

## Ceramic Traditions and Cultural Territories

New directions for southern Mesopotamian  
pottery studies

Angelo Di Michele, Sara Pizzimenti, Steve Renette (editors)



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## Archaeology of Ancient Iraq

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Cover illustration: The pottery yard of Safa'a al-Kawaz, Nahrawan, Baghdad (photo credit: Khalil Dawood).

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## Editors

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Angelo Di Michele and Steve Renette

## 1. Introduction

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### 2021 workshop

On 7 April 2021, at the 12th International Congress on the Archaeology of the Ancient Near East (12ICAANE), hosted by the University of Bologna but held remotely due to the pandemic, the editors of this volume organised a workshop titled 'Ceramic Traditions and Cultural Territories: New Research Approaches in the Study of the South Mesopotamia Pottery'. The purpose of this session was to hold a first collegial discussion regarding the current state of ceramic studies in southern Mesopotamia. Since the mid-2010s, a growing number of new fieldwork projects were developed in south Iraq by a range of international researchers in collaboration with Iraqi colleagues. Following a very long hiatus in sustained archaeological fieldwork in Iraq since the 1980s, these projects quickly encountered multiple challenges. With regards to ceramic studies, a wealth of practical knowledge of Mesopotamian pottery was held mainly by retired and retiring scholars, whereas a new generation of researchers had only studied this material from drawings and museum collections. Furthermore, since the 1980s, archaeological and archaeometric approaches to ancient pottery had developed significantly. Returning to the large archaeological sites of south Iraq also entails a major challenge of dealing with vast quantities of sherd material that require detailed documentation, registration in a digital database, photography, and drawings, at a scale that exceeds most projects around the world. In response to these challenges, the editors of this volume thought it was necessary to share experiences and to delineate a shared approach to Mesopotamian pottery studies with a new set of research questions. The contributions to this volume

reflect this initial intention with papers that deal with new methodologies, critical reflections on how Mesopotamian studies has dealt with ceramics in the past, and the formulation of new research questions.

### History of pottery studies in Southern Mesopotamia

Upon reviewing the tradition of research on the Western Asia region, it is evident that the ceramics from southern Mesopotamia have been considerably overlooked. Whereas the assumption might exist that the ceramic typology of southern Mesopotamia as well as a body of knowledge about its practices in production are well-established following two centuries of archaeological fieldwork, the state of knowledge in this region lags far behind comparable studies in northern Mesopotamia, the Levant, and Anatolia. As a result, the ceramic chronology of southern Mesopotamia is still at a phase we might hopefully call a 'work in progress', characterised by more uncertainties than certainties.

Yet upon reflection, the history of ceramic research in Southwest Asia commenced with the historical periods of Mesopotamia. Indeed, during the 1930s, this path began with a significant chrono-stratigraphic sequence (stratigraphy interpreted as layers based on the methodologies used at that time) carried out by Arndt von Haller in Warka (Uruk). Von Haller, an architect and archaeologist, created a ceramic sequence spread across twenty levels (XX-I), that covered nearly two thousand years, from the Ubaid 4 period to the mid-third millennium BCE. The sequence was derived from

the excavations at Eanna in Uruk, especially the deep trench known as *Tiefschnitt*.

Just under twenty years later, following a notable season of digs by what was then referred to as the Oriental Institute of Chicago (now the Institute for the Study of Ancient Cultures) along the lower Diyala River just east of Baghdad, the first effort to analyse the chrono-typology of ceramics from the Diyala sites was made by Pinhas Pierre Delougaz. Although the *Tiefschnitt* sequence of Eanna in Uruk ranges chronologically from the late fifth to the early third millennium BCE, the Diyala sequence not only fulfilled but also broadened this timeline into the mid-second millennium BCE.

This marked the first instance in the history of Mesopotamian studies where an effort was undertaken to organise a ceramic repertoire from various sites within the same area. Delougaz merits recognition for structuring the extensive dataset provided by archaeological and architectural phases, featuring a substantial collection of pottery plates that continue to serve as a significant reference for scholars even today. Although the methodology used by the author was groundbreaking for its time, it has now been eclipsed by contemporary techniques for studying the ceramic corpus. These modern approaches not only consider morphological features, manufacturing methods, surface treatments, and decorative styles but also emphasise a more detailed understanding of the vase's morphological traits to determine types and their evolution over time. Additionally, they focus on the functional interpretation of the vessel and, crucially, its statistical occurrence across various archaeological phases that are identified stratigraphically rather than architecturally.

For a long time, these two landmark works by von Haller and Delougaz were seen as isolated publications in the history of research on southern Mesopotamian pottery. Donald Hansen's 1965 publication of a summary of the fourth to third millennium pottery from the Inanna Temple Sequence at Nippur added crucial additional information. It wasn't until 1982 that Sa'ad Ayoub created a synthetic study on the pottery assemblage from the Ur III to the Kassite periods. Utilising both published and unpublished repertoires, he recognized 99 different types according to morphological parameters. In his research, he concentrated on the technical elements of vase production and firing, and he elaborated a detailed typology of vase surface decoration.

Similar to the research of Delougaz, Ayoub's study also generated a typology primarily founded on the morphological features of the examined vases, independent of a stratigraphic sequence and absent a discussion on the progression of the identified types throughout various periods. Both of these works helped shape the notion that the ceramic repertoire of central-southern Mesopotamia was marked by significant typological uniformity. A labelled description that still proves difficult to eradicate from the tradition of pottery study in central and southern Mesopotamia.

The 1980s signalled a revitalized interest in pottery from southern Mesopotamia. Specifically, investigations

at Abu Salabikh yielded new data sets, leading to Jane Moon's publication of the pottery sequence from the third millennium BCE of the site. Additionally, the publication of a significant corpus of third and second millennium pottery from Uruk was made available in detailed stratigraphical studies by Beate Pongratz-Leisten and Margarete Van Ess.

Regrettably, the extended pause in archaeological digs in the area since 1991 has affected the development of a reliable pottery chronology. New impulses arose in 2006 with the publication of the findings of the WF sounding at Nippur by Augusta McMahon. This research marked renewed interest in southern Mesopotamian pottery following an extended break, although it stems from an investigation that relied on a very restricted area and limited parallels with other regional sequences.

In 2014, a watershed year for Mesopotamian pottery research was marked by the publication of the book by J. Armstrong and H. Gasche, *Mesopotamian Pottery: A Guide to the Babylonian Tradition in the Second Millennium B.C.* This work stems from an investigation that explored the pottery of the second millennium, contrasting pottery forms from various sites in a specific area while analysing them technological and morphological features in connection with the stratigraphic sequences of two key sites, Tell ed-Der and Nippur. The examination goes beyond the area of central-southern Mesopotamia itself, reaching northward to the Syrian Jezira and northern Mesopotamia and southward to Susiana. The approach suggested by Armstrong and Gasche serves as a crucial foundation for upcoming research, relevant not only for the second millennium BCE but also, from a methodological viewpoint, for pottery datasets from other chronological periods.

In recent years, additional major datasets have become available. A detailed study of the old Kish excavations by Federico Zaina resulted in a comprehensive publication, including pottery types. A similar study of the old excavations at Ur was carried out by Giacomo Benati. Another major leap in our knowledge of ceramic development in southern Mesopotamia came with the publication of the pottery documentation from the 1968–1990 excavations at Lagaš by Steve Renette. This volume is of particular relevance because Donald Hansen and Edward Ochsenchlagler paid far greater attention to the statistical documentation of potsherds than other contemporary fieldwork projects in Iraq. Additionally, with the resumption of archaeological fieldwork in south Iraq in the past decade, initial publication of new datasets from both excavations and survey projects has started to be made available for new integrative studies (Di Michele 2016; Romano and Zingale 2019; Bruno 2020; Pizzimenti 2020a; 2020b; Di Michele in S. Rey 2024). A major publication of such new data was made available in 2021 by Daniel Calderbank. This volume presents in great detail a comprehensive, stratigraphically anchored, and well-dated ceramic assemblage of the period of the First Dynasty of the Sealand in the middle of the second millennium BCE. Not only does this volume elucidate a transitional period that was

previously inaccessible archaeologically, it also demonstrates the value for southern Mesopotamian archaeology of engaging in ceramic studies with the tools of the twenty-first century and a new conceptual mindset.

Despite the still significant gap with pottery that needs addressing, this volume aligns with a direction that seeks to emphasise ceramics and the necessity for novel research methods, all while encouraging interdisciplinary approaches. This book, the first volume regarding the pottery of southern Mesopotamia, seeks to tackle several of these research questions that remain in progress. This is due to the fact that field research has only recently started to produce new datasets and the discussion regarding the ceramics of central–southern Mesopotamia remains in what we might call an early stage. The aspiration is for this book to serve as the beginning of a revitalized discussion on the ceramics of central–southern Mesopotamia, while also encouraging the development of new strategies and methods that can offer innovative viewpoints for examining and exploring the pottery assemblage of the central–southern Mesopotamia area, which has been undervalued for an excessively long time.

### Third millennium chronology and ceramic phasing

The main focus of this volume is on the long third millennium BCE in southern Mesopotamia (Fig. 1). This reflects partially the primary chronological focus of many ongoing fieldwork projects in this region, partially the main research interests of the editors, and partially the ongoing challenge to categorise the material culture of this period in a meaningful and representative way. Despite numerous efforts and major advances in making significant legacy datasets available, the field of Mesopotamian archaeology is still very much tied to old culture-historical frameworks developed in the first half of the twentieth century. For the third millennium BCE, this framework is structured by an early attempt to identify historical developments in the archaeological record (Early Dynastic–Akkadian–Ur III–Old Babylonian). Yet over the following decades, multiple researchers observed the difficulties of adhering to this framework, especially as it was developed based on stratigraphic sequences from the Diyala region in Central Mesopotamia. Essential datasets from the south, i.e. from Nippur, Uruk, Abu Salabikh, and Lagash, revealed local idiosyncrasies, while still mostly trying to adhere to the Diyala historical framework.<sup>1</sup>

One particular subphase that has caused much disagreement is the Early Dynastic II period of the middle of the third millennium BCE. The difficulty of aligning multiple lines of evidence is revealed in this academic debate.

<sup>1</sup> A renewed effort to develop a meaningful archaeological phasing for central and southern Mesopotamia based on changes in material culture is taking place within the ARCANÉ framework. Yet, at the time of writing, this will undoubtedly require significant additional effort and time to complete.

Dates A.D./B.C.	South Mesopotamia	Middle East Chronology
6500 - 6000 B.C.	Ubaid 0	Early Chalcolithic
6000 - 5700 B.C.	Ubaid 1	
5700 - 5300 B.C.	Ubaid 2	Middle Chalcolithic
5300 - 4900 B.C.	Ubaid 3	
4900 - 4500 B.C.	Ubaid 4	
4500 - 4200 B.C.	Ubaid 5	Late Chalcolithic I
4200 - 3900 B.C.	Early Uruk	II
3900 - 3400 B.C.	Middle Uruk	III
3400 - 3100 B.C.	Late Uruk	IV
3100 - 2900 B.C.	Jemdet Nasr	V
2900 - 2600 B.C.	Early Dynastic I	Early Bronze Age I
2600 - 2350 B.C.	Early Dynastic IIIA	II
	IIIB (Lagash I)	III
2350 - 2200 B.C.	Early Akkad	IVA
2200 - 2100 B.C.	Late Akkad Gutean Lagash II	IVB
2100 - 2000 B.C.	Ur III	
2000 - 1800 B.C.	Isin/Larsa	Middle Bronze Age I
1800 - 1600 B.C.	Old Babylonian	II
1600 - 1200 B.C.	Kassite	Late Bronze Age I/II
1200 - 700 B.C.	Middle Babylonian	Iron Age I/II
700 - 500 B.C.	Neo-Babylonian	Iron Age III
500 - 300 B.C.	Achaemenid	Persian Period
300 - 130 B.C.	Seleucid	Hellenistic - Seleucid
130 B.C. - 200 A.D.	Parthian	Hellenistic/Roman/Parthian
200 - 650 A.D.	Sasanian	Roman/Byzantine/Sasanian
650 - 900 A.D.	Early Islamic	Byzantine - Islamic

Fig. 1. Chronological table of archaeological and historical periods of southern Mesopotamia.

Numerous field archaeologists active in south Iraq have observed over the decades that the ceramic development of the third millennium was a gradual process. Within this process, the middle of the third millennium shows clear changes, yet identifying a distinct ceramic assemblage for the middle centuries proved exceptionally difficult. Attempts to distinguish such an assemblage took form especially at Abu Salabikh where morphological changes among spouted jars, pot stands, and stemmed dishes have been claimed to provide the necessary chronological markers for the Early Dynastic II (Moon 1987). However, further south, most notably within the large corpus from Tell Al-Hiba, ancient Lagash, such a clear development could not be identified (Renette 2021). Instead, the ceramic development of the Early Dynastic period has generally been subdivided into

two: Early Dynastic I, with an early and late stage, and Early Dynastic III A and B. At the same time, the identification of Early Dynastic II remained prevalent among other artefact categories, especially those carrying imagery (cylinder seals; plaques; sculptures). Building on H. Frankfort's original studies (1939; 1943; 1955), several researchers prefer to maintain a distinct Early Dynastic II period, based on artistic or iconographic changes, to which the ceramic record should be matched (e.g. Marchetti and Marchesi 2011). The very origins of the threefold division of this long historical period has been put into question by the detailed study of Jean Evans who has argued extensively that the threefold division was derived from idealised interpretations of iconographic evolution, which was then imposed upon the stratigraphic sequence, even if the fit was never perfect (Evans 2007; 2012). Even at Fara, ancient Šuruppak, where the canonical development of cylinder seals from Early Dynastic I to III has been established with a large corpus, recent work is revealing that the observed variety might not be as chronologically meaningful as previously assumed.<sup>2</sup> Meanwhile, whereas occasional ceramic types have been proposed to be chronologically restricted to a narrow slice of time in the middle of the third millennium, no full assemblage has yet been demonstrated. Therefore, in this volume, we maintain the traditional historical framework, in the current absence of a better alternative, yet we largely omit the use of Early Dynastic II as it cannot be identified within the ceramic record that is presently available.

## Structure of the volume

The contributions made by the workshop participants encompass a wide thematic and chronological range from the late fifth to the early second millennium BCE. We have loosely organised the volume into three sections.

*(De-)Constructing pottery studies in southern Mesopotamia in the 21st century* presents three studies that take a critical look at how pottery has been investigated, while presenting new ways forward. This includes both conceptual innovation and an argument for more systematic, scientific approaches. Daniel Calderbank begins the volume with a paper that explores the state's role, and therefore the potters', in ceramic production by investigating manufacturing methods, using two cups from two different sites, dated to the MBA–LBA, as study artefacts. Steve Renette presents an argument for a more careful and considered approach to integrating old legacy data with insights from new fieldwork within an Archive Archaeology framework. Marta Zingale examines the ceramic collections of the Early Dynastic III to Early Akkadian transitional phase at Abu Tbeirah via a mixed typological and production approach, tracing the *chaîne opératoire* of the chosen pottery forms discussed in her work.

*Much left unsaid: Late Chalcolithic to Early Dynastic ceramic development* includes four site-based studies that demonstrate the ongoing need for detailed studies of site

assemblages to identify meaningful patterns in space and time. Jacopo Bruno begins this section by discussing the ceramic collection obtained from the excavations of mounds 7 and 8 at Tūlūl al-Baqarat. Both were found during a survey, and later through excavations carried out on mound 7. The pottery dataset uncovered during fieldwork from 2013 to 2019 provides a new dataset for comprehending the transitional phase Ubaid 5/Early Uruk (Late Chalcolithic 1–2), which remains relatively obscure, particularly in central–southern Iraq. The fruitful phase of reanalysis of the legacy data that constitutes Hugo Naccaco's paper examines a period that remains problematic from both a chronological perspective and the definition of the pottery assemblage. The Jemdet Nasr period, which marks the transition between the fourth and third millennia, is one of the crucial periods where the shadows of uncertainty gather with greater density. The valuable work of identifying pottery shapes as chronological markers for this period serves as an important starting point for grounding further investigations and analyses of the pottery repertoire from this phase. The work by Angelo Di Michele derives from the archaeological research conducted on Tell A at Tello, which restarted in 2015 and yielded a fresh collection of ceramic information from well-stratified contexts. Specifically, Area B has produced a continuous series of occupation layers spanning from the onset of the third to the start of the second millennium BCE. The paper offers a preliminary assessment of the Tello pottery repertoire. The study presents the morphological changes in pottery shapes, which are closely linked to the stratigraphic sequence. Finally, Albert Dietz's article offers a summary of Ur III and Old Babylonian ceramics from new excavation on the southern mound of Ur. Excavations in Area 5, led by Adelheid Otto (LMU Munich) as part of the renewed digs at Ur under Elizabeth Stone's direction (Stony Brook, NY) in 2017 and 2019, revealed an Isin-Larsa and Old Babylonian dwelling with inventory remnants in accurately datable contexts. This allows for the examination of the pottery within a clear framework and the creation of a typology for early second millennium BCE pottery in southern Mesopotamia. The Ur III strata are located directly under the Isin-Larsa structure, offering a unique chance to examine Ur III ceramics in well-defined contexts and contrast them with the Old Babylonian collection. Both levels' materials can be dated with the help of cylinder seals and tablets.

*Zooming out: detecting regional patterns from surface pottery collections* presents two studies of pottery from survey projects. Whereas in the past, survey of southern Mesopotamia focused exclusively on mapping sites at a broad scale, relying on minimal and not fully reliable ceramic typologies, these studies demonstrate the potential to use surface sherd material to investigate the ceramic corpus of specific periods. In the study conducted by Stephanie Rost and Angelo Di Michele, the pottery assemblage from the Abu Jarabie site is extensively analysed. This site records, via the ceramics found on the surface, occupation from the Ubaid 4 period to the Early Dynastic I, while also

<sup>2</sup> Paper presented by A. Otto at 14th ICAANE in Lyon, 2025.

outlining the site's development through various periods. The volume ends with a contribution by Eleonora Mariani which analyses the pottery collection from the latter part of the third millennium BCE gathered at locations in the QADIS survey. The display of the pottery assemblage, along

with the categorization of pottery types for every historical period examined, combined with manufacturing methods and fabric types, highlights the importance of the surveys as a means to establish the dating of the investigated sites and place them more precisely within a historical context.

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2020 *The Urban Archaeology of Early Kish. The 3rd Millennium BCE Phases at Tell Ingharra*, OrientLab Series Maior 5, Bologna: Ante Quem.

**Arabic Abstract****١. المُقَدِّمَةُ (أنجيلو. دي ميشيل وستيف رينيت)**

لاتزال الثقافة المادية لجنوب بلاد ما بين النهرين غير مفهومة بشكلٍ كافٍ بالمُقارنة مع المناطق الرئيسية الأخرى في العالم القديم على الرغم من كونها محوراً لمشاريع البحث الميداني المُكثَّفة والواسعة النطاق مُنذ ما يقرب من مئتي عامٍ. ويعودُ التقسيمُ التاريخي الأثري للألفية الرابعة والثالثة والثانية قبل الميلاد إلى مؤتمر عُقد في عام ١٩٢٩، بينما لا يزالُ التصنيفُ النمطي للسيراميك يعتمدُ إلى حدٍ كبيرٍ على حفرياتٍ دِيالِي التي أُجريت في ثلاثينيات القرن العشرين مع بعض الإضافات الرئيسية وخاصةً من موقعي أبو صلابيخ ونيبور (نُقر) وموخرًا من مدينة لَکش. وقد وضع النشرُ الحديثُ لِتصنيفٍ شاملٍ للألفية الثانية قبل الميلاد من قبل جيمس أرمسترونغ وهيرمان غاش، وهو أولُ مجموعة سيراميكٍ مؤرَّخة بِدِقَّة من سُلالة القُطر البحري في موقع نلِّ حَيِّبَر معياراً جديداً لتلك الفترة، لكنَّه أعاد أيضاً تنشيطَ الحُجج الزمنية وكشف عن الثغرات الرئيسية في معرفتنا التي لا تزال قائمةً. وقد تضمَّنت هذه الدراسات جوانباً من تكنولوجيا السيراميك ووظائفه، ولكن نادراً ما تمَّ التطرُّق إلى الدور الاجتماعي والاقتصادي للسيراميك في جنوب بلاد ما بين النهرين القديمة وعادةً ما كان يتمُّ التطرُّقُ إليه بشكلٍ غير منهجي (كقصصٍ شخصية).

ويمكننا توقُّعُ صدور منشوراتٍ رئيسيةٍ لمجموعاتِ بياناتِ السيراميك في السنوات القادمة سواءً من التنقيبات القديمة التي لم تُنشر بعد مثل تنقيباً قياس أعماق معبد نيبور إنانا، وكذلك من العمل الميداني الجديد باستخدام معايير التنقيب الحديثة في القرن الحادي والعشرين. وفي ضوء تجدد العمل الميداني في جنوب العراق، يجمعُ هذا المُجَدُّ المُتخصِّصين في صناعة السيراميك في جنوب بلاد ما بين النهرين من أجل تحديد الثغرات المعرفية الضرورية وأنواع البحوث المطلوبة لحلِّها. وقد تناولت ورشة العمل التي أفضت إلى هذا المُجَدُّ على وجه الحُصوص مسائلَ التسلسل الزمني والتكنولوجيا والوظائف والتوزيع الجُغرافي لسيراميك جنوب بلاد ما بين النهرين بين عامي 4000 و1500 قبل الميلاد.

## Abstract

Archaeologists across the discipline have long been aware of the methodological and interpretive issues of binding material typologies to historical classifications. We are perhaps less cognisant of the insidious ways in which these practices construct a specific version of early Mesopotamia that pivots on narratives of the state and marginalises other social agents. By conflating archaeological types with ancient traditions, and by interpreting these traditions as the consequence of centralised mass-production, we endow the Mesopotamian state with the capacity to intervene directly in the daily lives of its citizenry and to manipulate their material worlds and social habits. In this paper, I reassess the links between potters and state institutions in selective textual sources, before analysing the production and use of two Middle–Late Bronze Age (MBA–LBA) cups, one from Tell Khaiber and one from Kani Masi. From this comparative analysis, I contend that it was the decentralised and pluralistic unfolding of this craft tradition that drove continuities in practice in time and space.

Daniel Calderbank

## 2. Rethinking ‘types’ and ‘traditions’: relationalities of pot and state in Middle–Late Bronze Age Mesopotamia

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### 1. Introduction

Bourdieu (1994; 2014, 162–205) insightfully outlined some of the ways in which states produce symbolic monopolies. In particular, he observed how people—citizens, bureaucrats, and sociologists, for example—inadvertently partake in the construction of the state when they seek to define and analyse it. Assyriologists have recently addressed ancient Mesopotamian state formation from a similar perspective, focusing on the ways in which official state ideology and rhetoric did not reflect their actionable power, but was instead used as a strategy to secure legitimacy (Yoffee 2004; Richardson 2012). Ancient states are now understood, by and large, to have been fragile, heterarchical, and infrastructurally weak (e.g. Ando and Richardson 2017; Yoffee and Seri 2019), a fundamental departure from the persistent notion of the early or ‘archaic’ state as despotic, interventionist, and territorial (e.g. as developed by Weber 1897). What is yet to be addressed in these emerging historical and sociological studies, however, is the active role played by archaeologists in constructing ancient state power. This paper uses pots as a material proxy to think these ideas through.

Mesopotamian pots have traditionally been employed in the service of historical orthodoxy:<sup>1</sup> to recognise the presence of a state, to define its temporalities, and to articulate its spatial extent. We have inherited a ceramic lexicon that marches in step with the procession of successive states;

for the Middle–Late Bronze Age (ca.2100–1100 BCE), for instance, we use the terms Ur III, Isin/Larsa, Old Babylonian, Sealand, and Kassite pottery, each one replete with historical baggage. An immense amount of painstaking work has gone into building and refining discrete pottery typologies that align with these state-centred classifications. For many ceramicists, myself included, the reliance on these terms has often been attributed to evidential absence, that is the lack of rigorous typological sequences built independently from the historical framework (e.g. Reichel 2007; 2009; van Ess 2005; 2009). These terms have therefore come to be regarded as too convenient to discard.<sup>2</sup> I contend that the repetition of culture-historical terminology tacitly serves to entrench the conceptual primacy of the state.

The link between pots and early political production has also been pursued more explicitly. To explain why Bronze Age pots often assume a typical plain, undecorated, and standardised appearance, archaeologists have regularly advanced some version of the ‘efficiency hypothesis’; that is the view that there is a direct causative arrow between increased centralisation, mass-production, and product standardisation.<sup>3</sup> The stubbornness of this unilineal model hinges on the seemingly logical inference that the pottery

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<sup>2</sup> I present this very reasoning in my book on the pottery from Tell Khaiber (Calderbank 2021a).

<sup>3</sup> Childe (1929, 209), for instance, stated that ‘with the specialization incident upon city life the potter [became] industrialized and [turned] from craft-work to mass-production’. For interpretively similar accounts of second-millennium pottery, see Moorey (1994, 157–9), Pfälzner (1995, 258), and Armstrong and Gasche (2014, 95).

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<sup>1</sup> Archaeology was famously referred to as the ‘handmaiden to history’ (Noel Hume 1964). For a recent critique on the interdisciplinary association of archaeology and history in Ancient Near Eastern studies, see Gates 2005.

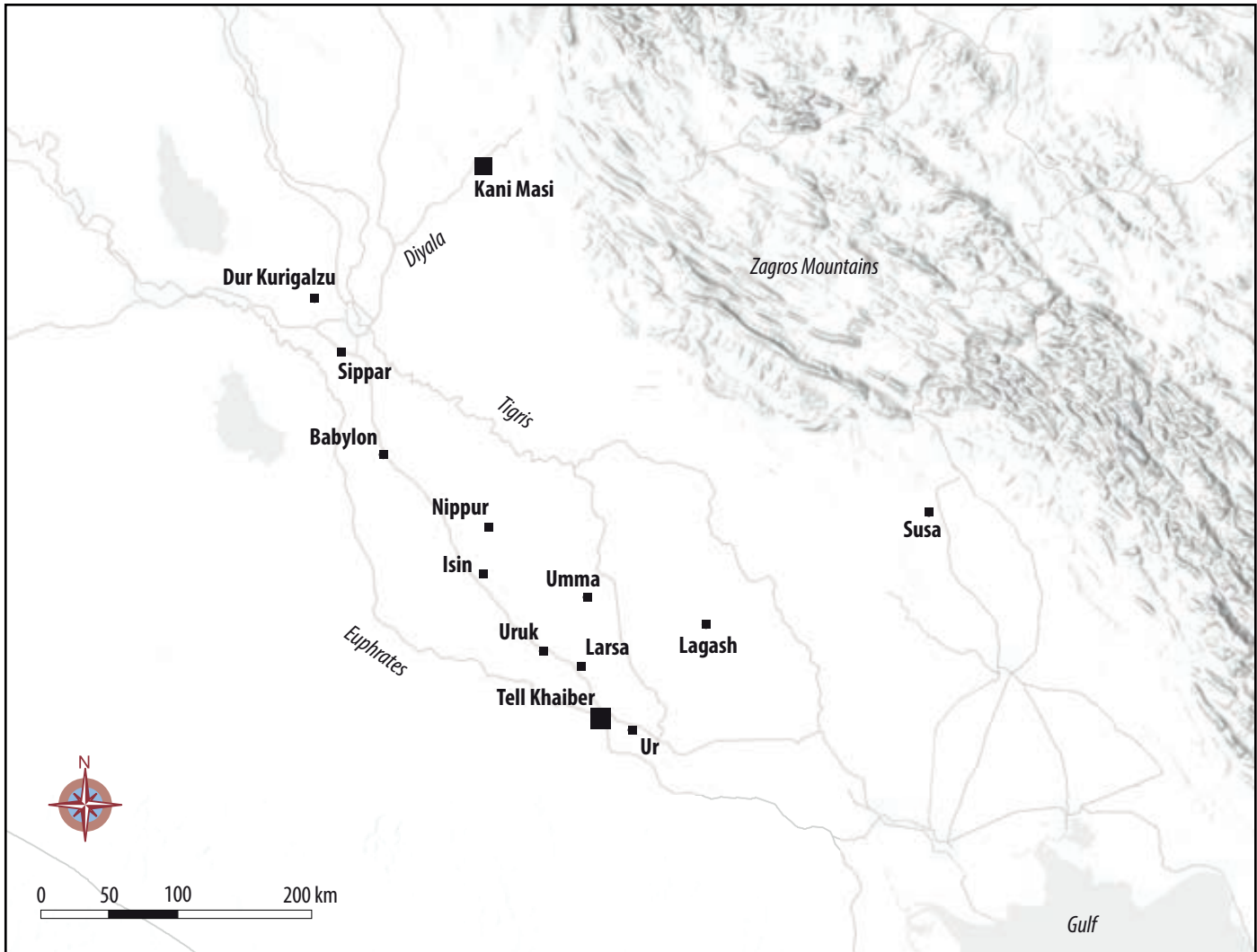


Fig. 1. Map of Mesopotamia with sites referenced in the text and other important MBA–LBA sites (base map: ESRI World Terrain Base, World Hillshade [Creative Commons]).

industry benefits from economies of scale, with mass-production therefore proving most cost-effective (e.g. Brown 1989; Kramer 1985; for critique see Glatz 2015, 16–23). Wengrow (2001) conceptualises the development of plain, standardised vessels as the material consequence of an elite strategy of aesthetic deprivation, whereby the state deliberately stripped its subjects of the means to produce shared symbols. In line with these *plain pot = state* narratives, painted pots have conversely been interpreted as key indicators for groundswells of collective action and resistance to the state (e.g. Sanders 2020).

In this paper I will approach second-millennium pottery in a way that purposefully removes the state as the fall-back explanatory framework: firstly, by providing a historical overview of the relationship between political institutions and the pottery industry, as taken from a selection of contemporary textual sources; secondly, by presenting a selective *chaîne opératoire* analysis of two pottery cups from two recently excavated sites, Tell Khaiber, southern Iraq, and Kani Masi, the Upper Diyala (Fig. 1), in order to establish the

threads of continuity in technological and social practice that connected people from politically and geographically diverse contexts; and, finally, by seeking to understand craft continuity in a way that also accounts for the role of decentralised agents and relationalities in the transmission of cultural and technological practices, out of which emerged a dynamic and multi-faceted MBA–LBA pottery tradition.

## 2. Potter and state in text

Steinkeller (1996, 233) considers the Mesopotamian pottery industry as a ‘paradoxical case’. While the material is the most visible archaeologically, references to potters and their products are peculiarly absent in almost all early written sources. Consequently, the limited sources that do exist have received disproportionate attention. Most typically brought to bear in these discussions are two administrative tablets from Umma (Waetzoldt 1970–71; Steinkeller 1996; Dahl 2010). Belonging to a city institution during Amarsin year 4 (ca. 2042 BCE), their purpose was to calculate the amount of labour owed to the state from the previous year

by two pottery workshops. The first text attests to over 3,600 working days outstanding, while the second totals 8,245 days; in sum, this would approximately have corresponded to about 33 workers operating for an entire year (Sallaberger 1996, 35). Two points have been taken from this evidence: firstly, that the accounts testify to the intensive scale of activity at this particular pottery workshop, and, secondly, that potters held the status of fully-fledged state dependents. The Umma texts have therefore contributed significantly to the prevailing view of Bronze Age mass-production,<sup>4</sup> and have added credence to the long-standing attitude that little, if anything, existed beyond the state (for criticism of this view, see Stein 1994, 11–13; Seri 2005, 192).

What these interpretations do not account for is the rarity in which potters actually appear in institutional profession lists (e.g. van de Mieroop 1992, 104; Sassmanhausen 2001, 96–7; Jakob 2003; Harris 1975, 281). In administrative texts associated with Sippar's military, administrative, and religious institutions, for instance, just one potter is listed among hundreds of craftspeople and service personnel of 68 different professions. For some perspective, this single potter should be compared with eighteen goldsmiths in the same set of archives (Harris 1975, 270). At Tell Khaiber too, no potter is present among over 150 named individuals of 26 different professions referenced in the site's archive (Robson 2017; Robson 2023). Just two receipts (TK 1096.55 and 3064.65) of goods received attest to the import of pots to Tell Khaiber's fortified building (Calderbank 2021b). This apparent dislocation of potters from many institutional archives is significant even before we take into account the localised and heterarchical structure of many of these urban institutions (e.g. Seri 2005). Here we observe multiple levels of disconnection.

Even in texts in which potters do appear, the view that they were tethered to institutions which tracked and determined their daily activities is untenable. It masks the independent and multi-directional interactions between potters and other specialist craftspeople in the flow of the Mesopotamian economy (Steinkeller 1996). We know from various sources that potters gathered their own raw materials and acquired various types of leather, hide, rope and cord for wrapping both empty and full vessels (see Sallaberger 1996, 18–22; Steinkeller 1996, 242). In other cases, empty vessels were moved on to brewers, millers, oil pressers, or ghee producers, to be filled with their respective products, before being passed to the leather worker for closure and packaging. In MBA texts from an Isin workshop archive, leather workers manufactured numerous accessories for pottery vessels, such as leather coverings, bitumen coatings, and sheepskin lids (van de Mieroop 1987, 38). It is no coincidence that when present

in profession lists potters were usually listed alongside these other specialists (see Sallaberger 1996, 33, 38).

In times of increased demand, potters seem to have enlisted the help of various manual labourers; in times of low demand, it was potters themselves that were recruited into a range of ad hoc labouring jobs (Steinkeller 1996, 250). This would have been dependent on economic need and more than likely determined by seasonality; potting, for instance, is more suited to the summer months, since the river floods would by then have abated with the deposited clay easier to obtain (Sallaberger 1996, 13). The palace workshop at Isin suggests similar economic practices among carpenters, felters, leather workers, and reed workers (van de Mieroop 1987), all of whom are only registered as present approximately fifty percent of the time, and, even then, were often noted as working away in various places: on the city wall, in the house or office of specific individuals, and even in other cities (van de Mieroop 1987, 53–4). When agricultural demand was high, they were sometimes said to be 'hoeing in the field' (van de Mieroop 1987, 55). How the workers attached to the Isin workshop spent the remaining fifty percent of their time is never articulated. According to van de Mieroop (1987, 87), this probably allowed them time to work for themselves; this freedom, he says, might 'indicate the origins of free enterprise.' Such economic fluidity and relative craft autonomy is rarely credited in accounts of early statehood.

### 3. Cups in context: Tell Khaiber and Kani Masi

The empirical base for this paper consists of two pottery vessels from two sites: Tell Khaiber and Kani Masi. Tell Khaiber situated 19km northwest of Ur in southern Iraq, is dominated by a single-period fortified administrative building. Two texts from the site's archive bear a legible year name – 'Year: Aya-dara-galama became king' (Campbell et al. 2017, 10) – which places occupation somewhere in the mid-late sixteenth century BCE, the very end of the MBA. Tell Khaiber therefore provides the first securely stratified material that can be reliably linked to the Sealand Dynasty, already generations after the apparent disintegration of the centralised Old Babylonian state in this part of Mesopotamia (Stone 1977). Tell Khaiber was positioned at the heart of an incipient 'shadow state' (after al-Hamdani 2015), operating as a prominent node within the network of canals and seasonal and permanent marshlands that covered the region in this period (Moon et al. 2023). The fortified building seems to have been abandoned at a time broadly in line with the breakdown of the Sealand Dynasty in ca.1475 BCE.

Kani Masi, on the other hand, was an LBA centre located in the Upper Diyala, 12km south of the modern town of Kalar, which demonstrates several phases of occupation between ca.1500–1000 BCE. Use of the site fluctuated between periods of large-scale monumental construction and ad hoc industrial reinterpretation (Glatz et al. 2019; 2024). It is the period of monumental architecture, centred on the Area I mudbrick

<sup>4</sup>For a more conservative estimate on the scale of vessel production and use, Glatz (2020, 236–7) points us towards Whitelaw's (2001, 62–4) analysis of vessels from the Late Bronze Age Mycenaean palace at Pylos.



Fig. 2. Vessel p5022-63 (a), and vessel Y88.110.1.1 (b).

Vessel	Shape Type	Approx. date	Rim di. (mm)	Base di. (mm)	Rim-Base ratio	Max. height	Max. width	Height-Width ratio	Neck Height	Volume (L)
p5022-63	TK Type 50.3	1550-1500 BCE	80	29	2.76	141	106	1.33	38	0.4
Y88.110.1.1	KM Type 10.4	1400-1300 BCE	65	32	2.03	130	92	1.41	35	xx

Table 1. Morphometric data for vessels p5022-63 and Y88.110.1.1.

building complex, Phase 1c (ca.1400–1300 BCE), that is the focus here. This was a period of ostensible imperial expansion of the Kassite Dynasty, its influence reaching from the central plains of Mesopotamia up the Diyala river and resulting in the establishment of several administrative centres, Kani Masi included, which potentially formed a northern perimeter across the region (Glatz et al. 2019, 445–7).

These two sites have been chosen, firstly, because I have significant experience working with their respective pottery assemblages, and, secondly, because, they demonstrate a significant degree of contextual separation: in time, in geographical and environmental context, and, importantly, in their historically associated power structures. Despite these differences, both sites exhibit significant material convergence, with stylistic overlap existing across almost all pottery vessel forms. Since tablewares are often considered to be most susceptible to changes, in style, in production technique, and in use, I consider cups to hold significant potential for such a comparative analysis.

