otherwise sheep or goat); the base of a stone bowl TZ 019057-001 (Fig. 2.23); a rubbing stone; a shell.



Fig. 2.23 Stone bowl with base ring TZ 019057-001 (Source: BAI/GPIA).

In the room labeled A 4: 6452 (possible passage); fill layer 6416. Finds include: a hand mill; a truncated cone-shaped mace-head made of quartzite TZ 019064-001 and conically drilled from above and below⁷⁶ (Fig. 2.24); two flint objects; two shells; pottery (including two spindle whorls TZ 019307-001 and TZ 021722-040, 26 % cookware); ash pit 6458 in the south-west corner of the room.



Fig. 2.24a Macehead TZ 019064-001 (Source: BAI/GPIA).



Fig. 2.24b Macehead TZ 019064-001 (Source: BAI/GPIA).

In A 5: fill layers 3652; 6368 (finds: bones, pottery—mostly bowls; funnel TZ 021667-002, Fig. 2.25); wall/installation/collapsed material 6030 (finds: Late Bronze Age pottery, including a rim of an imported bowl from Cyprus TZ 021429-002; unspecified animal bones, two lower grinding stones; three flint objects; one oval hinge stone TZ 018934-001).



Fig. 2.25 Funnel TZ 021667-002 (Source: BAI/GPIA).

76 A comparable object comes from Tall al-'Umēri, but from an Iron Age/Persian context. Other comparable specimens

come from Gezer from the Late Bronze Age II. See: Herr et al. 1991, 251 f.

Changes in Complex B

In B 3: the silo/pit 6337 was built on top of wall 6336 (possibly not until Iron Age I). Fill layers 6339, 6340, 6358 (finds: charcoal, a flint object, some undetermined bones, pottery of which 40 % fine ware, mostly closed vessels, among them also Middle Bronze Age pottery). Collapsed architectural remains were discovered in 6322 and belong to walls 6321 and 6476. Finds: bones and pottery (including the spindle whorl TZ 019304-001, mostly closed vessels).

In B 4: the ash pit/fireplace 6063 belongs to stratum 14 d, is a round discoloration of the soil north of Square AT 123. It consists mainly of ashes and having a diameter of about 1 m (finds: some undetermined bones; pottery).

In B 5: the fireplace/tabun 6033 was built near the entrance to B 5—round clay and lime layer, surrounded by an ash ring with a diameter of 40 cm.

In B 7: pit 6363 in the eastern baulk was only partially cut and continues into the eastern profile. It probably has a diameter of 1.80 m (no finds).

In B 8: Fill layer 6054 (lower edge: -23.27 m) the following finds are included: bones (43 % cattle, 57 % sheep or goat), pottery, stone stamp TZ 018988-001 (conical; on the flat underside in the middle a dotted circle and around it two concentric circles of dots, *Fig. 2.26*) and iron nodules. Fill layers 6057: In the north of the room some ash lenses and tabun fragments. The following finds are included: bones (25 % cattle, 3 % fox, otherwise sheep or goat); pottery; two flint objects; shell pendant TZ 018608-001; sherd of a faience vessel TZ 018995-001. Fill layer 6085 is very clayey and mixed heavily with ashes, tabun fragments and burnt olive pits. Other finds: unspecified animal bones, pottery (mainly bowls and many cooking pots); 16 flint objects; a rubbing stone. Fill layer 6126 contains a rubbing stone, unspecified animal bones and pottery sherds.

The channel (6191) was also built in room B 8. It consists of two parallel stone rows and is approximately 60 cm in length. The space between the two rows of stones is 20 cm wide.



Fig. 2.26 Stamp TZ 018988-001 (Source: BAI/GPIA).

In B 9: pit 6366 in the eastern half of the room (possibly also Iron Age I) consists of a semi-circular clay layer around very loose soil (continuing into the eastern profile) with a diameter of about 2.5 m (finds: burnt olive pits). Pit 6370 with a diameter of about 1.10 m (possibly identical with 6366) consists of a clay ring around hard, packed ground in the middle of Square AS 123. Finds: burnt olive pits TZ 019184-001 and pottery (fine ware).

In B 9/10: the 1.4 m long wall 6473 represents a repair of 6433.

Changes in Complex C

In C 3: fill layer 6061 (bones, pottery, among them almost only closed vessels, few cooking pots, clasp of a vessel TZ 021435-010, *Fig. 2.27*, a rubbing stone

and stone bowl with base ring TZ 018881-001, *Fig. 2.28*).



Fig. 2.27 Clasp TZ 021435-010 (Source: BAI/GPIA).



Fig. 2.28 Stone bowl TZ 018881-001 (Source: BAI/GPIA).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
5893	AT 120	Fill layer/floor	A 1	-	-	-
6402	AT 120	Fill layer	A 1	✓	✓	✓
6416	AT 120	Fill layer	A 4	✓	✓	✓
6452	AT 121	Wall/installation	A 4	-	-	-
6458	AT 120	Pit	A 4	-	-	✓
3652	AR 120	Fill layer	A 5	✓	-	-
6030	AS 121	Wall/collapse	A 5	✓	✓	✓
6368	AT 120	Fill layer	A 5	✓	-	✓
6108	AS 122	Collapse	B	✓	-	-
6322	AT 122	Collapse	B 3	✓	-	✓
6337	AT 123	Silo/pit	B 3	-	-	-
6338	AT 123	Collapse	B 3	-	-	-
6339	AT 123	Fill layer	B 3	-	-	-
6340	AT 123	Fill layer	B 3	-	-	-
6358	AT 123	Fill layer	B 3	✓	✓	✓
6063	AT 123	Pit/fire place	B 4	✓	-	✓
6033	AS 121	Fire place/tabun	B 5	-	-	-
6363	AT 123	Pit	B 7	-	-	-
6054	AS 122	Fill layer	B 5	✓	✓	✓

6057	AS 122	Fill layer	B 8	✓	✓	✓
6085	AS 122	Fill layer	B 8	✓	✓	✓
6126	AS 122	Fill layer	B 8	✓	✓	✓
6366	AS 123	Pit	B 9	-	-	✓
6370	AS 123	Pit/fill layer	B 9	✓	-	✓
6473	AS 123	Wall	B 9/10	-	-	-
6369	AS 123	Collapse	B 10	-	-	-
6149	AR 123	Collapse	C	-	-	-
6150	AR 123	Collapse	C	-	-	-
6061	AR 123	Fill layer	C 3	✓	✓	✓

Tab. 2.2 Stratum 14 d, contexts within Complex A, B and C (Source: BAI/GPIA).

2.2.1.2. Complex D



Fig. 2.29 Stratum 14 d, overview of Complex D in the north of Area I (Source: BAI/GPIA).

Complex D was rebuilt in Stratum 14 d on the back-fill of Stratum 15 and extends over Squares AP–AR 118–122. The complex consists of a temple *in an-*

tis (D 3) with an attached staircase (D 2), a large courtyard (D 4) and four smaller rooms in the east (D 5–D 8)⁷⁷.

77 Contrary to the assumption of Schwermer 2014, 322, n. 85: This temple was built earlier than the ‘gate sanctuary’

(Complex I in Stratum 14 a). In Stratum 14 a both sanctuaries were in use at the same time.

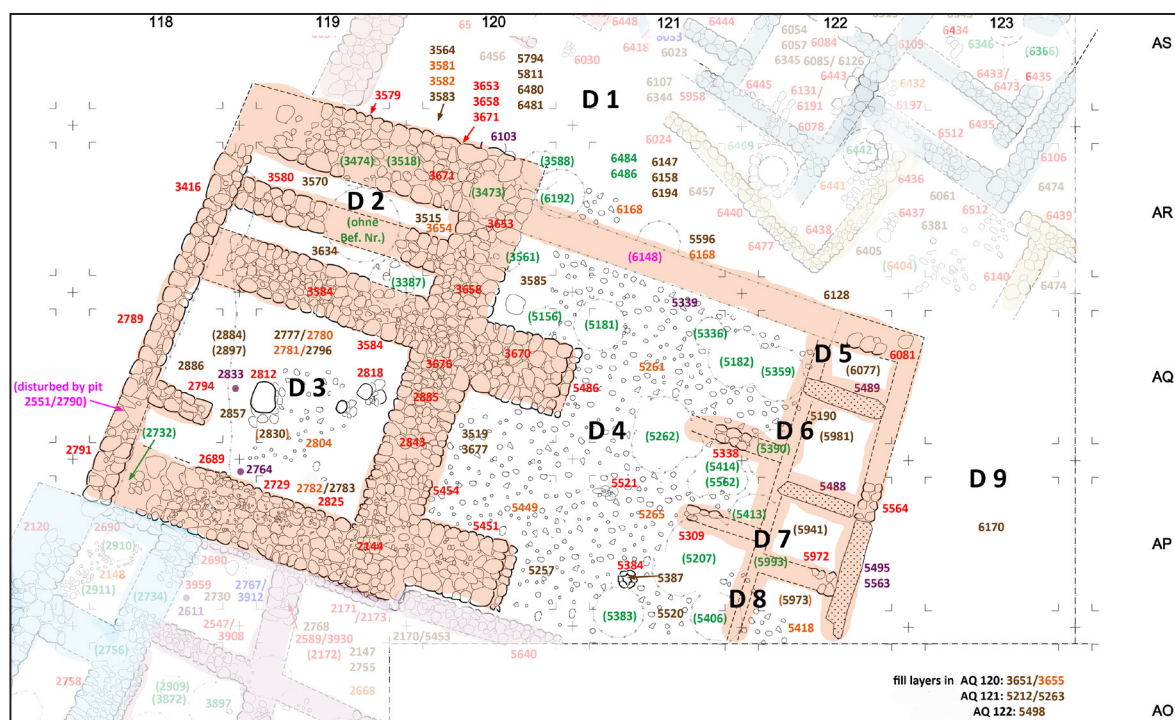


Fig. 2.30 Stratum 14 d, Complex D to the north of Area I (Source: BAI/GPIA).

Room D 1 denotes the area between the Complexes A–C, which already exists in Stratum 15, and the large temple consists only of fill layers without associated architecture. Two floors (Contexts 3581 and 3582) and a pit (Contexts 6484 and 6486) belong to this area. Context 6168 could be a paving, but it is more likely to be the backfill layer of Stratum 15.

Special finds are:

From Context 5596: base of incense burner TZ 020896-006 made of pottery; cooking pot TZ 020896-001; nail TZ 017307-001.

From Context 5794: spindle whorl made of pottery TZ 018764-001; oil lamp TZ 021091-009.

From Context 5811: quern TZ 017787-001.

From Context 6128: bones in addition to (majority) sheep, goat and cattle, also pig and horse/donkey/mule TZ 018224-001 and 018256-001; mortar TZ 018376-001 (*Fig. 2.31*), not in situ, sherd of glass TZ 018807-001 and the tip of a pyramid-shaped loom weight made of clay TZ 018812-001—next to Hellenistic-Roman pottery; Iron Age I pyxis⁷⁸ TZ 021525-011 (*Fig. 2.32*).

78 Cf. Amiran 1970, 277 (Photo 291): Comparison with object from Afula dated into the Iron Age I; comparison from

Megiddo, see Amiran 1970, 284 (Pl. 96:2,5,10).



Fig. 2.31 Mortar TZ 018376-001 (Source: BAI/GPIA).



Fig. 2.32 Pierced jug handle TZ 021525-011 (Source: BAI/GPIA).

From Context 6147: also cattle, pig and gazelle bones; limestone bead TZ 018601-001 (biconical, oblique and irregular piercing, *Fig. 2.33*); faience sherd TZ 018762-001; pottery mainly bowls and cookware, some tabun fragments.



Fig. 2.33 Bead TZ 018601-001 (Source: BAI/GPIA).

From Context 6158: fragment of an inlay (probably faience) TZ 019531-001.

From Context 6480: stone bowl with pedestal TZ 019023-001; faience bead TZ 019319-001.

From Context 6481: pig bones, faience bead TZ 019318-001 (*Fig. 2.34*) and faience platelet TZ 019317-001, pottery mainly bowls and cookware.



Fig. 2.34 Faience bead TZ 019318-001 (Source: BAI/GPIA).

From Context 6486: game piece TZ 019115-001, spindle whorl TZ 019309-001 made of pottery.

From Context 6103 (mudbrick collapse, probably from wall 3671): spindle whorl TZ 019100-001 made of stone.

Room D 2 denotes the staircase north of the temple cella. It is formed by the walls 3416 in the west; 3584 in the south; 3653 and 3658 (finds: stone tile TZ 012527-001 as spolia) in the east; 3579 and 3671 (finds: quern TZ 019060-001 as spolia) in the north. In the middle, the room is partitioned by wall 3580 (this was destroyed by a later pit, however, did not receive a context number). Width of the inner walls is c. 1 m, the outer walls up to 1.80 m⁷⁹.

79 Gropp 2013, 178 considers its use as a storage space to be more likely. Various comparative examples, e.g. from Tall ar-Rāmīl or Tall Waqqāṣ, as well as the pottery inventory,

which contains 78 % bowls, point against this (Schwermer 2014, 324).

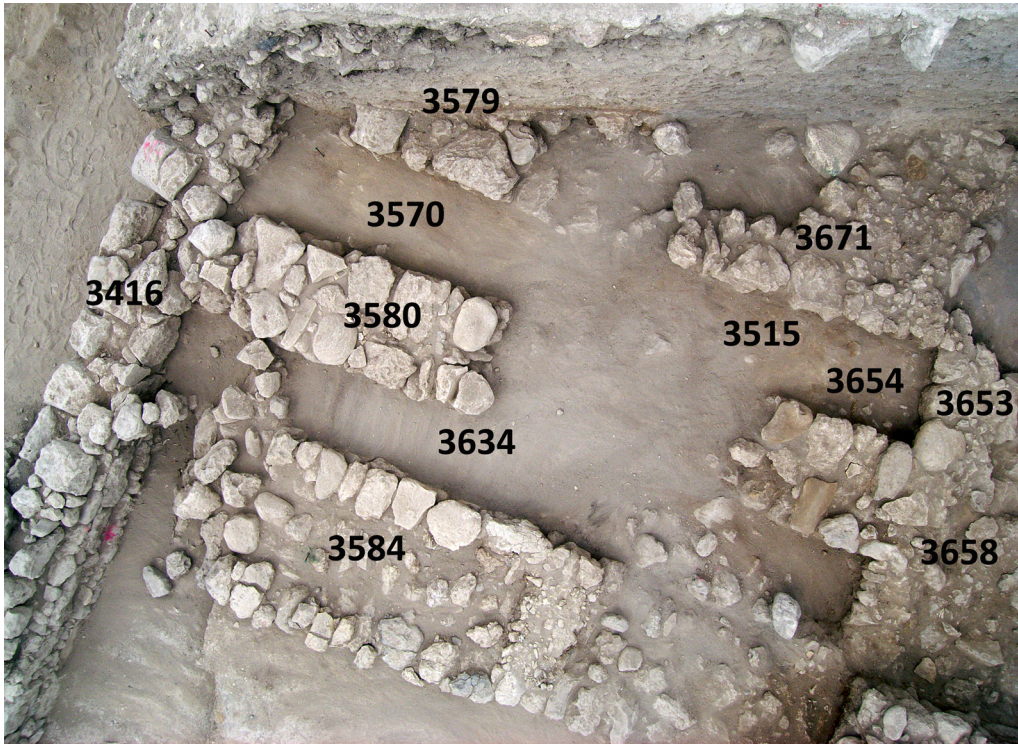


Fig. 2.35 Staircase D 2 in AR 119 (Source: BAI/GPIA).

Fill layers in the northern chamber are: 3515 (finds: large number of pottery, mostly bowls, but also jug/pitcher, a pyxis, half of it preserved and painted) and 3570 (bones, also pig, cattle, horse/donkey/mule besides the usual sheep and goat; fragment

of a metal bowl TZ 012479-001, *Fig. 2.36*; spool-shaped loom weight made of clay TZ 012260-001, *Fig. 2.37*; stone inlay in the form of a rose petal TZ 012319-001). The fill layer in the southern chamber is 3634.



Fig. 2.36 Metal bowl TZ 012479-001 (Source: BAI/GPIA).



Fig. 2.37 Loom weight TZ 012260-001 (Source: BAI/GPIA).



Fig. 2.38 Stone inlay TZ 012319-001 (Source: BAI/GPIA).

In wall 3416 in the west a kernos stone/cult stone was used as a spolia (TZ 012655-001, *c.* 27 small notches with a diameter of *c.* 1 cm surround a larger notch with a diameter of *c.* 6 cm, *Fig. 2.39*); width of the wall *c.* 70–90 cm, orientation north–north-east to south–south-west. Clay layer 3654 denotes the floor or the collapsed material of the surrounding walls.



Fig. 2.39 Kernos stone TZ 012655-001 (Source: BAI/GPIA).

A comparable staircase comes from Stratum VIIB (Iron Age; 9th century BC) from Tall ar-Rāmīt⁸⁰.

Room D 3 is the main room/cella of the temple in antis. The walls (Contexts 3584, 2789, 2791, 3676, 2885, 2843, 2144 [finds: slag TZ 009032-001], 2825, 2729, 2689, and 5454) form a rectangle with two antes in the east (Contexts 3670, 5486, and 5451; width 2.15 m, length 3.40 m). In the middle of the room, there is a column base (Context 2812, a large flat stone based on smaller ones) and possibly a second column base (2818). The interior is divided by wall 2794. To the north of it is Context 2886 which probably represents the construction trench for the wall 2794.

80 Barako 2015, 63 f. 192–194.



Fig. 2.40 Cella D 3 (Source: BAI/GPIA).



Fig. 2.41 Ante 5451 in AP 120 (Source: BAI/GPIA).



Fig. 1.42 Ante 3670 in AQ 120 (Source: BAI/GPIA).

Fill layers within the room are⁸¹:

2777 (finds: a large number of cylinder seals and faience [see Context 2780 and chalice 2784, within 2777]). Presumably, both originate from the last phase of Stratum 14 (i.e. 14 a), therefore, they are described there in more detail as well as the cylinder seals.

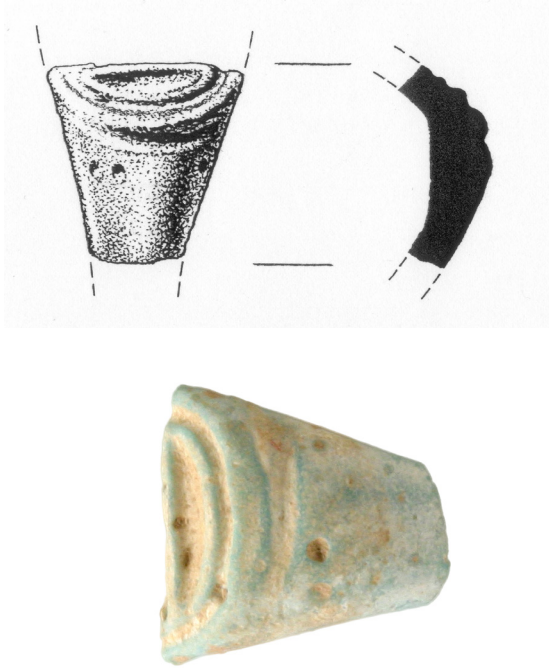


Fig. 2.43 Drawing and photo of faience ring TZ 010171-001 (Source: BAI/GPIA).

2781 and 2782 designate a clay stamped earth floor; a special find is a scarab TZ 010112-001 made of faience with blue glaze and a cartouche of Amenhotep III⁸² (Fig. 2.44).



Fig. 2.44 Scarab made of faience with cartouche of Amenhotep III TZ 010112-001 (Source: BAI/GPIA).

2783: above the clay floor, finds: TZ 004506-043 Mycenaean pottery (Fig. 2.45), oil lamps TZ 04506-009, -039, -053, -054 and 'Chocolate-on-White' ware bowl TZ 004506-042; turquoise cylinder seal TZ 010326-001; the glass bead or game piece TZ 010377-001 (rectangular object with rounded corners, on the upper side two deep parallel grooves, traces of turquoise glaze visible, probably platelet bead, but not pierced); two additional glass beads TZ 010760-001 and TZ 010761-001; the fragment of a stone knob TZ 010346-001 (Fig. 2.46) is probably a part of a chariot. It has a curved swinging edge, is smoothly polished on the upper side with a centric hole. The lower finish is rough and originally continued from there. A horizontal notch runs along the upper, swinging edge.

81 A large number of cylinder seals were found within room D 3. These are presented in a separate catalogue (*Chap. 2.3.6*).

82 For the Egyptological confirmation of the assignment of this cartouche Dr. Miriam Müller is to be given sincere thanks.



Fig. 2.45 Mycenaean pottery TZ 004506-043 (Source: BAI/GPIA).



Fig. 2.46 Stone knob TZ 010346-001 (Source: BAI/GPIA).

2796: cylinder seals TZ 010327-001, TZ 010328-001, TZ 010331-001 and beads, including TZ 010345-001 (limestone) and TZ 010357-001 (obsidian, *Fig. 2.48*); chain links and faience bowl; a knife with a handle and two rivets TZ 010177-001 (*Fig. 2.49*), two fragments of a copper bracelet TZ 010280-001 and- 002 and a weight TZ 010313-001 and a scraper TZ 010632-001 (*Fig. 2.50*); however, some finds seem to be part of the Roman pit.

2830: cylinder seal TZ 010449-001 and four fragments of a barrel-shaped bead TZ 010759-001.

2833: mainly consisting of one bowl, fine pottery TZ 004521.

2857: polished jug TZ 004584-001.

2804: pavement, metal, probably fibula or belt buckle TZ 010279-001 (*Fig. 2.51*); was covered with clay.



Fig. 2.47 Bead TZ 010345-001 (Source: BAI/GPIA).



Fig. 2.48 Bead TZ 010357-001 (Source: BAI/GPIA).



Fig. 2.49 Knife TZ 010177-001 (Source: BAI/GPIA).



Fig. 2.50 Scraper TZ 010632-001 (Source: BAI/GPIA).



Fig. 2.51 Fibula/belt buckle TZ 010279-001 (Source: BAI/GPIA).

Inside wall 3676, there is a hinge stone TZ 012519-001 and a cultic stone TZ 012529-001 (*Fig. 2.52*) that were used as spolia. Additionally, wall 2789 continued to be used in the Iron Age I. The finds probably came from a large pit from the classical period and are not discussed in this report.



Fig. 2.52 Cultic stone TZ 012529-001 (Source: BAI/GPIA).

The high density of exceptional and prestigious finds suggests they may have been votive offerings. The pottery inventory also goes far beyond every-

day tableware and indicates a cultic use of the room: 68 % bowls, 9 % cookware, 15 % jugs (of which only a few were storage jugs, mostly small jugs), faience bowls, 'Chocolate-on-White' ware and a Mycenaean sherd; high proportion of oil lamps⁸³.

D 4 denotes the paved courtyard in front and bordered in the west by the temple in antis, in the east by a row of four small rooms. The boundary in the south is unclear, as it lies outside the excavation area. The northern boundary can only be determined on the basis of a negative find, since the stones were robbed in classical times. The courtyard covers an area of about 10 m x 10 m and is very elaborately paved with small field stones. Two intermediate walls extend from the four eastern buildings into the courtyard (Contexts 5338 and 5309). Remains of a wall, possibly a continuation of Context 5309, are represented by Context 5521, however, no direct connection could be established. In the southern area of the courtyard is Context 5384, a collection of six field stones, which are arranged in a ring (inside the ring there was clay, Context 5387, no finds) and possibly formed a posthole. The north-east portion of the courtyard is heavily disturbed by Iron Age pits.



Fig. 2.53 Posthole Context 5384 in AP 121 (Source: BAI/GPIA).

83 Schwermer 2014, 324 f.

Fill layers within the courtyard are:

3519: pottery bowls, animal bones, remains of a metal razor TZ 012609-001.

3585: mixed pottery, bowls, jugs, cooking pots, a painted double handle (TZ 005425-013, *Fig. 2.54*); two rubbing stones (TZ 012264-001 and TZ 012329-001), olive pits, bones, including a spatula TZ 012546-001 made from a rib of an unspecified animal (*Fig. 2.55*). The latter probably comes from a younger pit.



Fig. 2.54 Painted double handle TZ 005425-013 (Source: BAI/GPIA).



Fig. 2.55 Spatula TZ 012546-001 (Source: BAI/GPIA).

3677: pottery lid TZ 005522-003 and slag TZ 012501-001.

5257: possibly belongs to Stratum 14 a; pottery, noticeably a lot of fine ware, mixed bowls and jugs, also cookware.

5339: clay surface, poor in finds.

5520: glass sherd TZ 016759-001; animal bones (mostly sheep or goat, 14.5 % cattle, also dog), miniature vessel TZ 020820-001 and -002 (*Fig. 2.56*), fragment of a chalice TZ 020820-008 and possibly a fragment of a snake application of a cultic stand TZ 020820-009⁸⁴ (*Fig. 2.57*), otherwise mainly bowls, but also jugs and cooking pots.



Fig. 2.56 Miniature vessel TZ 020820-001 and -002 (Source: BAI/GPIA).



Fig. 2.57 Fragment of a snake application TZ 020820-009 (Source: BAI/GPIA).

5263: bones (26 % cattle, one dog bone, otherwise sheep or goat bone), pottery: mostly bowls, small amount of cookware.

In the northern part of the courtyard were remains of mudbricks (3651) as well as clay layer 3655, which probably indicates the floor level, but was only visible in the eastern profile.

Fill layer 5212 contained a cylinder seal (TZ 005307-001, measuring point at -22.53 m), little but outstanding pottery (painted, fine pottery, e.g. Eggshell ware TZ 020417-007), a flint object, and some animal bones of sheep or goats.

84 Cf. TZ 015074-001; TZ 020284-001/008 and TZ 020810-017 as well as comparative pieces from Tall Waqqāṣ and Tall al-Hiṣn (Gropp 2013, 418–429).

Fill layer 5498 is located in the middle of the courtyard and contained very few finds: one snail, two bones (sheep or goat) and the rim of a bowl TZ 020849-001.

Paving: 5261 (finds: many small, c. 5–10 cm large stones, laid flat, falling from west to east by almost 20 cm, disturbed by ash pits; in the north, there is a clay surface, Context 5339 and above the context; finds of animal bones, flint objects, weight stone TZ 017807-001, pottery, including a bowl TZ 021182-004 standing on three feet in the form of handles, again a lot of fine pottery), 5265 (pavement, no finds, also disturbed by ash pits), 5449: no finds, partial remains of a thin layer of limestone above the stones (0.5 cm thick).

Overall, the pottery inventory of the courtyard corresponds to that of the temple interior, although a higher proportion of jugs were found in the courtyard. One big difference is the quality of the pottery. While a high proportion of painted pottery and imported pieces were found inside, the pottery from the courtyard area was unpainted and locally produced⁸⁵.

D 5–D 8 are small rooms that confine the courtyard to the east. Room D 5 is closed in the north by wall 6081 (only partially preserved) and in the south by the mudbrick wall 5489. The east-west extension can only be accessed indirectly through a virtual continuation of wall 5564 to the north and the end of 5489 to the west.



Fig. 2.58 Room D 5 in AQ 122 (Source: BAI/GPIA).

Within this 2.5 m x 2 m large room is fill layer 6077, which was unfortunately divided too late and therefore describes both the pavement and one of the backfills of Stratum 15. The whole room is very poor in finds, only individual bones and pottery sherds (e.g. TZ 020847 in 5489).

In the south–south-west, D 5 is directly connected to D 6 and also uses the mudbrick wall 5489 in the north. In the east and south, the room is bordered by wall 5564 and mudbrick wall 5488. The fill layer belonging to this room were not divided in time and mostly contain material from Stratum 13 (Contexts 5190 and 5981). Next to wall 5564, which was

85 Schwermer 2014, 326.

still in use in Iron Age I, there could have been a cooking area, as the ash remains and the base of a baking tray TZ 020890-004 may suggest. The 2.5 m x 2.5 m room D 7 is clearly defined on three sides: in the north by Contexts 5488 and 5564, in the east by mudbrick walls 5495 and 5563, and in the south by wall 5972. A closure towards the west seems to exist, but is only theoretical. The enclosed fill layer is 5941.



Fig. 2.59 Rim of a baking tray TZ 020890-004 (Source: BAI/GPIA).

The last of the four rooms, which close the courtyard to the east, is D 8. Only in this room are remains of a preserved pavement (5418, consisting of unworked stones of c. 4 to 8 cm in size, which were laid in solid clay, finds: raw glass TZ 016634-001 and the rim of a faience bottle TZ 020759-001, disturbed by ash pits) as well as a fill layer that can clearly be identified as a floor (5973, contained indeterminate bones, flint objects, pottery and cookware; unfortunately a pit was overlooked, therefore there is also pottery from the Iron Age). The location of the boundaries to the north and west can only be theoretical due to the installation of three large, younger pits. It cannot be ruled out that all rooms were originally opened to the west towards the courtyard.

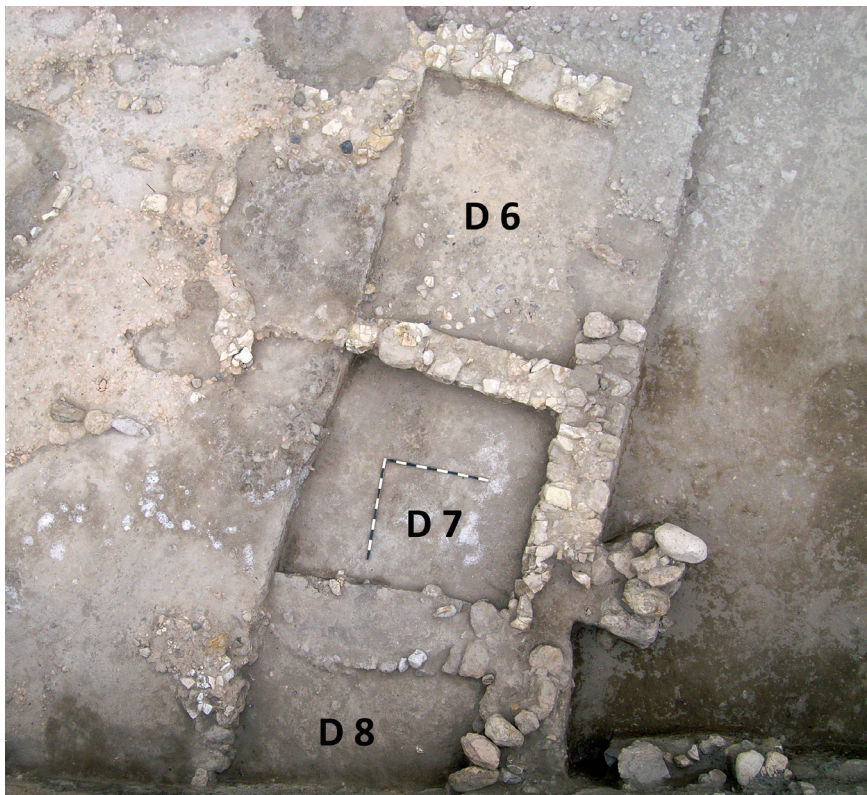


Fig. 2.60 Rooms D 6–D 8 in AP 122 (Source: BAI/GPIA).

D 9 denotes the area east of the temple and consists of fill layer 6170, which encompasses the entire Square AP 123. Finds include: a large number of flint objects, animal bones (mostly sheep or goat, but also cattle and wild boar), a bronze earring TZ 018707-001 (Fig. 2.61), a hammer stone TZ 018993-001, burnt olive pits TZ 019180-001 and mixed pottery to include cooking pots, bowls, jugs, an oil lamp, a miniature vessel TZ 021592-009 (Fig. 2.62) and a chalice (TZ 021592-014). This context indicates a cooking area, but also the proximity to the cultic site/temple.



Fig. 2.61 Earring TZ 018707-001 (Source: BAI/GPIA).



Fig. 2.62 Miniature vessel TZ 021592-009 (Source: BAI/GPIA).

Building D is exceptionally well constructed, with a courtyard area of approximately 150 m² and a staircase complex that points to at least one, if not two additional floors. In this house, 38 cylinder seals⁸⁶, a wide variety of glass beads, faience and a silver

pendant with the relief of a goddess (possible votive offerings) were discovered. Additionally, industrial pottery, raw glass and a melting pot were also found. It is therefore reasonable to assume this complex is a temple⁸⁷ with an integrated craft workshop for glass production or glass processing⁸⁸. Similar structures can be found in Ṭabaqāt Faḥl (Pella)⁸⁹, Megiddo⁹⁰ and Tall Balāṭa (Shechem)⁹¹.

The temple in antis of the Middle Bronze Age as well as the Migdol Temple at Ṭabaqāt Faḥl (Pella) (here phase I) display similarities to Complex D from Stratum 14 of the Tall Zirā'a. It is reasonable to suspect that under the *temple in antis* Complex D there was also a Middle Bronze Age predecessor building in a similar style, however, this area was not excavated any further and it is feared the possible predecessor buildings fell victim to the landslide at the end of Stratum 16. The main room of the temple on the Tall Zirā'a also has column bases, but in contrast to the temple from Ṭabaqāt Faḥl (Pella), there is no longer any clear demarcation of a rear cultic area. Both buildings had a courtyard, paved with small stones and in both cases the courtyard area seems to have been enclosed by walls (thus forming a temenos area)⁹². In phase 2, at the end of the Late Bronze Age, the temple at Ṭabaqāt Faḥl (Pella) was modified and rebuilt after a major destruction. In this phase, the overall size was reduced and the outer walls were less massive⁹³. Finds from this temple included building sacrifices, votive offerings and finds due to the destruction. The first category was carefully buried in the interior and contained cylinder seals of stone and faience, raw glass and glass finds, faience, beads of various materials, metal finds, including a bronze arm of a figurine and a snake of copper. The majority of cylinder seals can be assigned to the Mitanni Common Style. Votive

86 Cylinder seals were used for identification and certification; each one had a unique design, identifying the owner. The number of seals found is extraordinary, as only about 90 cylinder seals are published from all over Jordan.

87 Migdol or fortress temple refers to a temple with massive walls and flanking towers exclusively in the Southern Levant. Apart from their primarily cultic function, these buildings certainly offered protection in times of war and fulfilled other secondary functions. Bourke 2012, 159. 191.

88 On the coexistence of ritual and craft activities in directly adjacent areas cf. Kition in the Late Bronze Age. See Yasur-

Landau 2010, 153.

89 Area XXXII Bourke 2012, 159–201; see Gropp 2013, 124 f.

90 Aharoni et al. 1993, 1011; Ward 2008, 7. For a comparison of the temple see Gropp 2013, 178–183.

91 Campbell 1993, 1349; Campbell 2002, 147 fig. 139.

92 Bourke 2012, 169 f.

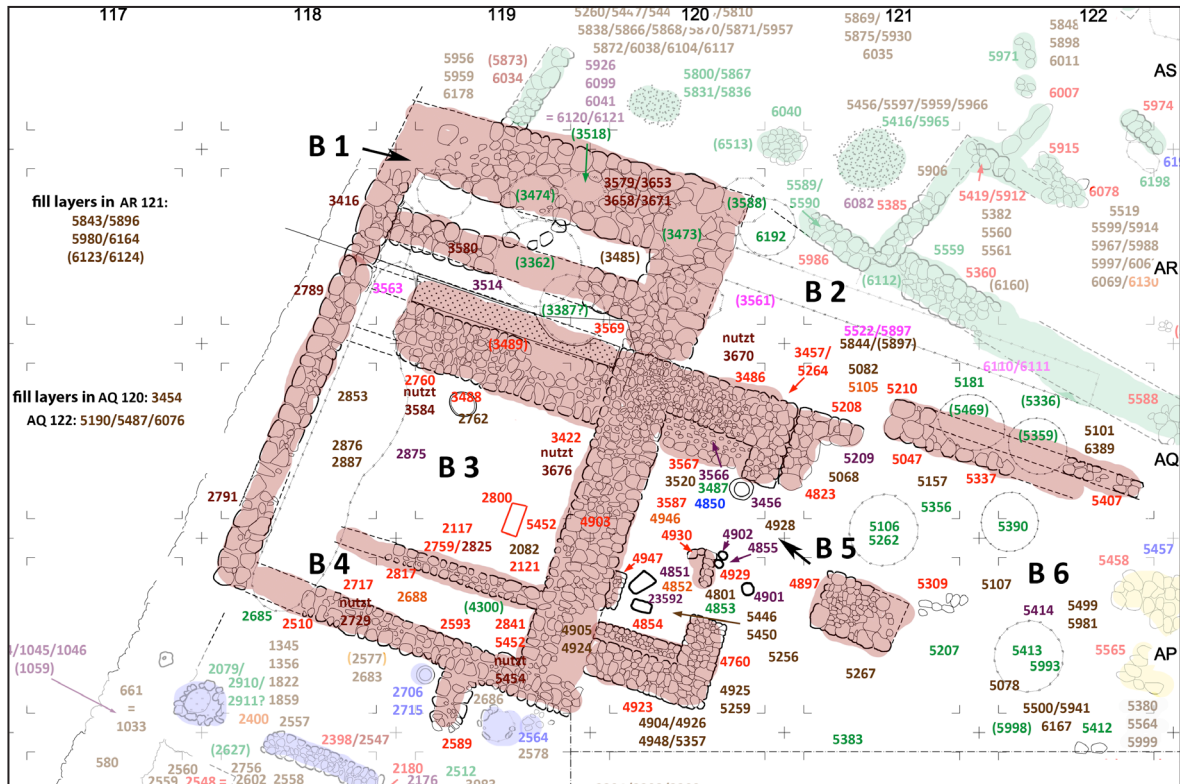
93 Bourke 2012, 171.

94 Bourke 2012, 175. This major reconstruction phase is also attributed to a change in cult, namely a change in worship from El to Baal and a greater influence of Egyptian elements.

offerings contained broken (pottery) cult objects, including cultic stands, chalices and rhyta⁹⁴.

If one looks at the development of the temple in comparison to the temple in Ṭabaqāt Faḥl (Pella), it is noticeable that reconstruction measures were also carried out on the Tall Zirā'a in the Iron Age I, on the one hand the thickness of the outer wall was reduced and on the other hand the division

of the interior changed. The most obvious parallel development, however, is the altar in front of the eastward entrance of the temple. In Stratum 12, the Iron Age IIA/B, an area for storerooms was created in the rear part of the room, similar to phase 3 in Ṭabaqāt Faḥl (Pella), and the structure of the building's layout is closer to a residential building than to a cultic area.



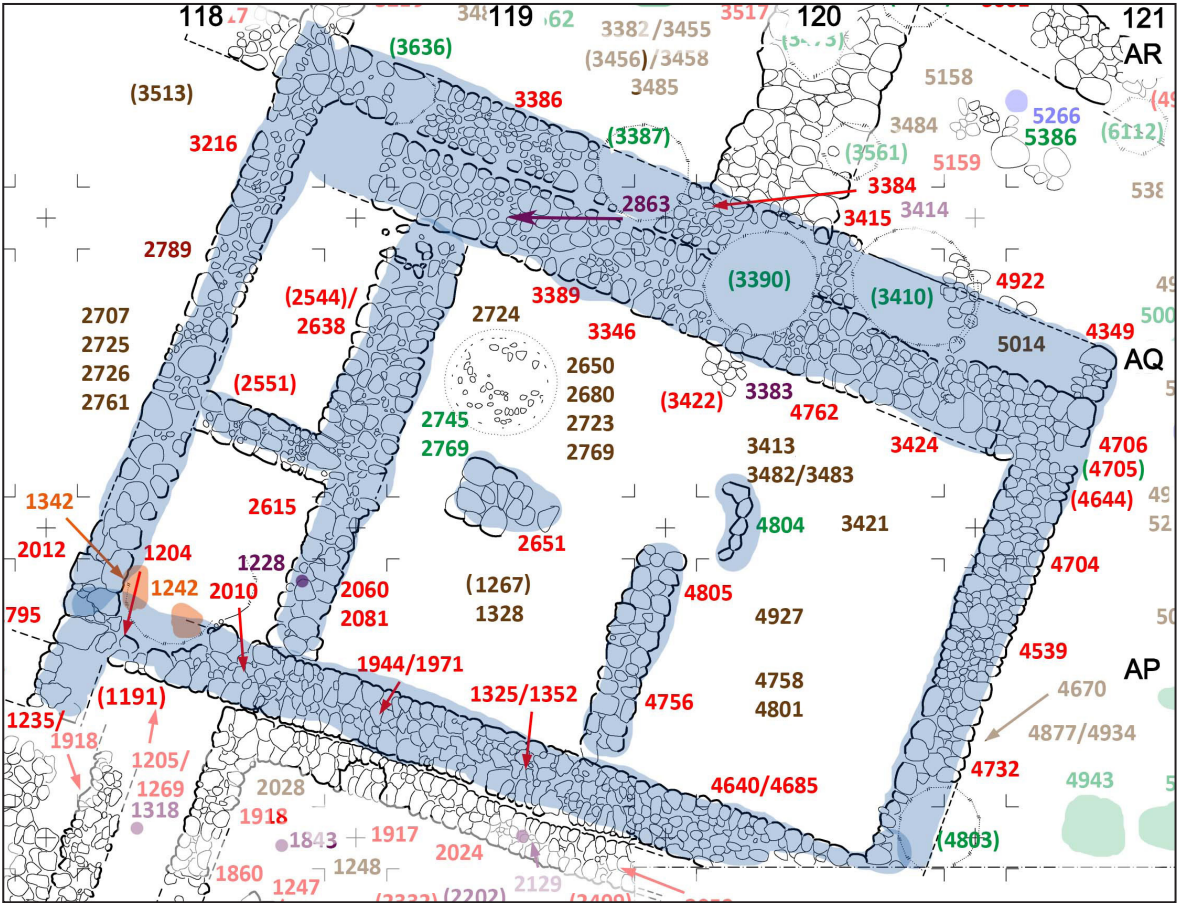


Fig. 2.64 Stratum 12, Complex B (Source: BAI/GPIA).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
3564	AR 119	Fill layer	D 1	✓	✓	✓
3581	AR 119	Floor	D 1	-	-	-
3582	AR 119	Floor	D 1	-	-	-
3583	AR 119	Fill layer	D 1	✓	-	✓
5596	AR 121	Fill layer	D 1	✓	✓	✓
5794	AS 120	Fill layer	D 1	✓	-	✓
5811	AS 120	Fill layer	D 1	✓	✓	-
6128	AQ 122	Fill layer	D 1	✓	✓	✓
6147	AR 121	Fill layer	D 1	✓	✓	✓
6158	AR 121	Fill layer	D 1	✓	✓	✓

6168	AR 121	Pavement/backfill	D 1	✓	-	-
6194	AR 121	Fill layer	D 1	✓	✓	✓
6480	AS 120	Fill layer	D 1	✓	✓	✓
6481	AS 120	Fill layer	D 1	✓	✓	✓
6484	AR 121	Pit	D 1	✓	✓	✓
6486	AR 121	Pit	D 1	✓	✓	✓
3416	AR 118	Wall	D 2	-	✓	-
3515	AR 120	Fill layer/clay layer	D 2	✓	✓	✓
3570	AR 119	Fill layer	D 2	✓	✓	✓
3579	AR 119	Wall	D 2	-	-	-
3580	AR 119	Wall	D 2	-	✓	-
3584	AR 119	Wall	D 2/3	✓	✓	✓
3634	AR 119	Fill layer	D 2	-	✓	✓
3653	AR 120	Wall	D 2	-	-	-
3654	AR 119	Clay layer	D 2	-	-	-
3658	AQ 120	Wall	D 2	-	✓	-
3671	AR 119	Wall	D 2	-	✓	-
6103	AR 120	Mudbrick collapse	D 1/2	-	✓	-
2144	AP 119	Wall	D 3	✓	✓	✓
2689	AP 118	Wall	D 3	-	-	-
2729	AP 118/119	Wall	D 3	✓	✓	✓
2764	AQ 118	Cylinder seals	D 3	-	✓	-
2777	AQ 118/119	Fill layer	D 3	✓	✓	✓
2780	AQ 118	Fill layer, cylinder seals	D 3	-	✓	-
2781	AQ 118/119	Floor	D 3	-	✓	-
2782	AQ 118/119	Floor	D 3	-	-	-
2783	AQ 118/119	Fill layer	D 3	✓	✓	✓
2784	AQ 118	Find/pottery	D 3	✓	-	✓
2789	AQ 118	Wall	D 3	✓	✓	✓
2791	AQ 118	Wall	D 3	-	-	-
2794	AQ 118	Wall	D 3	-	-	-
2796	AQ 118/119	Fill layer	D 3	✓	✓	✓
2804	AQ 118/119	Pavement/floor	D 3	-	✓	✓
2812	AQ 119	Column base	D 3	-	-	-

2818	AQ 119	Possible column base	D 3	-	-	-
2825	AP 119	Wall	D 3	✓	-	✓
2830	AQ 118/119	Fill layer/floor	D 3	✓	✓	✓
2833	AQ 118/119	Fill layer/pottery	D 3	✓	-	✓
2843	AQ 119	Wall	D 3	-	-	-
2857	AQ 118	Fill layer	D 3	✓	-	✓
2885	AQ 119	Wall	D 3	✓	-	-
2886	AQ 118	Fill layer	D 3	-	-	✓
2897	AQ 118	Fill layer/ possible floor	D 3	-	-	-
3670	AQ 120	Wall/ante	D 3	✓	-	-
3676	AQ 120	Wall	D 3	✓	✓	✓
5451	AP 120	Wall/ante	D 3	-	-	-
5454	AP 120	Wall	D 3	-	-	-
5486	AQ 121	Wall/ante	D 3	-	-	-
3519	AQ 120	Fill layer	D 4	✓	✓	✓
3585	AR 120	Fill layer	D 4	✓	✓	✓
3651	AQ 120	Mudbrick/fill layer	D 4	-	✓	-
3655	AQ 120	Clay layer	D 4	-	-	✓
3677	AQ 120	Fill layer	D 4	✓	✓	✓
5212	AQ 121	Fill layer	D 4	✓	✓	✓
5257	AP 120	Fill layer	D 4	✓	-	✓
5261	AQ 121	Pavement	D 4	✓	✓	✓
5263	AQ 121	Fill layer	D 4	✓	-	✓
5265	AP 121	Pavement	D 4	-	-	-
5309	AP 121	Wall	D 4	-	-	-
5338	AQ 121	Wall	D 4	-	-	-
5339	AP 121	Fill layer	D 4	✓	-	✓
5384	AP 121	Possible posthole	D 4	-	-	-
5387	AP 121	Fill layer	D 4	-	-	-
5449	AP 120	Pavement	D 4	-	-	-
5498	AQ 122	Fill layer	D 4	✓	-	✓
5520	AP 121	Fill layer	D 4	✓	✓	✓
5521	AP 121	Wall/collapse	D 4	-	-	-
5489	AQ 122	Mudbrick wall	D 5/6	✓	-	✓

6081	AQ 122	Wall	D 5	-	-	-
5488	AP 122	Mudbrick wall	D 6/7	-	-	-
5564	AP 122	Wall (also in 13)	D 6/7	✓	✓	-
5495	AP 122	Mudbrick wall	D 7/8	✓	-	-
5563	AP 122	Mudbrick wall	D 7/8	✓	-	-
5972	AP 122	Wall	D 7/8	-	-	-
5418	AP 122	Pavement	D 8	(✓)	✓	-
5973	AP 122	Fill layer/floor	D 8	✓	✓	✓
6170	AP 123	Fill layer	D 9	✓	✓	✓

Tab. 2.3 Stratum 14 d, contexts within Complex D (Source: BAI/GPIA).

2.2.1.3. Complex E

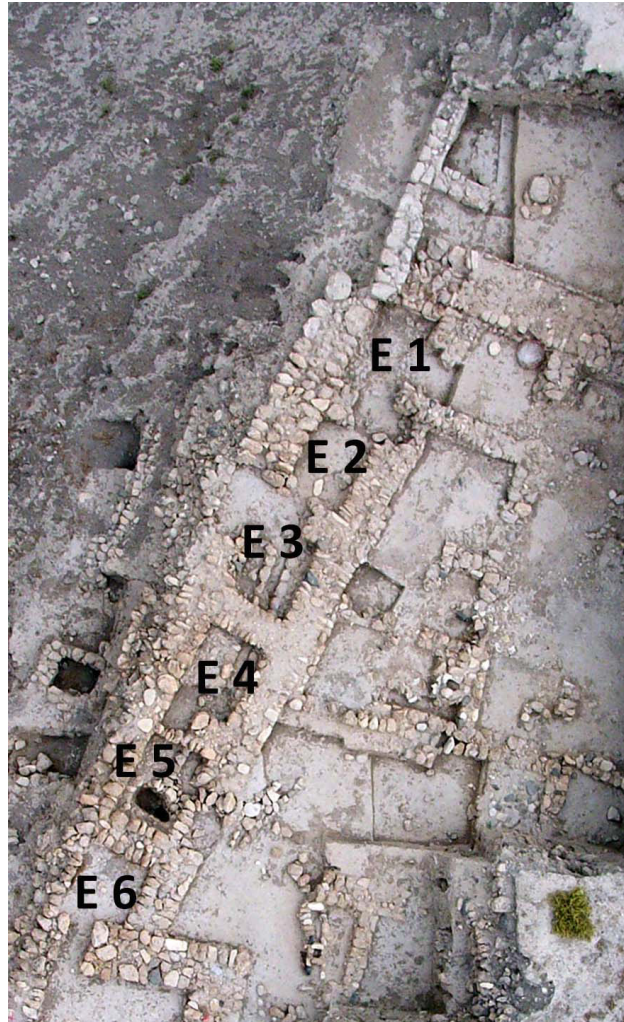


Fig. 2.65 Stratum 14 d, overview Complex E, Summer 2007 (Source: BAI/GPIA).

Complex E adjoins the great temple to the south and consists of two walls with a length of 21 m running from north-east to south-west. The western outer wall is 2 m thicker than the inner wall, which is 1 m around a casemate wall with six rooms, each separated by an intermediate wall 1 m wide. The room size is c. 2 m x 3 m. Overall, the complex is almost 6 m wide. Below the casemate wall⁹⁵ runs the channel of Complex F. In the south, the complex is bordered

by tower I and the southernmost casemate has direct access to it. To the east, the two courtyard houses G and H are attached to the wall. South of tower I, Complex K is a continuation of the casemate wall, which differs from Complex E in its construction. E 1 is formed by Contexts 2078, 2120, 2690 and 3959. The pottery of the finds is mixed and contains a great deal of Early Bronze Age material, so it is likely these are part of the fill layers of Stratum 15. The

95 Such a casemate wall consisted of adjacent rooms. These could be used for storage in times of peace and filled with

soil and stones in times of war to create a massive wall to protect the city.

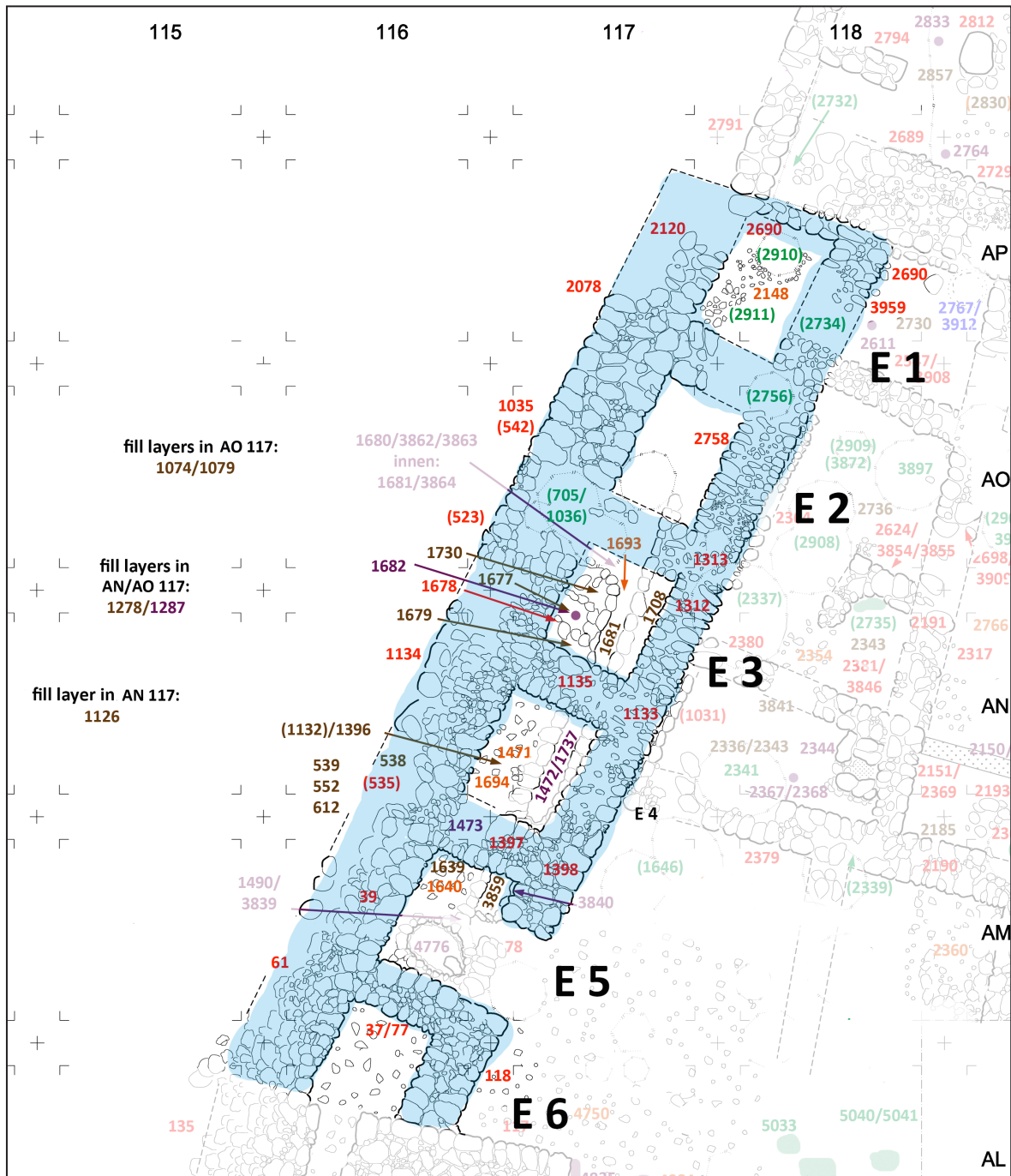


Fig. 2.66 Stratum 14 d, Complex E (Source: BAI/GPIA).

interior of the casemate is paved with small limestones (find 2148). Presumably, the paving represents the occupation layer of Stratum 14 a, which is the youngest of the phases.

E 2 also uses wall 2078, is limited in the east by Contexts 2758 and 1313, in the west by Context 1035 (542). The southern end is disturbed by pits 705 and 1036. The room contains the fill layers 1074 and 1079. The pottery of Context 1074 shows a remarkable amount of cooking pots, but is also very mixed, this fits together with Context 1079, a fireplace (finds: rubbing stones made of basalt, one cuboid TZ 06945-001 and one disc-shaped TZ 07772-001).

The third casemate E 3 is formed by the walls 1312, 1133, 1135 and 523. The north-west is severely disturbed by pits. Inside the 2 m x 3 m room are the paving surface of 1693 and fill layers 1679, 1708 and 1730. This is the fill layer under the Iron Age surface 1157. A special find is an architectural part TZ 007937-001 made of limestone with an oval ground plan and flat top and bottom (length: 31 cm; width: 14 cm and height 6 cm, *Fig. 2.67*).

Inside the casemate is a single row, setting of semi-oval stones setting (Context 1678), which connects to the outer wall to the west. It remains unclear whether this is a pit or a work area. The stone setting is filled with fill layer 1677 (finds: pottery, among others the painted body sherd of the presumably imported jug TZ 003162-007, *Fig. 2.68*, and the bottom of a baking tray TZ 003162-010 as well as find 1682, an ivory handle with two elongated bronze pieces TZ 007877-001, *Fig. 2.69* and 2.70, presumably a knife)⁹⁶.



Fig. 2.67 Architectural fragment TZ 007937-001 (Source: BAI/GPIA).



Fig. 2.68 Pottery TZ 003162-007 (Source: BAI/GPIA).



Fig. 2.69 Handle TZ 007877-001 (Source: BAI/GPIA).



Fig. 2.70 Handle TZ 007877-001 (reconstructed) (Source: BAI/GPIA).

96 Find TZ 007877-001 made from ivory of an elephant (information by M. Blana).

Below room E 3, the channel begins (description see below Complex F). It is filled in with Context 1681 (finds: only a little pottery and cattle bones).

Fill layers in the area of the baulk, which are still to be counted among the casemate E 3: Context 1278 is a mudbrick collapse—remains of the collapsed walls or of the roof of the casemate (finds: bones of sheep, goat and cattle; shaft of an awl/needle made of bronze and/or copper TZ 007248-001, iron nodule, rim to base of a round handmade limestone bowl TZ 007324-001 (*Fig. 2.71*), pottery mixed in, also some from the Iron Age, bowls and kraters, plates and cooking pots) and 1287 (finds: stone bowl and krater, this one, however, dating to the Iron Age II). The finds suggest this installation was a cooking area and not a pit. Fill layer 1126 can no longer be clearly assigned as it belonged to either casemate E 3 or E 4. Worth mentioning is an incised bone fragment TZ 007081-001 (*Fig. 2.72*), which probably belonged to a handle. A comparative piece comes from Tall al-Fuḥḥār: a bone with incised marks F-02/85, which is interpreted as a kohl tube. The interior of the bone contained pigments, which could be applied with the aid of a small stick⁹⁷. Parallels can be found in Hazor and Beth Shean as well as Megiddo⁹⁸. It is possible the bones TZ 008351-001 and TZ 007081-001 from Stratum 14, which were interpreted as handles, had a similar function.



Fig. 2.71 Bowl made of limestone TZ 007324-001 (Source: BAI/GPIA).



Fig. 2.72 Handle or kohl tube made of bone TZ 007081-001 (Source: BAI/GPIA).

Casemate E 4 is formed by the walls 1133, 1134, 1135 as well as 1397, 1398 and 535. Their dimensions correspond to those of casemate E 3 within a few centimetres. The walls consist of two lines of large, unhewn field stones, which are filled with small fist-sized stones. The interior is paved with fist-sized stones (1471, upper edge: -23.25 m and 1694, upper edge: -23.23 m) and also crossed by the channel mentioned above (1472 and 1737 indicate the fill of the channel; finds: pottery mainly jugs, a few bones and charcoal).

Also belonging to this area are Contexts 1132 (finds: two rubbing stones—one disc-shaped TZ 007123-001 and one conical TZ 007788-001; pottery TZ 002722, mostly bowls, some dating to the Iron Age, context probably not cleanly separated), 1396 (fill layer above the pavement; finds: disc-shaped rubbing stone TZ 001648-001; pottery mainly bowls TZ 002901—including Eggshell bowl TZ 002901-007 and ‘Chocolate-on-White’ ware TZ 002901-004, as well as a miniature vessel TZ 002935-001 (*Fig. 2.73*), a small cup which is no longer complete; possibly part of a kernos, could also belong to a zoomorphic vessel or to a carinated chalice with inner cup; a round weight TZ 007373-001 (*Fig. 2.74*) and a coil-shaped weight stone TZ 007628-001; three further rubbing stones, a quern TZ 007631-001, two shells and various bones). The finds indicate a working or kitchen area.



Fig. 2.73 Miniature vessel TZ 002935-001 (Source: BAI/GPIA).

⁹⁷ Strange 2015b, 196. 233.

⁹⁸ Jensen 2015, 333.

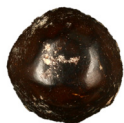


Fig. 2.74 Weight TZ 007373-001 (Source: BAI/GPIA).

Context 1473 indicates a passage area to the southern casemate E 5, where the pottery is mainly from the Early Bronze Age and seems to belong to the fill layer of Stratum 15. To the west outside the casemate are the fill layers 538, 539, 552 and 612; these are problematic in the analysis because of their hillside location. This pottery is also mixed and consists mostly of Early Bronze Age, therefore also part of the backfill. The wall 535 seems to be part of the outer wall, but was badly damaged.

Casemate E 5 is formed by the walls 535, 1397 and 1398 in the north, 39 in the west and 37/77 in the south. The eastern area was probably closed in the past (wall 118, in which a game piece or possibly a balance weight TZ 001305-001, *Fig. 2.75*, was found) and was destroyed by a later pit or there was a passage to the channel. The interior of casemate E 5 includes floor 1640 (upper edge: -23.71 m) and the fill layers 1639 (finds: a cattle bone, Early Bronze Age pottery) and 3859 (soil within the channel).



Fig. 2.75 Weight/game token TZ 001305-001 (Source: BAI/GPIA).

The southernmost casemate E 6 is formed by the Contexts 37/77, 61, 118 and is open in the south to the north of two tower rooms. The pavement within the casemate does not have its own context number because it was added to the pavement of the tower room (Context 1981, see Complex I).

A comparable casemate wall can be found on the Tall Abū Ḥaraz; however, it originates from the Iron Age I Stratum (phase IX; area 9)⁹⁹.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
2078	AO/AP 117	Wall	E 1/E 2	✓	-	-
2120	AP 117/118	Wall	E 1	✓	-	✓
2148	AP 118	Pavement	E 1	-	-	-
2690	AP 118	Wall	E 1	-	-	-
3959	AP 118	Wall	E 1	✓	-	✓
2758	AO 118	Wall	E 2	-	-	-
1035	AO 117	Wall	E 2	-	-	-
542	AO 117	Colluvium	E 2	✓	✓	✓
1313	AN/AO 117	Wall	E 2	-	-	-
1074	AO 117	Fill layer	E 2	✓	-	✓
1079	AO 117	Fill layer	E 2	✓	✓	-

1693	AN/AO 117	Pavement	E 3	-	-	-
1312	AN/AO 117	Wall	E 3	-	-	-
523	AO 116	(Wall)	E 3	-	-	-
1708	AN/AO 117	Fill layer	E 3	-	-	-
1681	AN/AO 117	Fill layer	E 3/F 1	✓	✓	-
1730	AN 117	Fill layer	E 3	✓	✓	-
1677	AN 117	Fill layer	E 3	✓	-	✓
1682	AN 117	Find	E 3	-	✓	-
1678	AN 117	Installation	E 3	-	-	-
1679	AN 117	Fill layer	E 3	-	-	✓
1135	AN 117	Wall	E 3/E 4	-	-	-
1133	AN 117	Wall	E 3/E 4	✓	✓	✓
1134	AN 117	Wall	E 4	✓	✓	✓
1132	AN 117	Fill layer	E 4	✓	✓	✓
1396	AN 116/117	Fill layer	E 4	✓	✓	✓
539	AN 115	Fill layer/ash lenses	E 4	-	-	-
552	AN 115	Fill layer	E 4	✓	-	✓
612	AN 115	Fill layer	E 4	-	-	-
538	AN 116	Fill layer	E 4	-	-	-
535	AN 116	Wall	E 4	-	-	-
1471	AN 116/117	Pavement	E 4	✓	-	-
1694	AN 117	Pavement	E 4	-	-	-
1472	AN 117	Fill layer/channel	E 4	✓	-	✓
1737	AN 117	Fill layer/channel	E 4	-	-	-
1473	AM/AN 116	Passage way	E 4	✓	✓	-
1397	AM 116/117	Wall	E 4/E 5	-	-	-
1398	AM/AN 116	Wall	E 4/E 5	-	-	-
(3859)	AM 117	Fill layer	E 5/Str. 15	-	-	-
1639	AM 116	Fill layer	E 5	✓	-	✓
1640	AM 116	Pavement	E 5	-	-	-
38	AM 117	Collapse	E 5	-	-	-
39	AM 116	Wall	E 5	-	-	-
37	AM 116	Wall	E 5/E 6	-	-	-
77	AM 116	Wall	E 5/E 6	-	-	-

61	AM 116	Wall	E 6	-	-	-
118	AL 116	Wall	E 5/E 6	✓	✓	-
(1981)	AK 116	Pavement	E 6/I 1	✓	✓	✓
1278	AN/AO 117	Fill layer/mudbrick collapse	E 3	✓	✓	✓
1287	AN/AO 117	Fill layer	E 3	✓	✓	-
1126	AN 117	Fill layer/mudbrick collapse	E 3/E 4	✓	✓	✓

Tab. 2.4 Stratum 14 d, contexts within Complex E (Source: BAI/GPIA).

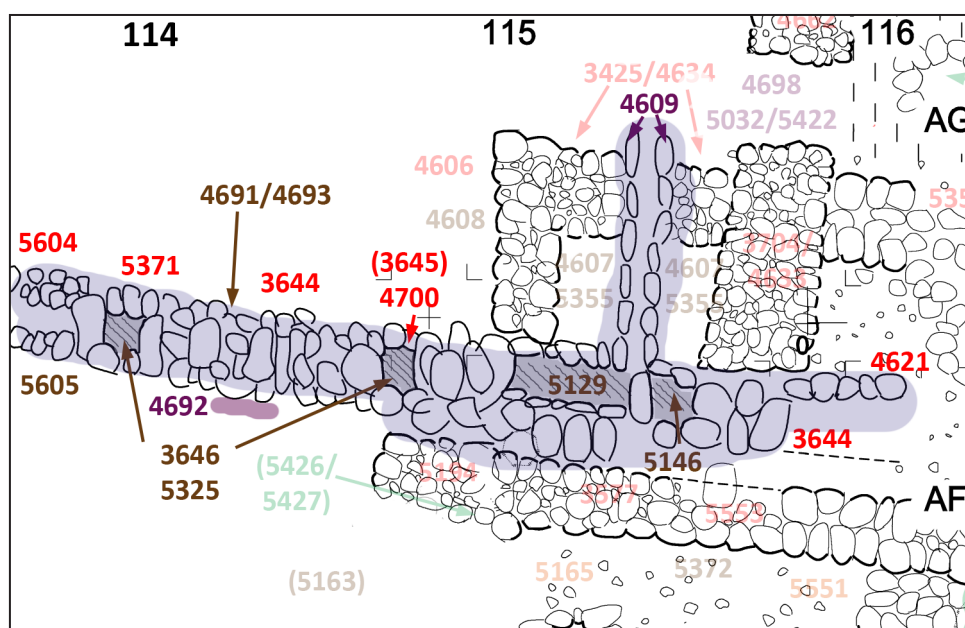


Fig. 2.77 Stratum 14 d, Complex F 2 (Source: BAI/GPIA).

Complex F 1, the northern part of the channel, consists of the Contexts 1490, 3839 (further use of Stratum 15), 1680, 3840 (also further used from Stratum 15), 3862, 3863 (Stratum 15) and is filled by the soil layers 1681 and 3864 (Stratum 15, mixed pottery). 4776 denotes a larger, oval collecting basin with an area of about 1.25 m x 1.00 m and is the beginning of a shaft (pottery: Early Bronze Age jug and flint flakes). Wall 78 was originally part of the architecture of the casemate, however, it also seems to have been part of the collection basin too. The channel consists of two parallel rows of large field stones with a c. 30 cm wide gap and runs in north–south direction along (below) the casemate wall (Context 1680 with upper edge: -23.19 m; Context 3839 with upper edge: -23.48 m and lower edge: -23.78 m and Context 3840 with upper edge: -23.53 m).

Complex F 2, the southern part of the channel, begins below the buildings in Square AF/AG 115: A 3 m long inflow (Context 4609; finds: Late Bronze Age bowl TZ 006555-001, some bones and flint objects that cannot be defined closer) comes from the north and meets a larger channel in east–west direction, which also consists of two parallel rows of larger field stones (Contexts 3644, 4621, 4700, 5371 and 5604). Special finds in this area are: a cylindrical stone bead TZ 017332-001, a Late Bronze Age jug TZ 006636-002 (Fig. 2.78) and a stone bowl with base ring TZ 015571-001.



Fig. 2.78 Jug TZ 006636-002 (Source: BAI/GPIA).

The *c.* 50 cm wide space in between the channel was covered with blocks. The channel running towards the slope can be followed for a length of 10 m and then breaks off.

Fill layers of the gap are: 5146 (finds: bones, mostly sheep or goat, cattle, but also domestic pigs; pottery, only bowls [fine ware]; a flint object), 5129 (traces of possible destruction by fire; finds: hammer stone, hand mill, iron nodule, four sheep or goat bones, one bone each from cattle, sheep and goat, pottery, bowls, jugs, bottle TZ 020405-001), 3646 (finds: Late Bronze Age cooking pot TZ 006488-001 and bones), 5325 (contents of the water channel, finds: lower grinding stone, three snails, indeterminable bones and pottery, most of them bowls and dating to the Middle Bronze Age), 5605 (three snails, pottery, including an oval button with two biconical drillings TZ 017330-001, *Fig. 2.79*), 4691 (TZ 017204-001 worked tubular bone of a sheep or goat, with nine irregularly arranged holes on different sides, possibly a flute, *Fig. 2.80*)¹⁰⁰ and 4693 (limestone chain links TZ 014644-001 and -002, *Fig. 2.82 and 2.82*).



Fig. 2.79 Button TZ 017330-001 (Source: BAI/GPIA).



Fig. 2.80 Bone TZ 017204-001 (Source: BAI/GPIA).



Fig. 2.81 Chain link TZ 014644-001 (Source: BAI/GPIA).



Fig. 2.82 Chain link TZ 014644-002 (Source: BAI/GPIA).

Context 4692 describes the remains of a 10 cm thick layer of clay (presumably mudbrick) south of the channel (finds: Late Bronze Age pottery, fine ware, one White Slip bowl TZ 006658-001, a jug with comb line TZ 006658-002).

¹⁰⁰ A similar piece from Megiddo was called a filter. However, this stems from an Early Bronze Age context. See: Sass – Cinamon 2006, 376 fig. 18.15.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
78	AM 116	Wall	F 1	✓	✓	-
1490	AM 116/117	Channel	F 1	✓	-	-
1680	AN/AO 117	Channel	F 1	-	-	-
1681	AN/AO 117	Fill layer	E 3/F 1	✓	✓	-
4776	AM 117	Channel	F 1	✓	✓	-
3644	AF 114	Wall	F 2	✓	✓	✓
3645	AF 114	Channel	F 2	-	-	-
3646	AF 114	Channel backfill	F 2	✓	-	✓
4609	AF 115	Channel	F 2	✓	✓	✓
4621	AF 116	Wall	F 2	-	-	-
4691	AF 114	Fill layer	F 2	-	✓	-
4692	AF 114	Clay layer	F 2	✓	-	-
4693	AF 114	Fill layer	F 2	-	-	✓
4700	AF 114	Channel	F 2	✓	✓	✓
5129	AF 115	Fill layer	F 2	✓	✓	✓
5146	AF 115	Fill layer	F 2	✓	✓	✓
5325	AF 114	Fill layer	F 2	✓	✓	✓
5371	AF 114	Channel	F 2	-	-	-
5604	AF 113	Channel	F 2	-	-	-
5605	AF 113	Fill layer	F 2	✓	-	✓

Tab. 2.5 Stratum 14 d, contexts within Complex F (Source: BAI/GPIA).

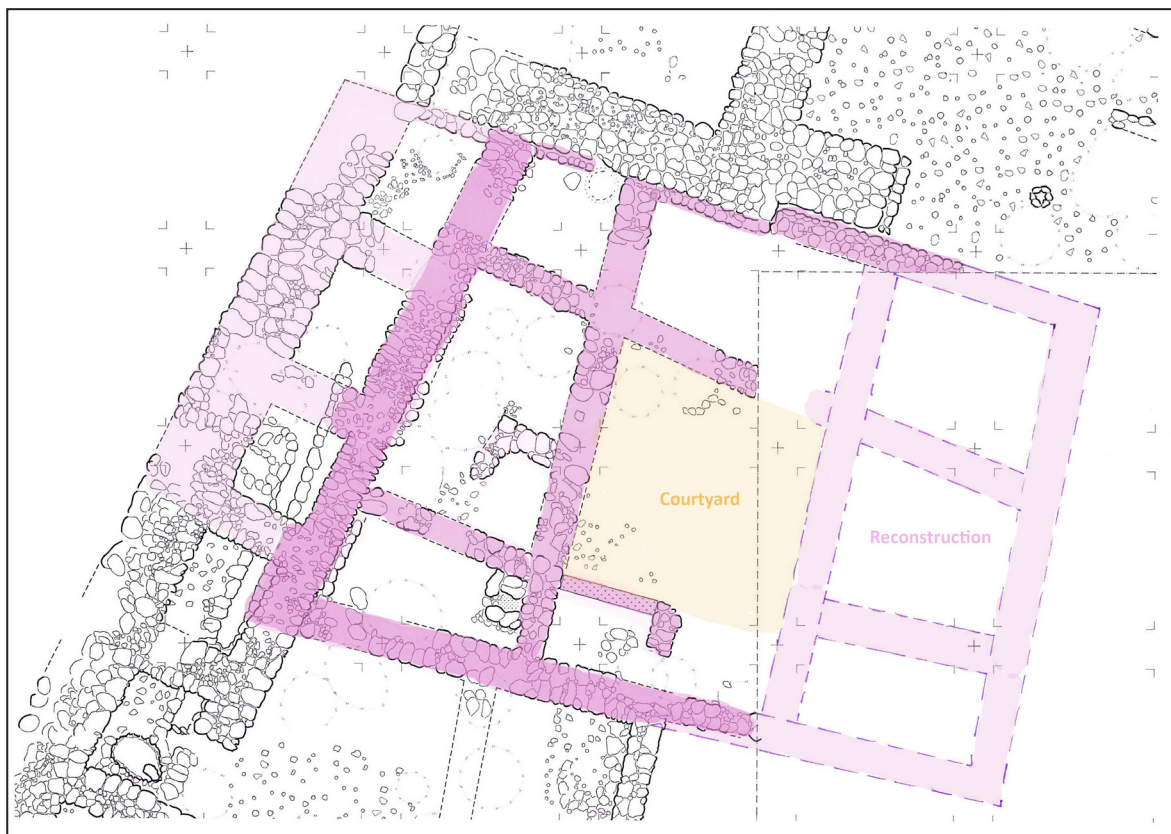


Fig. 2.84 Stratum 14 d, Complex G, Reconstruction (Source: BAI/GPIA).

In the northwestern corner, G 1 is the smallest room with a size of 2.5 m x 2.5 m. G 1 is bordered in the north by wall 2171/2173 (upper edge: -22.91 m and -22.97 m) as well as the outer wall of the great temple; in the east G 1 is separated from G 2 by wall 2589 (upper edge: -22.44 m)/3930; in the south G 1 is separated from G 3 by wall 2547/3908 and uses in the west the walls of casemate E 1 2690 and 3959. Presumably, the three casemate walls in the north were also used by the residents of this house during times of peace. In the north-east of room G 1, there is a tabun/oven (Contexts 2767 and 3912), which was, however, severely damaged and its dimensions were not clearly identifiable (upper edge: -22.75 m; lower edge: -23.00 m). A thick layer of ashes was preserved inside. This includes the fill layer 2730 (upper edge: -22.83 m; lower edge: -22.98 m), with charcoal remains and a great deal of ash, which was produced during the use of the

tabun. Finds in this area are: bones—mostly sheep or goat, but also cattle and domestic pigs; snails and shells; two rubbing stones TZ 010291-001 and TZ 010304-001; several metal finds, among them slag TZ 010080-001 and a trapezoidal fragment of a metal object TZ 010074-001 as well as a large number of pottery finds TZ 004338, 004395, 004417, including many bowls (an intact TZ 004417-011, *Fig. 2.85*) and (painted) jugs, some cooking pots (CP 1 and 3) and the oil lamp TZ 004417-009; together with find 2611 (TZ 010019-001 left arm with a peg of a bronze figurine, *Fig. 2.86*). The finds in connection with the oven suggests it was used as a cooking area. Worth mentioning are finds of pottery and charcoal in Context 3908: jug/jug with grooved decoration (TZ 005689-002) and a bronze needle with eyelet from find 3930 (TZ 012916-001, *Fig. 2.87*). Overall, the finds and the size of the house suggests the inhabitants had a high economic status.



Fig. 2.85 Bowl TZ 004417-011 (Source: BAI/GPIA).



Fig. 2.86 Find TZ 010019-001 (Source: BAI/GPIA).



Fig. 2.87 Bronze needle TZ 012916-001 (Source: BAI/GPIA).

Room G 2 connects to G 1 in the east and is limited in the north as well as room G 1 by the walls 2171/2173 and 5640, in the east by the end of the excavation area (therefore, an exact extension is indeterminable), in the south by wall 2519 and in the west by wall 2589/3930. The south-western area was heavily destroyed by a later pit. Within the area of G 2, there are fill layers 2147, 2170, 2755, 2768, 5453 and the floor 2668. Context 2755 (upper edge: -22.69 m and lower edge: -22.86 m) are very rich in finds: a large number of pottery, including a lot of cookware (mostly CP 1), among them isolated Iron Age sherds. Casting residue/melting drops (TZ 010116-001), bones (an equal numbers of sheep, goat and cattle) as well as two matching fragments

of a limestone bowl/mortar (TZ 010307-001, *Fig. 2.88*). Additionally, three snails and a fragment of a shell. 2170 describes the fill layer in the north-eastern corner between wall 5640 and the end of the excavation area. The pottery found there dates exclusively from the Late Bronze Age and consists mainly of (painted) jugs/pitchers (TZ 003783 and TZ 003801). In addition, bones of sheep and goats were found. A charcoal sample was also taken. Fill layer 5453 equals Context 2170, but in the area of the baulk. Noticeable is a small amount of pottery found, however, two rubbing stones (TZ 015449-001 and 015584-001) as well as a spindle whorl made of stone (convex, notches at the edges were made by threads, TZ 015434-001, *Fig. 2.89*) were found.



Fig. 2.88 Mortar TZ 010307-001 (Source: BAI/GPIA).



Fig. 2.89 Spindle whorl TZ 015434-001 (Source: BAI/GPIA).

The pottery finds (TZ 004363, CP 3 cooking pot, two Late Bronze Age bowls, one polished jug) and wall 2519 suggests that it was constructed during the Late Bronze Age, even though it was probably still in use in the Iron Age I.

With Context 2668, a structure of loosely laid small stones forms a surface which represents the former occupation layer. Charcoal and ashes were scattered heavily on the soil (similar measurements as in find 2170, of upper edge: -22.81 m and lower edge: -23.08 m). The pottery is mixed and contains a few Early Bronze Age and some Iron Age sherds. Remarkable finds are a cooking pot (TZ 004268-019), a painted jug (TZ 004268-016), a Cypriot milk bowl (TZ 004294-010), a painted bowl (TZ 004353-010), and an Early Bronze Age bowl with a horn grip (TZ 004353-017, *Fig. 2.90*). With a high percentage of painted pottery as well as the imported goods added to the inventory of G 1 suggests a high living standard of the inhabitants. This is also visible in the other finds (e.g. faience scarab TZ 009936-001 with turquoise coating, *Fig. 2.91*), and even in the bone finds which, in addition to the usual sheep and goat bones, have an increased number of cattle bones and bone of a fallow deer (TZ 009829-001).



Fig. 2.90 Bowl TZ 004353-017 (Source: BAI/GPIA).

The largest interior space of the complex, G 3, is trapezoidal in shape and measures 3/4.5 m x 6 m. It is bordered by the walls 2547 and 3908 in the north, 2698, 3909 and 2191 in the east, 2364 in the west and 2380 (finds: rim and wall of a stone bowl TZ 010621-001), 2381 and 3846 in the south (finds: oil lamp TZ 005628-003, the bottom of a jug in secondary use as an oil lamp). Presumably, the western casemate wall (1312 and 1313) and wall 2364 was added later. Particularly noteworthy are the diverse finds within Context 2698: pottery, among them cooking pots and pans like everyday goods, but also oil lamps and painted ware as well as a loom weight (TZ 004361-002, *Fig. 2.92*); the fragment of a turquoise faience ring (TZ 009801-001, *Fig. 2.93*, possibly with hieroglyphics); two shells; bones (ten sheep or goat, one cattle, one sheep, others unspecified); copper ore (TZ 009999-001) and the fragment of an iron nodule; a metal fragment forming the tip of a needle (TZ 010117-001) and a rubbing stone in the shape of a truncated cone (TZ 010086-001). These objects probably do not belong to the wall, but rather come from the area of the passageway to courtyard G 4.



Fig. 2.92 Loom weight TZ 004361-002 (Source: BAI/GPIA).



Fig. 2.91 Scarab made of faience TZ 009936-001 (Source: BAI/GPIA).



Fig. 2.93 Ring made of faience TZ 009801-001 (Source: BAI/GPIA).

The entire G 3 area is severely disrupted by later pits (3897, 2909, 3872, 2908, 2337 and 2735). The southern half is separated or subdivided by a right-angled installation (Contexts 2624, 3854 and 3855). The corner of the wall (upper edge: -22.69 m) measures 1.5 m x 2 m and is 80 cm thick. There are no special finds, apart from the fragment of a needle TZ 010030-001. The pottery is mixed, which can be attributed to pit 2735. In a deeper layer the context received the new numbers 3854 and 3855 and the pottery found is from the Late Bronze Age.

Closed fill layers are only 2736 in the northern half and 2343 in the southern half, and the paving 2354. Fill layer 2343 shows many smaller stones, so that the remains of a paving are probably present here too. Tabun remains and cooking pottery indicate a place for cooking. There is a larger number of common, everyday use pottery consisting of both bowls and jugs. Additionally, flint objects, the two rubbing stones TZ 009272-001 and 009273-001 were also found. A notable object among the bone finds is a spindle whorl TZ 009260-001 made from the bone of a large mammal. Its upper side is slightly conical and polished and its lower side is flat. It was pierced in the middle vertically and cylindrically. Fill layer 2736 in the north of the room consists of loamy soil, interspersed with a circular ash layer, which could indicate an overlooked pit and thus explain the Iron Age pottery.

Special finds: in addition to a mixture of bowls, jugs and cooking pottery, a polished lid with a skin-coloured coating stands out (TZ 004427-001). Also worth mentioning is the bronze needle TZ 010010-001, three pierced shells as well as casting residues TZ 010073-001.

Presumably, the gap of the wall south of paving 2354 represents a passage to G 5. The entrance from the courtyard G 4 to room G 3 seems to be located in the northern half if the wall and directly next to the paving. The fill in pit 3897 in the north-east corner of the room consists of ashes.

G 4 denotes the area of the courtyard around which the other rooms are arranged. It is enclosed by the walls 2519 in the north, 2150, 2904, 2192 and 2361 (upper edge: -22.78 m; lower edge: -23.16 m) in the south and 2698, 3909, 2191 and 2317 (upper edge:

-22.68 m) in the west. The eastern extension has not yet been determined. Context 2150 appears in the plan as a mudbrick wall, however, the soil in areas north and south of it were also counted. This area stands out due to the high density of finds. The pottery does not differ from other fill layers containing pottery (large number, nearly equal distribution of bowls and jugs, cooking pottery with mainly CP 3, small number of painted sherds, little fine ware, two oil lamps); metal (two fragments of needles TZ 009034-001 and TZ 009036-001); bones (very large number, 111 sheep or goat, 13 sheep, 13 goat, 27 cattle¹⁰¹, two red or fallow deer, one horse/donkey and some not determinable); many snails and some shells; two iron nodules; glass (two completely preserved glass beads TZ 009051-001, *Fig. 2.94*, and TZ 009058-001, *Fig. 2.95*); three querns TZ 008974-001, TZ 009149-001 and TZ 009156-001; one hammer stone TZ 009130-991 and six rubbing stones.



Fig. 2.94 Glass bead TZ 009051-001 (Source: BAI/GPIA).



Fig. 2.95 Glass bead TZ 009058-001 (Source: BAI/GPIA).

Particularly noteworthy are two matching fragments of a limestone tile TZ 009164-001, a cube-shaped rubbing stone made of basalt TZ 009172-001 (*Fig. 2.96*) and a knob made of alabaster TZ 009176-001 (*Fig. 2.97*, with a round ground plan, constriction in the middle; a round hole in the middle of the upper side, a rectangular hole on the lower side).

This knob was probably part of the apparatus of a chariot (e.g. an axle cap)¹⁰².

In the later reconstruction phase 14 a, the mudbrick wall was given the context number 2904.

101 This is equivalent to 16 % cattle.

102 Cf. Tall al-Hiṣn (Beth Shean) and from Tall al-Amarna.



Fig. 2.96 Rubbing stone TZ 009172-001 (Source: BAI/GPIA).



Fig. 2.97 Stone knob TZ 009176-001 (Source: BAI/GPIA).

Fill layers in the courtyard:

2314: measuring point at -22.75 m, finds: cooking pot, fragments of tabun, but also some Iron Age sherds. Four mother-of-pearl fragments (TZ 009358-001).

2315: a large volume of ashes, finds: tabun fragments and a percentage of cookware, hole mouth jar TZ 003955-004, spindle whorl, bones (24 sheep or goat, three sheep, three goat, 18 cattle¹⁰³, two horse/donkey and one domestic pig), spindle whorl from the bone of a large mammal, two rubbing stones, bearing of a potter's wheel made of basalt TZ 009276-001 (Fig. 2.98), an earring TZ 009281-001, a robe pin TZ 009282-001 (Fig. 2.99), a white ring-shaped glass bead TZ 009283-001, casting residue.

2326: without finds.

2327: of the pottery found in this fill layer, the absence of cookware is noticeable as well as the finds consist of a high proportion of fine pottery (TZ 003926). Two hammer stones and some bones.

2355: pottery; few bones, one rubbing stone.

2666: small amount of pottery, with half of it dating to the Iron Age (this context should have been divided); 30 % cattle bones, otherwise sheep or goat.

2716: fill layer in the north of the courtyard, next to pit 2906/2667, consisting of very firm clay soil, interspersed with a few stones. Probably former occupation layer for this phase (upper edge: -23.05 m and lower edge at -23.07 m). Pottery mix containing a relatively high proportion of cooking pots (18 %) and relatively high proportion of fine ware (24 %). Of the identifiable bones, 45 % are cattle while the rest are sheep or goat. Here, too, casting residues and two fragments of a glass bead TZ 010754-001 as well as a spindle whorl of basalt TZ 010704-001 were found.

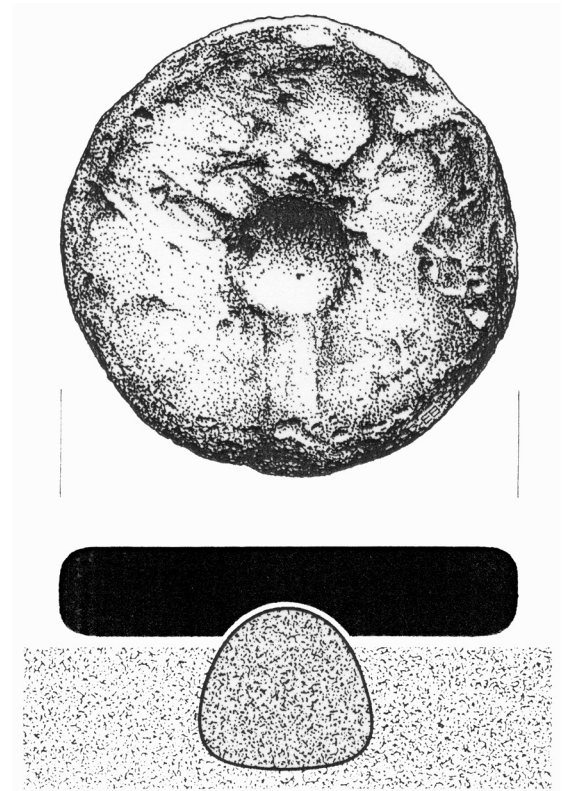


Fig. 2.98 Lower part of a potter's wheel TZ 009276-001 (drawing: E. Brückelmann).

103 This corresponds to 35 %.



Fig. 2.99 Coat pin TZ 009282-001 (Source: BAI/GPIA).

Floor/pavement in the courtyard:

2353: an irregularly laid and clay-covered paving in the south-western corner of the courtyard (no special finds except a dog bone).

2766: paving in the south-west corner of the yard, upper edge: at -23.04 m. This confirms that this elevation, along with Context 2716, is the former occupation layer. The context appears to consist of two layers: A coarse layer of smaller river pebbles, which was covered with larger irregular stones (few finds: two bowls, a jug and an obsidian fragment TZ 010277-001). It cannot be ruled out

that this lower layer could be the first layer of the backfill layers.

The fireplace, Context 2388 in the south-east of the courtyard, consists of a round area which is interspersed with ashes and charcoal. In approximately the middle of the courtyard, Context 2338 consists of three larger field stones on a layer of solid clay. Perhaps this was the base for a wooden column to provide support for a partial covering of the courtyard (e.g. by tarpaulins or skins) is possible. A special find is the Late Bronze Age bowl TZ 003929-001 with a unique shape and with incised decoration.

The room in the southwestern corner of the complex is G 5, which uses in the west the wall 1133 of the casemates E 3 and E 4 and later wall 1031 was added for reinforcement, in the north G 5 is bordered by the walls 2380, 2381 and 3846, in the east wall 2151/2369 which separates it from G 6 and in the south the outer wall is 2379. Within the 2/2.5 m x 5 m room, there is an installation/fireplace 2344 (upper edge: -22.74 m and lower edge: -23.12 m; two rubbing stones and two sheep bones, no pottery).



Fig. 2.100 Fireplace Context 2344 in AN 118 (facing west) (Source: BAI/GPIA).

A part of the outer wall in the south was destroyed by pit 2341 (Late Bronze Age pottery and few bones).

The fill layer inside the room is Context 2336 (measuring point at -23.24 m; contains solid grey clayey soil at the same level as the floor 2354 in G 3). The finds are: apart from an average pottery collection, include cooking pots, also CP 2 TZ ware, there is a button made of pottery TZ 010834-001 with two conical holes drilled into a body of the sherd and on both sides of the button, the edges were broken off irregularly, a spindle whorl of unfired clay TZ 009259-001; beside it bones, snails and tabun fragments.

In the area of the passage to G 3, is the location of fill layer 3841 (finds: hinge stone TZ 012819-001, only in phase d and c). Worth mentioning are the two complete mortars, two querns and a mortar bowl (TZ 009431-001) found in Context 2367 and Context 2368 (basalt stone bowl), also tabun remains and bones were found.

The smallest excavated area of the complex, measuring 2 m x 2.5 m, is G 6 in the south-east. The interior fill layer is 2185 with only few finds, among them a pyxis TZ 003788-010, iron nodules and bones (seven sheep or goat, one domestic pig). West of the wall 2192, a round accumulation of field stones following, probably a pit/silo 2193/2362 (no finds, possibly only collapsed material). The eastern end was destroyed by the later pit 2133. The southern end is formed by wall 2190 of Complex H. Walls 2319 and 2370 were still part of this complex, although they probably also form the southern end of the courtyard G 4.

The absence of right angles is striking¹⁰⁴. The builders seem to have made use of the existing walls and thus gained stability. Looking at the pottery inventory, this seems to indicate rooms G 2 and G 5 were used as storage rooms, G 3 as living quarters and G 6 as a stable¹⁰⁵.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Others	
2611	AP 118	Find/figurine	G 1	-	✓	-
2730	AP 118/119	Fill layer	G 1	✓	✓	✓
2767	AP 118/119	Fireplace/tabun	G 1	-	-	-
3912	AP 119	Fireplace/tabun	G 1	-	-	-
2171	AP 119	Wall	G 1/G 2	-	-	-
2172	AP 119	Wall	G 1/G 2	-	-	-
2173	AP 119	Wall	G 1/G 2	-	-	-
2589	AO/AP 119	Wall (continued use in IA)	G 1/G 2	✓	-	✓
3930	AP 119	Wall	G 1/G 2	-	-	-
2547	AO 118	Wall (continued use in IA)	G 1/G 3	✓	-	✓
3908	AO 118	Wall	G 1/G 3	✓	-	✓
2768	AO/AP 119	Fill layer	G 2	✓	-	✓
2170	AP 119	Fill layer	G 2	✓	-	✓
5453	AP 120	Fill layer	G 2	✓	✓	-

104 As already stated by Schwermer 2014, 334.

105 Schwermer 2014, 338.

2147	AP 119	Fill layer	G 2	-	-	-
2755	AO/AP 119	Fill layer	G 2	✓	✓	✓
2668	AO 119	Fill layer	G 2	✓	✓	✓
2519	AO 119	Wall	G 2/G 4	✓	-	✓
5640	AP 120	Wall	G 2	-	-	-
2191	AN 118/119	Wall	G 3/G 4	-	-	-
2343	AN 118	Fill layer	G 3	✓	✓	✓
2354	AN 118	Pavement	G 3	-	-	-
2364	AN 118	Wall	G 3	-	-	-
2380	AN 118	Wall	G 3/G 5	-	✓	-
2381	AN 118	Wall/collapse	G 3/G 5	-	✓	-
2624	AN/AO 118	Corner of a wall	G 3	✓	✓	✓
2698	AO 118/119	Wall	G 3/G 4	✓	✓	✓
2736	AN/AO 118	Fill layer	G 3	✓	✓	✓
3846	AN 118	Wall	G 3/G 5	✓	-	-
3854	AN 118	Wall	G 3	-	-	-
3855	AN 118	Wall	G 3	✓	-	✓
3897	AO 118	Pit	G 3	-	-	✓
3909	AO 119	Wall	G 3/G 4	-	-	-
2317	AN 118	Wall	G 4	-	-	-
2150	AM/AN 119	Fill layer	G 4/G 6	✓	✓	✓
2192	AM/AN 119	Wall	G 4/G 6	-	-	-
2314	AN 119	Fill layer	G 4	✓	-	✓
2315	AN 119	Fill layer	G 4	✓	✓	✓
2326	AN 119	Fill layer	G 4	-	-	-
2327	AN 119	Fill layer	G 4	✓	✓	✓
2338	AN 119	Column base?	G 4	✓	-	-
2353	AN 119	Pavement	G 4	✓	✓	✓
2361	AN 119	Wall	G 4/G 6	-	-	-
2388	AN 119	Fire place	G 4	-	-	-
2666	AN 119	Fill layer	G 4	✓	-	✓
2716	AO 119	Fill layer	G 4	✓	✓	✓
2766	AN/AO 119	Pavement/floor	G 4	✓	✓	-
2904	AN 119	Mudbrick wall	G 4/G 6	-	✓	-

2355	AN 119	Fill layer	G 4	✓	✓	✓
2151	AM/AN 118	Wall	G 5/G 6	-	-	-
2336	AN 118	Fill layer/floor	G 5	✓	✓	✓
2341	AN 118	Pit	G 5	✓	-	✓
2344	AN 118	Fire place/tabun	G 5	-	✓	✓
2367	AN 118	Fill layer	G 5	✓	✓	✓
2368	AN 118	Fill layer/find	G 5	✓	✓	✓
2369	AN 118	Wall	G 5/G 6	-	-	-
2379	AM 119	Wall	G 5/H 1	-	-	-
3841	AN 118	Fill layer	G 5	✓	✓	-
2185	AM 118	Fill layer	G 6	✓	✓	✓
2190	AM 119	Wall	G 6/H 2	✓	-	-
2193	AM/AN 118	Silo/fire place	G 6	-	-	-
2362	AN 119	Silo/pit	G 6	-	-	-
2319	AM 119	Wall	G 6/G 4?	-	-	-
2370	AM 119	Wall	G 6/G 4?	-	-	-

Tab. 2.6 Stratum 14 d, contexts within Complex G (Source: BAI/GPIA).

H 2 lies to the east of H 1 and is bordered by walls 2190 to the north and 2184/2318 to the east. The interior is paved on an area of 2 m x 3 m (Context 2360). The finds are: two lower grinding stones with one of them being complete TZ 014241-001 and a quern, measuring point: -22.97 m).

H 3 is the north-eastern most room of the complex, of which is mostly located outside the excavation area. H 4 denotes an area in the south-east and is characterized by a large number of pits. Pit 5033 has a diameter of about 60 cm and a depth of about 25 cm. The content consist of ash remains with clay, an egg-shaped hammer stone made of basalt TZ 015720-001, red chalk TZ 015333-001 (*Fig. 2.102*), bones (mostly sheep or goat, 13.8 % cattle, 6.9 % domestic pig) as well as pottery (also here with c. 25 % a high proportion of Middle and Early

Bronze Age pottery). A similar situation can be seen in the other pits (5035, 5037/5038 and 5040/5041). Particularly noteworthy is the relatively high proportion of fine pottery among the pottery finds from pit 5041 (TZ 020205 and TZ 020637).



Fig. 2.102 Red chalk TZ 015333-001 (Source: BAI/GPIA).

Context	Square	Description/ Interpretation	Complex	Artifacts		Ecofacts
				Pottery	Others	
2379	AM 119	Wall	G 5/H 1	-	-	-
2190	AM 119	Wall	G 6/H 2	✓	-	-
2319	AM 119	Wall	G 6/H 3	-	-	-
2370	AM 119	Wall	G 6/H 3	-	-	-
2184	AM 119	Wall	H 2/H 3	-	-	-
2318	AM 119	Wall	H 2/H 3	-	-	-
2360	AM 119	Pavement/floor	H 2	-	✓	-
4750	AM 117	Pavement	H 1	✓	✓	✓
4984	AL 119	Pavement	H 1	-	-	-
4833	AL 117	Mudbrick	H 1	✓	✓	✓
4835	AL 117	Mudbrick wall	H 1	-	-	✓
5033	AL 118	Pit	H 4	✓	✓	✓
5040	AL 118	Pit	H 4	-	-	-
5041	AL 118	Pit	H 4	✓	✓	✓
5035	AL 118	Pit	H 4	✓	✓	✓
5037	AL 118	Pit	H 4	-	-	-
5038	AL 118	Pit	H 4	✓	✓	✓

Tab. 2.7 Stratum 14 d, contexts within Complex H (Source: BAI/GPIA).

2.2.1.7. Complex I

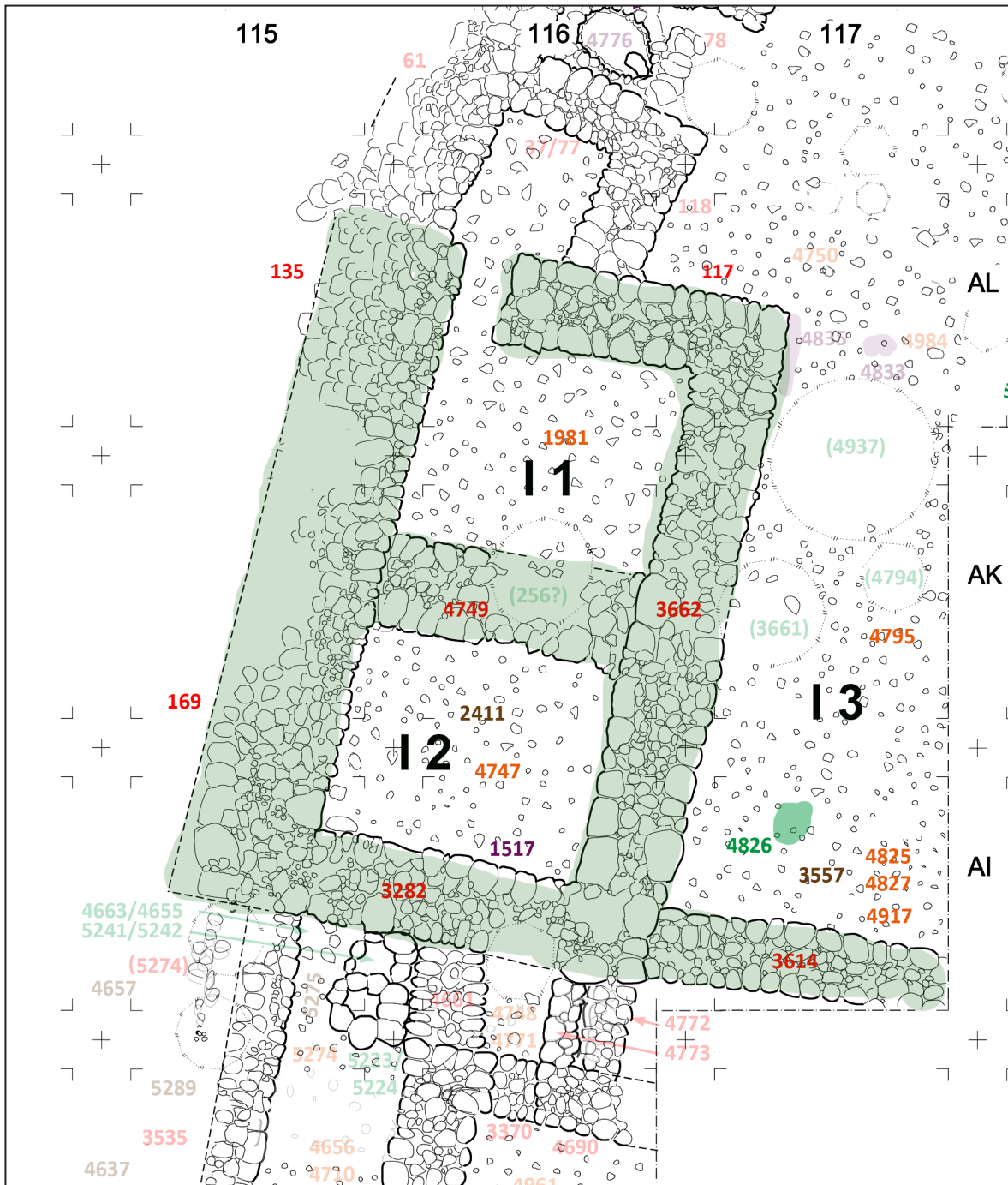


Fig. 2.103 Stratum 14 d, Complex I (Source: BAI/GPIA).



Fig. 2.104 Stratum 14 d, Complex I (facing west) (Source: BAI/GPIA).

The tower (Complex I) extends over the Squares AI–AL 115–117 and consists of two, almost square rooms and a paved courtyard to the east. From the northern room, I 1, a passage stretches to the southernmost room of the casemate wall (E 6). This wall is 1 m thick while the western outer wall was probably 2 m thick, however, the outer wall is not completely preserved.

The interiors have a size of 3 m x 4 m and are both paved. Room I 1 is enclosed by walls 117, 135, 3662 and 4749. Wall 3662, which forms the eastern end of both rooms I 1 and I 2, which contained few finds. The finds are: The rim of a Late Bronze Age jug, some bones that are no longer determinable and the fragment of a metal object, probably a small rod TZ 015249-001. The pavement in the interior is



Fig. 2.105 Hinge stone TZ 015979-001 (Source: BAI/GPIA).

Context 1981 with a low density of finds: only two sherds, some bones which are no longer determinable, as well as a rubbing stone and a hinge stone of limestone TZ 015979-001 (*Fig. 2.105*). The two rooms are separated by wall 4749.

The room I 2 is adjoining to the south and is bordered by the walls 169, 3282, 3662, and 4749. The interior contained Context 1517 (a rim of a Late Bronze Age painted jug TZ 002990-001, *Fig. 2.106*) and Context 2411 (upper edge: -23.55 m and lower edge: -23.61 m; except for the rim of a bowl and a painted sherd of a 'Chocolate-on-White' jug, almost exclusively Middle and Early Bronze Age pottery, six rubbing stones). Presumably, this context as well as pavement 4747 belongs to the last layer of backfill of Stratum 15.



Fig. 2.106 Rim TZ 002990-001 (Source: BAI/GPIA).



Fig. 2.107 Spindle whorl TZ 015407-001 (Source: BAI/GPIA).

Finds from this context include a complete spindle whorl made of stone (TZ 015407-001, *Fig. 2.107*) cylindrical shaped with notches on top and bottom. The pottery found shows a high percentage of Early Bronze Age ware (60 %) as well as Late Bronze Age pottery with a coarse texture.

To the east of the two rooms is a large, paved courtyard which was probably connected to the courtyard of Complex H. Courtyard I 3 is closed to the south by wall 3614. The eastern extension cannot yet be assessed, as no further excavation was carried out resulting in the possibility of only half of I 3 was explored. The paving is composed of the Contexts 4795 (finds: bones, mostly sheep or goat, 14 % cattle and domestic pig each, 5 % gazelle), 4825, 4827 and 4917 (finds: contained a rubbing stone, a hammer stone, a snail and little amount of pottery). Fill layer 3557 contained a great deal of painted Late Bronze Age pottery and two needle fragments TZ 012559-001 and TZ 012560-001.

It is possible Complexes I and H as well as parts of the casemate wall E (E 4, E 5, E 6) formed a single architectural unit. A comparable tower complex (from the Iron Age IIA/B, attached to the Late Bronze Age city wall) comes from Tall Abū Ḥaraz from Stratum XII¹⁰⁶.

106 Fischer 2013, 31. 69. 91.

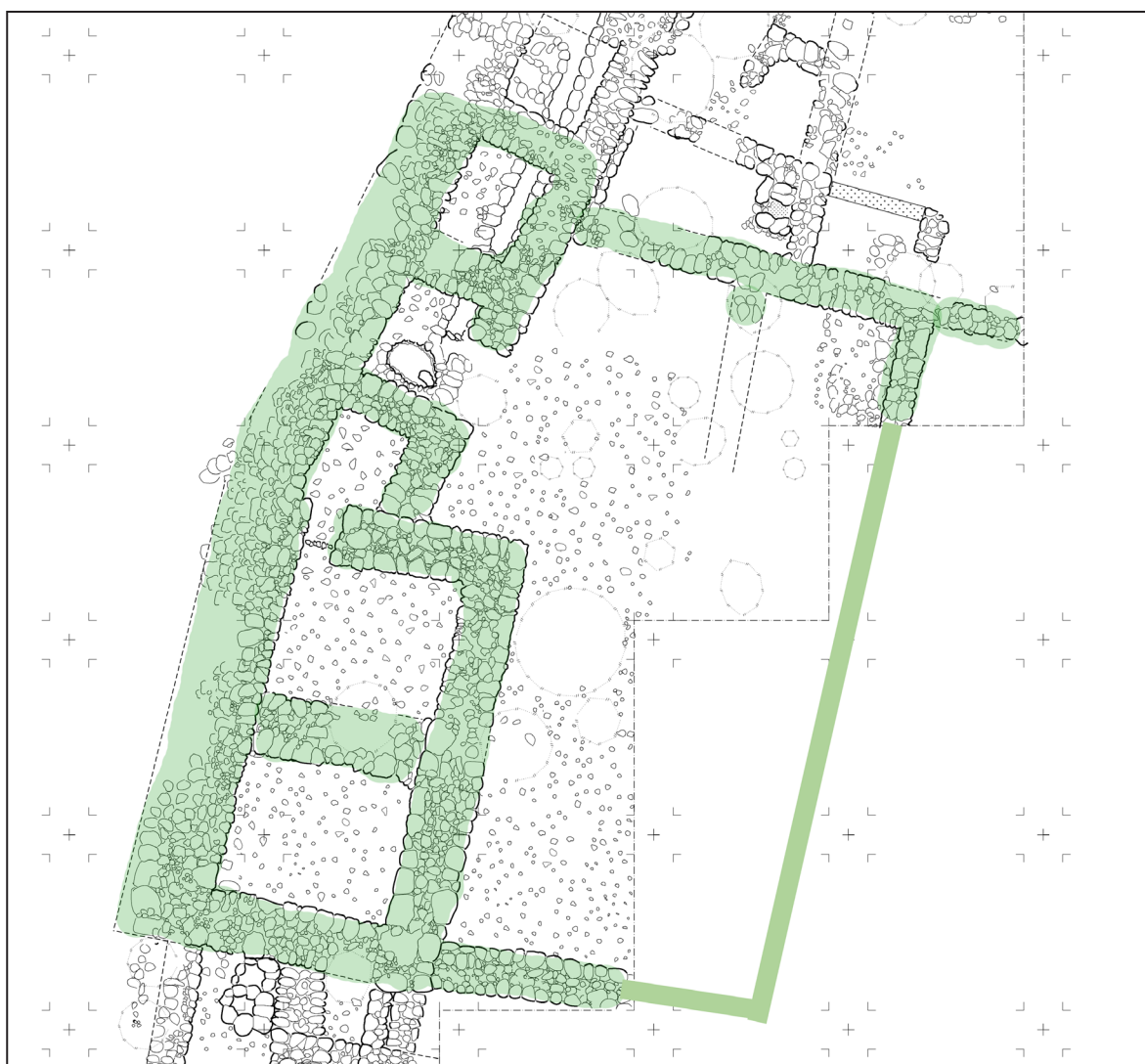


Fig. 2.108 Stratum 14 d, Complex I, expansion reconstruction (Source: BAI/GPIA).

Context	Square	Description/Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Others	
135	AL 116	Wall	I 1	-	-	-
169	AK 116	Wall	I 2	-	-	-
117	AL 116	Wall	I 1	-	-	-
1981	AK 116	Pavement/floor	E 6/I 1	✓	✓	✓
3662	AI 117	Wall	I 1/I 2	✓	✓	✓
4749	AK 116	Wall	I 1/I 2	-	-	-
2411	AI/AK 115	Fill layer	I 2	✓	✓	-
4747	AI 116	Pavement	I 2	✓	✓	✓
3282	AI 116	Wall	I 2	-	-	-
1517	AI 116	Fill layer	I 2	✓	-	-
4795	AK 117	Pavement	I 3	✓	✓	✓
3557	AI 117	Fill layer	I 3	✓	✓	✓
4826	AI 117	Pit	I 3	-	-	-
3614	AI 117	Wall	I 3	-	-	-
4825	AI 117	Pavement	I 3	-	-	-
4827	AI 117	Pavement	I 3	✓	-	-
4917	AI 117	Pavement	I 3	✓	✓	✓

Tab. 2.8 Stratum 14 d, contexts within Complex I (Source: BAI/GPIA).

2.2.1.8. Complex K

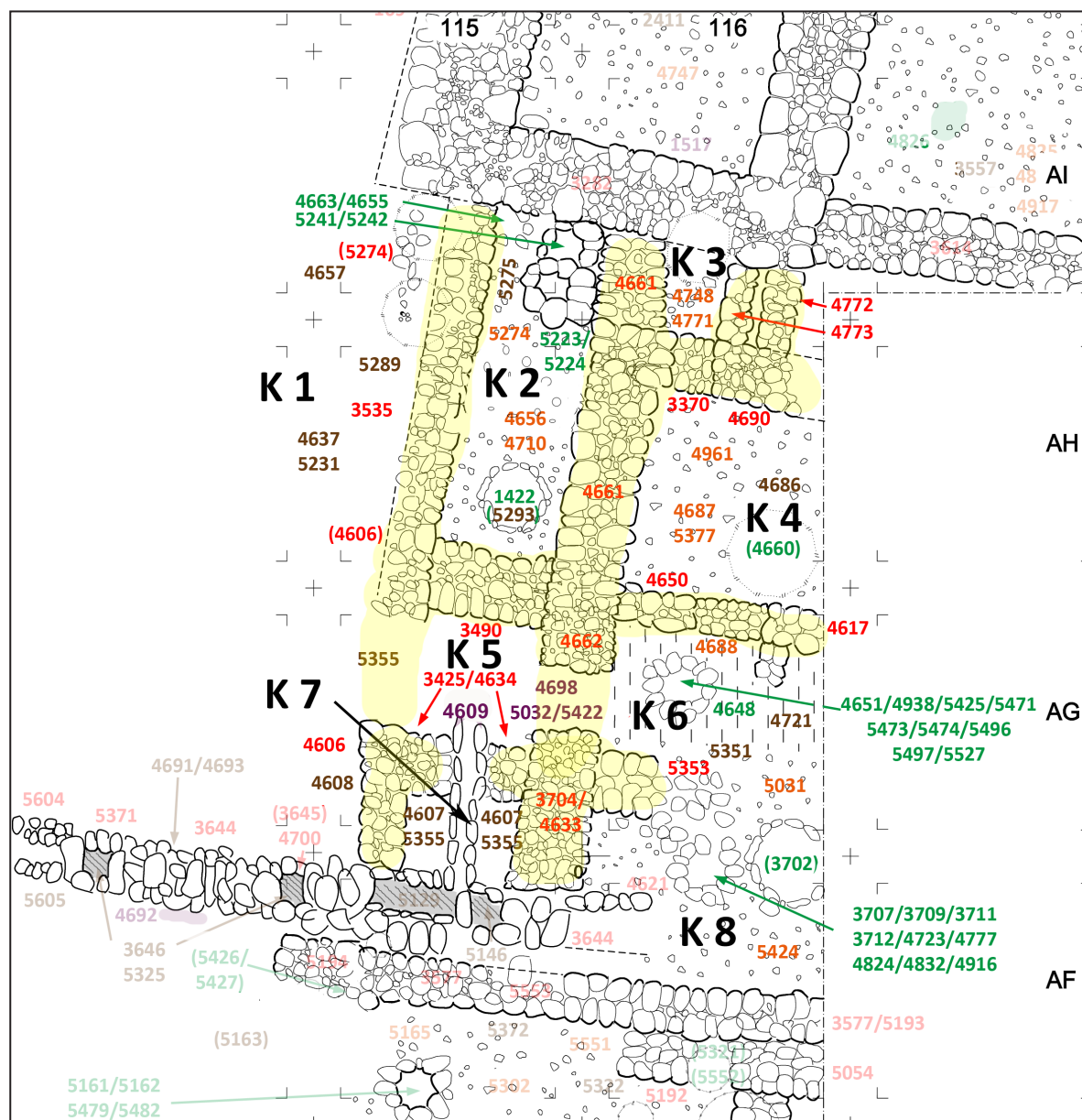


Fig. 2.109 Stratum 14 d, Complex K (Source: BAI/GPIA).

Complex K appears to be a gate area, consisting of a narrow passage between two casemate-like rooms. It also appears the casemate-like rooms were sealed during a later construction phase. This area adjoins the tower to the south and comprises Squares AG/AH 115/116.

K 1 describes the fill layers outside the area on the slope and consists of the Contexts 4608 (collapse

of the wall 4606), 4637 (contains Early and Middle Bronze Age pottery, probably part of the fill layers), 4657 (fill layer/pit: large concentration of ash, also Early Bronze Age pottery, but in smaller numbers to include a hammer stone and two rubbing stones), 5231 (also mixed pottery) and 5289 (again mainly Early and Middle Bronze Age pottery, a disc-shaped stone spindle whorl TZ 015432-001).

Separated from the interior, K 1 is bordered by

the eastern walls 3535 (finds: a quern, a rubbing stone and a mortar bowl) and 4606 (finds: rubbing stone, bones: three sheep or goat, one sheep, five cattle and one horse). It appears walls 3535 and 4606 were originally larger in width because the outer wall lacks a clear outer edge and a width of up to 2 m is plausible, based on the wall thickness in

Complex I and Complex L. Such a width would be appropriate for a city wall and the fallen stones in 5274 could be the remains of such a wall. Overall, it is difficult to classify the finds of K 1: due to the hillside location, all finds seem to be mixed with remnants from backfilled layers and their significance is therefore limited.

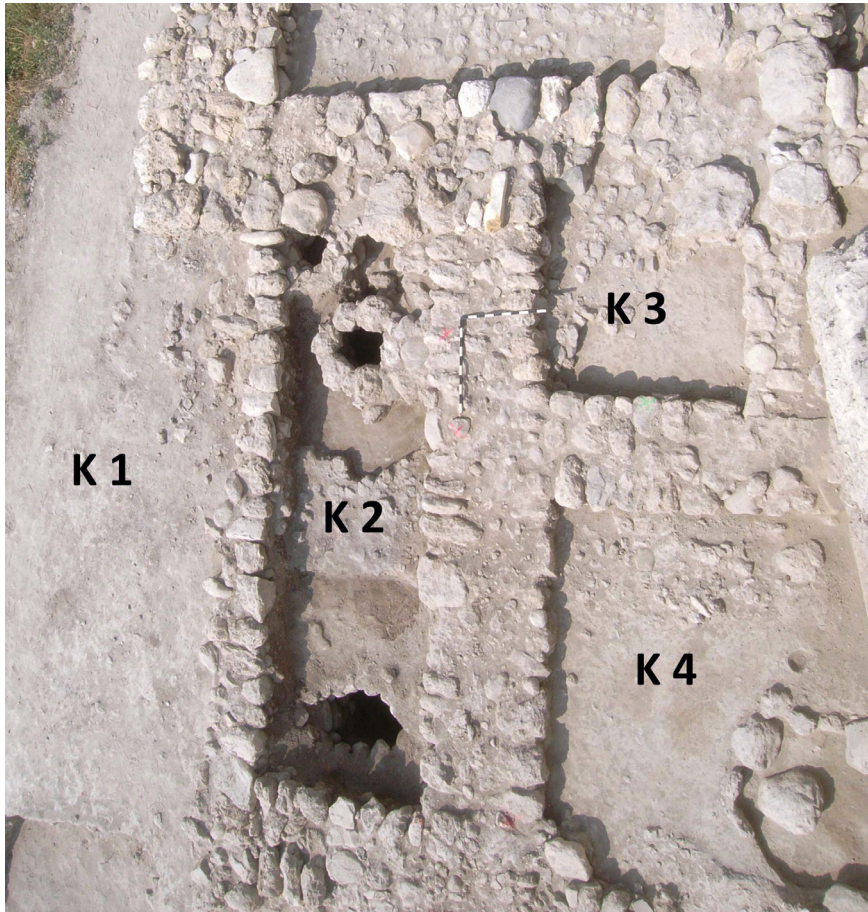


Fig. 2.110 Stratum 14 d, Complex K 1 to K 4 (Source: BAI/GPIA).

K 2 is a rectangular room measuring 2 m x 6 m north of the passage K 5. The finds are clearer in room K 2 even with the occasional appearance of isolated Early and Middle Bronze Age pottery. In addition, pits were apparently dug in this area during the Roman period, which were not always recognized and identified in time during the excavation. The area is enclosed by the walls 3282 (Complex I), 3535, 4606, 3490 (upper edge: -23.35 m and -23.42 m), 4661 (finds: painted pottery TZ 06600-001, rubbing stone, bones that can no longer be determined and

a metal fragment). The wall thickness is 1.3 m (although the outer wall is only preserved 1 m thick due to the hillside location).

There are four pits/silos in the interior: three in the north (4663/4655 diameter 0.8 m; 5241/5242 diameter 0.4 m; 5223/5224 diameter 0.6 m) and one in the south (1422/5293 diameter 0.9 m, limestone capstone TZ 015350-001, measuring point -23.16 m). All consist of a ring of 15–30 cm large field stones laid in a circle. The room is also completely paved with 15–40 cm field stones (Contexts

4656: body sherd of an industrial vessel/drain pipe TZ 006596 (Fig. 2.111); Context 4710: fragment of a limestone cap TZ 015950-001 and Context 5274). Fill layers are 5275 in the north and 5293 in the south, although the demarcation of 5293 from pit 1422 is not clear. Based on the surprisingly small percentage of cookware, K 2 was probably a storage area. Examples of drain pipes, similar to Context 4656, come from the Strata R-2 and R-1 in Beth Shean as well as specimens found in Hazor, Megiddo, Lachish and Ṭabaqāt Faḥl (Pella)¹⁰⁷.



Fig. 2.111 TZ 006596-001 from Stratum 14 (Source: BAI/GPIA).



Fig. 2.113 Lid TZ 015950-001 (Source: BAI/GPIA).



Fig. 2.112 Capstone TZ 015350-001 (Source: BAI/GPIA).

By far, the smallest room of the Complex is K 3 with an area of 1.3 m x 1.6 m. It is separated from K 2 by wall 4661 and is bordered to the east by wall 4773 (and the directly adjacent wall 4772, which possibly belongs to a room to the east that has not yet been excavated; both walls are double-rowed and run parallel to each other). Finds in wall 4773: two rubbing stones TZ 015968-001 (Fig. 2.114) and TZ 015970-001 used as spolia. In the south, the room is bordered by wall 3370. The interior is also paved with 15–30 cm large stones (Contexts 4771 and 4748). The pavement is disturbed in the north by a later pit. The pottery shows a decrease of the Early Bronze Age pottery. Remarkable are a high

107 Mullins 2007, 439 and Smith 1973, 212. Some of the industrial vessels from Tall Zirā'a seem to be similar to the Egyptian „flower pots“. All examples from Beth Shean have a hole in the bottom side, but some of the Egyptian

specimens did not have this. Mullins 2007, 448 f. For Hazor: Yadin et al. 1955, Plate CXXXI.13; Yadin et al. 1960, Plate CXLVII.7–9 and 11.

percentage of closed vessels (75 %) and fine ware (37 %) as well as a lack of cooking pots. The few open vessels are exclusively fine ware. Worth mentioning is the neck of a bottle TZ 006730-001 from Context 4771.

This room could also be interpreted as a storage area. It is unclear whether the complete mortar TZ 015362-001 was part of the paving or was *in situ*. The wall 3370 lies between finds 4661 and 4690, however, it is 40–50 cm deeper and seems to be one layer, suggesting this is a threshold/passage between rooms K 4 and K 3.



Fig. 2.114 Rubbing stone TZ 015968-001 (Source: BAI/GPIA).

The extent of K 4 cannot be definitively identified, as the eastern part has not yet been excavated. The area is limited by the walls 3370 (possible threshold to K 3), 4690, 4661, 4650, 4617 and 4688 (threshold to K 6, consisting of small flat stones, length: 1.20 m, width: 0.80 m). Like the other two rooms, K 6 is also paved (4687, 4961 and 5377). The pottery finds were an even distribution of open and closed vessels, 11% cooking pot ware, a snout of an oil lamp (TZ 020444-006, Fig. 2.115); however, 44 % represents a high proportion of fine ware. The identifiable bones found are as follows: 70 % sheep or goat, 10 % cattle, 10 % each domestic pig and wild boar. The corresponding fill layer is Context 4686, but very poor in finds. The south-eastern area is disturbed by the later pit 4660.



Fig. 2.115 Oil lamp TZ 020444-006 (Source: BAI/GPIA).

K 5 refers to the passage or gate area measuring 4.5 m x 2 m located between room K 2 and K 7. The significance of the associated fill layer 5355 is also low, since there is a mix of pottery (Early and Middle Bronze Age), suggesting this context is also part of the backfill layers. Boundary walls in the north are Contexts 3490 and 4662 (finds: an egg-shaped rubbing stone with flat underside TZ 015886-001). Boundary walls in the south are Contexts 3425, 4606 and 4634 (the latter being the foundation of 3425).

They include many finds: bones (goat, cattle and gazelle), metal (spatula TZ 012557-001); pottery (mainly open vessels); a quern and five rubbing stones. These contexts were built in front of walls 3704/4633 (finds: pottery, 50 % of it cookware, among them a baking tray). Channel 4609 leads from room K 5 through room K 7.

The Contexts 4698 (finds: a small amount of Late Bronze Age pottery and a bronze bead TZ 015167-001 broken in two halves), 5032 (finds: 10–20 cm large fieldstones laid flat, a fragment of a quern) and 5422 marks the passage between K 5 and K 6.

An opening of this kind in the outer wall appears problematic and would probably have posed a security risk for the city's inhabitants. However, the excavations' finds do not allow us to assume that the wall was once closed.

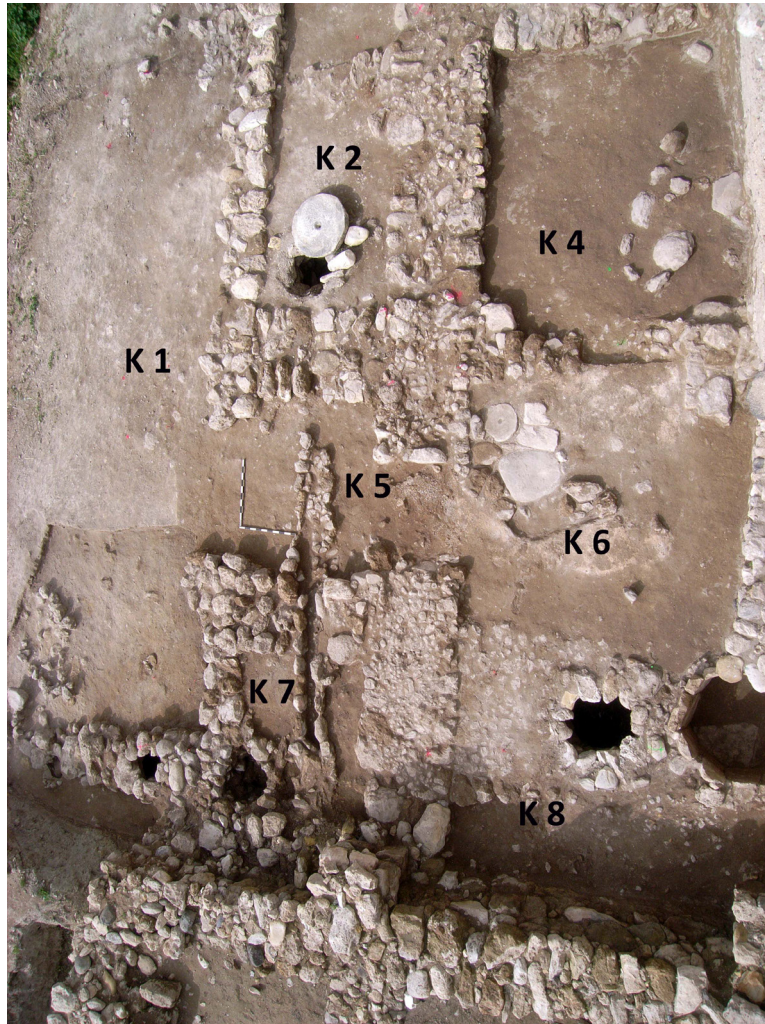


Fig. 2.116 Stratum 14 b, Complex K, southern area (Source: BAI/GPIA).

K 6 is similar to K 8 and consists of a paved area in which some storage pits/silos are embedded. The room is located to the east of the passage/gate area K 5 and is bordered to the north by walls 4617, 4650 and 4662. K 6 is interrupted by the passage to K 4 (Context 4688). In the south, it is separated from K 8 by wall 5353. The eastern extension is unknown, since this area lies outside the previous excavation area.

Associated fill layers are 4721 and 5351 (finds: complete lower grinding stone TZ 015820-001 (Fig. 2.117) with oval ground plan; bones of sheep and goat; pottery closed vessels, mostly of Middle Bronze Age and 66 % fine pottery, among them a painted body sherd TZ 020613-003 (Fig. 2.118) belonging to an imported Mycenaean vessel or a local imitation of such a vessel).

The paving consists of fist-sized stones 5031 laid flat, however, they are only preserved in the southern part of the room (finds: two fragments of rubbing stones, a quern; pottery, only closed vessels/jars and, besides Late Bronze Age material also Early and Middle Bronze Age material).



Fig. 2.117 Lower grinding stone TZ 015820-001 (Source: BAI/GPIA).



Fig. 2.118 Pottery TZ 020613-003 (Source: BAI/GPIA).

Inside room K 6 is a large silo 4648 (finds: mixed pottery, also Early and Middle Bronze Age; quern, hammer stone, mortar bowl of basalt with feet TZ 015853-001) with a diameter of 1.30 m from the outside and about 80 cm inside, closed with a stone slab measuring 40 cm in diameter (TZ 015355-001, *Fig. 2.119*). The rim of the silo consists of several layers of circularly laid large fieldstones.

Contexts inside the silo are: 4651, 4938 (finds: pottery; bones: 13.3 % cattle, 3.3 % fallow deer, otherwise sheep or goat; shell pendant TZ 016441-001; weight stone made of basalt TZ 015906-01 (*Fig. 2.120*); a rubbing stone as well as a quern fragment), 5425 (finds: complete rubbing stone TZ 015809-001; fragment of an ivory object which is possibly an inlay TZ 017216-001 (*Fig. 2.121*); pottery consisting mostly of closed vessels, oil lamp, little cookware), 5471 (finds: rubbing stone, game piece TZ 017338-001; bones: 8.8 % cattle, 3 % each gazelle and fallow deer, otherwise sheep or goat; pottery, including 50 % fine ware, base of a chalice TZ 020739-008), 5473 (bones: 75 % pig, otherwise sheep or goat), 5474 (finds: fragment of a rubbing stone, pottery also mixed Early and Middle Bronze Age), 5496 (finds: wire, possibly earring TZ 015368-001; spindle whorl made of limestone with a diameter of 3.1 cm TZ 015399-001 and fragment of a stone ring made of limestone with a diameter of 5.5 cm TZ 015491-001 (*Fig. 2.122*), on the front side decorated with concentric circles, the back side is not smoothed; two rubbing stones; bones: 10 % cattle, otherwise sheep or goat; metal two fragments of an awl TZ 017197-001 and 017298-001; pottery almost exclusively of Middle Bronze Age material and bowls, two loom weights TZ 020745-011 and -014), 5497 (finds: fragment of an awl TZ 017299-001; bones: 46 % sheep or goat and domestic pig

each, 7 % cattle; pottery: 30 % pottery, including two baking trays) and 5527 (Early and Middle Bronze Age pottery).

With the last, perhaps the last two contexts, the bottom of the backfill layer was reached. The pits' floor is formed by irregularly laid stones and is probably the uppermost stone layer of the backfill layers.



Fig. 2.119 Lid TZ 015355-001 (Source: BAI/GPIA).



Fig. 2.120 Weight stone TZ 015906-001 (Source: BAI/GPIA).



Fig. 2.121 Ivory inlay TZ 017216-001 (Source: BAI/GPIA).



Fig. 2.122 Limestone ring TZ 015491-001 (Source: BAI/GPIA).

K 7 describes the south-western area of the complex (c. 1.90 m x 1.25 m). It contains the fill layer 4607 (finds: a lot of pottery, clearly Late Bronze Age, little pottery CP 3, even amount of open and closed vessels, especially TZ 006522-017 bottom of a jug (black slip, fine pottery); almost completely preserved needle TZ 014469-001 (*Fig. 2.123*) and the tip of an arrowhead TZ 014470-001 (*Fig. 2.124*); stone lumps, a hammer and a rubbing stone). Below the access level is an inflow from channel 2 (Context 4609).



Fig. 2.123 Bronze needle TZ 014469-001 (Source: BAI/GPIA).

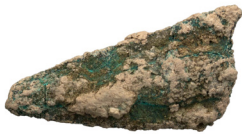


Fig. 2.124 Arrowhead TZ 014470-001 (Source: BAI/GPIA).

K 8 is similar to K 6 with a paved area in which storage pits/silos were embedded. Finds within the pavement 5424 are: an almost complete stone vessel TZ 015416-001 (*Fig. 2.125*), probably locally produced; an oval hammer stone made of flint TZ 016033-001 and two flint objects; bones: 14.8 % domestic pig, 3.7 % gazelle, otherwise sheep or goat; pottery is almost completely Middle Bronze Age, among them a krater TZ 020703-009 with heringbone pattern impressions, *Fig. 2.126*).



Fig. 2.125 Stone vessel TZ 015416-001 (Source: BAI/GPIA).



Fig. 2.126 Krater TZ 020703-009 (Source: BAI/GPIA).

The pear-shaped storage silo 3707 was probably built in phase 14 d and continued to be used until 14 b. It was built using the dry wall method and has a diameter of c. 60 cm. The inner area is heavily streaked with ash.

Contexts inside are:

3709 (finds: normal pottery finds with open and closed vessels, oil lamp and cookware; two fragments of a quern; bones: 20 % cattle, 6.5 % wild boar, otherwise sheep or goat).

3711 (finds: strikingly, many open vessels, two lamps, little cookware; special finds: faience figurine TZ 012657-001 (*Fig. 2.127*); white and ring-shaped glass bead TZ 012658-001; stone button TZ 012661-001 with rectangular ground plan, rounded corners

and two conical perforations; spherical mace-head of grey-white marbled stone TZ 012662-001 (Fig. 2.128); truncated cone-shaped rubbing stone TZ 012675-001; bones: 9.8 % cattle, otherwise sheep or goat).

3712 as 3711 (finds: imported Eggshell pottery TZ 005566-018 (Fig. 2.129), one rim lip with carination; baking tray TZ 005566-022; two hammer stones and one mortar bowl; bronze ring TZ 012711-001 (Fig. 2.31) with a diameter of 2.2 cm; bones: 15.1 % cattle, 3 % each fallow deer and gazelle, as well as domestic pig and dog, otherwise sheep or goat).

4723 (finds: pottery, bones and metal no longer determinable, worth mentioning TZ 006691-001 six sherds of a bottle, rim with neck 'Red Polished fine', otherwise mostly closed vessels).

4777 (finds: pottery, 50 % of which are fine ware, mostly closed vessels; unspecified bones; 18 flint objects).

4824 (finds: 31 flint objects).

4832 (finds: pottery consisting mostly Early Bronze and Middle Bronze Age, here also 50 % fine pottery; bones not determinable; 8 flint objects).

The underlying layer of 4916 also shows mostly Early Bronze and little Middle to Late Bronze Age pottery, therefore, the lower part of the pit is part of the backfill layer of Stratum 15.

Pit 3702 probably dates from phases 14 a and 14 b.

Overall, Complex K appears to be a public storage area. This is indicated not only by the large number of silos that could store supplies for a large community, but also by the location of the entrance¹⁰⁸.



Fig. 2.127 Front- and backside of figurine made of faience TZ 012657-001 (Source: BAI/GPIA).



Fig. 2.128 Top and side view of mace head TZ 012662-001 (Source: BAI/GPIA).

108 See comparable installations e.g. in Tall as-Seba' (Herzog 1993, 167).



Fig. 2.129 Eggshell imported pottery TZ 005566-01 (Source: BAI/GPIA).



Fig. 2.130 Stone button TZ 012661-001 (Source: BAI/GPIA).



Fig. 2.131 Bronze ring TZ 012711-001 (Source: BAI/GPIA).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
4608	AF 115	Fill layer/collapse	K 1	-	✓	-
4637	AG 115	Fill layer	K 1	✓	-	-
4657	AI 115	Fill layer/pit	K 1	✓	✓	-
5231	AH 115	Fill layer	K 1	✓	-	✓
5289	AH 115	Fill layer	K 1	✓	✓	✓
3535	AG 115	Wall	K 1/K 2	✓	✓	-
5274	AH 115	Pavement	K 1/K 2	✓	✓	✓
4606	AF 115	Wall	K 1/K 5/K 7	-	✓	✓
1422	AH 115	Silo	K 2	✓	✓	✓
4655	AI 115	Pit fill	K 2	✓	-	✓
4656	AH 115	Pavement/possible workspace	K 2	✓	✓	✓
4663	AI 115	Edge of a pit	K 2	-	-	-
4710	AH 115	Pavement	K 2	✓	✓	✓

5223	AI 115	Edge of a pit	K 2	-	-	-
5224	AI 115	Pit fill	K 2	✓	-	✓
5241	AI 115	Edge of a pit	K 2	-	-	-
5242	AI 115	Pit fill	K 2	✓	-	✓
5275	AI 115	Fill layer	K 2	✓	✓	✓
5293	AH 115	Pit fill/fill layer	K 2	✓	-	-
4661	AH 115	Wall	K 2/K 3/K 4	✓	✓	✓
3490	AH 115	Wall	K 2/5	✓	-	✓
4748	AI 116	Pavement	K 3	✓	✓	✓
4771	AI 116	Pavement	K 3	✓	-	-
4772	AI 116	Wall	K 3	-	-	-
4773	AI 116	Wall	K 3	-	✓	-
3370	AH 116	Wall/passageway	K 3/K 4	-	-	-
4617	AG 116	Wall	K 4	-	-	-
4650	AH 116	Wall	K 4	-	✓	✓
4686	AH 116	Fill layer	K 4	-	-	✓
4687	AH 116	Pavement/floor	K 4	✓	✓	-
4688	AG 116	Passageway	K 4	✓	-	-
4690	AH 116	Wall	K 4	-	-	-
4961	AH 116	Pavement	K 4	✓	-	✓
5377	AH 116	Pavement	K 4	✓	✓	-
4662	AG 115	Wall	K 5/K 6	-	✓	✓
4698	AG 115	Fill layer/possible Floor	K 5/K 6	✓	✓	-
5032	AG 115	Pavement/passageway	K 5/K 6	-	✓	✓
5422	AG 115	Fill layer	K 5/K 6	-	-	-
3425	AG 115	Wall	K 5/K 7	✓	✓	✓
4634	AG 115	Wall	K 5/K 7	✓	-	-
5355	AG 115	Fill layer	K 5/K 7	✓	-	-
3704	AF 116	Wall	K 5/K 7/K 8	-	-	-
4633	AF 115	Wall	K 5/K 7/K 8	✓	-	-
4648	AG 116	Silo	K 6	✓	✓	-
4651	AG 116	Silo filling	K 6	✓	-	✓
4721	AG 116	Fill layer	K 6	✓	-	-
4938	AG 116	Pit fill	K 6	✓	✓	✓

5351	AG 116	Fill layer	K 6	✓	✓	✓
5425	AG 116	Silo filling	K 6	✓	✓	✓
5471	AG 116	Silo filling	K 6	✓	✓	✓
5473	AG 116	Silo filling	K 6	✓	✓	✓
5474	AG 116	Silo filling	K 6	✓	✓	✓
5496	AG 116	Silo filling	K 6	✓	✓	✓
5497	AG 116	Silo filling	K 6	✓	✓	✓
5527	AG 116	Silo filling	K 6	✓	✓	✓
5031	AG 116	Pavement	K 6/K 8	✓	✓	✓
5353	AG 116	Wall	K 6/K 8	-	✓	-
4607	AF 115	Fill layer	K 7	✓	✓	✓
3707	AF 116	Pit	K 8	✓	✓	✓
3709	AF 116	Pit fill	K 8	✓	✓	✓
3711	AF 116	Pit fill	K 8	✓	✓	✓
3712	AF 116	Pit fill	K 8	✓	✓	✓
4723	AF 116	Pit fill	K 8	✓	✓	✓
4777	AF 116	Pit fill	K 8	✓	✓	✓
4824	AF 116	Pit fill	K 8	✓	✓	✓
4832	AF 116	Pit fill	K 8	✓	✓	✓
4916	AF 116	Pit fill	K 8	✓	-	✓
5424	AF 116	Pavement	K 8	✓	✓	✓

Tab. 2.9 Stratum 14 d, contexts within Complex K (Source: BAI/GPIA).

layer 5163 should be added to this area, however, it seems to belong to phase 14 c.

The large courtyard L 2 is completely paved (Contexts 5165, 5191 [finds: rectangular rubbing stone TZ 015949-001], 5302, 5432 and 5551) and contains two storage silos: Contexts 5428/5429 in the south-west measuring 2 m x 2 m with 30–50 cm oval stones arranged with an inner diameter of 1.4 m for several layers. The finds include: stone knob TZ 015463-001 (*Fig. 2.133*); 12 flint objects; pottery: 66 % fine pottery, only closed vessels. The north-western silo 5161 is ringed with 40–50 cm large fieldstones (finds: six flint objects; bones [one cow, one domestic pig]; rim of a jug), 5162 (finds: many pieces of cookware, also contains Middle Bronze Age sherds), 5479 (finds: gaming piece, rubbing stone, an almost completely preserved jug/jug TZ

020742-001 as well as ‘Chocolate-on-White’ ware TZ 020742-002 (*Fig. 2.124*) and -003 and jug TZ 020742-006, *Fig. 2.135*), 5482 (finds: blue glass bead TZ 015335-001; five rubbing stones of which two are conical; shell pendant TZ 016457-001; bones: 47 % sheep or goat, 47 % cattle, 6 % domestic pig; cookware). In 5547 (finds: game piece, stone bowl with feet TZ 015617-001, disc-shaped rubbing stone, pottery to include many miniature vessels TZ 020865-004; -007; -008; -009; -010; -013; -014; -015; -016; -017), 5555 (finds: oval stone button with two holes TZ 015435-001 (*Fig. 2.136*), one rubbing stone, eight flint objects, three iron nodules; one glass or faience fragment; bones: 63.3 % sheep or goat, 25 % cattle, 8.3 % pig and 3.3 % dog; fragment of an awl TZ 017305-001 (*Fig. 2.137*); pottery also contains pieces from the Middle Bronze Age).



Fig. 2.133 Stone knob TZ 015463-001 (Source: BAI/GPIA).



Fig. 2.134 ‘Chocolate-on-White’ ware TZ 020742-002 (Source: BAI/GPIA).



Fig. 2.135 Jug TZ 020742-006 (Source: BAI/GPIA).



Fig. 2.136 Stone button TZ 015435-001 (Source: BAI/GPIA).



Fig. 2.137 Awl TZ 017305-001 (Source: BAI/GPIA).

Beginning in the north-east, the fill layers are: 5198, 5322 (finds: 80 % closed vessels, a small amount of cookware), 5372 (finds: fragment of an arrow shaft smoother TZ 015935-001 and four flint objects), 5394 (finds: seven flint objects), 5395 (finds: five flint objects; little pottery, among them were pieces from the Middle Bronze Age), 5397 (finds: handle with body sherd of a jug with an incised cross and two lines representing the potter's mark), 5399 (finds: among them 66 % fine pottery and 66 % closed vessels, also pieces of Middle Bronze Age material) and 5430 (finds: one rubbing stone; four flint objects; little pottery).

A small rectangular area (1.5 m x 2 m) in the south-east of the complex was subdivided off to from the courtyard (L 3). It is bordered by the walls 5149 to the north, 4971 to the east and 5324 to the west. L 3 contains the fill layer 5131, pavement 5373, and a storage pit/silo 3608 (finds: stone cover of limestone TZ 015384-001 (Fig. 2.138); oval lower grinding stone TZ 015652-001; pottery); 5199 (finds: bones: sheep or goat; fine pottery); 5299; 5554 (finds: four flint objects; one sheep bone; a cooking pot sherd).



Fig. 2.138 Stone lid TZ 015384-001 (Source: BAI/GPIA).