### 3.1 Shape and forming technique

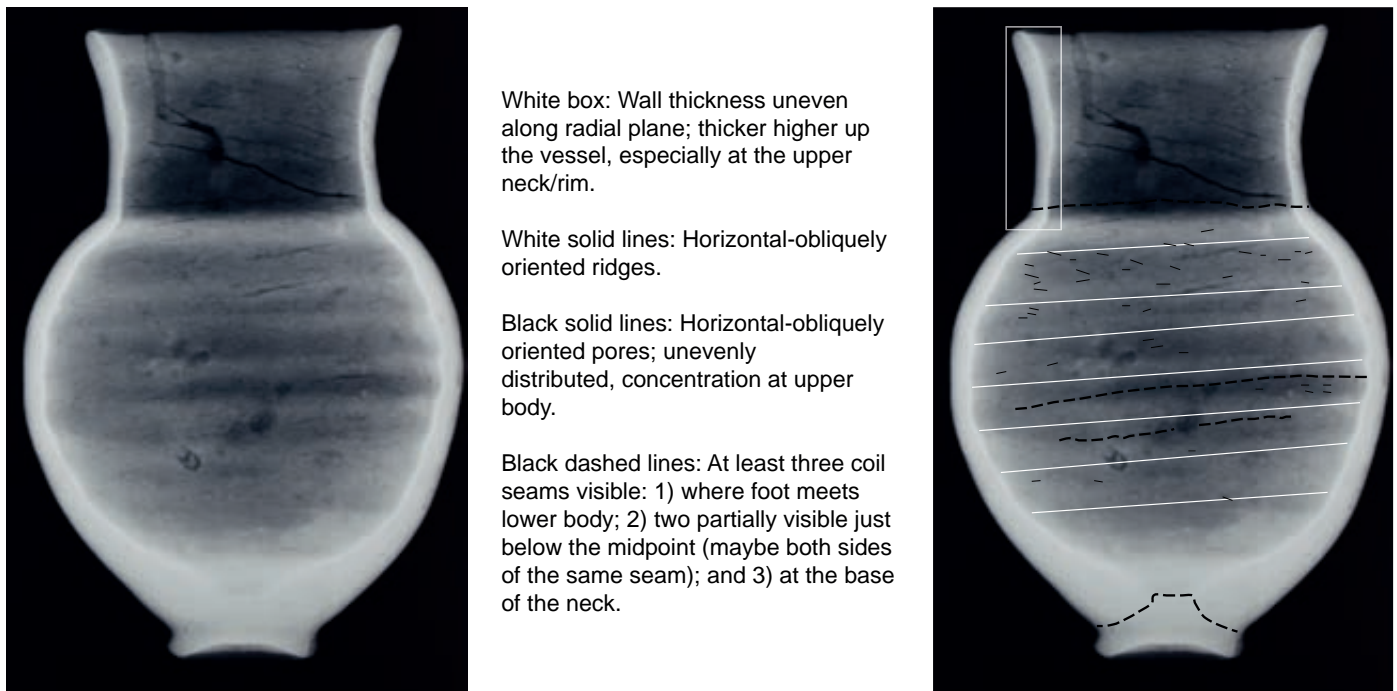
Visually, the shapes of the chosen cups, p5022-63 from Tell Khaiber and Y88.110.1.1 from Kani Masi, are almost identical (Fig. 2). Each vessel has a narrow, but stable foot, which leads into a squat, round body, topped by a sharply defined cylindrical neck and a slightly everted rim. Morphometrically each of these shape attributes aligns extremely well (see Tab. 1) with each other and with similar cup types in their

respective assemblages. Yet, shape largely only reflects the intention of the potter, which was dictated to a significant extent by the intended use of these vessels (see §3.2). More deeply ingrained within craft communities are the technical methods used in production. Vessels with similar shapes, for example, can be the product of very different forming techniques, and so it is important to identify these specific techniques, where possible, through a combination of visual and X-ray analyses.<sup>5</sup>

Comprehensive technological analysis of the Tell Khaiber assemblage (Calderbank 2021a, 50–5, Fig. 4.21), and preliminary analysis of the Kani Masi assemblage (Calderbank 2024, 249–57), has shown that no vessels can be reliably identified as wheel-thrown. Instead, cups demonstrate a combination of wheel-coiling techniques.<sup>6</sup> Firstly, the potter wound a coiled spiral of clay to form the lower body; this coil was then joined, thinned, and shaped using the rotative kinetic energy (henceforth RKE) of the wheelhead (Roux and Courty 1998, Fig. 2). This can be

<sup>5</sup>For the utilisation of X-ray analysis in the identification of pottery forming techniques, see Berg 2008 and Pierret 2019.

<sup>6</sup>While wheel-throwing raises the vessel walls and rapidly forms the vessel's rough-out or preform by means of continuous, generally high-speed RKE, wheel-coiling refers to the creation of a rough-out via coil building, before discontinuously applying RKE to create the finished shape (Roux and Courty 1998, 748; Velde and Druc 1999, 164).



**Fig. 3.** Vessel Y88.110.1.1. Plain and annotated X-ray image, drawing attention to relevant signatures of production.

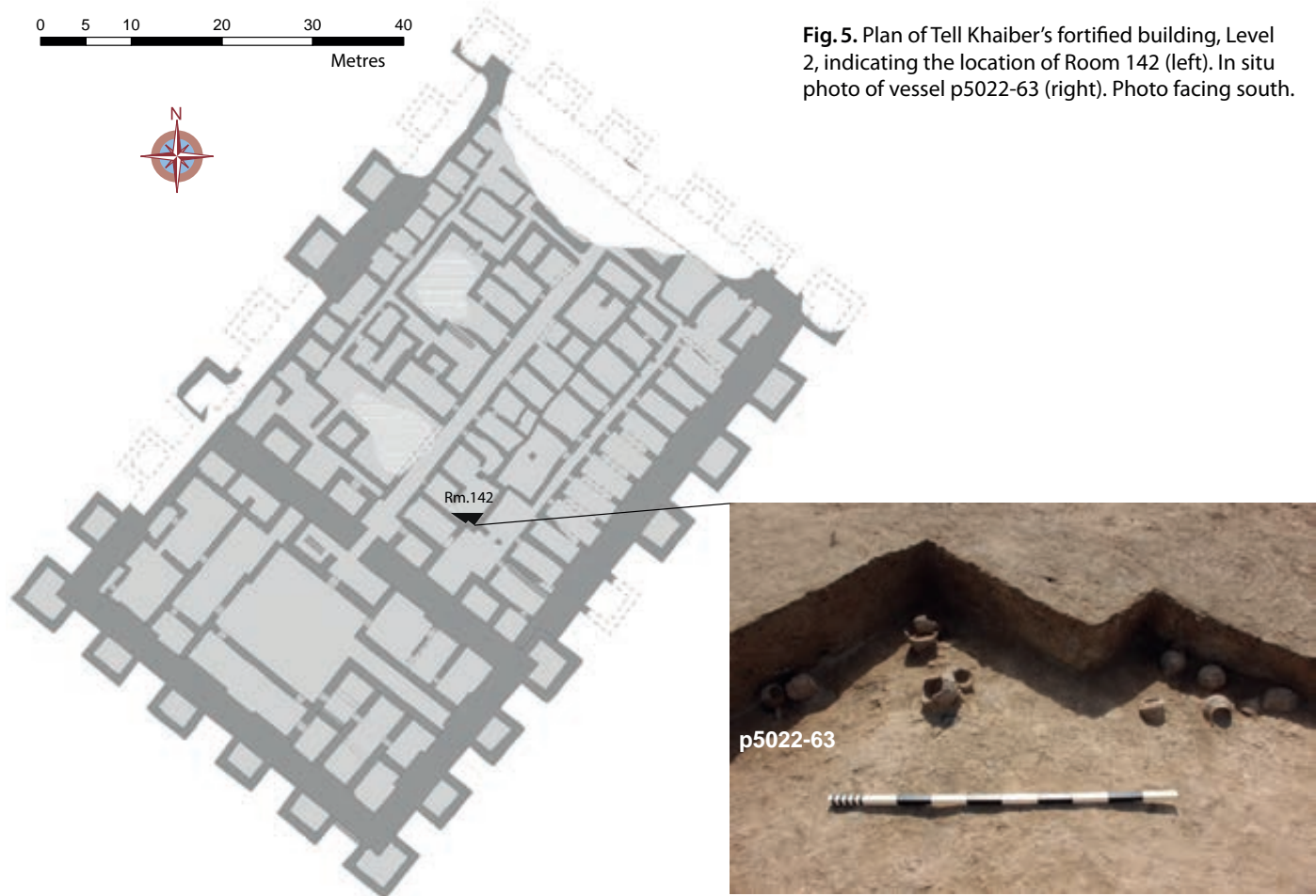


**Fig. 4.** Vessel p5022-63. Photos of upper body, neck, and rim (a), and base detail (b).

observed by irregular horizontal-oblique oriented ridges on the interior surfaces of these vessels which are asymmetrical in their alignment across opposite walls, as well as in the horizontal-oblique orientation of inclusions/pores which align along the direction of coils (Fig. 3). While this forming technique could sometimes be used to build the entire body of a cup up to the neck, it usually covers only the lower body, up to around the midpoint, as is the case with both these vessels. During this first forming stage, the potter left a small hole at the bottom of the cup, ready for the foot to be attached at a later stage.

The coil spiralling technique for the lower body was then joined to another coiled segment for the upper body. This upper coiled segment can be recognised by the same signatures as the lower body, and the join between the two segments can be discerned macroscopically on both vessels

(Fig. 2), as well as in the X-ray image (see Fig. 3), by curvilinear fissures running horizontally-obliquely just below both vessels' midpoints. The upper body of vessel Y88.110.1.1 also exhibits a concentration of oblique oriented inclusions/pores (Fig. 3); these may be the product of manual drawing to join the coils and to pull them inwards towards the neck. The necks and rims of the vessels were applied as an extra coiled segment; the relative neatness of the neck and rim, with little evidence of interior ridging, reflects the increased attention paid by the potter to finishing these elements, with the resulting smoothness of finish being well suited to the controlled pouring of liquids (see §3.2). A further indication for this coiled neck is the differentiation in wall thickness along the radial plane, in that the wall thickness increases higher up vessel Y88.110.1.1, especially at the very top of the rim (Fig. 3). Increased thickness higher up a vessel



**Fig. 5.** Plan of Tell Khaiber's fortified building, Level 2, indicating the location of Room 142 (left). In situ photo of vessel p5022-63 (right). Photo facing south.

is generally considered inconsistent with wheel-throwing (Roux 2019, 180–5).

Once the body of the vessel had dried to a leather-hard consistency, the potter inverted the cups onto their rims in order to attach a separate coil of clay which was shaped to form the foot. The place where the foot joins the lower body is sometimes indicated by curvilinear fissures, usually visible in X-ray images (e.g. Fig 3); however, it can also be identified visually by a sharp turn in the orientation of the vessel's profile, or sometimes by neat rilling close to the foot, indicative of where the join has been consolidated and tidied using RKE (e.g. Fig.4b). Once the attachment was completed, the attention paid to shaping and finishing the foot varied markedly from vessel to vessel. For both of these cups, RKE was used to trim and finish the feet, leaving them neat and well-defined. However, this was not always the case, with feet occasionally left as rough, unfinished stumps (see Calderbank 2021a, Fig. 4.9 for examples).

### 3.2 Archaeological context and use

Vessel p5022-63 was chosen from a selection of 484 complete or mostly complete vessels recorded from Tell Khaiber, most of which were found in the site's fortified building. Following the building's central passage (Area 125) southwest from the main entrance is a self-contained suite of rooms set off to

the east (Rooms 140–2, see Fig. 5) with occupation dating to site's second building phase (Phase 2.3; ca.1525–1475 BCE). The main room (Room 142) is a rectangular space which was covered with carefully laid and still well-preserved reed matting, which must have formed a suitable place for group feasting, where people perhaps sat in rows on the floor with food spread out in between. A group of fourteen cups and jugs, including p5022-63, were found grouped in the southeast corner of Room 142 (Fig. 5). Alongside them were two small bottles for special liquid storage, as well as a few cylindrical measuring vessels, including two elaborately decorated examples bearing a complex series of wavy bands and incised ridges, vessels which elsewhere at the site have been associated with beer production (Calderbank 2021b, 44–9). This assemblage must have come together to support the communal drinking activities taking place in Room 142, perhaps for individuals or groups waiting to gain entry to the southern part of the building where higher-level administrative activities took place

Vessel Y88.110.1.1 was chosen from a selection of 65 complete or mostly complete vessels recorded from Kani Masi (Calderbank 2024, 262–7). The cup was found in the Area I building, a large mudbrick building complex of several discrete phases. In the building's third phase, probably dating to the 14<sup>th</sup> century (1415–1290 cal. BCE, 2σ; Glatz et al.

2019, 453, table 1), the floor surfaces of Rooms 1–2 and the collapse layers directly above, were littered with at least 50 small drinking cups and footed goblets, Y88.110.1.1 included, as well as a curious selection of ceramic filters, lids, and stoppers. These rooms, similar to Room 142 at Tell Khaiber, strongly indicate that the building was used as a locus for commensal consumption (Glatz et al. 2019, 452). This has been reinforced by organic residue analysis of a selection of Kani Masi's drinking and serving vessels from these rooms, which commonly show signatures for a combination of compounds consistent with barley beer (Perruchini et al. 2018), a staple of Mesopotamian life and central to sociality and politics (e.g. Michalowski 1994; Paulette 2021). In rooms to the west and northwest (Rooms 3 and 4) were found material assemblages that primarily functioned for food and drink preparation, including cooking installations, vessels for beer production, as well as additional drinking equipment.

#### 4. Deconstructing 'tradition'

Archaeologists feel comfortable talking of 'traditions'; craft traditions, architectural traditions, and so on. Yet we often use these terms vaguely to denote typological similarity, rather than to forward socially driven understandings of how traditions emerged, how they were communicated across space and time, and how they may have intersected with emerging political structures. Since the MBA–LBA was a period of apparent continuation of a Mesopotamian pottery tradition (e.g. Armstrong and Gasche 2014), it will come as no surprise that the two vessels discussed in this paper show significant stylistic, technological, and contextual convergence. Armstrong and Gasche (2014, 95) have viewed the resilience of this tradition through the lens of productive efficiency, drawing attention to 'professional potters', 'mass production', and 'standardisation'. This explanation has roots deep in a modernist perspective that frames the world in terms of economic growth, yet continues to lack a robust evidence-base (see Glatz 2015, 17–19).

We have seen from a brief textual analysis (§2) that potters were not always professional individuals tethered to institutions. Furthermore, technological analyses of Tell Khaiber's and Kani Masi's vessel assemblages demonstrates that, while standardisation of vessel shapes was the intention of MBA–LBA potters, mechanical measurements of standardisation are inconsistent with contexts of high intensity or 'mass' production (Calderbank 2020). A similar pattern has also been established by Roux (2003, 780–1) in her reanalysis of EBA waster stacks from Tell Leilan, an assemblage which up until recently had formed a central empirical study arguing for mass production (see Blackman et al. 1993). Indeed the relatively standardised shapes we encounter archaeologically are unlikely to have been governed by the scale of production, and were in fact far more likely to have been determined by customs of intended vessel use (e.g. Glatz 2015, 23–6). In the case of vessels p5022–63 and Y88.110.1.1, their intended use was in both instances tied to communal drinking, probably involving beer, from vessels with capacities conforming to

an individual person's portion, and occurring within multi-roomed architectural complexes.

This makes our concept of tradition somewhat murkier. Not only does the MBA–LBA pottery tradition draw on the visual appearance of vessels, it also folds in broader contextual referents: specific forming techniques (§3.1), the customs and physical gestures of vessel use, and the spaces and social contexts in which commensal performances took place (§3.2). Traditions are also multi-temporal; while they have deep-time genealogies and referents, they are brought into being by situated actions (Pauketat 2001, 10; Ingold 2010; van Oyen 2019). Indeed, traditions, as relations of abstract concepts and tangible materialities, were 'territorialised' (after Deleuze and Guattari 1984) in the innumerable actions of MBA–LBA pottery production and vessel use. Each of these moments of 'becoming' (after Ingold 2011) had the potential to maintain, redirect, or destabilise. As such, traditions should be considered as continuously unfolding phenomena negotiated between people at multiple scales (Pauketat 2001, 3).

These multi-scalar and multi-temporal approaches to objects and object assemblages, while variously conceptualised under 'actor-network theory' (Latour 2005; Van Oyen 2015), 'entanglements' (Hodder 2012), 'meshworks' (Ingold 2011), 'assemblages' (De Landa 2016; Harris 2017; Jervis 2018), or 'rhizomes' (Deleuze and Guattari 2004), share in common the understanding that we can not analyse phenomena, material or immaterial, in isolation. And herein lies a fundamental issue with typology building as an isolated academic practice, or as the ultimate goal of many Mesopotamian pottery studies. Typologies and traditions, while regularly conflated, are not one and the same. Typologies are the archaeologist's construct (e.g. Miller 1985); they are generally based on things that are easy to measure—shape, size, fabric etc.—rather than emic Mesopotamian classifications of ancient material worlds, which appear instead to have been shaped largely by functional practice (e.g. Potts 1997; Calderbank 2021b). As such, archaeological typologies can often operate as passive *reflections* of past societies, as static manifestations of normative traditions distanced from the vibrant contexts of object production and use. Once removed from the fundamental interconnections that produced their social value, archaeological pots can become locked in a culture-historical semiotic world: they are labelled as 'Ur III', as 'Old Babylonian', or 'Kassite', and little more. In this isolation, they become representative of culture, representative of linear time, and with nowhere else to go, representative of the state.

I am not proposing here that craft traditions and political institutions existed entirely separately. Indeed, Pauketat (2001, 14) has insightfully outlined some of the central ways by which traditions can be politicised, in the same way that power can be traditionalised (see also Habermas 1992). Furthermore, Glatz (2020, 228–63) has offered an important and detailed reassessment of the associations between plain pottery and LBA Hittite imperialism. Analysing the ways by which political powers, ancient and modern, have enacted

strategies to reconfigure or standardise the material worlds of their citizens, and thus to exert physical and ideological control over their lives, bodies, and social practices, Glatz stresses that state interventions in daily activities are fairly uncommon and have historically yielded limited success. Glatz (2020, 263) ultimately concludes that ‘the production and geographical proliferation of plain, simple, and visually homogenous things do not equate with state sovereignty... rather, they represent the outcomes of more complex, localised processes of partial mimesis and mixing that, while seemingly reinforcing cultural hegemonies, actually subvert and ultimately weaken the cultural and symbolic ties that hold together imperial networks.’

MBA–LBA Mesopotamian pots were produced of riverine clays, raw materials that were easily accessible to anyone, and were subjected to techniques of production that did not rely on elaborate specialised equipment. Even if the will was there, such an industry would have proven exceptionally difficult to bring under any sort of economic monopoly, particularly when taken from the perspective of the infrastructurally weak states of ancient Mesopotamia (e.g. Richardson 2017).

Multiple seams of continuity flow between vessels p5022-63 and Y88.110.1.1, despite the fact that these pots were situated ca.100 years and 450km apart, and that their associated communities ostensibly lived under the governance of very different political dynasties. We must therefore acknowledge the role of alternative decentralised agencies as responsible for traditions of cup manufacture and use. These traditions were continuously unfolding through actions, including, though by no means restricted to: the collection of raw materials, forming techniques, structures of technological knowledge exchange, economic relationships between different craftspeople (e.g. potters and brewers), and long-held customs of eating and drinking, particularly involving beer. We have seen in the textual sources that potters’ work did at times intersect with state agents and institutions. However, state ideologies and bureaucratic mechanisms would have represented specific nodes in the expansive relational webs in which tradition was generated. Ultimately it was the relative political dislocation, yet robust social and economic integration of these varied communities of craft practice and their shared ‘ways of doing’ (after Wenger 1998; Roux 2016, 2) that resulted in the resilience of tradition in the face of widespread political change during the MBA–LBA period.

## 5. Conclusion

Archaeologists and Assyriologists alike share a persistent habit of seeing the state where it is not. In line with recent important critiques (e.g. Glatz 2020, 228–63), I contend that the state has acted as a fall-back explanation for plain pots, whether implicitly through culture-historical typology building and the passive conflation of archaeological types and ancient traditions, or explicitly through repetition of the ‘efficiency hypothesis.’ These archaeological frameworks persist despite a lack of robust empirical evidence to sustain the pot-state association, not to mention a quickening current of historical thought that argues convincingly against interventional state power, whether that be legal, infrastructural, or cultural.

With the recent influx of large-scale archaeological surveys and excavations in Iraq and the Kurdistan Region of Iraq, sherds are once again piling high. Just as Mesopotamian pottery has formed fertile ground for archaeological state-centrism, changing our approaches to this most mundane of materials can go a long way to dismantling the state as our prevailing explanatory framework. This paper has taken just two pots, separated in space and in time, to illustrate this larger point. The individual vessels chosen, from Tell Khaiber and from Kani Masi, unequivocally demonstrate that the MBA–LBA craft tradition endured regardless of the specific overarching political power, in this case Sealand and Kassite.

I have found it valuable in this paper to think of pots and their constituent sherds not as a ‘black box’ (after Latour 1999, 304) representative of larger scale ancient phenomena, but as fundamentally relational with other aspects of the material and immaterial world. According to Crellin (2020, 150, my emphasis), ‘we can only understand the world and the way it *changes* by appreciating its deeply interconnected nature.’ And this holds true for understanding processes of continuity too. Craft traditions are constituted of a series of nested assemblages and social practices which can only be addressed archaeologically via detailed *chaîne opératoire* and contextual analyses (Duistermaat 2017). Vessels p5022-63 and Y88.110.1.1 were generative of tradition; this tradition, while appearing conservative and enduring on the surface, was constantly unfolding through moments of territorialisation in which people, materials, time, and space were actively assembled.

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## Arabic Abstract

### ٢. إعادة النظر في الأنواع والتقاليد: علاقات الأواني الفخارية والدولة في بلاد ما بين النهرين خلال العصر البرونزي الوسيط والمتأخر (دانييل كالدربانك)

لقد كان علماء الآثار في مختلف التخصصات على معرفة منذ فترة طويلة بالمشكلات المنهجية والتفسيرية المتعلقة بربط الأنماط المادية بالتصنيفات التاريخية. ولعلنا أقل إدراكاً للطرق الماكرة التي تُشكّل بها هذه الممارسات نسخةً مُحدّدة من بلاد ما بين النهرين القديمة والتي تتمحور حول سرديات الدولة وتهمّش الفاعلين الاجتماعيين الآخرين. ومن خلال الدمج بين الأنواع الأثرية مع التقاليد القديمة وتفسير هذه التقاليد كنتيجة للإنتاج المركزي الضخم، فإننا نمخ الدولة في بلاد ما بين النهرين القدرة على التدخل المباشر في الحياة اليومية لمواطنيها والتلاعب بعوالمهم المادية وعاداتهم الاجتماعية. وأعيد في هذا البحث تقييم الروابط بين الخزافين ومؤسسات الدولة في مصادر نصية إنتقائية قبل تحليل إنتاج وإستخدام كأسين من العصر البرونزي الوسيط والمتأخر (MBA-LBA)، أحدهما من موقع تل حبيّر والآخر من منطقة كاني ماسي. وأؤكد من خلال هذا التحليل المقارن أنّ التطور اللامركزي والتعددي لهذا التقليد الحرفي هو الذي دفع إلى إستمرارية مُزاوَلته عبر الزمان والمكان.

## Abstract

Over the span of two centuries, an enormous amount of archaeological remains have been excavated across Iraq. An inverse relationship has existed between the scale of excavations and the detail of recorded information. In a first phase, during the 19th and early twentieth century BCE, excavations in Iraq primarily mined archaeological sites for textual records, monumental architecture, and aesthetically pleasing artefacts. During the second phase from the 1920s to 1980s, the scale of excavations gradually reduced while the recording became more detailed, integrating the full range of material culture. In the present-day phase, which began in the 1980s, reductions in budgets, increases in fieldwork costs, difficulties of logistics and time availability have reduced the scale of operations of archaeological fieldwork in Iraq, while simultaneously integrating new digital recording methods that provide unprecedented levels of accuracy and detail. Yet, any comprehensive study of ancient Mesopotamian societies from an archaeological perspective needs to integrate data that was collected at these different scales and with highly varied methodologies. Despite this, no active discussion in the field of Mesopotamian archaeology tries to resolve these tensions, which is generating ongoing debates about old questions from new perspectives that at times seem to go on in circles. This paper outlines how this tension presented with the publication project of legacy data from excavations at al-Hiba, ancient Lagaš, between 1968 and 1990 led by Donald P. Hansen, while new ongoing excavations were initiated in 2019 by the Lagaš Archaeological Project (LAP) by the Penn Museum under the direction of Holly Pittman.

Steve Renette

## 3. In with the new, out with the old? Integrating legacy data and new fieldwork results at al-Hiba, ancient Lagaš

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The investigation of unpublished fieldwork projects has become a third major source of archaeological data procurement in addition to excavation and survey. With the cessation of the majority of fieldwork in Iraq from the 1980s to the 2010s, the number of publication projects of old excavation data grew rapidly, although much work still remains to catch up with the accumulated archival backlog from the twentieth century. In recent years, excavation projects returned to southern Iraq, often targeting major urban sites that had previously been explored. As a result, work on legacy data is again taking a backseat to new fieldwork activities. Yet, the integration of legacy data with new fieldwork provides a major benefit that deserves more attention. One of the strengths of Mesopotamian archaeology is the sustained accumulation of archaeological documentation for over 150 years, despite challenges with methodological innovations and often subpar standards of record keeping for much of this history. Integration of legacy data with new data then offers significant challenges, but when done successfully, the results are well worth it.

While previous archaeological investigation of southern Mesopotamian sites was typically large-scale but reliant on analogue, imprecise, and slow recording methods, new fieldwork is out of logistical necessity relatively small-scale but with the availability of digital, high-resolution, and fast processing of integrated datasets. Spatial data from old projects is usually limited and inaccurate, while modern spatial data can be collected on a large scale and high accuracy. In contrast, stratigraphic information and material assemblages were accumulated far more quickly than they could be recorded in the past, while today's excavations face financial, logistical,

and methodological restrictions that limit the quantity of such data that can be collected. As a result, integrating data from old and new fieldwork projects faces serious challenges due to differences of methodologies and scale. At the same time, legacy data provides a quantity of stratigraphic and contextual data that can no longer be matched.

This paper presents the case of the site of al-Hiba, the ancient city of Lagash, which is the focus of a simultaneous legacy data publication project and a new fieldwork project. The paper offers considerations of the challenges and potentials of integrating research results from both projects. The particular focus here is the need to maintain continuity in the analysis and recording of pottery to ensure reliable integrative data evaluation.

### Legacy data and archive archaeology

In recent years, curation and investigation of fieldwork archives have been increasingly acknowledged as an archaeological practice that demands the establishment of its own methodological principles (Aspöck et al. 2020; Baird and McFadyen 2014; Swain 2012). Growing out of an initial discussion to set common standards of archival practices and accessibility among museums, public archaeology institutions, and commercial archaeology stakeholders (Brown 2007; Merriman and Swain 1999; Perrin 2002; Richards 2002), Archive Archaeology has morphed into a separate research activity as a new generation of academic archaeologists sought accessible datasets to develop research skills, test new ideas, and produce publications at the beginning of their careers. Through sharing of experiences at professional events and networking activities, these young researchers identified

common logistical, methodological, and financial challenges, which existing research-support structures in academia did not consider. Despite limited financial support, recent years have witnessed an impressive number of publications and PhD dissertations on previously unpublished datasets. Making such data available now allows new investigations and reassessments that are no longer dependent on the memory of the original excavators. At the same time, these studies have brought to the forefront the deficiencies upon which the traditional framework of Mesopotamian material culture has been built, while opening a suite of innovative research questions to guide renewed fieldwork.

Archive Archaeology relies on access to legacy data. This term can be understood in two different ways, both of which are pertinent to this discussion. The term *legacy data* refers to old data that is recorded in outdated mediums that are difficult to access. The most common usage refers to outdated digital formats, for which the hardware is no longer available, or which have deteriorated and can no longer be properly read. As such, digital data from relatively recent projects in the past decade can already be labelled as *legacy data* since old hard drives, tablets, or online storage repositories, as well as outdated software or those with expired software licenses, can no longer be easily accessed and require transposition into new formats.

Expanding its meaning, for our purposes, *legacy data* also includes paper records and outdated photographic records that require proper archival storage for preservation. Archive Archaeology is the process of investigating old fieldwork records through a reconstruction of the original archaeological data that is stored in various forms of legacy data. Crucially, this process includes an exploration of the project structure itself, which requires a new metadata infrastructure to organise the often-fragmentary legacy data (see Baird and McFadyen 2014; Zaina 2018 and 2020 for discussions of best practices in Archive Archaeology methodology).

## Legacy versus innovation at al-Hiba

From 1968 to 1979, and again in 1990, six seasons of excavations at al-Hiba explored remains of the ancient city of Lagaš (Renette 2021: 6-10).<sup>1</sup> Results from these excavations were summarized in preliminary reports and one unpublished dissertation (Bahrani 1989), but a comprehensive presentation of the vast amount of data that covered over a millennium of occupation was never achieved. Following Hansen's death in 2007, Holly Pittman of the Penn Museum at the University of Pennsylvania accepted the arduous task of final publication with the establishment of the Tell al-Hiba Publication

Project (Pittman and Ashby 2022).<sup>2</sup> Recognizing the need for organising and digitizing the records following proper archival standards, Pittman assembled a small team, consisting mainly of graduate students in archaeology at the University of Pennsylvania. Throughout this process, the practical challenge of sorting, processing, analysing, and presenting such a large and diverse dataset became increasingly clear. With a series of four volumes in process of publication following a decade of work,<sup>3</sup> Pittman in 2019 initiated the resumption of fieldwork at al-Hiba with the Lagaš Archaeological Project (LAP) to collect new information on the urban society of Lagaš with new research questions and the availability of greatly advanced archaeological methods. This fieldwork project remains active and is set up to sustain a long-term fieldwork presence at the site, integrated with the regeneration of Iraqi archaeology. The new fieldwork project has developed new digital recording methods that make full use of the technology available in the 21<sup>st</sup> century. Mapping of the site is rapidly advancing, incorporating surface survey with aerial mapping under different environmental conditions to capture surface features, as well as geophysical survey of vast areas (McMahon et al. 2023; Pittman 2023; Zimmerman 2023). Geomorphological survey and analysis of site formation processes have become an integral component of the project to interpret surface features (e.g. canals) and urban layout (Goodman et al. 2025). Excavation recording fully integrates 3D modelling and digital database entry, combined with spatial data.

The resulting digital data differs in every aspect from the legacy data of the 1968-90 excavations, yet both datasets need to be combined to fully understand the urban development of the site. Logistical obstacles, such as different staff members in the publication and fieldwork projects, and the need to share access to data with project participants located in different countries, prevents a full integration into a singular project. Furthermore, the legacy data does not provide the same information, nor is it organised in a comparable structure to the fieldwork data, which makes integration into a single database impossible. The data is simply too incompatible to be fully integrated. Our solution has been to accept these as different projects, but with the potential for integrative collaboration and sharing of results. Analysis

<sup>2</sup>Generous funding for this publication project was provided over the year by the White Levy Fund for Archaeological Publications and the Charles K. Williams Fund for Publication of the Art History Department at the University of Pennsylvania.

<sup>3</sup>The first volume, already published, presents the ceramic corpus from the entire site (Renette 2021). The second volume, in press at the time of writing, is a comprehensive publication of an Early Dynastic I institutional complex in Area G and also includes summaries of survey and mapping studies of the entire site (Pittman and Renette in press). The third volume forms the final publication of an Early Dynastic IIIB administrative and craft production complex in Area C. The fourth and final volume will discuss the Early Dynastic III and Akkadian temple architecture of Areas A and B, which have been analysed by Darren Ashby in his Ph.D. dissertation (2017).

<sup>1</sup>The fieldwork project was a joint expedition of the Institute of Fine Arts at New York University (IFA) and the Metropolitan Museum of Art under the general direction of Vaughn E. Crawford (Metropolitan Museum) and field director Donald P. Hansen (IFA). In 1984, with permission of the general project, Elizabeth Carter conducted two months of surface survey covering the entire site.

of the legacy data produces knowledge that can guide new fieldwork, while modern fieldwork generates information that contextualises the legacy data.

Let us take the pottery analysis as a direct example. The active Lagash Archaeological Project applies modern technology and methodology to investigate ceramic production and use to generate knowledge regarding craft production practices, differential access, and interpretation of contexts. However, such an approach, which has become standard in modern archaeological practice, cannot be carried out successfully without a detailed chrono-typological framework. Despite decades of traditional pottery analysis in Mesopotamian archaeology, a reliable and comprehensive framework for south Iraq is still not available. Constructing a chrono-typology requires large amounts of quantified pottery data from many stratigraphic sequences (e.g. Armstrong and Gasche 2014). Given the large size of urban sites in south Iraq, the depth of their deposits, their stratigraphic complexity, and the slow pace of modern archaeological excavation practice, obtaining the required amount of data is nearly impossible. A single sounding might obtain a good sequence, but robust statistical analysis of gradual changes in ceramic assemblages and microvariations requires vast amounts of pot sherds from stratigraphically reliable contexts that can no longer be obtained within contemporary fieldwork projects that are frequently designed as no more than 5-year projects due to pressure of funding structures. Yet the accumulation of excessively large amounts of material from deep soundings and large excavation exposures is precisely the strength of old fieldwork projects in south Iraq. Their legacy data can provide the framework that new fieldwork projects require. The publication of the ceramic record with a chrono-typology from al-Hiba (Renette 2021) was designed for this purpose. While, unfortunately, analyses of fabrics and production, or of use patterns, were largely out of reach with the recorded data due to inconsistencies or lack of attention to such information, the large size of the corpus that covers most of the archaeological sequence proved to be essential to establish a detailed typology. The new fieldwork project at Lagash has adopted and continues to adapt this typology. Without its availability, much of the new work would not be possible or be severely hindered by unresolvable questions of chronological resolution.

### The Al-Hiba legacy data: challenges and solutions

The initial vision to analyse and publish the legacy data from al-Hiba foresaw a few years of systematic work. While going through the paper records, the monumental challenges of such a project manifested themselves. After all, those challenges had prevented timely publication in the past decades, much as it has for other projects from Iraq. The realization rapidly emerged for the need of a first stage of an archival digitization project that would require many hours of work by a team of people. Accessing the information

necessitated the combination of all records, which would take a lifetime to achieve manually. A relational digital database, on the other hand, can produce quantified data based on carefully designed queries within a matter of seconds. Therefore, the initial multi-year task of archive organisation, database design, and systematic data entry was necessary to produce the essential information that was hidden within the labyrinth of paper records.

### Preservation of the archive

The paper records of the archive required substantial organisation. The physical integrity of the records was in danger. At the same time, over the years, some of the records had been distributed to different researchers for individual research and publications so that the archive was no longer fully intact. The first step required was to find a secure storage location with appropriate archival containers, which resulted in the creation of the Al-Hiba office at the Penn Museum. Furthermore, the organisational structure of the fieldwork records needed to be reconstructed; in essence, an excavation of the archive, which produced its own metadata, had to be carried out. The records were eventually organised by type (e.g., field notebooks; pottery counting sheets; etc.) and within each type by fieldwork season. Only then could the paper records be systematically scanned and organised in a digital archive that adopted the same organisational structure.

### Digitization process

Given the large amount of paperwork, the question of prioritization presented itself. The decision was made to scan the entire archive, but prioritize the fieldwork records themselves. Additional records, such as budget notes, old grant applications, permit forms, etc. were also scanned. To maintain a manageable timeline, most of the paper records were scanned at 600 dpi resolution, while a higher resolution was adopted for drawings. The digital files are stored in perpetuity on a dedicated server hosted at the University of Pennsylvania.

The main challenge of the digitization process is the significant investment of time required for this. Scanning the files was only the first step. The information embedded in these files needed to be made accessible. For this purpose, initially a FileMaker database was designed by Gabriel Pizzorno, who at the time was employed as researcher at the Penn Museum. All digitally scanned files were integrated into this database in preparation for the next phase of data entry.

From 2012 to 2017, data embedded within the original records were systematically entered into the database. Beginning in the third season (1971), the original excavation project at al-Hiba had adopted standard recording sheets for contexts and associated materials. The FileMaker database mirrored the format of these sheets to facilitate easy data entry, which was carried out over the years by paid work students. However, data from non-standardized sheets of the first two seasons required better knowledge of the system and internal recording logic of the project, and therefore this needed to

be completed by core members of the publication project. Since no members could be employed for this purpose, this significant task had to be carried out in their spare time.

Additionally, narrative records, such as daily trench notebooks, required a different approach. These were first transcribed by paid student workers within the database. Next, core team members systematically went through these texts to highlight and tag different types of data. In this way, the narrative records could be easily submitted to search queries for specific analytical tasks.

When the digitization process was completed after several years, a new, open-source, fully relational database was designed: TARA (Toolkit for Archaeological Research and Analysis). This database consists of built-in query functions to mine the digital data. Overall, the digitization process and database design formed a highly labour-intensive, time-consuming, and team-driven project that necessitated multi-year delays in data analysis and research outcomes. Funding such a task with delayed outcomes has become increasingly difficult in today's academic funding structures, which prioritize relatively short (3 to 5 years) projects with demonstrable deliverables throughout their lifespan. The larger the legacy datasets, the harder it becomes to secure funding and institutional support to sustain a digitization and publication project.

### Making the data available

One solution to the challenge of the excessive time required for such a project is to create a digital repository of scanned records, photographs, drawings, and spreadsheets. While still time-consuming, the creation of a repository of the records in a digital format mainly requires high-quality scanning and digital data file management. These records can then be made available on dedicated servers that are maintained in perpetuity. Institutional servers can provide the resources for such a long-term guarantee but often do not provide open access. Institutions are also subject to invasive changes over decades when priorities can shift, so that guarantees of perpetuity might be suddenly retracted. Commercial repositories, including those dedicated specifically to archaeology, also exist. These include a significant financial cost but can provide easier access to the data for other researchers. Whether perpetuity of data curation can be guaranteed remains an open question.

However, making digital data available through these repositories does not complete the responsibilities of the researchers in charge of its publication. Analysis of the data requires significant organisational efforts. Merely making digital data available does not provide access to the scientifically relevant information. For this reason, the Al-Hiba Publication Project decided to invest the time and resources to present the data in an organised manner together with detailed analysis. This choice resulted in a much longer time investment, at the expense of meeting the responsibility for timely dissemination of data, but the final outcome achieves access to the data that could not otherwise be provided.

## The example of 'true types' in south Mesopotamian pottery studies

Pottery recording was considered one of the main tasks during the six seasons of excavation, yet it never was given attention in preliminary reports of the site. Edward Ochsenschlager took charge of pottery recording during most of the fieldwork and at several times between 1968 and 1990, he dedicated a significant amount of effort to developing methodologies to study Mesopotamian pottery. In the al-Hiba archive, grant applications discuss strategies to assess production methods and the use of pottery at ancient Lagash, but these projects never materialized. Ochsenschlager tried to create a shape typology and to record occurrences and frequencies of different types, but without a digital, relational database, such a task was simply impossible given the amount of material collected.

In this section, I first discuss the underlying logic of the pottery recording system. For much of the twentieth century, pottery studies in Mesopotamia and elsewhere assumed the existence of 'true types' (I use this term because it is what Edward Ochsenschlager used in his article on the pottery collection methodology). A 'true type' is an ideal type. This concept assumes that ancient potters had an ideal type in mind when shaping a clay vessel. At any point in time, a fixed collection of true types was in use, which would be what we call a period assemblage. In this model, the variation observed in pottery is the result of human error, sloppiness, creativity, or technological restrictions during production. Pottery publications usually would depict idealised drawings of selected complete vessels. Drawings could at times be extrapolated based on the excavator's experience with the full range of vessels. The idea is that anyone dealing with pottery from south Mesopotamia would need to identify the ideal type the potter had in mind when creating the vessel. The typologies constructed from the major excavation projects would provide the chronological and function information needed. (For a critical discussion of this approach and how it affected ceramic recording methods, see Renette 2021: 13-16).

More recent publications of south Mesopotamian pottery produce plates that show a range of vessels. Using a set of predetermined characteristics (e.g. rim shape), vessels that share a set of formal characteristics are grouped together into an overarching type. Publications of smaller datasets more often simply publish a catalogue of a subset of the material to illustrate the range of vessels that were found (e.g. complete vessels from Abu Salabikh, Moon 1987). Outliers, which are vessels that cannot easily be classified within one of the identified types, are either not included or presented as unique or miscellaneous objects. Today, most studies would acknowledge that typologies are always subjective. Any dataset can be organised into types in different ways and much of tedious discussions of ceramic typology come down to nothing more than preferences for the choice of

determining characteristics. In their book 'Archaeological Typology and Practical Reality', Adams and Adams (1991) demonstrate the subjectivity of typology construction, while at the same time maintaining the validity of this effort.

At al-Hiba, the concept of the 'true type' shaped the recording system. Only one sherd or vessel would be drawn, described, and assigned a unique number with which other sherds could be identified. When a new, more 'complete' or 'better' example was found, the old one could be replaced. Still, we need to recognize the innovation introduced by Edward Ochsenschlager and Donald Hansen in the pottery recording at al-Hiba. Frustrated with the refusal to document sherd material at Nippur, they were intent on documenting the obvious variety within the ceramic corpus. This healthy obsession with variation led Ochsenschlager ultimately to ask 'what is style?' (Abramov et al. 2006). At al-Hiba, it led to a more complete documentation of the ceramic corpus than what was current practice at other sites in south Iraq in the 1960s. If a sherd or vessel was sufficiently distinct, it was recorded separately, drawn and described, given its own unique number. Unfortunately, it is not fully clear what 'distinct' means. Types such as conical bowls are documented with almost 200 drawings, barely differing other than slight variations in size or angles. Other types were documented much more sparsely even when notes in daily recording indicate significant differences. In total, 1895 drawn and described sherds and vessels are in the al-Hiba archive, while some additional records seem to have been lost over the decades.

In addition to the underlying logic of the recording system, additional factors determined the quality of the dataset. The recording system was maintained throughout the six seasons, even though in the first two seasons the team did not yet use standardized forms for daily sherd recording. Still, the records are at times severely inconsistent. A major factor was the way this labor was organized during fieldwork. Inexperienced graduate students would be tasked with much of the initial sherd recording. The previously recorded specimens representing 'true types' were laid out on long tables inside. Graduate students with little experience with south Mesopotamian pottery, and who were undoubtedly tired from fieldwork and very likely increasingly bored with tedious tasks, had to identify sherds by matching them up to the sherds that were laid out in poorly lit conditions. Glimpse of the subjectivity of this process can be seen in the records. For example, within a season, one individual, who can be identified by their initials and handwriting, would repeatedly select a specific type number for a conical bowl sherd, while another individual would systematically prefer another conical bowl. Going through the records now, you develop a liking for some recorders and a disliking for others who had lousier handwriting and tended to be far less meticulous in their recording. Unfortunately, it seems that there was no micromanagement in the field so that less accurate recorders would not be corrected.

This results in problems within the dataset that are often impossible to identify now. For example, pottery retrieved from levels that are ED I in date, might have a few sherds that were assigned to types that are usually confidently dated to the ED III or Akkadian periods. This results in three scenarios: it could be an intrusive sherd that got mixed in within an ED I assemblage; there could be an intrusion within the stratigraphy and such sherds belong to later cuts; or it is a misidentification. A misidentification can either mean that a vessel with similar characteristics as a later type was produced during ED I, or that the person identifying the sherd made a mistake out of inexperience or sloppiness. This kind of issue arises often in the dataset, which can skew any statistical analysis.

This extended discussion of the pottery recording methods and the underlying logic of the original fieldwork project illustrates the difficulties in dealing with legacy data. Merely digitizing old records and making these available in online repositories does not fulfil the task of the researcher to disseminate the knowledge gained from the fieldwork. Furthermore, merely making available the material itself is insufficient to understand how the data came to be and how it can be compared with other datasets. A full investigation of all fieldwork records, including random observation notes, grant applications, communication with colleagues and authorities, needs to be included in this process. The act of archaeology is a human endeavour that is prone to countless subjectivities, mistakes, or unexplained decisions, all of which shape the dataset and ultimately the information that can be gained from it.

### Integrating legacy data with new fieldwork at Lagash

The knowledge gained from a decade of processing the legacy data from al-Hiba has been integrated into the new fieldwork by the Lagash Archaeological Project in various ways. The old excavations had focused exclusively on large-scale architectural complexes, including at least two temples (the Ibgal of Inana in Area A and the Bagara of Ningirsu in Area B), a vast craft production and administrative complex in Area C, and an Early Dynastic I administrative complex in Area G. These had been mapped using analogue methods in the 1960s-70s. A first goal in 2019 consisted of upgrading the geospatial information of the excavated areas and the site itself using modern, digital tools. A new topographic map of the site was created. The mapping of surface features across the site was initiated and continues throughout the duration of the project. As a result, we now have a much better understanding of the extent of the site, the location of its major 'public' buildings, craft production areas, and waterways. Additionally, site formation processes, including countless wadis and canals that formed over the millennia, are now much better understood.

The new excavations of 2019 through 2024 have targeted craft production areas and residential zones. The research

goal of the project includes a focus on economic diversity and inequality in this ancient Mesopotamia city. Incorporating the knowledge of the major monumental cores within the site and their spatial location has guided the mapping of different zones to achieve a more balanced picture.

The results of the ceramic analysis, which out of necessity took a traditional approach of chronology and typology, have allowed the new fieldwork project to have a major running start. Both the surface survey and the excavations now have access to a substantial database of pottery and their statistical analysis. This allows a more refined chronology that would otherwise not have been possible without years of extensive excavation and careful analysis. Keeping in mind the application of the typology in ongoing fieldwork, the ceramic typology of the legacy data adopts a flexible system in which new vessel types or variations of documented types can be easily integrated without disrupting the organisational logic.

## Conclusion

While fully recognizing the severe shortcomings of excavated legacy data that was recorded with outdated methodologies, the integration of such legacy data with new fieldwork at the site of al-Hiba has demonstrated conclusively that the

significant time and resource investment is not only well worth it, but in fact essential. Conducting new fieldwork at a previously excavated site without fully analysing and integrating the legacy data results in a major loss of knowledge. Even worse, neglecting to integrate legacy data into a recording system thoughtfully designed to resolve discrepancies in methodologies between the old and the new data results in a mismatch that undermines comprehensive interpretations of the site's occupational history. Legacy data might initially appear to be too flawed to be useful for fieldwork projects with new research questions in the 21<sup>st</sup> century; yet with detailed analysis and the effort to set up integrated, relational digital databases, the knowledge that is gained from these large legacy datasets cannot be matched. The work achieved by old excavations in Iraq, even when neglecting high methodological standards that were already developed elsewhere in the 1960s and 70s, has produced data that is foundational for our knowledge of the ancient Mesopotamian world.

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## Arabic Abstract

٣. هل يُقبلُ الجديدُ أم يُستغنى عن القديم؟ دمجُ البيانات القديمة ونتائجُ العمل الميداني الجديدة في موقع تلّ الهبا في مدينة لكش القديمة (ستيف رينيت)

تمّ التنقيبُ على مدى قرنين من الزمان عن كمياتٍ هائلةٍ من البقايا الأثرية في جميع أنحاء العراق. وقد كانت هناك علاقةٌ عكسيّةٌ بين حجم التنقيبات ودقّة المعلومات المُسجّلة. وركّزت التنقيباتُ في العراق في المرحلة الأولى خلال القرن التاسع عشر وأوائل القرن العشرين قبل الميلاد بشكلٍ أساسي على المواقع الأثرية بحثاً عن السجّلات النصّية والمعالم المعمارية الضخمة والتحف الفنية ذات القيمة الجمالية. وانخفض نطاقُ التنقيبات خلال المرحلة الثانية من عشرينيات إلى ثمانينيات القرن العشرين تدريجياً بينما ازدادت دقّة التسجيل ودمج النطاق الكامل للثقافة الماديّة. وفي المرحلة الحالية التي بدأت في ثمانينيات القرن العشرين، أدّت التخفيضاتُ في الميزانيات وارتفاع تكاليف العمل الميداني وصعوبات اللوجستيات وضيق الوقت إلى تقليص نطاق عمليات التنقيب الأثري الميداني في العراق بالتزامن مع دمج أساليب التسجيل الرقمي الحديثة والتي توفّر مستويات غير مسبوقّة من الدقّة والتفصيل. ومع ذلك، فإنّ أيّ دراسةٍ شاملةٍ لمُجتمعات بلاد ما بين النهرين القديمة من منظورٍ أثري تتطلّب دمج البيانات التي تمّ جمعها على هذه المستويات المختلفة وبمنهجياتٍ شديدة التنوّع. وعلى الرغم من ذلك، لا يوجد نقاشٌ فعّالٌ في مجال آثار بلاد ما بين النهرين يسعى إلى حلّ هذه الخلافات، الأمر الذي يُولّد نقاشاتٍ مُستمرّةً حول المسائل القديمة من وجهات نظرٍ جديدة تبدو أحياناً وكأنّها تدورُ في حلقةٍ مُفرّغةٍ. ويُسلّطُ هذا البحث الضوء على كيفية ظهور هذا الخلاف مع مشروع نشر البيانات التراثية من التنقيبات في موقع الهبا (لكش القديمة) بين عامي 1968 و1990 بقيادة دونالد ب. هانسن، في حين بدأت التنقيبات الجديدة الجارية في عام 2019 من قبل مشروع لكش الأثري (LAP) التابع لمتحف بنسلفانيا تحت إشراف هولي بيتمان.

## Abstract

The plain ware assemblages of the Early Dynastic III to Akkadian transition in southern Mesopotamia remain not fully defined and understood due to several obstacles: the high variability of pottery profiles; the differences in the pottery repertoires between well-preserved grave assemblages and fragmentary household repertoire; the continuity of shapes into the second half of the third millennium BCE, a sign of cultural continuity. Early Dynastic III/Akkadian plain pottery needs to be analysed from new perspectives, including the study of the *chaîne opératoire* of different types and individual objects' biographies (use, repair, re-use, discard). Research on the skill-sets involved in potters' practices, on their technical choices and behaviours might help define their technical identity, seeing them as individuals acting inside society and subject to environmental and cultural factors. This paper will present the preliminary results and the future perspectives of an on-going study on the above-mentioned aspects as demonstrated by the assemblage from Abu Tbeirah.

Marta Zingale

## 4. Southern Mesopotamian pottery technology: the evidence from Abu Tbeirah

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Abu Tbeirah is a 43 ha site located near the city of Nasiriyah and mainly dated to the third millennium BCE. The phases excavated belong to the Early Dynastic III (ED III) to Akkadian transition (2450–2250 BCE), reaching the beginning of the second millennium BCE in the northeastern part of the site (Romano 2019). Most of the information about Abu Tbeirah comes from Area 1 in the southeastern part of the site. Here, the research brought to light, immediately below the surface, a cemetery area, and traces of various activities, such as fireplaces and dump pits. Both the cemetery and other anthropogenic traces cut and covered the layers of a large articulated complex, so-called Building A. As the area is subject to erosion, it is not possible to define the real relation between the cemetery and the structures below (Romano 2019). The ceramic assemblage from these two contexts reveals a continuity in the shapes. Both can be attributed generally to the ED III/Akkadian sequence, but no additional information is available to determine a more precise dating within this transition (Romano and Zingale 2019). Three main areas of analysis have been applied to the Abu Tbeirah pottery for our investigation into their production:

1. The typological study: focusing on the high variability of pottery profiles; the differences in the pottery repertoires between well-preserved grave assemblages and fragmentary household repertoires; the continuity of shapes into the second half of the third millennium BCE.
2. The technological study: aiming at reconstructing the *chaîne opératoire* of vessel shapes and clarifying the skills involved in potters' practices as well as their technical choices.
3. The reconstruction of the individual objects' biographies: focusing on the intended function and actual use of pottery vessels as well as their eventual repair, re-use, and discard.

### Typological study

The great variability in the shapes and profiles makes the definition of a reliable typology premature. Therefore, the study is based on statistical analysis and aims to highlight the presence of possible trends among the more frequent types discovered in all the phases so far excavated. Most of the pottery shapes are represented by conical bowls, beakers, and several typologies of jars. The system preferred for the typological analysis of the different shapes is the 'envelope method' which has been demonstrated to be a powerful tool for sorting and sketching the pottery horizon of the two occupational phases considered here.<sup>1</sup> This method consists of overlaying the profiles at the same scale to highlight any significant variations (Orton 1987).

### Open shapes

Drinking vessels, like conical bowls and beakers, are the most widespread shapes in Abu Tbeirah and this frequency is also attested in other sites of the second half of the third millennium BCE.<sup>2</sup> Conical bowls (Fig.1) are significantly

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<sup>1</sup> The present article focuses on the most widespread typologies. See Romano and Zingale 2019 to observe how the method has been used.

<sup>2</sup> Woolley 1934, 390 Types 4–7, pl. 251; Romano and Zingale 2019, 327–8.

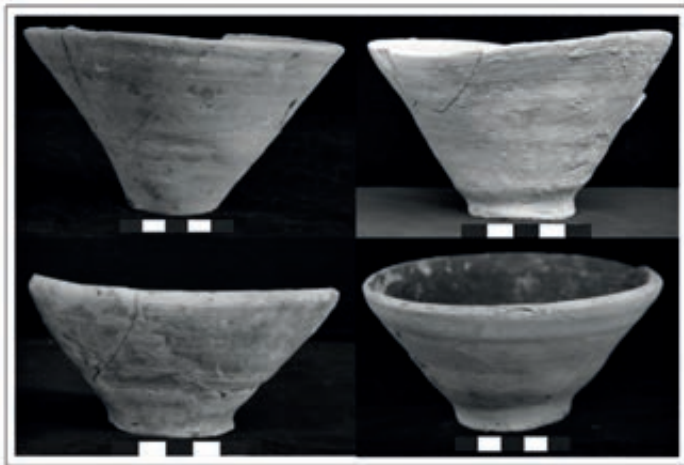


Fig. 1. Conical bowls from Building A (AbT.14.173.3; AbT.15.350.1 above) and from the cemetery (AbT.14.233.4; AbT.15.332.6 below).



Fig. 2. Beakers from Building A (AbT.15.395.6; AbT.14.226.1 above) and the cemetery (AbT.13.183.8; AbT.15.332.10 below).

standardized and it would seem that they reflect the tendency to become shallower at the end of the Early Dynastic period (Gruber 2015). Furthermore, it has been possible to observe that vessels from the cemetery and other contexts are more standardized and shallower, when compared to those in Building A (Romano and Zingale 2019, 328).

Beakers (Fig. 2), as well as conical bowls, are standardized, although it seems that those from the cemetery are bigger and realized more carefully than the examples recovered



Fig. 3. A fragment of plain rim jar from the Building A (AbT.15.338.21 above) and two complete plain rim jars from the Cemetery (AbT.15.385.8; AbT.16.453.1 below).

from Building A. At present, it is impossible to establish whether this could be due to a chronological difference, the presence of different workshops, or a different conception of the shape (Romano and Zingale 2019, 331).

Due to the similarity of these two categories of drinking vessels, as well as their asymmetry, it is not always easy to attribute a fragment to one class rather than another.

### Closed shapes

Closed shapes, unlike bowls and beakers, exhibit a huge variety of rim, body, and base combinations. In fact, among jars, the plain rim can be combined with different bodies and bases (flat, rounded, convex, and ring) and spouts or handles can be attached to the body. By contrast, among open shapes this type of rim could be found exclusively in conical bowls and beakers.<sup>3</sup> Complete vessels come largely from the cemetery and there seems to be a considerable difference among the types and the shapes discovered in domestic contexts (Romano 2019). Some examples are plain rim jars with a straight neck that are widely attested in the domestic contexts of Building A even though most of them are fragments, while those belonging to the cemetery and other activities show an opposite trend (Fig. 3) (Romano and Zingale 2019, 335–7).

<sup>3</sup>Woolley 1934, 391; Moon 1987; McMahon 2006; Romano and Zingale 2019, 327

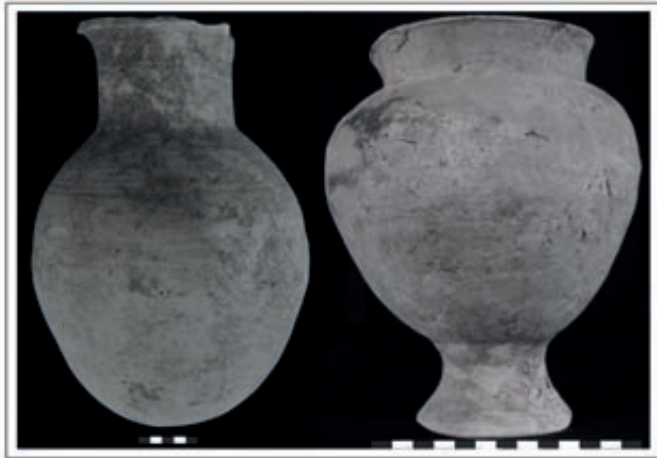


Fig. 4. Triangular rim jars from the Cemetery (AbT.12.56.5; AbT.13.195.3).

Triangular rim jars (Fig. 4) with slightly flared or straight neck are more frequent in the cemetery and only a few sherds were found in domestic contexts. In this category are included two completely different vessels: a trumpet base jar found in the cemetery and a very wide-bodied jar found in Building A (Romano and Zingale 2019, 337–9). Band rim jars with straight or flared neck and convex or flat bases are widely attested in Building A and in the latest activities' layers, whereas double-ridged rim jars, a more marked version of the band rim, appear to be more related to the funerary contexts rather than domestic ones (Fig. 5) (Romano and Zingale 2019, 339). It should be noted that it is not always easy to distinguish a band rim from a double-ridged jar, since in the same vessel the rim does not have a uniform shape. In the broader regional context, Abu Tbeirah pottery repertoire is directly comparable with Ur and with other southern Mesopotamian cities.<sup>4</sup>

## Technological study

### Clay and firing temperature

The studies of pottery technology are based on an interdisciplinary approach that joins together macroscopic and scientific analysis to gain a better understanding of the pottery production process used by potters. The research involves a non-destructive and non-invasive neutron activation analysis of southern Mesopotamian pottery fabrics from the third millennium BCE. Neutron Diffraction and Neutron Resonance Capture Analysis have revealed that fabrics were made using the natural clay from the Mesopotamian homogeneous alluvial plain. Differences among them are essentially due to the firing temperature, that sometimes is not homogeneous in the same vessel, as well as the presence of iron nodules or vegetal temper (Festa et al. 2019). These results find evidence in the archaeological literature in which a homogeneity of the ceramic pastes used



Fig. 5. A band rim jar from Building A (AbT.14.275.1 left) and a double-ridged jar from the Cemetery (AbT.15.366.1 right).

in Mesopotamia is highlighted.<sup>5</sup> Furthermore, Abu Tbeirah was crossed by an artificial channel, thus it is probable that the clay was gathered locally. The proximity of a modern dry creek at a depth of 50 cm and comparison with the ancient samples seems to show a local origin for the clay used (Festa et al. 2019).

Abu Tbeirah's pottery record often shows traces of a non-uniform firing, and the dark or black core of some vessels is due to the non-complete control of the firing atmosphere or to an insufficient duration of the firing process. Neutron activation analysis demonstrated that temperatures reached during the firing process never exceeded 1000°C (Festa et al. 2019). All characteristics usually connected to pit and open firing. The presence of areas in the northeastern part of the settlement with waste from pottery production that is not associated with any visible installations or kiln structures supports this idea. Although the erosion that characterises Abu Tbeirah's surface could have obliterated the original kilns' structures, it is not possible to exclude the identification of these areas with open firings (D'Agostino, Romano 2017).

### Manufacturing process<sup>6</sup>

As far as the shaping technique is concerned, what follows focuses on the most frequently attested typologies. Conical bowls and beakers are usually quickly and poorly shaped, the clay is of medium quality, and they usually are fired at low to low-medium temperature. Their bases are not a perfect circle, resulting from detaching the vessels with a string, which caused deformation. Additionally, the base could be poorly detached, or with a piece of extra clay left inside (Romano and Zingale 2019, 342–7).

<sup>5</sup>Thuesen 1981; Gibson 1990; Armstrong, Gasche 2004

<sup>6</sup>The data presented in this article update what was published in the book *Abu Tbeirah Excavation 1* and are the preliminary results of research carried out in 2020 with Dr. Ina Berg from the University of Manchester. However, the study of the manufacturing process is still in progress, and we have presented here just an overview of the research.

<sup>4</sup>Woolley 1934; Moon 1987; McMahon 2006

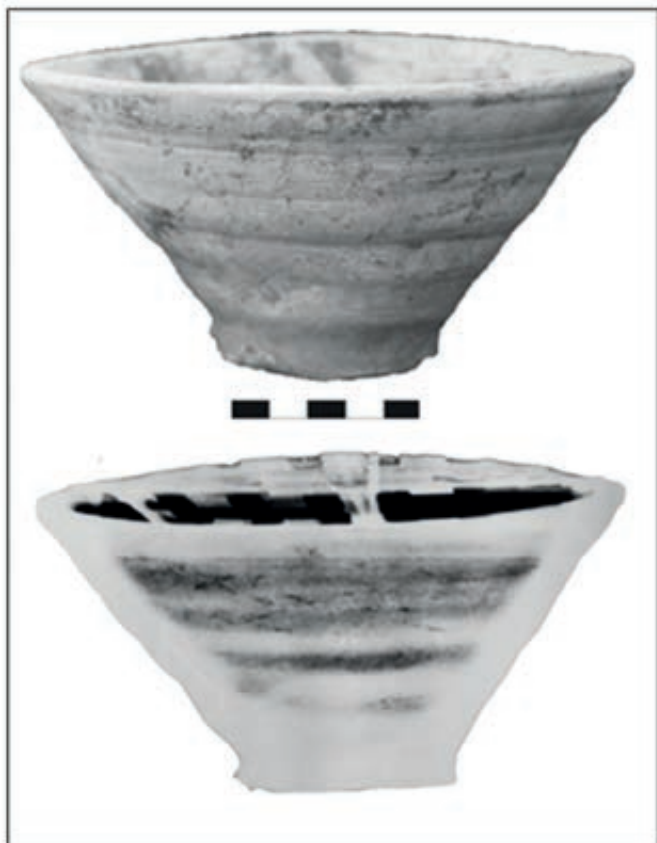


Fig. 6. Conical bowl AbT.15.365.1.

Generally, conical bowls (Fig. 6) show rilling on the external surface while a vortex and a wheel lump on the base are visible inside. In X-ray images, the gradual darkening towards the rim, due to the reduction of the walls, and the thickness variability, indicated by the alternation of clearer and darker areas, shows the practice of rilling. The diagonal voids follow the same direction of the spirals, and their size and frequency indicate the use of water. Besides, it is possible to observe some crossed voids. The above-mentioned are all typical signs that suggest the use of the wheel (Berg 2008; 2013; Romano and Zingale 2019, 343–4).

In the beakers (Fig. 7), as well as in conical bowls, signs of rilling and twisting are visible on the external and internal surface indicating the use of the wheel-throwing technique. In the X-ray images, rilling is evident given the presence of darker and clearer areas. Various diagonal voids and crossed voids are present. Sometimes few horizontal voids, typical of coils, are also visible. These clues could suggest the use of the wheel-coiling technique (Berg 2008; 2013). However, it should be stated that the hypothesis of using more than one technique for small and standardized vessels is not convincing (Romano and Zingale 2019, 345–6).

It is undeniable that the reconstruction of the *chaîne opératoire* of the jars is a more complex task. From a first analysis, the plain rim jar AbT.14.224.2 (Fig. 8a) was identified as wheel-thrown based on some clues on the external surface and on the X-ray images, which seemed to show oblique

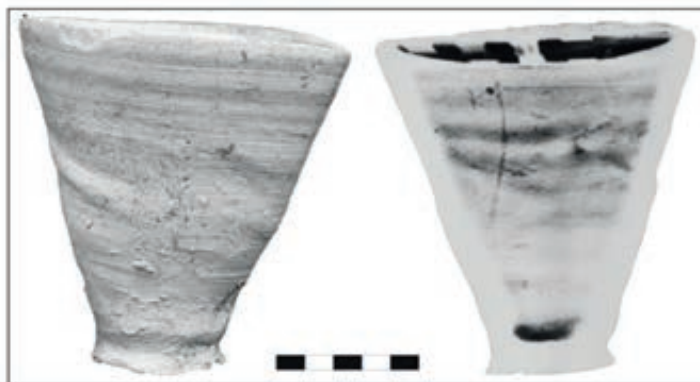


Fig. 7. Beaker AbT.15.332.1.

fissures following the spiral of the clay. However, the lack of decreasing wall thickness, typical of the wheel-throwing technique makes the use of a single technique unlikely. On the external surface it is possible to see that the vessel is scraped on its lower body and base, a common feature in the jar repertoire (Romano and Zingale 2019, 363).

A first hypothesis for the trumpet base jar AbT.15.385.7 (Fig. 8b) was that it could be composed of four different parts: the upper half of the body coiled, the lower part made in a mould and then attached together with a coil; then neck and rim attached separately through the wheel, as diagonal voids are visible and alternated thicker and thinner areas are equally present. While it seems plausible that the vessel was realized in different stages, the use of a mould for the lower part is unlikely, as the base is irregular and thicker than the wall, which would be unusual for this forming technique. The exterior is heavily trimmed with a tool that left oblique marks on the surface. The joint of the ring base is very clear with fingerprints left by the potter (Romano and Zingale 2019, 337, 350–2).

More than one technique might have been used also on vessel AbT.15.391.4 (Fig. 8c), as it seems composed of three different parts. The use of a hand-forming procedure can be hypothesized since the base shows an irregular thickness variation. There is no clear evidence of the use of a fast wheel, as the density of the clay indicates a lack of water. Neck and rim seem attached separately, suggesting the use of some hand-forming technique. The external surface is smoothed by scraping and the shoulders are combed (Romano and Zingale 2019, 354).

The utilisation of different techniques for the realization of closed shapes is an interesting possibility but further research and testing, including petrographic sections, microfabric analysis and experimental replicas, will contribute to a clearer view of the mid-third millennium BCE manufacturing sequence of these characteristic vessels.

## Object biographies

The study of the intended use and actual function of Abu Tbeirah's vessels combines different elements, considering not only the morphology with its physical characteristics (for example the volume or peculiar shape of the vessel) but also



Fig. 8. a. Plain rim jar AbT.14.224.2; b. Trumpet base jar AbT.15.385.7; c. Jar AbT.15.391.4.

the presence of residues or use-wear and the archaeological context. Jars and closed containers could clearly be used in a variety of ways, from long to temporary liquid or dry storage. Surely the size and volume of the containers can help distinguish the movable from the unmovable ones. In contrast, conical bowls and beakers, due to their dimension, shape, and volume, were probably intended as individual-sized serving and eating vessels found in funerary and domestic contexts, and were used both in daily and funeral or ceremonial practices. However, their design makes them perfect to be used as multifunctional containers (Romano and Zingale 2019, 360–1). Some conical bowls were found one on top of the other along

the walls of rooms and with some bitumen incrustations inside. Considering the absence of bones or other evidence of offerings, these findspots could indicate their use as lamps (Fig. 9a). A conical bowl with a hole in the base (Fig. 9b) could suggest use as a funnel<sup>7</sup> while another example, originally connected to a stand, (Fig. 9c) shows a circular depression that could be achieved through pounding, indicating its use as a mortar (Romano and Zingale 2019, 362).

Repair and reuse were very common in Abu Tbeirah and are quite evident in the pottery record. The sarcophagus

<sup>7</sup> Moon 1987, 3; Gruber 2015, 161–2; Romano and Zingale 2019, 343; 360.

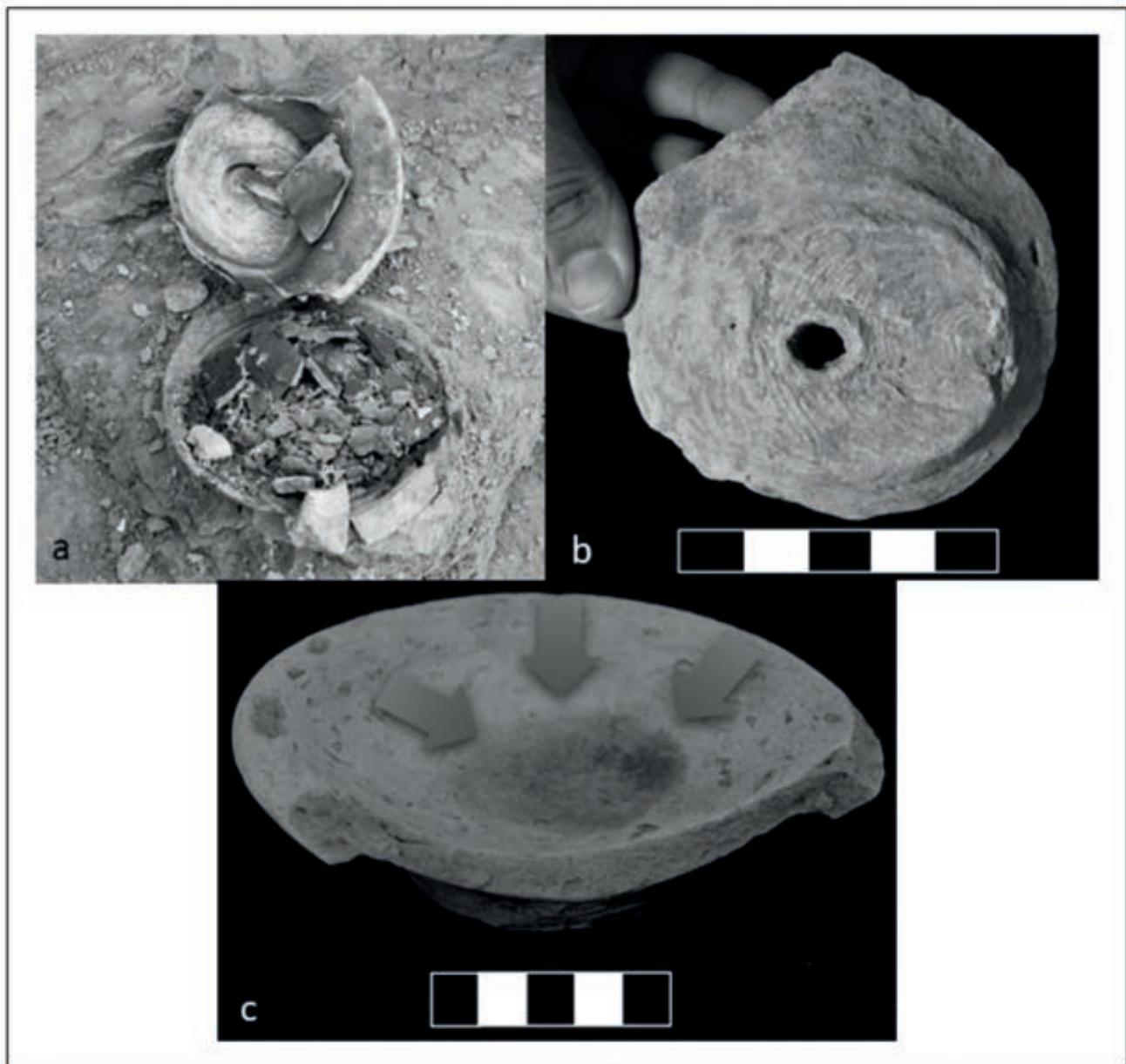


Fig. 9. a. Conical bowls found along a rooms' wall; b. Conical bowl AbT.14.242.39; c. Conical bowl AbT.12.4.2.

of Grave 17 was repaired using a bitumen glue after firing (Fig. 10a) (Romano and Zingale 2019, 361–2) whereas some clay was used, before firing, to repair the string cut base of a miniature plain rim jar (Fig. 10b) (Romano and Zingale 2019, 338, 361). Furthermore, the bottom of a ring base jar was fixed using a rounded fragment of a coarse vessel (Fig. 10c).<sup>8</sup>

Building A was abandoned during the last occupational phase and started to be used for trash disposal (Romano 2019, 67). In a huge dump pit dug inside Room 7 and then cut by Grave 15 and 16, a vast quantity of vessels was found, including at least 250 drinking vessels, 80 jars of different

dimensions, and a variety of other shapes (Fig. 11a).<sup>9</sup> In another huge dump pit (US 84) that cut the filling and the ground surface of Room 2 were found at least 19 drinking vessels, 5 medium dimension jars and several fragments of coarse big vat (Fig. 11b) (Romano and Khadem 2019, 97).

## Conclusions

The analyses carried out so far on Abu Tbeirah's pottery have shown important results. Despite the wheel technology introduction, it seems that other techniques continued to be used without major changes. Thus, the diffusion of wheel-throwing could have been a phenomenon that took place

<sup>8</sup>Doojes-Nieuwenheuse 2007; 2008; 2009; Romano and Zingale 2019, 361–2.

<sup>9</sup>Romano 2019, 66–7; 86; Romano and Khadem 2019, 141; Romano and al-Hosseini 2019, 222.

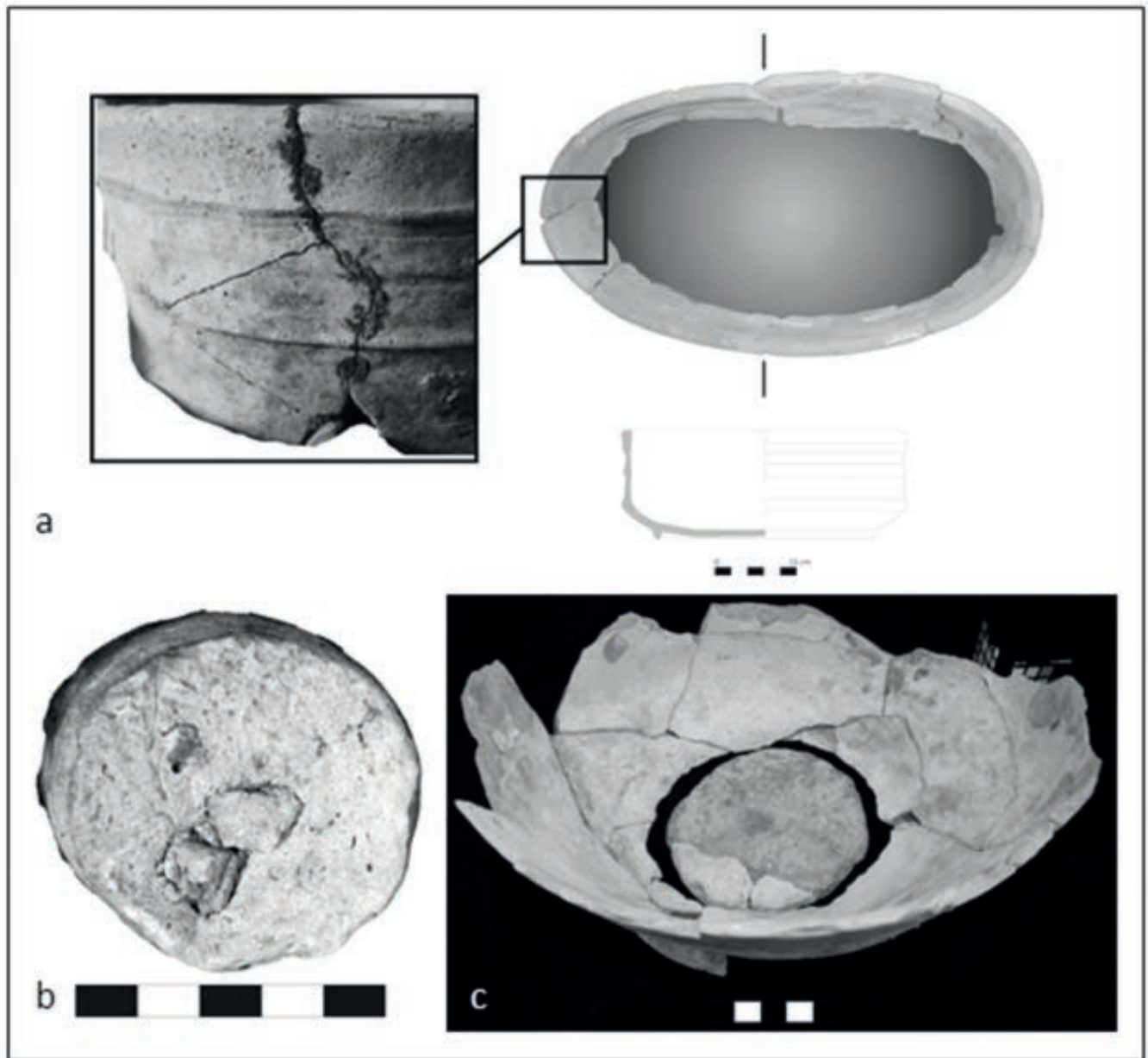


Fig. 10. a. Sarcophagus of Grave 17 (US 225); b. Base of miniature jar with plain rim AbT.14.221.70; c. Ring base jar AbT.14.268.1+4.

slower than expected, as only small vessels were entirely realized through RKE. Further research involving experimental reconstructions of Abu Tbeirah's vessels will help to clarify the handmade techniques used, how much the wheel was integrated into the production system and the ability of potters to use it. The research will also aim to reconstruct the status of the potter in the ED III/Akkadian society, their role within the changing centralized economic system and their connection with the institutions, placing Abu Tbeirah's data into the wider Mesopotamian administrative and socioeconomic context and investigating to what degree ceramic production mirrors the situation of other crafts with regards to accessibility and cost of raw materials, manufacturing process, final use of these objects, and intended recipients.

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All photographs are courtesy of the Iraqi-Italian Mission at Abu Tbeirah.



Fig. 11. a. Dump Pit inside Room 7; b. Dump pit US.

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## Arabic Abstract

## ٤. تِقْنِيَةُ صِنَاعَةِ الْفُخَّارِ فِي جَنُوبِ بِلَادِ مَا بَيْنَ النَّهْرَيْنِ: الْأَدَلَّةُ مِنْ مَوْقِعِ أَبُو طُبَيْرَةَ (مَارْتَا زِينْغَال)

لا تزال مجموعات الفُخَّار البسيطة في جنوب بلاد ما بين النهرين التي تعود إلى الفترة الانتقالية بين عصر السلالة المُبَكِّر الثالث والعصر الأكدي غير مُحدّدة ومفهومة تماماً نظراً لعدّة عوائقٍ منها: التنوّع الكبير في أنماط الفُخَّار والاختلافات في مخزون الفُخَّار بين مجموعات القبور المحفوظة جيّداً ومخزون الفُخَّار المنزلي المُتجزّأ وإستمرارية الأشكال في النصف الثاني من الألفية الثالثة قبل الميلاد، وهي علامة على الإستمرارية الثقافية. ولذا يتطلّب تحليل الفُخَّار البسيط في الفترة الانتقالية بين عصر السلالة المُبَكِّر الثالث والعصر الأكدي وجهات نظرٍ جديدةٍ بما في ذلك دراسة سلسلة العمليات لأنواعٍ مُختلفةٍ وقطعٍ أثريةٍ فنيةٍ من الفُخَّار ودراسة سيرة وتاريخ كلّ قطعةٍ على حدةٍ (إستخدامها وترميمها وإعادة إستخدامها والتخلّص منها). وقد يُسهم البحث في المهارات التي ينطوي عليها عمل الخزّافين وخياراتهم الفنيّة وسلوكياتهم في تحديد هويتهم الفنيّة من خلال النظر إليهم كأفرادٍ يعملون ضمن المُجتمع ويخضعون للعوامل البيئية والثقافية. ويعرّض هذا البحث النتائج الأولى والآفاق المُستقبلية لتحليل الفُخَّار في موقع أبو طُبَيْرَةَ كدراسةٍ مُستمرّةٍ للجوانب المذكورة أعلاه.