Area L 4 is located east of L 3 and separated by the walls 4971, 5150 and 5054 (finds: two flint objects; bones: 12 % domestic pig, otherwise sheep or goat; two fine ware bowls, including Eggshell ware). For the most part, L 4 has not yet been excavated. No new find numbers were assigned to the fill layers of L 4, but all were recorded under Context 5131. Finds of this context are: Rubbing stone, sheep and goat bones, pottery. Remarkable is the relatively high volume of flint objects within the whole complex. Additionally, more than two thirds of the relatively small pottery finds consist of fine, closed vessels.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Others	
5433	AF 114	Pavement/clay layer	L 1	-	-	✓
5164	AE 115	Wall	L 1/L 2/M 1	✓	✓	✓
5305	AE 114	Wall	L 1/L 2	✓	✓	-
5161	AF 115	Silo/pit	L 2/M 1	✓	✓	✓
5162	AF 115	Silo/pit	L 2/M 1	✓	✓	✓
5165	AF 115	Pavement	L 2/M 1	-	-	-
5191	AF 116	Pavement	L 2	-	✓	-
5192	AF 116	Wall	L 2	-	-	-
5198	AF 116	Fill layer	L 2	✓	✓	✓
5302	AF 115	Pavement	L 2/M 1	-	-	-
5322	AE 116	Fill layer	L 2	✓	✓	✓

5372	AF 115	Fill layer	L 2	-	✓	✓
5394	AE 115	Fill layer	L 2	-	✓	✓
5395	AE 116	Fill layer	L 2	✓	✓	-
5397	AE 115	Fill layer	L 2	✓	-	✓
5399	AE 115	Fill layer	L 2	✓	-	✓
5426	AF 115	Pit	L 2	-	-	-
5427	AF 115	Pit fill	L 2	-	-	-
5428	AE 115	Silo/pit	L 2	✓	✓	✓
5429	AE 115	Silo/pit fill	L 2	✓	✓	✓
5430	AE 115	Fill layer	L 2	✓	✓	✓
5432	AE 115	Pavement	L 2	✓	✓	✓
5479	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5482	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5547	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5551	AE 116	Pavement	L 2	✓	✓	-
5555	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
3577	AF 116	Wall	L 2 /(K 8)/ M 1	✓	✓	✓
5193	AF 116	Wall	L 2 /(K 8)	✓	✓	✓
5194	AF 115	Wall	L 2 /(K 8)	✓	✓	✓
5553	AF 115	Wall	L 2 /(K 8)	-	-	-
5149	AE 116	Wall	L 2/3	-	-	-
5324	AE 116	Wall	L 2/3	-	-	-
5150	AF 116	Wall	L 2/4	✓	-	-
3608	AE 116	Silo/pit	L 3	✓	✓	-
5131	AE 116	Fill layer	L 3/4	✓	✓	✓
5199	AE 116	Silo/pit	L 3	✓	-	✓
5299	AE 116	Silo/pit fill	L 3	-	-	-
5373	AE 116	Pavement	L 3	-	-	-
5554	AE 116	Silo/pit fill	L 3	✓	✓	✓
4971	AE 116	Wall	L 3/4	-	-	-
5054	AF 116	Wall	L 4	✓	✓	✓

Tab. 2.10 Stratum 14 d, contexts within Complex L (Source: BAI/GPIA).

2.2.2.1. Changes in Stratum 14 c

There are very few differences between phases 14 d and 14 c:

In room K 8, the southernmost of the rooms in Complex K (AG 116), a newly built-in floor was found: paving 4619 (finds: little pottery; two flint objects; bones that are no longer identifiable) and 4620 (finds: Middle Bronze Age pottery; four flint objects, two rubbing stones; bones: mainly sheep

and goat). Fill layer 4632 belongs to phase c and b. Especially noteworthy is the fragment of a stone bowl made of basalt TZ 014478-001.

In the south of excavation area I, as previously described, Complex L was rebuilt and divided into two complexes: Complexes M and N. The whole area north of Squares AE/AF 114–116 remains as part of phase 14 d.

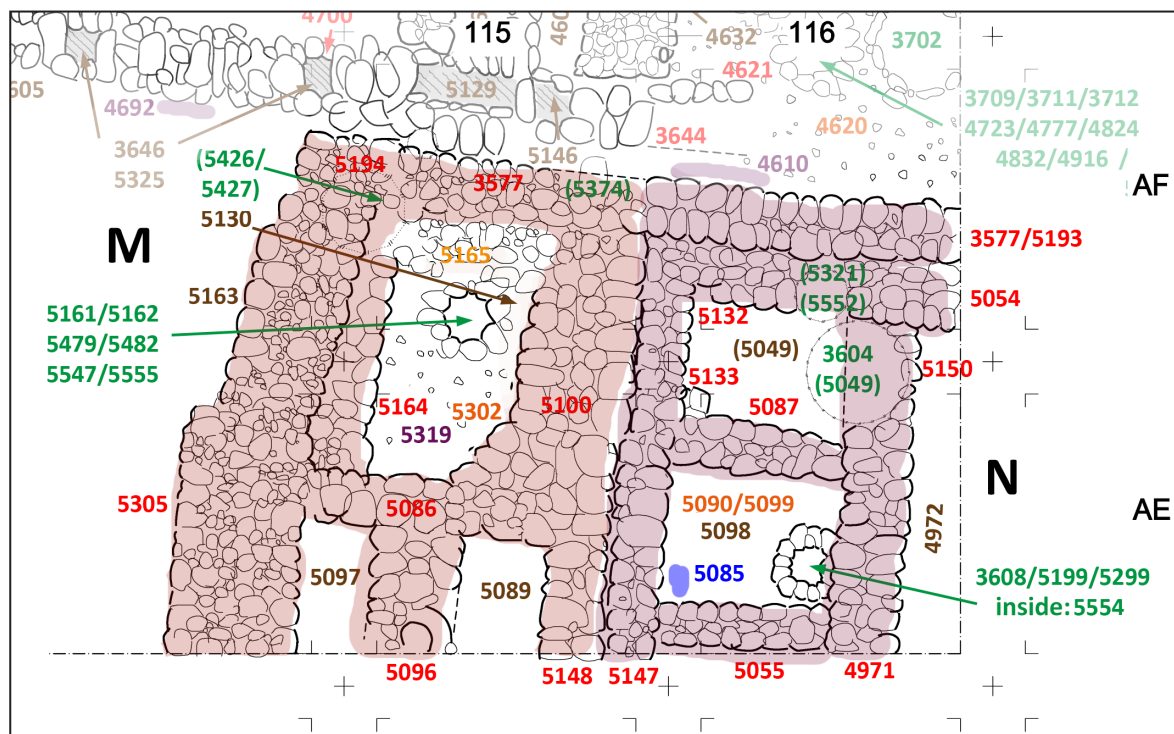


Fig. 2.140 Stratum 14 c, Complexes M and N (Source: BAI/GPIA).



Fig. 2.141 Stone bowl TZ 014478-001 (Source: BAI/GPIA).

2.2.2.2. Complex M

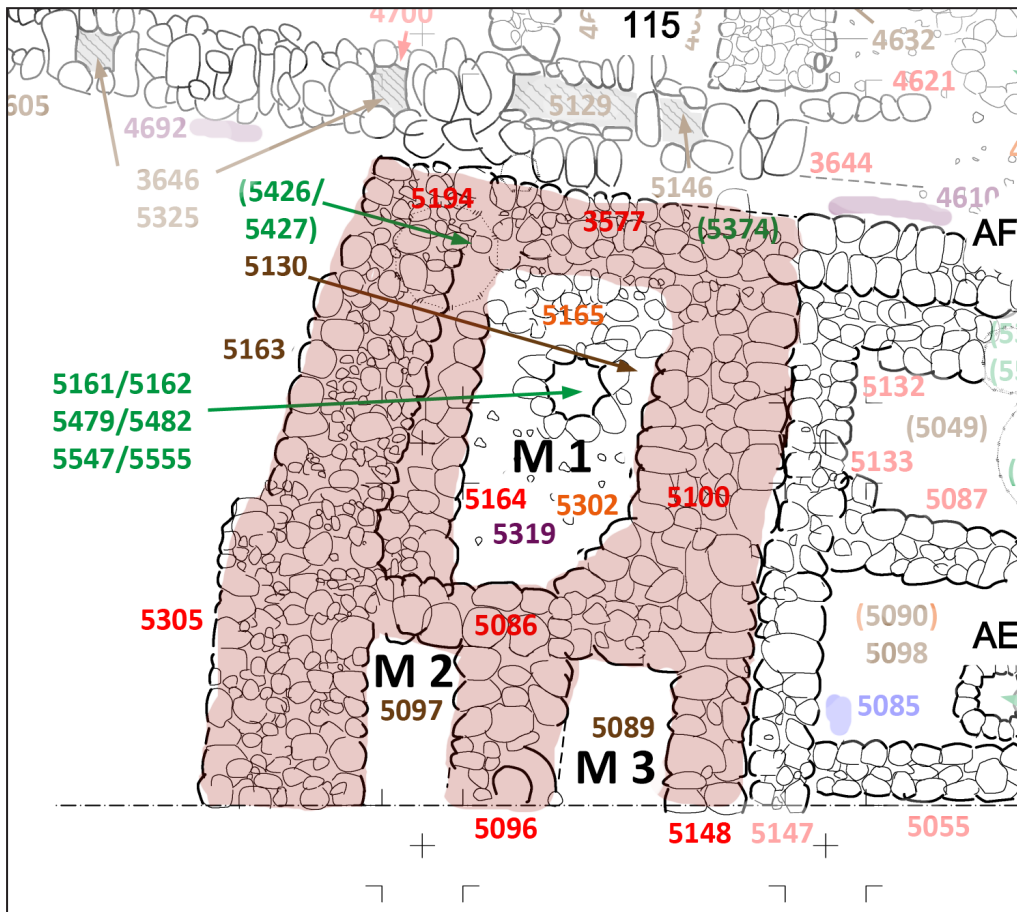


Fig. 2.142 Stratum 14 c, Complex M (Source: BAI/GPIA).

Complex M denotes the western area of the new complexes and is primarily located in Squares AE/AF 115. It consists of three rooms: M 1 is located in the north and is 2.5 m x 3 m, which is the largest room of the three, followed by M 2 (1 m x 2 m) and M 3 (1.3 m x 2 m).

M 1 is bordered by the walls 5100 in the east, 5086 in the south, 5163 (also a fill layer) in the west, as well as 3577 and 5194 in the north. Context 5164 is probably a bench. The outer walls have a thickness of 1.5 m; however wall 5086, which is the demarcation to the rooms M 2 and M 3, is only 0.8 m thick. Inside the room are paving stones 5165 and 5302, silo 5161/5162/5479/5482/5547/5555, fill layer 5130 (finds: seven flint objects; some bones that cannot be determined; pottery with 40 % cookware) and the limestone layer 5319.

M 2 is bordered by wall 5086 in the north, 5096 in the east and wall 5305 in the west, which also existed in phase d. The southern boundary has not yet been excavated. The interior of the room contains Context 5097 (finds: eight flint objects; sheep or goat bones; utility pottery).

M 3 is bordered by 5086 in the north, 5096 in the west, and 5148 in the east. The southern boundary has not yet been excavated. The interior of the room contains Context 5089 (finds: three flint objects; bones, 76 % sheep or goat, 6 % cattle, 6 % domestic pig, 12 % gazelle; pottery exclusively closed vessels).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
5161	AF 115	Silo/pit	L 2/M 1	✓	✓	✓
5162	AF 115	Silo/pit	L 2/M 1	✓	✓	✓
5479	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5482	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5547	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
5555	AF 115	Silo/pit fill	L 2/M 1	✓	✓	✓
3577	AF 116	Wall	L 2/(K 8)/ M 1	✓	✓	✓
5100	AE 115	Wall	M 1	-	-	-
5130	AF 115	Fill layer	M 1	✓	✓	✓
5163	AE 115	Fill layer/wall	M 1	✓	-	-
5164	AE 115	Wall	L 1/L 2/M 1	✓	✓	✓
5165	AF 115	Pavement	M 1	-	-	-
5194	AF 115	Wall/mudbrick	L 2/M 1	✓	✓	✓
5302	AF 115	Pavement	L 2/M 1	-	-	-
5319	AE 115	Limestone layer/floor	M 1	-	-	-
5086	AE 115	Wall	M 1/M 2/ M 3	✓	-	-
5097	AE 115	Fill layer	M 2	✓	✓	✓
5096	AE 115	Wall	M 2/M 3	✓	-	-
5089	AE 115	Fill layer	M 3	✓	✓	✓
5148	AE 115	Wall	M 3	✓	✓	✓

Tab. 2.11 Stratum 14 c, contexts within Complex M (Source: BAI/GPIA).

2.2.2.3. Complex N

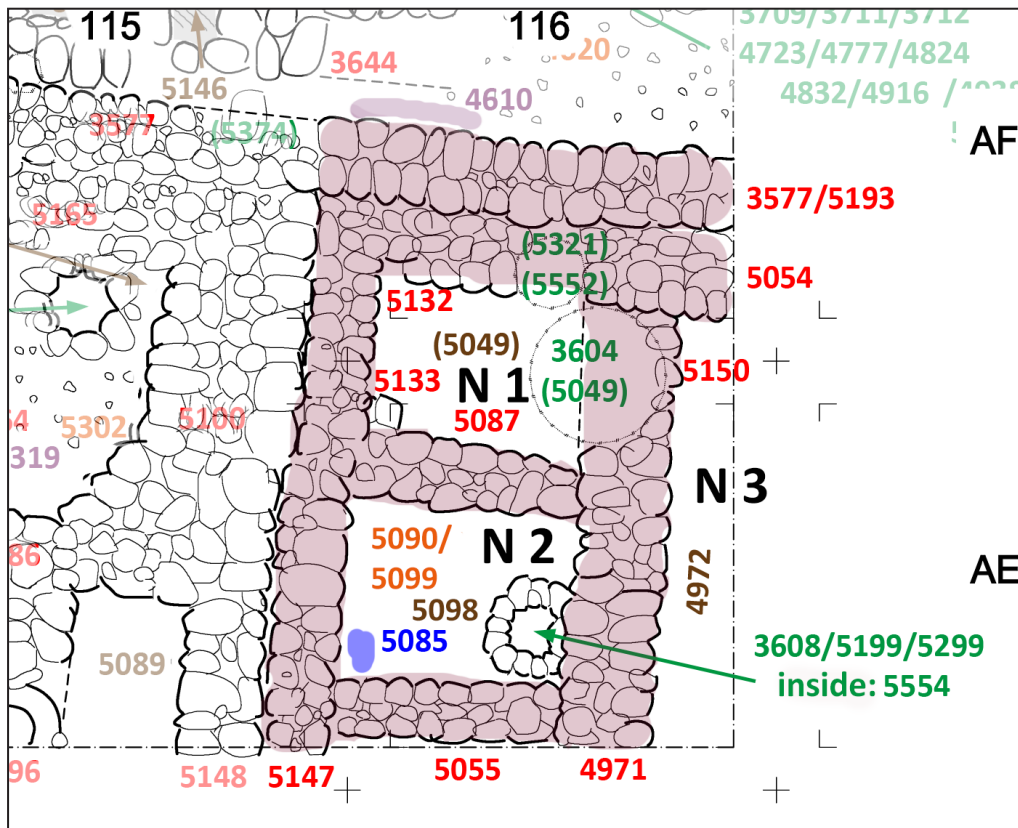


Fig. 2.143 Stratum 14 c, Complex N (Source: BAI/GPIA).

The Complex N is also divided into three rooms. As with L 2, the northern end of the complex is formed in Stratum 14 d by the wall 3577/5193. It is possible that this wall originally belonged to Complex K and represented the southern wall of K 8. Remains of mudbricks located north of wall 3577 seem to have been part of its original construction (Context 4610).

Room N 1 has an area of about 2.5 m x 2 m and is bordered by wall 5054 in the north, 5132 (finds: bones: 75 % sheep or goat, 17 % cattle and 8 % domestic pig; pottery: a balanced number of open and closed vessels, some cooking pots, everyday goods) and 5133 in the west, 5087 in the south (finds: seven flint objects; three snails; little pottery) and 5150 in the east. The walls are disturbed by two pits (5321/5552 and 3604/5049). The fill layer in the in-

terior cannot be reconstructed clearly, because all finds were assigned to pit 5049, but some belong to Stratum 14 c (see discussion at Stratum 12).

The slightly larger room N 2 is bordered by the wall 5087 in the north, 5147 in the west, 5055 in the south (finds: tip of a dagger blade TZ 015256-001, *Fig. 2.144*; bone; an oval rubbing stone; four flint objects; pottery, mainly closed vessels as well as an oil lamp) and 4971 in the east.

In the south-western corner of the room is the fireplace 5085, which consists of small stones arranged in a circle. In this area there was a high concentration of ashes. Finds inside the fireplace are: a spherical sling stone TZ 016056-001 made of flint (*Fig. 2.145*); an oval rubbing stone TZ 016069-001; a flint object and some bones that cannot be determined.



Fig. 2.144 Dagger blade TZ 015256-001 (Source: BAI/GPIA).



Fig. 2.145 Sling stone TZ 016056-001 (Source: BAI/GPIA).

Context numbers 5090 and 5099 consist of a layer of ash, which extends over the entire interior and probably marks the horizon area of a floor. There were strikingly few finds (finds: a flint object; little pottery, including cooking pots). The fill layer belonging to the interior is 5098 (finds: a complete axe of bronze/copper TZ 015265-001 (Fig. 2.146); a ring-shaped weight stone of basalt TZ 015779-001 (Fig. 2.147); a flint object; some bones that can no longer be identified; pottery, among them two spindle whorls TZ 20259-007 and -008, otherwise open and closed vessels, no cookware, a high quantity of fine pottery). The silo 3608/5199/5299 with the filling 5554 is still in use during this phase.

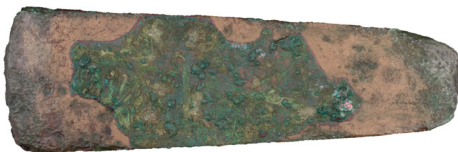


Fig. 2.146 Hatchett TZ 015265-001 (Source: BAI/GPIA).



Fig. 2.147 Weight stone TZ 015779-001 (Source: BAI/GPIA).

N 3 uses the walls 4971, 5054 and 5150 from Stratum 14 d and the fill layer belonging to this phase is 4972. It contains a bronze needle TZ 015276-001; an oval rubbing stone made of basalt TZ 015679-001; four flint objects; a shell; three snails; bones (86.5 % sheep or goat, 13.5 % cattle); a white game piece TZ 017335-001; pottery (mainly bowls, some pieces from the Early or Middle Bronze Age, 38 % fine ware).

Context	Square	Description/ Interpretation	Complex	Artefact		Ecofact
				Pottery	Others	
4610	AF 116	Remnants of mudbrick	N 1	✓	✓	✓
5132	AF 115	Wall	N 1	✓	-	✓
5133	AF 115	Wall	N 1	-	-	-
(5049)	AF 116	Fill layer/pit	N 1	✓	✓	✓
5087	AE 116	Wall	N 1/N 2	✓	✓	✓
5147	AE 115	Wall	N 2	-	-	-
5055	AE 116	Wall	N 2	✓	✓	✓
5090	AE 116	Floor	N 2	-	-	-
5098	AE 116	Fill layer	N 2	✓	✓	✓
5099	AE 116	Ash layer	N 2	✓	✓	-
5085	AE 116	Fire place	N 2	-	✓	✓
4972	AE 116	Fill layer	N 3	✓	✓	✓

Tab. 2.12 Stratum 14 c, contexts within Complex N (Source: BAI/GPIA).

2.2.3. Stratum 14 b

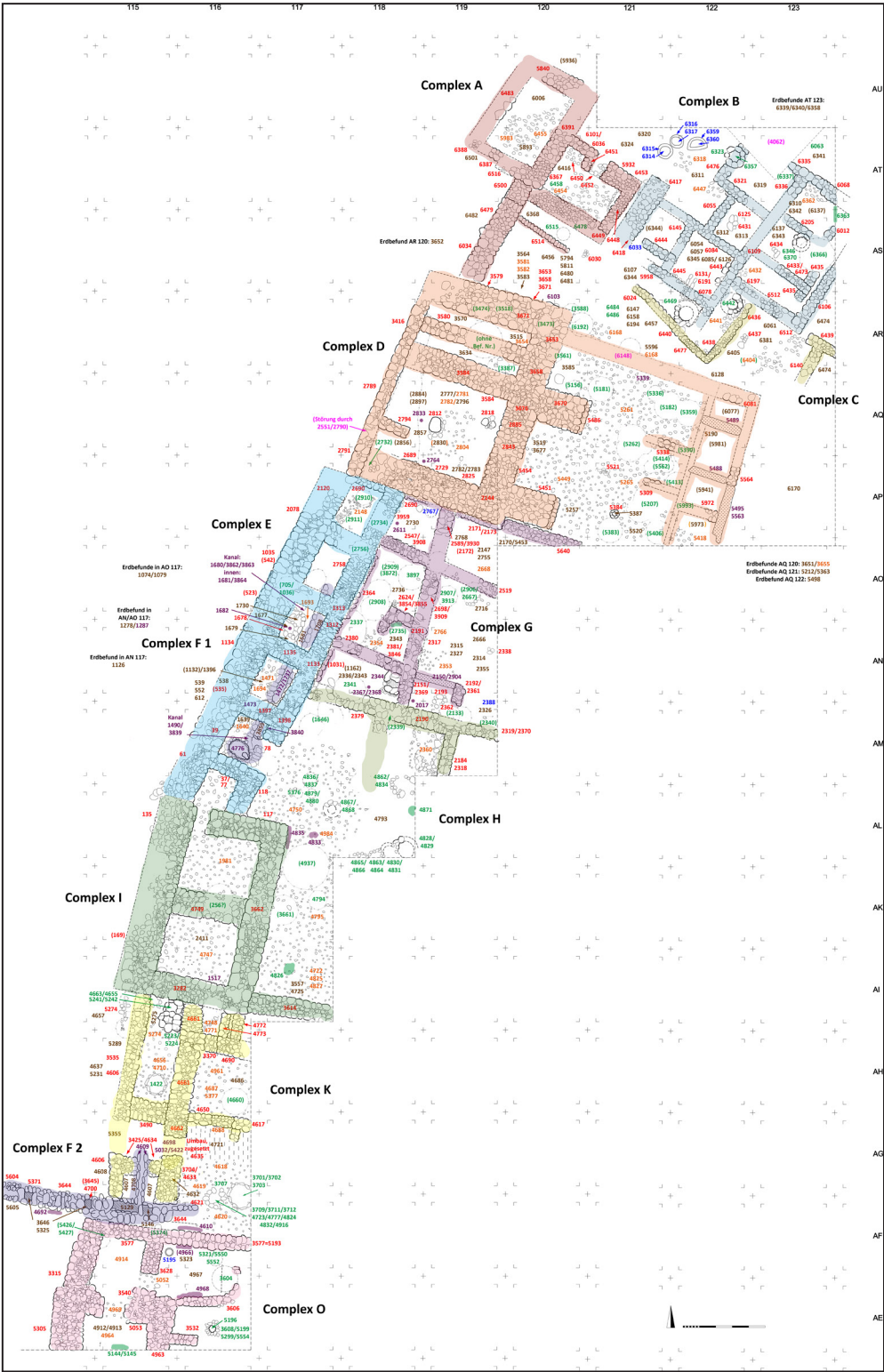


Fig. 2.148 Stratum 14 b, Architectural plan with context numbers (Source: BAI/GPIA).

2.2.3.1. Reconstructions in Stratum 14 b

Compared to 14 c and d, Stratum 14 b shows only minor changes and reconstruction measures. In the area of the courtyard house H, the courtyard areas

H 1 and H 4 in Squares AL 117 and AL 118 were changed and a row of silos was created. This modified area is named H 5.

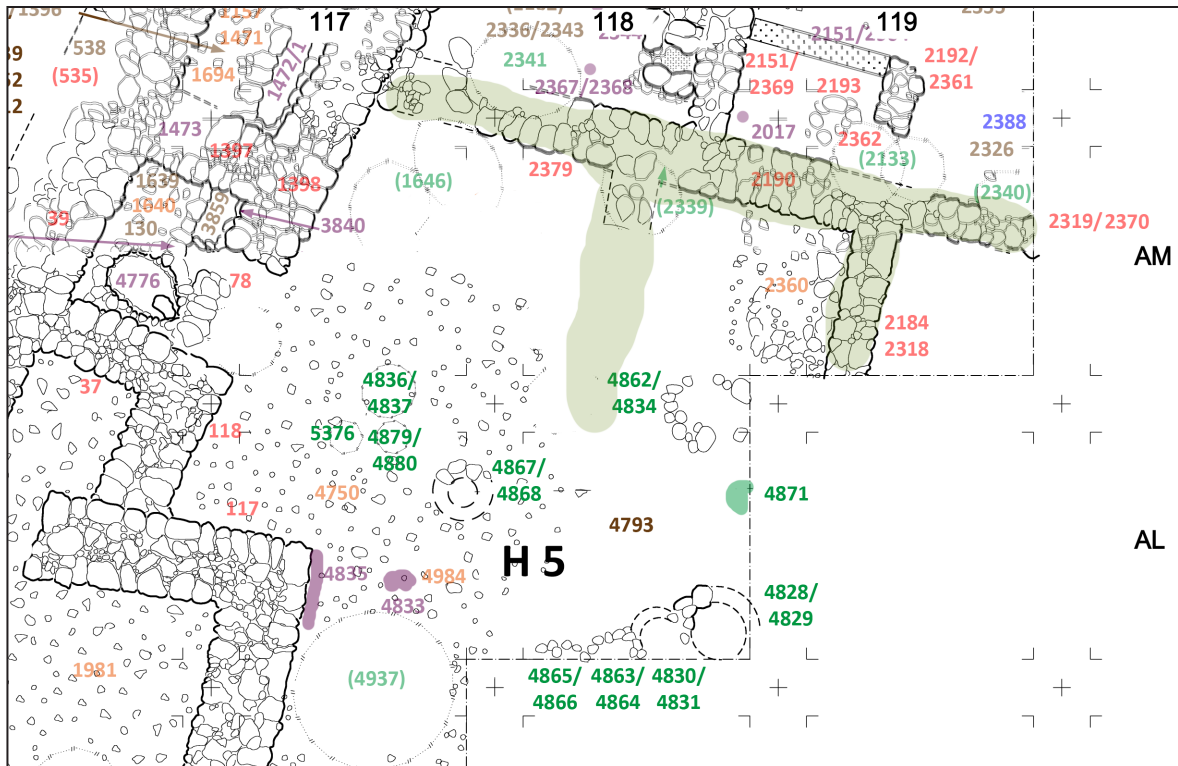


Fig. 2.149 Stratum 14 b, Complex H (Source: BAI/GPIA).

The fill layer around the silos (next to the pavement) is context number 4793. Based on radiocarbon samples from this area, the results indicate a dating from 1297 to 996 BC (with a probability of 99.6 %).

Overall, there is a high percentage of closed vessels and a low percentage of fine ware is noticeable. Particularly noteworthy is a theriomorphic figurine in the shape of a bull TZ 015437-001 (*Fig. 2.150*, with a head and tail no longer preserved); the rim of

a very large limestone vessel TZ 015396-001 (*Fig. 2.151*), two basalt stone bowls with feet or base ring (TZ 015603-001, *Fig. 2.152*, and 015726-001, *Fig. 2.153*), seven rubbing stones, a sling stone and 58 flint objects.

In AL 118 (near the baulk to AL 119) in Context 4793, some bronze remains were found within the fill layer, which could indicate to metal processing in this area (*Fig. 2.154*).



Fig. 2.150 Figurine TZ 015437-001 (Source: BAI/GPIA).



Fig. 2.151 Limestone vessel TZ 015396-001 (Source: BAI/GPIA).



Fig. 2.152 Mortar bowl TZ 015603-001 (Source: BAI/GPIA).



Fig. 2.153 Mortar bowl TZ 015726-001 (Source: BAI/GPIA).



Fig. 2.154 Bronze remnants within context 4793 (Source: BAI/GPIA).

Many of the bones found were no longer identifiable, however, among the bones that could be identified, there are 90.7 % sheep or goat, 5.2 % cattle, 2.6 % gazelle and 1.5 % domestic pig. Special finds are: a shell pendant TZ 016475-001 and an awl from the rib bone of a cow TZ 016610-001 (Fig. 2.155).



Fig. 2.155 Awl TZ 016610-001 (Source: BAI/GPIA).

The silo 4828/4829 in the south-eastern corner of Square AL 118 consists of 20 to 35 cm large fieldstones laid in a quarter circle. A part of the context is probably located in the baulk that was not excavated. The north-eastern part of the silo border was destroyed. The fill of the silo was very ashy. Finds: pottery (few sherds, Late Bronze Age, 30 % fine ware), among them a theriomorphic figurine TZ 015074-001 in the shape of a bull, but with incomplete legs, horns and tail (*Fig. 2.156*); bones (no longer identifiable), daub and charcoal.



Fig. 2.156 Figurine TZ 015074-001 (Source: BAI/GPIA).

Attached to the west side of silo 4828/4829 is silo 4830/4831, which is somewhat smaller with a diameter of 60 cm. It contained only a few finds: a marginal rim of a bowl (Late Bronze Age, fine ware), slag and olive pits. To the west of silo 4830/4831 is silo 4863/4864, which again is somewhat smaller in diameter (about 40 cm) and contained no finds. The last silo to the west in this row is 4865/4866, of similar size as the one described above, but mostly hidden in the baulk and also without finds.

In the north-eastern corner of the square is another silo 4834/4862. Finds inside: pottery (mainly of the Middle Bronze Age, among them a foot of a bowl TZ 006838-001), bones (mainly sheep or goat, one domestic pig) as well as rim to the bottom of a stone bowl with feet TZ 015799-001, very carefully smoothed and with friction marks. The edge of the silo was heavily disturbed by an Iron Age pit. The last silo of this design 4867/4868 is located in the area of the baulk from AL 118 to AL 117 and has a diameter of about 45 cm. There were no finds in the fill.

Another pit 4871 (this one without stone enclosure) is located at the eastern edge of Square AL 118. It contained fragments of a jug as well as remains of a tabun. The remaining three pits in this area can only be recognized by recesses in the pavement 4750. 4836/4837 has a diameter of about 1 m and contains little pottery (although this is probably part of the fill layers) and three flint objects. To the south is the smaller pit 4879/4880. There is a surprising lack of pottery, however, there are six flint objects and a few bones. To the west is the smallest pit 5376 with a diameter of about 25 cm and there were no finds in it.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
4793	AL 118	Fill layer	H 5	✓	✓	✓
4828	AL 118	Silo/edge of pit	H 5	-	-	-
4829	AL 118	Silo/pit fill	H 5	✓	✓	✓
4830	AL 118	Silo/edge of pit	H 5	-	-	-
4831	AL 118	Silo/pit fill	H 5	✓	✓	✓
4834	AL 118	Silo/edge of pit	H 5	✓	-	✓
4836	AL 117	Pit fill	H 5	-	✓	-
4837	AL 117	Edge of pit	H 5	✓	-	-

4862	AL 118	Silo/pit fill	H 5	✓	✓	✓
4863	AL 118	Silo/edge of pit	H 5	-	-	-
4864	AL 118	Silo/pit fill	H 5	-	-	-
4865	AL 118	Silo/edge of pit	H 5	-	-	-
4866	AL 118	Silo/pit fill	H 5	-	-	-
4867	AL 118	Silo/edge of pit	H 5	-	-	-
4868	AL 118	Silo/pit fill	H 5	-	-	-
4871	AL 118	Pit	H 5	✓	-	-
4879	AL 117	Edge of pit	H 5	-	✓	✓
4880	AL 117	Pit fill	H 5	-	✓	✓
5376	AI 117	Pit	H 5	-	-	-

Tab. 2.12 Stratum 14 b, contexts within Complex H (Source: BAI/GPIA).

In square AI 116/117 (in room I 3 from Stratum 14 c), a new fill layer (4725) is to be noted. Worth mentioning is the discovery of a scarab made of faience TZ 014765-001 (*Fig. 2.157*), respectively the underside of a scarab depicts two snakes that can be recognized, flanking a figure kneeling to the right, which is wearing a robe in the same shape as the two snakes. The figure has the shape of a female body, but her gender cannot be clearly determined. The head could end in a long beak, however, the lines that could be interpreted as a beak could possibly be part of a long stick the figure holds vertically in front of their head. At the upper end of the staff, appears to be an element that is bent downwards. Since there is no upward directed element on the other side, an interpretation as a Was-sceptre seems out of the question. In addition to the scarab, a small amount of pottery as well as bones were found. The pavement in I 3 was repaired and renewed (Context 4722; finds: pottery and bone, a spindle whorl of bone TZ 016612-001 is worth mentioning). The ash pit 4794 is embedded in it.

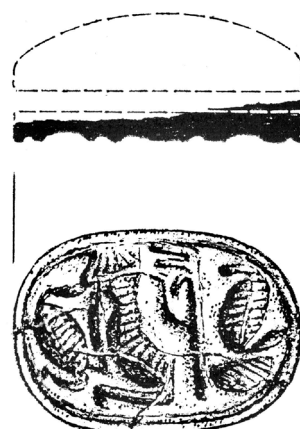


Fig. 2.157 Scarab TZ 014765-001, size 1,6 cm; left: photograph (Source: BAI/GPIA); right: drawing (Source: E. Brückelmann/BAI).

Complex K underwent minor changes: the passage between rooms K 5 and K 6 was walled in (context 4635) and the wall 5333 that ran east–west was removed. Additionally, silo 4648 was no longer in use.

Major modifications can be found in square AE 115/116. The former Complexes N and M were merged and now form the new Complex O.

In the north of the room and south of the outer wall, is a mudbrick collapse 4966 (finds: cone-shaped rubbing stone TZ 015741-001; shell, some unspecified bones as well as Late Bronze Age pottery, including a striking number of open vessels and almost 50 % fine ware). A mudbrick collapse is also found in the southern part of the room, north of the partition 3606, which carries the context number 4968 (finds: eight flint objects; some bones that can no longer be defined; little pottery, among them the handle of a heavily burnt bottle (TZ 020197-005)). Fill layers in the interior were 4967 (finds: Three rubbing stones; a hand mill; a fragment of alabaster with triangular or leaf-shaped incisions TZ 017228-001 (*Fig. 2.160*). This object is presumably a fragment of a make-up bowl¹⁰⁹. Other finds: snails, some indeterminable bones and pottery, including the bottom of a 'Chocolate-on-White' bowl TZ 020116-002) and 5323 (no finds).



Fig. 2.160 Bowl for cosmetics TZ 017228-001 (Source: BAI/GPIA).

Room O 3 is located south of room O 1 and is confined on the east by walls 5053 and 4963. An 8 cm thick limestone floor 4964 connects O 3 with O 1. The fill layers in this room are context 4912 (finds: fragment of an arrow or spearhead made of bronze TZ 015180-001 (*Fig. 2.161*); a stone ball TZ 015910-001 with several rubbing surfaces, a conical rubbing stone made of basalt TZ 015914-001 with a convex upper side (*Fig. 2.161*); bones: sheep or goat; little pottery) and context 4913 (finds: bones, mostly sheep or goat, little cattle; pottery, of which 15 % is cookware). In the south of the room, half-way into the baulk, is a stone-lined pit 5144/5145 with an estimated diameter of 70 cm. Apart from four flint objects it contained no finds.

109 An interpretation as the abdomen of a female figure is also possible and has parallels in Cypriot and Cretan figurines of the Late Bronze Age, but these are not in relief and not made of alabaster but terracotta or bone figurines. A com-



Fig. 2.161 Arrowhead TZ 015180-001 (Source: BAI/GPIA).



Fig. 2.162 Rubbing stone TZ 015914-001 (Source: BAI/GPIA).

To the east of room O 3 is room O 4. The wall 3532 seems to divide the area into two parts, but this statement can only be verified during further excavations (finds: fragment of a quern; six flint objects; individual pottery fragments, 50 % of them pottery). In the middle of room O 4 is a well-known silo 3608/5199/5299/5554. The layer of this silo belonging to Stratum 14 b bears the context number 5196 (finds: 18 flint objects; bones, 10 % of them domestic pig, otherwise sheep or goat; pottery).

Overall, O 1 and O 3 seem to be interiors, O 2 and O 4 seem to be yards.

parative piece of ivory comes from Egypt, Nagada I-II, c. 3500 BC. and is now in the Biblelands Museum, Jerusalem (BLMJ 2365).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Others	
4914	AE 115	Floor/pavement	O 1	-	-	-
3540	AE 115	Wall/mudbrick	O 1/O 2	✓	-	✓
3628	AE 115	Wall	O 1/O 2	✓	-	-
5052	AE 115	Pavement/passageway	O 1/O 2	✓	✓	✓
5166	AF 115	Wall	O 1/O 2	-	-	-
3315	AE 114	Wall	O 1/O 3	-	-	-
4969	AE 115	Pavement/passageway	O 1/O 3	-	-	-
4966	AF 115	Mudbrick	O 2	✓	✓	✓
4967	AE 116	Fill layer	O 2	✓	✓	✓
4968	AE 116	Mudbrick	O 2	✓	✓	✓
5321	AF 116	Pit	O 2	-	-	✓
5323	AF 116	Fill layer	O 2	-	-	-
5550	AF 116	Pit	O 2	✓	✓	✓
5552	AF 116	Pit	O 2	-	-	-
5195	AF 115	Tabun/oven	O 2	✓	✓	✓
3606	AE 116	Wall	O 2/O 4	✓	✓	✓
4912	AE 115	Fill layer	O 3	✓	✓	✓
4913	AE 115	Fill layer	O 3	✓	-	✓
4964	AE 115	Limestone floor	O 3	-	-	-
5053	AE 115	Wall	O 3	-	-	-
5144	AE 115	Silo/pit	O 3	-	-	-
5145	AE 115	Silo/pit fill	O 3	-	✓	-
4963	AE 115	Wall	O 3/O 4	✓	-	-
3532	AE 116	Wall	O 4	✓	✓	✓
5196	AE 116	Silo fill	O 4	✓	✓	✓

Tab. 2.13 Stratum 14 b, contexts within Complex O (Source: BAI/GPIA).

2.2.4. Stratum 14 a



Fig. 2.163 Stratum 14 a, architectural plan with context numbers (Source: BAI/GPIA).

2.2.4.3. Complex B

Fill layer 6053 in room B 3 (finds: bones; a shell pendant; two flint objects; pottery, mostly closed vessels, plate TZ 021408-003, also contains Iron Age I pottery). Also in room B 3, there is collapse 6322 and pit 6366 in B 9.

2.2.4.4. Complex C

Fill layer 6159 in room C 1 (finds: few bones and pottery, 21 flint objects).

Context	Square	Description/ Interpretation	Complex	Artefacts		Other
				Pottery	Ecofacts	
6118	AT 121	Fill layer	A 2/B 1	✓	✓	✓
6023	AS 121	Fill layer	A 5/C 1	✓	✓	✓
6027	AS 120	Fill layer	A 5	✓	-	-
6028	AS 121	Fill layer	A 5	✓	✓	✓
6031	AS 121	Collapse	A 5	-	✓	-
6390	AS 120	Fill layer	A 5	✓	-	-
6498	AS 120	Pit/collapse	A 5	✓	✓	✓
6053	AT 123	Fill layer	B 3	✓	✓	✓
6322	AT 122	Collapse	B 3	✓	-	✓
6366	AS 123	Pit	B 9	-	-	✓
6159	AR 122	Fill layer	C 1	✓	✓	✓

Tab. 2.14 Stratum 14 a, Contexts within complex A, B and C (Source: BAI/GPIA).

2.2.4.5. Complex D

In the area of the large temple, there is one minor change: the creation of pit 2145 in the *cella* (D 3). This is a circular pit measuring about 80 cm in diameter, filled with brown sediment and surrounded by small stones (upper edge: -22.51 m). In addition

to the Late Bronze Age pottery, finds included: a flint object; sheep and goat bones; a cylinder seal made of quartz frit (TZ 008972-001) depicting two caprids or deer facing each other (Common Style of Mittani-Glyptic, western group, see *Chap. 2.3.5*).

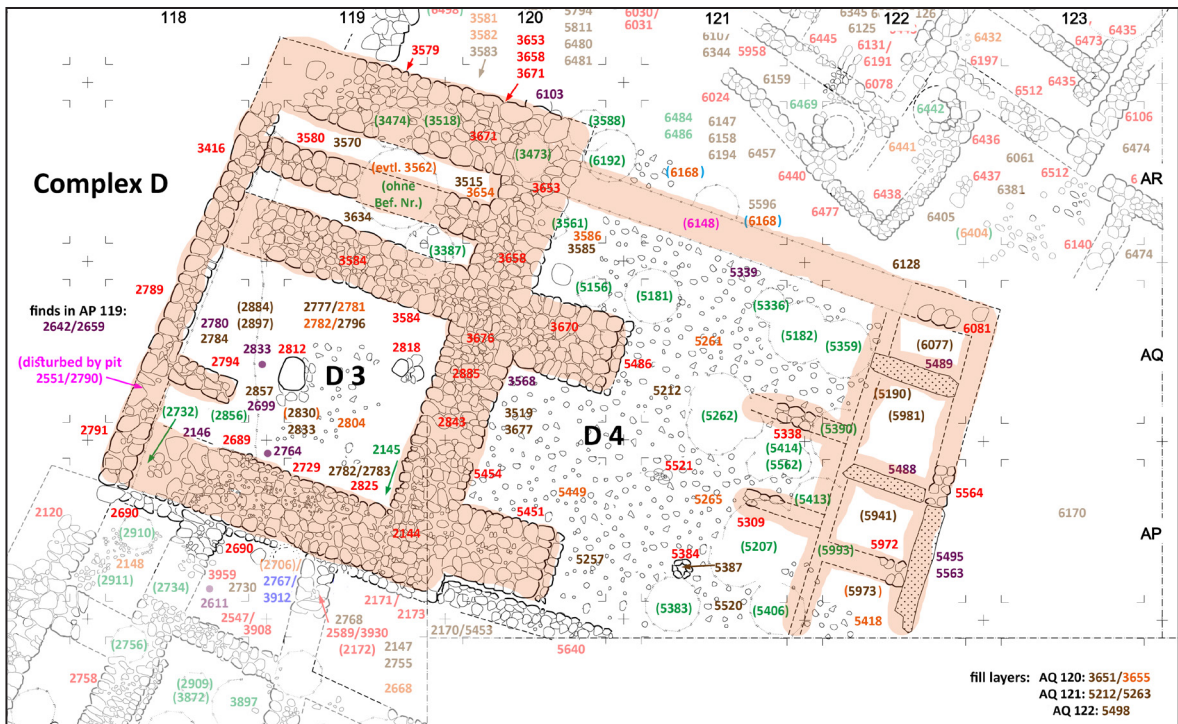


Fig. 2.165 Stratum 14 a, Complex D (Source: BAI/GPIA).

The discovery of a bronze metal sieve is particularly worth mentioning (TZ 010281-001; Context 2699; measuring point: -22.79 m; Fig. 2.166 and 2.167). This type of sieve was part of a wine set consisting of a bowl, a sieve and a jug. The wine was poured from the jug through the sieve to filter out the sediment or dregs so that pure wine could be drunk out of the bowl without leaving any residue.



Fig. 2.166 Metal sieve TZ 010281-001 (after recovery) (Source: BAI/GPIA).



Fig. 2.167 Metal sieve TZ 010281-001 (after restoration) (Source: BAI/GPIA).

A comparable sieve of such a set comes from Tel Nami from the 13th century BC and two others from Tall as-Sa'idiya¹¹⁰ (Graves 32 and 101) from the Late Bronze Age IIB and III (1250-1150 BC)¹¹¹.

110 Tel Nami today in the Israel Museum; inventory number 1985.0714.54. Tall as-Sa'idiya in the British Museum. Tubb 1988a, 23 and Pritchard 1980, 1 and 10-14. Tubb 1988a, 58-65; Tubb 1990, 29.

111 Further sites are e.g. Tall al-Mutasallim and Tall al-Hişn. These sets are part of an extended repertoire of metal objects that begin in the Late Bronze Age. This also includes scale armour. Previously, most metal objects were very

Another comparative piece is from Megiddo/Tall al-Mutasallim, Stratum VI, Iron Age I, Context 1739¹¹².

The mudbrick collapse (2146) is also assigned to room D 3 (finds: Late Bronze Age pottery, only closed vessels). Two metal finds 2642 and 3659 (fragments of a needle, TZ 010025-001) were probably also found in room D 3. Remains of a floor 2897 in D 3 could be identified and another floor (3586) is found in the courtyard area D 4. South of *ante* 3670, there were remains of mudbricks (Context 3568), which contained only a few pottery and bone finds. In the eastern part of the courtyard, ash pit 5562 was probably built during this phase.

A very comparable temple is in Tall Waqqāš (Hazor). If one compares the Late Bronze Age temple H with Complex D from Stratum 14 a of the Tall Zirā'a, one notices that both were open to the east, had an vestibule and an attached staircase. The entire complex was self-contained with an atrium, which was architecturally framed. The following Complex B from Stratum 13 of the Tall Zirā'a is

very similar to the structure found in Stratum 1-b in area H of Hazor. In Complex B, there is also an altar in the courtyard in front of the entrance to the main building. Thus both temple complexes from Tall Zirā'a have comparable elements of the Late Bronze Age temple H in Hazor¹¹³. The comparison becomes particularly clear with regard to the 19 cylinder seal finds¹¹⁴ in Stratum 1-a of room 2113 in area H of the Hazor temple. These 19 cylinder seals from Hazor can be divided into three groups: 1) Syrian style¹¹⁵, 2) Mitanni Common Style¹¹⁶ and 3) unknown¹¹⁷. All of the cylinder seals, except for find H 444, were found on the floor of Cella 2113 amongst a large number of beads and shells¹¹⁸. It can be assumed: they were kept together in one vessel; they represented a votive offering to the temple; the pieces were heirlooms. Additionally, the seals of the Mitanni style and are assumed to be locally produced (but not in Hazor itself) as these are pieces from the 13th century BC and not objects imported from Mitanni in the 15th century BC. The closest parallel is represented by the cylinder seals of Tall Zirā'a are from Tall al-Hiṣn (Beth Shean), as well as Megiddo and Lachish¹¹⁹.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
2145	AP 119	Pit	D 3	✓	✓	✓
2146	AP 119	Mudbrick	D 3	✓	-	-
2642	AP 119	Find	D 3?	-	✓	-
2659	AP 119	Find	D 3?	-	✓	-
2699	AP 118/119	Find	D 3	-	✓	✓
2897	AQ 118	Possible floor	D 3	-	-	-
3568	AQ 120	Mudbrick	D 4	✓	-	✓
3586	AR 120	Floor	D 4	-	-	-
5562	AP 122	Ash pit	D 4	-	-	-

Tab. 2.15 Stratum 14 a, contexts within Complex D (Source: BAI/GPIA).

functional (tools and weapons, except for some figurines).
See also: Tubb 1988b, 254.

112 Loud 1948, Pl. 190.15.

113 For further comparisons see also: the staircase from Stratum VII B of Tall ar-Rāmīṭ and the Migdol-temple from Ṭabaqāt Faḥl (Pella).

114 See Chap. 2.3.6 Catalogue of Cylinder Seals.

115 See Yadin et al. 1961, Plate CCCXIX, 1–2.

116 See Yadin et al. 1961, Plate CCCXIX, 3–4; CCCXX, 1–4; CCCXXI, 2–5 and 7; CCCXXII, 1–5.

117 Beck 1989a, 310. For comparison see Chap. 4.1.1.3.5.

118 Beck 1989a, 319.

119 Beck 1989a, 320 f.

2.2.4.6. Complex E

In the area of the casemate wall, there were minor changes. The floor/fill layer in casemate E 5 belonging to Stratum 14 a is numbered Context 130. The pottery found there consists almost exclusively of closed vessels (possibly a storage room). In ad-

dition to a flint object and bones (60 % sheep or goat, 20 % cattle and 20 % wild boar), a biconically pierced spindle whorl of alabaster was found (TZ 001297-001, *Fig. 2.169*).

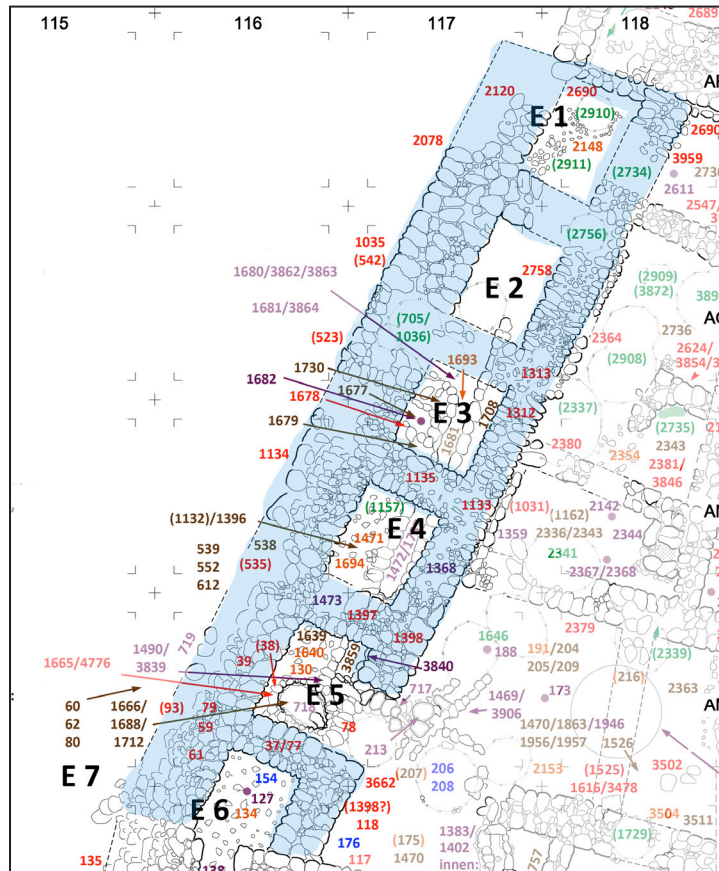


Fig. 2.168 Stratum 14 a, Complex E (Source: BAI/GPIA).



Fig. 2.169 Spindle whorl TZ 001297-001 (Source: BAI/GPIA).

In room E 6: The walls 39 and 52 are combined to form wall 59 (finds: pottery, including a Late Bronze Age oil lamp and a rim of a cooking pot). A part of this wall was given the context number 79.

The floor is made of small stones, belonging to Stratum 14 a, which is referenced under Context number 134 and the location of Context 127 (finds: pottery, including a painted Late Bronze Age bowl, fine ware) and fireplace/cooking place 154 (finds: pottery, including cooking pots, 50 % fine ware). The transition from E 6 to the connected room I 1 to the south was formed by a threshold (Context 138, *Fig. 2.170*).



Fig. 2.170 Threshold Context 138 (Source: BAI/GPIA).

The new room E 7 contains fill layers 60, 62 and 80 outside the casemate wall on the western slope. The few pottery finds date to the Late and Early Bronze Age. One part seems to come from Stratum 14 a and the earlier one from the Stratum 15 repair layer. It is striking that all of them are bowls or plates.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Others	
130	AM 116	Fill layer/floor	E 5	✓	✓	✓
59	AM 116	Wall	E 6	✓	-	-
79	AM 116	Wall/collapse	E 6	-	-	-
127	AL 116	Find (pottery)	E 6	✓	-	-
134	AL 116	Floor/pavement	E 6	✓	-	-
154	AM 116	Fire place	E 6	✓	-	-
93	AM 116	Collapse	E 6/E 7	-	-	-
138	AL 116	Threshold	E 6/I 1	-	✓	-
60	AM 116	Fill layer	E 7	-	-	-
62	AM 116	Fill layer	E 7	-	-	-
80	AM 116	Fill layer	E 7	✓	-	-

Tab. 2.16 Stratum 14 a, contexts within Complex E (Source: BAI/GPIA).

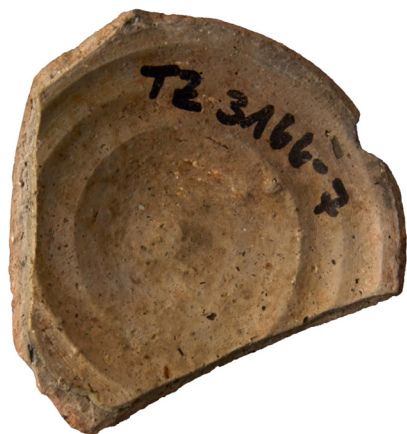


Fig. 2.172 Button base TZ 003166-007 (Source: BAI/GPIA).



Fig. 2.174 Miniature vessel TZ 002900-001 (Source: BAI/GPIA).



The new extension runs from the opening 1.5 m towards the south-east (Context 717), where the channel branches off so that one part runs towards the north-east–south-west (channel 1469/fill 3906) and a longer part continues towards south–south-east (channel 1402/fill 1401). The finds in 1401 include: charcoal and pottery, including the foot of a figurine or of a vessel in the shape of an animal TZ 002924-003 (*Fig. 2.173*); therein, find 1383 includes a complete miniature bowl TZ 002900-001 (*Fig. 2.174*, a small hand-formed plate with a diameter of 4 cm). This extension allowed the water to be collected in the courtyard and channelled out of the city through a vertical shaft.



Fig. 2.173 Vessel TZ 002924-003 (Source: BAI/GPIA).

Channel 1402 consists of two rows of medium-sized limestone blocks that were laid *c.* 70 cm apart. Intermittently, the capstones were preserved over the channel. Measuring points of the channel are: upper edge -22.84 m and lower edge -23.11 m. The channel is disturbed by a wall in the northern end and in the southern end, where it breaks off for no apparent reason.

Channel 1469 runs north-east–south-west and consists of two parallel rows of stones laid at distance of 50–60 cm. It has a total length of 3 m and breaks off both in the north and in the south. In addition to pottery, a basalt offering stand with a maximum diameter of 5.3 cm TZ 015805-001 (*Fig. 2.176*, double conical with a small bowl and a high, closed pedestal) was discovered inside the channel.

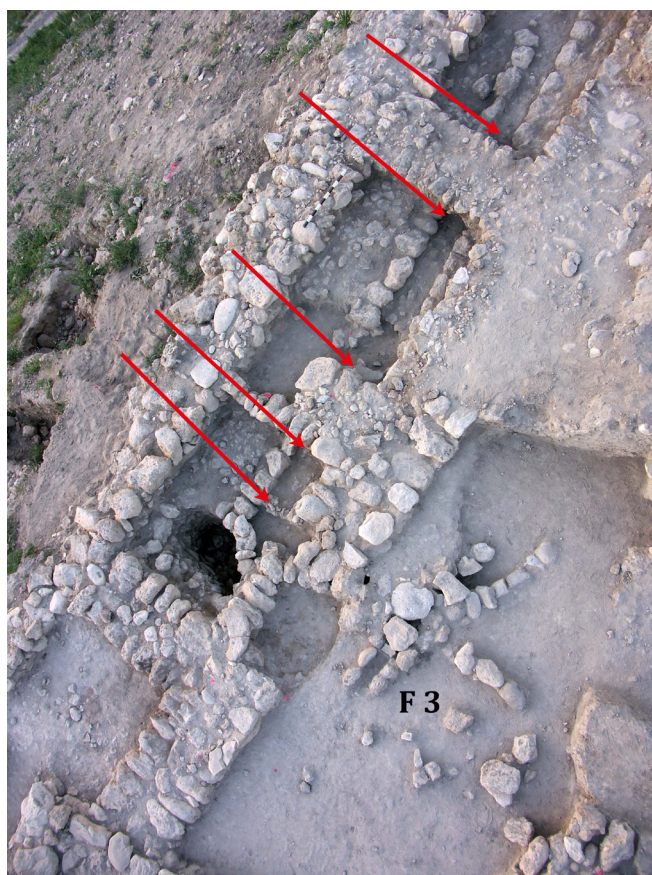


Fig. 2.175 Stratum 14 a, Complex F overview photo; the arrows mark areas where the old channel F 1 was added to with stones (Source: BAI/GPIA).



Fig. 2.176 Offering stand TZ 015805-001 (Source: BAI/GPIA).

The intersection of the channels was covered with two large field stones (maintenance shaft). These, as well as the soil around these stones, bear the context number 213 (finds: a cylindrical rubbing stone; seven flint objects; bones, 40 % sheep or goat, 20 % each of domestic pig, fallow deer and red deer; pottery, mainly closed vessels of the Late Bronze Age).

It is unclear whether the pit 1646, located northeast of the channel, was built during this period or constructed in the Iron Age. Finds are: pottery (almost exclusively Late Bronze Age material); bones; a rubbing stone.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
131	AM 116	Opening of the channel	F 1	✓	-	-
718	AM 116/117	Channel	F 1	-	-	-
1665	AM 116	Reservoir/channel	F 1	-	-	-
1666	AM 116	Backfill of 1665	F 1	✓	✓	✓
1688	AM 116	Backfill of 1665	F 1	✓	✓	✓
1712	AM 116	Backfill of 1665	F 1	-	-	-
213	AM 117	Cover stones of the channel	F 3	✓	✓	✓
717	AM 116/117	Channel	F 3	-	-	-
1383	AL/AM 117	Find	F 3	✓	-	-
1401	AL 117	Channel fill	F 3	✓	-	✓
1402	AL 117	Channel	F 3	-	-	-
1469	AM 117	Channel	F 3	✓	-	-
3906	AM 117	Channel fill	F 3	✓	✓	-
1646	AM 117	Pit	Possible F 3	✓	✓	✓

Tab. 2.17 Stratum 14 a, contexts within Complex F (Source: BAI/GPIA).

2.2.4.8. Complex G

The courtyard house seems to have been in use without any major reconstructions and no structural changes can be traced. However, find 2142 seems to come from room G 5 (TZ 009055-001)¹²⁰. The context is Iron Age (Context 2114), however, this classification and demarcation was not made in time. The find is a scarab with a turquoise coating and an inscription (*Fig. 2.177*). The measuring point is at -22.71 m.

From area XXXII of the temple at Ṭabaqāt Faḥl (Pella), scarabs and cylinder seals were discovered, which are very similar to finds from the Tall Zirā‘a¹²¹.



Fig. 2.177 Scarab TZ 009055-001 (Source: BAI/GPIA).

Possibly paving 2153 in Square AM 118 is the floor of room G 6 belonging to phase 14 a (no finds).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
2142	AN 118	Find	G 5	-	✓	-
2153	AM 118	Pavement	G 6	-	-	-

Tab. 2.18 Stratum 14 a, contexts within Complex G (Source: BAI/GPIA).

2.2.4.9. Complex H

In Stratum 14 a, the courtyard house underwent major changes: rooms H 1 to H 3 keep their names because there are no architectural changes apart from fill layers, floors and finds. To the south, there is an extension of two new rooms (H 6 and H 7) and they are separated from H 1 and H 2 by a newly inserted wall. These new rooms occupy the area formerly

identified as the silo area H 5. South of H 7, there is another room labeled H 8.

The northern, western and eastern boundaries of the building have remained the same, however, a southern wall (3573/3589) has added and provides a clear boundary between Complex H and Complex I.

120 Cf. scarabs from Tall al-Husn from tomb 62 (Middle to Late Bronze Age). Smith – Potts 1992a, 78 f.

121 Bourke 2012, 180 f. For a comparison of cylinder seals see *Chap. 2.3.6*.

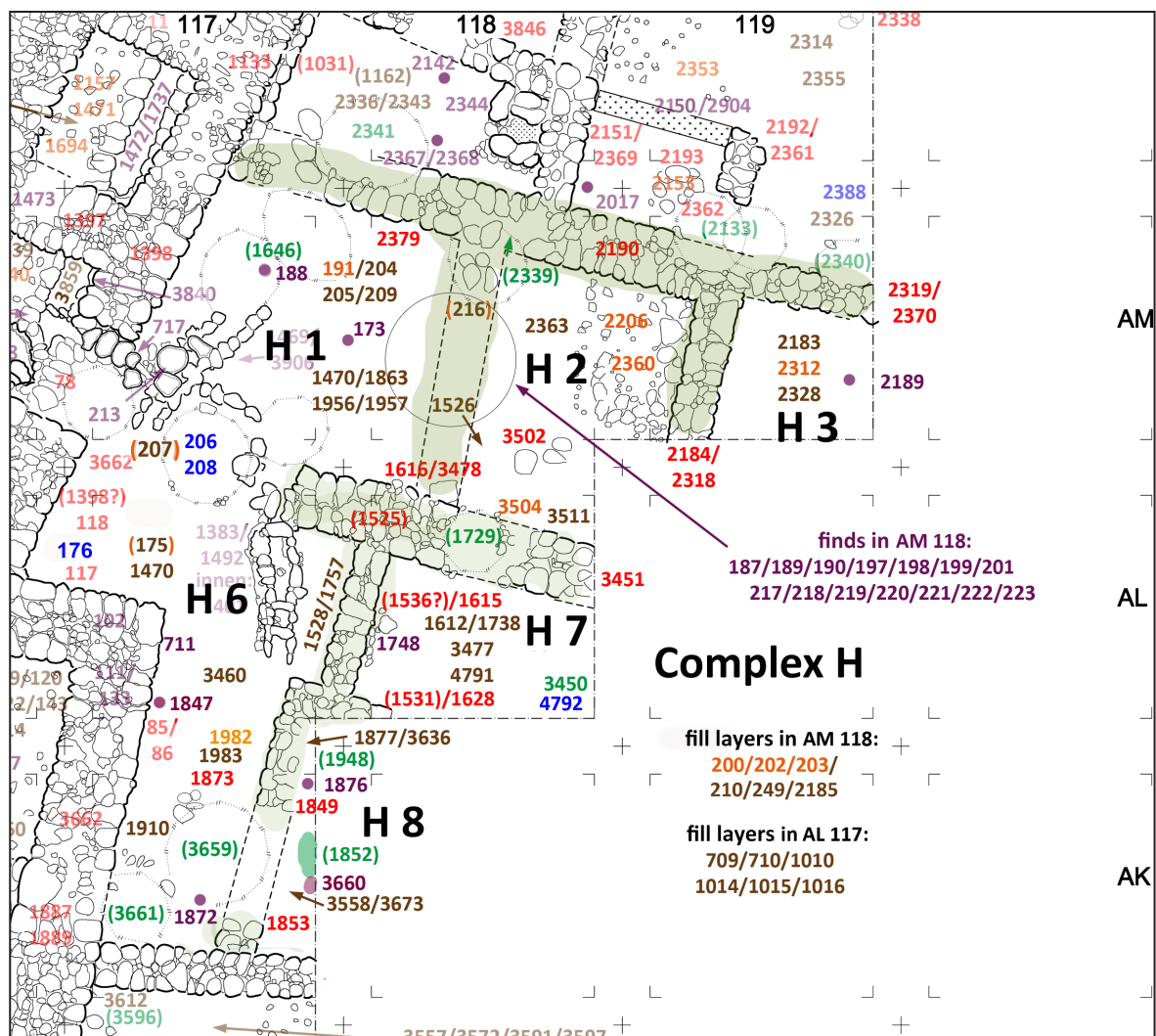


Fig. 2.178 Stratum 14 a, Complex H (Source: BAI/GPIA).

Room H 1 is bordered to the south by channel F 3 and wall 3451. The eastern boundary used to separate H 1 from H 2 (like in Stratum 14 d) is only partially recognizable because it was destroyed by a later pit. Without the existence of an easily recognizable architectural structure to divide H 1 and H 2, some of the finds in Square AM 118 cannot be clearly assigned to H 1 or H 2.

This concerns the following fill layers: 210 (finds: A cuboid rubbing stone, a fragment of a bronze needle with a bent eyelet TZ 001611-001, Fig. 2.179; pottery, including a high proportion of cooking pots and a 'Chocolate-on-White' ware bowl TZ 001546-001); 249 with floor 200/202/203 (clay floor with ash lenses); 187 (finds: stand made of alabaster, TZ 001511-001, Fig. 2.180), 189

(finds: tip of a bronze knife blade, TZ 001508-001, Fig. 2.181), 190 (finds: fragment of a needle tip, TZ 001509-001, Fig. 2.182), 197 (finds: body sherd with handle attachment and dotted decoration pattern, Tell Yahudiyeh ware, TZ 001507-001), 198 (finds: eight fragments of an oil lamp, TZ 001512-002), 199 (finds: imported pottery, TZ 001510-001), 201 (finds: mudbrick remains), 217 (finds: stone vessel), 218 (finds: stone vessel, mortar), 219 (finds: rubbing stone), 220 (finds: sand, content of 217), 221 (finds: sand, content of 218), 222 (finds: pottery, a Late Bronze Age bowl TZ 001544-001, mortar bowl TZ 001616-001, complete mortar made of limestone TZ 001617-001, Fig. 2.183) and 223 (pottery).



Fig. 2.179 Copper needle TZ 001611-001 (Source: BAI/GPIA).



Fig. 2.180 Alabaster stand TZ 001511-001 (Source: BAI/GPIA).



Fig. 2.181 Blade of a knife TZ 001508-001 (Source: BAI/GPIA).



Fig. 2.182 Point of a needle TZ 001509-001 (Source: BAI/GPIA).

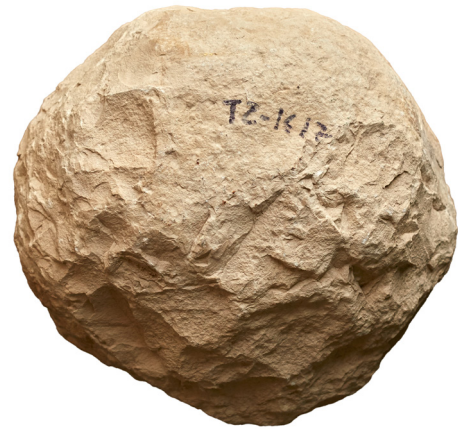


Fig. 2.183 Mortar made of limestone TZ 001617-001 (Source: BAI/GPIA).

The following contexts can be clearly assigned to H 1: the floor 191, fill layers 204, 205 (striking: only fine ware), 209, 1470 (extends into H 6, was not separated), 1863 (finds: pottery; a biconically shaped bead of steatite TZ 008380-001 (*Fig. 2.184*); a rubbing stone; an iron nodule; a snail; bones, mainly sheep and goat, 6 % cattle and 3 % red or fallow deer), 1956 (finds: little pottery, some tabun remains; a piece of metal of unclear function as well as bones, mostly sheep or goat and 25 % fallow deer), 1957 (finds: pottery and bones), 173 (finds: an almost complete bronze mirror TZ 001612-001, *Fig. 2.186*), 188 (finds: hammer stone TZ 001459-001 discovered in floor 191), 1946 (finds: bronze needle TZ 008382-001 discovered in Context 1863). On the floor, heavy traces of fire and ashes were visible. The large number of pottery

depicts a balanced ratio of open and closed vessels, 18 % cookware, 16 % fine pottery, including a base ring of an Eggshell bowl. The bones found are almost exclusively from sheep or goat with only 15 % cattle. In addition, eight flint objects, two querns and three rubbing stones were found. Also from room H 1, there is Context 1359, a bronze robe pin (TZ 007368-001, *Fig. 2.185*) and Context 1368, a 20 cm long and 4.5 cm wide bronze dagger with small pins for fastening the handle (TZ 007366-001, *Fig. 2.187*); however, these could also belong to room G 5.



Fig. 2.184 Bead TZ 008380-001 (Source: BAI/GPIA).



Fig. 2.185 Cloak pin TZ 007368-001 (Source: BAI/GPIA).

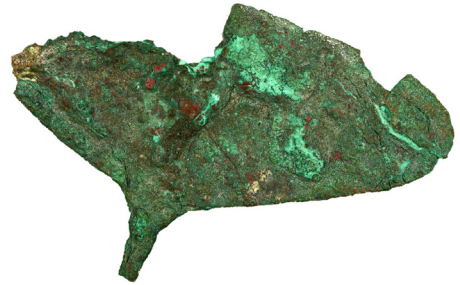


Fig. 2.186 Bronze mirror TZ 001612-001 (Source: BAI/GPIA).

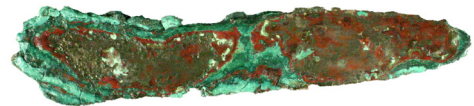


Fig. 2.187 Bronze dagger TZ 007366-001 (Source: BAI/GPIA).

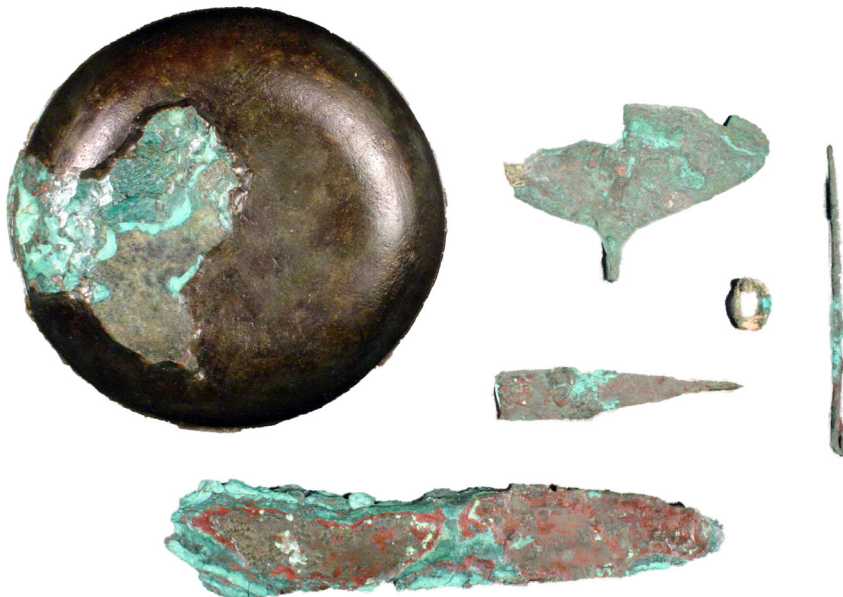


Fig. 2.188 Compilation of some metal finds of Complex H after cleaning (TZ 001508-001; 001611-001; 001612-001; 007082-001; 007366-001; 009281-001) (Source: BAI/GPIA).

Room H 2 is bordered by wall 2190 in the north, 2184/2318 in the east, 3451 and 1525 (upper edge -22.71 m, finds: pottery; bones; a quern) in the south and 1616/3478 (as well as its suggested continuation toward the north) in the west. The space enclosed in this way has an area of about 3 m x 4 m. The double-row wall 3451, running east-west, contained Late Bronze Age pottery with a high proportion of fine and painted pottery, a rubbing stone and special find TZ 011852-001, a the complete rounded-rectangular bearing of a potter's wheel made of basalt (*Fig. 2.189*; measuring point: -22.77 m).



Fig. 2.189 Bearing of a potter's wheel TZ 011852-001¹²²
(Source: BAI/GPIA).

The eastern quarter of the room is paved with stones about the size of a fist (Contexts 2206, 2360), however, there are also remains of paving in the southern area (Context 3504), which could be a passage to room H 7. Above this paving was a layer of ash. Fill layers in the interior are: 216, 1526, 2363, and 3511. There were no special finds, except that remarkably little pottery was found. The stones (3502) in the southern half of the room are probably a pit or a collapse. Finds in this half of the room include the fragment of a quern, a complete rubbing stone, pottery (also Iron Age, which suggests the interpretation of this area as a pit) and some bones that can no longer be specified.

Fill layers belonging to room H 3 are 2183 (including find 2189, finds: two fragments of a bronze ring TZ 009129-001) and 2328. It is worth mentioning that apart from the bronze ring, only pottery

was found. The floor is Context 2312 (upper edge: -22.63 m and -22.72 m; lower edge: -22.94 m) with finds of pottery, among them almost exclusively closed vessels, a spindle whorl and tabun remains; bones and a tile of marble TZ 009280-001 (measuring c. 13 cm x 13 cm).

The largest area of the complex is the L-shaped room H 6, which extends over Squares AL/AK 117. It is bordered in the north by channel F 3 and wall 1525, in the south and west by Complex I (and E 6). To the east it is connected to rooms H 7 and H 8. In the north, there is a fireplace (206/208) next to or above the new canal extension F 3. Floor 207 (finds: pottery, bones, a flint object) can be assigned to it and corresponds to the clay floor (175) and fireplace (176) located to the south.

Fill layers in the area of square AL 117 are: 709 (finds: a truncated cone-shaped rubbing stone; few bones; pottery, including tabun fragments, but no cooking pots), 710, 711 (mudbrick remains; bones consisting mainly of sheep or goat, 11 % domestic pig, 11 % cattle, 11 % gazelle), 1010, 1014, 1015 and 1016. Overall, there is almost no cookware under the pottery, otherwise balanced between open and closed vessels, little fine pottery. The fill layers were very loamy and hard, interspersed with many stones. Perhaps this indicates that the area H 6 was used as a path/road between the houses, as it was later in Stratum 13 (Iron Age I). The area east of the channel contains the fill layers 1528 (finds: a cuboid rubbing stone, little bone, little pottery) and 1757 (finds: pottery, among them no cookware, but some tabun fragments; bone, of which 7 % cattle, 13 % pig, otherwise sheep or goat).

The southern corridor of H 6 contains the fill layers 1910 (finds: whetstone TZ 008370-001), 1983, 3460 (finds: pottery, including a pilgrim's flask TZ 005174-018 painted with three bands; a flint object, bones; upper edge: -22.55 m, lower edge: -22.79 m), the floor (1982) was laid out of small stones as well as the finds in 1847 (finds: baking tray, measuring point: -22.77 m, TZ 003308-004) and 1872 (finds: fragment of a bronze ring TZ 008122-001). Unfortunately, fill layer 1910 was not subdivided and describes the fill for the entire square AK 117 and seems to contain material from Iron Age pits 3659 and 3661 to include an anthropomorphic fi-

122 For the reconstruction of a potter's wheel with upper and lower parts see Magrill – Middleton 2004, 2542 fig. 36.30.

A reconstruction can also be seen in the Pike Museum in Haifa.

gurine (belly, arms and thigh of a figurine from Asherah with hanging arms, TZ 008350-001, *Fig. 2.190*). This figurine, however, most likely dates to the Iron Age and does not belong to the Late Bronze Age. One object made of bone, TZ 008351-001 (*Fig. 2.191*), which is a decorated case, is special and is probably a handle¹²³.

More finds are: pottery (tabun remains, 10 % cooking pots, 24 % fine ware, including imported goods from Cyprus White Slip ware TZ 003409-016 and -037 or 'Chocolate-on-White' ware TZ 003409-034 and -052); a faience fragment TZ 008324-001; three fragments of a needle and casting residues TZ 008337-001 and -002; two flint objects; a quern; a hammer stone; a rubbing stone; bones (11 % cattle, otherwise sheep or goat).



Fig. 2.190 Figurine TZ 008350-001 (Source: BAI/GPIA).



Fig. 2.191 Handle made of bone TZ 008351-001 (Source: BAI/GPIA).

In the middle of the room is Context 1873, which is presumably a collapse or the remains of an intermediate wall (measuring point: -22.41 m). At the southeastern end of the room, it transitions into H 8 and is disturbed by a later pit (Context 3659).

To the east of H 6 is the smaller, rectangular room H 7. It is bordered by the walls 1525 and 3451 to the north, (1536)/1615 to the west and 1531/1628 (finds: Late Bronze Age pottery) to the south. The eastern extension is unknown, as the end of the excavation area has been reached. Fill layers in the interior are: 1612, 1738 (unfortunately the context was not subdivided in time, so that this context also includes finds from the Iron Age Stratum 13, finds: pottery, including painted 'Chocolate-on-White' ware bowls, 80 % fine ware; bones), 3477 and 4791.

Fill layer 3477 (upper edge: -22.79 m) contained a large amount of pottery (16 % fine ware, 7 % cookware, balanced open and closed vessels), bones (80.3 % sheep or goat, 16.1 % cattle, 1.8 % each of gazelle and red or fallow deer), a flint object and a quern. A comparable condition is provided by fill layer 4791, even though cookware is completely missing and there are three fragments of a rubbing stone instead of a quern.

In the southeastern corner of the square are the fireplaces 1523 (measuring point: -22.85 m) and 4792 as well as pit 3450 (soil containing ash enclosed by small stones; upper edge -22.45 m, lower edge -23.22 m; pottery and bones). Due to the mixed pottery finds, the pit could also date from the Iron Age I. East of the 70 cm wide wall 1615 are the remains of a kiln (1748).

The last room of the complex (H 8) was barely excavated and bordered by walls 1531/1628 in the north, 1849 (finds: pottery, an imported milk bowl from Cyprus, otherwise only closed vessels; two rubbing stones (one disc-shaped and one truncated cone shaped); a fragment of a bronze needle TZ 008383-001; a shell pendant TZ 008425-001) and 1853 (pottery TZ 003449, 36 % of which is fine ware, mostly 'Chocolate-on-White' ware bowls; bones; three flint objects; a hammer stone; three shells) in the west and 3573/3589 in the south.

123 Comparison pieces for figurine and handle come from Tall al-Husn (Pella). Smith – Potts 1992a, Plate 71 + 72; Smith – Potts 1992b, 96 f.

The connection of the two western walls was disturbed by the later pit 3659. The fill layers in the small trapezoidal interior are 1877 (finds: large amount of pottery, 29 % of which is fine ware, an import from Cyprus and 13 % cookware as well as tabun remains and a spindle whorl; three rubbing stones; bones, mainly sheep or goat, 9.5 % cattle and 5 % red deer; casting residues; a mother-of-pearl fragment TZ 008272-001 as well as a shell pendant TZ 008273-001), 3558 (also here finds: 60 % fine pottery which represents a remarkably high proportion of fine pottery), 3636 (finds: pottery, of which an incense burner TZ 005451-029 is worth mentioning; bones; a grey-white glass bead TZ 012458-001 (*Fig. 2.192*); a sling stone; six flint objects as well as metal fragments) and 3673 (ash layer). In addition, there is also find 1876 (bronze fragment TZ 008121-001), mudbrick remains 3660 and the Iron Age pit 1852.



Fig. 2.192 Glass bead TZ 012458-001 (Source: BAI/GPIA).

Complex H is remarkable for its large amount of fine pottery, especially in room H 8. The quantity of metal finds as well as the shell pendants suggest a wealthy owner. The floor level/occupation layer seems to have been at about -22.80 m, even if the floors were not discovered everywhere. In addition, there appears to be more remains of wild animals in Stratum 14 a than in the previous phases, therefore, hunting appears to have played a greater role in supplying sustenance.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
173	AM 117	Find/mirror	H 1	-	✓	-
188	AM 117	Find/hammer stone	H 1	-	✓	-
191	AM 117	Floor	H 1	✓	✓	✓
204	AM 118	Fill layer	H 1	✓	-	-
205	AM 118	Fill layer	H 1	✓	-	-
209	AM 118	Fill layer	H 1	✓	-	✓
1359	AM/AN 117	Find	H 1	-	✓	-
1368	AM/AN 117	Find	H 1	-	✓	-
1863	AM 117/118	Fill layer	H 1	✓	✓	✓
1946	AM 117/118	Find	H 1	-	✓	-
1956	AM 117/118	Fill layer	H 1	✓	✓	✓
1957	AM 117/118	Fill layer	H 1	✓	-	✓
187	AM 118	Find/alabaster bottle	H 1/H 2	-	✓	-
189	AM 118	Find/blade of a knife	H 1H /2	-	✓	-
190	AM 118	Find/needle	H 1/H 2	-	✓	-
197	AM 118	Find/pottery	H 1/H 2	✓	-	-
198	AM 118	Find/pottery	H 1/H 2	✓	-	-
199	AM 118	Find/pottery	H 1/H 2	✓	-	-

200	AM 118	Floor	H 1/H 2	-	-	-
201	AM 118	Remains of mudbricks	H 1/H 2	-	-	-
202	AM 118	Floor	H 1/H 2	-	-	-
203	AM 118	Floor	H 1/H 2	-	-	-
210	AM 118	Fill layer	H 1/H 2	✓	✓	-
217	AM 118	Find	H 1/H 2	-	✓	-
218	AM 118	Find	H 1/H 2	-	✓	-
219	AM 118	Find	H 1/H 2	-	✓	-
220	AM 118	Find/fill of 217	H 1/H 2	-	-	-
221	AM 118	Find/fill of 218	H 1/H 2	-	-	-
222	AM 118	Finds	H 1/H 2	✓	✓	-
223	AM 118	Find/fill of 217/218	H 1/H 2	✓	-	-
249	AM 118	Fill layer	H 1/H 2	✓	-	-
1964	AM 118	Collapse	H 1/H 2	✓	-	✓
3478	AL 118	Wall	H 1/H 2	✓	-	-
1525	AL 118	Wall	H 1/H 2/ H 6/H 7	✓	✓	✓
1616	AL/AM 117	Wall	H 1/H 2/ H 6/H 7	✓	-	-
1470	AL/AM 117	Fill layer	H 1/H 6	✓	-	✓
216	AM 118	Fill layer/floor	H 2	✓	-	-
1526	AL 118	Fill layer	H 2	✓	-	-
2206	AM 119	Pavement	H 2	-	-	-
2363	AM 118	Fill layer	H 2	-	-	-
3502	AL 118	Collapse/pit	H 2	✓	✓	✓
3511	AL 118	Fill layer	H 2	✓	✓	✓
3451	AL 118	Wall	H 2/H 7	✓	✓	✓
3504	AL 118	Pavement/passageway	H 2/H 7	✓	-	-
2183	AM 119	Fill layer	H 3	✓	-	-
2189	AM 119	Find/ring	H 3	-	✓	-
2312	AM 119	Floor	H 3	✓	✓	✓
2328	AM 119	Fill layer	H 3	✓	-	-
85	AL 116	Wall	H 6	-	-	-
86	AL 116	Wall	H 6	-	-	-
175	AM 117	Floor	H 6	-	-	-

176	AM 117	Fire place	H 6	-	-	-
206	AM 117	Fire place	H 6	✓	-	✓
207	AM 117	Floor	H 6	✓	✓	✓
208	AM 117	Fire place/oven	H 6	✓	✓	✓
709	AL 117	Fill layer	H 6	✓	✓	✓
710	AL 117	Fill layer	H 6	-	✓	✓
711	AL 117	Fill layer	H 6	✓	-	✓
1010	AL 117	Fill layer	H 6	✓	-	✓
1014	AL 117	Fill layer	H 6	✓	-	✓
1015	AL 117	Fill layer	H 6	-	-	-
1016	AL 117	Fill layer	H 6	✓	✓	✓
1528	AL 118	Fill layer	H 6	✓	✓	✓
1757	AM 117/118	Fill layer	H 6	✓	-	✓
1847	AK 117	Fill layer/find	H 6	✓	-	-
1872	AK 117	Find/ring	H 6	-	✓	-
1873	AK 117	Wall/installation	H 6	✓	✓	-
1910	AK 117	Fill layer	H 6	✓	✓	✓
1982	AK 116/117	Floor/pavement	H 6	-	-	-
1983	AK 116/117	Fill layer	H 6	-	-	-
3460	AL 118	Fill layer	H 6	✓	✓	✓
1615	AL 117/118	Wall	H 6/H 7	-	-	-
1849	AK 117	Wall	H 6/H 8	✓	✓	✓
1853	AK 117	Wall	H 6/H 8	✓	✓	✓
1523	AL 118	Oven/tabun	H 7	-	-	-
1612	AL 118	Fill layer	H 7	✓	✓	✓
1738	AL/AM 118	Fill layer	H 7	✓	-	✓
1748	AL 118	Oven/tabun	H 7	✓	-	-
3450	AL 118	Pit	H 7	✓	-	✓
3477	AL 118	Fill layer	H 7	✓	✓	✓
4791	AL 118	Fill layer	H 7	✓	✓	✓
4792	AL 118	Fire place	H 7	✓	-	✓
1531	AL 118	Wall	H 7/H 8	✓	-	-
1628	AL 117/118	Wall	H 7/H 8	✓	-	✓
1876	AK 117	Find	H 8	-	✓	-

1877	AK 117	Fill layer	H 8	✓	✓	✓
3558	AK 117	Fill layer	H 8	✓	-	✓
3636	AK 117	Fill layer	H 8	✓	✓	✓
3660	AK 117	Mudbrick	H 8	-	-	-
3673	AK 117	Fill layer/ash layer	H 8	-	-	-

Tab. 2.19 Stratum 14 a, contexts within Complex H (Source: BAI/GPIA).

2.2.4.10. Complex I

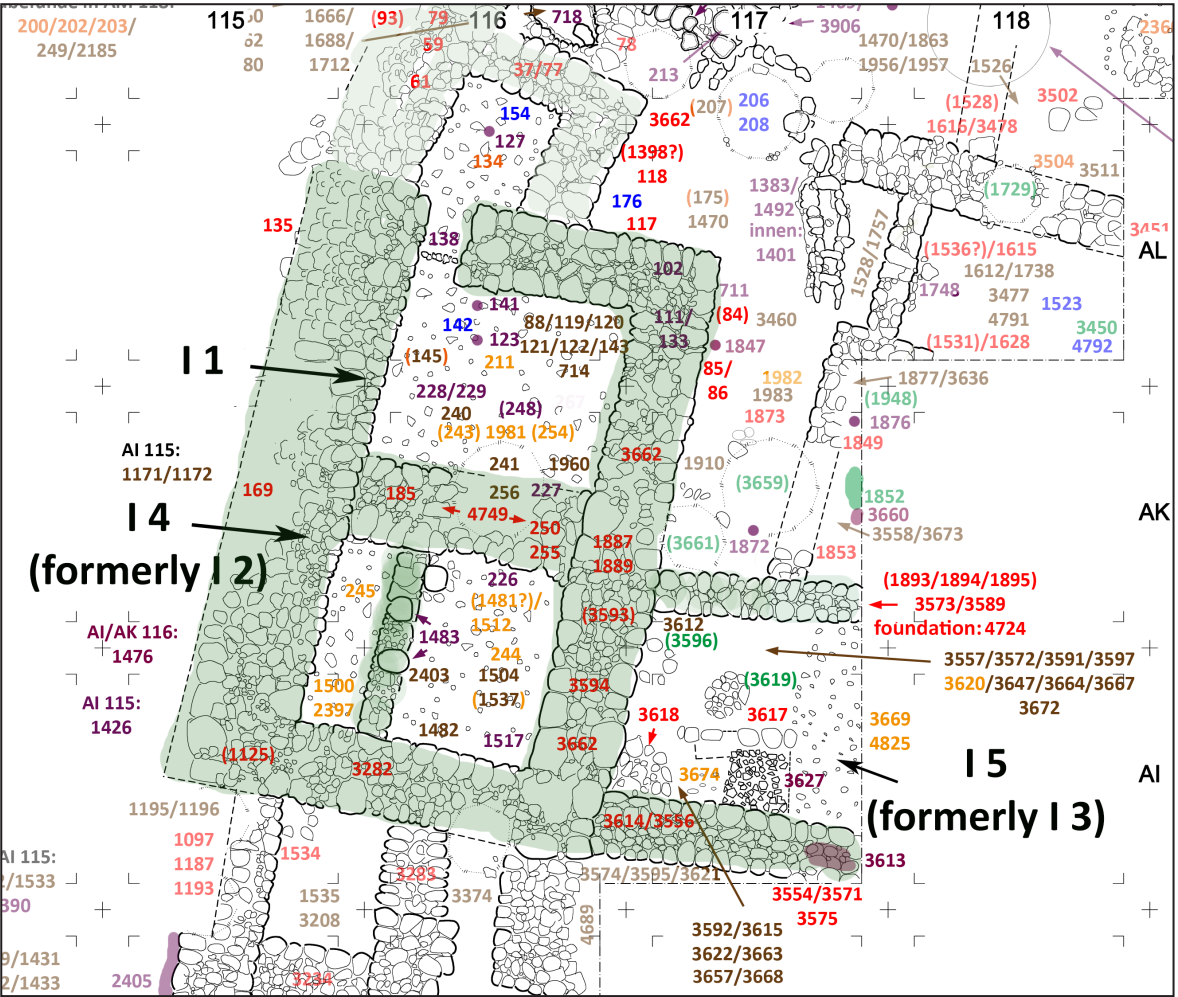


Fig. 2.193 Stratum 14 a, Complex I (Source: BAI/GPIA).

Significant changes compared to Stratum 14 b can be observed in relation to Tower I: Although the external dimensions remain unchanged, the interior changed significantly to include a different floor level as well as a different use of the space. In the earlier phases, the tower served only as fortification and protection for the city, while in this phase the southern part (I 2) transitioned into a small, two room sanctuary (I 4). This was accomplished by the installation of a partition wall, running from north to south and built into this partition wall were two columns bases indicating columns were erected so that a separation between a cella and a sanctuary was possible. The courtyard (formerly I 3, now I 5) is located in front of the sanctuary (I 4) in this phase and is now used for ritual purposes.

The delimitation of Room I 1 has not changed and the remains of the superstructures are assigned to phase 14 a, even if it cannot be excluded they were already in use in phase b (or c, d). Wall 4749 has Contexts 185, 250, and 255 as superstructures and superstructures of 3662 were 1887 and 1889. Fill layer 256, which extends into the boundary area of I 4, contains sherds from a Late Bronze Age painted krater (TZ 001605-001 and -002, *Fig. 2.194*). The other fill layers in the interior are: Context 88 (a solid layer of clay without finds, possibly a floor), 119/120/121/122/123 (finds: pottery, balanced open and closed vessels, very little pottery for cooking, few fine wares). All contained a vast amount of charcoal and accumulation of ash; fill layer 143 (find: mudbrick material; pottery, 85 % bowls, 79 % fine ware, eight fragments of Eggshell ware TZ 001323-001 to -005 (adapting) and -007; two shells; one rubbing stone); 240 (finds: mudbrick material; pottery; two flint objects); 241 (finds: pottery, of which 69 % bowls, 50 % fine ware; bones, 10 % cattle, otherwise sheep or goat; four iron nodules and one hammer stone TZ 007754-001). Context 714, in the north of the room, consists of fallen stones and clayey soil (no finds). The most significant fill layer seems to be 1960 and it contained: pottery, tabun remains, cooking pots and a baking tray; some bones; a conical rubbing stone, a weight of hematite TZ 008492-001 (*Fig. 2.195*) and a stopper made of limestone TZ 008498-001 (*Fig. 2.196*).



Fig. 2.194 Krater TZ 001605-001 and -002 (reconstructed)
(Source: BAI/GPIA).



Fig. 2.195 Balance weight TZ 008492-001 (Source: BAI/GPIA).



Fig. 2.196 Stopper TZ 008498-001 (Source: BAI/GPIA).

A floor was reached with context 145 in square AL 116 (finds: 12.5 % bowls, otherwise closed vessels; import of a Mycenaean jug with red painting) and with context 211/243/254 in square AK 116. The floors of both squares are pavements made of small stones.

The clay layer 248 in square AK 116 sealed the pavement in 254, while ash layer 228/229 was found in the whole square (without finds). Worth mentioning is fireplace 142, however, the exact dimensions for this fireplace could no longer be determined (finds: bones, from sheep or goat as well

as cattle). Especially in the north-eastern corner as well as in the southern part of the room, remains of mudbrick structures were preserved (Contexts 102/111/133 and 227).

Overall, room I 1 does not seem to belong directly to the ritual area but rather to a wealthy residential house or possibly part of the courtyard house in Complex H. However, a disproportionately high number of bowls could also indicate a food processing and preparation area (possibly in a sacrifice context) took place here¹²⁴.

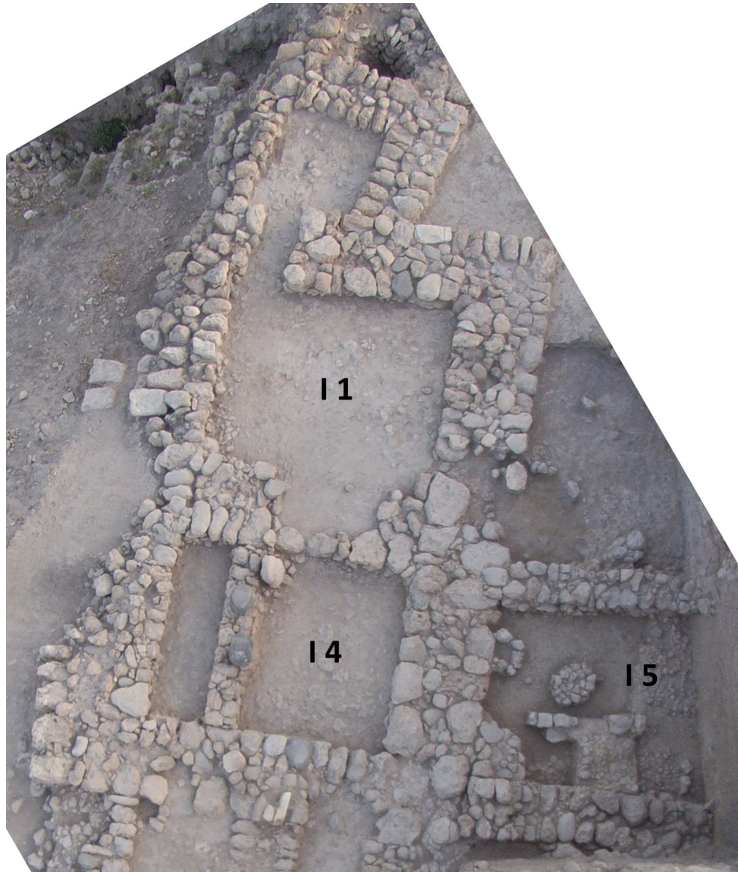


Fig. 2.197 Stratum 14 a, Complex I, overview (Source: BAI/GPIA).

124 Schwermer 2014, 320.

The c. 15 m long and c. 6 m wide temple area is in the form of a long room temple¹²⁵ in squares AI–AK 115–117 and consists of a courtyard (I 5) located in front and through which the cella could be entered and a cella which led further to the 1.5 m x 4 m wide inner sanctum (both cella and sanctum I 4). The passage between the cella and sanctum is marked by a partition wall with two erected column bases of basalt (1483; measuring points: northern

stone TZ 015357-001 -22.83 m and southern stone TZ 015358-001 -22.82 m; diameter 43 cm; Fig. 2.198 and 2.199).

Beside the northern column base, a conical cult stone of light limestone was found, however, it was not *in situ* (TZ 015359-001, height 75 cm, diameter 37 cm; Fig. 2.200). East of the column bases, a light limestone layer was visible in profile, which represents the floor of Stratum 14 a.



Fig. 2.198 Room I 4 with column bases TZ 015358-001, TZ 015357-001 as well as cultic stone TZ 015359-001 (facing west) (Source: BAI/GPIA).

125 See: Gropp 2013, 169–177.



Fig. 2.199 Column base TZ 015357-001 (Source: BAI/GPIA).

The entire area is paved (244, 1512 in the cella, 245, 1500 and 2397 in the inner sanctum with context 2397 and already reached in the earlier fill layers from Stratum 15).

Under context number 244, the transition from Stratum 13 to Stratum 14 could not be clearly drawn; therefore, finds from Stratum 13 are also included in 244. The floor inside the cella, above the pavement, is 1537 and is a lime floor. The pottery has an increased proportion of oil lamps; otherwise, there are remarkably few finds, especially few bones.

Fill layers in the cella are: 1482, 1504, 1537 and 2403 (finds: triangular rubbing stone TZ 009414-001). Worth mentioning is find 1476 from the area of the cella: TZ 007433-001 (amorphous fragments of bitumen or asphalt). A find that can no longer be clearly assigned is 1426, a grey, ring-shaped glass bead, which probably comes from the area of the inner sanctum (TZ 007376-001). The fill layers 1171 and 1172 are also no longer clearly assignable and it remains unclear whether they can be located inside or outside room I 4 (finds: bones; pottery, mostly cooking pots; a rubbing stone; a flint object as well as a charcoal sample, which dates this area to it around 1450 to 1300 BC). This tower sanctuary



Fig. 2.200 Cultic stone TZ 015359-001 (Source: BAI/GPIA).

forms a part of the casemate wall that covers most of the excavated area (Complex E, I, K and O).

There is a comparable temple in Ṭabaqāt Faḥl (Pella)¹²⁶ and on Tall Abū Ḥaraz¹²⁷. However, the temple on Tall Abū Ḥaraz lacks the division in the interior to establish a cella and an inner sanctum¹²⁸.

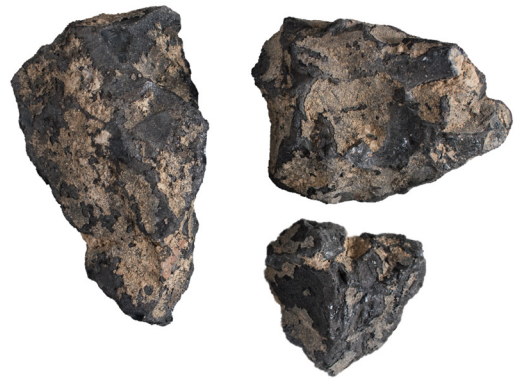


Fig. 2.201 Bitumen TZ 007433-001 (Source: BAI/GPIA).

The courtyard connected to the east (I 5) was separated from the temple interior by wall 3594, bordered to the north by wall 3573/3589 (identical

¹²⁶ Gropp 2013, 170 f.

¹²⁷ Fischer 2006b, 345 f.

¹²⁸ Fischer 2006b, 140 fig. 153; 346 fig. 321.

with 1893, 1894, 1895; measuring points -22.91 m to -22.99 m; substructure: 4724; finds in the wall: pottery, only bowls; a spherical hammer stone; bones, including dog bones) and bordered by the walls of the courtyard house H and bordered in the south by walls 3556/3554/3571/3575 from Com-

plex K (Late Bronze Age pottery). These separating walls were added later and were not integrated.

Above 3554, remains of a mudbrick structure can still be seen (Context 3613, Late Bronze Age pottery). The eastern end lies outside the excavated area.

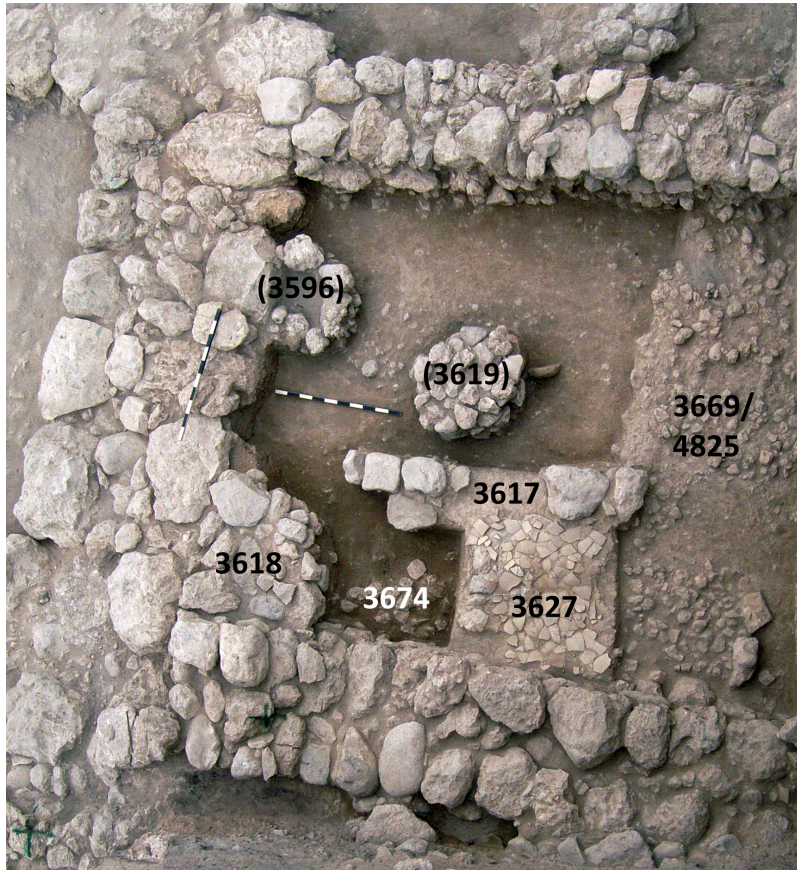


Fig. 2.202 Stratum 14 a, Altar Complex I 5 (Source: BAI/GPIA).

In the courtyard area, there are various installations to include: a raised platform in the form of a quarter circle (Context 3618 finds: pottery; three rubbing stones; unspecified bones), a wall consisting of six boulders lying in a row 3617 (find: a bronze arrowhead TZ 012516-001, *Fig. 2.203*), a hearth consisting of a surface carefully covered with sherds¹²⁹ with an area of 1.25 m x 1.25 m (Context 3627 finds: large number of body sherds, little diagnostic material, seem to lie on one layer of stones, mostly bowls; eight rubbing stones; bones no longer identifiable).



Fig. 2.203 Arrowhead TZ 012516-001 (Source: BAI/GPIA).

¹²⁹ Against the use as tabun/hearth, but possibly altar: Gropp 2013, 177.

In the east and south of the courtyard, the remains of pavement are preserved (3674, 3669, 4825), however, the entire area was probably paved. Fill layers in the northern part are: 3572 (finds: several oil lamps; a loom weight; bones, of which 25 % were a striking number of domestic pigs; three rubbing stones, two querns; fragment of a cylindrical turquoise glass bead TZ 012464-001), 3591, 3597, 3612, 3620 (probably floor; finds: baking tray; a white glass bead with turquoise fragments TZ 012375-001, *Fig. 2.204*; fragment of a spindle whorl from a cattle bone, 3647, 3664 (baking tray; one rubbing stone), 3667 and 3672. A noticeable accumulation of oil lamps can also be seen here¹²⁹.



Fig. 2.204 Glass bead TZ 012375-001 (Source: BAI/GPIA).



Fig. 2.205 Weight TZ 012491-001 (Source: BAI/GPIA).

Altogether, the finds are balanced between open and closed vessels, between 12–19 % cookware and 15 % fine ware. This, in combination with a whole range of rubbing stones and querns as well as sheep, goat, cattle and pig bones, suggests that the courtyard was used for the preparation and consumption of food¹³⁰.

Fill layers in the southern part are: 3592, 3615 (finds: pottery, among them a miniature vessel; a

rubbing stone and a weight of basalt TZ 012491-001; sheep bone), 3622 (finds: a fragment of a metal needle TZ 012548-001), 3663 and 3668 (finds: metal fragment of a needle TZ 015066-001), and 3657. Regarding the distribution and subdivision of the pottery, the southern part does not differ from the northern part. Context 3593 most probably represents the collapse of the wall 3594 and contained pottery, a sheep bone, a flint object, and some stone implements (a quern, a mortar bowl and a rubbing stone, a hammer stone, a game piece, and a balance weight of hematite TZ 012317-001, *Fig. 2.206*)¹³¹.



Fig. 2.206 Balance Weight TZ 012317-001 (Source: BAI/GPIA).

The pits 3596 and 3619 disrupt the courtyard area. Isolated Islamic, Roman and Iron Age sherds indicate additional, undetected disturbances or a faulty demarcation of the pits to the fill layers.

An interpretation of the complex as a temple is based on the architecture as well as on comparative examples of some installations (e.g. comparisons to the sherd-covered platform from Tall al-Ḥiṣn (Beth Shean) and Tall Qasīla¹³² as well as Tell es-Safī).

With its three-part structure, it depicts the typical floorplan for temples of the Middle Bronze Age/Late Bronze Age and Iron Age I in the Southern Levant. The floorplans for this temple originate from the area of Syria¹³³.

Looking exclusively at the finds, there are no special finds in the interior or in the courtyard apart from the mazzēbe (conical cultic stone) that would indicate the use of this area as a temple or a cult building. This could indicate that the temple was deliberately abandoned and valuable objects were taken away¹³⁴.

129 The increased occurrence of baking trays, which are generally rare, could be an indication for the production of special dishes. In the area of the courtyard two specimens were found, in F 1 another of only five pieces in total in Stratum 14 a and only 11 in total in Stratum 14 (Schwermer 2014, 321).

130 See: Schwermer 2014, 316.

131 Cf. find from Tall al-Ḥiṣn (Beth Shean) (Mazar – Mullins 2007, 676, fig. 13.4).

132 Gropp 2013, 172 f. Tall al-Ḥiṣn (Beth Shean) Mazar 2006, 93 + fig. 3.35.

133 Vieweger 2012, 289 f.

134 Gropp 2013, 276; Schwermer 2014, 319. 332 f.

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
88	AL 116	Fill layer/floor	I 1	-	-	-
102	AL 116	Mudbrick	I 1	-	-	-
111	AL 116	Mudbrick	I 1	-	-	-
119	AL 116	Fill layer	I 1	-	-	-
120	AL 116	Fill layer	I 1	-	-	-
121	AL 116	Fill layer	I 1	✓	-	-
122	AL 116	Fill layer	I 1	✓	-	-
123	AL 116	Find/fill layer	I 1	✓	-	-
133	AL 116	Mudbrick	I 1	-	-	-
141	AL 116	Find/fill layer	I 1	-	-	✓
142	AL 116	Fire place	I 1	-	-	✓
143	AL 116	Fill layer	I 1	✓	✓	✓
145	AL 116	Floor/pavement	I 1	✓	-	-
211	AK 116	Floor/pavement	I 1	✓	-	-
228	AK 116	Ash layer	I 1	-	-	-
229	AK 116	Ash layer	I 1	-	-	-
240	AK 116	Fill layer	I 1	✓	✓	-
241	AK 116	Fill layer	I 1	✓	✓	✓
243	AK 116	Floor/pavement	I 1	-	-	-
248	AK 116	Clay layer	I 1	-	-	-
254	AK 116	Floor/pavement	I 1	-	-	-
256	AK 116	Pit/fill layer	I 1	✓	-	-
227	AK 116	Mudbrick	I 1	-	-	-
714	AL 117	Fill layer/collapse	I 1	-	-	-
1960	AK 116	Fill layer/floor	I 1	✓	✓	✓
185	AK 118	Wall	I 1/I 4	-	-	-
250	AK 116	Wall	I 1/I 4	-	-	-
255	AK 116	Wall	I 1/I 4	-	-	-
1887	AK 117	Wall	I 1/I 4	✓	-	-
1889	AK 117	Wall	I 1/I 4	-	-	-
244	AK 116	Pavement	I 4	✓	-	-
245	AK 116	Pavement	I 4	✓	-	-

226	AK 116	Wall/collapse	I 1	-	-	✓
1125	AI 115	Wall	I 4	-	-	✓
1171	AI 115	Fill layer	I 4	✓	-	✓
1172	AI 115	Fill layer	I 4	✓	✓	✓
1426	AI 115	Find	I 4	-	✓	-
1476	AI/AK 116	Find	I 4	-	✓	-
1482	AI 116	Fill layer	I 4	✓	-	✓
1483	AI/AK 116	Column base/cultic stone	I 4	-	✓	-
1500	AI/AK 115	Pavement	I 4	✓	-	-
1504	AI/AK 116	Fill layer	I 4	✓	✓	✓
1512	AI/AK 116	Pavement	I 4	-	-	-
1537	AI/AK 116	Floor	I 4	✓	✓	✓
2397	AI/AK 115	Pavement	I 4	✓	✓	✓
2403	AI 116	Fill layer	I 4	-	✓	-
3594	AI 117	Wall	I 4/I 5	-	-	-
1893	AK 117	Wall	I 5	-	-	-
1894	AK 117	Wall	I 5	-	-	-
1895	AK 117	Wall	I 5	-	-	-
3554	AI 117	Wall	I 5	✓	-	-
3556	AI 117	Wall	I 5	-	-	-
3571	AI 117	Wall	I 5	✓	-	-
3572	AI 117	Fill layer	I 5	✓	✓	✓
3573	AI 117	Wall	I 5	✓	✓	✓
3575	AI 117	Wall	I 5	✓	-	-
3589	AI 117	Wall	I 5	✓	✓	-
3591	AI 117	Fill layer	I 5	✓	-	-
3592	AI 117	Fill layer	I 5	✓	✓	✓
3593	AI 117	Collapse	I 5	✓	✓	✓
3597	AI 117	Fill layer	I 5	✓	-	✓
3612	AI 117	Fill layer	I 5	✓	✓	-
3613	AI 117	Mudbrick	I 5	✓	✓	✓
3615	AI 117	Fill layer	I 5	✓	✓	✓
3617	AI 117	Find	I 5	-	✓	-
3618	AI 117	Installation	I 5	✓	✓	✓

3620	AI 117	Floor/fill layer	I 5	✓	✓	✓
3622	AI 117	Fill layer	I 5	✓	✓	-
3627	AI 117	Installation	I 5	✓	✓	✓
3647	AI 117	Fill layer	I 5	✓	-	-
3657	AI 117	Fill layer	I 5	✓	-	-
3663	AI 117	Fill layer	I 5	✓	-	-
3664	AI 117	Fill layer	I 5	✓	✓	✓
3667	AI 117	Fill layer	I 5	✓	-	-
3668	AI 117	Fill layer	I 5	✓	✓	-
3669	AI 117	Pavement	I 5	✓	✓	-
3672	AI 117	Fill layer	I 5	✓	-	-
3674	AI 117	Pavement	I 5	✓	-	-
4724	AI 117	Wall	I 5	✓	-	-

Tab. 2.20 Stratum 14 a, contexts within Complex I (Source: BAI/GPIA).

2.2.4.11. Complex P

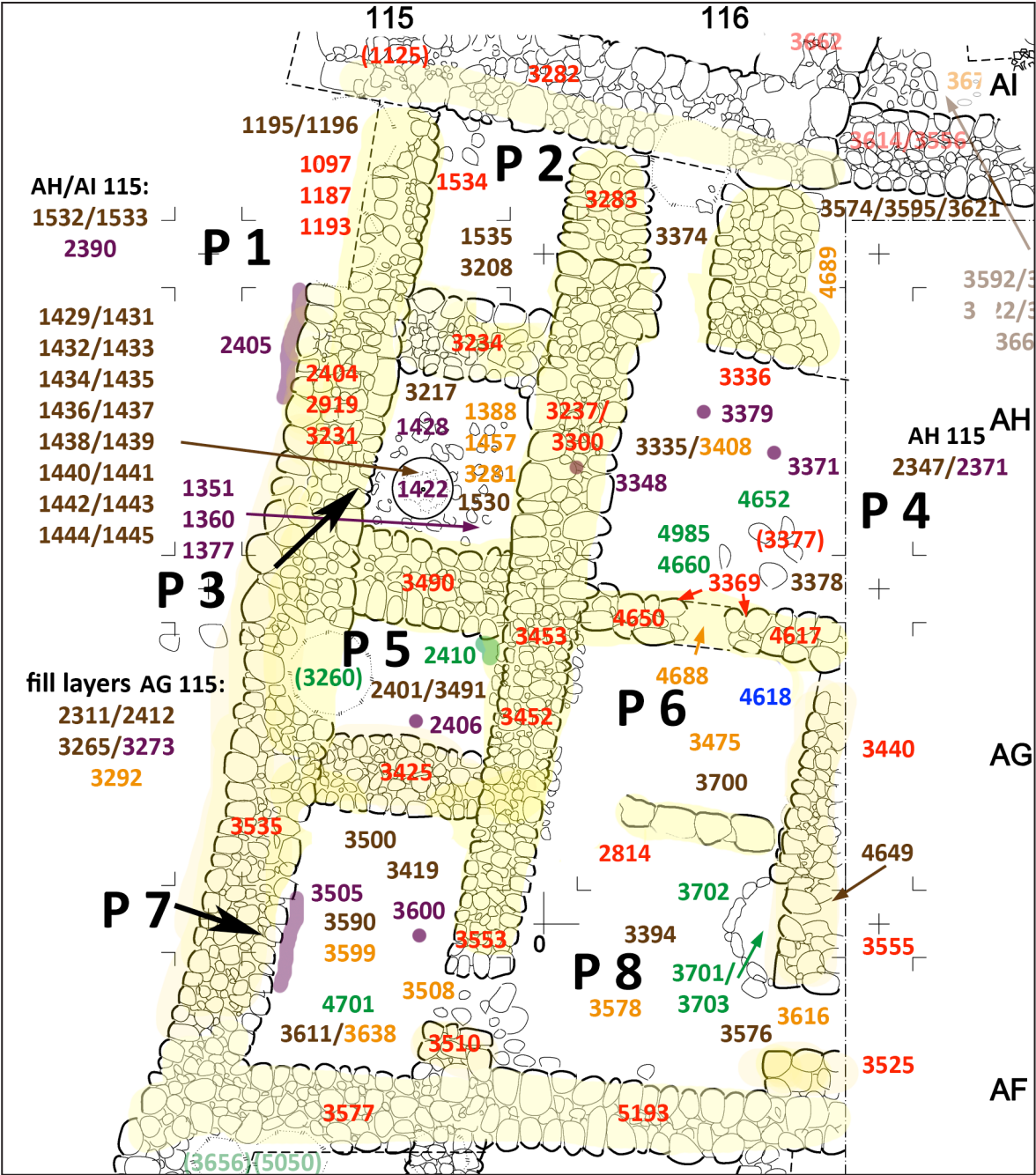


Fig. 2.207 Stratum 14 a, Complex P (Source: BAI/GPIA).

The former entrance area of Complex K was preserved in its entirety, however, there were major changes in the interior, so that it is now renamed Complex P. In this phase, the passage through the gate was closed, the channel F 2 was taken out of service and a partition wall was built in the former room K 2, resulting in a cleaner structure for a courtyard house with a connection to the outer casemate wall. Presumably only two thirds of the house have been revealed.

P 1 denotes the slope west of the casemate wall. Originally, it was assumed the Context 1187 was an opening in the wall 1097 and that it possibly represented a pedestrian gate to the town. In Stratum 14 a, this is not the case because the missing stones from the wall were the result of a Roman-Byzantine pit located in the same spot (as can be seen from the finds, especially the pottery). The only significant find from this area is a metal tip of unclear function TZ 010805-001. Next to the outer wall, remains of mudbricks were found (2405), which contained a few pig and sheep or goat bones and two fragments of a tile of limestone TZ 009439-001.

The northernmost casemate of the complex is room P 2. It is bordered by the walls 1097, 1187 and 1193 to the west, 3282 to the north, 3237 (finds: pottery, including a milk bowl from Cyprus; wall plaster TZ 011144-001, *Fig. 2.208*, with irregularly worked exterior and smoothed interior; a rubbing stone and bones which can no longer be determined) as well as 3300 to the east (finds: pottery; bones; hinge stone TZ 015661-001 of coarse-pored basalt) and 3234 to the south. Possibly, wall 3283 also represents part of the eastern boundary, even though it seems to have been used in the Iron Age and later. Fill layers in the interior are 1535 and 3208. 1534 is probably not a wall but the remains of a silo which was destroyed by the later pit. Fill layer 3208 contained a number of finds, among them pottery (mostly closed vessels, some cookware); bones (14 % cattle, 14 % fallow deer, 7 % domestic pig, otherwise sheep or goat); a turquoise, spherical glass bead with surrounding ribs TZ 016654-001; a fragment of a shell pendant TZ 016478-001; a bronze arrowhead TZ 011153-001 as well as a bronze needle TZ 011107-001; a sling stone, three rubbing stones (one of them of very unusual, pestle-like shape: conical with a basalt heel, TZ 011320-001, *Fig. 2.209*), three flint objects; a burnt olive pit and two snails. The metal

finds were measured and amounted to -22.19 m and -22.26 m; this seems to be the occupation layer. The lower edge of the total context is -23.52 m.



Fig. 2.208 Wall plaster TZ 011144-001 (Source: BAI/GPIA).



Fig. 2.209 Rubbing stone 011320-001 (Source: BAI/GPIA).

To the south of P 2 is room P 3. It is bordered by the walls 3234 in the north, 3237/3300 to the east, 3490 to the south and 2404/2919/3231 to the west. This western wall is 1.60 m wide, four to six-row wall of large field stones form its outer wall and continues south (Context 3535). There were a number of findings within P 3 to include pottery, bones, the fragment of a metal needle, a fragment of a rubbing stone and a whetstone TZ 011238-001 (*Fig. 2.210*).



Fig. 2.210 Whetstone TZ 011238-001 (Source: BAI/GPIA).

The interior of the room is paved (1388, 1457) and contains a thin limestone floor (3281). It contains fill layers 1530 (finds: pottery, among them c. 30 % cookware; a fragment of a faience bowl TZ 003011-013; bone; one half of a shell), 2347 (finds: pottery, including a high percentage of cookware, two fragments of a pilgrim's flask TZ 003993-005, a miniature vessel reminiscent of a ladle TZ 003993-011 (*Fig. 2.211*), an oil lamp; bitumen TZ 009209-001; bones; a snail; a spindle whorl of basalt TZ 009261-001 and flint objects), 2371 (finds: fragment of a metal needle TZ 009284-001) and 3217. The latter extends over the square boundary AH 115 and AH 116 and designates the northern half of the room. Finds in this area include pottery; a light-blue cylindrical faience bead TZ 015331-001 (*Fig. 2.212*); a fragment of a stone tile TZ 011175-001; hammer stone TZ 011228-001 (*Fig. 2.213*), six rubbing stones, two lower grinding stones; 24 flint objects as well as alabaster raw material TZ 011234-001 to -011 and 011235-001; a grey-white marbled glass bead TZ 011250-001; two shell pendants; bones, 16.6 % cattle, 2.8 % domestic pig and 2.8 % gazelle, otherwise sheep or goat; a round bone button with convex upper side and flat underside TZ 011147-001, a spindle whorl made of bone TZ 012209-001 and a bead made of bone TZ 012211-001 (*Fig. 2.214*); a metal fragment, which is probably slag TZ 011282-001 (*Fig. 2.215*).



Fig. 2.211 Miniature vessel reminiscent of a ladle TZ 003993-011 (Source: BAI/GPIA).



Fig. 2.212 Bead made of faience TZ 015331-001 (Source: BAI/GPIA).



Fig. 2.213 Hammer stone TZ 011228-001 (Source: BAI/GPIA).



Fig. 2.214 Bead made of bone TZ 012211-001 (Source: BAI/GPIA).

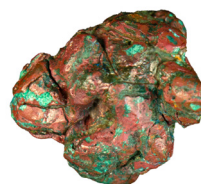


Fig. 2.215 Slag TZ 011282-001 (Source: BAI/GPIA).

Within the pavement, a painted Late Bronze Age plate, a hammer stone, a quern, a rubbing stone, three flint objects, the stone bowl TZ 007713-001, animal bones and two objects made of bones, four matching fragments of a needle with a cylindrical hole (TZ 007693-001, *Fig. 2.216*, from a large mammal) and a spindle whorl with a convex polished upper side and flat underside (TZ 007694-001, *Fig. 2.217*, also from a large mammal) were found.



Fig. 2.216 Needle made of bone TZ 007693-001 (Source: BAI/GPIA).



Fig. 2.217 Spindle whorl TZ 007694-001 (Source: BAI/GPIA).

Other contexts are 428 (finds: clay fragments with wickerwork imprints TZ 007613-001), 1351 (the so-called “Orpheus jug” TZ 002962-003 to -008, see also TZ 002989-001, *Fig. 2.218*)¹³⁵, 1360 (bronze needle TZ 007565-001) and 1377 (bottle with red slip and dark red horizontal lines TZ 002886-001).

The “Orpheus jug”¹³⁶ is painted in two colours (red and black), has a height of 40 cm and a maximum diameter of 32 cm. The painting divides the jug into different zones. The area of the neck and shoulder is decorated with alternating red and black lines and geometric patterns (triangles), followed by a register of animal motifs between the handles. This in turn is separated from the area around the foot by lines. The lowest register depicts two snakes, probably sand vipers, wound around the jug and meeting with their heads face to face (see detail a, *Fig. 2.219*).



Fig. 2.218 “Orpheus Jug” TZ 002989-001 (TZ 002962-003 to -008) after the reconstruction (Source: BAI/GPIA).

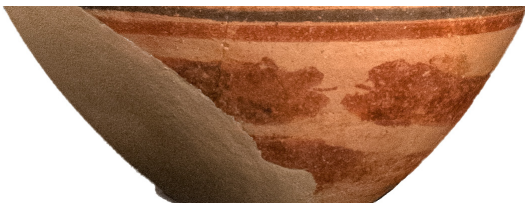


Fig. 2.219 “Orpheus Jug” detail a (Source: BAI/GPIA).

135 Another body sherd, which was only found in a later campaign, also belongs to this jug (TZ 004222-011).

136 See: Vieweger – Soennecken 2019.



Fig. 2.220 Addition TZ 004222-011 (Source: BAI/GPIA).

If the snakes are represented as a religious, symbolic animal from the repertoire of the surrounding area as well as the other animals (lion, bull, scorpion), then they come from Syrian or Mesopotamian mythology, which can be easily explained, however, the scenes in the middle register still present an interpretive challenge.

To the right of the handle is a coiled snake. There is a man sitting on a stool and playing a musical instrument (probably a lyre) and is depicted beneath a black bull with red fur (or a fleece?) on its back. To the left of the bull is a lion and above them a snake. To the right of the human figure, there is another animal, either a goat or a dog (see detail b, Fig. 2.221).

This motif seems to be unique in the southern Levant in the Late Bronze Age and examples with similar motifs are rare with the majority known only from later periods, such as in the Greek legend of “Orpheus”. This was a common motif in Aegean art in the 6th century BC, for which T. Dothan also referred to older traditions¹³⁷.

A comparable piece comes from Tall al-Mutasalim, Stratum VI A (Iron Age I/II). It is a decorated jug and is classified as “Philistine”¹³⁸. Further examples come from Tall Dēr ‘Allā (Iron Age I), Ṭabaqāt Faḥl (Pella) (Late Bronze Age II), Kuntillet Ajrud (Iron Age IIB) and Ashdod (Iron Age)¹³⁹.

The picture on the opposite side of the jug represents an equally important motif. Again, a coiled up snake is visible right of the handle. A lion follows. He is accompanied by a larger animal and three smaller animals (sheep or goats) and again, connected to a snake that is depicted above them (see detail c, Fig. 2.222). The scene is reminiscent of elements of the biblical topos of the “animals at peace” from Isa. 11:6 f. as well as 65:25 (cf. Hos. 2:20). Here, too, the ancient story of Orpheus could be a model or inspiration.



Fig. 2.221 “Orpheus Jug” detail b (Source: BAI/GPIA).



Fig. 2.222 “Orpheus Jug” detail c (Source: BAI/GPIA).

¹³⁷ Dothan 1982, 151.

¹³⁸ Aharoni et al. 1993, 1015–1016. The area of origin of the lyre seems to be most probably the southern Mesopotamia (see Keel 1972, 323). For comparative finds with representations of a lyre see also Braun 1999, 222 f.

¹³⁹ For illustrations and further examples see Gropp 2013, 250–255.



Fig. 2.223 Roll off of motive TZ 002989-001 (Source: BAI/GPIA).

The flask TZ 002886-001 (*Fig. 2.224*) has a red slip and dark red parallel horizontal lines. It has a height of 17.9 cm and a maximum diameter of 13.3 cm.



Fig. 2.224 Flask TZ 002886-001 after the reconstruction (Source: BAI/GPIA).

The southern half of room P 3 is characterised by silo 1422, which was also in use in the more recent phases. It was covered with a large round basalt stone (diameter 90 cm, *Fig. 2.226*). Inside of it the following fill layers can be found: 1429, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444 and 1445.

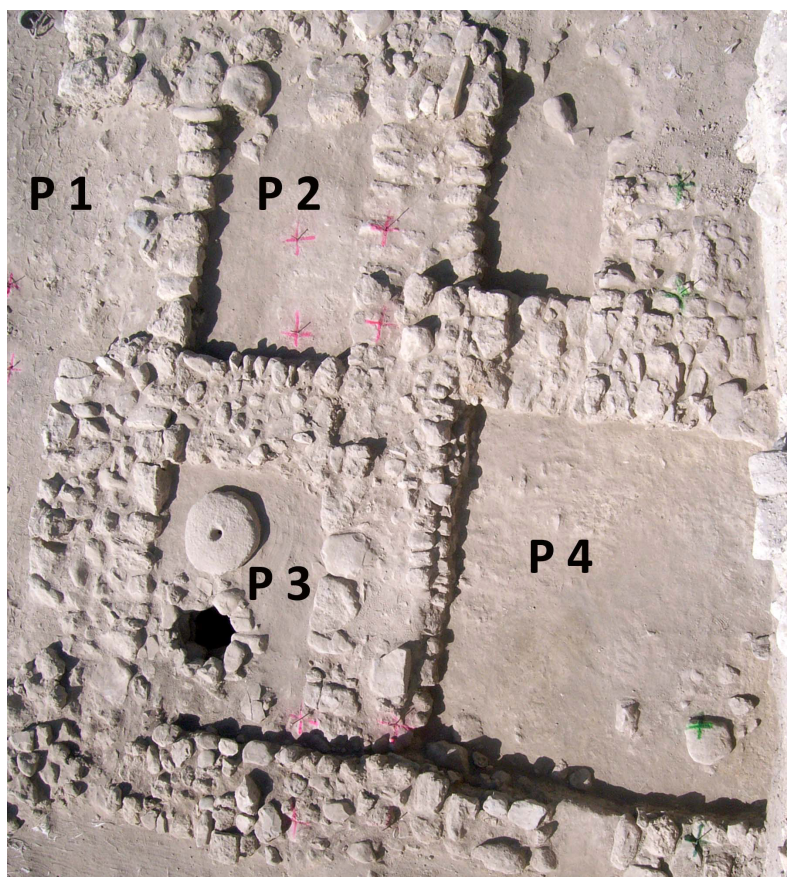


Fig. 2.225 Overview P 1–4 (Source: BAI/GPIA).



Fig. 2.226 Cover of silo 1422 (Source: BAI/GPIA).

Finds within the first fill layers of the silo (1429 to 1440) are pottery sherds (especially in the shaft also of Iron Age date), bones (mainly sheep and goat, 8 % each of fallow deer, wild boar, domestic pig), a bone object TZ 007369-001 (probably a handle), a yellowish glass bead TZ 007377-001, a bead made of silicate rock TZ 007380-001 (*Fig. 2.227*) as well as casting residues. At a depth of about 2 m, the shaft widens to a slightly oval interior of about 1.60 m x 1.60 m. At a depth of 2.30 m, the silo has a first floor, which is covered with a layer of stones (Context 1440). The finds in this final layer of stones seem to belong to Stratum 14 a: pottery (only bowls, 'Chocolate-on-White' ware), a biconical weight of hematite TZ 007374-0011 (*Fig. 2.228*), bones (sheep and goat, domestic pig and red deer), a fragment of a shell, a rubbing stone and two rubbing bowls (TZ 007615-001 and TZ 007676-001). At this time, the silo was probably used to store grain. The fill layers below are either from Stratum 14 a or already from 14 b. Under the stone layer the silo extends to an area of 1.70 m x 1.50 m. Finds within the further fill layers (1441 to 1445) are pottery (mainly bowls, including a high proportion of fine ware and also Mycenaean imported goods), bones (sheep and goat, 7 % cattle, 14 % domestic pig) and a rubbing stone. The lime plaster on the walls suggests this silo was originally used as a cistern. It has a total depth of 2.70 m.



Fig. 2.227 Stone bead TZ 007380-001 (Source: BAI/GPIA).



Fig. 2.228 Haematite balance weight TZ 007374-001 (Source: BAI/GPIA).

Due to the large number of finds (e.g. the large amount of raw material and processing equipment), there are many indicators to suggest P 2 and P 3 were either storage rooms or a small workshop.

To the east of P 2 and P 3 is room P 4, a courtyard area with a small corridor running northwards, which possibly represents a passage to temple I. P 4 is bordered by the walls 3282 and 3336 (finds: fragments of a metal vessel TZ 014633-001 (*Fig. 2.229*) and -002, two stone bowls TZ 014740-001 and TZ 015643-001) in the north; 3369 (upper edge: -23.27 m), 4617 and 4650 in the south; 3283, 3237 and 3300 (therein Context 3348, a bronze leaf-shaped spearhead TZ 011524-001, *Fig. 2.230*) in the west.

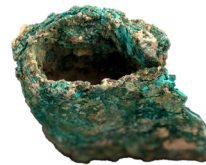


Fig. 2.229 Fragment of metal vessel TZ 014633-001 (Source: BAI/GPIA).

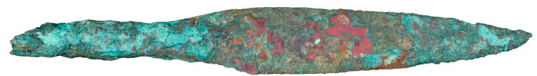


Fig. 2.230 Spear head TZ 011524-001 (Source: BAI/GPIA).

In the south, there is a passage to P 6. The extension to the east has not yet been excavated. In the north-east, another area seems to follow which is only rudimentary recognizable, therefore, the fill layers of this area are treated under P 4. These are: 3574 (consisting almost entirely of ashes, little pottery and bone), 3595, 3621 and 4689.

Contexts within the courtyard are: Fill layer 3374 located in the 80 cm wide passageway to Complex I; a mudbrick collapse 3335, above floor 3408 contains the finds 3371 (finds: bronze pendant TZ 011523-001, *Fig. 2.232*) and 3379 (finds: basalt macehead TZ 011555-0011, *Fig. 2.233*); fill layer 3378 in the south-eastern corner and floor 3408. The fill layer 3335 (upper edge: -23.34 m; lower edge: -23.58 m) had a very high density of finds, e.g. pottery (balanced between open and closed vessels, 19.5 % fine ware, 20 % cooking pots, four oil lamps, a spindle whorl TZ 020577-001, a lid as well as two milk bowls TZ 006572-003), bones (mostly sheep or goat, 8.9 % cattle, 3.3 % domestic pig, 2.2 % gazelle, 1.1 % horse/donkey/mule), a shell pendant TZ 012619-001, 16 rubbing stones, two hammer

stones, a sling stone, a game piece TZ 011626-001, three flint objects, three snails, a metal needle TZ 012615-001.



Fig. 2.231 Button TZ 011518-001 (Source: BAI/GPIA).



Fig. 2.232 Bronze pendant TZ 011523-001 (Source: BAI/GPIA).



Fig. 2.233 Macehead made of basalt TZ 011555-001 (Source: BAI/GPIA).

In the south-west, the pits 4652 (probably younger), 4660 and 4985 (extends down to the backfill layers) were embedded. Context 3377 is either the stone enclosure of another pit or a collapse. The smallest room of the complex is P 5, with an area of 2.5 m x 2 m, is bordered by the walls 3490 in the north, 3453 and 3452 in the east, 3425 in the south and 2404/2919/3231 (whetstone TZ 011238-

001) in the west. The western end is severely disturbed by pit 3260. The eastern walls 3452 and 3453 clearly have upper edges at different levels, however, they tie into one another and form a southern continuation of wall 3300.

Fill layers in the interior of P 5 are: 2311 (finds: pottery, 50 % fine ware, among them a milk bowl; bone; a quern), 2401 (finds: pottery, bone, a bronze nail shaft TZ 009365-001, a rubbing stone), 2412 (finds: pottery and tabun fragments), 3265 (finds: fill layer above the floor 3292) and 3491 (finds: pottery, among them two feet of a chalice each, a pyxis; two flint objects; bone).

Finds in 3265 are: bowls from Cyprus (base ring ware TZ 004970-015, -016, -035 and white slip ware TZ 004970-031), three spindle whorls made of pottery, two fragments of a bronze fibula and a bronze base ring ware TZ 004970-015, -016, -035 and white slip ware TZ 004970-031). Two fragments of a bronze fibula, respectively of a robe needle TZ 011283-001 (Fig. 2.234) and a needle TZ 011301-001; bone, including a tongue-shaped cut bone TZ 011415-001 (Fig. 2.235); within this context were also context 3273 (measuring point: -23.46 m), a bronze leaf arrowhead TZ 011280-001 (Fig. 2.236), a fragment of a needle TZ 011461-001 and bone. Below the context was a thin layer of solid clay, which is interpreted as floor (Context 3292). Several metal fragments, probably belonging together, were found here, possibly part of a belt buckle or a dagger (TZ 012497-001 and -002, Fig. 2.237).



Fig. 2.234 Bronze clasp TZ 011283-001 (Source: BAI/GPIA).



Fig. 2.235 Bone TZ 011415-001 (Source: BAI/GPIA).



Fig. 2.236 Leaf arrowhead TZ 011280-011 (Source: BAI/GPIA).

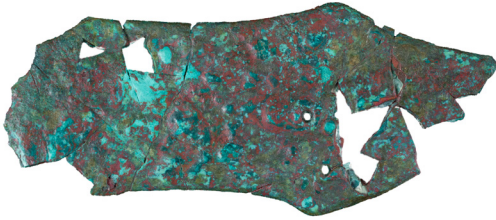


Fig. 2.237 Bronze fragments, possibly from a belt buckle or dagger TZ 012497-001 and -002 (Source: BAI/GPIA).

Find 2406 is an almost complete cooking pot (TZ 004044-001, *Fig. 2.238*; Late Bronze Age II). The area in the immediate vicinity was filled with ashes, so probably a cooking pit. Nearby, in the north-eastern corner of the room is another ash pit (Context 2410).



Fig. 2.238 Cooking pot TZ 004044-001 (Source: BAI/GPIA).

Room P 6 is located within Square AG 116 and measures 3.75 m x 2.5 m; it is bordered by walls 4617/4650 to the north, 3440 to the east, 2814 to the south and 3452 and 3453 to the west. To the north, there is a passage to P 4 (Context 4688) and to the south there seems to be a passage to P 8, since the wall/room divider 2814 does not reach wall 3452.

The fill layers are: 3394 (upper edge: -22.92 m and lower edge: -23.33 m) and covers the entire Square AG 116 including the baulk area to AF 116 and includes the floor 3475 (upper edge: -23.29 m). Among the finds are pottery (balanced proportion

of open and closed vessels, little cookware, a loom weight TZ 005090-020, *Fig. 2.239*), bones (83.3 % sheep or goat, 16.7 % cattle), a spindle whorl made of bone (TZ 011774-001), a bone bead (TZ 012206-001) and a black and white banded glass bead (TZ 012467-001, *Fig. 2.240*), nine rubbing stones, three lower grinding stones, a quern, a hammer stone, a foot of a stone bowl (TZ 011797-001), a cube-shaped stone weight of basalt (TZ 011798-001, *Fig. 2.241*), six flint objects, snails and shells.



Fig. 2.239 Loom weight TZ 005090-001 (Source: BAI/GPIA).



Fig. 2.240 Glass bead TZ 012467-001 (Source: BAI/GPIA).



Fig. 2.241 Weight TZ 011798-001 (Source: BAI/GPIA).

A similar picture emerges from the finds of fill layers 3700 and 4649: pottery, a few bones (among them a fragment of a handle with smoothed upper surface and incisions of three concentric circles, TZ 019541-001, *Fig. 2.242*), a rubbing stone, two querns, a fragment of a stone tile, a balance weight TZ 014611-001, three flint objects, a shell pendant. Below the fill layer of 3700, a white limestone layer can be seen in many places of the square, which is probably the remains of a floor (bronze pendant TZ 014474-001, *Fig. 2.243*). These fill layers are assigned to room P 6 as they were counted as part of the entire square and it was not differentiated whether they were north or south of wall 2814.



Fig. 2.242 Bone TZ 019541-001 (Source: BAI/GPIA).



Fig. 2.243 Bronze pendant TZ 014474-001 (Source: BAI/GPIA).

The south-westernmost casemate of the Complex is Room P 7, which is bordered by walls 3425 to the north, 3553 and 3510 to the east, 3577 to the south and 3535 to the west. To the east of the outer wall 3535, the remains of mudbricks were found (3505).

The fill layers 3419, 3500, 3590, and 3611 (bone button TZ 012371-001) are very similar to the finds in P 6. Worth mentioning is find 3600, which was found within Context 3590, although not *in situ*. It is a building ornament, perhaps a column base (TZ 012541-001). The floor in the southern half was paved (3508, 3638, with an ash pit 4701/4708 embedded in it) and in the northern half, this can no longer be clearly determined (floor 3599).

Room P 8 is bordered by wall 2814 in the north, 3555 and 3525 in the east, 5193 in the south and

3452, 3553 and 3510 in the west. In the west was a passage to P 7 (3508) and a passage to an unexcavated area in the east (3576/3616).

Context 3578 describes the floor together with the overlying mudbrick collapse in the southern part of room P 8. In the area of the passage to the east, the rammed clay floor 3616 was clearly visible and further west it could not be separated from fill layer 3576. The finds are: pottery (ratio open to closed vessels 2:1, 25 % cookware, 28 % fine ware, 12 % painted, four imported vessels from Cyprus and a complete jar/krater TZ 005452-022), bones (5.8 % cattle, otherwise sheep or goat), a spindle whorl made of bone (probably cattle, TZ 012372-001), two mortar bowls, one lower grinding stone, two rubbing stones as well as a quern, nine flint objects, a round bronze/copper bracelet with an inner diameter of 4.7 cm (TZ 012514-001, *Fig. 2.244*), four glass beads (TZ 012374-001, 012459-001, 012461-001 and 012462-001, *Fig. 2.245*), snails and a shell pendant (TZ 012376-001).



Fig. 2.244 Bronze hoop TZ 012514-001 (Source: BAI/GPIA).



Fig. 2.245 Beads TZ 012462-001, 012374-001, 012459-001 (Source: BAI/GPIA).

Attached to wall 3555 is silo 3702 with fill layers 3701/3703 (finds: pottery, bones, three flint objects and a ballistic stone TZ 015361-001, *Fig. 2.246*).

In Complex P, the wealth of finds as well as the good quality (especially of the pottery) are striking and it is obvious that this, too, belonged to a wealthy owner.



Fig. 2.246 Ballistic stone TZ 015361-001 (Source: BAI/GPIA).

Context	Square	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
1195	AI 115	Fill layer	P 1	-	-	-
1196	AI 115	Fill layer	P 1	-	-	-
1532	AH/AI 115	Fill layer	P 1	-	-	-
1533	AH/AI 115	Fill layer	P 1	-	-	-
2390	AH/AI 115	Fill layer	P 1	-	✓	-
2405	AH 115	Mudbrick	P 1	-	✓	✓
1097	AI 115	Wall	P 1/P 2	-	✓	✓
1187	AI 115	Wall/Pit	P 1/P 2	✓	✓	✓
1193	AI 115	Wall	P 1/P 2	-	-	-
1534	AH/AI 115	Collapse/wall	P 2	-	-	-
1535	AH/AI 115	Fill layer	P 2	-	-	-
3208	AH 116	Fill layer	P 2	✓	✓	✓
3234	AH 115	Wall	P 2/P 3	-	-	✓
3237	AH 115	Wall	P 2/P 3/P 4	✓	✓	✓
3300	AH 116	Wall	P 2/P 3/P 4	✓	✓	✓
1351	AH 115	Find/"Orpheus Jug"	P 3	✓	-	-
1360	AH 115	Find	P 3	-	✓	-
1377	AH 115	Find/pottery	P 3	✓	-	-
1388	AH 115	Pavement	P 3	✓	✓	✓

1428	AH 115	Mudbrick	P 3	✓	-	-
1429	AH 115	Silo fill	P 3	-	-	-
1431	AH 115	Silo fill	P 3	✓	-	✓
1432	AH 115	Silo fill	P 3	-	-	✓
1433	AH 115	Silo fill	P 3	-	-	✓
1434	AH 115	Silo fill	P 3	✓	-	✓
1435	AH 115	Silo fill	P 3	✓	-	✓
1436	AH 115	Silo fill	P 3	✓	-	✓
1437	AH 115	Silo fill	P 3	-	-	✓
1438	AH 115	Silo fill	P 3	✓	✓	✓
1439	AH 115	Silo fill	P 3	-	✓	✓
1440	AH 115	Silo fill	P 3	✓	✓	✓
1441	AH 115	Silo fill	P 3	✓	-	✓
1442	AH 115	Silo fill	P 3	-	-	✓
1443	AH 115	Silo fill	P 3	✓	-	✓
1444	AH 115	Silo fill	P 3	✓	✓	✓
1445	AH 115	Silo fill	P 3	✓	-	-
1457	AH 115	Pavement	P 3	-	-	-
1530	AH 115	Fill layer	P 3	✓	✓	✓
2347	AH 115	Fill layer	P 3	✓	✓	✓
2371	AH 115	Fill layer	P 3	-	✓	-
3217	AH 115/116	Fill layer	P 3	✓	✓	✓
3281	AH 115	Floor	P 3	-	-	-
2404	AH 115	Wall	P 3/P 5	-	-	-
2919	AH 114/115	Wall	P 3/P 5	-	-	-
3231	AH 115	Wall	P 3/P 5	✓	✓	✓
3335	AH 116	Fill layer	P 4	✓	✓	✓
3336	AH 116	Wall	P 4	-	✓	-
3348	AH 116	Find	P 4	-	✓	-
3369	AG 116	Wall	P 4	✓	✓	✓
3371	AH 116	Find	P 4	-	✓	-
3374	AI 116	Fill layer	P 4	-	-	✓
3377	AH 116	Pit/collapse	P 4	-	-	-
3378	AH 116	Fill layer	P 4	✓	✓	✓

3379	AH 116	Find	P 4	-	✓	-
3408	AH 116	Floor	P 4	-	-	-
3574	AI 117	Fill layer	P 4	✓	-	✓
3595	AI 117	Fill layer	P 4	-	-	-
3621	AI 117	Fill layer	P 4	✓	-	-
4652	AH 116	Pit	P 4	✓	✓	✓
4660	AH 116	Pit fill	P 4	✓	✓	✓
4689	AI 116	Fill layer/floor	P 4	✓	✓	✓
4985	AH 116	Pit	P 4	✓	✓	✓
2311	AG 115	Fill layer	P 5	✓	✓	✓
2401	AG 115	Fill layer	P 5	✓	✓	✓
2406	AG 115	Find/cooking pot	P 5	✓	-	-
2410	AG 115	Ash pit	P 5	-	-	-
2412	AG 115	Fill layer	P 5	✓	-	-
3265	AG 115	Fill layer	P 5	✓	✓	✓
3273	AG 115	Find	P 5	-	✓	-
3292	AG 115	Floor	P 5	-	✓	✓
3491	AG 115	Fill layer	P 5	✓	✓	✓
3453	AG 116	Wall	P 5/P 6	✓	-	-
3452	AG 116	Wall	P 5/P 6/P 8	✓	✓	✓
3440	AG 116	Wall	P 6	✓	-	-
3475	AG 116	Floor	P 6	-	-	-
4618	AG 116	Limestone layer	P 6	-	✓	-
2814	AG 116	Wall/installation	P 6/P 8	✓	-	✓
3700	AF 116	Fill layer/possible floor	P 6/P 8	✓	✓	✓
4649	AG 116	Fill layer	P 6/P 8	✓	✓	✓
3419	AG 115	Fill layer	P 7	✓	✓	✓
3500	AF 115	Fill layer	P 7	✓	✓	✓
3505	AF 115	Mudbrick	P 7	-	-	-
3590	AF 115	Fill layer	P 7	✓	✓	✓
3599	AF 115	Floor	P 7	-	-	-
3600	AG 115	Find	P 7	-	✓	-
3611	AF 115	Fill layer	P 7	✓	✓	✓
3638	AF 115	Pavement	P 7	✓	-	✓

4701	AF 115	Ash pit	P 7	-	-	-
4708	AF 115	Pit	P 7	✓	✓	✓
3508	AF 116	Fill layer/passageway	P 7/P 8	-	-	-
3510	AF 115	Wall	P 7/P 8	-	-	-
3553	AF 115	Wall	P 7/P 8	-	✓	-
3394	AG 116	Fill layer	P 8	✓	✓	✓
3525	AF 116	Wall	P 8	-	-	-
3555	AF 116	Wall	P 8	✓	✓	-
3576	AF 116	Fill layer/passageway	P 8	-	-	-
3578	AF 116	Fill layer/floor	P 8	✓	✓	✓
3616	AF 116	Floor	P 8	-	-	-
3701	AF 116	Silo fill	P 8	✓	✓	✓
3702	AF 116	Silo	P 8	-	-	✓
3703	AF 116	Silo fill	P 8	-	-	-

Tab. 2.21 Stratum 14 a, contexts within Complex P (Source: BAI/GPIA).