## Abstract

The present paper focuses on the pottery found by the Italian expedition of the Centro Ricerche Archeologiche e Scavi di Torino and the University of Turin during surface surveys and stratigraphic excavations carried out in the area of Tell Baqarat 7–8 (TB7–TB8) between 2013 and 2019. TB7 and TB8 are the oldest mounds in the Tulūl al-Baqarat archaeological area; the ceramic material collected so far can be assigned mostly to the Uruk period and, at least in the case of the pottery excavated from the central and northwestern sectors of TB7, to the Early Uruk (Late Chalcolithic 2) phases. While comparisons with pottery from Uruk and other southern sites confirm this chronological framework, they also suggest that some elements of the ceramic complex at TB7 could be dated to the very end of the Ubaid period. The analysis of the pottery recovered by the Italian expedition provides new insights into the ceramic traditions of the Early Uruk period in southern Mesopotamia.

Jacopo Bruno

## 5. Ceramic traditions in Late Chalcolithic southern Mesopotamia: some thoughts on the ceramic assemblages from the central and northwestern sectors of Tell Baqarat 7

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The archaeological complex of Tulūl al-Baqarat, located about 20 km south of the modern city of al-Kūt (Wasit, Iraq), consists of a group of mounds with traces of settlements dating from the late fifth/early fourth millennium BCE to the Islamic period. Archaeological investigations have focused on Tulūl al-Baqarat since 2008, when a team of archaeologists from the State Board of Antiquities and Heritage of Iraq (SBAH) conducted the first extensive excavations on the largest mound, Tell Baqarat 1 (TB1). The Italian archaeological expedition, sponsored by the Centro Ricerche Archeologiche e Scavi di Torino (CRAST), the University of Turin and the Ministry of Foreign Affairs and International Cooperation, has been active in the area since 2013 under the direction of Prof. Carlo Lippolis. Initially, the Italian team's efforts were directed towards documenting the archaeological remains on the Tulūl al-Baqarat mounds through surveys and reconnaissance. Following this preliminary work, further reconnaissance was accompanied by extensive excavations on two of the most important tells in the area: Tell Baqarat 1 (TB1; Lippolis 2020a), which had already been intensively excavated by Iraqi archaeologists, and the complex formed by Tell Baqarat 7 and Tell Baqarat 8 (TB7–TB8; Lippolis 2020b; 2020c), which had never before been explored. The most interesting data for the reconstruction of settlement phenomena in the area come from these last two tells, TB7–TB8, which have also provided invaluable insights into the material culture and funerary practices attributable to the earliest phases of occupation known for Tulūl al-Baqarat and its surroundings (Bruno 2020; Quirico 2020; Ragazzon 2020).

The TB7–TB8 complex consists of two roughly circular mounds covering an area of 8 ha and 4 ha respectively. These

tells are separated by an approximately 80 m wide depression and it is likely that they formed a single site, at least for a period of time. The surface of both tells is relatively regular, except for the central part of TB7, where an elevation rises up to 4 m above the surrounding plain.

After an initial inspection of the site in 2013, the activities of the Italian team in the TB7–TB8 area were officially inaugurated in 2015 with an intensive survey, analysis of the distribution of surface finds and the excavation of two small trenches on the central elevation (soundings S1 and S2) and one trench in the northwestern part of the site (sounding S3). S3 was extended during the 2016 season, revealing the remains of structures occupying an area of considerable size, referred to as Building A (Lippolis 2016, 88–96)<sup>1</sup>.

Based on the interpretation of the data and the materials collected during the first archaeological campaigns, it was suggested that TB7 and TB8 were occupied from the Uruk/Late Uruk period to the Early Dynastic I period (Lippolis 2016, 89)<sup>2</sup>, and that the structures of the Building A discovered in S3 should be attributed to the Jemdet Nasr–Early Dynastic I phases (Lippolis 2016, 96).

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<sup>1</sup> See Di Michele 2016 for the preliminary study on the pottery collected during these first seasons.

<sup>2</sup> Most of the pottery collected from the surface can be attributed to an Uruk cultural horizon, with fewer sherds dating to later phases. Some of the material that can be associated with the Uruk period has close parallels in the ceramic assemblages from Building A and the central terrace of TB7 (see below), while some other forms, and in particular the very few examples of bevelled-rim bowls, are not represented in either of these sectors.



**Fig. Plan** of TB7–TB8, showing the location of the excavated areas (2015–2019). Source: Mirko Furlanetto.

In 2017, the excavation of TB7 continued with the extension of S3 and the opening of three new soundings (S4–S6) on its central elevation (Fig. 1). These activities, together with the progress made in the study of the ceramic material from TB7, have led to changes in the chronological framework previously reconstructed for the site and allowed a more precise definition of the main phases of occupation in its two main sectors, which should be dated to the Early Uruk Period (Late Chalcolithic 2) (Bruno 2020, 358–71). Furthermore, the research carried out has shown that the ceramic complex of TB7 does not show major differences in the two sectors studied, which allows the attribution of the excavated structures of Building A and the central terrace to the same chronological and cultural horizons.

The central sector of the site is characterised by the presence of a terrace or platform with traces of thick, robust walls decorated with niches and buttresses (Lippolis 2020c). This platform must have served as a support for buildings that have almost completely disappeared and that were probably decorated with painted decorations, terracotta cones and cylinders. Some fragments of painted mud bricks were found on the northwestern slope of the central elevation, while significant quantities of cones and cylinders were found throughout the area and, to a lesser extent, in the other

soundings and on the surface of the site. The ceramic material from this sector forms a coherent corpus in terms of fabrics and shapes, and shows remarkable similarities with that excavated from the northwestern sector (S3). On the basis of inter-site comparisons, this ceramic assemblage can probably be placed within a chronological horizon referable to the Early Uruk period (Late Chalcolithic 2).

Walls belonging to one or more buildings, conventionally referred to as Building A, were exposed in S3, approximately 150 m northwest of the central terrace. Approximately twenty rooms with residential and/or productive functions were exposed in this sector, reflecting at least three major phases of occupation (Fig. 2).

The most recent phase, which can be dated to the Parthian period on the basis of relevant ceramic material<sup>3</sup>, seems to have been characterised by a limited, though not occasional, occupation of the area, with the construction of working installations, facilities for the processing and production of goods, and drainage systems.

<sup>3</sup>The archaeological information and materials of the later occupation phases on TB7 and in the area of Tūlūl al-Baqarat are being published (Bruno, Quirico forthcoming).



Fig. 2. Plan of S3, Building A. Source: Mirko Furlanetto.

The other two phases can be linked to a much earlier period, most likely coeval with the main occupational levels documented on the central elevation and attributable to an Early Uruk chronological horizon. During the latest of these two phases, identified in the northwestern part of S3, the area appears to have been provided with numerous working and fire facilities, suggesting that its function was largely related to craft and manufacturing activities. With regard to the oldest phase recorded so far, this sector must have been used for both productive and domestic purposes, as clearly shown by the archaeological evidence that has been the subject of indepth research (Quirico 2020). Moreover, several burials found under the floors of the rooms and near the corners of the walls belonging to this phase are of interest, as they have provided material useful for defining a chronological framework and for identifying the cultural horizons in this sector (Ragazzon 2020).

The ceramic material collected from the central and northwestern sectors of TB7 can be largely assigned to a main phase dating back to the Early Uruk period<sup>4</sup>. This paper presents a selection of the most common or representative pottery types found in these sectors, which form the main components of the TB7 ceramic complex<sup>5</sup>.

<sup>4</sup>To date, few specimens can be traced back to the (Late) Ubaid period, while pottery post-dating the Early Uruk period (Middle/Late Uruk–Jemdet Nasr–Early Dynastic phases) rarely comes from stratified contexts and almost exclusively from the surface of the site. Finally, sparse fragments of green-glazed pottery, probably of Parthian date, come from surface assemblages and the surface layers of the trenches (see also S7, where clear traces of occupation could be attributed to the Parthian period; Bruno 2020, 370).

<sup>5</sup>Bruno 2020.

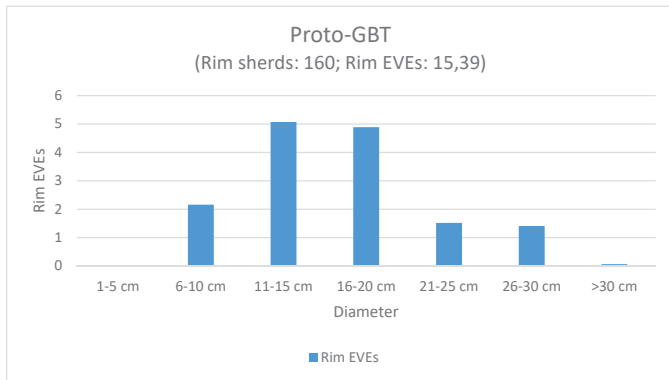


Fig. 3a. Proto-GBT: average diameter. .

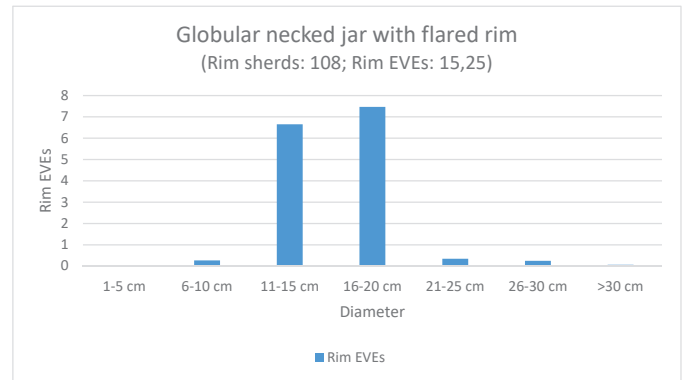


Fig. 4a. Globular necked jar with flared rim: average diameter.

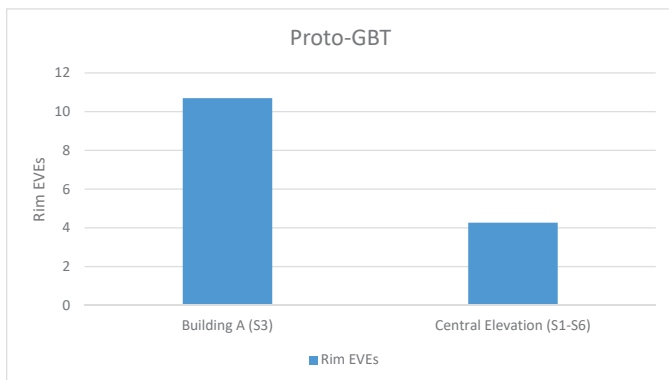


Fig. 3b. Proto-GBT: distribution. .

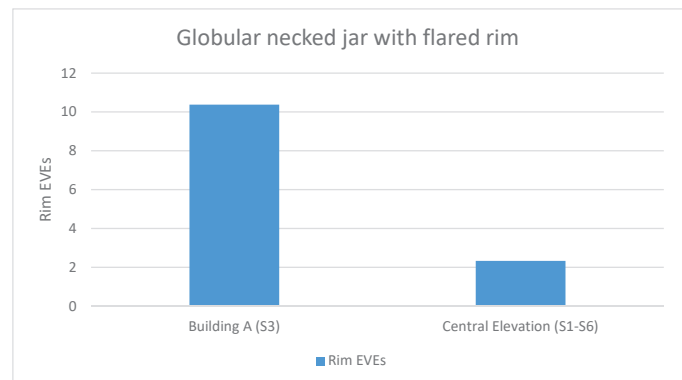


Fig. 4b. Globular necked jar with flared rim: distribution. Source:

The characteristics of the relevant shapes are summarised in diagrams illustrating their quantification in terms of number of rim sherds and estimated vessel equivalents (EVEs or rim percentages), as well as their distribution in the northwestern (S3) and central (S1–S6) sectors.

The most abundant and easily recognisable diagnostic shape within the TB7 ceramic corpus coincides with the mass-produced<sup>6</sup> vessel type known as coarse flower pot or Proto-*Grober Blumentopf* (proto-GBT)<sup>7</sup> (Fig. 3). Proto-GBTs are rather irregular vessels with the shape of a truncated cone and present a ring base with circular impressions around its lower part (Fig. 14.1–3). The ceramic body consists of a very coarse fabric with copious vegetal inclusions. The diameter can also vary considerably between specimens, but is usually between 11 and 20 cm. Vessels of this type are clearly handmade and show visible fingertip marks made by the potter when modelling the base. It is possible to observe different types of

smooth rim, which can be slightly rounded, pointed or, more commonly, cut at an angle. In several specimens, particularly the better-preserved ones, the presence of horizontal marks running around the entire internal surface and rim of the vessel suggests the use of a wet cloth for finishing. The outer surface, however, shows no signs of surface treatment.

Proto-GBTs are very common at TB7, where this vessel type is one of the most widespread, especially in the areas of Building A and the central elevation. This shape has parallels at Uruk, where it appears among the innovations of the Early Uruk period (Late Chalcolithic 2); relevant examples have been identified in level XIIb of the Eanna precinct (Sürenhagen 1986, T/314; 1999, 15, pl. 5.6) and level 5 of sounding II–II', in the area of the Steingebäude (Boehmer 1972, pl. 53.352–3). In this last sounding, proto-GBTs were found in levels 5<sup>8</sup> to 1<sup>9</sup> (corresponding to levels XIIb–IX of the Eanna precinct) and were accordingly dated to the Early Uruk period (Late Chalcolithic 2)<sup>10</sup>. Similar shapes are also documented at

<sup>6</sup>The other mass-produced vessel typical of the Uruk period, the bevelled-rim bowl, is a fairly rare find within the ceramic complex at Tūlū al-Baqarat. Semi-complete specimens were rarely found during the survey of TB7, and very few sherds were recorded in the TB7–TB8 and TB1 areas (Di Michele 2016, 101). Interestingly, however, no sherds of this vessel type were recovered from the excavated sectors.

<sup>7</sup>This designation is borrowed from German literature (Sürenhagen 1999, 15, 123–4). See also Nissen 1970, 138–9 and Sürenhagen 1999, 99–100.

<sup>8</sup>According to Sürenhagen (1999, 122–3), level 5 can be related to the so-called 'proto-Uruk' period.

<sup>9</sup>Level 4 (Boehmer 1972, pl. 54.387–8), Level 3 (Boehmer 1972, pl. 54.402–3) and Level 1 (Boehmer 1972, pl. 55.434–5). Only specimens that are clearly distinguished by the presence of impressions on the base are considered here.

<sup>10</sup>See Sürenhagen 1999, pl. 21.

other southern Mesopotamian sites<sup>11</sup>, such as Tell Qirawi (in the region of al-Kūt; Hrouda 1973, fig. 6.12) and Tell el'Oueili (Calvet 1991, pl. X.102, pl. XXc), and always originate from Early Uruk contexts<sup>12</sup>.

The excavations in the central and northwestern sectors of TB7 produced large quantities of other shapes in addition to proto-GBTs. In particular, a significant number of sherds belong to medium-sized closed forms, represented mainly by globular necked jars with flared rims, jars with tubular spouts and smaller jars with horizontal ribs.

Globular necked jars with flared rims (Fig. 4; Fig. 14.4–11) are abundantly represented on the site. The body of these vessels was modelled by hand and later refined with the addition of the neck and the ring base<sup>13</sup>, which were made separately and joined onto the body before firing. Similar jars were fairly common from the Late Ubaid period<sup>14</sup> and throughout the Late Chalcolithic 1 (Calvet 1991, pl. XIII.134, pl. XVI.171; Boehmer 1972, pl. 48.109–111, pl. 50.165–9, pl. 51.177 and 211, pl. 53.342–36. See also Baldi and Abu Jarryad 2012, 165, fig. 1) and 2 (Boehmer 1972, pl. 54.374–6, 399, 418; Sürenhagen 1986, T/299–300) periods, as reflected in the ceramic sequences of Uruk and Tell el'Oueili<sup>15</sup>.

Jars with straight tubular spouts directly attached to the shoulder appear in two variants (Fig. 5): spouted jars with a globular body (Fig. 15.12–13) and spouted jars with an ovoid body (Fig. 15.14–17). Both variants display a short neck and a plain everted rim<sup>16</sup>. Also in this case, the ring base and the spout were modelled separately and added to the body at a later stage. These vessels are traditionally recognised as

<sup>11</sup> A comparable vessel was found in the Uruk levels of Tello (De Genouillac 1934, pl. III.5293). However, in this specific case, it is not clear if the specimen is handmade or, unlike the vessels from Tulūl al-Baqarat, wheel-made. See also Adams and Nissen 1972, fig. 49, WS 178/6.

<sup>12</sup> Similar shapes found in Susiana seem to originate from later contexts, hypothetically dating back to the Jemdet Nasr period (Steve and Gasche 1971, 133–6, 147, pl. 26.13, pl. 27.19, and pl. 29.13).

<sup>13</sup> No complete examples of this shape were found at the site, and it is therefore impossible to reconstruct the characteristics of the base with any degree of certainty. However, large numbers of complete or fragmented ring bases found in the same contexts would seem to support their association, and also suggest that ring bases were made separately and added to the body before firing. See Calvet 1991, pl. XVIII.186.

<sup>14</sup> Tell el'Oueili (Lebeau 1983, pl. XVI.2–5), Ras el-Amiya (Stronach 1961, 115–16, pl. LV.19), Uruk (Boehmer 1972, pl. 45.24–8, pl. 46.67–74, and pl. 53.304–9), Tell Zurghul (Volpi 2020, fig. 8.3–6).

<sup>15</sup> The production of these shapes continued well into the Early Dynastic period (McMahon 2006, table 96).

<sup>16</sup> Given the degree of fragmentation of many of these vessels, it is in most cases extremely difficult to determine which of the two variants, globular or ovoid, the excavated specimens represent. For this reason, these variants have been considered together in this paper.

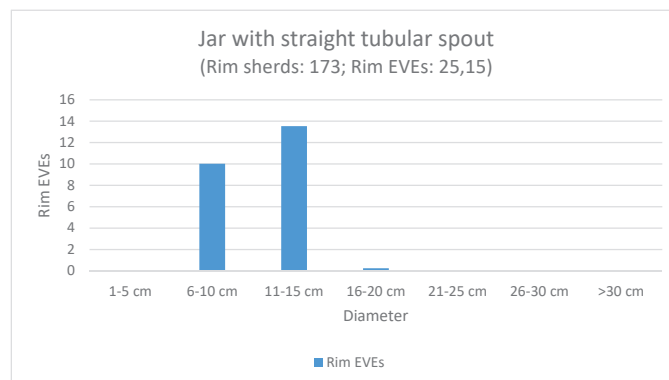


Fig. 5a. Jar with straight tubular spout: average diameter.

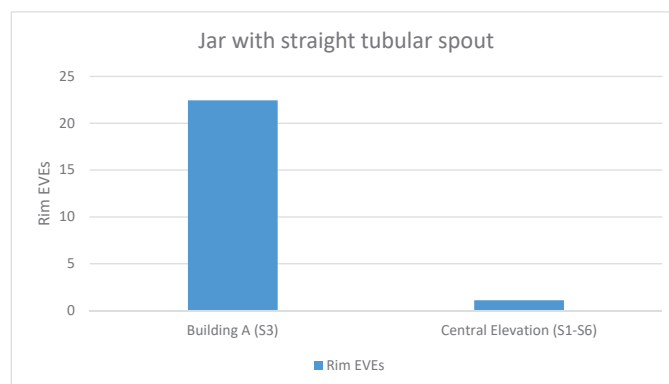


Fig. 5b. Jar with straight tubular spout: distribution.

chronological indicators of the Early Uruk period in southern Mesopotamia (Adams and Nissen 1972, 100–1, fig. 30a). At Uruk, many fragments of tubular spouts and ring bases were found in the deep levels of the Steingebäude sounding (Boehmer 1972, pl. 46.42–8, pl. 49.115–7, 134–7, pl. 53.313–4), which can be dated between the Late Ubaid and the Late Chalcolithic 1 periods (levels XVIII–XIII of the Eanna precinct; Sürenhagen 1999, 127 pl. 14). In the Eanna area, jars with tubular spouts were equally documented in ceramic assemblages associated with Late Chalcolithic 1 levels (Levels XIVc–XIII; Sürenhagen 1986). Both in the Eanna (Sürenhagen 1986, T/245, T/246, T/304, T/308, T/327; 1999, pl. 5.11) and the Steingebäude (Boehmer 1972, pl. 54.377–384, 389, 400, pl. 55.430–2) areas, this shape continued to be attested throughout the Early Uruk period (Late Chalcolithic 2), disappearing shortly before the Middle Uruk period (Late Chalcolithic 3; Sürenhagen 1999, 16)<sup>17</sup>.

Another medium- or small-sized closed shape, found particularly in S3, is the jar, which has one to three horizontal ribs with a triangular section. (Fig. 6). The ribs are arranged parallel to one another, either below the rim or on the shoulder of the vessel (Fig. 16.21–26). Although all specimens of this

<sup>17</sup> It should be emphasised that from the Middle Uruk period and throughout the Late Uruk period, a version of this vessel with the spout bent downwards became increasingly common, gradually replacing earlier vessels with straight spouts pointing upwards. (see Adams and Nissen 1972, 100–1, fig. 30o).

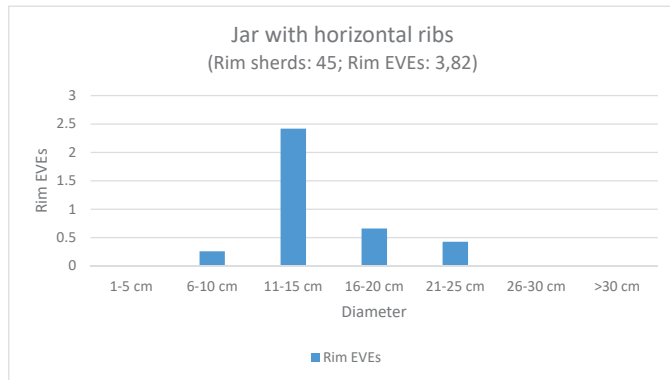


Fig. 6a. Jar with horizontal ribs: average diameter.

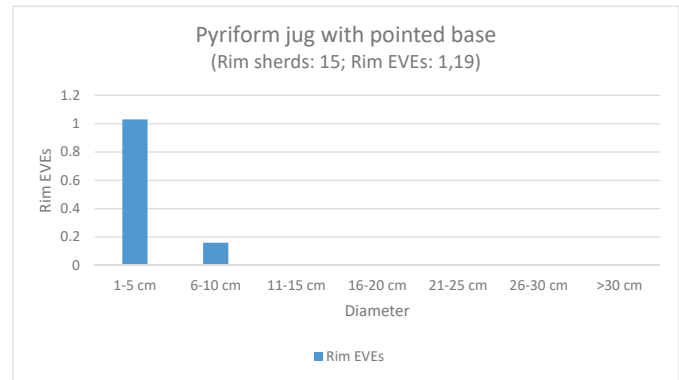


Fig. 7a. Pyriform jug with pointed base: average diameter.

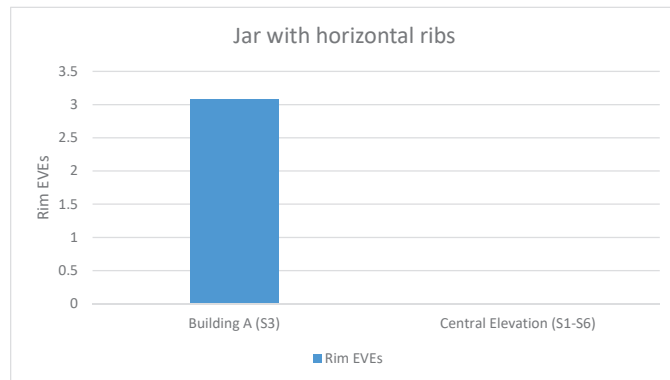


Fig. 6b. Jar with horizontal ribs: distribution.

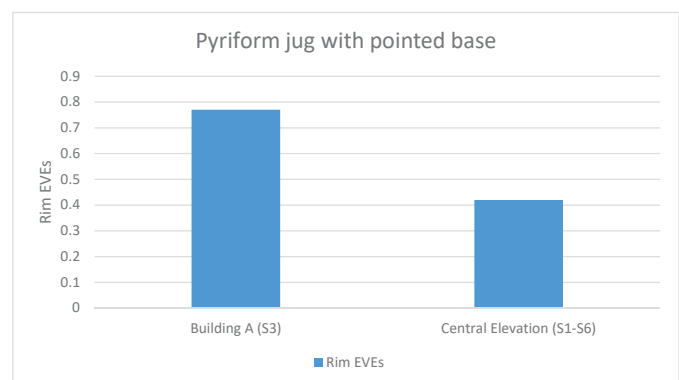


Fig. 7b. Pyriform jug with pointed base: distribution.

shape are incomplete, numerous rim sherds are associated with a spout and it is therefore possible to suggest that at least some, if not all, of these vessels were characterised by the presence of a small spout attached to the rim. This type of spouted ribbed vessel does not appear to have been widespread in southern Mesopotamia. Vessels with spouts similar to those found at TB7, but displaying a notched band with a circular section instead of ribs, come from the post-Ubaid<sup>18</sup> (Late Chalcolithic 1) levels of Tell el'Oueili (Calvet 1991, pl. XVIII.184). More sherds seemingly belonging to a comparable shape originate from the surface of Tell Qirawi (Hrouda 1973, fig. 7.17–18); their chronological attribution, however, is more complex, and they are broadly placed between the fourth and third millennia BCE (Hrouda 1973, 13). Lastly, a sherd resembling those from TB7 in the type of spout and horizontal ribs is documented in the ceramic complex of Tell Uqair and is attributed to the Ubaid period (Lloyd, Safar, Frankfort 1943, pl. XXa.6).

One last closed shape that is not very common in the ceramic complex of TB7 and is only represented by a few specimens from Building A and the central terrace is the pyriform jug with a pointed base (Fig. 7; Fig. 16.27). This shape appeared for the first time at Uruk, in the ceramic assemblages of levels XV–XIII (Late Chalcolithic 1; Boehmer 1972, pl. 53.350; Sürenhagen 1986, T/391; 1999, 14, 123,

pl. 5.8)<sup>19</sup>, and was largely used during the Early Uruk period (Sürenhagen 1986, T/315, 221, 204, 53; 1999, 14, 18)<sup>20</sup>, to the point of being considered one of the chronological indicators of this period in southern Mesopotamia (Adams and Nissen 1972, 101, fig. 30e. See also De Genouillac 1934, pl. III.4693).

Large vessels, probably intended for storage, are represented exclusively by a main type of basin or crater with a flat rim thickened inside and out. (Fig. 8; Fig. 16.18–20). They occasionally have a smooth rib below the rim or, more commonly, a band decorated with semicircular impressions. Similar vessels were found in Late Chalcolithic 1 levels at Tell el'Oueili (Calvet 1991, pl. XII.119), while, in the ceramic sequence of Uruk, they stand out among the innovations introduced with the Early Uruk period (Late Chalcolithic 2). In particular, they originate from level XIIb of the Eanna precinct and level 4 of sounding II–II', in the area of the Steingebäude (Boehmer 1972, pl. 54.367; Sürenhagen 1986, T/317–326; 1999, 15, pl. 5.7a, pl. 6.7b, 16.1). Sherds belonging to large craters were also documented in layers belonging to the Middle Uruk period, at least up to level 6 of the Eanna

<sup>18</sup> The post-Ubaid period is also referred to as 'proto-Uruk' by Sürenhagen (1999). On this designation and its use, see also Finkbeiner 2001.

<sup>19</sup> A specimen of this shape was also found in a post-Ubaid (Late Chalcolithic 1) context at Tell el'Oueili (Calvet 1991, pl. X.105, pl. XXa).

<sup>20</sup> A further specimen (T/53) found in level VI (Middle Uruk) comes from a secondary context and cannot be placed within a reliable chronological framework (Sürenhagen 1999, 16).

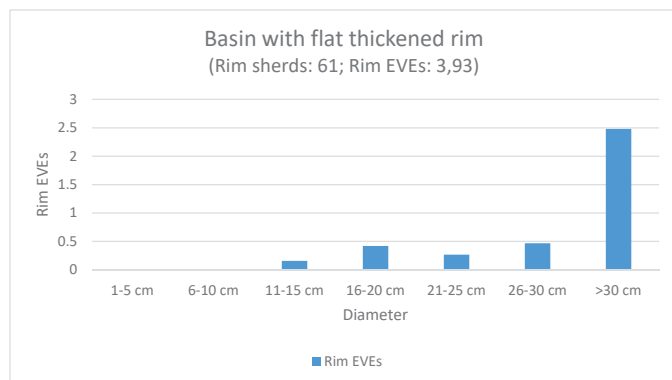


Fig. 8a. Basin with flat thickened rim: average diameter.

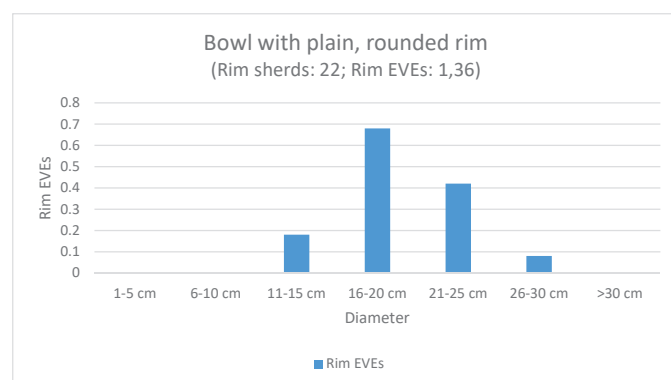


Fig. 9a. Bowl with plain, rounded rim: average diameter.

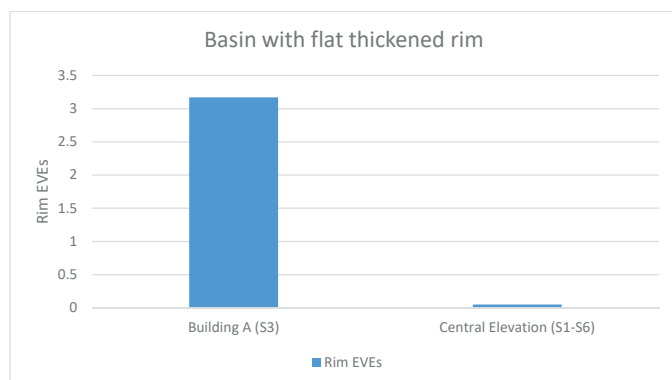


Fig. 8b. Basin with flat thickened rim: distribution.

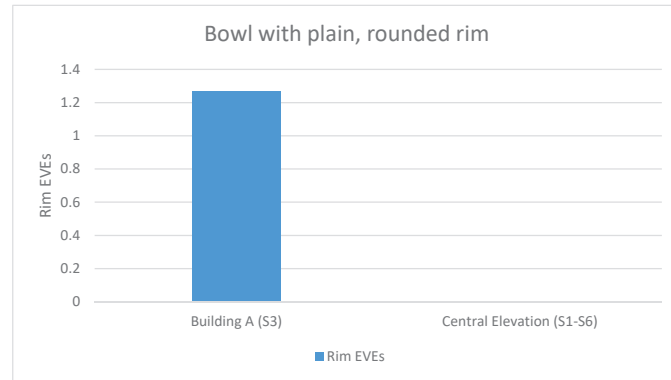


Fig. 9b. Bowl with plain, rounded rim: distribution.

precinct (Sürenhagen 1999, 16, pl.6.16.2. See also Finkbeiner 1991, pl.55.21).

Sherds and rare complete specimens of grey, red or painted ware are of great interest, although less represented in the areas of Building A and the central terrace.

The grey-ware repertoire mainly consists of bowls with a plain, rounded rim (Haller 1932, pl. 17, D a; Sürenhagen 1986, T/227, 201)<sup>21</sup> (Fig. 9; Fig. 17.28–30), and small carinated bowls with a spout and, in some cases, a ring base (Sürenhagen 1986, T/382–378, 370–368, 363–362, 348, 253, 228; 1999, pl.5.1) (Fig. 10; Fig. 17.31–38), while fragments of everted rims similar to those exhibited by jars with tubular spouts are rare. The same shapes were also produced in the so-called red ware, which is characterised by the presence of red slip on the interior and exterior surfaces of the vessel. The different types of grey-ware and red-ware bowls are well documented at Uruk, at least from level XIV of the Eanna precinct (Haller 1932, pl. 17 D), and chiefly in Early Uruk (Late Chalcolithic 2) levels (Sürenhagen 1986, T/333–332; 1999, pl.5.2). Moreover, the carinated bowls from Tulūl al-Baqarat are occasionally

<sup>21</sup> A single sherd with at least one straight side, which could also belong to another shape, was found in Building A. However, given its small size, it is not possible to determine whether its appearance is due to warping during the production process or whether it is related to the rectangular or triangular shape of a vessel not dissimilar to the stone trays found in S3 and on the surface of TB7 (see Ragazzon 2020, fig.267; Lippolis 2020d, pl.45).

made of common ware and can lack surface treatment, consistently with what observed in the Uruk levels of Tello (De Genouillac 1934, 30, pl. 19.2, pl. III.5441).

Painted wares were rarely found in the area of TB7 and mostly come from the surface of the site and from Building A. Painted motifs are generally observed on small bowls with strap handles, spouted bowls and deep bowls or cups, which also occur without decoration. The few complete specimens, as well as some red ware carinated bowls, come from some of the burials excavated in Building A (Ragazzon 2020, fig. 270).

In the TB7 area, strap-handled bowls (Fig. 11; Fig. 18.39–41) are represented by a few diagnostic sherds and two complete specimens from funerary contexts. In terms of surface treatment, these two vessels are coated with red slip and heavily abraded burgundy/violet slip or paint respectively. The remaining sherds show no evidence of surface treatment, but it is not clear whether this is due to a deliberate choice by the potter or rather the loss of decoration and surface integrity due to erosion or other causes that may have affected their preservation over time.

The strap-handled bowls from TB7 display some analogies with similar but slightly bigger vessels found at Uruk (Sürenhagen 1986, T/5, T/144, T/183; 1987, O/24) and other southern sites (Adams and Nissen 1972, fig. 30i, j; fig. 41 WS 137; fig. 52 WS 201), primarily in contexts dated to the Middle and Late Uruk (Late Chalcolithic 3–5) periods, although comparable specimens are also attested from earlier contexts (Sürenhagen 1986, T/388). As far as shape and chronology are

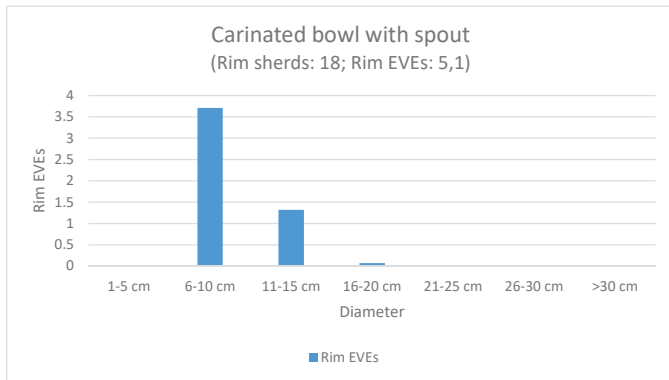


Fig. 10a. Carinated bowl with spout: average diameter.

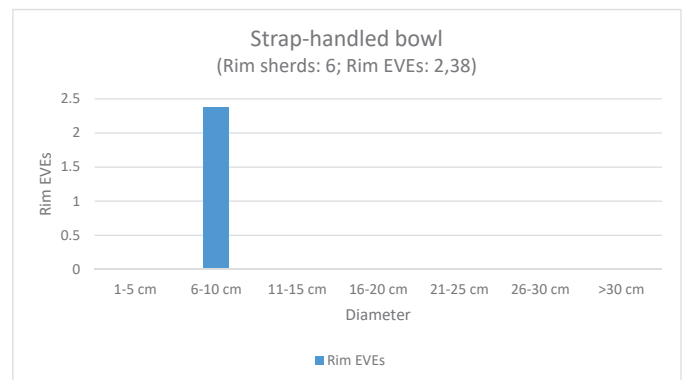


Fig. 11a. Strap-handled bowl: average diameter.

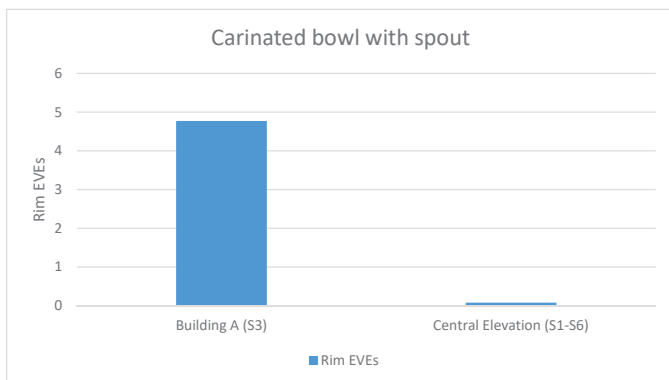


Fig. 10b. Carinated bowl: distribution.

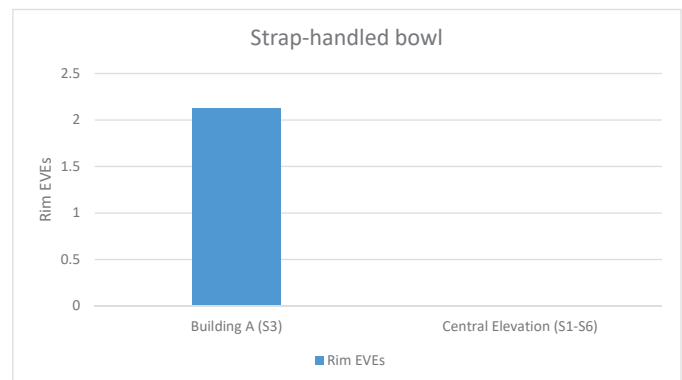


Fig. 11b. Strap-handled bowl: distribution.

concerned, the small bowls from Tello (De Genouillac 1934, pl.20.3b; pl.III.5538; Parrot 1948, fig.10)<sup>22</sup> and Ur (Woolley 1955, pl.53, aU.49) are close parallels for the strap-handled bowls from TB7. These have very interesting comparisons also in vessels from northwestern Iran and the Hamrin area, which are dated to the fourth millennium BCE, and, more precisely, to the Late Uruk and Jemdet Nasr periods<sup>23</sup>. Finally, specimens from Susa (Miroschedji 1976, fig.8.8) and Chogha Mish (Delougaz and Kantor 1996, 48 (Protoliterate Family XVIIIa), fig. 8, pl.82 A–D) in Iran, and Tell Hassan (Nannucci 2012, fig.5.45) in the Hamrin area are remarkably similar to the strap-handled bowls from TB7, even though they present bigger handles with a large, circular or flat section.

Deep bowls or beakers are only represented by few specimens from Building A, among which two complete vessels found in funerary contexts (Fig.12; Fig.18.45–47). Almost all of these bowls are decorated with geometric motifs and painted in black, while only one of the two complete vessels

has no surface treatment at all.<sup>24</sup> Decorations predominantly consist of horizontal or vertical lines, cross-hatched bands and patterns, polka dots, triangles and lozenges. The shape and, where present, the decorations of these vessels are very similar to Late Ubaid and post-Ubaid (Late Chalcolithic 1) specimens from Uruk (Kalb 1983, pl.31.17; Sürenhagen 1986, T/371), Tell el'Oueili (Calvet 1991, pl.XVI no.160) and Tell Uqair (Lloyd, Safar, and Frankfort 1943, pl. XIXb.3, 18).

Unlike the shapes discussed above, small spouted bowls were exclusively recovered from funerary contexts, in S3 (Fig.13; Fig.18.42–44). They are represented by three complete specimens presenting homogeneous red slip on the interior and exterior surfaces (Fig.18.42), black paint on a buff body (Ragazzon 2020, fig.270 centre) (Fig.18.43), and red slip with black paint on a painted white or cream ground (Ragazzon 2020, fig.270, left) (Fig.18.44), respectively. In the first and third cases, the slipped exterior surface displays clear traces of burnishing. The decoration of the last vessel is of interest, as burnished red slip and white and black paint occur together, similarly to what observed in a fragmentary vessel from level XIV of the Eanna precinct (Haller 1932, pl.17 D I; Sürenhagen 1986, T/364), which is characterised by the application of the same decorative technique.

<sup>22</sup> According to Parrot (1948, 42–3), the so-called ‘Warka V’ level (De Genouillac 1934) can be placed between level XII and level VII of the Eanna precinct and, more precisely, between levels IX and VIII.

<sup>23</sup> However, it has to be noted that, at least at Susa, this shape was excavated from the same contexts as vessels belonging to the proto-GBT type (Steve and Gasche 1971, pl.83).

<sup>24</sup> The outer surface of the bowl is slightly abraded and it is not possible to determine whether the decoration was originally present and has disappeared over time.

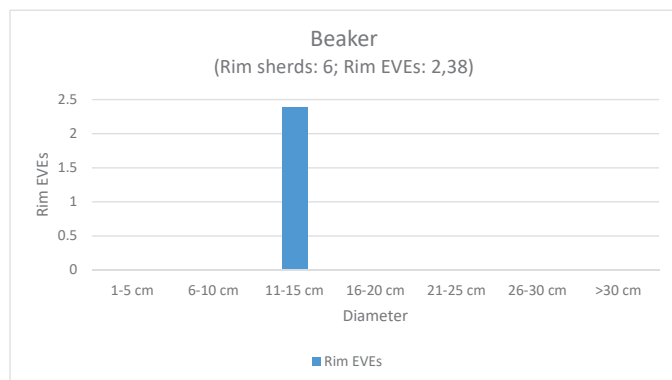


Fig. 12a. Beaker: average diameter.

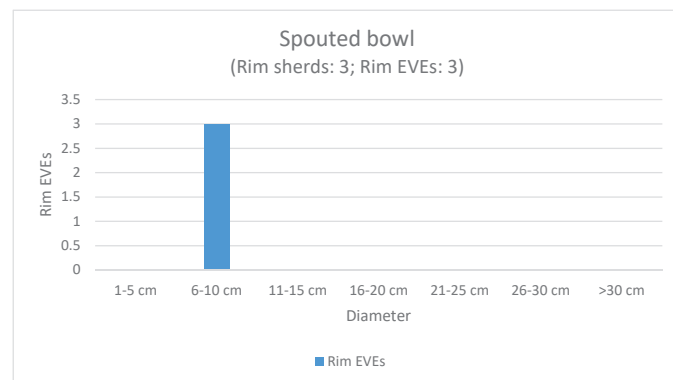


Fig. 12b. Beaker: distribution.

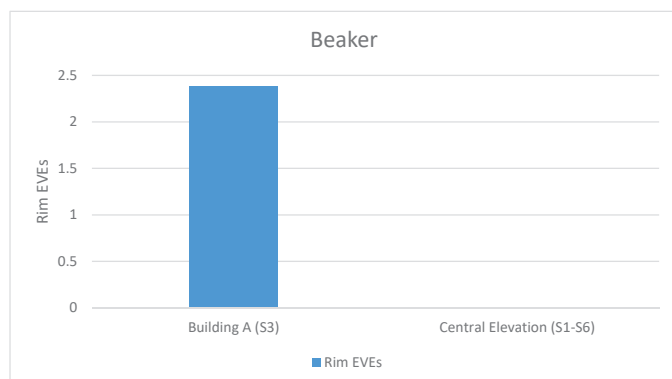


Fig. 13a. Spouted bowl: average diameter.

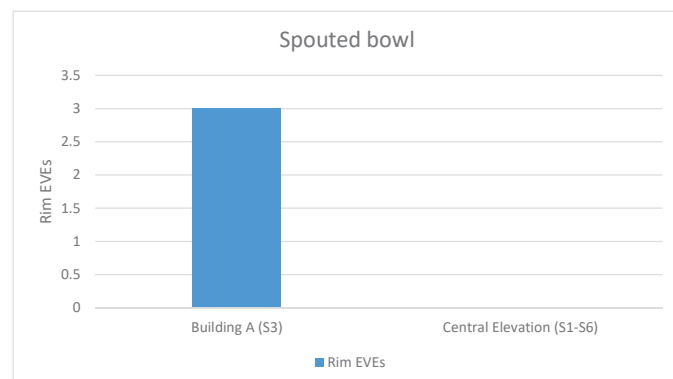


Fig. 13b. Spouted bowl: distribution.

This vessel type seems to be extremely rare in southern Mesopotamia. Some similarities can be noted with sherds from Ubaid–Early Uruk contexts at Uruk (Sürenhagen 1986, T/345), Tell el’Oueili (Calvet 1991, pl.V.57, pl.XI n. 113) and Tell Uqair (Lloyd, Safar, Frankfort 1943, pl.XXb, n.1–3, 5), while an exact match is solely found in a specimen from Tello (De Genouillac 1934, pl.20.3a, pl.2.5440), which can be dated to the Early Uruk period (Parrot 1948, 40–44, fig. 9c)<sup>25</sup>.

A final example of painted pottery from Building A is a fragment of a plate with an inverted rim, with a horizontal band painted in red decorating both the inner and outer surfaces. (Fig.18.48). This plate recalls vessel types that are well known from Late Ubaid and Early Uruk contexts at sites like Uruk (Haller 1932, pl.16D g; Kalb 1983, pl.38b.1), Tell el’Oueili (Lebeau 1983, pl.II.4; Calvet 1991, pl.XVI.159) and Tell Zurghul (Volpi 2020, figs.2–3).

Finally, sparse fragments of painted pottery, chiefly body sherds, were collected during the survey of the site, particularly in its western and northern areas<sup>26</sup> (Fig.18.49–52). These surface pottery sherds, in most cases very abraded, bear traces of geometric motifs painted in black, which are very similar to

those decorating the specimens from S3. The ceramic body is very hard and compact, usually overfired.

As discussed in this preliminary presentation of the ceramic assemblages from the central and northwestern sectors of TB7, many of the forms documented at the site can be related to vessel types that are well known and widespread in southern Mesopotamia and that are traditionally accepted as chronological indicators of the Early Uruk period (Late Chalcolithic 2) (Adams and Nissen 1972, 100–101). The same picture emerges from the comparison between this ceramic material and the ceramic assemblages from the post-Ubaid and Early Uruk (Late Chalcolithic 1–2) levels of the Eanna precinct (Haller 1932; Sürenhagen 1986) and the Steingebäude (Boehmer 1972). The grey-ware or red-ware carinated vessels and the specimens of painted pottery excavated from S3 have parallels in the Late Chalcolithic 1 and 2 ceramic sequences of Uruk and are in some cases comparable with prototypes dating back to earlier phases (i.e. the Late Ubaid period).

Other shapes, such as the strap-handled bowls, seem to be less common in southern Mesopotamia, while similar vessel types sporadically appear in Middle and Late Uruk contexts in southwestern Iran and the Hamrin area. However, as far as the TB7 specimens are concerned, this chronological framework appears unlikely. At TB7, fragments of bowls of this type were found in the same contexts as materials typical of the Early Uruk period, with complete specimens coming from burials pertaining to the same phase. Furthermore, the surface treatment of one of these bowls, finished with a coating of red

<sup>25</sup> According to Parrot (1948, 44), painted pottery can be related to the so-called ‘Ubaid II’ ware documented at Uruk (levels XII–VIII, Early Uruk; see Haller 1932, 35–36; Sürenhagen 1999, 16).

<sup>26</sup> Rare sherds of painted pottery resembling those found at TB7–TB8 were also detected on the surface of TB1.

slip, is absolutely consistent with that applied to the carinated bowls with spouts found in the S3 burials, which can be ascribed to the earliest levels excavated.

Chronological indicators of the Middle and Late Uruk period (see e.g. Adams and Nissen 1972, 100; Sürenhagen 1999, 19–20) are so far completely absent from the ceramic assemblages of S3 and the central elevation. Rare sherds and semi-complete specimens of bevelled rim bowls have been found on the surface of TB7 and in the surrounding areas, but none of these come from stratified contexts within the investigated sectors. This vessel type, whose origins can be traced back to the Early Uruk period (Sürenhagen 1999, 17–18), is rarely or never documented in the ceramic material recovered from the surface of Early Uruk sites in southern Mesopotamia (Adams and Nissen 1972, 100). On the other hand, another type of mass-produced vessel that can be considered a reliable chronological indicator of the Early Uruk period, the proto-GBT, is very common in the ceramic complex of TB7.

The pottery found in the central and northwestern sectors of TB7 forms a coherent ceramic corpus which, on the basis of comparisons with relevant materials, can be dated to the early stages of the Early Uruk period. This brief analysis of the most representative vessel types from TB7 gives an idea of the main components of the ceramic complex of an Early Uruk site in southwestern Mesopotamia.

The distribution and percentages of each vessel type can certainly be related to the contexts studied; however, it should be noted that roughly the same shapes were recorded in two sectors with different characteristics, the central terrace or platform and Building A.

The data available so far allow the identification of the structures exposed in S3 as belonging, at least in a first phase, to one or more residential buildings. The importance of these structures may be reflected in the grave goods that accompany some of the burials found under the floors and in the corners of the rooms that can be attributed to the earliest phases of occupation documented in the sector.

At a later stage, but still within an Early Uruk chronological framework, there appears to have been a change in the function and use of the area, with its transformation into a space dedicated to productive activities. Interestingly, the different phases of occupation of Building A do not seem to be clearly reflected in its ceramic material, which, despite some differences, remains largely unchanged between the two main phases. Obviously, this consideration does not apply to the pottery attributed to the reoccupation of the area during the Parthian period. In other words, the changes observed in the layout of Building A are not directly reflected in its ceramic assemblage, which retains essentially the same characteristics and displays homogeneous features both ‘vertically’, i.e. diachronically, and ‘horizontally’, over the entire excavated area. Therefore, although it is not possible to reconstruct the exact duration of the different phases of occupation, it can be assumed that they did not last very long, since no major changes in the ceramic material can be detected. In

this context, a single element, represented by the specimens of painted pottery, could suggest an earlier dating of the residential/domestic phase of Building A, which, based on comparisons with similar material, could extend as far back as the Late Chalcolithic 1 or post-Ubaid period. However, the other materials excavated from contexts belonging to this phase fit perfectly into an Early Uruk chronological horizon.

The central monumental terrace or platform of TB7, the focal point of the site and possibly its social organisation, produced a ceramic assemblage that is essentially identical to that from S3. The chronology of the relevant forms, and in particular the numerous examples of proto-GBT, is consistent with that reconstructed for the S3 material, coinciding with the Early Uruk period. A final noteworthy aspect is the abundant presence of mass-produced proto-GBTs in both the central and northwestern sectors of the site, which may suggest a close relationship between the two areas. If proto-GBTs were associated with administrative activities and the redistribution of goods, as has been suggested for other mass-produced vessels such as the bevelled-rim bowls<sup>27</sup>, it could be hypothesised that they also had similar functions within the TB7 area. According to this reconstruction, the building or complex of buildings located on the central terrace of TB7 may have functioned as a centre for the collection, processing and redistribution of goods, alongside the facilities and structures located in area S3.

<sup>27</sup> For an updated summary of this topic, see Helwing 2014.

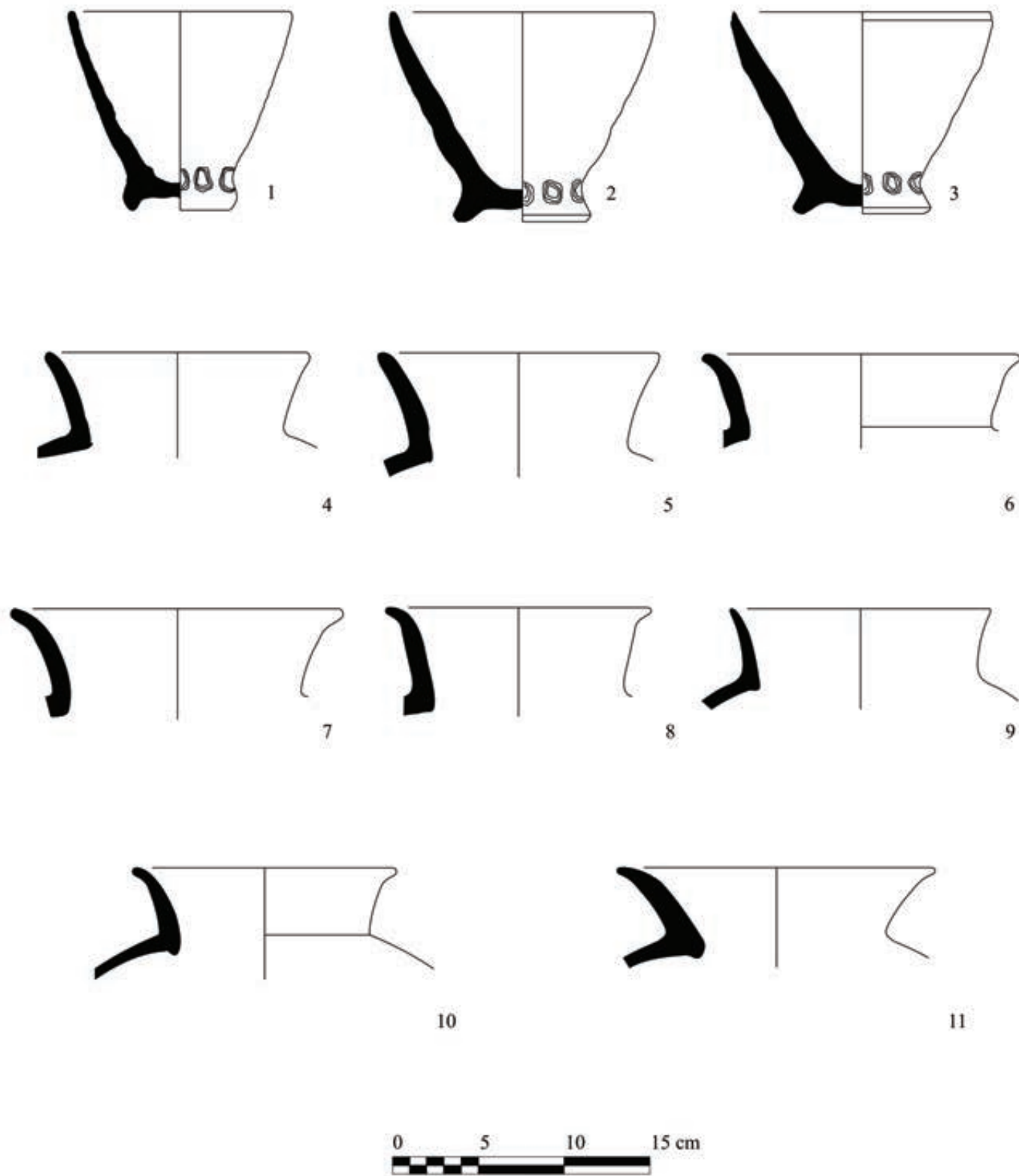
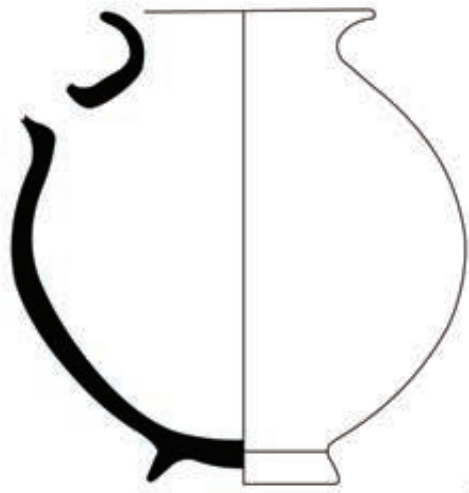


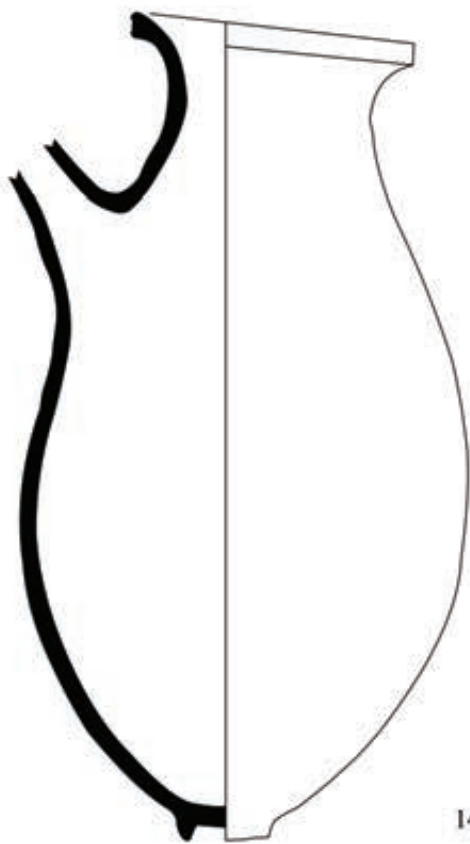
Fig. 14. Ceramic assemblage from TB7-TB8.



12



13



14



15



16



17



Fig. 15. Ceramic assemblage from TB7-TB8.

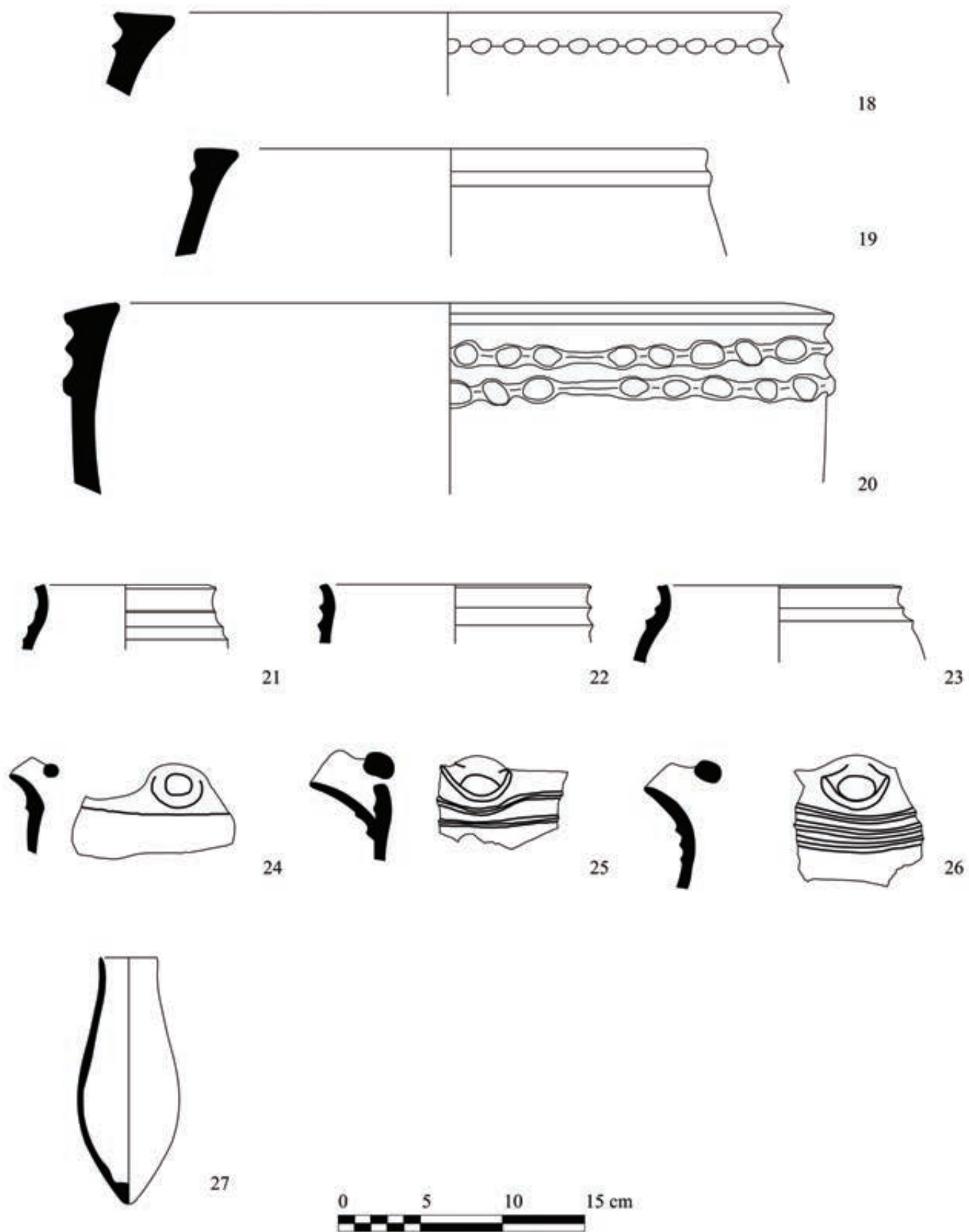


Fig. 16. Ceramic assemblage from TB7-TB8.

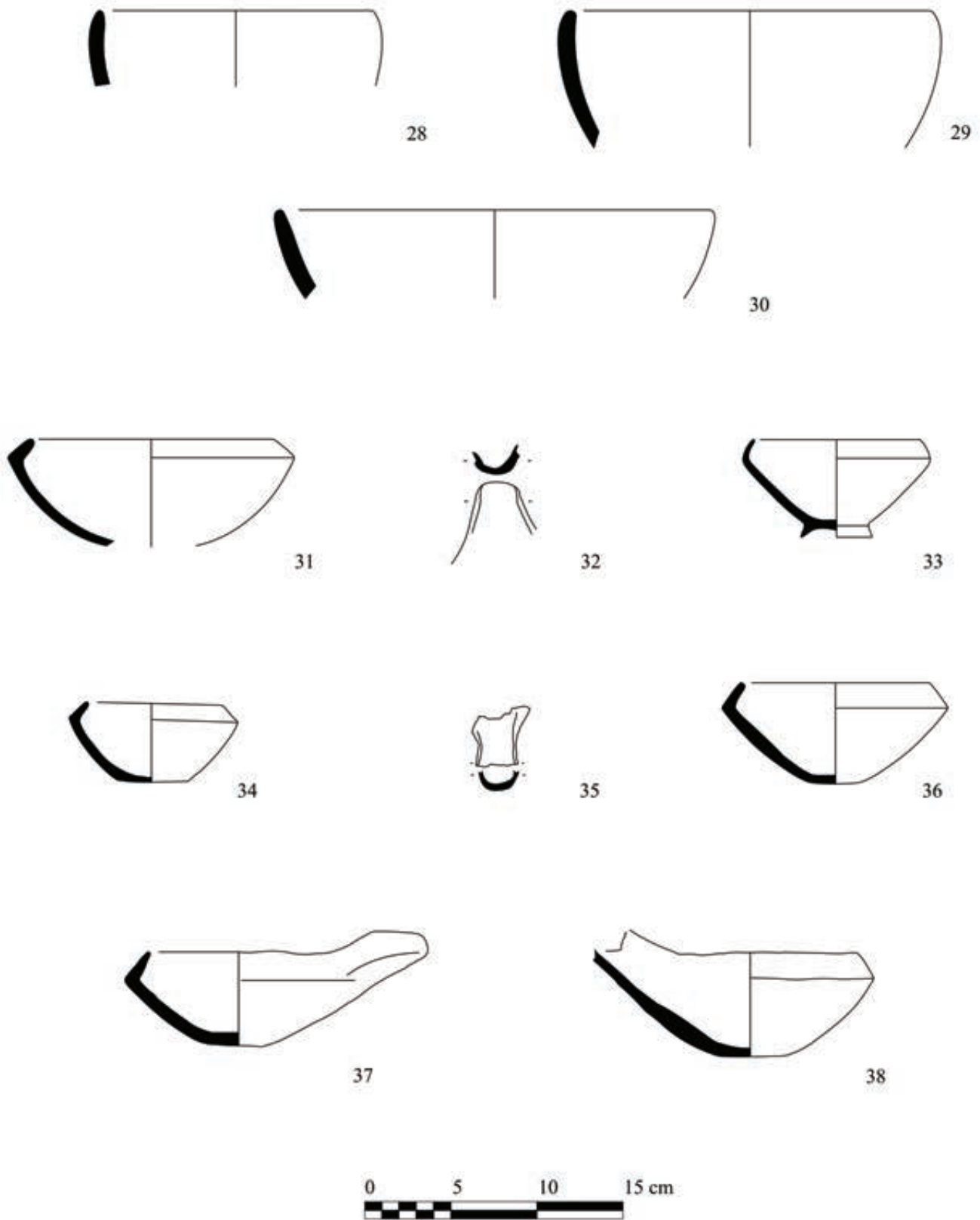


Fig. 17. Ceramic assemblage from TB7-TB8.

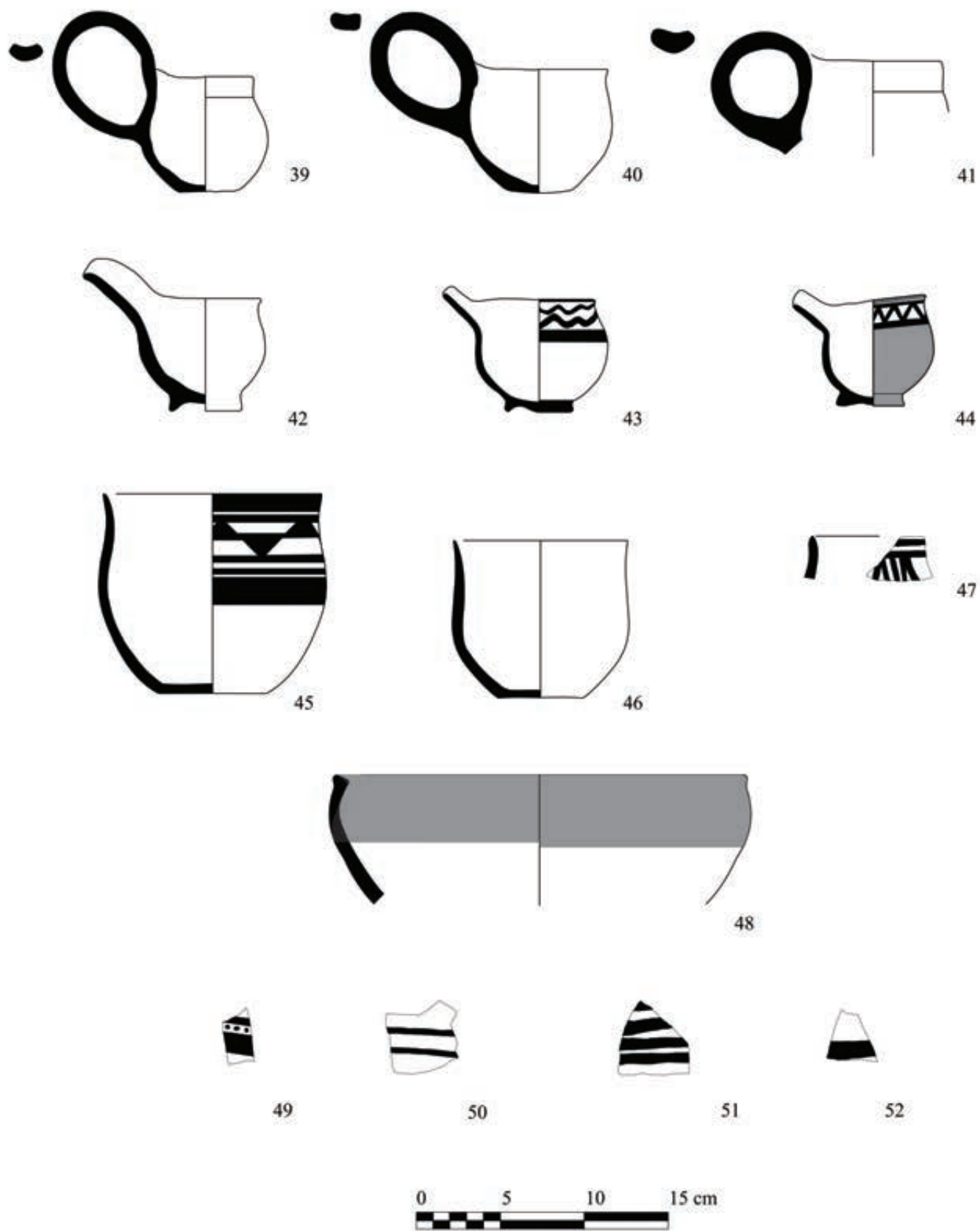


Fig. 18. Ceramic assemblage from TB7-TB8.

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**Arabic Abstract**

٥. تقاليد صناعة السيراميك في جنوب بلاد ما بين النهرين خلال العصر النحاسي المتأخر: بعض الأفكار حول مجموعات السيراميك من القطاعات الوسطى والشمالية الغربية لتلول البقرات ٧ (ج. برونو)

تُرَكِّزُ هذه الورقة البحثية على الفخار الذي عثرت عليه البعثة الإيطالية التابعة لمركز سكافي دي تورينو للأبحاث والتنقيب الأثرية وجامعة تورينو خلال المسوحات السطحية والتنقيبات الطبقيّة التي أُجريت في منطقة تلول البقرات ٧-٨ (TB7-TB8) بين عامي ٢٠١٣ و٢٠١٩. ويُعدُّ تلاً TB7 وTB8 أقدم التلال في منطقة تلول البقرات الأثرية؛ ويُمكن إرجاع معظم مواد السيراميك التي جُمعت حتى الآن إلى فترة الوركاء (أوروك)، وفي حالة الفخار المُستخرج من القطاعين الأوسط والشمالي الغربي من تلول TB7 فينسبُ إلى مرحلة الوركاء (أوروك) المُبكرة (العصر الحجري النحاسي المتأخر 2). وبينما تُؤكِّد المقارنات مع الفخار من مدينة الوركاء (أوروك) وغيرها من المواقع الجنوبية هذا الإطار الزمني فإنّها تُشيرُ أيضاً إلى إمكانية تأريخ بعض عناصر مُجمَع السيراميك في موقع TB7 إلى نهاية فترة العبيد. ويُقدِّم تحليل الفخار الذي استخرجه البعثة الإيطالية رؤىً جديدةً حول تقاليد صناعة السيراميك في فترة الوركاء (أوروك) المُبكرة في جنوب بلاد ما بين النهرين.



## Abstract

The transition between the fourth and third millennia BCE is characterised by profound socio-political and economic upheavals. Changes occurred in the material culture of societies from southern Mesopotamia during this period, traditionally called Jemdet Nasr and dated from 3200 to 2900 BCE. The most remarkable one is undoubtedly the reappearance of monochrome and polychrome painted pottery that was supposed to have disappeared during the Uruk period. However, this type of pottery, which was at the centre of discussions, was actually rare on many sites and chronologically problematic. The definition of a wider pottery assemblage characteristic of the Jemdet Nasr period raises major problems, mainly due to the transitional nature of this phase. In this paper, I will trace the complex history of research on Jemdet Nasr pottery undertaken over the past hundred years. I argue that, apart from the painted pottery, the identification of a corpus of other pottery types specific to this period is possible. Their synthesis can constitute a basis for current and future works in a time of renewal of the archaeological research in southern Iraq. This new research, which already brought some results, will be decisive for renewal of our knowledge about a crucial period at the dawn of the Sumerian world.

Hugo Naccaro

## 6. At the dawn of a new chapter: about the definition of the Jemdet Nasr pottery

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### Introduction

The end of the fourth millennium is marked by the collapse of the networks set up by the proto-urban southern Mesopotamian centres. The Syrian ‘colonies’ were notably abandoned and Iran was engaged in a new phenomenon with the emergence of the ‘Proto-Elamite’ horizon (Butterlin 2003; Butterlin et al. 2020). In southern Mesopotamia, the proto-urban centres seem to be subject to profound restructuring, as witnessed by the evolution of the Eanna at Uruk (Eichmann 1989; 2007). This period is traditionally called Jemdet Nasr and dated from 3200 to 2900 BCE (ESM 1)<sup>1</sup>. During this period, the textual documentation in proto-cuneiform increases significantly (Englund 1998; Sallaberger and Schrakamp 2015). According to P. Steinkeller (2002), as well as R. Matthews and A. Richardson (2019), an organisation involving different centres was based on the cult of the goddess Inanna from Uruk. At the beginning of the third millennium, the city of Uruk seems to have held a dominant position in southern Mesopotamia, reaching 500ha in extent (Lecompte 2020; Nissen 2013, 112). At the same time, other cities, such as Ur, appear to have reinforced their political and economic

position in the region (Benati 2015; Charvát 2017, 265–8; Benati and Lecompte 2021).

Significant changes occur also in the material culture of societies from southern Mesopotamia (Map. 1). The most remarkable one is undoubtedly the reappearance of monochrome and polychrome painted pottery that was supposed to have disappeared during the Uruk period. Apart from this distinctive pottery, the definition of a characteristic pottery assemblage for the Jemdet Nasr period raises major issues mainly due to the transitional nature of this crucial period in the history of Mesopotamia (Table 1). Today, about a century after the excavation of Jemdet Nasr (1926–28) in a time of renewal of archaeological research in southern Iraq, it seems appropriate to come back to this issue.

The history of research on Jemdet Nasr pottery can be separated in two stages. The first one starts with the excavations at the eponymous site and ends with the establishment of the first typologies, focusing in particular on painted pottery. A second stage is characterised by attempts to define a distinctive set of pottery types restricted to the period. Finally, current works will constitute, without any doubt, a significant new chapter in the long history of the definition of Jemdet Nasr pottery.

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<sup>1</sup> The term ‘Jemdet Nasr’ comes from the eponymous site excavated in 1926 and 1928. Following the Baghdad Conference from 1930, it gave the name to the period (Langdon 1927; Potts 1986; Matthews 2002) (see below). This phase is also known as ‘Uruk III’ (Englund 1998; Sallaberger and Schrakamp 2015; Lecompte 2020). For ARCANÉ periodisation (ESM 1), see Lebeau 2014; see also scientific reports from M. van Ess available on ARCANÉ website (<http://www.arcane.uni-tuebingen.de/rg11/>).

## 1. From the 'Dark mound'<sup>2</sup> to the first typologies

In 1925, remarkable painted pottery was brought to the excavators' camps at Kish.<sup>3</sup> It came from a mound located 26 km from the Sumerian city, with the Arabic name 'Jemdet Nasr' (Matthews 2002, 1–3). During the first excavation at the site in early 1926, S. Langdon (1927, 70–4) uncovered a large number of these painted vessels in a large building on Mound B ('Langdon Building').<sup>4</sup> This pottery seemed to be found everywhere on the site surface. The anthropologist H. Field (1953, 80), just arriving on the site, said: 'Immediately painted pottery fragments were visible everywhere and we knew this was Jemdet Nasr'. As soon as they were discovered, Langdon (1927, 74) compared them to the painted pottery found at Susa and Musiyan, and on the sites of Eridu, Ur and Tell al-'Ubaid.

The discovery of a new type of painted pottery at Jemdet Nasr had an important echo within the scientific community. For some years, various scholars maintained a connection with the 'Second Style at Susa' (Potts 1986, 17–21). However, from 1929–1930, 'Jemdet Nasr style' pottery was recognised by C. L. Woolley at Ur<sup>5</sup> and J. Jordan at Uruk<sup>6</sup>, and became to be considered the distinctive feature of the period following the Uruk phase.<sup>7</sup>

The publication of the material from the first campaign at Jemdet Nasr (1926) was published in 1931 (Mackay 1931).<sup>8</sup>

<sup>2</sup>This expression used by Matthews (2002) for the title of his book, comes from H. Field (1953, 179).

<sup>3</sup>The mission was led by S. Langdon. At Kish, the fieldwork was directed by E. Mackay.

<sup>4</sup>Matthews 1992, 1–3; 2002, 3–5. Although painted pottery was emphasised, Langdon (1927, 70, 73) pointed out the presence of numerous common vessels in the building.

<sup>5</sup>Woolley 1929, 329; Woolley 1930, 328–41. For complete references to Woolley's early considerations of the Jemdet Nasr pottery at Ur, see Potts 1986, 18–22.

<sup>6</sup>In fact, it is clear that Jordan attributes the 'Schichten Ib bis III' excavated in the southeast area of the Ziggurat of Ur-Nammu to the Jemdet Nasr period mainly on the basis of tablet finds and not on the basis of ceramics (Jordan 1931, 28–9, 54). As the excavator points out: *Eine einzige Scherbe von der Art der in Djemdet Nasr gefundenen polychromen Gefaße lag in Schicht I, es ist aber wahrscheinlich, dass sie aus II oder III nach oben gekommen ist, wohin sie gehören würde, weil diese Schichten aus der Djemdet-Nasr-Zeit stammen* (Jordan 1931, 52).

<sup>7</sup>The Ubaid–Uruk–Jemdet Nasr chronological scheme was adopted at the Baghdad conference on 16 January 1930 (Potts 1986, 20–2). The Leiden conference in September 1931 confirmed the Uruk–Jemdet Nasr–Archaic Ur periodisation. In addition to the painted ceramics, the definition of the Jemdet Nasr period was based mainly on the associated proto-cuneiform tablets.

<sup>8</sup>The pottery found during the second campaign of 1928 by L. Ch. Watelin, brought back to the Field Museum in Chicago, was the subject of a cursory article (Field and Martin 1935).