2.2.4.12. Complex O

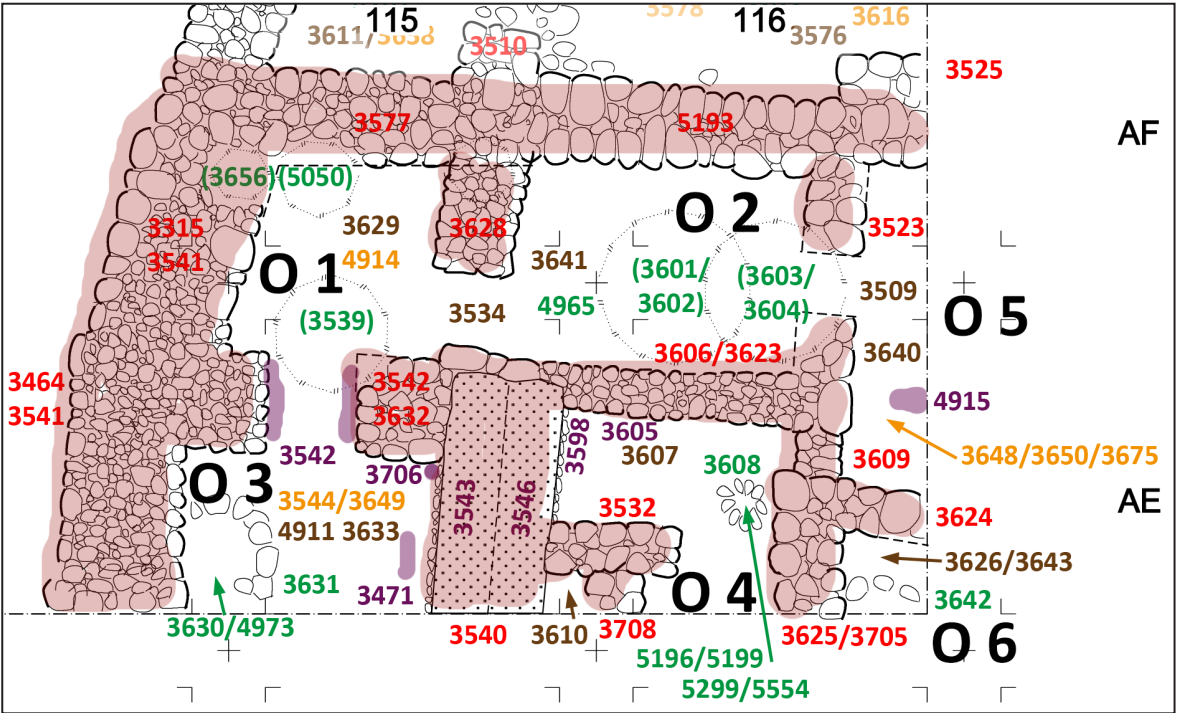


Fig. 2.247 Stratum 14 a, Complex O (Source: BAI/GPIA).

In Complex O there were minor changes while maintaining the outer boundaries. In the east of the complex the new rooms O 5 and O 6 were separated. Changes in rooms O 1 and O 3 were limited to a reinforcement of the outer wall 3315 by the walls 3464/3541; repair of the passage between the two rooms (mudbrick 3542 and wall 3632). In addition, fill layer 3629 in room O 1 and fill layer 3534 (finds: pedestal of a bowl, possibly rubbing stone, TZ 012290-001) in the passage from room O 1 to O 2 belong to Stratum 14 a.

The changes in room O 2 are similarly minor: fill layer 3641 and pit 4965 were added as well as a redesign of the passage to O 5 (through walls 3523 and 3623). Finds from fill layer 3641 are: Pottery (balanced ratio between open and closed vessels, 17 % cookware, 11 % fine ware, an oil lamp); bones (8 % cattle, 4 % gazelle, otherwise sheep or goat); a rubbing stone and a stone bowl with feet of basalt (TZ 015796-001, *Fig. 2.248*) as well as snails. Within the new dividing wall 3523, Late Bronze Age pottery was found to include: a milk bowl from Cyprus, bones, a rubbing stone, a quern and a metal find (TZ 015183-001, possibly a spearhead, *Fig. 2.249*).



Fig. 2.248 Stone bowl with pedestal TZ 015796-001 (Source: BAI/GPIA).



Fig. 2.249 Spearhead TZ 015183-001 (Source: BAI/GPIA).

In room O 3, a silo was built (3630, 3631 and floor 4973) and placed against wall 3541. There was a new floor 3544 (noteworthy, is the discovery of a ring-shaped hinge stone), 3649, (base of a limestone bowl TZ 014421-001, *Fig. 2.250*) and fill layers 3633 and 4911, mudbricks 3471 and find 3706, a hinge stone TZ 012690-001 (probably *in situ*).

The demarcation to O 4 was renewed with wall 3540 and clay structures 3543 (finds: Late Bronze Age pottery, bones, a rubbing stone, a stone weight TZ 012679-001, a hammer stone, nine flint objects, some of the blades with sickle shine) and 3546 (all finds were collected under 3543).



Fig. 2.250 Limestone bowl TZ 014421-001 (Source: BAI/GPIA).



In O 4, too, there were only minor changes: new fill layer 3607 (finds: Late Bronze Age pottery, bones, stone bowls TZ 015648-001 and TZ 015795-001, two rubbing stones as well as a shell pendant and a snail, which served as a chain link or pendant TZ 016587-001), mudbrick 3598 (presumably the collapse of mudbrick structure 3546) and 3605, division of the room by wall 3708 (this created the separated area with fill layer 3610, in which two knife blades TZ 012477-001, *Fig. 2.251*, and TZ 012478-001, *Fig. 2.252*, were found). Finds inside the wall were: pottery, including imported goods from Cyprus, bones, a shell pendant. With the installation of walls 3609, 3625/3705 (finds: Late Bronze Age pottery; among them, ‘Chocolate-on-White’ ware jug TZ 05556-0011, *Fig. 2.253*; flint objects) two new rooms O 5 and O 6 were identified.

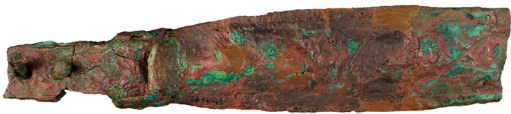


Fig. 2.251 Bronze knife TZ 012477-001 (Source: BAI/GPIA).

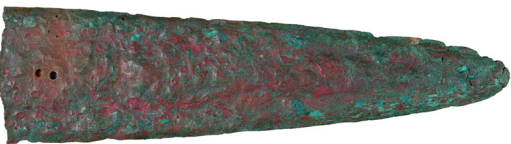


Fig. 2.252 Bronze knife TZ 012478-001 (Source: BAI/GPIA).



Fig. 2.253 ‘Chocolate-on-White’ jug TZ 05556-001, Stratum 14 a, reconstructed (Source: BAI/GPIA).

The new rooms O 5 and O 6 are only rudimentarily excavated. O 5 contains the fill layers 3509 and 3640, the floors 3648, 3650 and 3675 as well as mudbricks 4915. Finds in fill layer 3509 were: pottery (ratio open to closed vessels 2:1, 6 % cooking pots, 34 % fine ware, 20 % painted pottery, two oil lamps and an import vessel from Cyprus); bones (19 % cattle, 1.6 % fallow deer, 1.6 % horse/donkey, otherwise sheep or goat); two lower grinding stones, one rubbing stone, two querns, seven flint objects.

Room O 6 contains fill layers 3626 and 3643 (finds: pottery, bones to include two dog bones, fragment of a stone bowl TZ 015579-001) as well as the half-visible silo 3642.

Context	Squate	Description/ Interpretation	Complex	Artefacts		Ecofacts
				Pottery	Other	
3629	AE 115	Fill layer	O 1	✓	✓	✓
3534	AE 116	Fill layer	O 1/O 2	✓	✓	✓
3464	AE 115	Wall	O 1/O 3	-	-	-
3541	AE 115	Wall	O 1/O 3	✓	-	-
3542	AE 115	Mudbrick	O 1/O 3	-	✓	-
3632	AE 115	Wall	O 1/O 3	✓	-	✓
3641	AE 116	Fill layer	O 2	✓	✓	✓
4965	AE 116	Ash pit	O 2	-	-	-
3623	AE 116	Wall	O 2/O 4	-	-	-
3523	AF 116	Wall	O 2/O 5	✓	✓	✓
3471	AE 115	Mudbrick	O 3	-	-	-
3543	AE 115	Mudbrick	O 3	✓	✓	✓
3544	AE 115	Fill layer/floor	O 3	✓	✓	✓
3630	AE 115	Silo	O 3	-	-	-
3631	AE 115	Silo	O 3	-	-	-
3633	AE 115	Fill layer	O 3	-	-	-
3649	AE 115	Floor	O 3	-	✓	-
3706	AE 115	Find	O 3	-	✓	-
4911	AE 115	Fill layer	O 3	✓	-	-
4973	AE 115	Silo filling/soil	O 3	✓	✓	-
3546	AE 115	Mudbrick	O 4	-	-	-
3598	AF 116	Mudbrick	O 4	✓	-	✓
3605	AE 116	Mudbrick	O 4	-	-	-
3607	AE 116	Fill layer	O 4	✓	✓	✓
3610	AE 116	Fill layer	O 4	✓	✓	✓
3708	AE 116	Wall	O 4	✓	✓	✓
3609	AE 116	Wall	O 4/O 5	✓	-	-
3625	AE 116	Wall	O 4/O 6	✓	-	-
3705	AE 116	Wall	O 4/O 6	✓	✓	-
3509	AF 116	Fill layer	O 5	✓	✓	✓
3640	AE 116	Fill layer	O 5	✓	-	✓
3648	AE 116	Floor	O 5	-	-	-

3650	AE 116	Floor	O 5	-	-	-
3675	AE 116	Floor	O 5	-	-	✓
4915	AE 116	Mudbrick	O 5	✓	-	✓
3624	AE 116	Wall	O 5/O 6	-	✓	-
3626	AE 116	Fill layer	O 6	✓	✓	✓
3642	AE 116	Pit/silo	O 6	-	-	-
3643	AE 116	Fill layer	O 6	✓	✓	✓

Tab. 2.22 Stratum 14 a, contexts within Complex O (Source: BAI/GPIA).

2.3. Catalogue of Finds: Late Bronze Age (Stratum 14)

2.3.1. Catalogue of Metal Finds: Stratum 14

by K. Soenneken

In the stratum of the Late Bronze Age on Tall Zirā'a, altogether 144 metal finds were documented – all four phases combined.

With respect to the metal classification, the following should be noted:

- Cu_2Sn bronze is being defined from an Sn content of 1.0 % as the metal's malleability decreases with a Sn content of 1.3 % or higher. Thus, the production of bronzes with an intentionally low Sn content seems reasonable.
- Regarding the metal classification of the metal objects from Tall Zirā'a on the basis of data relevant for XRF-spectroscopy: All specifications are given in ppm (10.000 ppm = 1.0 %). Cu contents exceeding 100 % are not realistic and must be due to the calibration of the instrument being used and to object-related measuring errors. All data cited in this chapter taken from Schulze 2014.
- Values <10 ppm are defined as being below the limit of detection (<LOD).

In order to ascertain the metals' provenance, numerous archaeometrical examinations were performed and published in Schulze 2014. esp. 121–123.

The archaeometric examinations illustrate that only three of the samples can be linked to material from Wādī Fēnān or Timna respectively and the overwhelming majority of 22 samples can be linked to material from Cyprus. Some analysis results could not be attributed to any specific copper mining area.

TZ 001470-001

Area I; Square AM 117; Complex H 1; Context 173

Description: Indeterminable fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: 0.64 g

Material: Bronze/Copper

TZ 001490-001

Area I; Square AK 116; Context 183

Description: Small fragment of a mirror, fitting to TZ 01612-001. Therefore also listed under stratum 14

Figure Reference: —

Date of Context: IA II A/B—Stratum 12

Dimensions: —

Weight: —

Material: Bronze/Copper

TZ 001508-001

Area I; Square AM 118; Complex H 1; Context 189

Description: Point of a knife blade

Figure Reference: Fig. 2.181; 2.254

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.3; W (max.) 1.6

Weight: —

Material: Copper. Analysis: Cu 1598009; Sn 8373; Pb 494; As 4803; Zn <NWG; Fe 51194; Ag 59



Fig. 2.254 Point of a knife blade TZ 001508-001 (Source: BAI/GPIA).

TZ 001509-001

Area I; Square AM 118; Complex H 1; Context 190

Description: Point of an awl or needle

Figure Reference: Fig. 2.182; 2.255

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.2; D (max.) 0.56

Weight: 2.7 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA**

I/II: Sass – Cinamon 2006, 391 Fig. 18.26



Fig. 2.255 Point of an awl or needle TZ 001509-001 (Source: BAI/GPIA).

TZ 001611-001

Area I; Square AM 118; Complex H 1; Context 210

Description: Fragment of a needle with eyelet turned over

Figure Reference: Fig. 2.179; 2.256

Date of Context: LB II—Stratum 14 a

Dimensions: L 10.5; W (max.) 0.4

Weight: —

Material: Copper

Reference: For lead isotope ratio see Schulze 014. Chart 11-2 (sample 61-5) and fig. 5-10 / 5-11.

Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Ḥiṣn (Beth Shean) **LB IB–LB IIA:** Yahalom-Mack 2007a, 612 Fig. 9.3; Tell el-Ajjūl (Gaza) **MB IIC–LB IA,** Petrie 1931, Pl. XVI.10–15



Fig. 2.256 Fragment of a needle TZ 001611-001 (Source: BAI/GPIA).

TZ 001612-001

Area I; Square AM 117; Complex H 1; Context 173

Description: Mirror; object completely preserved

Figure Reference: Fig. 2.186; 2.257

Date of Context: LB II—Stratum 14 a

Dimensions: L (max.) 9.3; W (max.) 6.1

Weight: —

Material: Copper. Analysis: Cu 1171407; Sn 6457; Pb 15; As 284; Zn <NWG; Fe 11914; Ag 36

Reference: Tell el-Ajjūl (Gaza) **MB II–LB II,** Petrie 1932, Pl. XV.82–84; **LB IIB,** Petrie 1933, Pl. IX.23

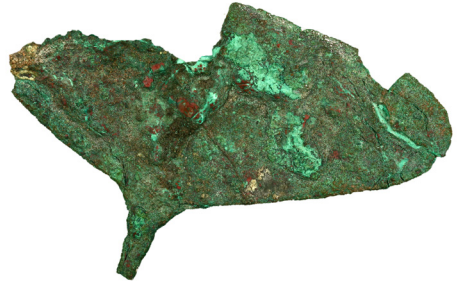


Fig. 2.257 Mirror TZ 001612-001 (Source: BAI/GPIA).

TZ 007248-001

Area I; Square AN/AO 117; Complex E 3; Context 1278

Description: Fragment of a shank of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a-d

Dimensions: L 1.8

Weight: 0.5 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA**

I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 007366-001

Area I; Square AM/AN 117; Complex H 1; Context 1368

Description: Dagger with small handle pin to fix the handle; completely preserved

Figure Reference: Fig. 2.187; 2.258

Date of Context: LB II—Stratum 14 a

Dimensions: L 20; W 4.5

Weight: —

Material: Tin Bronze. Analysis: Cu 1358286; Sn 18918; Pb 5803; As 2671; Zn <NWG; Fe 15654; Ag 217

Reference: For lead isotope ratio see Schulze 2014. Chart 11-2 (sample 61-6) and fig. 5-10 / 5-11.

Tall al-Ḥiṣn (Beth Shean) **MB II:** Yahalom-Mack 2007a, 608 Fig. 9.1.4; Tell el-Ajjūl (Gaza) **LB IIB,** Petrie 1933, Pl. XVIII

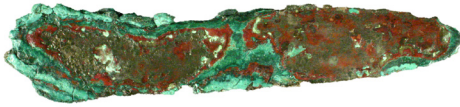


Fig. 2.258 Dagger TZ 007366-001 (Source: BAI/GPIA).

TZ 007368-001

Area I; Square AM/AN 117; Complex H 1; Context 1359

Description: Cloakpin; completely preserved

Figure Reference: Fig. 2.185; 2.259

Date of Context: LB II—Stratum 14 a

Dimensions: L 9

Weight: 28 g

Material: Copper. Analysis: Cu 353904; Sn 468; Pb 30; As 3257; Zn 401; Fe 37275; Ag <NWG



Fig. 2.259 Cloakpin TZ 007368-001 (Source: BAI/GPIA).

TZ 007374-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: biconical weight, flattened on the bottom; completely preserved

Figure Reference: Fig. 2.288; 2.260

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.7; W 1.4; H 1.1

Weight: 9.48 g

Material: Iron/Haematite

Reference: Häser 2019, 225. 240. Cat. no. 67



Fig. 2.260 Balance weight made from iron or haematite TZ 007374-001 (Source: BAI/GPIA).

TZ 007565-001

Area I; Square AH 115; Complex P 3; Context 1360

Description: Fragment of a shank of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4; D (max.) 0.4

Weight: 2.5 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) LBI; IA I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 007570-001

Area I; Square AH 115; Complex P 3; Context 1438

Description: Two pieces of casting residue / melting drops

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: W 1.1

Weight: —

Material: Tin Bronze. Analysis:

Reference: Cu 395773; Sn 82899; Pb 45; As 906; Zn 813; Fe 7618; Ag <NWG

Intensities for the point measurements using μ -RFA in cps: Cu 2583.89; Sn 82.71; Pb 2.99; Zn 0

TZ 007571-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Fragment of a small hook

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 0.6

Weight: —

Material: Iron

TZ 008121-001

Area I; Square AK 117; Complex H 8; Context 1876

Description: Indeterminable fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.9

Weight: 1.2 g

Material: Bronze/Copper

TZ 008122-001

Area I; Square AK 117; Complex H 6; Context 1872

Description: One third of a thin ring; round in cross-section; earring

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 1.5; D (opening) 1.38; Th (wall) 0.12

Weight: 0.1 g

Material: Copper. Analysis: Cu 915126; Sn 2898; Pb 68; As 342; Zn <NWG; Fe 10107; Ag 38

Reference: For lead isotope ratio see Schulze 2014. Chart 11-2 (Probe 3-7) and fig. 5-10 / 5-11

TZ 008122-002

Area I; Square AK 117; Complex H 6; Context 1872

Description: Two pieces of casting residue / melting drops

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.3; W 1.3

Weight: 8.5 g

Material: Copper. Analysis: Cu 915126; Sn 2898; Pb 68; As 342; Zn <NWG; Fe 10107; Ag 38

Reference: For lead isotope ratio see Schulze 2014. Chart 11-2 (Probe 3-7) and fig. 5-10 / 5-11

TZ 008266-001

Area I; Square AK 117; Complex H 8; Context 1877

Description: Two pieces of casting residue / melting drops

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: 7.6 g

Material: Tin Bronze. Analysis: Cu 603362; Sn 21496; Pb 13; As 131; Zn <NWG; Fe 18484; Ag 30

TZ 008337-001

Area I; Square AK 117; Complex H 6; Context 1910

Description: Three fragments of a needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.7; D (max.) 3.6

Weight: 1.2 g

Material: Copper. Analysis: Cu 1001939; Sn 3873; Pb <NWG; As 300; Zn <NWG; Fe 9731; Ag <NWG

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 008337-002

Area I; Square AK 117; Complex H 6; Context 1910

Description: 12 small and one large casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: 10.4 g

Material: Copper. Analysis: Cu 1001939; Sn 3873; Pb <NWG; As 300; Zn <NWG; Fe 9731; Ag <NWG

TZ 008341-001

Area I; Square AK 117; Complex H 6/ H 8; Context 1853

Description: casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: W 0.8

Weight: —

Material: Copper. Analysis: Cu 691542; Sn 1158; Pb 66; As 2701; Zn <NWG; Fe 77368; Ag 18

TZ 008382-001

Area I; Square AM 117/118; Complex H 1; Context 1946

Description: Two matching fragments of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; D (max.) 0.7

Weight: 5.4 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 008383-001

Area I; Square AK 117; Complex H 6/H 8; Context 1849

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.5; D (max.) 0.35

Weight: 1.1 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 008385-001

Area I; Square AM 117/118; Complex H 1; Context 1956

Description: Fragment of a semicircular plate with two tips

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.5; W 1.35; H 0.4

Weight: 1.3 g

Material: Bronze/Copper

TZ 009032-001

Area I; Square AP 119; Complex D 3; Context 2144

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a-d /13

Dimensions: L 2.5; W 1.9

Weight: —

Material: Iron

TZ 009034-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a-d

Dimensions: L 2; D (max.) 0.2

Weight: 0.1 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) LB I; IA I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 009036-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Head and shaft of a needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a-d

Dimensions: L 1.2; D (max.) 0.8

Weight: 1.2 g

Material: Bronze/Copper

TZ 009129-001

Area I; Square AM 119; Complex H 3; Context 2189

Description: Two fragments of a ring

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.5; D (max.) 0.4; D (opening) 3.4

Weight: 1.6 g

Material: Bronze/Copper

TZ 009281-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Earring; completely preserved

Figure Reference: Fig. 2.261

Date of Context: LB II—Stratum 14 a-d

Dimensions: D (max.) 1.9

Weight: —

Material: Tin Bronze. Analysis: Cu 910892; Sn 10580; Pb 371; As 1675; Zn <NWG; Fe 15701; Ag

69

Reference: For lead isotope ratio see Schulze 2014. Chart 11-2 (Probe 61-3) and fig. 5-10 / 5-11. Megiddo tombs **LB II**: Guy – Engberg 1938, fig.178 pl. 128



Fig. 2.261 Earring TZ 009281-001 (Source: BAI/GPIA).

TZ 009282-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Needle with elongated, thickened head and two fragments of the shaft; cloakpin

Figure Reference: Fig. 2.99; 2.262

Date of Context: LB II—Stratum 14 a-d

Dimensions: L 4.3; D (max.) 1.08

Weight: 9.8 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I**; **IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Hiṣn (Beth Shean) **LB IB – LB IIA**: Yahalom-Mack 2007a, 612 Fig. 9.3



Fig. 2.262 Cloakpin TZ 009282-001 (Source: BAI/GPIA).

TZ 009284-001

Area I; Square AH 115; Complex P 3; Context 2371

Description: Fragment of a cloakpin with elongated, thickened head

Figure Reference: Fig. 2.263

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.9; D (max.) 0.7

Weight: 3 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26



Fig. 2.263 Fragment of a cloakpin TZ 009284-001 (Source: BAI/GPIA).

TZ 009288-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: W 1.2

Weight: 1.8 g

Material: Tin Bronze. Analysis: Cu 1068393; Sn 25185; Pb 110; As 771; Zn <NWG; Fe 7101; Ag <NWG

TZ 009365-001

Area I; Square AG 115; Complex P 5; Context 2401

Description: Fragment; round shaft of a nail

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.3

Weight: 11.7 g

Material: Iron

TZ 010010-001

Area I; Square AN/AO 118; Complex G 3; Context 2736

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.2; D (max.) 0.3

Weight: 0.5 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LBI; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 010019-001

Area I; Square AP 118; Complex G 1; Context 2611

Description: Left arm with cone preserved; anthropomorphic figurine

Figure Reference: Fig. 2.86; 2.264

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5; W 5.9

Weight: —

Material: Tin Bronze. Analysis: Cu 1246794; Sn 66952; Pb 791; As 4097; Zn <NWG; Fe 5218; Ag 233

Reference: Tall Waqqāṣ (Hazor) **LB IIB:** Negbi 1989, 349, Pl. CCCXL, 9–11



Fig. 2.264 Left arm of an anthropomorphic figurine TZ 010019-001 (Source: BAI/GPIA).

TZ 010021-001

Area I; Square AP 119; Complex D 3; Context 2659

Description: Fragment of a small stick

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: 0.8 g

Material: Bronze/Copper

TZ 010025-001

Area I; Square AP 119; Complex D 3; Context 2659

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.3; D (max.) 0.2

Weight: 0.2 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LBI; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 010028-001

Area I; Square AP 119; Complex D 3; Context 2642

Description: Five amorphous fragments

Figure Reference: —

Date of Context: LB II—Stratum 14 a;

Dimensions: —

Weight: 0.5 g

Material: Bronze/Copper

TZ 010030-001

Area I; Square AN/AO 118; Complex G 3; Context 2624

Description: Three fragments of an awl or needle?

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 0.2

Weight: 0.3 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) LB I; IA I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 010073-001

Area I; Square AN/AO 118; Complex G 3; Context 2736

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 2.3

Weight: 6.2 g

Material: Copper. Analysis: Cu 140706; Sn <NWG; Pb 262; As <NWG; Zn 435; Fe 8771; Ag <NWG

TZ 010074-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Fragment; trapezoidal object; function unclear

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.7; W 2.5; H 0.5

Weight: 172 g

Material: Bronze/Copper

TZ 010075-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Tip of a knife?

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.6; W 1.2; H 0.5

Weight: —

Material: Bronze/Copper

TZ 010077-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.4

Weight: 2.1 g

Material: Bronze/Copper

TZ 010080-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Two amorphous fragments; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 6.5

Weight: —

Material: Presumably iron

TZ 010081-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 6

Weight: —

Material: Iron

TZ 010114-001

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Object completely preserved; silver amulet with a standing female figure on the front; pendant

Figure Reference: Fig. 2.265

Date of Context: LB II—Stratum 14 a

Dimensions: W 3.4; H 5.8

Weight: —

Material: Silver sulphide. Analysis: 47 % silver, 30 % sulphur

Reference: For lead isotope ratio see Schulze 2014. Chart 11-2 (Probe 61-1) and fig. 5-10 / 5-11.



Fig. 2.265 Silver amulet with female figure TZ 010114-001
(Source: BAI/GPIA).

TZ 010116-001

Area I; Square AO/AP 119; Complex G 2; Context 2755

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.2; W 0.7

Weight: 2.1 g

Material: Copper. Analysis: Cu 441435; Sn 41; Pb <NWG; As 22; Zn <NWG; Fe 22313; Ag <NWG

TZ 010117-001

Area I; Square AO 118/119; Complex G 3/ G 4; Context 2698

Description: The point of a needle or a knife?

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.8

Weight: 2.7 g

Material: Bronze/Copper

TZ 010119-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 1.6

Weight: 1.7 g

Material: Copper. Analysis: Cu 353548; Sn 5664; Pb 29; As <NWG; Zn 489; Fe 23576; Ag <NWG

TZ 010172-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: —

Weight: —

Material: —

TZ 010174-001

Area I; Square AO 119; Complex G 4; Context 2716

Description: Casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 1.2

Weight: 1.6 g

Material: Copper. Analysis: Cu 264202; Sn <NWG; Pb <NWG; As 208; Zn 319; Fe 29547; Ag <NWG

TZ 010176-001

Area I; Square AQ 118; Complex D 3; Context 2789

Description: Fragment; rod; maybe needle or awl

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d/13

Dimensions: L 1.1; D (max.) 0.3

Weight: 0.2 g

Material: Bronze/Copper

TZ 010176-002

Area I; Square AQ 118; Complex D 3; Context 2789

Description: casting residue / melting drop

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d / 13

Dimensions: L 0.9

Weight: 0.3 g

Material: Bronze/Copper

TZ 010177-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Object almost completely preserved; knife with handle and two rivets

Figure Reference: Fig. 2.49; 2.266

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10; W 1.2

Weight: —

Material: Copper. Analysis: Cu 122955; Sn 4574;

Pb 113; As 357; Zn <NWG; Fe 684; Ag 43

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (Probe 60-12) and fig. 5-10 / 5-11.



Fig. 2.266 Knife TZ 010177-001 (Source: BAI/GPIA).

TZ 010279-001

Area I; Square AQ 118/119; Complex D 3; Context 2804

Description: Fragment of a fibula/belt buckle

Figure Reference: Fig. 2.51; 2.267

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7; W 1.6; H 0.3

Weight: —

Material: Copper. Analysis: Cu 1765594; Sn 214; Pb 154; As 5782; Zn <NWG; Fe 23126; Ag 49

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 60-11) and fig. 5-10



Fig. 2.267 Fibula/belt buckle TZ 010279-001 (Source: BAI/GPIA).

TZ 010280-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Fragment of a bracelet

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.2; D (max.) 5; Th 0.3

Weight: 1.4 g

Material: Tin Bronze. Analysis: Cu 747794; Sn 31309; Pb 1480; As 1673; Zn <NWG; Fe 4081; Ag 130

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-4) and fig. 5-10 / 5-11

TZ 010280-002

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Two Fragments of a bracelet

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.0; D 0.5

Weight: —

Material: Copper. Analysis: Cu 982319; Sn 7335; Pb 399; As 213; Zn <NWG; Fe 3483; Ag <NWG

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-5) and fig. 5-10 / 5-11

TZ 010281-001

Area I; Square AP 118/119; Complex D 3; Context 2699

Description: Strainer; almost completely preserved

Figure Reference: Fig. 2.10; 2.167; 2.268

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 9.8; H 4.3

Weight: —

Material: Tin bronze. Analysis: Cu 2186778; Sn 40858; Pb <NWG; As 418; Zn <NWG; Fe 12964; Ag 43

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-2) and fig. 5-10 / 5-11.

Tall as-Sa'idiya, **LB IIB**: Tubb 1988a, 23.58–65/fig. 49; Tubb 1990, 29; Pritchard 1980, 1 and 10–14/fig. 47 + 49; Tall al-Qādī (Dan) “Mycenaen Tomb” **LB**: Ben-Dov 2002, 202, fig. 2.155.114; Tell el-Ajjūl (Gaza) **MB IIC–LB IA**, Petrie 1931, Pl. XLIX.67; **LB IIB**, Petrie 1933, Pl. VIII.14



Fig. 2.268 Strainer TZ 010281-001 (Source: BAI/GPIA).

TZ 010282-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Two fragments; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: —

Weight: —

Material: —

TZ 010681-001

Area I; Square AN 119; Complex G 4/G 6; Context 2904

Description: Fragment; disintegrated; rod

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: 2.5 g

Material: Bronze/Copper

TZ 010685-001

Area I; Square AQ 118/119; Complex D 3; Context 2830

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.1; W 0.5; H 0.2

Weight: 0.3 g

Material: Bronze/Copper

TZ 010805-001

Area I; Square AH/AI 115; Complex P 1; Context 2390

Description: Tip of an object; broken off; function and original length uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.7; D (max.) 11

Weight: 10.9 g

Material: Bronze/Copper

TZ 011107-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Fragment; square in cross-section; rod

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; W 0.4

Weight: 4.7 g

Material: Bronze/Copper

TZ 011152-001

Area I; Square AH 115; Complex P 3/P 5; Context 3231

Description: Fragment; round stick; probably needle or awl

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.9

Weight: 4.3 g

Material: Bronze/Copper

TZ 011153-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Three matching fragments of a flat bar, tapering on both sides; oval in cross-section

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; H 0.3

Weight: —

Material: Bronze/Copper

TZ 011280-001

Area I; Square AG 115; Complex P 5; Context 3273

Description: Object almost completely preserved; leaf arrowhead with square stem; only the uppermost tip is missing

Figure Reference: Fig. 2.236; 2.269

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.2; W 1.7

Weight: —

Material: Copper. Analysis: Cu 2035509; Sn 614; Pb <NWG; As 1291; Zn <NWG; Fe 11019; Ag 70

Reference: Tall al-Qādī (Dan) “Mycenaean Tomb” LB: Ben-Dov 2002, 125 fig. 2.91, Type 1b



Fig. 2.269 Leaf arrowhead TZ 011280-001 (Source: BAI/GPIA).

TZ 011282-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Amorphous fragment; slag

Figure Reference: Fig. 2.215; 2.270

Date of Context: LB II—Stratum 14 a

Dimensions: L 3; W 2.5

Weight: —

Material: Tin bronze. Analysis: Cu 1159215; Sn 10711; Pb 24; As 597; Zn <NWG; Fe 12306; Ag <NWG

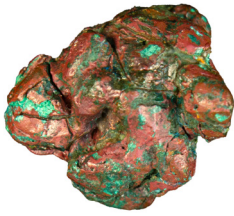


Fig. 2.270 Slag TZ 011282-001 (Source: BAI/GPIA).

TZ 011283-001

Area I; Square AG 115; Complex P 5; Context 3265

Description: Fragments of a fibula

Figure Reference: Fig. 2.234; 2.271

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: —

Material: Ferruginous copper. Analysis: Cu 183527; Sn 2204; Pb 20; As 461; Zn <NWG; Fe 608315; Ag <NWG

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-12) and fig. 5-10 / 5-11



Fig. 2.271 Fragments of a bronze clasp TZ 011283-001 (Source: BAI/GPIA).

TZ 011301-001

Area I; Square AG 115; Complex P 5; Context 3265

Description: Fragment; round rod, probably needle or awl

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.8; D (max.) 0.6

Weight: 2.2 g

Material: Bronze/Copper

TZ 011461-001

Area I; Square AG 115; Complex P 5; Context 3273

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1; D (max.) 0.3

Weight: —

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 011523-001

Area I; Square AH 116; Complex P 4; Context 3371

Description: Fragment with eyelet; pendant

Figure Reference: Fig. 2.232; 2.272

Date of Context: LB II—Stratum 14 a

Dimensions: H 3; D (max.) 1

Weight: —

Material: Copper. Analysis: Cu 1444012; Sn 248; Pb <NWG; As 1071; Zn <NWG; Fe 10878; Ag 14



Fig. 2.272 Pendant TZ 011523-001 (Source: BAI/GPIA).

TZ 011524-001

Area I; Square AH 116; Complex P 4; Context 3348

Description: Fragment of a spearhead; leaf-shaped with stalk

Figure Reference: Fig. 2.230; 2.273

Date of Context: LB II—Stratum 14 a

Dimensions: L 12.3; W 17

Weight: —

Material: Bronze/Copper

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-6) and fig. 5-10 / 5-11. Tall al-Ḥiṣn (Beth Shean) **LB IB – LB IIA:** Yahalom-Mack 2007a, 610 Fig. 9.2.1; Tall al-Qāḍī (Dan) “Mycenaean Tomb” **LB:** Ben-Dov 2002, 125 fig. 2.91, Type 3

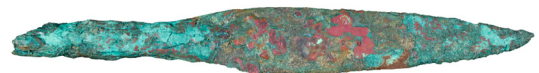


Fig. 2.273 Fragment of a spearhead TZ 011524-001 (Source: BAI/GPIA).

TZ 012477-001

Area I; Square AE 116; Complex O 4; Context 3610

Description: Fragment of a knife blade

Figure Reference: Fig. 2.251; 2.274

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.2; W 3.5

Weight: —

Material: Tin bronze. Analysis: Cu 1344891; Sn 58409; Pb <NWG; As 483; Zn 247; Fe 4484; Ag <NWG

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-7) and fig. 5-10 / 5-11; Tell el-Ajjūl (Gaza) **MB IIC-LB IA**, Petrie 1931, Pl. XIX.46

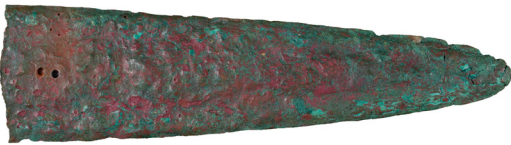


Fig. 2.274 Fragment of a knife blade TZ 012477-001 (Source: BAI/GPIA).

TZ 012478-001

Area I; Square AE 116; Complex O 4; Context 3610

Description: Knife blade with handle

Figure Reference: Fig. 2.252; 2.275

Date of Context: LB II—Stratum 14 a

Dimensions: L 14.5; W 3

Weight: —

Material: Tin bronze. Analysis: Cu 954244; Sn 61781; Pb 1304; As 4703; Zn <NWG; Fe 4327; Ag 75

Intensities for the point measurements using μ -RFA in cps: Cu 2373.09; Sn 52.72; Pb 12.63; Zn 0

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-12) and fig. 5-10 / 5-11. Tall al-Ḥiṣn (Beth Shean) **LB IB-LB IIA**: Yahalom-Mack 2007a, 608 Fig. 9.1.5

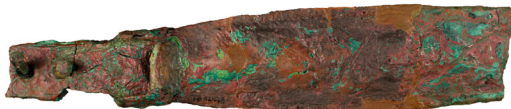


Fig. 2.275 Knife blade with handle TZ 012478-001 (Source: BAI/GPIA).

TZ 012479-001

Area I; Square AR 119; Complex D 2; Context 3570

Description: Base of a bowl

Figure Reference: Fig. 2.276

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.3; W 3.6; H approx. 1

Weight: —

Material: Silber. Analysis: Cu 1164; Sn 2399; Pb 234; As <NWG; Zn 35; Fe 702; Ag 29292



Fig. 2.276 Base of a bowl TZ 012479-001 (Source: BAI/GPIA).

TZ 012497-001

Area I; Square AG 115; Complex P 5; Context 3292

Description: One flat plate (cutting edge) and several other flat fragments; holes preserved by rivets; dagger

Figure Reference: Fig. 2.237; 2.277

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: —

Material: Tin bronze. Analysis: Cu 1092041; Sn 32410; Pb <NWG; As 367; Zn <NWG; Fe 7678; Ag 37 Intensities for the point measurements using μ -RFA in cps: Cu; Sn; Pb; Zn

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-16) and fig. 5-10 / 5-11.

Reference: Tell el-Ajjūl (Gaza) **MB IIC-LB I**: Petrie 1931, Pl. XXI.117

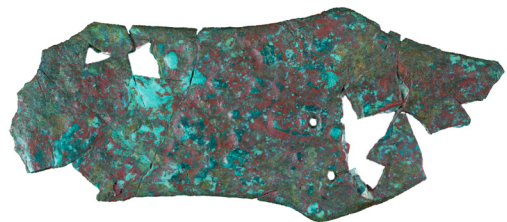


Fig. 2.277 Dagger? Belt buckle? TZ 012497-001 and -002 (Source: BAI/GPIA).

TZ 012495-001

Area I; Square AG 115; Complex P 5; Context 3292

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.5; W 4.5; H 1.5

Weight: —

Material: Bronze/Copper

TZ 012497-002

Area I; Square AG 115; Complex P 5; Context 3292

Description: Fragment; may belong to TZ 012497-001 (dagger)

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: —

Weight: —

Material: Copper. Analysis: Cu 1393392; Sn 337; Pb 3107; As 1261; Zn <NWG; Fe 2963; Ag 546

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-14) and fig. 5-10 / 5-11

TZ 012499-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Several amorphous fragments

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: Largest piece: L 4; W 2; H 2

Weight: —

Material: Bronze/Copper

TZ 012547-001

Area I; Square AK 117; Complex H 8; Context 3636

Description: Bent wire fragment; ring

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 0.5; L 0.89

Weight: 0.2 g

Material: Copper. Analysis: Cu 440180; Sn 3261; Pb 125; As 748; Zn <NWG; Fe 20256; Ag <NWG

Reference: Tall al-Qāḍī (Dan) “Mycenaean Tomb”

LB: Ben-Dov 2002, 208 fig. 2.163

TZ 012548-001

Area I; Square AI 117; Complex I 5; Context 3622

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.9; D (max.) 0.5

Weight: 1 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) LBI; IA I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012500-001

Area I; Square AI 117; Complex I 3; Context 3557

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6; W 4; H 2

Weight: —

Material: Presumably iron

TZ 012501-001

Area I; Square AQ 120; Complex D 4; Context 3677

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.5; W 2.2; H 1.1

Weight: —

Material: Iron

TZ 012514-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: One third of a bracelet with round cross section

Figure Reference: Fig. 2.244; 2.278

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.2; D (opening) 4.7; Th 0.5

Weight: 4.2 g

Material: Bronze/Copper

Reference: Tall al-Ḥiṣn (Beth Shean) **LB IB–LB**

IIA: Yahalom-Mack 2007a, 620 Photo 9.7



Fig. 2.278 Fragment of a bracelet TZ 012514-001 (Source: BAI/GPIA).

TZ 012516-001

Area I; Square AI 117; Complex I 5; Context 3617

Description: Object completely preserved; arrow-head

Figure Reference: Fig. 2.203; 2.279

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.7; W 2.1; Th 1.1

Weight: —

Material: Bronze/Copper

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-14) and fig. 5-10 / 5-11. Tall al-Ḥiṣn (Beth Shean) **LB IA**: Yahalom-Mack 2007a, 610 Fig. 9.2.3; Tall al-Qāḍī (Dan) “Mycenaean Tomb” **LB**: Ben-Dov 2002, 125 fig. 2.91, Type 2a

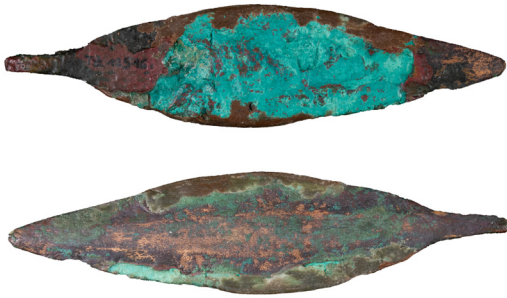


Fig. 2.279 Arrowhead TZ 012516-001 (Source: BAI/GPIA).

TZ 012551-001

Area I; Square AF 115; Complex P 7; Context 3590
Description: Fragment; elongated, round object; rod

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.1; D (max.) 1.0

Weight: 3.4 g

Material: Bronze/Copper

TZ 012554-001

Area I; Square AG 115; Complex P 5; Context 3265
Description: Platelet; function unclear

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.2

Weight: 0.3 g

Material: Bronze/Copper

TZ 012557-001

Area I; Square AG 115; Complex K 5/ K 7; Context 3425

Description: Two fragments of a flat rod with flat-oval cross-section; spatula

Figure Reference: Fig. 2.280

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3; W 0.8; H 0.4

Weight: —

Material: Bronze/Copper



Fig. 2.280 Spatula (?) TZ 012557-001 and -002 (Source: BAI/GPIA).

TZ 012559-001

Area I; Square AI 117; Complex I 3; Context 3557

Description: Two fragments of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.5 and 1.5; D (max.) 0.4

Weight: 2.2 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012560-001

Area I; Square AI 117; Complex I 3; Context 3557

Description: Two fragments of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3 and 4; D (max.) 0.5

Weight: 3.6 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012605-001

Area I; Square AF 115; Complex P 7; Context 3500

Description: Fragment; elongated, pointed object; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.5; D (max.) 0.9

Weight: 9.5 g

Material: Bronze/Copper

TZ 012609-001

Area I; Square AQ 120; Complex D 4; Context 3519

Description: Fragment of a razor

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: —

Weight: 1 g

Material: Bronze/Copper

TZ 012611-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Globule; indeterminate fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d/13

Dimensions: D (max.) 0.3

Weight: —

Material: Bronze/Copper

TZ 012612-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.2; D (max.) 0.5

Weight: 0.5 g

Material: Bronze/Copper

TZ 012613-001

Area I; Square AF 115; Complex P 7; Context 3500

Description: Three fragments of a needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.9

Weight: 5.2 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA**

I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012615-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Globule (Pin head?)

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 0.9

Weight: 1 g

Material: Bronze/Copper

TZ 012615-002

Area I; Square AH 116; Complex P 4; Context 3335

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.6; D (max.) 0.2

Weight: 1 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA**

I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012621-001

Area I; Square AG 116; Complex P 4; Context 3369

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.7; D (max.) 0.4

Weight: 1.8 g

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA**

I/II: Sass – Cinamon 2006, 391 Fig. 18.26

TZ 012625-001

Area I; Square AF 115; Complex P 7; Context 3590

Description: Elongated, round fragment; round rod; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.1; D (max.) 0.6

Weight: 3 g

Material: Bronze/Copper

TZ 012626-001

Area I; Square AE 115; Complex O 1; Context 3629

Description: Fragment; elongated, round, slightly curved rod

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.4; D (max.) 0.4

Weight: 0.5 g

Material: Bronze/Copper

TZ 012627-001

Area I; Square AE 116; Complex O 6; Context 3626

Description: Fragment of an earring?

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.1; D (max.) 0.4

Weight: 0.2 g

Material: Bronze/Copper

TZ 012628-001

Area I; Square AK 117; Complex H 8; Context 3636

Description: Diamond-shaped object with small elevations; function uncertain

Figure Reference: Fig. 2.281

Date of Context: LB II—Stratum 14 a

Dimensions: L 4; W 2.7; H 1

Weight: —

Material: Tin bronze. Analysis: Cu 392058; Sn 33241; Pb 356; As 682; Zn 721; Fe 86321; Ag 26



Fig. 2.281 Diamond-shaped object TZ 012628-001 (Source: BAI/GPIA).

TZ 012629-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Eight fragments of a thin plate; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3; H 0.2

Weight: 1.8 g

Material: Bronze/Copper

TZ 012630-001

Area I; Square AE 116; Complex O 6; Context 3626

Description: Fragment; acute-angled, flat platelet; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.5; W 1.8; H 0.3

Weight: 1.2 g

Material: Bronze/Copper

TZ 012633-001

Area I; Square AR 119; Complex D 2; Context 3570

Description: Spherical fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 1.8

Weight: 4 g

Material: Bronze/Copper

TZ 012634-001

Area I; Square AE 115; Complex O 3; Context 3544

Description: Spherical fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 1.6

Weight: 3.5 g

Material: Bronze/Copper

TZ 012635-001

Area I; Square AE 116; Complex O 6; Context 3626

Description: Spherical fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 1.3

Weight: 2 g

Material: Bronze/Copper

TZ 012636-001

Area I; Square AE 116; Complex O 6; Context 3626

Description: Two platelets; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 12

Weight: 0.1 g

Material: Bronze/Copper

TZ 012710-001

Area I; Square AF 116; Complex K 8; Context 3712

Description: Fragment; rod with rectangular cross-section? Function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 1.1; W 0.7; H 0.6

Weight: 1 g

Material: Copper. Analysis: Cu 643234; Sn 108; Pb 647; As 3001; Zn <NWG; Fe 25645; Ag 44

TZ 012711-001

Area I; Square AF 116; Complex K 8; Context 3712

Description: Ring; object completely preserved

Figure Reference: Fig. 2.131; 2.282

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: D (max.) 2.2

Weight: —

Material: Bronze/Copper

Reference: Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 176; pl. 95.39



Fig. 2.282 Ring TZ 012711-001 (Source: BAI/GPIA).

TZ 012916-001

Area I; Square AP 119; Complex G 1/G 2; Context 3930

Description: Needle with eyelet; completely preserved

Figure Reference: Fig. 2.87; 2.283

Date of Context: LB II—Stratum 14 a-d

Dimensions: L 14.3; D (max.) 0.85

Weight: —

Material: Bronze/Copper

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Ḥiṣn (Beth Shean) **LB IB–LB IIA**: Yahalom-Mack 2007a, 612 Fig. 9.3; Tell el-Ajjūl (Gaza) **MB IIC–LB IA**: Petrie 1931, Pl. XVI.10–15



Fig. 2.283 Needle with eyelet TZ 012916-001 (Source: BAI/GPIA).

TZ 013120-001

Area I; Square AE 115; Complex O 1/O 2; Context 5052

Description: Fragment of a dagger, maybe a sword

Figure Reference: Fig. 2.284

Date of Context: LB II—Stratum 14 b

Dimensions: L 12; W 5.7; H 2

Weight: —

Material: Bronze/Copper

Reference: Tell el-Ajjūl (Gaza) **MB IIC–LB IA**: Petrie 1931, Pl. XIX 41. 43



Fig. 2.284 Fragment of a dagger or sword TZ 013120-001 (Source: BAI/GPIA).

TZ 014469-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Needle; object nearly completely preserved; broken in three fragments

Figure Reference: Fig. 2.123; 2.285

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 11.2; Th 0.4

Weight: —

Material: Copper. Analysis: Cu 2247338; Sn 9139; Pb 10; As 1005; Zn <NWG; Fe 4974; Ag <NWG

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II**: Sass – Cinamon 2006, 391 Fig. 18.26; Tall al-Ḥiṣn (Beth Shean) **MB II**: Yahalom-Mack 2007a, 612 Fig. 9.3



Fig. 2.285 Needle TZ 014469-001 (Source: BAI/GPIA).

TZ 014470-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Fragment; tip preserved; arrowhead

Figure Reference: Fig. 2.214; 2.286

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 3.1; W 1.5; H 0.6

Weight: 2.7 g

Material: Tin bronze. Analysis: Cu 1122427; Sn 16449; Pb 56; As 638; Zn <NWG; Fe 12100; Ag <NWG



Fig. 2.286 Fragment of an arrowhead TZ 014470-001 (Source: BAI/GPIA).

TZ 014474-001

Area I; Square AG 116; Complex P 6; Context 4618

Description: Fragment; pendant or eye of a needle

Figure Reference: Fig. 2.243; 2.287

Date of Context: LB II—Stratum 14 b.c

Dimensions: L 2.5; D (max.) 0.7

Weight: —

Material: Tin bronze. Analysis: Cu 1175808; Sn 25431; Pb 25; As 724; Zn <NWG; Fe 3296; Ag 18
Reference: For lead isotope ratio see Schulze 2014., Chart 11-2 (Probe 60-4) and fig. 5-10 / 5-11



Fig. 2.287 Pendant or eye of a needle TZ 014474-001 (Source: BAI/GPIA).

TZ 014566-001

Area I; Square AH 115; Complex K 2/K 3/K 4; Context 4661

Description: Amorphous small fragments

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 1.3; W 0.9

Weight: 0.9 g

Material: Copper. Analysis: Cu 663749; Sn 1279; Pb 154; As 1280; Zn <NWG; Fe 22378; Ag 26

TZ 014633-001

Area I; Square AH 116; Complex P 4; Context 3336
Description: Fragment; vessel with rim turned over?

Figure Reference: Fig. 2.229; 2.288

Date of Context: LB II—Stratum 14 a

Dimensions: W 2.2; H 1.8

Weight: 3.7 g

Material: Bronze/Copper



Fig. 2.288 Fragment of a metal vessel TZ 014633-001 (Source: BAI/GPIA).

TZ 014633-002

Area I; Square AH 116; Complex P 4; Context 3336
Description: Fragment; vessel with rim turned over?

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: W 1.7

Weight: 1.1 g

Material: Bronze/Copper

TZ 015066-001

Area I; Square AI 117; Complex I 5; Context 3668

Description: Fragment; rod with point; needle or awl?

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.3; D (max.) 0.3

Weight: 0.8 g

Material: Bronze/Copper

TZ 015071-001

Area I; Square AL 118; Complex H 5; Context 4829

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 3.8; W 2.9; H 2.0

Weight: —

Material: Bronze/Copper?

TZ 015073-001

Area I; Square AL 118; Complex H 5; Context 4831

Description: Small amorphous fragments; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: —

Weight: —

Material: —

TZ 015167-001

Area I; Square AG 115; Complex K 5/K 6; Context 4698

Description: Fragment; bead, broken in two halves

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: D (max.) 1.2

Weight: 1.9 g

Material: Copper. Analysis: Cu 668280; Sn 1221; Pb 1597; As 563; Zn <NWG; Fe 11494; Ag 33

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-21) and fig. 5-10 / 5-11

TZ 015180-001

Area I; Square AE 115; Complex O 3; Context 4912

Description: Fragment of an arrow- or spearhead with socket

Figure Reference: Fig. 2.289

Date of Context: LB II—Stratum 14 b;

Dimensions: L 4.9; W 1.1

Weight: 6.3 g

Material: Copper. Analysis: Cu 627579; Sn 5398; Pb 1032; As <NWG; Zn <NWG; Fe 11596; Ag

<NWG

Reference: For lead isotope ratio see Schulze 2014., Chart 11-2 (sample 3-17) and fig. 5-10 / 5-11

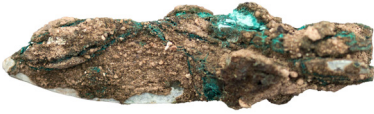


Fig. 2.289 Fragment of an arrow- or spearhead TZ 015180-001
(Source: BAI/GPIA).

TZ 015182-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Indeterminable fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.5; W 2.4

Weight: 10.2 g

Material: Bronze/Copper

TZ 015183-001

Area I; Square AF 116; Complex O 2/O 5; Context 3523

Description: Object almost completely preserved; shaft angular, tip round; shaft broken off on angular side; arrowhead/spearhead

Figure Reference: Fig. 2.249; 2.290

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.8; D (max.) 4

Weight: 12 g

Material: Copper. Analysis: Cu 1529187; Sn 242; Pb 279; As 3389; Zn <NWG; Fe 20490; Ag 33



Fig. 2.290 Arrowhead or spearhead TZ 015183-001 (Source: BAI/GPIA).

TZ 015189-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Nail? Fragment; head preserved

Figure Reference: Fig. 2.291

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.2; W 1.3 x 1.5

Weight: —

Material: Tin bronze. Analysis: Cu 1896379; Sn 79243; Pb <NWG; As 1036; Zn <NWG; Fe 6907; Ag 302

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 1-17) and fig. 5-10 / 5-11



Fig. 2.291 Fragment of a nail (?) TZ 015189-001 (Source: BAI/GPIA).

TZ 015190-001

Area I; Square AF 116; Complex K 8; Context 4723

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: D (max.) 0.8

Weight: 0.4 g

Material: Copper. Analysis: Cu 435183; Sn 185; Pb 16; As 731; Zn <NWG; Fe 45954; Ag <NWG

TZ 015201-001

Area I; Square AF 116; Complex K 8; Context 4723

Description: Spherical fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: D (max.) 1.1

Weight: —

Material: Copper. Analysis: Cu 490351; Sn 40; Pb 17; As 631; Zn <NWG; Fe 24238; Ag 30

TZ 015216-001

Area I; Square AI 117; Complex I 3; Context 4722

Description: Amorphous fragment

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: D (max.) 1

Weight: 0.8 g

Material: Copper. Analysis: Cu 826878; Sn 1639; Pb 161; As 2243; Zn <NWG; Fe 19300; Ag 139

TZ 015249-001

Area I; Square AI 117; Complex I 1/I 2; Context 3662

Description: Fragment of a rod

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.5; W 0.8

Weight: 5.3 g
Material: Bronze/Copper

TZ 015255-001

Area I; Square AE 116; Complex N 2; Context 5055
Description: Two fragments of an awl/needle or wire

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 4; D (max.) 0.4

Weight: 0.8 g

Material: Tin bronze. Analysis: Cu 649779; Sn 12035; Pb 694; As 1173; Zn <NWG; Fe 7056; Ag 154

TZ 015256-001

Area I; Square AE 116; Complex N 2; Context 5055

Description: Fragment; tip of a dagger blade

Figure Reference: Fig. 2.144; 2.292

Date of Context: LB II—Stratum 14 c

Dimensions: L 3.7; W 1.9

Weight: 6.7 g

Material: Tin bronze. Analysis: Cu 762845; Sn 14765; Pb <NWG; As 52; Zn 185; Fe 18356; Ag <NWG

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 7-41) and fig. 5-10 / 5-11

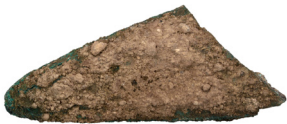


Fig. 2.292 Tip of a dagger blade TZ 015256-001 (Source: BAI/GPIA).

TZ 015265-001

Area I; Square AE 116; Complex N 2; Context 5098

Description: Hatchet, object completely preserved

Figure Reference: Fig. 2.146; 2.293

Date of Context: LB II—Stratum 14 c

Dimensions: L 13.2; W 4.2; Th 0.9

Weight: —

Material: Tin bronze. Analysis: Cu 2518262; Sn 70603; Pb 3391; As 5121; Zn <NWG; Fe 3224; Ag 1608

Reference: Tell el-Ajjūl (Gaza) **MB IIC–LB IA:** Petrie 1931, Pl. XVI.23.

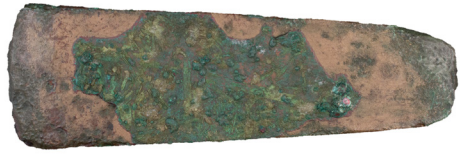


Fig. 2.293 Hatchet TZ 015265-001 (Source: BAI/GPIA).

TZ 015274-001

Area I; Square AH 115; Complex K 2; Context 4710

Description: Fragment of a rod of square cross-section; awl?

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 1.9; D (max.) 0.8

Weight: 2.4 g

Material: Copper. Analysis: Cu 607569; Sn 5393; Pb <NWG; As 119; Zn 53; Fe 23319; Ag <NWG

TZ 015276-001

Area I; Square AE 116; Complex N 3; Context 4972

Description: Six fitting fragments of a rod with tip; needle or awl

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 9.2; D (max.) 0.27

Weight: —

Material: Copper. Analysis: Cu 742662; Sn 7410; Pb 2447; As 546; Zn <NWG; Fe 9111; Ag 29

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 015293-001

Area I; Square AH 115; Complex K 2; Context 4710

Description: Fragment of a knife blade

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 2.5; W 1.9; H 0.4

Weight: —

Material: Copper. Analysis: Cu 840912; Sn 71; Pb 170; As 3317; Zn <NWG; Fe 32782; Ag 39

Intensities for the point measurements using μ -RFA in cps: Cu 3582.63; Sn 0.98; Pb 7.37; Zn 0

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 4-4) and fig. 5-10 / 5-11

TZ 015342-001

Area I; Square AG 116; Complex K 6; Context 4938

Description: Fragment; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 6.5; W 4.1; H 1

Weight: —

Material: Bronze

TZ 015368-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Fragment; spiral wire; earring?

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 2; W 1.3

Weight: —

Material: Bronze/Copper

TZ 016341-001

Area I; Square AK 117; Complex I 3; Context 4795

Description: Amorphous fragment; slag

Figure Reference: —

Date of Context: LB II—Stratum 14 b.c.d

Dimensions: L 3.2; W 2.5

Weight: —

Material: Bronze/Copper

TZ 017296-001

Area I; Square AG 116; Complex K 6; Context 5473

Description: Fragment of an almond-shaped object; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 2.5; W 1.2; H 0.6

Weight: 0.8 g

Material: Iron

TZ 017297-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Fragment of an awl or needle

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 2; D (max.) 0.3

Weight: 0.5 g

Material: Copper. Analysis: Cu 615179; Sn 65; Pb 38; As 877; Zn <NWG; Fe 17054; Ag <NWG

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 017298-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Three fragments of an awl or needle?

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 7; D (max.) 1

Weight: 8.8 g

Material: Arsenic bronze. Analysis: Cu 1054025; Sn 2147; Pb 104; As 14994; Zn <NWG; Fe 48511; Ag 75

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-23) and fig. 5-10 / 5-11. Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 017299-001

Area I; Square AG 116; Complex K 6; Context 5497

Description: Point of a needle or awl

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 2; D (max.) 0.2

Weight: 0.4 g

Material: Copper. Analysis: Cu 897041; Sn 64; Pb 713; As 3245; Zn <NWG; 8912 Fe; Ag 45

Reference: Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26

TZ 017305-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Two fitting fragments of an awl

Figure Reference: Fig. 1.137; 2.294

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 5.5; D (max.) 0.4

Weight: 2.9 g

Material: Copper. Analysis: Cu 898140; Sn 7408; Pb 486; As 749; Zn <NWG; Fe 9338; Ag 43

Reference: For lead isotope ratio see Schulze 2014, Chart 11-2 (sample 3-24) and fig. 5-10 / 5-11. Tall al-Mutasallim (Megiddo) **LB I; IA I/II:** Sass – Cinamon 2006, 391 Fig. 18.26



Fig. 2.294 Awl, two fitting fragments TZ 017305-001 (Source: BAI/GPIA).

TZ 017306-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Fragment of a flat, irregularly broken object; function uncertain

Figure Reference: —

Date of Context: LB II—Stratum 14 c.d

Dimensions: L 1.5; W 0.7; H 0.3

Weight: 0.5 g

Material: Copper. Analysis: Cu 227779; Sn 1197; Pb 1635; As 676; Zn <NWG; Fe 10463; Ag 22

TZ 017307-001

Area I; Square AR 121; Complex D 1; Context 5596

Description: Fragment; round nail with round head

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.4; D (max.) 1.9

Weight: 22.8 g

Material: Iron

TZ 018707-001

Area I; Square AP 123; Complex D 9; Context 6170

Description: Fragment; oval earring with sharpened end

Figure Reference: Fig. 2.61; 2.295

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 2.2

Weight: 1.4 g

Material: Bronze/Copper

Reference: Megiddo tombs **LB II**: Guy – Engberg 1938, fig.178 pl. 128



Fig. 2.295 Oval earring TZ 018707-001 (Source: BAI/GPIA).

2.3.2. Catalogue of Faience, Glass and Glazed Pottery Finds (Stratum 14)

by K. Soennecken

2.3.2.1. Introduction

The following catalogue contains all faience, glass and glazed pottery finds. Often a concrete distinction between faience and glass was difficult as the difference between the two is not so much in the composition (both consist of quartz/silica, soda and lime, although in different proportions of the mixture) but in the processing. This is especially true in the firing process as glass is fully melted while faience is merely sintered and has a glazed surface. Glazed pottery, in turn, consists of a glaze applied to ceramics as a carrier material¹⁴⁰.

Particularly with regard to beads, the overwhelming majority of which no longer had their original glaze and whose original surface was often completely eroded, it is possible that some pieces described under glass are actually made of faience.

Also, the original colours of the beads could rarely be indicated due to their state of preservation.

Parallels for this faience and glass beads have been found throughout the Late Bronze Age Levant. Mostly, they are in a poor state of preservation¹⁴¹.

2.3.2.2. Faience Finds

In the Late Bronze Age Stratum 14 (all four phases together), 13 faience finds have been listed. Among these, there were four scarabs, three fragments of a ring, three beads, one figurine and one game piece.

23 cylinder seals made of faience (quartz frit) are not included in this catalogue but are presented in Chap. 2.3.6. with the other cylinder seals¹⁴².

TZ 009055-001

Area I; Square AN 118; Complex G 5; Context 2142

Description: Scarab with inscription (Apophis?) and rope borders; turquoise coating

Figure Reference: Fig. 2.177; 2.296

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.5; W 1; H 0.7

Reference: MB/LB Tall al-Husn (Smith – Potts 1992a, 78 f.); Ṭabaqāt Faḥl (Pella) tomb 62 **MB IIC/LB I**: Richards 1992, Pl. XIII 56; Jericho, Megiddo MB II; Jericho, Tell el-Ajjul MB/LB: Ben-Tor 2007, 146 Pl. 62.9-22; Tall al-Husn (Irbid MB IIB–LB IA): Eggler – Keel 2006, 206 fig. 14



Fig. 2.296 Scarab with inscription TZ 009055-001, image twice the size of the object (Source: BAI/GPIA).

TZ 009801-001

Area I; Square AO 118/119; Complex G 3/G 4; Context 2698

Description: Fragment of a ring; turquoise, with hieroglyphs?

Figure Reference: Fig. 2.93; 2.297

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.3; W (max.) 1.0; W (min.) 0.5

Reference: See finger ring type I (ring with cartouche-shaped bezel) Keel 1995, 113 f.



Fig. 2.297 Fragment of a ring TZ 009801-001 (Source: BAI/GPIA).

¹⁴⁰ Moorey 1994, 189; Wartke 2002, 402 f.; Ingram 2005, 5.85.

¹⁴¹ Ingram 2005, 22. 60.

¹⁴² The following cylinder seals consist of faience:

TZ 008972-001; TZ 010059-001; TZ 010101-001; TZ 010102-001; TZ 010103-001; TZ 010104-001; TZ 010105-

001; TZ 010106-001; TZ 010108-001; TZ 010109-001; TZ 010326-001; TZ 010327-001; TZ 010328-001; TZ 010329-001; TZ 010330-001; TZ 010331-001; TZ 010332-001; TZ 010333-001; TZ 010334-001; TZ 010335-001; TZ 010339-001; TZ 010449-001; TZ 015307-001.

TZ 010112-001

Area I; Square AQ 118/119; Complex D 3; Context 2781

Description: Scarab with blue coating; with cartouche of Amenhotep III

Figure Reference: Fig. 2.44; 2.298

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.7; W 2.4; H 1.4

Reference: Tall ad-Duwēr (Lachisch) **LB I:** Tufnell



Fig. 2.298 Scarab with cartouche of Amenhotep III TZ 010112-001 (Source: BAI/GPIA).

1958, pl. 38.287

TZ 010171-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragment of a ring

Figure Reference: Fig. 2.43; 2.299

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.3; W 1.1

Reference: See finger ring type II (ring with oval or almond shaped bezel) Keel 1995, 113 f.



Fig. 2.299 Fragment of a ring TZ 010171-001 (Source: BAI/GPIA).

TZ 010338-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragment of a ring

Figure Reference: Fig. 2.300

Date of Context: LB II—Stratum 14 a–d;

Dimensions: D (max.) 2.2; W 1.1

Reference: Tell el-Ajjūl (Gaza) **MB IIC–LB IA:** Petrie 1934, Pl.VII.225 See finger ring type II (ring with oval or almond shaped bezel) Keel 1995, 113 f.



Fig. 2.300 Fragment of a ring TZ 010338-001 (Source: BAI/GPIA).

TZ 012657-001

Area I; Square AF 116; Complex K 8; Context 3711

Description: Anthropomorphic figurine; completely preserved

Figure Reference: Fig. 2.127; 2.301

Date of Context: LB II—Stratum 14 b, c, d

Dimensions: H 8



Fig. 2.301 Anthropomorphic figurine TZ 012657-001 (Source: BAI/GPIA).

TZ 014765-001

Area I; Square AI 117; Complex I 3; Context 4725
Description: Fragment/base of a scarab; two snakes are visible, flanking a kneeling figure turned to the right; the robe of this person with female body shapes is worked similar to the shape of the snakes; person carries a staff? At the upper end of the staff there is an object bent downwards

Figure Reference: Fig. 2.157; 2.302

Date of Context: LB II—Stratum 14 b.c

Dimensions: L 1.6; W 1.1; H 0.2

Reference: Ṭabaqāt Faḥl (Pella) tomb 62 **MB IIC/LB I**: Richards 1992, 96 fig. 18; Bet Schemesch **LB II**: Keel – Schroer 2011, 172 fig. 685; Amman **MB IIB**: Eggler – Keel 2006, 29 fig. 32. Megiddo **LB**: Keel 1995, 228 fig. 523



Fig. 2.302 Base of a scarab TZ 014765-001 (Source: BAI/GPIA).

TZ 015331-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Light blue, cylindrical bead; completely preserved

Figure Reference: Fig. 2.212; 2.303

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.95; D (max.) 0.61; D (opening) 0.28



Fig. 2.303 Cylindrical bead TZ 015331-001 (Source: BAI/GPIA).

TZ 019317-001

Area I; Square AS 120; Complex D 1; Context 6481

Description: Cuboid; token or game piece

Figure Reference: Fig. 2.304

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.8; W 1.35 x 1.35



Fig. 2.304 Faience cuboid TZ 019317-001 (Source: BAI/GPIA).

TZ 019318-001

Area I; Square AS 120; Complex D 1; Context 6481

Description: Barrel-shaped bead; completely preserved

Figure Reference: Fig. 2.34; 2.305

Date of Context: LB II—Stratum 14 a–d;

Dimensions: L 2.7



Fig. 2.305 Barrel-shaped bead TZ 019318-001 (Source: BAI/GPIA).

TZ 019319-001

Area I; Square AS 120; Complex D 1; Context 6480

Description: Fragments of a bead; carefully crafted

Figure Reference: Fig. 2.306

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 0.7

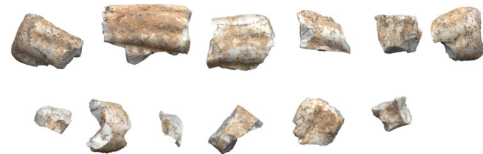


Fig. 2.306 Fragments of a bead TZ 019319-001 (Source: BAI/GPIA).

TZ 019531-001

Area I; Square AR 121; Complex D 1; Context 6158

Description: Inlay (?).

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.9; W 1.5; H 3.6

2.3.2.3. Glass Finds

In the Late Bronze Age Stratum 14 (all four phases together), 84 glass finds were listed; among these, there were at least three glass vessels that can only be intrusions from younger strata (TZ 007561-001; TZ 010784-001 and TZ 010784-002). More than 90 % of the finds were beads—the majority spherical, but also four ring-shaped, two disc-shaped, ten cylindrical/barrel-shaped, two grooved, one ovoid, one tripartite oblong and one conical—in addition there is a special specimen of a platelet pearl. Furthermore, three samples of raw glass were found. These, as well as the increase in beads and their concentration in certain areas, give evidence of local glass production.

TZ 007376-001

Area I; Square AI 115; Complex I 4; Context 1426

Description: Fragments of a ring-shaped bead; light blue corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: Grey

Dimensions: D (max.) 0.7; D (opening) 0.2

TZ 007377-001

Area I; Square AH 115; Complex P 3; Context 1438

Description: Spherical bead; completely preserved

Figure Reference: Fig. 2.307

Date of Context: LB II—Stratum 14 a

Colour: Yellow-beige

Dimensions: H 0.7; D (opening) 0.2



Fig. 2.307 Spherical glass bead TZ 007377-001 (Source: BAI/GPIA).

TZ 007380-001

Area I; Square AH 115; Complex P 3; Context 1439

Description: Spherical bead; completely preserved; top and bottom flattened

Figure Reference: Fig. 2.227; 2.308

Date of Context: LB II—Stratum 14 a

Colour: Yellow-beige

Dimensions: L 0.9; D (max.) 1.1; D (opening) 0.2



Fig. 2.308 Spherical glass bead TZ 007380-001 (Source: BAI/GPIA).

TZ 007561-001

Area I; Square AI/AK 116; Complex I 4; Context 1504

Description: Base of a vessel; intrusion

Figure Reference: Fig. 2.309

Date of Context: LB II—Stratum 14 a

Colour: Smoky green translucent glass; strongly sintered

Dimensions: L 3.5; W 1.7; H 1.3

Reference: Hoss group 25

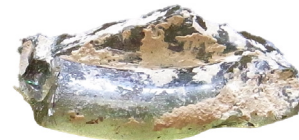


Fig. 2.309 Base of a vessel TZ 007561-001 (Source: BAI/GPIA).

TZ 009051-001

Area I; Square AM/AN 119; Complex G 4; Context 2150

Description: Grooved bead; completely preserved

Figure Reference: Fig. 2.94; 2.310

Date of Context: LB II—Stratum 14 a–d

Colour: Yellow-beige

Dimensions: D (max.) 0.9



Fig. 2.310 Grooved bead TZ 009051-001 (Source: BAI/GPIA).

TZ 009058-001

Area I; Square AM/AN 119; Complex G 4; Context 2150

Description: Bead; completely preserved

Figure Reference: Fig. 2.95; 2.311

Date of Context: LB II—Stratum 14 a–d

Colour: White

Dimensions: L 0.9; D (max.) 1.3



Fig. 2.311 Bead TZ 009058-001 (Source: BAI/GPIA).

TZ 009283-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Ring-shaped bead; completely preserved; corroded

Figure Reference: Fig. 2.312

Date of Context: LB II—Stratum 14 a–d

Colour: White

Dimensions: H 0.25; D (max.) 0.6; D (opening) 0.3



Fig. 2.312 Ring-shaped bead TZ 009283-001 (Source: BAI/GPIA).

TZ 010099-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Three matching fragments of a spherical bead; corroded

Figure Reference: Fig. 2.313

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: D (max.) 1.6

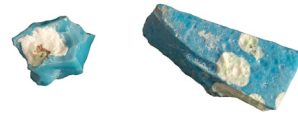


Fig. 2.313 Fragments of a spherical bead TZ 010099-001 (Source: BAI/GPIA).

TZ 010171-002

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragment of a bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue with white at the edge

Dimensions: L 0.96

TZ 010336-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Bead; completely preserved

Figure Reference: Fig. 2.314

Date of Context: LB II—Stratum 14 a–d

Colour: Light beige with darker threads

Dimensions: L 2.9; D (max.) 0.8

Reference: TZ 013040-001



Fig. 2.314 Bead TZ 010336-001 (Source: BAI/GPIA).

TZ 010337-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Platelet bead; completely preserved; rectangular object with rounded corners, on the upper side two deep parallel grooves

Figure Reference: Fig. 2.315

Date of Context: LB II—Stratum 14 a–d

Colour: Traces of a turquoise glaze visible

Dimensions: L 3.1; W 1.8; H 0.9

Reference: Eggler – Keel 2006, Buseira Nr. 8



Fig. 2.315 Platelet bead TZ 010337-001 (Source: BAI/GPIA).

TZ 010340-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Barrel-shaped bead; completely preserved

Figure Reference: Fig. 2.316

Date of Context: LB II—Stratum 14 a–d

Colour: Light beige with darker threads

Dimensions: L 2.1; D (max.) 0.7

Reference: TZ 0010336-001



Fig. 2.316 Barrel-shaped bead TZ 010340-001 (Source: BAI/GPIA).

TZ 010344-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Conical bead; completely preserved

Figure Reference: Fig. 2.317

Date of Context: LB II—Stratum 14 a–d

Colour: Light beige

Dimensions: L 2.5; D (max.) 1.9



Fig. 2.317 Conical bead TZ 010344-001 (Source: BAI/GPIA).

TZ 010351-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Bead; completely preserved

Figure Reference: Fig. 2.318

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: L 0.9; D (max.) 1.3



Fig. 2.318 Bead TZ 010351-001 (Source: BAI/GPIA).

TZ 010352-001

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Spherical bead; completely preserved

Figure Reference: Fig. 2.319

Date of Context: LB II—Stratum 14 a

Colour: White-beige

Dimensions: H 1.34; D (max.) 1.5; D (opening) 0.17



Fig. 2.319 Spherical bead TZ 010352-001 (Source: BAI/GPIA).

TZ 010354-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Spherical bead; completely preserved; top and bottom flattened; corroded

Figure Reference: Fig. 2.320

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: H 0.8; D (max.) 1.4; D (opening) 0.35



Fig. 2.320 Spherical bead TZ 010354-001 (Source: BAI/GPIA).

TZ 010355-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Bead; completely preserved

Figure Reference: Fig. 2.321

Date of Context: LB II—Stratum 14 a–d

Colour: White-beige
Dimensions: H 1.7; D (max.) 2.1



Fig. 2.321 Bead TZ 010355-001 (Source: BAI/GPIA).

TZ 010356-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Ring-shaped bead; completely preserved

Figure Reference: Fig. 2.322

Date of Context: LB II—Stratum 14 a–d

Colour: White

Dimensions: H 0.2; D (max.) 0.5; D (opening) 0.16



Fig. 2.322 Ring-shaped bead TZ 010356-001 (Source: BAI/GPIA).

TZ 010358-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Grooved bead; completely preserved; biconical with regular notches at the edge

Figure Reference: Fig. 2.323

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: D (max.) 1.6; D (opening) 0.29



Fig. 2.323 Grooved bead TZ 010358-001 (Source: BAI/GPIA).

TZ 010359-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Disc-shaped bead; completely preserved

Figure Reference: T 2338, JMA 2710; Fig. 2.324

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: H 0.2; D (max.) 1.2



Fig. 2.324 Disc-shaped bead TZ 010359-001 (Source: BAI/GPIA).

TZ 010360-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Spherical bead; completely preserved; top and bottom flattened

Figure Reference: Fig. 2.325

Date of Context: LB II—Stratum 14 a–d

Colour: White-green

Dimensions: H 1.2; D (max.) 1.9; D (opening) 0.4



Fig. 2.325 Spherical bead TZ 010360-001 (Source: BAI/GPIA).

TZ 010361-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Bead; completely preserved

Figure Reference: Fig. 2.326

Date of Context: LB II—Stratum 14 a–d

Colour: Green and white banded

Dimensions: L 1.4; D (max.) 1.1



Fig. 2.326 Bead TZ 010361-001 (Source: BAI/GPIA).

TZ 010362-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Two matching fragments of a bead; corroded

Figure Reference: Fig. 2.327

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: H 1.7; D (max.) 2.2



Fig. 2.327 Two matching fragments of a bead TZ 010362-001 (Source: BAI/GPIA).

TZ 010754-001

Area I; Square AO 119; Complex G 4; Context 2716

Description: Two fragments of a spherical bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue corroded

Dimensions: D (max.) 1.0

TZ 010755-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Two fragments of one or presumably two different beads

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise corroded

Dimensions: D (max.) 1.2

TZ 010756-001

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Fragments; probably several beads in heavily destroyed condition

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: —

Weight: < 1 g

TZ 010757-001

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Two matching fragments of a bead; in the middle of one fragment is a piece of metal; badly corroded

Figure Reference: Fig. 2.328

Date of Context: LB II—Stratum 14 a

Colour: Beige

Dimensions: H 1.1; D (max.) 1.6



Fig. 2.328 Two fragments of a bead TZ 010757-001 (Source: BAI/GPIA).

TZ 010757-002

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Two fragments of a bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: White

Dimensions: D (max.) 0.9/1.1

TZ 010757-003

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Half of a spherical bead; corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: White

Dimensions: D (max.) 1.6

TZ 010757-004

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Two fragments of an elongated bead; badly corroded

Figure Reference: Fig. 2.329

Date of Context: LB II—Stratum 14 a

Colour: White

Dimensions: L 2.1



Fig. 2.329 Two fragments of an elongated bead TZ 010757-004 (Source: BAI/GPIA).

TZ 010757-005

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Fragment; lower fragment of an elongated bead; corroded

Figure Reference: Fig. 2.330

Date of Context: LB II—Stratum 14 a

Colour: Yellow-grey-white

Dimensions: D (max.) 1.4; H 0.8



Fig. 2.330 Fragment of an elongated bead TZ 010757-005
(Source: BAI/GPIA).

TZ 010757-006

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Tiny fragments of a bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: —

Dimensions: —

TZ 010757-007

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Half of a bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: —

Dimensions: D (max.) 1.1; H 0.75

TZ 010757-008

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Two fragments of an elongated bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: —

Dimensions: D (max.) 0.6; H 1.1; D (max.) 0.45; H 0.7

TZ 010757-009

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Two fragments of a spherical bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: —

Dimensions: L 0.5; W 0.6; H 0.65; L 0.4; W 0.6; H 0.5

TZ 010759-001

Area I; Square AQ 118/119; Complex D 3; Context 2830

Description: Four fragments of a barrel-shaped bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue, green corroded

Dimensions: L 2.1

TZ 010760-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Half of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue iridescence

Dimensions: D (max.) 1.5

TZ 010761-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Two halves of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Dimensions: D (max.) 1.7

TZ 010762-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Tiny fragment of a bead

Date of Context: LB II—Stratum 14 a–d

Colour: Dark blue

Dimensions: L 0.6

TZ 010763-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Half of a spherical bead; corroded

Date of Context: LB II—Stratum 14 a–d

Colour: Yellow-green

Dimensions: D (max.) 1.3

TZ 010764-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Tiny fragment of a bead; corroded

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Weight: < 1 g

TZ 010765-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Two fragments; half of a spherical bead

Date of Context: LB II—Stratum 14 a–d

Colour: Unicoloured with white, circulating thread

Dimensions: D (max.) 1.8

TZ 010765-002

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Two fragments; half of a bead

Date of Context: LB II—Stratum 14 a–d

Colour: Blue

Dimensions: D (max.) 1.8

TZ 010766-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Two halves of a spherical bead

Date of Context: LB II—Stratum 14 a–d

Colour: Multicoloured wrapped thread pattern, but badly corroded

Dimensions: D (max.) 1.2

TZ 010767-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Figure Reference: —

Description: Tiny fragments of a bead; corroded

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Weight: < 1 g

TZ 010768-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Two halves of a spherical bead; corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Dimensions: D (max.) 1.7

TZ 010769-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Two halves of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: D (max.) 1.1

TZ 010770-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Half of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise

Dimensions: D (max.) 1.5

TZ 010771-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Tiny fragments of a bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: greyish

Weight: < 1 g

TZ 010772-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Raw glass? Badly corroded

Figure Reference: Fig. 2.231

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Dimensions: L 4; W 2.3



Fig. 2.331 Raw glass? TZ 010772-001 (Source: BAI/GPIA).

TZ 010773-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragment of a spherical bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Weight: < 1 g

TZ 010774-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Two matching fragments of a disc-shaped bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: White

Dimensions: D (max.) 1.3

TZ 010775-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Spherical bead; probably former multi-coloured, strongly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Dimensions: D (max.) 1.4

TZ 010776-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragment; one third of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Blue

Dimensions: D (max.) 1.2

TZ 010777-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Fragments of three very similar beads: all three are irregularly shaped, some of them show the remains of the manufacturing technique, which is all „rod-formed“ (protruding ends at the perforation, irregular thickness of the bead etc.)

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Dark base colour, white thread wrapping

Dimensions: D 1.1 and 1.2

TZ 010778-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Half of a spherical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Dimensions: D (max.) 1.2

TZ 010779-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Several fragments of beads, one of them has an irregularly shaped surface, most likely the glass was shaped in an open form; a small hole is found on one side of the fragment, so it is probably a bead or pendant with a shaped upper side; in some places the dark blue colour is still preserved, but mostly corroded to turquoise

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Dark blue

Dimensions: D (max.) 1.7

TZ 010780-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Fragments of at least one bead

Date of Context: LB II—Stratum 14 a–d

Figure Reference: —

Colour: Light blue

Dimensions: D (max.) 1.8; D (opening) 0.5

TZ 010780-002

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Fragments of formerly round bead; heavily corroded, in the middle dark blue corroded towards the outside light blue

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d
Colour: Dark blue
Dimensions: L 1.1; W 0.9; H 0.7

TZ 010781-001

Area I; Square AQ 118/119; Complex D 3; Context 2796
Description: Two matching fragments forming half of a spherical bead; badly corroded
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Colour: Yellow, outside formerly white thread decoration
Dimensions: D (max.) 1.8; D (opening) 0.2

TZ 010784-001

Area I; Square AQ 118; Complex D 3; Context 2789
Description: Beaker; three fragments; base with pontil mark; intrusion
Figure Reference: Fig. 2.332
Date of Context: LB II—Stratum 14 a–d / 13
Colour: Greenish shimmering transparent glass with sintering
Dimensions: D foot 5.5
Reference: Hoss group 56

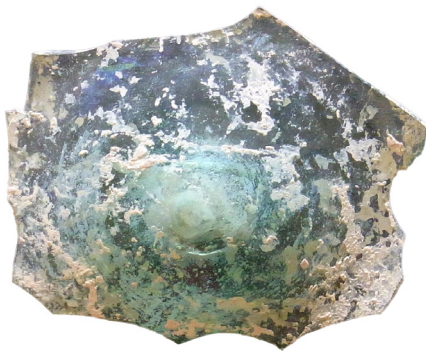


Fig. 2.332 Base of a beaker TZ 010784-001 (Source: BAI/GPIA).

TZ 010784-002

Area I; Square AQ 118; Complex D 3; Context 2789
Description: Two fragments of a vessel
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d/13
Colour: Greenish shimmering transparent glass with sintering; presumably the same vessel as TZ

010784-001
Dimensions: L 2.5; W 1.9

TZ 010793-001

Area I; Square AQ 118/119; Complex D 3; Context 2796
Description: Crumb; function indeterminable
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Colour: —
Dimensions: D (max.) 0.6

TZ 011250-001

Area I; Square AH 115/116; Complex P 3; Context 3217
Description: Barrel-shaped, oblong bead, completely preserved
Figure Reference: Fig. 2.333
Date of Context: LB II—Stratum 14 a
Colour: Grey and white marbled
Dimensions: L 2.5; D (max.) 0.8; D (opening) 0.2



Fig. 2.333 Barrel-shaped bead TZ 011250-001 (Source: BAI/GPIA).

TZ 012374-001

Area I; Square AF 116; Complex P 8; Context 3578
Description: Tripartite oblong bead, completely preserved
Figure Reference: Fig. 2.334
Date of Context: LB II—Stratum 14 a
Colour: Turquoise
Dimensions: L 0.5; D (max.) 0.3; D (opening) 0.05
Reference: Uluburun shipwreck **LB II:** Ingram 2005, 18 Tab. 2.1.1



Fig. 2.334 Tripartite oblong bead TZ 012374-001 (Source: BAI/GPIA).

TZ 012375-001

Area I; Square AI 117; Complex I 5; Context 3620

Description: Spherical bead

Figure Reference: Fig. 2.335

Date of Context: LB II—Stratum 14 a

Colour: White with turquoise sprinkles

Dimensions: H 0.7; D (max.) 0.9



Fig. 2.335 Spherical bead TZ 012375-001 (Source: BAI/GPIA).

TZ 012458-001

Area I; Square AK 117; Complex H 8; Context 3636

Description: Spherical bead; completely preserved; upper and lower side flattened

Figure Reference: Fig. 2.336

Date of Context: LB II—Stratum 14 a

Colour: Grey-white

Dimensions: D (max.) 1.5; D (opening) 0.3



Fig. 2.336 Spherical bead TZ 012458-001 (Source: BAI/GPIA).

TZ 012459-001

Area I; Square AF 116; Complex P 8; Context 3578
Description: Cylindrical bead; completely preserved

Figure Reference: Fig. 2.337

Date of Context: LB II—Stratum 14 a

Colour: Turquoise and grey

Dimensions: L 1.3; D (max.) 0.7; D (opening) 0.3



Fig. 2.337 Cylindrical bead TZ 012459-001, image twice the size of the object (Source: BAI/GPIA).

TZ 012461-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Tiny fragment of a bead

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: White

Weight: < 1 g

TZ 012462-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Spherical bead; completely preserved; upper and lower side flattened

Figure Reference: Fig. 2.338

Date of Context: LB II—Stratum 14 a

Colour: Green

Dimensions: H 0.3; D (max.) 0.5; D (opening) 0.2



Fig. 2.338 Spherical bead TZ 012462-001 (Source: BAI/GPIA).

TZ 012464-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Fragment of a cylindrical bead; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d / 13

Colour: Turquoise

Dimensions: L 1.4; D (max.) 0.9; D (opening) 0.2

TZ 012467-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Fragment of an ovoid bead; corroded

Figure Reference: Fig. 2.339

Date of Context: LB II—Stratum 14 a

Colour: Black and white banded

Dimensions: L 0.9; D (max.) 0.7



Fig. 2.339 Fragment of an ovoid bead TZ 001247-001 (Source: BAI/GPIA).

TZ 012596-001

Area I; Square AK 117; Complex H 8; Context 3636

Description: Base with pedestal of a goblet; intrusion

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: Light blue, transparent

Dimensions: W 2; D foot 6

Reference: Hoss Group 42

TZ 012658-001

Area I; Square AF 116; Complex K 8; Context 3711

Description: Ring-shaped bead, completely preserved

Figure Reference: Fig. 2.340

Date of Context: LB II—Stratum 14 b, c, d

Colour: White

Dimensions: H 0.22; D (max.) 0.7; D (opening) 0.2



Fig. 2.340 Ring-shaped bead TZ 012658-001 (Source: BAI/GPIA).

TZ 015335-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482

Description: Six fragments of a bead

Figure Reference: Fig. 2.341

Date of Context: LB II—Stratum 14 c, d

Colour: Blue

Dimensions: H 1.3; D (max.) 1.3; D (opening) 0.5

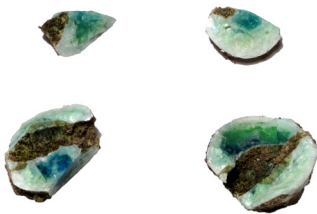


Fig. 2.341 Fragments of a bead TZ 015335-001 (Source: BAI/GPIA).

TZ 016634-001

Area I; Square AP 122; Complex D 8; Context 5418

Description: Raw glass

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Transparent

Dimensions: L 0.8; W 0.6; H 0.4

TZ 016654-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Spherical bead; completely preserved; with vertical circumferential ribs

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Colour: Turquoise

Dimensions: H 0.6; D (max.) 0.7; D (opening) 0.2

TZ 016759-001

Area I; Square AP 121; Complex D 4; Context 5520

Description: Body sherd of a vessel

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Turquoise; transparent

Dimensions: W 1.2; H 0.9

TZ 018807-001

Area I; Square AQ 122; Complex D 1; Context 6128

Description: Body sherd of a vessel

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Olive green; transparent; surface rough due to iridescence

Dimensions: L 2.8; H 0.76; Th (wall) 0.4

TZ 019322-001

Area I; Square AT 120; Complex A 4; Context 6416

Description: Crumbs (of a bead?)

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Colour: Light blue

Weight: 3 g

TZ 016668-001

Area I; Square AE 116; Complex O 2/O 4; Context 3606

Description: Fragment of a spherical bead; corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Colour: Light blue

Dimensions: H 1.5; D (max.) 2; D (opening) 0.3

TZ 016747-001

Area I; Square AH 115; Complex K 1/K 2; Context 5274

Description: Fragment of a vessel; rim and wall preserved; round, slightly thickened, inwardly curved rim

Figure Reference: —

Date of Context: LB II—Stratum 14 b. c. d

Colour: Light blue; transparent; roughened by iridescence

Dimensions: W 1.1; H 1.1; Th (wall) 0.16

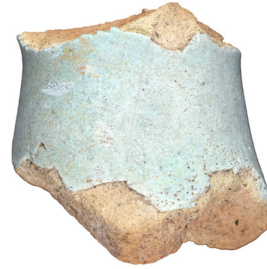


Fig. 2.343 Glazed base fragment of a bowl TZ 004433-056 (Source: BAI/GPIA).

2.3.2.4. Glazed Pottery Finds

In the Late Bronze Age Stratum 14 (all four phases together), 12 pieces of glazed pottery have been listed.

TZ 003011-013

Areal I; Square AH 115; Complex P 3; Context 1530

Description: Body sherd of a bowl; core dark red; outside and inside grey-yellow coating

Figure Reference: Fig. 2.342

Date of Context: LB II—Stratum 14 a

Dimensions: Th (wall) 0.5



Fig. 2.342 Glazed sherd of a bowl TZ 003011-013 (Source: BAI/GPIA).

TZ 004433-056

Areal I; Square AQ 118/119; Complex D 3; Context 2777

Description: Base fragment of a bowl

Figure Reference: Fig. 2.343

Date of Context: LB II—Stratum 14 a–d

Dimensions: Th (wall) 1.25

TZ 004471-019

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Body sherd of a bowl; outside and inside glaze, which is light blue-turquoise corroded

Figure Reference: Fig. 2.344

Date of Context: LB II—Stratum 14 a–d

Dimensions: Th (wall) 0.9

Reference: TZ 004471-020; TZ 004471-021

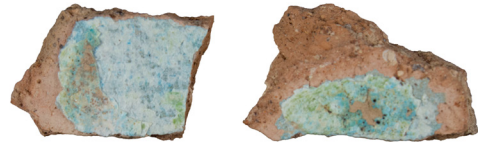


Fig. 2.344 Glazed body sherds of a bowl TZ 004471-019 and -020 (Source: BAI/GPIA).

TZ 004471-020

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Body sherd of a bowl; outside and inside glaze, which is light blue-turquoise corroded

Figure Reference: Fig. 2.344

Date of Context: LB II—Stratum 14 a–d

Dimensions: Th (wall) 0.9

TZ 004471-021

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Body sherd of a bowl

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: Th (wall) 0.9

Reference: TZ 004471-019; TZ 004471-020

TZ 005370-060

Area I; Square AR 119; Complex D 2; Context 3570
Description: Body sherd or tile; beige core; white-light blue coating on the outside and inside convex and with black paste

Figure Reference: Fig. 2.345

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6.1; W 5.3; Th (wall) 0.7

Reference: Comparable are TZ 05207-007, TZ 05207-008, TZ 05207-009, TZ 05260-007, TZ 05370-060 and TZ 05526-001



Fig. 2.345 Body sherd or tile TZ 005370-060 (Source: BAI/GPIA).

TZ 008324-001

Area I; Square AK 117; Complex H 6; Context 1910

Description: Tiny fragment

Figure Reference: —

Date of Context: Stratum 14 a

Weight: < 3 g

TZ 010111-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Body sherd of a bowl; core light-red; outside and inside turquoise coating

Figure Reference:

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.5; W 1.2; Th (wall) 0.69

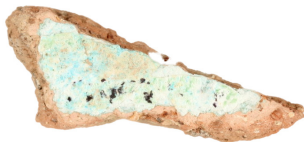


Fig. 2.346 Body sherd of a bowl TZ 010111-001 (Source: BAI/GPIA).

TZ 018762-001

Area I; Square AR 121; Complex D 1; Context 6147

Description: Body sherd of a vessel; outside turquoise glazed

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 0.97; W 0.66; Th (wall) 0.57

TZ 018995-001

Area I; Square AS 122; Complex B 8; Context 6057

Description: Body sherd of a vessel; inside and outside turquoise glazed

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 2.2; W 1.5; Th (wall) 0.9

TZ 020748-001

Area I; Square AH 116; Complex P 4; Context 4660

Description: Base of a bowl; white coating; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: Th (wall) 1.1

TZ 020759-001

Area I; Square AP 122; Complex D 8; Context 5418

Description: Rim of a jug; white coating; badly corroded

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (opening) 6; Th (wall) 0.5

2.3.3. Catalogue of Stone Finds

by H.-M. Jakubik/B. Schröder/K. Soennecken

For an overview of the used typology cf. *Chap. 1.3.4*. Cylinder seals made of stone are presented in *Chap. 2.3.5*.

Architecture

Architectural Element

TZ 007937-001

Area I; Square AN 117; Complex E 3; Context 1730

Description: Architectural element; complete; oval in plan view; upper and bottom side flat; possible threshold stone

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 31; W 14; H 6

Weight: 2125 g

Material: Limestone

TZ 012541-001

Area I; Square AG 115; Complex P 7; Context 3600

Description: Architectural element/ornament; complete; upper side flattened

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 39; W 34; H 25

Weight: 2600 g

Material: Limestone

TZ 015350-001

Area I; Square AH 115; Complex K 2; Context 1422

Description: Architectural element; complete; circular in plan view; a central hole; capstone of a pit

Type: —

Figure Reference: Fig. 2.112; 2.347

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 13; D (max.) 93

Weight: —

Material: Limestone



Fig. 2.347 Capstone of a pit made from limestone TZ 015350-001 (Source: BAI/GPIA).

TZ 015355-001

Area I; Square AG 116; Complex K 6; Context 4648

Description: Architectural element; complete; circular in plan view; a central hole; capstone of a pit

Type: —

Figure Reference: Fig. 2.119; 2.348

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 15; D (max.) 46

Weight: —

Material: Limestone



Fig. 2.348 Capstone of a pit made from limestone TZ 015355-001 (Source: BAI/GPIA).

TZ 015357-001

Area I; Square AI/AK 116; Complex I 4; Context 1483

Description: Architectural element; complete; pillar base

Dimensions: H 46; D (upper side) 43

Type: —

Figure Reference: Fig. 2.198; 2.199; 2.349

Date of Context: LB II—Stratum 14 a

Weight: —

Material: Basalt



Fig. 2.349 Pillar base made from basalt TZ 015357-001 (Source: BAI/GPIA).

TZ 015358-001

Area I; Square AI/AK 116; Complex I 4; Context 1483

Description: Architectural element; complete; pillar base

Type: —

Figure Reference: Fig. 2.198

Date of Context: LB II—Stratum 14 a

Dimensions: H 70; D (max.) 53; D (upper side) 42

Weight: —

Material: Basalt

TZ 015696-001

Area I; Square AH 116; Complex P 4; Context 4660

Description: Architectural element; fragment; edge piece of a floor tile

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 17; W 11; H 2.2

Weight: 777 g

Material: Limestone

Hinge stone

TZ 012519-001

Area I; Square AQ 120; Complex D 3; Context 3676

Description: Hinge stone; complete; outside hardly worked; roughly rounded; one side straight; about 2 cm deep trough

Type: Hinge stone type 1.3

Figure Reference: Fig. 2.350

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 21.5; W 15; H 11.2

Weight: 5700 g

Material: Basalt



Fig. 2.350 Hinge stone made from basalt TZ 012519-001 (Source: BAI/GPIA).

TZ 012690-001

Area I; Square AE 115; Complex O 3; Context 3706

Description: Hinge stone; complete; roughly worked; about 1.5 cm deep trough

Type: Hinge stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 20; W 16; H 11; D (opening) 6

Weight: —

Material: Limestone

TZ 012819-001

Area I; Square AN 118; Complex G 5; Context 3841

Description: Hinge stone; complete; rectangular in plan view; outside roughly worked; trough approx. 2.5 cm deep

Type: Hinge stone type 1.2

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 15; W 14; H 6; D (opening) 9

Weight: 1294 g

Material: Limestone

TZ 015661-001

Area I; Square AH 116; Complex P 2/P 3/P 4; Context 3300

Description: Hinge stone; complete; irregular oval; upper side concave with a 1.5 cm deep irregular trough; bottom side irregular convex; roughly worked

Type: Hinge stone type 2

Figure Reference: Fig. 2.251 a, b

Date of Context: LB II—Stratum 14 a

Dimensions: L 27; W 20; H 9.8

Weight: 5900 g

Material: Basalt



Fig. 2.351 a Hinge stone made from basalt TZ 015661-001
(Source: BAI/GPIA).



Fig. 2.351 b Hinge stone made from basalt TZ 015661-001
(Source: BAI/GPIA).

TZ 015979-001

Area I; Square AK 116; Complex; Context 1981

Description: Hinge stone; complete; upper side with a flat 7 cm deep trough with rub marks; bottom side flat; outside irregularly shaped; only roughly worked and on two sides straight to a corner shaped; depth of the trough approx. 1.5 cm

Type: Hinge stone type 1.3

Figure Reference: Fig. 2.105; 2.352 a, b

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 16; W 12.5; H 4.3

Weight: —

Material: Limestone



Fig. 2.352 a Hinge stone made from limestone TZ 015979-001
(Source: BAI/GPIA).



Fig. 2.352 b Hinge stone made from limestone TZ 015979-001
(Source: BAI/GPIA).

TZ 018934-001

Area I; Square AS 121; Complex A 5; Context 6030
Description: Hinge stone; complete; oval in plan view; very roughly worked; on the upper side a 7 cm wide and 5 cm deep trough

Type: Hinge stone type 6

Figure Reference: Fig. 2.353

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 29; W 18; H 7

Weight: —

Material: Limestone



Fig. 2.353 Hinge stone made from limestone TZ 018934-001
(Source: BAI/GPIA).

Tile

TZ 009164-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Description: Two fitting fragments of a tile

Dimensions: L 16; W 11; H 1.2

Weight: —

Material: Limestone

TZ 009280-001

Area I; Square AM 119; Complex H 3; Context 2312

Description: Flat fragment of a tile

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.8; W 13.5; H 2.1

Weight: 810 g

Material: Marble

TZ 009437-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Tile; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6.6; W 4.8; H 2.7

Weight: 137 g

Material: Limestone

TZ 009439-001

Area I; Square AH 115; Complex P 1; Context 2405

Description: Two fragments of a tile (not fitting)

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.7; W 3; H 1

Weight: 41 and 19 g

Material: Limestone

TZ 011175-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Flat fragment of a tile

Type: —

Figure Reference: Fig. 2.354

Date of Context: LB II—Stratum 14 a

Dimensions: L 17.3; W 16; H 4.3

Weight: 1200 g

Material: Limestone



Fig. 2.354 Limestone tile TZ 011175-001 (Source: BAI/GPIA).

TZ 012527-001

Area I; Square AQ 120; Complex D 2; Context 3658

Description: Tile; flat fragment; possibly part of a corner

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 11.4; W 8.1; H 2.1

Weight: 358 g

Material: Marble

TZ 012681-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Tile; fragment; roughly worked on upper and bottom side; possibly part of a corner

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.3; W 6; H 3

Weight: 242 g

Material: Limestone

Household/Craft

Beaker/Cup

TZ 007732-001

Area I; Square AI/AK 116; Complex I 4; Context 1537

Description: Beaker/cup; fragment; rim and wall; circular in plan view

Type: —

Figure Reference: Fig. 2.355

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.7; W 5.7; H 4.3; D (max.) 22; D (opening) 13; Th (wall) 2.5

Weight: 188 g

Material: Basalt



Fig. 2.355 Fragment of a beaker or cup made from basalt TZ 007732-001 (Source: BAI/GPIA).

Bowl

TZ 007324-001

Area I; Square AN/AO 117; Complex E 3; Context 1278

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; flattened/slightly convex base; handmade; horizontal and diagonal cut marks on exterior and interior side; sharp rim

Type: Bowl type 1A1

Figure Reference: Fig. 2.71; 2.356

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 2.8; D (max.) 2.6; D (opening) 8; D (base) 3.2; Th (wall) 1.3

Weight: 43 g

Material: Limestone



Fig. 2.356 Limestone bowl TZ 007324-001 (Source: BAI/GPIA).

TZ 007326-001

Area I; Square AN/AO 117; Complex E 3; Context 1287

Description: Bowl; fragment; rim and wall; sloping wall; circular in plan view

Type: Bowl type 1A

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 4; D (max.) 34; D (opening) 30; Th (wall) 2

Weight: 119 g

Material: Basalt

TZ 007713-001

Area I; Square AH 115; Complex P 3; Context 1388

Description: Bowl; fragment; rim and wall; sloping wall; circular in plan view; flattened/slightly convex base

Type: Bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9.7; W 8.5; H 5; D (max.) 32; D (opening) 30; Th (wall) 2

Weight: 321 g

Material: Basalt

TZ 010621-001

Area I; Square AN 118; Complex G 3/G 5; Context 2380

Description: Bowl; fragment; rim and wall; sloping wall; circular in plan view; flattened/slightly convex base

Type: Bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 11.5; W 6; H 3.6; D (max.) 28;

Th (wall) 2

Weight: 347 g

Material: Basalt

TZ 011797-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Bowl; fragment; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: W 8.2; H 16.6

Weight: 936 g

Material: Basalt

TZ 012270-001

Area I; Square AI 117; Complex I 5; Context 3593

Description: Bowl; fragment; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 12; W 11.8; H 10.6

Weight: 1280 g

Material: Basalt

TZ 012290-001

Area I; Square AE 116; Complex O 1/O 2; Context 3534

Description: Bowl; fragment; one leg/foot preserved; possibly mortar bowl

Type: Bowl type 3A

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 9.3; D (max.) 7.2

Weight: 481 g

Material: Basalt

TZ 012530-001

Area I; Square AQ 120; Complex D 3; Context 3676

Description: Bowl; fragment; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d (also IA I)

Dimensions: L 8; W 8.5; H 4.3

Weight: 481 g

Material: Basalt

TZ 012673-001

Area I; Square AF 116; Complex K 8; Context 3707

Description: Bowl; fragment; rim and wall; sloping wall; circular in plan view

Type: Bowl type 1A

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8.4; W 10; H 9; D (max.) 16; D (opening) 15

Weight: 445 g

Material: Basalt

**TZ 014421-001**

Area I; Square AE 115; Complex O 3; Context 3649

Description: Bowl; fragment; rim to base; sloping wall; circular/oval in plan view; ring base

Type: Bowl type 1A4

Figure Reference: Fig. 2.250; 2.357

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.1; D (base) 5.6; Th (wall) 1.1

Weight: —

Material: Limestone



Fig. 2.357 Limestone bowl TZ 014421-001 (Source: BAI/GPIA).

TZ 014478-001

Area I; Square AF 115; Complex K 8; Context 4632

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; flattened/slightly convex base; rim pitched; bottom side with axial scratched stripe (width 5 cm)

Type: Bowl type 1A1

Figure Reference: Fig. 2.141; 2.358

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 16.6; W 11.3; H 6; D (max.) 17; D (opening) 14; Th (wall) 3

Weight: 1173 g

Material: Basalt



Fig. 2.358 Basalt bowl TZ 014478-001 (Source: BAI/GPIA).

TZ 015571-001

Area I; Square AF 114; Complex F 2; Context 4700

Description: Bowl; fragment; rest of base and wall; sloping wall; circular/oval in plan view; flat base

Type: Bowl type 1A3

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 18; W 16; H 4.6; D (base) 21; Th (wall) 2.2

Weight: 1720 g

Material: Basalt

TZ 015579-001

Area I; Square AE 116; Complex O 6; Context 3643

Description: Bowl; fragment; sloping wall; circular in plan view; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: Fig. 2.359

Date of Context: LB II—Stratum 14 a

Dimensions: L 19.5; W 12.1; H 12.4; D (max.) 20; D (opening) 20; Th (wall) 2.2

Weight: 1290 g

Material: Basalt

Reference: Buchholz 1963, 37 fig. 13 h.



Fig. 2.359 Fragment of a basalt bowl with foot TZ 015579-001
(Source: BAI/GPIA).

TZ 015617-001

Area I; Square AF 115; Complex L 2/M 1; Context 5547

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: Fig. 2.360

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 23.3; W 15.5; H 10; D (max.) 31; D (opening) 31

Weight: 2015 g

Material: Basalt

Reference: Buchholz 1963, 31 fig. 13 n



Fig. 2.360 Fragment of a basalt bowl with foot TZ 015617-001
(Source: BAI/GPIA).

TZ 015643-001

Area I; Square AH 116; Complex P 4; Context 3336

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; ring base

Type: Bowl type 1A4

Figure Reference: Fig. 2.361

Date of Context: LB II—Stratum 14 a

Dimensions: L 28; W 15; H 9.5; D (max.) 34; D (opening) 34; D (base) 24; Th (wall) 3.5

Weight: 2800

Material: Basalt

Reference: Tell Abū al-Kharaz: Fischer 2006b, 356 Fig. 323, 21



Fig. 2.361 Fragment of a basalt bowl TZ 015643-001 (Source: BAI/GPIA).

TZ 015648-001

Area I; Square AE 116; Complex O 4; Context 3607

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; one leg/foot preserved; interior side smooth; exterior side only roughly worked; rim with bulge maybe from a spout

Type: Bowl type 3

Figure Reference: Fig. 2.362

Date of Context: LB II—Stratum 14 a

Dimensions: L 29.5; W 13.1; H 9; D (max.) 32; D (opening) 32; Th (wall) 4

Weight: 2200 g

Material: Limestone



Fig. 2.362 Fragment of a limestone bowl TZ 015648-001
(Source: BAI/GPIA).

TZ 015795-001

Area I; Square AN 118; Complex G 3/G 5; Context 2380

Description: Bowl; complete; sloping wall; oval in plan view; flattened/slightly convex base; straight rim with spout

Type: Bowl type 1A1

Figure Reference: Fig. 2.363

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.7; H 3.7; D (max.) 10.7; Th (wall) 2.6

Weight: 541 g

Material: Basalt

Reference: Sparks 2007, 128 Fig. 48, 1



Fig. 2.363 Basalt bowl with spout TZ 015795-001 (Source: BAI/GPIA).

TZ 015796-001

Area I; Square AE 116; Complex O 2; Context 3641

Description: Bowl; fragment; rim to base; sloping wall; circular/oval in plan view; one leg/foot preserved

Type: Bowl type 3A

Figure Reference: Fig. 2.364

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.5; W 12.2; H 8.4; Th (wall) 3.2

Weight: —

Material: Basalt



Fig. 2.364 Fragment of a basalt bowl TZ 015796-001 (Source: BAI/GPIA).

TZ 015799-001

Area I; Square AL 118; Complex H 5; Context 4862

Description: Bowl; fragment; rim to base; sloping wall; circular in plan view; one leg/foot preserved; interior side with abrading marks

Type: Bowl type 3A

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 7.8; W 5.1; H 6.9; D (max.) 23; Th (wall) 2.2

Weight: 295 g

Material: Basalt

TZ 018881-001

Area I; Square AR 123; Complex C 3; Context 6061

Description: Bowl; fragment of base; sloping wall; circular/oval in plan view; ring base

Type: Bowl type 1A4

Figure Reference: Fig. 2.365

Date of Context: LB II—Stratum 14 a–d (also IA I)

Dimensions: L 18; W 11; H 5.3; D (base) 17.5; Th (wall) 2.8

Weight: 960 g

Material: Basalt



Fig. 2.365 Basalt bowl, fragment of the base TZ 018881-001 (Source: BAI/GPIA).

TZ 019023-001

Area I; Square AS 120; Complex D 1; Context 6480

Description: Bowl; almost complete; five single broken components; rim to base; sloping wall; circular in plan view; flattened/slightly convex base, lugs preserved

Type: Bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 3.8; D (max.) 22

Weight: 2400 g

Material: Basalt

TZ 019057-001

Area I; Square AT 120; Complex A 1; Context 6402

Description: Bowl; fragment of base; sloping wall; circular/oval in plan view; ring base

Type: Bowl type 1A4

Figure Reference: Fig. 2.23; 2.366

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.4; W 5.4; H 3.9; D (base) 9; Th (wall) 1

Weight: 95 g

Material: Granite



Fig. 2.366 Fragment of the base of a granite bowl TZ 019057-001 (Source: BAI/GPIA).

Hammer stone

TZ 001326-001

Area I; Square AL 116; Complex I 1; Context 143

Description: Hammer stone; complete; irregularly shaped

Type: Hammer stone type 8

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.7

Weight: 224 g

Material: Flint/silex conglomerate

TZ 001459-001

Area I; Square AM 117; Complex H 1; Context 188

Description: Hammer stone; fragment; central break edge; only one half of the tuber

Type: Hammer stone type 2.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 3.8; D (max.) 6.6

Weight: 274 g

Material: Flint/silex

TZ 007385-001

Area I; Square AH 115; Complex P 3; Context 1388

Description: Hammer stone; complete; cuboid; impact points on the narrow sides

Type: Hammer stone type 5

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.9; W 5.1; H 3.5

Weight: —

Material: Limestone

TZ 007754-001

Area I; Square AK 116; Complex I 1; Context 241

Description: Hammer stone; complete; spherical; several impact marks

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 6.5; W 6.1; H 5.6

Weight: 419 g

Material: Flint/silex

TZ 008369-001

Area I; Square AK 117; Complex H 6; Context 1910

Description: Hammer stone; complete; reduced on two adjacent sides

Type: Hammer stone type 1.3.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 4.8

Weight: —

Material: Flint/silex

TZ 008398-001

Area I; Square AK 117; Complex H 6/H 8; Context 1853

Description: Hammer stone; fragment; spherical

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 2.9; D (max.) 7.2

Weight: 221 g

Material: Flint/silex

TZ 009130-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Hammer stone; complete; cuboid

Type: Hammer stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8; W 6; H 7

Weight: 581 g

Material: Flint/silex

TZ 009205-001

Area I; Square AN 119; Complex G 4; Context 2327

Description: Hammer stone; fragmented

Type: Hammer stone type 2.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 5.6

Weight: —

Material: Flint/silex

TZ 009271-001

Area I; Square AN 119; Complex G 4; Context 2327

Description: Hammer stone; complete; ovoid

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9.4; W 7; H 5.2

Weight: 462 g

Material: Limestone

TZ 009387-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Hammer stone; complete; spherical; sharpened by two reductions

Type: Hammer stone type 1.3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 6.5; D (max.) 6.8

Weight: 509 g

Material: Flint/silex

TZ 010648-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Hammer stone; complete; ovoid; with traces of use on the bottom

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5.5; D (max.) 7

Weight: 427 g

Material: Flint/silex

TZ 011228-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Hammer stone; fragment; formerly cuboid; all sides and corners well rounded; pushed off on one side

Type: —

Figure Reference: Fig. 2.367

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.4; W 6.4; H 5.4

Weight: —

Material: Basalt



Fig. 2.367 Hammer stone made from basalt TZ 011228-001
(Source: BAI/GPIA).

TZ 011635-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Hammer stone; complete; in plan view almost round; upper and bottom sides convex; on one side chippings

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.2; D (max.) 5.5

Weight: 148 g

Material: Limestone

TZ 011654-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Hammer stone; complete; spherical; several reductions

Type: Hammer stone type 1.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 6.9

Weight: —

Material: Flint/silex

TZ 011796-001

Area I; Square AG 116; Complex P 8; Context 3394
Description: Hammer stone; complete; conical; upper side convex and rough; unedged or chipped underside

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.2; D (max.) 5.3

Weight: 202 g

Material: Basalt

TZ 012327-001

Area I; Square AI 117; Complex I 5; Context 3573
Description: Hammer stone; complete; slightly flattened on one side

Type: Hammer stone type 2.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 3.6; D (max.) 4.3

Weight: 102 g

Material: Flint/silex

TZ 012328-001

Area I; Square AI 117; Complex I 5; Context 3593
Description: Hammer stone; complete; spherical; flattened on several sides

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.8; D (max.) 6.7

Weight: 367 g

Material: Flint/silex

TZ 012663-001

Area I; Square AF 116; Complex K 8; Context 3712
Description: Hammer stone; fragment; hemispherical

Type: Hammer stone type 2.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 6.8

Weight: 270 g

Material: Limestone

TZ 012665-001

Area I; Square AF 116; Complex K 8; Context 3712
Description: Hammer stone; complete; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.5; W 4.7; H 4

Weight: 150 g

Material: Basalt

TZ 012691-001

Area I; Square AE 115; Complex O 3; Context 3543
Description: Hammer stone; complete; irregular shaped

Type: Hammer stone type 8

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.4; W 6.6; H 4.3

Weight: 267 g

Material: Flint/silex

TZ 014484-001

Area I; Square AF 115; Complex K 8; Context 4632
Description: Hammer stone; complete

Type: Hammer stone type 1.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: H 6.8; D (max.) 8.6

Weight: 656 g

Material: Flint/silex

TZ 014479-001

Area I; Square AF 116; Complex N 1; Context 4610

Description: Hammer stone; complete; wedge-wise shaped; roughly worked

Type: Hammer stone type 1.3.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 8.2; W 4.1; H 3.8

Weight: 198 g

Material: Flint/silex

TZ 014481-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Hammer stone; complete; slightly flattened on one side

Type: Hammer stone type 1.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 6.7

Weight: 198 g

Material: Flint/silex

TZ 014619-001

Area I; Square AG 116; Complex K 6; Context 4648

Description: Hammer stone; complete; reductions on two sides

Type: Hammer stone type 1.2

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 10.1; W 9.6; H 8.1

Weight: 1155 g

Material: Flint/silex

TZ 015448-001

Area I; Square AF 115; Complex F 2; Context 5129

Description: Hammer stone; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 7.7; W 5.5; H 5.1

Weight: —

Material: Flint/silex

TZ 015720-001

Area I; Square AL 118; Complex H 4; Context 5033

Description: Ovoid hammer stone; complete; impact marks on the broader side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: L 5.6; W 4.8; H 3.8

Weight: 137 g

Material: Basalt

TZ 016031-001

Area I; Square AR 119; Complex D 2; Context 3580

Description: Hammer stone; complete; oval in plan view

Type: Hammer stone type 3

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 8.3; W 7.6; H 6.3

Weight: 539 g

Material: Flint/silex

TZ 016053-001

Area I; Square AI 117; Complex I 3; Context 4917

Description: Hammer stone; fragment; spherical; one quarter preserved

Type: Hammer stone type 1.2

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 5.1; W 5.5; H 3.7

Weight: 159 g

Material: Flint/silex

TZ 018554-001

Area I; Square AQ 122; Complex D 1; Context 6128

Description: Hammer stone; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6; W 5.1; H 4.7

Weight: —

Material: Flint/silex

TZ 018993-001

Area I; Square AP 123; Complex D 9; Context 6170

Description: Hammer stone; complete; burn marks; flattened on several sides

Type: Hammer stone type 1.21.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 6.4

Weight: 285 g

Material: Flint/silex

Inlay

TZ 012319-001

Area I; Square AR 119; Complex D 2; Context 3570

Description: Inlay; complete; leaf of a rosette

Type: —

Figure Reference: Fig. 2.38; 2.368

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8.2; W 2.9; H 0.5

Weight: —

Material: Limestone



Fig. 2.368 Limestone inlay TZ 012319-001 (Source: BAI/GPIA).

TZ 015491-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Cosmetic bowl; rim fragment; upper side of rim decorated with two irregular rows of concentric circles; very much corroded

Type: —

Figure Reference: Fig. 2.122; 2.369 a. b

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 0.6; D (max.) 5.5

Weight: —

Material: Limestone



Fig. 2.369 a Rim of a cosmetic bowl made from limestone TZ 015491-001, upper side (Source: BAI/GPIA).



Fig. 2.369 b Rim of a cosmetic bowl made from limestone TZ 015491-001, lower side (Source: BAI/GPIA).

Knob

TZ 015463-001

Area I; Square AE 115; Complex L 2; Context 5428
Description: Knob; complete; outside hemispherical; unfinished bore inside; heavily weathered

Type: —

Figure Reference: Fig. 2.133; 2.370

Date of Context: LB II—Stratum 14 d

Dimensions: H 1.7; D (max.) 2.1

Weight: 285 g

Material: Calcite



Fig. 2.370 Calcite knob TZ 015463-001 from both sides (Source: BAI/GPIA).

Lid

TZ 007605-001

Area I; Square AH 115; Complex P 3; Context 1440
Description: Fragment; edge section received; discoidal; carefully flattened; lid (?)

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 1.4; D (max.) 12

Weight: —

Material: Basalt

TZ 015384-001

Area I; Square AE 116; Complex L 3; Context 3608

Description: Lid; complete; circular in plan view; upper side flat; bottom side slightly convex

Type: —

Figure Reference: Fig. 2.138; 2.371

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.5; D (max.) 6.1; W 1.3

Weight: —

Material: Limestone

Reference: Lachish **LB IIIA/B**: Sass 2004a, 1454 fig. 23.2



Fig. 2.371 Lid made from limestone TZ 015384-001 (Source: BAI/GPIA).

TZ 015950-001

Area I; Square AH 115; Complex K 2; Context 4710

Description: Lid; fragment; circular in plan view; edge retracted inwards; small overhang on the edge and two horizontal grooves; possibly worked from a flat bottom piece

Type: —

Figure Reference: Fig. 2.113; 2.372

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 2.8; D (max.) 12.5

Weight: 293 g

Material: Limestone



Fig. 2.372 Lid made from limestone TZ 015950-001 (Source: BAI/GPIA).

Lock/Wedge**TZ 015489-001**

Area I; Square AL 118; Complex H 4; Context 5041

Description: Lock/wedge; fragment

Type: —

Figure Reference: Fig. 2.373

Date of Context: LB II—Stratum 14 d

Dimensions: L 5; W 2.2; H 1.4

Weight: —

Material: Silicate stone

Reference: TZ 015422-001; TZ 017811-001



Fig. 2.373 Lock/wedge made from silicate stone TZ 015489-001 (Source: BAI/GPIA).

Plate

TZ 015767-001

Area I; Square AF 116; Complex L 2/(K 8)/M 1; Context 3577

Description: Plate; two fitting fragments; rectangular in plan view; flattened/ slightly convex base; rounded edges

Type: Plate type 1B

Figure Reference: Fig. 2.374

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 16; W 34.5; H 9

Weight: 6100 g

Material: Basalt

Reference: Sparks 2007, 126 Fig. 47, 4



Fig. 2.374 Basalt plate TZ 015767-001 (Source: BAI/GPIA).

Potter's Wheel (Lower/Upper Part)

TZ 009276-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Potter's wheel; complete; conical; trough on the narrow side

Type: —

Figure Reference: Fig. 2.98

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 8.5; D (max.) 4.2; D (inside opening) 1.3

Weight: 311 g

Material: Basalt

TZ 011852-001

Area I; Square AL 118; Complex H 2/H 7; Context 3451

Description: Potter's wheel; complete; lower part; rectangular in plan view with rounded corners

Type: —

Figure Reference: Fig. 2.189; 2.375

Date of Context: LB II—Stratum 14 a

Dimensions: L 14.1; W 11.8; H 8.2

Weight: 1751 g

Material: Basalt



Fig. 2.375 Lower part of a potter's wheel made from basalt TZ 011852-001 (Source: BAI/GPIA).

Scraper

TZ 010632-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Scraper; fragment; flat chipping, four retouched "teeth" on one edge

Type: —

Figure Reference: Fig. 2.50; 2.376

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9; W 7.5; H 2

Weight: 113 g

Material: Limestone



Fig. 2.376 Limestone scraper TZ 010632-001 (Source: BAI/GPIA).

Spindle Whorl

TZ 001297-001

Area I; Square AM 116; Complex E 5; Context 130

Description: Spindle whorl; complete; biconically pierced

Type: —

Figure Reference: Fig. 2.161; 2.377

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 2.8; D (opening) 0.9

Weight: —

Material: Alabaster



Fig. 2.377 Spindle whorl made from alabaster TZ 001297-001
(Source: BAI/GPIA).

TZ 009261-001

Area I; Square AH 115; Complex P 3; Context 2347

Description: Spindle whorl; complete; ring-shaped; flat on upper and bottom side; biconically pierced

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 2.6; D (max.) 5.5; D (inside opening) 1.8

Weight: 136 g

Material: Basalt

TZ 010704-001

Area I; Square AO 119; Complex G 4; Context 2716

Description: Spindle whorl; complete; ring-shaped; biconically pierced

Type: —

Figure Reference: Fig. 2.378

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.3; D (max.) 3.6; D (inside opening) 1.2

Weight: 24 g

Material: Basalt



Fig. 2.378 Spindle whorl made from basalt TZ 010704-001
(Source: BAI/GPIA).

TZ 015399-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Spindle whorl; complete; lenticular; slightly damaged

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 1; D (max.) 3.1

Weight: —

Material: Limestone

TZ 015407-001

Area I; Square AI 116; Complex I 2; Context 4747

Description: Spindle whorl; complete; cylindrical; upper and bottom side with notches

Type: —

Figure Reference: Fig. 2.107; 2.379

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 2.2; D (max.) 3.4; D (inside opening) 0.9

Weight: —

Material: Limestone



Fig. 2.379 Spindle whorl made from limestone TZ 015407-001
(Source: BAI/GPIA).

TZ 015432-001

Area I; Square AH 115; Complex K 1; Context 5289

Description: Spindle whorl; fragment; discoidal

Type: Spindle whorl type 2

Figure Reference: Fig. 2.380

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 1.2; D (max.) 4.4; D (inside opening) 0.8

Weight: —

Material: Limestone



Fig. 2.380 Fragment of a spindle whorl made from limestone TZ 015432-001 (Source: BAI/GPIA).

TZ 015434-001

Area I; Square AP 120; Complex G 2; Context 5453

Description: Spindle whorl; complete; cylindrical; notches on the edge

Type: —

Figure Reference: Fig. 2.89; 2.381

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.4; H 0.8; D (inside opening) 0.4

Weight: —

Material: Silicate stone



Fig. 2.381 Spindle whorl made from silicate stone TZ 015434-001 (Source: BAI/GPIA).

TZ 019100-001

Area I; Square AR 120; Complex D 1/D 2; Context 6103

Description: Spindle whorl; complete; discoidal; biconically pierced

Type: Spindle whorl type 2

Figure Reference: Fig. 2.382

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 2.1; D (max.) 7; D (inside opening) 0.8

Weight: 78.8 g

Material: Limestone



Fig. 2.382 Spindle whorl made from limestone TZ 019100-001 (Source: BAI/GPIA).

Stand

TZ 001511-001

Area I; Square AM 118; Complex H 1/2; Context 187

Description: Stand; complete; two fitting halves; restored; in plan view circular disc as a base with a slightly cylindrical elevation on its perforation

Type: —

Figure Reference: Fig. 2.180; 2.383

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.5; D (max.) 10.1; D (inside) 3.7

Weight: —

Material: Alabaster



Fig. 2.383 Alabaster stand TZ 001511-001 (Source: BAI/GPIA).

Stopper

TZ 008498-001

Area I; Square AK 116; Complex I 1; Context 1960

Description: Fragment of a stopper

Type: —

Figure Reference: Fig. 2.196; 2.384

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.2; W 2.5; H 1

Weight: —

Material: Limestone



Fig. 2.384 Fragment of a limestone stopper TZ 008498-001 (Source: BAI/GPIA).

Vessel

TZ 015396-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Possibly rim fragment of a large vessel

Type: —

Figure Reference: Fig. 2.151; 2.385

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 7.6; Th (wall) 2.8

Weight: —

Material: Limestone



Fig. 2.385 Fragment of a limestone vessel (?) TZ 015396-001 (Source: BAI/GPIA).

TZ 015416-001

Area I; Square AF 115; Complex K 8; Context 5424

Description: Vessel; fragment; nearly complete; rim partially damaged; probably local production

Type: Alabastron

Figure Reference: Fig. 2.125; 2.386

Date of Context: LB II—Stratum 14 d

Dimensions: H 6.2; D (max.) 4.2

Weight: —

Material: Alabaster

Reference: Tall al-Ḥiṣn (Beth Shean) **LB IIB; IA**

IA: Panitz-Cohen et al. 2009, 754 photo 16.11.a



Fig. 2.386 Alabastron TZ 015416-001 (Source: BAI/GPIA).

Weight Stone/Loom Weight

TZ 007628-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Weight stone/loom weight; complete; coiled

Type: Weight stone/Loom weight type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 12; D (max.) 8.5

Weight: 1556 g

Material: Limestone

TZ 009265-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Weight stone/loom weight; complete; ring shaped; conically pierced from two sides

Type: Weight stone/Loom weight type 1

Figure Reference: Fig. 2.387

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 3.8; D (max.) 8.5; D (inside opening) 2.6

Weight: —

Material: Basalt



Fig. 2.387 Weight stone/loom weight made from basalt TZ 009265-001 (Source: BAI/GPIA).

TZ 012243-001

Area I; Square AE 115; Complex O 3; Context 3544

Description: Weight stone/loom weight; complete; ring shaped; coarse on the outside; carefully drilled

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 28; W 16.8; H 4.8; D (opening) 3.8

Weight: 1160 g

Material: Limestone

TZ 015779-001

Area I; Square AE 116; Complex N 2; Context 5098

Description: Weight stone/loom weight; complete; ring-shaped; conically pierced from two sides

Type: Weight stone/Loom weight type 1.2.2

Figure Reference: Fig. 2.147; 2.388

Date of Context: LB II—Stratum 14 c

Dimensions: H 6; D (max.) 11.5; D (opening) 2

Weight: 944 g

Material: Basalt



Fig. 2.388 Weight stone/loom weight made from basalt TZ 015779-001 (Source: BAI/GPIA).

TZ 015906-001

Area I; Square AG 116; Complex K 6; Context 4938

Description: Weight stone/loom weight; complete; irregularly shaped; smoothed; oblique hole on one side towards the middle

Type: —

Figure Reference: Fig. 2.120; 2.389

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 18; W 20; H 6.8; D (inside opening) 3.3

Weight: 3400 g

Material: Basalt



Fig. 2.389 Weight stone/loom weight made from basalt TZ 015906-001 (Source: BAI/GPIA).

TZ 017807-001

Area I; Square AQ 121; Complex D 4; Context 5261

Description: Weight stone/loom weight; fragment; oval in plan view

Type: Weight stone/Loom weight type 1.2.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 6.6; D (max.) 11.1; D (inside opening) 3.3

Weight: 138 g

Material: Basalt

Whetstone**TZ 008370-001**

Area I; Square AK 117; Complex H 6; Context 1910

Description: Whetstone; complete; cuboid; a narrow side beveled; grinding marks on the upper side

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.5; W 6.2; H 5.2

Weight: 769 g

Material: Red quartzite with proportions of mica

TZ 011238-001

Area I; Square AH 115; Complex P 3/P 5; Context 3231

Description: Whetstone; complete; narrow and cuboid

Type: —

Figure Reference: Fig. 2.210; 2.390

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.6; W 1.6; H 1.2

Weight: 17.6 g

Material: Silicate stone



Fig. 2.390 Whetstone made from silicate stone TZ 011238-001 (Source: BAI/GPIA).

TZ 015703-001

Area I; Square AE 116; Complex O 5/O 6; Context 3624

Description: Whetstone; complete; cuboid; started drilling on the upper side; friction marks on the bottom side

Figure Reference: Fig. 2.391

Date of Context: LB II—Stratum 14 a

Dimensions: L 12; W 5.7; H 3.1

Weight: 426 g

Material: Sandstone



Fig. 2.391 Whetstone made from sandstone TZ 015703-001
(Source: BAI/GPIA).

Dimensions: L 15; W 11.9; H 8.5
Weight: 1518 g
Material: Basalt



Fig. 2.393 Fragment of a lower grinding stone made from basalt
TZ 011231-001 (Source: BAI/GPIA).

Food Production

Lower Grinding Stone

TZ 008809-001

Area I; Square AM 116; Complex F 1; Context 1712

Description: Lower grinding stone; fragment; oval in plan view; upper side slightly concave; bottom side convex

Type: Lower grinding stone type 2a

Figure Reference: Fig. 2.392

Date of Context: LB II—Stratum 14 a

Dimensions: L 34.3; W 27; H 9.3

Weight: 8300 g

Material: Basalt



Fig. 2.392 Lower grinding stone made from basalt TZ 008809-001 (Source: BAI/GPIA).

TZ 011232-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Lower grinding stone; fragment; oval in plan view; bottom side convex; upper side flat

Type: Lower grinding stone type 2a

Figure Reference: Fig. 2.394

Date of Context: LB II—Stratum 14 a

Dimensions: L 20; W 16.5; H 4.5

Weight: 2216 g

Material: Basalt



Fig. 2.394 Fragment of a lower grinding stone made from basalt
TZ 011232-001 (Source: BAI/GPIA).

TZ 011231-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Lower grinding stone; fragment; bottom side convex; thick border area

Type: Lower grinding stone type 2a

Figure Reference: Fig. 2.393

Date of Context: LB II—Stratum 14 a

TZ 011643-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Lower grinding stone; fragment; oval in plan view; bottom side convex.

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 17.2; W 18.5; H 9.5

Weight: 4700 g

Material: Limestone

TZ 011794-001

Area I; Square AN 117; Complex P 8; Context 3394

Description: Lower grinding stone; fragment; rectangular in plan view; upper side flat; bottom side flattened/slightly convex

Type: Lower grinding stone type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 29; W 14.7; H 5.9

Weight: 3171 g

Material: Basalt

TZ 011806-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Lower grinding stone; fragment; rectangular in plan view; upper side flat; bottom side unworked

Type: Lower grinding stone type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 14.4; W 10.9; H 4.2

Weight: 1811 g

Material: Basalt

TZ 012235-001

Area I; Square AF 116; Complex O 5; Context 3509

Description: Lower grinding stone; fragment; bottom side convex; upper side slightly curved

Type: Lower grinding stone type 2a

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.4; W 15.8; H 3.7

Weight: 1126 g

Material: Basalt

TZ 012242-001

Area I; Square AE 115; Complex O 3; Context 3544

Description: Lower grinding stone; fragment; rectangular in plan view; upper side flat; bottom side flat and only roughly worked; rounded edges

Type: Lower grinding stone type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 12.5; W 9.1; H 3.7

Weight: 706 g

Material: Basalt

TZ 012244-001

Area I; Square AE 115; Complex O 3; Context 3544

Description: Lower grinding stone; complete; nearly circular in plan view; upper side flat; tapered per-

foration

Type: Lower grinding stone type 1a

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 26.8; W 17; H 7.2; D (max.) 18; D (perforation) 3.6

Weight: 3400 g

Material: Basalt

TZ 012266-001

Area I; Square AF 115; Complex P 7; Context 3590

Description: Lower grinding stone; fragment; upper side flat; bottom side slightly convex

Type: Lower grinding stone type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.5; W 8; H 4

Weight: 346 g

Material: Basalt

TZ 012275-001

Area I; Square AF 115; Complex P 7; Context 3590

Description: Lower grinding stone; fragment; upper-/bottom side flat

Type: Lower grinding stone type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 15; W 9; H 2.5

Weight: 390 g

Material: Basalt

TZ 012309-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Lower grinding stone; fragment; flat and highly fragmented; grinding surface existent

Type: Lower grinding stone type 1a

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 22; W 15.7; H 5.2

Weight: 2010 g

Material: Basalt

TZ 014241-001

Area I; Square AM 119; Complex H 2; Context 2360

Description: Lower grinding stone; complete; upper side slightly concave; bottom side convex

Type: Lower grinding stone type 2a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 30; W 25; H 10

Weight: 8900 g
Material: Basalt

TZ 014267-001

Area I; Square AM 119; Complex H 2; Context 2360

Description: Lower grinding stone; fragment; upper side flat and smoothed; bottom side flat and roughly worked

Type: Lower grinding stone type 1c

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 30; W 16; H 3.7

Weight: 3321 g

Material: Basalt

TZ 015627-001

Area I; Square AG 116; Complex P 4; Context 3369

Description: Lower grinding stone; fragment; oval in plan view; upper side flat with bulge at one side; bottom side convex

Type: Lower grinding stone type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 24.8; W 21; H 9.5

Weight: 5800 g

Material: Basalt

TZ 015632-001

Area I; Square AH 116; Complex K 4; Context 4687

Description: Lower grinding stone; fragment; upper side concave; bottom side convex and only roughly worked; rounded edges

Type: Lower grinding stone type 2a

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 30; W 27; H 9

Weight: 10300 g

Material: Basalt

TZ 015652-001

Area I; Square AE 116; Complex L 3; Context 3608

Description: Lower grinding stone; complete; oval in plan view; upper side concave with small bulge at one side; bottom side convex

Type: Lower grinding stone type 3a

Figure Reference: Fig. 2.395

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 39; W 13; H 6.5

Weight: 4281 g

Material: Basalt

Reference: McNicoll et al. 1992, Plate 72, 4



Fig. 2.395 Lower grinding stone made from basalt TZ 015652-001 (Source: BAI/GPIA).

TZ 015820-001

Area I; Square AG 116; Complex K 6; Context 5351

Description: Lower grinding stone; complete; oval in plan view; upper side concave; bottom side slightly convex with straight seat; carefully smoothed

Type: Lower grinding stone type 1a

Figure Reference: Fig. 2.117; 2.396

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 29.4; W 14.5; H 8.5

Weight: 5300 g

Material: Basalt



Fig. 2.396 Lower grinding stone made from basalt TZ 015820-001 (Source: BAI/GPIA).

TZ 015890-001

Area I; Square AF 114; Complex F 2; Context 5325

Description: Lower grinding stone; fragment; oval in plan view; upper and bottom side flat

Type: Lower grinding stone type 1b

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 16; W 5.5; H 2.7

Weight: 1152 g

Material: Basalt

TZ 015997-001

Area I; Square AF 116; Complex L 2 /(K 8)/ M 1; Context 3577

Description: Lower grinding stone; complete; rec-

tangular in plan view; upper side concave and completely smooth; bottom side roughly worked; rounded edges; large hole in upper side

Type: Lower grinding stone type 2a

Figure Reference: Fig. 2.397

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 40; W 28; H 15

Weight: 20100 g

Material: Basalt



Fig. 2.397 Lower grinding stone made from basalt TZ 015997-001 (Source: BAI/GPIA).

TZ 016006-001

Area I; Square AF 115; Complex P 7; Context 3611
Description: Lower grinding stone; complete; rectangular in plan view; upper side slightly concave and flat with bulge at every side; bottom side convex

Type: Lower grinding stone type 4a

Figure Reference: Fig. 2.398

Date of Context: LB II—Stratum 14 a

Dimensions: L 39; W 32; H 19

Weight: 32700 g

Material: Basalt



Fig. 2.398 Lower grinding stone made from basalt TZ 016006-001 (Source: BAI/GPIA).

TZ 018825-001

Area I; Square AS 121; Complex A 5; Context 6030
Description: Lower grinding stone; fragment; oval in plan view; bottom side flattened, but no straight seat; upper side flat; exterior sides convex

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 14.7; W 7.5; H 8

Weight: 1535 g

Material: Basalt

TZ 018877-001

Area I; Square AS 121; Complex A 5; Context 6030
Description: Lower grinding stone; fragment; upper side flat; bottom side curved; exterior sides not carefully worked; edged shape

Type: Lower grinding stone type 2b

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 11.5; W 11; H 8.1

Weight: 1758 g

Material: Basalt

Mortar

TZ 001617-001

Area I; Square AM 118; Complex H 1; Context 222

Description: Mortar; complete; circular in plan view; exterior side roughly worked; upright size

Type: Mortar type 1

Figure Reference: Fig. 2.183; 2.399

Date of Context: LB II—Stratum 14 a

Dimensions: L 24; W 21; H 14; Th (wall) 3.3–6.5

Weight: 8500 g

Material: Limestone



Fig. 2.399 Mortar made from limestone TZ 001617-001, upside and bottom side (Source: BAI/GPIA).

TZ 007615-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Mortar; fragment; irregular formed; flat size

Type: Mortar type 2

Figure Reference: Fig. 2.400

Date of Context: LB II—Stratum 14 a

Dimensions: L 28.5; W 27.5; H 18; D (max.) 38; D (opening) 33

Weight: 19800 g

Material: Basalt



Fig. 2.400 Mortar made from basalt TZ 007615-001 (Source: BAI/GPIA).

TZ 007676-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Mortar; complete; four fitting fragments; upper side with slight depression and rim, exterior side unworked; circular in plan view; flat size

Type: Mortar type 2

Figure Reference: Fig. 2.401

Date of Context: LB II—Stratum 14 a

Dimensions: H 15; D (max.) 38; D (base) 28

Weight: 24500 g

Material: Limestone



Fig. 2.401 Mortar made from limestone TZ 007676-001 (Source: BAI/GPIA).

TZ 009453-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Mortar; complete; upright size

Type: Mortar type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 44; W 38; H 27

Weight: 50800 g

Material: Basalt

TZ 010286-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Mortar; fragment; rim and wall; upright size

Type: Mortar type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 12.2; W 12.6; H 6.8; D (opening) 35; Th (wall) 3.2

Weight: 1284 g

Material: Basalt

TZ 010307-001

Area I; Square AO/AP 119; Complex G 2; Context 2755

Description: Mortar; complete; two fitting fragments; upright size

Type: Mortar type 1

Figure Reference: Fig. 2.88; 2.402 a. b

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5; D (max.) 8.2; D (opening) 8

Weight: 375 g

Material: Limestone



Fig. 2.402 a Mortar made from limestone TZ 010307-001, seen from the side (Source: BAI/GPIA).



Fig. 2.402 b Mortar made from limestone TZ 010307-001, seen from above (Source: BAI/GPIA).

TZ 015362-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Mortar; complete; oval in plan view; flat size

Type: Mortar type 2

Figure Reference: Fig. 2.403

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 40; W 33; H 14

Weight: —

Material: Basalt



Fig. 2.403 Mortar made from basalt TZ 015362-001 (Source: BAI/GPIA).

TZ 015655-001

Area I; Square AF 116; Complex L 2/(K 8); Context 5193

Description: Mortar; fragment; rim to base; circular in plan view; upper side with small depression; roughly worked; upright size

Type: Mortar type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 18.5; W 12; H 11; D (max.) 25; D (opening) 21; depth of depression 2

Weight: 2300 g

Material: Basalt

TZ 016003-001

Area I; Square AG 115; Complex K 1/K 2; Context 3535

Description: Mortar; fragment; rim to base; irregular in plan view; exterior side roughly worked; interior side smooth; upright size

Type: Mortar type 1

Figure Reference: Fig. 2.404

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 37; W 32; H 20

Weight: 23400 g

Material: Basalt



Fig. 2.404 Fragment of a mortar made from basalt TZ 016003-001 (Source: BAI/GPIA).

TZ 018376-001

Area I; Square AQ 122; Complex D 1; Context 6128

Description: Mortar; complete; exterior sides irregularly worked; upright size

Type: Mortar type 1

Figure Reference: Fig. 2.31; 2.405

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 20; D (max.) 33; Depth of depression 10

Weight: 24100 g

Material: Basalt



Fig. 2.405 Mortar made from basalt TZ 018376-001 (Source: BAI/GPIA).

Mortar Bowl

TZ 001616-001

Area I; Square AM 118; Complex H 1/H 2; Context 222

Description: Mortar bowl; fragment; nearly complete; rim to base; steep and convex wall; circular in plan view; flat base

Type: Mortar bowl type 2A2a

Figure Reference: Fig. 2.406

Date of Context: LB II—Stratum 14 a

Dimensions: H 16; D (max.) 33; D (opening) 29

Weight: 13900 g

Material: Basalt

Reference: Sparks 2007, 113 Fig. 50, 4



Fig. 2.406 Mortar bowl made from basalt TZ 001616-001
(Source: BAI/GPIA).