Apart from the very basic<sup>9</sup> and inadequate quality of the illustrations, this publication raised some issues (Potts 1986, 24–26). First, the presence of forms dating back to the Uruk period led H. Frankfort (1932, 10, n. 1) to assume a possible older occupation of the site. Conversely, D. B. Harden (1934) noticed the presence of later types, showing parallels with Kish. These data demonstrated the non-homogeneity of the ceramic material found on the site itself.

At the same time, the excavators of Uruk had major problems in recognising the Jemdet Nasr pottery in the Eanna sector within the 'Schichten II/III'. E. Heinrich (1932, 22) pointed out: *Dagegen fehlt uns die typisch bemalte Djemdet-Nasr-Keramik noch immer, bis auf zwei Scherben, die noch dazu nicht schichtenmäßig bestimmt sind*. In order to overcome this problem, the architect A. von Haller assembled unpainted pottery types found around the buildings of levels III/II (von Haller 1932, 46, taf. 20: B, C).<sup>10</sup> The assemblage, which incorporated numerous conical bowls and flower pots, remained for many years the only reference pottery of the 'Jemdet Nasr Schichten' at Uruk.<sup>11</sup>

Two years later, Heinrich published the results of a stratigraphic trench that he had carried out in sector O XII/XIII at Uruk. According to the excavator, the trench had cut through layers of domestic levels dating to the Uruk and Jemdet Nasr periods (Heinrich 1934, 13–16, taf. 15). In contrast to the Eanna, the excavators found numerous painted sherds in this sector. Heinrich produced a first chronology of this material. He identified sherds with red slip (*Typ 1*), vessels with horizontal bands of red paint (*Typ 2*), polychrome painted ceramics (*Typ 3* with three variants)<sup>12</sup> and 'genuine Jemdet Nasr sherds' (*Typ 4*) (Fig. 1). The latter type was restricted to the upper layers of the trench. However, red slip and polychrome pottery (sometimes indistinguishable) were found in both Uruk (*Schicht IV*)<sup>13</sup> and Jemdet Nasr levels.

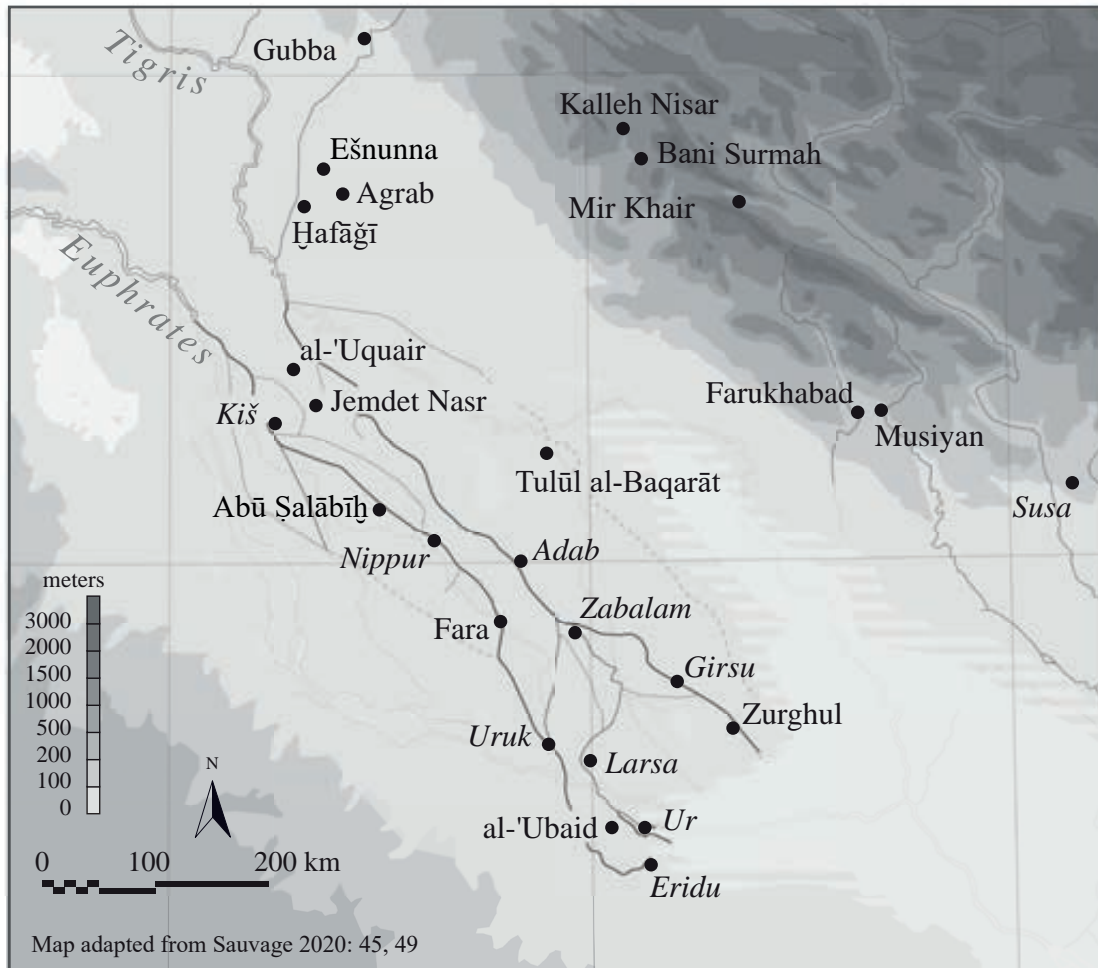
<sup>9</sup>As Matthews (1992, 3; 2002, ix) points out.

<sup>10</sup>The material collected by von Haller for these levels is mainly coming from filling contexts in the area of the *Raumkettentrakt (Opferstättenhöfe)* (UA 1) (Eichmann 2007, 60–77) and the *Labyrinth/Tempel III* complex (UA 4) (Eichmann 2007, 294–8). Thus, the material published by von Haller was coming from mixed and unsafe contexts. Any contextual interpretation from these published forms is impossible, except in a few special cases (Sürenhagen 1987; 1999, 38–113; Nissen 2002, 5).

<sup>11</sup>Until 1970, the term *Blumentopf* was used for both *Blumentopf* (conical bowl) and *Grobe Blumentopf* (flower pot) whose differentiation was clarified by H. J. Nissen (1970, 132–6). Sometimes the term '*GN-Becher*' was used by H. Lenzen, but the definition was variable. See also Pongratz-Leisten 1988, 299–308.

<sup>12</sup>The first variant of polychrome pottery (type 3) according to Heinrich (1934, 15, taf. 15a) was defined as bearing groups of three parallel vertical plastic ridges (see below).

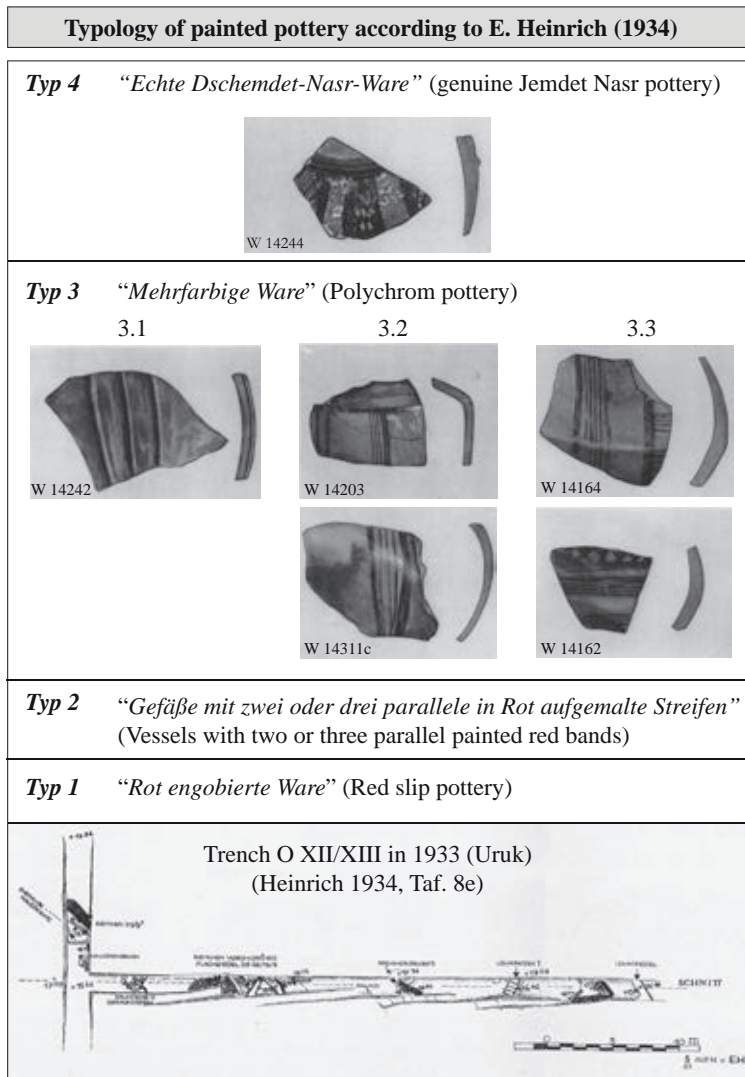
<sup>13</sup>The dating of O XII/XII layers with *Schicht IV* of the Eanna was induced by the discovery of two archaic numerical tablets, found '*mit vielen Scherben der roten Uruk Ware*' (Englund and Nissen 2005, 20; Sürenhagen 1987, 32).



Map 1. Main sites dating from the Jemdet Nasr period. Map adapted from Sauvage 2020: 45, 49.

BC	Period	Uruk		Ur	Nippur	Abu Salabikh		Fara	Kish	Jemdet Nasr	Khafajeh		Zurghul	
		Eanna	Archaische Siedlung	Pit F	Inanna Temple	West Mound 2G46	Uruk Mound 3G81	DE 38/39	Y sound.	4C88	Houses	Sin	Area A	
2900	Early Dynastic I	I7-6? GS 11-10	Phase III-I	H-E	XI-IX	Level II	p.c.wall		Level 5-2	Level 3-5	Dump upper phase	11-7	V-VII	Phase 5-7
			Phase IV		XII							12	IV	
3000	Jemdet Nasr	III GS 14-12	Phase VIII, VI-V	K-I	XIV-XIII	Break	Topmost floor beneath p.c.wall	Pits 102 & 103	Level 7	Level 1-2	Dump lower phase	Below	I-III	Phase 3-4
3100			Phase XI-IX, VII	KS 5										Phase 2
3200	Late Uruk	V-IV GS 19-15		KS 4	XVI-XV	Level III	Below				Riemchen wall			Phase 1

Table 1. Main stratified sequences in southern and central Mesopotamia dating from the Jemdet Nasr period.



**Fig. 1.** Typology carried out by E. Heinrich (1934) concerning the painted pottery discovered in the O XII/XIII sounding during the fifth campaign at Warka-Uruk (winter 1932-33). The figure incorporates the few watercolours and the plan of the sounding published in the report. After Heinrich 1934, 13-16, taf. 8e, 15.

Heinrich (1934, 16) explained this observation by the domestic nature of the architectural levels in O XII/XIII, which are very different from those of the Eanna. Heinrich's pioneering typology was not retained. However, his observations highlighted the problems linked to the painted pottery, which probably developed as early as the Uruk period.<sup>14</sup>

After the Second World War, in a large comparative study, A. L. Perkins (1949) abandoned the Uruk/Jemdet Nasr terminology in favour of the Protoliterate periodisation

<sup>14</sup>In my opinion, some of Heinrich's remarks are worth remembering, as he remains one of the few archaeologists to have been able to excavate an uninterrupted sequence of domestic settlements from the Uruk to Jemdet Nasr period. The possibility to excavate this type of occupation again could put into perspective the German researcher's contestations on the ceramics in O XII/XIII.

introduced by P. Delougaz and S. Lloyd (1942, 8, n.10). Thereafter, the publication of pottery from Diyala excavations by Delougaz (1952) has provided a wealth of new data and renewed typologies. The author confirmed the non-homogeneity of the material found at Jemdet Nasr (Delougaz 1952, 128, 137).<sup>15</sup> He pointed out the presence of monochrome and polychrome painted pottery in the 'Protoliterate c and d' levels, 'which roughly correspond to the so-called 'Jemdet Nasr' period' (Delougaz 1952, 125-7). He stressed some morphological and decorative evolutions between the Protoliterate c and d phases. At Nippur, the soundings carried out between 1957 and 1962 under the direction of C. Haines in the Inanna Temple also yielded monochrome and polychrome jars. They were distributed from level XIV to level XII attributed to the Jemdet Nasr period. According to D. P. Hansen (1965, 206-8), monochrome painted vessels dominated in the Level XIV whereas elaborate polychrome vessels appeared mainly in level XIII.

In 1964, W. Nagel (1964, 10-13) synthesized the data, establishing a typology which is still a reference for the Jemdet Nasr painted pottery.<sup>16</sup> The author defined three types, which he defined in clear terms (Fig. 2). *Typ I*, almost always polychrome, is characterised by squat ledge-rim jars. According to the author, the decoration of these jars was done in three steps. It was covered with a light yellow slip (cream), then plum red slip. The latter was not applied to the upper portion of the body, which was then decorated with black and plum red painted motifs. Next, *Typ II*, mainly monochrome, is defined by the four-lugged jars with a short neck and a more or less marked ledge. The shoulder is clearly delimited by a carination, where the lugs are connected by a groove. Finally, the last type (*Typ III*) is composed exclusively of monochrome tall or globular jars with spouts and more rarely with a handle.<sup>17</sup>

Nagel (1964, 12), described the whole variety of decorations and was able to demonstrate a clear correlation between patterns and morphological types as defined.<sup>18</sup>

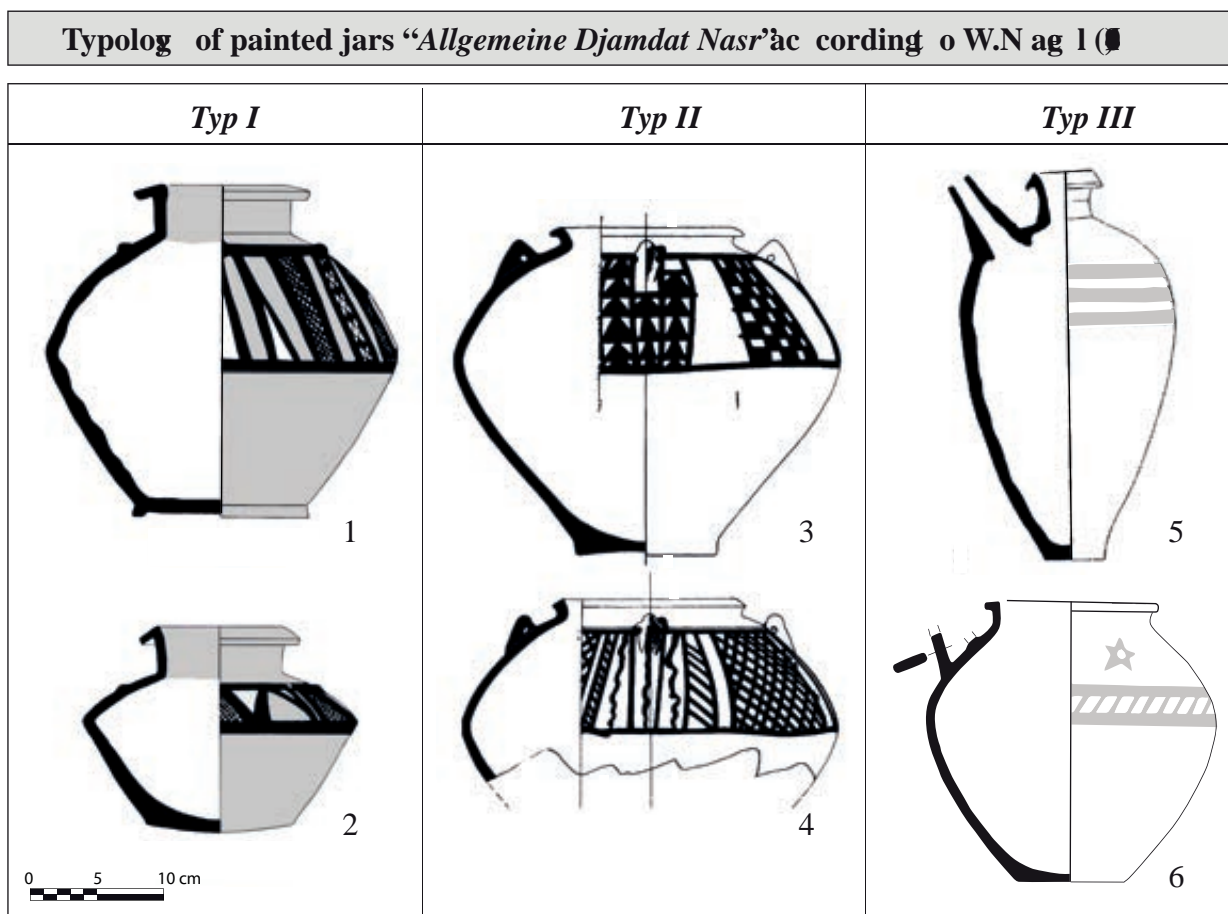
The reopening of excavations at Uruk since 1954 did not answer the question of pottery from the Jemdet Nasr period, which is still largely devoid of painted pottery. Nevertheless,

<sup>15</sup> See also Potts 1986, 25-26, tab. 2.

<sup>16</sup> See D. Sürenhagen's (1999, 3, n. 4) very positive comment on Nagel's work. The chronological elements need to be adjusted with the new available data.

<sup>17</sup> Nagel (1964, 12) *Type III* was 'weniger kennzeichnend'. According to his definition, some of these jars were integrated into a group considered to be older, 'Uruk-Keramik mit Bänderdekor' (Nagel 1964, 8, taf. 2). Following other archaeological discoveries in stratigraphic context, the horizontal three-banded jars found at Jemdet Nasr can now be considered to be included within Nagel's *Typ III* of the 'Allgemeine Djamdāt Nasr' group (see Matthews 1992a, 11, 13, 17; 2002, 26).

<sup>18</sup> On this correlation between decorations and forms, see also Matthews 2002, 21; Wilson 1986, 61-2.



Nº	Adapted from	Other number	Context and indications
1	Matthews 2002: fig. 14: 1	PJN 121. FM 158355	Jemdet Nasr. Old excavations
2	Wilson 1986: fig. 10: 4	7 N 740	Nippur. Inanna Temple XIII (XIV). Above Locus 341
3	Llogl, S afar & Frankfort 1943: pl. 23a	–	Tell Uqair. Sounding I. Rooms beneath chapel. Level IV
4	Llogl, S afar & Frankfort 1943: pl. 23b	–	
5	Matthews 2002: fig. 24: 2	FM 158405	Jemdet Nasr. Old excavations
6	Matthews 2002: fig. 26: 2	FM 158347	Jemdet Nasr. Old excavations

**Fig. 2.** Typology carried out by W. Nagel (1964) of painted jars called ‘Allgemeine Djamdat Nasr’. The figure incorporates two examples of jars according to types defined by Nagel.

H. J. Nissen (1970, 132–42), after his work in sector K/L XI/XIII, produced a typology of the different ‘*Massenkeramiktypen*’, clarifying at the same time, a terminological *imbroglio* between the German and English designations for these bowls.<sup>19</sup> He emphasised the chronological potential of these productions based on the hypothesis that the ‘*Blumentöpfe*’ (BT) (conical




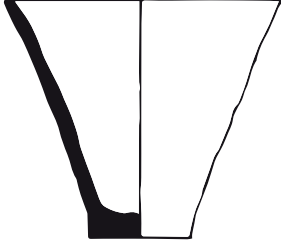
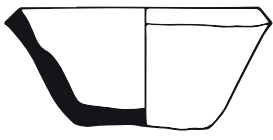
bowl, CB) replaced the ‘*Glockentöpfe*’ (GT) (bevelled-rim bowls, BRB) from the Jemdet Nasr period (Nissen 1970, 133) (Fig. 3). Thus, according to him, the disappearance of the mass production of BRBs could constitute a dating criterion for the Jemdet Nasr period.<sup>20</sup> This element coupled with the absence of distinctive Early Dynastic I types, such as solid

<sup>19</sup> The bowls called ‘Flower pots’ by the Anglo-Saxon researchers did not correspond to the bowls called ‘*Blumentöpfe*’ by the Uruk excavators. The excavator thus introduced the term ‘*Grober Blumentopf*’ for the ‘*Flower pot*’, which would be found in Uruk in the ‘*Schichten V bis III*’. In detail, the situation was more complex because Delougaz included in his category of ‘conical bowls’ both the ‘*Blumentöpfe*’ and ‘*Grobe Blumentöpfe*’ of Nissen. See also, Pongratz-Leisten 1988, 299–308; Gruber 2015, 136.

<sup>20</sup> At the Tübingen conference, Nissen (1986, 372) made it clear that BRB production continues in the Jemdet Nasr period, but sporadically and no longer as a mass production. According to S. Sürenhagen (1999, 98, 116; 2014, 179) BRBs were already no longer used as a mass production at Uruk after the Eanna IVc. For a discussion concerning the end of BRB use, see Helwing 2014, 36–7; Butterlin 2018, 337–9.

Chronotypology at Uruk according to H. J. Nissen (1970)			
Eanna I			SFG
Eanna III	GBT/ FP	BT/ CB	
Eanna IV			
Eanna V		GT/ BRB	
Eanna VI			
Eanna VII			

Typology of bowls according to H. J. Nissen (1970)	
Adapted from Nissen 1970: Taf. 104	
<p>“BT 1” = <i>Solid footed goblet</i> (SFG)</p>	 <p>see also Benati 2019</p>
<p><i>Blumentopf</i> (BT) = <i>Conical bowl</i> (CB)</p>	<p>BT 2      BT 3      BT 4</p>  <p>BT 5      BT 6</p>  <p>see also Gruber 2015</p>
<p><i>Grober Blumentopf</i> (GBT) = <i>Flower pot</i> (FP)</p>	 <p>see also Pongratz-Leisten 1988, 303-08</p>
<p><i>Glockentopf</i> (GT) = <i>Bevelled-rim bowl</i> (BRB)</p>	 <p>see also Butterlin 2018, 337-39</p>

**Fig. 3.** Typology carried out by H. J. Nissen (1970) of bowls called ‘mass production’ with their chronostratigraphic repartition in the Eanna sector according to the author.

footed goblets (SFG), were used during surveys conducted by R. McC. Adams and Nissen (1972, 99–103).<sup>21</sup> However, the researchers emphasised that the Jemdet Nasr period was ‘the weak point’, which could only be defined by the painted ceramics, unfortunately very rare and almost impossible to find on surface. The same difficulties arose for all the surveys conducted in southern Iraq (Adams 1981, 126; Wright 1981, 327). At the turn of the 1980s, the situation was very problematic. No other characteristic pottery than the painted one was available to define the Jemdet Nasr period.

## 2. ‘Defining the style of the period’:<sup>22</sup> looking for the pottery of the Jemdet Nasr period

The Tübingen conference, ‘Jemdet Nasr: Period or Regional Style?’, which took place in 1983, marks a major turning point for the definition of the Jemdet Nasr pottery in southern Mesopotamia.<sup>23</sup> Indeed, the publication by K. Wilson (1986) of the material in the Jemdet Nasr levels of the Inanna Temple sounding at Nippur changes the situation. The stratified pottery discovered in levels XIV, XIII and XII located between the stratified Late Uruk levels (XVI–XV) and ED I levels (XI–X) are still a major reference for the definition of the Jemdet Nasr period (Fig. 4). According to Wilson and Hansen, levels XIV to XII form a distinct ceramic phase in the Nippur Inanna Temple sequence with only a few vessel types providing continuity to the previous Uruk and following ED I periods. Nevertheless, the material of these levels illustrates a progressive evolution of the ceramic assemblage (Wilson 1986, 63). In addition to polychrome and monochrome painted jars, among the characteristic forms of these levels, Wilson (1986, 60) points out the recurring presence of painted lids and solid stands. This type of lid seems to be related to the use of decorated jars, as illustrated by the examples found in situ on painted jars at Uqair (Lloyd et al. 1943, 151, pl. XXVI: 4, XXVII: 1). According to Wilson, the characteristic solid stands, which were called ‘pork pies’ by Dorothy Mackay at Jemdet Nasr<sup>24</sup>, seem to constitute an early development of the ED I stands (see below).<sup>25</sup>

Wilson (1986, 59) highlighted the presence of small quantities of plum-red slip, monochrome and polychrome painted sherds discovered in the Late Uruk level (XV).

<sup>21</sup> See also Nissen 2015, 4.

<sup>22</sup> Matthews’s article title (1992).

<sup>23</sup> The conference was held from 26 to 29 November 1983. Its aim was to provide a more secure definition of the material culture of the putative Jemdet Nasr period and its geographical distribution. It could have led if necessary, to the questioning of the term ‘Jemdet Nasr’ itself (Finkbeiner and Röllig 1986).

<sup>24</sup> See Matthews 2002, 1, 5.

<sup>25</sup> Wilson (1986, 60–1, n. 9) does not agree with Delougaz (1952, 39) on the alternative hypothesis of considering these artefacts as stoppers/lids of large storage jars.



**Fig. 4.** Monochrome jar (7 N 756. MMA 62.70.36) found in Inanna Temple Level XIV (locus 334), hosted in The Metropolitan Museum of Art (New York). Credit: Public Domain.

Conversely, the author emphasised the persistence of monochrome and polychrome sherds in the ED I levels (XI) (Wilson 1986, 62–63). In addition, she pointed out the presence of some BRBs in Level XIV.<sup>26</sup> Moreover she reports the presence of SFG, a marker of the ED I period, as early as Level XII, emphasising a gradual transition between the Jemdet Nasr and ED I phases (Wilson 1986, 60, 63, n.12, Fig. 11: 1).<sup>27</sup>

In sum, the publication of the stratified material from Nippur has provided the first reference for the establishment of a correlation between the unstratified material from other southern Mesopotamian sites and the Diyala sequence. The latter has been revised and adjusted.<sup>28</sup>

During the Tübingen conference, despite the contribution of the Nippur data, the difficulty to recognise a Jemdet Nasr period ceramic assemblage on sites of southern Mesopotamia are highlighted by N. Postgate (1986) and J. Moon (1986a) at Abu Salabikh. They stressed their difficulty to clearly identify the Jemdet Nasr levels, which would have been present on the West Mound of Abu Salabikh, in two soundings in 2G46 and 3G81 despite the lack of painted pottery (Postgate 1986,

<sup>26</sup> See footnote 20 above.

<sup>27</sup> This presence has led G. Benati (2014, 12, 14, tab. 3; 2019, 60, tab. 3) to date Nippur level XII to the beginning of ED I in his recent work.

<sup>28</sup> According to Wilson (1986, 64–6, fig. 12), the ‘Protoliterate d’ defined by Delougaz (1952) in the Diyala must have been contemporary with the beginning of ED I period in southern Mesopotamia. Wilson’s chronological propositions have been discussed by Sürenhagen (2011), mainly concerning Khafajeh.

N°	Adapted from	Other number	Context and indications
1	Matthews 2002: fig. 10: 5	FM 158352	Jemdet Nasr. Old excavations
2	Matthews 2002: fig. 10: 6	FM 158353	
3	Matthews 1989: fig. 3: 1	–	Jemdet Nasr. Mound B. NE Area. 4D91 sub-surface
4	Matthews 1989: fig. 3: 2	–	
5	Matthews 2002: fig. 10: 7	FM 158351	Jemdet Nasr. Old excavations
6	Matthews 2002: fig. 10: 8	AM 1926.470	
7	Matthews 2002: fig. 10: 9	AM 1926.354	
8	Wilson 1986: fig. 5: 2	7 N 759	Nippur. Inanna Temple XIV (XIII, XII). Locus 336
9	Wilson 1986: fig. 5: 1	7 N 762	Nippur. Inanna Temple XIV (XIII). Locus 340
10	Moon & Postgate 1982: fig. 3: 6	3C81: 243	Abu Salabikh. West Mound. 3G81c topmost “Uruk” floor running beneath plano-convex brick wall (5602)
11	Moon & Postgate 1982: fig. 3: 10	3C81: 230	
12	Pollock 1990: fig. 4c	U1008: 2	Abu Salabikh. Uruk Mound. Refuse-filled pits (locus 102-103)
13	Pollock 1990: fig. 4d	U1013: 71	
14	Pollock 1990: fig. 4e	U1013: 36	
15	Pollock 1990: fig. 4a	U1010: 4	
16	Pollock 1990: fig. 4b	U1010: 8	
17	Wright 1981: fig. 6e	RB5-4	Eridu-Ur Region. EP-60. Ishan Khaiber
18	Lenzen 1965: Taf. 26: i	W 21420,1	Uruk. Eanna. Oc XVI-2,3 aus einer Brennstelle (5) der “Zwischenschicht IVa-III” UA 4: SV 13/14-2: Grube 15 (Eichmann 2007, 276)
19	Lenzen 1965: Taf. 26: g	W 21420,8	
20	Lenzen 1965: Taf. 26: c	W 21420,2	
21	Lenzen 1965: Taf. 26: f	W 21420,5	
22	Lenzen 1965: Taf. 26: h	W 21420,3	
23	Genouillac 1934: pl. VIII: 4386	TG 4386	

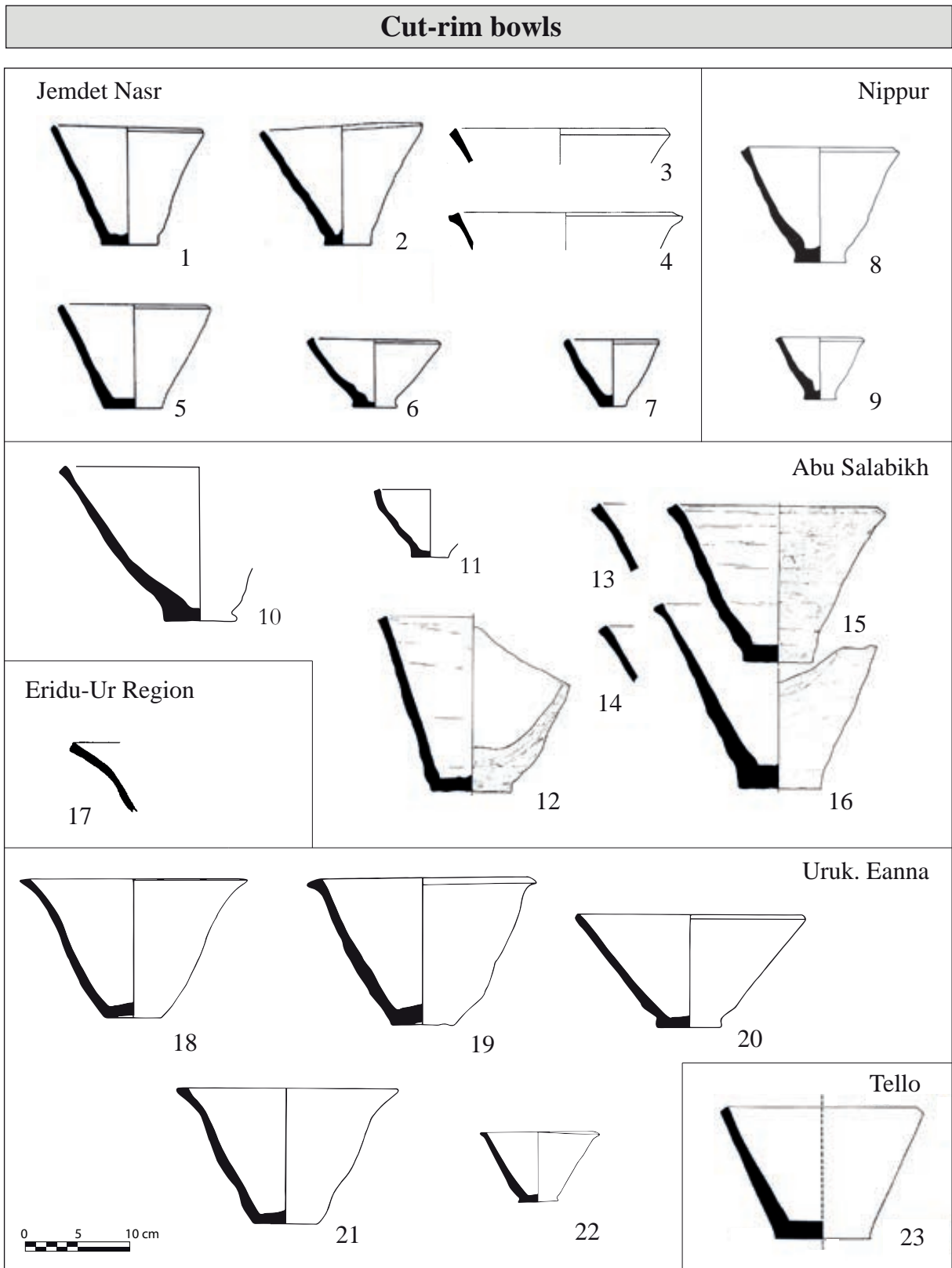
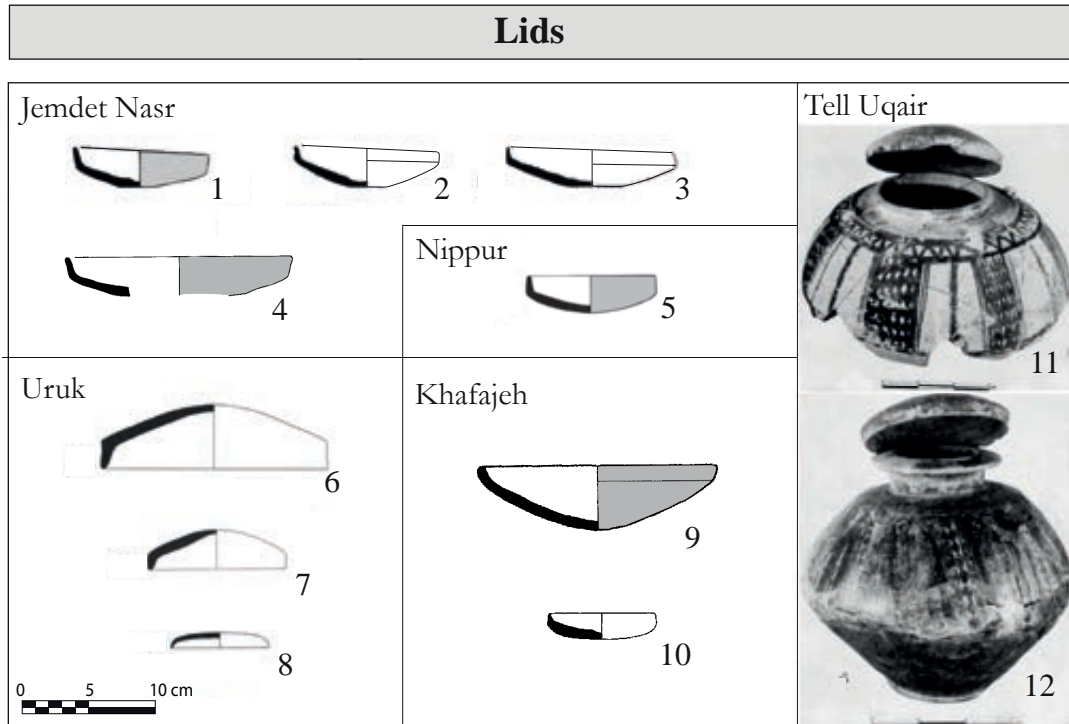


Fig. 5. Examples of cut-rim bowls found in southern and central Mesopotamia sites.



N°	Adapted from	Other number	Context and indications
1	Matthews 2002: fig. 12: 11	FM 158473	Jemdet Nasr. Old excavations
2	Matthews 2002: fig. 12: 12	GN 2547. FM 230753	Jemdet Nasr. Old excavations
3	Matthews 2002: fig. 12: 13	GN 3096. FM 158424	Jemdet Nasr. Old excavations
4	Matthews 1989: fig. 3: 9	–	Jemdet Nasr. Mound B. NE Area 5D11 sub-surface
5	Wilson 1986: fig. 7: 7	7 N 745	Nippur. Inanna Temple XIII (XIV, XII), Below locus 330
6	Pongratz-Leisten 1988: p. 266: Nr. 351	W 20288	Uruk. Archaische Siedlung. Phase XI, Schicht 67, bei 12 m (Strommenger, 1963, 50, Taf. 38m)
7	Pongratz-Leisten 1988: p. 265: Nr. 339	W 20290	Uruk. Archaische Siedlung. Phase IX, Schicht 43, bei 21,90 m (Strommenger, 1963, 51, Taf. 38n)
8	Pongratz-Leisten 1988: p. 257: Nr. 273	W 20346	Uruk. Archaische Siedlung. Phase V, Schicht 9a, bei 62 cm (Strommenger, 1963, 51, Taf. 38o)
9	Delougaz 1952: pl. 169: C.041.500	Kh. VII. 283. A 21453 Kh. IX. 197 Kh. VII. 175	Khafajeh. Q 42:39. Sin II; P 43:51. Below Houses 12; Q 42:26. Sin III
10	Delougaz 1952: pl. 147: B.041.500	Kh. VII. 145. A 21393 Kh. VII. 211	Khafajeh. Q 42:26. Sin III; Q 42:39. Sin II; other samples: Q 43:43. Houses 11; Q 43:55. 32.50 m
11	Lloyd, Safar & Frankfort 1943: pl. 27: 1	–	Tell Uqair. Sounding I. Level IV. in situ atop jars
12	Lloyd, Safar & Frankfort 1943: pl. 26: 4	–	Tell Uqair. Sounding I. Level IV. in situ atop jars

**Fig. 6.** Examples of lids found in southern and central Mesopotamian sites.

90; Moon 1986a, 108).<sup>29</sup> Nevertheless, they emphasised the importance of a particular form that they called ‘cut-rim bowl’, based on its transitional nature, between BRBs and conical bowls.<sup>30</sup> This type of bowl would have a similar shape and manufacturing technique than conical bowls, but a bevelled rim, like a BRB (see below).<sup>31</sup>

The Tübingen conference demonstrated that the use of the term ‘Jemdet Nasr’ for a material culture or period should be restricted to central and southern Mesopotamia (Nissen 1986). However, it did not solve the problem of defining a specific pottery assemblage, despite the decisive contribution of the Nippur data. Recently Moon returned to this failure, she says: ‘I wish I could recall that we solved the ‘Jemdet Nasr problem’, but I fear we did not’ (Calderbank and Moon 2017, 73). In my opinion, one of the main gaps in the Tübingen conference was the absence of material data from Uruk.<sup>32</sup> Indeed, the important publications of D. Sürenhagen (1987; 1999) and B. Pongratz-Leisten (1988) came only later.