TZ 009431-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Mortar bowl; complete; steep wall; rectangular in plan view; slightly convex base; rounded edges

Type: Mortar bowl type 2B2

Figure Reference: Fig. 2.407

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 25; W 13.5; H 5.6

Weight: 3200 g

Material: Basalt

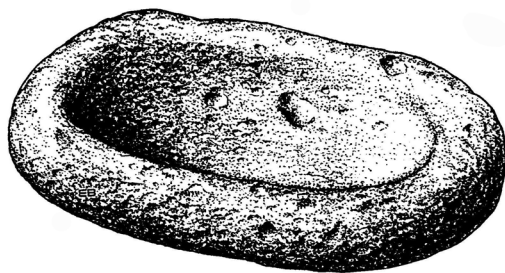


Fig. 2.407 Mortar bowl made from basalt TZ 009431-001
(Source: BAI/GPIA).

TZ 010618-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Mortar bowl; complete; sloping wall; circular in plan view; flattened base

Type: Mortar bowl type 1A1

Figure Reference: Fig. 2.408

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 4; D (max.) 13

Weight: 960 g

Material: Basalt

Reference: Tell Abū al-Kharaz: Fischer 2006b, Fig. 184, 2



Fig. 2.408 Mortar bowl made from basalt TZ 010618-001
(Source: BAI/GPIA).

TZ 012276-001

Area I; Square AF 116; Complex O 5; Context 3509

Description: Mortar bowl; fragment; rest of rim preserved; oval in plan view

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.5; W 5.5; H 4.3

Weight: 437 g

Material: Basalt

TZ 012303-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Mortar bowl; fragment; rim to base; sloping wall; circular in plan view; rounded rim; concave disc base

Type: Mortar bowl type 1A5

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.6; W 10.6; H 10.2; D (max.) 24; D (base) 10

Weight: 1172 g

Material: Basalt

TZ 012304-001

Area I; Square AF 116; Complex O 5; Context 3509

Description: Mortar bowl; fragment; rest of rim preserved; circular/oval in plan view

Type: Mortar bowl type 1A

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7; W 5.3; H 4

Weight: 119 g

Material: Basalt

TZ 012664-001

Area I; Square AF 116; Complex K 8; Context 3712

Description: Mortar bowl; fragment; leg/foot; circular/oval in plan view

Type: Mortar bowl type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 11; W 6.5; H 9.3

Weight: 1014 g

Material: Basalt

TZ 014740-001

Area I; Square AH 116; Complex P 4; Context 3336

Description: Mortar bowl; fragment; rim to base; oval in plan view; flattened or slightly convex base

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.7; W 14.6; H 5.2

Weight: 654 g

Material: Basalt

TZ 015603-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Mortar bowl; fragment; rim to base; three legs/feet preserved; circular in plan view

Type: Mortar bowl type 4

Figure Reference: Fig. 2.152; 2.409

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 16.5; D (max) 26; D (opening) 26

Weight: 10500 g

Material: Basalt

Reference: Stern 1984, 125 Figure 41



Fig. 2.409 Mortar bowl with three feet made from basalt TZ 015603-001 (Source: BAI/GPIA).

TZ 015726-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Mortar bowl; fragment; circular in plan view; pedestal base; carefully worked; upper side damaged; at one side knocked off

Type: Mortar bowl type 3

Figure Reference: Fig. 2.153; 2.410

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 10.7; W 9.4; H 7.4; D (max.) 10.7; D (base) 9.4

Weight: 1112 g

Material: Basalt



Fig. 2.410 Mortar bowl with pedestal base made from basalt TZ 015726-001 (Source: BAI/GPIA).

TZ 015853-001

Area I; Square AG 116; Complex K 6; Context 4648

Description: Mortar bowl; fragment; rim to base; one leg/foot preserved; circular in plan view; carefully smoothed

Type: Mortar bowl type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 13.4; W 16.5; H 10; D (max.) 24

Weight: 2100 g

Material: Basalt

TZ 015905-001

Area I; Square AE 115; Complex L 1/L 2/M 1; Context 5164

Description: Mortar bowl; fragment; circular/oval in plan view; flattened base; rubbing marks at the interior side; part of basement

Type: Mortar bowl type 1A1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 18; W 9.5; H 7.7

Weight: 1501 g

Material: Basalt

TZ 018935-001

Area I; Square AQ 122; Complex D 1; Context 6128

Description: Mortar bowl; fragment; steep convex wall; circular in plan view; flat base with concave bottom side

Type: Mortar bowl type 2A2b

Figure Reference: Fig. 2.411 a, b

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 15; W 9.4; H 8.5; D (max.) 15; D (base) 12

Weight: 1600 g

Material: Basalt

Reference: Sparks 2007, 132 Fig. 50, 5



Fig. 2.411 a Fragment of a basalt mortar bowl TZ 018935-001, seen from the side (Source: BAI/GPIA).



Fig. 2.411 b Fragment of a basalt mortar bowl TZ 018935-001, seen from above (Source: BAI/GPIA).

Quern**TZ 001505-001**

Area I; Square AM 117; Complex H 1; Context 191

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: Fig. 2.412

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.5; W 6.5; H 5

Weight: 208 g

Material: Basalt



Fig. 2.412 Fragment of a loaf-shaped quern made from basalt TZ 001505-001 (Source: BAI/GPIA).

TZ 001674-001

Area I; Square AM 117; Complex H 1; Context 191

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.7; W 4.6; H 3.7

Weight: 172 g
Material: Basalt

TZ 007631-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9; W 6.3; H 6

Weight: 345 g

Material: Basalt

TZ 007654-001

Area I; Square AH 115; Complex P 3; Context 1388

Description: Quern; fragment; oval in plan view

Type: Quern type 4a

Figure Reference: Fig. 2.413

Date of Context: LB II—Stratum 14 a

Dimensions: L 25; W 17.5; H 10

Weight: 5000 g

Material: Basalt



Fig. 2.413 Fragment of an oval quern made from basalt
TZ 007654-001 (Source: BAI/GPIA).

TZ 008179-001

Area I; Square AK 117; Complex H 6; Context 1873

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 18.5; W 12; H 6.2

Weight: 1567 g

Material: Basalt

TZ 008367-001

Area I; Square AK 117; Complex H 6; Context 1910

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7; W 7.8; H 5.3

Weight: 327 g

Material: Basalt

TZ 008675-001

Area I; Square AM 116; Complex F 1; Context 1712

Description: Quern; fragment; loaf-shaped

Type: Quern type 1h

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.5; W 12.3; H 4.5

Weight: 511 g

Material: Basalt

TZ 008974-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Quern; fragment; flat and broad shape; oval in plan view; upper side slightly concave; bottom side convex

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 20.8; W 12.9; H 7.1

Weight: 920 g

Material: Basalt

TZ 009149-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Quern; fragment; flat and broad shape

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8.3; W 12.2; H 5.5

Weight: 751 g

Material: Basalt

TZ 009156-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Quern; fragment; flat and broad shape

Type: Quern type 3c

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8; W 11.2; H 4.8

Weight: 583 g

Material: Basalt

TZ 009218-001

Area I; Square AG 115; Complex P 5; Context 2311

Description: Quern; fragment; loaf-shaped

Type: Quern type 1h

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; W 8.5; H 7

Weight: 549 g

Material: Basalt

TZ 009433-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Quern; fragment; loaf-shaped

Type: Quern type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10.3; W 11; H 6.4

Weight: 621 g

Material: Basalt

TZ 009434-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Quern; fragment; flat and broad shape

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13; W 13; H 4.3

Weight: 1430 g

Material: Basalt

TZ 011803-001

Area I; Square AK 117; Complex H 6; Context 1873

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 19.3; W 11; H 4.4

Weight: 951 g

Material: Basalt

TZ 011819-001

Area I; Square AG 116; Complex P 5/P 6/P 8; Context 3452

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 18.3; W 12.1; H 6.6

Weight: 1644 g

Material: Basalt

TZ 011894-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 18; W 11.5; H 5.5

Weight: 1444 g

Material: Basalt

TZ 011987-001

Area I; Square AG 115; Complex P 7; Context 3419

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9; W 13.9; H 4.6

Weight: 788 g

Material: Basalt

TZ 012233-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d (also IA I)

Dimensions: L 22.5; W 14; H 5.5

Weight: 2172 g

Material: Basalt

TZ 012236-001

Area I; Square AF 116; Complex O 5; Context 3509

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: Fig. 2.414

Date of Context: LB II—Stratum 14 a

Dimensions: L 22; W 13.2; H 7.2

Weight: 2647 g

Material: Basalt



Fig. 2.414 Fragment of a loaf-shaped quern made from basalt TZ 012236-001 (Source: BAI/GPIA).

TZ 012246-001

Area I; Square AE 115; Complex O 3; Context 3544
Description: Quern; fragment; loaf-shaped; marginally abraded
Type: Quern type 1g
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 25.5; W 13.5; H 12.5
Weight: 5800 g
Material: Basalt

TZ 012267-001

Area I; Square AF 115; Complex P 7; Context 3590
Description: Quern; fragment; loaf-shaped
Type: Quern type 1e
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 12.5; W 13.5; H 7
Weight: 1753 g
Material: Basalt

TZ 012269-001

Area I; Square AI 117; Complex I 5; Context 3593
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 15.5; W 11.7; H 6
Weight: 1118 g
Material: Basalt

TZ 012271-001

Area I; Square AF 115; Complex P 7/P 8; Context 3553
Description: Quern; complete; oval in plan view
Type: Quern type 4b
Figure Reference: Fig. 2.415
Date of Context: LB II—Stratum 14 a–d (also IA I)
Dimensions: L 24.8; W 16.8; H 6.8
Weight: 3868 g
Material: Basalt



Fig. 2.415 Oval quern made from basalt TZ 012271-001 (Source: BAI/GPIA).

TZ 012280-001

Area I; Square AF 116; Complex O 5; Context 3509
Description: Quern; fragment; loaf-shaped
Type: Quern type 1d
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 7.5; W 9; H 6
Weight: 374 g
Material: Basalt

TZ 012284-001

Area I; Square AI 117; Complex I 5; Context 3572
Description: Quern; fragment
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d (also IA I)
Dimensions: L 13; W 11.6; H 4.9
Weight: 1076 g
Material: Basalt

TZ 012286-001

Area I; Square AE 115; Complex O 1/O 3; Context 3542
Description: Quern; fragment
Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 12.5; W 12.5; H 5.3

Weight: 1064 g

Material: Basalt

TZ 012291-001

Area I; Square AF 116; Complex O 2/O 5; Context 3523

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 16.9; W 14.5; H 5.3

Weight: 1279 g

Material: Basalt

TZ 012301-001

Area I; Square AF 115; Complex P 7; Context 3611

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 10.3; W 14; H 7.6

Weight: 1304 g

Material: Basalt

TZ 012302-001

Area I; Square AN 118; Complex G 5; Context 2367

Description: Quern; fragment; flat and broad shape

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13; W 13; H 4.3

Weight: 1430 g

Material: Basalt

TZ 012308-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Quern; fragment; flat and broad shape

Type: Quern type 3c

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7; W 10.4; H 3.8

Weight: 359 g

Material: Basalt

TZ 012311-001

Area I; Square AG 115; Complex K 1/K 2; Context 3535

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13.5; W 17; H 6.2

Weight: 2034 g

Material: Basalt

TZ 012312-001

Area I; Square AF 115; Complex P 7; Context 3611

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11; W 9.2; H 4.6

Weight: 558 g

Material: Basalt

TZ 012683-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Quern; fragment; loaf-shaped

Type: Quern type 1c

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 26.5; W 12.8; H 7.2

Weight: 2947 g

Material: Basalt

TZ 012684-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Quern; fragment; loaf-shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 23; W 13; H 7

Weight: 2380 g

Material: Basalt

TZ 012688-001

Area I; Square AF 116; Complex K 8; Context 3709

Description: Quern; fragment; flat and broad shape

Type: Quern type 3c

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 13.3; W 12; H 6

Weight: 1084 g

Material: Basalt

TZ 012689-001

Area I; Square AF 116; Complex K 8; Context 3709

Description: Quern; fragment; flat and broad shape

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 11; W 14.5; H 5

Weight: 978 g

Material: Basalt

TZ 014268-001

Area I; Square AM 119; Complex H 2; Context 2360

Description: Quern; fragment; different front and rear side curvature

Type: Quern type 2b

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 14; W 16; H 7.5

Weight: 2435 g

Material: Basalt

TZ 014607-001

Area I; Square AG 116; Complex K 6; Context 4648

Description: Quern; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 9.8; W 8.9; H 6.1

Weight: 763 g

Material: Silicate stone

TZ 014612-001

Area I; Square AG 116; Complex P 4; Context 3369

Description: Quern; fragment; flat and broad shape

Type: Quern type 3b

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.7; W 7.7; H 5.1

Weight: 666 g

Material: Basalt

TZ 015575-001

Area I; Square AM 117; Complex H 1; Context 4750

Description: Quern; fragment; sleeve or semi-finished product; exterior- and interior side only roughly worked; burning marks

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 12.3; W 9.7; H 6.6

Weight: 634 g

Material: Basalt

TZ 015621-001

Area I; Square AL 118; Complex H 7; Context 4791

Description: Quern; fragment; loaf-shaped; upper side slightly convex; bottom side flat

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8; W 12.5; H 5.5

Weight: 815 g

Material: Basalt

TZ 015663-001

Area I; Square AH 116; Complex K 4; Context 4650

Description: Quern; fragment; flat and broad shape; upper side slightly concave; bottom side convex and extremely abraded

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 18.6; W 14.6; H 5

Weight: 1502 g

Material: Basalt

TZ 015666-001

Area I; Square AF 116; Complex O 2; Context 5550

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 12; W 12.5; H 4.9

Weight: 1225 g

Material: Basalt

TZ 015685-001

Area I; Square AF 116; Complex O 2; Context 5550

Description: Quern; fragment; grinding surface chipped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.7; W 12.5; H 5.6

Weight: 715 g

Material: Basalt

TZ 015739-001

Area I; Square AE 115; Complex M 3; Context 5148

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 8.2; W 11.9; H 5

Weight: 800 g

Material: Basalt

TZ 015750-001

Area I; Square AL 118; Complex H 1/H 2/H 6/H 7; Context 1525

Description: Quern; fragment; flat and broad shape

Type: Quern type 3c

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13; W 8.7; H 6.7

Weight: 694 g

Material: Basalt

TZ 015764-001

Area I; Square AG 116; Complex K 6; Context 5351

Description: Quern; fragment; flat and broad shape; saddle-shaped

Type: Quern type 3b

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 25.5; W 16.8; H 5.8

Weight: 3775 g

Material: Basalt

TZ 015822-001

Area I; Square AL 118; Complex H 7; Context 3477

Description: Quern; fragment; flat and broad shape; upper side slightly concave; bottom side convex and extremely abraded

Type: Quern type 3a

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.8; W 5.7; H 4.2

Weight: 202 g

Material: Basalt

TZ 015829-001

Area I; Square AF 115; Complex F 2; Context 5129

Description: Quern; fragment; flat and broad shape; saddle-shaped; upper side concave; bottom side convex and only roughly worked

Type: Quern type 3c

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 20.5; W 15; H 8

Weight: 3274 g

Material: Basalt

TZ 015839-001

Area I; Square AL 118; Complex H 2; Context 3502

Description: Quern; fragment; loaf-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 10; W 6.5; H 5.1

Weight: 378 g

Material: Basalt

TZ 015855-001

Area I; Square AE 116; Complex O 4; Context 3532

Description: Quern; fragment; loaf-and saddle-shaped

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Dimensions: L 10.2; W 12.2; H 5.7

Weight: 1040 g

Material: Basalt

TZ 015857-001

Area I; Square AG 116; Complex K 6; Context 4938

Description: Quern; fragment; loaf-shaped; upper side concave; bottom side convex

Type: Quern type 1e

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Dimensions: L 28.5; W 12.5; H 5

Weight: 2547 g

Material: Basalt

TZ 015907-001

Area I; Square AG 116; Complex K 6/K 8; Context 5031

Description: Quern; fragment; loaf-shaped; rectangular in plan view; rounded edges; upper side flat; bottom side convex

Type: Quern type 1g

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 13; W 16.4; H 7.3

Weight: 1844 g
Material: Basalt

TZ 015912-001

Area I; Square AE 116; Complex O 2; Context 4967
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB II—Stratum 14 b
Dimensions: L 10.3; W 12.6; H 6
Weight: 1008 g
Material: Basalt

TZ 015928-001

Area I; Square AG 116; Complex K 6; Context 4648
Description: Quern; fragment; loaf-shaped
Type: Quern type 1g
Figure Reference: —
Date of Context: LB II—Stratum 14 c, d
Dimensions: L 13; W 16.6; H 9.7
Weight: 1989 g
Material: Basalt

TZ 015932-001

Area I; Square AG 115; Complex K 5/K 6; Context 5032
Description: Quern; fragment; flat and broad shape; only roughly worked
Type: Quern type 3a
Figure Reference: —
Date of Context: LB II—Stratum 14 b–d
Dimensions: L 8.3; W 8.6; H 4.5
Weight: 455 g
Material: Basalt

TZ 017522-001

Area I; Square AF 115; Complex P 7; Context 4708
Description: Quern; complete; oval in plan view; bottom and upper side slightly convex
Type: Quern type 4b
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 18; W 16; H 5
Weight: 1558 g
Material: Basalt

TZ 017787-001

Area I; Square AS 120; Complex D 1; Context 5811
Description: Quern; fragment; loaf- and saddle shaped

Type: Quern type 1d

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 12.2; W 11; H 8.2

Weight: 1200 g

Material: Basalt

TZ 018943-001

Area I; Square AR 121; Complex D 1; Context 6194
Description: Quern; fragment; highly destructed
Type: —
Figure Reference: Fig. 2.416
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 12.2; W 11; H 8.2
Weight: 1200 g
Material: Basalt



Fig. 2.416 Fragment of a quern made from basalt TZ 018943-001 (Source: BAI/GPIA).

TZ 019024-001

Area I; Square AS 120; Complex D 1; Context 6481
Description: Quern; fragment; flat and broad shape
Type: Quern type 3c
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 14.7; W 15; H 5.5
Weight: 1400 g
Material: Basalt

TZ 019060-001

Area I; Square AR 119; Complex D 2; Context 3671
Description: Quern; complete; oval in plan view

Type: Quern type 4b
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d (also IA I)
Dimensions: L 22; W 14.8; H 6.3
Weight: 2657 g
Material: Basalt

TZ 019062-001

Area I; Square AT 120; Complex A 4; Context 6416
Description: Quern; fragment; saddle-shaped
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 17.5; W 11; H 4.7
Weight: 1424 g
Material: Basalt

Rubbing Stone

TZ 001307-001

Area I; Square AL 116; Complex E 6/I 1; Context 138
Description: Rubbing stone; complete; cuboid; beveled on a narrow side; one friction surface; overall irregular shape
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 9.7; W 6.7; H 6.4
Weight: 713 g
Material: Basalt

TZ 01503-001

Area I; Square AM 117; Complex H 1; Context 191
Description: Rubbing stone; complete; cuboid; rounded corners
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 10.3; W 6.4; H 5.9
Weight: 843 g
Material: Flint/silex

TZ 001535-001

Area I; Square AM 117; Complex H 6; Context 208
Description: Rubbing stone; fragment; discoidal/oval
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a

Dimensions: L 6.5; W 5.5; H 2.5
Weight: 151 g
Material: Basalt

TZ 001552-001

Area I; Square AM 118; Complex H 1/H 2; Context 210
Description: Rubbing stone; complete; cuboid; rounded corners; a friction surface with pores of red-brown material (probably iron mineral)
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 11.7; W 7.4; H 5
Weight: 905 g
Material: Basalt

TZ 001555-001

Area I; Square AM 117; Complex F 3; Context 213
Description: Rubbing stone; fragment; roller-shaped; one friction surface on the front
Type: Rubbing stone type 8.1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 6; D (max.) 5.8
Weight: 390 g
Material: Basalt

TZ 001648-001

Area I; Square AN 116/117; Complex E 4; Context 1396
Description: Rubbing stone; complete; discoidal; friction surfaces on the upper and bottom side
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 8.7; W 7; H 3
Weight: 420 g
Material: Basalt

TZ 001675-001

Area I; Square AM 117; Complex H 1; Context 191
Description: Rubbing stone; fragment; ovoid; all around with a smooth friction surface
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 6.7; W 6.2; H 5.1
Weight: 240 g
Material: Basalt

TZ 001676-001

Area I; Square AM 117; Complex H 1; Context 191
Description: Rubbing stone; complete; irregular shaped; five friction surfaces
Type: Rubbing stone type 10.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 7.8; W 6.1; H 6
Weight: 446 g
Material: Basalt

TZ 002203-001

Area I; Square AL 117; Complex H 6; Context 709
Description: Rubbing stone; fragment; truncated conical; bottom and edge roughly smooth; apparently a part of the top is missing
Type: Rubbing stone type 2
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 5.7; D (max.) 6
Weight: 296 g
Material: Basalt

TZ 006945-001

Area I; Square AO 117; Complex E 2; Context 1079
Description: Rubbing stone; complete; cuboid
Type: Rubbing stone type 6
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 9.3; W 7; H 4
Weight: 632 g
Material: Basalt

TZ 007123-001

Area I; Square AN 117; Complex E 4; Context 1132
Description: Rubbing stone; complete; discoidal
Type: Rubbing stone type 12.1
Figure Reference: Fig. 2.417 a. b
Date of Context: LB II—Stratum 14 a–d
Dimensions: H 4; D (max.) 9
Weight: 514 g
Material: Basalt



Fig. 2.417 a Rubbing stone made from basalt TZ 007123-001 (Source: BAI/GPIA).



Fig. 2.417 b Rubbing stone made from basalt TZ 007123-001 (Source: BAI/GPIA).

TZ 0007137-001

Area I; Square AI 115; Complex I 4; Context 1172
Description: Rubbing stone; complete; shoe-shaped
Type: Rubbing stone type 10.2
Figure Reference: Fig. 2.418
Date of Context: LB II—Stratum 14 a
Dimensions: L 6.7; W 5.8; H 5
Weight: 461 g
Material: Basalt



Fig. 2.418 Rubbing stone made from basalt TZ 007123-001 (Source: BAI/GPIA).

TZ 007142-001

Area I; Square AI 115; Complex P 1/P 2; Context 1187
Description: Rubbing stone; complete; spherical to roller-shaped
Type: Rubbing stone type 5.2
Figure Reference: —
Date of Context: LB II/IA I—Stratum 14/13
Dimensions: H 7.3; D (max.) 7.7
Weight: 576 g
Material: Basalt

TZ 007552-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Rubbing stone; fragment; cuboid; smooth reduced on a narrow side or broken off

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.1; W 3.8; H 2.9

Weight: 146 g

Material: Limestone

TZ 07556-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Rubbing stone; fragment; discoidal

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 2.6; D (max.) 13

Weight: —

Material: Basalt

TZ 007560-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Rubbing stone; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.8; W 4.5; H 3.8

Weight: —

Material: Basalt

TZ 007612-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Rubbing stone; fragment; discoidal; several cracks

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.5; D (max.) 8.5

Weight: —

Material: Basalt

TZ 007624-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Rubbing stone; complete; truncated conical

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5.7; D (max.) 5.2

Weight: 323 g

Material: Basalt

TZ 007637-001

Area I; Square AH 115; Complex P 3; Context 1444

Description: Rubbing stone; complete; ovoid; bottom side flat

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.5; W 5.5; H 5

Weight: 338 g

Material: Basalt

TZ 007720-001

Area I; Square AH 115; Complex P 3; Context 1388

Description: Rubbing stone; complete; cuboid; rounded corners

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13; W 8.9; H 5.3

Weight: —

Material: Basalt

TZ 007733-001

Area I; Square AL 118; Complex H 6; Context 1528

Description: Rubbing stone; complete; cuboid

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 7.3; W 7.3; H 5.5

Weight: 479 g

Material: Flint/silex

TZ 007772-001

Area I; Square AO 117; Complex E 2; Context 1079

Description: Rubbing stone; complete; discoidal circular

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10; W 8.3; H 3.4

Weight: 480 g

Material: Basalt

TZ 007788-001

Area I; Square AN 117; Complex E 4; Context 1132

Description: Rubbing stone; complete; conical

Type: Rubbing stone type 5.1

Figure Reference: Fig. 2.419

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 8; D (max.) 6.5

Weight: 551 g

Material: Basalt



Fig. 2.419 Rubbing stone, basalt, TZ 007788-001 (Source: BAI/GPIA).

TZ 007847-001

Area I; Square AM 117; Complex F 3; Context 1646

Description: Rubbing stone (?); fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.5; W 10; H 8.5

Weight: 826 g

Material: Limestone

TZ 008171-001

Area I; Square AK 117; Complex H 8; Context 1877

Description: Rubbing stone; fragment; spherical to ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7; W 12.2; H 8.2

Weight: 824 g

Material: Basalt

TZ 008172-001

Area I; Square AK 117; Complex H 8; Context 1877

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.1; W 5; H 3.6

Weight: 288 g

Material: Basalt

TZ 008173-001

Area I; Square AK 117; Complex H 8; Context 1877

Description: Rubbing stone; complete; cuboid; rounded corners

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.4; W 5.8; H 3.2

Weight: 253 g

Material: Basalt

TZ 008178-001

Area I; Square AK 117; Complex H 6/H 8; Context 1849

Description: Rubbing stone; complete; discoidal; lenticular in plan view

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 2.6; D (max.) 8.3

Weight: 255 g

Material: Basalt

TZ 008368-001

Area I; Square AK 117; Complex H 6; Context 1910

Description: Rubbing stone; complete; rectangular in plan view; in longitudinal section trapezoidal; on the bottom and on a long side friction surfaces

Type: Rubbing stone type 9

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 10.5; W 7.8; H 5

Weight: 657 g

Material: Basalt

TZ 008400-001

Area I; Square AK 117; Complex H 6/H 8; Context 1849

Description: Rubbing stone; complete; conical to trapezoid

Type: Rubbing stone type 9

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.5; W 6.8; H 6.5

Weight: 437 g

Material: Basalt

TZ 008494-001

Area I; Square AK 116; Complex I 1; Context 1960

Description: Rubbing stone; complete; conical

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.7; W 5; H 6.5

Weight: 281 g

Material: Basalt

TZ 008674-001

Area I; Square AM 116; Complex F 1; Context 1712

Description: Rubbing stone; complete; discoidal

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 3; D (max.) 14.5

Weight: 1081 g

Material: Basalt

TZ 009148-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; complete; conical

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 6.1; D (max.) 5.9

Weight: 311 g

Material: Basalt

TZ 009152-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; complete; shoe-shaped

Type: —

Figure Reference: Fig. 2.420

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5.9; W 5.2; H 6.6

Weight: 279 g

Material: Basalt



Fig. 2.420 Rubbing stone made from basalt TZ 009152-001
(Source: BAI/GPIA).

TZ 009165-001

Area I; Square AM/AN 119; Complex G 4/6; Context 2150

Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 14.2

Figure Reference: Fig. 2.421

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5.6; D (max.) 6

Weight: 333 g

Material: Basalt



Fig. 2.421 Rubbing stone made from basalt TZ 009165-001
(Source: BAI/GPIA).

TZ 009167-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; complete, roller-shaped to cuboid with rounded corners

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13.8; W 5.5; H 5.3

Weight: 692 g

Material: Limestone

TZ 009168-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5.5; D (max.) 7

Weight: 399 g

Material: Basalt

TZ 009172-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; complete; cuboid; one corner fragmented; six friction surfaces

Type: Rubbing stone type 7

Figure Reference: Fig. 2.96; 2.422

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5; W 4.5; H 4

Weight: 301 g

Material: Basalt



Fig. 2.422 Rubbing stone made from basalt TZ 009172-001 (Source: BAI/GPIA).

TZ 009264-001

Area I; Square AN 118; Complex G 5; Context 2344

Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 14.1

Figure Reference: Fig. 2.423

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 6.5; D (max.) 6.5

Weight: 570 g

Material: Flint/silex



Fig. 2.423 Rubbing stone made from flint/silex TZ 009264-001 (Source: BAI/GPIA).

TZ 009269-001

Area I; Square AN 118; Complex G 5; Context 2344

Description: Rubbing stone; complete; discoidal; two friction surfaces

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5; D (max.) 7.4

Weight: 406 g

Material: Basalt

TZ 009270-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Rubbing stone; complete; discoidal; flattened on one side of the edge

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 8.9; W 3.5; H 6.9

Weight: —

Material: Basalt

TZ 009272-001

Area I; Square AN 118; Complex G 3; Context 2343

Description: Rubbing stone; complete; shoe-shaped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.5; W 6.7; H 5.7

Weight: 364 g

Material: Flint/silex

TZ 009273-001

Area I; Square AN 118; Complex G 3; Context 2343

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6.7; W 5.6; H 4.4

Weight: 267 g

Material: Basalt

TZ 009390-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Rubbing stone; complete; conical; circular in plan view

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 8; D (max.) 6.5

Weight: —

Material: Basalt

TZ 009395-001

Area I; Square AN 119; Complex G 4; Context 2355

Description: Rubbing stone; complete; conical; circular in cross section

Type: Rubbing stone type 5.2

Figure Reference: Fig. 2.424

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 7; D (max.) 4.4

Weight: 237 g

Material: Limestone



Fig. 2.424 Rubbing stone made from limestone TZ 009395-001
(Source: BAI/GPIA).

TZ 009401-001

Area I; Square AG 115; Complex P 5; Context 2401

Description: Rubbing stone; complete; cuboid; rounded corners; a small trough on the upper side (pestle); slightly convex on the bottom side

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 12.7; W 9.1; H 6.3

Weight: 1386 g

Material: Basalt

TZ 009414-001

Area I; Square AI 116; Complex I 4; Context 2403

Description: Rubbing stone; complete; approx. ovoid; triangular in longitudinal section; friction surface

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.7; W 3.4; H 4.5

Weight: 121 g

Material: Silicate stone

TZ 009441-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4; W 3.5; H 1.6

Weight: 40 g

Material: Granite

TZ 009442-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; complete; conical; oval in plan view

Type: Rubbing stone type 5.2

Figure Reference: Fig. 2.425

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4.3; W 3.9; H 4.8

Weight: 106 g

Material: Basalt



Fig. 2.425 Rubbing stone made from basalt TZ 009442-001
(Source: BAI/GPIA).

TZ 009443-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; complete; ovoid; flat on the bottom side with trough

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.4; W 4.2; H 2.7

Weight: —

Material: Silicate stone

TZ 009446-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; fragment; discoidal/ ovoid

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 7; W 5.9; H 2.7

Weight: 155 g

Material: Basalt

TZ 009447-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; fragment; original shape uncertain

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 3.9; W 2; H 2.9

Weight: 34 g

Material: Basalt

TZ 009448-001

Area I; Square AI/AK 115; Complex I 2; Context 2411

Description: Rubbing stone; fragment; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.2; W 5.6; H 3.2

Weight: —

Material: Basalt

TZ 010094-001

Area I; Square AN/AO 118; Complex G 3; Context 2736

Description: Rubbing stone; complete; cuboid

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10; W 6; H 5.5

Weight: 698 g

Material: Basalt

TZ 010095-001

Area I; Square AN/AO 118; Complex G 3; Context 2736

Description: Rubbing stone; fragment ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7; W 6; H 5.5

Weight: 289 g

Material: Basalt

TZ 010290-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Rubbing stone; complete; oval in plan view; triangular in longitudinal section

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 11; W 7; H 5

Weight: —

Material: Limestone

TZ 010291-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Rubbing stone; complete; spherical; small trough opposite the friction surface

Type: Rubbing stone type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 4; D (max.) 5

Weight: 178 g

Material: Basalt

TZ 010295-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Rubbing stone; complete; truncated conical

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 8; D (max.) 6

Weight: 403 g

Material: Basalt

TZ 010304-001

Area I; Square AP 118/119; Complex G 1; Context 2730

Description: Rubbing stone; complete; irregularly shaped; cut notches on the upper side; no friction surfaces visible

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7; W 5.5; H 2

Weight: 121 g

Material: Basalt

TZ 010602-001

Area I; Square AQ 118; Complex D 3; Context 2780

Description: Rubbing stone; complete; oval in plan view; rounded upper and bottom sides

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8; W 6; H 5

Weight: 356 g

Material: Basalt

TZ 010620-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Rubbing stone; complete; slightly triangular in plan view; upper and bottom side convex

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13; W 10; H 6

Weight: 1406 g

Material: Basalt

TZ 010086-001

Area I; Square AO 118/119; Complex G 3/G 4; Context 2698

Description: Rubbing stone; complete; conical section; circular in plan view

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5; D (max.) 6

Weight: 270 g

Material: Basalt

TZ 011229-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Rubbing stone; complete; oval in plan view; triangular in plan view; upper side very convex

Type: Rubbing stone type 10.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.6; W 6.3; H 5.7

Weight: 629 g

Material: Basalt

TZ 011230-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Rubbing stone; complete; spherical

Type: Rubbing stone type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.5

Weight: 190 g

Material: Flint/silex

TZ 011239-001

Area I; Square AH 115; Complex P 3/P 5; Context 3231

Description: Rubbing stone; fragment; rectangular in plan view; rounded corners; upper side convex; two friction surfaces

Type: Rubbing stone type 12

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.7; W 7.9; H 5.2

Weight: 334 g

Material: Basalt

TZ 011275-001

Area I; Square AH 115; Complex P 2/P 3/P 4; Context 3237

Description: Rubbing stone; fragment; shoe-shaped; triangular in plan view and longitudinal section

Type: Rubbing stone type 14

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.4; W 5.8; H 4

Weight: 191 g

Material: Limestone

TZ 011316-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Rubbing stone; complete; conical; oval in plan view

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.1; W 7.1; H 9.2

Weight: 768 g

Material: Basalt

TZ 011317-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Rubbing stone; fragment; shoe-shaped; trapezoid in plan view

Type: Rubbing stone type 14.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.8; W 6.7; H 5.5

Weight: 465 g

Material: Basalt

TZ 011320-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Rubbing stone; complete; conical with overhang; circular in plan view

Type: Rubbing stone type 4

Figure Reference: Fig. 2.209; 2.426

Date of Context: LB II—Stratum 14 a

Dimensions: L 5; W 5.1; H 7.3

Weight: 260 g

Material: Basalt



Fig. 2.426 Rubbing stone made from basalt TZ 011320-001 (Source: BAI/GPIA).

TZ 011564-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; fragment; oval in plan view; very convex on the upper side

Type: Rubbing stone type 15

Figure Reference: —

Date of Context: LB II—Stratum 14 a
Dimensions: L 7.1; W 6.3; H 6.2
Weight: 411 g
Material: Basalt

TZ 011566-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 6; W 4.6; H 3.3
Weight: 141 g
Material: Basalt

TZ 011567-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; approx. conical; only roughly worked
Type: Rubbing stone type 5.1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 7.9; W 7.5; H 5.7
Weight: 493 g
Material: Basalt

TZ 011622-001

Area I; Square AG 116; Complex P 8; Context 3394
Description: Fragment of a rubbing stone (?); oval in plan view; on the upper side elaborated recessed grips; bottom side convex
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 11.8; W 10.5; H 8.9
Weight: 1577 g
Material: Basalt

TZ 011631-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; conical
Type: Rubbing stone type 5.1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 5.8; D (max.) 3.6
Weight: 114 g
Material: Basalt

TZ 011632-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 7.6; W 6.1; H 5.8
Weight: —
Material: Basalt

TZ 011633-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; irregular shape; slightly triangular in plan view
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 6.3; W 6.4; H 6.2
Weight: 350 g
Material: Basalt

TZ 011634-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 8.1; W 6; H 5.5
Weight: 418 g
Material: Basalt

TZ 011636-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Rubbing stone; complete; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 7.3; W 5.2; H 4
Weight: 228 g
Material: Flint/silex

TZ 011645-001

Area I; Square AG 116; Complex P 8; Context 3394
Description: Rubbing stone; complete conical
Type: Rubbing stone type 5.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 4; D (max.) 4.7
Weight: 125 g
Material: Basalt

TZ 011648-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; oval in plan view; upper and bottom side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.9; W 5.2; H 3.8

Weight: —

Material: Basalt

TZ 011650-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.2; W 5.5; H 4.9

Weight: —

Material: Basalt

TZ 011651-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; conical; upper side convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.3; D (max.) 4.7

Weight: 181 g

Material: Basalt

TZ 011652-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.7; W 5.5; H 4.4

Weight: 230 g

Material: Flint/silex

TZ 011693-001

Area I; Square AG 115; Complex P 7; Context 3419

Description: Rubbing stone; fragment; oval in plan view; upper side convex; bottom side flat.

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.9; W 3.4; H 2.6

Weight: 75 g

Material: Basalt

TZ 011789-001

Area I; Square AG 116; Complex P 4; Context 3369

Description: Rubbing stone; complete

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.3; W 5; H 5.6

Weight: 274 g

Material: Basalt

TZ 011795-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; oval in plan view; upper side convex; friction surface on the bottom side

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.8; W 7.1; H 4.4

Weight: 325 g

Material: Silicate stone

TZ 011799-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; irregularly shaped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 19.2; W 9.8; H 9.1

Weight: —

Material: Basalt

TZ 011800-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; triangular in longitudinal section; rounded corners; very convex on the bottom side; friction surface

Type: Rubbing stone type 16

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.6; W 4.3; H 4

Weight: 151 g

Material: Pebble

TZ 011801-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; rectangular

in plan view; trapezoid in longitudinal section

Type: Rubbing stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.7; W 4.9; H 6.9

Weight: 300 g

Material: Basalt

TZ 011802-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; rectangular in plan view; rounded corners

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.2; W 8.1; H 6.4

Weight: 1176 g

Material: Basalt

TZ 011804-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; conical section

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.5; W 5.9; H 5.4

Weight: 331 g

Material: Basalt

TZ 011805-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Rubbing stone; complete; cuboid; two friction surfaces

Type: Rubbing stone type 7

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.3; W 5.7; H 6.3

Weight: 363 g

Material: Basalt

TZ 011874-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Rubbing stone; complete; spherical; convex on the upper side and slightly on the bottom side

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.8; D (max.) 5.6

Weight: 237 g

Material: Limestone

TZ 011875-001

Area I; Square AG 116; Complex P 5/P 6/P 8; Context 3452

Description: Rubbing stone; complete; circular in plan view; very convex upper side and convex bottom side

Type: Rubbing stone type 3

Figure Reference: Fig. 2.427

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.2; W 10.5; H 6.5

Weight: 1161 g

Material: Basalt



Fig. 2.427 Rubbing stone made from basalt TZ 011875-001
(Source: BAI/GPIA).

TZ 011890-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Rubbing stone; complete; slightly conical; flat bottom side

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 7.4; D (max.) 10

Weight: 1022 g

Material: Basalt

TZ 011891-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Rubbing stone; complete; oval in plan view; convex upper and bottom side; two opposite friction surfaces

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10.6; W 8.9; H 5.6

Weight: —

Material: Basalt

TZ 011892-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Rubbing stone; complete; oval in plan view; upper and bottom side convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5.2; W 3.7; H 2.6

Weight: 85 g

Material: Basalt

TZ 011893-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Rubbing stone; complete; rectangular in plan view; very convex upper side; flat bottom side

Type: Rubbing stone type 9

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9.8; W 6.6; H 7

Weight: 600 g

Material: Basalt

TZ 011911-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Rubbing stone; fragment; rectangular in plan view; rounded corners; convex upper side; flat bottom side

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 11.6; W 7.9; H 4.6

Weight: 635 g

Material: Flint/silex

TZ 011912-001

Area I; Square AL 118; Complex H 2; Context 3511

Description: Rubbing stone; complete; cuboid; several friction surfaces

Type: Rubbing stone type 7

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.7; W 5.7; H 4.9

Weight: 297 g

Material: Flint/silex

TZ 012229-001

Area I; Square AF 115; Complex P 7; Context 3500

Description: Rubbing stone; complete; oval in plan view; convex on the upper side; slightly convex bottom side; two friction surfaces

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8.8; W 5.9; H 4.2

Weight: 320 g

Material: Basalt

TZ 012262-001

Area I; Square AI 117; Complex I 5; Context 3592

Description: Rubbing stone; complete; ovoid; slightly flattened on one side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.5; W 10.1; H 6

Weight: 1405 g

Material: Basalt

TZ 012264-001

Area I; Square AR 120; Complex D 4; Context 3585

Description: Rubbing stone; complete; hemispherical; bottom side flat.

Type: Rubbing stone type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 5.8; D (max.) 7.6

Weight: —

Material: Basalt

TZ 012273-001

Area I; Square AF 115; Complex P 7; Context 3500

Description: Rubbing stone; complete; discoidal; friction surfaces on the upper and bottom side

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 3.2; D (max.) 11

Weight: —

Material: Basalt

TZ 012279-001

Area I; Square AR 119; Complex D 2; Context 3570

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.5; W 6.3; H 5.3

Weight: 361 g

Material: Basalt

TZ 012281-001

Area I; Square AF 116; Complex O 5; Context 3509

Description: Rubbing stone; complete; cuboid; two friction surfaces

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 10.7; W 9.2; H 6.8

Weight: 1247 g

Material: Basalt

TZ 012283-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Rubbing stone; complete; discoidal; straight edge

Type: Rubbing stone type 12.1

Figure Reference: Fig. 2.428

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 9.4; W 8.3; H 5.2

Weight: 639 g

Material: Basalt



Fig. 2.428 Rubbing stone made from basalt TZ 012283-001
(Source: BAI/GPIA).

TZ 012285-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Rubbing stone; complete; ovoid; bottom side flat

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 23.8; W 17.2; H 8.7

Weight: 5700 g

Material: Basalt

TZ 012288-001

Area I; Square AI 117; Complex I 5; Context 3593

Description: Rubbing stone; complete; conical

Type: Rubbing stone type 5.1

Figure Reference: Fig. 2.429

Date of Context: LB II—Stratum 14 a

Dimensions: H 6.5; D (max.) 4.7

Weight: 159 g

Material: Limestone



Fig. 2.429 Rubbing stone made from limestone TZ 012288-001
(Source: BAI/GPIA).

TZ 012289-001

Area I; Square AI 117; Complex I 5; Context 3615

Description: Rubbing stone; complete; conical

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 7.6; D (max.) 4.7

Weight: 289 g

Material: Basalt

TZ 012292-001

Area I; Square AF 116; Complex O 2/O 5; Context 3523

Description: Rubbing stone; complete; conical; bottom side slightly convex

Type: Rubbing stone type 5.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.8; D (max.) 6.8

Weight: 360 g

Material: Basalt

TZ 012294-001

Area I; Square AE 116; Complex O 2/O 4; Context 3606

Description: Rubbing stone; complete; pyramidal section

Type: Rubbing stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Dimensions: L 5.5; W 5.2; H 6.3

Weight: 328 g

Material: Basalt

TZ 012295-001

Area I; Square AI 117; Complex I 5; Context 3627

Description: Rubbing stone; complete; ovoid; bottom side convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.8; W 6.1; H 4.4

Weight: 375 g

Material: Limestone

TZ 012296-001

Area I; Square AI 117; Complex I 5; Context 3622

Description: Rubbing stone; complete; ovoid; bottom side very convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.8; W 5.6; H 5.3

Weight: 302 g

Material: Basalt

TZ 012298-001

Area I; Square AF 115; Complex P 7; Context 3611

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.8; W 4.2; H 2.6

Weight: 66 g

Material: Limestone

TZ 012299-001

Area I; Square AF 115; Complex P 7; Context 3611

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 2.6; D (max.) 3.5

Weight: 78 g

Material: Silicate stone

TZ 012300-001

Area I; Square AF 115; Complex P 7; Context 3611

Description: Rubbing stone; complete; oval in plan view; triangular in longitudinal section

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.3; W 3.8; H 3.2

Weight: 78 g

Material: Basalt

TZ 012306-001

Area I; Square AI 117; Complex I 5; Context 3627

Description: Rubbing stone; complete; pyramidal; triangular in plan view; rather irregular to natural shape; friction surface on the bottom side

Type: Rubbing stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.8; W 3.3; H 2.8

Weight: 48 g

Material: Silicate stone

TZ 012307-001

Area I; Square AI 117; Complex I 5; Context 3627

Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.3; W 3.7; H 3.1

Weight: 100 g

Material: Basalt

TZ 012310-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Rubbing stone; complete; conical to pyramidal; rectangular in plan view; transition to truncated pyramid, flattened on the top

Type: Rubbing stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.2; W 4.8; H 7.2

Weight: 350 g

Material: Basalt

TZ 012520-001

Area I; Square AR 119; Complex D 2/D 3; Context 3584

Description: Rubbing stone; complete ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 8.3; W 5.5; H 4.7

Weight: 287 g

Material: Basalt

TZ 012521-001

Area I; Square AR 119; Complex D 2/D 3; Context 3584

Description: Rubbing stone. One half preserved; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions:

Weight: 127 g

Material: Basalt

TZ 012522-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Rubbing stone; complete; conical; bottom side convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.2; W 4.6; H 6

Weight: 207 g

Material: Basalt

TZ 012525-001

Area I; Square AE 116; Complex O 2; Context 3641

Description: Rubbing stone; complete; conical; bottom side convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.9; D (max.) 4.7

Weight: 174 g

Material: Basalt

TZ 012671-001

Area I; Square AE 116; Complex O 4; Context 3708

Description: Rubbing stone; complete; rectangular in plan view; rounded corners; smooth surface

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.7; W 2.9; H 1.7

Weight: 36 g

Material: Pebble

TZ 012672-001

Area I; Square AE 115; Complex O 3; Context 3543

Description: Rubbing stone; fragment; original shape not determinable

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.1; W 8.1; H 4.1

Weight: 347 g

Material: Basalt

TZ 012674-001

Area I; Square AF 116; Complex K 8; Context 3707

Description: Rubbing stone; fragment; original shape not determinable

Type: Rubbing stone type 5

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 3.7; D (max.) 5.8

Weight: 207 g

Material: Basalt

TZ 012675-001

Area I; Square AF 116; Complex K 8; Context 3711

Description: Rubbing stone; complete; conical section

Type: Rubbing stone type 5.2

Figure Reference:

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 5.9; D (max.) 5.3

Weight: 234 g

Material: Basalt

TZ 012680-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Rubbing stone; complete; oval in plan view; upper side slightly convex; bottom side flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.7; W 10.5; H 5.6

Weight: 1150 g

Material: Basalt

TZ 014459-001

Area I; Square AG 115; Complex K 1/K 2; Context 3535

Description: Rubbing stone (?); fragment; half round object, lengthwise broken; possibly ecofact

Type: Rubbing stone type 15

Figure Reference: Fig. 2.430

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.4; W 4.7; H 3

Weight: 107 g

Material: Sandstone



Fig. 2.430 Fragment of a rubbing stone (?) made from sandstone
TZ 014459-001 (Source: BAI/GPIA).

TZ 014462-001

Area I; Square AF 115; Complex K 1/K 5/K 7; Context 4606

Description: Rubbing stone; complete; irregular to natural shape; bottom side flat; friction surface

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6.5; W 5; H 4.5

Weight: 199 g

Material: Pebble

TZ 014483-001

Area I; Square AF 116; Complex N 1; Context 4610

Description: Rubbing stone; complete; oval in plan view; upper side very convex; bottom side slightly convex; friction surface; natural shaped

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 4.5; W 4.1; H 3.1

Weight: 84 g

Material: Pebble

TZ 014602-001

Area I; Square AI 115; Complex K 1; Context 4657

Description: Rubbing stone; fragment; oval in plan view; bottom side flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4.7; W 6.1; H 3.2

Weight: 153 g

Material: Basalt

TZ 014603-001

Area I; Square AI 115; Complex K 1; Context 4657

Description: Rubbing stone; complete; triangular in plan view; bottom side convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6; W 5; H 3.6

Weight: 158 g

Material: Basalt

TZ 014604-001

Area I; Square AH 115; Complex K 2/K 3/K 4; Context 4661

Description: Rubbing stone; complete; oval in plan view; bottom side flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 8.2; W 6.5; H 3

Weight: 231 g

Material: Limestone

TZ 014605-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; approx. cuboid; one clearly friction surface

Type: Rubbing stone type 7

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.1; W 5.7; H 5

Weight: 327 g

Material: Basalt

TZ 014608-001

Area I; Square AH 116; Complex P 4; Context 4652

Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 14.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.8; W 7.1; H 6

Weight: 549 g

Material: Basalt

TZ 014609-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; complete; oval in plan view; convex and slightly beveled forward on the upper side; bottom side flat and heavily abraded

Type: Rubbing stone type 12.2

Figure Reference: Fig. 2.431 a, b

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.4; W 8.2; H 3.8

Weight: 477 g

Material: Basalt



Fig. 2.431 a Rubbing stone made from basalt TZ 014609-001
(Source: BAI/GPIA).



Fig. 2.431 b Rubbing stone made from basalt TZ 014609-001
(Source: BAI/GPIA).

TZ 014613-001

Area I; Square AF 116; Complex P 8; Context 3555

Description: Rubbing stone; fragment; circular in plan view; convex and abraded on the upper and bottom side

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.6; D (max.) 13.1

Weight: 1315 g

Material: Basalt

TZ 014617-001

Area I; Square AG 116; Complex K 6; Context 4648

Description: Rubbing stone; complete; lenticular; oval in plan view; upper side slightly convex; bottom side flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 9.7; W 6.8; H 3.6

Weight: 374 g

Material: Basalt

TZ 014733-001

Area I; Square AI 117; Complex I 5; Context 3627

Description: Rubbing stone; complete; spherical section; flat and with friction surfaces on the upper and bottom side

Type: Rubbing stone type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.8; D (max.) 7

Weight: 442 g

Material: Basalt

TZ 014734-001

Area I; Square AI 117; Complex I 5; Context 3669
Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side flat

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 13.4; W 10; H 5.3

Weight: 1041 g

Material: Limestone

TZ 014735-001

Area I; Square AI 117; Complex I 5; Context 3627
Description: Rubbing stone; complete; ovoid

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.1; D (max.) 3.8

Weight: 100 g

Material: Basalt

TZ 014738-001

Area I; Square AI 117; Complex I 5; Context 3612
Description: Rubbing stone; complete; approx. circular in plan view; slightly convex and with friction surface on the bottom side; almost natural shape

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.3; W 4.9; H 3.7

Weight: —

Material: Pebble

TZ 014739-001

Area I; Square AF 115; Complex K 7; Context 4607
Description: Rubbing stone; complete; shoe-shaped

Type: Rubbing stone type 14.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6.5; W 6.1; H 5.4

Weight: 325 g

Material: Basalt

TZ 014743-001

Area I; Square AI 117; Complex I 5; Context 3618
Description: Rubbing stone; complete; conical; upper side convex; bottom side slightly convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.1; D (max.) 4.8

Weight: 158 g

Material: Basalt

TZ 014744-001

Area I; Square AI 117; Complex I 5; Context 3627
Description: Rubbing stone; complete; approx. cuboid; rounded corners; one friction surface

Type: Rubbing stone type 7

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.2; W 4.5; H 4.7

Weight: 209 g

Material: Basalt

TZ 014746-001

Area I; Square AI 117; Complex I 5; Context 3627
Description: Rubbing stone; complete; oval in plan view; slightly prismatic

Type: Rubbing stone type 10

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.4; W 3.9; H 2.6

Weight: 89 g

Material: Basalt

TZ 015449-001

Area I; Square AP 120; Complex G 2; Context 5453
Description: Rubbing stone; complete; conical; a trough on the bottom side

Type: —

Figure Reference: Fig. 2.432

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.8; W 4.7; H 3.8

Weight: —

Material: Basalt



Fig. 2.432 Rubbing stone made from basalt with trough on the bottom side TZ 015449-001 (Source: BAI/GPIA).

TZ 015452-001

Area I; Square AH 116; Complex P 4; Context 4985

Description: Rubbing stone; complete; ovoid

Type: —

Figure Reference: Fig. 2.433

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.6; D (max.) 3.2

Weight: —

Material: Silicate stone



Fig. 2.433 Ovoid rubbing stone made from silicate stone TZ 015452-001 (Source: BAI/GPIA).

TZ 015578-001

Area I; Square AM 117; Complex H 1; Context 4750

Description: Rubbing stone; complete; oval to triangular in plan view; rounded corners; upper side convex with two small recessed grips; bottom side slightly convex

Type: Rubbing stone type 10.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.8; W 3.9; H 2.3

Weight: —

Material: Basalt

TZ 015581-001

Area I; Square AG 116; Complex K 6; Context 5474

Description: Rubbing stone; fragment; rectangular in plan view; rounded corners; burn marks

Type: Rubbing stone type 12

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 7.5; W 9; H 3.2

Weight: 285 g

Material: Basalt

TZ 015584-001

Area I; Square AP 120; Complex G 2; Context 5453

Description: Rubbing stone; complete; irregular

in plan view; bottom side slightly convex; roughly worked

Type: Rubbing stone type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5.7; W 5.3; H 6.5

Weight: 394 g

Material: Basalt

TZ 015585-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Rubbing stone; complete; rectangular in plan view; one side beveled; the upper part pyramidal; irregular side lengths; dark basalt

Type: Rubbing stone type 4

Figure Reference: Fig. 2.434

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 4.2; W 3.5; H 5.4

Weight: 132 g

Material: Basalt



Fig. 2.434 Rubbing stone made from basalt TZ 015585-001 (Source: BAI/GPIA).

TZ 015620-001

Area I; Square AL 118; Complex H 7; Context 4791

Description: Rubbing stone; fragment; oval in plan view; upper side convex; on the bottom side slightly convex; possibly ecofact

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 8; W 16; H 9

Weight: 1397 g

Material: Limestone

TZ 015630-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482

Description: Rubbing stone; complete; conical; convex on the upper and bottom side; slightly flattened on the upper side

Type: Rubbing stone type 5.1

Figure Reference: Fig. 2.435

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 6.6; D (max.) 5.9

Weight: 237 g

Material: Basalt



Fig. 2.435 Rubbing stone made from basalt TZ 015630-001 (Source: BAI/GPIA).

TZ 015679-001

Area I; Square AE 116; Complex N 3; Context 4972
Description: Rubbing stone; complete; oval in plan view; upper and bottom side flat; edge slightly convex

Type: Rubbing stone type 12.2

Figure Reference: Fig. 2.436 a, b

Date of Context: LB II—Stratum 14 c

Dimensions: L 14.6; W 7.7; H 3.1

Weight: 625 g

Material: Basalt



Fig. 2.436 Oval rubbing stone made from basalt TZ 015679-001 (Source: BAI/GPIA).



Fig. 2.436 b Oval rubbing stone made from basalt TZ 015679-001 (Source: BAI/GPIA).

TZ 015702-001

Area I; Square AE 116; Complex O 4; Context 3607
Description: Rubbing stone; complete; pestle; conical; on the upper side traces of impact; bottom side reduced (not smoothed)

Type: Rubbing stone type 13

Figure Reference: Fig. 2.437

Date of Context: LB II—Stratum 14 a

Dimensions: H 8.4; D (max.) 5.3

Weight: 246 g

Material: Basalt

Reference: Tall Waqqāṣ (Hazor) **LB II:** Ebeling 2012, 550, fig. 11.7.4



Fig. 2.437 Rubbing stone made from basalt TZ 015702-001 (Source: BAI/GPIA).

TZ 015705-001

Area I; Square AG 116; Complex K 6; Context 4938

Description: Rubbing stone; complete; discoidal

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 3.3; D (max.) 7.5

Weight: 272 g

Material: Basalt

TZ 015716-001

Area I; Square AE 115; Complex O 3; Context 4973

Description: Rubbing stone; fragment; discoidal to circular; two friction surfaces

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.5; W 7.5; H 3.2

Weight: 66 g

Material: Basalt

TZ 015723-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; complete; cuboid; rounded corners; upper side convex; bottom side flat

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 10.2; W 7.6; H 6.7

Weight: 1136 g

Material: Basalt

TZ 015974-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; fragment; broken on the bottom and narrow side; original shape not determinable

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6.3; W 4.1; H 3.3

Weight: 85 g

Material: Limestone

TZ 015729-001

Area I; Square AE 116; Complex O 2; Context 4967

Description: Rubbing stone; complete; shoe-shaped to conical; bottom side convex

Type: Rubbing stone type 14.2

Figure Reference: Fig. 2.438

Date of Context: LB II—Stratum 14 b

Dimensions: H 6.5; D (max.) 6.9

Weight: 394 g

Material: Basalt



Fig. 2.438 Rubbing stone made from basalt TZ 015729-001 (Source: BAI/GPIA).

TZ 015731-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Rubbing stone; complete; conical; upper side convex; bottom side slightly convex

Type: Rubbing stone type 5.1

Figure Reference: Fig. 2.439

Date of Context: LB II—Stratum 14 a

Dimensions: H 7.5; D (max.) 6

Weight: 339 g

Material: Basalt



Fig. 2.439 Conical rubbing stone made from basalt TZ 015731-001 (Source: BAI/GPIA).

TZ 015740-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482

Description: Rubbing stone; complete; conical; upper side slightly convex; bottom side convex

Type: Rubbing stone type 5.2

Figure Reference: Fig. 2.440

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 5.4; D (max.) 6.3

Weight: 203 g

Material: Basalt



Fig. 2.440 Rubbing stone made from basalt TZ 015740-001
(Source: BAI/GPIA).

TZ 015741-001

Area I; Square AF 115; Complex O 2; Context 4966
Description: Rubbing stone; complete; conical; upper side slightly convex; bottom side convex
Type: Rubbing stone type 5.2
Figure Reference: —
Date of Context: LB II—Stratum 14 b
Dimensions: H 5.6; D (max.) 5.6
Weight: 341 g
Material: Basalt

TZ 015743-001

Area I; Square AI 117; Complex I 5; Context 3627
Description: Rubbing stone; complete; ovoid
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 8; W 5.4; H 5.1
Weight: 336 g
Material: Basalt

TZ 015773-001

Area I; Square AL 118; Complex H 7; Context 4791
Description: Rubbing stone; fragment; discoidal; oval in plan view
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 13.1; W 8.1; H 4.8
Weight: 876 g
Material: Basalt

TZ 015801-001

Area I; Square AL 118; Complex H 5; Context 4793
Description: Rubbing stone; fragment; possibly discoidal
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4.5; W 4.6; H 1.7
Weight: 43 g
Material: Basalt

TZ 015803-001

Area I; Square AI 117; Complex I 3; Context 4917
Description: Rubbing stone; fragment; oval in plan view; bottom side slightly convex
Type: —
Figure Reference: —

Date of Context: LB II—Stratum 14 c, d
Dimensions: L 6.8; W 7.9; H 4.3
Weight: 252 g
Material: Basalt

TZ 015804-001

Area I; Square AL 118; Complex H 2/H 7; Context 3451
Description: Rubbing stone; complete; circular in plan view; upper side clearly convex and beveled steeper at one side; flat on the bottom side
Type: Rubbing stone type 3

Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 8.2; W 7.6; H 6.6
Weight: 604 g
Material: Basalt

TZ 015809-001

Area I; Square AG 116; Complex K 6; Context 5425
Description: Rubbing stone; complete; irregular to circular shape; upper side convex; bottom side flat, a hole on the bottom side: D (opening) 1 to 1.5 cm
Type: Rubbing stone type 3
Figure Reference: Fig. 2.441
Date of Context: LB II—Stratum 14 c, d
Dimensions: L 5.6; W 5.1; H 4.1
Weight: 178 g
Material: Basalt
Reference: Tall Waqqāṣ (Hazor) IA: Ebeling 2012, 554, fig. 11.8.5



Fig. 2.441 Rubbing stone made from basalt with a hole on the bottom side TZ 015809-001 (Source: BAI/GPIA).

TZ 015812-001

Area I; Square AG 116; Complex K 6; Context 5471

Description: Rubbing stone; complete; oval in plan view; upper side convex and beveled on one side; bottom side slightly concave

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 7.5; W 5.5; H 4

Weight: 212 g

Material: Basalt

TZ 015827-001

Area I; Square AK 116; Complex E 6/I 1; Context 1981

Description: Rubbing stone; fragment; oval in plan view; upper side convex and smoothed with friction surfaces; flat but not smoothed on the bottom side

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10; W 8.3; H 3.6

Weight: 382 g

Material: Basalt

TZ 015876-001

Area I; Square AF 115; Complex L 2/M 1; Context 5547

Description: Rubbing stone; complete; discoidal; not quite round in plan view; upper side slightly concave with a trough; bottom side slightly convex

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 2.9; D (max.) 7.6

Weight: 178 g

Material: Basalt

TZ 015885-001

Area I; Square AE 114; Complex L 1/L 2; Context 5305

Description: Rubbing stone; complete; discoidal; oval in plan view; a small trough on the upper side

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 10.1; W 5.7; H 3.1

Weight: 304 g

Material: Basalt

TZ 015886-001

Area I; Square AG 115; Complex K 5/K 6; Context 4662

Description: Rubbing stone; complete; ovoid; bottom side flat; friction surface

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6.4; W 4.2; H 3.5

Weight: 138 g

Material: Pebble

TZ 015891-001

Area I; Square AF 116; Complex K 8; Context 4620

Description: Rubbing stone; fragment; cuboid; rounded and smoothed on one narrow side; fragmented on the opposite side; smoothed side surfaces; upper and bottom sides smoothly cut off

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 12; W 6; H 4

Weight: 526 g

Material: Basalt

TZ 015901-001

Area I; Square AF 116; Complex K 8; Context 4620

Description: Rubbing stone; complete; ovoid; bottom side flat

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 6.9; W 5.8; H 4.8

Weight: 293 g

Material: Basalt

TZ 015910-001

Area I; Square AE 115; Complex O 3; Context 4912
Description: Rubbing stone; complete; one friction surface

Type: Rubbing stone type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: D (max.) 5.2

Weight: 178 g

Material: Basalt

TZ 015914-001

Area I; Square AE 115; Complex O 3; Context 4912
Description: Rubbing stone; complete; conical; upper side convex; bottom side slightly convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: H 6.3; D (max.) 5.2

Weight: 266 g

Material: Basalt

TZ 015918-001

Area I; Square AE 116; Complex O 2; Context 4967
Description: Rubbing stone; complete; conical; upper and bottom side slightly convex

Type: Rubbing stone type 5.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: H 10.2; D (max.) 7.8

Weight: 838 g

Material: Basalt

TZ 015931-001

Area I; Square AG 116; Complex K 6/K 8; Context 5031

Description: Rubbing stone; fragment; oval in plan view; upper side very convex; bottom side flat

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 6.4; W 5.7; H 6.5

Weight: 286 g

Material: Basalt

TZ 015933-001

Area I; Square AG 116; Complex K 6/K 8; Context 5031

Description: Rubbing stone; fragment; approx. circular in plan view; flat on the bottom side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 5.4; D (max.) 6

Weight: 161 g

Material: Basalt

TZ 015943-001

Area I; Square AE 116; Complex O 2; Context 4967

Description: Rubbing stone; fragment; cuboid; triangular on one narrow side; upper and bottom side flat; possibly natural shape

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 11.7; W 7.8; H 5

Weight: 765 g

Material: Limestone

TZ 015944-001

Area I; Square AL 118; Complex H 4; Context 5041

Description: Rubbing stone; complete; ovoid; upper and bottom side convex; friction surfaces on the bottom side; possibly natural shaped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: L 21.5; W 13.5; H 9.1

Weight: —

Material: Limestone

TZ 015947-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482

Description: Rubbing stone; complete; oval in plan view; upper and bottom side slightly convex with traces of friction

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 9; W 5.7; H 3.1

Weight: 183 g

Material: Limestone

TZ 015949-001

Area I; Square AF 116; Complex L 2; Context 5191

Description: Rubbing stone; complete; rectangular in plan view; upper and bottom side flat; one long side half beveled; traces of friction on the bottom side

Type: Rubbing stone type 12

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: L 12.2; W 7.8; H 2.5

Weight: 282 g

Material: Limestone

TZ 015955-001

Area I; Square AE 115; Complex L 2; Context 5430

Description: Rubbing stone; fragment; circular in plan view; convex and reduced on the upper side; bottom side slightly convex; completely smoothed

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: H 2.7; D (max.) 6.3

Weight: 107 g

Material: Limestone

TZ 015956-001

Area I; Square AI 117; Complex I 5; Context 3664

Description: Rubbing stone; complete; oval in plan view; bottom side flat; all sides smoothed

Type: Rubbing stone type 15

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.3; W 4.4; H 4.2

Weight: 239 g

Material: Limestone

TZ 015958-001

Area I; Square AE 116; Complex L 3/L 4; Context 5131

Description: Rubbing stone; complete; ovoid; upper side convex; bottom side; slightly convex with traces of friction

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: L 5.5; W 4.6; H 3.4

Weight: 94 g

Material: Limestone

TZ 015962-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; fragment; oval in plan view; upper and bottom side slightly convex

Type: Rubbing stone type 12.2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 6.5; W 6; H 2.6

Weight: 167 g

Material: Limestone

TZ 015964-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; fragment; circular in plan view; bottom side slightly convex; bottom side flat

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5; W 5; H 1.3

Weight: 28 g

Material: Limestone

TZ 015968-001

Area I; Square AI 116; Complex K 3; Context 4773

Description: Rubbing stone; complete; triangular in plan view; on the upper side slightly rising to a peak; flat on the bottom side

Type: Special shape

Figure Reference: Fig. 2.114; 2.442 a, b

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 11.4; W 11; H 5.3

Weight: 710 g

Material: Limestone



Fig. 2.442 a Triangular rubbing stone made from limestone TZ 015968-001 (Source: BAI/GPIA).



Fig. 2.442 b Triangular rubbing stone made from limestone
TZ 015968-001 (Source: BAI/GPIA).

TZ 015969-001

Area I; Square AE 116; Complex O 4; Context 3607
Description: Rubbing stone; complete; approx. discoidal
Type: Rubbing stone type 12.1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 11.5; W 10.8; H 3.2
Weight: 599 g
Material: Limestone

TZ 015970-001

Area I; Square AI 116; Complex K 3; Context 4773
Description: Rubbing stone; complete; oval in plan view; upper and bottom side slightly convex; slanted upper side on a narrow side towards the middle
Type: Rubbing stone type 12.2
Figure Reference: —
Date of Context: LB II—Stratum 14 b–d
Dimensions: L 9.8; W 7.8; H 3.6
Weight: 382 g
Material: Limestone

TZ 015972-001

Area I; Square AL 118; Complex H 2; Context 3502
Description: Rubbing stone; complete; oval in plan view; upper side convex and partly slightly beveled; on the bottom side slightly convex
Type: Special shape
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 9.3; W 4.5; H 3

Weight: 188 g
Material: Limestone

TZ 015973-001

Area I; Square AH 116; Complex P 2; Context 3208
Description: Rubbing stone; fragment; triangular in plan view; one side broken; upper side flat; bottom side slightly convex with traces of friction
Type: Special shape
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 6.6; W 4.6; H 2.9
Weight: 148 g
Material: Limestone

TZ 015989-001

Area I; Square AI 117; Complex I 5; Context 3618
Description: Rubbing stone; fragment; original form not determinable; upper and bottom side slightly convex
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 13.1; W 9.2; H 5.6
Weight: 1070 g
Material: Limestone

TZ 016014-001

Area I; Square AG 116; Complex K 6; Context 5496
Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side flat with traces of friction
Type: Rubbing stone type 3
Figure Reference: —
Date of Context: LB II—Stratum 14 c, d
Dimensions: L 8.1; W 6.2; H 5.2
Weight: 399 g
Material: Flint/silex

TZ 016020-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482
Description: Rubbing stone; complete; approx. shoe-shaped; triangular in plan view; bottom side flat; two friction surfaces
Type: Rubbing stone type 14
Figure Reference: —
Date of Context: LB II—Stratum 14 c, d
Dimensions: L 8.3; W 6.1; H 5.3

Weight: 311 g
Material: Flint/silex

TZ 016021-001

Area I; Square AF 116; Complex L 2/(K 8); Context 5193

Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side flat with traces of friction

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 10.6; W 7; H 6.7

Weight: 703 g

Material: Flint/silex

TZ 016024-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; complete

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 6.7; D (max.) 6

Weight: 359 g

Material: Flint/silex

TZ 016027-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Rubbing stone; complete; irregular shaped; bottom side flat with traces of friction

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 8; W 5.8; H 4.5

Weight: 378 g

Material: Pebble

TZ 016042-001

Area I; Square AE 116; Complex O 2; Context 3641

Description: Rubbing stone; complete; cuboid; upper side convex; bottom side flat with traces of friction; on a long side beveled down

Type: Rubbing stone type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.2; W 7.4; H 6.2

Weight: 715 g

Material: Flint/silex

TZ 016045-001

Area I; Square AE 115; Complex M 3; Context 5148

Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side slightly convex with traces of friction

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 11.7; W 8.7; H 7.5

Weight: 1009 g

Material: Flint/silex

TZ 016046-001

Area I; Square AF 115; Complex L 2/M 1; Context 5482

Description: Rubbing stone; complete; circular in plan view; convex on the upper side; bottom side slightly convex

Type: Rubbing stone type 12.1

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 4.3; D (max.) 8.7

Weight: 386 g

Material: Flint/silex

TZ 016050-001

Area I; Square AE 116; Complex N 2; Context 5055

Description: Rubbing stone; complete; oval in plan view; upper side convex; bottom side flat

Type: Rubbing stone type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 6.8; W 6.4; H 4.7

Weight: 273 g

Material: Flint/silex

TZ 016060-001

Area I; Square AG 116; Complex K 6; Context 5496

Description: Rubbing stone; complete; ovoid; bottom side slightly convex with traces of friction

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 6.4; W 5.9; H 4.8

Weight: 264 g

Material: Flint/silex

TZ 016063-001

Area I; Square AI 117; Complex I 5; Context 3618
Description: Rubbing stone; complete; cuboid; rounded corners; upper side slightly convex; bottom side flat

Type: Rubbing stone type 10.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 10.6; W 7.4; H 4

Weight: 545 g

Material: Flint/silex

TZ 016069-001

Area I; Square AE 116; Complex N 2; Context 5085
Description: Rubbing stone; fragment; oval in plan view; upper and bottom side convex

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 9.9; W 8.2; H 6.2

Weight: 588 g

Material: Limestone

TZ 018843-001

Area I; Square AR 123; Complex C 3; Context 6061
Description: Rubbing stone; complete; oval in plan view; upper side very convex; bottom side slightly convex

Type: Rubbing stone type 10.1

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 10.8; W 5.5; H 7

Weight: 664 g

Material: Basalt

TZ 018871-001

Area I; Square AS 121; Complex A 5/C 1; Context 6023

Description: Rubbing stone; complete; approx. cuboid

Type: Rubbing stone type 7

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 6.66; W 5.7; H 5.2

Weight: 355 g

Material: Basalt

TZ 018922-001

Area I; Square AT 121; Complex A 2/B 1; Context 6118;

Description: Rubbing stone; complete; oval in plan

view; upper side convex and slightly beveled; bottom side slightly convex

Type: Rubbing stone type 10.1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9; W 7.5; H 5

Weight: 557 g

Material: Basalt

TZ 019080-001

Area I; Square AT 120; Complex A 1; Context 6402

Description: Rubbing stone; fragment; ovoid; bottom side flat with possibly traces of friction

Type: Rubbing stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions: L 9.1; W 6.6; H 5.6

Weight: 463 g

Material: Silicate stone

2.3.3.4. Personal Items**Balance Weight****TZ 007373-001**

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Balance weight; complete; spherical; flat on the bottom side

Type: Balance weight type 3

Figure Reference: Fig. 2.74; 2.443

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1.2; W 0.8

Weight: 2.3 g

Material: Goethite

Reference: T 2264, JMA2638

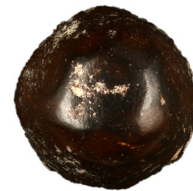


Fig. 2.443 Spherical balance weight made from goethite TZ 007373-001 (Source: BAI/GPIA).

TZ 007374-001

Area I; Square AH 115; Complex P 3; Context 1440

Description: Balance weight; complete; biconical; flat on the bottom side

Type: Balance weight type 4

Figure Reference: Fig. 2.228; 2.260; 2.444

Date of Context: LB II—Stratum 14 d

Dimensions: L 2.7; W 1.4; H 1.1

Weight: 9.5 g

Material: Hematite

Reference: —



Fig. 2.444 Biconical balance weight made from hematite TZ 007374-001 (Source: BAI/GPIA).

TZ 010313-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Balance weight?; complete; biconical

Type: Balance weight type 4

Figure Reference: Fig. 2.445

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.6; W 1.4; H 1.2

Weight: —

Material: Silicate stone



Fig. 2.446 Biconical balance weight (?) made from silicate stone TZ 010313-001 (Source: BAI/GPIA).

TZ 008492-001

Area I; Square AK 116; Complex I 1; Context 1960

Description: Balance weight; complete; spherical section; bottom side flat

Type: Balance weight type 3

Figure Reference: Fig. 2.195; 2.445

Date of Context: LB II—Stratum 14 a

Dimensions: W 4.5; H 3.4

Weight: 161 g

Material: Hematite



Fig. 2.445 Flattened-spherical balance weight made from hematite TZ 008492-001 (Source: BAI/GPIA).

TZ 011798-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Balance weight; complete; cuboid; abraded on two opposite sides

Type: Balance weight type 1

Figure Reference: Fig. 2.241; 2.447

Date of Context: LB II—Stratum 14 a

Dimensions: W 5.6; H 6

Weight: —

Material: Basalt



Fig. 2.447 Cuboid balance weight made from basalt TZ 011798-001 (Source: BAI/GPIA).

TZ 012317-001

Area I; Square AI 117; Complex I 5; Context 3593

Description: Balance weight; complete; biconical; upper side convex; bottom side flat

Type: Balance weight type 4

Figure Reference: Fig. 2.206; 2.448

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.5; W 1.05; H 0.9
Weight: 6.6 g
Material: Hematite



Fig. 2.448 Biconical balance weight made from hematite TZ 012317-001 (Source: BAI/GPIA).

TZ 012322-001

Area I; Square AF 115; Complex P 7; Context 3500
Description: Balance weight; complete; biconical, upper side convex, lower side flat
Type: Balance weight type 4
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 1.5; W 0.9; H 0.7
Weight: 2.5 g
Material: Hematite

TZ 012491-001

Area I; Square AI 117; Complex I 5; Context 3615
Description: Balance weight; complete; oval in plan view, upper side convex, lower side flat
Type: —
Figure Reference: Fig. 2.205; 2.449
Date of Context: LB II—Stratum 14 a
Dimensions: L 2.9; W 2.1; H 1.4
Weight: 15.4 g
Material: Basalt



Fig. 2.449 Oval balance weight made from basalt TZ 012491-001 (Source: BAI/GPIA).

TZ 012679-001

Area I; Square AE 115; Complex O 3; Context 3543
Description: Balance weight; complete; lenticular; flattened on the bottom side; completely smoothed
Type: Balance weight type 5
Figure Reference: Fig. 2.450
Date of Context: LB II—Stratum 14 a

Dimensions: L 4.2; W 2.3; H 1.2
Weight: 17.7 g
Material: Basalt



Fig. 2.450 Lenticular balance weight made from basalt TZ 012679-001 (Source: BAI/GPIA).

Bead

TZ 007380-001

Area I; Square AH 115; Complex P 3; Context 1439
Description: Bead; complete; spherical section; upper and bottom side flat
Type: Bead type 1
Figure Reference: Fig. 2.227; 2.308; 2.451
Date of Context: LB II—Stratum 14 a
Dimensions: L 0.9; D (max.) 1.1; D (inside opening) 0.2
Weight: 1 g
Material: Silicate stone



Fig. 2.451 Bead made from silicate stone TZ 007380-001 (Source: BAI/GPIA).

TZ 008380-001

Area I; Square AM 117/118; Complex H 1; Context 1863
Description: Bead; complete; biconically pierced; very flattened on one side
Type: —
Figure Reference: Fig. 2.184; 2.452
Date of Context: LB II—Stratum 14 a
Dimensions: D (max.) 0.8; D (opening) 0.2
Weight: —
Material: Soapstone
Reference: —



Fig. 2.452 Bead made from soapstone TZ 008380-001 (Source: BAI/GPIA).

TZ 010341-001

Area I; Square AQ 118/119; Complex D 3; Context 2777

Description: Bead; complete; spherical section; upper and bottom side flat; dark brown with a white band

Type: Bead type 1

Figure Reference: Fig. 2.453

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.4; D (max.) 1.8

Weight: —

Material: Agate

Reference: —



Fig. 2.453 Bead made from agate TZ 010341-001 (Source: BAI/GPIA).

TZ 010345-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Bead; complete; discoidal; very thin; one central perforation

Type: Bead type 6

Figure Reference: Fig. 2.47; 2.454

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 0.14; D (max.) 1.3

Weight: < 1g

Material: Limestone



Fig. 2.454 Discoidal bead made from limestone TZ 010345-001 (Source: BAI/GPIA).

TZ 010357-001

Area I; Square AQ 118/119; Complex D 3; Context 2796

Description: Bead; complete

Type: Bead type 1

Figure Reference: Fig. 2.48; 2.455

Date of Context: LB II—Stratum 14 a–d

Dimensions: W 1; H 0.6

Weight: —

Material: Obsidian



Fig. 2.455 Bead made from obsidian TZ 010357-001 (Source: BAI/GPIA).

TZ 014644-001

Area I; Square AF 114; Complex F 2; Context 4693

Description: Bead; complete; natural tube of stone; probably used as a chain link; cylindrical with a perforation

Type: Bead type 8

Figure Reference: Fig. 2.81; 2.456

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.1; D (max.) 0.8; D (opening) 0.3

Weight: 1 g

Material: Calcareous sinter



Fig. 2.456 Cylindrical bead/chain link made of calcareous sinter TZ 014644-001 (Source: BAI/GPIA).

TZ 014644-002

Area I; Square AF 114; Complex F 2; Context 4693

Description: natural tube of stone; probably used as a chain link; cylindrical with a perforation

Type: Bead type 8

Figure Reference: Fig. 2.82; 2.457

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 2.8; D (max.) 0.5; D (opening) 0.3

Weight: 1 g

Material: Calcareous sinter



Fig. 2.457 Cylindrical bead/chain link made of calcareous sinter
TZ 014644-002 (Source: BAI/GPIA).

TZ 017332-001

Area I; Square AF 114; Complex F 2; Context 3644
Description: Bead; complete; natural tube of stone; probably used as a chain link; cylindrical with a perforation

Type: Bead type 8

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 2.4; D (max.) 1.6

Weight: 6 g

Material: Calcareous sinter

TZ 018601-001

Area I; Square AR 121; Complex D 1; Context 6147
Description: Bead; complete; biconically pierced; oblique and irregular perforation

Type: Bead type 6

Figure Reference: Fig. 2.33; 2.458

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 0.5; D (max.) 1.8; D (opening) 0.56

Weight: 2.2 g

Material: Limestone



Fig. 2.458 Bead made from limestone TZ 018601-001 (Source: BAI/GPIA).

Button

TZ 012661-001

Area I; Square AF 116; Complex K 8; Context 3711
Description: Button; fragment; rectangular in plan view; rounded corners; two perforations conically pierced

Type: —

Figure Reference: Fig. 2.130; 2.459

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 3; W 2.6; H 1

Weight: 6 g

Material: Limestone



Fig. 2.459 Button made from limestone TZ 012661-001 (Source: BAI/GPIA).

TZ 015435-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Button; complete; oval in plan view; two perforations biconically pierced

Type: —

Figure Reference: Fig. 2.136; 2.460

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 5.2; W 4.4; H 1.3; D (opening) 0.4

Weight: —

Material: Limestone



Fig. 2.460 Oval button made from limestone TZ 015435-001 (Source: BAI/GPIA).

Cosmetic bowl / Cosmetic palette

TZ 017228-001

Area I; Square AE 116; Complex O 2; Context 4967
Description: Cosmetic bowl; fragment; edge fragment; round in plan view; incised triangles on the upper side; in each second triangle small dots; possibly Lotus flowers?

Type: —

Figure Reference: Fig. 2.160; 2.461
Date of Context: LB II—Stratum 14 b
Dimensions: D (max.) 7
Weight: 4.7 g
Material: Alabaster
Reference: BLMJ 2365



Fig. 2.461 Fragment of a cosmetic bowl or cosmetic palette made from alabaster TZ 017228-001 (Source: BAI/GPIA).

Game Piece

TZ 001305-001
 Area I; Square AL 116; Complex E 5/6; Context 118
Description: Game piece or balance weight; complete; cone-shaped
Type: Balance weight type 2

Figure Reference: Fig. 2.75; 2.462
Date of Context: LB II—Stratum 14 a–d
Dimensions: H 1.9; D (max.) 2.3
Weight: 22 g
Material: Limestone with proportions of hematite



Fig. 2.462 Game piece or balance weight made from limestone with proportions of hematite TZ 001305-001 (Source: BAI/GPIA).

TZ 011568-001

Area I; Square AH 116; Complex P 4; Context 3378
Description: Game piece; complete; approx. spherical; carefully worked
Type: Game piece type 1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: —
Weight: 83.4 g
Material: Basalt

TZ 011626-001

Area I; Square AH 116; Complex P 4; Context 3335
Description: Game piece; complete; spherical
Type: Game piece type 1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: D (max.) 2.4
Weight: 14.9 g
Material: Basalt

TZ 012287-001

Area I; Square AI 117; Complex I 5; Context 3593
Description: Game piece; complete; spherical; slightly compressed
Type: Game piece type 1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 2.9; D (max.) 4
Weight: 58 g
Material: Limestone

TZ 012297-001

Area I; Square AF 115; Complex P 7; Context 3611
Description: Game piece; complete; spherical; slightly compressed
Type: Game piece type 1
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 3.2; D (max.) 4.3
Weight: 46 g
Material: Basalt

TZ 012318-001

Area I; Square AF 115; Complex P 7; Context 3590
Description: Game piece; fragment; conical
Type: Game piece type 5
Figure Reference: Fig. 2.463
Date of Context: LB II—Stratum 14 a
Dimensions: L 2.3; W 2; H 3.2
Weight: —
Material: Limestone



Fig. 2.463 Game piece made from limestone TZ 012318-001 (Source: BAI/GPIA).

TZ 012523-001

Area I; Square AF 116; Complex P 8; Context 3578
Description: Game piece; complete; oval in plan view
Type: Game piece type 4.2
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 1.7; W 1.1; H 1
Weight: 5.6 g
Material: Silicate stone

TZ 015423-001

Area I; Square AF 115; Complex L 2/M 1; Context 5479
Description: Game piece; complete; natural shape
Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d
Dimensions: L 2.2; W 1.9; H 0.5
Weight: —
Material: Pebble

TZ 017335-001

Area I; Square AE 116; Complex N 3; Context 4972
Description: Game piece; complete; discoidal/oval; very evenly
Type: Game piece type 4.2
Figure Reference: Fig. 2.464
Date of Context: LB II—Stratum 14 c
Dimensions: L 2.5; W 2.2; H 0.9
Weight: 8 g
Material: Pebble



Fig. 2.464 Game piece, pebble TZ 017335-001 (Source: BAI/GPIA).

TZ 017338-001

Area I; Square AG 116; Complex K 6; Context 5471
Description: Game piece; complete; flat pebble
Type: Game piece type 4.1
Figure Reference: —
Date of Context: LB II—Stratum 14 c, d
Dimensions: L 3; W 2.9; H 1.3
Weight: 16 g
Material: Pebble

TZ 019115-001

Area I; Square AR 121; Complex D 1; Context 6486
Description: Game piece; complete; spherical; irregularly worked
Type: Game piece type 1
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: D (max.) 2.3
Weight: 15 g
Material: Basalt

Hygiene Cutlery¹⁴³**TZ 008414-001**

Area I; Square AM 117/118; Complex H 1; Context 1863

Description: Rubbing stone; complete; shoe-shaped; for personal hygiene

Type: Hygiene cutlery type 6

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7; W 6; H 3.5

Weight: —

Material: Pumice

TZ 009170-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Rubbing stone; fragment; cuboid; two fitting halves

Type: Hygiene cutlery type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 7.2; W 5.5; H 4.3

Weight: 145 g

Material: Pumice

TZ 009397-001

Area I; Square AN 118; Complex G 3/G 5; Context 2381

Description: Rubbing stone; fragment; cuboid

Type: Hygiene cutlery type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.6; W 4.5; H 3

Weight: 51 g

Material: Pumice

TZ 011563-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Rubbing stone; fragment; discoidal/ovoid; straight edge

Type: Hygiene cutlery type 3.2

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 7.5; W 6.9; H 2.8

Weight: 100 g

Material: Pumice

TZ 012282-001

Area I; Square AI 117; Complex I 5; Context 3572

Description: Rubbing stone; complete; cuboid; diagonally pierced

Type: Hygiene cutlery type 2

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 8.4; W 5.7; H 4.6

Weight: 147 g

Material: Pumice

TZ 015762-001

Area I; Square AF 115; Complex L 2/M 1; Context 5479

Description: Rubbing stone; complete; oval in plan view; convex on the upper side and slightly beveled towards the front; on the top runs a groove; bottom side flat

Type: Hygiene cutlery type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 8.9; W 6.3; H 6.2

Weight: 76 g

Material: Pumice

TZ 018167-001

Area I; Square AS 122; Complex B 8; Context 6126

Description: Rubbing stone; complete; rectangular in plan view with one beveled corner; pyramidal in longitudinal section; on the upper part conically pierced from two sides

Type: Hygiene cutlery type 4

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9.5; W 8; H 4.6

Weight: 201 g

Material: Pumice

TZ 018837-001

Area I; Square AS 122; Complex B 8; Context 6085

Description: Rubbing stone; fragment; original shape not determinable

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 4.1; W 3.7; H 2.2

Weight: 19 g

Material: Pumice

143 See for hygiene cutlery (scoria and pumice scrapers): Ebeling 2012, 553–554.

Miniature Vessel

TZ 002900-001

Area I; Square AL/AM 117; Context 1383

Description: Miniature vessel; small plate

Type: —

Figure Reference: Fig. 2.174; 2.465

Date of Context: LB II—Stratum 14 a

Dimensions: H 1.5; D (max.) 4; Th (wall) 0.5

Weight: 13 g

Material: Calcite

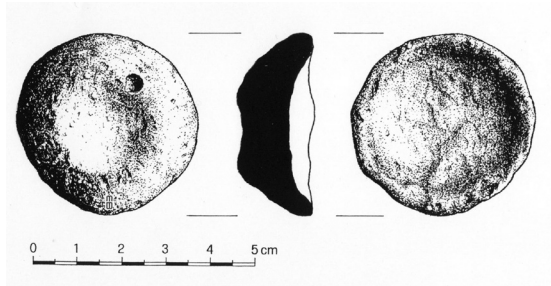


Fig. 2.465 Miniature vessel made from calcite TZ 002900-001 (Source: BAI/GPIA).

Pendant

TZ 012592-001

Area I; Square AF 115; Complex P 7; Context 3500

Description: Pendan; fragment; white stone

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.2; W 0.8; H 0.6

Weight: —

Material: Quartzite?

Stamp

TZ 018988-001

Area I; Square AS 122; Complex B 5; Context 6054

Description: Stamp (or game piece); complete; conical; on the flat bottom side a circle of scratches around the center and concentric circles of dots; at the side equally possible conscious incisions

Type: —

Figure Reference: Fig. 2.26; 2.466

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 3.13; D (max.) 2.5

Weight: —

Material: Limestone

Reference: Khirbat al-Mudayyina; Tall Safut **IA**:

Eggler – Keel 2006, 123, fig. 6; 441, fig. 8



Fig. 2.466 Stamp or game piece made from limestone TZ 018988-001 (Source: BAI/GPIA).

Warfare

Ballistic Stone

TZ 015361-001

Area I; Square AF 116; Complex P 8; Context 3701

Description: Ballistic stone; complete; circular in plan view

Type: —

Figure Reference: Fig. 2.246; 2.467

Date of Context: LB II—Stratum 14 a, b

Dimensions: H 25; D (max.) 46

Weight: —

Material: Limestone



Fig. 2.467 Ballistic stone made from limestone TZ 015361-001 (Source: BAI/GPIA).

Knob (war chariot)**TZ 009176-001**

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Knob; complete; circular in plan view; circumferential deep round groove in the middle; on the top in the middle round perforation; on the bottom rectangular trough with distinctive „corners“

Type: —

Figure Reference: Fig. 2.97; 2.468

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 3.2; D (max.) 5.3; D (inside opening) 1.2

Weight: —

Material: Alabaster

Reference: Lachish **LB IIIA**: Sass 2004a, 1482, fig. 23.15.11



Fig. 2.468 Knob of a war chariot made from alabaster TZ 009176-001 (Source: BAI/GPIA).

TZ 010346-001

Area I; Square AQ 118/119; Complex D 3; Context 2783

Description: Knob; fragment of a round pommel with a swinging out smooth polished top and a central bore; round in plan view; circumferential deep round groove in the middle; on the top a central round hole; on the upper swinging out edge runs horizontally a notch

Type: —

Figure Reference: Fig. 2.46; 2.469

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.9; D (max.) 8; D (inside opening) 1.5

Weight: 15.5 g

Material: Alabaster



Fig. 2.469 Fragment of a knob of a war chariot made from alabaster TZ 010346-001 (Source: BAI/GPIA).

Macehead

TZ 011555-001

Area I; Square AH 116; Complex P 4; Context 337

Description: Macehead; complete; conical; carefully worked with a cylindrical perforation

Type: —

Figure Reference: Fig. 2.470

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.5; D (max.) 5.6; D (inside opening) 1.4

Weight: 203.8 g

Material: Basalt



Fig. 2.470 Macehead made from basalt TZ 011555-001 (Source: BAI/GPIA).

TZ 012662-001

Area I; Square AF 116; Complex K 8; Context 3711

Description: Macehead; complete; spherical; cylindrical trough

Type: —

Figure Reference: Fig. 2.128; 2.471

Date of Context: LB II—Stratum 14 b–d

Dimensions: H 4; D (max.) 5.2; D (inside opening) 1.1

Weight: —

Material: Quartzite



Fig. 2.471 Macehead made from quartzite TZ 012662-001 (Source: BAI/GPIA).

TZ 019064-001

Area I; Square AT 120; Complex A 4; Context 6416

Description: Macehead; fragment; one half preserved; conical; bottom side slightly convex; biconically pierced from top to bottom from two sides; drill grooves clearly visible; carefully worked

Type: —

Figure Reference: Fig. 2.24; 2.472

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 7.3; D (max.) 6.8

Weight: 276 g

Material: Quartzite



Fig. 2.472 Fragment (half) of a macehead made from quartzite
TZ 019064-001 (Source: BAI/GPIA).

Sling Stone

TZ 011649-001

Area I; Square AH 116; Complex P 4; Context 3335

Description: Sling stone; complete; irregular shape

Type: Sling stone type 3

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.1; W 2.8; H 2.4

Weight: 29 g

Material: Limestone

TZ 012524-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Sling stone; complete; spherical; slightly compressed

Type: Sling stone type 1

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; W 5.4; H 6.6

Weight: 258 g

Material: Limestone

TZ 012540-001

Area I; Square AK 117; Complex H 8; Context 3636

Description: Sling stone; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions:

Weight: 30 g

Material: Basalt

TZ 015732-001

Area I; Square AH 116; Complex P 2; Context 3208

Description: Sling stone (or game piece); complete; carefully smoothed

Type: Sling stone type 1

Figure Reference: Fig. 2.473

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 4.3

Weight: —

Material: Pebble



Fig. 2.473 Sling stone or game piece, pebble TZ 015732-001
(Source: BAI/GPIA).

TZ 015747-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Sling stone; complete; ovoid

Type: Sling stone type 2

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 4.4

Weight: 61 g

Material: Limestone

Cultic Items

Cultic Stone (Mazzebe)

TZ 012529-001

Area I; Square AQ 120; Complex D 3; Context 3676

Description: Cultic stone (Mazzebe); complete; truncated pyramid shaped; an overhang on the top; bottom side flat

Type: —

Figure Reference: Fig. 2.52; 2.474

Date of Context: LB II/IA I—Stratum 14/13

Complete;

Dimensions: L 15; W 15; H 16

Weight: 3600 g

Material: Basalt



Fig. 2.474 Cultic stone (Mazzebe) made from basalt TZ 012529-001 (Source: BAI/GPIA).

TZ 015359-001

Area I; Square AI/AK 116; Complex I 4; Context 1483

Description: Cultic stone (Mazzebe); complete; towards the top of both broad sides narrower rounded

Type: —

Figure Reference: Fig. 2.198; 2.200; 2.475

Date of Context: LB II—Stratum 14 a

Dimensions: H 75; D (max.) 48; D (top) 37

Weight: —

Material: Limestone



Fig. 2.475 Cultic stone (Mazzebe) made from limestone TZ 015359-001 (Source: BAI/GPIA).

Incense burner

TZ 015805-001

Area I; Square AM 117; Complex F 3; Context 3906

Description: Incense vessel; fragment of goblet; rim to base; circular in plan view; double cone-shaped with small bowl at upper side and pedestal foot

Type: Bowl type 2A

Figure Reference: Fig. 2.176; 2.476

Date of Context: LB II—Stratum 14 a

Dimensions: W 2.4; H 7.2; D (max.) 5.3

Weight: 161 g

Material: Basalt



Fig. 2.476 Incense burner made from basalt TZ 015805-001
(Source: BAI/GPIA).

Kernos stone

TZ 012655-001

Area I; Square AR 118; Complex D 2; Context 3416

Description: Kernos-stone; complete; built into wall; 27 round recesses (D approx. 1 cm, depth 3–5 mm) surround a large hollow (D approx. 6 cm, depth approx. 2 mm)

Type: —

Figure Reference: Fig. 2.39; 2.477

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 40; W 32; H 13

Weight: —

Material: Limestone

Reference: Malia (Crete), 1650–1450 BC (Gropp 2013, 266 f.)



Fig. 2.477 Kernos stone made from limestone TZ 012655-001
(Source: BAI/GPIA).

Flint, Flakes

Flakes/Tools from Flint/Silex of Stratum 14; Date of Context: LB II—Stratum 14 a–d

TZ 001391-001; 1 sickle blade, 1 flake; Area I; Square AM 116; Complex F 1; Context 78

TZ 007124-001; 1 blade; Area I; Square AN 117; Complex E 3/E 4; Context 1133

TZ 007125-001; 1 sickle blade; Area I; Square AN 117; Complex E 4; Context 1134

TZ 007242-001; 1 blade, 1 ecofact; Area I; Square AN/AO 117; Complex E 3; Context 1278

TZ 007581-001; 1 blade, 1 sickle blade; Area I; Square AN 116/117; Complex E 4; Context 1396

TZ 007583-001; 1 blade, 1 sickle blade; Area I; Square AN 116/117; Complex E 4; Context 1396

TZ 007584-001; 1 blade; Area I; Square AM/AN 116; Complex E 4; Context 1473

TZ 008997-001; 2 flakes; Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

TZ 009131-001; 1 sickle blade, 2 flakes; Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

TZ 009132-001; 2 blades, 1 flake; Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

TZ 009137-001; 1 flake; Area I; Square AM 118; Complex G 6; Context 2185

TZ 009248-001; 1 blade; Area I; Square AN 118; Complex G 3; Context 2343

TZ 009250-001; 1 ecofact; Area I; Square AN 118; Complex G 3; Context 2343

TZ 009255-001; 1 blade; Area I; Square AN 119; Complex G 4; Context 2353

TZ 009325-001; 1 ecofact; Area I; Square AN 119; Complex G 4; Context 2315

TZ 009352-001; 1 sickle blade; Area I; Square AN 118; Complex G 5; Context 2368

TZ 009750-001; 1 ad-hoc-tool, 1 flake; Area I; Square AN/AO 118; Complex G 3; Context 2624

TZ 009954-001; 2 blades; Area I; Square AO 119; Complex G 2; Context 2668

TZ 010137-001; 2 sickle blades, 1 borer; Area I; Square AP 118/119; Complex G 1; Context 2730

TZ 010487-001; 1 sickle blade; Area I; Square AQ 118/119; Complex D 3; Context 2830

TZ 010488-001; 1 sickle blade; Area I; Square AQ 118/119; Complex D 3; Context 2830

TZ 010489-001; 1 ecofact; Area I; Square AQ 118/119; Complex D 3; Context 2796

TZ 010491-001; 2 blades, 1 chip; Area I; Square AQ 118/119; Complex D 3; Context 2783

TZ 010492-001; 1 blade; Area I; Square AQ 118/119; Complex D 3; Context 2796

TZ 010493-001; 1 blade; Area I; Square AQ 118/119; Complex D 3; Context 2830

TZ 010494-001; 1 bladelet; Area I; Square AQ 118/119; Complex D 3; Context 2830

TZ 010499-001; 1 ecofact; Area I; Square AQ 118/119; Complex D 3; Context 2804

TZ 010507-001; 2 blades, 1 sickle blade; Area I; Square AQ 118/119; Complex D 3; Context 2777

TZ 010512-001; 1 bladelet, 1 flake; Area I; Square AQ 118/119; Complex D 3; Context 2783

TZ 010517-001; 1 sickle blade; Area I; Square AN/AO 118; Complex G 3; Context 2624

TZ 012045-001; 1 blade; Area I; Square AQ 120; Complex D 4; Context 3519

TZ 012048-001; 1 projectile; Area I; Square AQ 120; Complex D 4; Context 3519

TZ 012251-001; 2 blades, 1 core, 1 uncertain; Area I; Square AR 119; Complex D 1; Context 3564

TZ 012341-001; 1 blade, 1 sickle blade; Area I; Square AG 115; Complex K 1/K 2; Context 3535

TZ 012342-001; 1 flake; Area I; Square AR 120; Complex D 4; Context 3585

TZ 012345-001; 1 blade; Area I; Square AR 119; Complex D 2; Context 3570

TZ 012359-001; 3 flakes, 1 chip; Area I; Square AR 119; Complex D 2; Context 3634

TZ 012363-001; 2 bladelets, 9 flakes; Area I; Square AR 119; Complex D 2; Context 3570

TZ 012364-001; 1 scraper, 1 projectile, 1 flake; Area I; Square AR 120; Complex D 4; Context 3585

TZ 012535-001; 1 tabular scraper; Area I; Square AR 120; Complex D 2; Context 3515

TZ 012536-001; 1 blade; Area I; Square AR 120; Complex D 2; Context 3515

TZ 012539-001; 1 blade, 1 core; Area I; Square AQ 120; Complex D 4; Context 3651

TZ 015013-001; 1 bladelet, 2 flakes; Area I; Square AM 117; Complex F 1; Context 4776

TZ 016214-001; 1 sickle blade, 3 flakes; Area I; Square AF 116; Complex L 2/(K 8); Context 5193

TZ 016224-001; 1 flake; Area I; Square AQ 121; Complex D 4; Context 5212

TZ 016240-001; 1 flake; Area I; Square AQ 121; Complex D 4; Context 5261

TZ 016291-001; 1 sickle blade, 1 knife; Area I; Square AP 120; Complex G 2; Context 5453

TZ 016305-001; 4 blades, 1 flake, 1 chip; Area I; Square AP 121; Complex D 4; Context 5520

TZ 016311-001; 1 blade, 1 flake; Area I; Square AE 116; Complex L 3; Context 5554

TZ 018305-001; 1 flake; Area I; Square AS 122; Complex B 8; Context 6057

TZ 018311-001; 3 blades, 5 flakes, 4 chips; Area I; Square AS 122; Complex B 8; Context 6085

TZ 018335-001; 1 sickle blade, 1 ecofact; Area I; Square AS 121; Complex A 5; Context 6030

TZ 018369-001; 3 blades, 1 sickle blade, 3 tabular scrapers, 10 flakes, 8 chips; Area I; Square AR 121; Complex D 1; Context 6147

TZ 018501-001; 2 ecofacts; Area I; Square AP 122; Complex D 8; Context 5973

TZ 018516-001; 1 flake; Area I; Square AR 121; Complex D 1; Context 6158

TZ 018530-001; 2 blades, 1 flake, 5 chips; Area I; Square AQ 122; Complex D 1; Context 6128

TZ 018540-001; 9 flakes, 1 chip; Area I; Square AP 123; Complex D 9; Context 6170

TZ 018542-001; 6 flakes, 4 chips; Area I; Square AQ 122; Complex D 1; Context 6128

TZ 018544-001; 2 blades, 1 rubbing stone, 4 flakes, 8 chips; Area I; Square AQ 122; Complex D 1; Context 6128

TZ 019236-001; 1 flake; Area I; Square AT 123; Complex B 3; Context 6358

TZ 019254-001; 1 blade, 1 flake; Area I; Square AT 120; Complex A 4; Context 6416

TZ 019272-001; 1 sickle blade, 1 flake; Area I; Square AR 121; Complex D 1; Context 6484

**Flakes/Tools from Flint/Silex of Stratum 14;
Date of Context: LB II—Stratum 14 a–d (also
IA I)**

TZ 012022-001; 1 sickle blade; Area I; Square AL 118; Complex H 6; Context 3460

TZ 012337-001; 1 flake; Area I; Square AR 119; Complex D 2/D 3; Context 3584

TZ 016313-001; 1 blade, 1 flake; Area I; Square AP 122; Complex D 6/D 7; Context 5564

TZ 018306-001; 1 sickle blade; Area I; Square AS 121; Complex A 5/C 1; Context 6023

TZ 018324-001; 1 blade, 2 flakes; Area I; Square AS 121; Complex A 5; Context 6028

TZ 018340-001; 1 sickle blade, 1 flake; Area I; Square AT 123; Complex B 3; Context 6053

TZ 018431-001; 1 flake/tools; Area I; Square AS 121; Complex A 5/C 1; Context 6023

TZ 019194-001; 1 blade, 3 flakes, 1 chip; Area I; Square AQ 120; Complex D 3; Context 3676

**Flakes/Tools from Flint/Silex of Stratum 14 a;
Date of Context: LB II—Stratum 14 a**

TZ 001300-001; 1 blade; Area I; Square AM 116; Complex E 5; Context 130

TZ 001504-001; 1 blade, 1 sickle blade, 4 flakes; Area I; Square AM 117; Complex H 1; Context 191

TZ 001554-001; 1 blade; Area I; Square AM 117; Complex H 6; Context 207

TZ 001602-001; 1 flake, 1 ecofact; Area I; Square AK 116; Complex I 1; Context 240

TZ 002204-001; 1 blade; Area I; Square AL 117; Complex H 6; Context 710

TZ 006936-001; 1 borer; Area I; Square AL 117; Complex H 6; Context 1016

TZ 007138-001; 1 flake; Area I; Square AI 115; Complex I 4; Context 1172

TZ 007610-001; 1 flake; Area I; Square AH 115; Complex P 3; Context 1440

TZ 007716-001; 1 flake, 1 chunk; Area I; Square AH 115; Complex P 3; Context 1388

TZ 007719-001; 1 sickle blade; Area I; Square AH 115; Complex P 3; Context 1388

TZ 007734-001; 1 sickle blade, 2 flakes; Area I; Square AI/AK 116; Complex I 4; Context 1537

TZ 007743-001; 1 borer, 3 flakes; Area I; Square AM 117; Complex F 3; Context 213

TZ 007745-001; 1 flake; Area I; Square AM 117; Complex H 6; Context 208

TZ 007914-001; 1 sickle blade; Area I; Square AM 116; Complex F 1; Context 1666

TZ 007944-001; 1 sickle blade; Area I; Square AL 118; Complex H 7; Context 1612

TZ 007945-001; 2 flakes; Area I; Square AM 116; Complex F 1; Context 1688

TZ 008340-001; 1 sickle blade, 1 chunk; Area I; Square AK 117; Complex H 6; Context 1910

TZ 008418-001; 1 sickle blade, 1 flake; Area I; Square AK 117; Complex H 6/H 8; Context 1853

TZ 008447-001; 1 sickle blade; Area I; Square AK 117; Complex H 6/H 8; Context 1853

TZ 009001-001; 1 chip; Area I; Square AP 119; Complex D 3; Context 2145

TZ 009324-001; 1 blade; Area I; Square AH 115; Complex P 3; Context 2347

TZ 009382-001; 2 blades, 2 flakes; Area I; Square AI/AK 115; Complex I 4; Context 2397

TZ 009386-001; 1 blade; Area I; Square AG 115; Complex P 5; Context 2401

TZ 011136-001; 1 bladelet; Area I; Square AH 116; Complex P 2; Context 3208

TZ 011207-001; 2 bladelets, 1 flake; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 011212-001; 3 flakes; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 011277-001; 1 ecofact; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 011608-001; 1 blade; Area I; Square AH 116; Complex P 4; Context 3335

TZ 011614-001; 1 sickle blade; Area I; Square AH 116; Complex P 4; Context 3335

TZ 011736-001; 1 bladelet; Area I; Square AG 116; Complex P 8; Context 3394

TZ 011740-001; 1 blade; Area I; Square AG 115; Complex P 7; Context 3419

TZ 011741-001; 1 blade; Area I; Square AG 116; Complex P 8; Context 3394

TZ 011743-001; 1 ad-hoc-tool; Area I; Square AG 116; Complex P 8; Context 3394

TZ 012008-001; 1 blade, 1 pick; Area I; Square AG 115; Complex P 5; Context 3491

TZ 012009-001; 1 sickle blade; Area I; Square AG 115; Complex P 5; Context 3292

TZ 012010-001; 1 sickle blade; Area I; Square AL 118; Complex H 7; Context 3477

TZ 012013-001; 1 blade; Area I; Square AF 116; Complex O 5; Context 3509

TZ 012018-001; 1 flake; Area I; Square AG 116; Complex P 5/P 6/P 8; Context 3452

TZ 012027-001; 1 flake; Area I; Square AG 116; Complex P 8; Context 3394

TZ 012030-001; 1 large blade; Area I; Square AG 116; Complex P 8; Context 3394

TZ 012031-001; 6 flakes; Area I; Square AG 116; Complex P 5/6/8; Context 3452

TZ 012032-001; 1 flake; Area I; Square AG 116; Complex P 8; Context 3394

TZ 012034-001; 1 flake; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 012040-001; 1 flake; Area I; Square AF 115; Complex P 7; Context 3500

TZ 012249-001; 1 knife, 1 blade, 2 flakes; Area I; Square AF 116; Complex O 5; Context 3509

TZ 012331-001; 1 blade, 1 sickle blade; Area I; Square AF 116; Complex P 8; Context 3578

TZ 012332-001; 1 blade; Area I; Square AI 117; Complex I 5; Context 3593

TZ 012334-001; 1 large blade, 1 sickle blade; Area I; Square AF 115; Complex P 7; Context 3611

TZ 012338-001; 1 blade; Area I; Square AI 117; Complex I 5; Context 3613

TZ 012339-001; 1 knife; Area I; Square AE 115; Complex O 1/O 3; Context 3542

TZ 012340-001; 1 ad-hoc-tool; Area I; Square AE 115; Complex O 3; Context 3544

TZ 012343-001; 2 flakes; Area I; Square AF 115; Complex P 7; Context 3590

TZ 012344-001; 1 blade, 1 bladelet, 1 sickle blade, 1 flake; Area I; Square AF 116; Complex P 8; Context 3578

TZ 012346-001; 1 burin; Area I; Square AF 115; Complex P 7; Context 3590

TZ 012362-001; 1 knife, 1 dagger; Area I; Square AF 116; Complex P 8; Context 3578

TZ 012365-001; 2 flakes; Area I; Square AF 116; Complex O 5; Context 3509

TZ 012481-001; 1 burin; Area I; Square AF 116; Complex P 8; Context 3578

TZ 012482-001; 1 blade, 1 flake; Area I; Square AE 115; Complex O 1; Context 3629

TZ 012483-001; 2 sickle blades; Area I; Square AE 116; Complex O 2; Context 3641

TZ 012484-001; 1 blade; Area I; Square AI 117; Complex I 5; Context 3593

TZ 012538-001; 2 flakes; Area I; Square AH 116; Complex P 2; Context 3208

TZ 012693-001; 1 blade, 1 sickle blade, 1 knife, 1 large blade, 2 bladelets, 1 flake, 1 chip, 1 hammer stone; Area I; Square AE 115; Complex O 3; Context 3543

TZ 012694-001; 1 large blade, 1 sickle blade; Area I; Square AF 116; Complex P 6/P 8; Context 3700

TZ 012695-001; 1 flake; Area I; Square AE 116; Complex O 4/O 6; Context 3705

TZ 014623-001; 1 blade; Area I; Square AF 116; Complex P 6/P 8; Context 3700

TZ 014709-001; 1 chip; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 014710-001; 1 large blade; Area I; Square AI 117; Complex I 5; Context 3618

TZ 014711-001; 1 flake; Area I; Square AI 117; Complex I 5; Context 3627

TZ 016072-001; 4 blades, 1 flake; Area I; Square AH 115/116; Complex P 3; Context 3217

TZ 016073-001; 1 chip; Area I; Square AH 116; Complex P 4; Context 3335

TZ 016074-001; 1 borer; Area I; Square AF 116; Complex O 2/O 5; Context 3523

TZ 016079-001; 3 flakes, 1 chip; Area I; Square AK 117; Complex H 8; Context 3636

TZ 016080-001; 1 core, 1 ecofact; Area I; Square AF 115; Complex P 7; Context 3638

TZ 016083-001; 1 blade, 1 sickle blade, 5 flakes, 2 chips; Area I; Square AI 117; Complex I 5; Context 3664

TZ 016084-001; 1 flake; Area I; Square AM 117; Complex F 3; Context 3906

TZ 016097-001; 1 sickle blade; Area I; Square AH 116; Complex P 4; Context 4660

TZ 016153-001; 1 blade; Area I; Square AH 116; Complex P 4; Context 4985

TZ 017415-001; 4 flakes, 4 chips; Area I; Square AH 116; Complex P 4; Context 4652

TZ 018427-001; 1 uncertain; Area I; Square AS 121; Complex A 5; Context 6031

TZ 018550-001; 1 sickle blade, 8 flakes, 5 chips; Area I; Square AR 122; Complex C 1; Context 6159

TZ 019278-001; 1 borer, 1 flake; Area I; Square AS 120; Complex A 5; Context 6498

**Flakes/Tools from Flint/Silex of Stratum 14;
Date of Context: LB II—Stratum 14 a. b**

TZ 014594-001; 1 bladelet, 1 flake, 1 chip; Area I; Square AF 116; Complex P 8; Context 3701

TZ 016076-001; 2 flakes; Area I; Square AE 116; Complex O 4; Context 3532

TZ 016078-001; 4 ecofacts; Area I; Square AE 116; Complex O 2/O 4; Context 3606

TZ 016217-001; 3 flakes, 7 chips; Area I; Square AE 116; Complex O 4; Context 5196

**Flakes/Tools from Flint/Silex of Stratum 14 b;
Date of Context: LB II—Stratum 14 b**

TZ 016116-001; 1 flake/tools; Area I; Square AL 117; Complex H 5; Context 4836

TZ 016124-001; 1 blade; Area I; Square AL 117; Complex H 5; Context 4879

TZ 016125-001; 1 flake; Area I; Square AL 117; Complex H 5; Context 4880

TZ 016146-001; 1 sickle blade, 1 flake; Area I; Square AE 116; Complex O 2; Context 4967

TZ 016147-001; 1 flake; Area I; Square AE 116; Complex O 2; Context 4968

TZ 016175-001; 1 tabular scraper, 2 flakes; Area I; Square AE 115; Complex O 1/O 2; Context 5052

TZ 016199-001; 1 cutting-tool, 2 flakes; Area I; Square AE 115; Complex O 3; Context 5145

TZ 016216-001; 2 ecofacts; Area I; Square AF 115; Complex O 2; Context 5195

**Flakes/Tools from Flint/Silex of Stratum 14 b. c;
Date of Context: LB II**

TZ 015004-001; 2 flakes; Area I; Square AI 117; Complex I 3; Context 4725

TZ 016094-001; 2 blades; Area I; Square AG 116; Complex K 8; Context 4619

TZ 016095-001; 1 blade, 3 flakes; Area I; Square AF 116; Complex K 8; Context 4620

**Flakes/Tools from Flint/Silex of Stratum 14 b-d;
Date of Context: LB II**

TZ 009440-001; 10 blades, 1 bladelet, 2 scrapers, 1 cutting-tool, 1 borer?, 6 flakes; Area I; Square AI/ AK 115; Complex I 2; Context 2411

TZ 014591-001; 1 blade, 1 core, 12 flakes, 12 chips; Area I; Square AI 115; Complex K 1; Context 4657

TZ 014592-001; 1 blade; Area I; Square AF 115; Complex K 1; Context 4608

TZ 014593-001; 1 bladelet; Area I; Square AH 115; Complex K 2; Context 4656

TZ 014995-001; 2 blades, 9 flakes; Area I; Square AF 116; Complex K 8; Context 4824

TZ 015001-001; 1 blade, 11 flakes; Area I; Square AF 116; Complex K 8; Context 4777

TZ 015002-001; 2 flakes; Area I; Square AL 118; Complex H 5; Context 4793

TZ 015014-001; 1 blade; Area I; Square AH 115; Complex K 2; Context 4710

TZ 015019-001; 3 blades, 5 flakes; Area I; Square AM 117; Complex H 1; Context 4750

TZ 015026-001; 1 flake; Area I; Square AI 116; Complex K 3; Context 4748

TZ 016093-001; 1 flake; Area I; Square AF 115; Complex F 2; Context 4609

TZ 016102-001; 5 blades, 1 sickle blade, 22 flakes; Area I; Square AM 117; Complex H 1; Context 4750

TZ 016108-001; 7 blades, 2 sickle blades, 2 bladelets, 27 flakes; Area I; Square AL 118; Complex H 5; Context 4793

TZ 016113-001; 2 blades, 9 flakes; Area I; Square AF 116; Complex K 8; Context 4824

TZ 016114-001; 6 flakes; Area I; Square AF 116; Complex K 8; Context 4832

TZ 016115-001; 1 blade, 9 flakes; Area I; Square AL 117; Complex H 1; Context 4833

TZ 016194-001; 1 flake; Area I; Square AF 115; Complex F 2; Context 5129

TZ 016200-001; 1 flake; Area I; Square AF 115; Complex F 2; Context 5146

TZ 016241-001; 1 knife, 1 chip; Area I; Square AI 115; Complex K 2; Context 5275

TZ 016247-001; 4 blades, 1 flake; Area I; Square AH 115; Complex K 1; Context 5289

TZ 016262-001; 1 bladelet; Area I; Square AG 115; Complex K 5/K 6; Context 5032

Flakes/Tools from Flint/Silex of Stratum 14 c; Date of Context: LB II

TZ 016148-001; 4 ecofacts; Area I; Square AE 116; Complex N 3; Context 4972

TZ 016177-001; 1 sickle blade, 3 flakes; Area I; Square AE 116; Complex N 2; Context 5055

TZ 016184-001; 1 tabular scraper; Area I; Square AE 116; Complex N 2; Context 5085

TZ 016185-001; 3 blades; Area I; Square AE 116; Complex N 1/N 2; Context 5087

TZ 016187-001; 2 flakes; Area I; Square AE 115; Complex M 3; Context 5089

TZ 016188-001; 3 flakes; Area I; Square AE 115; Complex M 2; Context 5097

TZ 016189-001; 1 flake; Area I; Square AE 116; Complex N 2; Context 5098

TZ 016193-001; 4 flakes; Area I; Square AF 115; Complex M 1; Context 5130

TZ 016201-001; 1 blade, 2 flakes; Area I; Square AE 115; Complex M 3; Context 5148

TZ 018304-001; 1 projectile; Area I; Square AE 116; Complex N 2; Context 5099

**Flakes/Tools from Flint/Silex of Stratum 14 c. d;
Date of Context: LB II**

TZ 016139-001; 3 flakes; Area I; Square AG 116;
Complex K 6; Context 4938

TZ 016176-001; 1 flake; Area I; Square AF 116;
Complex L 4; Context 5054

TZ 016205-001; 2 blades, 4 flakes; Area I; Square
AF 115; Complex L 2/M 1; Context 5161

TZ 016206-001; 1 flake; Area I; Square AF 115;
Complex L 2/M 1; Context 5162

TZ 016207-001; 1 ecofact; Area I; Square AE 115;
Complex L 1/L 2/M 1; Context 5164

TZ 016215-001; 1 blade, 1 bladelet, 13 flakes; Area
I; Square AF 115; Complex L 2/M 1; Context 5194

TZ 016266-001; 1 borer; Area I; Square AG 116;
Complex K 6; Context 5351

TZ 016293-001; 3 flakes; Area I; Square AG 116;
Complex K 6; Context 5474

TZ 016301-001; 1 chip; Area I; Square AF 115;
Complex L 2/M 1; Context 5482

TZ 016307-001; 2 flakes; Area I; Square AF 115;
Complex L 2/M 1; Context 5547

TZ 016312-001; 1 blade, 1 borer, 1 flake; Area I;
Square AF 115; Complex L 2/M 1; Context 5555

**Flakes/Tools from Flint/Silex of Stratum 14 d;
Date of Context: LB II**

TZ 016162-001; 1 sickle blade, 7 flakes; Area I;
Square AL 118; Complex H 4; Context 5033

TZ 016164-001; 1 flake; Area I; Square AL 118;
Complex H 4; Context 5035

TZ 016166-001; 4 flakes; Area I; Square AL 118;
Complex H 4; Context 5038

TZ 016167-001; 1 blade; Area I; Square AL 118;
Complex H 4; Context 5041

TZ 016219-001; 2 ecofacts; Area I; Square AF 116;
Complex L 2; Context 5198

TZ 016258-001; 1 sickle blade, 2 flakes; Area I;
Square AE 116; Complex L 2; Context 5322

TZ 016268-001; 1 flake; Area I; Square AG 116;
Complex K 6/8; Context 5353

TZ 016272-001; 2 flakes; Area I; Square AF 115;
Complex L 2; Context 5372

TZ 016276-001; 6 chips; Area I; Square AE 115;
Complex L 2; Context 5394

TZ 016277-001; 3 blades, 2 flakes; Area I; Square
AE 116; Complex L 2; Context 5395

TZ 016283-001; 1 flake; Area I; Square AF 116;
Complex K 8; Context 5424

TZ 016284-001; 1 blade, 1 ad-hoc-tool, 1 chip;
Area I; Square AE 115; Complex L 2; Context 5428

TZ 016285-001; 2 flakes; Area I; Square AE 115;
Complex L 2; Context 5429

TZ 016286-001; 1 blade, 1 bladelet, 1 flake; Area I;
Square AE 115; Complex L 2; Context 5430

TZ 016288-001; 2 blades, 2 flakes; Area I; Square
AE 115; Complex L 2; Context 5432

TZ 016310-001; 3 flakes; Area I; Square AE 116;
Complex L 2; Context 5551

Ecofacts

Ecofact

TZ 009298-001

Area I; Square AN 119; Complex G 4; Context
2315

Description: Ecofact; complete; irregular flat
shaped; two small troughs on every side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 3.3; W 2.7; H 1.4

Weight: 7.6 g

Material: Limestone

TZ 009396-001

Area I; Square AN 119; Complex G 4; Context 2315

Description: Ecofact; fragment; oval in plan view

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 13; W 12.3; H 6.1

Weight: 1522 g

Material: Silicate stone

TZ 010090-001

Area I; Square AO 119; Complex G 4; Context 2716

Description: Ecofact; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 12; W 12; H 12

Weight: 1700 g

Material: Basalt

TZ 012268-001

Area I; Square AF 115; Complex P 7; Context 3590

Description: Ecofact; complete; irregularly shaped; outside hardly worked; a broad and deep trough on the upper side

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 9; W 7; H 4.5; trough: L 5.5; W 4.7; D 1.5

Weight: 248 g

Material: Limestone

TZ 015459-001

Area I; Square AE 115; Complex O 3; Context 4912

Description: Ecofact; amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 7; W 3.7; H 2.7

Weight: —

Material: Calcareous sinter

TZ 018971-001

Area I; Square AR 121; Complex D 1; Context 6147

Description: Ecofact; complete; elongated thin, natural stone, which could possibly have served as a tool

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 6.8; W 2.4; H 1.4

Weight: 34 g

Material: Silicate stone

TZ 018992-001

Area I; Square AS 122; Complex B 5; Context 6054

Description: Ecofact; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 9.3; W 7.2; H 6.3

Weight: 627 g

Material: Hematite (Fe₂O₃)

Iron Nodule

TZ 001615-001

Area I; Square AK 116; Complex I 1; Context 241

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 4.6; W 4.3; H 3.8

Weight: —

Material: Hematite (Fe₂O₃)

TZ 001615-002

Area I; Square AK 116; Complex I 1; Context 241

Description: Iron nodule; complete

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 4.4; W 4.2; H 3.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 007564-001

Area I; Square AN/AO 117; Complex E 3; Context 1278

Description: Iron nodule; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 5.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 007567-001

Area I; Square AN 116/117; Complex E 4; Context 1396

Description: Iron nodule; complete; irregularly shaped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 11; W 7

Weight: 141 g

Material: Hematite (Fe₂O₃)

TZ 007771-001

Area I; Square AM 118; Complex H 1/H 2; Context 197

Description: Iron nodule; small chipped fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.9; W 3.1

Weight: 28 g

Material: Hematite (Fe₂O₃)

TZ 007951-001

Area I; Square AM 116; Complex F 1; Context 1666

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 3.4

Weight: 64 g

Material: Hematite (Fe₂O₃)

TZ 008420-001

Area I; Square AM 117/118; Complex H 1; Context 1863

Description: Iron nodule; fragment; one half preserved

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 008475-001

Area I; Square AK 116; Complex I 1; Context 1960

Description: Iron nodule; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 4.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 009027-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Iron nodule; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 4.3

Weight: 143 g

Material: Hematite (Fe₂O₃)

TZ 009030-001

Area I; Square AM 118; Complex G 6; Context 2185

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 4.9; D (max.) 5.3

Weight: 312 g

Material: Hematite (Fe₂O₃)

TZ 009031-001

Area I; Square AM 118; Complex G 6; Context 2185

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 7.2; D (max.) 8.8

Weight: 1076 g

Material: Hematite (Fe₂O₃)

TZ 009092-001

Area I; Square AM/AN 119; Complex G 4/G 6; Context 2150

Description: Iron nodule; fragment; in one half preserved with several fragments

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 4.6
Weight: —
Material: Hematite (Fe₂O₃)

TZ 009258-001

Area I; Square AN 118; Complex G 5; Context 2336
Description: Iron nodule; complete; spherical
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: D (max.) 4.3
Weight: 131 g
Material: Hematite (Fe₂O₃)

TZ 009994-001

Area I; Square AO 119; Complex G 2; Context 2668
Description: Iron nodule; complete; ovoid
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 5.5; W 5.2; H 3.4
Weight: 188 g
Material: Hematite (Fe₂O₃)

TZ 009996-001

Area I; Square AO 118/119; Complex G 3/G 4; Context 2698
Description: Iron nodule; fragment; hemispherical
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 1.2; D (max.) 2.8
Weight: 16 g
Material: Hematite (Fe₂O₃)

TZ 010120-001

Area I; Square AQ 118/119; Complex D 3; Context 2783
Description: Two Iron nodules; complete; two chunks
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 3.2; W 2.6; H 2.1
Weight: 14 g
Material: Hematite (Fe₂O₃)

TZ 010121-001

Area I; Square AN/AO 118; Complex G 3; Context

2736

Description: Iron nodule; complete; spherical
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: L 6.6; W 5.5; H 5
Weight: 382 g
Material: Hematite (Fe₂O₃)

TZ 010520-001

Area I; Square AQ 118/119; Complex D 3; Context 2777
Description: Iron nodule; complete; spherical
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a–d
Dimensions: H 3.7; D (max.) 3.5
Weight: 164.5 g
Material: Hematite (Fe₂O₃)

TZ 011245-001

Area I; Square AH 115/116; Complex P 3; Context 3217
Description: Iron nodule; complete
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: L 8.4; W 7.4; H 6.7
Weight: —
Material: Hematite (Fe₂O₃)

TZ 011303-001

Area I; Square AG 115; Complex P 5; Context 3265
Description: Iron nodule; complete; spherical
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: D (max.) 4.1
Weight: 109.2 g
Material: Hematite (Fe₂O₃)

TZ 011660-001

Area I; Square AG 116; Complex P 8; Context 3394
Description: Iron nodule; complete; ovoid
Type: —
Figure Reference: —
Date of Context: LB II—Stratum 14 a
Dimensions: H 5.4; D (max.) 8
Weight: 310 g
Material: Hematite (Fe₂O₃)

TZ 012181-001

Area I; Square AG 115; Complex P 5; Context 3292

Description: Iron nodule; fragment; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5

Weight: 74 g

Material: Hematite (Fe₂O₃)

TZ 012182-001

Area I; Square AG 115; Complex K 5/K 7; Context 3425

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 9

Weight: 780 g

Material: Hematite (Fe₂O₃)

TZ 012184-001

Area I; Square AG 116; Complex P 8; Context 3394

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5

Weight: 218 g

Material: Hematite (Fe₂O₃)

TZ 012352-001

Area I; Square AF 116; Complex O 2/O 5; Context 3523

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 4.3

Weight: 124 g

Material: Hematite (Fe₂O₃)

TZ 012353-001

Area I; Square AI 117; Complex I 5; Context 3622

Description: Iron nodule; complete ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 12.3; W 8.6; H 7

Weight: 1430 g

Material: Hematite (Fe₂O₃)

TZ 012354-001

Area I; Square AI 117; Complex I 5; Context 3615

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 5.2; D (max.) 8

Weight: 552 g

Material: Hematite (Fe₂O₃)

TZ 012355-001

Area I; Square AI 117; Complex I 5; Context 3612

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 3.1

Weight: 37 g

Material: Hematite (Fe₂O₃)

TZ 012367-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 4.1; D (max.) 7.4

Weight: 351 g

Material: Hematite (Fe₂O₃)

TZ 012368-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.7

Weight: 224 g

Material: Hematite (Fe₂O₃)

TZ 012369-001

Area I; Square AF 116; Complex P 8; Context 3578

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 2.6; D (max.) 3.4

Weight: 64 g

Material: Hematite (Fe₂O₃)

TZ 012504-001

Area I; Square AI 117; Complex I 5; Context 3620

Description: Iron nodule; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.5; W 2; H 0.5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 012643-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Iron nodule; complete; roller-shaped

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.9; D (max.) 2.9

Weight: 26 g

Material: Hematite (Fe₂O₃)

TZ 012644-001

Area I; Square AI 117; Complex I 5; Context 3664

Description: Iron nodule. Several fragments

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.5

Weight: 50 g

Material: Hematite (Fe₂O₃)

TZ 012506-001

Area I; Square AQ 120; Complex D 4; Context 3655

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 3.7; D (max.) 5.2

Weight: 179 g

Material: Hematite (Fe₂O₃)

TZ 012641-001

Area I; Square AR 120; Complex D 4; Context 3585

Description: Iron nodule; fragment; semispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 4

Weight: 25 g

Material: Hematite (Fe₂O₃)

TZ 012709-001

Area I; Square AF 116; Complex K 8; Context 3711

Description: Iron nodule; complete

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 2.3

Weight: 15 g

Material: Hematite (Fe₂O₃)

TZ 012724-001

Area I; Square AF 116; Complex K 8; Context 3712

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 3.6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014472-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4; W 3.6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014475-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6; W 5.4; H 4.2

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014634-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Iron nodule; fragment; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 4.2; W 3.7; H 1.6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 014691-001

Area I; Square AI 117; Complex I 5; Context 3617

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.4; W 4.9; H 4.4

Weight: —

Material: Hematite (Fe_2O_3)

TZ 014514-001

Area I; Square AF 115; Complex K 7; Context 4607

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 3.5; W 2.5; H 2.4

Weight: —

Material: Hematite (Fe_2O_3)

TZ 015441-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: Fig. 2.478

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 1.2; D (max.) 2.2

Weight: —

Material: Hematite (Fe_2O_3)



Fig. 2.478 Iron nodule TZ 015441-001 (Source: BAI/GPIA).

TZ 015490-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Iron nodule; fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 3.6; W 2.1; H 1

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016377-001

Area I; Square AF 115; Complex P 7; Context 4708

Description: Small pulverized fragments of one (?) iron nodule

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions:

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016381-001

Area I; Square AF 115; Complex F 2; Context 5129

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 4

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016385-001

Area I; Square AE 115; Complex O 3; Context 4912

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: D (max.) 5.5

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016392-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: D (max.) 6

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016393-001

Area I; Square AI 117; Complex I 3; Context 4725

Description: Iron nodule; amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Description: Iron nodule; complete; spherical

Dimensions: D (max.) 6

Weight: —

Material: Hematite (Fe_2O_3)

TZ 016396-001

Area I; Square AF 115; Complex P 7; Context 4708

Description: Iron nodule; amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5; W 3; H 2.9

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016403-001

Area I; Square AE 116; Complex N 1/N 2; Context 5087

Description: Iron nodule; fragment; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: D (max.) 3.8

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016404-001

Area I; Square AK 116; Complex E 6/I 1; Context 1981

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 2.4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016409-001

Area I; Square AF 115; Complex P 7; Context 4708

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.2

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016414-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: D (max.) 3.3

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016415-001

Area I; Square AF 115; Complex L 2/M 1; Context 5555

Description: Iron nodule; fragment; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: H 2; D (max.) 6

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016417-001

Area I; Square AF 115; Complex L 2/M 1; Context 5479

Description: Iron nodule; complete; two fitting halves

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: L 7.8; W 4; H 4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 016426-001

Area I; Square AG 116; Complex K 6; Context 5474

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c, d

Dimensions: D (max.) 4.9

Weight: —

Material: Hematite (Fe₂O₃)

TZ 018717-001

Area I; Square AS 122; Complex B 5; Context 6054

Description: Iron nodule; complete; spherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: D (max.) 5.4

Weight: —

Material: Hematite (Fe₂O₃)

TZ 018719-001

Area I; Square AS 122; Complex B 5; Context 6054

Description: Iron nodule; complete; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 3.5; D (max.) 5

Weight: —

Material: Hematite (Fe₂O₃)

TZ 018733-001

Area I; Square AQ 122; Complex D 1; Context 6128

Description: Iron nodule; fragment; hemispherical

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 0.6; D (max.) 2.1

Weight: —

Material: Hematite (Fe₂O₃)

TZ 018738-001

Area I; Square AS 122; Complex B 8; Context 6085

Description: Iron nodule; fragment; ovoid

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.5; D (max.) 2.1

Weight: —

Material: Hematite (Fe₂O₃)

Raw Material

TZ 007433-001

Area I; Square AI/AK 116; Complex I 4; Context 1476

Description: Six amorphous chunks

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions:

Weight: 72 g

Material: Bitumen/Asphalt

TZ 009999-001

Area I; Square AO 118/119; Complex G 3/4; Context 2698

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5; W 2.5; H 2

Weight: —

Material: Copper ore

TZ 010277-001

Area I; Square AN/AO 119; Complex G 4; Context 2766

Description: Rock sample

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 1; W 0.9; H 0.4

Weight: —

Material: Obsidian

TZ 011234-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Eleven Fragments

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 11.3; W 10.6; H 4.2 (largest fragment)

Weight: 13 g

Material: Alabaster

TZ 011235-001

Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 4.5; W 1.6; H 1.1

Weight: 8 g

Material: Alabaster

TZ 012660-001

Area I; Square AF 116; Complex P 3; Context 3712

Description: Amorphous fragment

Type: —

Figure Reference: Fig. 2.479

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 3.5; W 2

Weight: —

Material: Bitumen/asphalt



Fig. 2.479 Bitumen/asphalt TZ 012660-001 (Source: BAI/GPIA).

TZ 012321-001

Area I; Square AI 117; Complex I 5; Context 3593

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 5.2; W 3; H 1.6

Weight: 31 g

Material: Alabaster

TZ 012356-001

Area I; Square AG 116; Complex P 4; Context 3369

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 5.3

Weight: —

Material: Pyrite

TZ 012682-001

Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Flat amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.8; W 4.1; H 2.8

Weight: 106 g

Material: Quartzite

TZ 014486-001

Area I; Square AF 115; Complex K 8; Context 4632

Description: Small lime-green chunk of a hard gemstone

Type: —

Figure Reference: Fit. 2.480

Date of Context: LB II—Stratum 14 b

Dimensions: L 1.1; W 1; H 6.7

Weight: —

Material: Agate



Fig. 2.480 Agate TZ 014486-001 (Source: BAI/GPIA).

TZ 015333-001

Area I; Square AL 118; Complex H 4; Context 5033

Description: Amorphous fragment

Type: —

Figure Reference: Fig. 2.102; 2.481

Date of Context: LB II—Stratum 14 d

Dimensions: L 6; W 4.2; H 4.1

Weight: —

Material: Red chalk



Fig. 2.481 Red chalk TZ 015333-001 (Source: BAI/GPIA).

TZ 015334-001

Area I; Square AI 117; Complex I 3; Context 4725

Description: Fragment; rectangular in plan view; one side convex

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b, c

Dimensions: L 3; W 3.4; H 2.5

Weight: —

Material: Red chalk

TZ 015471-001

Area I; Square AF 115; Complex L 2; Context 5372

Description: Nine amorphous fragments

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 d

Dimensions:

Weight: —

Material: Flint/silex

TZ 015484-001

Area I; Square AL 118; Complex H 5; Context 4862

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b

Dimensions: L 2.4; W 1.8; H 0.8

Weight: —

Material: Flint/silex

TZ 015485-001

Area I; Square AE 116; Complex O 4; Context 5196

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Dimensions: D (max.) 1.2

Weight: —

Material: Soapstone

TZ 015694-001

Area I; Square AI 116; Complex P 4; Context 4689

Description: Plate-shaped fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.3; W 3.3; H 1.5

Weight: 44 g

Material: Alabaster

TZ 016028-001

Area I; Square AE 116; Complex O 4; Context 3532

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a, b

Dimensions: H 5.5; D (max.) 12.8

Weight: 953 g

Material: Flint/silex

TZ 019102-001

Area I; Square AE 116; Complex O 5; Context 3675

Description: Amorphous fragment

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: D (max.) 1

Weight: —

Material: Quartzite

Uncertain

TZ 007106-001

Area I; Square AI 115; Complex P 1/2; Context 1097

Description: Blank or semi-finished product; truncated pyramid shape; all sides only roughly worked

Type: —

Figure Reference: —

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 9.8; W 10; H 10.3

Weight: 371 g

Material: Limestone

TZ 012272-001

Area I; Square AF 115; Complex; Context 3553

Description: Fragment; triangular in plan view; formerly rhombus-shaped (?); flat; a straight broken side; no friction surfaces; cult stone (?)

Type: —

Figure Reference: Fig. 2.482 a, b

Date of Context: LB II/IA I—Stratum 14/13

Dimensions: L 19; W 14.5; H 6.7

Weight: 2700 g

Material: Basalt



Fig. 2.482 a Basalt fragment TZ 012272-001 (Source: BAI/GPIA).



Fig. 2.482 b Basalt fragment TZ 012272-001 (Source: BAI/GPIA).

TZ 015757-001

Area I; Square AL 118; Complex H 5; Context 4793

Description: Fragment; small object; possibly chip of a lower grinding stone

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 5.2; W 4.2; H 5.7

Weight: 130 g

Material: Basalt

TZ 015784-001

Area I; Square AE 115; Complex; Context 5089

Description: Fragment; triangular in plan view; flat and smoothed on the bottom side; smoothed on two more sides; two sides broken

Type: —

Figure Reference: —

Date of Context: LB II—Stratum 14 c

Dimensions: L 12.6; W 9; H 8.1

Weight: 1199 g

Material: Basalt

2.3.4. Catalogue of Bone Finds

by K. Soennecken

The bone finds on the Tall Zirā'a were evaluated by N. Benecke (DAI Berlin).

A total of 4,891 bones could be determined in the entire stratum 14. Of these, only 1.57 % are from wild animals and 12.59 % are from working animals. Of the farm animals, 85.72 % come from sheep or goats, 12.38 % from cattle and 1.9 % from domestic pigs. Cattle appear in two categories, as they could be used as farm animals as well as work animals.

Purpose	Animal species	Number of bones
Farm animals		
Meat, eggs, milk, fat, skin, bones, wool	Sheep	349
	Goat	244
	Sheep or goat	3514
	Cattle	593
	Domestic pig	91
	total	4791
Wild animals		
Meat, fat, skin, bones, antlers	Gazelle	26
	Fallow deer	18 (26 Fallow or red deer)
	Wild pig	5
	Fox	2
	total	77
Work animals		
Guard animals, means of transport, ploughing	Dog	11
	Cattle	593
	Horse/donkey /mule	9
	Horse	1
	Donkey	2
	total	616

Tab. 2.23 Identifiable bone material from Stratum 14: animal species and number (Source: BAI/GPIA).

144 See also chapter 5 of volume II of the final publication (Vieweger 2019 a; Vieweger 2019 b).

Among the single bone finds 22 objects are particularly noteworthy:

TZ 007081-001

Stratum 14; Area I; Square AN 117; Complex E3/E4; Context 1126

Description: Fragment of a knife handle or kohl tube with incised decoration; the incised pattern has three bands: at the top and bottom there is a band of cross-hatching, each of which is finished with a horizontal line to the edges of the object; the middle band consists of horizontal lines

Figure Reference: Fig. 2.72; 2.483

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5.6; D (max.) 1.5

Weight: 4 g

Reference: TZ 008351-001; Tall al-Fuḥḥār **LB**: Jensen 2015, 333 Pl. 196.11; Tall al-Mutasallim (Megiddo) **IA I**: Sass – Cinamon 2006, fig. 18.30; Megiddo tombs **LB II**: Guy – Engberg 1938, fig. 175.6. pl. 84 1.2; Tall al-Ḥiṣn (Beth Shean) **IA IA**: Panitz-Cohen et al. 2009, 757–759 fig. 16.12 photo 16.16; Tall Waqqāṣ (Hazor) **EB III**: Ben-Tor et al. 2017, 533 fig. 12.1; **IA IIA/B** (Str. VIII): Yadin et al. 1960, pl. LXXVIII.25 photo pl. CLXVI.6; **Persian** (Str. II): Yadin et al. 1961, pl. CXCI.23. photo pl. CCCLXV.7; Umm ad-Dananir **LB II**: McGovern 1986, fig. 76.4; Tall ad-Duwēr (Lachisch) **IA**: Sass 2004b, 2023 Pl. 28:20; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB**: Ben-Dov 2002, 151–153 fig. 2.120



Fig. 2.483 Fragment of a knife handle or kohl tube made from bone TZ 007081-001 (Source: BAI/GPIA).

TZ 007369-001

Stratum 14; Area I; Square AH 115; Complex P 3; Context 1438

Description: Rectangular object, part broken off on one side; possibly inlay; animal species can not be determined

Figure Reference: Fig. 2.484

Date of Context: LB II—Stratum 14 a

Dimensions: L 2.0; W 2.0; H 0.6

Weight: 6 g

Reference: Tall al-Fuḥḥār **IA**: Jensen 2015, 335 Pl. 197.6; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB**: Ben-Dov 2002, 147 fig. 2.108; 2.109; Tall Waqqāš (Hazor) **LB**: Ben-Tor et al. 2017, 544 fig. 12.6



Fig. 2.484 Rectangular bone object, possibly inlay TZ 007369-001 (Source: BAI/GPIA).

TZ 007693-001

Stratum 14; Area I; Square AH 115; Complex P 3; Context 1388

Description: Four matching fragments of a needle with a cylindrical hole; object completely preserved; large mammal, long bones, diaphysis

Figure Reference: Fig. 2.216; 2.485

Date of Context: LB II—Stratum 14 a

Dimensions: L 9.0; D (max.) 0.9; D (opening) 0.3

Weight: 6 g

Reference: Tall al-Mutasallim (Megiddo) unstratified: Sass – Cinamon 2006, 389–391 Fig. 18.26; Tall ad-Duwēr (Lachisch) **LB**: Sass 2004a, 1477 fig. 23.27; Tall Waqqāš (Hazor) **IA II A/B**: Bechar 2012, 500 fig. 8.2



Fig. 2.485 Bone needle, four matching fragments TZ 007693-001 (Source: BAI/GPIA).

TZ 007694-001

Stratum 14; Area I; Square AH 115; Complex P 3; Context 1388

Description: Spindle whorl; object completely preserved; large mammal, tubular bone, diaphysis; round; upper surface convex and polished, lower surface flat; centrically, vertically cylindrically pierced

Figure Reference: Fig. 2.217; 2.486

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.7

Weight: 4 g

Reference: Tall al-Mutasallim (Megiddo) **LB I**; **LB II**; **IA I and IA II**: Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB**: Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Megiddo tombs **LB II**: Guy – Engberg 1938, fig. 175.8. pl. 84.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB**: Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch): Sass 2004a, 1476, fig. 23.12



Fig. 2.486 Spindle whorl made from bone TZ 007694-001 (Source: BAI/GPIA).

TZ 008351-001

Stratum 14; Area I; Square AK 117; Complex H 6; Context 1910

Description: Handle or kohl tube with incised decoration; object completely preserved; the decoration consists of three bands; the upper and lower band is formed by crosshatching; the middle band consists of triangles filled with horizontal lines

Figure Reference: Fig. 2.191; 2.487

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.1; D (max.) 1.8

Weight: —

Reference: TZ 007081-001; Tall al-Fuḥḥār **LB**: Jensen 2015, 333 Pl. 196.11; Tall al-Mutasallim (Megiddo) **IA I**: Sass – Cinamon 2006, fig. 18.30; Megiddo tombs **LB II**: Guy – Engberg 1938, fig. 175.6. pl. 84 1.2; Tall al-Ḥiṣn (Beth Shean) **IA IA**: Panitz-Cohen et al. 2009, 757–759, fig. 16.12 photo 16.16; Tall Waqqāš (Hazor) **EB III**: Ben-Tor et al. 2017, 533 fig. 12.1; **IA IIA/B** (Str. VIII): Yadin et al. 1960, pl. LXXVIII.25 photo pl. CLXVI.6; **Persian** (Str. II): Yadin et al. 1961, pl. CXCI.23. photo pl. CCCLXV.7; Umm ad-Dananir **LB II**: McGovern 1986, fig. 76.4; Tall ad-Duwēr (Lachisch) **IA**: Sass 2004b, 2023 Pl. 28.20; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB**: Ben-Dov 2002, 151–153, fig. 2.120



Fig. 2.487 Handle or kohl tube made from bone TZ 008351-001
(Source: BAI/GPIA).