Pongratz-Leisten carried out a synthesis on the pottery found in some sectors of the Eanna, K/L XII/XIII, I XIII and in Archaische Siedlung. The latter, whose results had already been published by E. Strommenger (1963), proved to be very important for the definition of the Jemdet Nasr material. This excavation on a satellite site of Uruk, 4 km northeast of the centre of the Eanna, revealed numerous stratified pottery forms alongside painted jars and an ‘Uruk III’ tablet.<sup>33</sup> Pongratz-Leisten (1988, 240–66) distinguished a genuine Jemdet Nasr level (Phase XI–IX, VII), with the entire corpus of reference forms (see below), and a late Jemdet Nasr level (Phase VIII, VI–V).<sup>34</sup> In the same year, H. Martin (1988)

<sup>29</sup> At 2G46, a break in the stratigraphy between Levels II and III, presumably resulting from levelling works, has removed the architectural remains of the Jemdet Nasr period (Postgate and Moon 1982, 105–9; Calderbank and Moon 2017, 73). Nevertheless, in 3G81 floors beneath a wall with ‘not conspicuously convex’ bricks appear to be well dated to the Jemdet Nasr period according to the published material (Postgate and Moon 1982, 104–5, figs. 3: 5, 6, 7, 10; fig. 5: 4, 8 (with locations)).

<sup>30</sup> For recognition of cut-rim bowls see Postgate and Moon 1982, 114, 120–3; Postgate 1983, 48; 1986, 90; Moon 1986a, 108–9. This type of bowl had already been identified at Nippur by Hansen (1965, 208), who described that a ‘special variety of beaker found in XIV and XIII has a beveled rim’. More recently see Gruber 2015, 143.

<sup>31</sup> As the conical bowls, these bowls would be made with a rotating device. A technological study should be undertaken on this type of bowl in the light of recent works, e.g. Baldi 2021; Montero Fenollós and Sanjurjo Sánchez 2021.

<sup>32</sup> Announcing future publications, U. Finkbeiner (1986, 49) had focused on the stratigraphy of the Jemdet Nasr period at Uruk and on the building material of this period.

<sup>33</sup> W 20389 (Englund and Nissen 1993, 12, 55).

<sup>34</sup> Pongratz-Leisten (1988, 240–2) followed an earlier revision made by Nissen that she modified slightly. She also demonstrated the stratigraphic inversion between Phases VII and VIII in the initial sequence.

published a revision of the early excavations of E. Schmidt (1931) at Fara. The author reproduced stratified pottery dating to the Jemdet Nasr period from Level 7 of the deep test pit in sector DE 38/39 (Martin 1988, 20–2, 172–5; 2003, 707–8).

Thus, at the end of the 1980s, a repertoire of stratified pottery was found at a few sites in southern Mesopotamia. Hopes raised by the reopening of excavations in 1988 at Jemdet Nasr by Matthews (1989; 1990) were thus legitimate. However, they were quickly shattered by the interruption of work, after the second campaign in 1989 due to political events. Nevertheless, a stratigraphic sequence (sector 4C88) and stratified pottery associated with architectural remains dating from the Jemdet Nasr period (sectors 4C34 and 5D33) were identified during these two campaigns (Matthews 1989, 237–42; 1990, 27–36).<sup>35</sup>

Following the new fieldwork, Matthews undertook a revision of the material from the earlier excavations of 1926–28.<sup>36</sup> The results of his study were presented first in a preliminary article and then some ten years later in the final publication devoted to the Jemdet Nasr site (Matthews 1992; 2002). Matthews clearly demonstrated that the ceramic material from the ancient excavations at Jemdet Nasr covered a long period from Ubaid to Akkadian times, with a great majority of the material falling into the Late Uruk, Jemdet Nasr and Early Dynastic I periods (Matthews 2002, 20–9).

Comparisons with various Mesopotamian assemblages made by Matthews (1992, 6–17; 2002, 20–1) justified the existence of a Jemdet Nasr period in southern and central Mesopotamia and improved its definition. Several ceramic forms specific to this period were thus isolated and presented in a preliminary table (Matthews 1992, 17), which was adjusted in the final publication (Matthews 2002, 22–9).<sup>37</sup>

First, Matthews discussed the problem of painted pottery. According to him, ‘polychrome and monochrome painted pottery of Jemdet Nasr has to some extent received a fame out of proportion to its real significance’ (Matthews 2002, 20–1). The results of his study show that polychrome round or carinated ledge-rim jars (Nagel Typ I),<sup>38</sup> monochrome design-painted lugged vessels (Nagel Typ II) and painted spouted vessels (Nagel Typ III) seem to be characteristic to the Jemdet Nasr period (Matthews 1992, 8, 11, 17; 2002, 24–

<sup>35</sup> In the preliminary reports of both campaigns, the majority of the published material came from surface clearances and ED I levels. The mission archives, in particular photographs, are now available on University of Reading website: *Jemdet Nasr. The Digital Archive*. See <https://research.reading.ac.uk/jemdet-nasr/> [Accessed 26 June 2022].

<sup>36</sup> The material was held in the collections of the Ashmolean Museum (Oxford), Field Museum (Chicago) and the Iraq Museum (Baghdad).

<sup>37</sup> Thus, the results of Matthews provided in 1992 must be updated with the 2002 publication.

<sup>38</sup> This equivalence with Nagel’s typology is not indicated by Matthews, so it does not necessarily correspond to the author’s thinking.

6). Nevertheless, as Wilson had previously demonstrated at Nippur (see above), Matthews also suggests continuity of these painted ceramics into the ED I period, particularly regarding possible comparisons with Diyala sites.<sup>39</sup> Furthermore, other painted (monochrome) or slipped pottery close to these three forms would date to the Middle and Late Uruk. The most notable are the 'red painted lugged jars or bottles' (Matthews 1992, 8, 17; 2002, 25–6).

Then, and most importantly, the analysis of Matthews (1992, 5–17; 2002, 22–9) allowed to distinguish unpainted ceramic forms that can be restricted to the Jemdet Nasr period. For this paper I have selected only a part of these forms, which I have reproduced in different synthetic figures<sup>40</sup>. First of all, the cut-rim bowls, identified by Postgate and Moon at Abu Salabikh (see above), are spread over many sites in southern Mesopotamia and seem to be an important marker for the Jemdet Nasr period (Fig. 5). Next, as Wilson has highlighted earlier, painted lids (Fig. 6) and solid stands<sup>41</sup> (Fig. 7) seem to be specific to the period. Nevertheless, as pointed out by Matthews (1992, 8; 2002, 24), this shape of lids, in unpainted version, seems to appear as early as the Late Uruk period.<sup>42</sup> Then, tall ledge-rim jars with a narrow base sometimes painted or not, seem to be observed only in Jemdet Nasr contexts (Fig. 8).<sup>43</sup> Finally, a type of vessel with a looped handle pressed

close to the rim ('rim-handled vessels') would be exclusively attested in Jemdet Nasr levels (Fig. 9).

In sum, data coming from excavations before the cessation of the work in Iraq and the revisions of the old research have further renewed the definition of Jemdet Nasr pottery. Several types have been identified and constitute the basis for new research on the Jemdet Nasr period.

### 3. Discussion and prospects

The pottery restricted to the Jemdet Nasr levels suggests a coherent cultural assemblage present throughout the whole of southern Mesopotamia and extending into the Lower Diyala.<sup>44</sup> It derives from Late Uruk forms, and this is also the case for painted pottery which developed locally as already pointed out in the former typologies based on the Uruk data (Heinrich 1934, 16). Although rare in the southern part of the alluvium plain, painted pottery characterises the whole area. They present an undeniable unity in form and decoration.<sup>45</sup> As Matthews (2002, 21) has pointed out: 'It is hard not to see these shared elements as representing a fixed and highly specific community of beliefs and interactions underlying the limited physical remains as we have them today'. Other remarkable artefacts were found with this pottery. A particular type of baked clay bead with spiral-groove, imitating shell cores, seems to have been very appreciated by the communities of the

<sup>39</sup> In Lower Diyala, *Typ I* jars come from levels considered as *Protoliterate d*, partly dating from the ED I period (Delougaz 1952, 48–51; Wilson 1986, 63–6). They are found alongside proto-Scarlet Ware, or '*Frühe Scharlach Keramik*' according to Nagel (1964, 14–15, taf. 17: 1), see also Del Bravo 2014, 135–6.

<sup>40</sup> I chose not to retain ceramic forms with a high degree of chronological uncertainty in the corpus. This includes: oval trays (Matthews 1992, 8, 17) that are found in many sites in Uruk period levels, e.g. at Habuba Kabira (Sürenhagen 2014, 156, 170: FG 13 and 15, taf. 17–18: G 184–6, 189–90, 207–12). The small round-based bottle ('single-lugged vessel') (Matthews 1992, 11, 17) was later dated to the ED I period (Matthews 2002, 28). The 'open spouted vessel' specimens that were restricted by Matthews (1992, 11, 17) are also very close to forms attested in ED I levels, e.g. at Khafajeh (Houses 11–8) (Delougaz 1952, pl. 179: C.525.262b), or in Late Uruk levels, e.g. at Susa (Acropolis I, Level 18) (Le Brun and Miller 2021, fig. 64.2; 65.3, 6). Finally, the bucket-handled vessels could date to the Jemdet Nasr period (Matthews 1992, 14, 17). Nevertheless it presents a parallel only at Khafajeh (Houses 12) (Delougaz 1952, 42, pl. 24b, 166: B.757.605). This type of handle is also observed at Tell Gubba (Level VII) (Ii 1993, fig. 30: 924–7) and perhaps at Chogha Mish (Delougaz and Kantor 1996, pl. 101: L). Since it is completely absent from other sites in southern Mesopotamia, I chose to omit this type.

<sup>41</sup> Matthews (1992, 14) observed that some Jemdet Nasr examples were painted or covered with bitumen.

<sup>42</sup> Samples are attested at Habuba Kabira (Sürenhagen 2014, Taf 16: G 166) and at Chogha Mish (Delougaz and Kantor 1996, pl. 80: G–I).

<sup>43</sup> In addition to examples illustrated in Fig. 8, other published jars from Nippur - Inanna Temple XIV and XII (Wilson 1986, fig. 7: 15, 17) and from Khafajeh - Houses 12 (Delougaz 1952, pl. 18f: C.537.270) could be included.

<sup>44</sup> In the Hamrin Valley, Level VII of the circular fortress at Tell Gubba has yielded numerous polychrome and monochrome jars (Fujii 1981; Ii 1993). This level is dated to the transition between the Jemdet Nasr period and the Early Dynastic I (ECM 1/2) (Porada et al. 1992, 101, fig. 4; Sürenhagen 2011, 6; Del Bravo 2014, 131). The inclusion of Gubba in the Jemdet Nasr cultural area had been refuted by Moon (1986b) at the Tübingen conference, and had been subject of discussions (Nissen 1986, 368, 377). Matthews (1992, 17, 24; 2002, 21) had emphasised the strong links between Gubba VII material and the Jemdet Nasr pottery. However, no unpainted forms characteristic of the Jemdet Nasr period can be securely identified. Although the painted material from Gubba VII shows connections with the southern Mesopotamian Jemdet Nasr traditions, it reveals also other morphological influences from Luristan. The painted pottery of Gubba VII with multiple influences would thus constitute a formative phase of the Scarlet Ware tradition (Del Bravo 2014).

<sup>45</sup> Polychrome and monochrome jars, as well as unpainted pottery from southern Mesopotamian, have been found in the Persian Gulf. They are clearly imports illustrating exchanges between southern Mesopotamia and this region (Potts 1986b; Méry 2000, 169–89). In Iran the situation is more complex, a production of painted jars with similar motifs ('Jemdet Nasr related') is attested over a large area, from Luristan to Tepe Yahya (Mutin 2013, 71–83; Helwing and Neumann 2014, 44–6; Del Bravo 2014; Matthews and Fazeli Nashli 2022, 194). They are part of very diverse material cultures that are different from Mesopotamian cultures. They cover a period extending from Late Uruk to ED I.

Jemdet Nasr period.<sup>46</sup> In addition, a possible new type of architectural decoration made of small baked bricks, the so-called '*Keramikplatten*', could be seen as another marker of the period.<sup>47</sup>

The renewal of knowledge on Jemdet Nasr pottery is also the result of other revisions of former excavations such as Tello (Huh 2008), Tell Ingharra at Kish (Zaina 2020) and Ur (Benati 2014). At Ur, the contextual analyses of G. Benati (2014), following studies initiated by Sürenhagen (1999, 175–247) and R. Dittmann (2006), have distinctly clarified the Jemdet Nasr levels uncovered by Woolley in various test pits.<sup>48</sup> However, at Uruk, despite the contribution of Pongratz-Leisten (1988), the contextual analysis of the material from the Eanna remains very problematic.<sup>49</sup> Eanna III, whose ruins have been excavated over a gigantic surface (several hectares), constitutes the overwhelming majority of the architectural remains dated from the Jemdet Nasr period.<sup>50</sup> The challenge that represents a chrono-stratigraphic analysis of these ruins in the light of the new typology was considerable. Sürenhagen

<sup>46</sup>The definition of these beads as a marker of the Jemdet Nasr period has been emphasised by several scholars (Wilson 1986, 62; Matthews 2002, 31; Quenet 2008, 125; Charvát 2021, 197). Indeed, they were discovered within Jemdet Nasr period contexts at Ur, Jemdet Nasr, Fara and Nippur (Woolley 1955, 178, no. U. 14480, 8, no. U. 12767; Wilson 1986, 62; Martin 1988, 217, no. 231; Matthews 2002, fig. 54: 8–31, pl. 43). However, as Limper (1988, 27) and Quenet (2018, 10–12) have highlighted, this type of bead continued to be used in the ED I period and cannot be circumscribed to the Jemdet Nasr period. Examples are found within ED I levels in southern Mesopotamia, at Fara (Martin 1988, 217, no. 232), Nippur (Wilson 1986, 62), Uruk (Limper 1988, 27, 185, no. F 305–312, 314, taf. 5: 53–5; 18: 113–14; 19: 122–5) or al-Hiba (Renette, pers. comm.). In addition, another rarer type of long incised tubular bone bead could be restricted to the Jemdet Nasr period (Quenet, 2008, 125; Martin, 1988, 62). They have been identified at Fara, Jemdet Nasr and Uruk (Martin 1988, 219, no. 286; Matthews 2002, 31, fig. 54: 1–5, pl. 42; Limper 1988, 26, 185, no. F 303, taf. 11: 92b).

<sup>47</sup>These are small rectangular baked bricks (c. 15x9x3 cm) or quoin-shaped bricks, used with the same technique as the clay cones (still present in the Jemdet Nasr period). These elements are attested in situ in Uruk III levels (Eanna III; UA 2; BS 13) (Lenzen 1936, 12–13, taf. 17; Eichmann 2007, 112–23; van Ess 2021, 89), and out of any context at Eridu near the platform of 'Temple I' (Safar et al. 1981, 240–1, fig. 119) and at Tell el 'Ubaid (Hall and Woolley 1927, pl. XII: 4).

<sup>48</sup>According to Benati, Pit F: I–K ('kiln stratum 5': LU–JN transition), Pit G: 1–4 and part of the 'JN Cemetery' date to the Jemdet Nasr period. In my opinion, the presence of small clay cones and *Riemchen* structure (22x8.8x8.5 cm) (Woolley 1939, 5) in the Archaic III–IV phases (Ziggurat area) is not incompatible with an Uruk Eanna III dating (Jemdet Nasr period), however, in light of the available data, it is not possible to exclude a Late Uruk dating.

<sup>49</sup>Pongratz-Leisten relied on contexts and dates provided by Lenzen for the western and southern sectors of the Eanna (UA 3, 5, 6) and did not comment on material from the central sectors (UA 1, 2, 3).

<sup>50</sup>For a general plan of Eanna III, see Heinrich 1982, Abb. 142; van Ess 2015a, Abb 4 (with Eanna I levels) or Nissen, 2021, Abb. 1.

(1999) undertook this difficult task. Unfortunately, his study could only partly incorporate the complete revision of the architectural remains by Eichmann (1989; 2007). This revision was completed afterwards and renewed our perception of the stratigraphic evolution of the Eanna. The conclusions of Sürenhagen (1999, 115–19, 173; 2014, 180) who dated the beginning of the Jemdet Nasr period before Eanna phase III have not been retained by the different scholars.<sup>51</sup>

Concerning the markers of the Jemdet Nasr period, Sürenhagen (1999, 98, 102–3; 2014, 180) mainly based his reflexion on two forms: the cut-rim bowls (see below) and the 'tall flower pots'.<sup>52</sup> Among the problematic examples of 'tall flower pots' that Sürenhagen mentioned,<sup>53</sup> the particular shape of the bowls found at Uruk and Nippur stand out. These are very large bowls, with an average height of 25 cm and an average rim diameter of about 27 cm. These coarse conical bowls had a band-like rim and a string-cut base.<sup>54</sup> This type of bowls can be identified in several secured Jemdet Nasr levels, notably on the Uruk Mound at Abu Salabikh and in Archaische Siedlung near Uruk (Fig. 10). Thus this type, more precisely defined, appears to be limited to Jemdet Nasr levels in southern Mesopotamia. If this is confirmed by future discoveries, it could be added to the different types defined above and used as an additional indicator for further work.<sup>55</sup>

The excavation programs currently carried out on the main sites of the period, such as Uruk,<sup>56</sup> will be decisive for the understanding of the Jemdet Nasr period. Initial results are already available. At Tūlūl al-Baqarat, a mission under the direction of C. Lippolis, identified a Jemdet Nasr period occupation on mound TB4a, materialised by the discovery of a magnificent polychrome jar (S2 sounding)

<sup>51</sup>According to Sürenhagen, ED I time was already reached during Eanna III levels. Sürenhagen (1999, 103–19, 173) has based his argument on three indicators: the appearance of solid footed goblets, 'älterfrühdynastischen' art objects and new construction methods that herald the use of plano-convex bricks before Eanna III.

<sup>52</sup>This name was originally used at Tell Brak by D. Oates and J. Oates (1993, 180).

<sup>53</sup>Sürenhagen (2014, 180) groups together bowls found in Susa, Nippur, Uruk and Tell Brak under the same appellation, but the typological homogeneity is, in my opinion, not assured.

<sup>54</sup>The string-cut base is attested at Nippur (Wilson 1986, 74, no. 3).

<sup>55</sup>The identification of these bowls during surveys remains very problematic. Indeed a complete form is necessary to identify this type with certitude. This kind of rim may belong to other types of vessels dated to the ED I period (van Ess, pers. comm.). From a general point of view, it is still very difficult to distinguish the Jemdet Nasr period from Late Uruk or ED I during surveys, as demonstrated by new publications (Marchetti et al. 2019; Di Michele and Rost, this volume).

<sup>56</sup>New work at Uruk has been undertaken since 2015 under the direction of M. van Ess (2019). The accessibility of the late 4th millennium architectural levels in many areas confirms the place of Uruk as the most important site for future research on the Jemdet Nasr period.

No	Adapted from	Other number	Context and indications
1	Matthews 2002, fig. 37: 1	AM 1925.401	Jemdet Nasr. Old excavations
2	Matthews 2002, fig. 37: 2	GN 2982. AM 1926.367	Jemdet Nasr. Old excavations
3	Matthews 2002, fig. 37: 3	FM 228989	Jemdet Nasr. Old excavations
4	Matthews 2002, fig. 37: 4	AM 1981.947	Jemdet Nasr. Old excavations
5	Matthews 2002, fig. 37: 5	GN 2983. FM 228988	Jemdet Nasr. Old excavations
6	Matthews 2002, fig. 37: 6	GN 2985. AM 1926.366	Jemdet Nasr. Old excavations
7	Matthews 2002, fig. 37: 7	FM 158441	Jemdet Nasr. Old excavations
8	Matthews 1989, fig. 3: 5	88:367 (JN553)	Jemdet Nasr. Mound B. NE Area 4D72 sub-surface
9	Zaina 2020, pl. 28: 12	–	Kish. Y Sounding. Phase 1b
10	Pongratz-Leisten 1988: p. 257: Nr. 272	W 20317	Uruk. Archaische Siedlung. Phase V. Schicht 9b, bei 60 m. Scale corrected: Strommenger 1963, 50, Taf. 38j
11	Pongratz-Leisten 1988: p. 265: Nr. 340	W 20446	Uruk. Archaische Siedlung. Phase IX/X. Schicht 43/44, bei 41 m. Scale corrected: Strommenger 1963, 50, Taf. 38i
12	Pongratz-Leisten 1988: p. 253: Nr. 242	W 20302	Uruk. Archaische Siedlung. Oberfläche. Schicht 1, bei 62,50 m. Scale corrected: Strommenger 1963, 50, Taf. 38k
13	Pongratz-Leisten 1988: p. 256: Nr. 264	W 20316	Uruk. Archaische Siedlung. Phase IV. Schicht 5, bei 62,20 m. Scale corrected: Strommenger 1963, 50, Taf. 38l
14	Pongratz-Leisten 1988: p. 214: Nr. 73	W 17518b	Uruk. K/L XII/XIII. La XII-5 unter LZ. 7?
15	Woolley 1955: pl. 64 : JN 160	U. 14430. BM. 124487	Ur. Pit F Level I (Sürenhagen 1999, Taf. 54: 3; Dittmann 2006, 31)
16	Wilson 1986: fig. 7: 10	7 N 748	Nippur. Inanna Temple XIV (XII). Loc 342
17	Stefanski 2016: p. 3	7 N 749. ROM 962.143.103	Nippur. Inanna Temple XIV. Locus 342 Corrected Scale : "rim diameter: 16,5 cm"
18	Delougaz 1952: pl. 20e: C.200.210	Kh. VII. 230	Khafajeh. Q 42:40. Sin II another sample: P 43:43. Houses 11
19	Adams & Nissen 1972: p. 212	–	Uruk Region. Site 044, 230, 272, 177, 256, 288. Surface
20	Postgate & Moon 1982: fig. 4: 3	2G36:191	Abu Salabikh. 2G36d, fine sandy layers at base of Level II (5441)
21	Lloyd, Safar & Frankfort 1943: pl. 16a	–	Tell Uqair. From the Painted Temple ?

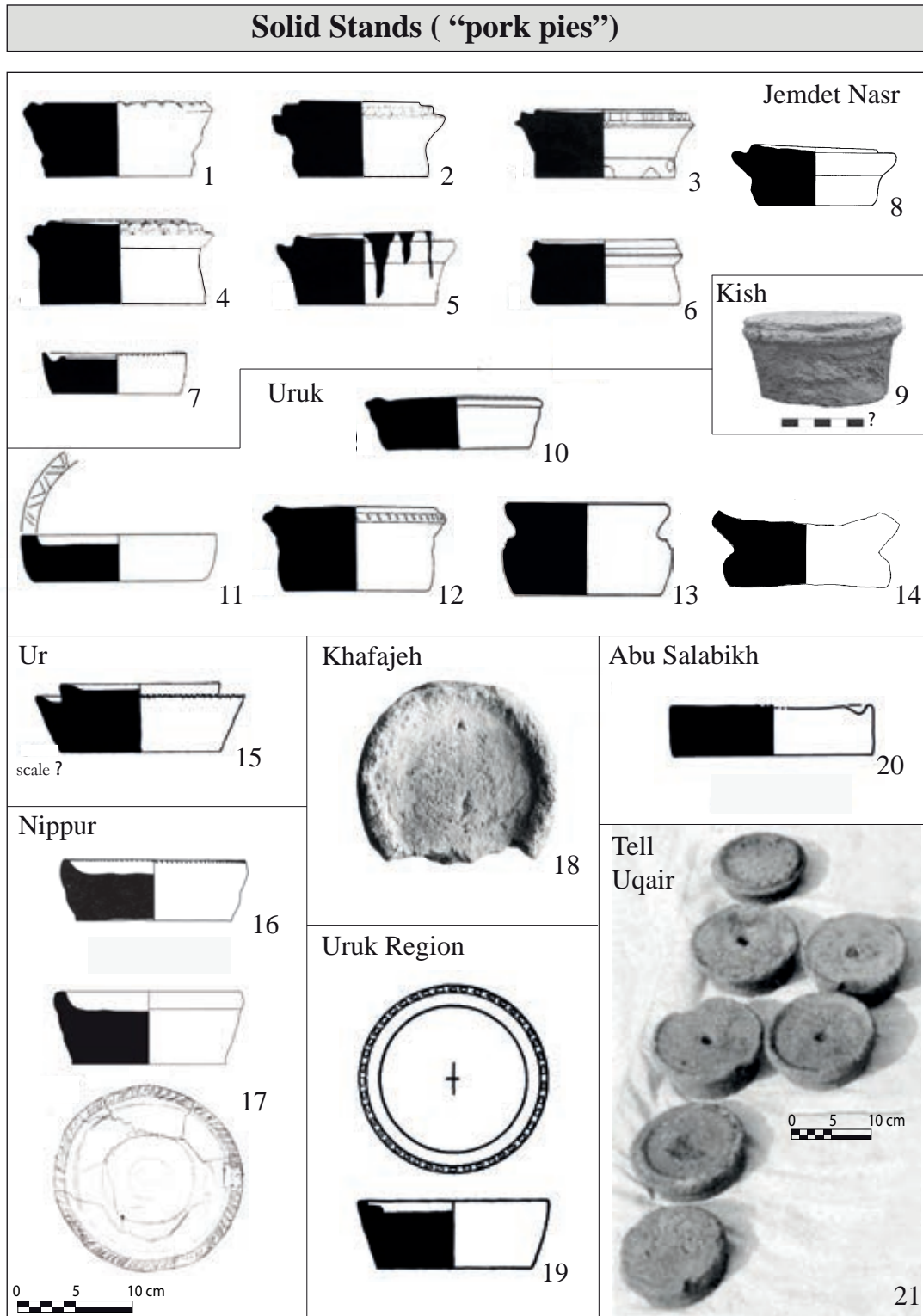
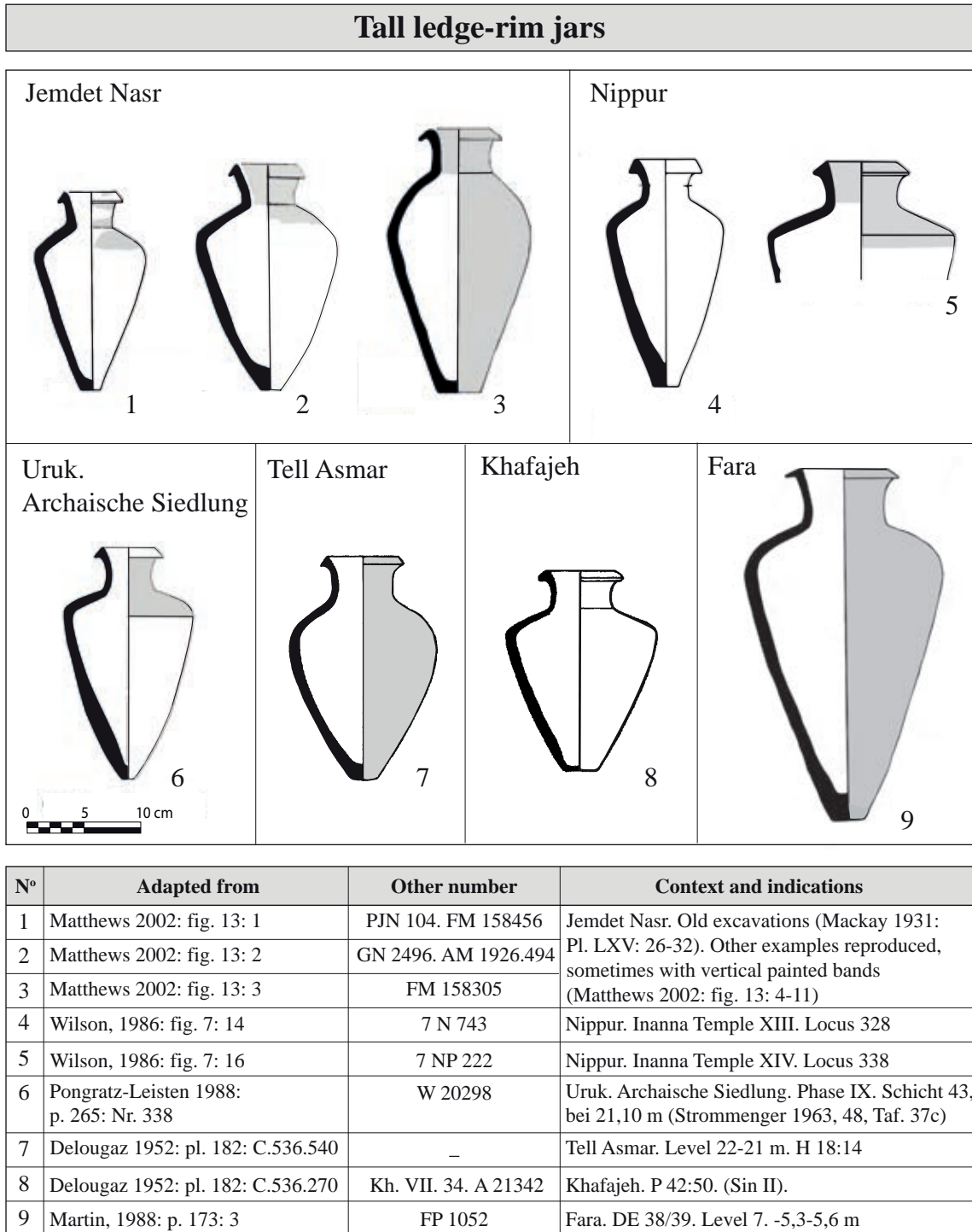
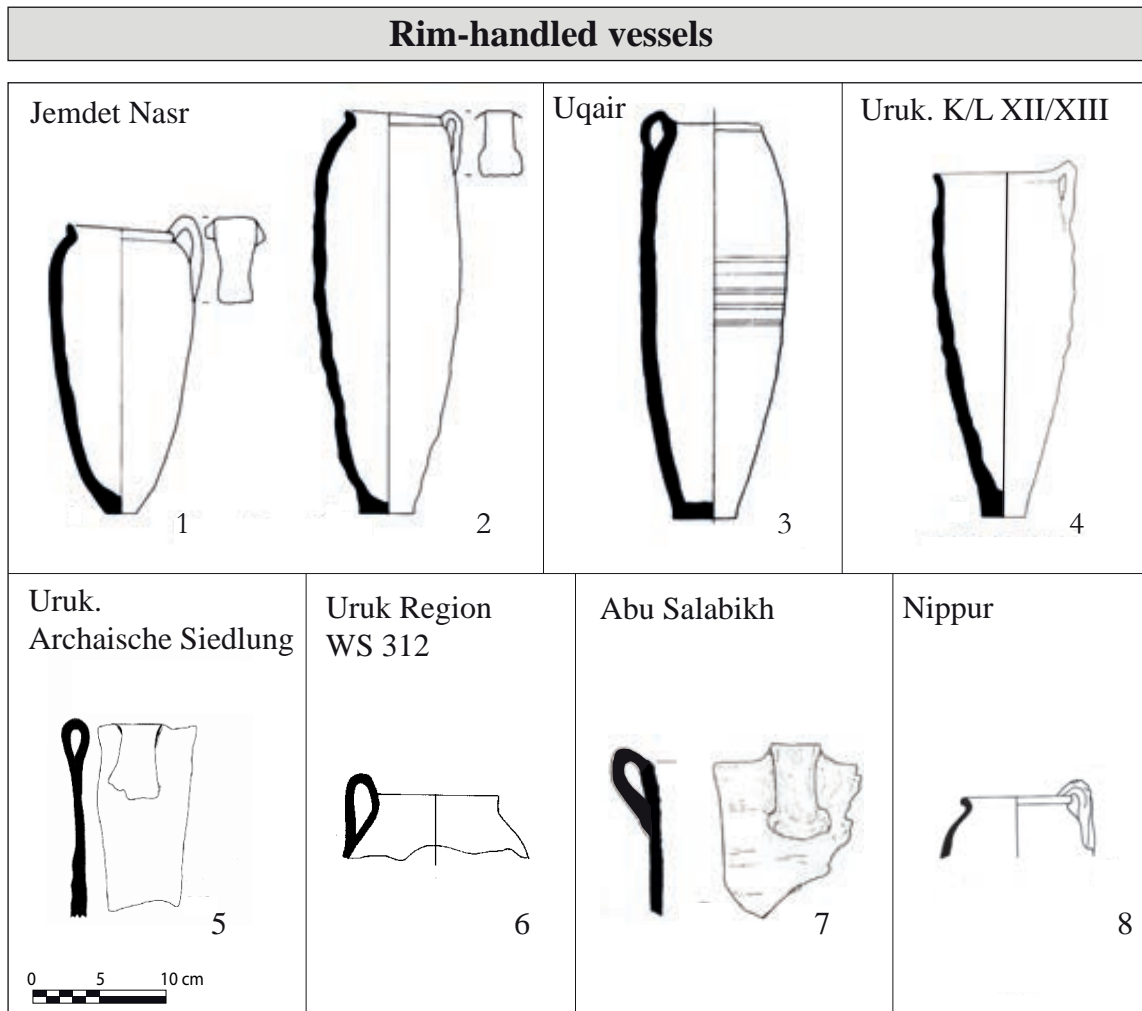


Fig.7. Examples of Solid Stands found in southern and central Mesopotamian sites.

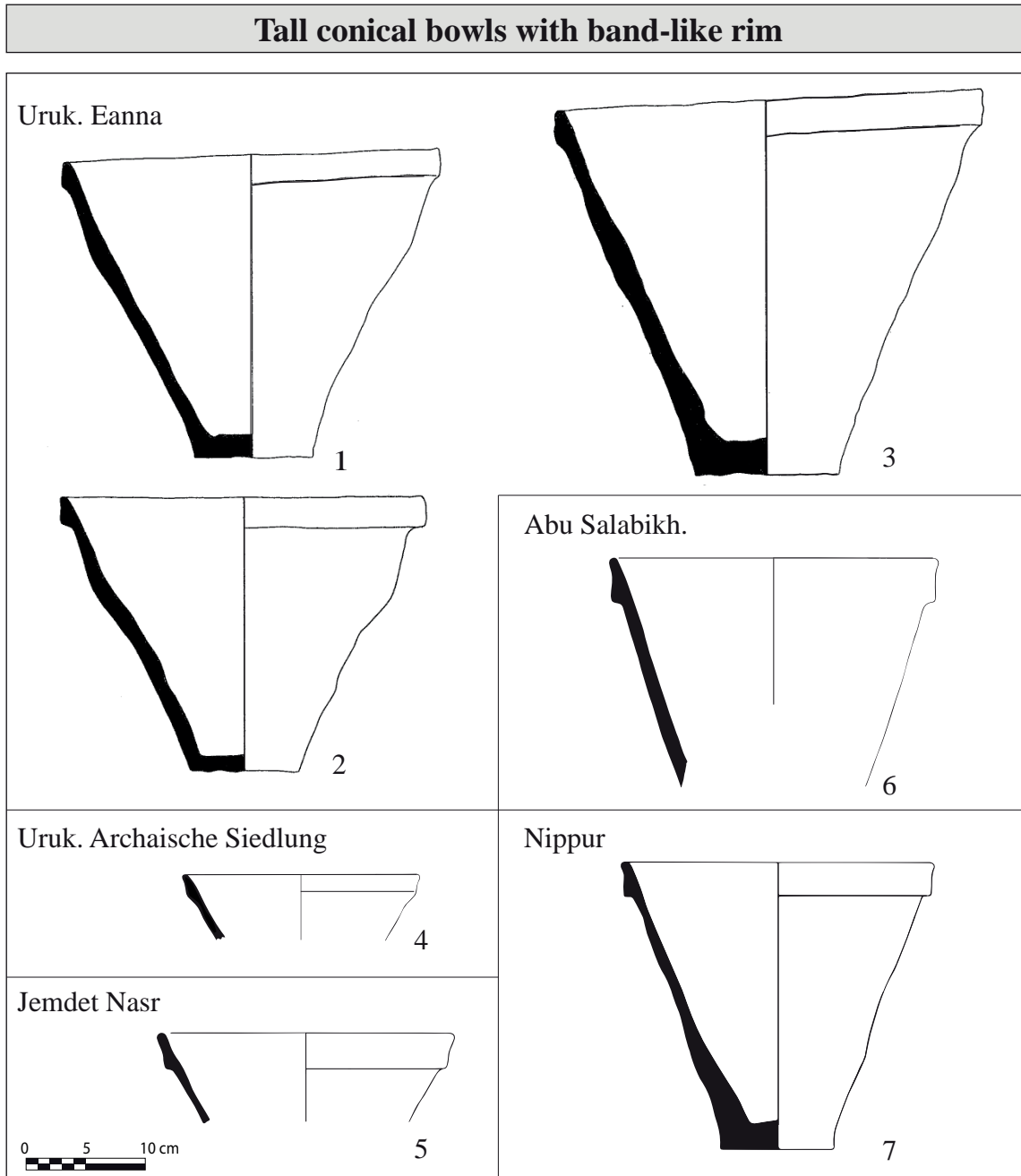


**Fig. 8.** Examples of Tall ledge-rim jars found in southern and central Mesopotamian sites



N°	Adapted from	Other number	Context and indications
1	Matthews 2002: fig. 31: 2	GN 3044. FM 158420	Jemdet Nasr. Old excavations
2	Matthews 2002: fig. 31: 1	GN 3077. FM 158495	
3	Lloyd, Safar & Frankfort 1943: pl. 22: 4	–	Uqair. “Uruk and Jemdet Nasr context” ?
4	Sürenhagen 1987: p. 58: Nr. 31	W 17276	Uruk. K/L XII/XIII, Ke XII-4, Niveau der Unterkante der äußersten Ringmauer
5	Pongratz-Leisten 1988: p. 265: Nr. 342	–	Uruk. Archaische Siedlung. Phase IX. Schicht 43, bei 28 m (Strommenger 1963, 51, Taf. 39c)
6	Adams & Nissen 1972: fig. 69: 15	–	Uruk Region. WS 312. Surface
7	Pollock 1990: fig. 5c	U1008: 1	Abu Salabikh. Uruk Mound. Refuse-filled pits (locus 102-103)
8	Wilson, 1986: fig. 7: 5	–	Nippur. Inanna Sounding XVII, fill [=Inanna Temple XIV/XIII]

**Fig. 9.** Examples of Rim-handled vessels found in southern and central Mesopotamian sites



N°	Adapted from	Other number	Context and indications
1	Lenzen 1965: Taf. 26: q	W 21420, 18	Uruk. Eanna. Oc XVI-2,3 aus einer Brennstelle (5) der "Zwischenschicht IVa-III" UA 4: SV 13/14-2: Grube 15 (Eichmann 2007, 276)
2	Lenzen 1965: Taf. 26: r	W 21420, 17	
3	Lenzen 1965: Taf. 26: p	W 21420, 19	
4	Pongratz-Leisten 1988: p. 266: Nr. 348	–	Uruk. Archaische Siedlung. Phase X. Schicht 44, bei 30-35m unterhalb von Ofen I. (Strommenger 1963, 52, Taf. 39x)
5	Matthews 1989: fig. 3: 3	–	Jemdet Nasr. Mound B, NE Area. 5D02 surface
6	Pollock 1990: fig. 5a	U1023: 13	Abu Salabikh. Uruk Mound. Refuse-filled pits (locus 102-103)
7	Wilson 1986: fig. 5: 4	7 N 747	Nippur. Inanna Temple XIV. Locus 336

Fig. 10. Examples of Tall conical bowls with band-like rim found in southern and central Mesopotamian sites

(Di Michele 2016, 102–3). At Tell Zurghul, excavations under the direction of D. Nadali and A. Polcaro (2020) have uncovered an uninterrupted sequence of occupation extending from Late Uruk to the ED I period in Area A on the Main mound (Pizzimenti 2020). The Jemdet Nasr levels (Phase 3–4) yielded monochrome and polychrome jars, as well as bowls found in large quantities. Among the latter, cut-rim bowls were distinguished (Pizzimenti 2020, Fig. 10: 12; 16: 3). The technological study dealing with evolution of mass production carried out by S. Pizzimenti renews our knowledge on the evolution of this type of bowls between Late Uruk and ED I periods. Moreover, the results of Tell Zurghul already allow a refining of the general definition of the Jemdet Nasr pottery. For example, a polychrome jar with a decoration of four vertical ridges (Pizzimenti 2020, 110–11, Fig. 12: 2) finds parallels in Uruk in O XII/XIII, in Jemdet Nasr and Musiyān (Nagel 1964, 9, taf. 3). Its discovery in Phase 3–4 thus helps to clarify the dating of a form that was previously unstratified.<sup>57</sup>

There is no doubt that additional data will soon come from other sites and improve further our knowledge. New absolute dates are also expected, which will clarify the time of existence of this period that could begin before 3200 BCE, according to recent studies.<sup>58</sup>

## Conclusion

The definition of the Jemdet Nasr pottery was subject to numerous difficulties that could only be partly resolved. The identification of a corpus of some markers specific to this period is possible, but it remains limited. I hope that their synthesis will be useful for current and future work. The new data discovered may very quickly confirm or refute the few elements discussed here. They will undoubtedly make it possible to write a new chapter in this long history that started almost a hundred years ago.