TZ 009260-001

Stratum 14; Area I; Square AN 118; Complex G 3; Context 2343

Description: Spindle whorl; object almost completely preserved; large mammal, long bones, diaphysis; round, upper side slightly conical and polished, underside flat; centrally, vertically cylindrically pierced; slightly damaged on two sides

Figure Reference: Fig. 2.488

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 1.0; D (max.) 2.6; D (opening) 0.3

Weight: 4.5 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 175.8. pl. 84.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147, fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476, fig. 23.12



Fig. 2.488 Spindle whorl made from bone TZ 009260-001
(Source: BAI/GPIA).

TZ 009349-001

Stratum 14; Area I; Square AN 119; Complex G 4; Context 2315

Description: Fragment of a spindle whorl; large mammals, long bones, diaphysis; round, upper side convex and polished, underside flat; cannulation not preserved

Figure Reference: —

Date of Context: LB II—Stratum 14 a–d

Dimensions: H 0.5; D (max.) 3.0

Weight: 0.5 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 175.8. pl. 84.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004 a, 1476 fig. 23.12

TZ 011415-001

Stratum 14; Area I; Square AG 115; Complex P 5; Context 3265

Description: Object completely preserved; function uncertain, possibly bone-shuttle; tongue-shaped cut bone

Figure Reference: Fig. 2.235; 2.489

Date of Context: LB II—Stratum 14 a

Dimensions: L 6.9; W 1.7; H 0.6

Weight:

Reference: Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1478 fig. 23.13



Fig. 2.489 Tongue-shaped bone object TZ 011415-001 (Source: BAI/GPIA).

TZ 011427-001

Stratum 14; Area I; Square AG 115; Complex P 5; Context 3265

Description: One-hole button; object completely preserved; round, upper side convex and polished, underside flat; vertically pierced in the centre

Figure Reference: Fig. 2.490

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.8; D (max.) 2.5

Weight: 3.6 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **IA I/LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.6; Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 175.8. pl. 84.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004 a, 1476 fig. 23.12



Fig. 2.490 One-hole button made from bone TZ 011427-001
(Source: BAI/GPIA).

TZ 011518-001

Stratum 14; Area I; Square AI 116; Complex; Context 3374

Description: One-hole button; object completely preserved; round button with bulge on top

Figure Reference: Fig. 2.231; 2.491

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.7; D (max.) 2.2

Weight: —

Reference: Tall al-Ḥiṣn (Beth Shean) **IA I:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.5; Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 175.20. pl. 166.18; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12



Fig. 2.491 One-hole button made from bone TZ 011518-001
(Source: BAI/GPIA).

TZ 011774-001

Stratum 14; Area I; Square AG 116; Complex P 8; Context 3394

Description: Fragment of a spindle whorl; probably cattle, long bones, diaphysis; round, upper side slightly convex and polished, underside flat; broken off on one side; centrally, vertically cylindrically pierced; funnel-shaped depression around the hole on the upper and lower side

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 1.7; D (max.) 2.1; D (opening) 0.1

Weight: 2.4 g

Reference: Tall al-Mutasallim (Megiddo) **LB I;**

LB II; IA I and IA II: Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12

TZ 012206-001

Stratum 14; Area I; Square AG 116; Complex P 8; Context 3394

Description: Disc-shaped bead; completely preserved; probably cattle, long bone, diaphysis

Figure Reference: Fig. 2.492

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.5; D (max.) 1.7; D (opening) 0.5

Weight: 1.1 g

Reference: Tall al-Qāḍī (Dan) “Mycenaen Tomb”

LB: Ben-Dov 2002, 147 fig. 2.122



Fig. 2.492 Disc-shaped bead made from bone TZ 012206-001
(Source: BAI/GPIA).

TZ 012209-001

Stratum 14; Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Spindle whorl; object completely preserved; probably cattle, tubular bones, diaphysis; two matching fragments; round, upper side conical and polished, lower side flat; centrally, vertically cylindrically pierced

Figure Reference: Fig. 2.493

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.7; D (max.) 2.1; D (opening) 0.2

Weight: 2.2 g

Reference: Tall al-Mutasallim (Megiddo) **LB I;** **LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Megiddo tombs **LB II:** Guy – Engberg 1938, fig. 175.26. pl. 171.2; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147, fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12



Fig. 2.493 Spindle whorl made from bone TZ 012209-001
(Source: BAI/GPIA).

TZ 012211-001

Stratum 14; Area I; Square AH 115/116; Complex P 3; Context 3217

Description: Disc-shaped bead; completely preserved; animal species not identifiable; one side polished, on the other side the bone structure is visible

Figure Reference: Fig. 2.214; 2.494

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.3; D (max.) 1.5; D (opening) 0.3

Weight: 0.7 g

Reference: Tall al-Qādī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; **LB:** Sass 2004a, 1476 fig. 23.12



Fig. 2.494 Disc-shaped bead made from bone TZ 012211-001
(Source: BAI/GPIA).

TZ 012371-001

Stratum 14; Area I; Square AF 115; Complex P 7; Context 3611

Description: Disc-shaped button or spindle whorl; object completely preserved; probably cattle, long bones, diaphysis; upper side only slightly convex and polished, underside flat; centric, vertically cylindrically pierced

Figure Reference: 2.495

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.5; D (max.) 3.1; D (opening) 0.2

Weight: 4.2 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 fig. 18.21; Tall al-Qādī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122



Fig. 2.495 Disc-shaped button or spindle whorl made from bone
TZ 012371-001 (Source: BAI/GPIA).

TZ 012372-001

Stratum 14; Area I; Square AF 116; Complex P 8; Context 3578

Description: Spindle whorl; object completely preserved; probably cattle, long bones, diaphysis; upper side convex and polished, lower side flat; centric, vertical cylindrical bore

Figure Reference: Fig. 2.496

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.5; D (max.) 1.9; D (opening) 0.2

Weight: 1.7 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Tall al-Qādī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147, fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12



Fig. 2.496 Spindle whorl made from bone TZ 012372-001
(Source: BAI/GPIA).

TZ 012545-001

Stratum 14; Area I; Square AI 117; Complex I 5; Context 3620

Description: Fragment of a spindle whorl; probably cattle, long bones, diaphysis; two matching fragments, slightly more than half of the spindle whorl preserved; upper side convex and polished, lower side flat; centric, vertically cylindrically pierced

Figure Reference: —

Date of Context: LB II—Stratum 14 a

Dimensions: H 0.8; D (max.) 3.1; D (opening) 0.3

Weight: 4.2 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147 fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12

TZ 012546-001

Stratum 14; Area I; Square AR 120; Complex D 4; Context 3585

Description: Fragment of a spatula; animal species not identifiable, tubular bone, diaphysis; elongated, pointed, slightly curved object; back part broken off; made from rib; very carefully worked; presumably part of a weaver’s shuttle; probably comes from a younger pit

Figure Reference: Fig. 2.55; 2.497

Date of Context: LB II—Stratum 14 a–d

Dimensions: L 5.5; W 0.8; H 0.2

Weight: —

Reference: Tall al-Mutasallim (Megiddo) **EB III:** Sass – Cinamon 2006, 394 Fig. 18.29



Fig. 2.497 Fragment of a bone spatula TZ 012546-001 (Source: BAI/GPIA).

TZ 016610-001

Stratum 14; Area I; Square AL 118; Complex H 5; Context 4793

Description: Slightly curved object with tip; fragment of an awl or bone shuttle; rib of cattle

Figure Reference: Fig. 2.498

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 8.2; W 0.7; H 0.6

Weight: 2.9 g

Reference: Tall al-Mutasallim (Megiddo) **EB III:** Sass – Cinamon 2006, 394 fig. 18.29; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1478 fig. 23.17; Tall Waqqāṣ (Hazor) **IA IIA** (Str. X): Yadin et al. 1960, pl.LXXXVIII.24



Fig. 2.498 Fragment of an awl or bone shuttle made of a cattle rib TZ 016610-001 (Source: BAI/GPIA).

TZ 016612-001

Stratum 14; Area I; Square AI 117; Complex I 3; Context 4722

Description: Spindle whorl; object completely preserved; animal species not identifiable, large tubular bone, diaphysis; upper surface convex and polished; underside flat and smoothed, but not polished; vertical, central cylindrical hole

Figure Reference: Fig. 2.499

Date of Context: LB II—Stratum 14 b

Dimensions: H 0.7; D (max.) 2.2; D (opening) 0.3

Weight: 2.7 g

Reference: Tall al-Mutasallim (Megiddo) **LB I; LB II; IA I and IA II:** Sass – Cinamon 2006, 384 Fig. 18.21; Tall al-Ḥiṣn (Beth Shean) **LB IIB:** Yahalom-Mack – Mazar 2007, 161 Fig. 6.4; Tall al-Qāḍī (Dan) “Mycenaen Tomb” **LB:** Ben-Dov 2002, 147, fig. 2.122; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1476 fig. 23.12



Fig. 2.499 Spindle whorl made from bone TZ 016612-001 (Source: BAI/GPIA).

TZ 017204-001

Stratum 14; Area I; Square AF 114; Complex F 2; Context 4691

Description: Fragment; function uncertain; possibly flute; sheep or goat, tibia, diaphysis; tubular bone with nine irregularly arranged holes on different sides

Figure Reference: Fig. 2.80; 2.500

Date of Context: LB II—Stratum 14 b–d

Dimensions: L 3.4; D (max.) 1.8

Weight: 3.6 g

Reference: TZ 013422 (MB/LB); TZ 017479-001 (MB); Tall al-Mutasslim (Megiddo) **EB II/MB I/**

MB II: Loud 1948, Pl. 286, l. 7; Braun 1999, 100 f.; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004a, 1500 fig. 23.32



Fig. 2.500 Fragment of a bone object, possibly a flute TZ 017204-001 (Source: BAI/GPIA).

TZ 019541-001

Stratum 14; Area I; Square AF 116; Complex P 6/P 8; Context 3700

Description: Fragment of a handle or inlay with incised decoration; cattle; rib; upper side smoothed and provided with three concentric circles

Figure Reference: Fig. 2.242; 2.501

Date of Context: LB II—Stratum 14 a

Dimensions: L 1.9; W 1.5; H 0.2

Weight: 0.5 g

Reference: Tall al-Ḥiṣn (Beth Shean) **MB/LB:** Yahalom-Mack – Mazar 2007, 682 Fig. 13.13. For more parallels see: Yahalom-Mack – Mazar 2007, 682; Tall ad-Duwēr (Lachisch) **LB:** Sass 2004 a, 1508 fig. 23.32



Fig. 2.501 Fragment of a bone handle or inlay TZ 019541-001 (Source: BAI/GPIA).

2.3.5. Catalogue of Cylinder Seals

by K. Soenneken/J. Häser

On Tall Zirā'a, the largest find to date of Late Bronze Age cylinder seals in Jordan was made—and one of the largest in the entire southern Levant. It comes from Area I, probably from stratum 14, phase a, however, the fill layers could not be clearly distinguished and the cylinders could also come from phase b, c or d. The immediate find context is a temple (see also description of stratum 14 d, complex D): large, nearly square cella with a base for a column in the middle. The walls in the south, north and east are about 2.5 m, the western wall only 70 cm wide. Due to the thickness of the wall, at least two floors are probable. The discovery of a hallway, a room to the north of the cella consisting of two long, narrow corridors, fits this context. The entrance to the cella in the east was protected by two antae (about 3 m wide) which protruded into the courtyard paved with small pebbles. The southern end of the courtyard was not excavated and the northern part is only visible through a negative find in a building pit for a wall which has now disap-

peared. This form of the temple with the antae resembles the Syrian temple type.

From the final Late Bronze Age settlement layer (stratum 14 a), there stems various interesting finds to include 24 cylinder seals of the Mittani glyptic. Additionally, 14 other cylinder seals were found in younger strata. Regarding the distribution of the cylinder seals, a concentration in the area of the temple is noticeable. 24 cylinders seals originate either from the inner area or from the courtyard (context: 2145, 2764, 2777, 2780, 2783, 2796, 2830, 5212). Even the cylinder seals, which originate from later contexts (Iron Age I, II A/B and II C, as well as Roman and Byzantine strata), are concentrated around the area of the temple (above or close by; context: 2595, 3339, 3420, 3481, 3513, 4624, 4674, 4706, 4801, 4821, 4852) with only two exceptions. These two come from an area further south (Context 2019 from Square AN 119 and Context 2866 from Square AI 117).



Fig. 2.502 Stratum 14, Complex D, contexts with cylinder seal finds (Source: BAI/GPIA).

	Find no.	Square	Context	Description	Stratum	Dating of Context
1	TZ 008558-001	AN 119	2019	IA IIA/B level	12	IA II A/B
2	TZ 008972-001	AP 119	2145	Inside LB temple cella	14 a	LB
3	TZ 009798-001	AQ 118	2595	Level above LB temple cella	4	Byzantine
4	TZ 010059-001	AQ 118	2764	Inside LB temple cella	14 a	LB
5	TZ 010101-001	AQ 118	2780	Inside LB temple cella	14 a	LB
6	TZ 010102-001	AQ 118	2780	Inside LB temple cella	14 a	LB
7	TZ 010103-001	AQ 118	2780	Inside LB temple cella	14 a	LB
8	TZ 010104-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
9	TZ 010105-001	AQ 118	2780	Inside LB temple cella	14 a	LB
10	TZ 010106-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
11	TZ 010107-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
12	TZ 010108-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
13	TZ 010109-001	AQ 118	2780	Inside LB temple cella	14 a	LB
14	TZ 010326-001	AQ 118/119	2783	Inside LB temple cella	14 a–d	LB
15	TZ 010327-001	AQ 118/119	2796	Inside LB temple cella	14 a–d	LB
16	TZ 010328-001	AQ 118/119	2796	Inside LB temple cella	14 a–d	LB
17	TZ 010329-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
18	TZ 010330-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
19	TZ 010331-001	AQ 118/119	2796	Inside LB temple cella	14 a–d	LB
20	TZ 010332-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
21	TZ 010333-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
22	TZ 010334-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
23	TZ 010335-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
24	TZ 010339-001	AQ 118/119	2777	Inside LB temple cella	14 a–d	LB
25	TZ 010448-001	AI 117	2866	IA II A/B level	11	IA II A/B (later)
26	TZ 010449-001	AQ 118/119	2830	Inside LB temple cella	14 a–d	LB
27	TZ 011531-001	AR 119	3339	Level above temple staircase	10	IA II C
28	TZ 011778-001	AQ 119	3420	Inside LB temple cella	—	Colluvium
29	TZ 012357-001	AR 120	3481	Roman pit in LB temple courtyard	8 b.c	Early Roman

30	TZ 012457-001	AR 118	3513	Level above LB temple staircase	4	Byzantine
31	TZ 014467-001	AP 120	4624	Level above LB temple courtyard	10	IA II C
32	TZ 014764-001	AP 121	4674	Level above LB temple courtyard	10	IA II C
33	TZ 015303-001	AP 120	4801	Level above LB temple courtyard	13–12	IA I–II A/B
34	TZ 015304-001	AQ 121	4706	Level above LB temple courtyard	12–11	IA II A/B
35	TZ 015305-001	AP 120	4801	Level above LB temple courtyard	13–12	IA I–II A/B
36	TZ 015306-001	AP 122	4821	Level above LB temple courtyard	8 a	Early Roman
37	TZ 015307-001	AQ 121	5212	LB temple courtyard	14 a–d	LB
38	TZ 015337-001	AP 120	4852	Level above LB temple courtyard	13	IA I

Tab. 2.24 Short description of find contexts of seals from Tall Zirā'a (Source: BAI/GPIA).

The majority of all cylinder seals (35 pieces) are made of quartz-frit and covered with a blue-greenish glaze. Only two are made of chlorite and one of

calcite—but these also show representations of the Mitanni style and belong to the same group as the quartz-frit seals.

Find No.	Material	Motif	Motif Group	Geographical Group	Style Group
TZ 008558-001	Quartz-frit	Human figure, bovines, 'bouquet-tree', spiral band	1.8	EG ¹⁴⁵	P 1 ¹⁴⁶
TZ 008972-001	Quartz-frit	Stags, spiral band	2.3 (M)	WG	—
TZ 009798-001	Quartz-frit	Net-pattern between two spiral bands	4.1	WG	—
TZ 010059-001	Quartz-frit	Stars with dotted circles	4.1	WG	—
TZ 010101-001	Quartz-frit	Row of human heads, row of fishes	1.2	WG	—
TZ 010102-001	Quartz-frit	Row of fishes, spiral band	2.2 (F)	WG	—
TZ 010103-001	Quartz-frit	Couchant stags sideways-on, spiral band	2.3 (M)	WG	S/P 3
TZ 010104-001	Quartz-frit	Human figure, gazelle, 'bouquet-tree', spiral band	1.8	EG	P 1
TZ 010105-001	Quartz-frit	Gazelle, 'bouquet-tree', standard	2.2 (M)	EG	S/P 1

145 Legend for the geographical groups: EG = eastern group; WG = western group. Cf. Salje 1990, 75 f

146 Legend for the style groups: P = Palestinian; S/P = Syro-Palestinian; S(L) = Syrian Group (Linear Style).

TZ 010106-001	Quartz-frit	Human figure, stag, 'bouquet-tree', zigzag-band	1.8	EG	P 1
TZ 010107-001	Chlorite	Human figures, tree?	1.3 ?	—	—
TZ 010108-001	Quartz-frit	Spiral band, net-pattern	4.1	WG	—
TZ 010109-001	Quartz-frit	Row of fishes, net-pattern	2.2 (F)	WG	—
TZ 010326-001	Quartz-frit	Row of ibex, gazelle, ibex	2.1 (M)	WG	S/P 1
TZ 010327-001	Quartz-frit	Rows of octopods, spiral band	4.1	WG	—
TZ 010328-001	Quartz-frit	Couchant stag and gazelle sideways-on, row of fishes	2.1 (M/F)	WG	S/P 3
TZ 010329-001	Quartz-frit	Stags, 'bouquet-tree'	2.2 (M)	EG	S/P 1
TZ 010330-001	Quartz-frit	Couchant gazelles sideways-on, spiral band	2.3 (M)	WG	S/P 3
TZ 010331-001	Quartz-frit	Three rows of fishes	2.1 (F)	WG	—
TZ 010332-001	Quartz-frit	Human figure, couchant bovines, 'bouquet-tree', spiral band	1.8	EG	P 1
TZ 010333-001	Quartz-frit	Row of human figures	1.1	WG	S/P 3
TZ 010334-001	Quartz-frit	Fishes, chevron-pattern	2.2 (F)	WG	—
TZ 010335-001	Quartz-frit	Row of birds	2.1 (B)	WG	—
TZ 010339-001	Quartz-frit	Spiral band, net-pattern	4.1	WG	—
TZ 010448-001	Chlorite	Human figures, tree, goat, chevron-pattern	1.8	—	—
TZ 010449-001	Quartz-frit	Human figures, gazelle, 'bouquet-tree'	1.5	EG	P 1
TZ 011531-001	Quartz-frit	Row of fishes, spiral band	2.2 (F)	WG	—
TZ 011778-001	Quartz-frit	Billet?	—	—	—
TZ 012357-001	Calcite	Human figure, tree	1.3	—	S(L)1
TZ 012457-001	Quartz-frit	Row of human figures, gazelle	1.2	WG	S/P 3
TZ 014467-001	Quartz-frit	Spiral band, net-pattern	4.1	WG	—
TZ 014764-001	Quartz-frit	Human figure, two gazelles, 'bouquet-tree'	1.5	EG	P 1
TZ 015303-001	Quartz-frit	Human figure, animal, lion	1.2	WG	—
TZ 015304-001	Quartz-frit	Row of human figures, gazelle	1.2	WG	S/P 3
TZ 015305-001	Quartz-frit	Gazelles, 'bouquet-tree'	2.2 (M)	EG	S/P 1
TZ 015306-001	Quartz-frit	Couchant stags sideways-on, spiral band	2.3 (M)	WG	S/P 3
TZ 015307-001	Quartz-frit	Three rows of fishes, spiral band	2.2 (F)	WG	—
TZ 015337-001	Quartz-frit	Couchant stag sideways-on, vertical chevron-pattern	2.3 (M)	WG	S/P 3

Tab. 2.25 Short description and classification of seals from Tall Zirā'a (Source: BAI/GPIA).

If one takes a closer look at the incised images on the cylinder seals, one will notice they depict only a limited repertoire of motifs. All these motifs belong to the Syro-Palestinian group of the Common Style of the Mitanni-Glyptic (after the classification of B. Salje¹⁴⁷). In total, the cylinder seals made of quartz-frit found on the Tall Zirā'a can be classified into six motif groups:

- 1) Bouquet-tree with stags or caprids (TZ 008972-001, TZ 010105-001, TZ 010329-001, TZ 012457-001, TZ 015304-001, TZ 015305-001);
- 2) Couchant caprids sideways-on with bands or with vertical division (TZ 010103-001, TZ 010328-001, TZ 010330-001, TZ 015306-001, TZ 015337-001);
- 3) Caprids, human figures, bouquet-tree sometimes combined with bands or vertical divisions (TZ 008858-001, TZ 010104-001, TZ 010106-001, TZ 010332-001, TZ 010449-001, TZ 014764-001);
- 4) Rows of human figures (TZ 010101-001, TZ 010333-001);
- 5) Rows of animals (TZ 010326-001, TZ 010335-001), and
- 6) Different bands sometimes with rows of fish (TZ 009798-001, TZ 010059-001, TZ 010102-001, TZ 010108-001, TZ 010109-001, TZ 010327-001, TZ 010331-001, TZ 010334-001, TZ 010339-001, TZ 011531-001, TZ 014467-001, TZ 015307-001).

No. of motif group	Description	Quantity of seals
1.1	Anthropomorphic	1
1.2	Anthropomorphic/zoomorphic	4
1.3	Anthropomorphic/floral	2 (one not definite)
1.5	Anthropomorphic/zoomorphic/floral	2
1.8	Anthropomorphic/zoomorphic/floral/ornamental	5
2.1	Zoomorphic with mammals, fish and/or birds	4
2.2	Zoomorphic/ornamental with fish	5
2.2	Zoomorphic/floral with mammals	3
2.3	Zoomorphic/ornamental with mammals	5
4.1	Pure ornamental	6

Tab. 2.26 Motif groups used on seals of Tall Zirā'a according to the distinction by Salje (1990, 29–77).

One of the seals made of quartz-frit is difficult to determine, because it is heavily damaged (TZ 015303-001). A human figure and a standing lion can be seen, but it is unclear what was depicted between of them. The incisions of the two chlorite seals (TZ 010107-001 and 010448-001) are also very flat and difficult to determine and they also seem to belong to the group with a bouquet tree and human figures. The calcite seal (TZ 012357-001) shows, somewhat roughly made, a human figure and a tree. At first sight, it does not seem to fit into the Mitanni glyptic

group, however, they show great similarity to a seal made in Nuzi¹⁴⁸.

A seal made of quartz-frit, which was also found inside the cella, could be a blank of a cylinder seal without decoration (TZ 011778-001), however, it is nearly impossible to distinguish it from an elongated bead and must remain undefined. Next and near to the cylinder seals, other valuable objects were found, e.g. a silver pendant with the representation of a goddess (TZ 010114-001; Context 2780, *Fig. 2.504*), a scarab with the cartouche of Amenhotep

147 Salje 1990, 89–94.

148 See: Salje 1990, plate XX, 351.

III (TZ 010112-001; Context 2781, *Fig. 2.503*)¹⁴⁹, rings made of faience (also Egyptian imports), glass beads and Mycenaean pottery. An object from the immediate vicinity of the cylinder seals is a goblet TZ 004443-001¹⁵⁰ (*Fig. 2.505*), which could be the storage container for the seals.

Radiocarbon samples from the cella area indicate a dating to the period between 1450 and 1300 BC (with a probability of 95.4 %). If the above mentioned scarab is taken into account, the time span could be narrowed down to the range of about 1388–1300 BC.



Fig. 2.503 Cartridge of Amenhotep III (TZ 010112-001) with modern impression (Source: BAI/GPIA).



Fig. 2.505 Vessel TZ 004443-001 (restored) (Source: BAI/GPIA).



Fig. 2.504 Silver pendant TZ 010114-001 (Source: BAI/GPIA).

As the name of the glyptic style implies, the origin of this specimen lies in the area of the Mitanni Kingdom in northern Mesopotamia and Syria. The cylinder seals of this type were called ‘Common Style’, because they do not show any noticeable features to the eye of a modern observer. Thus they had a low market value and were not noticed by tomb robbers and treasure hunters, therefore, they could be recovered by archaeologists. Through this stroke of luck, the origin of the seals can be determined exactly and an extensive trading network can be reconstructed.

Within Jordan, cylinder seals of this type have been found in various places. They come from excavations at Ṭabqāt Faḥl (Pella), Ya‘amun, Tall Dēr ‘Allā, Jabal Qusayr, the citadel of Amman, Amman airport and Khirbat adh-Dharīḥ¹⁵¹. However, if one compares the cylinder seals found at these sites to those of the Tall Zirā‘a, there are striking differences and the nearest comparative examples to those found at the Tall Zirā‘a are not in Jordan, but in Ra’s Šamra (Ugarit), Alalakh, Tall al-Ḥiṣn (Beth Shean), Bet-Shemesh, Gezer and Ashdod (even as

149 Cf. cartridge from Tall al-Ḥiṣn (Beth Shean) (James 1966, 17 f. and 316.).

150 Cf. Goblet N1397 from Tall Abū Ḥaraz (Fischer 2013, 498

fig. 298.456; fig. 293).

151 Eggler – Keel 2006.

152 Cf. Salje 1990, plate I–XV.

far as Marlik in Iran)¹⁵². The finds from Tall Zirā'a belong to the Syrian or Syro-Palestinian style of the 'Common Style' of the Mitanni glyptic and are more strongly connected to this area than to the centres in the kingdom of Mitanni (North-East Syria).

In contrast to the originating area of the Mitanni glyptic, where nearly all seals are known only by their seal imprint, no such imprints have been found in Jordan or other areas of the southern Levant. The assumption is that such cylinder seals were not only valuable because of their function as seals, but also because they were exported and worn as jewellery or amulets¹⁵³. This is also indicated by the fact that many examples were found in graves¹⁵⁴.

2.3.5.1. Cylinder Seal Finds in Other Places

If one considers the find contexts of cylinder seals in places like Ra's Šamra (Ugarit) or Alalakh, where a high percentage of this style was found, they are scattered over the entire excavation area, with a high concentration in administrative buildings. In recent years, however, it has become clear, at least in Jordan, that cylinder seals were often used in cultic contexts (e.g. Tall Dēr 'Allā, the Amman airport or in Ṭabaqāt Faḥl [Pella])¹⁵⁵. The concentration of cylinder seals in the temple area of the Tall Zirā'a fits the picture.

The temple in Tall Dēr 'Allā stood on an 8 m high platform and its cella was raised by another meter. In its last phase, the temple belonged to the long-room type with non-axial or indirect entrance¹⁵⁶. To the west of the cella and separated from her by a clay brick wall, there was an area of long rooms. To the east of the cella was a small courtyard and at the end of the courtyard, smaller rooms were excavated.

In one of these rooms 12 clay tablets were found (a reference to the temple archives) and in another room pottery, cylinder seals, scarabs, faience bottles, alabaster plates, beads and Mycenaean imports were found. The whole complex was interpreted by the excavators as a sanctuary or shrine for travellers or traders, as there was little space for housing on the tall itself¹⁵⁷.

A temple was also found at Amman airport. It had a central room with a series of surrounding corridors and corridors along the outer wall. Dozens of Mycenaean pottery sherds, fragments of Egyptian stone vessels, weapons and seals were found here. The settlement connected to this site is probably located under the access road to the airport.

Ṭabaqāt Faḥl shows several temple complexes. The appearance of the temple from the Middle Bronze Age II shows some similarities to the temple on the Tall Zirā'a. However, in the transition from the Middle to the Late Bronze Age, it was rebuilt into a 'Migdal' or 'fortress temple' and once again in the Late Bronze Age into a columned temple. The foundation deposit for this temple contained various cylinder seals, gold foil, glass ingots and a number of beads of different materials (which could be from a necklace). Among the metal offerings were a miniature harpoon, a bronze forearm and fist, fragments of a copper snake and part of an animal head. In the temple itself scarabs, cult stands and other valuable objects were found.

Also, on the western side of the Jordan River this tradition of deposition of cylinder seals can be verified for a cultic context. For example, on the Tall al-Ḥiṣn (Beth Shean), glass bars and cylinder seals were embedded into the temple's foundation deposit¹⁵⁸. Both temple 58066 in stratum R-2 and temple 1230 in stratum IX show features of non-monumental irregular temples as well as monumental temples in Syrian style. At the time of construction of these temples in the mid-15th century BC, Egyptian influence on the local population was less evident than in the subsequent period of the 19th and 20th dynasties. Therefore, Strata VIII–VI show a greater interaction between Canaanite and Egyptian religion and iconography, also religious syncretism with regard to temple architecture and cultic artefacts is evident.

Also further north, on the Tall Waqqāṣ (Hazor) cylinder seals of the Mitanni style were found in the temples in areas A and H. The so-called 'Southern Temple' in Area A is a symmetrical long-room temple and is part of the so-called 'Ceremonial Precinct'¹⁵⁹. To a certain extent, cultic activity continued into the courtyard, even after the 'Northern

153 Salje 1990, 12.

154 Collon 1987, 61.

155 Egger – Keel 2006, 77–81; 239–245; 413–419.

156 Strange 2001, 309.

157 Franken 1992, 23–103; 2008, 25–52; van der Kooij 1993, 339–340.

158 Bourke 2012, 175; James – McGovern 1993.

159 Zuckerman 2012, 99–125.

Temple' was no longer in use. A monumental symmetrical temple (building 7050) with an adjoining courtyard also belongs to this 'sacred area'. A large number of special finds have been made in this area, including cult stands, a figurine, a silver sickle, metal and stone statues, jewellery and more than two dozen cylinder seals in the Mitanni style¹⁶⁰. The temples in area H are also of monumental manner with courtyards in front. A large number of (storage) pottery and vessels with special functions were found here, but also bones with incised marks, ivory plaques, metal and stone figurines, ceremonial weapons and a cylinder seal¹⁶¹.

All these examples of cylinder seal finds in temples show the finds from Tall Zirā'a are part of a widespread tradition of the southern Levant for depositing cylinder seals and other valuable objects in temples.

Another question that arises in this context is the question of individuality. Not all of these precious votive offerings/storage objects such as beads made of glass or precious stones, metal or stone figurines, special pottery, etc. could be associated with an individual person as the situation is different with cylinder seals. Even though these seals were most likely not used for administrative purposes, they show a remarkable singularity which must have been of great importance for their respective owners. If this would not have been the case, the creator of the cylinder seals would not have gone to the trouble of making each one special. Therefore, it seems to be important for the donors to leave behind not only a valuable but also a personal gift in order to ask the deity for their own or the community's well-being.

2.3.5.2. Catalogue

TZ 008558-001

Area I; Square AN 119; Context 2019

Description: Two standing bovines fixed at the chest and with heads turned backwards; a spiral band (Salje 1990, plate XV.296 Type 7) is placed above the animals and separated by a horizontal line; a naked man with a bent left arm stands in front of a bouquet tree¹⁶² with seven balls and two horizontal bars, holding it with his right hand; the man is depicted in frontal position with his head turned sideward; he has a tapered nose; the person wears a rounded hat with a broad rim and a pommel at the backside

Motif group: 1.8 anthropomorphic/zoomorphic/floral/ornamental (Salje 1990, 47 nos. 14–15a)

Style: Palestinian group, group 1 (Salje 1990, 92)

Figure Reference: Fig. 2.506

Date of Context: Stratum 12; IA IIA/B

Dimensions: H 2.4, D 1.0

Material: Quarz-frit

Reference: Alalah, Isin, Ra's Šamra (Ugarit) (Salje 1990, 210 nos. 14–15a); Qal'at al-'Ammān (Eggler – Keel 2006, 52 f. no. 80); Ġabal al-Ḥawāyah (Eggler – Keel 2006, 156 f. no. 12), Ṭabqāt Faḥl (Pella) (Eggler – Keel 2006, 240 f. no. 88)

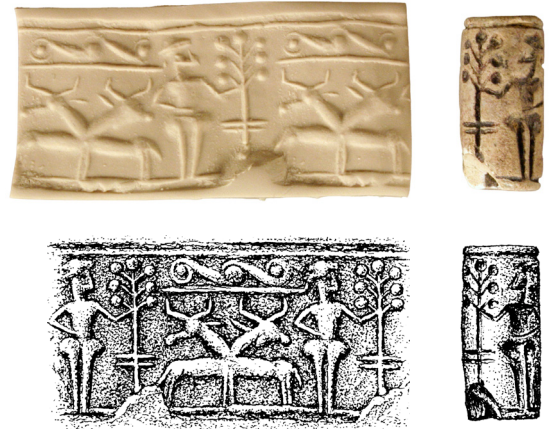


Fig. 2.506 Cylinder seal made from quarz-frit TZ 008558-001 (Source: BAI/GPIA).

160 Peri 2010, 525 f.

161 See Chap. 4.4.1.2.

162 Salje 1990, plate XIV.271.

TZ 008972-001

Area I; Square AP 119; Context 2145

Description: A vertical spiral band (Salje 1990, plate XV.302 Type 14) is in the focus of the scene; two stags slightly reared and with their heads turned back are standing on either side of the spiral band; the scene is separated to the following one by a vertical line

Motif group: 2.3 zoomorphic/ornamental with mammal (Salje 1990, 62 no. 15)

Style: —

Figure Reference: Fig. 2.507

Date of Context: Stratum 14; LB II

Dimensions: H 3.0, D 1.3

Material: Quarz-frit with remains of glaze

Reference: Gezer (Salje 1990, 219 no. 15, plate VII.124)



Fig. 2.507 Cylinder seal made from quarz-frit TZ 008972-001
(Source: BAI/GPIA).

TZ 009798-001

Area I, Square AQ 118, Context 2595

Description: Two horizontal spiral bands (Salje 1990, plate XV.295 Type 6) frame a horizontal net-pattern separated by horizontal lines

Motif group: 4.1 pure ornamental (Salje 1990, 74, nos. 54–56)

Style: —

Figure Reference: Fig. 2.508

Date of Context: Stratum 4, Byzantine

Dimensions: H 2.9, D 1.3

Material: Quarz-frit with remains of glaze

Reference: Tall al-Hiṣn (Beth Shean), Knossos, Tanagra (Salje 1990, 226 nos. 54–56, plate VIII.163)



Fig. 2.508 Cylinder seal made from quarz-frit TZ 009798-001
(Source: BAI/GPIA).

TZ 010059-001

Area I, Square AP/AQ 118, Context 2764

Description: A pattern of stars is created by round dots which are connected by two diagonal lines; the spaces between them are filled with dotted circles

Motif group: 4.1 pure ornamental (Salje 1990, 74 no. 53).

Style: —

Figure Reference: Fig. 2.509

Date of Context: Stratum 14; LB II

Dimensions: H 2.8, D 1.2

Material: Quarz-frit with remains of glaze

Reference: Ra's Šamra (Ugarit) (Salje 1990, 226 no. 53 plate VIII.162)

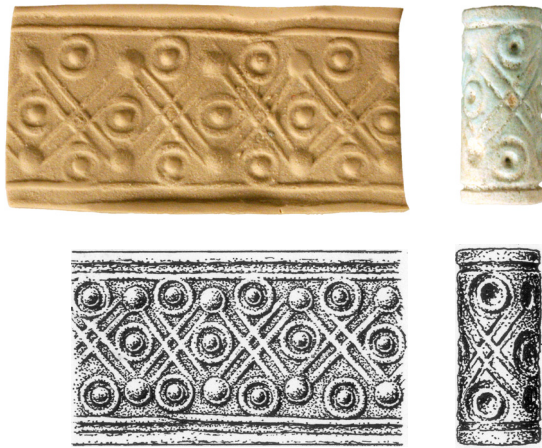


Fig. 2.509 Cylinder seal made from quarz-frit TZ 010059-001 (Source: BAI/GPIA).

TZ 010101-001

Area I, Square AQ 118, Context 2780

Description: In the upper part a row of fish; in the lower part a row of human heads which are separated from each other by vertical lines; bad condition of preservation

Motif group: 1.2 anthropomorphic/zoomorphic (Salje 1990, 31 nos. 9–10)

Style: —

Figure Reference: Fig. 2.510

Date of Context: Stratum 14; LB II

Dimensions: H 2.8, D 1.3

Material: Quarz-frit with remains of glaze

Reference: Tall al-Hiṣn (Beth Shean), Collection Moskau (Salje 1990, 198 no. 9–10)



Fig. 2.510 Cylinder seal made from quarz-frit TZ 010101-001 (Source: BAI/GPIA).

TZ 010102-001

Area I, Square AQ 118, Context 2780

Description: In the upper part a row of fish, in the lower part spiral band (Salje 1990, plate XV.295 Type 6); both registers are separated by a horizontal line

Motif group: 2.2 zoomorphic/ornamental with fish (Salje 1990, 67)

Style: —

Figure Reference: Fig. 2.511

Date of Context: Stratum 14; LB II

Dimensions: H 2.0, D 1.0

Material: Quarz-frit with remains of glaze

Reference: Alalakh (Salje 1990, 221 no. 4 plate VII.139)



Fig. 2.511 Cylinder seal made from quarz-frit TZ 010102-001
(Source: BAI/GPIA).

TZ 010103-001

Area I, Square AQ 118, Context 2780

Description: In the upper part a spiral band with two connecting lines (Salje 1990, plate XV.299 Type 11); in the lower part a row of couchant stags side-ways-on

Motif group: 2.3 zoomorphic/ornamental with mammals (Salje 1990, 63 no. 29–33)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.512

Date of Context: Stratum 14; LB II

Dimensions: H 2.9, D 1.2

Material: Quarz-frit with remains of glaze

Reference: Rimah, Tall al-Ḥiṣn (Beth Shean), Enkomi, Abū Ḥawām, Marlik (Salje 1990, 219 nos. 29–33, plate VII.129), TZ 015306-001, TZ 010330-001



Fig. 2.512 Cylinder seal made from quarz-frit TZ 010103-001
(Source: BAI/GPIA).

TZ 010104-001

Area I, Square AQ 118/119, Context 2777

Description: Broken into three pieces; a ‘bouquet-tree’ with five balls and two horizontal lines are in the focus of the scene (Salje 1990, plate XIV.271); a man with long garment and a round hat with pommel is standing to the left of it; a standing gazelle with backward turned head is standing on the right side of the tree; a vertical spiral band similar to Type 13 (Salje 1990, plate XV.301) separates the scene to the following one

Motif group: 1.8 anthropomorphic/zoomorphic/floral/ornamental (Salje 1990, 46 f. nos. 1–8a)

Style: Palestinian group, group 1 (Salje 1990, 92).

Figure Reference: Fig. 2.513

Date of Context: Stratum 14; LB II

Dimensions: H 2.9, D 1.2

Material: Quarz-frit with remains of glaze

Reference: Rimah, Bet Šemeš, Byblos, Hazor, Enkomi, Collection New York, Collection Paris, Ra’s Šamra (Ugarit), Gezer, Susa (Salje 1990, 209–211 nos. 1–8a plate V.90–91).



Fig. 2.513 Cylinder seal made from quartz-frit TZ 010104-001 (Source: BAI/GPIA).

TZ 010105-001

Area I, Square AQ 118, Context 2780

Description: A ‘bouquet-tree’ with seven balls and two horizontal bars stands in the focus of the scene; the ‘bouquet-tree’ is framed by two standing gazelles standing with their backside to the tree and turning their heads backward; the scene is separated to the following one by a standard

Motif group: 2.2 zoomorphic/floral with mammals (Salje 1990, 60 nos. 10–13)

Style: Syro/Palestinian group, group 1 (Salje 1990, 89)

Figure Reference: Fig. 2.514

Date of Context: Stratum 14; LB II

Dimensions: H 3.3, D 1.4

Material: Quarz-frit with remains of glaze

Reference: Alalah, Tall al-Hiṣn (Beth Shean), Laḥiṣ, Tepe Giyan (Salje 1990, 218 no. 10–13, plate VI.119), Tall Dēr ‘Allā (Eggler – Keel 2006, 412 f. no. 40)



Fig. 2.514 Cylinder seal made from quartz-frit TZ 010105-001 (Source: BAI/GPIA).

TZ 010106-001

Area I, Square AQ 118/119, Context 2777

Description: A 'bouquet-tree' with five balls and two horizontal bars stands in the focus of the scene. A man with a long garment and a hat is standing to the left of the tree. A reared stag with backward turned head stands to the right of the tree. A vertical zigzag-band with framing lines separates the scene from the following one.

Motif group: 1.8 anthropomorphic/zoomorphic/floral/ornamental (Salje 1990, pp. 46–47 nos. 1–8a)

Style: Palastinian group, group 1 (Salje 1990, p. 92)

Figure Reference: Fig. 2.515

Date of Context: Stratum 14; LB II

Dimensions: H 3.0, D 1.4

Material: Quarz-frit with remains of glaze

Reference: Rimah, Bet Šemeš, Byblos, Hazor, Enkomi, Collection New York, Collection Paris, Ra's Šamra (Ugarit), Gezer, Susa (Salje 1990, pp. 209–210 nos. 1–8a, plate V.90).



Fig. 2.515 Cylinder seal made from quartz-frit TZ 010106-001 (Source: BAI/GPIA).

TZ 010107-001

Area I, Square AQ 118/119, Context 2777

Description: Very shallowly carved and only faint traces of motif visible; on the left side, two persons are visible standing in front of a standard or an altar; another larger human figure is standing to the right of this object; the person holds a tree or a standard with his left hand to the right side

Motif group: 1.3 anthropomorphic/floral?

Style: —

Figure Reference: Fig. 2.516

Date of Context: Stratum 14; LB II

Material: Black Chlorite

Dimensions: H 2.3, D 1.1

Reference: —



Fig. 2.516 Cylinder seal made from black chlorite TZ 010107-001 (Source: BAI/GPIA).

TZ 010108-001

Area I, Square AQ 118/119, Context 2777

Description: In the upper part spiral band, in the lower part net-pattern; the two registers are separated by a horizontal line

Motif group: 4.1 pure ornamental (Salje 1990, 74)

Style: —

Figure Reference: Fig. 2.517

Date of Context: Stratum 14; LB II

Dimensions: H 2.1, D 1.0

Material: Quarz-frit

Reference: —



Fig. 2.517 Cylinder seal made from quartz-frit TZ 010108-001 (Source: BAI/GPIA).

TZ 010109-001

Area I, Square AQ 118, Context 2780

Description: In the upper part row of fish, in the lower part net-pattern; the two registers are separated by a horizontal line

Motif group: 2.2 zoomorphic/ornamental with fish (Salje 1990, 67 nos. 32–35)

Style: —

Figure Reference: Fig. 2.518

Date of Context: Stratum 14; LB II

Dimensions: H 2.1, D 0.9

Material: Quarz-frit with glaze

Reference: Alalah, Ra's Šamra, Paleokastro (Salje 1990, 222 nos. 32–35, plate VII.142), Ṭabqāt Faḥl (Pella) (Eggler – Keel 2006, 242–243 no. 91)



Fig. 2.518 Cylinder seal made from quartz-frit TZ 010109-001, photograph (Source: BAI/GPIA).

TZ 010326-001

Area I, Square AQ 118/119, Context 2783

Description: Row of standing ibex, gazelle and ibex with heads turned backwards

Motif group: 2.1 pure zoomorphic with mammals (Salje 1990, 57 no. 18)

Style: Syro/Palestinian group, group 1 (Salje 1990, p. 89)

Figure Reference: Fig. 2.519

Date of Context: Stratum 14; LB II

Dimensions: H 2.8, D 1.3

Material: Quarz-frit with remains of glaze

Reference: Susa (Salje 1990, 216 no. 18), Tall Dēr 'Alla (Eggler – Keel 2006, 414–415 no. 43)

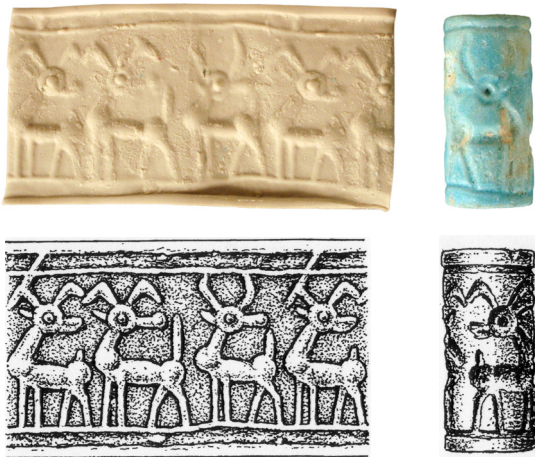


Fig. 2.519 Cylinder seal made from quartz-frit TZ 010326-001 (Source: BAI/GPIA).

TZ 010327-001

Area I, Square AQ 118/119, Context 2796

Description: The seal has three horizontal registers separated by two horizontal lines; a spiral band is situated in the middle register; a row of triangles with five to six short lines looking like swimming octopods are situated in the upper and lower register; the lower row is running in the opposite direction to the upper one

Motif group: 4.1 pure ornamental (Salje 1990, 74 no. 59)

Style: —

Figure Reference: Fig. 2.520

Date of Context: Stratum 14; LB II

Dimensions: H 3.0, D 1.3

Material: Quarz-frit with glaze

Reference: Ra's Šamra (Ugarit) (Salje 1990, 226 no. 59)



Fig. 2.520 Cylinder seal made from quartz-frit TZ 010327-001 (Source: BAI/GPIA).

TZ 010328-001

Area I, Square AQ 118/119, Context 2796

Description: In the upper part row of fish; in the lower part row of couchant stags sideways-on

Motif group: 2.1 pure zoomorphic mixed mammals and fish (Salje 1990, 58 no. 39–40)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.521

Date of Context: Stratum 14; LB II

Dimensions: H 2.9, D 1.3

Material: Quartz-frit with faint remains of glaze

Reference: Tall al-Ḥiṣn (Beth Shean), Hazor (Salje 1990, 217 nos. 39–40), Ṭabqāt Faḥl (Pella) (Eggler – Keel 2006, 244 f. no. 95), TZ 0130330-001



Fig. 2.521 Cylinder seal made from quartz-frit TZ 010328-001 (Source: BAI/GPIA).

TZ 010329-001

Area I, Square AQ 118/119, Context 2777

Description: A ‘bouquet-tree’ with five balls and two horizontal lines is standing in the focus of the scene; two stags with backward turned heads are standing right and left of the ‘bouquet-tree’; a vertical line separates the next scene.

Motif group: 2.2 zoomorphic/floral with mammals (Salje 1990, p. 61 no. 17)

Style: Syro/Palestinian group, group 1 (Salje 1990, 89)

Figure Reference: Fig. 2.522

Date of Context: Stratum 14; LB II

Dimensions: H 2.7, D 1.2

Material: Quartz-frit with remains of glaze

Reference: Tall al-Ḥiṣn (Beth Shean) (Salje 1990, 216 no. 17), TZ 015305-001



Fig. 2.522 Cylinder seal made from quartz-frit TZ 010329-001 (Source: BAI/GPIA).

TZ 010330-001

Area I, Square AQ 118/119, Context 2777

Description: In the upper part spiral band like the one on the seal TZ 010108-001; in the lower part row of couchant gazelles sideways-on like on seal TZ 010103-001

Motif group: 2.3 zoomorphic/ornamental with mammals (Salje 1990, 63 nos. 29–33)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.523

Date of Context: Stratum 14; LB II

Dimensions: H 3.2, D 1.3

Material: Quarz-frit with glaze

Reference: Rimaḥ, Tall al-Ḥiṣn (Beth Shean), Enkomi, Abū Ḥawām, Marlik (Salje 1990, 219 no. 29–33 plate VII.129), TZ 015306-001, TZ 010103-001, TZ 013028-001



Fig. 2.523 Cylinder seal made from quarz-frit TZ 010330-001
(Source: BAI/GPIA).

TZ 010331-001

Area I, Square AQ 118/119, Context 2796

Description: Three rows of fish; the upper row is separated from the other two rows by a horizontal line

Motif group: 2.1 pure zoomorphic with fishes (Salje 1990, 66 nos. 12–17)

Style: —

Figure Reference: Fig. 2.524

Date of Context: Stratum 14; LB II

Dimensions: H 2.7, D 1.3

Material: Quartz-frit with glaze

Reference: Collection de Clerq, Chalkis, Rimaḥ Ra's Šamra (Ugarit) (Salje 1990, 221 nos. 12–17 plate VII.138)

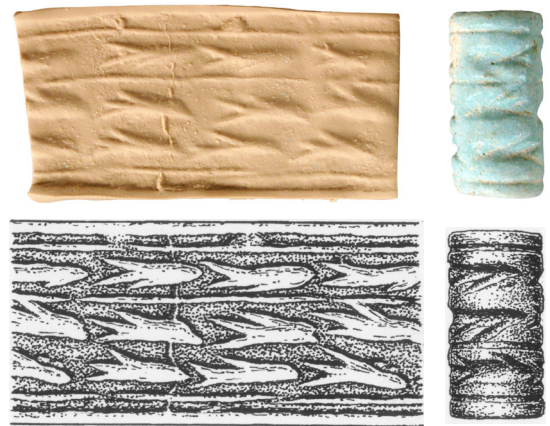


Fig. 2.524 Cylinder seal made from quarz-frit TZ 010331-001
(Source: BAI/GPIA).

TZ 010332-001

Area I, Square AQ 118/119, Context 2777

Description: A man in “Knielauf” position wearing a long garment holds with his bent right hand a ‘bouquet-tree’ on his left side; left of the tree are two couchant bovines connected at their backside and with backwards turned heads; there is a vertical line between them; below the bovines is placed a guilloche

Motif group: 1.8 anthropomorphic/zoomorphic/floral/ornamental (Salje 1990, 47 nos. 16–25a)

Style: Palestinian group, group 1 (Salje 1990, 92)

Figure Reference: Fig. 2.525

Date of Context: Stratum 14; LB II

Dimensions: H 2.2, D 0.9

Material: Quartz-frit with remains of glaze *Reference:* Assur, ‘Ammān, Alishar, Norsuntepe, Laḫiš, Tell Hadidi, Alalāḫ, Ra’s Šamra (Ugarit), Baq’ah (Salje 1990, 210 nos. 16–25a), Taḇqāt Faḫl (Pella) (Eggler – Keel 2006, 240 f. no. 88)



Fig. 2.525 Cylinder seal made from quartz-frit TZ 010332-001 (Source: BAI/GPIA).

TZ 010333-001

Area I, Square AQ 118/119, Context 2777

Description: Broken in two pieces; row of dancing human figures connected at shoulder

Motif group: 1.1 pure anthropomorphic (Salje 1990, 30 nos. 5–22a)

Style: —

Figure Reference: Fig. 2.526

Date of Context: Stratum 14; LB II

Dimensions: H 2.4, D 1.1

Material: Quartz-frit

Reference: Alalāḫ, Ra’s Ibn Hāni, Ra’s Šamra (Ugarit)/Minat al-Baydha, Ra’s Šamra (Ugarit), Bet-Schean, Dhekelia-Steno, Niniveh, Nippur, Megiddo, Mohammad ‘Arab, Tall Ta‘anaḫ, Tall al-Faḫar, Šiqmona, Artik (Salje 1990, 197 f. nos. 5–22a plate I.1–5)

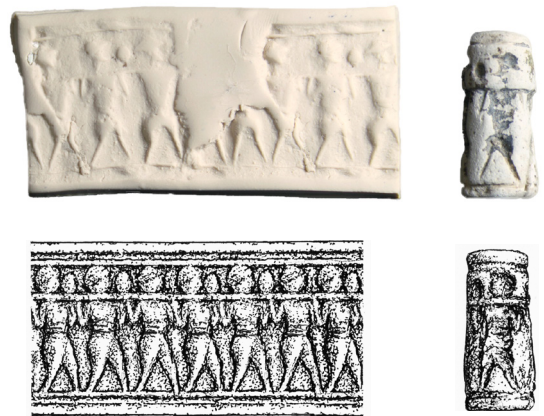


Fig. 2.526 Cylinder seal made from quartz-frit TZ 010333-001 (Source: BAI/GPIA).

TZ 010334-001

Area I, Square AQ 118/119, Context 2777

Description: Slightly damaged; four fish one upon the other; vertical chevron-pattern

Motif group: 2.2 zoomorphic/ornamental with fish (Salje 1990, 68 nos. 44–44a)

Style: —

Figure Reference: Fig. 2.527

Date of Context: Stratum 14; LB II

Dimensions: H 2.8, D 1.2

Material: Quartz-frit with remains of glaze

Reference: Tall al-Ḥiṣn (Beth Shean), Mari, Tall Subeidi (Salje 1990, 222 nos. 44, 44a, 49)



Fig. 2.527 Cylinder seal made from quartz-frit TZ 010334-001 (Source: BAI/GPIA).

TZ 010335-001

Area I, Square AQ 118/119, Context 2777

Description: Row of stalking birds with uplifted wings and bended beak

Motif group: 2.1 pure zoomorphic with birds (Salje 1990, 69 nos. 10–16)

Style: —

Figure Reference: Fig. 2.528

Date of Context: Stratum 14; LB II

Dimensions: H 2.9, D 1.2

Material: Quartz-frit with glaze

Reference: Tall Sa'ad, Collection Adana, Ra's Šamra (Ugarit), Tall al-Ḥiṣn (Beth Shean), Gezer, Pharos (Salje 1990, 222 f. nos. 10–16) and Megiddo

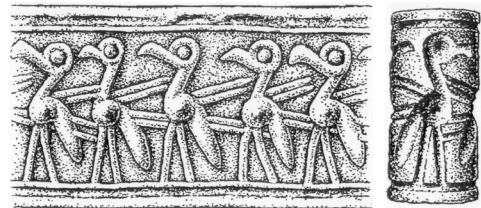


Fig. 2.528 Cylinder seal made from quartz-frit TZ 010335-001 (Source: BAI/GPIA).

TZ 010339-001

Area I, Square AQ 118/119, Context 2777

Description: In the upper part spiral band (Salje 1990, 72 plate XV.296 Type 7), in the lower part net-pattern; the registers are separated by two horizontal lines

Motif group: 4.1 pure ornamental (Salje 1990, 74 no. 54)

Style: —

Figure Reference: Fig. 2.529

Date of Context: Stratum 14; LB II

Dimensions: H 2.3, D 1.0

Material: Quarz-frit with remains of glaze

Reference: Tall al-Ḥiṣn (Beth Shean), Knossos (Salje 1990, 226 nos. 54–55 plate VIII.163)



Fig. 2.529 Cylinder seal made from quarz-frit TZ 010339-001 (Source: BAI/GPIA).

TZ 010448-001

Area I, Square AI 117, Context 2866

Description: Surface poriferous, carving very shallow; the depiction is divided in two vertical registers separated by a chevron-pattern; a standing human figure is depicted in the left register; the upper part of the figure is carved in frontal position, the lower part is seen from the side; there are two lines in front of the belly and one line at the backside; this might be a dagger or the bent lower arm of the figure; the human figure holds an unidentified object in the right hand; a naturalistic tree is standing in the middle of the second scene; a goat is standing reared-up with backward turned head left of the tree; a human figure is standing on the right side of the tree

Motif group: 1.8 anthropomorphic/zoomorphic/floral/ornamental (Salje 1990, 46)

Style: —

Figure Reference: Fig. 2.530

Date of Context: Stratum 11, IA II A/B

Dimensions: H 2.5, D 1.3

Material: Dark grey chloride

Reference: —



Fig. 2.530 Cylinder seal made from chloride TZ 010448-001 (Source: BAI/GPIA).

TZ 010449-001

Area I, Square AQ 118/119, Context 2830

Description: Very good state of preservation; a 'bouquet-tree' with five balls is in the focus of the scene; a naked human figure with a round hat sits left of the tree on a small chair; the human figure holds the tree with the left bent arm; a gazelle stands with the backside to the right of the tree and turns the head back

Motif group: 1.5 anthropomorphic/zoomorphic/floral (Salje 1990, 38 nos. 21a–22)

Style: Palestinian group, group 1 (Salje 1990, 92)

Figure Reference: Fig. 2.531

Date of Context: Stratum 14; LB II

Dimensions: H 3.2, D 1.4

Material: Quartz-frit with glaze

Reference: Ra's Šamra (Ugarit), Jerusalem, Çatal Hüyük (Salje 1990, 204 nos. 21a–22)



Fig. 2.531 Cylinder seal made from quartz-frit TZ 010449-001
(Source: BAI/GPIA).

TZ 011531-001

Area I, Square AR 119, Context 3339

Description: In the upper part row of spiral band, in the lower part a row of fish

Motif group: 2.2 zoomorphic/ornamental with fishes (Salje 1990, 67 nos. 8–9)

Style: —

Figure Reference: Fig. 2.532

Date of Context: Stratum 10, IA II C

Dimensions: H 3.1, D 1.3

Material: Quartz-frit with remains of glaze

Reference: Agia Peraskevi, Ra's Šamra (Ugarit)/Minet al-Beida, Enkomi (Salje 1990, 221 nos. 8–9 plate VII.140)

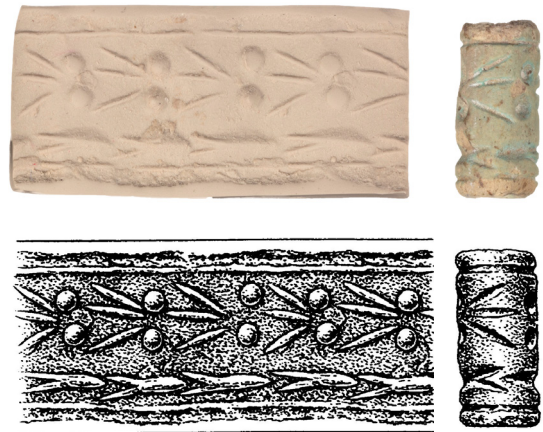


Fig. 2.532 Cylinder seal made from quartz-frit TZ 011531-001
(Source: BAI/GPIA).

TZ 011778-001

Area I, Square AQ 119, Context 3420

Description: Uncarved; billet (?)

Motif group: —

Style: —

Figure Reference: Fig. 2.533

Date of Context: Colluvium

Dimensions: H 2.4, D 1.2

Material: Quartz-frit

Reference: —

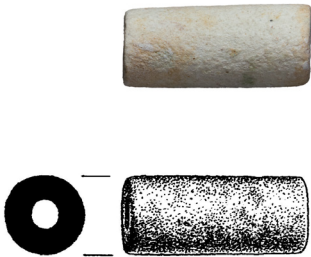


Fig. 2.533 Uncarved cylinder seal made from quartz-frit TZ 011778-001 (Source: BAI/GPIA).

TZ 012357-001

Area I, Square AR 120, Context 3481

Description: The carving is very crude and difficult to interpret; probably, there is a human figure standing or sitting to the left of a naturalistic tree; the place to the right of the tree is very worn and nothing can be seen

Motif group: 1.3 anthropomorphic/floral with naturalistic tree (Salje 1990, 36)

Style: Syrian group, 'Flüchtig linearer Stil', group 1, Ugaritic I (Salje 1990, 84)

Figure Reference: Fig. 2.534

Date of Context: Stratum 6, Roman

Dimensions: H 3.2, D 1.6

Material: Calcite

Reference: Ra's Šamra (Ugarit), Enkomi, collection Aleppo (Salje 1990, 202 nos. 9–15 plate III.40–42)

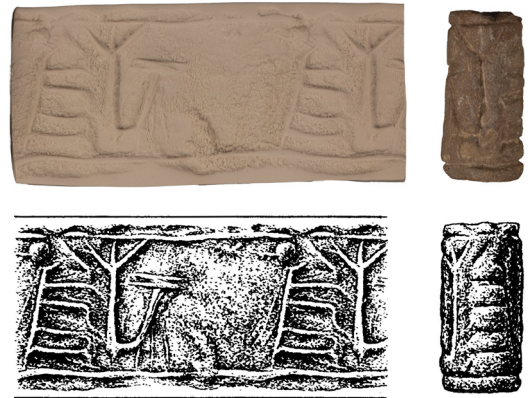


Fig. 2.534 Cylinder seal made from calcite TZ 012357-001 (Source: BAI/GPIA).

TZ 012457-001

Area I, Square AR 118, Context 3513

Description: The scene consists of two parts; on the left side there is a standing gazelle with head turned backwards; on the right side there is a row of three human figures sideways-on; the human figures wear a hat with a pommel; the human figures are connected at the hip with a line

Motif group: 1.2 anthropomorphic/zoomorphic (Salje 1990, 32)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.535

Date of Context: Stratum 4, Byzantine

Dimensions: H 2.8, D 1.2

Material: Quartz-frit with glaze

Reference: Ra's Šamra (Ugarit), Alalah (Salje 1990, 199 nos. 34–35 plate II.20), TZ 015304-001



Fig. 2.535 Cylinder seal made from quartz-frit TZ 012457-001
(Source: BAI/GPIA).

TZ 014467-001

Area I, Square AP 120, Context 4624

Description: In the upper part spiral band (Salje 1990, plate XV.301 Type 13), in the lower part net-pattern

Motif group: 4.1 pure ornamental (Salje 1990, 74)

Style: —

Figure Reference: Fig. 2.536

Date of Context: Stratum 10, IA II C

Material: Quartz-frit with glaze

Dimensions: H. 2.5, D 1.0

Material: Quartz-frit with glaze

Reference: TZ 010339-001



Fig. 2.536 Cylinder seal made from quartz-frit TZ 014467-001
(Source: BAI/GPIA).

TZ 014764-001

Area I, Square AP 121, Context 4674

Description: A naked human figure is depicted in the position of a “Knielauf”; he wears a hat with a pommel; the figure is placed to the left of a ‘bouquet-tree’ with five balls and two horizontal bars and holds it with his left bent arm; there are two animals to the right of the tree; the lower one is a standing gazelle bending the head downwards; the upper one is a couchant gazelle carved sideways-on
Motif group: 1.5 anthropomorphic/zoomorphic/floral (Salje 1990, 38 no. 31)

Style: —

Figure Reference: Fig. 2.537

Date of Context: Stratum 10, IA II C

Dimensions: H 3.0, D 1.2

Material: Quartz-frit with glaze

Reference: Rimah (Salje 1990, 205 no. 31)



Fig. 2.537 Cylinder seal made from quartz-frit TZ 014764-001 (Source: BAI/GPIA).

TZ 015303-001

Area I, Square AP 120, Context 4801

Description: Damaged in the lower part; a naked human figure in moving position holds an unidentified animal on the leg up-side-down; the figure wears a hat with a pommel; to the right there is a reared lion turning the head in a sideward position

Motif group: 1.2 anthropomorphic/zoomorphic (Salje 1990, 34 no. 78)

Style: —

Figure Reference: Fig. 2.538

Date of Context: Stratum 13–12, IA I–IA II A/B

Dimensions: H. 3.1, D 1.1

Material: Quartz-frit with remains of glaze

Reference: —

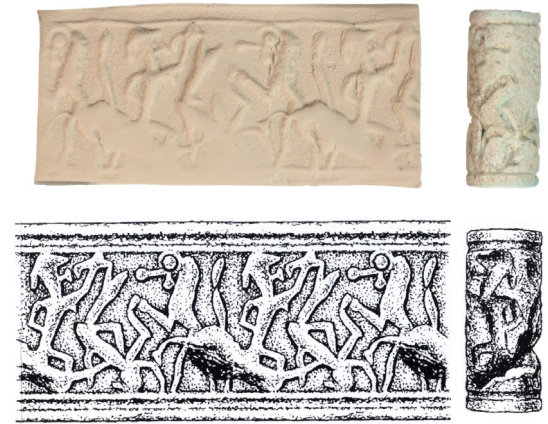


Fig. 2.538 Cylinder seal made from quartz-frit TZ 015303-001 (Source: BAI/GPIA).

TZ 015304-001

Area I, Square AQ 121, context 4706

Description: The scene consists of two parts; on the left side there is a standing gazelle with head turned backwards; on the right side there is a row of three human figures sideways-on; the human figures wear a hat with a pommel; the figures are connected at the hip with a line

Motif group: 1.2 anthropomorphic/zoomorphic (Salje 1990, p. 32)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.539

Date of Context: Stratum 12–11, IA II A/B

Dimensions: H 3.1, D 1.1

Material: Quartz-frit with remains of glaze

Reference: Ra's Šamra (Ugarit), Alalah (Salje 1990, 199 nos. 34–35 plate II.20), TZ 012457-001



Fig. 2.539 Cylinder seal made from quartz-frit TZ 015304-001
(Source: BAI/GPIA).

TZ 015305-001

Area I, Square AP 120, Context 4801

Description: A 'bouquet-tree' with five balls and three horizontal lines is standing in the focus of the scene; two gazelles with heads turned backwards are standing right and left of the 'bouquet-tree'; a vertical line separates the following scene

Motif group: 2.2 zoomorphic/floral with mammals (Salje 1990, 61 no. 17)

Style: Syro/Palestinian group, group 1 (Salje 1990, 89)

Figure Reference: Fig. 2.540

Date of Context: Stratum 13–12, IA I–IA II A/B

Dimensions: H 2.9, D 1.2

Material: Quartz-frit with glaze

Reference: Bet Shean (Salje 1990, 216 no. 17), Tall Dēr 'Alla (Eggler – Keel 2006, 414 f. no. 45), TZ 010329-001



Fig. 2.540 Cylinder seal made from quartz-frit TZ 015305-001
(Source: BAI/GPIA).

TZ 015306-001

Area I, Square AP 122, Context 4821

Description: In the upper part spiral band (Salje 1990, plate XV.296 Type 7); in the lower part row of couchant stags sideways-on

Motif group: 2.3 zoomorphic/ornamental with mammals (Salje 1990, 63 nos. 29–33)

Style: —

Figure Reference: Fig. 2.541

Date of Context: Stratum 6, Roman

Dimensions: H 3.0, D 1.3

Material: Quartz-frit with glaze

Reference: Rimaḥ, Tall al-Ḥiṣn (Beth Shean), Enkomi, Abu Hawām, Marlik (Salje 1990, 219 no. 29–33 plate VII.129), TZ 010103-001, TZ 010330-001



Fig. 2.541 Cylinder seal made from quartz-frit TZ 015306-001
(Source: BAI/GPIA).

TZ 015307-001

Area I, Square AQ 121, Context 5212

Description: In the upper part three rows of fish, in the lower part spiral band (Salje 1990, plate XV.301 Type 13)

Motif group: 2.2 zoomorphic/ornamental with fish (Salje 1990, 67 no. 28)

Style: —

Figure Reference: Fig. 2.542

Date of Context: Stratum 14; LB II

Dimensions: H 3.0, D 1.4

Material: Quartz-frit with remains of glaze

Reference: Ḥazor (Salje 1990, 221 no. 28)



Fig. 2.542 Cylinder seal made from quartz-frit TZ 015307-001
(Source: BAI/GPIA).

TZ 015337-001

Area I, Square AP 120, Context 4852

Description: Couchant stag sideways-on. Two vertical chevron-patterns.

Motif group: 2.3 zoomorphic/ornamental with mammal (Salje 1990, 62 nos. 9-12)

Style: Syro/Palestinian group, group 3 (Salje 1990, 91)

Figure Reference: Fig. 2.543

Date of Context: Stratum 13, IA I

Material: Quartz-frit with glaze

Dimensions: H 3.0, D 1.2

Reference: Ra's Šamra (Ugarit), New York Collection Anavian, Collection Paris, Tall Ašdod, Tall al-Ḥiṣn (Beth Shean), Ṭabqāt Faḥl (Pella) (Salje 1990, 218 f. nos. 9–12, plate VII.123)

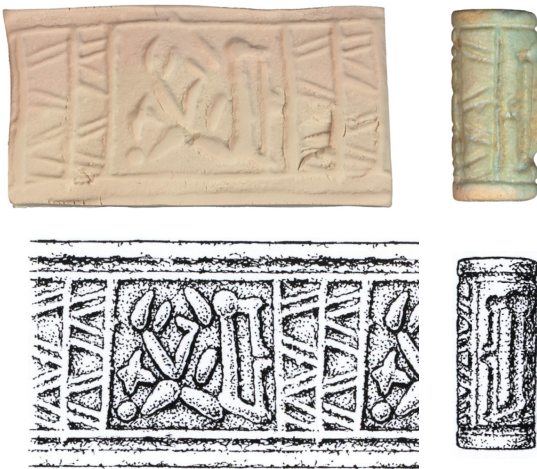


Fig. 2.543 Cylinder seal made from quartz-frit TZ 015337-001
(Source: BAI/GPIA).

2.3.6. Mycenaean-type Pottery from Tall Zirā'a

by R. Jung with a contribution by H. Mommsen



Fig. 2.544 The map shows sites (black dots) and regions exporting Mycenaean pottery to Tall Zirā'a (identified either with certainty or with some degree of probability by NAA, see contribution by H. Mommsen). The white dot indicates a site with a similar import assemblage of LH IIIA1/IIIA2 Early date (Graphics: M. Börner).

2.3.6.1. Introduction

The excavations of the German Protestant Institute of Archaeology and the Biblical Archaeological Institute Wuppertal at Tall Zirā'a yielded sherds of approximately 20 Mycenaean vessels (see catalogue). All were found in strata overlying the Late Bronze Age layers and thus post-dating the periods, during which Mycenaean pottery could be imported from the Aegean¹⁶³. One may conclude that these

fragments reached the levels of their final deposition as a result of re-working processes of settlement layers due to building and other activities in the course of the centuries-long habitation history of the tall.

Despite those limitations inhibiting a contextual discussion of the finds, the Mycenaean material from Tall Zirā'a is of considerable importance for

¹⁶³ Most of the Mycenaean sherds come from Iron Age II strata (for these see Vieweger – Häser 2011, 375–377).

several reasons. First, the distribution of Mycenaean pottery in the Levant shows its main concentrations in the coastal regions and in the immediate hinterland of the coast. It is much rarer to the east of the hills and mountain chains running parallel to the coast from Antioch in the north to Gaza in the south. At a quite limited number of sites located east of the Jordan River Mycenaean ceramics were found¹⁶⁴. Second and more importantly, more than half of the Mycenaean vessels found at Tall Zirā'a date to the time prior to the peak of Mycenaean pottery export towards the Near Eastern kingdoms. Third, the chemical composition of four of these early fragments was determined by using neutron activation analysis (NAA) enabling a provenance assignation of the vessels to specific Aegean production regions (see contribution by H. Mommsen).

2.3.6.2. Typological and Chronological Analysis of the Finds

Rim fragment TZ 005143-016 (*Fig. 2.545, Pl. 2.1, no. 1*) belongs to a goblet FT 255. The curve-stemmed spiral FM 49 is one of the motifs that were most frequently used to decorate this vessel type. Parallels from closed contexts in the Aegean provide evidence for its assignation to LH IIIA1. In Palestine, there is a parallel at Tall Bēt Mirsim, Phase C. It bears a spiralliform motif, which unfortunately is too fragmentary to be identified¹⁶⁵. So far, in the Near East this is the only other site that yielded a goblet FT 255. The one-handled goblet FT 262 found at Tall ad-Duwēr (Lachish) inside the 'Fosse Temple', Phase I, and dated to LH IIA is well-known¹⁶⁶, but does neither offer a morphologically nor chronologically close parallel for the find from Tall Zirā'a¹⁶⁷. A rim sherd of a LH IIB goblet FT

254 was found in Stratum XIV inside the so-called Canaanite Palace or Ceremonial Palace (Building 7050) at Tall Waqqāṣ (Hazor). It has the long lip characteristic for the earlier goblet shapes¹⁶⁸.

A second eastern Mediterranean parallel for the Tall Zirā'a goblet FT 255 comes from Enkomi in eastern Cyprus and more specifically from tomb 69 of the British Museum excavations¹⁶⁹. In this case the vessel is decorated with a running spiral FM 46, 59. Regrettably, the inadequate documentation of the stratigraphic evidence prevents an assignation of the vessel to a specific burial.

Rim and body fragments of a second small open vessel (TZ 020586-001[1–3] and TZ 020586-015; *Fig. 2.546–2.547; Pl. 2.1, no. 2 and 3*) belong to the earliest type of Mycenaean kylikes, a type that is present in LH IIIA1 contexts but was not singled out by A. Furumark. P. Mountjoy defined the type on the basis of vessels found in Attica, Laconia and the Argolid¹⁷⁰. The potters had developed this kylix departing from the earlier goblet types FT 254–255 by making the bowl shallower and the foot higher. These traits remained the basic characteristics of painted kylikes throughout the Mycenaean palace period. However, this early kylix type is still provided with a long everted rim and wide strap handles, features reminiscent of the goblet. In contrast to goblet handles decorated with a ladder pattern executed in broad strokes, kylix handles since the beginning of kylix production were entirely covered in paint (which is called 'painted monochrome' in the conventional Mycenaean terminology).

In the Near East, this vessel type was unknown so far¹⁷¹. The only possible Near Eastern parallel comes from Jerusalem and was found in a rock-cut tomb as part of a grave good assemblage consisting exclusively of pottery for an unknown number of burials. This tomb assemblage, apart from the kylix,

164 See e.g. the distribution maps in Leonard 1994, maps 1–37; van Wijngaarden 2002, 302 f. map 1.

165 Albright 1932, 43 f. pl. 15C, 1; Leonard 1994, 106 cat. no. 1600.

166 It lay close to the altar in room D of this phase, s. Tufnell et al. 1940, 80. 83. 88 pl. 49A–B, 257; 58, 5; Furumark 1941, 629 f.; Stubbings 1951, 56 pl. 14, 1; Hankey 1981b, 109 f. fig. 1; Hankey et al. 2004, 1406 tab. 22.2 cat. no. B-18.

167 The LH IIB goblet type FT 254 is attested at Sarepta on the Lebanese coast. It is decorated with wavy vertical stems FM 35, 17 (Koehl 1985, 91 cat. no. 92 fig. 15, 92).

168 Linear decoration 1.2; argonaut FM 22 (Zuckerman 2007b, 623 f. fig. 2, 3; Mountjoy 2015, 533 f. fig. 1, 4; Bechar 2017, 361 f. fig. 7.86, 21).

169 Murray 1900, 40 fig. 68, 1092; Furumark 1941, 628.

170 Mountjoy 1986, 65 f. fig. 76; see also Catling 2009, vol. 1, 355.—Mountjoy first mentioned the shape in Mountjoy 1981, 69 fig. 25, 360, but without discussing its relation to the goblet FT 255.

171 Cf. among others Leonard 1994; van Wijngaarden 2002, 330–345.

includes three Mycenaeanizing pots, Cypriot imported vessels and local pottery types. The Mycenaeanizing pots were inspired by Mycenaean types of LH IIIA2 date (FT 45, FT 94)¹⁷². However, the Jerusalem kylix is not a typical specimen. One may classify it as transitional shape between goblet FT 255 and LH IIIA1 kylix¹⁷³ for it features the same shallow bowl as the kylikes from the Spartan Menelaion and from Athens, but stands on a shorter foot. Overall, it fits the kylix better than the goblet¹⁷⁴. The handle decoration with bars is derived from the ladder pattern of the earlier goblets and is otherwise not typical for the classical kylix of LH IIIA1, as stated above¹⁷⁵.

By contrast, the Tall Zīrā'a vessel (TZ 020586-001; TZ 020586-015) is a canonical kylix in terms of shape, motif (scale pattern FM 70, 1), linear decoration (rim decoration 1.1 + lower bands 1.3) as well as monochrome handle decoration.

On Cyprus, there are two specimens of the LH IIIA1 kylix shape. The first seems to be an exact parallel for TZ 020586-001[1-3] and TZ 020586-015, as it also features the same scale pattern FM 70, 1. It was found in chamber tomb 10 at the cemetery of Miliá in the north-eastern part of the island¹⁷⁶. The second, nearly equally close parallel for the

Zīrā'a kylix was part of a well deposit at Hala Sultan Tekke on the south-eastern coast¹⁷⁷. In addition, chamber tomb 11 of Kalavasós-Áyios Dhímítrios in the south of the island yielded a vessel, which again based on its rather low foot should be classed as a transitional type between FT 255 and the true kylix¹⁷⁸. A final specimen from the same site has a bowl slightly deeper than usual for a kylix, while it has only one handle decorated with the ladder pattern characteristic for goblets. With the foot broken off, an important typological trait is missing¹⁷⁹.

A handle fragment (TZ 020055-004; *Fig. 2.549; Pl. 2.1, no. 4*) is certainly also one of the earliest Mycenaean imports to Tall Zīrā'a. The best parallel from the Aegean region is unfortunately only a handle fragment, which is as incomplete as the sherd from Tall Zīrā'a. It was found at Lerna in the southern Argolid, in a settlement layer stratified below a LH IIIA2 Late/IIIB Early floor¹⁸⁰. This kind of strap handle is characteristic for open kraters FT 7–8¹⁸¹ and for the earlier specimens of the amphoroid krater FT 54/55 as well¹⁸². The wavy line version with high amplitude and well-defined loops (FM 53, 4/5) is a recurrent motif on LH IIIA1 and IIIA2 Early¹⁸³ vessels.

172 Amiran 1960, 29. 34. 37 fig. 3, 53–55; pl. 4, 10–12.—For the Mycenaeanizing pieces cf. the Mycenaean types illustrated in Mountjoy 1999, 114 f. fig. 23, 143–164; 116–118 fig. 24, 154–156.

173 Amiran 1960, 25 f. 34 f. fig. 1, 1; pl. 3, 1.

174 Cf. Mountjoy 1999, 263–264 fig. 86, 72–74; 523–524 fig. 187, 124–125.—The foot is already higher than is the case with a vessel from Epidauros Limera. The latter had already been classed as a kylix by Mountjoy (Mountjoy 1999, 263 f. fig. 86, 72).

175 See, however, the mentioned short-footed specimen from Epidauros Limera. Nevertheless, in this case the bars are framed by lateral stripes and thus reproduce the canonical handle decoration of goblets (Mountjoy 1999, 263 f. fig. 86, 72).

176 Westholm 1939, 3 cat. no. 23 pl. 5, 2; Stubbings 1951, 26 f. fig. 2, right; Nicolau 1973, 54 cat. no. 2 pl. 12, 7.—Unfortunately, no complete drawing has been published so far. Therefore, one cannot assess the interior decoration of the bowl.

177 Öbrink 1983, 20 cat. no. 26; 43 fig. 50e. f; 51 fig. 108.

178 South – Russell 1993, 306. 308 fig. 3, K-AD737.

179 South 1997, 157 fig. 3, 1916; S. 172.

180 Wiencke 1998, 130 figs. 3–4; 158–163; 164 cat. no. P241; 165 fig. 24, P241.—This fill layer contained also LH IIIA1

and even earlier ceramics (Wiencke 1998, 163–175 figs. 24–28).—The handle is somewhat narrower than the one from Tall Zīrā'a, and it cannot be excluded that in fact it belonged to a closed vessel (Wiencke 1998, 164 cat. no. P241).

181 Benzi 1992, 348 cat. no. 6 pl. 84c; 158b; Mountjoy 1999, 269 f. fig. 89; 383 f. fig. 133, 46; 533–535 figs. 191, 160 and 192, 162 (with a vertical wavy band with low amplitude on the handle); 163; 661 f. fig. 251, 66.

182 Sakellarakis 1992, 48 f. cat. no. 61; 71 f. cat. no. 127 (both with a vertical wavy band with low amplitude on the handle).

183 Mycenae, Kalkáni, chamber tomb 20, North Pit (LH IIIA2 Early): piriform jar FT 39 with FM 53, 4 on the shoulder (Wace 1932, 21 f. 24 cat. no. 14 pl. 16, 14; Mountjoy 1999, 114 f. fig. 23, 140).—Prósímnna, chamber tomb XVIII, heap of one skull and eight LH IIIA1 vessels: straight-sided alabastron FT 93 with FM 53, 4 on the belly (Blegen 1937, 57–58 fig. 109, 212; Mountjoy 1999, 107 f. fig. 20, 115).—Prósímnna, chamber tomb XVI, niche with children bones and LH IIIA2 Early vessels: a shallow cup FT 220 with FM 53, 5 on the body and a straight sided alabastron FT 94 with FM 53, 5 on the shoulder (Blegen 1937, 52 fig. 97, 201. 203; Mountjoy 1999, 116–177 fig. 24, 154).

Fragments of closed vessels demonstrate that the LH IIIA1 repertoire used at Tall Zirā'a was even richer. Wall sherds of probably at least three, possibly four vessels (TZ 020018-025, TZ 004759-034, TZ 005105-072 and TZ 004397-005 (*Fig. 2.552–2.554; 2.556; Pl. 2.1, no. 7–9 and 11*¹⁸⁴) represent the small to medium piriform jar FT 30/31. A rim fragment and a wall sherd from the lower body suggest that there may be even two more examples of the same type and date (TZ 020080-051 and TZ 004737-022; *Fig. 2.551. 2.561; Pl. 2.1, nos. 6 and 16*). The extension of the scales to a point even below the belly, perhaps the rather large size of the single scales, the long everted and thin lip as well as the attested types of linear decoration are features suggesting that these vessels from Tall Zirā'a antedate the developed palatial age. Parallels for them come from different closed contexts of LH IIIA1 date in the Aegean. Piriform jars produced during that phase are rare finds in the Levant. There is one specimen of FT 30/31 at Hīrbat Ġudūr. However, it is painted with a net instead of a scale pattern¹⁸⁵. A small piriform jar FT 47 decorated with scale pattern FM 70, 1 was found at Tall Abū Hawām¹⁸⁶, but its characteristic carination clearly distinguishes it from the fragments found at Tall Zirā'a. Therefore, it is probably a Cypriot rather than a Peloponnesian product¹⁸⁷. In Cyprus, the small to medium FT 30/31 appears with several imported examples dating to LH IIIA1¹⁸⁸.

The base fragment of a rounded alabastron shows that it belonged to a vessel with a large diameter, possibly FT 84 (TZ 003605-019; *Fig. 2.563; Pl. 2.1, no. 18*). The base decoration consisting of concentric circles is again characteristic for LH IIIA1.

Complete vessels that offer good parallels are attested in closed contexts in the Argolid and in Laconia. As is the case with the above mentioned, LH IIIA1 types, alabastra FT 84 constitute exceptional cases in the Levant. One can name a specimen from a pit tomb at the Sidon-Dakerman cemetery site in southern Lebanon and a second specimen from al-Ġīb (Gibeon) in Palestine. While the one from al-Ġīb is lacking any information on its find context, the alabastron from Dakerman accompanied two unpainted local vessels inside tomb 10¹⁸⁹.

The large closed vessel (TZ 003492-026, TZ 005213-230, TZ 006714-005, TZ 002963-002, TZ 003473-026; *Pl. 2.2, no. 1*), the reconstruction of which is quite certain¹⁹⁰, does not find any exact parallel. However, the arrangement of multiple motif zones extending from the shoulder deep onto the lower body is an early stylistic trait of LH II to IIIA1 at the latest. A smaller vessel found in a secondary burial context inside chamber tomb 5 at Mitópoli in Achaea, a piriform jar FT 31 most probably dating to LH IIIA1, shows a net pattern (FM 57, 2) on its shoulder followed by three zones of simplified foliate band FM 64 down to the base. This combination of decorative syntax and motif make it the best parallel for the large vessel exported to Tall Zirā'a. It differs from the latter in some aspects including the size, the shoulder motif and the fact that the decorative zones are separated by single broad bands instead of band groups. A vessel dated again to LH IIIA1, but coming from a secondary burial deposit inside chamber tomb XLII Prósíma in the Argolid, offers some evidence for the production of a similar decorative syntax in the Argolid. Finally, the concentric semicircles (FM 44) arranged in an appar-

184 TZ 005105-072 (*Fig. 2.554; Pl. 2.1, no. 9*) may belong to the same vessel as TZ 004759-034 (*Fig. 2.553; Pl. 2.1, no. 8*).

185 Hankey 1981a, 33 f. fig. 2, 1; 36 f. cat. no. 2; Leonard 1994, 13 cat. no. 4.

186 Balensi 1980, pl. 38, 24; Leonard 1994, 20 cat. no. 108; Graziadio 2017, 154 cat. no. 120.

187 On the production of FT 47 in southern Cyprus see Mountjoy – Mommsen 2015, 470 f. fig. 33 (based on NAA). A detailed discussion of all FT 47 specimens provides Graziadio 2017.

188 Examples from a well deposit at Hala Sultan Tekke are discussed in the following chapter. Those which offer the best parallels for the Tall Zirā'a fragments are also listed

and described in the catalog. There are further specimens at Kalavassós-Áyios Dhímítrios (Nicolau 1973, 55 cat. no. 9 pl. 10, 2) and Maróni, tomb 5 (Johnson 1980, 18 cat. no. 55 pl. 14, 55; 62, 55).

189 Saïdah 2004, 28 f. 52 fig. 21–22. The excavator reports another grave gift, a very small fibula (measuring 3.2 cm x 1.5 cm, see Saïdah 2004, 29 cat. no. 51), which, however, is lost (Yon 2004, 163 n. 7).

190 The drops of paint at the start and the end of the vertical brush strokes define the orientation of the fragments and therefore their position on the vessel—of course in combination with their sections. These characteristics prove that most of the sherds belong to the lower body and not to the shoulder of the pot.

ently alternating composition on the shoulder and the multiple zones of simplified foliate bands (FM 64) on the lower body of the Zirā'a vessel show some reminiscence to the LM II–IIIA1 Palace Style of Crete. This is suggested by comparison with a vessel from the West Magazine Area at Knossós¹⁹¹.

Other vessels are definitely of later date and were produced during the developed stages of the palatial age. Three of these are small closed vessels represented by wall and base sherds respectively (*Fig. 2.555; 2.557; 2.562; Pl. 2.1, nos. 10, 12, 17*). A shoulder fragment belongs to a small piriform jar FT 45 with narrow shoulder zone carrying a simplified foliate band FM 64 (TZ 002874-035; *Fig. 2.555; Pl. 2.1, no. 10*). This clearly points to a date in LH IIIA2 Late. There are several parallels for this vessel type with the same motif in different Levantine settlements¹⁹². It belongs to the usual export spectrum of the developed palatial age. The second vessel fragment comes from the base of a rounded alabastron. Size and concentric circle decoration underneath suggest an identification as FT 85 (TZ 001331-003; *Fig. 2.562; Pl. 2.1, no. 17*). Although in the Aegean this was one of the most common types among the closed vessels during LH IIIA2 Late, it rarely reached the Levantine shores¹⁹³. One can make a contrary statement about the globular flask FT 188/189 (TZ 004032-017; *Fig. 2.557; Pl. 2.1, no. 12*). The Tall Zirā'a fragment belongs to the type defined as 'vertical' based on the arrangement of the concentric circles decoration both sides, as defined by the handle axis¹⁹⁴. Some of the specimens assigned to this type have a bulging globular shape and were produced in the same way as

most small closed vessels, while others were made by joining two halves that had been formed separately as shallow bowls¹⁹⁵. The fragment form Tall Zirā'a belongs to the former variety. Although this type was used by the Aegean population, it was not a common shape in Greece, neither in settlements nor in tombs. However, a large number of globular flasks FT 188/189 was exported to the Levant¹⁹⁶.

A fourth vessel produced during the developed palatial age (LH IIIA2 to IIIB Middle) is an amphoroid krater FT 54/55, of which only a small wall fragment with part of a chariot representation survived (TZ 004903-061; *Fig. 2.550; Pl. 2.1, no. 5*). This vessel type that was one of the most frequent export articles delivered from the Mycenaean pottery workshops to the kingdoms of Cyprus and the Levantine coast¹⁹⁷. Due to the small size of the fragment, proposing a precise date for it would equal overstretching the evidence¹⁹⁸.

A final fragment belongs to a lentoid flask FT 186 (TZ 004023-017; *Fig. 2.558; Pl. 2.1, no. 13*). In contrast to the aforementioned flask FT 188/189, the lentoid flask FT 186 was always made by joining two separate shallow bowls. The dull paint and the other fabric characteristics hint at a production region outside Greece, probably in the Levant. Typological, stylistic and fabric parallels from different Levantine sites speak in favour of this hypothesis¹⁹⁹. Few of those flasks FT 186 from Egypt and Palestine have been analysed by NAA in Bonn. One seems to come from a workshop in Egypt and/or Palestine²⁰⁰, another one is in fact a Cypriot product²⁰¹.

191 Popham 1970, 72 f. pl. 7a; Niemeier 1985, 250 cat. no. XVIII A1 pl. 8, XVIII A1.—Popham's comments on the "lateness" of this vessel in terms of the restriction of (complex) motifs to the vessel shoulder caused by the extension of banded decoration on the lower body may suggest a LM IIIA1 date.

192 See catalogue.

193 For specific parallels see the catalog; for its rarity in the Levant cf. Leonard 1994, 34 f. (listing only six different sites).

194 Furumark 1941, 616. The horizontal type is subdivided into FT 190, 191, 192 and 193 (Furumark 1941, 616–617).—Cf. also Mountjoy 1986, 80 f. fig. 95, 2; 96.

195 Mountjoy 1986, 80 f. fig. 95.

196 Leonard 1994, 83–87.

197 See recently Feldman – Sauvage 2010, esp. 110–119 (a catalog with chariot kraters found outside Greece); Jung 2015, 247–249, 255 f.

198 Some parallels can be named for the way the pole of the chariot intersects the tails of the pair of horses (Vermeule – Karageorghis 1982, 197 cat. no. IV.1; 198 cat. nos. IV.19 and IV.29). Based on their style these parallels can be dated to LH IIIA2 (Güntner 2000, 175 cat. no. 34; 177 nos. 74 and 78).

199 See catalogue.

200 Mommsen et al. 2005, 153 tab. 1 no. 28; 155; Mountjoy – Mommsen 2015, 473 f. fig. 35, T.933.

201 Mommsen et al. 2005, 153 tab. 1 no. 16; 155.

2.3.6.3. The Relevance of the Mycenaean Pottery at Tall Zirā'a in its Levantine context

The special relevance of the Mycenaean pottery found at Tall Zirā'a lies in the early date (i.e. to the phase LH IIIA1) of eleven imported pieces (of which two belong to one and the same vessel with some probability). Only four other imports can be ascribed to the main phase of Mycenaean pottery exportation to the Levant. One final fragment is of Mycenaean style, but probably a Levantine (or Cypriot) product.

It is well-known that Mycenaean pottery exports to the wider eastern Mediterranean region, including Cyprus and the whole Levantine coast, increased only by LH IIIA2²⁰². There is no doubt, the main export-oriented production took place during the phases LH IIIA Late (LH IIIA2 Late), LH IIIB Early and LH IIIB Middle. Since several decades, scholars reconstruct a three-staged development of Mycenaean pottery exportation. According to this evaluation of the evidence and after the initial phase with very limited numbers of imported LH I–IIA products, quantities of Mycenaean pots rose during the second phase covering LH IIB and IIIA1, while the steep and final increase occurred during the time period of LH IIIA2 and IIIB Early–Middle²⁰³. In that final period, exports were dominated, to a very large extent, by products of workshops in the northern Argolid and in the region of Mycenae. This is proven by chemical analyses using NAA and points to the existence of a large scale centralized pottery production. Moreover, this was an export-oriented production, because the most frequent types among the exported vessels resemble typical Levantine and Cypriot shapes and were therefore specifically

made to fit the consumption habits of the eastern populations²⁰⁴.

The mentioned chronological reconstruction was proposed for both, the island of Cyprus and the Levantine coastal zone. However, some regional differentiation between those two macro-regions is observable for LH IIB and IIIA1. In the Levant, even the larger sites yielded only up to ten Mycenaean imports dating to this time span. In most cases, one counts much less than ten²⁰⁵. This may only be partially due to the fact that at many Levantine sites excavations uncovered predominantly structures dating to the later Late Bronze Age phases. Although in Cyprus, the earlier phases of the Late Bronze Age settlements were also uncovered to a much more limited extent than the later ones. We also have evidence of more LH IIIA1 pots from the island than from the mainland coast of the Levant. Another important aspect in this regard is the fact that many more Late Bronze Age II tombs were excavated in Cyprus than in the Levant.

In order to better understand the significance of the Mycenaean pottery from Tall Zirā'a, one should dwell on the evidence of other Cypriot and Levantine sites in some more detail. This comparison is all the more necessary, as none of the Tall Zirā'a fragments comes from a stratigraphically closed, Late Bronze Age context. However, the stylistic-typological dates of the sherds do offer quite a good basis for a meaningful interpretation of the material. The first set of questions one can pose, relates to the repertory. Are the vessel shapes present at Tall Zirā'a characteristic for the Mycenaean pottery exports in general? Do the ratios between open and closed vessels and those between specific shape classes reflect common trends? Due to the uneven representation of the mentioned export phases at

202 Hankey 1967; Sherratt 1982, 179–182; van Wijngaarden 2002, 261; Mountjoy 2015, 533.—Some decades ago, it seemed as if in LH IIIA1 the export of the products of the increased centralized pottery production in the north-eastern Peloponnese had to be confined to the Aegean regions (Sherratt 1982, 179–181).

203 Åström 1973, 122–125 (with the first exact quantification for Cyprus); Cadogan 1973, 168 f.; Nicolaou 1973; Steel 1998, 286; Steel 2004a, 70; van Wijngaarden 2002, 261, 267.—For the end of the export see below.

204 For further discussion and bibliography see Jung 2015.

205 For Ugarit G. J. van Wijngaarden has listed eight specimen (including two found at the harbor site of Mīnet al-Bēda)

and dated them to LH II–IIIA1 (van Wijngaarden 2002, 44 tab. 5.3; 330–340 catalog II).—However, his cat. nos. 129, 204, 207 and 408 have to be deleted from this list as they are either not datable with such precision or definitely later than LH IIIA1 (for van Wijngaarden's cat. no. 129 see Koehl 2006, 172 cat. no. 700, fig. 33, 700: LM IIIA2 late).—By contrast, one must add to his list five other vessels of the phases LH IIA, IIB and IIIA1: Hirschfeld 2000, 91, 127, 138, 222 cat. nos. 99, 100, 102; 230 cat. no. 292; 233 cat. no. 365. The early conical rhyton (FT 199) no. 292 in Hirschfeld's catalog is dated to LH IIA by Koehl 2006, 155 cat. no. 574. We then arrive at nine verifiable imports to Ugarit from LH IIA until LH IIIA1.

Tall Zīrā'a, only the LH IIIA1 vessels are numerous enough for any semi-quantitative comparison. A second set of questions relates to the social and economic significance of Mycenaean pottery imports. For answering such questions, closed contexts with even few imported pots may, in certain cases, have a higher significance than sites with larger quantities of vessels, but without certain stratigraphical data.

Approaching the mentioned issues, one needs to remember that in the whole of the eastern Mediterranean between Cyprus and Palestine, there are only few closed excavation contexts that are contemporary to LH IIIA1 and comprise sufficient pottery fragments for a meaningful quantification. One pottery assemblage from the settlement at Hala Sultan Tekke is of special relevance here. It was classified as a well deposit and contains the largest stratified complex of LH IIIA1 and LH IIIA2 Early pottery so far published from a site located to the east of the Aegean. In comparing the Mycenaean repertoire from this well with the LH IIIA1 (–IIIA2 Early) sherds from Tall Zīrā'a, one observes interesting similarities.

According to the study by U. Öbrink, the so-called well at Hala Sultan Tekke contained 1502 Mycenaean sherds²⁰⁶. After sorting, one counts 52 rim sherds of painted imported Mycenaean vessels²⁰⁷. Small to medium piriform jars FT 31, 44 and 45 form the largest group amounting to 75 % in the rim count. The second largest group consists of large piriform jars FT 19, 34, which represent only 7.69 % of the whole assemblage. In addition, there is one open krater with vertical strap handles FT 7 (1.92 %) and one kylix of the LH IIIA1 type (1.92 %). Amphoroid kraters of uncertain typological identification may amount to 5.77 %²⁰⁸. The

remaining 7.68 % of rims belong other open and closed vessels.

Similarly, at Tall Zīrā'a, the small to medium piriform jars FT 30/31 make up the largest group with probably three, possibly four (*Fig. 2.552–2.554; 2.556; Pl. 2.1, nos. 7–9. 11*²⁰⁹) or even five or six vessels (including *Fig. 2.551. 2.561; Pl. 2.1, nos. 6 and 16*). Several fragments of a large closed vessel can probably be assigned to a large piriform jar (*Pl. 2.2, no. 2*). Furthermore, a base fragment comes from a broad rounded alabastron (*Fig. 2.563; Pl. 2.1, no. 18*). Small open vessels are represented by single specimens of the goblet FT 255 (*Fig. 2.545; Pl. 2.1, no. 1*) and the LH IIIA1 kylix (*Fig. 2.546; Pl. 2.1, no. 2*). Finally, one vertical strap handle should belong to a krater FT 7 or an early specimen of an amphoroid krater FT 54/55 (*Fig. 2.549; Pl. 2.1, no. 4*).

For evaluating the significance and the relative value of the imported pots²¹⁰, their association with other objects plays a crucial role. Scholars have proposed different quantitative or qualitative approaches over the last few years for such an endeavour²¹¹. Due to the small numbers involved, a qualitative approach seems to be best suited for the LH IIIA1 exports.

The already mentioned chamber tomb 11 of Kalavasós-Áyios Dhimítrios is of interest not only because of its rare attestation of the LH IIIA1 kylix type outside Greece, but also because of its undisturbed and well-documented burial assemblages. The tomb contained the remains of three young women, a three-year old child and three babies. “Much gold and silver jewelry, with ivory and other objects²¹²” accompanied the three women, and the overall impression is that of a rich tomb. The LH

206 Öbrink 1983, 28 f.

207 Öbrink 1983, 18–22. 35 tab. 2; 48 figs. 82, 84, 85; 49 fig. 91; 50 figs. 94–95; 51 figs. 108–109; 52 fig. 110 and 120; 53 fig. 138; 55 figs. 139–147; 56 figs. 147–151.—Two vessels were excluded (Öbrink 1983, 20 cat. no. 28; 22 cat. no. 62; 52 fig. 110; 55 fig. 144). U. Öbrink had already been tentatively assigned the one to local Cypriot production (Öbrink 1983, 20 cat. no. 28; 29), which was subsequently confirmed by NAA (Mountjoy – Mommsen 2015, 471 fig. 33, right), while the second one might also be a local product based on its decoration (dots on the rim) and the description of the fabric, which resembles the one of the first fragment (cf. Öbrink 1983, 20 cat. no. 28; 22 cat. no. 62).

208 Öbrink 1983, 21 cat. nos. 58–60; 55 figs. 140–142.

209 TZ 005105-072 (Pl. X.1, no. 9) may belong to the same vessel as TZ 004759-034 (*Fig. 2.552; Pl. X.1, no. 8*).

210 For the difficulty in applying the Marxist category of exchange value (noted in brief by Voutsaki 1995, 56, for Mycenaean grave goods—cf. already Voutsaki 1992, 43–46) to LBA societies in the Mediterranean see Jung 2015, 260.

211 E.g. Voutsaki 1995; Keswani 2004, 119–139; van Wijn-gaarden 2012, 65–68 tab. 7.1–7.3.

212 South 2000, 136.—For the jewelry see also Swiny 1985, 49 pl. 4 fig. 10.

IIIA1 kylix was found next to the remains of skeleton 4, the grave goods of which included two open kraters FT 7²¹³. Unfortunately, it is not clear if the two or three LH IIIA1 imports found in front of the eastern bench and close to skeleton 4, a child, are in some way related to the two richly equipped individuals on the bench (skeletons 2 and 3)²¹⁴. A connection may be suggested from the fact that bones inside the tomb had been rearranged. The child (skeleton 4), in particular, was laying in front of the bench, while its milk teeth were found on the eastern bench. Either of the body parts must have been moved “after mortification of the flesh”²¹⁵. Tomb 11 of Kalavasós-Áyios Dhimitrios may suggest that at the outset of Mycenaean pottery export, the population of Cyprus included such painted fine-ware vessels from Greece among goods of higher value. Other contemporary contexts from Cyprus tend to confirm this impression.

One case is provided by tomb 5 in the cemetery of Maróni Tsaróukas located 6.7 km to the south-east of Kalavasós-Áyios Dhimitrios. It contained an unusual amount of Mycenaean vessels of LH IIIA1 date, a krater FT 6, a goblet FT 255, a cut-away neck jug FT 132, two piriform jars FT 30/31 and an imported Mycenaeanizing vessel, i.e. a Base Ring shape with Mycenaean decoration and motifs (FT 243), as well as at least one local Base Ring II bull figure and one White Slip II bowl. This same tomb also contained a plain gold diadem²¹⁶. Unfortunately, the excavators of the British Museum at the end of the nineteenth century did not document the find

context and as a result, we do not know the number of burials that occurred in this tomb. If the Mycenaeanizing bowl FT 243 can be dated according to the other Mycenaean LH IIIA1 imports (something that would also be supported by its motifs)²¹⁷ it would be the earliest example of a Mycenaean vessel that imitates a Cypriot vessel type and was exported to Cyprus²¹⁸.

The find situation in the chamber of tomb 10 excavated in Quarter 4 West at Enkomi by P. Dikaios was a complicated one, however, it provides some indirect evidence for the association of LH IIIA1 pottery and golden objects. The excavator was able to document four different burial levels inside the tomb, but unfortunately no primary, undisturbed interments were preserved. LH IIIA1 pots appeared in the second, third and fourth burial layer, while golden objects were part of the grave gifts in the third and fourth layer. However, already in the second burial layer LH IIIA1 pottery is outnumbered by Mycenaean vessels of the following LH IIIA2 phase²¹⁹.

Several tombs at Hala Sultan Tekke also contained LH IIIA1 imports, but again no close find contexts dating to that phase are preserved. Tomb 1 MLA 1173 contained a cup FT 219 with stipple pattern FM 77²²⁰ as well as a few gold objects and ivory objects and even exotica objects such as fragments of alabaster vessels and ostrich egg shells²²¹. The whole tomb was in use from LC IIA down to LC IIIA (i.e. until the first half of the twelfth century BC)²²². Unfortunately, due to disturbance and to the

213 The krater painted with lilies FM 9, 17, also dates to LH IIIA1 (South 2006, 135 f. fig. 2).—The second krater shows a group of fish FM 20 (South – Russell 1993, 308 fig. 3, K-AD690. K-AD761). For this pictorial specimen K-AD690 W. Güntner has proposed an assignment to the ‘Painter of the Tiryns Dolphins’ and a stylistic date to LH IIIA2 (Güntner 2000, 294 no. 20; Güntner 2006, 52 f. figs. 5–6), but the vessel shape may suggest an earlier date. The excavator proposed an assignment to LH IIIA2 Early (South 2000, 136 f. fig. 3). This pictorial krater was the one lying closer to the LH IIIA1 kylix (for the find distribution with excavation numbers see Goring 1989, 99 fig. 13.1). Its proposed date fits with that of a good parallel from the LH IIIA2 Early layers at Tsoúngiza (EU 9) with similar fish on the same krater type (Thomas 2011, 201 f. fig. 14, 143).

214 South 2000, 135–137.—LH IIIA2 imports were found further away, in the western half of the chamber (cf. South 2000, 135 fig. 2 and South – Russell 1993, 306, 308 fig. 3,

K-AD779. K-AD790. K-AD793. K-AD814; for a colour photo of all the Mycenaean pots see Karageorghis 2002, 36 fig. 60).

215 Goring 1989, 101.

216 Johnson 1980, 9. 17 f. pl. 13, 49–51; 14; 15, 56–57; 62, 50. 53–56.

217 Johnson 1980, 18 cat. no. 56 (British Museum 98.12-1.117, BM C624) pl. 15, 56; 62, 56: The motifs are curved stripes FM 67, 8 and scale pattern 70, 1.

218 However, it looks like an early experiment of customer-oriented production. Such Base Ring shapes were not among the regular export ceramics leaving the Argive workshops from LH IIIA2 to LH IIIB Middle.

219 Dikaios 1969/71, 357–394 pl. 203–211. 223–228. 285 f.

220 Samaes – Nys 2012, 206. 226 fig. 5,3.

221 Samaes – Nys 2012, 212 f. 216. 224 fig. 3; 227 fig. 6,8. 9; 228 fig. 7,1–10.

222 Samaes – Nys 2012, 215 f. 224 fig. 3.

lack of stratigraphic observations, it is impossible to say if these precious objects were deposited in the same period as the fourteenth century BC cup. Tomb 12, described as “thoroughly looted”,²²³ contained the shoulder fragments of a large and a small piriform jar and of a rounded alabastron, which all date to LH IIIA1²²⁴, as well as remnants of wealthy grave gifts such as ostrich egg shells and a golden earring²²⁵.

In the Levant, an important case for assessing the significance of Aegean pots during the early fourteenth century BC is the excavation of two LM IIIA1 cups inside the LBA IB–IIA palace of Level 9 at Tall ar-Rumēla (Beth Shemesh) in Palestine²²⁶. They confirm the high esteem, which at least one ruler had for such imported ceramic exotica²²⁷.

However, the cemetery at the Dakerman site of Sidon in the central Levant seems to offer evidence for a different appraisal. This cemetery consists of 22 pit graves, which in general do not stand out in terms of grave gifts. Grave goods consist almost exclusively of pottery including 16 Mycenaean imports. These amount to a little less than 17 % of the whole pottery repertoire and date from LH IIIA1 to LH IIIA2 Late (and perhaps LH IIIB Early/Middle)²²⁸. The relative scarcity of luxury goods fits with the low investment of time for tomb construction. Two grave assemblages, tomb 1 and tomb 10, include vessels of LH IIIA1 date. These are a one-handled alabastron (‘squat jug’) FT 87 and a medium-squat alabastron FT 84, respectively²²⁹. It may be significant that the only tomb with rare non-pottery grave goods (tomb 7) did not contain any Mycenaean pots, but—apart from an unpainted and probably local jug—two imported Cypriot vessels, one Canaanite jar, one ivory duck pyxis

and a bronze grip-tongue dagger of Near Eastern type as well as a sheep skull²³⁰. These are the only preserved non-pottery grave goods at Dakerman. One might conclude that for the community burying their dead in that cemetery Mycenaean pottery did not have a high value in relation to other exotica such as an ivory pyxis. If so, this phenomenon might be due to the exceptionally high quantities of Mycenaean pots reaching the harbour town of Sidon in the course of the fourteenth century BC²³¹. However, it is not excluded that the Mycenaean imports did have the status of luxurious objects. The problem to verify or falsify such hypotheses lies in our inability to estimate, how representative the few Dakerman tombs are for the different classes of the Sidon community and to which degree this society expressed social differences by means of burial expenditure.

2.3.6.4. Summary

One may draw several tentative conclusions from the preceding comparisons with other contemporary assemblages in different eastern Mediterranean regions. As mentioned above, LH IIIA1 and possibly also the earliest stage of LH IIIA2 was the time when pottery production was being intensified in the Argolid. However, our overview allows the first conclusion that pottery production did not yet reach a specialized character by that time. That is to say, a targeted manufacture of types that were especially asked for by the Cypriot and Levantine consumers, but only rarely used by the Mycenaean population itself had not yet started in the early fourteenth century BC—apart from very rare

223 Åström – Nys 2007, 7 f. figs. 3–4.

224 Åström – Nys 2007, 11 f. figs. 10–12

225 Åström – Nys 2007, 24 f. fig. 62; 27.

226 Bunimovitz et al. 2013, 52–56 figs. 1–4.—For the local chronology of Level 9 (“it spans the local Late Bronze IB–IIA period” see Bunimovitz et al. 2013, 60).

227 Bunimovitz et al. 2013, 60 f.

228 Saïdah 2004, 96 f. (including a few stray finds and one psi-figurine, which also was a stray find); 107 f. fig. 53–54.

229 Saïdah 2004, 22 cat. no. 5; 28 f. cat. no. 49; 40 fig. 5, 5; 52 fig. 22, 49; Doumet Serhal 2008, 30 fig. 39.—A very close parallel for the squat alabastron originates from the famous ‘Cuirass Tomb’ (chamber tomb 12) at Dhendrà in the Argolid, a closed context of a warrior burial, the latest pottery

vessels of which date to LH IIIA1 (Åström 1977, 15 f. cat. no. 16; fig. 6; pl. 5, 5–6).

230 Saïdah 2004, 25 f.; 49 fig. 16; Doumet Serhal 2008, 10 fig. 10; 40 fig. 56.

231 At the College Site of Sidon the quantity of Mycenaean pottery found is estimated as “at least as important as that of Ras Shamra”, while “the large amount of pictorial-style ware found at Sidon demonstrates that the local elite had a pronounced taste for luxury pottery” (Doumet-Serhal 2013, 137).—However, the published Mycenaean pottery from the College Site does not antedate LH IIIA2 (Karageorghis 2018, 103–181. 335–344). Therefore, by LH IIIA1 the situation might still have been a different one.

exceptions. Such a consumer-oriented production only characterized the phases from LH IIIA2 Late onwards and was concentrated in the northern Argolid, in the region of Mycenae, which is borne out by many pottery analyses conducted with NAA²³². The second conclusion is that by the time of LH IIIA1, the Cypriot and Levantine populations used more closed than open Mycenaean vessels²³³, while the most frequently imported vessel shape seems to have been the piriform jar. This suggests that in the decades around 1400 BC it was the content rather than the container, which triggered the initial interest of Cypriot and Levantine consumers in Mycenaean pottery. In addition, the fact that some small and large open table ware shapes were transported even to sites situated rather far from the coast (e.g. to Tall Zīrā'a) hints at a rapidly growing demand for Mycenaean products all over the Eastern Mediterranean. However, this also hints at a quick extension of consumer interest towards the fine painted pottery itself. Finally, the Cypriot and some of the Levantine evidence point to a rather high relative value that the population of those regions began to ascribe to imported Mycenaean ceramics. The basis for comparison and for the tentative assessment of their relative value is the association of imported Mycenaean pots with other objects in grave assemblages as well as closed settlement contexts.

2.3.6.5. NAA Results

by H. Mommsen

The NAA procedure used in Bonn since about 25 years has been described many times²³⁴. The important facts for the specialists is briefly summarised below:

- Irradiations at the reactor of the Reactor Institute Delft, the Netherlands
- 10 hour irradiation
- Flux 5×10^{12} neutrons/(cm² s)

- Amount of sample needed: c. 80 mg
- Standard: Bonn pottery standard (composition of the standard²³⁵, calibrated with the Berkeley pottery standard)²³⁶
- To form groups of samples of similar composition a statistical filter method developed in Bonn is applied that has the advantage that experimental uncertainties and also possible constant shifts of the concentration data due to dilutions or compacting of the clay paste can be considered²³⁷.

From the assemblage of Mycenaean vessels found at Tall Zīrā'a we have sampled four fragments. The raw concentration data are shown in *Tab. 2.27*.

Three of the pieces could be assigned to already known groups. Samples Zīrā'a 2 (the LH IIIA1 kylix TZ 020586-001[1–3] and TZ 020586-015; *Pl. 2.1 no. 2*) and 4 (the piriform jar FT 30/31 TZ 005105-072; *Pl. 2.1, no. 9*) are members of the MYBE group and thus products of the Mycenae region. Sample Zīrā'a 3 (the goblet TZ 005143-016; *Pl. 2.1, no. 1*) is a member of the TIR group, (i.e. a product of the southern Argolid, see *Tabs. 2.28 and 2.29*). Finding exports from the workshops at or close to Tiryns in the Levant is a rare phenomenon. In our databank, we have only four pieces with pattern TIR from the Levantine region. All are later than LH IIIA1: an amphoroid krater (Abuh 10, Museum inventory no. 37.330, LH IIIA2)²³⁸ and a deep or stemmed bowl (Abuh 33, inv. no. 37.336, LH IIIB–IIIC Early 1)²³⁹ both found at Tall Abū Ḥawām; a stirrup jar (Hazor 46) and a jug (? , Hazor 49), both from Tall Waqqāš (Hazor) and dated to LH IIIB²⁴⁰. The goblet sample Zīrā'a 3 (TZ 005143-016; *Pl. 2.1, no. 1*) is the earliest export originating from the Tirynthian workshop discovered thus far. In the Berkeley NAA data bank, this group is also not represented with large quantities in the Levant²⁴¹. Only three samples from Tall Abū Ḥawām show pattern TIR. These are an amphoroid krater (Berke-

232 Jung 2015 (with bibliography).

233 Compare the LH IIIA1 type repertoire in the Enkomi tombs: 5 open shapes and 9 closed ones (Graziadio – Pezzi 2013, 71. 73 fig. 6A. B).

234 Mommsen et al. 1991; Mommsen 2007; recently Gilboa et al. 2017.

235 Mommsen – Sjöberg 2007, 260 tab. 1.

236 Perlman – Asaro 1969.

237 Beier – Mommsen 1994a; Beier – Mommsen 1994b.

238 Hamilton 1935, 50 cat. no. k pl. 19k; Hoffmann – Robinson 1993, 10; Mountjoy 2015, 536 f. fig. 4, 3.

239 Hamilton 1935, 50 cat. no. 306r pl. 19r; Balensi 1980, pl. 44, 8; Hoffmann – Robinson 1993, 10; Mountjoy 2015, 536 f. fig. 4, 4.

240 Mountjoy 2015, 537 fig. 4, 1–2.

241 Asaro – Perlman 1973, 215; Mommsen et al. 2002.

ley label HWM 10, re-measured by us as Abuh 10), a deep or stemmed bowl (HWM 17, re-measured also as Abuh 33), and a possible amphoroid krater (HWM 43, inv. no. 37.360, LH IIIA2–IIIB)²⁴².

Unfortunately, sample Tall Zirā'a 1 (the large vessel TZ 003492-026, TZ 005213-230, TZ 006714-005, TZ 002963-002, TZ 003473-026; *Fig. 2.564–2.568: Pl. 2.2, no. 2*) turned out to be a chemical singleton. Nevertheless, there is a general agreement with patterns from the north-western Peloponnese, so that a provenance from there is not unlikely. A comparison of the average concentration pattern of a clay from the cape of Katákolos (37° 38' 37'' N, 21° 19' 06'' O) measured twice and from a construction pit in the centre of the village of Salmóni (37° 39' 37'' N, 21° 31' 58'' O)—both located in Elis—is shown in *Tab. 2.29*. The clays from the north-western Peloponnese are not very

different from the paste used for the production of vessel sample Zirā'a 1 and these clays differ mainly in Cs and Rb from the clays of the north-eastern Peloponnese.

The occurrence of three different clay pastes in only four analysed vessels from Tall Zirā'a, three certainly and one presumably from the Peloponnese, points to the fact, that at the beginning of regular trade between Mycenaean Greece and the Levant various Peloponnesian workshops have been engaged in this export. In the subsequent phases of the developed palatial age, this trade was centralized and based mainly in workshops on the north-eastern Peloponnese—and more specifically in the region of Mycenae in the northern Argolid. These workshops used a clay paste with the chemical pattern MYBE.

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242 Hamilton 1935, 51 cat. no. 307t pl. 20t; Hoffmann – Robinson 1993, 10.

Sample	Zirā'a 1	Zirā'a 2	Zirā'a 3	Zirā'a 4	average error	average error in %
Factor	1.000	1.000	1.000	1.000		
As	5.46	3.44	8.61	10.8	0.11	1.6
Ba	944	277	1376	306	33	4.5
Ca %	11.5	10.5	7.01	11.1	0.19	1.9
Ce	58.6	61.01	66.8	65.5	0.37	0.6
Co	20.8	25.5	20.5	28.3	0.12	0.5
Cr	241	237	174	219	0.87	0.4
Cs	6.13	9.21	4.88	9.11	0.11	1.5
Eu	1.27	1	1.19	1.13	0.02	1.7
Fe %	4.24	5.25	5.18	5.81	0.015	0.3
Ga	22.5	25.2	24.4	26.4	2.1	8.4
Hf	3.82	3.64	4.67	3.48	0.054	1.4
K %	2.24	3.4	3.05	3.24	0.024	0.8
La	31.6	30.4	29.6	33.1	0.075	0.2
Lu	0.45	0.42	0.43	0.46	0.013	2.9
Na %	0.87	0.48	1.36	0.5	0.004	0.5
Nd	29.1	24.9	25.6	28.8	2.0	7.4
Ni	282	244	183	266	30	12
Rb	112	169	128	169	2.6	1.8
Sb	0.49	0.46	0.52	0.53	0.025	5.1
Sc	17.4	22.1	20.8	22.4	0.022	0.1
Sm	5.72	4.61	5.09	5.08	0.11	2.1
Ta	0.76	0.8	0.89	0.82	0.038	4.7
Tb	0.72	0.6	0.72	0.65	0.057	8.5
Th	9.65	11	11.2	11.6	0.066	0.6
U	2.63	2.42	1.91	2.77	0.18	7.6
W	2.02	2.43	2.23	2.84	0.16	6.9
Yb	2.85	2.61	2.88	2.83	0.050	1.8
Zn	111	103	82.4	115	2.0	2.0
Zr	144	150	163	127	22	15

Tab. 2.27 Raw concentrations C of the Tall Zirā'a samples for 29 elements in µg/g (ppm), if not indicated otherwise, measured by NAA, and in the 6th and 7th columns the average experimental uncertainties (errors), also in % of C, to indicate the measurement precisions of the NAA procedure.

	Zirā'a 2, 1 sample factor 1.00		Zirā'a 4, 1 sample factor 0.94		MYBE, 674 samples factor 1.00	
	C	δ (%)	C	δ (%)	M	σ (%)
As	3.44	(3)	10.2	(1.1)	7.87	(79)
Ba	277.	(9.5)	288	(8.6)	433.	(32)
Ca\%	10.5	(1.7)	10.4	(1.6)	9.65	(19)
Ce	61	(0.6)	61.6	(0.6)	62.7	(2.7)
Co	25.5	(0.5)	26.6	(0.5)	27.7	(6)
Cr	237	(0.4)	205	(0.4)	215	(7.3)
Cs	9.21	(1.2)	8.57	(1.3)	8.83	(7.6)
Eu	1	(1.9)	1.06	(1.8)	1.13	(3.6)
Fe\%	5.25	(0.3)	5.46	(0.3)	5.15	(3.4)
Ga	25.2	(7.6)	24.8	(8.1)	21.9	(19)
Hf	3.64	(1.5)	3.27	(1.6)	3.59	(8.5)
K\%	3.4	(0.7)	3.05	(0.8)	2.67	(7.3)
La	30.4	(0.2)	31.1	(0.2)	31.3	(2.5)
Lu	0.42	(3.0)	0.43	(2.9)	0.43	(4.9)
Na\%	0.48	(0.6)	0.47	(0.6)	0.56	(25)
Nd	24.9	(7.9)	27.0	(7.1)	25.9	(6.3)
Ni	244	(12.)	250	(12)	217	(15)
Rb	169	(1.6)	159	(1.7)	153	(5.7)
Sb	0.46	(5.4)	0.5	(4.6)	0.59	(16.)
Sc	22.1	(0.1)	21.1	(0.1)	21.1	(3.5)
Sm	4.61	(2.3)	4.78	(2.1)	4.77	(5.1)
Ta	0.8	(4.9)	0.77	(4.9)	0.79	(5.1)
Tb	0.6	(9.4)	0.61	(9.0)	0.67	(7.2)
Th	11	(0.6)	10.9	(0.6)	10.9	(2.3)
U	2.42	(7.1)	2.61	(6.5)	2.32	(7.2)
W	2.43	(6.3)	2.67	(5.8)	2.23	(15)
Yb	2.61	(1.7)	2.66	(1.7)	2.72	(2.8)
Zn	103	(2)	108	(1.9)	109	(10)
Zr	150	(15)	119	(19)	143	(27)

Tab. 2.28 Given are the concentration values C for the samples Zirā'a 2 and 4 and the average concentration values M for the group MYBE in µg/g (ppm), if not indicated otherwise. δ is the experimental uncertainty of the values C and σ is the standard deviation (root mean square deviation) in % of the grouping values M. The individual samples in the group have been corrected with a best relative factor with respect to the grouping value. The values of the Zirā'a samples have been multiplied with the best relative fit factor (factor) with respect to the group MYBE.

	Zirā'a 1 1 sample factor 0.80		Clays from Elis 2 samples (+ 1 rep.) factor 1.00		Zirā'a 3 1 sample factor 1.00		TIR 158 samples factor 1.00	
	C	δ (%)	M	σ (%)	C	δ (%)	M	σ (%)
As	4.36	(2)	4.77	(19.)	8.61	(1.5)	6.91	(43)
Ba	755	(3.6)	212	(10)	1376.	(3)	500	(21)
Ca\%	9.19	(1.7)	8.93	(2.1)	7.01	(2.8)	9.02	(18)
Ce	46.9	(0.6)	48.7	(0.9)	66.8	(0.5)	66.9	(1.8)
Co	16.7	(0.5)	20.1	(4.9)	20.5	(0.5)	23.3	(5.4)
Cr	193.	(0.4)	188	(1)	174	(0.5)	176	(4.6)
Cs	4.90	(1.6)	5.51	(7.1)	4.88	(2)	4.79	(6.7)
Eu	1.01	(1.6)	0.98	(2.3)	1.19	(1.7)	1.3	(3.3)
Fe\%	3.39	(0.3)	3.67	(0.8)	5.18	(0.3)	5.03	(3.4)
Ga	18.0	(8.6)	14.4	(14.)	24.4	(9.8)	20.2	(28)
Hf	3.06	(1.3)	3.04	(2.5)	4.67	(1.2)	4.35	(6.3)
K\%	1.79	(1)	1.87	(4.9)	3.05	(0.9)	2.26	(13)
La	25.2	(0.2)	23.5	(1.6)	29.6	(0.2)	30.8	(2.1)
Lu	0.36	(2.7)	0.34	(4.2)	0.43	(2.9)	0.44	(4.4)
Na\%	0.69	(0.4)	1.22	(28)	1.36	(0.4)	1.29	(20)
Nd	23.2	(7.1)	20.1	(5.8)	25.6	(7.8)	28.2	(7.7)
Ni	225	(10)	157	(6.9)	183	(16)	171	(10)
Rb	89.3	(2.0)	109	(3.8)	128	(1.9)	110	(7.7)
Sb	0.39	(5.2)	0.47	(52.)	0.52	(5.4)	0.62	(19)
Sc	13.9	(0.1)	15.4	(2.4)	20.8	(0.1)	20	(2.6)
Sm	4.58	(1.9)	4.07	(6.2)	5.09	(2.3)	5.44	(5.1)
Ta	0.61	(4.8)	0.6	(4.2)	0.89	(4.3)	0.86	(5.6)
Tb	0.58	(7.6)	0.6	(6.9)	0.72	(8)	0.76	(6.1)
Th	7.72	(0.6)	8.07	(2.9)	11.2	(0.6)	11	(2.1)
U	2.10	(7.0)	2.03	(12)	1.91	(11)	2.05	(7.6)
W	1.62	(7.7)	1.74	(7.8)	2.23	(8.2)	2.16	(20)
Yb	2.28	(1.7)	2.17	(4.3)	2.88	(1.9)	2.85	(3.9)
Zn	89.1	(1.8)	79.7	(2.4)	82.4	(2.3)	91.7	(9.1)
Zr	115	(15)	147	(18)	163	(14)	172	(22)

Tab. 2.29 Elemental pattern comparison of sample Zirā'a 3 and group TIR and of sample Zirā'a 1 and a group of two clays from Elis (see text). Given are the concentration values C for the samples Zirā'a and the average concentration values M for the groups in µg/g (ppm), if not indicated otherwise. δ is the experimental uncertainty of the values C and σ is the standard deviation (root mean square deviation) in % of the grouping values M. The individual samples in the groups have been corrected with a best relative factor with respect to the grouping value M. The values of the Zirā'a samples have been multiplied with the best relative fit factors (factor) with respect to their groups.

2.3.6.6. Catalogue

by R. Jung

Fabric descriptions follow largely the criteria established by Schneider et al. 1989²⁴³.

Quoted finds present parallels for vessel type (FT = Furumark Type)²⁴⁴, motif (FM = Furumark Motif) and linear or monochrome decoration²⁴⁵.

The original drawings were made by R. Jung, the digitalisation by F. Kenkel, F. Levenson and A. Poelstra. The photographs were taken by M. Del-Negro.

TZ 005143-016 (NAA sample Zirā'a 3)

Area I; Square AR 120; Context 3414

Description: Goblet FT 255; rim diameter 17 cm (9 %). – Decoration 1.2; curve-stemmed spiral FM 49. – Fired clinky hard. – Surface wet-smoothed (most probably on the potters' wheel) with fine wheel-marks being still visible; paint slightly lustrous, solid cover (at certain spots diluted). – Colour of paint 2.5YR 4/8 (red), 3/6 (dark red), 3/3 (dark reddish brown); colour of surface 2.5Y 7/3 (pale yellow); colour of break 7.5YR 7/4 (pink). – Pottery matrix dense; very few inclusions (dark particles); size fine to medium

Figure Reference: Fig. 2.545; Pl. 2.1, no. 1

Date of Context: Stratum 12. 11; Iron Age IIA/B (older) – Iron Age A/B (younger)

Parallels in the Near East: Tall Bēt Mirsim, Phase C: goblet FT 255; rim band; spiralfiform motif (Albright 1932, 43 f. pl. 15C, 1; Leonard 1994, 106 cat. no. 1600)

Parallels in Cyprus: Enkomi, tomb 69 of the British Museum excavations: goblet FT 255. – Decoration 1 + lower bands 1.3 + base decoration 7.2.1; running spiral FM 46, 59 (Murray 1900, 40 fig. 68, 1092; Furumark 1941, 628; <www.britishmuseum.org> [Enkomi cat. no. 69.40])

Parallels in the Aegean: Menelaion, Mansion 2, fill underneath Room VII, Level 1 (= uppermost level of the fill accumulated on top of the Mansion 1 floor, [LH IIB–] IIIA1): goblet FT 255; rim diame-

ter 19 cm. – Decoration 1.2.1; curve-stemmed spiral FM 49, 10 (Catling 2009, vol. 1, 102. 109 cat. no. VII17; vol. 2, 131 fig. 135, VII17)



Fig. 2.545 Mycenaean sherd, TZ 005143-016 (Photograph: M. Del-Negro).

243 Accordingly (Schneider et al. 1989, 12), particle sizes of inclusions and void sizes are classified as follows: fine = 0.063–0.2 mm; medium = 0.2–0.63 mm; coarse 0.63–2.0 mm; very coarse = 2.0–6.3 mm.

244 For the classification of rim varieties on closed vessels see Podzuweit 2007, 184 f. pl. 103–106.

245 The classification of linear and monochrome decorations follows the system established by Ch. Podzuweit (2007, 311–316 Beil. 78a–j) including later additions (Jung 2002, 575–580 pl. I–XVII; Kardamaki 2009, 14 f. 454 f. tab. 2–4).

TZ 020586-001 (1–3), TZ 020586-015 (NAA sample Zirā'a 2)

Area I; Square AQ 122; Context 5101

Description: Kylix of LH IIIA1 type without FT number (one handle partially preserved); rim diameter c. 14 cm (14 %); handle width 1.8 cm. – Decoration 1.1 + lower bands 1.3; handle monochrome; scale pattern FM 70, 1. – Fired clinky hard. – Surface well smoothed (self-slip?), paint slightly lustrous to lustrous, solid to diluted cover with brush marks. – Colour of paint 2.5Y 2.5/1 (black), 3/1 (very dark grey), 3/2 (very dark greyish brown), 3/3 (dark olive brown); colour of slip (self-slip?) 2.5Y 7/3 (pale yellow); colour of break 2.5Y 7/3 (pale yellow). – Pottery matrix dense; few medium to large voids; few inclusions (white and dark particles); size fine to medium, occasionally coarse

Figure Reference: Fig. 2.546–2.547; Pl. 2.1, no. 2

Date of Context: Stratum 13. 12; Iron Age I – Iron Age IIA/B (older)

Parallels in the Near East (vessel shape): Jerusalem, rock-cut tomb at Naḥlat Aḥim: kylix on low foot; height 10.5 cm; rim diameter 11.4 cm. – Decoration 1.1 + lower bands 1.2 + foot decoration 7.2.2; handle bars (Amiran 1960, 25 f. 34 f. fig. 1, 1; pl. 3, 1; Leonard 1994, 109 cat. no. 1636)

Parallels in Cyprus: Hala Sultan Tekke, well, Trench 1, Feature F1: kylix of LH IIIA1 type without FT number; rim diameter 15 cm. – Decoration 1.1 + lower bands 1.3 + base decoration 7.2.1; scale pattern FM 70, 1 (Öbrink 1983, 20 cat. no. 26; 43 fig. 50e. f; 51 fig. 108). – Miliá, chamber tomb 10: kylix of LH IIIA1 type without FT number. – Narrow rim band + lower bands 1.2; scale pattern FM 70, 1 (Westholm 1939, 3 cat. no. 23 pl. 5, 2; Stubblings 1951, 26–27 fig. 2, right). – Kalavassós-Áyios Dhimitrios, chamber tomb 11, north of child burial skeleton 4 (in combination with other imports of LH IIIA1 and LH IIIA2 Early date): kylix on low foot; rim band + lower bands 1.3 + base decoration 7.2.1; wavy line FM 53, 4 (South – Russell 1993, 306. 308 fig. 3, K-AD737)

Parallels in the Aegean: Menelaion, Mansion 2, fill underneath Room VII, Level 3 (= higher level of the fill accumulated on top of the Mansion 1 floor, [LH IIB–] IIIA1): kylix of LH IIIA1 type without FT number (at least one handle preserved, monochrome); rim diameter 15 cm. – Decoration 1.1 + lower bands 1.3 + base decoration 7.1; scale pattern FM 70, 1 (Catling 2009, vol. 1, 102. 109 cat. no. VII18; vol. 2, 131 fig. 135, VII18). – Menelaion,

East Terrace, between the east wall of Mansion 2 and the terrace retaining wall, fill overlying the east corridor of Mansion 1, Level 19 ([SH IIB–] IIIA1: kylix of LH IIIA1 type without FT number; rim diameter 13 cm. – Decoration 1.1; scale pattern FM 70, 1 (Catling 2009, vol. 1, 87. 90 cat. no. ET79; vol. 2, 90 fig. 94, ET79). – Athens, Agora, chamber tomb VII, burial VIII: kylix of LH IIIA1 type without FT number (one handle preserved, monochrome); height 15.0–15.5 cm; rim diameter 17 cm; base diameter 6.8 cm. – Decoration 1.1 + lower bands 1.3 + base decoration 7.1; running spiral FM 46 with papyrus fill FM 11, 55 (Townsend 1955, 194 fig. 3, 16; 196 f. 210 f. cat. no. 16 pl. 71, 16; 74, 16; Immerwahr 1971, 187 cat. no. VII-16 pl. 39, 16. 67 VII-16; pl. 83; Mountjoy 1986, 65 f. fig. 76, 1; Mountjoy 1999, 523 f. fig. 524, 124). – Tiryns, Profitis Ilias, chamber tomb III, burial in the niche (LH IIIA1): transitional type between goblet FT 255 and kylix of LH IIIA1 type; height 10.8–11.4 cm; rim diameter 11.0–12.1 cm; base diameter 5.9 cm. – Decoration 1.1 + lower bands 1.3; base decoration 7.2.2; scale pattern FM 70, 1 (Rudolph 1973, 30–31 cat. no. 4 pl. 14, 1; Mountjoy 1999, 113–114 fig. 23, 136). – Iasos, LBA III settlement levels: kylix of LH IIIA1 type; rim diameter 15 cm. – Decoration 1.1; scale pattern FM 70, 1 (Benzi 2005, 207 pl. 50i)



Fig. 2.546a Mycenaean sherd, TZ 020586-001 (1–3), exterior side (Photograph: M. Del-Negro).



Fig. 2.546b Mycenaean sherd, TZ 020586-001 (1-3), interior side (Photograph: M. Del-Negro).



Fig. 2.547 Mycenaean sherd, TZ 020586-015 (Photograph: M. Del-Negro).

TZ 003458-001

Area I; Square AG 115; Context 1936

Description: Small open vessel; diameter indeterminate. – One narrow and one broad lower band. – Fired very hard. – Surface very well smoothed; paint lustrous, solid cover, at some spots diluted cover with brush marks. – Colour of paint on the exterior predominantly black, but at the diluted spots 10YR 2/2 (very dark brown); colour of paint on the interior 2.5YR 4/4 (reddish brown); colour of the external surface 10YR 8/3 (very pale brown), colour of the internal surface 10YR 7/4 (very pale brown); colour of break 10YR 8/3 (very pale brown). – Pottery matrix dense; few fine voids; no certain inclusions visible

Figure Reference: Fig. 2.548; Pl. 2.1, no. 3

Date of Context: Stratum 13; Iron Age I



Fig. 2.548 Mycenaean sherd, TZ 003458-001 (Photograph: M. Del-Negro).

TZ 020055-004

Area I; Square AQ 121; Context 4921

Description: Probably krater with vertical strap handles FT 7-8; but potentially amphoroid krater FT 54/55; preserved handle width 5.2 cm. – Lateral bands; vertical wavy line with high amplitude and well-defined loops FM 53, 4. – Fired very hard. – Surface very well smoothed; paint lustrous, solid cover, at some spots diluted cover with brush marks. – Colour of paint predominantly 10YR 2/1 (black), at the diluted spots 10YR 3/3 (dark brown); colour of external surface 10YR 8/3 (very pale brown), colour of internal surface 10YR 7/4 (very pale brown); colour of break 10YR 7/4 (very pale brown). – Pottery matrix dense; no certain inclusions visible

Figure Reference: Fig. 2.549; Pl. 2.1, no. 4

Date of Context: Stratum 11; Iron Age IIA/B (younger)

Parallels in the Aegean: Lerna, fill deposit 7 (LH IIIA2 with many earlier sherds): fragmentary vertical strap handle; width 4.2 cm. – Lateral bands; vertical wavy line with high amplitude and well-defined loops FM 53, 4/5 (Wiencke 1998, 164 cat. no. P241; 165 fig. 24, P241)



Fig. 2.549 Mycenaean sherd, TZ 020055-004 (Photograph: M. Del-Negro).



Fig. 2.550 Mycenaean sherd, TZ 004903-061 (Photograph: M. Del-Negro).

TZ 004903-061

Area I; Square AF 116; Context 3203

Description: Amphoroid krater FT 54/55; diameter indeterminable. – Parts of two horses FM 2 and of a chariot pole FM 39 intersecting the tails and hind legs. – Fired clinky hard. – Surface very well smoothed and slipped; paint lustrous, solid cover. – Colour of paint 7.5YR 2.5/1 (black), 2.5/2 (very dark brown); colour of slip between 10YR 8/2 (very pale brown) and 7/2 (light grey); colour of break 7.5YR 7/4 (pink). – Pottery matrix dense; very few inclusions (white particles); size medium to coarse
Figure Reference: Fig. 2.550; Pl. 2.1, no. 5

Date of Context: Stratum 12; Iron Age II A/B (older)

Parallels in Cyprus (Combination of type and variety of chariot motif): Enkomi: amphoroid krater FT 54/55. – Two broad lower bands; chariot with two persons and two horses, FM 2 + chevrons FM 58 + quirk FM 48 (Vermeule – Karageorghis 1982, 198 cat. no. IV.29). – Enkomi or Psematisméno near Maróni: amphoroid krater FT 54/55. – Decoration 8.13?; chariot FM 39, 2 with two persons FM 1 and two horses FM 2 + papyrus FM 11, 31 + chevrons FM 58, 8 (Vermeule – Karageorghis 1982, 197 cat. no. IV.1). – Unknown find place: amphoroid krater FT 54/55. – Decoration 8? + lower bands 2.3, 2.3 + base decoration 7.2.1; chariot FM 39 with two persons FM 1 and two horses FM 2, the tails of which intersect the pole + palm II FM 15 + flower FM 18 + quirk FM 48 (Vermeule – Karageorghis 1982, 198 cat. no. IV.19)

TZ 020080-051

Area I; Square AQ 122; Context 4919

Description: Small closed vessel, perhaps FT 30/31; rim variety 5 Var. (down-sloping); rim diameter 11 cm (16 %). – Decoration 8.6. – Fired clinky hard. – Surface seemingly very well smoothed, but not classifiable with certainty (due to the small extension of the preserved unpainted surface); paint lustrous to slightly lustrous, solid cover, at some spots diluted cover with brush marks. – Colour of paint predominantly 10YR 2/1 (black), only at the diluted spots 10YR 3/2 (very dark greyish brown); colour of surface 10YR 8/3 (very pale brown); colour of break 10YR 8/3 (very pale brown). – Pottery matrix dense; few fine to medium voids; very few inclusions (white particles); size medium
Figure Reference: Fig. 2.551; Pl. 2.1, no. 6

Date of Context: Stratum 11; Iron Age IIA/B (younger)

Parallels in Cyprus: Hala Sultan Tekke, well, Trench 1, Feature F1: medium-sized piriform jar FT 30/31; rim variety 5 Var. (down-sloping); rim diameter 9 cm. – Decoration 8.6. (2 reserved lines), shoulder bands 1.2; scale pattern FM 70, 1 (Öbrink 1983, 19 cat. no. 12; p. 43 fig. 47c; p. 50 fig. 94).

Parallels in the Aegean: Menelaion, Mansion 2, fill underneath Room V and fill underneath Room VII, accumulated on top of the Mansion 1 floor, [LH IIB–] IIIA1): medium-sized piriform jar FT 30/31 with horizontal handles (at least one preserved, monochrome); rim variety 5 Var. (only slightly down-sloping); height 24 cm; rim diameter 10.5 cm. – Decoration 11.9, shoulder band 1.1 + belly bands 1.2 + lower bands 1.2 + lower bands 7.1 +

base decoration 7.2.1 (Catling 2009, vol. 1, 102. 108 cat. no. VIII1; vol. 2, 130 fig. 134, VIII1)



Fig. 2.551 Mycenaean sherd, TZ 020080-051 (Photograph: M. Del-Negro).

TZ 020018-025

Area I; Square AQ 121; Context 4918

Description: Medium-sized piriform jar with vertical handles FT 30/31 (one handle attachment preserved); belly diameter 16 cm; diameter at the neck junction c. 8 cm. – Neck junction monochrome, below that shoulder band 1.1; scale pattern FM 70, 1 down to the uppermost zone of the lower body. – Fired clinky hard. – Exterior surface well smoothed, but not slipped, traces of smoothing slightly visible; paint slightly lustrous to lustrous, solid cover, at some spots diluted cover with brush marks. – Colour of paint 2.5Y 2.5/1 (black), 3/1 (very dark grey), 3/2 (very dark greyish brown); colour of surface 2.5Y 8/2 (pale yellow); colour of break 2.5Y 8/2 (pale yellow), Kern 2.5Y 7/1 (light grey). – Pottery

matrix dense; very few fine to medium voids; very few inclusions (white and dark particles); size fine to medium

Figure Reference: Fig. 2.552; Pl. 2.1, no. 7

Date of Context: Stratum 11; Iron Age IIA/B (younger)

Parallels in the Near East (vessel shape): Ħirbat Ġudūr, tomb: medium-sized piriform jar with vertical handles FT 31 (all handles broken off); height 18.1 cm; rim diameter 10.0 cm; belly diameter 13.5 cm; base diameter 6.0 cm. – Decoration 11.1 + lower bands 4.1, 4.1 + base decoration 7.2.1; net FM 57, 2 (Hankey 1981a, 33 f. fig. 2, 1; 36 f. cat. no. 2; Leonard 1994, 13 cat. no. 4)

Parallels in Cyprus: Hala Sultan Tekke, well, Trench 1, Feature F1: two medium-sized piriform jars FT 30/31 (with one vertical handle preserved on each [monochrome]); belly diameter of both 17 cm. – Neck monochrome, shoulder band 1.1; scale pattern FM 70, 1 (Öbrink 1983, 19 cat. no. 11; 43 fig. 47b; 49 fig. 93) and rest of shoulder band followed by narrow shoulder band; scale pattern FM 70, 1 seemingly extending down to the uppermost zone of the lower body (Öbrink 1983, 20 cat. no. 20; 43 fig. 48f; 50 fig. 102)

Parallels in the Aegean: Athens, Agora, Cist Grave XVII (LH IIIA1): medium-sized piriform jar with three vertical handles (monochrome) FT 31. – Height 18.7 cm; belly diameter 16 cm. – Decoration 11.0? + lower bands 3.3 + lower bands 1.3 + base decoration 7.3; scale pattern FM 70, 1 extending down to the upper third of the lower body (Immerwahr 1971, 209 cat. no. XVII-1 pl. 48, XVII, 1; Mountjoy 1999, 516 n. 247). – Mycenae, secondary deposit – debris cut by the so-called Atreus Tholos Tomb (so-called Atreus Bothros, LH IIIA1): medium-sized piriform jar with three vertical handles (monochrome) FT 31; height c. 21 cm; rim diameter c. 10.5 cm; belly diameter c. 15.5 cm (according to illustration). – Decoration 8.6? + lower bands 3.4 + lower bands 1.3 combined with base decoration 7.2.1; scale pattern FM 70, 1 extending down to the upper third of the lower body; N-pattern FM 60 on the rim (French 1964, 244 fig. 1, 6; p. 247). – Menelaion, East Terrace between Mansion 2 and terrace retaining wall, fill overlying the eastern corridor of Mansion 1, Level 2 ([LH IIB–] IIIA1): shoulder fragment, according to Catling, medium-sized piriform jar. – Thin and broad lower band; scale pattern FM 70, 1 (Catling 2009, vol. 1, 87–88 cat. no. ET13; vol. 2, 85 fig. 89, ET13)



Fig. 2.552 Mycenaean sherd, TZ 020018-025 (Photograph: M. Del-Negro).

TZ 004759-034

Area I; Square AF 116; Context 3017

Description: Probably medium-sized piriform jar; diameter indeterminable. – One broad shoulder band or monochrome neck junction, below that one narrow shoulder band; scale pattern FM 70, 1. – Fired very hard. – Exterior surface slipped (or—more probably—covered with self-slip); paint lustrous, solid cover, at some spots diluted. – Colour of paint 10YR 2/1 (black); colour of slip/self-slip 10YR 8/4 (very pale brown); colour of internal surface 10YR 7/4 (very pale brown); colour of thin external layer of break c. 10YR 7/3 (very pale brown), colour of internal layer as well as of the core 10YR 6/3 (pale brown). – Pottery matrix dense; few fine voids; very few inclusions (dark particles); size medium

Figure Reference: Fig. 2.553; Pl. 2.1, no. 8

Date of Context: Stratum 12; Iron Age II A/B (older)



Fig. 2.553 Mycenaean sherd, TZ 004759-034 (Photograph: M. Del-Negro).

TZ 005105-072 (NAA sample Zirā'a 4)

Area I; Square AF 116; Context 3327

Description: Medium-sized piriform jar with vertical handles (no handle preserved) FT 30/31; belly diameter 15 cm. – Two thin lower lines; scale pattern FM 70, 1 extending down to the upper third of the lower body. – Fired clinky hard. – Exterior surface very well smoothed and possibly slipped; paint lustrous, solid cover, at some spots diluted. – Colour of paint black, 5YR 2.5/1 (black), 3/3 (dark reddish brown); colour of surface 10YR 7/4 (very pale brown); colour of break c. 10YR 8/3 (very pale brown). – Pottery matrix dense; few medium to coarse voids; very few inclusions (dark particles); size coarse

Figure Reference: Fig. 2.554; Pl. 2.1, no. 9

Date of Context: Stratum 13; Iron Age I

Parallels in Cyprus: Maróni, tomb 5: medium-sized piriform jar with three vertical handles (monochrome) FT 31. – Height 15.5 cm; rim diameter 8 cm; base diameter 5 cm. – Decoration 8.6? + lower bands 1.6 + (directly followed by) lower bands 7.4 + base decoration 7.3; scale pattern FM 70, 1 extending down to the upper third of the lower body; on the rim row of concentric circles FM 41 consisting of two circles with central dot (Johnson 1980, 18 cat. no. 55 pl. 14, 55; 62, 55)



Fig. 2.554 Mycenaean sherd, TZ 005105-072 (Photograph: M. Del-Negro).

TZ 002874-035

Area I; Square AH 115; Context 1298

Description: Small piriform jar with horizontal handles FT 45 (one handle attachment preserved); belly diameter 13 cm. – Lower neck monochrome, shoulder bands 6.4, one broad belly band and three preserved thin lines below; simplified foliate band FM 64, 21 or 22 (either in a continuous row or ordered in groups). – Fired clinky hard. – Exterior surface very well smoothed; secondarily burnt, no colour determinations possible; paint lustrous; solid cover, but at some spots diluted with brush marks. – Pottery matrix with medium quantity of fine to medium voids; very few inclusions (white particles); size fine to medium

Figure Reference: Fig. 2.555; Pl. 2.1, no. 10

Date of Context: Stratum 13; Iron Age I

Parallels in the Near East: Ra's Šamra (Ugarit), tomb LXXV: small piriform jar with horizontal handles FT 45 (one handle preserved, monochrome); rim variety 2. – Height 15.0 cm; rim diameter 9.4 cm; base diameter 4.0 cm. – Decora-

tion 8.6 (3 reserved lines) + shoulder bands 6.1 + belly bands 3.4 + lower bands 1.3 + lower bands 7.3 combined with base decoration 7.3; simplified foliate band FM 64, 21 (Leonard 1994, 18 cat. no. 71; Hirschfeld 2000, 80 cat. no. 23; 213 fig. 3, 23). – Tall Kazal (Tell Kazel), Area IV, Phase 6 (LBA IIB): small piriform jar with horizontal handles FT 45 (one handle preserved, monochrome); rim variety 2. – Height 13.2 cm; rim diameter 7.9 cm (63 %); base diameter 3.8 cm (100 %); belly diameter 11.1 cm. – Decoration 8.13 Var. (three reserved lip bands) + shoulder bands 6.3 + belly bands 3.3 + lower bands 1.2 + lower bands 7.3 combined with base decoration 7.3; simplified foliate band in a continuous row FM 64, 21; Tell Kazel ware M 12 (Jung 2008, 154. 156 fig. 2, 3. 213–214 cat. no. 3). – Sidon, Dakerman cemetery, stray find: small piriform jar with horizontal handles FT 45 (at least one handle preserved, monochrome); rim variety 2. – Height 14.1 cm; rim diameter 9.0 cm; belly diameter 12.0 cm. – Decoration 8.6 (2 reserved lines) + shoulder bands + belly bands 3.3 + lower bands 1.3 + lower bands combined with base decoration 7; simplified foliate band ordered in groups FM 64, 22 (Saïdah 2004, 37 cat. no. 115; 64 fig. 42, 115). – Tall ad-Duwēr (Lachish), Area S, Level VIIb(?): small piriform jar with horizontal handles FT 45 (one handle partially preserved, monochrome); rim variety 2. – Rim diameter 10 cm; belly diameter c. 13 cm. – Decoration 8.6 (2 reserved lines) + shoulder bands 1.1 + belly bands 3.3? + 1 broad lower band; simplified foliate band ordered in groups FM 64, 22 (Hankey et al. 2004, 1375 tab. 22.1, 2; 1381 cat. no. 2; 1386 fig. 22.1, 1; 1414 fig. 22.14, 1). – Tall al-Qāḍī (Dan), Stratum VIIB, built chamber tomb 387 (LBA II), SW corner (secondary position): small piriform jar with horizontal handles FT 45 (three handles preserved, monochrome); rim variety 2. – Rim diameter 7.4 cm; belly diameter 11.0 cm. – Decoration 8.6 (2 reserved lines) + shoulder bands 1.3 + belly bands 1.4; simplified foliate band in a continuous row FM 64, 21 (Ben-Dov 2002, 40 fig. 2.8, 85; 98 f. fig. 2.68, 85; 108 f. fig. 2.81, 85) *Parallels in the Aegean:* Mycenae, Pétras House, Room A (LH IIIA2 Late): piriform jar with vertical handles FT 45 (three vertical handles preserved, monochrome); rim variety 2. – Decoration 8.6 (2 reserved bands)? + shoulder bands 6.2? + belly bands 3.3 + lower bands 4.1 + base decoration 7.2.1; simplified foliate band in a continuous row FM 64, 20 (Papadimitriou – Petsas 1951, 210 fig. 9, 15; 225 f.;

Shelton 2016, 322 f. fig. 20.7, left). – Athens, Agora, chamber tomb XVIII, western burial (LH IIIA2 Late): piriform jar with horizontal handles FT 45 (three horizontal handles preserved, monochrome); rim variety 2. – Height 15 cm; rim diameter 9.7 cm; belly diameter 13.9 cm; base diameter 5.8 cm. – Decoration 8.6 (2 reserved bands) + shoulder bands 1.1 + belly bands 3.2 + lower bands 7.2 combined with base decoration 7.3; simplified foliate band in a continuous row FM 64, 21 (Immerwahr 1971, 209 f. cat. no. XVIII-1 pl. 48, XVIII-1; Mountjoy 1999, 524 f. fig. 187, 126). – Tsoúngiza, excavation unit 9 (EU 9), LH IIIA2 Late (–LH IIIB Early) layers: piriform jar FT 45; rim variety 2; rim diameter 10 cm; belly diameter 15 cm. – Decoration 8.6 (4 reserved bands) + shoulder bands 6.6 + 1 broad and 4 preserved thin belly; simplified foliate band in a row, floating FM 64, 19 (Thomas 2011, 179 f., fig. 5, 1)



Fig. 2.555 Mycenaean sherd, TZ 002874-035 (Photograph: M. Del-Negro).

TZ 004397-005

Area I; Square AH 116; Context 2601

Description: Small closed vessel; belly diameter c. 15 cm. – Lower bands 3.1; scale pattern FM 70, 1 (?) extending down to the point of the maximum diameter. – Fired clinky hard. – Exterior surface very well smoothed and slipped or covered with self-slip; slip very slightly lustrous; paint lustrous, solid cover, at few spots diluted. – Colour of paint 10YR 2/1 (black); colour of slip/self-slips 10YR 8/3 (very pale brown); colour of interior surface 10YR 8/3 (very pale brown); colour of break 10YR 7/1 (light grey). – Pottery matrix dense; no certain inclusions visible

Figure Reference: Fig. 2.556; Pl. 2.1, no. 11

Date of Context: Stratum 13; Iron Age I



Fig. 2.556 Mycenaean sherd, TZ 004397-005 (Photograph: M. Del-Negro).

TZ 004032-025

Area I; Square AO 118; Context 293

Description: Globular flask of vertical type FT 188/189 (wheel-marks horizontal, concentric circles vertical); diameter indeterminable. – Six narrow concentric circles of different width, loop around handle or spout attachment. – Fired very hard. – Exterior surface very well smoothed, possibly slipped (self-slip); paint dull to very slightly lustrous, solid cover to diluted, with brush marks, but not well preserved. – Colour of paint 10YR 2/1 (black), 3/2 (very dark greyish brown), 6/4 (light yellowish brown); colour of exterior surface 10YR 8/2 (very pale brown); colour of break 10YR 7/3 (very pale brown). – Pottery matrix dense; no inclusions visible

Figure Reference: Fig. 2.557; Pl. 2.1, no. 12

Date of Context: Stratum 12; Iron Age II A/B (older)

Parallels in the Near East: Tall ‘Aṭṣāna (Alalah), Level I, cremation burial ATG/37/3: globular flask of vertical type FT 188/189 (wheel-marks horizontal, concentric circles vertical); rim variety 2; two handles preserved (monochrome decorations). – Rim decoration + neck band + base decoration 1.3; one broad and many thin concentric circles with central dot; N-pattern FM 60 (Woolley 1955, 204, 372 pl. 128e; Leonard 1994, 85 cat. no. 1264). – Tall Kazal, Area II, Level 6 (LBA IIB): globular flask of vertical type FT 188/189 (wheel-marks horizontal, concentric circles vertical); maximum diameter 9 cm. – One broad, at least three thin concentric circles; vertical wavy line FM 53 (Jung 2008, 169 fig. 9, 37; 215 cat. no. 37). – Sidon, Dakerman, tomb 22 (LBA II): globular flask of vertical type FT 188/189 (wheel-marks horizontal, concentric circles vertical); rim variety 2; two handles preserved. – Broad rim band on the exterior + base decoration 1.3; one broad and many thin concentric circles with central dot; palm II FM 15, 2 (Leonard 1994, 84 cat. no. 1248; Saïdah 2004, 36 cat. no. 111; 64 fig. 42, 111). – Tall al-Qāḍī (Dan), Stratum VIIB, built chamber tomb 387 (LBA II), NE corner and N wall (secondary positions): two globular flasks of vertical type FT 188/189 (wheel-marks horizontal, concentric circles vertical); rim variety 2 (both); two handles preserved (monochrome decorations – both). – Heights 14.1 and 14.5 cm respectively; rim diameters 3.0 and 2.8 cm respectively; maximum diameters 10.5 and 11.1 cm respectively; base diameters 3.9 and 4.1 cm respectively. – Rim deco-

rations 1.2.1 + neck bands 1.1 + base decorations 1.3; one broad and many thin concentric circles (on cat. no. 100 with central dot); foliate band varieties FM 64, 21 and 64, 20 respectively (Ben-Dov 2002, 40 fig. 2.8, 100, 101; 105 fig. 2.75, 101; 116 f. fig. 2.85, 100, 101)

Parallels in the Aegean: Ialissós, Makrá Vounára, tomb 51, burial on the bench (LH IIIA2): Globular flask of vertical type FT 188 (wheel-marks horizontal, concentric circles vertical); rim variety 2. – Height 14.4 cm; rim diameter 2.5 cm; base diameter 4.3 cm. – Rim decoration 11.0 (?) + base decorations; thin concentric circles; papyrus FM 11, 40 and U-pattern FM 45 (Benzi 1992, 339 cat. no. 3 pl. 80i)



Fig. 2.557 Mycenaean sherd, TZ 004032-025 (Photograph: M. Del-Negro).

TZ 004023-017

Area I; Square AF 119; Context 2378

Description: Lentoid flask FT 186; diameter indeterminable. – Two concentric circles (the inner one broad, the outer one of uncertain thickness). – Fired very hard. – Exterior surface wet-smoothed; paint dull, solid cover, but only thinly applied. – Colour of paint 5YR 5/6 (yellowish red), 4/4 (reddish brown); colour of exterior surface c. 10YR 7/4 (very pale brown); colour of interior surface 10YR 6/3 (pale brown). – Pottery matrix dense; no inclusions visible

Figure Reference: Fig. 2.558; Pl. 2.1, no. 13

Date of Context: Stratum 12; Iron Age II A/B (older)

Parallels in the Near East: ‘Ammān, airport, ‘temple’: lentoid flask FT 186; rim variety 1. – Decorated in the so-called Simple Style by painting only broad concentric circles in purple matt paint (Hankey 1974, 155 cat. no. 94 and fig. 8, 94; Leonard 1994,

82 cat. no. 1231). – Aş-Şarafand (Sarepta), chamber tomb: six lentoid flasks FT 186 classified as local products (diameter in the vertical axis between 12.1 and 13.8 cm). – Decorated in the so-called Simple Style by painting only broad concentric circles in wine red colour (Baramki 1959, 136–138 fig. 27. 29–32. 35 pl. 16, 27). – Sidon, Dakerman, tomb 4 (LBA II): lentoid flask FT 186; rim variety 1. – Height 16.2 cm; rim diameter 4.7 cm; maximum diameter 12.2 cm. – Light slip; pottery matrix with many inclusions. – Decoration 13. – Decorated in the so-called Simple Style by painting only broad concentric circles in brick red colour (Saïdah 2004, 24 cat. no. 14; 44 fig. 11, 14)



Fig. 2.558 Mycenaean sherd, TZ 004023-017 (Photograph: M. Del-Negro).

TZ 005105-073

Area I; Square AF 116; Context 3327

Description: Small closed vessel; diameter indeterminate. – Double row of continuous foliate band FM 64. – Fired very hard. – Surface well burnished, slightly lustrous, slight burnish marks visible; paint slightly lustrous, solid cover. – Colour of paint 2.5YR 3/4 (dark reddish brown); colour of surface c. 10YR 7/3 (very pale brown); colour of break 10YR 7/3 (very pale brown). – Pottery matrix with few fine to medium voids; very few inclusions (dark particles); size medium

Figure Reference: Fig. 2.559; Pl. 2.1, no. 14

Date of Context: Stratum 13; Iron Age I

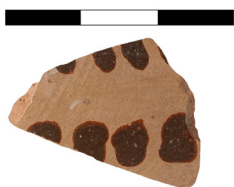


Fig. 2.559 Mycenaean sherd, TZ 005105-073 (Photograph: M. Del-Negro).

TZ 006682-016

Area I; Square AP 120; Context 4669

Description: Small closed vessel; belly diameter 14 cm. – Partially preserved groups of bands: 3 narrow and one broad band; one broad and two narrow bands. – Fired very hard. – Surface very well smoothed (self-slip?); paint slightly lustrous, solid to diluted cover with brush marks. – Colour of paint 2.5YR 5/8 (red), 4/6 (red); colour of surface (self-slip?) between 7.5YR 6/4 (light brown) and 6/6 (reddish yellow); colour of break 7.5YR 6/4 (light brown). – Pottery matrix dense; no inclusions visible

Figure Reference: Fig. 2.560; Pl. 2.1, no. 15

Date of Context: Stratum 11; Iron Age II A/B (younger)



Fig. 2.560 Mycenaean sherd, TZ 006682-016 (Photograph: M. Del-Negro)

TZ 004737-022

Area I; Square AF 116; Context 3017

Description: Large closed vessel; maximum diameter 10 cm. – lower bands 7.3 combined with monochrome base attachment. – Fired clinky hard. – Surface very well smoothed, probably slipped, interior surface worn off, but at some spots with characteristic wheel-marks; paint lustrous, solid cover with brush marks. – Colour of paint 2.5YR 5/8 (red), 4/6 (red); colour of slip 10YR 8/2 (very pale brown); colour of break 10YR 7/3 (very pale brown). – Pottery matrix dense with very few fine

to medium voids; very few inclusions (white particles); size medium

Figure Reference: Fig. 2.561; Pl. 2.1, no. 16

Date of Context: Stratum 12; Iron Age II A/B (older)

Parallels in Cyprus: Hala Sultan Tekke, well, Trench 1, Feature F1 and F1 + F2: two medium-sized piriform jars FT 30/31; heights 18 cm and indeterminable; rim diameters 10.5 cm and indeterminable; belly diameter of both 16 cm. – Decoration 8.6 + shoulder bands 1.2 + belly bands 3.3 + lower bands 7.3 combined with base decoration 7.3; net FM 57,2 (Öbrink 1983, 18 f. cat. no. 1; 48 fig. 82) and neck monochrome + shoulder bands 1.2 + belly bands 3.2 + lower bands 7.3 combined with base decoration 7.3; net FM 57,2 (Öbrink 1983, 19 cat. no. 2; 48 fig. 83)

Parallels in the Aegean: Mycenae, secondary deposit – debris cut by the so-called Atreus Tholos Tomb (so-called Atreus Bothros, LH IIIA1): medium-sized piriform jar FT 31 with three vertical handles (monochrome); height c. 21 cm; rim diameter c. 10.5 cm; belly diameter c. 15.5 cm (according to illustration). – Decoration 8.6? + lower bands 3.4 + lower bands 1.3 combined with base decoration 7.2.1; scale pattern FM 70, 1; N-pattern FM 60 on the rim (French 1964, 244 fig. 1, 6; 247)



Fig. 2.561 Mycenaean sherd, TZ 004737-022 (Photograph: M. Del-Negro).

TZ 001331-003

Area I; Square AM 117; Context 129

Description: Rounded alabastron, perhaps FT 85; base diameter 5.5 cm. – One partially preserved lower band; lower bands 1.2; base circles 1.3. – Fired very hard. – Surface very well smoothed, slightly lustrous; paint lustrous, solid cover to diluted. – Partially secondarily burnt, colour determinations uncertain; colour of paint 2.5YR 3/6 (dark red), 4/6 (red); colour of surface 10YR 7/3 (very pale brown); colour of break 10YR 7/4 (very pale brown). – Pottery matrix with few fine to coarse voids; very few inclusions (white particles); size medium

Figure Reference: Fig. 2.562; Pl. 2.1, no. 17

Date of Context: Stratum 13; Iron Age I

Parallels in the Near East: ‘Ammān, airport, ‘temple’: rounded alabastron FT 85 (three handles, monochrome); rim variety 2. – Height 7.3 cm; maximum diameter 9.5 cm. – Decoration 8.6? + lower bands 3.2 + base circles 1.3 + base circles 1.3; rock pattern FM 32, 5 (Hankey 1974, 149 cat. no. 28 and fig. 5, 28; Leonard 1994, 34 cat. no. 367). – Sidon, Dakerman, tomb 19 (LBA II): rounded alabastron FT 85 (two handles, monochrome); rim variety 2. – Height 6.9 cm; rim diameter 3.9 cm; maximum diameter 9.3 cm. – Decoration 8.6 (2 reserved lines) + lower bands 6.4 + base circles 1.5 + base circles 1.6 (Saidah 2004, 33 f. cat. no. 88; 61 fig. 38, 88; Leonard 1994, 34 cat. no. 368; Doumet-Serhal 2008, 30 fig. 40)

Parallels in the Aegean: Mycenae, Kalkáni, chamber tomb 529, burial XI (LH IIIA 2 Late): rounded alabastron FT 85 (three handles, monochrome); rim variety 2. – Height 8.5–8.7 cm; rim diameter 7 cm; maximum diameter 12.3 cm. – Decoration 8.6 (2 reserved bands) + neck bands 6.1 + lower bands 2.1 + base circles 1.3 + base circle 1.1; rock pattern FM 32, 5 (Wace 1932, 99 fig. 41; 101. 104 cat. no. 13; pl. 51, 13; Mountjoy 1999, 116 f. fig. 24, 153). – Spaliarékia-Lousiká, chamber tomb 10, burial 1 (LH IIIA 2 Late): rounded alabastron FT 85 (three handles, monochrome); rim variety 2. – Height 6.5 cm; rim diameter 4.6 cm; maximum diameter 8.8 cm. – Decoration 8.6 (2 reserved bands) + shoulder bands 1.2 + belly bands 1.4 + lower bands 4.1 + base circles 7.1 + base circles 7.1 + base circle 1.1; multiple wavy lines FM 53, concentric arcs FM 44 (Giannopoulos 2008, 106. 122 cat. no. Sp.G10-4, pl. 54, 4; 55, 4)



Fig. 2.562 Mycenaean sherd, TZ 001331-003 (Photograph: M. Del-Negro).

TZ 003605-019

Area I; Square AG 115/116; Context 2040

Description: Rounded alabastron FT 82 or 84; base diameter 10 cm; maximum preserved diameter: c. 18 cm. – Base circles 1.3. – Fired clinky hard. – Surface very well smoothed (self-slip?) and slightly lustrous; paint lustrous, solid to diluted cover. – Colour of paint 10YR 4/4 (dark yellowish brown), 3/3 (dark brown), 2/1 (black); colour of surface (self-slip?) 10YR 8/3 (very pale brown); colour of break 10YR 7/4 (very pale brown), core grey. – Pottery matrix dense with few fine to coarse voids; no few inclusions visible

Figure Reference: Fig. 2.563; Pl. 2.1, no. 18

Date of Context: Stratum 12; Iron Age II A/B (older)

Parallels in the Near East: Sidon, Dakerman tomb 10: rounded alabastron FT 84; height 7.4 cm; rim diameter 8 cm; belly diameter 16.6 cm; three handles preserved (monochrome decoration). – Rim decoration 11.0 (?) + lower bands 1.2 + base circles 1.3 + base circles 4.1 and central dot; ogival canopy FM 13, 6 with rock pattern FM 32, 5 (Leonard 1994, 34 cat. no. 365; Saïdah 2004, 28 f. cat. no. 49; 52 fig. 22, 49; Doumet-Serhal 2008, 30 fig. 39). – Al-Jib/Gibeon, from unknown context: rounded alabastron FT 84; height 7.5 cm; rim diameter 6 cm; belly diameter 13.5 cm; three handles preserved (monochrome decoration?). – Rim decoration 11.0 (?) + base circles; ogival canopy FM 13, 6 with rock pattern FM 32, 5 (Hankey 1967, 142 pl. 36c; Leonard 1994, 34 cat. no. 364)

Parallels in the Aegean: Dhendrá, chamber tomb 12 (so-called Cuirass Tomb, LH IIIA1): rounded, flat alabastron FT 84; height 6.5 cm; belly diameter 20 cm; three handles preserved (monochrome decoration). – Rim decoration 11.0 + shoulder band 1.1 + lower bands 1.2 + base circles 1.3 + base circles 1.2; ogival canopy FM 13, 6 with rock pattern FM 32, 5 (Åström 1977, 15 f. cat. no. 16; fig. 6; pl. 5, 5–6). – Tiryns, Profitis Ilias, chamber tomb III, burial in the niche (LH IIIA1): rounded, flat alabastron FT 84; height 5.0 cm; rim diameter 5.5 cm; belly diameter 11.7 cm. – Decoration 11.0 + shoulder band 1.1 + two groups of base circles; curve-stemmed spirals on top of rock pattern FM 49, 3 as well as multiple stem and tongue pattern FM 19, 34 (Rudolph 1973, 30 f. cat. no. 2 pl. 13, 2). – Menelaion, Mansion 2, fill underneath Room VII, Levels 3 and 4 (= upper and lower levels respectively of the fill accumulated on top of the Mansion 1 floor, [LH IIB–] IIIA1): rounded, flat alabastron FT 82; height 6.6 cm; rim diameter 10 cm; belly diameter 21 cm. – Decoration 8 (four reserved lip bands, one reserved interior band) + shoulder bands 1.2, 1.3 + lower bands 2.3 + base circles 1.3, 1.2 (Catling 2009, vol. 1, 102. 108 cat. no. VII3; vol. 2, 130 fig. 134, VII3)



Fig. 2.563 Mycenaean sherd, TZ 003605-019 (Photograph: M. Del-Negro).

TZ 004506-043

Area I; Square AQ 118/119; Context 2783

Description: Indeterminable large vessel; maximum diameter 23 cm. – Two broad lower bands. – Fired clinky hard. – Exterior surface polished, slightly lustrous; inner surface worn off; paint slightly lustrous, solid cover. – Colour of paint c. 7.5YR 2.5/1 (black); colour of exterior surface 10YR 7/3 (very pale brown); colour of break 10YR 8/3 (very pale brown). – Pottery matrix dense; medium quantity of inclusions (black particles); size fine and in few cases medium

Figure Reference: Pl. 2.2, no. 1

Date of Context: Stratum 14 a–d; Late Bronze Age II

TZ 003492-026, TZ 005213-230, TZ 006714-005, TZ 002963-002, TZ 003473-026 (NAA sample Zirā'a 1)

TZ 003492-026, Area I; Square AN/AO 118; Context 1945; Stratum 12; Iron Age IIA/B (older), *Fig. 2.564*

TZ 005213-230, Area I; Square AQ 120; Context 3484; Stratum 12. 11; Iron Age IIA/B (older and younger), *Fig. 2.565*

TZ 006714-005, Area I; Square AP 120; Context 4670; Stratum 12. 11; Iron Age IIA/B (older and younger), *Fig. 2.566*

TZ 002963-002, Area I; Square AH 115; Context 1459; Stratum 13; Iron Age I, *Fig. 2.567*

TZ 003473-026, Area I; Square AP 118/119; Context 1858; Stratum 0; colluvium, *Fig. 2.568*

Description: Large closed vessel; belly diameter c. 33 cm. – Lower bands 3.2, lower band 2.1; between the lower bands a simplified foliate band FM 64, but on the belly fragment antithetic groups of concentric arcs FM 44. – Fired very hard. – The external surface is very smooth (perhaps slipped); Paint slightly lustrous to lustrous; solid cover, but in places diluted with brush marks. – Colour of paint mainly black, at diluted spots c. 10YR 3/2 (very dark greyish brown); colour of surface (slip?) c. 10YR 8/3 (very pale brown); colour of break c. 10YR 8/2 (very pale brown). – Pottery matrix with medium amount of fine to medium voids; medium amount of inclusions (dark particles); size fine to medium

Figure Reference: Fig. 2.264–2.268; Pl. 2.2, no. 2

Parallels in the Aegean: Mitópoli, chamber tomb 5, in a heap of grave goods in front of the SW chamber wall (parallel for shape [but of smaller size], motif and decorative syntax): small piriform jar FT 31 with three vertical shoulder handles (monochrome); rim variety 5 (long); height 18.0 cm; rim diameter 10.0 cm; belly diameter 15.8 cm; base diameter 8.7 cm. Decoration 1.2 + neck band 2.1 + belly band 2.1 + lower band 2.1 + lower band 2.1 + base decoration 1.3; on the rim row of circles FM 41; on the shoulder net irregular net FM 57, 2; in each decorative zone between the lower bands simplified foliate band FM 64 (Christakopoulou-Somakou 2010, 82–85 cat. no. T5/4; 92 f. pl. 17. 18, 6). – Prósimna, chamber tomb XLII, heap of bones (representing several skeletons) in front of the northern chamber wall (parallel for shape and decorative syntax): large piriform jar FT 22 with three horizontal shoulder handles (monochrome); rim variety 5; height 29.4 cm; rim diameter 13.2

cm; belly diameter 26.2 cm; base diameter 9.9 cm. – Decoration 11.0 + shoulder bands 1.3 + belly bands 1.3 + lower bands 1.3 + lower bands 1.2 + base decoration 7.2.1; between the banding curved stripes FM 67, 3 (Blegen 1937, 151. 450 no. 901 pl. 89 fig. 374,901; plan 30,8; Mountjoy 1986, 53 f. fig. 59 – with different measurement for the belly diameter: 27.3 cm). – According to the excavator “relatively thin walls, pinkish buff clay, creamy slip, smooth surface” (Blegen 1937, 450 no. 901); according to another scholar “pink buff fabric, buff slip, brown glaze, worn” (Shelton 1996, 128 no. 901 – with different measurement for the height: 30.1 cm). – Knossós, West Magazine Area (parallel for decorative syntax): Minoan Palace Style jar with three vertical shoulder handles; height 84 cm. – Decoration? + shoulder bands 2.3 + belly bands 2.3 (4 x) + lower bands 2.3 combined with base decoration 7.3; curved stripes FM 67 on the neck; Minoan alternating arcs in the shoulder and the belly zones; curved stripes FM 67 in three zones of the lower part (Popham 1970, 46. 48. 72 f. pl. 7a; Niemeier 1985, 145. 250 cat. no. XVIII A1 pl. 8, XVIII A1)



Fig. 2.564 Mycenaean sherd, TZ 003492-026 (Photograph: M. Del-Negro).



Fig. 2.565 Mycenaean sherd, TZ 005213-230 (Photograph: M. Del-Negro).



Fig. 2.566 Mycenaean sherd, TZ 006714-005 (Photograph: M. Del-Negro).



Fig. 2.567 Mycenaean sherd, TZ 002963-002 (Photograph: M. Del-Negro).



Fig. 2.568 Mycenaean sherd, TZ 003473-026 (Photograph: M. Del-Negro).



Plate 2.1: Mycenaean pottery

No.	Inv. No.	Type	Square	Context	Colour of paint	Date	NAA results
1	TZ 005143-016	goblet FT 255	AR 120	3414	red/dark	LH IIIA1	NAA sample Zirā'a 3: group TIR
2	TZ 20586-001(1-3) TZ 20586-015	kylix	AQ 122	5101	dark	LH IIIA1	NAA sample Zirā'a 2: group MYBE
3	TZ 003458-001	small open vessel	AG 115	1936	dark/red	LH III	—
4	TZ 020055-004	probably krater FT 7-8	AQ 121	4921	dark	LH IIIA1 or LH IIIA2 Early	—
5	TZ 004903-061	amphoroid krater FT 54/55	AF 116	3203	dark	LH IIIA2-IIIIB Middle	—
6	TZ 020080-051	small closed vessel, per- haps FT 30/31	AQ 122	4919	dark	LH IIIA1	—
7	TZ 020018-025	medium-sized piriform jar FT 30/31	AQ 121	4918	dark	LH IIIA1	—
8	TZ 004759-034	probably medium-sized piriform jar	AF 116	3017	dark	LH IIIA1	—
9	TZ 005105-072	medium-sized piriform jar FT 30/31	AF 116	3327	dark	LH IIIA1	NAA sample Zirā'a 4: group MYBE
10	TZ 002874-035	small piriform jar FT 45	AH 115	1298	secondarily burnt	LH IIIA2 Late	—
11	TZ 004397-005	small closed vessel	AH 116	2601	dark	LH IIIA1	—
12	TZ 004032-025	globular flask of vertical type FT 188/189	AO 118	2393	dark	LH IIIA2 Late – LH IIIB	—
13	TZ 004023-017	lentoid flask FT 186	AO 119	2378	red/dark	LBA II	—
14	TZ 005105-073	small closed vessel	AF 116	3327	dark	LH	—
15	TZ 006682-016	small closed vessel	AP 120	4669	red	LH III	—
16	TZ 004737-022	large closed vessel	AF 116	3017	red	probably LH IIIA1	—
17	TZ 001331-003	rounded alabastron, per- haps FT 85	AM 117	129	red	probably LH IIIA2 Late	—
18	TZ 003605-019	rounded alabastron FT 82 or 84	AG 115/116	2040	dark	LH IIIA1	—

Plate 2.1: Mycenaean pottery

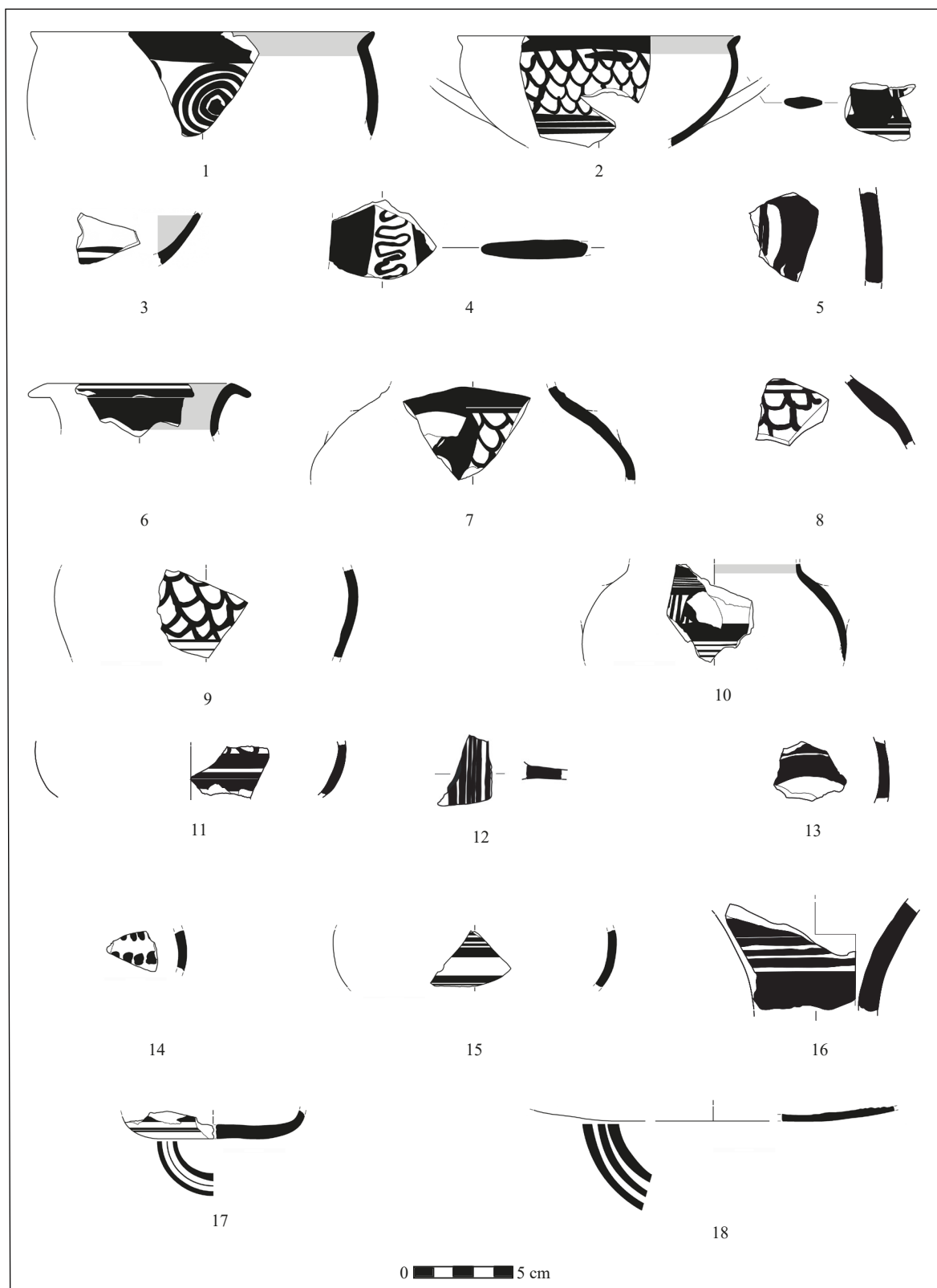
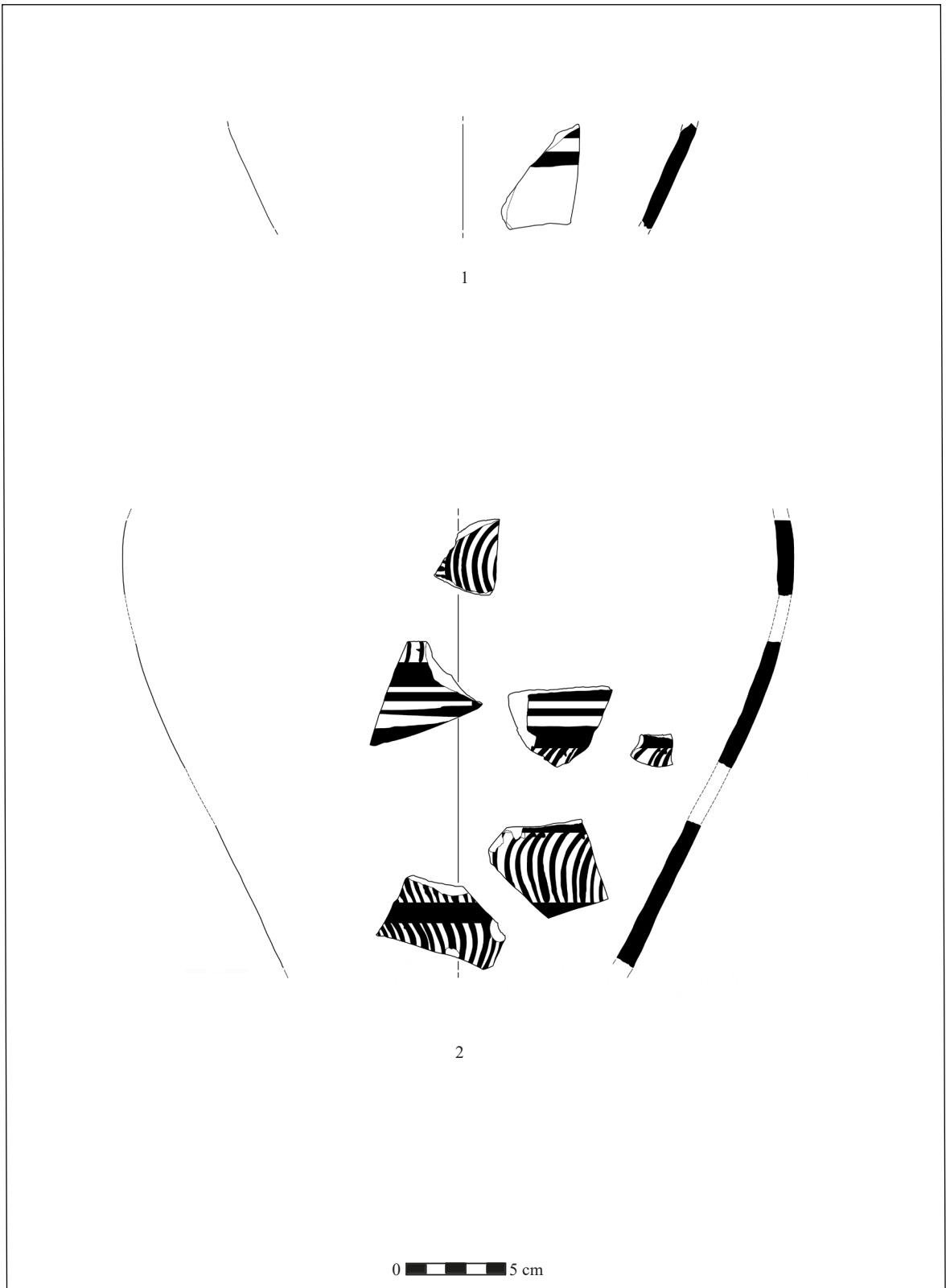


Plate 2.2: Mycenaean pottery

No.	Inv. No.	Type	Square	Context	Color of paint	Date	NAA results
1	TZ 004506-043	indeterminable large vessel	AQ 118/119	2783	dark	LH III	—
2	TZ 003492-026 TZ 005213-230 TZ 006714-005 TZ 002963-002 TZ 003473-026	large closed vessel	AN/AO 118 AQ 120 AP 120 AH 115 AP 118/119	1945 3484 4670 1459 1858	dark	probably LH IIIA1	NAA sample Zirā'a 1: singleton, but close to NW Peloponnesian patterns

Plate 2.2: Mycenaean pottery



2.3.7. Cypriote Imports on Tall Zirā'a – White Slip II Ware

by L. Goldammer

2.3.7.1. Introduction²⁴⁶

The White Slip Ware described in this section is ceramic ware that was produced in Cyprus mainly during the Late Bronze Age (LB, 1550–1200/1150 BC or the Late Cypriote Era (LC, c. 1600–1200 BC), respectively. This ware, along with other ceramic ware produced on Cyprus, was distributed across the entire Mediterranean area in the course of the burgeoning trade network during the Late Bronze Age.

The special feature of this ceramic is its characteristic décor that allows easy identification of even the smallest sherd. Given the relatively narrow timeframe, this makes it possible to almost precisely date an archaeological findings in the Eastern Mediterranean, the Italic and the Black Sea region, the southern and the northern Levant, as well as Egypt. This is why White Slip II Ware is of great archaeological importance when it comes to dating. Moreover, it provides a method for determining possible trade links in antiquity as well as the role Cyprus played in the maritime trade network in those times.

2.3.7.2. Excursus: Cyprus' Role during the Late Bronze Age

Due to Cyprus' strategic and convenient location between the Aegean Sea and the Levant, it was a

point of intersection for numerous trading and cultural contacts²⁴⁷. The Mediterranean Sea surrounding the island of Cyprus did not function as boundary but rather a connection between west and east²⁴⁸. This connection is reflected in the island's history and culture. Thus, today's archaeological remains give evidence of Aegean, Egyptian, Mesopotamian, and Persian influences²⁴⁹.

As was the case with other cities during the Late Bronze Age, urban growth in Cyprus, especially on its southern coast, was concomitant with the emergence of socio-political hierarchy. This process of urbanisation lasted until LC IIC (c. 1330/1300 BC). Administrative centres, such as Enkomi²⁵⁰, developed, and specialisations of crafts, such as the construction of ashlar masonry, emerged. Moreover, the production of olive oil increased and metal processing gained importance²⁵¹.

Today, researchers largely agree the kingdom of Alašia mentioned in antique written sources is the contemporary island of Cyprus²⁵². Mentions of the kingdom appear in Akkadian letters from the Middle Bronze Age and in the antique sources generally bring it up in the context of maritime trade links²⁵³. For instance, ships on their way to the city of Ugarit on the Levantine coast are said to have used the island for a layover as well as a loading terminal. Archaeologically, trade contacts between Cyprus and Crete from the Middle Bronze Age have been verified by ceramic finds on both islands and like-

246 I would like to thank Prof. Dr. Dr. Dr. h.c. D. Vieweger, Dr. J. Häser, Dr. K. Soenneken, Dr. F. Kenkel and also their colleagues on-site for giving me the opportunity to edit this material, and for their great support.

2547 References to this fact can already be found in antique written sources, s. Eriksson 2007, 17.

248 On the importance of maritime trade routes and "distance", s. also Horden – Purcell 2000, 11–13. 133; Bauer 2008, 93.

249 As an example for an overview, s. Lembke 2010, 147–153; Karageorghis 1968, 62–66.

250 On Enkomi, see also Sherratt – Sherratt 1991, 372; Cadoogan 1993, 92; Steel 2004b, 161.

251 See Steel 2004b, 161.

252 However, whether this kingdom encompassed the entire island or only a region in the west of Cyprus is still a matter

of controversy as it is yet unclear whether the island was divided into several kingdoms or whether these were, for instance, unified. Moreover, the spheres of influence, particularly those of the Hittite empire, cannot always be clearly identified. s. also Eriksson 2007, 16; Sherratt – Sherratt 1991, 370; Hankey 1993, 101; Malbran-Labat 1999; Yon 1999; Merrillees 1987.

253 These are cuneiform scripts from Greece, Crete, Hattuša, Ugarit, the Babylonian Empire, Mari, and from Tell el-Amarna in Egypt written in different languages during the Bronze Age, and Iron Age Phoenician and Aramaic texts. For a summary and overview s. Knapp 1996.—As yet, trade contacts prior to the Middle Bronze Age can only be verified to a very limited extent, such as occasional ones with Anatolia. This, however, may be owed to the limited

wise between the Levant and Egypt since the Late Bronze Age I (c. 1550–1400 BC) or the 17th/18th Dynasty in Egypt²⁵⁴. Almost simultaneously, corresponding contacts to the Eastern Aegean can also be observed and were apparently intensified in later times²⁵⁵. Finally, the funeral context also provides evidence of close contacts as foreign objects were found in burials on Cyprus, which in turn, illustrate the intercultural exchange²⁵⁶.

Apart from its strategic location, Cyprus possessed rich copper deposits²⁵⁷. Thus, it is not surprising to see that Cyprus is regarded as an equal to the Babylonian, the Hittite, and the Mittani Empires in the Letters of Amarna²⁵⁸. This is archaeologically confirmed by numerous copper mining sites on the island itself, as well as the shipwrecks discovered in the entire area of the Mediterranean Sea. For example, the ship finds off the Turkish coast near Uluburun and Cape Gelidonya as well as near Cape Iria in Greece not only give evidence of sections of the antique seafaring routes²⁵⁹, but also provides evidence of large quantities of Cypriote copper ingots, also called, “oxhide ingots” due to their characteristic shape²⁶⁰. They also illustrate Cyprus’s involvement in the Late Bronze Age maritime trade network. Therefore, it is not surprising that during the entire Late Bronze Age, Cypriote ceramic imports such as the White Slip, Red Lustrous Wheel Made, or Base Ring Ware can be found all over the Mediterranean area.

2.3.7.3. White Slip Ware

Due to the characteristics of a white slip exterior and interior as well as the exterior decoration consisting of brown-black geometrical motifs, White Slip Ware vessels are easily identifiable. Their limited period of prevalence is very convenient when it comes to dating²⁶¹. The vessel repertoire comprises jugs, jars, and bowls. All vessels are handmade and have unusually thin walls.

The globular hemispherical vessels are a special type which includes a characteristic horizontal wishbone handle. While these were referred to as “milk bowls” in earlier publications, modern research uses the more neutral term of “hemispherical bowls”²⁶².

Scientific research has revealed that White Slip Ware was exposed to a very high firing temperature in order to achieve a durable and resistant glaze. Moreover, the copper contingent contained in both the white coating and the black decor is remarkably high. Some Cypriote excavation sites yielded an extraordinarily large number of White Slip Ware, such as Maroni, Kalavassos-Ayios Dhimitrios, and Moutti tou Ayiou Serkou near the village of Sanida at the foot of the Troodos mountain range²⁶³. In view of the considerable quantity of production waste, misfired pottery, and ceramic finds; it can be assumed that the two latter places may have been production sites. Scientific examinations like the Neutron

state of present archaeological knowledge. s. also Georgiou 1979, 85; Voskos – Knapp 2008, 663; Frankel 2005, 20.

254 On trade links between Cyprus and Crete, s. Georgiou 1979, 85; Cadogan 2005, 314; between Cyprus and the Levant and Egypt, s. Steel 2004b, 154.

255 Karageorghis 1999, 121; Karageorghis 2009, 15; Catling 1963, 144.

256 Voskos – Knapp 2008, 663.

257 Steel 2004b, 150. 169.

258 For an overview, s. Georgiou 1979, 84; Steel 2004b, 184; Eriksson 2007, 16; for in-depth coverage, s. Rainey 2014. –The Amarna Letters make a clear hierarchical distinction between the different empires, for instance regarding the empires of the southern Levant. The archaeological testimonia, in any case, suggest that Cyprus held a position of relative power. s. Steel 2004, 185; Cadogan 1998, 13.

259 Eriksson 2007, 17; Muhly 1986, 53; Keswani 1991, 97; Cadogan 1998, 6; Eriksson 2001, 52; Steel 2004b, 150; Bass 1967; Lolos 1999.

260 Karageorghis 2009, 16.

261 Although White Slip Ware is eminently useful for purposes of dating archaeological finds, there is still controversial debate about relative and absolute dating in the Middle East and the Mediterranean area. For instance, the discrepant synchronisations between the scientifically achieved results of absolute dating and those of relative dating, which are based on Egyptian and Mesopotamian king lists and on other written sources, still need to be clarified. s. also Manning 2007, 101 f.; Steel 2004b.

262 The term „milk bowl“ derives from the vessel’s shape, which is reminiscent of this particular kitchen utensil. However, whether these bowls were actually only used for dairy products – as assumed in the older research literature – remains to be proven.

263 See for Maroni: Cadogan et al. 2001; for Kalavassos-Áyios Dhimitrios: South – Steel 2001 and for Moutti tou Ayiou Serkou: Todd – Pilides 2001.

Activation Analysis (NAA) have shown that many White Slip Ware vessels come from the area of the Troodos mountain range. Their clay analyses are identical with those from the clay deposits in that region²⁶⁴. Further production sites can probably be assumed at Enkomi and Amathous. Presumably, Ra's Šamra (Ugarit) was another production site, although outside of Cyprus²⁶⁵. Here, not only architectural remains of artisanal production sites such as kilns, but also numerous ceramic items imported from Cyprus (e.g. White Painted Ware, Base Ring Ware, and White Slip Ware) were found. Scientific examinations linking their clay compositions to those of deposits on Cyprus indicate these vessels were produced in Cyprus and then exported across the entire Mediterranean world. Whether imitations were circulated is a matter of controversy. Possibly, several grave finds in Ra's Šamra (Ugarit) show deviating workmanship are local imitations²⁶⁶.

White Slip Ware is subdivided into three groups. The common factors for all vessels are a white to greyish slip both on their interior and exterior as well as a black to brown decorative patterns. Presumably, the earliest examples belong to the Proto White Slip Ware. These bowls have a wavy line at the rim and are partitioned by horizontal and vertical bands running in a net pattern, the so-called "ladder pattern". Between the bands are small circles and diamond-shaped grids and sometimes small triangles too. The handle already has its characteristic wishbone shape; however, it is still a little compact.

By contrast, the decorative pattern on the bowls of White Slip I Ware is characterized by several parallel horizontal or vertical lines. The rim is bordered by a little zigzag line. A horizontal band of little circles runs below the rim of the bowl. Individual vertical lines may be bordered by a band of little dots.

The handle is characteristically wishbone-shaped and a little compact as well as decorated with four lines on each of its fork teeth.

The decoration of White Slip II bowls, again, seems more similar to that of Proto White Slip Ware and is less delicate than that of White Slip I Ware. The rim is emphasized by little vertical lines. Here, too, the decoration consists of two horizontal bands below the rim, intersected by vertical bands in a ladder pattern, which can again be bordered by vertical bands of little dots or short lines. A pearl band may run between the two horizontal ladder patterns. Geometrical patterns such as diamonds or triangles can also appear amid the ladder pattern. The characteristic wishbone-shaped and somewhat compact handle is emphasized by staggered thicker and thinner lines.

During the Late Bronze Age, the trade network spanning the entire Mediterranean region reached its prime. The epigraphic sources mentioned above convey a clear picture of the trade taking place and the goods imported. This picture is confirmed by archaeological evidence. Most of the White Slip I Ware finds in the northern Levant, especially in the region of Ra's Šamra (Ugarit), date back to LB I–IIA (c. 1550–1300 BC). From LB II A–B (c. 1300–1200/1150 BC), similar quantities were also found in the southern Levant²⁶⁷. However, White Slip II Ware finds make up the majority share of finds with remnants of the so-called "hemispherical bowls" as the most common among the finds²⁶⁸.

As a rule, the majority of the White Slip Ware finds seem to come from secular and settlement contexts, however, a small share belong to funeral contexts²⁶⁹. This may be an explanation for the fact that, compared to other types of pottery imported from Cyprus, White Slip Ware predominantly occurs in the Levant²⁷⁰.

264 Comprehensive examinations were carried out mainly by the Lawrence Berkeley Laboratory and the Hebrew University. s. also van der Does 2012, 29.

265 Artzy et al. 1981, 37–47.

266 For instance, the sherds found in Grave 4253 in 1963, and the fragments already unearthed in 1939, whose exact provenance can no longer be determined, are interpreted as local productions. s. also Courtois 1969, 132 Abb. 6 D; Courtois – Courtois 1978, 290 f.

267 See also Buchholz 1999, 447. Graziadio 2005, 331.

268 See also Popham 1972, 431 f.

269 It should be kept in mind, however, that details about find

contexts are absent in many publications and that the attribution of finds is often subject to their archaeological discovery; s. also Karageorghis 2001, 9; Yon 2001, 122. Still, Gittlen 1981, 52 states that 435 out of the 491 so-called hemispherical bowls of White Slip Ware from the southern Levant were found in settlement contexts.

270 In Egypt, for instance, Red Lustrous Wheel-made Ware and Base Ring Ware are notably predominant compared to other Cypriot imports. s. also van der Does 2012, 26; Eriksson 1991, 90; Eriksson 2007, 53 f.; Artzy 2007, 11; Merrillees 2007, 151; Gittlen 1981, 52; Steel 2004b, 170.

2.3.7.4. White Slip II Ware from Tall Zīrā'a

On Tall Zīrā'a, 59 White Slip Ware sherds were found during the campaigns carried out between 2003 and 2011. They all came from Area I, located in the western part of the settlement hill. The ceramic sherds were discovered in Strata 10 to 14, most of them, however, in Strata 12, 13, and 14a, which have been dated to the Late Bronze Age (Stratum 14, c. fifteenth to fourteenth century BC) and to the Iron Age (Stratum 13, c. twelfth and eleventh century BC; Stratum 12, c. tenth to eighth century BC) by C¹⁴ results.

The decorations of the individual sherds are in different states of preservation. The slip can vary in colour from white to greyish and be moreover severely faded. The decorative pattern varies from a light, almost reddish brown to dark brown and black too. Even though the remaining slip on the majority of sherds is very faded, the characteristic features of White Slip II Ware, as described above, are still distinctive. Painted bands of lines or dots in black-and-brown run along the outer rim of the vessels, some of them irregularly, and continue their path across the lip and then coming to a halt on the inside, a little below the rim. Almost all sherds

present slight traces of abrasion. The vessels' lips taper upwards to 0.2 cm towards the top. The wall thickness is between 0.3 and 0.5 cm. The bowls' diameters vary from 16 to 20 cm. The vessels are handmade and hard-fired. The firing is either dark grey towards the inside with light grey on the outside or of a more reddish colour. In both cases, the clay is rather finely tempered and interspersed with small particles of limestone, calcite, and quartz. No scientific examinations were conducted.

Unfortunately, no intact bowls could be found on Tall Zīrā'a, but several joining sherds, rim sherds with or without handle, and, of course, body sherds were excavated. Other vessel shapes of White Slip II Ware have not yet been identified beyond doubt. Based on their decorative pattern, the ceramic sherds TZ 005114-033 and TZ 005362-034 can undoubtedly be classified as White Slip I Ware.

Comparisons with White Slip II bowls from other sites have revealed equal measurements and provide evidence that the vessels were standardised. Corresponding finds were made, for instance, in the northern Levant in Ra's Bassit²⁷¹, in Ra's Šamra (Ugarit) and its surrounding²⁷², Tall Sukās²⁷³, Tartus²⁷⁴, Tall Kaze²⁷⁵, Tall Arqa²⁷⁶, Tripolis, and Tall Arde²⁷⁷; moreover farther south in Byblos²⁷⁸, Bei-

271 Both White Slip I Ware in the earlier layers and White Slip II Ware in the layers dated to LB II, s. Courbin 1986, 184.

272 The pottery found in the living quarters mainly consists of smaller sherds, while in the funerary realm, even some almost intact vessels were found. The latter were mostly found in graves alongside either local, Mycenaean (IIIB), or Cypriote Base Ring II (IIIB) and Red Lustrous Ware. Many of the ceramics can now be viewed in the museums in Aleppo, Damascus, Lattakia, and in the Louvre. The exact provenance of most of the pieces can no longer be reconstructed. An exemplary selection of still determinable provenances: Ra's Šamra (Ugarit), grave 37. 81. 4253; Minet al-Bēda, burial chamber III. As the excavations that took place from 1978 on were mainly focussed on the settlement context the number of finds of imported pottery from Cyprus generally declined. s. also Schaeffer 1949, 144 f. 164–167; Schaeffer 1966, 132 f.; Courtois 1969, 132; Courtois – Courtois 1978, 282–295. 290 f.; general overview: Artzy – Perlman – Asaro 1981. – G. Saadé conducted several surveys in the surroundings of the ancient territory of Ugarit. In the context of the following places he mentioned Cypriote imports and/or White Slip Ware in Qal'at ar-Rouss, Roussat es-Simhēni, Ġebel al-Qal'ā, Qal'at as-Syriani, and Tall Nahr al-'Arab. s. also Saadé 1990.

273 Danish campaigns have brought to light Cypriote imports and White Slip II along with Base-Ring Ware in the settlement context. s. Lund 1986, 20. 24.

274 Archaeological examinations were able to verify White Slip II Ware particularly in the settlement area of Tall Simirīyan and Tabbat al-Ĥammām, s. Braidwood – Braidwood 1940, 209 f.).

275 The Late Bronze Age strata in ancient Simyra are only partly preserved, thus, there are only small quantities of White Slip II Ware and other Cypriote imports, s. also Yon – Caubet 1990, 108–110; Dunand – Saliby 1957, 12.

276 In ancient Irqata, mainly Early Bronze Age strata have been preserved; in the Late Bronze Age stratum 11, however, isolated sherds of White Slip I and II Ware could be verified; s. Thalmann 1978, 95. 102.

277 Salamé-Sarkis 1973, 94. 99–102 reports on finds of White Slip II pottery during excavations in the Château de Raymond de Saint-Gilles and in Tall Arde, about 10 km from Tripolis.

278 Here, too, the remains of White Slip II Ware mainly come from the funerary context, e.g. Grave 5 with the famous Ahiram Sarcophagus (today in the Louvre Inv. AO 9117. AO 28787) and several graves with vessels from the necropolis K., some of them still intact. (s. Salles 1980, 24 f.).

rut²⁷⁹, Sidon²⁸⁰, and Tyros²⁸¹. All these places have two attributes in common: they are located right on the coast, and they are part of the Late Bronze Age maritime trade network²⁸². To date, archaeological evidence of Cypriote imports and White Slip II Ware in the hinterland is scarce. Presumably, this is due to the fact that these more remote parts of the country were only mediately connected to the maritime trade network²⁸³; still, the following sites beyond the coastline contained such remains: Emar²⁸⁴, Tall al-Mašrafa (Qatna)²⁸⁵, Ḥamā, and Ḥān Šēḥūn²⁸⁶, the plain of Jabbul²⁸⁷, the area of Damascus²⁸⁸, and finally, the plain of Bekaa²⁸⁹. Noticeably, all these cities and areas border on trade routes and were thus in touch with towns located on the coast.

The pottery was found along with other Cypriote and Mycenaean imports.

- 279 Although researchers mainly focussed on the Hellenistic and Roman layers in Beirut, the city was mentioned in cuneiform scripts from the 2nd millennium BC as a centre of power that even retained relations with the Empire of Ugarit. Here, too, the pottery mainly comes from the funerary context, along with other Cypriote imports like Base-Ring Ware, s. also Badre 1998, 73–75.
- 280 Due to the rather inadequate publication of the Late Bronze Age strata, only general statements can be made. Accordingly, corresponding remains of White Slip II Ware are mentioned in the context of the excavations in the Château de Saint Louis during the years of 1923/24 while in fact the provenance of several hemispherical bowls in the National Museum in Beirut is given as “Sidon”. Further pieces of White Slip II pottery, along with Mycenaean kraters and ivory vessels, came to light in the necropolis of Sidon-Dakerman; s. Saidah 1978, 132.
- 281 The Late Bronze Age strata of Tyros, too, have only been published in part; related ceramic finds, however, appear to have been verified the layers XVII–XV; s. Bikai 1978, 55. 65.
- 282 On coastal towns and their role in trade networks, s. with regard to the southern Levant, Artzy 2013.
- 283 Also, due to political unrest in those regions, the most excavation campaigns were only poorly published.
- 284 According to Yon 2001, 122, White Slip pottery was found in the modern town of Maskanah in strata dated to the thirteenth century BC during the French rescue excavations conducted from 1973–1975 by J. Margueron.
- 285 Du Mesnil du Buisson 1935, 34 f. and Sjöqvist 1940, 176 mention White Slip II Ware. The remains of a Mycenaean vase found in 1927 also give evidence of trade connections. Du Mesnil du Buisson 1928, AO Inv. 19805.

In the southern Levant, the towns of Tel Nami²⁹⁰, Tall al-Fuḥḥār (Akko)²⁹¹ and Haifa²⁹² are comparative examples. Via trade routes these places were connected primarily with Tall Qēmūn (Tēl Yoq-nā‘ām), Tall al-Mutasallim (Megiddo) and Tall al-Ḥiṣn (Beth Shean) as well as Tall Waqqāš (Hazor), which, again, were gateways to the Mesopotamian region. The find context of the pottery was mainly from private domain, but still some White Slip II pottery from Tall Waqqāš (Hazor) came from public-sacral context, such as the temple area. Several settlement hills in the Jordan Valley, like Tall Abū al-Ḥaraz, Tell Dēr ‘Alla, Ṭabqāt Faḥl (Pella), and Kataret as-Samra²⁹³, are comparative examples. They are situated on the trade route leading from

- 286 In Ḥamā (Stratum G) and further north in Ḥān Šēḥūn, several Cypriote imports such as White Slip I and II as well as Base Ring Ware were verified: Fugmann 1958, 123. 125 f. 128; Sjöqvist 1940, 160; Du Mesnil du Buisson 1932, 175.
- 287 Several White Slip II sherds could be found in Umm al-Marra, located east of Aleppo: Curvers – Schwartz 1997, 213. 220
- 288 Sjöqvist 1940, 176 mentions a White Slip II bowl from Dēr al-‘Adas.
- 289 Thus, e.g., in Kamid el-Loz. In the ancient town of Koumidi, not only White Slip II Ware was found, but also numerous ceramics, such as rhyta, and luxury items, such as ivory boxes, that were imported from Mycenae; s. Hachmann 1983, Abb. 5.
- 290 Tel Nami is known not only for its Cypriote and Mycenaean imports, mainly from funerary contexts, but also for significant wood finds from the Middle and Late Bronze Age; s. Lev-Yadun et al. 1996.
- 291 Not only Cypriote imports, but also imports from Mycenae, Anatolia, and Egypt could be excavated in the so-called Area AB; s. Artzy – Zagorski 2012.
- 292 Sherds of Cypriote and Mycenaean imports were found at Tall Abu Hawam; s. Hamilton 1933; Hamilton 1934; Balensi 1985. Moreover, salvage excavations unearthed pieces of imported pottery from Cyprus and Mycenae in the northern area of TAH 2001 and 2002 in the Late Bronze Age Stratum 5; s. Artzy 2005; Artzy 2007.
- 293 The finds in Tall Abū al-Ḥaraz were one White Slip I bowl, three White Slip II bowls, and one White Slip II jug. Most of the sherds were found in a private residential house close to the city wall in Area I; only one fragmented White Slip II bowl and the jug were excavated in the so-called temple in Area II. Petrographic analyses have revealed that the bowls and the jug were presumably crafted in the region of the Troodos mountain range in Cyprus.

the Jordan Valley up to the East Jordan Highlands, and south of the trade route running east from the Mediterranean coast via the plain of Jezreel and Beth Shean. Here, too, most finds stem from the private contexts.

2.3.7.5. Stratum 14: Late Bronze Age

Of the nine White Slip II sherds found in Stratum 14, eight sherds were found in 14a and one in 14a-d. There is a noticeable accumulation of finds in complex P, situated right next to and south of the passageway in Squares AG-AH 115-116, as well as in Complex G in Square AF 116. Both structures seem to be residential houses and in Complex P, probably a courtyard house.

Further ceramic sherds were discovered in Squares AK 117 and AO 119. Here, too, the excavated structures seem to be private houses.

2.3.7.6. Strata 13-10: Iron Age

The majority of White Slip II sherds were found in Strata 13 (c. twelfth century BC, IA I) and 12 (tenth to eighth century BC). Interestingly, here too, two larger find sites both in the north and in the south of the area, can be established. In Stratum 13, 11 sherds were excavated in Squares AE 116, AF-AH 115-116, and AI 116. The archaeological structures originated from the Late Bronze Age and were complemented with Iron Age conversions and formed a four-room house with a workshop. Accordingly, two sherds were built into the Late Bronze Age wall structures, which were re-used in Iron Age I (TZ 002955-003, TZ 005008-03). The remaining sherds, however, were found in the debris.

More ceramic finds were excavated in Squares AM-AN 118, AO 119, AP 122 and a larger bulk in AS-AT 120-123. These too were found in the debris; however, one sherd (TZ 021196-001) was found in an originally Late Bronze Age wall that was re-used during the Iron Age. The casemate wall from Stratum 14 no longer existed in Stratum 13. Still, part of the Late Bronze Age architecture was preserved and supplemented with Iron Age components.

The picture in Stratum 12 is similar as here too, accumulations of pottery can be found both in the south and in the north of the excavation area.

Squares AF 116 and AG-AH 116 in the south yielded sherds imported from Cyprus. The extant wall structures in Complexes F and G are again indicative of a private home.

Further sherds were found in Squares AI 116 and AL 117 within Complex E, moreover in the north in Square AM 119 within Complex C, in Squares AO-AP 118-119 within Complex B, and in Square AR 120 within Complex L. The sherds TZ 003667-002 and 003618-001 were built into an originally Late Bronze Age wall; the other pieces of pottery were found in the debris.

Another, though smaller quantity of White Slip II ceramics, could also be found in Strata 11 and 10. While in Stratum 11, the ceramic ware was unearthed both in the south (Squares AE 116 and AG 116) and in the north of the excavation area (Squares AP 122 and AT 122), in Stratum 10 it only occurred in the sediments of the northern section of the excavation area (Squares AS 121, AP 120-121, and AG 121-122). In the course of the reconstruction measures carried out by the inhabitants of the settlement mound, Cypriote imported sherds were apparently moved up to the layers of the younger Iron Age II.

2.3.7.7. Summary

It is noteworthy, that most of the White Slip II Ware sherds on Tall Zīrā'a were found in private contexts.

The Late Bronze Age was an era of far-reaching trade connections, which were reflected both in private and in public-sacral contexts. Therefore, it is not surprising to find conspicuous quantities of ceramics in port cities. However, there are also finds from the Mediterranean region in the Levantine hinterland. These sites are all located in close vicinity to important trade routes, and thus, connected to the Levantine port cities which giving them access to the goods exchanged. It can therefore be assumed that here too, the pottery reached the respective places as a result of trade links.

When comparing the White Slip II Ware items found on Tall Zīrā'a with those of the exemplary sites described above, striking similarities leap to the eye. The sherds found on the settlement mound were also excavated only in private contexts, while no graves were found. Important finds like cylinder seals, beads and decorative objects, as well as faience and terracotta figurines, and the aforementioned

Orpheus jar which were found in the public-sacral sector, also allow conclusions about trade links. In view of the tall's location, this is hardly surprising. It is located next to the Wādī al-ʿArab, which sets out as a distinct trench in the Jordan Valley and gently slopes upwards to the Transjordan Highland, situated at an about 200 m higher altitude, over the course of about 30 km. This means, it connects the Jordan Valley including the Mediterranean coast via the Jezreel Valley and Beth Shean with the Irbid-Ramtha Basin, where trade routes to the cities of Damascus in the north, Baghdad in the east, and Amman in the south commence. Thus, the Wādī al-ʿArab is an important trade route between Egypt in the south and the Syro-Mesopotamian region in the north. Furthermore, the nearby trade routes of the King's Highway and the so-called Via Maris from Roman times should not be disregarded.

All of the sites mentioned, including Tall Zirā'a, have in common the fact that Cypriote pottery was always found in conjunction with Mycenaean imports. This underlines both the importance of Cypriote imports in the trade during the Late Bronze Age and the role the Tall Zirā'a played in this trade.

2.3.7.8. Catalogue

TZ 001088-001

Area I; Square Am 116; Context 32

Stratum: Surface find

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; thick and thin stripes

Figure Reference: Fig. 2.569

Dimensions: Est. W (max.) 3; Wall Th 0.9

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 182 Nr. 3379 C; Tall Abū al-Ḥaraz: Fischer 2001, 164 Nr. 2; Loud 1948, Pl. 140, 17

Note: Characteristic wishbone handle



Fig. 2.569 Wishbone handle of a White Slip bowl with black painting, TZ 001088-001 (Source: BAI/GPIA).

TZ 002404-003

Area I; Square AL 117; Context 635

Stratum: 12

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern; chains of small dots

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tell Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 002813-001

Area I; Square AI 116; Context 1245

Stratum: 12

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting, ladder pattern

Figure Reference: —

Dimensions: Wall Th 0.4

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nic-
osia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr.
NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Body sherd with parts of broken handle

TZ 002888-048

Area I; Square AH 115; Context 1367

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting, net pattern; ladder pat-
tern

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall
Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz:
Fischer 2006, 216 Fig. 14 a. b

Note: Body sherd

TZ 002945-088

Area I; Square AI/AK 116; Context 1477

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting, ladder pattern

Figure Reference: —

Dimensions: Est. D. (max.) c. 20

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv.
Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr.
1. 2. 4

Note: Bottom sherd

TZ 002955-003

Area I; Square AI 116; Context 1410

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with round-
ed lip

Decoration: Black painting; net pattern; chain of
small circles

Figure Reference: Fig. 2.570

Dimensions: Est. D. (max.) 18; Wall Th 0.3

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall
Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz:
Fischer 2006, 216 Fig. 14 a. b

Note: Two joining sherds, one body sherd, one rim
sherd



Fig. 2.570 Two sherds of a White Slip bowl with black painting,
TZ 002955-003 (Source: BAI/GPIA).

TZ 003208-069

Area I; Square AK/AL 116; Context 1733

Stratum: Surface find

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with round-
ed lip

Decoration: Black painting; ladder pattern; line at
the rim

Figure Reference: —

Dimensions: Est. D. (max.) 18; Wall Th 0.5

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein
2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71
Nr. 1. 2. 4

Note: Rim sherd

TZ 003369-032

Area I; Square AM/AN 118; Context 1903

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with round-
ed lip

Decoration: Dark brownish and black painting;
thick and thin stripes; dot between thick stripes

Figure Reference: Fig. 2.571

Dimensions: —

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein
2001, 182 Nr. 3379 C; Tall Abū al-Ḥaraz: Fischer
2001, 164 Nr. 2; Loud 1948, Pl. 140, 17

Note: Characteristic wishbone handle



Fig. 2.571 Wishbone handle of a White Slip bowl with dark brown painting, TZ 003369-032 (Source: BAI/GPIA).

TZ 003436-001

Area I; Square AK 117; Context 1849

Stratum: 14 a

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting; ladder pattern; line at the rim

Figure Reference: —

Dimensions: Est. D. (max.): 16; Wall Th 0.5

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz: Fischer 2006, 216 Fig. 14 a. b

Note: Rim sherd

TZ 003593-011

Area I; Square AM 119; Context 2041

Stratum: 12

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D. (max.) 20; Wall Th 0.3

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 003593-012

Area I; Square AM 119; Context 2041

Stratum: 12

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Wall Th 0.4

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 003618-001

Area I; Square AP 118; Context 2010

Stratum: 12 (auch 11)

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip.

Decoration: Brownish painting; net pattern; chains of small dots; irregular row of small dots at the rim

Figure Reference: Fig. 2.572; Pl. 2.3 no. 4.

Dimensions: Est. D (max.) c. 20; Wall Th 0.6

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd



Fig. 2.572 Rim sherd of a White Slip bowl with brownish painting, TZ 003618-001 (Source: BAI/GPIA).

TZ 003688-019

Area I; Square AO 119; Context 2088

Stratum: 12

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting, net pattern; chain of small circles

Figure Reference: Pl. 2.14 no. 2

Dimensions: Est. D (max.) c. 20; Wall Th 0.4
Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3
Note: Rim sherd



Fig. 2.573 Rim sherd of a White Slip bowl with black painting, TZ 003688-019 (Source: BAI/GPIA).

TZ 003700-012

Area I; Square AP 119; Context 2029
Stratum: 12
Type: Hemispherical bowl
Rim Form: —
Decoration: Black painting, net pattern
Figure Reference: —
Dimensions: Est. D (max.) 16; Wall Th 0.5
Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4.
Note: Body sherd

TZ 003717-018

Area I; Square AG 116; Context 2039
Stratum: 11
Type: Hemispherical bowl
Rim Form: Tapered rim, flat on the top with rounded lip
Decoration: Brownish painting; net pattern; chain of small dots; unregular row of small dots at the rim
Figure Reference: —
Dimensions: Est. D (max.) 20; Wall Th 0.5
Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4
Note: Rim sherd



Fig. 2.574 Rim sherd of a White Slip bowl with brownish painting, TZ 003717-018 (Source: BAI/GPIA).

TZ 003915-008

Area I; Square AG 115; Context 2311
Stratum: 14 a
Type: Hemispherical bowl
Rim Form: —
Decoration: Black painting, net pattern
Figure Reference: —
Dimensions: Wall Th 0.3
Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4
Note: Body sherd

TZ 003987-008

Area I; Square AO 119; Context 2356
Stratum: 13
Type: Hemispherical bowl
Rim Form: —
Decoration: Brownish painting, net pattern
Figure Reference: —
Dimensions: Wall Th 0.4
Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4
Note: Body sherd

TZ 004164-034

Area I; Square AG/AH 116; Context 2570
Stratum: 12
Type: Hemispherical bowl
Rim Form: —
Decoration: Black painting; net pattern; chains of small dots

Figure Reference: —

Dimensions: Wall Th 0.5

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 004210-066

Area I; Square AG/AH 116; Context 2600

Stratum: 12

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.4

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 004232-049

Area I; Square AQ 119; Context 2631

Stratum: 4

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D. (max.) 20; Wall Th 0.5

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 004294-010

Area I; Square AO 119; Context 2668

Stratum: 14 a–d

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting, net pattern; chain of small circles

Figure Reference: —

Dimensions: Est. D (max.) 20; Wall Th 0.5

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicotia: Aloupi – Perdikatis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Rim sherd

TZ 004544-007

Area I; Square AG/AH 116; Context 2838

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting, net pattern; chains of small dots

Figure Reference: —

Dimensions: Wall Th 0.5

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz: Fischer 2006, 216 Fig. 14 a. b

Note: Body sherd

TZ 004590-001

Area I; Square AH 116; Context 2889

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; chains of small dots

Figure Reference: Fig. 2.575

Dimensions: Est. D (max.) 16; Wall Th 0.5

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd



Fig. 2.575 Rim sherd of a White Slip bowl with brownish painting, TZ 004590-001 (Source: BAI/GPIA).

TZ 004609-029

Area I; Colluvium

Stratum: Topsoil

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 20; Wall Th 0.5

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 004621-003/004

Area I; Square AG 116; Context 2815

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; ladder pattern; unregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D. (max.) 20; Wall Th 0.5

Reference: Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Two joining rim sherds

TZ 004715-001

Area I; Square AE 116; Context 3012

Stratum: 11

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Body sherd

TZ 004718-002

Area I; Square AF 116; Context 3017

Stratum: 12

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.35

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Body sherd

TZ 004920-002

Area I; Square AH 115; Context 3237

Stratum: 14 a

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern framed by small dots; irregular row of small dots at the rim

Figure Reference: Fig. 2.576

Dimensions: Est. D. (max.) 16; Wall Th 0.5

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

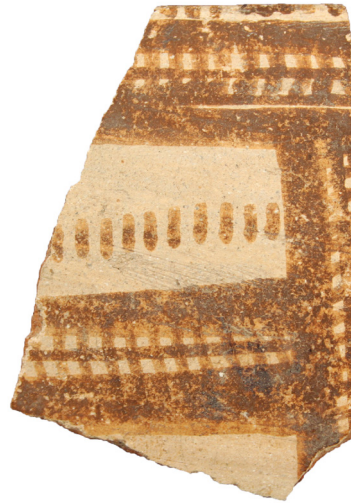


Fig. 2.576 Rim sherd of a White Slip bowl with brownish painting, TZ 004920-002 (Source: BAI/GPIA).

TZ 004928-003

Area I; Square AF 115; Context 3230

Stratum: 4

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; ladder pattern

Figure Reference: —

Dimensions: Wall Th 0.45

Reference: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Body sherd

TZ 005004-025

Area I; Square AH 116; Context 3278

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; chain of small dots; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 18; Wall Th 0.6

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 005008-032

Area I; Square AH 116; Context 3210

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.35

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 005033-061

Area I; Square AF 116; Context 3327

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern or ladder pattern

Figure Reference: —

Dimensions: Wall Th 0.4

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Body sherd

TZ 005033-063

Area I; Square AF 116; Context 3327

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Dark brownish painting; rough net pattern; unfinished chain of small circles (?)

Figure Reference: Fig. 2.577

Dimensions: Est. D (max.) 16; Wall Th 0.5

Reference: Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Rim sherd



Fig. 2.577 Rim sherd of a White Slip bowl with dark brownish painting, TZ 005033-063 (Source: BAI/GPIA).

TZ 005114-033

Area I; Square AE 116; Context 3359

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; framed lozenge

Figure Reference: Fig. 2.578

Dimensions: Est. D (max.) 15; Wall Th 0.3

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 182 Nr. 6462 E; Eriksson 2001, 58; Tall al-'Ağgūl: Bergoffen 1991, 68, Fig. 11

Note: White Slip I rim sherd



Fig. 2.578 Rim sherd of a White Slip bowl with brownish painting, TZ 005114-033 (Source: BAI/GPIA).

TZ 005117-155

Area I; Square AR 120; Context 3382

Stratum: 12 (auch 11)

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; thick and thin stripes

Figure Reference: —

Dimensions: Est. D (max.) 14; Wall Th 0.8

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 182 Nr. 3379 C; Tall Abū al-Ḥaraz: Fischer 2001, 164 Nr. 2; Loud 1948, Pl. 140, 17

Note: Parts of characteristic wishbone handle

TZ 005159-018

Area I; Square AF 115; Context 3380

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.5

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz: Fischer 2006, 216 Fig. 14 a. b

Note: Body sherd

TZ 005349-018

Area I; Square AF 115; Context 3500

Stratum: 14 a

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.45

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 005362-034

Area I; Square AF 116; Context 3509

Stratum: 14a

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; ladder pattern; chain of triangles

Figure Reference: —

Dimensions: Wall Th 0.4

Reference: Thera Akrotiri: Merrillees 2001, 92 Fig. 4

Note: White Slip I body sherd

TZ 005435-006

Area I; Square AF 116; Context 3523

Stratum: 14 a

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with round-

ed lip

Decoration: Dark brownish painting; net pattern; chain of small dots; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 18; Wall Th 0.4

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 006136-005

Area I; Square AS 121; Context 4319

Stratum: 10

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; ladder pattern; chain of small circles; irregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 18; Wall Th 0.4

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Rim sherd with parts of handle

TZ 006251-001

Area I; Square AT 122; Context 4215

Stratum: 11 (also 10)

Type: Hemispherical bowl

Rim Form: Slightly outwardly curved thickened rim, flat on the top with rounded lip

Decoration: Dark brownish painting; washed net pattern; unregular row of small dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 18; Wall Th 0.4

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 006572-003(1)/(2)

Area I; Square AH 116; Context 3335

Stratum: 14 a

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting, net pattern; first net pattern framed by chain of small dots; irregular row of small dots at the rim

Figure Reference: Fig. 2.579; Pl. 2.3, no. 3.
Dimensions: Est. D (max.) 18; Wall Th 0.4
Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4
Note: Two joining sherds



Fig. 2.579 Two joining sherds of a White Slip bowl, TZ 006572-003(1)/(2) (Source: BAI/GPIA).

TZ 006586-099

Area I; Square AP 120; Context 4624
Stratum: 10
Type: Hemispherical bowl
Rim Form: —
Decoration: Brownish painting; net pattern; ladder pattern(?)
Figure Reference: —
Dimensions: Wall Th 0.7
Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4
Note: Body sherd

TZ 006645-017

Area I; Square AP 121; Context 4262
Stratum: 10
Type: Hemispherical bowl
Rim Form: —
Decoration: Dark brownish painting; net pattern
Figure Reference: —
Dimensions: Wall Th 0.4
Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr.

1. 2. 4
Note: Body sherd

TZ 006665-011

Area I; Square AQ 121; Context 4712
Stratum: 10
Type: Hemispherical bowl
Rim Form: Tapered rim, flat on the top with rounded lip
Decoration: Brownish painting; net pattern; chain of small circles; irregular row of small dots at the rim
Figure Reference: —
Dimensions: Est. D (max.) 18; Wall Th 0.5
Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3
Note: Rim sherd

TZ 006722-003

Area I; Square AQ 122; Context 4731
Stratum: 10
Type: Hemispherical bowl
Rim Form: —
Decoration: Dark brownish painting; net pattern
Figure Reference: —
Dimensions: Wall Th 0.5
Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3
Note: Body sherd

TZ 006749-009

Area I; Square AP 121; Context 4715
Stratum: 10
Type: Hemispherical bowl
Rim Form: —
Decoration: Brownish painting; ladder pattern
Figure Reference: —
Dimensions: Wall Th 0.35
Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3
Note: Three joining body sherds

TZ 006787-031

Area I; Square AP 120; Context 4758
Stratum: 12
Type: Hemispherical bowl
Rim Form: —
Decoration: Black painting; ladder pattern

Figure Reference: —

Dimensions: Wall Th 0.45

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 006787-033

Area I; Square AP 120; Context 4758

Stratum: 12

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; ladder pattern

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 020012-007

Area I; Square AP 122; Context 4896

Stratum: 11

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Tall ad-Dab'a (Avaris): Bietak – Hein 2001, 184 Nr. 7945; Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 020696-031

Area I; Square AP 122; Context 5380

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting; net pattern; chain of small circles

Figure Reference: —

Dimensions: Est. D (max.) 16 cm; Wall Th 0.4 cm

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Nicosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3

Note: Rim sherd

TZ 021105-009

Area I; Square AU 120; Context 5793

Stratum: Surface find

Type: Hemispherical bowl

Rim Form: —

Decoration: Brownish painting, net pattern

Figure Reference: Fig. 2.580; Pl. 2.3 no. 6

Dimensions: Wall Th 0.4

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd with parts of broken handle

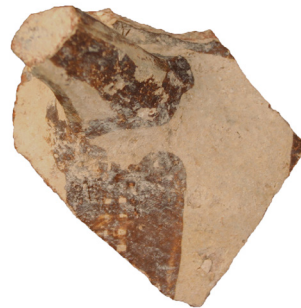


Fig. 2.580 Sherd of a White Slip bowl with parts of a broken handle, TZ 021105-009 (Source: BAI/GPIA).

TZ 021196-001

Area I; Square AT 120; Context 5874

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; net pattern

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Tall Kazel: Badre 2006, 69–71 Nr. 3; Tall Abū al-Ḥaraz: Fischer 2006, 216 Fig. 14 a. b

Note: Body sherd

TZ 021290-011(1)/(2)

Area I; Square AT 122; Context 5908

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Brownish painting, net pattern; chain of small circles; irregular row of dots at the rim

Figure Reference: Pl. 2.3 no. 1

Dimensions: Est. D (max.) 16; Wall Th 0.3

Reference: Maroni: Cadogan 2001, 82 Fig. 12; Ni-

cosia: Aloupi – Perdikatsis – Lekka 2001, 16. 17 Nr. NIC-3; Tall Kazel: Badre 2006, 69–71 Nr. 3.
Note: Two joining rim sherds, one with parts of broken handle



Fig. 2.581 Two joining sherds of a White Slip bowl with parts of a broken handle, TZ 021290-011(1)/(2) (Source: BAI/GPIA).

TZ 021318-002

Area I; Square AS 122; Context 5898

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting; net pattern; ladder pattern; irregular row of dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 16; Wall Th 0.4

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Rim sherd

TZ 021327-023

Area I; Square AT 123; Context 5968

Stratum: 13

Type: Hemispherical bowl

Rim Form: —

Decoration: Black painting; net pattern; ladder pattern; irregular row of dots

Figure Reference: —

Dimensions: Wall Th 0.3

Reference: Byblos: Salles 1980, Pl. VIII 8. 9 (Inv. Nos. 346. 79); Tall Kazel: Badre 2006, 69–71 Nr. 1. 2. 4

Note: Body sherd

TZ 021547-001

Area I; Square AT 122; Context 6127

Stratum: 13

Type: Hemispherical bowl

Rim Form: Tapered rim, flat on the top with rounded lip

Decoration: Black painting, net pattern with elongated horizontal lines; row of dots at the rim

Figure Reference: —

Dimensions: Est. D (max.) 18; Wall Th 0.4

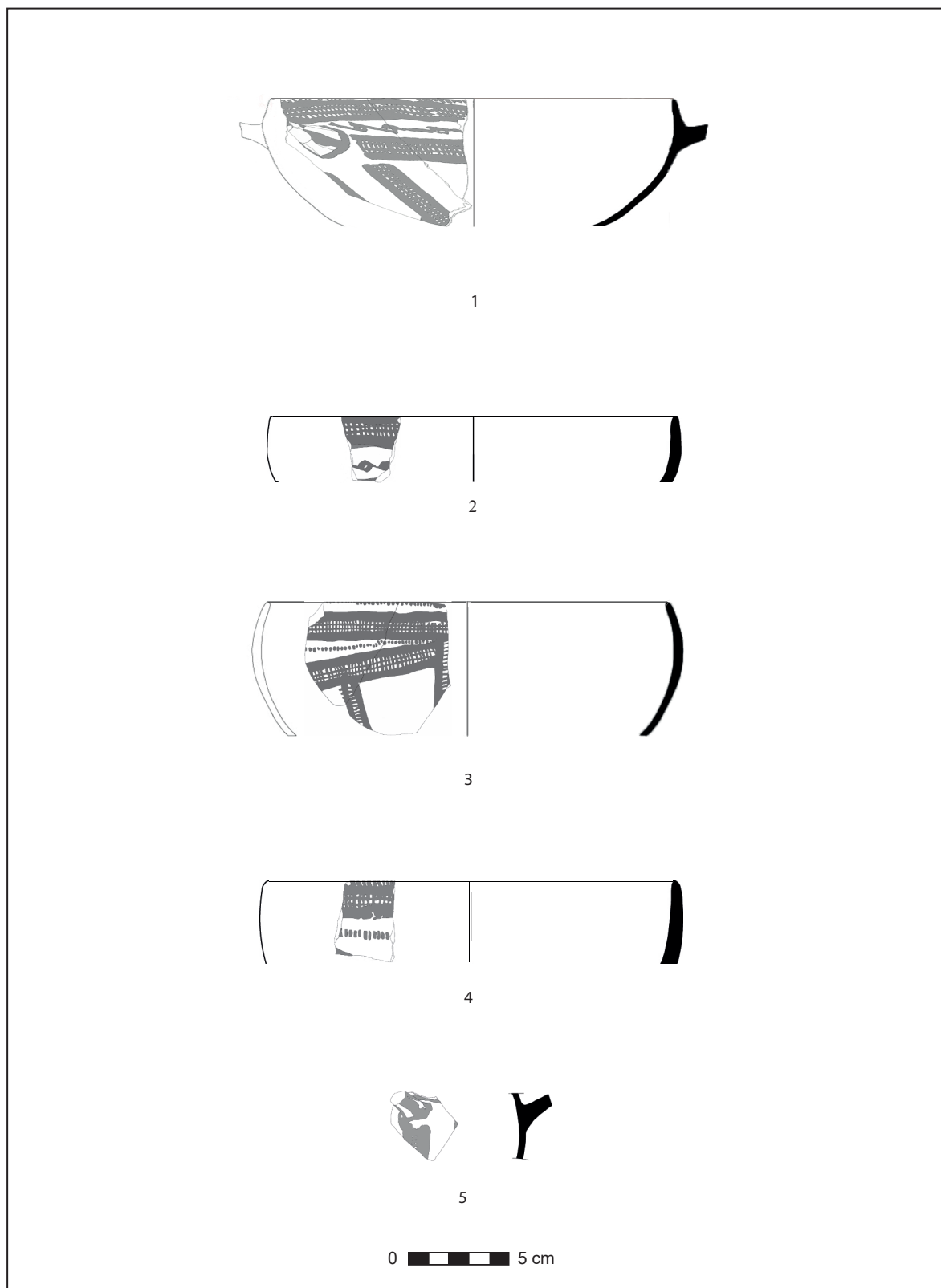
Reference: Loud 1948, Pl. 138, 22

Note: Rim sherd with broken parts of handle at the break

Plate 2.3: Cypriote imports from Tall Zirā‘a – White Slip II Ware

No.	Type	Inv. No.	Square	Context	Date
1	Hemispherical bowl	TZ 021290-011(1)/TZ 021290-011(2)	AT 122	5908	LB
2	Hemispherical bowl	TZ 003688-019	AO 119	2088	LB
3	Hemispherical bowl	TZ 006572-003(1)/TZ 006572-003(2)	AH 116	3335	LB
4	Hemispherical bowl	TZ 003618-001	AP 118	2010	LB
5	Hemispherical bowl	TZ 021105-00	AU 120	5793	LB

Plate 2.3: LB Cypriote imports on Tall Zirā'a – White Slip II Ware



2.3.8. Catalogue of Ceramic Finds

by A. Schwermer

2.3.8.1. Introduction

Stratum 14, with its four phases of modifications (d to a) follows the architectural structure of Stratum 16²⁹⁴, built upon the backfill layer of Stratum 15. The characteristic Late Bronze Age pottery collection can be found in all its diversity and at times opulent decorations²⁹⁵.

The basis for the following discussion needs no further explanation, since it was discussed in detail in the introduction to *Chap. 1.3.5.* of this volume.

The number of complete or reconstructible vessels in Stratum 14 is also very low and is under two percent of the total amount of sherds. Predominantly, bowls and smaller vessels survived and are more or less complete.

Stratum	Vessels			Proportion of total amount of sherds ²⁹⁶
	(almost) complete	50 % preserved	rim to bottom	
14	22 (7 bowls, 1 krater, 3 cooking vessels, 1 baking tray, 3 jars/ jugs, 4 miniature vessels, 3 others)	12 (2 bowls, 2 jars/ jugs, 1 bottle/ flask, 2 oil lamps, 1 miniature vessel, 4 others)	17 (12 bowls, 2 baking trays, 3 oil lamps)	1.79 %

Tab. 2.30 Completely or partially preserved vessels in Stratum 14 (Source: Schwermer).



Fig. 2.582 Miniature bowl from Stratum 14, TZ 020820-001 and TZ 020820-002 (Source: BAI/GPIA).



Fig. 2.583 Reconstructed bottle from Stratum 14, TZ 002886-001 (Source: BAI/GPIA).

294 Cf. *Chap. 2.2.*

295 See in particular the so-called Orpheus Jug with its rich iconography (cf. *Chap. 2.2.4.11.* with *Fig. 2.329–2.331*).

296 In accordance with *Tab. 2.31*.

2.3.8.2. The Types of Vessels

Distribution

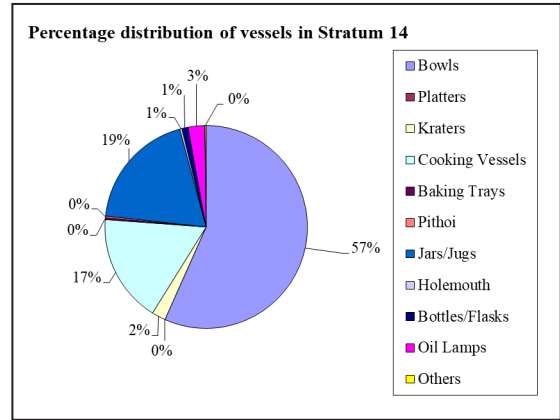
There are over 2,800 rim sherds from Stratum 14 and the analysis of each rim indicates a high probability of each find was in their original stratigraphic context. These rims sherds are spread over the following types of vessels:

- Bowls
- Platters
- Kraters
- Cooking vessels
- Baking trays
- Pithoi
- Jars/jugs²⁹⁷
- Holemouth
- Bottles/flasks
- Oil lamps
- Others

The following table provides the number of rims found in Stratum 14 for each type of vessel.

	Stratum 14
Bowls	1,617
Platters	---
Kraters	63
Cooking Vessels	493
Baking Trays	8
Pithoi	8
Jars/Jugs	544
Holemouth	10
Bottles/Flasks	28
Oil Lamps	76
Others	6
Σ	2,853

Tab. 2.31 Numerical distribution of the rim sherds to the different types of vessels in Stratum 14 (Source: Schwermer).



Graph 2.1 Percentage distribution of the rim sherds to the different types of vessels in Stratum 14 (Source: Schwermer).

The large proportion of **bowls** in the overall number of vessels in Stratum 14 is 58 % and is significantly higher than the bowl finds in Stratum 16 (the transitional stratum of Middle/Late Bronze Age) which contained only 44 %²⁹⁸. These findings also correspond to a smaller proportion of bowls, only 20 %, discovered in the strata of the Middle Bronze Age²⁹⁹.

Stratum 14 contains a much lower proportion of **kraters** (2%) than the older Stratum 16 (7 %). This same level of reduction in kraters was also observed at Tall al-Ḥiṣn (Beth Shean)³⁰⁰. Based on this information, the larger bowls potentially took over the function of kraters or a change in dietary habits occurred which could be reflected in a change within the variety of vessels.

298 Cf. *Chap. 1.3.5, Graph. 1.1*. To compare: On the Tall al-Ḥiṣn (Beth Shean) the proportion of bowls in Late Bronze Age II is at around 61 %, corresponding almost exactly with the Tall Zīrā'a. For the strata of Late Bronze Age I the proportion is on the average also over 60 % (Mullins, 2007, 391 Table 5.1). The low amount for the transitional Stratum 16 of the Tall Zīrā'a stems from the impact of the low representation of bowls in the late Middle Bronze Age. Counting here—at least half—of the sherds that cannot be clearly assigned either to Middle or Late Bronze Age, to the latter time period (cf. *Chap. 1.3.5, Graph 1.2*) the Tall Zīrā'a also reaches a bowl proportion of 60 percent.

299 Cf. Schwermer 2019c, 354, Graph 3.1.

300 Here the proportion of kraters in the Late Bronze Age IA stratum lies at just over 6 %, in Late Bronze Age IIA it is just under 3 %. (Mullins 2007, 391, Table 5.1).

297 About differentiating closed vessels cf. "Dimensions".

The proportion of **cooking ware** in Stratum 14 corresponds exactly with that of Stratum 16 (17 %) ³⁰¹ and is again significantly lower than during the earlier periods ³⁰².

With the considerable increase in the proportion of bowls in Late Bronze Age II, another decrease is observed in the proportion of **closed vessel types** (**jars/jugs** in particular) from 28 % in Stratum 16, to 19 % in Stratum 14. This was already an imminent development in the Middle Bronze Age strata ³⁰³.

Dimensions

The two following tables (*Tab. 2.32* and *2.33*) present the overall measurements for the wall thicknesses and the opening size for each of the vessel types identified in Stratum 14. In order to account for possible measurement errors, an 80 % range in the measurements was also included, thus the large majority of the vessels can be found.

As expected, the wall thickness of the vessel types found in Stratum 14 corresponds almost exactly to sherd finds from Stratum 16 ³⁰⁴. However, the exception are the cooking vessels, which are on average 2 mm thicker in Stratum 16. This can be explained as the the coarser, Middle Bronze Age cook ware as still in use and found in this stratum ³⁰⁵.

Stratum 14 Vessel Types	Wall Thickness (in cm)		
	Extreme Values	80 % of the Vessels	Average ³⁰⁶
Bowls	0.20–1.70	0.40–0.90	0.7
Kraters	0.50–1.70	0.70–1.30	0.9
Cooking Vessels	0.35–1.40	0.50–0.90	0.7
Baking Trays	0.80–2.30	0.80–2.30	1.6
Pithoi	1.00–1.80	1.00–1.80	1.4
Jars and Jugs	0.90–1.70	0.40–0.90	0.6
Holemouth	0.50–1.20	0.70–1.00	0.8
Bottles and Flasks	0.20–0.90	0.30–0.50	0.4

Tab. 2.32 Wall thickness of the different types of vessels in Stratum 14 (Source: Schwermer).

The opening diameter of individual vessel types increases, on average, from Late Bronze Age I to Late Bronze Age II, while wall thickness remains the same. This can be cautiously explained by refinements in pottery vessel production methods. Producing large vessels with relatively thin walls required strength in their structure as it relates to the purpose of the vessel. This presented the major challenge for potters of the time and was especially true for cooking pots that were exposed to extraordinarily high temperatures in their usage over open fires ³⁰⁷.

301 This proportion is clearly above that of Tall al-Ḥiṣn (Beth Shean), where the proportion is on average only at around 7 % (Mullins 2007, 391, Table 5.1).

302 Cf. Schwermer 2019a, Chap. 1.2.2.5, Graph 1.1; Schwermer 2019b, Chap. 2.2.2.5, Graph. 2.1; Schwermer 2019c, Chap. 3.2.2.5, Graph. 3.1.

303 Cf. Schwermer 2019c, Chap. 3.2.2.5, 354.

304 Cf. *Chap. 1.3.5, Tab. 1.17*.

305 In the larger vessel groups (with the exception of cooking pots) the wall thickness corresponds, with a slight deviation

for the kraters, to those of the Middle Bronze Age pottery (cf. Schwermer 2019c, Chap. 3.2.2.5, 354 f.). For the Tall al-Ḥiṣn (Beth Shean) Mullins states that “the LB potters made near universal use of less plastic clay. Thus, while certain shapes may recall MB vessels, the fabric was generally coarser and the vessel walls thicker (...)” (Mullins 2007, 393).

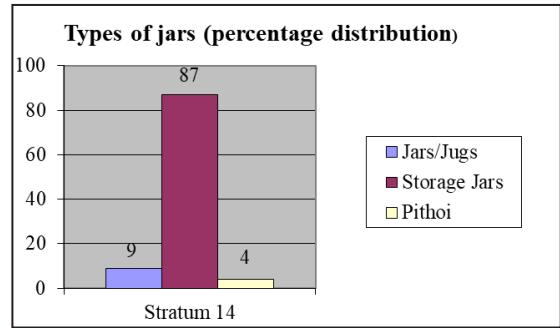
306 Rounded mean value of all sherds.

307 Cf. Schwermer 2014, Chap. 5; Chap. 2.3.10.

Stratum 14 Vessel Types	Opening diameter (in cm)		
	Extreme Values	80 % of the Vessels	Ave- rage ³⁰⁸
Bowls	6–42	14–30	21.4
Kraters	12–60	18–40	29.1
Cooking Vessels	12–55	20–32	26.4
Baking Trays	30–40	30–40	30.2
Pithoi	22–44	24–30	28.3
Jars and Jugs	4–40	10–18	13.0
Holemouth	16–30	16–30	21.9
Bottles and Flasks	1–9	2–8	3.8

Tab. 2.33 Opening diameters of the different types of vessels in Stratum 14 (Source: Schwermer).

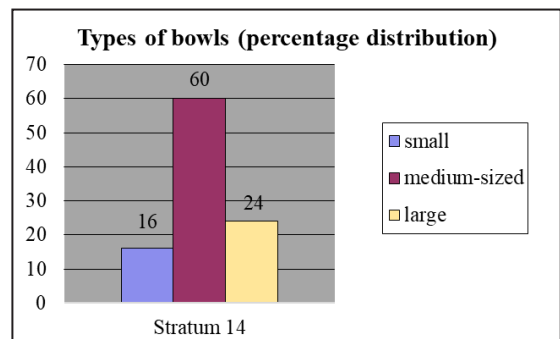
With regard to the **jars**, the question arises whether their different forms of appearance, along with the associated specific functions, can be determined simply by looking at their respective openings. Using the criteria established for the Middle Bronze Age jars and jugs from the Tall al-Ḥiṣn (Beth Shean)³⁰⁹, the possible distribution of jar types within Stratum 14 from the Tall Zirā'a are shown in *Graph 2.2*.



Graph 2.2 Percentage distribution of the different jar types according to the criteria from Tall al-Ḥiṣn (Beth Shean) in Stratum 14 (Source: Schwermer).

The successive increase of storage vessels³¹⁰, already detailed for the preceding strata, is reinforced again in Stratum 14. Here, their proportion is as high as 87 %. This particular result depicts the proportional decrease of large storage vessels (pithoi) while the percentage of smaller jars and jugs remains almost unchanged.

Categorising the **bowls** according to the criteria³¹¹ laid out in *Chap. 1.3.5* yields the following result for Stratum 14:



Graph 2.3 Percentage distribution of the different bowl types in Stratum 14 of Tall Zirā'a according to the criteria specified above (Source: Schwermer).

308 Rounded mean value of all sherds.

309 According to Maeir 2007, 264 f.:

Type of vessel	Diameter (in cm)	Additional Criterion
Pithos	> 15	thick vessel body
Storage Jar	9–14	
Jar/Jug	< 7–8	thin vessel wall

On the possibilities and limitations of this approach, cf. in more detail Schwermer 2019c, Chap. 3.2.2.5.

310 Cf. *Chap. 1.3.5* with *Graph 1.4*.

311 Cf. *Chap. 1.3.5* with *Graph 1.5*.

The distribution of bowls in Stratum 14 is consistent with the results for this stratum and differs from that of earlier strata³¹². The amount of large bowls or basins remains almost the same while the percentage of medium sized bowls rose again, however, “at the expense of” the smaller bowls. This may be connected to a change in dietary habits during the Late Bronze Age.

Among the over 1600 rim sherds belonging to bowls found in Stratum 14, 93 are identified as carinated bowls. The number of rim sherds for bowls represent 5.8 % of the collection and thus a higher proportion than found in Stratum 16³¹³. Although the actual proportion was presumably higher, these numbers show that carinated bowls were not simple pottery for daily use, but had a specific function and were potentially not available to everybody. Their finer design, in clay composition and surface details, supports this theory. While bowls of this type showed at times very developed carinated bowls (Fig. 2.85; 2.584) in the Middle Bronze Age and Late Bronze Age I, this is often only hinted at and sometimes only visible on the outside by Late Bronze Age II³¹⁴. This development may be connected to the challenges in production but might also have practical reasons: sharp carination is very prone to breakage, as well as it being difficult to clean such bowls.



Fig. 2.584 Reconstructed carinated bowl from Stratum 14, TZ 004417-011 (Source: BAI/GPIA).

312 Cf. Chap. 1.3.5 with Graph 1.5.

313 Cf. Chap. 1.3.5., 166.

314 Cf. Amiran 1969, Plates 27 and 39.

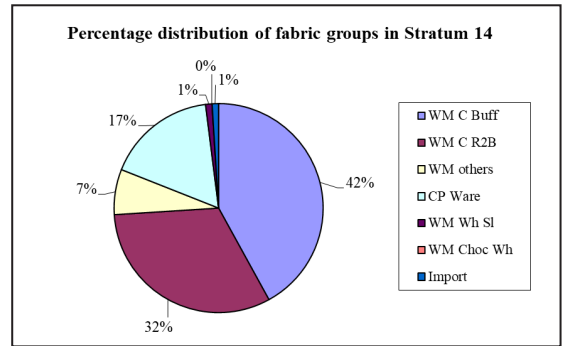
315 Schwermer 2019a, Chap. 1.2.2.5; 2019b, Chap. 2.2.2.5; 2019c, 3.2.2.5.

316 Cf. Chap. 1.3.5, Tab. 1.22.

317 The ware groups are here only defined by their clay and potentially their surface details (slip). Common wares can

Ware Categories/Fabric Groups

The types of pottery appearing in Stratum 14 have been essentially described in Vol. II³¹⁵ and in Chap. 1.3.6 they have been listed again, supplemented by the types of imported pottery³¹⁶. Thus they will not be listed separately in this location.



Graph 2.4 Percentage distribution of fabric groups in Stratum 14 (reduced version) (Source: Schwermer).

Stratum 14 also sees the common ware³¹⁷ as the dominating type of wares; it lies at 74 percent, which is still a few percentage points less than in Stratum 16 (80 percent)³¹⁸. As in Stratum 16, the bright pottery (buff) outweighs the red-brown (red to brown), although not nearly as clearly delineated as in Stratum 16 (i.e. 42 % versus 32 % in Stratum 14 as compared to 57 % versus 23 % in Stratum 16)³¹⁹. In Stratum 14, the quantity of rarer types of vessel and the very small proportion of imported pottery are more significant in number than they were in Stratum 16. This points towards lively trade relationships between the Levant, Mycenae, and Cyprus in the Late Bronze Age³²⁰.

thus also show paintings, making them outstanding (see 175–180).

318 For the Late Bronze Age strata at Tall al-Ḥiṣn (Beth Shean) the proportion of common wares is 68 %. (Mullins 2007, 392).

319 Cf. Chap. 1.3.5 with Graph 1.6.

320 Cf. Chap. 2.3.6. and 2.3.7.

Ware type categories

Bowls in Stratum 14 also show the broadest variation amongst the vessel shapes and ware types, followed closely by the jars/jugs. Here, 88 % are made of beige and reddish everyday ware, however, the proportion of the beige ware is 10 % higher than that of the reddish ones while in Stratum 16 the difference was nearly 40 %³²¹.

The **kraters** of Stratum 14 are, apart from some exceptions of the finer ‘Chocolate-on-White’ ware, completely made up of the two main ware types, the beige and reddish clays with 57 % created from the brighter clay. This makes the numerical ratio again, less clearly divided than in Stratum 16, where over 71 % of the kraters were made of the brighter clay³²².

The few examples of **pithoi** show an exactly equal amount of brighter and reddish clay. Among the **jugs**, the brighter ones dominate again with over 50 %, however, not nearly reaching the percentage of those in Stratum 16 (73 %)³²³. All remaining ware types reach percentages of between 0 and 2.

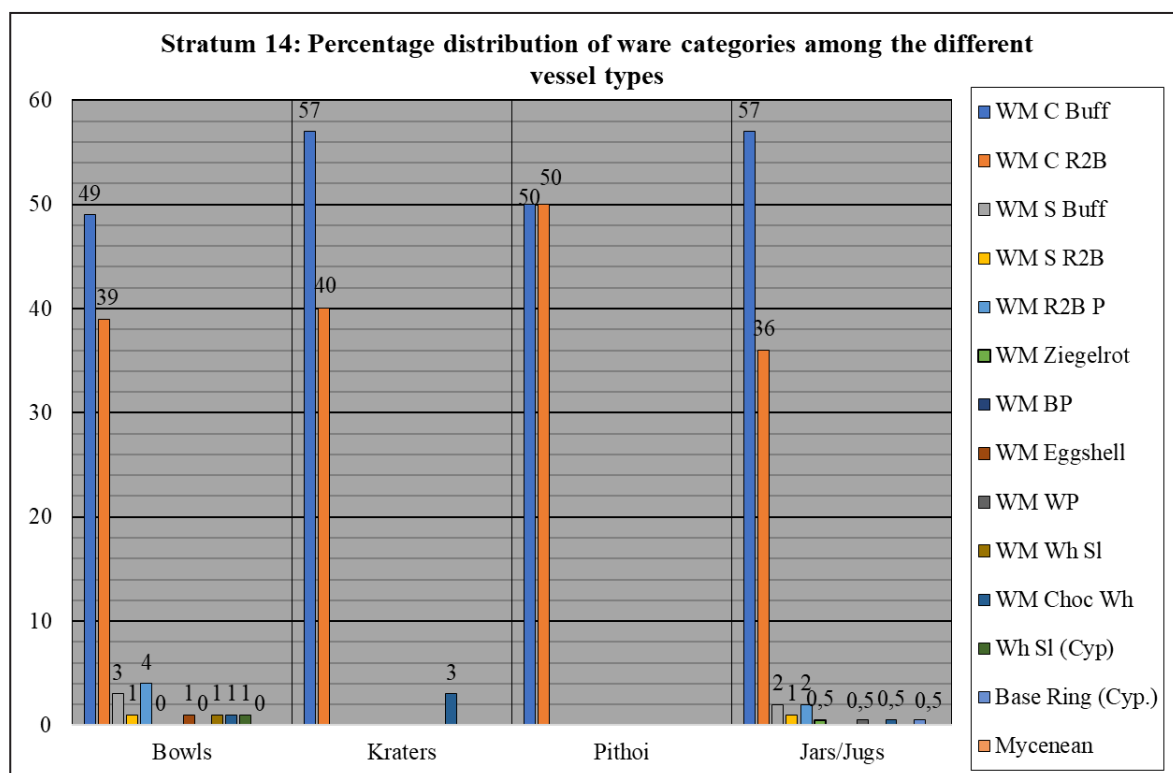
Ware type	Stratum 14			
	Bowls	Kra- ters	Pithoi	Jars/ Jugs
WM C Buff	790	34	4	308
WM C R2B	629	24	4	193
WM S Buff	48			12
WM S R2B	23			6
WM R2B P	59			12
WM Brick red	4			2
WM BP	2			1
WM Egg-shell	13			
WM WP	2			2
WM Wh Sl	16			
WM Choc Wh	13	2		3
Wh Sl (Cyp)	8			
Base Ring (CYP)	3			2
Mycenaean	1			1

Tab. 2.34 Numerical distribution of ware categories among the different types of vessels in Stratum 14 (Source: Schwermer).

321 Cf. Chap. 1.3.5 with Graph 1.7.

322 Cf. Chap. 1.3.5 with Graph 1.7.

323 Cf. Chap. 1.3.5 with Graph 1.7.



Graph 2.5 Proportional distribution of ware categories among the different vessel types in Stratum 14 (Source: Schwermer).

The cooking pots are not included in these overviews as they were previously discussed as functioning in a “special role.”³²⁴ The typical cooking pots of the Late Bronze Age are all made of specific cooking ware (CP 3)³²⁵. They are treated in their own chapter in this volume and referenced here³²⁶.

Decoration

As already described in the chapter on the pottery finds of Strata 16 and 15, the use of carvings, impressions and plastic applications decreases significantly in the Late Bronze Age compared to their distribution in the Middle Bronze Age. They are

only present as grooves on vessel rims and predominantly as so called “pot marks” on handles of jars³²⁷. Decorations appear mostly in the form of paint³²⁸ on bowls, kraters and jars/jugs. Cooking pots are never painted due to their function and usage.

The following overview describes the proportion of painted rim sherds out of the total number of rim sherds found of the vessel types named above. It is important to keep in mind that these vessel might have been painted below the breakage point. Presumably, the percentage of painted vessels could be higher than what has been established here³²⁹. For comparative purposes, the numbers of painted handles and wall sherds were also determined.

³²⁴ See *Chap. 1.3.5*.

³²⁵ Cf. *Chap. 1.3.5* with *Tab. 1.22*.

³²⁶ Cf. *Chap. 2.3.9*.

³²⁷ Cf. also Mullins 2007, 395. Mullins about a potential cause: „This may be due in part to the increased use of leaner clay during the Late Bronze Age (...)”.

³²⁸ Cf. on this also *Chap. 2.3.6*.

³²⁹ Cf. the significantly higher values at Tall al-Ḥiṣn (Beth Shean) in Mullins 2007, 395 with Table 5.3. Mullins does admit however that “decorated sherds were always kept during sorting and are therefore probably over-represented in the database.”

Vessel type	Stratum 14 ³³⁰	
	Amount	Percentage
bowls	40 (1,617)	2.5
kraters	7 (165)	4.2
jars/jugs	36 (544)	6.6
handles	50 (1,423)	3.6
body sherds	418 (13,852)	3.0

Tab. 2.35 Amount and proportion of painted rim sherds of bowls, kraters and jars/jugs as well as handles and body sherds out of the overall amount of vessel sherds (in brackets) (Source: Schwermer).

As in Stratum 16³³¹, the proportion of painted vessels in Stratum 14 is the highest among the jars/jugs, followed by kraters and bowls. Overall, less sherds are painted proportionally than in the transitional period from the Middle to Late Bronze Age. The proportion of painted handles are clearly under the percentage of painted jugs, the amount of body sherds are about half a percent under that of all painted rim sherds.

The majority of paintings consists of simple horizontal stripes or of concentric circles (on the inside of bowls and on pilgrim's bottles). These stripes can be of varying thickness and are usually painted in red, red-brown or black. In the Late Bronze Age both colours also often appear together (bichrome)³³². Another motif found often on kraters and jugs are waves, often in combination with simple lines³³³. Further shapes are triangles, chequer, grid and ladder patterns. The same conditions as above apply to the colours here.

330 Without imported wares.

331 Cf. *Chap. 1.3.5* with *Tab 1.24*.

332 Cf. also Mullins 2007, 395: The most popular colours during LB I – IIA are bichrome red and black (especially in LB I) and monochrome red (increasingly popular in LB II)".

333 Cf. also Mullins, 2007, 395: „The most common painted motif is horizontal bands, usually on the interior of an open vessel (...), occasionally on the exterior (...), but rarely on both (...). Storage jars often decorated with horizontal bands. This motif was occasionally accompanied by dots



Fig. 2.585a TZ 002990-001 (Source: BAI/GPIA).



Fig. 2.585b TZ 001605-001 and TZ 001605-002 (reconstructed) (Source: BAI/GPIA).

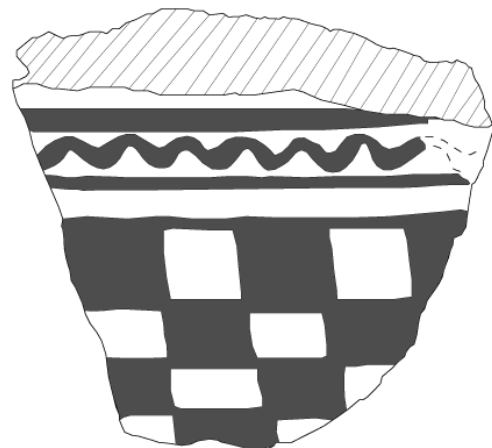
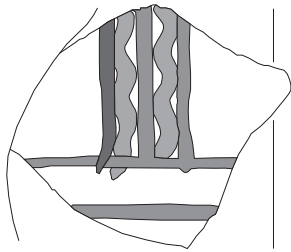


Fig. 2.585c TZ 0021732-001 (Source: BAI/GPIA).

(...), the lattice (...), the ladder (...), the downward-pointing triangle (...) or combinations. The second most common painted motif is the framed wavy line on a vertical or horizontal axis".



TZ 020439-009



Fig. 2.585d TZ 020439-009 (Source: BAI/GPIA).

Fig. 2.585f TZ 004454-013 (Source: BAI/GPIA).



Fig. 2.585e TZ 003795-126 (Source: BAI/GPIA).

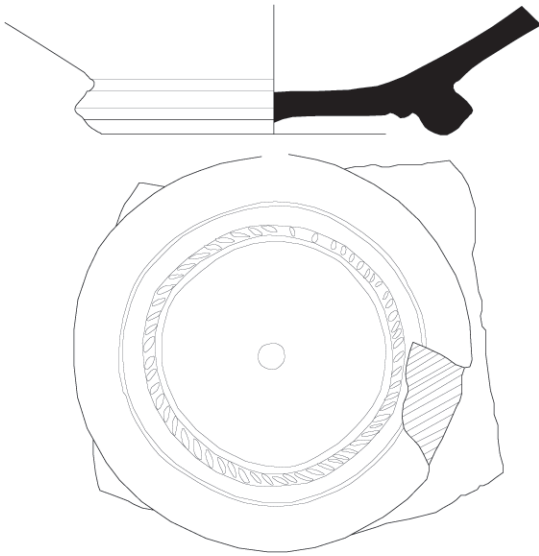
In light of the scarcity of paintings with figurative or floral motives, the almost entirely reconstructed, so-called “Orpheus-Jug” found in Stratum 14 is an unparalleled rarity with its pictorial programme showing numerous animals and a lyra player. It is described in more detail elsewhere (Fig. 2.218–2.223; 2.586)³³⁴.



Fig 2.586 “Orpheus-Jug” after reconstruction and depiction of the motif, TZ 002989-001, TZ 002962-003 to -008 (Source: BAI/GPIA).

334 Cf. Chap. 2.2.4.11. 329–331 with Fig. 2.218–2.223; Gropp 2013, 251–254 and Soennecken 2017, 295–297.

A specific type of embellishment is the carefully crafted bottom of a jug or krater, showing a small bulge within the pedestal ring, with circumferential diagonal carvings (TZ 020563-002, *Fig. 2.587*).



The function of this (basically invisible) decoration is not clear. It is also unclear whether or not this sherd ended up in this layer due to shifts in the soil, since this kind of decoration usually points to the Middle Bronze Age.



Fig. 2.587 Bottom of a jug/krater with circumferential carvings, TZ 020563-002 (Source: BAI/GPIA) .

Another sherd shows an appliqué in the shape of a snake (TZ 020820-009, *Fig. 2.57*; 2.588). Snakes have appeared since the Chalcolithic era and often in religious contexts that usually symbolises the regeneration and/or the earth³³⁵. Due to the burn marks on the inside of this sherd and comparative pieces, this jug might have been part of an incense vessel³³⁶.



Fig. 2.588 Fragment of a snake application on an incense vessel, TZ 020820-009 (Source: BAI/GPIA).

335 Cf. Schwermer 2019c, Chap. 3.2.2.5, 363 with Fig. 3.153, and in this volume *Chap. 1.3.5*, 177 with Fig. 1.178.

336 Cf. for this Gropp 2013, 194 f. See also the snake depiction on the “Orpheus Jug”, *Fig. 2.586*.

Small bar-handles appear occasionally at the rim of bowls (Fig. 2.90 and 2.589), showing the fluent transition from a functional application to a merely decoration. Amiran points out these might simply be imitations of metal objects³³⁷.



Fig. 2.589 Small bar-handle of a bowl with a rim diameter of c. 25 cm, TZ 004353-017 (Source: BAI/GPIA).

Other ceramic vessels and objects

Next to the household vessels described above, Stratum 14 contains remains of 76 oil lamps which, in contrast to bowls and vessels, show a predominantly reddish-brown clay colour (WM C R2B)³³⁸. Also found were the remains of five pyxes, seven chalices and five baking trays³³⁹. A particularly remarkable find is a goblet (TZ 004443-001, Fig. 2.505 and 2.590) because it is one of the few completely preserved vessels and it was found in the direct vicinity of multiple cylinder seals, beads, faience fragments, a scarab and a silver amulet, all of which might have been its content³⁴⁰.



Fig. 2.590 Goblet, TZ 004443-001 (restored) (Source: BAI/GPIA).

337 Amiran 1969, 125.

338 54 % compared to 46 % with beige (buff) colouring.

339 Detailed description of baking trays cf. *Chap. 2.3.10* in this volume.

340 Cf. also Gropp 2013, 235, and Soenneken 2017, 321.

Further, six miniature vessels, four in the shape of bowls³⁴¹ (compare *Fig. 2.582*) and two in the shape of goblets (TZ 002935-001, *Fig. 2.73* and 2.592, and TZ 004510-032, *Fig. 2.591*) were also found. One small goblet shows an incomplete coating, it might have been part of a kernos or zoomorphic vessel, but might also have been part of “a carinated chalice with inner cup.”³⁴²



Fig. 2.591 Miniature goblet from Stratum 14, TZ 004510-032 (Source: BAI/GPIA).

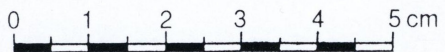
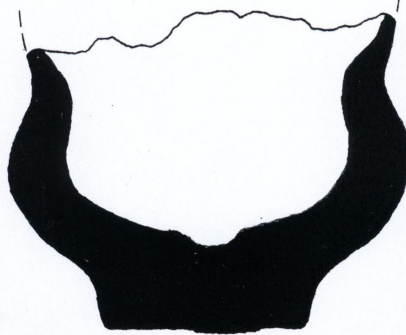
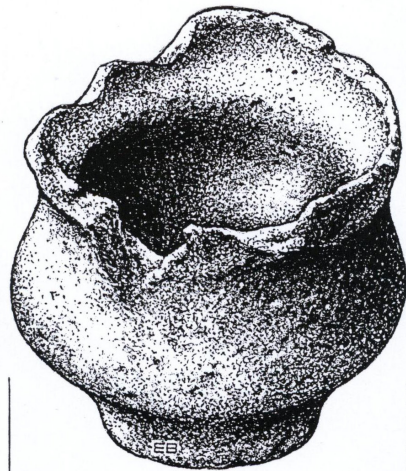


Fig. 2.592 Miniature goblet from Stratum 14, TZ 002935-001 (Source: BAI/GPIA).

341 Cf. Gropp 2013, 204–206. 236.

342 Soenneken 2017, 193; Gropp 2013, 237.

Like a miniature bowl with a handle or shaft appears another, rather unusual find (TZ 003993-011, *Fig. 2.593*). Using modern understanding as a basis for defining this find, it might be a type of ladle.



Fig. 2.593 Miniature vessel reminiscent of a ladle, TZ 003993-011 (Source: BAI/GPIA).

One individual handmade piece continues to provide a puzzle as it resembles most closely an oval-shaped lid with a handle (TZ 005478-008, *Fig. 2.594*). The latter is pierced in the middle, potentially serving to mount or attach it to something. Originally the piece, of which half is preserved, measured a length of c. 12 cm, the width is slightly over 7 cm. The cross section shows that the bottom is bend at both edges, which contradicts the idea of a lid. Presumably, this piece is a tool or kitchen utensil to smoothen or press something in or out, and it was not part of a vessel at all. For example, plant fibres might have been prepared for textile production with this item. Another argument for this hypothesis is that no vessel from the period is known that would fit such a lid.

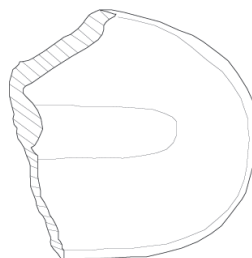
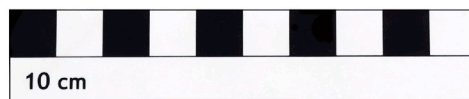
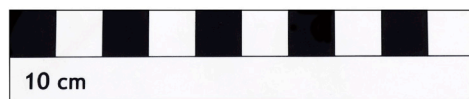


Fig. 2.594 Lid or tool, TZ 005478-998 (Source: BAI/GPIA).

Another unusual find, because it is rather irregular, is a piece which could be a part of a figurine or a vessel in the shape of an animal (TZ 002924-003, *Fig. 2.173* and 2.595). It could be the foot of an animal or the neck, opening towards the body of the vessel. In this case the carvings on the smooth coating can be interpreted as a mane. Since the clay sherd shows the base of a handle, it might have been an aquamanile which often serves cultic purposes³⁴³.



Fig. 2.595 Foot or neck of a zoomorphic vessel, TZ 002924-003 (Source: BAI/GPIA).

Stratum 14 also provides three additional figurine clay finds. These are two theriomorphic figurines (TZ 015074-001, *Fig. 2.156* and 2.596, and TZ 015437-001, *Fig. 2.150* and 2.597), which were found near each other and might represent a bull. Important features are missing, like the horned head, making a determination somewhat unclear³⁴⁴. Animal figurines could served as totems, toys, or had symbolic meaning³⁴⁵, the bull being the symbolic animal of the weather god³⁴⁶.



Fig. 2.596 Theriomorphic figurine presumably representing a bull, TZ 015437-001 (Source: BAI/GPIA).



Fig. 2.597 Theriomorphic figurine presumably representing a bull, TZ 015074-001 (Source: BAI/GPIA).

The third figure is the middle-part of a figurine showing a naked female body, with arms hanging down to the thighs (TZ 008350-001, *Fig. 2.190* and 2.598). This type of depiction is very common in the Levant during the Late Bronze Age and Iron Age. Presumably, this find represents an embodiment of Asherah³⁴⁷.

343 Gropp 2013, 233; Soenneken 2017, 265.

344 Gropp 2013, 211, 214; Soenneken 2017, 248–250).

345 Gropp 2013, 211.

346 Gropp 2013, 345 f. 372, among others.

347 Gropp 2013, 226. Soenneken (2017, 276) sees a dating to the Iron Age as more plausible for the figurine found in Stratum 14. .



Fig. 2.598 Fragment of a female figurine, TZ 008350-001 (Source: BAI/GPIA).

Another category of pottery finds in all periods is the secondarily production of utensils made from broken and unusable clay vessels, which makes them also waste products. These are flat, round ceramic discs, processed more or less carefully and potentially used as lids, stoppers or counting stones³⁴⁸. Some of these ceramic discs have a hole in the middle, making their function as spindle whorls or as loom weights (in the respective sizes) more plausible (Fig. 2.239 and 2.599). Ceramic discs with two holes point towards a usage as buttons (Fig. 2.79 and 2.600). Additionally, the bottom and lower part of a broken jug was sometimes repurposed as a funnel by drilling a hole in it (Fig. 2.25 and 2.601). Stratum 14 shows 107 ceramic discs, two spindle whorls, three loom weights and two buttons out of

348 On the potential function of secondary usage ceramic discs cf. Genz 2002, 107 f., and Schwermer 2014, 281 f.
349 Cf. Number of vessel sherds and secondarily produced ceramic discs in the Strata 27 to 17 (Schwermer 2019c, 365 Tab. 3.58) and in the Strat 16 and 15 (Chap. 1.3.5 in this volume):

2853 rim sherds. This is a considerably lower proportion than in Stratum 16 and corresponds roughly to the low amount during Early Bronze Age³⁴⁹.



Fig. 2.599 Broken ceramic vessel with hole drilled into it (secondary use as a loom weight?), TZ 005090-001 (Source: BAI/GPIA).



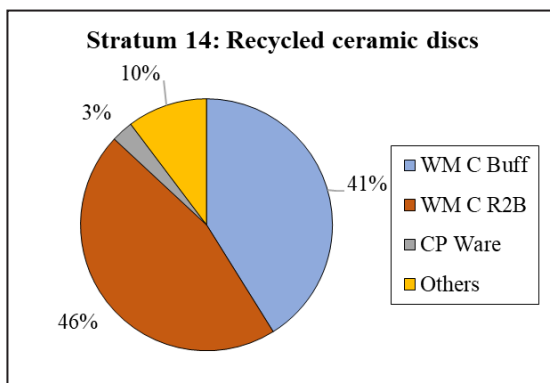
Fig. 2.600 Ceramic disc with two holes drilled into it (secondary use as a button), TZ 017330-001 (Source: BAI/GPIA).

Strata	Amount pottery vessels	Amount clay sherds
25–22 (EB II/III)	755	30
21–20 (EB IV/MB I)	560	32
19–17 (MB II)	1,233	154
16 MB II/LB I)	842	87
15 (Repair)	1,885	55



Fig. 2.601 Bottom of a jug with hole drilled into the bottom (secondary use as a funnel?), TZ 021667-002 (Source: BAI/GPIA).

In contrast to the findings concerning the ceramic vessels, the majority of the ceramic discs found in Stratum 14 can be assigned to the ware category WM C R2B. A different picture develops also in comparison to the distribution of ware types among the clay sherds in Stratum 16, where the proportion of the red-brown lies at only 23 %³⁵⁰.



Graph 2.6 Number and percentage of ceramic discs and their distribution among the different ware categories (Source: Schwermer).

The wall thickness of these ceramic discs ranges in Stratum 14 from 0.4 cm to 2.2 cm (80 % of them are between 0.6 cm and 1.3 cm) with an average of 0.9 cm. This is more than the average wall thickness of the main vessel types of this stratum³⁵¹, though less than the average wall thickness of clay sherds from Stratum 16, where the average lies at c. 1.1 cm³⁵².

The diameters of all discs in Stratum 14 range from 2.7 cm to 11 cm; however, 80 percent of them are between 3.5 cm and 7 cm. The average diameter is 4.8 cm. This result corresponds almost exactly with that of the older strata³⁵³ and shows again that there obviously existed some sort of standardisation for this type of object. At least their dimensions do not seem to be entirely arbitrary³⁵⁴.

350 Cf. Chap. 1.3.5 with Graph 1.10.

351 Cf. Tab. 2.32.

352 Cf. Chap. 1.3.5, 180.

353 Cf. Schwermer 2019a, 88; 2019b, 205; 2019c, 365; in this volume Chap. 1.3.5, 180.

354 Cf. Schwermer 2019c, 365.

2.3.9. Typology of Cooking Pots from the Late Bronze Age³⁵⁵

by A. Schwermer

2.3.9.1. Introduction³⁵⁶

Cooking pots are different from all other articles of daily use in that, in addition to the usual “dangers” that breakable goods are exposed to, they are always subjected to particular stresses.

Potters of the ancient world were challenged with the task of developing the cooking pots’ material and shape in such a manner as to make the product usable in an open fire³⁵⁷. The pots were therefore designed to be heat conductive yet also able to tolerate extreme differences in temperature as well as being impervious to fluids. Furthermore, a cooking pot had to be shaped to comply with their users’ nutritional habits and their specific cooking techniques in terms of size and form and, last but not least, it preferably had to be movable³⁵⁸.

All this raises the interesting question as to how the people involved mastered that challenge. After all, a form had to be found that met the requirements of both the pot’s material, its function, and all the other demands put to that type of vessel. As a consequence, cooking pots were a stronger motivation than any other type of common ware for potters to scrutinize and improve the technology they used. The material remains of cooking pots across the ages bear eloquent witness to this improvement.

The specific characteristics of cooking pots and their impact on the history of the technology of pottery thus merits individual consideration.

2.3.9.2. General Remarks

In the database, a total of 11,452 thickened rims of cooking vessels have been registered for Area I. Of these, more than 8,900 (amounting to approximately 78 %) were typologized. The discrepancy results firstly from the small size and sometimes the place of fracture of an individual sherd that prevented an exact classification and secondly from the fact that of several matching sherds that were listed separately in the database³⁵⁹ only one was typologized in order to preclude a biased result. In addition, there are 475 typologized cooking pot sherds from the Middle Bronze Age which (although they are “only” body sherds), could still be exactly identified due to the specific characteristics of Middle Bronze Age cooking pots³⁶⁰. A few body sherds (49) of cooking pots from other periods could also be typologized because the rim’s shape was still recognizable. Of course, the two more or less complete cooking pots could also be classed with a specific type.

A type designation is composed of the following specifications:

355 The text is based on Chapter 4.4 of the author’s doctoral thesis (Schwermer 2014). The part about the Early and Middle Bronze and the Iron Age cooking pots is published in Vieweger – Häser 2019; Vieweger – Häser forthcoming.

356 The chapters “Introduction” and “General remarks” apply also to the Early Bronze Age, Middle Bronze Age and Middle to Late Bronze Age cooking pots, published in Vieweger – Häser 2019, and the Iron Age cooking pots, published in Vieweger – Häser forthcoming.

357 Here, the cooking pot’s outside is exposed to almost 1.000°C while on its inside the temperature only rises to 100°C. This leads to an extreme tension that the material has to endure. According to Vilders (1991/92, 70), the porosity of clay reduces the thermal stress and moreover

soaks up liquid, which makes it possible to heat up more rapidly.

358 “Vessels intended for cooking are expected to make efficient use of the heat, but also exhibit characteristics suited to particular cooking techniques.” (Spagnoli 2010, 2).

359 Often, it was discovered only when identifying the sherds on the site that some pieces were parts of the same vessel. However, since they had already been tagged previously, in most cases by a different person, and retagging would often have been extremely complicated and time-consuming, the initial numbering was retained and only complemented by the information that the sherd matched one or several others.

360 On this, cf. Schwermer 2019b, Chap 4.2.

Example: CP_{LB} 1a**CP** vessel type, in this case cooking pot**LB** rough chronological placement (subscript)³⁶¹**1** main type**a** subcategory of main type

If the main type's manifestation also features several distinctly different variations, the small letter is succeeded by a dot and another figure, e.g. CP LB 1a.1.

All the chapters dealing especially with cooking pots will show particularly representative examples of each type or type manifestation. Additionally, unique forms were also included of which only very few specimens have been found. These could be cooking pots with a rim design that was “borrowed” from different vessel types, or also vessels that may have been made of the same material as cooking pots but were possibly used for completely different purposes³⁶².

There is comprehensive statistical material on every cooking pot type. In particular there is material on:

1. Individual subtypes' respective share in the total repertoire of cooking pot sherds of one specific time horizon,
2. Distribution of the various cooking pot types among the different strata,
3. Allocation of all typologized cooking pot sherds among the different cooking pot types within the individual strata.

On all of this, Part III of the Annexe³⁶³ will give an overview. In the graphical representation of these numerical proportions sometimes, wherever this seemed advisable, several individual pieces of data were grouped together. If statistical specifications on any finds from the reference sites were available, these were also included. It should be noted, however, that an immediate statistical comparison of the finds from Tall Zīrā'a with those from the reference sites is often made difficult by the different approaches with regard to typologization, and is sometimes only possible if the reference finds' statistical material is converted to our own methods. Unless otherwise noted, the statistical specifications on the cooking pot types from the reference sites always refer to the finds from verified contexts of the respective time horizon.

2.3.9.3. Typology

The transition from Middle to Late Bronze Age saw the development of the open vessel form with carinated sides and round bottom³⁶⁴, which became an influential design of cooking pots during the Late Bronze Age. This design appeared to be considered “ideal” by people of the time since it was retained also into the Iron Age, potentially indicating that cooking and eating habits did not develop substantially over this long period of time. The design of the rim also draws on the Late Bronze Age cooking pots, which themselves were based on the Middle Bronze Age form of the rim jar. It is plausible that this rim made the carrying or transport of a pot easier, as the depression underneath the rim could be used to securely fasten a flexible lid (e.g. cloth) with a string³⁶⁵. In how far the rather small variations in the rim design have chronological implications will be clarified below. None of the sherds of Late Bronze Age pots found on the Tall Zīrā'a show decorations or handles.

361 The period classification that was initially implemented on the basis of the dating of comparative finds in the reference literature, serving as an orientation when typologizing the sherds found on Tall Zīrā'a, which was continuously colonized since the Early Bronze Age. In individual cases, the timespan can go beyond the limits of the respective period.

362 Part I of the Annexe in Schwermer 2014 will list further examples of the different types and subtypes in order to show

the range of variations, and will also offer further references of comparative sites in the area. In Part II of the Annexe, the typologies of other excavation sites that were used as references are represented.

363 Schwermer 2014.

364 Schwermer 2019c, Chap. 4.3.

365 Also cf. Fischer 2006, 244.

The clay used for the Late Bronze Age cooking pots is brighter brown or beige, in contrast to that of later periods. Finds of Middle Bronze Age cooking pots of a brighter material were made sporadically³⁶⁶.

The shape of the rim is the central principle for typologizing the Late Bronze Age cooking pots of the Tall Zirā'a. The definition of two types based on their size is, however, disrupting this principle (1d and 1e). This refers to cooking pots with a rim diameter of c. 50 cm and relatively thick walls on the one hand, and small, delicate vessels, whose opening measures about 15 cm in diameter on the other. These two forms are significantly different enough from the average shape and size to warrant their own type. Similarly, on Tall al-Qassis (Tēl Qāšīš) a small cooking pot with a rim diameter of 15 cm is being defined as its own type³⁶⁷.

Thus, the following types are defined on the Tall Zirā'a, whereby the transitions between them are sometimes fluent and can hinder a clear definition³⁶⁸:

- CP_{LB} 1: Late Bronze Age cooking pot with carinated walls and triangular everted rim
- CP_{LB} 1a: rim compact
- CP_{LB} 1a.1: sharp
- CP_{LB} 1a.2: rounded
- CP_{LB} 1a.3: grooved
- CP_{LB} 1b: rim elongated
- CP_{LB} 1b.1: smooth
- CP_{LB} 1b.2: grooved
- CP_{LB} 1c: rim indented
- CP_{LB} 1d: large vessel
- CP_{LB} 1e: small vessel

Single Types

In total, five single types, in addition to the shapes above, appear in small numbers (two to seven sherds each). This includes (with the exception of one cooking bowl; S 2) mainly vessels with an everted rim³⁶⁹ and a rim design that cannot be assigned to any of the types defined above.

366 Cf. in detail Schwermer 2014, Chap. 5.

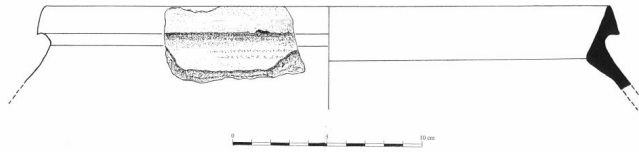
367 Bonfil 2003, 286. 302 Fig. 119, 14.

368 Bonfil concedes this also for the Tall al-Qassis (Tēl Qāšīš)

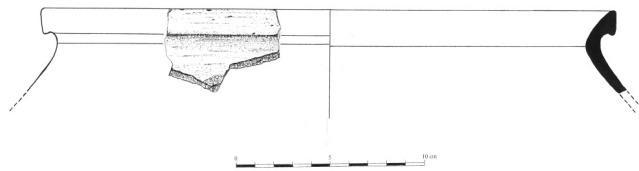
(Bonfil 2003, 285).

369 Some sherds are very small, so that the shape of the vessel, or the walls at least, cannot be determined with certainty.

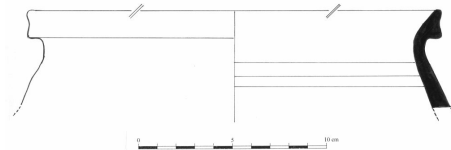
Plate 2.4: Typology of Late Bronze Age cooking pots

CP_{LB} 1: Carinated walls and triangular everted rimCP_{LB} 1a: compactCP_{LB} 1a.1: sharp

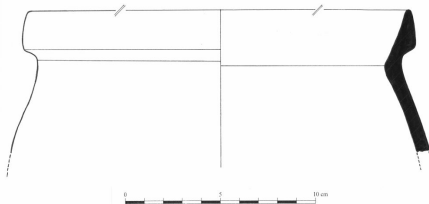
TZ 002001-032

CP_{LB} 1a.2: rounded

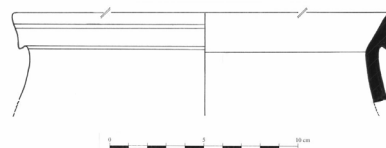
TZ 001088-004

CP_{LB} 1a.3: grooved

TZ 003778-012

CP_{LB} 1b: elongatedCP_{LB} 1b.1: smooth

TZ 003229-008

CP_{LB} 1b.2: grooved

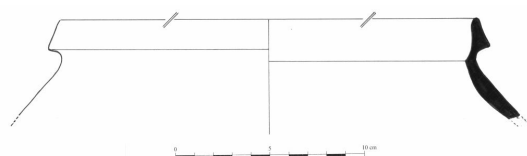
TZ 003267-096

0  5 cm

Plate 2.5: Typology of Late Bronze Age cooking pots

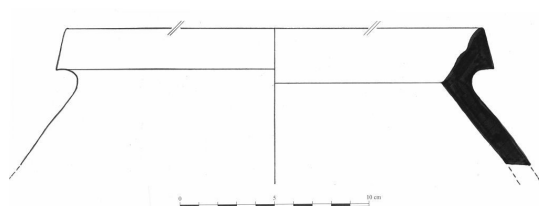
CP_{LB} 1: Carinated walls and triangular everted rim

CP_{LB} 1c: indented



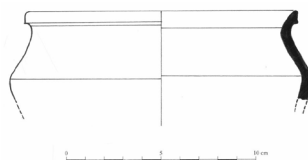
TZ 003778-059

CP_{LB} 1d: large



TZ 004416-045

CP_{LB} 1e: small



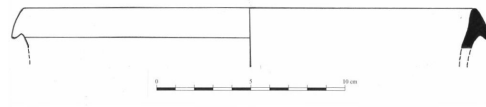
TZ 001585-001

0  5 cm

Plate 2.6: Typology of Late Bronze Age cooking pots

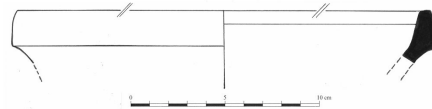
Single Forms

LB S 1



TZ 004153-001

LB S 2



TZ 004238-010

LB S 3



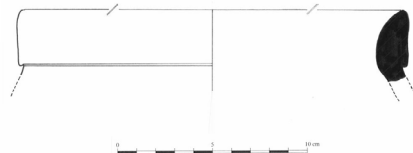
TZ 004329-042

LB S 4



TZ 004459-016

LB S 5



TZ 003188-008

0  5 cm

2.3.9.4. Statistical Evaluation

Of the c. 1600 sherds found of Late Bronze Age cooking pots on the Tall Zirā'a, 1126 can be assigned to the types described above. This includes five more or less complete vessels that allow for reconstruction.

Dimensions

The Late Bronze Age cooking pots possess slightly thinner walls and larger openings, compared to those dating from the transitional period of Middle to Late Bronze Age, especially when looking at the bottom value (*Tab. 2.36*). With the exception of the large and small shapes (1d and 1e), 80 % of the vessels of every type show a diameter of 20 to 30 cm and are almost identical in wall thickness.



Fig. 2.602 Reconstructed cooking pot of the Late Bronze Age
Type 1b.1, TZ 004127-058 (Source: Schwermer: 2014).

Type	Wall Thickness (in cm)		Opening Diameter (in cm)	
	Extreme Values	80 % of the Vessels	Extreme Values	80 % of the Vessels
CP _{LB} 1a.1	0.3–1.20	0.5–1.00	16–40	20–32
CP _{LB} 1a.2	0.3–1.25	0.5–0.90	16–40	20–30
CP _{LB} 1a.3	0.4–1.40	0.5–0.90	14–36	20–32
CP _{LB} 1b.1	0.35–1.35	0.5–0.90	16–46	20–32
CP _{LB} 1b.2	0.3–1.30	0.5–0.80	18–36	20–30
CP _{LB} 1c	0.4–1.30	0.5–0.90	16–38	20–30
CP _{LB} 1d	0.5–2.00	0.6–1.50	26–55	26–50
CP _{LB} 1e	0.35–0.80	0.4–0.75	10–24	12–20

Tab. 2.36 Wall thickness and opening diameters of Late Bronze Age cooking pots from Tall Zirā'a (Source: Schwermer 2014).

Three reconstructed Late Bronze Age cooking pots of the Tall Zirā'a, of the types 1a and 1b, fit 2.25 to

3.50 litres up to the carination, and 3 to 5.5 litres when filled fully (*Tab. 2.37*).

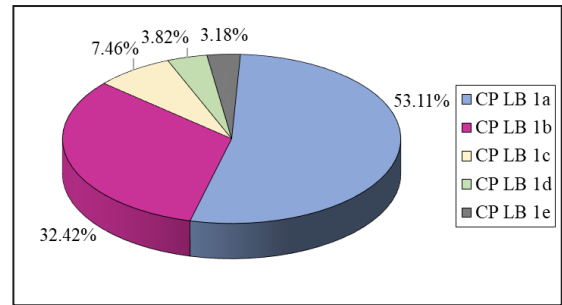
Find Number	Opening Diameter (in cm)	Volume up to Rim (in litres)	Volume up to Carination (in litres)
TZ 4044-001	25	4	2.75
TZ 4127-058	30	3	2.25
TZ 5408-001	31	5.5	3.5

Tab. 2.37 Volume of Late Bronze Age type 1 cooking pots from Tall Zirā'a (Source: Schwermer 2014).

This puts them into the context found also at other sites: the average large Late Bronze Age cooking pots of the Tall Abū al-Ḥaraz have a volume of 4 to 5 litres, while the smaller cooking pots (corresponding to Zirā'a type 1e) 0.32 to 1.40 litre, and the very large cooking pots (corresponding to Zirā'a type 1d) 14 litre were measured³⁷⁰. In Tall al-Ḥiṣn (Beth Shean) for cooking pots of type 1e, a 0.80 litre volume was determined³⁷¹.

Allocation to the Different Types

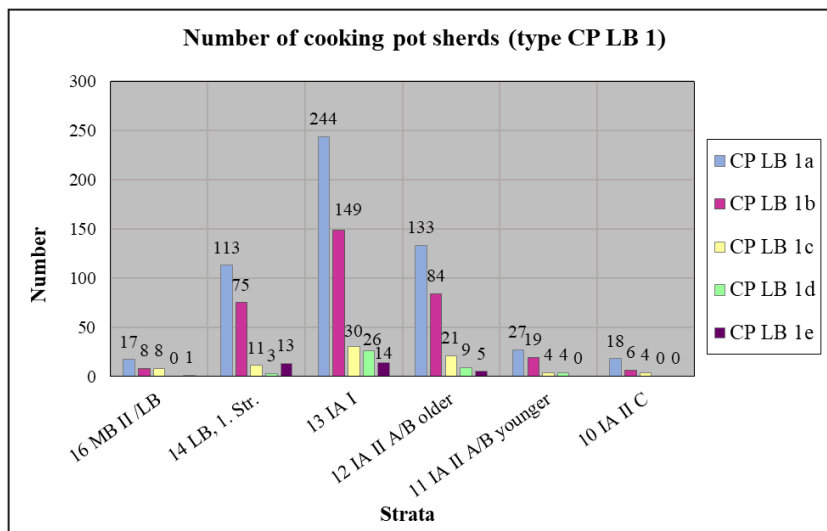
More than 85 % of the Late Bronze Age cooking pot sherds that were typologized belong to types 1a and 1b (*Graph 2.7*), with half of them (53.11 %) being the "classic" shape of the Late Bronze Age cooking pot with compact and triangular rim (Type 1a). The remarkably large and small cooking pots only appear in relatively small amounts (overall 7 %). The spread of the (sub-)types over the different strata is almost correspondent making it possible to assign each to a time frame and period.



Graph 2.7 Percentage allocation of Late Bronze Age cooking pot sherds to the different types (Source: Schwermer 2014).

Distribution among the Separate Strata

Analyzing the spread of Late Bronze Age cooking pot sherds over the individual strata also shows a tendency towards the younger layers³⁷². When assessing purely the quantity of the sherds, only a minor proportion dates from Stratum 16, up to Middle Bronze Age II B around 1400 BC, and only just about one fifth from Stratum 14. The majority was found in both older Iron Age strata (*Graph 2.8*). Similarly, the few single forms appear to be almost without exception from two Iron Age strata³⁷³. As is to be expected in the layer of backfill (Stratum 15), only few sherds of the Late Bronze Age cooking pots are to be found.



Graph 2.8 Number of cooking pot sherds Type LB 1 in the strata with the highest incidence (Stratum 15 excepted) (Source: Schwermer 2014).

370 Fischer 2006a, 246–251 Fig. 277–281.

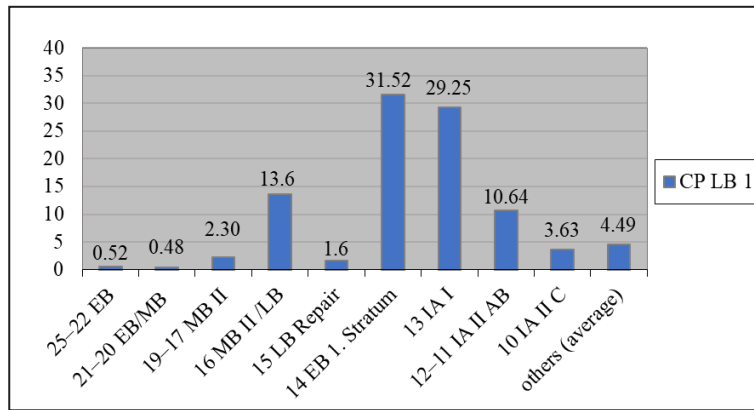
371 Panitz-Cohen 2009b, 227.

372 Cf. Schwermer 2019c, Chap. 4.3.2 and 4.3.4.

373 Only the two sherds of single form S 4 stem from Stratum 14.

This finding becomes relative when looking at the percentage of these cooking pot types in all cooking pots within the individual strata (*Graph 2.9*). The highest proportion of cooking pot sherds of Type LB 1 is found in Stratum 14, followed by Stratum 13 assigned to Iron Age I and Stratum 16, as already mentioned above. The relatively low percentage of Late Bronze Age cooking pot sherds, at just over 30 % (compared to the finds of Early and Middle Bronze Age, at 90 and 80 % respectively)³⁷⁴—even when adding the c. 26 % of Type MB/LB—in this stratum points towards a much higher probability of disruptions than the so far excavated lower strata³⁷⁵. This could be an explanation for the large proportion of Late Bronze Age cooking pot sherds in Stra-

tum 13. Further explanations include the possibility that this period is an early phase of Iron Age I, contemporary with the transition from the Late Bronze Age³⁷⁶, or can be seen as evidence that cooking pots are generally seen as typical for the Late Bronze Age on the Tall Zirā'a, and probably elsewhere, had a longer lifespan and were not replaced by the “typical” Iron Age forms at all, but were used simultaneously³⁷⁷. It has to be reiterated here the time periods in question cover long timespans and the inhabitants, whose traces are now found in Stratum 13 for example, were not necessarily the “same” for the 200 years of Iron Age I; potential breaks with tradition may have occurred.



Graph 2.9 Percentage of Type LB 1 cooking pot sherds among the total of typologized cooking pot sherds in the specified strata (in the Strata 9 to 0, the cooking vessels of the Classical and Post-classical epochs have been included) (Source: Schwermer 2014).

2.3.9.5. Comparisons with Reference Sites *Transjordan*

The array of Late Bronze Age cooking pots on the Tall Zirā'a fits entirely into the framework known from other sites in North Jordan. Forms like the

Type 1a are, for example, documented at Ṭabqāt Faḥl (Pella)³⁷⁸ and Tall al-Fuḥḥār³⁷⁹ for Late Bronze Age II (1400 to 1200 BC), while Ṭabqāt Faḥl (Pella)³⁸⁰ also shows Type 1b.1. Also, the smaller cooking pot (Type 1e) can be documented for Ṭabqāt Faḥl (Pella) in Late Bronze Age I and II³⁸¹.

374 Cf. Schwermer 2019c, Chap. 4.1.3 and 4.2.3.

375 More detail in Schwermer 2014, Chap. 4.8.

376 This is supported by one of the 14C-samples of this stratum: it is dated, with almost 70 % probability, to the time between 1440 and 1300 BC (TZ 007257-001), while the other three cover exactly the timespan of Iron Age I (1200-1000 BC) (cf. Schwermer 2014, Chap. 1.3.2).

377 Franken – London 1995, 221: For the transition from Late Bronze Age to Iron Age, they speak of a continuity in pottery tradition and changes at the same time. Lamprichs

2007, 188 makes similar observations for the Tall Juhfiyya. Mazar also speaks of a “high degree of continuity between the late 13th c. and the early 12th c. BC ceramic assemblages in general and at Beth Shean in particular” (Mazar 2006, 74); see in this context also Panitz-Cohen 2009, 225.

378 Mc Nicoll et al. 1982, 53 Pl. 119, 15. 16; Mc Nicoll et al. 1992, Pl. 28, 4; 34, 9; Bourke et al. 1998, Pl. 197, 2.

379 MacDonald et al. 2001, Pl. 305, 3.

380 Mc Nicoll et al. 1992, Pl. 48, 9.

381 Mc Nicoll et al. 1992, Pl. 45, 5; Pl. 48, 14.

Forms of Type 1.a.3 and 1b.2 with grooved rim are also attested at Ṭabqāt Faḥl (Pella) (Late Bronze Age I)³⁸² and at Tall al-Fuḥḥār (Late Bronze Age II)³⁸³. The list could be extended with further examples but this will not be necessary for the reasons named above, namely the completely typical array of forms found.

On Tall Dēr ‘Allā cooking pot Type 2 (*Fig. 2.603*), which is documented to be dated from the last phase of the Late Bronze Age sanctuary, stands out here.

The rim shape corresponds largely to Zirā‘a-Type IA 3, which will be discussed in the following chapter. Franken also states that the Type 2 Iron Age cooking pots of Tall Dēr ‘Allā have strong connections to the type of cooking pots from the sanctuary and that for an exact dating, further research would be necessary³⁸⁴. Also without descriptions, the images suggest the walls of this cooking pot are very thin. This appears to be similarly designed to the thin-walled cooking pot of Zirā‘a-Type 3b³⁸⁵, with the larger dimensions and tough firing³⁸⁶.

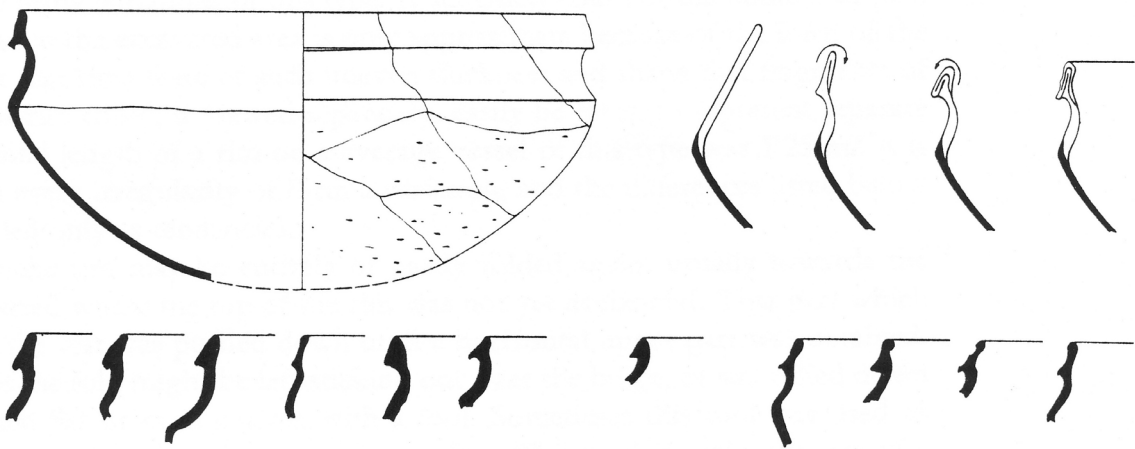


Fig. 2.603 Tall Dēr ‘Allā: Late Bronze Age cooking pot Type 2 (Source: Franken 1969).

The following section presents an insight into the typology of the **Tall Abū al-Ḥaraz**. As pointed out in the preceding chapter, Fischer typologized vessel types separately for each stratum instead of showing the lifespan of each vessel type. Thus, parallel

examples of Type 1a.2 for the phases IV/2 to VIII (late Middle Bronze Age to beginning of Late Bronze Age II)³⁸⁷ and for types 1a.3, 1d and 1e for phases V and VI (Late Bronze Age I) are listed (*Tab. 2.38*).

382 MacDonald et al. 2001, Pl. 305, 2; Mc Nicoll et al. 1982, Pl. 119, 2; Mc Nicoll et al. 1992, Pl. 45, 1. 2. 4.

383 MacDonald et al. 2001, Pl. 305, 3.

384 Franken 1969, 119; cf. also Franken – London 1995, 219. Franken dates the sanctuary to the 16th to 13th c. BC (following van der Steen 1997, 81 with Table 1). The comparable type of cooking pot from the Tall Zirā‘a is also found to a considerable proportion already in Late Bronze Age strata. This points to a longer lifespan, starting at the end of the Late Bronze Age, as well as a regional particularity (cf. Schwermer 2014, Chap. 4.5).

385 Cf. Schwermer 2014, Chap. 4.5.1.

386 Franken 1969, 119 f.

387 Fischer refers to Phase VIII as Late Bronze Age IC, thus differing from the usual definition for the Levant of Late Bronze Age II or II A. He reasons that the traditional border between time periods, with Late Bronze Age II starting with the enthronement of Amenhotep III, is an artificial and mathematic one, since the material culture does not actually display changes.

Tall Abū al-Ḥaraz ³⁸⁸	Tall Zīrā'a
—	CP _{LB} 1a.1
Fig. 278, 1. 2. 4 Fig. 279, 7. 8 Fig. 280, 6 Fig. 281, 2. 3 Fig. 282, 3. 8	CP _{LB} 1a.2
Fig. 280, 3	CP _{LB} 1a.3
—	CP _{LB} 1b.1
—	CP _{LB} 1b.2
—	CP _{LB} 1c
Fig. 279, 9	CP _{LB} 1d
Fig. 279, 3. 6 Fig. 281, 4. 5	CP _{LB} 1e

Tab. 2.38 Referential examples for Late Bronze Age cooking pots of the Tall Abū al-Ḥaraz (Source: Schwermer 2014).

For Late Bronze Age II, no vessels are noted since that layer was destroyed on Tall Abū al-Ḥaraz. Fischer gives two examples for Phase VIII, which show handles starting immediately at the rim³⁸⁹. Similar to Franken, Fischer sees some as examples for predecessors of Iron Age cooking pots in the Late Bronze Age cooking pot array of Strata VII and VIII³⁹⁰.

With regards to the question of the transition from Late Bronze to Iron Age I, it is interesting in the context of the findings on the Tall Zīrā'a that Franken also ascertained that no clear point of departure exists for the **Tall Dēr 'Allā** assemblage, but rather a continuity "on making Late Bronze pottery". The knowledge and experience should later be passed to the "Early Hebrews." The Late Bronze Age pottery underwent a lengthy development towards Iron Age pottery, at least in certain regions³⁹¹.

Cisjordan

Also, in comparison with the reference sites in the modern day state of Israel, there is no remarkable differences in the range of cooking pots. Already in Amiran³⁹², almost all types found on the Tall Zīrā'a can be seen; including a large cooking pot with about 50 cm opening diameter and a smaller one with about 15 cm³⁹³. For Tall al-Mutasallim (Megiddo), Ilan, Hallote, and Cline suggest a "high degree of standardization" for the Late Bronze Age cook-ing pots³⁹⁴.

Seamlessly comparing the typologies of **Tall al-Qassis (Tēl Qāšīš)**, **Tall Qēmūn (Tēl Yoqnā'ām)** and **Tall al-Ḥiṣn (Beth Shean)** (Tab. 2.39) is not possible here either, since different definition criteria were employed in different places. For example; sharp or rounded rims are not differentiated within subtype 1a of the Zīrā'a-cooking pots. The typology of Tall Qēmūn (Tēl Yoqnā'ām) differentiates between an everted rim and a only slightly everted one³⁹⁵, which in turn is not part of the typological criteria at the Tall Zīrā'a.

With the exception of the large cooking pot (Type 1d), which does not form its own category in the typologies of Tall al-Qassis (Tēl Qāšīš), Tall Qēmūn (Tēl Yoqnā'ām) and Tall al-Ḥiṣn (Beth Shean), all types defined for the Tall Zīrā'a are found here as well. Respectively each of Tall al-Qassis (Tēl Qāšīš), Tall Qēmūn (Tēl Yoqnā'ām) and Tall al-Ḥiṣn (Beth Shean) showed five shapes corresponding to those of the Tall Zīrā'a. Some of the types defined for the excavations in the modern day state of Israel, which are marking the transition of the Middle to Late Bronze Age, were already touched upon in the previous chapter.

The individual comparisons are presented as follows:

388 Fischer 2006, 245–251 Fig. 277–282 (see Schwermer 2014, Part II, 2.7).

389 Fischer 2006, Fig. 282, 10. 11.

390 Fischer 2006, 252.

391 Franken 1982, 143. cf. also Franken – London 1995, 218–221; van der Steen 1997, 89 f.

392 Amiran 1969, Pl. 42.

393 Amiran 1969, Pl. 42, 1 Tall ad-Duwēr (Lachish) and Pl. 42, 15 Tall Waqqāš (Hazor).

394 Ilan et al. 2000, 211 f. Fig. 9.11, 8–20. Here also all shapes of the types described above are represented. They are dated to Late Bronze Age II with the remark that they follow older traditions.

395 Ben-Ami – Livneh 2005, 276–279.

Tall al-Ḥiṣn (Beth Shean) ³⁹⁶	Tall Qēmūn (Tēl Yoqnə‘ām) ³⁹⁷	Tall al-Qassis (Tēl Qāšīṣ) ³⁹⁸	Tall Zirā‘a
CP1b (35) CP1c ³⁹⁹ (20)	CP CIb (17), c (6) CP CIe3 (3) CP CIIa1 (10), 2 (10)	CP IIIa (34), b (7), e (10) ⁴⁰⁰³	CP _{LB} 1a.1
	CP CId (2) CP CIIa3 (2)		CP _{LB} 1a.2
			CP _{LB} 1a.3
	401	CP IIIc (2), d (8) ⁴⁰²	CP _{LB} 1b.1
			CP _{LB} 1b.2
	CP CIe2 (3)	—	CP _{LB} 1c
403	—	—	CP _{LB} 1d
404	405	CP V (5)	CP _{LB} 1e

Tab. 2.39 Comparison of the typologies of Late Bronze Age cooking pots from Tall al-Ḥiṣn (Beth Shean), Tall Qēmūn (Tēl Yoqnā'ām), Tall al-Qassis (Tēl Qāšīš) (percentage in parentheses), and Tall Zirā'a⁴⁰⁶ (Source: Schwermer 2014).

One type of cooking bowl, seen in small quantities on Tall al-Qassis (Tēl Qāšīš) (Type CP IV)⁴⁰⁷ and Tall Qēmūn (Tēl Yoqnā'ām) (Type D I)⁴⁰⁸, was only found in very few individual finds on the Tall Zirā'a (Single form S 2). These however differ in the design of the rim. The remaining single forms are also, usually also in low quantities, found at the other reference sites⁴⁰⁹.

The cooking pot types listed here for Tall al-Qassis (Tēl Qāšīš), Tall Qēmūn (Tēl Yoqnā'ām) and Tall al-Ḥiṣn (Beth Shean) are seen as clear indicators for the Late Bronze Age, although, in some cases they already appeared in the transitional period since the Middle Bronze Age⁴¹⁰.

396 Mullins 2007, 422 with Fig. 5.7; 463–547 (see Fig. in Schwermer 2014, Annexe, Part II, 2.2). Also statistical information, 423 with Table 5.11.

397 Ben-Ami – Livneh 2005, 275–277, Fig. IV.8–IV.10 (see Fig. in Schwermer 2014, Annexe, Part II, 2.3). Also statistical information, 271 f. with Table IV.6.

398 Bonfil 2003, 302, Fig. 119 (see Fig. in Schwermer 2014, Annexe, Part II, 2.4). Also statistical information, 315 Table 22 (here only Type CP).

399 A rim, grooved on the outside, does not form a typological criterion here (Mullins 2007, 422–424).

400 Mullins counts as this type also single form E 1, represented on the Tall Zirā'a with only 6 examples. (Ben-Ami – Livneh 2005, 277 with Fig. IV 9:16).

401 The rim, sharp-edged on the inside, does not form a typological criterion here, but does appear (Ben-Tor – Bonfil 2003a, Fig. 106, 7. 8, CP IIIb). Bonfil does not distinguish a separate type for the indented rim—she refers to it as “wavy”—but counts it as part of the triangular rim shape (Bonfil 2003, 285; Ben-Tor – Bonfil 2003a, Fig. 98, 10; 107, 13; 108, 12. 13).

402 No distinction is made between compact and elongated rims.

403 The grooved rim is not considered typologically separate. The large cooking pot does not form its own type here, but is counted among the already defined types (Mullins 2007, Pl. 39, 11, here CP 1c).

404 What has been said about big cooking pots in the previous footnote is also true for the small ones (Mullins 2007, Pl. 51, 8; 59, 3 CP 1a; 59, 6; 76, 11 CP 1c).

405 Ben-Ami also counts the smaller cooking pots among the already defined types (Ben-Ami 2005, Fig. III. 8:14, CP C 1a). Only in Bonfil they receive their own typological designation: “CP V: Miniature” (Bonfil 2003, Fig. 119, 14).

406 For the proportional spread of the types on the Tall Zirā'a see *Graph 2.7*.

407 Bonfil 2003, 302 Fig. 119, 12. 13.

408 Ben-Ami – Livneh 2005, 280 f. with Fig. IV.10:6–9 and 272 with Table IV.6.

409 Cf. also references for this in Schwermer 2014, Annexe, Part I, 4.

410 Ben-Ami – Livneh 2005, 276; Mullins 2007, 422–424.

Forms equivalent to Zirā'a-Type 1b are more often assigned to Late Bronze Age II,⁴¹¹ while parallels to types 1a, 1c and 1e are often identified as belonging to Late Bronze Age I⁴¹² and finally the types 1a.3 and 1b.2 to Late Bronze Age II⁴¹³. None of these feature handles or decorations.

Due to the aforementioned reasons it is difficult to compare the percentage of individual types and subtypes. However, it can be discerned that the pottery forms at all three sites correspond to the dominant Zirā'a-types 1a and 1b making up at least 50 % and at times considerably more, while the proportion of the remaining types, if specified individually, lies far below that percentage.

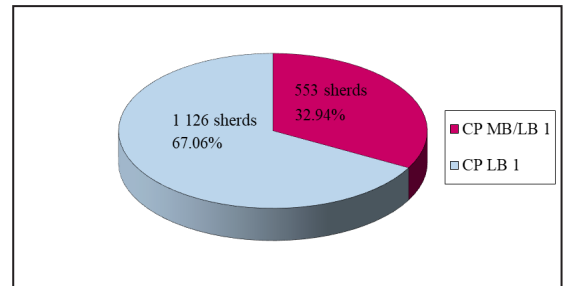
Regarding the lifespan of the Late Bronze Age cooking pots discussed here, the publication about Tall al-Ḥiṣn (Beth Shean) as an Egyptian garrison, during the Ramessid period, is of interest,⁴¹⁴ as it covers the timespan from the thirteenth to the eleventh century BC; precisely the transitional phase from the Late Bronze Age to Iron Age I. For the "typical" Late Bronze Age cooking pot (Type 1, especially 1a, in the cited publication CP74) a lifespan into Iron Age I is attested here. This type allegedly disappears at the end of the twelfth century BC and is thus missing from the respective strata at Tall al-Ḥiṣn (Beth Shean). A continuation of this cooking pot type into Iron Age I is also attested from other sites, particularly "in the central hill country."⁴¹⁵ This confirms the findings for the Tall Zirā'a.

2.3.9.6. Conclusion

The cooking pots of the Tall Zirā'a discussed here belong to the typical array of shapes of the Late Bronze Age. The key characteristic is the triangular, everted rim⁴¹⁶. Even the single forms appear at other locations⁴¹⁷. They appear however to have been used, according to the latest stratigraphic find-

ings, continuously into the early Iron Age; which is also attested for the other reference sites.

When looking at the round or slightly carinated (Type MB/LB)⁴¹⁸ and the more carinated cooking pots with triangular rim (Type LB) together with the corresponding find locations, as is done in some publications, the whole numerical ratio for the Tall Zirā'a lies at about 1 to 2 (*Graph 2.10*).



Graph 2.10 Proportional spread of Middle/Late Bronze Age and Late Bronze Age cooking pot sherds (Source: Schwermer 2014).

A similar ratio is found for the "globular" and "carinated cooking pots" in the Middle and Late Bronze Age strata at Tall Qēmūn (Tēl Yoqnā'ām) (121 to 233)⁴¹⁹. At Tall al-Ḥiṣn (Beth Shean) the round cooking pots appear slightly more often (294 to 422)⁴²⁰ and in Tall al-Qassis (Tēl Qāšīš) the ratio is almost even (65 to 61)⁴²¹. Such absolute numbers, however, do not take into account the specific excavational situation in the individual strata and thus can be relative in certain cases.

Comparing the percentage of cooking pot Type MB/LB and Type LB in the individual strata of the Tall Zirā'a (*Graph 2.11*) it becomes clear however, that Type MB/LB appears earlier and its proportion diminishes rapidly at the transition to Iron Age I, while Type LB remains relatively well represented.

411 Bonfil 2003, 286.

412 Ben-Ami – Livneh 2005, 276.

413 Ben-Ami – Livneh 2005, 279.

414 Panitz-Cohen – Mazar 2009.

415 Panitz-Cohen 2009, 227 Pl. 16, 3–6. For Tall Waqqās (Hazor) no traditional Late Bronze Age shape was found in the strata of the early Iron Age (Ben-Ami – Ben-Tor 2012, 22). On the Tall Abū al-Ḥaraz the younger Bronze Age Strata

already contain cooking pot types that are precursors of the early Iron Age (Fischer 2006, 252).

416 Cf. Ben-Ami 2005, 168.

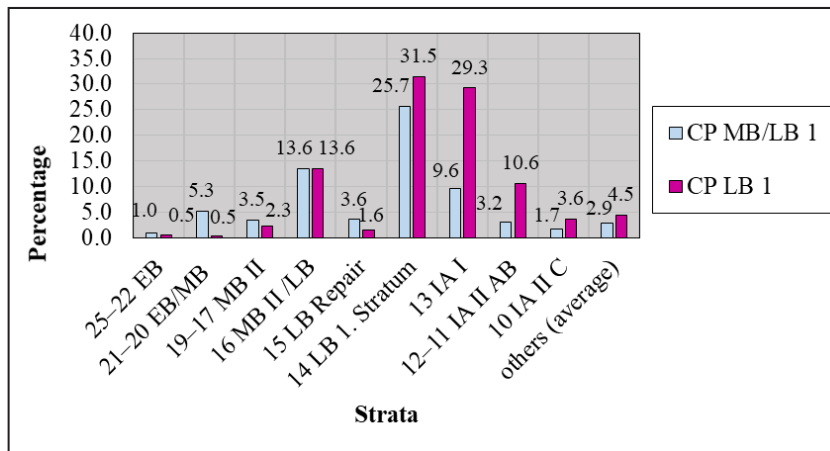
417 Cf. references Schwermer 2014, Annexe, Part I, 4.

418 Cf. Schwermer 2019, Chap. 4.3.

419 Ben-Ami – Livneh 2005, 271 f. Table IV.6.

420 Maeir 2007, 258 Table 4.4; Mullins 2007, 422 Table 5.10.

421 Bonfil 2003, 315 Table 22.



Graph 2.11 Proportion of cooking pot sherds of Types MB/LB and LB out of all typologically defined cooking pot sherds in the respective strata (Source: Schwermer 2014).

The proportion of cooking pots of all vessel types in Stratum 14 (which can be clearly defined as Late Bronze Age) on the Tall Zirā'a lies at slightly under 20 %; proportionally the lower if one takes all the excavated time horizons into consideration⁴²². A similar picture emerges on Tall Abū al-Ḥaraz, where cooking pots in the Late Bronze Age strata

VI to VIII represent about 18 % on average – with a spread between 13 and 33 %⁴²³. At Tall al-Ḥiṣn (Beth Shean) the cooking pots of the Late Bronze Age are also in third place among the vessel types, but only make up around 8 % overall⁴²⁴, in Ṭabqāt Faḥl (Pella) even only 5 % on average⁴²⁵.

422 See Schwermer 2014, Chap. 2.3.4 with Tab. 2.6 and Graph 2.9. In Stratum 16, which can already be dated to Middle Bronze Age II, the proportion is 22 % (cf. Schwermer 2014, Chap. 1.3.2).

423 Fischer 2006, 253 Table 51 A.

424 Mullins 2007, 391 Table 5.1.

425 Bourke et al. 2006, 32 Fig. 27.

2.3.10. Baking Trays⁴²⁶

by A. Schwermer

Often neglected by the literature, the prehistoric strata of the Tall Zīrā'a contain another form,⁴²⁷ aside from the numerically well represented cooking pots, which are both used in cooking or baking. In the literature this form⁴²⁸ is usually referred to as a "baking tray", or a "cooking plate" and, in one specific case, the phrase "Egyptian bread mould"⁴²⁹ was used. The purpose of these "trays" is not entirely certain, nor is it known which side represents top or bottom⁴³⁰. These are flat, domed or discs trays that at times are made from rather coarse cooking ware (Fig. 2.604)⁴³¹.

One side of the baking tray (probably the bottom) often has a different quality than the other side (probably the top), showing coarse pieces of calcite enclosed in it or displaying, in more or less regular patterns, holes of multiple millimetres depth. The other side (probably the top) can be very strongly smoothed. The rim is either non-existent or exists only as a small contour or protruding 1–2 cm at a right angle. In that case it is often decorated with simple carvings. Not all baking trays show burn marks.

According to Smith, baking trays are found from the Early Bronze Age into the Iron Age⁴³².

Only few complete examples have been found thus far. Since the baking trays are usually not the object of detailed studies, they were rarely typologized so the pottery catalogues for reference sites are used more often, unlike when dealing with cooking pots.



Fig. 2.604 Reconstructed baking tray from Tall Zīrā'a, TZ 005484-040 (Source: BAI/GPIA).

2.3.10.1. Typology

Up to and including the summer campaign 2011, 48 sherds of baking trays were discovered on the Tall Zīrā'a, that presumably belong to 36 individual baking trays, of which 30 could be typologized. Due to the low overall amount and the chronologically unspecific form, the typology initially refrained from assigning individual time periods. This shall be attempted at the end of this chapter.

In contrast to the reference sites⁴³³, none of the baking trays found on the Tall Zīrā'a, with possibly one exception⁴³⁴, have a curved shape, rather, they are all flat.

426 The text is based on Chapter 4.6 of the author's doctoral thesis "The pottery of cooking pots of the Tall Zīrā'a. A typological and functional analysis of the finds from the Early Bronze Age to the late Iron Age" („Die Kochtopfkeramik des Tall Zīrā'a. Eine typologische und funktionale Analyse der Funde von der Frühen Bronze- bis in die späte Eisenzeit") (Schwermer 2014).

427 Cf. also Vilders 2005, 11 f.

428 The baking tray was presumably more common than the literature and excavations would suggest. The often coarse and thick sherds were in many cases presumably not identi-

fied correctly, especially since a certain danger of confusion with the sherds of a straight-walled Middle Bronze Age cooking pot exists.

429 In Maeir 2007, 263.

430 See also Smith 1973, 206.

431 Partly this has been tempered a lot with organic material.

432 Smith 1973, 206. Maeir concludes that baking trays were common from Middle Bronze Age II to Iron Age II (Maeir 2007, 263).

433 Cf. Chap. 2.3.11.4.

434 Cf. Chap. 2.3.11.4.

The following typology categorises the baking trays roughly into two groups, with or without protruding rim. These can be further subdivided based on three form characteristics. Type 1 refers to baking trays whose upper half is completely flat⁴³⁵. The differentiation of subtypes 1a to 1c results from the differences in the design of the bottom half: completely flat (1a), slightly thickened with only somewhat smaller diameter than the whole tray (1b) or with a pedestal ring (1c).

The baking trays of Type 2 all possess one completely flat side and one with a protruding rim, whose design is in turn the criterion for the three further subtypes: slightly domed and protruding (2a), curving outwards and tapered towards the top (2b) and protruding in a right angle (2c).

For Type 2c (*Fig. 2.605* and *2.606*) the definition can be problematic due to the higher rim, whether it represents indeed a baking tray or a very shallow variant of Middle Bronze Age cooking pot⁴³⁶. On Tall Zirā'a, at least four such examples were found that measured only around 7 to 8 cm from the bottom to the rim; two showing the usual bulge with finger indentations, the two others showing no appliques. Probably, these form an individual type, possibly a type of pan⁴³⁷.



Fig. 2.605 Baking tray Type 2c, Middle Bronze Age cooking pot or possibly a pan, TZ 020482-003 (Source: Schwermer 2014).

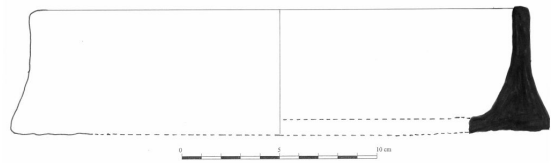


Fig. 2.606 Baking tray Type 2c, TZ 020170-012 (Source: Schwermer 2014).

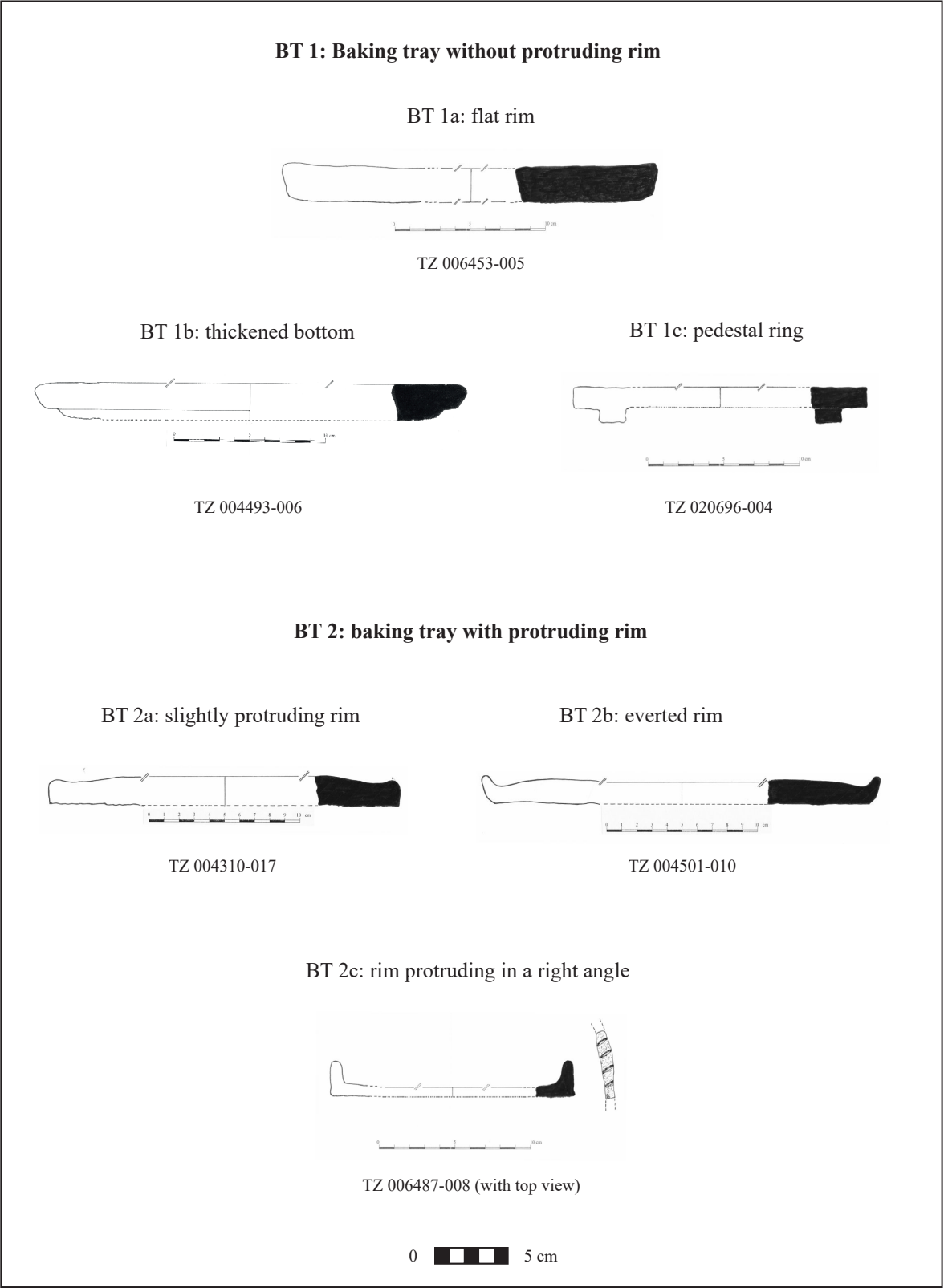
435 To simplify the description, the upper and lower side were defined in the typology according to Plate 2.7; in the actual usage this might have been different. This will be further discussed below.

436 Cf. also Maeir 2007, 260.

437 In an early publication about the Tall Waqqāš (Hazor) this

form, dated to Middle Bronze Age II, referred to as “Platter” (Yadin et al. 1960, Pl. CX, 24). Smith refers to such a vessel, found in Ṭabaqāt Faḥl (Pella) in a Middle Bronze Age context, as “flat bottom baking dish” (Smith 1973, 200 Pl. 39, 806).

Plate 2.7: Typology of Late Bronze Age baking trays



2.3.10.2. Decorations and Function Appliqués

A number of baking trays show decorations or have been given appliqués, that serve an obvious functional purpose (*Tab. 2.40*).

These include, on the one hand, smaller holes, poked into the wet clay with a small stick (*Fig. 2.607*) and on the other a more or less thick “carpet” of sharp crystalline stones, covering one side (*Fig. 2.608*). During its production, such a baking tray was presumably placed into a “bed” of crushed quartz and flint stones and shortly pressed into them. Thirteen baking trays of the Tall Zirā’a were

produced in such a manner, two of which showed even additional holes. A further five baking trays had holes only in their underside. Another three examples show the imprint of a woven mat on their underside, which must have been used in their production (*Fig. 2.609*). The sherds of Type 1 are the only ones found without functional appliques. Among the baking trays with pedestal ring (Type 1c) none were found with crystalline inclusions, which points towards a difference in usage.

The top side of the baking trays is often strongly smoothened and polished. It can also be coated with a layer of material containing limestone (*Fig. 2.610*).



Fig. 2.607 Bottom side (upper side?) of baking trays with holes pressed into them, both Type 1c, TZ 021567-001 (left) and TZ 020746-006/TZ 020790-001 (right) (Source: BAI and Schwermer 2014).



Fig. 2.608 Underside of baking trays with calcite inclusions: TZ 005499-001, Type 2c (left), and TZ 020890-004, Type 2a (right) (Source: BAI)

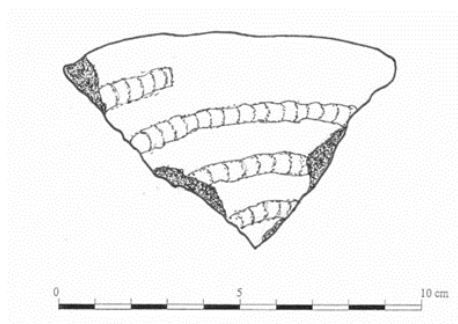


Fig. 2.609 Baking tray (Type 2c) with the imprint of a woven matt on its underside, TZ 020947-003, photograph (left) and drawing (right) (Source: Schwermer 2014).



Fig. 2.610 Baking tray Type 1a with a lime coating and smoothed upper side, TZ 006453-005 (Source: BAI/GPIA).

Eleven baking trays display an often simple, yet at times very detailed, carving decoration on the rim or the pedestal ring (Fig. 2.611 to 2.613). Furthermore, the types without a pedestal ring or protruded rim (1a, 1b and 2a) show none of these decorations.

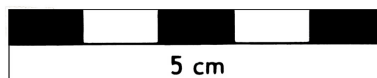


Fig. 2.611 Simple carvings on the rim of a baking tray Type 2c, TZ 006487-008 (Source: BAI/GPIA).

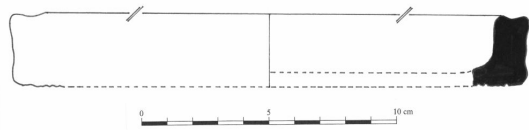


Fig. 2.612 Carved embellishment of a rim/pedestal ring of a baking tray Type 2c, in profile and top view, TZ 003178-011 (Source: Schwermer 2014).



Fig. 2.613 Carved Herringbone pattern on the rim and pedestal ring of a baking tray Type 1c, photograph (left) and drawing (right), TZ 021436-015 (Source: Schwermer 2014).

Type	Find number	Quartz particles	Holes	Decoration	Other
BT 1a	TZ 006453-005				Tempered strongly with organic material, smooth surface with lime layer
BT 1b	TZ 004493-006	X			
	TZ 020951-001	X			Tempered strongly with organic material, quartz particles pressed in 2–3 mm layer
BT 1c	TZ 020696-004			Pedestal ring with cross-shaped carvings	Fired hard, possibly not cooking ware
	TZ 020746-006 TZ 020790-001		X (1.5 cm deep)	Pedestal ring with diagonal carvings	
	TZ 021436-015		X	Pedestal ring and rim with carvings (Herringbone pattern)	Reddish clay
	TZ 021436-017			Pedestal ring with carvings	Slightly domed

BT 2a	TZ 003308-004	X			Upper side polished smooth
	TZ 004310-017	X			
	TZ 004773-034	X			
	TZ 005301-002	X			Black and relatively large quartz particles
	TZ 006581-006				Upper side polished smooth
	TZ 020890-004	X			
BT 2b	TZ 003503-009	X			Inner sides polished smooth
	TZ 005566-022			Parallel impressions on the rim	Imprint of a mat
	TZ 021451-001	X		Diagonal carvings on the rim	Not cooking ware
BT 2c	TZ 003162-010		X		
	TZ 003178-011	X	X	Diagonal carvings on the rim	Broad rim
	TZ 005484-040		X	Diagonal carvings on pedestal ring/rim	Very thin rim, upper side smoothened
	TZ 005499-001	X	X	Diagonal carvings on the rim	Mat imprint?
	TZ 006487-008			Diagonal carvings on the rim	Underside very coarse, upper side smoothened
	TZ 020930-018	X			Tempered strongly with organic material, upper side smoothened
	TZ 020947-003				Imprint of a mat
	TZ 021694-004			Carvings on both sides of rim	
Undef.	TZ 004622-018	X			
	TZ 021567-001		X		

Tab. 2.40 Decorations and functional appliquées on baking trays of the Tall Zirā'a (Source: Schwermer 2014).

2.3.10.3. Statistical Evaluation

Dimensions

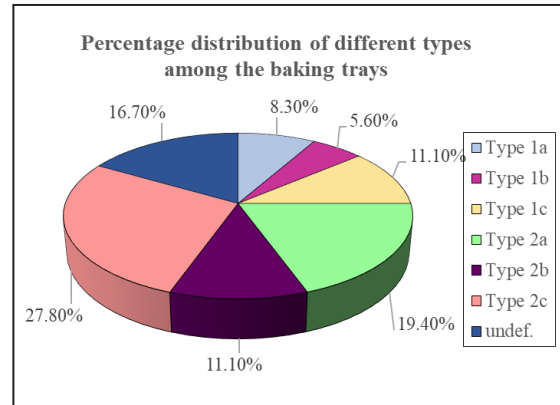
Baking trays have relatively thick walls and a diameter of up to 50 cm, with the majority falling into the range of 30 to 40 cm. Usually, the walls are 2 to 3 cm high, with the exception of the aforementioned high-walled examples for which the classification of an overall vessel-type is problematic.

Type	Wall Thickness (in cm)	Diameter (in cm)	Height (in cm)
BT 1a	2.7	40	2.7
BT 1b	1.7–2.3	40	2.5
BT 1c	1.1–2.2	26–38	2.5–3.3
BT 2a	1.2–1.7	21–44	1.6–2.1
BT 2b	1.4–1.8	20–32	1.6–2.5
BT 2c	0.8–2.3	20–50	2.0–6.5
undefined	1.4	30	—

Tab. 2.41 Wall thickness, diameter and height of the baking trays from Tall Zirā'a⁴³⁸ (Source: Schwermer 2014).

Distribution of the individual types

Among the baking trays excavated on the Tall Zirā'a, almost 60 % (58.3) can be assigned to Type 2 (Graph 2.12). Removing the six sherds that could not be typologized, this figure rises to over two thirds (70 %). The form without protruding rim (Type 1) only accounts for 25 to 30 %.

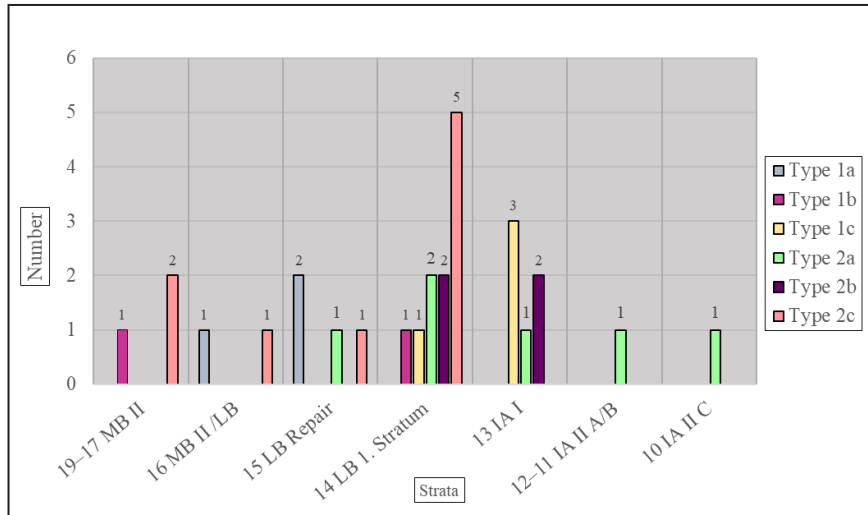


Graph 2.12 Percentage distribution of different types among the baking trays (Source: Schwermer 2014).

Distribution over the individual strata

Concerning a chronological categorisation and due to the small amount of baking trays found, conclusions resulting from the stratigraphic distribution of the individual types (Graph 2.13), can only be made conditionally. At the very least, the baking trays on the Tall Zirā'a are more prominently represented in the Middle and Late Bronze Age strata than in Iron Age ones (20 to 8 sherds), with a clear focus in the Late Bronze Age, Stratum 14 (11 sherds). Types 1a, 2a and 2c are also found in the backfill layer, which might point towards them predating the Late Bronze Age. These, and also Type 1b, are not present in the subsequent strata from that period. The types 1c, 2a and 2b, with the exception of one sherd of Type 2a in the repair layer, do not appear until the younger stratum of the Late Bronze Age and into the Iron Age.

438 Vilders (2005, 112) shows a diameter—referring to domed baking trays however—of about 24 to 34 cm and a height of 4 to 6 cm.



Graph 2.13 Distribution of baking tray types over the individual strata (Source: Schwermer 2014).

2.3.10.4. Comparison with Reference Sites

Transjordan

In northern Jordan only few baking trays are documented during excavations. One notable exception is found in the publications about Ṭabqāt Faḥl (Pella) and in parts about Tall as-Sa'īdiya (Tell Saidiyeh).

For **Ṭabqāt Faḥl (Pella)** one form of Early Bronze Age I-II (“tray”) is listed among the pottery⁴³⁹, corresponding to Type 2c of the typology used here. Closer observations about function or usage were not made, but the description of the clay (coarse texture, medium to large inclusions of grey flint “chert”, limestone, quartz and some black particles) suggests a purpose or use related to cooking.

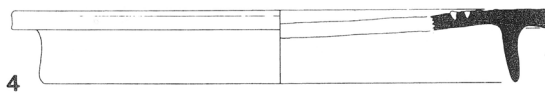


Fig. 2.614a Baking tray of Type 1c with holes on the upper side without decoration (D upside 33,5 cm, D downside 30 cm) from Ṭabqāt Faḥl (Pella) (MB II late) (Source Smith 1973)⁴⁴⁴.

For Middle Bronze Age II, a domed “baking tray” with holes made before firing, irregularly spread around the bottom, is attested⁴⁴⁰, whereby the convex side is seen as the underside. Such a form has not been found on the Tall Zirā'a thus far⁴⁴¹. Two “cooking plates” are dated to the late Middle Bronze Age⁴⁴², showing a completely smooth top and a pedestal ring about 3 cm in height. With that they can be assigned to Type 1c, although the pedestal ring is usually lower here. Of these two, one found at Tall Zirā'a, features holes on the upper side (Fig. 2.614). No further observations were made. The aforementioned “flat-bottom baking dish” corresponding to Type 2c also belongs to a Middle Bronze Age context⁴⁴³.

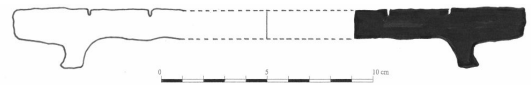


Fig. 2.614b Baking tray of Type 1c (embellished cf. Fig. 2.613) (D upside 38 cm, D downside 32 cm) (IA I), Stratum 13 on Tall Zirā'a, TZ 021436-015 (Source: Schwermer 2014).

439 Bourke et al. 1994, 86 f. Fig. 4, 5.

440 Smith 1973, Pl. 37, 550.

441 Cf. also Schwermer 2014, 216 and Chap. 5.11.1 (Section „Siebe“).

442 Bourke et al. 1998, 200 Fig. 25a, 3, 4.

443 Smith 1973, 200 Pl. 39, 806 (see above Chap. 2.3.10.1 Plate 2.7 and footnote 441 f.).

444 Fig. from Smith 1973, 200 Fig. 25a, 4.

On the **Tall as-Sa'idiya (Tell Saidiyeh)** nine sherds of domed baking trays were found in the strata of Late Bronze Age II–III and Iron Age I–II. One could be reconstructed and shows seven concentric circles on the convex upper side. The spaces in between are marked with small carvings or holes, that presumably were impressed onto the wet clay with a small stick (compare *Fig. 2.616f* and 2.622)⁴⁴⁵.

West Jordan (Cisjordan)

Excavations west of the Jordan river yielded more comparative pieces⁴⁴⁶. Amiran shows no baking trays however, the excavations at **Tall Waqqāš (Hazor)** and in the Jezreel Valley particularly, show evidence for a large amount of baking trays from the Middle Bronze Age to the Iron Age. A specific typology for different forms of this specific vessel type however, was only undertaken for the domed Iron Age baking trays of Qīre (Tall Qīrī)⁴⁴⁷; a type not yet seen on the Tall Zirā'a (apart from the aforementioned exception⁴⁴⁸).

The baking trays of the Middle Bronze Age II strata at Tall Waqqāš (Hazor) display a smooth upper side and sit on a pedestal ring of up to 3 cm height, that often shows diagonal⁴⁴⁹ or latticed⁴⁵⁰ carvings on the bottom. Holes are often pushed into the upper side⁴⁵¹. Some of these baking trays have an upper side arching over the pedestal ring (similar to Type 1c), for others, it sits directly on it (similar to the Zirā'a Types 2b and 2c, where the pedestal ring is interpreted as part of the protruded rim).

One form, that was only observed once, is referred to as “tray”, showing burn marks on the inside and possesses a ledge handle with finger indentations (*Fig. 2.615*). Here, the smooth side forms the bottom, the rim is about 5 cm high. This item could indeed be a type of pan, like the example shown above from the Tall Zirā'a; however, the latter does not show remnants of decorations nor handles⁴⁵².

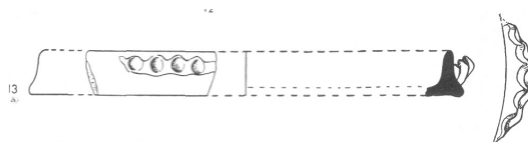


Fig. 2.615 “Tray” with ledge handle from Tall Waqqāš (Hazor)
(Source: Yadin et al. 1961)⁴⁵³.

Baking trays of Late Bronze Age I and II display largely the same characteristics as the Middle Bronze Age forms described above⁴⁵⁴. Some rare convex shapes, with the dome interpreted as the upper side, join the picture. The rim barely protrudes and does not usually show any decorations; the upper side might have been pierced by holes (*Fig. 2.616*)⁴⁵⁵.

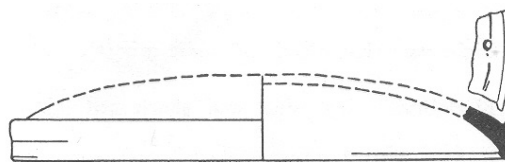


Fig. 2.616 Tall Waqqāš (Hazor): domed baking tray from Late Bronze Age II (Source: Yadin et al. 1961)⁴⁵⁶.

445 Vilders 2005, 111–113 Fig. 2.

446 See for this also the references given in Schwermer 2014, Annexe, Part I, 6 for the baking plates found on the Tall Zirā'a.

447 Hunt 1987, 167 Fig. 41, 10–15, 199 f. (Definition into six types based on rim design). Cf. Fig. 4, 65.

448 See Schwermer 2014, Chap. 5.11.1 (Section „Siebe“).

449 Yadin et al. 1958, Pl. CII, 4; Pl. CIV, 13; Yadin et al. 1960, Pl. CXV, 16–19; Yadin et al. 1961, Pl. CCLX, 10, 11.

450 Yadin et al. 1960, Pl. CXV, 15; Yadin et al. 1961, Pl. CCXCVI, 17.

451 Yadin et al. 1958, Pl. XCVIII, 23; Pl. CII, 4; Yadin et al. 1960, Pl. CXV, 17–20; Yadin et al. 1961, Pl. CCXCVI, 18.

452 Cf. Chap. 2.3.10.1 with Fig. 2.605 and 2.606.

453 Yadin et al. 1961, Pl. CCLX, 13. A similar example with surrounding bulge and finger imprints as on cooking pots

of Middle Bronze Age II, see same source, Pl. CCXXXIX, 25.

454 Yadin et al. 1958, Pl. LXXXV, 25–28, Pl. CXLII, 9–11; Yadin et al. 1960, Pl. CXXIII, 13–15; Pl. CXXIV, 22; Pl. CXXV, 14, 15; Pl. CXLVI, 14, 15; Yadin et al. 1961, Pl. CC, 7; Pl. CCLXXXI, 18, 19; Pl. CCXCV, 19, 20; Pl. CCXCVIII, 3; Ben-Tor et al. 1997, [38], Fig. II.12:21 and 22; [54], Fig. II.20:19; [80], Fig. II.29:1; [248], Fig. III.30: 28. One example from Tall Waqqāš (Hazor), dates to Late Bronze Age II, showing exactly the same decorations like TZ 21436-015 (see Fig. 4.55 and 4.58), also the reddish colour of the clay is corresponding (Yadin et al. 1961, Pl. CCXCVIII, 3).

455 Yadin et al. 1961, Pl. CLX, 21; Pl. CCLXXXI, 17.

456 Yadin et al. 1961, Pl. CLX, 21.

For the Iron Age, these domed shapes, similar to an upside-down plate, are also documented from Tall Waqqāš (Hazor) (*Fig. 2.617*), but also flat or smooth baking plates, that correspond to the Zirā‘a-Type 2 (*Fig. 2.618*)⁴⁵⁷. Both shapes display holes on one side, which is seen as the upper side, and sometimes also concentric grooves or a coating of calcite particles⁴⁵⁸.

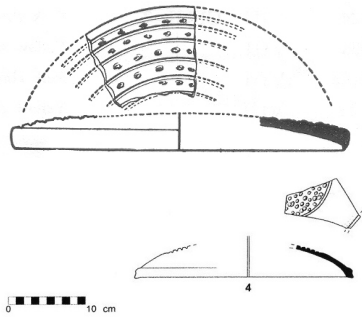


Fig. 2.617 Tall Waqqāš (Hazor): domed baking tray from Iron Age II AB (Source: Yadin et al. 1960)⁴⁵⁹.

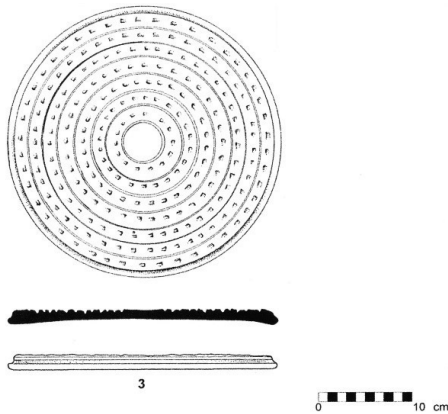


Fig. 2.618a Tall Waqqāš (Hazor): flat baking tray from Iron Age II C (eighth century BC) (Source: Ben-Ami et al. 2012)⁴⁶⁰.



Fig. 2.618b Tall Waqqāš (Hazor): flat baking tray from Iron Age II C (eighth century BC) (Source: Ben-Ami et al. 2012, see footnote 460).

In the publication on **Tall al-Mutasallim (Megiddo)** from the year 1948, flat and domed baking trays are also pictured, although not classified as such, but referred to as “bowls”, thereby making a different decision about which side constitutes the “upper” or “under” side than seen with the examples from the Tall Waqqāš (Hazor). However, they do display all the aforementioned features in the description⁴⁶¹. The flat forms show carved decorations on the slightly protruding rim, which are also recorded with the Zirā‘a-Type. In a more recent publication (from 2000), on Middle and Late Bronze Age pottery, these forms are classified and shown as baking trays but are pictured the other way around (*Fig. 2.619*). In one example, it is mentioned the upper side is covered in a layer of lime⁴⁶². Both baking trays correspond to the Zirā‘a-Type 2c.

457 Yadin et al. 1961, Pl. CCVIII, 49; CCXVI, 17; Ben-Ami et al. 2012, 456 f. Fig. 6.14, 3 Photo 6, 21; presumably also Ben-Ami 2012a, Fig. 2.20, 19 (IA II A, middle of tenth to early ninth century BC); Ben-Ami 2012b, Fig. 3.8, 3 (ninth century BC).

458 Yadin et al. 1958, Pl. XLVI, 15; Yadin et al. 1960, Pl. LII, 26, 27; LXII, 1–3; LXXIV, 11; Yadin et al. 1961, Pl. CLXXIX, 21; CCVII, 27; Ben-Tor et al. 1997, 130 Fig. II.44, 20; 248 Fig. III.30, 27.

459 Yadin et al. 1960, Pl. LII, 26 (upper example); Ben-Ami et

al. 2012, Fig. 6.14, 4 (lower example). Cf. also Ben-Ami 2012a, Fig. 2.1, 20 dating to the Iron Age II A (middle of the tenth to early ninth century BC); Ben-Ami 2012b, Fig. 3.16, 5; 3.18, 19; 3.24, 3 (corresponds to the examples shown) dating to the Iron Age II A/B (ninth century BC).

460 Ben-Ami et al. 2012, 456 f. Fig. 6.14, 3 Photo 6, 21.

461 Flat baking trays: Loud 1948, Pl. 53, 21, 22 (Late Bronze Age I), Pl. 61, 22 (Late Bronze Age II); domed baking trays: Loud 1948, Pl. 85, 11 (Iron Age I/II).

462 Ilan et al. 2000, 187 f.

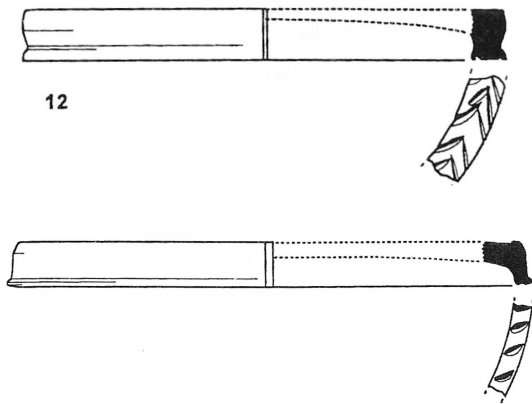


Fig. 2.619 Tall al-Mutasallim (Megiddo): flat baking tray from Middle Bronze Age II (Source: Ilan et al. 2000)⁴⁶³.

For **Qīre (Tall Qīrī)**, the **Tall al-Qassis (Tēl Qāšīš)** and the **Tēl Yoqnā'ām** Middle Bronze Age II baking trays are also listed, with a smooth upper side, showing diagonal⁴⁶⁴ or cross-shaped⁴⁶⁵ carvings or impression⁴⁶⁶ on the pedestal ring (*Fig. 2.620*). On the Tēl Yoqnā'ām, another form can be found which is a baking tray with slightly convex upper side and carvings in a lattice shape on the pedestal ring⁴⁶⁷. Overall the Tēl Yoqnā'ām shows a proportion of 1.2 %⁴⁶⁸ for baking plates, out of all the cooking ware of the Middle and Late Bronze Age. On the Tall Zirā'a this amount is presumably much lower. From Late Bronze Age strata, no baking trays are documented at any of the three locations.

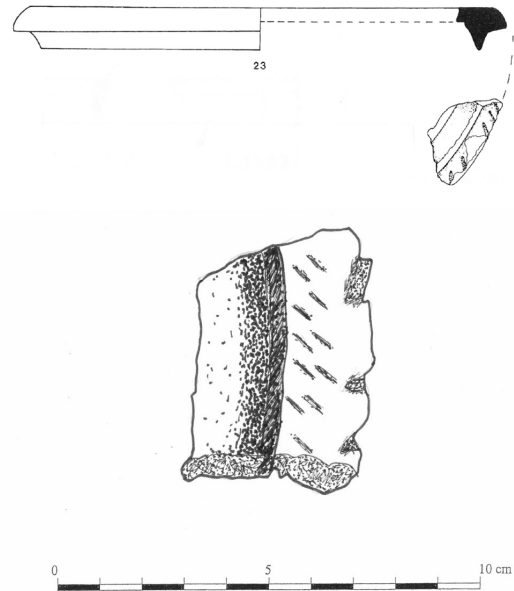


Fig. 2.620 Qīre (Tall Qīrī): flat baking tray from Middle Bronze Age II (Source: Ben-Tor 1987)⁴⁶⁹ (top) – for comparison: rim design of TZ 021694-004 (Type BT 2c) from Stratum 16 (MB II/LB) (Source: Schwermer 2014) (bottom).

In the Iron Age strata of **Qīre (Tall Qīrī)** 41 baking trays were found⁴⁷⁰. All of these baking trays are convex and often show holes pierced into the upper side⁴⁷¹. Occasionally they also feature carved concentric lines⁴⁷². Based on their rim designs, six types can be differentiated (*Fig. 2.621*). Corresponding forms were also found on the Tall al-Qassis (Tēl Qāšīš)⁴⁷³.

463 Ilan et al. 2000, 188 Fig. 9.1, 12; 197 Fig. 9.6, 12.

464 Ben-Tor 1987, 269 Fig. 63, 23.

465 Ben-Ami – Livneh 2005, 281 Fig. IV.10, 11.

466 Ben-Tor – Bonfil 2003b, 368 Fig. 143, 13.

467 Ben-Ami – Livneh 2005, 281 Fig. IV.10, 10.

468 Ben-Ami – Livneh 2005, 282.

469 Ben-Tor 1987, 269 Fig. 63, 23.

470 Hunt 1987, 199 f.

471 The imprints are partially made with a thin reed pipe (Zarzecki-Peleg et al. 2005, 281).

472 See *Fig. 2.617* and *Fig. 2.618*.

473 Ben-Tor – Bonfil 2003b, 379 Fig. 152, 6; 361 Fig. 141, 10.

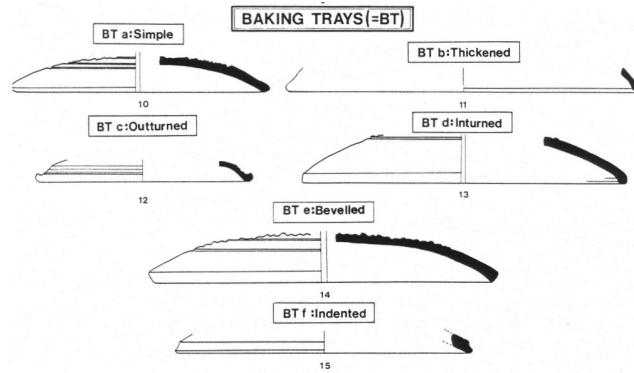


Fig. 2.621 Typology of the Iron Age baking trays from Qīre (Tall Qīrī) (Source: Hunt 1987)⁴⁷⁴.

The Iron Age baking trays from **Tēl Yoqnā'ām**⁴⁷⁵ account for 1.5 % of all cooking ware there and are also domed. They are roughly divided into two types (simple and turned inwards) based on their rim designs (CP XIA and CP XIB)⁴⁷⁶. The surface design shows two different approaches and are seen as chronologically significant. The first, allegedly typical for Iron Age I, is where concentric circles exist in close proximity, in-between which holes were meticulously pierced using a reed stem. The second, to be dated to Iron Age II A and B, is where baking trays with coarse, irregular holes are encircled only by a circular line (Fig. 2.622).

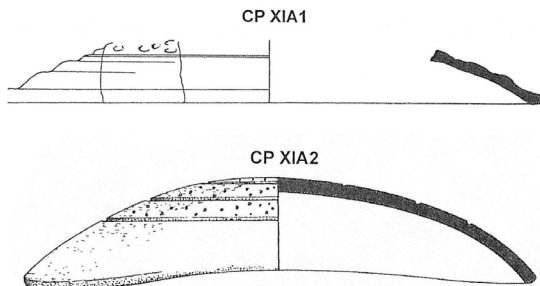


Fig. 2.622 Tēl Yoqnā'ām: baking tray with concentric circles and delicate holes (IA I) (top) and baking plate with rough holes (IA II) (bottom) (Source: Zarzecki-Peleg et al. 2005)⁴⁷⁷.

As mentioned a number of times in this chapter, no domed baking trays were found, as of yet, on the Tall Zir'ā. Potentially one vessel, interpreted as a sieve and reconstructed as such, was made of coarse cooking ware and could be seen as a baking tray. The pierced holes alone set this Tall Zir'ā find apart from the baking plate with coarse imprints described above (Fig. 2.623 and 2.624).

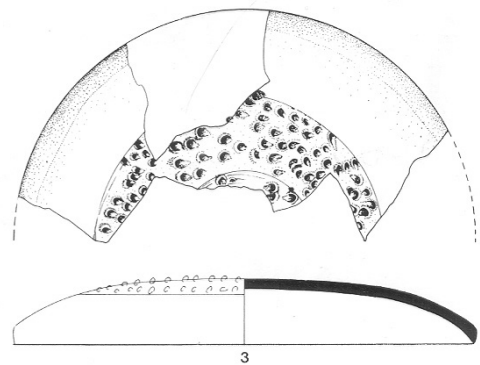


Fig. 2.623 Baking tray of Iron Age II from Qīre (Tall Qīrī) (Source: Hunt 1987)⁴⁷⁸.

474 Hunt 1987, 167 Fig. 41.

475 Zarzecki-Peleg 2005, 44 Fig. I.6, 21; 53 Fig. I.13, 15; 66 Fig. I.21, 12, 13; 72 Fig. I.25, 26 (all Iron Age I); 108 Fig. I.36, 30; 116 Fig. I.40, 27; 120 Fig. I.42, 13; 136 Fig. I.51, 2, 3; 142 Fig. I.55, 19; 144 Fig. I.57, 17; 146 Fig. I.58, 33;

150 Fig. I.60, 11; 158 Fig. I.64, 26 (all Iron Age II A); 182 Fig. I.76, 1, 2 (Iron Age II A-B).

476 Zarzecki-Peleg et al. 2005, 281 f. Fig. II, 24.

477 Zarzecki-Peleg et al. 2005, 281 f. Fig. II.24, 1, 2.

478 Hunt 1987, 78 Fig. 13, 3. Cf. also Fig. 2.622, bottom example.



Fig. 2.624 Remnants of a vessel from the Tall Zirā'a, probably identifiable as a baking tray (TZ 004416-001) (top); reconstruction of the same vessel (bottom) (Source: BAI/GPIA).

The baking trays documented for **Tall al-Ḥiṣn (Beth Shean)** from the Middle Bronze Age strata correspond to our Type 2c. They have a protruded rim, diagonal imprints or carvings (Fig. 2.625)⁴⁷⁹. In contrast to the publications described above, the rim is not interpreted as a pedestal ring here, but as the side of the baking plate that is facing up. This is founded on the observation that the vessels lack the usual imprints on the side otherwise seen as the

upper side, and the concave side being worked on rather carefully. Thus, the vessel is seen rather as a baking form for bread (i.e. a “bread mould”) rather than a baking tray. Since such baking forms are documented in Egypt from the 13th Dynasty (i.e. the middle of the 18th c. BC) a potential Egyptian origin or influence might be present here⁴⁸⁰.

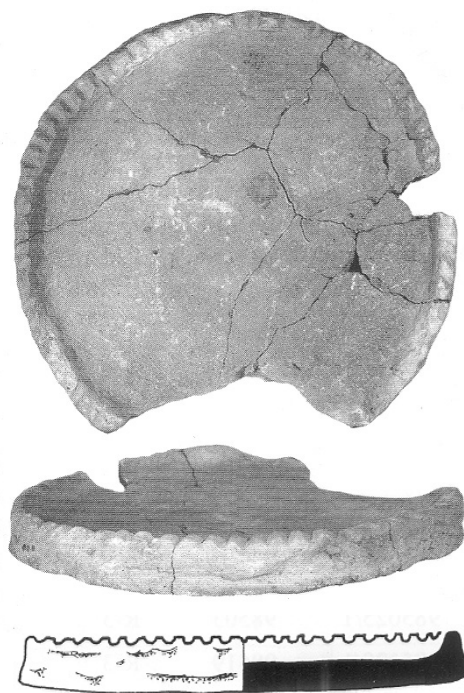


Fig. 2.625 Tall al-Ḥiṣn (Beth Shean): baking plate or rather “bread mould” from Middle Bronze Age II (Source: Maeir 2007)⁴⁸¹.

In contrast to Tall Waqqāṣ (Hazor), baking trays from Late Bronze Age I strata are missing on the Tall al-Ḥiṣn (Beth Shean) and are not documented until Late Bronze Age II. The baking tray found on Tall al-Ḥiṣn (Beth Shean) (Fig. 2.626) corresponds to our Type 2b. It is, like numerous examples from the Tall Zirā'a, smoothed with water on the inside (“wet-smoothed”)⁴⁸² and shows irregular, diagonal carvings on the rim. The bottom is rough and unhewn, the inside is blackened with soot. Baking trays from the Iron Age are not documented for the Tall al-Ḥiṣn (Beth Shean).

479 Maeir 2007, 263 Photo 4, 32; 365 Pl. 25, 11; 377 Pl. 31, 5; 385 Pl. 35, 4.

480 Maeir 2007, 263 f.

481 Maeir 2007, 263 Photo 4, 32; 377 Pl. 31, 5.

482 Cf. Chap. 2.3.10.2. and Tab. 2.40.



Fig. 2.626 Late Bronze Age baking tray from Tall al-Ḥiṣn (Beth Shean) (Source: Mullins 2007)⁴⁸³.

2.3.10.5. Conclusion and Thoughts about Functionality

The comparison of baking trays from the Tall Zirā‘a, with those of the other reference sites listed above, shows that apart from Type 1b, all other forms are also documented there (see summary in *Tab. 2.42*). The domed variant, particularly in use in the Jezreel plain and the Tall Waqqāṣ (Hazor), could not be unequivocally proven to have existed yet on the Tall Zirā‘a.

Tall Zirā‘a		References ⁴⁸⁴	
Type	Strata	Find location	Dating
BT 1a	16, 15	Tall Waqqāṣ (Hazor)	MB II
BT 1b	18, 14	—	—
BT 1c	14, 13	Tall Waqqāṣ (Hazor)	MB II–LB II
		Qīre (Tall Qīrī)	MB II
		Ṭabqāt Faḥl (Pella)	MB late
BT 2a	15, 14, 13, 12, 10	Tall Waqqāṣ (Hazor)	IA II und IA II C
BT 2b	14, 13	Tall Waqqāṣ (Hazor)	MB II late and LB II
		Tall al-Ḥiṣn (Beth Shean)	LB II
BT 2c	19, 17, 16, 15, 14	Ṭabqāt Faḥl (Pella)	EB I–II
		Tall al-Mutasallim (Megiddo)	MB II
		Tall al-Ḥiṣn (Beth Shean)	MB II
		Tēl Yoqnə‘ām	MB IIB
		Tall Waqqāṣ (Hazor)	EB, MB II–LB II
		Tall al-Qassis (Tēl Qāšīṣ)	MB II
		Qīre (Tall Qīrī)	MB II
BT domed TZ 4416-001?	13	Tell es-Sa‘idiyeh	LB II–III and IA I–II
		Qīre (Tall Qīrī)	IA
		Tel Tall al-Qassis (Tēl Qāšīṣ)	IA
		Tēl Yoqnə‘ām	IA
		Tall Waqqāṣ (Hazor)	LB/IA

Tab. 2.42 Overview over the baking trays from Tall Zirā‘a and the reference sites (Source: Schwermer 2014).

483 Mullins 2007, 421 Photo 5, 32; 541 Pl. 76, 9.

484 Complete information about the references see catalogue in Schwermer 2014, Annexe, Part I, 6.

Like on the Tall Zirā'a, the baking trays at other excavation sites appear particularly in the strata of Middle and Late Bronze Age, as well as the Iron Age. The dating of the individual types and sub-types does not differ significantly from one another. The baking trays of Type 1 (2b and 2c) are focussed around Middle Bronze Age II, however, they were still in use by the Late Bronze Age. Form 2a, on the Tall Zirā'a found in the strata of Late Bronze Age to Iron Age II C, has an overall later dating ascribed. Otherwise, this smooth baking tray appears in the Iron Age only on the Tall Waqqās (Hazor). For the other locations, domed baking trays appear to be typical for the Iron Age.

Baking trays were handmade and appear to be, at least in part, formed on mats. The domed variants were more common at other locations and were presumably, similar to the Late Bronze and Iron Age cooking pots, made in a cast, or "mould."⁴⁸⁵ Since their production does not require a high proficiency in pottery, the great amount of homogeneity beyond local borders in regards to form, manufacturing and decoration is surprising. On the one hand, this points to a functional necessity of certain features, in particular the outer form and surface design – smoothing, pierced holes or imprinted quartz pieces. On the other hand, baking trays which were not mass produced like cooking pots were possibly produced in only a few pottery workshops from which they then made their way to other locations.

Many open questions pertaining to the usage of this type of vessel remain. Soot traces point towards these trays having contact with fire; often they are associated with bread baking. Bread and cereal products more generally (e.g. barley, wheat or wild emmer) were the staple foods of the time period⁴⁸⁶. The flat breads,⁴⁸⁷ comparable to pita bread, are still

common in the Middle East and were made in ovens (called tabuns⁴⁸⁸), however, flat breads could also be made on a hot stone, a hot plate or simply in the ash of a fire, which was later dusted off. Many Bible passages document these various baking methods⁴⁸

The domed baking trays of the Iron Age, in particular those from the Jezreel Valley, eradicate any doubt as to their usage, particularly when comparing them with an item that is still in use by modern day Bedouins to bake flat breads. Hereby the trays are placed, domed side facing up, over a fire or embers, sitting on a ring of stones. When heated up, the flat bread dough is placed on the tray. The holes in the tray could, as interpreted by Hunt, have served to hold the dough in place⁴⁹⁰. More likely, they were necessary to be able to lift off the finished bread. The holes are usually exactly in the middle of these baking trays, where the heat is at its most intense. If the dough was not placed there in its entirety, the oxygen in the holes would have made it easier to remove it. Possibly some fat or water was added to the holes to increase this effect.

This assumption is supported by an experiment carried out by Vilders with a reconstructed baking tray from Tall as-Sa'idiya (Tell Saidiyeh) (*Fig. 2.627*) whereby a Bunsen burner was placed under the baking tray, reaching about 850 °C. A number of baking processes followed, both with unleavened and leavened dough. This showed that unleavened flat bread was easy to remove from the baking tray which had been baked in eight minutes to the desired stage of crispness and taste. A bread with leavened dough on the other hand could not be removed from the baking tray even after ten minutes. Vilders concludes that baking trays were used to produce unleavened bread, whilst leavened dough was baked in tabuns, which were present in almost

485 Vilders 2005, 113. On the production of Late Bronze and Iron Age cooking pots see Schwermer 2014, Chap. 5.7.2 and 5.8.2.

486 Kaufman 2006, xxxi; Borowski 2004, 99 f.; Leonard 2004, 69; Amiran – Ilan 1992, 66–68, for Early Bronze Age Arad. See also Schwermer 2014, Chap. 5.3.

The bread, its ingredients and production are often mentioned in the Old Testament, particularly in ritual contexts, showing its importance beyond simply being a staple food. There are numerous web pages that compile this and show the respective bible passages. One example shall be given

here, the page of the "International Standard Bible Encyclopaedia" (ISBE); for example the chapter "Bread", see www.internationalstandardbible.com/B/bread.html (last visit: 02.05.2020).

487 Shaped breads are of a later development (Kaufman 2006, xliii).

488 See Schwermer 2014, Chap. 3.1.5 f. with Fig. 3.7 f.

489 Baking in hot ash: e.g. Isaiah 44:19; Kings 19:6.

Baking on a plate: e.g. Leviticus 2:5, 7:9.

Baking in an oven: e.g. Leviticus 7:9, 26:26.

490 Hunt 1987, 199.

every household. For the sedentary population there was no need for baking trays, hence the relative lack of findings. On the other hand, for shepherds, nomads and travelling merchants that could not leaven the dough while travelling, these baking trays were important tools⁴⁹¹.

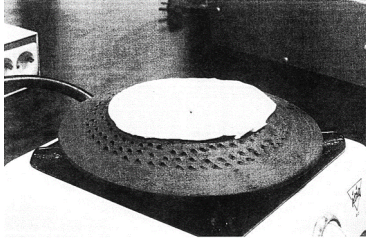


Fig. 2.627 Experiment: baking an unleavened flat bread on a reconstructed baking tray (Source: Vilders 2005)⁴⁹².

The domed shape of the baking trays is reminiscent of the metal “bowls” still in use by bedouins today. A bowl is placed over an open fire in order to bake flat bread on top. This flat bread is one of the most important staple foods (Fig. 2.628 and 2.629)⁴⁹³. Such “mobile ovens” were easy to transport and quickly set up for use which is important for a nomadic lifestyle, however, it could also an advantage in other contexts.

Since Iron Age cooking equipment completely lacked implements akin to a frying pan, Hunt assumes in relation to the domed baking trays from Qīre (Tall Qīrī), that these may have been used for frying too; although he has to concede that the vessel is not actually suited to frying, as fat would drip into the fire due to the sloped shape⁴⁹⁴.



Fig. 2.628 Baking bread on a metal baking bowl (arab. “saj”) in a bedouin garden on Mt. Sinai (taken 19th July 2002) (Source: Schwermer 2014). Below: Detail.



491 Cf. for the entire section: Vilders 2005, 115 f.

492 Image: Vilders 2005, 115 Fig. 4, 493; Nunn 2006, 39–41.

493 Cf. also Vilders 2005, 114 f. Fig. 3. One such “iron pan” or pan was already mentioned in the Book Ezekiel (4,3) dating to the sixth century BC.

494 Hunt 1987, 199. In his essay about prehistoric cooking, Borowski considers that the items interpreted by archaeologists as baking trays could have been used for frying (Borowski 2004, 106).



Fig. 2.629 Bread baker and seller with a metal baking bowl (Arab. “saj”) on a street in Jericho (taken 4th September 2010) (Source: Schwermer 2014).

The question remains whether the flat baking trays found on the Tall Zirā‘a fulfilled the same function and were used in the same way. For this, it is firstly important to know which side of the baking trays was used as upper or bottom side. For the forms with a pedestal ring and overhanging plate (Type 1c) this seems to be obvious and is not contested in the literature. Why the decorations were added to the pedestal ring, a place that would thus hardly ever be seen, appears somewhat mysterious (see Fig. 2.613). Potentially it was used to imprint shapes into the uncooked dough, similar to waffles or wafers. The existence of such “embellishments” on baked goods in the ancient Middle East is documented for instance by the baking forms from Mari with about 50 different patterns⁴⁹⁵.

495 Nunn 2006, 39–41.

496 Cf. the respective information about the references in the catalogue of Schwermer 2014, Annexe, Part I, 6.

497 The smoothing of the surface appears also in the clay baking forms of ancient Egypt. (Kaufman 2006, 47).

498 Kaufman 2006, 47.

In particular, the forms of Type 2 see a number of different interpretations. Often the side with holes and/or quartz stones is seen as the side on which the dough is baked with the rim forming a pedestal⁴⁹⁶. However, it is also possible that these higher, often decorated forms of rim were used similarly to modern flat baking trays for cake bases or tarts where the dough was pushed into the form. The smoothed and polished surface of this type would make removal of the dough easier⁴⁹⁷ and a fact which supports this interpretation. The holes and quartz pieces on the underside could help heat up the tray or made it more durable to withstand the high level of thermic stress.

The flat baking trays, same as the domed ones, could also be used over an open fire or hot embers without the dough touching either. Another possibility is, they were placed inside a tabun. However, no baking tray has been found inside a tabun, which may contradict this particular theory. Another option is the baking tray was placed above the opening of a tabun in order to use the “bottom heat” of the oven to bake (or roast?) certain meals as is known from Egypt⁴⁹⁸, Mesopotamia⁴⁹⁹, and described in the Old Testament⁵⁰⁰ as well as encountered in some countries across the globe today (Fig. 2.630).



Fig. 2.630 Metal baking tray on a clay oven in front of a shop in Pushkar/India (taken March 2014) (Source: Schwermer 2014).

499 Bottéro 2004, 49.

500 In Lev 2, 5 f. for example the rules for the preparation of an offering made on an “oven plate” (according to the standard translation) are given. This should be made of unleavened, fine-ground flour, mixed with oil, and finally broken into pieces.

The final question that should be asked is why additional bread making trays were required, if every house had a tabun which, once heated up, allowed for the easy and quick production of bread in large quantities. Compared to an oven, baking trays possess the advantage of being portable and thus are of use while travelling. Although it can also be presumed people would bake bread in the hot ash of a fire or on a flat stone they had picked up, rather than weighing themselves down with extra “luggage”. It is much more plausible that baking trays were not used for the making of the daily bread but rather something, of which the dough was such, that it could not be “tossed” into the inside walls of the oven. Possibly they were used for flat cakes, filled or covered with fruits, spices or vegetables⁵⁰¹ and only served on special occasions. This would be plausible, not least because of the small amount of baking trays which have been found.

501 Nunn 2006, 39, states that the ancient Middle East has had 300 bread types, that one “would partly have to refer to as cake.” See also Borowski 2004, 99. The Old Testament is

also explicitly referring to “cakes” (e.g. Ex 29,2 and Lev 2,4). Schwermer 2014, 145. 234.

2.4. Conclusion

by K. Soennecken

After the complex construction work of the western slope, the city was rebuilt. The boundaries of the land were not fundamentally changed, as the location for the walls of the new city is very similar to that of the preceding ones. This is particularly evident in the north of Area I: the floor plans of the existing buildings continue to be used with minimal changes, and the new Complex D is built on the fill layers of Stratum 15 and fits into the existing structure. From the continued settlement, it can be inferred that relatively little time passed between the landslide and the reconstruction of the city and the city was rebuilt by the same inhabitants.

This stratum is divided into four phases, which are labelled d to a (d as the oldest and a as the youngest phase). These phases are characterized by the reconstruction of individual complexes while maintaining the larger architectural context.

14 d	14 c	14 b	14 a
A	A	A	A
B	B	B	B
C	C	C	C
D	D	D	D
E	E	E	E
F 1 and F 2	F 1 and F 2	F 1 and F 2	F 3
G	G	G	G
H	H	H 1 + 4 → H 5	H 6-8
I	I	I	I 2 → I 4 I 3 → I 5
K	K	K	P

Tab. 2.43 Table with reconstruction phases and complexes
(Source: BAI/GPIA).

The architecture in the northern part of Area I (**complexes A, B and C**) has not changed compared to Stratum 16 and 15 in Stratum 14 d. However, there have been some minor alterations.

Complex D was rebuilt in Stratum 14 d on top of debris layers of Stratum 15 and covers the Squares AP–AR 118–122. The complex consists of a temple in antis (D 3) with an attached staircase (D 2), a large courtyard (D 4) and four smaller rooms in the east (D 5–8). Room D 1 denotes the area between the Complexes A–C, which already existed in Stratum 15, and the large temple, consisting of soil features without associated architecture. Two floors (Contexts 3581 and 3582) and a pit (Contexts 6484 and 6486) belong to this area. Context 6168 could represent a pavement, but it is more likely that these are the fill layers of Stratum 15.

Building D is exceptionally well built, with a courtyard of about 150 m² and a staircase complex that indicates at least one, if not two, more floors. In this building, 38 cylinder seals have been found so far, various glass beads, faience and a silver pendant with the relief of a goddess. Finds also include an industrial pottery, raw glass and a melting pot. Therefore, it is reasonable to assume that the complex is a craft enterprise for glass production or glass processing.

Complex E adjoins the great temple to the south and consists of two walls with a length of 21 m running from north-east to south-west. The western outer wall is 2 m thick and thus wider than the inner wall with 70 cm. It is a casemate wall with six rooms, each of which is separated by an intermediate wall with an average width of 1 m. The size of the rooms is about 2 m x 3 m. In total, the complex has a width of almost 6 m. Below the casemate wall runs the channel of Complex F. In the south, the complex is bordered by Tower I and the southernmost casemate has direct access to it. In the east, the two courtyard houses G and H are attached to the wall.

South of Tower I, Complex K is a continuation of the casemate wall, although its construction differs from that of Complex E.

Complex F: Overall, it appears the canal was constructed at the end of Stratum 15 and before the new buildings of Stratum 14, including the case-

mate wall, were built. Soil was probably brought from the bottom of the tall and used as supporting material. This explains the large amount of Early Bronze Age pottery in the fill layers of Stratum 14 d. The casemate wall Complex E does not cut the channel, so it was probably still in use in Stratum 14 d–b and only in the last phase Stratum 14 a was it added to and replaced by a new one (see *Chap. 4.1.1.3.4.*).

The channel consists of two areas, one below the casemate wall in Squares AO–AM 116/117 and one in the area of the gate and courtyard house III in Squares AF/AG 114–116. It is likely that parts of the channel were originally connected and continued below the tower. This channel was probably necessary to drain off the collecting water (partly from rain, partly caused by the artesian spring) and to prevent another landslide. Thus, the water could be channelled and diverted to the foot of the tall without posing a danger to the buildings and if necessary, could still be used to irrigate the fields.

Complex G covers the Squares AM–AP 117–120 and shows the ground plan of a courtyard house. In the largest extension 10 m x 17 m have been excavated, but probably only half of the house was developed, so an original house size of at least 15 m x 17 m can be assumed (approx. 255 m²). In the north, the complex is connected to the large temple, in the west, it uses the eastern outer wall of the casemate wall and in the south, the outer wall of complex H. The east was not excavated at this time. The complex consists of five rooms (G 1, G 2, G 3, G 5 and G 6) arranged around a courtyard (G 4). The outer walls have an average thickness of 1.3 m to 1.5 m and the inner partition walls are between 80 cm and 1 m thick.

Complex H south of complex G is unfortunately only rudimentarily preserved (or not yet excavated). It uses Contexts 2379, 2190, 2319 and 2370 as its northern outer wall together with Complex G, is either bordered in the west by the two casemate rooms E 4 and E 5 or probably uses both of them. The eastern boundary was not excavated and in the south the courtyard of the tower (Complex I) adjoins. Whether the two courtyards of Complexes H and I were connected with each other or separated by a wall cannot be determined with certainty due to the many later pits in this area. Even if the larger extension shown below seems more probable, the areas are first worked on separately.

The tower (Complex I) extends over the Squares AI–AL 115–117 and consists of two almost square rooms and a paved courtyard to the east. From the northern room I 1, there is a passage to the southernmost room (E 6) of the casemate wall. The wall is 1 m thick, not including the western outer wall which was probably twice as thick but this wall is not completely preserved. The interiors measure 3 m x 4 m and are both paved.

In front of the two rooms I 1 and I 2 to the east is a large paved courtyard, which was probably connected to the courtyard of complex H. The courtyard I 3 is closed to the south by wall 3614. The eastern extension cannot yet be determined, as this area was not excavated, but probably only half of it was developed.

Complex K is probably a gate area consisting of a narrow passage between two casemate-like rooms, which was probably closed in a later construction phase. It adjoins the tower to the south and comprises the Squares AG/AH 115/116.

Overall, complex K appears to be a public storage area. This is indicated by the large number of silos that could store supplies for a large community as well as the location of the silos at the entrance area.

The southernmost complex of Stratum 14 d (Complex L) seems to be the northwestern quarter of a courtyard house. An area of approximately 10 m x 8 m was excavated, consisting mainly of a large paved courtyard of approximately 45 m² (L 2). The complex is separated from the northern gate area by a 1 m wide wall running east-west.

Modifications in Stratum 14 c: There are few differences between phases 14 d and 14 c.

In room K 8, the southernmost of the rooms of Complex K (AG 116), a new floor could be determined (Contexts 4619 and 4620) and the soil formation (Context 4632) belongs to phase's c and b.

To the south of excavation Area I, the already described Complex L was reconstructed and divided into two complexes named Complexes M and N. The entire area north of Squares AE/AF 114–116 is preserved as in phase 14 d. Complex M designates the western side of the new complexes and is mainly restricted to Squares AE/AF 115. It consists of three rooms: M 1 (2.5 m x 3 m) is located in the north and is the largest room of the three, followed by M 2 (1 m x 2 m) and M 3 (1.3 m x 2 m).

Complex N is also divided into three rooms. The northern end of the complex is formed by the wall 3577/5193, as with L 2 in stratum 14 d. It is probable that this wall originally belonged to Complex K and represented the southern end. Remains of clay bricks north of wall 3577 seem to have been part of its original structure.

Rebuildings in Stratum 14 b: Stratum 14 b show minor changes and conversions compared to 14 c and d. In the area of the courtyard house H, the courtyard areas H 1 and H 4 in Squares AL 117 and AL 118 were changed and a row of silos was created. This modified area is designated H 5.

Complex K underwent minor changes: the passage between rooms K 5 and K 6 was filled with a wall (Context 4635) and the east-west running wall 5333 was removed. Silo 4648 was no longer in use.

Larger reconstructions can be seen in Squares AE 115/116. The former Complexes N and M are merged and now form the new Complex O. The entire complex is limited to the north by wall 3577/5193, to the west by the very massive wall 3315 (wall thickness from 2.0 to about 2.5 m) and wall 5305, and to the east and south by the end of the excavated area. In the interior, the complex is divided into four rooms which are connected to each other: O 1 in the north-west (dimensions: approx. 2.5 m x 3 m), separated from O 2 in the east by the walls 3628 (= 5166) and 3540, with a paved passage 5052. Wall 5053 separates O 1 from O 3 in the south—there is also a paved passage 4969. Overall, O 1 and O 3 seem to be rooms, O 2 and O 4 courtyards.

Reconstructions in Stratum 14 a: In Stratum 14 a, no fundamental changes in the building plan of the northern complexes A to C can be determined either. However, smaller changes can be noticed. In addition, the collapse layers, which were created during the abandonment or destruction of the buildings in stratum 14, are recorded under Stratum 14 a.

Complex D: There are minor changes in the area of the great temple. Pit 2145 is being constructed in cella D 3.

Complex E: There were minor changes in the area of the casemate wall. The floor/soil layer in casemate E 5 belongs to Stratum 14 a. The pottery found there consists almost exclusively of closed vessels (possible storage room). In room E 6: Walls 39 and 52 are combined to form wall 59, while the

new room E 7 contains the soil layers 60, 62 and 80 outside the casemate wall on the western slope. The few ceramic finds date to the Late and Early Bronze Age. One part seems to come from Stratum 14 a and the earlier one from Stratum 15, the repair layer. It is conspicuous that they are all without exception bowls or plates.

Channel F: Channel F, which was created in Stratum 14 d, underwent major changes. From F 1, only the drain remained in use and the actual channel was blocked and taken out of service. Instead, an extension of the outflow in east-southeast direction was built (F 3). Channel F 2 in the south of Area I was also no longer in use.

The opening of the channel (Context 131) was later used as a second pit. Underneath, the opening widens to an oval 1 m x 1.5 m basin.

The new extension runs from the opening 1.5 m towards the southeast (Context 717), where the channel branches. One part runs towards the north-east-south-west (channel 1469/fill 3906) and a longer part towards the south-southeast (channel 1402/fill 1401). This extension made it possible to collect the water in the courtyard and drain it out of the city via the vertical shaft. The channel 1402 consists of two rows of medium-sized limestones laid at a distance of about 70 cm. Isolated capstones are preserved. Measuring points of the channel are: OK -22.84 m and UK -23.11 m. The channel was disturbed by a wall at the northern end and at the southern end, it also breaks off without any recognizable reason.

Channel 1469, running northeast-southwest, also consists of two parallel rows of stones laid at 50–60 cm intervals. It has a total length of 3 m and also breaks off both in the north and south.

The intersection of the channels was covered with two large field stones (maintenance shaft).

Complex G: The courtyard house seems to have remained in use without major changes.

Complex H: The courtyard house has undergone major changes: The rooms H 1 to H 3 keep their names, because there are no architectural changes apart from floors and the extension to the south. These rooms were separated from the southern new H 6 and H 7 by newly inserted walls. They comprise of the area of the former silo in area H 5 and followed by a section of another room to the south of H 7 (H 8).

The northern, western and eastern boundaries of the building have remained the same, however, the

wall 3573/3589 in the south created a clear demarcation to complex I.

Complex H is noticeable for its high number of fine pottery, especially in room H 8, and the large number of metal finds and shell pendants suggest a wealthy owner. The floor level seems to have been at about -22.80 m, even if the floors were not found everywhere. Furthermore, there seem to be more bones of wild animals in Stratum 14 a than in the previous phases, so that hunting seems to have played a major role in the subsistence.

Complex I: Noteworthy changes compared to Stratum 14 b can be observed with regard to tower I: Although the outer dimensions have remained unchanged, there was a different floor level inside and it seems there was a change in the use for this space too. In the earlier phases, the tower served only as the fortification and protection of the city and later, the southern part was rebuilt into a small sanctuary. In the southern of the two rooms of tower I (formerly I 2, now I 4), a dividing wall running from north to south was built and two column bases were erected, so that there was a separation between a cella and a sanctuary. The courtyard in front of this room (formerly I 3, now I 5) now also shows as a ritual use.

The temple area in AI-AK 115-117, which is almost 15 m long and about 6 m wide, consists of a courtyard (I 5) in front of it (through which the cella could be entered) which led further to the 1.5 m x 4 m wide sanctum sanctorum (both summarized as I 4). The passage is marked by a partition wall with two erected basalt column bases.

Next to the northern column base, a conical cult stone of light limestone was found, however, not in situ. East of the column bases, a thin limestone layer was visible in the profile which represents the floor of Stratum 14 a.

In the courtyard area, there are various installations: an elevated storage area in the shape of a Square, wall 3617 consisting of six blocks of boulders lying in a row, a surface covered with sherds measuring 1.25 m x 1.25 m.

An interpretation of the complex as a temple is only possible on the basis of the architecture and comparative examples of some installations (e.g. comparisons to the shattered surface from Tall al-Ḥiṣn [Beth Shean] and Tall Qasīla as well as Tall aṣ-Ṣāfi [Gath]).

If one looks exclusively at the finds, there are no special finds in the interior or in the courtyard that would identify the area as a cult building.

Complex P: The former entrance area K was retained in its entirety, but there were major changes to the interior, so that it is now renamed complex P. The gate passage was closed, channel F 2 was taken out of service, and a partition wall was built in the former room K 2 which resulted in a clearer structure of a courtyard house with a connection to the outer casemate wall. Probably only two-thirds of the house has been excavated.

Due to the large number of finds (and the large amount of raw material or processing equipment), there is evidence to suggest that P 2 and P 3 were either storage rooms or a small workshop.

Also in Complex P, the richness of finds as well as the good quality (especially of the pottery) are striking and it is obvious this was also a wealthy owner.

In **Complex O**, there were minor changes while maintaining the outer boundaries. In the east of the complex, the new rooms O 5 and O 6 were separated. Changes in rooms O 1 and 3 are limited to a reinforcement of the outer wall 3315 by the walls 3464/3541; repair of the passage between the two rooms. The changes in room O 2 are similarly minor: Earth find 3641 and pit 4965 were added as well as a redesign of the passage to O 5 (through walls 3523 and 3623).

Dating: Four radiocarbon samples from this stratum provide a date between 1465 and 927 BC, however, the period between 1465 and 1259 and 1108 BC seems more precise. It can be assumed that construction began shortly after 1500 BC. The end of the last Late Bronze Age phase seems to be around 1200 and 1150 BC respectively.

Find-No.	Context	Square	Year	3σ (99.7 %)	2σ (95.4 %)	1σ (68.2 %)	uncalibrated	Stratum	Dating
015568	4792	AL 118	2010	1282–976 BC	1226–1014 BC	1196–1140 BC (32.1 %) 1134–1074 BC (32.3 %) 1065–1057 BC (3.8 %)	2930±35 BP	14	Late Bronze Age II
015568 HS				1378–1347 BC (0.5 %) 1304–927 (99.2 %)	1262–1005 BC	1207–1056 BC	2930±45 BP	14	Late Bronze Age II
007269	1172	AI 115	2005	1496–1471 BC (0.7 %) 1465–1259 BC (99.0 %)	1437–1288 BC	1425–1381 BC (39 %) 1342–1307 BC (29.2 %)	3110±30 BP	14	Late Bronze Age II
014477	3701	AF 116	2010	1415–1108 BC (99.5 %) 1100–1081 BC (0.2 %)	1392–1337 BC (17.1 %) 1323–1156 BC (74.1 %) 1147–1128 BC (4.2 %)	1374–1356 BC (8 %) 1302–1210 BC (60.2 %)	3015±35 BP	14	Late Bronze Age II
015531	4793	AL 188	2010	1372–1359 BC (0.1 %) 1297–996 BC (99.6 %)	1258–1246 BC (1.8 %) 1234–1027 BC (93.6 %)	1214–1108 BC (63.1 %) 1100–1088 BC (5.1 %)	2940±35 BP	14	Late Bronze Age II

Tab. 2.44 Radiocarbon analysis from Stratum 14 (Source: BAI/GPIA).

For an extensive and detailed analysis of Late Bronze Age pottery from Tall Zīrā'a, see *Chap.* 2.3.9. It can be stated that Late Bronze Age II pottery had a long duration from 1465 to 1200/1150 BC. With regard to the cooking pottery, it can be said that it belongs to the repertoire of forms common in the surroundings of the Tall Zīrā'a for the Late Bronze Age. Their main characteristic is a bent triangular rim lip. The cooking pottery also had a long life span and was in use until the Iron Age I⁵⁰². An accumulation of the rare baking plates in Stratum 14 has already been pointed out⁵⁰³.

In conclusion, the following can be stated:

Throughout the entire Late Bronze Age II, a flourishing settlement existed on the Tall Zīrā'a, which was reconstructed and redesigned several times in individual areas, whereby four settlement phases can be distinguished (Strata 14 d to 14 a). However, the larger architectural contexts retained in each case. The casemate wall erected in Stratum 14 represents a very early example of this construction method in the southern Levant and shows clear influences from Asia Minor and Syria. In the last phase of this stratum, a small sanctuary was built in the southern part of the tower, next to the already existing temple in antis. The residential buildings generally follow the scheme of a courtyard house.

502 Schwermer 2014, 145. 234.

503 Schwermer 2014, 207.

The architecture on the Tall Zirā'a shows no Egyptian influence whatsoever. Egyptian or Egyptianizing objects are rare. Therefore, no direct presence of an Egyptian administrator, a garrison or even an Egyptianized upper class can be assumed (in contrast to the nearby Tall al-Ḥiṣn [Beth Shean]). Despite the important strategic location⁵⁰⁴, the city seems to be located only in the peripheral sphere of influence of Egypt. Even though it certainly had to pay tribute to Egypt, it probably possessed a high degree of independence. A stele of Seti I from Beth Shean and a campaign report of Ramses II prove the Egyptians ruled the cities along the trade route to the north. The city *qa-dù-rú* or *qa/gá-da-ra* mentioned in these inscriptions could have been the Tall Zirā'a⁵⁰⁵.

It is probable that this was a prosperous city state that had a share in the supra-regional and international trade network. In contrast to Egyptian connections, the evidence of trade contacts to the north, the coastal plain and the Aegean Sea is remarkably high. South Syrian influences can also be seen in the architecture (e.g. the casemate wall). Extraordinary is the tower sanctuary which existed only for a very short period of time (Stratum 14 a) and gives evidence of a cult from the coastal plain. Besides this sanctuary and the great temple, there might have been another sanctuary in the area of the artesian spring.

Unlike in other places, the water supply on the Tall Zirā'a was not a problem due to the natural conditions, however, drainage of superfluous water was an issue as can be seen from the numerous drainage channels. Questions still remain unanswered as to how the artesian spring was architecturally conceived, what the water management on the hill looked like and whether this unique phenomenon of

an artesian spring was connected to a temple. The questions whether there was a Late Bronze Age palace in Area II, how large was the Late Bronze Age lower city in the west and possibly also in the north, or how large was the territorial extent of the city state in the Late Bronze Age can only be answered by further excavations.

The transition period from the Late Bronze Age II B to the Iron Age I, which was marked by intense upheavals, did not pass the valley Zirā'a without leaving its mark. The city was destroyed, but it remains unclear whether this destruction was due to an earthquake or to war. The fact that there is no extensive destruction horizon with hardly any weapons among the finds and with the same inhabitants which seem to return to the site in time, suggests a natural cause of the destruction, such as an earthquake⁵⁰⁶.

In the transitional period from the Late Bronze Age to the Iron Age I, a clear change is visible on the Tall Zirā'a as in other sites of the southern Levant. From a highly developed urban centre, a city-state, the settlement develops into a smaller village structure with a lower population density. The architecture, apart from the changes and alterations of the temple, did not reach the former standard anymore and a larger part of the buildings consisted only of smaller structures, such as huts and stables. Nevertheless, connecting lines can be seen, such as the same elements in architecture and craftsmanship (especially in pottery and glass production). Accordingly, the period between 1200 BC and 1000 BC was characterised by a coexistence of established traditions of the Late Bronze Age as well as innovations that were created in the Iron Age I but only appear fully developed in the Iron Age II.

504 A watchtower was discovered by a survey of the surrounding area, which controlled access down in the wadi and had visual contact with the city.

505 Cf. Dijkstra et al. 2005, 185 f.

506 The transition from the Late Bronze Age to the Iron Age I, which in Cisjordan as in the north is marked by destruction

and in Transjordan rather by continuity, is also marked by continuity on the Tall Zirā'a, even if no clear transitional stratum is to be recognized. Possibly, however, Stratum 13 with its huts and stables on the one hand and the well-built houses on the other hand represents this transitional phase.

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3. FAUNAL REMAINS – PART II

3.1. The Butchered Faunal Remains and Associated Butchering Patterns from the Early and Middle Bronze Age of Tall Zirā‘a

by J. A. Beller/H. J. Greenfield/J. S. Gastra¹

3.1.1. Introduction

The analysis of faunal remains from archaeological contexts permits inquiry into a range of behaviours associated with the interaction between humans and animals. Such inquiry has provided information on aspects of carcass processing, status, diet, ethnic identity, and technology of past communities². In particular, information on the butchering process can inform not only on the type of technology used³, but also on the nature of provisioning of urban settlements – i.e. the production and distribution of food⁴. In this study, we explore data from the Early and Middle Bronze Age (hereafter **EB** and **MB**) levels of a multi-period urban site in the southern Levant, Tall Zirā‘a, Jordan, in order to uncover information on the distribution of food across the site during periods of early urbanisation.

This is also a complementary study to the broad investigation of changes in butchering practices associated with the transition from a stone to metal blade technology that occurred during these periods. As shown elsewhere, the EB butchering technology across the southern Levant is entirely based on stone tools, both in the form of knives and axes. In contrast, metal (probably tin-bronze) appear and continue to grow in popularity from the MB II onwards⁵.

This study analyses a subset of the large assemblage of faunal remains collected during the multi-year excavation at Tall Zirā‘a. Of the many thousands of bones collected, a total of 483 bones from EB and MB related contexts exhibited evidence of butchering. Aspects of assemblage taphonomy, taxonomic variation, age culling profiles, and element distributions are explored in association with the types and distribution of butchering marks and activities. In this regard, discrepancies in the patterns found between the two broad time periods can be identified.

3.1.2. Methods

All butchered bones were identified to their taxon and element, as finely as possible, using comparative specimens and identification manuals⁶. Taphonomic marks are identified and discussed below to enable understanding of the sources of assemblage modification⁷. Age and sex were identified wherever possible based on tooth eruption and wear, and states of bone fusion and ossification. From these data, aspects of the assemblage are explored in association with the types and distribution of butchering marks and activities.

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2 E.g., Binford 1981; Greenfield 1986, 2002; Lyman 1987b; Potts and Shipman 1981.

3 E.g., Greenfield 1999; Greenfield 2006; 2013; Guilday et al. 1962.

4 E.g., Beller et al. 2022.

5 Greenfield 2013.

6 E.g., Barone 1976.

7 Lyman 1994; Shipman et al. 1984.

Butchering marks and other modifications to the bones were identified with combinations of the naked eye, hand-held illuminated magnifying glass, and binocular light optical microscope (25–40x). Silicon moulds of several butchering marks were examined using a scanning electron microscope to ensure their identification and to determine the raw material used⁸. For each butchering mark, the type, number, location, and orientation, and representative activity were documented. While the full data can be found in Appendices 1–3, smaller tables referencing more specific data are found throughout this study.

Butchering marks have previously been categorised based on experimental and observational data⁹. A range of butchering marks were identified on the EB–MB Tall Zirā’a faunal assemblage: bash, chop, saw, scrape, and slice. Their general identification can be summarized as the following¹⁰:

- Bashes are caused by heavy blows from a blunt object, such as a hammerstone, when attempting to break open the bone. They manifest as irregularly-shaped grooves with no evident striations.
- Chops are the result of heavy impact to a bone with a sharp implement, such as an axe, typically to dismember or break open a bone. They appear as short broad linear grooves with a roughly V-shaped cross-section. The edges are usually straight with the edge opposite the direction from which the blow was struck having a higher profile than the other. A relatively straight edge remains with no striations evident within the groove.
- Sawing results from repeated back-and-forth slicing action by a sharp implement. It leaves behind multiple striations in a single series within a wide groove. The groove also exhibits a V-shaped cross-section.
- Scrapes result from the surficial removal of flesh along the bone. They appear as a series of shallow parallel striations, typically elongated and orientated with the longitudinal axis of the bone.
- Slices result from the removal or cutting through soft tissues (e.g., muscles) using a sharp implement. A slice appears as a single elongated, relatively narrow, linear striation. Although the cross-sectional shapes exhibit some variation, they usually are V-shaped with flat regular sides and fine parallel striations within the main groove.

The Number of Individual Specimens (NISP) and Number of Butchering Incidences (NBI) are provided in most of the tables. While the NISP counts a single specimen once, the NBI reflects the number of times that an episode of butchering activity may have occurred on the same specimen. For example, if there are separate butchering grooves on two different sides of the bone, then the NISP would be one, but the NBI would be two. The NISP has its known drawbacks, particularly a tendency to over-represent what is present and can over-count specimens more susceptible to fragmentation. Thus, for butchering, the NBI permits a more suitable analysis of butchering patterns and avoids double counting of elements and taxa¹¹.

The overall faunal assemblage from Tall Zirā’a was analysed by Norbert Benecke¹². He made available his database from the site so that we could integrate our data into his system. However, we discovered that some of our data differ from his initial observations in some important ways largely because butchering analysis was not his primary focus. Therefore, he did not record evidence of butchering systematically. We also discovered bags of faunal remains that were not analysed, as they were excavated after his study. Additionally, his taxonomic identifications were similar to ours with the exception that we tried to speciate the more amorphous sheep/goat category as much as possible. Finally, he collapses most of his analysis into general EB vs. MB periods, whereas here we examine each period and its subperiods separately. In general, we applaud his efforts to try to make some sense out of the larger assemblage that helped to guide our study.

8 See Greenfield et al. in this volume.

9 Fisher 1995; Greenfield 1999; 2000; Lyman 1987a; Lyman 1994; Olsen 1988; Walker 1978; Walker – Long 1977.

10 Adapted from Beller et al. 2022; Gifford-Gonzalez 2018,

chap. 14.

11 Beller et al. 2022; Greenfield – Brown 2016; Greenfield et al. 2018.

12 Benecke 2019.

3.1.3. Sample size

A total of 483 bones (by NISP) in the EB-MB assemblage retain indications of butchering in the form of 581 incidences (*Tab. 3.1*). The butchered bones are unevenly divided among the respective periods: 54 – EB, 122 – EB IV/MB I, and 307 – MB (NISP). Similar frequencies are reflected in the number of butchering incidences per period: 61 – EB, 145 – EB IV/MB I, and 363 – MB. Two important points should be drawn from these data. First, the assemblage increases in size from the EB to the MB. This is because a much larger area of MB remains were excavated than for the EB. Second, the presence of substantial EB IV/MB I faunal remains is relatively unique for the southern Levant. West of the Jordan River, EB IV/MB I faunal assemblages are very rare which resulted in difficulties for monitoring the shift from stone to metal butchering tools. Hence, the data from Tall Zirā'a provide a unique opportunity to observe butchering trends continuing from the EB to the MB.

Period		NISP	NBI
EB I–III	Total	54	61
	II	7	9
	II/III	14	15
	III	33	37
EB IV/MB I (transitional period)	Total	122	148
	Indeterminate	10	14
	Older stratum	48	56
	Younger stratum	64	78
MB II	Total	307	372
	IIA	118	147
	IIB	100	125
	IIC	89	100
Grand Total		483	581

Tab. 3.1 NISP and NBI of the butchered assemblage by subperiod.

3.1.4. Taphonomy of the Collective EB–MB Assemblage

The taphonomy of the EB-MB faunal assemblage is essential for understanding what might be biased or absent in the assemblage¹³. In this regard, several taphonomic variables are quantified, as relevant zooarchaeological data are presented.

3.1.4.1. Weathering

Overall, the EB-MB faunal assemblage is in relatively good condition and exhibits patterns of preservation that are not unusual compared to other assemblages in the region (*Tab. 3.2*)¹⁴. The majority ($n = 423$, 87.6 %) of the faunal remains are lightly weathered. By contrast, very few specimens exhibit medium ($n = 50$, 10.4 %) and no significant patterns of weathering ($n = 10$, 2.1 %). No specimens exhibit heavy weathering. These patterns attest to a moderate degree of preservation and suggest that the bones were discarded and buried fairly quickly after meat consumption or use as tools.

Period	Degree of weathering	# NISP	% NISP
EB I–III	Light	46	9.5
	Medium	5	1.0
	N/A	3	0.6
EB IV/MB I (transitional period)	Light	104	21.5
	Medium	16	3.3
	N/A	2	0.4
MB II	Light	273	56.6
	Medium	29	6
	N/A	5	1.0
Grand Total	Light	423	87.6
	Medium	50	10.4
	N/A	10	2.1

Tab. 3.2 Weathering of the butchered assemblage.

13 Lyman 1987a; 1994.

14 See Greenfield 1986 for category definitions.

3.1.4.2. Gnawing

Canid gnawing activity typically presents in the form of scalloped edges on broken bones, punctures, and drags. The vast majority ($n = 470$ 97.3 %) of the EB-MB faunal assemblage does not exhibit any indication of gnawing (*Tab. 3.3*). Only 9 (1.9 %) specimens retain medium gnawing and a few ($n = 4$, 0.8 %) others have light gnawing. All gnawing was performed by canids. These extremely low frequencies of gnawing demonstrate that canids (and rodents) were not a significant taphonomic factor affecting the visibility of butchering marks and overall condition of the assemblage.

Period	Degree of gnawing	# NISP	% NISP
EB I–III	Medium	1	0.2
	N/A	53	11.0
EB IV/MB I (transitional period)	Medium	1	0.2
	N/A	121	25.1
MB II	Light	4	0.8
	Medium	7	1.4
	N/A	296	61.3
Grand Total	Light	4	0.8
	Medium	9	1.9
	N/A	470	97.3

Tab. 3.3 Gnawing of the butchered assemblage.

3.1.4.3. Fragmentation

The preservation quality of a faunal assemblage can be indicated by the sizes of fragmentation (*Tab. 3.4*). In the case of the EB-MB faunal assemblage, more than half ($n = 278$, 57.6 %) of the butchering remains are heavily fragmented, representing an estimated ≤ 25 % of the original element. In addition, a high proportion ($n = 185$, 38.3 %) of the assemblage represent ≤ 10 %. These varying degrees of fragmentation complicate taxonomic identification and can skew taxonomic and element representation. The mostly complete specimens ($n = 23$, 4.8 %), those representing an estimated 80 % \geq are largely represented by smaller harder bones, such as astragali, calcanei, carpals, and tarsals, which are more resistant to fragmentation and degradation. Similar patterns of fragmentation among bones of common food animals are documented at Early Bronze sites in the southern Levant, including Halif, Nahal Tillah, Tall Yarmuth, and Tall aş-Şāfi (Gath)¹⁵.

15 Greenfield et al. 2018; Greenfield – Brown 2016; Greenfield et al. 2016a.

Period	Percent remaining of original bone																Total
	1 %	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %	Un-known	
EB I–III		11	5		10	3	6	3	5	1			3			7	54
EB IV/MB I (transitional period)	1	23	19	2	18	8	11	10	5	1	1	1	1	1		20	122
MB II	8	58	60	2	46	4	32	20	12	6	1		11	4	3	40	307
Grand Total	9	92	84	4	74	15	49	33	22	8	2	1	15	5	3	67	483

Period	Percent remaining of original bone																Total
	1 %	5 %	10 %	15 %	20 %	25 %	30 %	40 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %	Un-known	
EB I–III	0.0 %	20.4	9.3		18.5	5.6	11.1	5.6	9.3	1.9			5.6			13.0	100.0
EB IV/MB I (transitional period)	0.8 %	18.9	15.6	1.6	14.8	6.6	9.0	8.2	4.1	0.8	0.8	0.8	0.8	0.8		16.4	100.0
MB II	2.6 %	18.9	19.5	0.7	15.0	1.3	10.4	6.5	3.9	2.0	0.3		3.6	1.3	1.0	13.0	100.0
Grand Total	1.9%	19.0	17.4	0.8	15.3	3.1	10.1	6.8	4.6	1.7	0.4	0.2	3.1	1.0	0.6	13.9	100.0

Tab. 3.4 Fragmentation of the butchered assemblage by NISP.

3.1.4.4. Heat Treatment

The EB-MB faunal assemblage was assessed for indications of thermal alteration using traditional zooarchaeological techniques based on texture and colour¹⁶. A significant portion (n = 202, 41.8 %) of the assemblage were modified by heat treatment. These alterations were identified as boiling (n =

194, 40.2 %) and burning (n = 8, 1.7 %) (*Tab. 3.5*). These patterns of heat treatment are similar to EB sites, specifically at Nahal Tillah where over half of the butchered bones underwent some form of heat treatment¹⁷. Additional information on heat treatment by taxon is presented in *Tab. 3.12* and is additionally discussed later in the text.

Period	# NISP				% NISP			
	Boil	Burn	N/A	Total	Boil	Burn	N/A	Total
EB I–III	18	3	33	54	33.3	5.6	61.1	100.0
EB IV/MB I (transitional period)	47	2	73	122	38.5	1.6	59.8	100.0
MB II	129	3	175	307	42.0	1.0	57.0	100.0
Grand Total	194	8	281	483	40.2	1.7	58.2	100.0

Tab. 3.5 Heat treatment of the butchered assemblage.

3.1.4.5. Worked Bone

Bones are often selected for and modified into tools or ornaments. Any excessive interaction between the bone and another material (e.g., palm of the hand, polishing stone) can produce a smooth topography, a loss of surface detail, and ultimately surface polish¹⁸. The surface polish is scaled by the intensity of light reflected off the bone. It is a common taphonomic variable with the capacity to reduce the visibility of diagnostic criteria of elements or completely erase butchering marks.

Overall, a moderate proportion (n = 141, 29.2 %) of the EB-MB faunal assemblage exhibit surface polish with little difference between periods (*Tab. 3.6*). In order of frequency, medium (n = 65, 13.5 %) and light (n = 64, 13.3 %) polish were most common, followed by high (n = 11, 2.3 %), and very light (n = 1, 0.2 %). These data indicate that many bones were selected for use as tools.

In this regard, 75 specimens (by NISP) may have functioned as tools or ornaments (*Tab. 3.7*). These appear in diverse forms, but in small quantities, including probable handles (n = 21), scoops (n = 11), spatulas (n = 5), and gaming pieces/die (n = 4). This assemblage does not include the specimens that were separated as bone tools based on morphological criteria during excavation by the Department of Antiquities of Jordan. Elements selected for cultural modification include several long bones (handles), scapulae (scoops, spatulas), ribs (spatulas, counting), and astragali (gaming pieces/die). The use of astragali as tokens or game pieces is quite common in the southern Levant¹⁹. In addition, there are two specimens that may be production wasters and also 28 bones with indications of having been worked, but the nature of the tool or ornament is unclear. Broadly speaking, the frequency of worked bone is proportional to that of number of bones in each subperiod, where more appear in subperiods with greater numbers of bones overall.

16 Gifford-Gonzalez 2018, chap. 15.6; Greenfield – Beattie 2017; Shipman et al. 1984.
17 Greenfield et al. 2018.

18 Maeir et al. 2009; Shipman – Rose 1988.
19 Gilmour 1997; Sasson 2007.

Period	# NISP						% NISP					
	High	Medium	Light	Very light	N/A	Total	High	Medium	Light	Very light	N/A	Total
EB I–III	1	4	5		44	54	1.9	7.4	9.3	0.0	81.5	100.0
EB IV/MB I (transitional period)	4	5	9		104	122	3.3	4.1	7.4	0.0	85.2	100.0
MB II	6	56	50	1	194	307	2.0	18.2	16.3	0.3	63.2	100.0
Grand Total	11	65	64	1	342	483	2.3	13.5	13.3	0.2	70.8	100.0

Tab. 3.6 Polishing intensities of the butchered assemblage.

Period	Awl	Comb/ loom piece?	Count- ing?	Gaming piece - die	Flesher?	Handle	Handle?	Pro- duction waste	Scoop?	Spatu- la?	Un- known	N/A	Grand Total
EB I–III	1						2	1			2	48	54
EB IV/MB I (transitional period)			1			1	1		3	3	3	110	122
MB II		1		4	1	3	14	1	8	2	23	250	307
Grand Total	1	1	1	4	1	4	17	2	11	5	28	408	483

Tab. 3.7 Types of worked bones within the butchered assemblage by NISP.

3.1.5. Butchering patterns

Butchering activities can be present in a variety of forms. Key studies, such as Binford²⁰ and Lyman²¹, and the personal observation of modern butchers and slaughterers that relate marks at particular locations to specific activities are drawn upon for conclusions regarding the types of butchering activities. The most common activities are listed below²²:

- Brain extraction: chopping of the cranium open to remove brain.
- Disarticulation: calculated division of one bone from another, typically division of the limb into smaller units at the articular joints.
- Dismemberment: forceful division of body, typically a separation of a limb from the trunk regardless of articular joints.
- Filleting: removal of meat around and along bones.
- Marrow extraction: a form of dismemberment, which involves the destruction of the long bone to retrieve marrow within the interior shaft.
- Skinning: removal of hide and skin; mainly exterior processing, typically around the head and feet.
- Slaughter: incision, strike, or blow intended to kill animal, typically around the neck or head.
- Toolmaking: extensive removal of residual flesh to completely expose the bone.

As previously noted, the butchered faunal assemblage presented in this report originates from the EB-MB levels of Tall Zirā'a. The butchering activities associated with the assemblage are interpreted from the extensive data presented in Appendices 1–3, which is compressed into *Tables 3.8–3.12*. These data are used to describe the taxonomy, elements, and age profiles of the butchered animals, as well as the distribution and type of butchering mark. From these collective data, insight into the nature of butchering activities is obtained. The butchering activities appear in a variety of forms, but with some forms more prevalent than others, namely disarticulation and filleting. These are related by period and taxon in the sections that follow.

20 Binford 1978; 1981.

21 Lyman 1994.

22 Repeated from Beller et al. 2022.

Taxon	Period										Grand Total
	Early Bronze I–III			Early Bronze IV/Middle Bronze I (transitional period)			Middle Bronze II				
	II	II/III	III	Indeter- minate	Older stratum	Younger stratum	IIA	IIB	IIC		
<i>Bos taurus</i>	1	1	4	2	5	10	12	12	12	59	
<i>Canis familiaris</i>		1								1	
<i>Canis</i> sp.								1		1	
<i>Capra hircus</i>	1		1		2	3	8	3	4	22	
<i>Capra ibex</i>					1					1	
<i>Dama dama</i>			3		1		1			5	
<i>Gazelle</i> sp.	1				3	7	3	3	6	23	
Mammal – large	2	3	1		1	4	12	12	13	48	
Mammal – medium			3	3	11	8	5	16	8	54	
<i>Ovis aries</i>		2	3		7	4	14	13	5	48	
<i>Ovis/Capra</i>	2	7	12	1	6	8	40	19	17	112	
<i>Sus scrofa</i>			4	4	7	20	22	21	24	102	
<i>Equus asinus</i>			1		3					4	
<i>Sus scrofa</i> (wild)							1			1	
Unidentified			1		1					2	
Grand Total	7	14	33	10	48	64	118	100	89	483	

Tab. 3.8 Taxa profiles of the butchered assemblage by NISP.

Taxon and period		Age							Grand Total
		Infant	Juvenile	Subadult	Subadult/ adult	Adult	Unknown		
<i>Bos taurus</i>	Taxon total		2	10	16	28	3	59	
	EB I–III	Total		3	1	2		6	
		II			1			1	
		II/III		1				1	
		III							
	EB IV/MB I (transitional period)	Total	2	2	6	6	1	17	
		Indeterminate				2		2	
		Older stratum	1			1	2	1	5
		Younger stratum	1	1	2	3	4		10
	MB II	Total			5	9	20	2	36
IIA				1	1	10		12	
IIB				3	3	6		12	
IIC				1	5	4	2	12	
<i>Canis familiaris</i>	Taxon total		1	1				1	
	EB I–III	Total		1				1	
		II/III			1				1
<i>Canis</i> sp.	Taxon total			1				1	
	MB II	Total		1	1			1	
		II			1				1

<i>Capra hircus</i>	Taxon total			2		3	2	14	1	22
	EB I–III	Total						2		2
		II						1		1
		III						1		1
	EB IV/MB I (transitional period)	Total			1	1	3			5
		Older stratum				1	1	1		2
		Younger stratum			1		2			3
	MB II	Total		2	2	1	1	9	1	15
		IIA		2	1			5		8
		IIB						3		3
<i>Capra ibex</i>	Taxon total	IIC			1	1	1	1	1	4
								1		1
								1		1
	EB IV/MB I (transitional period)	Total						1		1
		Older stratum						1		1
<i>Dama dama</i>	Taxon total							5		5
	EB I–III	Total						3		3
		III						3		3
	EB IV/MB I (transitional period)	Total						1		1
		Older stratum						1		1
	MB II	Total						1		1
		IIA						1		1
	Taxon total				2	1	1	1		4
	EB I–III	Total			1					1
		III			1					1
<i>Equus asinus</i>	EB IV/MB I (transitional period)	Total			1	1	1	1		3
		Older stratum			1		1	1		3
	Taxon total				1	1	1	1		3
	Taxon total									

<i>Gazelle</i> sp.	Taxon total				3		2		3		15		23	
	EB I–III	Total									1		1	
		II									1		1	
	EB IV/MB I (transitional period)	Total			1				1		8		10	
		Older stratum			1						2		3	
		Younger stratum							1		6		7	
	MB II	Total			2		2		2		6		12	
		IIA			1				1		1		3	
		IIB			1				1		1		3	
		IIC					2				4		6	
	Mammal – large	Category total								11		9	28	48
		EB I–III	Total							2		1	3	6
II									2				2	
II/III											1	2	3	
III												1	1	
EB IV/MB I (transitional period)		Total						1		2		2	5	
		Older stratum										1	1	
		Younger stratum							1		2	1	4	
MB II		Total							8		6	23	37	
		IIA							1		1	10	12	
		IIB							4			8	12	
		IIC							3		5	5	13	

Mammal – medium	Category total			2		2		15	4	31	54
	EB I–III	Total						1		2	3
		III						1		2	3
	EB IV/MB I (transitional period)	Total		1		2		6	2	11	22
		Indeterminate						1		2	3
		Older stratum				2		2	1	6	11
		Younger stratum		1				3	1	3	8
	MB II	Total		1				8	2	18	29
		IIA								5	5
		IIB		1				2	2	11	16
<i>Ovis aries</i>	Taxon total	IIC						6		2	8
			1	4		9		5	29		48
						3			2		5
	EB I–III	Total									
		II/III				2					2
		III				1			2		3
	EB IV/MB I (transitional period)	Total				3		2	6		11
		Older stratum				1		1	5		7
		Younger stratum				2		1	1		4
	MB II	Total	1	4		3		3	21		32
		IIA	1	2		2		1	8		14
		IIB		2		1		1	9		13
		IIC						1	4		5

<i>Ovis/Capra</i>	Category total		1	13	37	26	29	6	112
	EB I–III	Total		2	8	4	6	1	21
		II			1	1			2
		II/III			4	1	1	1	7
		III			3	2	5		12
	EB IV/MB I	Total		2	4	6	3		15
	(transitional period)	Indeterminate				1			1
		Older stratum		2	2	2			6
		Younger stratum			2	3	3		8
	MB II	Total	1	9	25	16	20	5	76
		IIA	1	3	17	8	10	1	40
		IIB		4	6	6	3		19
		IIC		2	2	2	7	4	17
	Taxon total		6	29	40	16	9	2	102
<i>Sus scrofa</i>	EB I–III	Total	1		1		1	1	4
		III	1		1		1	1	4
	EB IV/MB I	Total	1	10	12	5	3		31
	(transitional period)	Indeterminate	1	1	2				4
		Older stratum		2	3	2			7
		Younger stratum		7	7	3	3		20
	MB II	Total	4	19	27	11	5	1	67
		IIA	3	6	6	6	1		22
		IIB		5	11	3	2		21
		IIC	1	8	10	2	2	1	24

Element	Period									
	Early Bronze I–III			Early Bronze IV/Middle Bronze I (transitional period)			Middle Bronze II			Grand Total
	II	II/III	III	Indeterminate	Older stratum	Younger stratum	IIA	IIB	IIC	
Astragalus			1		3	4	3	1	3	15
Calcaneus			3		3	1	1		1	9
Carpal					1	1		1	1	4
Cranium			2	1	4	3	1	5	9	25
Femur		1	4		1	3	8	7	1	25
Fibula			1						1	2
Flat bone							4	3	2	9
Horn core					1					1
Humerus	2		7		4	3	5	11	2	34
Innominate			2			5	13	6	2	28
Long bone	2	3	5	3	9	11	9	19	15	76
Mandible				1	3	5	8	3	8	28
Metacarpus						1	7	2	2	12
Metapodium			1							1
Metatarsus		1	1		2	1	6	1	2	14
Phalange				1	2	1	1	2		7
Radius			1		2	6	8	3	4	24
Rib	1	3	1	1	3	8	11	8	12	48
Scapula		1	1	1	3	4	5	10	8	33
Sternum								1		1
Tibia	1	2	1	1	3	1	7	4	1	21
Ulna		1				2	7	3	1	14
Vertebra	1	2	2	1	3	3	12	10	11	45
Centrotarsal					1	1			3	5
Unknown							2			2
Grand Total	7	14	33	10	48	64	118	100	89	483

Tab. 3.10 Elements of the butchered assemblage by NISP.

Period		Incidence type by # NBI								
		Bash	Chop	Chop and break	Saw	Scrape	Slice	Slice and break	Slice and scrape	Grand Total
EB I–III	Total	2	1			1	56	1		61
	II	1					8			9
	II/III					1	14			15
	III	1	1				34	1		37
EB IV/MB I (transitional period)	Total	16	4	2	1	6	114	5		148
	Indeterminate	3	3		1		7			14
	Older stratum	4	1	2		3	41	5		56
	Younger stratum	9				3	66			78
MB II	Total	29	11		1	4	295	31	1	372
	IIA	12	6			3	121	4	1	147
	IIB	12	1			1	99	12		125
	IIC	5	4		1		75	15		100
Grand Total		47	16	2	2	11	465	37	1	581

Period		Incidence type by % NBI								
		Bash	Chop	Chop and break	Saw	Scrape	Slice	Slice and break	Slice and scrape	Grand Total
EB I–III	Total	3.3	1.6			1.6	91.8	1.6		100.0
	II	11.1					88.9			100.0
	II/III					6.7	93.3			100.0
	III	2.7	2.7				91.9	2.7		100.0
EB IV/MB I (transitional period)	Total	10.8	2.7	1.4	0.7	4.1	77.0	3.4		100.0
	Indeterminate	21.4	21.4		7.1	0.0	50.0			100.0
	Older stratum	7.1	1.8	3.6		5.4	73.2	8.9		100.0
	Younger stratum	11.5				3.8	84.6			100.0

MB II	Total	7.8	3.0			0.3	1.1	79.3	8.3	0.3	100.0
	IIA	8.2	4.1				2.0	82.3	2.7	0.7	100.0
	IIB	9.6	0.8				0.8	79.2	9.6		100.0
	IIC	5.0	4.0			1.0		75.0	15.0		100.0
Grand Total		8.1	2.8	0.3	0.3	1.9	80.0	6.4	0.2	100.0	

Tab. 3.11 Butchering incidences of the butchered assemblage.

Period	Activity type by # NBI										
	Brain ex- traction	Disartic- ulation	Disartic- ulation, skinning	Dismen- berment	Filleting	Filleting, skinning	Filleting, tool- making	Marrow extrac- tion	Skinning	Tool- making	Un- known
EB I-III	Total	27		1	31			2			
	II	4			4			1			
	II/III	3			12						
	III	20		1	15			1			
EB IV/ MB I (transi- tional period)	Total	52	1	9	49		7	16	11	3	
	Indeter- minate	1		3	4		1	3	1	1	
	Older stratum	23		6	18		3	4	2		
	Younger stratum	28	1		27		3	9	8	2	
MB II	Total	151		11	141	2	2	29	23	8	4
	IIA	60		7	49			12	13	5	1
	IIB	47		2	50		1	12	8	2	3
	IIC	44		2	42	2	1	5	2	1	
Grand Total		230	1	21	221	2	9	47	34	11	4
											581

Tab.3.12a Butchering activities of the butchered assemblage.

Period		Activity type by % NBI											
		Brain ex- traction	Disartic- ulation	Disartic- ulation, skinning	Dimem- berment	Filleting	Filleting, skinning	Filleting, tool- making	Marrow extrac- tion	Skinning	Tool- making	Un- known	Grand Total
EB I-III	Total		44.3		1.6	50.8			3.3				100.0
	II		44.4			44.4			11.1				100.0
	II/III		20.0			80.0							100.0
	III		54.1		2.7	40.5			2.7				100.0
EB IV/ MB I (transi- tional period)	Total		35.1	0.7	6.1	33.1		4.7	10.8	7.4	2.0		100.0
	Indeter- minate		7.1		21.4	28.6		7.1	21.4	7.1	7.1		100.0
	Older stratum		41.1		10.7	32.1		5.4	7.1	3.6			100.0
	Younger stratum		35.9	1.3		34.6		3.8	11.5	10.3	2.6		100.0
MB II	Total	0.3	40.6		3.0	37.9	0.5	0.5	7.8	6.2	2.2	1.1	100.0
	IIA		40.8		4.8	33.3			8.2	8.8	3.4	0.7	100.0
	IIB		37.6		1.6	40.0		0.8	9.6	6.4	1.6	2.4	100.0
	IIC	1.0	44.0		2.0	42.0	2.0	1.0	5.0	2.0	1.0		100.0
Grand Total		0.2	39.6	0.2	3.6	38.0	0.3	1.5	8.1	5.9	1.9	0.7	100.0

Tab.3.12b Butchering activities of the butchered assemblage.

Element	Period			
	Early Bronze II–III	Early Bronze IV/Middle Bronze I (transitional period)	Middle Bronze IIA	Middle Bronze IIB–C
Astragalus		Slices all over body for disarticulation and skinning	Slice across distal condyles for disarticulation	Slice on distal condyles for disarticulation and chop on body for dismemberment
Calcaneus	Slices on mid-proximal portion for disarticulation	Slices on distal and proximal portions for disarticulation	Slices on proximal shaft for disarticulation	Slices on distal shaft for disarticulation
Cranium	Chop on frontal bone for dismemberment	Slices in various locations for disarticulation. Chops for dismemberment	Chop for dismemberment and a slice for skinning on frontal bone	Slices in various locations for disarticulation and on premaxilla and frontal for skinning. Chop on parietal bone for brain extraction
Mandible		Mainly slices on heel and ramus for disarticulation	Mainly slices on heel and ramus for disarticulation	Mainly slices on heel and ramus for disarticulation
Femur	Slices for disarticulation on proximal end and filleting on shaft	Slices for disarticulation on proximal end	Mainly slices on distal and proximal end for disarticulation. Chops on proximal portion for dismemberment	Mainly slices on distal and proximal end for disarticulation
Humerus	Mainly slices on proximal and distal ends for disarticulation. Some slices for filleting on mid-shaft	Mainly slices on proximal and distal ends for disarticulation. Some slices for filleting on mid-shaft	Mainly slices on proximal and distal ends for disarticulation. Some slices for filleting on distal shaft	Mainly slices on proximal and distal ends for disarticulation. Some slices for filleting on mid-distal shaft
Innominate	Slices on ventral face of ischium and proximal portion for disarticulation	Mainly slices on ventral face on proximal portion for disarticulation	Slices on ventral face of proximal portion for disarticulation and filleting, namely on iliac and ischial sections	Chop on acetabulum for dismemberment. Slices around acetabulum and iliac shaft for disarticulation. Some slices for filleting on iliac and ischial sections
Indeterminate long bones	Butchering marks primarily on shaft—bashes for dismemberment and slices for filleting	Butchering marks primarily on shaft—bashes for dismemberment and slices for filleting	Butchering marks primarily on shaft—bashes for dismemberment and slices for filleting	Butchering marks primarily on shaft—bashes for dismemberment and slices for filleting

Metacarpus					
Metatarsus	Slices on proximal portion for filleting and disarticulation	Slices on shaft for skinning	Slices for skinning on proximal portion and filleting on shaft	Mainly slices for filleting and disarticulation on shaft and proximal end respectively	Various butchering marks on proximal portion for skinning and filleting
Phalange		Slices in various locations for disarticulation and skinning	Scrape on mid-shaft for skinning	Slices for skinning on proximal portions	
Radius	Slice on proximal end for disarticulation	Slices on distal and proximal portions for disarticulation	Slice on proximal portion for disarticulation and mid-shaft for skinning	Slices on proximal portions for disarticulation. Bashes on mid-shaft for dismemberment	
Ribs	Slices all over shaft for filleting	Slices all over shaft for filleting	Slices all over shaft for filleting	Slices all over shaft for filleting. Slices on proximal portion for disarticulation	
Scapula	Slices on distal portion for filleting and disarticulation	Slice, chop, and bash on distal portion for disarticulation and dismemberment. Slices on mid-proximal portion for filleting	Mainly slices on distal portion for disarticulation.	Slices on distal portion for disarticulation. Slices on mid-proximal portion for filleting. Bashes on shaft for marrow extraction	
Tibia	Mainly slices on proximal portion for filleting	Mainly bashes on distal shaft for marrow extraction	Bashes for marrow extraction on mid-shafts and dismemberment on proximal shaft. Slices on proximal and distal ends for disarticulation. Slices on proximal portion for filleting	Slices on proximal and distal ends for disarticulation. Slices on proximal shafts for filleting	
Ulna	Slice on proximal end for disarticulation	Mainly slices on proximal end for disarticulation	Mainly slices on proximal end for disarticulation	Mainly slices on proximal end for disarticulation	
Vertebra	Mainly slices for disarticulation on centrum. Primarily dorsal face	Slices for disarticulation on centrum and cranial portion. Primarily dorsal face. Some slices for filleting on various processes	Mainly slices for disarticulation on cranial facets and processes. Primarily dorsal face. Chops for dismemberment	Mainly slices for disarticulation on cranial facets and processes. Primarily dorsal face	

Tab. 3.13 Notable butchering patterns by period.

3.1.5.1. Early Bronze II (Stratum 23)

3.1.5.1.1. Taxonomy

Seven butchered specimens are known from the EB II. These are largely composed of domestic taxa, namely *Bos taurus* (n = 1), *Capra hircus* (n = 1), and *Ovis/Capra* (n = 2). The only wild taxon is *Gazelle* sp. (n = 1). Indeterminate large mammals also appear in low numbers (n = 2).

3.1.5.1.2. Age Profiles

The *Ovis/Capra* specimens are of a subadult and subadult/adult. Similarly, the *Bos taurus* specimen and indeterminate large mammals are subadult/adults. The *Capra hircus* and *Gazelle* sp. are adults.

3.1.5.1.3. Element Representation

Aside from a rib and cervical vertebra, the remains are mostly fragments of long bones, namely several humeri and a tibia.

3.1.5.1.4. Butchering Activities

Bos taurus

A lone rib bone bears a slice incidence upon its distal shaft that is most likely indicative of filleting.

Capra hircus

A slice incidence on the distal end of a humerus is interpreted as disarticulation. Here, an attempt was made to separate it from the radius and ulna.

Gazelle sp.

The lone specimen, a humerus, retains a slice incidence upon its proximal epiphysis, which is indicative of disarticulation from the scapula.

Ovis/Capra

Two slice incidences on the mid- and proximal shaft of a tibia are indicative of filleting, while two slice incidences on the dorsal and ventral surfaces of a cervical vertebra suggest disarticulation.

Mammal – large

A fragment of a long bone shaft retains a slice in-

cidence indicative of filleting. Another long bone fragment has a bash on its shaft that suggests marrow extraction.

3.1.5.2. Early Bronze II/III (Stratum 23)

3.1.5.2.1. Taxonomy

Fourteen butchered specimens were found among transitional EB II/III contexts. Similar to the EB II, these are predominantly domestic taxa, which are represented by *Ovis/Capra* (n = 7), *Ovis aries* (n = 2), *Bos taurus* (n = 1), and *Canis familiaris* (n = 1). No wild taxa are present, but indeterminate large mammals are indicated by three specimens.

3.1.5.2.2. Age Profiles

The *Ovis aries*, *Bos taurus*, and *Canis familiaris* specimens are of subadult age. Similarly, the *Ovis/Capra* specimens are represented primarily by subadults and to a lesser extent by adults. Indeterminate large mammals are adult and unidentified age.

3.1.5.2.3. Element Representation

Four long bone fragments, one of a femur and three of indeterminate long bones, were discovered along with other bones of the limbs, namely a metatarsus and an ulna. Three rib fragments and a scapula originate from the trunk, as well as two vertebrae, one cervical and one thoracic.

3.1.5.2.4. Butchering Activities

Bos taurus

A lone rib bone exhibits a slice incidence upon its mid-shaft that is most likely indicative of filleting.

Canis familiaris

A single rib exhibits a slice incidence on the proximal shaft as the result of filleting.

Ovis aries

Disarticulation is interpreted from a slice incidence on the glenoid fossa of a scapula, where the upper limb was divided. A tibia retains evidence of filleting in the form of a slice incidence upon its distal shaft.

Ovis/Capra

The disarticulation of several bones is evident from slice incidences in certain locations. These include the shafts of a metatarsus and femur, the proximal shafts of a rib and tibia, and between the superior articular facets on a cervical vertebra. Slice incidences on the semi-lunar notch of an ulna and the centrum of a thoracic vertebra indicate disarticulation of various osteological elements.

Mammal – large

Extensive filleting is observed upon three long bone shafts in the form of three slice incidences and one shave incidence.

3.1.5.3. Early Bronze III (Stratum 22)

3.1.5.3.1. Taxonomy

A total of 33 butchered specimens originate from EB III contexts. The specimens are predominantly of domestic taxa, including *Ovis/Capra* (n = 12), *Bos taurus* (n = 4), *Sus scrofa* (n = 4), and *Ovis aries* (n = 3). A lone specimen belongs to each of *Capra hircus* and *Equus asinus*. Wild taxa are represented by *Dama dama* (n = 3), while other specimens belong to indeterminate medium (n = 3) and large (n = 1) mammals and unidentified taxa (n = 1).

3.1.5.3.2. Age Profiles

The *Sus scrofa* specimens range from infant to sub-adult and adult. *Ovis aries* and *Bos taurus* are represented by subadult and adults, while the *Capra hircus* and *Dama dama* specimens are of adult age. The *Ovis/Capra* specimens exhibit a fair distribution from juvenile to adult. The *Equus asinus* is a subadult, while the indeterminate medium and large mammals are of unknown age.

3.1.5.3.3. Element Representation

Many bones from the hind limb are present, such as lone specimens of a tibia, fibula, metatarsus, and an astragalus. In addition, portions of three calcanei and four femora were discovered. Bones of the fore limb include lone specimens of a humerus and radius. Lastly, scattered remains from the trunk include

two innominate bones, and single specimens of a rib, scapula, cervical vertebra, and lumbar vertebra. While innominates and scapulae are often analysed as part of the hind and fore limbs, we group them with the trunk since they are deeply embedded within the flesh of the trunk, and not exposed for easy disarticulation as the rest of the appendicular skeleton. Indeterminate bones include representatives of the cranium, metapodium, and four long bones.

3.1.5.3.4. Butchering Activities

Bos taurus

Disarticulation is the only butchering activity identified among the *Bos taurus* remains. It occurs as four slice incidences, one on each of following locations: mid-shaft of a calcaneus, caput of a femur, distal condyle of a metapodium, and spinous process of a cervical vertebra.

Capra hircus

The lone specimen, an astragalus, retains extensive slices upon its entirety, which are indicative of disarticulation from the rest of the joint.

Dama dama

A forceful chop on a frontal bone is likely due to dismemberment. An assortment of slices upon two humeri are indicative of filleting (distal shaft) and disarticulation, occurring both on the proximal and distal ends.

Equus asinus

A slice incidence upon a the proximal shaft of a calcaneus is likely from disarticulation.

Ovis aries

Several occurrences of disarticulation are evident from three slice incidences. These occur on the proximal end of a calcaneus, the distal end of a humerus, and the proximal end of a radius. In these cases, the limbs were likely being divided.

Sus scrofa

Filleting is present as two slice incidences on the proximal shaft of a fibula and one incidence on the distal shaft of a humerus. The acetabulum of an innominate and an interparietal of a cranium each retain a slice incidence that suggests disarticulation of these bones.

Ovis/Capra

Disarticulation is primarily observed on limb bones as slice incidences, including the caput of a femur, the distal portions of two humeri, the proximal portion of a metatarsus and innominate, and the centrum of lumbar vertebra. Filleting occurs as slice incidences on the distal and proximal shaft of two femora, the proximal shafts of a humerus and a tibia, the centrum of lumbar vertebra, the distal shaft of a rib, and the neck of scapula.

Mammal – medium

Two long bone shafts exhibit filleting in the form of slice incidences. A third long bone shaft retains a bash that is likely the result of marrow extraction.

Mammal – large

A lone slice incidence on a long bone shaft is indicative of filleting.

Unidentified

A fragment of a long bone retains a slice incidence on its shaft from filleting.

3.1.5.4. Early Bronze IV/Middle Bronze I (indeterminate)

3.1.5.4.1. Taxonomy

Ten butchered specimens are known from the material that could not be specifically assigned to a subperiod during the EB IV/MB I periods. These are largely composed of domestic taxa, namely *Sus scrofa* (n = 4), *Bos taurus* (n = 2), and *Ovis/Capra* (n = 1). Indeterminate medium mammals are represented by a lone specimen, but no wild taxa are present.

3.1.5.4.2. Age Profiles

It is notable that the *Sus scrofa* specimens are particularly young, appearing as infants, juveniles, and subadult. These profiles stand in stark contrast to the profiles for the commonly found *Bos taurus*, *Ovis/Capra*, and indeterminate medium mammals, all of which are of subadult/adult age.

3.1.5.4.3. Element Representation

Three long bone fragments were found, as were other limb bones, including a tibia and a phalange. A rib, scapula, and vertebrae are the lone representatives of the trunk. A cranial and mandible bone are also present.

3.1.5.4.4. Butchering Activities

Bos taurus

A scapula exhibits a chop through the centre and a bash on the distal shaft. The chop is from an aggressive attempt at dismemberment, while the bash is related to marrow extraction. A slice incidence on the mid-shaft of a phalange is interpreted as skinning.

Sus scrofa

A chop through a cranial bone is indicative of dismemberment of the head. Another chop through the body of a vertebra indicates dismemberment of the vertebral column. A slice incidence on the same vertebra and one on the proximal shaft of a rib are interpreted as filleting. Lastly, a slice incidence on a mandible suggest disarticulation of it from the adjoining cranium.

Ovis/Capra

A lone fragment of a tibia retains several types of butchering marks, each indicative of separate activities. A bash on the mid-shaft suggests marrow extraction, while a saw and slice incidences on the distal shaft were likely for filleting and toolmaking.

Mammal – medium

Similar to the situation in the preceding period, two long bone shafts also exhibit filleting in the form of slice incidences. A third long bone shaft retains a bash that is likely the result of marrow extraction.

3.1.5.5. Early Bronze IV/Middle Bronze I (older – Statum 21)

3.1.5.5.1. Taxonomy

A total of 48 butchered specimens originate from EB IV/MB I (older) contexts. The specimens predominantly represent domestic taxa, including *Ovis*

aries (n = 7), *Sus scrofa* (n = 7), *Ovis/Capra* (n = 6), *Bos taurus* (n = 5), and two specimens of *Capra hircus*, as well as three *Equus asinus* bones. Several wild taxa appear as *Gazelle* (n = 3), *Dama dama* (n = 1), and *Capra ibex* (n = 1). A considerable portion of the remains belong to indeterminate medium (n = 11) and large (n = 1) mammals, while a lone specimen was unidentified.

3.1.5.5.2. Age Profiles

The *Sus scrofa* specimens range from juvenile to subadult/adult. Most domestic taxa, specifically *Bos taurus*, *Ovis aries*, *Capra hircus*, and *Equus asinus* are represented by mostly subadult/adult and adult individuals, though there is one juvenile *Bos taurus*. By contrast, the indeterminate *Ovis/Capra* are evenly distributed from juveniles to subadult/adults. The indeterminate medium and large mammals are predominantly of unknown age. Among the wild taxa, the *Capra ibex*, *Dama dama*, and most *Gazelle* sp. specimens are of adult age, though another *Gazelle* sp. is a juvenile.

3.1.5.5.3. Element Representation

Multiple bones of the hind limb were recovered, including two metatarsi, a femur and cuboid, and three of each of the following: astragali, calcanei, and tibia. The fore limb is represented by four humeri, two radii and phalanges, and a carpal bone. Portions of the head are represented by four cranial fragments, three mandible fragments, and a horn core; fragments of three ribs, two scapulae, and three indeterminate vertebrae originate from the trunk. Lastly, nine indeterminate long bone fragments were also collected.

3.1.5.5.4. Butchering Activities

Bos taurus

Bones of the lower limbs, namely an astragalus and two phalanges, exhibit slice incidences on the body and distal ends, respectively. A slice incidence on the distal shaft of a metatarsus is indicative of skinning. Dismemberment is identified on the alveolus of a mandible from a slice incidence.

Capra ibex

The lone *Capra ibex* femur retains a slice incidence and break on the distal end, likely as the result of disarticulation.

Capra hircus

An astragalus exhibits an extensive slice incidence on the condyles, which is indicative of disarticulation from the rest of the joint. Dismemberment is found as a deep slice incidence that occurs on a horn core.

Dama dama

An extensive slice incidence on the proximal half of an astragali is indicative of dismemberment of the lower limb.

Equus asinus

Skinning is evident as a slice incidence on the proximal shaft of a metatarsus. Further slices on the distal portion of a radius indicate disarticulation. Two forceful chops and an associated break on the distal shaft suggest the occurrence of dismemberment, where an aggressive separation of the lower limb was attempted.

Gazelle sp.

Filleting is evident from a slice incidence on the proximal shaft of a scapula and a scrape on the shaft of a tibia. Another scrape on the centrum of a vertebra is indicative of disarticulation of the vertebral column.

Ovis aries

Three slice incidences occur on the proximal shafts of calcanei, which are likely indicative of disarticulation. Additional disarticulation is found on the distal portions of three humeri, again as slice incidences where attempts were made to separate the humeri from the radii.

Sus scrofa

Slice incidences on an occipital condyle and zygomatic arch indicate disarticulation of the crania. Further disarticulation appears as a slice incidence on the distal end of a scapula. Filleting is observed in the form of slice incidences that appear on the mid-shaft of a separate scapula, the alveolus of a mandible, and two cranial bones.

Ovis/Capra

Evidence of disarticulation is found on the proximal shaft of a radius, the centrum of a vertebra, a carpal and mandible, all in the form of single slice incidence. A tibia retains a bash indicative of marrow extraction and a slice incidence that suggests filleting. This activity also occurs as a slice incidence on the distal and proximal shaft of a rib.

Mammal – medium

Several slice incidences distributed across five long bone shafts, a rib shaft, and vertebrae suggests the occurrence of filleting. A bash on a long bone shaft suggests marrow extraction and a chop on the lateral process of the aforementioned vertebra indicates dismemberment. Disarticulation is found on the body of a cuboid in the form of a slice incidence, where a division of the joint occurred.

Mammal – large

Disarticulation is identified by a scrape incidence upon the shaft portion of a long bone fragment.

Unidentified

A slice incidence on a rib fragment is likely due to filleting and associated toolmaking.

3.1.5.6. Early Bronze IV/Middle Bronze I (younger – Stratum 20)

3.1.5.6.1. Taxonomy

Sixty-four butchered specimens were recovered from EB IV/MB I (younger) contexts. These are largely composed of domestic taxa, primarily *Sus scrofa* (n = 20) followed by *Bos taurus* (n = 10), *Ovis/Capra* (n = 8), *Ovis aries* (n = 4), and *Capra hircus* (n = 3). The only wild taxon is *Gazelle* (n = 7), but indeterminate medium (n = 8) and large (n = 4) mammals are also present.

3.1.5.6.2. Age Profiles

The *Sus scrofa* specimens are again represented by predominantly young individuals, namely juvenile and subadults, though several adults are also present. By contrast, *Bos taurus* and indeterminate medium and large mammals are mainly composed of subadult/adult and adult individuals. Similarly, *Ga-*

zelle sp. specimens are almost exclusively of adult age. The *Ovis aries*, *Capra hircus*, and indeterminate *Ovis/Capra* exhibit a fairly even distribution from subadult to adult age classes.

3.1.5.6.3. Element Representation

The fore limb is largely represented by long bones, including three humeri and six radii. In addition, there are two ulnas and two carpals. Several remains of the hind limb were recovered, including four astragali, three femora, and a single specimen of each of the following: cuboid, calcanei, metatarsus, and tibia. There are also eleven indeterminate long bone fragments; fragments of eight ribs, five innominates, four scapulae, and three vertebrae represent the trunk. The fragments of five mandibles and three crania bones represent the head.

3.1.5.6.4. Butchering Activities

Bos taurus

The location of several slice incidences suggests the occurrence of disarticulation. These appear on the proximal shaft and distal end of a calcaneus, the distal end of a humerus, the proximal portions of two radii, and the mid-shaft of a phalange. Filleting only occurs on a humerus and a mandible, both in the form of slices, where three incidences are found upon the shaft of the humerus. Marrow extraction is found as a bash on the mid-shaft of a humerus. Three slice incidences on an astragalus, one on a premaxilla, and another on a cuboid likely indicate locations where skinning begun.

Capra hircus

Disarticulation appears in the form of several slices on the distal end of a metatarsus, the cranial portion of a vertebrae, and the nose of an ulna. The ulna also retains a scrape on its proximal shaft that suggests filleting.

Gazelle sp.

Filleting appears in the form of slices on an innominate (iliac shaft) and the proximal shafts of ribs. Several bones retain evidence of disarticulation. These occur as slices on a femoral head, innominate, and proximal rib. Additional evidence is found as a slice incidence the coronoid process of a

mandible, where an attempt was made to separate it from the cranium.

Ovis aries

A scrape incidence on the proximal shaft of a radius is indicative of filleting. Disarticulation is found in the form of several slice incidences on an astragalus and the lateral condyle and acetabulum of a pelvis, likely to separate this bone from the femur.

Sus scrofa

Evidence of disarticulation occurs as slice incidences on several bones. These include the midshaft and distal condyle of two astragali, the caput of a femur, the proximal end of a radius, the semi-lunar notch of ulna, the vertical ramus of a mandible, the superior articular facets of vertebra, and the ischium of an innominate. A slice incidence upon a carpal suggest a location where disarticulation and skinning occurred. Additional skinning is identified by slice incidences on the vertical rami of two mandibles and the mid-shaft of a metacarpus. Filleting and associated toolmaking appears on four scapulae, which are notably polished. These appear as slice incidences on the distal shaft, neck, and mid-shaft. More evidence for filleting, in the form of slice incidences, is found upon a cranial fragment, the spinous process of a vertebra, and the shafts of two ribs.

Ovis/Capra

Disarticulation occurs on the occipital condyle of the cranium, the head of a femur, and the tubercle of a rib, all in the form of a single slice incidence. Filleting occurs as two slice incidences on the distal shaft of a humerus and a single slice incidence on the proximal shaft of the same bone and the mid-shaft of a radius. It is also present as two slice incidences on the proximal shaft of a rib. A bash on the mid-shaft of a radius is indicative of marrow extraction. Toolmaking is also found on the proximal shaft of a rib.

Mammal – medium

Eight long bones exhibit several forms of butchering activity. A bash on the shaft of one is indicative of marrow extraction. A further five bashes distributed among three long bones suggest dismemberment, while four slice incidences are likely due to filleting.

Mammal – large

Filleting is interpreted from several slice incidences on both the shafts of two long bones and the shaft of a tibia. Another long bone shaft retains a bash that suggests an attempt at marrow extraction.

3.1.5.7. Middle Bronze IIA (Strata 19–18)

3.1.5.7.1. *Taxonomy*

A total of 118 butchered specimens originate from MB IIA contexts. These bones are mainly represented by domestic taxa, namely *Ovis/Capra* (n = 40, 33.9 %), *Sus scrofa* (n = 22, 18.6 %), *Ovis aries* (n = 14, 11.9 %), *Bos taurus* (n = 12, 10.2 %), and *Capra hircus* (n = 8). Several wild taxa are also present, though in low frequencies, as *Gazelle* (n = 3, 2.5 %), and lone specimens of *Dama dama* and *Sus scrofa* (wild). Additional remains could only be identified as indeterminate large (n = 5) and medium (n = 11) mammals.

3.1.5.7.2. *Age Profiles*

The *Sus scrofa* individuals continues to be of a comparatively younger age, including infants, juveniles, and subadults, while *Bos taurus* specimens continue to be primarily older, almost exclusively adults. The *Dama dama* and *Gazelle* sp. are largely older individuals, subadult/adult and adult. Lastly, the indeterminate mammals are primarily of unidentified age. Those most age classes are represented by *Ovis aries* and *Capra hircus* specimens, their distribution is slightly skewed toward the older classes. This distribution is somewhat reflected in the indeterminate *Ovis/Capra*, though it is complicated by the high count of subadult/adults.

3.1.5.7.4. *Element Representation*

The trunk is well represented by multiple bones, including thirteen innominates, twelve vertebrae, five scapulae, and eleven ribs. Many long bones form the abundance of the hind limb, namely eight femora and seven tibias. Additional bones include six metatarsi, three astragali, and a calcaneus. Similar quantities of bones compose the fore limb, such as eight radii, seven ulnas and metacarpi, five humeri,

and a phalange. Eight mandible fragments and a cranial bone represent the head. Lastly, there are eleven indeterminate long bones and four indeterminate flat bones.

3.1.5.7.3. Butchering Activities

Bos taurus

Filleting presents as a series of slice incidences. These appear on the vertical ramus of a mandible, the proximal shaft of an innominate, and the shafts of two ribs and an ulna (Fig. 3.1). Eight additional slice incidences are indicative of skinning, namely those that occur on the proximal shafts of three metacarpals and three metatarsals. Three of these incidences occur on one metacarpus. A scrape on mid-shaft of phalange is likely due to skinning as well. One metatarsus retains a slice incidence on its proximal end that is indicative of disarticulation.



Fig. 3.1 Stone slices on a *Bos taurus* rib (bone TZ 013039-001), which are indicative of filleting.

Capra hircus

Two astragali retain evidence of disarticulation in the form of slice incidences. Additional disarticulation is found on the distal end of a scapula, and the proximal shafts of two femora, two radii, and a metatarsus. The same scapula exhibits filleting on its spine, while a bash on the midshaft of the metatarsus is indicative of marrow extraction.

Dama dama

A fragment of an innominate retains a slice incidence on the acetabulum for the purpose of disarticulating the femur from the pelvis.

Gazelle sp.

A scrape incidence on the pubis of an innominate and a slice incidence on the horizontal ramus of a mandible are indicative of filleting. Further slices

occur on an astragalus, which are suggestive of toolmaking, as this bone was polished and likely used as a game piece.

Ovis aries

Disarticulation appears on several bones as slice incidences, albeit in different locations. These are distributed across the proximal shafts of a radius, pelvis, and ulna, as well as the semilunar notch of another ulna, and the distal ends of two humeri. Multiple slice incidences also occur. For example, two are located on the proximal portion of a metatarsus and three on a vertebra. Additional slice incidences are indicative of filleting, such as those on the iliac and ischial shafts of two innominates and an acetabulum of one of them. Further occurrences are on the distal shafts of a humerus and scapula, as well as the mid-shaft of radius. A bash on the distal shaft of a metacarpus is indicative of marrow extraction.

Sus scrofa

Multiple slice incidences signal the occurrence of disarticulation. For limb bones, this activity is found on the proximal portions of three ulnas and a radius, the distal shaft of a humerus, and as two slice incidences on the proximal epiphysis of a tibia. It is also observed as slice incidences on the arch of a vertebra, the ischial shaft and ilium of two innominates, and the proximal portions of four mandibles. Filleting is confined to the shaft portions of several bones in the form of slice incidences. These include the distal shaft of a humerus, the iliac shaft of an innominate, the proximal shafts of two radii and a tibia, and various locations of three rib shafts. Two slice incidences on the proximal shaft of a metacarpus and a lone slice incidence on a frontal bone suggest skinning. Chops on a vertebra and a cranial fragment suggest dismemberment.

Sus scrofa (wild)

A radius of a *Sus scrofa* (wild) exhibits two slice incidences, both on the proximal end. These are most likely due to disarticulation, where the bone was being separated from the humerus and/or ulna.

Ovis/Capra

The location of multiple slice incidences suggests the occurrence of disarticulation. These appear on the proximal portions of a calcaneus, humerus, rib, radius, and femur, as well as the distal portions of

two femora. Additional evidence is found as below the hinge of a mandible, on the body and centrum of vertebrae, and the shaft and neck of two scapulae. Lastly, slice incidences on the iliac and ischial shaft of two innominates and the distal end and condyle of a tibia are indicative of disarticulation.

Filleting appears mainly on the shaft portions of bones and in the form of slice incidences, including the proximal shafts of a tibia, two ribs, and a metatarsus. Further slice incidences occur on the mid-shafts of a rib, ulna, and tibia, as well as the distal shafts of another tibia and rib. Filleting is also interpreted from two slice incidences on a metacarpus, and incidences on the centrum and spinous process of separate vertebra. A slice incidence on the ischial shaft of a third innominate is also due to filleting.

One of the ribs from above retains a slice indicative of dismemberment. A chop on a femur splits it lengthwise to achieve dismemberment (Fig. 3.2). Several chops also indicate dismemberment, such as those on the proximal end of another femur, the base of a vertebral arch, and through the body of a vertebra.

Three bashes on the mid-shaft of a tibia and the proximal shaft of another are due to marrow extraction. Additional bashes on the shafts of a femur and indeterminate long bone also suggest marrow extraction. Skinning is identified as a slice incidence on the alveolus of a mandible.

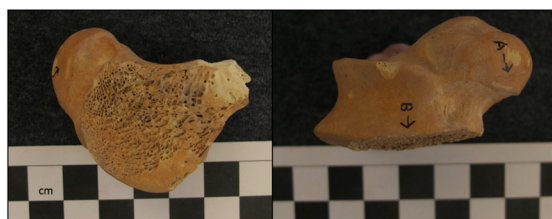


Fig. 3.2 Stone slice (A) and metal chop (B) on an indeterminate *Ovis/Capra* femur (bone TZ 013940-001). The former indicates disarticulation and the latter suggest dismemberment.

Mammal – medium

Filleting appears on the shafts of a flat bone, rib, and long bone in the form of slice incidences. A bash is found on another long bone shaft, which suggests marrow extraction. A slice incidence on the same bone is indicative of toolmaking. A slice and break on the superior articular facet of a vertebrae is likely due to disarticulation of the vertebral column.

Mammal – large

By count, filleting occurs most frequently, as it is found in the form of seven slice incidences distributed among long and flat bone shafts. Three bashes and a deep slice incidence on long bone shafts are suggestive of marrow extraction. Slice incidences on the distal shafts of two scapula are associated with toolmaking.

3.1.5.8. Middle Bronze IIB (Stratum 18)

3.1.5.8.1. *Taxonomy*

A large number of butchered remains originate from MB IIB levels. Several domestic taxa appear in notable frequencies, namely *Sus scrofa* (n = 21, 21 %), *Ovis/Capra* (n = 19, 19 %), *Ovis aries* (n = 13, 13 %), and *Bos taurus* (n = 12, 12 %). Other domestic taxa include *Capra hircus* (n = 3) and *Canis* sp. (n = 1). The wild taxa are only represented by *Gazelle* (n = 3, 3 %). A significant frequency of specimens could only be identified as indeterminate medium (n = 16, 16 %) and large (n = 12, 12 %) mammals.

3.1.5.8.2. *Age Profiles*

The *Sus scrofa* specimens are largely of younger age classes, juvenile and subadult. Similarly, the lone *Canis* sp. individual is of subadult age. The *Bos taurus*, *Ovis aries*, and *Capra hircus* specimens are largely represented by older (adult) specimens. The *Ovis/Capra* age classes are somewhat younger, dominated by juvenile to subadult/adult. *Gazelle* sp. range from juvenile to adult, while indeterminate mammals are mostly of unidentified age with several older specimens.

3.1.5.8.3. *Element Representation*

Multiple bones of the fore limb are represented by eleven humeri, three radii and ulnas, and two phalanges and metacarpi. Several bones represent the hind limb, including seven femora, four tibias, and a metatarsus and astragalus; fragments of ten vertebrae and scapulae, eight ribs, six innominates, and a sternum originate from the trunk. Portions of the head are represented by five cranial fragments and three mandible fragments. Lastly, nineteen indeter-

minate long bone fragments and three indeterminate flat bones were also collected.

3.1.5.8.4. Butchering Activities

Bos taurus

Disarticulation is distributed as slice incidences across the body. These appear on the mid-shaft of a carpal, the temporal bone, the proximal portion of an ulna, the superior articular process of vertebra, and the caput and neck of two femora. Four bashes on the shaft of a scapula suggests attempts to extract marrow or break it into smaller pieces possibly to fit into a cooking vessel, while a nearby slice incidence may be for filleting. Further filleting is found on two vertebrae in the form of slices. A lone chop through the acetabulum of an innominate is indicative of dismemberment. Evidence of skinning is present in the form of slice incidences upon the nasal bone and the proximal end of a phalange.

Canis familiaris

A slice and break incidence on a *Canis familiaris* rib is located on the mid-shaft. The slice incidence is likely the result of filleting, while the break is for marrow extraction.

Capra hircus

Filleting is observed on an innominate where a slice incidence appears below the rectus femoris. On the cranial half of a vertebra, another slice incidence suggests the disarticulation of the vertebral column at this point. A metacarpus retains evidence of both marrow extraction and skinning. The latter was indicated by a strong bash and the former by a slice incidence, both on the proximal shaft.

Gazelle sp.

Filleting is discovered upon the shafts of two scapulae in the form of slice incidences. A slice incidence and an associated break on the vertical ramus of a mandible are indicative of disarticulation, where ligaments were severed to remove the mandible from the cranium.

Ovis aries

Disarticulation is found on several sheep bones as multiple slice incidences. These appear on the distal portions of two humeri, two scapulae, a femur, a tibia and the occipital condyle of a radius. Several

slice incidences occur on two innominates, one on the iliac shaft and the other on the ischial tuber, suggest filleting, as do slice incidences on the shafts of a humerus and tibia. Lastly, three related slice incidences found upon a phalange are due to skinning.

Sus scrofa

Disarticulation is largely present on limb bones. Here slice incidences occur on the proximal portions of two ulnas and a tibia, the proximal and distal portions of two scapulae and two humeri, the distal shaft of a radius (Fig. 3.3), and the distal ends and neck of femur. This activity also occurs on the vertical ramus of two mandibles. Filleting occurs as slice incidences across a range of bones. These include the mastoid process of cranium, the lateral process of vertebra, the iliac shaft of an innominate, and the proximal shaft of rib. Its occurrence includes the mid-shaft of two scapulae and the distal shaft of a femur and humerus. A slice incidence on a cranial fragment suggests skinning.

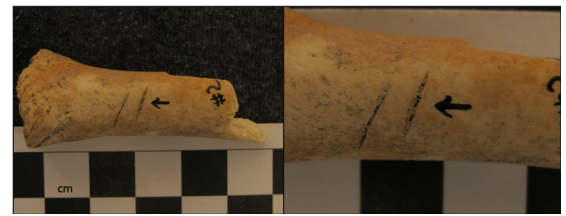


Fig. 3.3 Metal slices on a *Sus scrofa* radius (bone TZ 017447-002), which is indicative of filleting.

Ovis/Capra

A series of slice incidences occur on the occipital condyle, the proximal ends of a radius and rib, and the superior articular facet and process of two vertebra are indicative of disarticulation. Additional slice incidences are present on limb bones, such as the neck of a scapula, the distal epiphysis and proximal head of two humeri, and the proximal and distal ends of two femora. Filleting mainly appears as slice incidences on bones of the body, namely the proximal shaft of a rib, the shaft of the sternum, and the lateral process, spinous process, and superior anterior articular process of three vertebra. Two more slice incidences also occur on the distal shaft of two humeri. A metatarsus retains two slices incidences, one that stretches from the proximal to distal shaft and is inactive of toolmaking. The other is located on the shaft and is due to skinning.

Mammal – medium

Extensive filleting activity is observed on the midshafts of eight long bone fragments, as well as a humerus, rib, and metacarpus. These occur as slice incidences. Dismemberment is interpreted from a deep slice incidence on the proximal shaft of a rib. Two bashes on the shafts of two indeterminate long bones suggest attempts to extract marrow. Indeterminate activities occur as slice incidences on a flat bone fragment and long bone shaft.

Mammal – large

Two flat bone fragments retain a slice incidence each, which are indicative of filleting. Further filleting is discovered on two ribs and on several long bone shafts in the form of three slice incidences. Five bashes distributed across three long bones are indicative of marrow extraction.

3.1.5.9. Middle Bronze IIC (Stratum 16)

3.1.5.9.1. Taxonomy

A total of 89 butchered specimens come from MB IIC contexts. These are mainly represented by domestic taxa, such as *Sus scrofa* (n = 24, 27 %), *Ovis/Capra* (n = 17, 19.1 %), *Bos taurus* (n = 12, 13.5 %), *Ovis aries* (n = 5, 5.6 %), and *Capra hircus* (n = 4, 4.5 %). *Gazelle* (n = 6, 6.7 %) appears as the lone wild taxon. Additional remains could only be identified as indeterminate large (n = 13, 14.6 %) and medium (n = 8, 9 %) mammals.

3.1.5.9.2. Age profiles

The *Gazelle* sp. are of subadult and adult age. Young individuals, namely juveniles and subadults, dominate the *Sus scrofa* age classes. All other taxa, including indeterminate mammal and *Ovis/Capra* remains, are mostly represented by subadult/adult and adult individuals.

3.1.5.9.3. Element representation

The trunk is fairly well represented by multiple bones, including eight scapulae, two innominates, eleven vertebrae, and twelve ribs. Very few long bones represent the hind limb, only one specimen

of a femur and tibia. Additional bones include three metatarsi, four astragali, and a calcaneus and fibula. Similar quantities of bones compose the fore limb, such as four radii, two metacarpi and humeri, eight scapulae, and a carpal and ulna. Nine cranial bones and eight mandible fragments represent the head. Lastly, there are fifteen indeterminate long bones and two indeterminate flat bones.

3.1.5.9.4. Butchering activities

Bos taurus

Disarticulation is found distributed across the body, but consistently as slice incidences. These appear primarily on the lower portion of limbs, such as the distal shaft of a calcaneus, the body of a carpal, and the bodies of two tarsals. They also occur on the posterior of a cranium, the distal end of a scapula, and the spinous process of a thoracic vertebra. Slice incidences upon the distal shafts of a rib and ulna, as well as two vertebrae are indicative of filleting. Two chops, one on an astragalus and the other on one of the vertebrae, suggest attempts at dismemberment.

Capra hircus

The disarticulation of the distal end of a humerus and the cranial portion of a cervical vertebrae are found in the form of slice incidences in these locations. Further slice incidences found on the neck of a scapula and a vertebrae are interpreted as filleting.

Gazelle

A slice incidence on the premaxilla is indicative of skinning. Further slices on a rib, vertebra, and scapula suggests filleting. Another slice incidence on the scapula is the result of disarticulation. This same activity is interpreted from several slice incidences on the iliac shaft of an innominate, a bone upon which sawing indicates toolmaking. Evidence for marrow extraction is found on a radius shaft in the form of a bash.

Ovis aries

Several slice incidences are found on the distal condyles of astragali, the proximal end of a metacarpus, and the spine of a scapula. Their location of occurrence is suggestive of disarticulation. Further slice incidences upon the neck and midshaft of scapulae are indicative of filleting.

Sus scrofa

Disarticulation occurs primarily on the trunk and head as multiple slice incidences. On the trunk, this activity is located on the proximal shaft of two ribs, the body and dorsal arch of vertebrae, and the pubis of an innominate. On the head, disarticulation is found on the posterior edge of a mandible, the vertical ramus of five mandibles, and the occipital and zygomatic of cranial bones. Disarticulation is also found on the mid-shaft of a centrotarsal bone. Evidence of filleting occurs on the interparietal part of a cranium, the distal shaft of a fibula, the vertical ramus of a mandible, the distal shaft of two ribs, the proximal shaft of a scapula, and the spinous process of a vertebra. Skinning is identified as slice incidences upon the midshaft of a centrotarsal and the alveolus of a mandible. A distinct chop on the parietal suggests an attempt at brain extraction.

Ovis/Capra

Disarticulation appears on several bones from different parts of the carcass and as slice incidences. From the limb bones, these occur on the neck of a scapula, the proximal portions of two radii, the greater trochanter of a femur, and the proximal epi-

physis of humerus. Additional slice incidences are located on the proximal portions of two ribs and the superior anterior articular facet and centrum of two vertebra. Filleting is observed from the slice incidences on the distal shafts of a metacarpus and rib, as well as the proximal shafts of a rib, scapula, and tibia. A bash on the mid-shaft of a radius is likely due to marrow extraction.

Mammal – medium

A flat bone shaft and rib shaft retain a slice incidence each, which are indicative of filleting. More evidence of filleting is found in the form of eight slice incidences across six long bone shafts.

Mammal – large

There is a high occurrence of filleting, as slice incidences on seven long bone shafts and a flat bone are indicative of this activity. Three bashes, two on long bones and another on a metatarsus, suggest attempts to extract marrow. A chop on the proximal shaft of a metatarsus is indicative of dismemberment. Disarticulation is only found on the shaft of a rib as a slice incidence.

3.1.6. Discussion: Butchering Patterns at Tall Zirā'a

3.1.6.1. Butchering Taphonomy, Taxa, and Age Distributions

Broadly stated, the butchered assemblage can be described as in moderate condition. Most specimens were only subjected to light weathering and there is very little evidence of gnawing activity. However, the assemblage has undergone considerable fragmentation. Portions of larger and more compact bones tend to survive, while it is likely that many remains of smaller taxa or younger individuals are absent due to taphonomic processes. In this respect, there are no remains of foetal animals and very few remains of infants. A similar situation exists in the larger assemblage²³ which suggests a bias against finding the remains of such young animals preserved.

The taxa that compose the butchered assemblage are primarily traditional domestic taxa found in the southern Levant. These include *Bos taurus*, *Capra hircus*, and *Ovis aries*, all of which were exploited by pastoral nomads and sedentary societies for their primary and secondary products. These animals were largely butchered at adult and, to a lesser extent, subadult/adult and subadult age. These age profiles differ slightly than those of the indeterminate *Ovis/Capra* where most individuals are of subadult age, though adults and subadult/adults also appear in high frequencies. The overall patterns still suggest that most animals were butchered only after they were no longer useful for their secondary products. Other domestic species (e.g., *Equus*, *Canis*) are found in extremely low frequencies, indicating that they were likely not a dietary staple. There is

no evidence that *Equus* individuals were butchered during the MB.

Of particular note is the high frequency (21.1 %) of *Sus scrofa*, which is not found in abundance at other Bronze Age sites in the regions west of the Jordan River Valley, particularly those in the highlands of Samaria and Judea and the Shephelah. The age profiles of *Sus scrofa* differs from the rest of domestic taxa in that there was a preference for the consumption of younger subadult and juvenile individuals, rather than adults. Furthermore, the *Sus scrofa* remains are largely represented by cranial, mandible, scapulae, and ribs. There are relatively few remains of limb bones in comparison to the other domestic species. In both the EB IV/MB I and the MB IA–C, the scapulae are disproportionately selected for the production of tools. Most are modified into scoops or spatulas, probably for quotidian purposes.

The wild taxa are found in much lower frequencies than domestic taxa in both the butcher and larger faunal assemblages. They comprise 6.2 % of the entire butchered assemblage. Missing from the butchered wild taxa are all the small mammals, birds, and microfauna. In general, most wild taxa have few butchered specimens. They are useful since they indicate that wild animals were hunted and butchered during certain time periods. For example, *Capra ibex* butchered specimens appear during the EB, while *Sus scrofa* (wild) during the MB. *Gazelle* sp. occurs in all subperiods of each period, but in greater frequencies during the MB. In contrast, *Dama dama* appears predominantly in the EB. Almost all of the wild specimens are of adult age indicating that full-grown individuals were preferentially hunted. Both the wild and domestic animals were butchered in a similar manner.

3.1.6.2. Types of Butchering Activities

A wide range of butchering activities are present among the remains. They are present in varied frequencies, which range from dismemberment to toolmaking. Disarticulation (EB: 44.3 %, EB IV/MB I: 35.1 %, MB: 40.6 %) and filleting (EB: 50.8 %, EB IV/MB I: 33.1 %, MB: 37.6 %) are the most commonly found evidence of butchering activ-

ities, followed by marrow extraction (EB: 3.3 %, EB IV/MB I: 10.8 %, MB: 8.1%). Most evidence of disarticulation appears along the spinal column or limb bones, where attempts are made to apportion the body into smaller units. Although filleting appears on all types of bones, it is largely found on ribs, long bones, and innominates. Here efforts to remove portions of meat and soft tissue left behind slices and scrapes.

Both disarticulation and filleting are largely represented by slice incidences. In contrast, the bashes and chops are commonly associated with marrow extraction and dismemberment, respectively. In the latter activity, the intention is to divide up the body, but in an aggressive and perhaps more careless manner than disarticulation. Bashes occur mainly on various long bones and scapulae, while chops tend to appear upon bones of the trunk. In contrast, slices are distributed across most bones of the body, but typically upon limb and trunk bones.

Slices on metacarpi, metatarsi, and other bones of the lower limbs attest to skinning activities. In these locations the skin is taut and little meat is present, thereby providing a suitable starting point for exterior processing. Skinning is most apparent on *Bos taurus* and to a lesser extent on *Sus scrofa* and *Capra hircus* remains, likely because these smaller bones are relatively larger on such animals.

It should be noted that there is no evidence of slaughter on any of the butchered remains. Slaughter can be difficult to securely identify, but they relevant slicing marks are expected to appear on the ventral face of the cervical vertebrae and the hyoid bone, or as blows to the skull. Slices around the base of the skull are usually for disarticulation of the skull from the vertebral column.

The entire suite of butchering activities is not present at Tall Zirā'a for each of the periods (EB, EB IV/MB I, or MB IIA–C). However, evidence for all stages of butchering are present when all taxa are combined, ranging from skinning to toolmaking. The prevalence of disarticulation and filleting marks implies that mainly secondary and tertiary stages of the butchering process are represented in the butchered assemblage, where the carcass undergoes division into smaller portions and cuts of meat and the bones are extracted once again later for toolmaking²⁴.

3.1.6.3. Butchering Mark Analysis

The following observations only refer to the EB and MB butchered assemblage from Tall Zīrā'a and not the entire (non-b butchered) assemblage. Overall, 581 butchering incidences were distributed across 483 bone specimens (*Tab. 3.1*). Very few bones retained more than one butchering incidences upon them. By EB, EB IV/MB I, and MB II respectively, most incidences occur as slices (91.8 %, 77 %, 79.3 %), followed by bashes (3.3 %, 10.8 %, 7.8 %), combined slices + breaks (1.6 %, 3.4 %, 8.3 %), and chops (1.6 %, 2.7 %, 3 %) in considerably lower frequencies. Slices are the most common incidence in each subperiods, with higher frequencies in the EB (88.9–93.3 %) than MB II (75–82.3 %). This decrease in frequency is initially misleading as the “missing” percentages are found in the slice + break incidences (2.7–15 %) during the MB. A notable number of metal slice + break incidences occur during the MB IIB (9 + 1 potential) and MB IIC (9 + 3 potential)²⁵. The introduction of a stronger material (metal) likely permitted more force to be applied with the knife. The frequency of slice incidences in comparison to other types of butchering marks at Tall Zīrā'a is roughly similar to the pattern already established for EB sites elsewhere in the southern Levant, such as Nahal Tillah (83 %) and Tall Yarmuth (91 %)²⁶. Comparable data are not yet available for the MB.

Overall, there is little change in the butchering patterns from the EB to the MB (*Tab. 3.13*) signifying that the change from a stone to metal butchering technology did not as yet have a substantial impact on butchering style. However, this conclusion is complicated by 1) the small sample of butchered bones from the EB and 2) that the use of metal butchering implements in the butchered assemblage is less than half during the MB IIA and MB IIC²⁷.

For most elements, the location of butchering marks and associated butchering activities are similar between the EB and MB. However, there are several deviations to the general pattern that appear in the MB IIB and IIC assemblages, and others that have roots in the MB IIA. For example, in the MB

IIA–C, there are very few slices on the shafts of femora that indicate filleting. Disarticulation is the dominant activity on femora and appears on the distal and proximal end of femora in the form of slices, where the bone was separated from the tibia and innominate, respectively. In contrast, disarticulation was only identified on the proximal end during the EB and EB IV/MB I. Further slices on the distal and proximal ends of tibias appear during the MB IIA–C, which suggest disarticulation; whereas slices (and disarticulation) was not identified in these locations in previous periods. The occurrence of slices for disarticulation on vertebrae gradually become more concentrated toward the cranial portion of the bone during the MB IIA–C. During the MB IIB–C, slices on phalanges for skinning become concentrated on the proximal portions of the bone, rather than across the body/shaft as in the EB–MB IIA. Similarly, slices appear on the proximal portions of ribs, which indicate disarticulation, whereas only primarily filleting on shafts was discovered in earlier periods. It is not clear at this point whether these changes are due to the introduction of metal butchering technology or style of butchering. In fact, it is thought that the two sources of change are interrelated as butchering style would change with the introduction of the new technology.

Of additional note is the distribution of chops. In the EB, they are only found on the cranium. In the EB IV/MB I and MB IIA, they occur on the cranium, trunk, and long bones. The majority of chops appear in the MB IIA, though in the MB IIB–C, chops are identified on all parts of the body, including cranium, trunk, and bones of both upper and lower limb. This may indicate a shift in butchering patterns with the advent of the use of harder tin-bronze axes, though only two metal chops are identified in the MB.

It should also be noted that certain types of butchering marks are absent from the assemblage, namely gouges, nicks, and notches, and that burning, as a form of heat treatment, was rarely used (*Tab. 3.5*). The absence of these types of marks is similar to that seen at Bronze Age sites to the west of the Jordan River²⁸.

25 Greenfield et al. in this volume.

26 Beller et al. 2022; Greenfield et al. 2018.

27 Greenfield et al. in this volume.

28 Beller et al. 2022; Greenfield et al. 2018.

3.1.7. Conclusion

In conclusion, this study presents the analysis of the butchered fauna from the EB and MB assemblages at Tall Zirā'a. Analysis of these data enable identification of such quotidian activities as carcass processing and butchering patterns of animals consumed by the occupants of Tall Zirā'a during the EB, EB IV/MB I, and MB IIA–C s. Such aspects of daily life are as important to investigate as the “treasures” of the elite. Carcass processing is often ignored even by most faunal analysts – yet can contribute significant information about the behaviour of the ancient inhabitants of sites.

This study of the butchered assemblage demonstrates that the domestic animal exploitation at Tall Zirā'a was somewhat similar to other urban sites in the southern Levant during the EB and MB. In this respect, a similar range of taxa were butchered and consumed, namely the traditionally domestic taxa of the region (e.g., *Bos taurus*, *Ovis aries*, *Capra hircus*, and *Sus scrofa*). Individuals of *Bos taurus* and the collective *Ovicaprines* were culled at an older age, primarily adult, after their usefulness to provide secondary products had passed. In contrast, *Sus scrofa* were culled at a younger age (juvenile–subadult) probably because they are used predominantly for their primary products (e.g., meat, bone)²⁹. The occupants also acquired various wild taxa that were present throughout the region and targeted acquisition of adult individuals.

The majority of butchering marks are slices made by a stone or metal knife. Chops are mainly made by a metal axe (sharp) and bashes by a ground stone axe (blunt). The suite of butchering marks indicates that secondary and, to a lesser extent,

tertiary stages of butchering (dismemberment to toolmaking) are the dominant forms present at Tall Zirā'a during the EB and MB. Overall, the animals are butchered in a consistent manner from period to period with a similar distribution of marks across the elements. This style of butchering is largely maintained from the EB to MB with several notable exceptions. These include a proportionally greater number of marks related to disarticulation and fewer marks devoted to filleting, most notably on femora, ribs, and tibias in the MB. A greater number of chops relative to slice incidences also occurs over time. The collective changes coincide with the introduction of metal technology into quotidian activities, such as butchering, though it is not certain whether this new technology is the cause of those changes. At present, it can be stated that the shift from a stone to metal butchering implements had a minimal impact on the butchering style at Tall Zirā'a. Future research on later periods at the site (e.g., Late Bronze Age, Iron Age) will enable more rigorous testing of these conclusions.

How unique are the results from Tall Zirā'a? Unfortunately, very few assemblages from the same region and time periods have been described in a similar manner, leaving few comparative assemblages. This chapter is an attempt to change that trend and offers insight into the nature of butchering, particularly during a time period (EB IV/MB I) where the socio-economic landscape is not fully understood. We are working to rectify this lacuna in the regional database by extending our study to other sites in the region.

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29 Greenfield 1988, 2010.

3.1.8. Appendix

3.1.8.1. Appendix I: Early Bronze Age I–III Butchering Patterns

Early Bronze Age II				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Rib	Distal shaft	Slice					
<i>Capra hircus</i>	Humerus	Distal end	Slice		1			
<i>Gazelle</i> sp.	Humerus	Proximal epiphysis (head)	Slice		1			
Mammal – large	Long bone	Shaft	Bash					
			Slice					
<i>Ovis/ Capra</i>	Tibia	Midshaft	Slice					
		Proximal shaft	Slice					
	Vertebra	Dorsal surface	Slice		1			
		Ventral	Slice		1			
EB II total					4			
Early Bronze Age II/III				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Rib	Midshaft	Slice					
<i>Canis familiaris</i>	Rib	Proximal shaft	Slice					
Mammal – large	Long bone	Shaft	Scrape					
			Slice					
<i>Ovis aries</i>	Scapula	Glenoid fossa	Slice		1			
	Tibia	Distal shaft	Slice					

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
	1							1
								1
								1
				1				1
	1							1
	1							1
	1							1
								1
								1
	4			1				9
	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toomaking	Unknown	Grand Total
	1							1
	1							1
	1							1
	3							3
								1
	1							1

<i>Ovis/</i> <i>Capra</i>	Femur	Midshaft	Slice					
	Metatarsus	Shaft	Slice					
	Rib	Proximal shaft	Slice					
	Tibia	Proximal shaft	Slice					
	Ulna	Semilunar notch	Slice		1			
<i>Ovis/</i> <i>Capra</i>	Vertebra	Between cranial and caudal superior articular facets	Slice					
		Centrum	Slice		1			
Early Bronze Age II/III total					3			
Early Bronze Age II/III				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Calcaneus	Midshaft	Slice		1			
	Femur	Caput	Slice		1			
	Metapodium	Distal condyle	Slice		1			
	Vertebra	Spinous process	Slice		1			
<i>Capra hircus</i>	Astragalus	Entire	Slice		1			
<i>Dama dama</i>	Cranium	Base of pedicle on frontal bone	Chop				1	
	Humerus	Distal lateral epicondyle	Slice		1			
		Distal shaft	Slice					
		Greater tubercle	Slice		1			
<i>Equus asinus</i>	Calcaneus	Proximal shaft	Slice		1			
Mammal – large	Long bone	Shaft	Slice					

	1							1
	1							1
	1							1
	1							1
								1
	1							1
								1
	12							1

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
								1
								1
								1
								1
								1
								1
								1
	1							1
								1
								1
	1							1

Mammal – medium	Long bone	Shaft	Bash					
			Slice					
<i>Ovis aries</i>	Calcaneus	Proximal end	Slice		1			
	Humerus	Distal end	Slice		1			
	Radius	Proximal end	Slice		1			
<i>Ovis/ Capra</i>	Femur	Caput	Slice		1			
		Distal shaft	Slice					
		Proximal shaft	Slice					
	Humerus	Distal end	Slice		1			
		Distal shaft	Slice		2			
		Proximal shaft	Slice					
<i>Ovis/ Capra</i>	Innominate	Proximal shaft	Slice		1			
	Metatarsus	Proximal end	Slice		1			
	Rib	Distal shaft	Slice					
	Scapula	Neck	Slice					
	Tibia	Proximal shaft	Slice					
	Vertebra	Centrum	Slice		1			
<i>Sus scrofa</i>	Cranium	Interparietal	Slice		1			
	Fibula	Proximal shaft	Slice					
			Slice and break					
	Humerus	Distal shaft	Slice					
	Innominate	Ischium of acetabulum	Slice		1			
Unidentified	Long bone	Shaft	Slice					
Early Bronze Age III total					20		1	

Tab. 3.14 Early Bronze Age I–III butchering patterns

				1				1
	2							2
								1
								1
								1
								1
	1							1
	1							1
								1
								2
	1							1
								1
	1							1
	1							1
	1							1
	1							2
								1
	1							1
	1							1
	1							1
								1
	1							1
	1							1
	15			1				37

3.1.8.2. Appendix II: Early Bronze Age IV/Middle Bronze Age I (Transitional Period)

Early Bronze IV/Middle Bronze I (indeterminate)				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Phalange	Midshaft	Slice					
	Scapula	Chopped through center	Chop				1	
		Distal shaft	Bash					
Mammal – medium	Long bone	Shaft	Bash					
			Slice					
<i>Ovis/ Capra</i>	Tibia	Distal shaft	Saw					
			Slice					
	Midshaft	Bash						
<i>Sus scrofa</i>	Cranium	Chopped through center	Chop				1	
	Mandible	Heel	Slice		1			
	Rib	Proximal shaft	Slice					
	Vertebra	Chopped through center	Chop				1	
		Vertebral arch	Slice					
Early Bronze IV/Middle Bronze I (indeterminate) total					1		3	
Early Bronze IV/Middle Bronze I (older stratum)				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Astragalus	Body and Proximal condyles	Slice		1			
	Mandible	Alveolus	Slice				1	
	Metatarsus	Distal shaft	Slice					
	Phalange	Distal end	Slice		2			

Butchering Patterns

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
					1			1
								1
				1				1
				1				1
	2							2
						1		1
			1					1
				1				1
								1
								1
	1							1
								1
	1							1
	4		1	3	1	1		14
	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
								1
								1
					1			1
								2

<i>Capra hircus</i>	Astragalus	Distal, lateral and medial condyles	Slice		1			
	Horn core	Middle	Slice				1	
<i>Capra ibex</i>	Femur	Distal end	Slice and break		1			
<i>Dama dama</i>	Astragalus	Proximal half	Slice				1	
<i>Equus asinus</i>	Metatarsus	Proximal shaft	Slice					
	Radius	Distal end	Slice		2			
	Tibia	Distal shaft	Chop and break				2	
<i>Gazelle</i> sp.	Scapula	Proximal shaft	Slice					
	Tibia	Shaft	Scrape					
	Vertebra	Centrum	Scrape		1			
Mammal – large	Long bone	Shaft	Scrape		1			
Mammal – medium	Long bone	Shaft	Bash					
			Slice					
			Slice and break					
	Rib	Proximal shaft	Slice					
	Vertebra	Chopped through lateral process at juncture to vertebral arch	Chop				1	
		Lateral process	Slice					
	Centrotarsal	Body	Slice and break		1			
<i>Ovis aries</i>	Calcaneus	Proximal shaft	Slice		2			
			Slice and break		1			
	Humerus	Distal end	Slice		1			
		Distal medial condyle	Slice		1			
		Distal shaft	Slice		1			

								1
								1
								1
								1
					1			1
								2
								2
	1							1
	1							1
								1
								1
				1				1
	5							5
			2					2
	1							1
								1
	1							1
								1
								2
								1
								1
								1
	2							3

<i>Ovis/ Capra</i>	Carpal	Body	Slice		1			
	Mandible	Immediate-ly below notch	Slice		1			
	Radius	Proximal shaft	Slice		1			
	Rib	Distal shaft	Slice					
		Proximal shaft	Slice					
	Tibia	Distal shaft	Bash					
			Slice					
	Vertebra	Centrum	Slice		1			
<i>Sus scrofa</i>	Cranium	Unknown	Slice					
		Frontal	Slice					
		Occipital condyle	Slice		1			
		Zygomatic arch of tem- poral bone	Slice		1			
	Mandible	Alveolus	Slice					
	Scapula	Distal end	Slice		1			
		Midshaft	Slice					
Unidentified	Rib	Distal shaft	Slice					
Early Bronze IV/Middle Bronze I (older stratum) total					23		6	

								1
								1
								1
	1							1
	1							1
				3				3
	1							1
								1
	1							1
	1							1
								1
								1
	1							1
								1
								1
								1
								1
			1					1
	18		3	4	2			56

Early Bronze IV/Middle Bronze I (younger stratum)				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Astragalus	Distal lateral condyle	Slice					
		Proximal lateral condyle	Slice					
	Calcaneus	Distal end	Slice		1			
		Proximal shaft	Slice		1			
	Cranium	Premaxilla	Slice					
	Humerus	Distal end	Slice		2			
		Midshaft	Bash					
			Slice					
		Proximal shaft	Scrape					
			Slice					
	Mandible	Vertical ramus	Slice					
	Phalange	Midshaft	Slice		1			
	Radius	Proximal end	Slice		1			
		Proximal shaft	Slice		1			
	Centrotarsal	Body	Slice					
<i>Capra hircus</i>	Metatarsus	Distal end between two condyles	Slice		1			
	Ulna	Nose of ulna	Slice		1			
		Proximal shaft	Scrape					
	Vertebra	Cranial half	Slice		1			
<i>Gazelle</i> sp.	Femur	Femoral head	Slice		1			
	Innominate	Iliac shaft	Slice					
		Pubis	Slice		1			
	Mandible	Coronoid process	Slice		1			
	Rib	Proximal shaft	Slice		1			

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
					1			1
					2			2
								1
								1
					1			1
								2
				1				1
	1							1
	1							1
	1							1
	1							1
								1
								1
								1
					1			1
								1
								1
	1							1
								1
								1
	1							1
								1
								1
	2							3

Mammal – large	Long bone	Shaft	Bash					
			Slice					
	Tibia	Shaft	Slice					
Mammal – medium	Long bone	Shaft	Bash					
			Slice					
<i>Ovis aries</i>	Astragalus	Midshaft	Slice		1			
	Innominate	Lateral distal condyle	Slice		1			
		Proximal end of acetabulum	Slice		1			
<i>Ovis aries</i>	Radius	Proximal shaft	Scrape					
<i>Ovis/ Capra</i>	Cranium	Occipital condyle	Slice		1			
	Femur	Head	Slice		1			
	Humerus	Distal shaft	Slice					
		Proximal shaft	Slice					
	Radius	Midshaft	Bash					
			Slice					
	Rib	Above and below tubercle	Slice		1			
		Proximal shaft	Slice					
<i>Sus scrofa</i>	Astragalus	Distal condyle	Slice		1			
		Midshaft	Slice		1			
	Carpal	Distal end	Slice			1		
	Cranium	Palatine	Slice					
	Femur	Caput	Slice		1			
	Innominate	Ischium	Slice		1			
	Mandible	Heel – horizontal ramus junction	Slice					
	Metacarpus	Midshaft	Slice					
	Radius	Proximal end	Slice		1			

				1				1
	2							2
	1							1
				6				6
	4							4
								1
								1
								1
	1							1
								1
								1
	2							2
	1							1
				1				1
	2							2
								1
	2					1		3
								1
								1
								1
	1							1
								1
								1
					1			1
					1			1
								1

<i>Sus scrofa</i>	Rib	Distal shaft	Slice					
		Proximal shaft	Slice					
	Scapula	Distal shaft	Slice					
		Midshaft	Slice					
		Neck	Slice					
	Ulna	Semi-lunar notch	Slice		1			
	Vertebra	Both superior articular facets	Slice		1			
		Spinous process	Slice					
Early Bronze IV/Middle Bronze I (younger stratum) total					28	1		

Tab. 3.15 Early Bronze Age IV/Middle Bronze Age I (transitional period) butchering patterns

	1							1
	1							1
			2					2
			1					1
						1		1
								1
								1
	1							1
	27		3	9	8	2		78

3.1.8.3. Appendix III: Middle Bronze Age II Butchering Patterns

Middle Bronze Age IIA				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dis-memberment	
<i>Bos taurus</i>	Innominate	Proximal shaft	Slice					
	Mandible	Vertical ramus	Slice					
	Metacarpus	Proximal end	Slice					
		Proximal shaft	Slice					
		Shaft	Slice					
	Metatarsus	Proximal end	Slice		1			
		Proximal shaft	Slice					
	Phalange	Midshaft	Scrape					
	Rib	Bend	Slice					
		Neck	Slice					
	Ulna	Shaft	Slice					
<i>Capra hircus</i>	Astragalus	Body	Slice		1			
		Distal condyles	Slice		1			
	Femur	Proximal shaft	Slice		2			
<i>Capra hircus</i>	Metatarsus	Midshaft	Bash					
		Proximal shaft	Slice		1			
	Radius	Proximal shaft	Slice		2			
	Scapula	Distal end	Slice		1			
		Spine	Slice					
<i>Dama dama</i>	Innominate	Proximal end of acetabulum	Slice		1			
<i>Gazelle</i> sp.	Astragalus	Entire	Scrape					
	Innominate	Pubis	Scrape					
	Mandible	Horizontal ramus	Slice					

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
	1							1
	1							1
					1			1
					3			3
					1			1
					1			2
					2			2
					1			1
	1							1
	1							1
	1							1
								1
								1
								2
				1				1
								1
								2
								1
	1							1
								1
						1		1
	1							1
	1							1

Mammal – large	Flat bone	Shaft	Slice					
		Unknown	Slice					
	Long bone	Shaft	Bash					
			Slice					
	Scapula	Distal shaft	Slice					
Mammal – medium	Un-known	Shaft	Slice					
	Flat bone	Shaft	Slice					
	Long bone	Shaft	Bash					
			Slice and break					
Mammal – medium	Rib	Distal shaft	Slice					
	Vertebra	Superior artic-ular facet	Slice and break		1			
	Unknown	Shaft	Slice					
<i>Ovis aries</i>	Humerus	Distal end	Slice		2			
		Distal shaft	Slice					
	Innominate	Acetabulum	Slice					
		Iliac shaft	Slice					
		Ischial shaft	Slice					
		Proximal end	Slice		1			
	Meta-carpus	Distal shaft	Bash					
	Metatarsus	Proximal end	Slice		1			
		Proximal shaft	Slice and scrape		1			
	Radius	Midshaft	Slice					
		Proximal shaft	Slice		2			
	Scapula	Distal shaft	Slice					
	Ulna	Proximal shaft	Slice		1			
		Semilunar notch	Slice		1			
	Vertebra	Centrum	Slice		2			
		Dens	Slice		1			

	2							2
							1	1
				3				3
	4							4
						2		2
	1							1
	1							1
				1				1
						1		1
	1							1
								1
	1							1
								2
	1							1
	1							1
	2							2
	1							1
								1
				1				1
								1
								1
	1							1
								2
	1							1
								1
								1
								2
								1

<i>Ovis aries</i>	Femur	Caput	Slice		1			
		Distal lateral condyle	Slice		1			
		Distal shaft	Slice		2			
		Midshaft	Bash					
		Proximal end	Chop				1	
		Split length-wise	Chop				1	
	Humerus	Proximal epiphysis	Slice		1			
	Innominate	Iliac shaft	Slice		1			
		Ischial shaft	Slice		1			
		Proximal shaft	Bash					
	Mandible	Alveolus	Slice					
		Immediately below hinge	Slice		1			
	Metacarpus	Distal shaft	Slice					
		Midshaft	Slice					
	Metatarsus	Proximal extremity	Slice					
	Radius	Proximal end	Slice		1			
<i>Ovis aries</i>	Rib	Distal shaft	Slice					
		Medial	Slice					
		Proximal neck	Slice		1			
		Proximal shaft	Slice					
			Slice and break				1	
	Scapula	Distal articular edge	Slice					
		Neck	Slice		1			
		Shaft	Slice		1			

								1
								1
								2
				1				1
								1
								1
								1
								1
	1							2
				1				1
					1			1
								1
	1							1
	1							1
	1							1
								1
	1							1
	1							1
								1
	2							2
								1
						1		1
								1
								1

<i>Ovis aries</i>	Tibia	Distal condyle	Slice		1			
		Distal end	Slice		1			
		Distal shaft	Slice					
		Midshaft	Bash					
			Slice					
		Proximal shaft	Bash					
			Slice					
	Shaft	Slice						
	Ulna	Shaft	Slice					
	Vertebra	Base of vertebral arch	Chop				1	
		Centrum	Slice		2			
		Chopped from cranial to caudal	Chop				1	
		Proximal articular facet	Slice		1			
		Sacrum 4	Slice		1			
		Spinous process	Slice					
<i>Sus scrofa</i>	Cranium	Chopped through	Chop				1	
		Posterior half of frontal	Slice					
	Humerus	Distal shaft	Slice		1			
	Innominate	Iliac shaft	Slice					
		Ischial shaft	Slice		1			
		Wing of ilium	Slice		1			
	Mandible	Proximal end	Slice		3			
		Vertical ramus	Slice		1			
	Metacarpus	Proximal shaft	Slice					

								1
								1
	2							2
				3				3
	1							1
				1				1
	1							1
	1							1
	1							1
								1
	1							3
								1
								1
								1
	1							1
								1
					1			1
	1							2
	1							1
								1
								1
								3
								1
					2			2

<i>Sus scrofa</i>	Radius	Proximal end	Slice		1			
		Proximal shaft	Slice					
		Shaft	Slice					
	Rib	Distal shaft	Slice and break					
		Midshaft	Slice					
		Proximal shaft	Slice					
	Tibia	Proximal epiphysis	Slice		2			
		Proximal shaft	Slice					
	Ulna	Proximal articulation – fovea	Slice		1			
		Proximal shaft – olecranon	Slice		1			
		Semilunar notch	Slice		1			
		Ulnar notch	Slice		1			
	Vertebra	Midline	Chop				1	
		Vertebral arch	Slice		1			
<i>Sus scrofa</i> (wild)	Radius	Proximal end	Slice		1			
		Proximal end and shaft	Slice		1			
Middle Bronze Age IIA total					60		7	

Middle Bronze Age IIB				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Carpal	Midshaft	Slice		1			
	cranium	Nasal	Slice					
		Temporal	Slice		1			
	Femur	Caput	Slice		1			
		Neck	Slice		1			
	Innominate	Through center of acetabulum	Chop				1	
	Phalange	Proximal end	Slice					
	Scapula	Shaft	Bash					
			Slice					
	Ulna	Proximal extremity	Slice		1			
<i>Bos taurus</i>	Vertebra	Centrum	Slice					
		Cranial superior articular process	Slice		1			
		Midshaft	Slice					
<i>Canis sp.</i>	Rib	Midshaft	Slice and break					
<i>Capra hircus</i>	Innominate	Flat area below rectus femoris	Slice					
	Metacarpus	Proximal shaft	Bash					
			Slice					
	Vertebra	Cranial half	Slice		1			
<i>Gazelle sp.</i>	Mandible	Vertical ramus	Slice and break		1			
	Scapula	Distal shaft	Slice					
		Shaft	Slice and break					

	Filleting	Filleting, skinning	Filleting, toolmaking	Marrow extraction	Skinning	Toolmaking	Unknown	Grand Total
								1
					1			1
								1
								1
								1
								1
					1			1
				4				4
	1							1
								1
	1							1
								1
	1							1
	1							1
	1							1
				1				1
					1			1
								1
								1
	1							1
	1							1

Mammal – large	Flat bone	Shaft	Slice					
			Slice and break					
	Long bone	End	Slice		1			
		Shaft	Bash					
			Slice					
	Rib	Distal shaft	Slice					
			Slice and break					
Mammal – medium	Flat bone	Unknown	Slice					
	Hu-merus	Midshaft	Slice					
	Long bone	Shaft	Bash					
			Slice					
	Metacarpus	Shaft	Slice					
	Rib	Proximal shaft	Slice				1	
		Shaft	Slice					
<i>Ovis aries</i>	Astragalus	Shaft + proximal condyle	Slice		1			
	Femur	Distal epiphysis	Slice		1			
	Humerus	Distal end	Slice		1			
		Distal shaft	Slice		2			
		Midshaft	Slice					
	Innominate	Iliac shaft	Slice and break					
		Proximal to ischial tuber	Slice and break					
	Phalange	Mid to proximal shaft	Slice					
	Radius	Proximal end	Slice and break		1			
	Scapula	Distal end	Slice		4			
	Tibia	Base of spinous process	Slice		1			
		Distal end	Slice		1			
		Proximal shaft	Slice		1			

	1							1
	1							1
								1
				5				5
	5							5
	2							2
	1					1		2
							1	1
	1							1
				2				2
	8		1				1	10
	1							1
								1
	1							1
								1
								1
								1
								1
								2
	1							1
	1							1
	1							1
					3			3
								1
								4
								1
								1
	1							2

<i>Ovis/ Capra</i>	Cranium	Occipital condyle	Slice		1			
	Femur	Caput	Slice		1			
		Distal epiphysis	Scrape		1			
			Slice		1			
	Humerus	Distal epiphysis	Slice		1			
		Distal shaft	Slice					
		Proximal head	Slice		1			
	Metatarsus	Proximal and distal shaft	Slice					
		Shaft	Slice					
	Radius	Proximal end	Slice		1			
	Rib	Proximal shaft	Slice		1			
	Scapula	Neck	Slice		1			
	Sternum	Shaft	Slice and break					
	Tibia	Proximal shaft	Slice					
	Vertebra	Cranial superior articular facets	Slice		1			
		Lateral process	Slice					
		Left cranial superior articular process	Slice		1			
		Right superior anterior articular process	Slice					
		Spinous process	Slice					
<i>Sus scrofa</i>	Cranium	Unknown	Slice					
		Paramastoid process	Slice					
	Femur	Distal epiphysis	Slice		1			
		Distal shaft	Slice					
		Neck for caput	Slice		1			

								1
								1
								1
								1
								1
	2							2
								1
						1		1
					1			1
								1
	1							2
								1
	1							1
	1							1
								1
	1							1
								1
	1							1
	1							1
					1			1
	1							1
								1
	1							1
								1
	1							1
								1

<i>Sus scrofa</i>	Humerus	Distal end	Slice		1			
		Distal shaft	Slice					
		Proximal epiphysis – on head	Slice		2			
	Innominate	Acetabulum	Slice		1			
		Iliac shaft	Slice					
	Mandible	Vertical ramus	Slice		1			
		Junction of vertical ramus and alveolus meet	Slice		1			
	Radius	Distal shaft	Slice					
	Rib	Proximal shaft	Slice					
	Scapula	Distal end	Slice		1			
		Midshaft	Slice and break					
			Slice					
		Neck	Slice		1			
		Proximal end	Slice		1			
	Tibia	Proximal diaphysis	Slice		1			
<i>Sus scrofa</i>	Ulna	Proximal diaphysis	Slice		1			
		Proximal shaft	Slice		1			
		Unknown	Slice					
	Vertebra	Lateral process and centrum meet	Slice and break					
Middle Bronze Age IIB total					47		2	

								1
	1							1
								2
								1
	1							1
								1
								1
	1							1
	1							1
								1
	1							1
	1							1
	1							2
								1
								1
								1
								1
							1	1
	1							1
	50		1	12	8	2	3	125

Middle Bronze Age IIC				Butchering activity (# NBI)				
Taxon	Element	Part of element	Type of incidence	Brain extraction	Disarticulation	Disarticulation, skinning	Dismemberment	
<i>Bos taurus</i>	Astragalus	From cranial to caudal	Chop				1	
	Calcaneus	Distal shaft	Slice		1			
	Carpal	Body	Slice		1			
	Cranium	Posterior half	Slice		1			
	Rib	Distal shaft	Slice					
	Scapula	Distal end	Slice		1			
	Ulna	Distal shaft	Slice and break					
<i>Bos taurus</i>	Vertebra	From left to right	Chop				1	
		Sacrum 1	Slice					
		Spinous process	Slice		1			
	Centrotarsal	Body	Slice		1			
		Midshaft	Slice		1			
<i>Capra hircus</i>	Humerus	Distal end	Slice		1			
	Scapula	Neck	Slice					
	Vertebra	Cranial inferior articular facets	Slice		1			
		Inferior cranial articular process	Slice					
<i>Gazelle</i> sp.	Cranium	Premaxilla	Slice					
	Innominate	Iliac shaft	Saw					
			Slice		2			
	Radius	Shaft	Bash					
	Rib	Proximal shaft	Slice					
	Scapula	Shaft	Slice and break		2			
	Vertebra	Base of spinous process	Slice					

	Fillet-ing	Fillet-ing, skinning	Fillet-ing, tool-making	Marrow extrac-tion	Skinning	Toolmaking	Un-known	Grand Total
								1
								1
								1
								1
	1							1
								1
	1							1
								1
	1							1
	1							2
								1
								1
								1
	1							1
								1
	1							1
					1			1
						1		1
								2
				1				1
	1							1
	1							3
	1							1

Mammal – large	Flat bone	Shaft	Slice					
Mammal – large	Long bone	Shaft	Bash					
			Slice					
			Slice and break					
	Metatarsus	Proximal shaft	Bash					
			Chop					
			Slice					
	Rib	Shaft	Slice		1			
Mammal – medium	Flat bone	Shaft	Slice					
	Long bone	Shaft	Slice					
	Rib	Distal shaft	Slice					
<i>Ovis aries</i>	Astragalus	Distal condyle	Slice		1			
		Medial distal condyle	Slice		1			
	Metacarpus	Proximal end	Slice		1			
	Scapula	Midshaft	Slice					
		Neck	Slice and break					
		Spine	Slice and break		1			
<i>Ovis/ Capra</i>	Cranium	Occipital condyle	Slice		1			
			Slice and break		1			
	Femur	Greater trochanter	Slice		1			
	Humerus	Proximal epiphysis	Slice		1			

	1							1
				2				2
	6							6
	1							1
				1				1
		1						1
	1							1
								1
	1							1
	8							8
	1							1
								1
								1
								1
			1					1
	2							2
								1
								1
								1
								1
								1

<i>Ovis/ Capra</i>	Metacarpus	Distal shaft	Slice and break					
	Radius	Midshaft	Bash					
		Proximal end	Slice		1			
		Proximal shaft	Slice		1			
	Rib	Distal shaft	Slice					
		Proximal shaft	Slice		2			
			Slice and break					
	Scapula	Neck	Slice		1			
		Proximal shaft	Slice					
	Tibia	Proximal shaft	Slice					
	Vertebra	Centrum	Slice		1			
		Superior anterior articular facet	Slice		1			
<i>Sus scrofa</i>	Cranium	Frontal	Slice					
		Interparietal	Slice					
		Occipital	Slice		1			
		Parietal	Chop	1				
		Zygomatic process of temporal bone	Slice		1			
	Fibula	Distal shaft	Slice					
	Innominate	Below lip of acetabulum of pubis	Slice		1			
	Mandible	Alveolus	Slice					
		Posterior edge	Slice		1			
		Vertical ramus	Slice		4			
			Slice and break		1			
	Rib	Distal shaft	Slice and break					
		Immediately distal to tubercle	Slice		1			
		Proximal shaft	Slice		2			

	1							1
				1				1
								1
								1
	1							1
								2
	1							1
								1
	1							1
	1							1
								1
								1
		1						1
	1							1
								1
								1
								1
	1							1
								1
					1			1
								1
	1							5
								1
	2							2
								1
								2

<i>Sus scrofa</i>	Scapula	Proximal shaft	Slice					
	Vertebra	Body	Slice		1			
		Dorsal arch	Slice and break		1			
		Spinous process	Slice					
	Centrotarsal	Midshaft	Slice		1			
Middle Bronze Age IIC total				1	44		2	

Tab. 3.16 Middle Bronze Age II butchering patterns

	1							1
								1
								1
	1							1
								1
	42	2	1	5	2	1		100

3.2. Changes in Butchering Technology and Efficiency Patterns Between the Early and Middle Bronze Ages from Tell Zirā'a

by H. J. Greenfield/J. A. Beller/J. S. Gaastra³⁰

3.2.1. Introduction

In recent years, it has become clear that metallurgy appeared early in the Neolithic and continued to develop over time into the Chalcolithic and Bronze and Iron Ages. Most early metal objects (Neolithic and Chalcolithic) were made of relatively soft metals (gold, silver, copper, etc.) and were largely display items (e.g. ornaments). Over time, more and more functional or utilitarian shapes appear (e.g. mace heads, axes, etc. during the Chalcolithic), but it is often unclear as to their ultimate function³¹.

With the advent of the Bronze Age, metal tools made of harder alloys (e.g. tin-bronze) become widespread across the Near East³². While bronze is a stronger and more malleable material³³, it cannot be assumed that metal tools quickly replaced stone. However, it is very difficult to assess the relative importance of various technologies in the archaeological record since metal objects can be recycled (melted and recast) when unused or damaged. While most research on the origins of metallurgy has been conducted on the few preserved metal artefacts (mostly recovered from mortuary contexts), this is probably a very biased sample. It is likely that the few recovered items are those that were lost, ritually deposited or hidden and forgotten.

Earlier studies on the replacement of stone with metal tools demonstrated that it is a slow process and extends through the length of the Bronze Age. For example, Rosen³⁴ demonstrated that stone tools decline slowly through the Bronze Ages, but the

rate depends on when they are functionally displaced by equivalent metal tools. Greenfield's studies on butchery technology complement this picture. They demonstrate that stone slicing tools (e.g. knife blades) dominate butchery activities throughout the Early Bronze Age (I–III). They only begin to be replaced by metal knives during the Middle Bronze Age, and not fully until the end of the Late Bronze Age³⁵. In a few isolated places, there is a different pattern where stone tools continued to be used through the Iron and Classical periods since they are sharper, cheaper, and more readily accessible than metal tools—in central Anatolian sites such as Çatalhöyük and Göltepe³⁶.

In Greenfield's previous studies, the regional focus was on the southern Levant, specifically to the west of the Jordan River. The problem with this regional focus is that there is a dearth of well-contextualised and temporally controlled faunal data sets from the period following the collapse of the EB III urban centres (c. 2500 BC) until the reestablishment of urban sites during the MB II (c. 2000 BC). To the west of the Jordan River, this period is known as the EB IV/IB/MB I, depending on whether one argues for continuity with the preceding (EB), following (MB), or lack of continuity with either periods (IB)³⁷. Bronze knives first begin to appear in Mesopotamia during this 500 year gap in southern Levantine culture history³⁸. In consequence, it has not been possible to say whether metal knives replaced stone knives in butchery slowly from the end of the EB III (c. 2500 BC) or rapidly at the beginning of the MB II (c. 2500 BC) to the west of the Jordan River.

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31 Levy 1995, 227–244; Levy 2007; Levy – Shalev 1989, 353–372.

32 Avilova 2009, 50–58; La Niece et al. 2007; Yener 2000.

33 Moorey 1988, 28–33; Muhly 1988, 2–20.

34 Rosen 1997.

35 Greenfield 2005, 183–191; Greenfield 2013, 161–178; Greenfield et al. 2018, 20–40.

36 Greenfield – Chaput 2021; Greenfield – Marciniak 2019, 76–103.

37 Greenberg 2019, 136–179; Richard 2020; Steiner – Killebrew 2014.

38 Moorey 1994.

To the east of the Jordan River Valley, there is significant evidence for settlement and cultural continuity following the end of the EB III into the succeeding EB IV/IB/MB I³⁹. At one site, Tall Zirā'a, there is even evidence for distinguishing between the earlier and later phases of occupation during the IB⁴⁰. In this chapter, we discuss the evidence for changes in butchering technology through the Early and Middle Bronze Age at Tall Zirā'a, Jordan, and the implications for understanding the timing of the spread of metallurgy through the region.

3.2.2. Method of Analysis

Experimental work over the past 40+ years on butchering technology and the shape of the grooves that is created by different types of butchering technology now allows with fair certainty to identify which type of raw material and instrument was used during the butchering process⁴¹. In consequence, it is now possible to distinguish between stone from metal tool marks. This information can be and has been utilized to quantify their relative importance over time and for various functions. This has been done quite successfully in a number of regions in the Near East and Europe⁴².

Zooarchaeological (animal/faunal remains from archaeological contexts) provides an abundance of material for such studies. Faunal remains are found in large numbers on most sites and are generally preserved (if not always collected) throughout the Near East. A variable quantity (depending on the site) of bones exhibit microscopic grooves that are the result of ancient butchering activities. These grooves can be used to identify the transition from a stone- to metal-based technology in the local butchering industry.

The abundance of faunal remains provides a data set that avoids many of the pitfalls of relying upon the frequency and distribution of the few metal items that survive down to the present. Metal objects are removed from the archaeological record by a variety of factors, including reuse, smelting, burial, decay, etc. By focusing on the butchered re-

mains, we are able to allow us to examine aspects of butchering that would otherwise be difficult to reconstruct in the absence of the butchering tools themselves (*Fig. 3.4*). Therefore, it becomes possible to identify the different raw materials used to make butchering tools, determine the relative efficiency of the different raw material used in butchering, and discuss the wider issue of how and why metallurgy is adopted and its spread through a region.



Fig. 3.4 Photographs of two ovicaprine radius bones with butchering slice marks from MB IIA deposits at Tall Zirā'a TZ 014847-001 (*Ovis aries*), upper photograph, and TZ 014847-003 (*Capra hircus*), lower photograph.

39 Richard 2003, 280–296; Steiner – Killebrew 2014.

40 Vieweger – Häser 2017; Vieweger et al. 2015.

41 E.g. beginning with Binford 1981; Shipman 1981, 357–385.

42 Greenfield 1999, 797–808; Greenfield 2013, 161–178; Greenfield 2017, 50–68; Marciniak – Greenfield 2013, 457–468.

3.2.2.1. Hypothesis

As the goal of this project is to determine when changes in butchering implements occurs, the following two hypotheses are tested:

- If there is a change in groove morphology over time, then this may reflect the introduction of metallurgy into the butchering process.
- If the number of butchering marks per bone decreases as metal replaces stone, then the introduction of metallurgy represents an increase in efficiency.

3.2.2.2. Sample Size

Over 74,000 bone fragments were collected by the excavators of the site from all time periods and were analysed by Norbert Benecke⁴³. Subsequently, during 10 days in August 2018, the authors sorted through the Early and Middle Bronze Age assemblage and selected bones with butchering marks. Instead, we found 5147 NISP in Benecke's database on which his report is based (*Tab. 3.17*). This is a much larger assemblage that is reported in

Benecke's report on the larger assemblage⁴⁴. This larger NISP will be used for comparison with the butchered assemblage. The database is available upon request.

Of the approximately 5147 (979 EB, 1230 EB/MB, and 2848 MB) NISP (Number of Individual Bones, corrected for articulations) in the general EB and MB assemblage, a total of 483 NISP (10.85 %) exhibit butchering marks in various forms (slices, chops, bashes, scrapes, etc.). An additional specimen from the LB also was analysed. The percentage of butchered remains from Tall Zirā'a is double compared to other contemporary sites from the region, which are generally in the range of 3–5 %⁴⁵, attesting to the high level of preservation at the site for these early periods.

Since the focus of this research is on the transition to metallurgy during the Bronze Age, all remains from the Early and Middle Bronze Ages were fully analysed. One specimen ended up being assigned to the Late Bronze Age and it provides an interesting comparison (discussed below). There was not sufficient time to analyse the material from the later periods at the site (*Fig. 4.5; Tab. 3.17*). The hope is to add these missing periods during a visit to the site at a later time.

Periods	Sum of NISP entire assemblage	% NISP	Sum of NISP with butchery marks	%
EB I–III	979	7.42%	54	11.16 %
EB IV/MB I (transitional period)	1320	10.01%	122	25.21 %
MB II	2848	21.60%	307	63.43 %
LB	8040	60.97%	1	0.21 %
Grand Total	13187	100.00%	484	100.00 %
Total EB and MB	5147		483	
Benecke total	4452			

Tab. 3.17 Frequency distribution of butchered all bones from the analysed assemblage by NISP by major chronological periods.

43 Benecke 2019, 493–568.

44 Benecke 2019, 493–568.

45 Greenfield 2004, 243–261; Greenfield et al. 2018, 20–40.



Fig. 3.5 Photograph of bone assemblage still in crates from LB and later periods from Tall Zirā'a that were not yet analysed (with Haskel Greenfield).

3.2.2.3. Frequencies by Period

The frequencies of butchered bones are not equal for all sub-periods, and their frequencies vis-à-vis the general assemblage vary significantly (*Tab.*

3.18). Once again, the LB assemblage is not included here.

At Zirā'a, most of the butchered remains come from the MB IIA–C (63.5 %). This is followed by the EB IV/MB I material (25.2 %) and the EB II–III (11.2 %).

The frequency of butchered bones relative to entire assemblage varies over time significantly. No butchered remains were identified from the EB I. The EB II has many more specimens (12 %) in relative terms than the EB III (4.6 %). This may be a function of the small sample size from the EB II, since the overall size of the EB III assemblage is much larger. In contrast, the frequencies from the EB IV/MB I and the MB IIB and IIC are much more stable largely ranging from 7.4 to 9.3 %, with the exception of the MB IIA where the butchered assemblage reaches a much higher (16.43 %). A Pearson's *r* correlation coefficient shows that the number of butchered bones varies significantly with the frequency of bones in the overall assemblage ($r=0.87518173$, 2 df).

Period	Subperiod	Values					
		Sum of NISP	%	Sum of NISP with butchery marks	% 2	% of major period	% of total assemblage
EB I–III	?	40	0.78 %		0.00 %		0.00 %
	IIB	58	1.13 %	7	1.45%		12.07 %
	II/III	171	3.32 %	14	2.90 %		8.19 %
	IIC	710	13.79 %	33	6.83 %	11.18 %	4.65 %
EB IV/MB I (transitional period)	?	135	2.62 %	10	2.07 %		7.41 %
	Older stratum	484	9.40 %	48	9.94 %		9.92 %
	Younger stratum	701	13.62 %	64	13.25 %	25.26 %	9.13 %
MB II	IIA	718	13.95 %	118	24.43 %		16.43 %
	IIB	1078	20.94 %	100	20.70 %		9.28 %
	IIC	1052	20.44 %	89	18.43 %	63.56 %	8.46 %
Grand Total		5147	100.00%	483	100.00 %	100.00 %	9.38 %

Tab. 3.18 Frequency distributions of butchered and all bones by NISP by major sub-periods from EB and MB (not including 1 LB specimen).

3.2.2.4. Methods of Analysis

The identification of the butchering implement and its raw material has a long history in experimental archaeology. Over the years, many scholars have conducted a series of experiments to determine the relationship between the shape of slicing and scraping butchering mark on bone and the raw material of the butchering implement (metal or stone knife or other tools). The methods and techniques used in the analysis are described extensively elsewhere and we refer the reader to that literature⁴⁶.

For the first time, we also report on chopping and bashing marks made by axes and hammer stones. This is an important aspect of butchering technology that is rarely discussed in the literature. Yet, in the ages before the appearance and widespread use of metal axes, this is an important aspect of butchering technology. Chops are for dismemberment of limbs and bashes to break open bone are for marrow extraction (*Fig. 3.6* and *3.7*). Where



Fig. 3.6 Photographs of a) *Equus asinus* tibia bone (TZ 017754-002) from EB IV/MB I deposit, upper photograph, and b) *Ovis/Capra* proximal femur bone (TZ 014861-005) from MB IIA deposit, lower photograph, both chopped lengthwise along long axis of the bone from Tall Zirā'a.

chops and bashes were visible within the butchered assemblage (identified on the basis of slicing marks), they were recorded. Chop and bash marks have more recently been investigated by Okaluk and Greenfield⁴⁷.

In order to identify whether butchering marks were made by metal or stone tools, a number of morphologically diagnostic profiles of slicing grooves and chop marks created by the most common butchering implements are extensively illustrated elsewhere⁴⁸. These controlled experiments demonstrate that it is possible to distinguish between stone and metal tool marks based on the morphology of the groove or impact type. In summary, metal blades tend to have a flat-edge with varying edge angles and widths (depending on the raw material and function of the blade). These produce a V-shaped groove profile, with both sides rising steeply away from the apex at a similar angle. Metal tool marks also tend to be deeper and smoother than stone tool marks. Chipped stone blades produce grooves with more irregular profiles and lateral striations. Chipped stone axes often break during use and do not produce clear grooves. Ground stone axes often produce scalloped fracturing and/or impact marks that are more akin to bashes.



Fig. 3.7 Photograph of *Bos taurus* scapula bone (TZ 016834-003) with bash marks (labelled as b, c, and d) from a ground stone hammer or hammerstone from MB IIB deposit at Tall Zirā'a.

46 E.g. Bello – Soligo 2008, 1542–1552; Greenfield 1999, 797–808; Greenfield 2006, 147–163; 2013, 161–178; Olsen 1988, 337–360; Shipman 1981, 357–385; Walker 1978, 710–715.

47 Okaluk 2020.

48 Greenfield 1999, 797–808; Greenfield 2006, 147–163; Greenfield 2013, 161–178; Okaluk 2020.

3.2.3. Analysis

3.2.3.1. Taphonomy of Assemblage

Before the frequency of stone or metal marks can be considered, the taphonomy of the assemblage must be assessed. Taphonomy can influence the quality of any assessment. For example, in a badly weathered assemblage, it is difficult to determine the nature of the groove and to interpret if it was made by a stone or a metal instrument. A number of variables are discussed next.

Weathering

The vast majority of remains in the butchered assemblage are only lightly (89.5 %) or medium (10.5 %) weathered (*Fig. 3.8* and *3.9*). No heavily weathered butchered specimens were found attesting to the relatively high level of preservation at the site (*Tab. 3.19*). Further, the relative frequencies do not change significantly between periods or sub-periods, except where the sample sizes are very small. This suggests that the faunal remains were buried relatively quickly after being discarded and not exposed to the elements for very long. Almost no specimens had any evidence of root damage, as well.



Fig. 3.8 Photograph of *Bos taurus* rib bone (TZ 019494-001) with light weathering with evidence of slicing marks from EB II deposits at Tall Zirā'a.



Fig. 3.9 Photograph of large mammal flat bone (TZ 014780-001) with medium weathering with evidence of slicing marks from MB IIA deposits at Tall Zirā'a.

Period	Light weathering		Medium weathering		Unknown		Total Sum of NISP with butchery marks	Total %
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze I–III								
IIB	6	85.71 %		0.00 %	1	14.29 %	7	100.00 %
II/III	14	100.00 %		0.00 %		0.00 %	14	100.00 %
IIC	26	78.79 %	5	15.15 %	2	6.06 %	33	100.00 %
Early Bronze IV/Middle Bronze I (transitional period)								
?	7	70.00 %	3	30.00 %		0.00 %	10	100.00 %
Older stratum	39	81.25 %	8	16.67 %	1	2.08 %	48	100.00 %
Younger stratum	58	90.63 %	5	7.81 %	1	1.56 %	64	100.00 %

Middle Bronze II								
IIA	98	83.05 %	17	14.41 %	3	2.54 %	118	100.00 %
IIB	94	94.00 %	6	6.00 %		0.00 %	100	100.00 %
IIC	81	91.01 %	6	6.74 %	2	2.25 %	89	100.00 %
Late Bronze								
IIA	1	100.00 %		0.00 %		0.00 %	1	100.00 %
Grand Total	424	87.60%	50	10.33 %	10	2.07 %	484	100.00 %

Tab. 3.19 Frequency of butchered bones by weathering stage and subperiods by NISP.

Modern damage

A large percentage of the sample shows evidence of modern damage (87.4 % – Tab. 3.20; Fig. 3.10). In other words, either during excavation or during transportation to the lab most of the bones were damaged. This is important to note to ensure that modern marks are not confused with ancient butchering marks. In the vast majority of cases, the two types of marks were easily distinguished since modern marks leave breaks or grooves that are light in colour.

This high degree of damage within the assemblage could be interpreted as evidence that the assemblage has a poor history of preservation or collection. However, our recent experience at Tall aş-Şāfi (Gath), where we were directly involved in the excavation of sample, suggests that this is not a unique pattern. A similar fraction of bones from the EB at Tall aş-Şāfi (Gath) have modern damage in spite of all efforts at improving recovery⁴⁹. They fragment upon discovery. While this may have repercussions for the analysis of the larger assemblage, it does not appear to affect this butchering analysis since the surfaces of the bone are not significantly weathered or pitted.

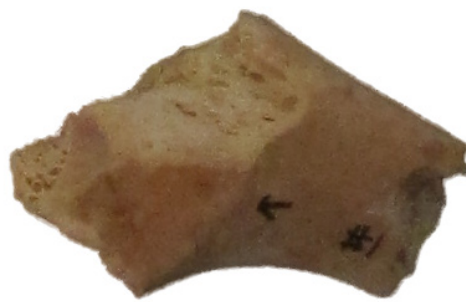


Fig. 3.10 Photograph of *Sus scrofa dom.* scapula bone (TZ 018093-001) with modern damage with evidence of slicing marks from EB IV/MB I (Older) deposits at Tall Zirā'a.

49 Greenfield et al. 2016b, 170–192.

Period	No damage		Damaged		Unknown		Total Sum of NISP with butchery marks	Total %
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze I–III								
IIB		0.00 %	6	85.71 %	1	14.29 %	7	100.00 %
II/III		0.00 %	14	100.00 %		0.00 %	14	100.00 %
IIC		0.00 %	31	93.94 %	2	6.06 %	33	100.00 %
Early Bronze IV/Middle Bronze I (transitional period)								
Older stratum	9	18.75 %	36	75.00 %	3	6.25 %	48	100.00 %
Younger stratum	2	3.13 %	57	89.06 %	5	7.81 %	64	100.00 %
?	1	10.00 %	9	90.00 %		0.00 %	10	100.00 %
Middle Bronze II								
IIA	4	3.39 %	93	78.81 %	21	17.80 %	118	100.00 %
IIB	1	1.00 %	99	99.00 %		0.00 %	100	100.00 %
IIC	10	11.24 %	77	86.52 %	2	2.25 %	89	100.00%
Late Bronze								
IIA		0.00 %	1	100.00 %		0.00 %	1	100.00 %
Grand Total	27	5.5 8 %	423	87.40 %	34	7.02 %	484	100.00 %

Tab. 3.20 Frequency of butchered bones by NISP with modern damage.

Calcium carbonate

Calcium carbonate covers the surface of the bone with a hard substance that can only be removed from bones with the use of acids. Often calcium carbonate covers the surface of the bone so entirely that it is nearly impossible to examine marks on the surface. No specimens exhibited any evidence of calcium carbonate concretions.

Heat treatment

Each of the bones was evaluated for thermal alteration for cooking using traditional zooarchaeological techniques based on bone colour and texture⁵⁰. Surprisingly, a large percentage of remains in each period experienced some evidence for heat or thermal alteration in the butchered assemblage (42 % boiled and 1.8 % boil and burn total – *Tab. 3.21; Fig. 3.11a and b*). This stands in stark contrast to the overall assemblage where there are only 32 more records of boiled bone (and these are bones

⁵⁰ Greenfield – Beattie 2017, 43–90; Shipman et al. 1984, 307–325.

that were discovered during our analysis that were ultimately deemed not to have any evidence of butchering) and only two more burned bones than in the butchered assemblage.

The frequencies of boiled remains ranges from a low of 24 % in EB III to a high of 57 % in the MB IIA. It is not surprising to find that such a high percentage was boiled given what is likely the style of cooking meat in most Bronze Age urban homes,

where limbs were broken up into small pieces and cooked slowly in ceramics, probably as stews. Far fewer specimens showed signs of burning (a low of 0 % in EB II, EB IV/MB I, and MB IIB and highs of 9 % in EB III). This suggests that roasting over a fire was a negligible form of cooking. The high frequency of boiled specimens has significance for understanding the next category – tool making.

Period	Boil		Burn		Unknown		Total Sum of NISP with butchery marks	Total %
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze I–III								
IIB	3	44.44 %		0.00 %	4	55.56 %	7	100.00 %
II/III	7	46.67 %		0.00 %	7	53.33 %	14	100.00 %
IIC	8	27.03 %	3	8.11 %	22	64.86 %	33	100.00 %
Early Bronze IV/Middle Bronze I (transitional period)								
Older stratum	24	51.85 %		0.00 %	24	48.15 %	48	100.00 %
Younger stratum	21	30.67 %	1	1.33 %	42	68.00 %	64	100.00 %
?	2	35.7 %	1	7.14 %	7	57.14 %	10	100.00 %
Middle Bronze II								
IIA	68	61.90 %	1	1.36 %	49	36.73 %	118	100.00 %
IIB	28	28.21 %		0.00 %	72	71.79 %	100	100.00 %
IIC	33	38.54 %	2	3.13 %	54	58.33 %	89	100.00 %
Late Bronze								
IIA	1	100.00 %		0.00 %		0.00 %	1	100.00 %
Grand Total	195	42.30 %	8	1.77 %	281	55.93 %	484	100.00 %

Tab. 3.21 Frequency of NISP and butchered bones with evidence of cooking (burning and boiling).



Fig. 3.11 Photographs of bones that were a) boiled [medium mammal long bone shaft, TZ 016871-002, MB IIB2 deposits, left photograph] and b) burned [*Sus scrofa* dom. Proximal end and shaft of radius, TZ 017580-001, EB IV/MB I, right photograph] with evidence of slicing marks from Tall Zirā'a.

Canid gnaw marks

Very few bones exhibited any evidence of canid gnaw marks (2.7 % of butchered assemblage – Tab. 3.22; Fig. 3.12). Interestingly, the highest frequency of canid gnaw marks occurs in the earliest period (EB II), probably because of the very small sample size from that sub-period. None of the other EB sub-periods have any canid gnawed bones. There are no

other canid gnawed specimens until the Younger (upper) stratum of the EB IV/MB I (1.5 %). Afterwards, the frequency climbs in the MB IIA (3.4 %), continues to rise in the MB IIB (5 %), but declines in the MB IIC (2.2 %). These data demonstrate that canids were not a significant taphonomic factor that affected the butchered bone assemblage. It should be noted that canid gnaw marks are easily distinguished from butchering marks in these later periods.

Period	Gnawing: Canid		Unknown		Total Sum of NISP with butche- ry marks	Total %
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze I–III						
IIB	1	14.29 %	6	85.71 %	7	100.00 %
II/III		0.00 %	14	100.00 %	14	100.00 %
IIC		0.00 %	33	100.00 %	33	100.00 %
Early Bronze IV/Middle Bronze I (transitional period)						
Older stratum		0.00 %	48	100.00 %	48	100.00 %
Younger stratum	1	1.56 %	63	98.44 %	64	100.00 %
?		0.00 %	10	100.00 %	10	100.00 %
Middle Bronze II						
IIA	4	3.39 %	114	96.61 %	118	100.00 %
IIB	5	5.00 %	95	95.00 %	100	100.00 %
IIC	2	2.25 %	87	97.75 %	89	100.00 %
Late Bronze						
IIA		0.00 %	1	100.00 %	1	100.00 %
Grand Total	13	2.69 %	471	97.31 %	484	100.00 %

Tab. 3.22 Frequency of butchered bones by NISP with evidence of canid gnawing from EB and MB. LB specimen is excluded.



Fig. 3.12 Photograph of *Capra hircus* proximal metatarsus bone (TZ 014888-001) with evidence of canid (piercing) damage and slicing marks from MB IIA deposit at Tall Zirā'a.

Cultural modification

A very small number of butchered specimens were found to be culturally modified into tools (e.g. handles), gaming pieces (die), and ornaments (15 %) (Tab. 3.23; Fig. 3.13). Most of the culturally modified specimens derive from the MB (75.7 % of total culturally modified specimens), followed by the EB IV/MB I (16.2 %), and the EB (8.1 %).

Each of the MB II sub-periods have higher frequencies of culturally modified specimens than all of the other sub-periods. The MB IIB has the highest frequency (22 %), followed by MB IIA (17.8 %) and MB IICI (14.6 %). All of the other periods and sub-periods have much smaller assemblages of culturally modified items in the overall assemblage: EB II and II/III – 14.3 %, each; EB III – 9.1 %; EB IV/MB I (Older) – 10.4 %; EB IV/MB I (Younger) – 9.4 %; and EB IV/MB I indeterminate – 10 %.



Fig. 3.13 Photograph of *Ovis/Capra* distal shaft of a tibia bone (TZ 017942-002) that was culturally modified into a handle with evidence of slicing marks from EB IV/MB I deposits at Tall Zirā'a.

Period	Culturally modified			Culturally unmodified			Total Sum of NISP with butchery marks	Total %	Total Sum of NISP with butchery marks 2
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks 2	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks 2			
Early Bronze I–III									
IIB	1	14.29 %	1.35 %	6	85.71 %	1.46 %	7	100.00 %	1.45 %
II/III	2	14.29 %	2.70 %	12	85.71 %	2.93 %	14	100.00 %	2.89 %
IIC	3	9.09 %	4.05 %	30	90.91 %	7.32 %	33	100.00 %	6.82 %
Early Bronze IV/Middle Bronze I (transitional period)									
Older stratum	5	10.42 %	6.76 %	43	89.58 %	10.49 %	48	100.00 %	9.92 %
Younger stratum	6	9.38 %	8.11 %	58	90.63 %	14.15 %	64	100.00 %	13.22 %
?	1	10.00 %	1.35 %	9	90.00 %	2.20 %	10	100.00 %	2.07 %
Middle Bronze II									
IIA+A26	21	17.80 %	28.38 %	97	82.20 %	23.66 %	118	100.00 %	24.38 %
IIB	22	22.00 %	29.73 %	78	78.00 %	19.02 %	100	100.00 %	20.66 %
IIC	13	14.61 %	17.57 %	76	85.39 %	18.54 %	89	100.00 %	18.39 %
Late Bronze									
IIA+A26		0.00 %	0.00 %	1	100.00 %	0.24 %	1	100.00 %	0.21 %
Grand Total	74	15.29 %	100 %	410	84.71 %	100 %	484	100 %	100 %

Tab. 3.23 Frequency of butchered bones by NISP with evidence of cultural modification (tool, game, and ornament) from EB and MB. LB specimen not included.

Polish and butchering

There is significant overlap between the culturally modified pieces discussed above and the cooked bones. This is largely due to the fact that bones selected for cultural modification will be boiled to remove all or most of their grease before they are modified into artefacts. This suggests that those selected as for secondary use as tools or ornaments will likely have derived from the cooked part of the assemblage. In consequence, a large percentage of the butchered assemblage has evidence of use as a tool and/or cooking in the form of surface polish (c. 30 %; *Tab. 3.24*).

Many bones had cultural polish on them. The polish seen on the surface of the bones was ranked according to intensity. Light and medium polish were the most common (13.5 %, each), followed heavy polish (2.3 %).

Over time, the frequency of polished bones changes. The MB has the highest portion of polished specimens (44.9 %), followed by the EB (28.6 %) and EB IV/M I (16.7 %).

A very high proportion of the bones with slicing marks were clearly cooked and then modified for use as tools, gaming pieces or ornaments. This brings up the issue of whether the slice marks really represent butchering for food or cleaning of bones for tool making.

Period	Polish intensity										Total %	
	High		Medium		Light		Very light		(blank)			
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze 1–III												
IIB		0.00%	1	14.29%	1	14.29%		0.00%	5	71.43%	7	100.00%
II/III	1	7.14%	1	7.14%	3	21.43%		0.00%	9	64.29%	14	100.00%
IIC		0.00%	2	6.06%	1	3.03%		0.00%	30	90.91%	33	100.00%
Early Bronze IV/Middle Bronze I (transitional period)												
Older stratum		0.00%	4	8.33%	4	8.33%		0.00%	40	83.33%	48	100.00%
Younger stratum	4	6.25%	1	1.56%	5	7.81%		0.00%	54	84.38%	64	100.00%
?		0.00%		0.00%		0.00%		0.00%	10	100.00%	10	100.00%
Middle Bronze II												
IIA	1	0.85%	22	18.64%	30	25.42%		0.00%	65	55.08%	118	100.00%
IIB	2	2.00%	19	19.00%	10	10.00%	1	1.00%	68	68.00%	100	100.00%
IIC	3	3.37%	15	16.85%	10	11.24%		0.00%	61	68.54%	89	100.00%
Late Bronze												
IIA		0.00%		0.00%	1	100.00%		0.00%		0.00%	1	100.00%
Grand Total	11	2.27%	65	13.43%	65	13.43%	1	0.21%	342	70.66%	484	100.00%

Tab. 3.24 Frequency of butchered bones by NISP and intensity of cultural polish from tool use.

3.2.3.2. Stone Versus Metal Marks

The frequency of stone and metal tool marks in the butchered assemblage changes dramatically over time (Tab. 3.25). In the EB, there is no evidence of metal tool marks on any of the specimens, whether by knife or axe blade. All of the marks are made by chipped stone tool knives or ground stone axes or hammer stones (Fig. 3.14). This situation begins to change in the EB IV/MB I (Younger) stratum, when a very small percentage of metal tool marks begin to appear (4.7 %, plus 3.1 % for possible metal). In the MB IIA, the frequency remains similar to the previous period (3.42 %, plus 1.7 % possible). During the MB IIB, the frequency of metal marks increases dramatically to 52 % (plus 3 % possible), but declines in the MB IICI to 40.4 % (plus 2.2 % possible) (Fig. 3.15). Even though metal marks make up an increasingly large proportion in the MB, chipped and ground stone tools continue to dominate the butchered mark assemblage throughout the MB. It is very interesting to note that the sole analysed LB I butchered specimen was made by a chipped stone tool blade.

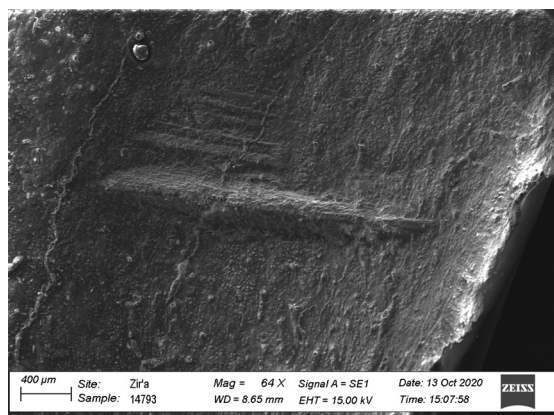


Fig. 3.14 Scanning electron micro-photograph of inverted groove on silicone mold from proximal end of *Capra hircus* femur bone (TZ 014793-003) with multiple strokes (from a single incidence) that was made by a chipped stone tool blade or flake, unifacially produced, unretouched from MB IIA deposits at Tall Zirā'a.

In this data set, it is possible to understand the nature of the transition between stone and metal technologies. They begin to appear toward the end of the EB IV/MB I, remain low in frequency in the MB IIA, and then dramatically increase in frequency in the MB IIB and IIC. However, stone tool slicing marks never completely disappear, even in modern times⁵¹.

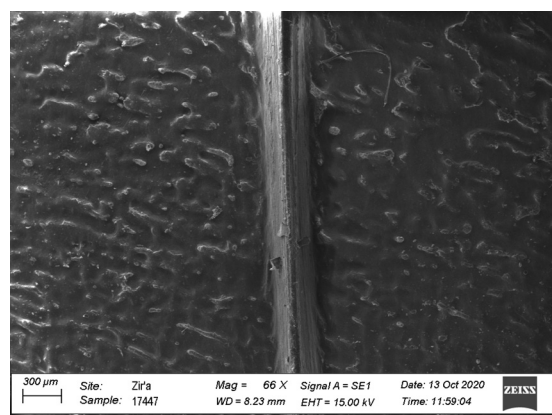
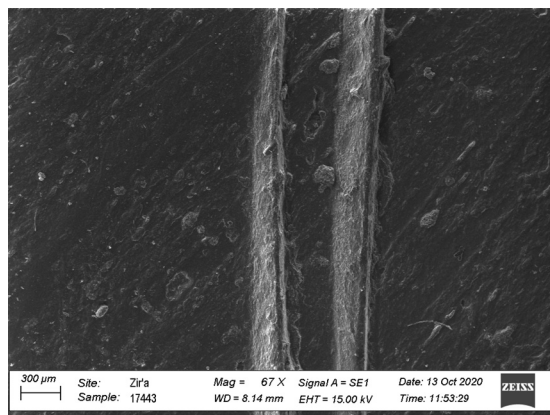


Fig. 3.15 Scanning electron micro-photograph of inverted groove on silicone mold from a) a *Sus scrofa dom.* lateral process of a lumbar vertebra (TZ 017443-001; upper photograph) and b) an medium mammal bone (TZ 017447-00?; lower photograph) that were made by a sharp metal slicing blade from MB IIB2 deposits at Tall Zirā'a.

51 Greenfield 2013, 161–178; Greenfield – Chaput 2021; Greenfield – Marciniak 2019, 76–103.

Period	Raw material												Total %
	?	Chipped stone		Ground stone		Metal		Metal?		(blank)		Total Sum of NISP with butchery marks	
		Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%		
Early Bronze I–III													
IIB			0.00 %	6	85.71 %	1	14.29 %		0.00 %		0.00 %	7	100.00 %
II/III			0.00 %	14	100.00 %		0.00 %		0.00 %		0.00 %	14	100.00 %
IIC			0.00 %	32	96.97 %	1	3.03 %		0.00 %		0.00 %	33	100.00 %
Early Bronze IV/Middle Bronze I (transitional period)													
?			0.00 %	9	90.00 %	1	10.00 %		0.00 %		0.00 %	10	100.00 %
Older stratum			0.00 %	47	97.92 %	1	2.08 %		0.00 %		0.00 %	48	100.00 %
Younger stratum			0.00 %	54	84.38 %	5	7.81 %	3	4.69 %	2	3.13 %	64	100.00 %
Middle Bronze II													
IIA	2		1.69 %	100	84.75 %	9	7.63 %	4	3.39 %	2	1.69 %	118	100.00 %
IIB	3		3.00 %	36	36.00 %	6	6.00 %	52	52.00 %	3	3.00 %	100	100.00 %
IIC	5		5.62 %	41	46.07 %	5	5.62 %	36	40.45 %	2	2.25 %	89	100.00 %
Late Bronze													
IIA			0.00 %	1	100.00 %		0.00 %		0.00 %		0.00 %	1	100.00 %
Grand Total	10		2.07 %	340	70.25 %	29	5.99 %	95	19.63 %	9	1.86 %	484	100.00 %

Tab. 3.25 Number of incidences by raw material (metal or stone) from EB and MB (and I LB).

3.2.3.3. Knife Blade Butchering Pattern

When the data are broken down by type of instrument (e.g. slice from knife blade, chop from axe blade, bash from hammer stone) and by raw material (stone or metal), slightly different patterns appear for each (*Tab. 3.26*).

Bash marks made by hammer stones are found in all periods and sub-periods examined in the assemblages. The frequencies are always low, ranging from 1 to 9 specimens (or 0 to 14.3 %, but the highest percentages are found when there are the lowest raw frequencies (e.g. EB II – 14.3 %). When values are higher, as in the MB, all phases yielded a relatively narrow set of percentages (5.6–7.6 %). This suggests that hammer stones were a pervasive part of the butchery process and were likely used to smash long bones to be able to fit them into pots for stewing and for marrow extraction. Many of the fragments could then be used in a secondary manner as tools, gaming pieces, or ornaments.

Chop marks made by axes are also found in all periods and several of the sub-periods. Axe marks in the EB and MB tend to be rare, and much rarer than bash or slice marks. This is likely because when axes chop into a bone, one side of the mark often breaks off leaving little or no clear evidence of the axe. From the data in *Tab. 3.26*, it is apparent that the type of raw material used in making axes varies over time. First, there is no evidence of metal axe marks through the entire chronological sequence, except for one possible metal chop mark in the MB IIB. Second, chipped (or thin ground stone since they are nearly indistinguishable) stone axe marks appear in small quantities in each of the major periods (EB and MB). Third, when the data are broken down by sub-periods, they are present in the EB III, EB IV/MB I, MB IIA, and MB IIC, but in very low frequencies. Based on these data, it is apparent that metal axes do not appear to be in use at Tall Zirā'a during the EB at all. During the MB, they might be present, but there is no clear and unambiguous evidence so far. Stone axes are used more rarely than knife blades or hammer stones for butchering. A single copper axe from the MB II was found at the site indicating that such tools were already available from this period onwards (*Fig. 3.16*), however there is no evidence that it was used for such quotidian activities. In fact, given that copper is relatively soft and the cutting edge easily dulled, it is unlikely that copper axes were used in butchering until much later in time.

No saw marks were observed in the assemblage, although it is expected that if more bone of the finished tools were present, these would have been observed. However, they were not analysed as part of this study.

A few scrape or shave marks (N=7) were identified in the butchered assemblage (*Fig. 3.16*). Most are likely the result of cleaning of soft tissue off of the bones before they can be made into tools. All but one were made by chipped stone tools (flakes, blades, or scrapers), and are distributed in both the EB IV/MB I and MB IIA assemblages. A single scrape mark that appears to have been made by a sharp metal blade was found in the EB IV/MB I (Older) deposit.

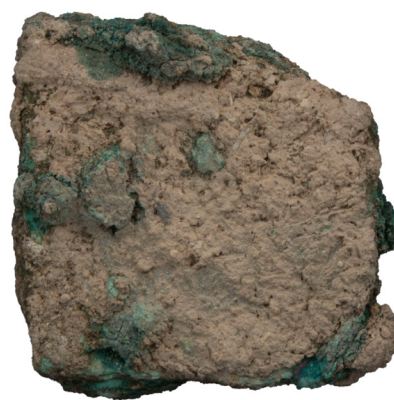


Fig. 3.16 Copper axe blade (TZ 019125-001) recovered from MB deposits at Tall Zirā'a.

Slice marks from knife blades or sharp stone flakes are found throughout the sequence. Chipped stone slice marks are present in each period and sub-period. They represent the vast majority of slicing marks in each period. Only in the EB IV/MB I do metal slicing marks appear and in very small quantities (N=3). This pattern continues into the MB IIA (N=3) and represent approximately 2 % of the slicing assemblage. However, in the MB IIB, the frequencies dramatically increase as metal slicing marks represent about 40 % of the sliced assemblage. The frequency of metal slicing marks declines significantly in the MB IIC (c. 30 %). This pattern in the data suggests that metal knife blades were first introduced in the EB/MB, but were rarely used in butchering activities. It is only in the MB IIB and later that metal knife blades begin to become

Period	Mark type													Total %				
	Slice			Slice and break						Slice and scrape		Total Sum of NISP with butchery marks						
	Chipped stone		Metal	Metal? (blank)		?				Metal			Chipped stone					
	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%	Sum of NISP with butchery marks	%								
Early Bronze I–III																		
II/III	14	100.00 %			0.00 %			0.00 %			0.00 %		0.00 %	14	100.00 %			
IIC	31	93.94 %			0.00 %			0.00 %			0.00 %		0.00 %	33	100.00 %			
Early Bronze IV/Middle Bronze I (transitional period)																		
?	7	70.00 %			0.00 %			0.00 %			0.00 %		0.00 %	10	100.00 %			
Older stratum	38	79.17 %			0.00 %			0.00 %		5	10.42 %		0.00 %	48	100.00 %			
Younger stratum	52	81.25 %	3	4.69 %	2	3.13 %		0.00 %			0.00 %		0.00 %	64	100.00 %			
Middle Bronze II																		
IIA	93	78.81 %	3	2.54 %	1	0.85 %	1	0.85 %	1	0.85 %	0	0.00 %		1	0.85 %	118	100.00 %	
IIB	35	35.00 %	43	43.00 %	1	1.00 %		0.00 %		0.00 %	1	1.00 %	9	9.00 %	0.00 %	100	100.00 %	
IIC	39	43.82 %	30	33.71 %		0.00 %		0.00 %	3	3.37 %		0.00 %	6	6.74 %	0.00 %	89	100.00 %	
Late Bronze																		
IIA	1	100.00 %		0.00 %		0.00 %		0.00 %		0.00 %		0.00 %		0.00 %		1	100.00 %	
Grand Total	316	65.29 %	79	16.32 %	4	0.83 %	1	0.21 %	4	0.83 %	6	1.24 %	15	3.10 %	1	0.21 %	484	100.00 %

Tab. 3.26 Frequency of butchering marks (NISP) by type of mark (slice, chop, bash, etc.) and raw material (stone or metal) from EB and MB (and one LB).

a regular part of the butchering technology. It is also clear that stone tools continue to be the dominant technology used in the butchering process.

When only slicing marks are considered (*Tab. 3.27*), in order to make the results comparable to the slicing mark study already carried out across much of the southern Levant⁵², the change in butchering technology becomes even more apparent. There is no evidence for metal knife blade marks at all during the EB. Only in the EB IV/MB I (Younger) do any

metal marks begin to appear and only in very small frequencies (5.4 %). This pattern continues through the MB IIA (3 %). As already noted, the MB IIB is the sub-period when metal knife blades increase in quantity dramatically (57.1 %), although they decline in importance during the MB IIB (45 %). As noted already, the lone LB specimen is a chipped stone blade/flake mark.

Slice marks	Stone	%	Metal	%	Total
Early Bronze I–III					
II	7	100.00 %	0	0.00 %	7
II/III	14	100.00 %	0	0.00 %	14
III	31	100.00 %	0	0.00 %	31
Early Bronze IV/Middle Bronze I (transitional period)					
?	7	100.00 %	0	0.00 %	7
Older stratum	43	100.00 %	0	0.00 %	43
Younger stratum	52	91.23 %	3	5.45 %	55
Middle Bronze II					
IIA	97	91.26 %	3	3.00 %	100
IIB	39	38.71 %	52	57.14 %	91
IIC	44	47.56 %	36	45.00 %	80
Late Bronze					
I	1	100.00 %	0	0.00 %	1
Grand Total	335	73.91 %	94	21.91 %	429

Tab. 3.27 Frequency of butchering marks (NISP) by type of mark (slice, chop, bash, etc.) and raw material (stone or metal) from EB and MB (and one LB), excluding unknowns (NISP).

3.2.3.4. Butchering Efficiency

Butchering efficiency can be monitored by examining the average frequency of slices with respect to slicing incidences (*Tab. 3.28*). In this case, the number of slices per slicing incidence observed under light optical microscope are summed and then divided by the number of cases (in this case, the

number of incidences). An incidence is when there is a cluster of marks which were part of the same activity area on the bone (*Fig. 3.17*). This is called the Butchering Efficiency Index (BEI). There can be one or more incidences (as defined by a single or cluster of marks) on any individual bone specimen. Marks at different locations on the bone would correspond to separate instances, as will different types

of butchering marks (e.g. bashes, slices, etc.)⁵³. For example, if you have 10 slices in a single incidence, the BEI would be 10. If there is only 1 slice per incidence, then the BEI would be 1. The higher the BEI value, the lower the efficiency. The lower the BEI value, the higher the efficiency.

Theoretically, there should be a change in efficiency (i.e. fewer slices/incidence) with the introduction of metal slicing tools for butchering. While metal tools are more efficient to use over and over again since they can be sharpened repeatedly, chipped stone flakes and blades are extremely but have a shorter use life before they become too dull. When they become dull, chipped stone can be sharpened by retouch. However, there is almost no evidence for the use of retouching in the slice mark analysis. Almost all of the slicing marks are made by unretouched unifacially produced flakes or blades. The question to be investigated is whether an increase or decrease in the butchering efficiency appears with the introduction of metallurgy.

As is visible in *Tab. 3.28*, BEI values across each of the sub-periods from the EB to the MB do not vary significantly. This suggests that there was no dramatic increase in butchering technology efficiency with the introduction of metallurgy. However, there is a temporal trend in efficiency. When the major periods are compared, the EB has slightly lower BEI (5.071428571) than the EB IV/MB I (3.875) and MB (4.448979592). This suggests a slight increase in efficiency over time. The lack of dramatic increase is probably because butchering technology during the MB is still dominated by stone tools. This is a pattern similar to that seen at other sites in the larger region where comparable analyses have occurred⁵⁴. With respect to butchering technology, the EB is still part of the Stone Age. It is only in the LB and eventually in the Iron Age that metal replaces stone technology for butchering purposes.

Slice marks	Stone	%	Metal	%	Total
Early Bronze I–III					
II	7	100.00 %	0	0.00 %	7
II/III	14	100.00 %	0	0.00 %	14
III	31	100.00 %	0	0.00 %	31
Early Bronze IV/Middle Bronze I (transitional period)					
?	7	100.00 %	0	0.00 %	7
Older stratum	43	100.00 %	0	0.00 %	43
Younger stratum	52	91.23 %	3	5.45 %	55
Middle Bronze II					
IIA	97	91.26 %	3	3.00 %	100
IIB	39	38.71 %	52	57.14 %	91
IIC	44	47.56 %	36	45.00 %	80
Late Bronze					
I	1	100.00 %	0	0.00 %	1
Grand Total	335	73.91 %	94	21.91 %	429

Tab. 3.28 Butchering efficiency index (BEI) from EB and MB (and 1 LB). The number of individual slicing marks are divided by the number of butchering incidences.

53 Greenfield – Brown 2016, 273–291; Greenfield et al. 2016b, 89–112.

54 Greenfield 2013, 161–178; Greenfield – Brown 2016, 273–291.



Fig. 3.17 Photographs of a) *Sus scrofa dom.* ulna (TZ 016835-003, left) and b) *Ovis aries* tibia (TZ 17022-001, right) bones with multiple butchering incidences from MB IIB deposits at Tall Zīrā'a.

3.2.4. Conclusions

Through the analysis of the morphology of butchering marks from Tall Zīrā'a, several long-term trends are visible. First, stone tools continue to be used for butchering throughout the EB and MB, and continue to be the dominant butchering technology. Second, metal tool marks on bones from butchering activities during the EB IV/MB I (Younger), but in such small numbers as to be an insignificant technology. In the MB IIB, metal tools begin to become very important as they represent approximately half of the butchering marks in the assemblage.

This is part of a larger regional pattern that is becoming increasingly apparent. The shift from a stone to metal butchering technology occurs much later than the advent of metallurgy in general or bronze metallurgy in particular. Knives appear in the archaeological record of the Near East in the latter half of the third millennium BC, but most are made from copper or low tin-bronze alloys, both of which are relatively soft in nature⁵⁵. Hard tin-bronze alloy (10 %) objects appear very late in the third millennium and only become common in the MB.

Third, there is no dramatic shift in butchering efficiency between the EB and MB as metallurgy is being introduced at the site. The Butchering Ef-

iciency Index (BEI) changes only slightly in the direction of greater efficiency during the MB IIB and IICI which suggests that metal butchering implements are being increasingly used, but are not the dominant technology. This follows the pattern already established for other sites in the region⁵⁶. The complete transition from a stone to metal butchering technology probably occurs later than the sequence already analysed from Tall Zīrā'a. We learned from our study of the material at Halif that the transition occurred almost 1000 years after bronze knives were first introduced to the region⁵⁷. The results from Tall Zīrā'a confirm the pattern seen at many other archaeological sites in the southern Levant. Clearly, metal takes a long time to be adopted for butchering technology even though it would be more efficient. However, it does not mean that all people can or will quickly adopt it.

Fourth, all stone tool marks were made by simple unretouched flakes and blades. This suggests that the stone tool production for butchering was relatively unspecialized, ad-hoc, and probably local affair. Striking of new flakes could have easily been part of daily household activities since it was easier and less expensive to provide a flint core than

55 Moorey 1994; Philip 1989.

56 Greenfield – Brown 2016, 273–291.

57 Greenfield – Brown 2016, 273–291.

to give a metal knife which would have been expensive since the raw materials to make it needed to be imported.

Fifth, the change in the BEI illustrates one of the reasons for why metal ultimately replaced stone as the preferred butchering implement. Sharp metal implements appear to require fewer strokes to cut through soft tissue during the butchering process, and less time to sharpen. If they break, the metal can be recycled. In contrast, sharpening by retouching flakes/blades is a time-consuming process. Hence, metal tools should be more efficient for use in the butchering process. However, one cannot assume that metal tools are more efficient to produce than stone since efficiency is more than simply strokes through the meat. Metal tools require specialists with the relevant technology to be at hand. In contrast, simple unretouched flakes and blade chipped stone tools can be made by household members from the abundant local raw materials. The sources for stone tools are more readily available than for metal which has to be imported over great distances. The sources for chipped stone tools are widespread through the region and easily available, especially around the site of Tall Zirā'a. Also, it is relatively easy and does not require specialists to produce chipped stone tools for butchering since most of them are simple flakes or blades which have very sharp edges. Hence, the acquisition and production of stone tools requires less energy and production time with less specialisation than is required for metal tools.

The limitation of stone tools is that they lose their cutting edge quickly and are difficult to sharpen. As a result, they are used for shorter periods of time and discarded more readily. In contrast to stone tools, metal tools can be easily sharpened

with a stone and will have greater longevity in the butchering process. While metal tools require less energy to cut through more tissue with fewer strokes, they require much greater investment in the procurement of raw materials and manufacturing since their sources are usually not local (and are often imported over great distances) and require specialised facilities to produce and repair. As a result, metal tools will be more expensive to acquire and maintain over time. All of the above can affect the rate of adoption of this new technology for mundane activities, such as butchering.

In conclusion, our analysis has demonstrated that it is possible to monitor the transition from a stone to metal based technology when applied to microscopic analysis of butchering grooves on animal bones. As new butchering methods are employed, there is an overall improvement in processing efficiency in the butchering process. While many economic and political changes occurred during the Early Bronze Age, one should not assume that all aspects of society are equally affected. Clearly, the adoption of metallurgy for household and daily butchering activities is laggard. This should not come as a surprise as the new metallurgical technology was probably expensive and consequently very limited in its distribution through society. Various factors (e.g. such as increased availability of bronze, decline in its cost, wider distribution in society, etc.) led to the increase in use of metal tools beginning in the MB IIB and continuing through the Late Bronze Age when it is employed more widely for mundane activities. Our detailed analysis of butchering marks allows insight into the impact of the introduction of metal on these economic and political changes in an entirely new manner.

Acknowledgements

The analysis of the butchered bone assemblage from Tall Zirā'a was funded by the University of Manitoba, St. Paul's College, and the Social Science and Humanities Research Council of Canada (to H. Greenfield) and the German Protestant Institute in Amman. The authors would like to thank Dieter Vieweger, Katharina Schmidt, and Jutta Häser for arranging access to the material used in this study and hospitality of the Deutsches Evangelisches Institut for their assistance and good company. Any errors are the responsibility of the authors.

3.3. A Breed Apart: Chronological Comparison of Sheep and Goat Populations at Tall Zīrā'a via 3D Geometric Morphometrics through the Bronze and Iron Ages

by J. S. Gaastra/J. Beller/H. J. Greenfield⁵⁸

3.3.1. Introduction

From the time of their domestication, sheep and goats have been the predominant domesticates kept across the Near East. Investigations into their management during pre-, proto- and historic periods has long been an area of significant research within zooarchaeological analysis⁵⁹. The proportions of animals of a given sex or age category has long been recognised as source of invaluable information as to the management of these domesticates for their products⁶⁰. However, while such demographic information may be readily reconstructed and compared against a large body of extant research, surprisingly little is known about regional variation (e.g. breeds or sub-species) in these key domesticates during the pre- and proto-historic periods. Conventional biometrical comparisons of bone size can provide some information as to changes in overall animal body size across time and space⁶¹, but are limited in their applicability. It is widely recognised in the study of faunal remains that simple metrics do not equate with livestock breed variation⁶².

While a useful comparative tool, this approach is unable to differentiate between size changes within a given breeding population (morphotype; e.g. breed) or the replacement of one morphotype with another. Changes from one breeding population to another of comparable size would likewise be undetectable. The incorporation of three-dimensional geometric morphometrics (**GMM** hereafter) allows for a detailed comparison of changes to the shape

and proportions of individual osteological elements (e.g. teeth, astragalus, etc.). These approaches have been used in recent years for the detection of local and regional variations in animal populations for both wild and domestic forms of multiple species (e.g. mice, pigs, horses, etc.)⁶³.

Comparisons of GMM morphotypes for domestic sheep and goat has also been shown to provide for discrimination between different breeding populations of these highly important domesticates⁶⁴. Recent developments in geometric morphometric (GMM) techniques provide the capacity to determine such morphotype changes in the past for both individual sites and/or regions through time allowing for increased understanding of livestock management and exploitation over time and space⁶⁵. The long occupational sequence uncovered at Tall Zīrā'a provides an ideal opportunity to study chronological changes to sheep and goat breeding populations in the pre- and proto-historic periods of the Jordan Valley and the escarpment that rises above it to the east (*Tab. 3.29*). A detailed investigation of the taxonomic proportions, age and sex structure and body size of domesticates represented at Tall Zīrā'a has been previously published⁶⁶. Given the long chronological sequence represented at Tall Zīrā'a, the faunal assemblage provides an ideal opportunity to implement these new methods to determine if chronological variation in ovicaprine morphotypes can be detected across the Bronze and Iron Age occupational phases.

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59 E.g. Davis 1987; Hesse – Wapnish 1985.

60 E.g. Davis 1984; Greenfield 1988; Payne 1973.

61 Cameron 2005; Haber et al. 2005; Köhler-Rollefson 1989; Payne 1969; Zeder 2001.

62 E.g. Albarella 2002; von den Driesch 1976.

63 Colominas et al. 2019; Cucchi 2008; Cucchi et al. 2011; Cucchi et al. 2017; Seetah et al. 2016.

64 Gaastra et al. forthcoming.

65 Gaastra et al. forthcoming; Haruda et al. 2019; Pöllath et al. 2019.

66 Benecke 2019.

Stratum	Cultural phase	<i>Ovis aries</i>	<i>Capra hircus</i>
10	Iron Age IIC	3	3
11	Iron Age IIA/B (younger)	9	13
12	Iron Age IIA/B (older)	18	13
13	Iron Age I	26	11
14	Late Bronze Age II	21	21
16	Middle Bronze Age IIC/Late Bronze Age I	8	1
17	Middle Bronze Age IIB	2	2
18	Middle Bronze Age IIA (younger)	2	-
19	Middle Bronze Age IIA (older)	1	-
20	Early Bronze Age IV/Middle Bronze Age I (younger)	2	1
21	Early Bronze Age IV/Middle Bronze Age I (older)	1	1
22	Early Bronze Age III	-	1
23	Early Bronze Age III/II	-	2

Tab. 3.29 Numbers of astragali studied by stratum and taxon.

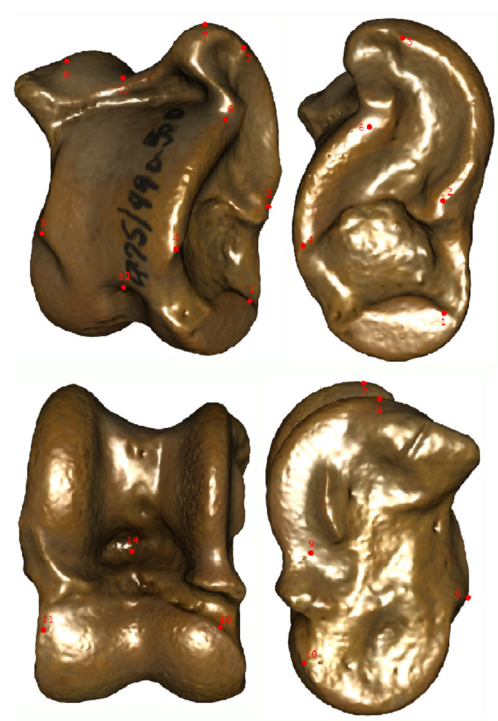


Fig. 3.18 Photogrammetric model of a sheep astragalus. The locations of GMM landmarks used in this study. Further details of these are given in Gastra et al. forthcoming.

3.3.2. Methods

Complete astragali from domestic sheep and goats recovered during the excavation of Area I at Tall Zīrā'a were extracted from the overall faunal assemblage and photogrammetrically modelled as detailed in Gaastra et al. (forthcoming). A total of 93 sheep and 69 goats were imaged for analysis (*Tab. 3.29*). Three-dimensional models of each astragalus were created via high-precision photogrammetric modelling using Agisoft Metashape. The assignment of landmarks and analysis of morphometric variation was made using the geomorph package (CITE) in R (R Development Core Team 2013). The location of the landmarks used can be seen in Figure 1 and further details on their precise anatomical location is given in Gaastra et al.⁶⁷. Astragali from both sheep and goats were first compared via Principal Components Analysis (PCA) alongside reference astragali of gazelle to confirm the speciation of each astragalus studied⁶⁸. Each taxon was subsequently subjected to an independent (taxon-specific) PCA as well as Procrustes ANOVA to determine chronological changes in morphotypes of each taxon kept at Tall Zīrā'a. Population mor-

photype variation reconstructions using this method do not vary as the result of differences in the age or sex structure of samples⁶⁹. Thus, identified morphotypes of sheep and goats and any chronological variation within these can be confidently identified as the result of changes to the breeding population of individuals and not as a result of changes to the age and/or sex structure of herds.

Previous investigations have determined that a minimum sample size of 16 astragali is required for a representative population sample of either sheep or goats⁷⁰. As can be seen in *Tab. 3.29*, not all chronologically differentiated samples from Tall Zīrā'a are large enough to meet this minimum size threshold. To expand the available sample sizes for comparison, some strata have been combined into cultural phase samples. These are the Iron Age II (Strata 10–12), the Middle Bronze I–II (Strata 17–19), the Early Bronze IV (Strata 20 and 21) and the Early Bronze II/III (Strata 22 and 23). For ANOVA comparisons, Strata 17–23 have also been combined to form an Early/Middle Bronze Age sample for comparative purposes (although still not sufficiently large for rigorous comparison).

3.3.3. Results

Following the creation of photogrammetric images of each of the specimens, the complete corpus of sampled Tall Zīrā'a astragali was compared via PCA to confirm the speciation assigned to each digitised astragalus. As can be seen in *Graph 3.1*, this form of multi-taxa comparison provides discrete clusters of astragali for each taxon represented⁷¹. Once each astragalus was confirmed as having the correct taxonomic assignment, subsequent analyses were made of each individual taxon. Separate PCA comparisons were made for sheep and goats

across the Bronze and Iron Ages at Tall Zīrā'a. As can be seen in *Graph. 3.2*, goat morphotypes show no apparent changes between the Early Bronze and Iron Ages. This lack of chronological variation in goats is confirmed by a Procrustes ANOVA analysis (*Tab. 3.30*). Essentially, this surprising result suggests strong genetic continuity in goat populations through the Bronze and Iron Ages in the valley between the Jordan Valley and the eastern escarpment.

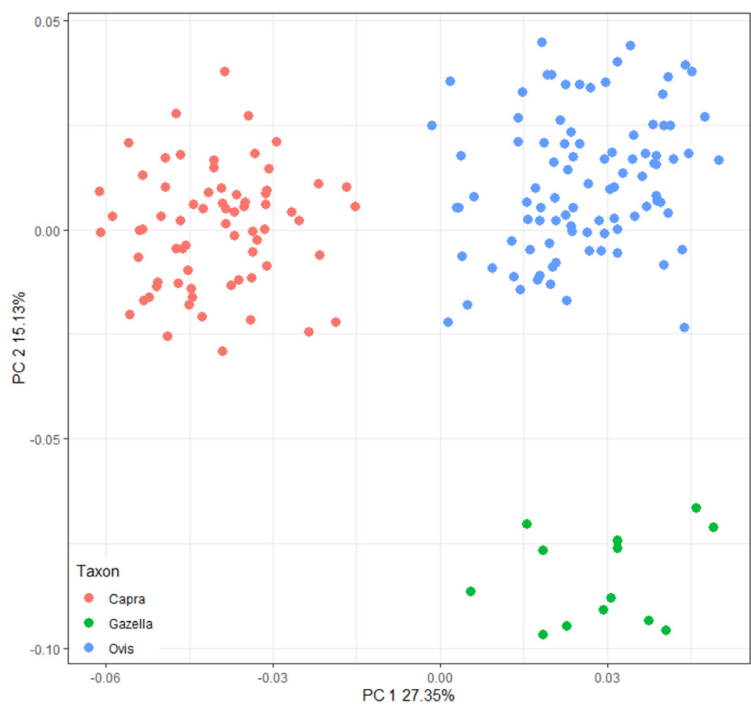
67 Gaastra et al. forthcoming.

68 Gaastra et al. forthcoming.

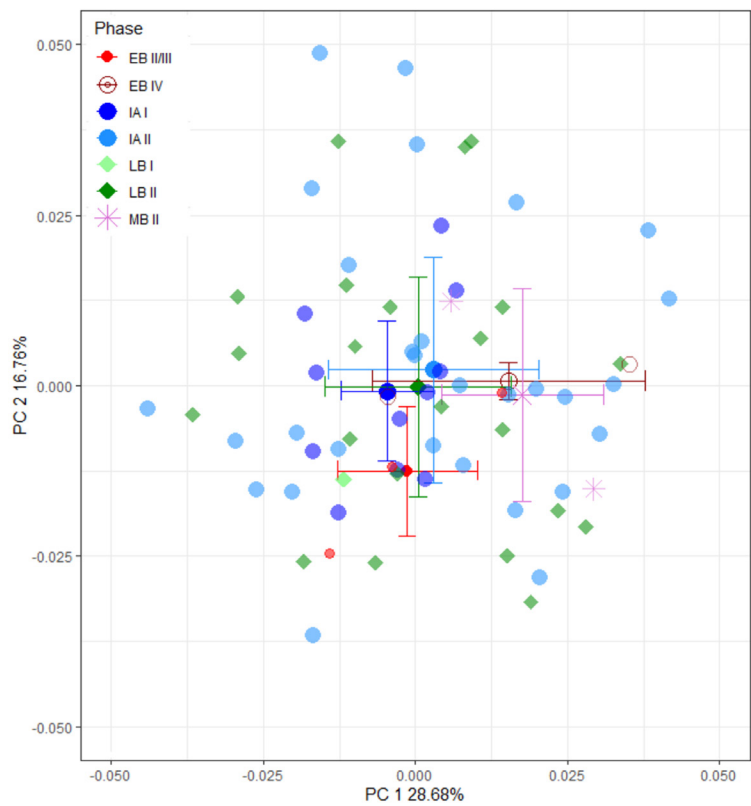
69 Gaastra et al. forthcoming.

70 Gaastra et al. forthcoming.

71 Gaastra et al. forthcoming.



Graph 3.1 Results of the multi-taxon PCA done to confirm the speciation of studied astragali.



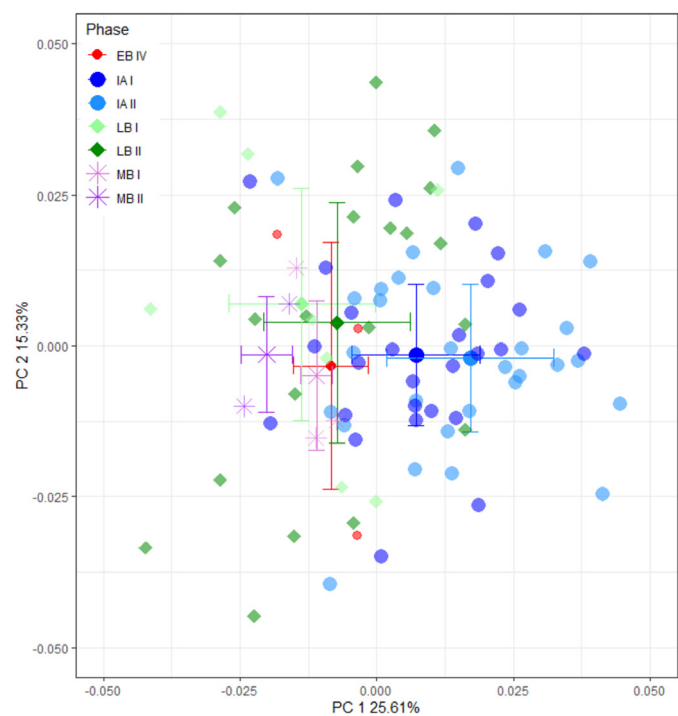
Graph 3.2 PCA comparison of goat morphotypes through time. The mean and standard error (error bars) for each chronological sample is given.

Capra hircus								
	EB II/III	EB IV	MB II	EB/MB	LB I	LB II	IA I	IA II
EB II/III	-	0.7036	-0.3122	-		1.2783	0.7277	1.4546
EB IV	0.235	-	-1.1904	-		1.888	2.4500	0.9204
MB II	0.617	0.0885	-	-		-1.6834	-0.2389	-1.4281
EB/MB	-	-	-	-		1.9614	2.4705	1.3253
LB I								
LB II	0.107	0.031	0.968	0.043		-	1.8724	1.2997
IA I	0.218	0.014	0.582	0.009		0.042	-	2.1595
IA II	0.075	0.180	0.938	0.106		0.092	0.022	-
Ovis aries								
	EB IV	MB I	MB II	EB/MB	LB I	LB II	IA I	IA II
EB IV	-	0.1898	-1.3550	-	-1.535	-1.533	0.3833	0.0643
MB I	0.401	-	-0.9205	-	-0.0141	0.8964	1.9166	0.7830
MB II	0.931	0.828	-	-	-1.5959	-0.7195	-2.4990	3.1482
EB/MB	-	-	-	-	-1.4473	-0.0065	2.3793	4.0421
LB I	0.955	0.486	0.949	0.946	-	-1.0465	1.6961	3.5397
LB II	0.952	0.188	0.768	0.486	0.856	-	1.1044	3.6968
IA I	0.333	0.036	0.591	0.014	0.054	0.137	-	1.1345
IA II	0.046	0.036	0.003	0.002	0.001	0.002	0.088	-

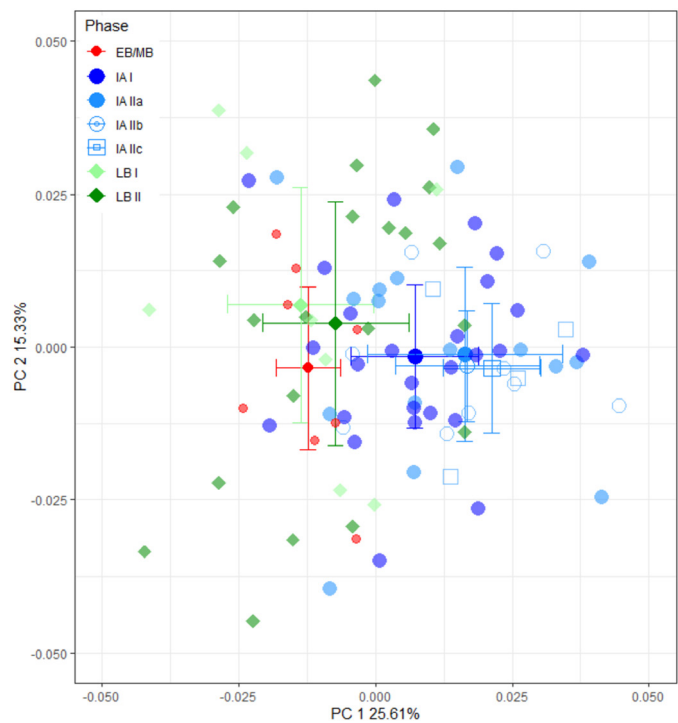
Tab. 3.30 Procrustes ANOVA results for goats (*Capra hircus*) and sheep (*Ovis aries*). Given here are the p-values (below) and effect size (above) for each taxon. P-values indicating a significant difference between morphotypes (breeding populations) have been highlighted.

In contrast, the PCA comparisons of sheep indicate that there was a change in sheep morphotypes kept or consumed at the site between the Late Bronze and Iron Ages. As can be seen in *Graph 3.3*, no change is indicated for sheep morphotypes at Zirā'a during the length of the Bronze Age sequence. However, at the beginning of the Iron Age I, the sampled astragali indicate that there was a change in sheep morphotypes. This second population morphotype of sheep does not differ in size from that of the Bronze Age, but is differentiated instead by its shape. The new morphotype continued to be exploited throughout the Iron Age II. This change is confirmed by Procrustes ANOVA analysis (*Tab. 3.30*). In order

to determine if this change represents one or more turnovers in sheep population morphotypes at Tall Zirā'a, the Iron Age II samples were compared by stratum. As can be seen in *Graph 3.4* and *Tab. 3.31*, no change is indicated for sheep during the Iron Age II suggesting that the new morphotype that appears during Iron I continues through the Iron II phase. Sheep from the Iron Age I (Stratum 13) are intermediate in shape, indicating that the sheep present at Zirā'a during this phase either comprised a population in transition or represent a contemporaneous mixture of both the previous and new sheep morphotypes.



Graph 3.3 A comparison of sheep morphotypes through time. The mean and standard error (error bars) for each chronological sample is given.



Graph 3.4 PCA comparison of sheep morphotypes with consideration of the individual strata of the Iron Age II. The mean and standard error (error bars) for each chronological sample is given.

Ovis aries						
	EB/MB	LB I	LB II	IA I	IA IIa	IA IIb
EB/MB	-	-1.4311	0.0323	2.4203	3.7549	2.3782
LB I	0.945	-		1.7053	3.0012	2.2134
LB II	0.477		-	1.1074	2.7131	1.5919
IA I	0.014	0.052	0.137	-	0.8146	0.3946
IA IIa	0.001	0.005	0.010	0.191	-	0.0373
IA IIb	0.142	0.021	0.032	0.334	0.466	-

Tab. 3.31 Procrustes ANOVA results for sheep (*Ovis aries*) with the Iron Age II divided into its component strata. Given here are the p-values (below) and effect size (above) for each taxon. P-values indicating a significant difference between morphotypes (breeding populations) have been highlighted. Phases lacking sufficient sheep astragali (minimum 5) for statistical comparison have been excluded.

These changes cannot be merely the result of changes to the age and/or sex structure of sheep populations as the method employed here is not impacted by variation in either age or sex⁷² and can therefore only indicate either changes to the breeding of sheep at Tall Zīrā'a during the Iron Age I at sufficient intensity to change the population morphotype, or the introduction of a new sheep morphotype from elsewhere. If sheep were placed under strong selective pressure within this site this would strongly indicate changes to the economic production of sheep at Tall Zīrā'a during the early stages of the Iron Age. If this change in morphotype

is the result of the introduction of a new breed, this may also be indicative of changes to sheep production as well as indicating a change in interaction and trade networks within the region. Further research into regional and chronological variation in sheep morphotypes across the southern Levant during the Late Bronze to Iron Age transition would be needed to determine which of these was the case. The specific origin of the Iron Age sheep morphotype identified at Tall Zīrā'a and its potential advantages vis à vis that kept at the site during the Bronze Age also remain a subject for future research.

3.3.4. Conclusion: Tall Zīrā'a Through Time

Previous analysis of sheep and goats from Tall Zīrā'a determined there were no significant differences in the management of either taxon through time at this site. The ratio of sheep to goats, age structure, sex proportions and overall body size for both taxa show no significant changes between Bronze and Iron Age periods⁷³. However, our GMM analysis suggests that the story is much more complex.

Our 3D GMM analysis of sheep and goat morphotypes at Tall Zīrā'a confirms this stability in breeding management practices for goats from the beginning the Bronze Age until the end of the Iron II period. This represents more than two millennia of population stability and homogeneity amongst the goats kept and/or consumed. This suggests that the nature of goat exploitation remained more or less constant over time in the region and there was

72 Gaastra et al. forthcoming.

73 Benecke 2019, Figure 5.5.

no introduction of new breeds during these cultural phases. As suggested elsewhere, goats were the earliest domesticate to be exploited for their secondary product (i.e. milk)⁷⁴, and new and improved breeds were not introduced into the region until much later in time – long after the abandonment of Tall Zirā'a.

However, the astragali of sheep indicate a very different story. Sheep population morphotypes at Tall Zirā'a demonstrate homogeneity across the Bronze Ages but show a significant change with the advent of the Iron Age. Beginning in the Iron Age I (Stratum 13) and continuing across the Iron Age II (Strata 12–10), the Bronze Age sheep morphotype is replaced with a distinct second morphotype (*Fig. 3.21* and *3.22*). The speed of change from one to another of sheep morphotypes, coupled with the lack of change in goats, argues against local breeding changes or adaptations to local environmental change, and strongly suggests the replacement of Zirā'a sheep with a second population morphotype from elsewhere. The intermediate position of Iron Age I sheep suggests that both morphotypes may have been present during this period, but by the Iron Age II only the new sheep population mor-

phototype is indicated. This demonstrates the rapidity with which new breeds may replace older breeds, and also shows that humans may be conservative in their adaptations in one realm (goats) and innovative in a second realm (sheep) at the same time.

The appearance of new sheep morphotypes at the advent of the Iron Age is contemporary with the collapse of Late Bronze empires and the movement of peoples throughout the eastern Mediterranean and Near East. Therefore, the origins and nature of these new sheep breeds may reflect a wealth of possibilities, including new breeds brought in by new international trade contacts, new peoples moving into the region who brought their own variety of sheep, etc. The appearance of new breeds of sheep (whose origin is yet to be determined) may also signal changes in the nature of wool production if such sheep may be demonstrated to yield higher quality wool. More investigation is needed to determine whether this change to sheep populations is unique to Tall Zirā'a or part of more widespread changes to production in the region at the onset of the Iron Age.

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