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<sup>57</sup> In addition, this type of decoration could reflect a possible Iranian influence, see e.g. Haerinck 2011, 65–6, 69, pl. 5 (Qabr Nahi), 6 (Abdanan), 9 (Mir Vali) and 17 (Tepe Jarali), 18 (Kunji Cave).

<sup>58</sup> C14 dates have been carried out on samples from the well-stratified Archaische Siedlung Phase IX. They led to several possibilities: 3350–3330 BCE or 3210–3180 BCE or 3240–3100 BCE (van Ess 2015b, 22), see also Wencel 2017. This uncertainty is related to the plateau in the radiocarbon calibration curve for the late 4th millennium (see, Dahl et al. 2013; Petrie 2014). The publication of further dates from the Jemdet Nasr levels of Tell Zurghul will be decisive. See also Polcaro 2020, 23, for the publication of a data coming from the ED I level (3104–2850 BCE). In Iran, according to recent studies the beginning of use of the proto-Elamite writing and thus, the dating of the eponymous period, could be dating to 3300 BCE (Desset 2016, 90–1).

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**Arabic Abstract**

**٦. في فجر فصلٍ جديدٍ: حول تعريف فخار فترة جمدة نصر (هوغو ناكارو)**

تتميز الفترة الإنتقالية بين الألفية الرابعة والثالثة قبل الميلاد باضطرابات إجتماعية وسياسية واقتصادية عميقة. وطرأت تغييراتٌ على الثقافة المادية لمجتمعات جنوب بلاد ما بين النهرين خلال هذه الفترة والتي تُعرف تقليدياً باسم جمدة نصر ويعود تاريخها إلى الفترة بين عامي ٣٢٠٠ و ٢٩٠٠ قبل الميلاد. ولعلّ أبرز هذه التغييرات هو عودة ظهور الفخار المطلي أحادي اللون ومتعدد الألوان والذي كان يُعتقد أنه اختفى خلال فترة الوركاء (أوروك). ومع ذلك، كان هذا النوع من الفخار الذي كان محور النقاشات نادراً في العديد من المواقع، كما أنه يُمثّل مشكلةً من الناحية الزمنية. ويثير تعريف مجموعة فخارية أوسع نطاقاً مميزة لفترة جمدة نصر إشكاليات كبيرة، ويرجع ذلك أساساً إلى الطبيعة الإنتقالية لهذه المرحلة.

وسأنتبغ في هذا البحث التاريخ المعقّد للبحوث التي أُجريت على فخار فترة جمدة نصر على مدى المئة عام الماضية. وأزعم أنه إلى جانب الفخار المطلي، من الممكن تحديد مجموعة من أنواع الفخار الأخرى الخاصة بهذه الفترة. ويمكن أن يُشكّل جميع هذه الأنواع أساساً للأعمال الحالية والمستقبلية في فترة تجدد البحث الأثري في جنوب العراق. وسيكون لهذا البحث الجديد الذي حقق بالفعل بعض النتائج دوراً حاسماً في تجديد معرفتنا بفترة بالغة الأهمية في فجر العالم السومري.

## Abstract

Archaeological investigation at the urban site of Tello resumed in 2015 and has provided a new pottery dataset from well-stratified contexts. The investigations carried out in area B (located within Tell A) produced a large amount of pottery which has been analysed in order to reconstruct the occupation sequence of this part of the site. The oldest levels were exposed in a deep sondage (B1) which uncovered a stratigraphic sequence comprising a large part of the third millennium associated with two mud-brick platforms built in two different periods. The Early and especially the Late Akkadian sequences found in B1 were also encountered in areas B2 to B11. This uninterrupted sequence, which starts late in the Early Dynastic I period, allowed a preliminary examination of the trends which characterise the pottery repertoire of the site in the third millennium BCE.

Angelo Di Michele

# 7. The Third Millennium pottery sequence from Area B in Tello, Iraq: persistence, change and evolution

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## Introduction

The archaeological site of Tello is situated about 55 km north of the modern city of Nasiriyah, in the province of Dhi Qar in southern Iraq. Research on the site began in 1877 by Ernest de Sarzec and continued intermittently until 1933 (Rey 2016, 5–12). Since 2016, after more than eight decades, fieldwork resumed on the site with a British Museum project directed by Sébastien Rey<sup>1</sup>. This focused on area B, the sector of the sacred precinct of Girsu, long known as Tell A or the Mound of the Palace. This area had already extensively investigated in numerous campaigns between 1877 and 1933, first mainly by Ernest de Sarzec and later by Henri de Genouillac. These campaigns were often conducted using deep soundings which were poorly recorded, which caused severe truncation of archaeological deposits including those of the third millennium.

Fieldwork in Tell A (Fig. 1 and Fig. 2) consisted of a deep sounding (B1) alongside more extensive excavation areas B2 to B11. B1 was investigated over the course of 4 seasons between 2016 and 2018, when the underlying stratigraphic sequences were investigated to a depth of approximately 7 m below the

current ground surface. Unfortunately, heavy rains in 2019 rendered these excavations unsafe, making it impossible to continue to greater depths. Notwithstanding this, B1 produced a stratigraphic sequence which showed an uninterrupted occupation related to two mud-brick platforms during the third millennium BCE (Rey 2024, 420–6). For later periods, Tell A was also investigated in large open areas (trenches B2 to B11) which brought to light occupation between the Late Akkadian and Isin–Larsa periods.

For clarity, we have distinguished the pottery from this area within ten phases (X–I). Pottery phases X–V are dated to the third millennium BCE, while phases IV–II belong to the second millennium BCE, with phase I relating to the Seleucid/Parthian period.

## The sequence within B1

The earliest phase (pottery phase X) was reached in the deepest part of B1, in contexts related to the earlier mud-brick platform 1063. Despite the repertoire of pottery shapes being rather limited, it provided interesting chronological information. Although mass-produced pottery was present, it formed no more than 50% of the whole. This comprised two pottery types: conical beakers (Pl. 1.1–2) and conical bowls (Pl. 1.3), representing 37% and 11% of the recorded diagnostic sherds, respectively.

However, if we turn to other pottery shapes, deep bowls and jars were frequent among the sherds collected for this phase. Deep bowls were characterised by plain (Pl. 1.4, 6), thickened (Pl. 1.7) or triangular rims (Pl. 1.5). Their exteriors were usually decorated with a simple or notched ridge, and more rarely an incised wavy line. A rarer form of deep bowl

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<sup>1</sup> The complete stratigraphic and chronological sequence revealed by the excavations on Tell A has been thoroughly examined and documented in a two-volume book (Rey 2024). The fieldwork employed a multidisciplinary method to enhance the understanding of settlement dynamics at the site of Girsu. Recent publications include an examination of the site's watercourses (Egbert et al. 2023) and an in-depth study of an Early Dynastic III favissa associated with the sacred precinct (Greenfield et al. 2024). Additional researches are on the way, including an assessment of data from the site survey and from other excavation areas.

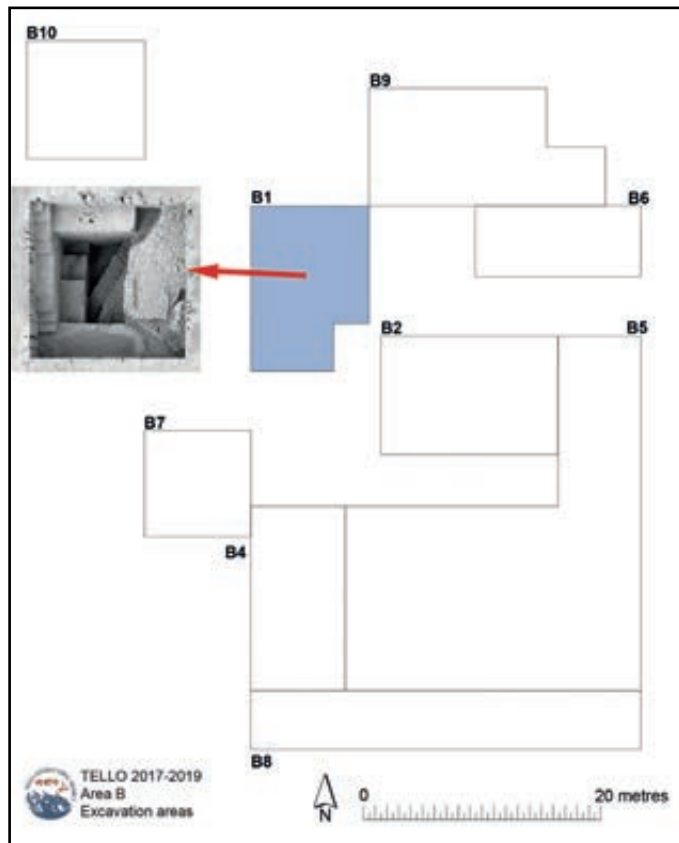


Fig. 1. Tello Area B: Schematic plan of the excavation areas of area B on Tell A. (courtesy of the Tello Archaeological Project).



Fig. 2. B1 facing southeast showing the two-step red platform 1063 (below) and the white platform 1036 (above), excavated by the British Museum team on Tell A. (courtesy of the Tello Archaeological Project).

featured curved walls with various rim shapes and outer side decoration. These included a thickened rim with an incised wavy line on the outside between the rim and the ridge (Pl. 1.8) and a triangular rim with a ridge bearing impressed fingernail decoration on the outer side (Pl. 1.9).



Fig. 3. Reserved Slip Jar shoulder from B1. (courtesy of the Tello Archaeological Project).

Closed shapes were considerably less common in this phase. Fragments (unfortunately not from the rims) of two types of large jars coated with a reserved slip were recovered from two different contexts (Pl. 2.3 and Fig. 3). One had a yellowish slip and a reserved slip decoration in a geometric pattern of bands and rectangles. The other item had a high ridge on the shoulder decorated with a row of impressed fingerprints (Pl. 2.2).

Other more unusual ceramic types were also found. These included a fragment which probably belonged to a hollow stand with a bulbous rim and a large ridge just below it on its outer wall (Pl. 2.1) and a flat tray with an internal ring (Pl. 2.4).

The subsequent phase IX was represented by contexts comprising levelling dumps, forming occupation over context 1066. Mass-produced pottery increased significantly within this phase, accounting for 63% of diagnostic sherds. Conical beakers (43%) and conical bowls (20%) continued to be the most commonly found shapes among this type (Pl. 2.5–7).

Other pottery forms represented just over a third of the pottery repertoire of this phase and are also characterised by an interesting diversification of shapes. Several specimens of deep bowls with triangular rims (Pl. 2.8–9) and, less commonly attested, deep bowls with thickened rounded rims (Pl. 2.10) were found among the open shapes. Some sherds of a hollow stand with a thickened rim and a simple ridge on the outer wall (Pl. 3.1–2) were also present within this phase. Closed shapes maintained a proportion similar to the previous phase, and all comprised jars including both small and medium-sized examples. The former included types with a short plain rim (Pl. 3.3), a short plain rim with dropping shoulder (Pl. 3.5–6), and a low-necked jar with an outside angular rim (Pl. 3.4). Finally, specimens with a triangular rim (Pl. 3.7–8) and with a ledge rim (Pl. 3.9–10) were found among the medium-necked jars.

The pottery assemblage of the subsequent layers 1052 and 1053 (pottery phase VIII) also included a large amount of mass-produced ware, which increased slightly to 66% of the recorded sherds. Conical beakers (Pl. 3.11–12) and conical bowls (Pl. 3.13) accounted for 44% and 22% of this total, respectively.

A greater variety in the shapes of conical beakers can be observed from this phase. These are now attested with straight walls (the type documented in previous phases, and which remained prevalent), and by a new type of conical beaker with flared walls which represented approximately one-fifth of the recorded beakers.

All other shapes represented only 34% of the total assemblage and among these the most distinctive diagnostic pottery type was carinated bowls with a plain everted rim (Pl. 4.1–3). The repertoire of open shapes was completed by three types of deep bowls differentiated by outwardly thickened (Pl. 4.7), triangular (Pl. 4.4) or hammer rims (Pl. 4.5–6). Most of these had a ridge or a notched band (or a large ridge with fingertip impressions) on their outer walls.

A type of hollow stand with a thickened rim and a simple ridge just below it on the outer side (Pl. 4.8) persisted from the previous phase. Finally, the lower part of a sinuously-walled funnel with a hole in the middle of its flat base was also found (Pl. 4.9).

The range of closed forms was largely dominated by medium-sized jars. The most common type was the short plain-rimmed jar (Pl. 5.1–3). Other types featured an elongated triangular rim (Pl. 5.4–5), while jars with ledge rims (Pl. 5.7–8) appeared to have shorter necks compared to the previous phase. A rarer specimen of jar had a narrow, flared neck with a triangular rim (Pl. 5.6).

Context 1051 is a particularly important layer within the stratigraphy of trench B1 (pottery phase VII) as it represents the surface on which a new monumental platform (1036) in whitish mud-bricks was built (Fig. 2). The pottery sherds collected from this showed some differences from the previous phases.

First of all, relatively few sherds were present in this layer and 77% were mass-produced types (Pl. 5.9–10). However, in common with the previous phases, conical beakers (46%) were still clearly more common than conical bowls (31%).

With the exception of this mass-produced pottery, other pottery fragments were found in a very poor state of preservation. It follows that the data for this pottery not only consists of a very limited sample (less than a quarter of the whole pottery assemblage of this phase), and its poor condition precludes an exhaustive analysis of most of the recorded fragments.

Among the few fragments able to be clearly identified, the most common type was consisted of jars with a short plain-rim (Pl. 5.11–12). Besides this, a fragment of cylindrical stand with straight walls and a shallow bowl on top was also found among the other forms (Pl. 5.13).

The pottery assemblage related to the use of the platform (phase VI) was small in amount. Mass-produced pottery

accounted for 68% of diagnostic sherds (Pl. 6.1–5). However, compared to the previous phases, we observed a complete reversal of the previous trend favouring the predominance of conical beakers over conical bowls: conical bowls now represented 46% of this total and conical beakers formed just 22%.

Open shapes are well represented, including both large bowls and deep bowls, the latter showing more variety in shape. The large bowls featured both triangular rims (Pl. 6.6) and external triangular rims with a more rounded profile (Pl. 6.7). Forms of deep bowls included those with upwardly-curving deep profiles with overhanging rounded triangular rims (Pl. 6.9), those with a notched band on the outer face below a triangular rim (Pl. 6.8), as well as bowls with slightly upturned bevelled rims (Pl. 7.1) and with hammer rims (Pl. 7.2).

As regards to closed forms, the range of rim forms of the jars was more limited compared to earlier phases. The largest group was composed of sherds belonging to short plain-rimmed jars (Pl. 7.3–4), although a sherd from a less common type of medium-necked jar with a band-rim was also recovered (Pl. 7.5).

## The Lagash II–Late Akkadian occupation of Area B

The upper levels of B1 (pottery phase V) were heavily disturbed by excavations conducted between the late 1800s and early 1900s. However, this part of the sequence can be supplemented by the results of more extensive excavations carried out in trenches B2 to B11 (Fig. 1).

The layers representing the phase which preceded the building of the temple to Ningirsu by Gudea are distinguished by a pottery assemblage of which more than 70% comprised mass-produced pottery types (Fig. 4) within which some notable changes occurred. In fact, although conical bowls (54%) were by far the most common shape (Pl. 7.9–10), a new pottery type appeared, a goblet with a narrow base<sup>2</sup> (16%), which represented the second most prevalent shape at this time (Pl. 7.6–8). In contrast, conical beakers were reduced to a sporadic presence when compared with these other forms.

The other pottery shapes collected represented less than a third of the pottery repertoire. The deep bowls with varying rim shapes and body profiles, were present among the open vessel types. Examples with triangular rims, which are well-attested throughout the third millennium BCE, were recovered (Pl. 8.1). Other fragments of deep bowls had straight walls ending in hammer rims (Pl. 8.2), and one fragment displayed

<sup>2</sup> Although this type of goblet occurs rarely from the final phase of the Early Dynastic IIIb period in Area B, its frequency increases considerably during the Early and Late Akkad period. They were found in large numbers in the building beneath the Temple of Ningirsu, both in the bedding layer (3086) for a floor and on the floor level of the building (3087). For further data about this building: Rey 2024, 429–35.



**Fig. 4.** Mass-produced pottery types, conical bowl and goblet with narrow base (pottery phase V). (courtesy of the Tello Archaeological Project).

rounded walls and an outwardly thickened rolled rim (Pl. 8.3). A strainer with a thickened outward rolled rim (Pl. 8.4) was also present among the open forms.

Compared to these open forms, closed shapes were attested in very small proportions. Among this small group, small to medium-sized short plain-rimmed jars were the most common. These mainly had a flaring rim above an oval-shaped body and drooping shoulders (Pl. 8.6), although more rarely they had rounded shoulders and globular bodies.

Although fewer jars were present within this phase, they had a more varied range of shapes. Two types of collared jars, double ridged (Pl. 8.5) and those with hammer rims (Pl. 8.7), were documented. Other jars had triangular rounded rims above horizontal shoulders (Pl. 8.9). A large jar with sloping shoulders, a vertical neck, and an outwardly flat and angular rim (Pl. 8.11) was also collected. Three rows of fingernails were located between the neck and the shoulder. Rarer items included a rolled-rim jar with a short neck and sloping shoulders (Pl. 8.10) and a short-necked jar with an oval rim above a horizontal shoulder (Pl. 8.8).

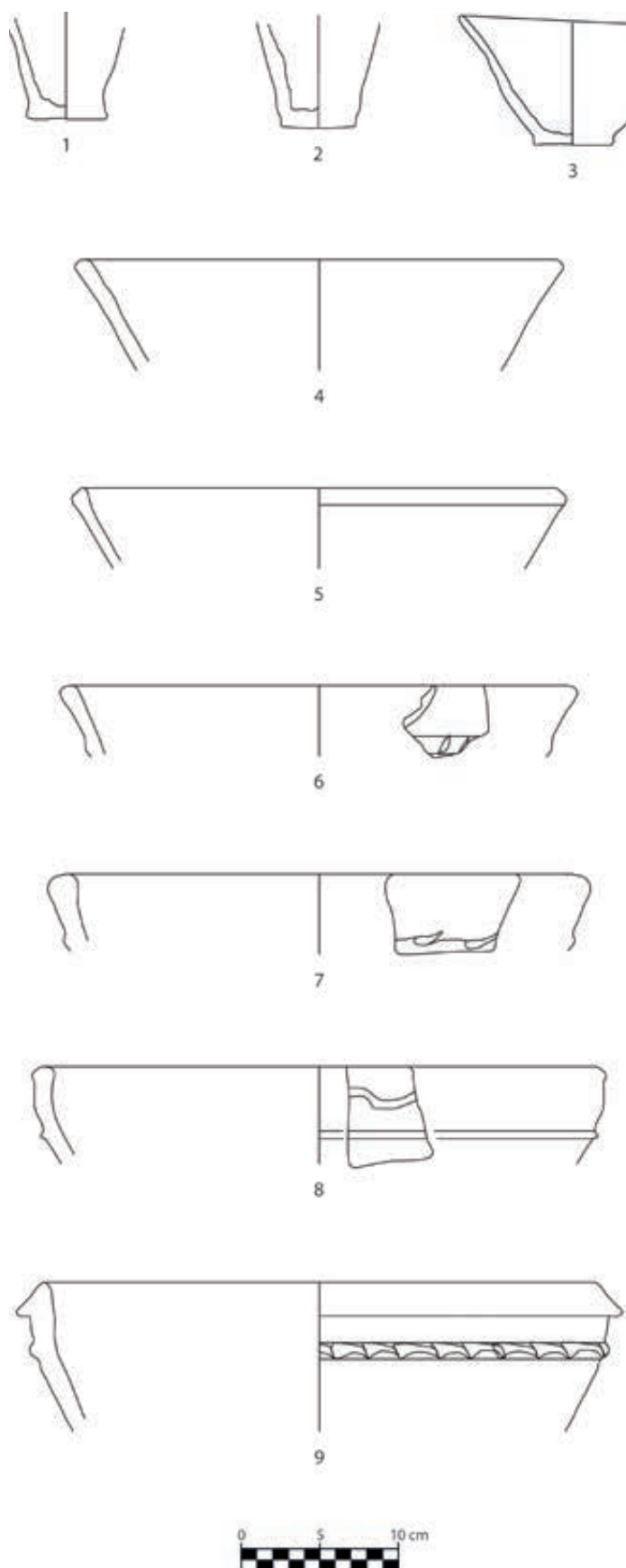
## Discussion

The sequence excavated in area B spanned the third millennium. The part associated with the earlier mudbrick platform 1063 (pottery phase X) was dominated by mass-

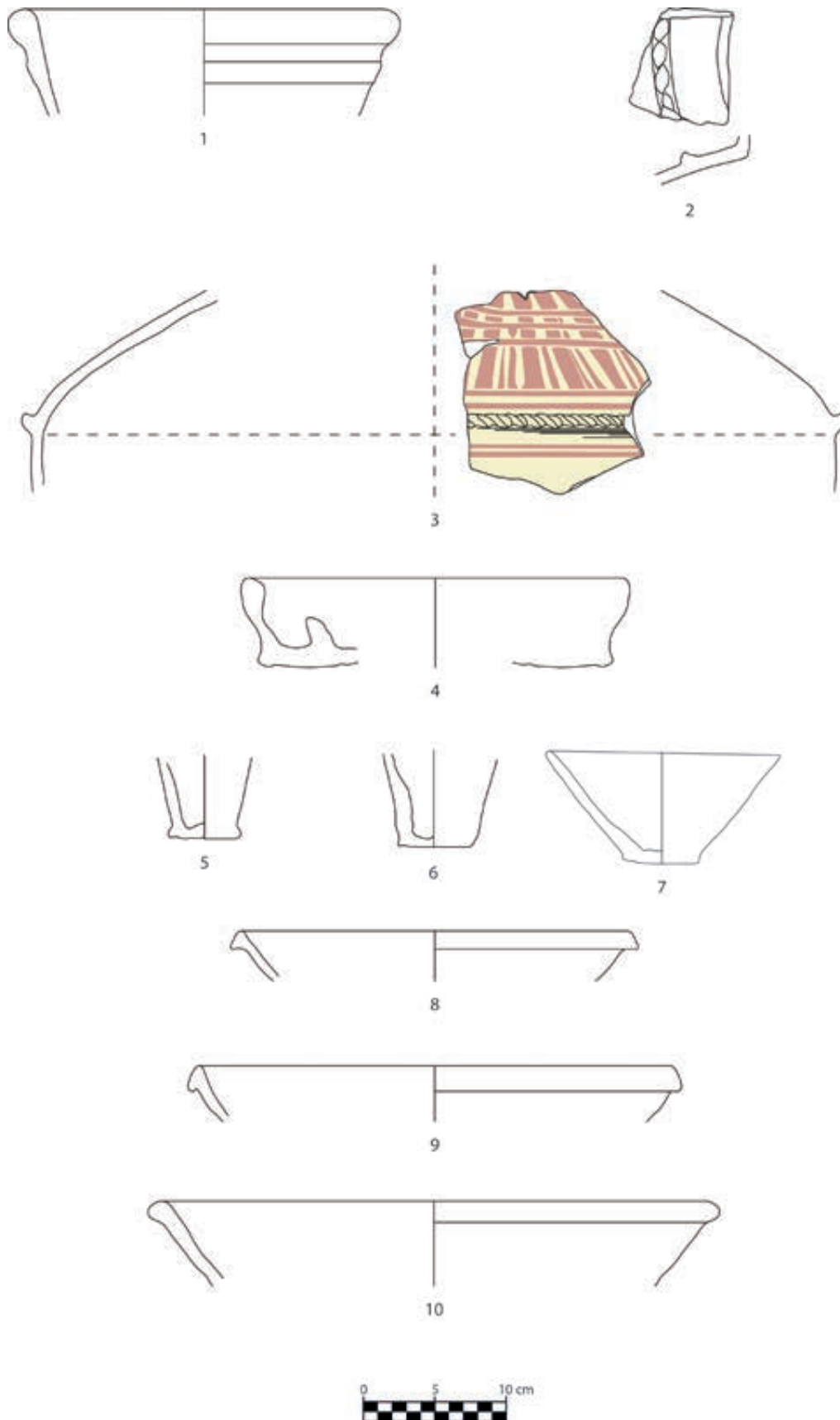
produced types such as conical beakers and conical bowls. These have also been recovered from many other sites throughout southern Iraq. The deep bowls from this phase have parallels in the contemporary pottery assemblage of Al-Hiba (Renette 2021, Type HF-7, HF-8b and HF-8c), Larsa (Calvet 2003, N74, N89), and Uruk (Boehmer 1987, no.58; Pongratz-Leisten 1988, no.118). Among the closed shapes, the reserved-slip jar can be compared with examples from Tell Khaiber (Calderbank and Moon 2017, Fig. 3.13), Abu Salabikh (McAdam 1983, no.226) and Uruk (Pongratz-Leisten 1988, no.113), whilst the flat tray with an internal ring is common on southern Mesopotamian sites, such as Al-Hiba (Renette 2021, Type HE-2), Abu Salabikh (Moon 1987, no.202), Larsa (Calvet 2003, N80, N108) and Uruk (Nissen 1970, Pl. 41.3/3, 51.5/3; Pongratz-Leisten 1988, nos.180, 229).

If we leave aside persistent mass-produced pottery types, such as conical beakers and conical bowls, the ceramic assemblage of this phase has parallels with pottery sequences from sites in southern Iraq more precisely dated to the Early Dynastic I period. Furthermore, for area B1 it can be noted that the absence of pottery shapes such as solid-footed goblets or tab-rim jars suggest that the earliest phase reached in B1 belongs to the end of the Early Dynastic I period.

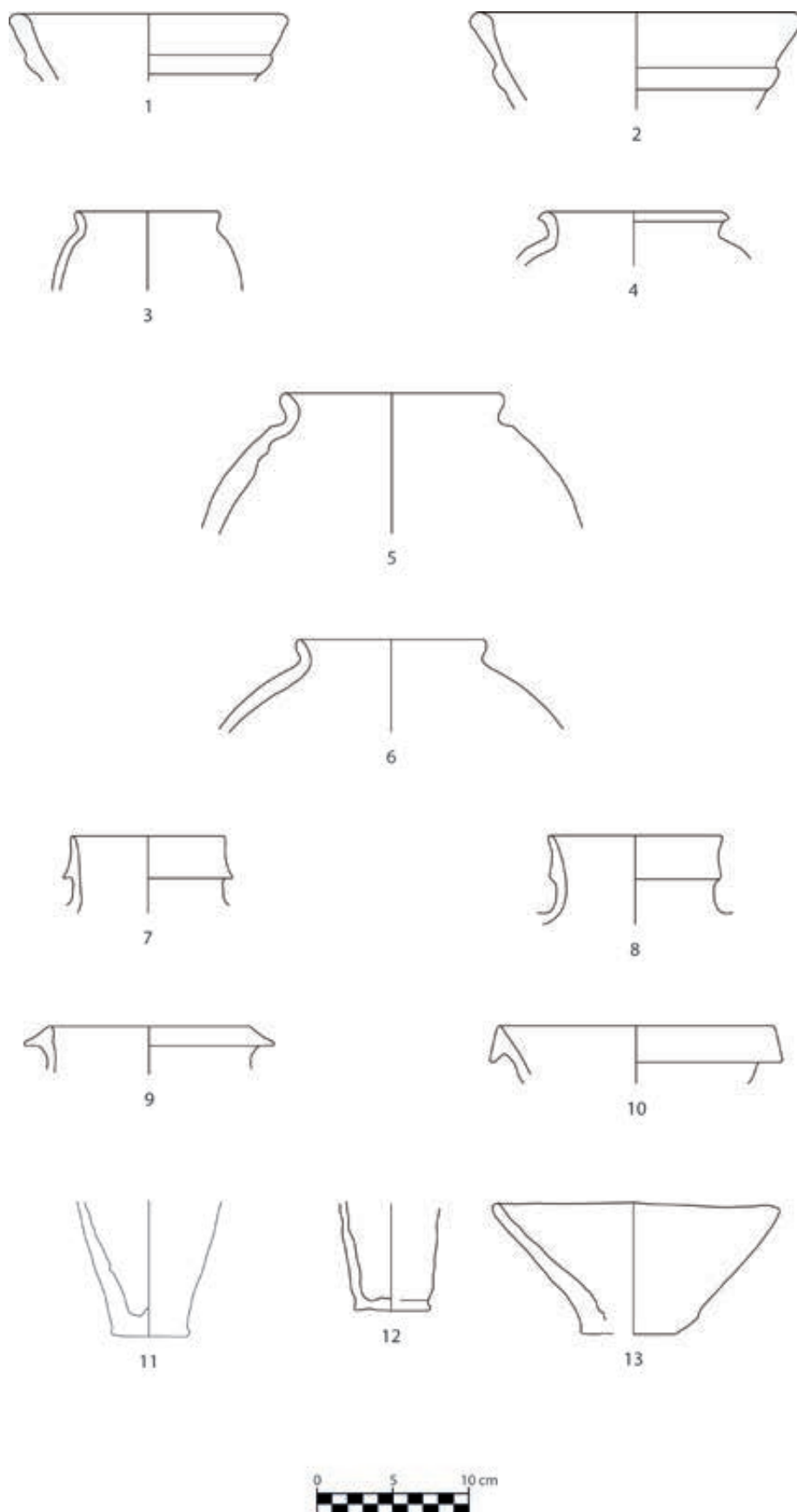
During the following pottery phase IX, mass-produced types persisted unchanged from the previous phase. Deep



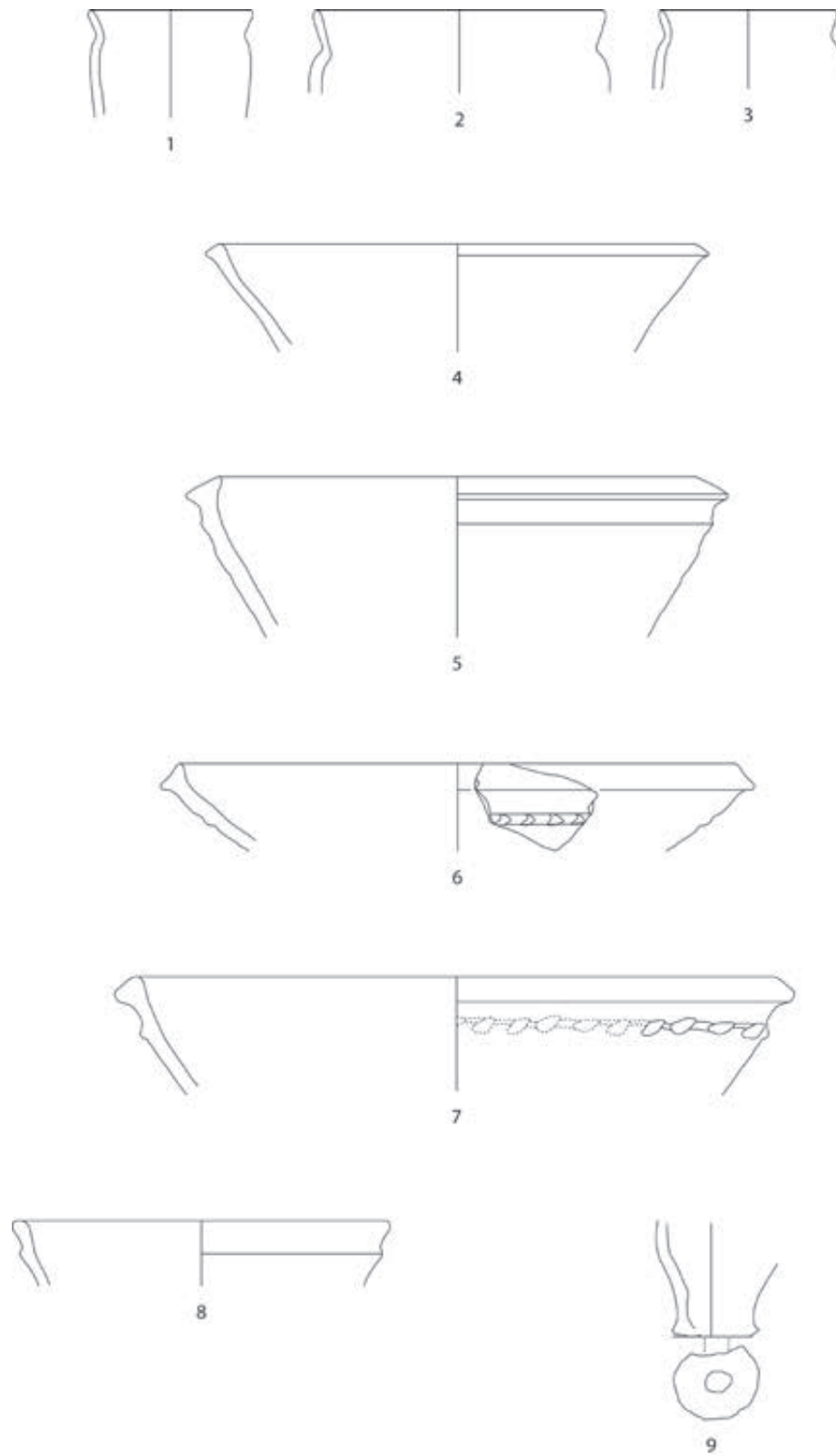
Pl. 1. Pottery Phase X. (courtesy of the Tello Archaeological Project).



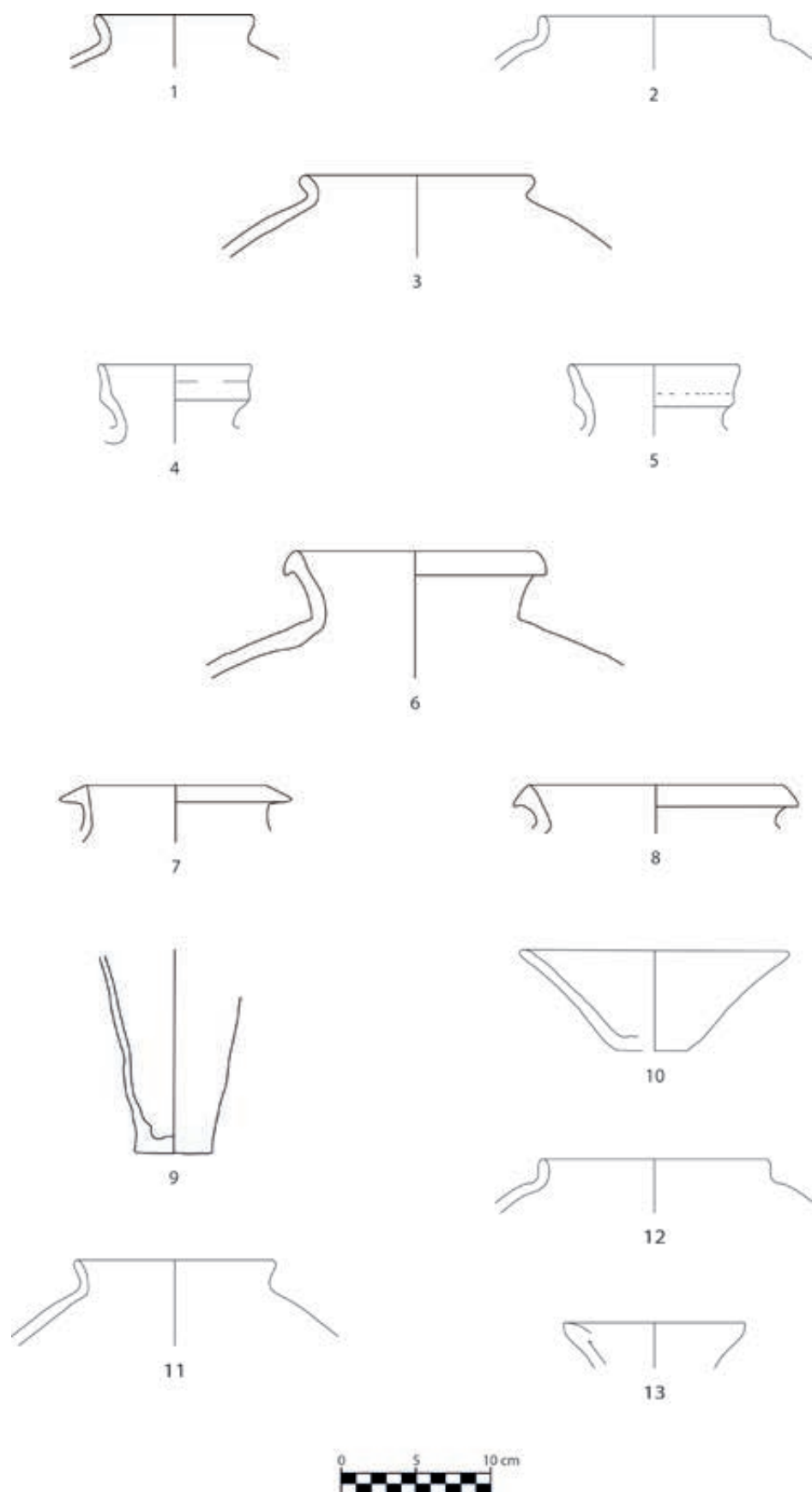
Pl. 2. Pottery Phase X (nn. 1-4); Pottery Phase IX (nn. 5-10). (courtesy of the Tello Archaeological Project).



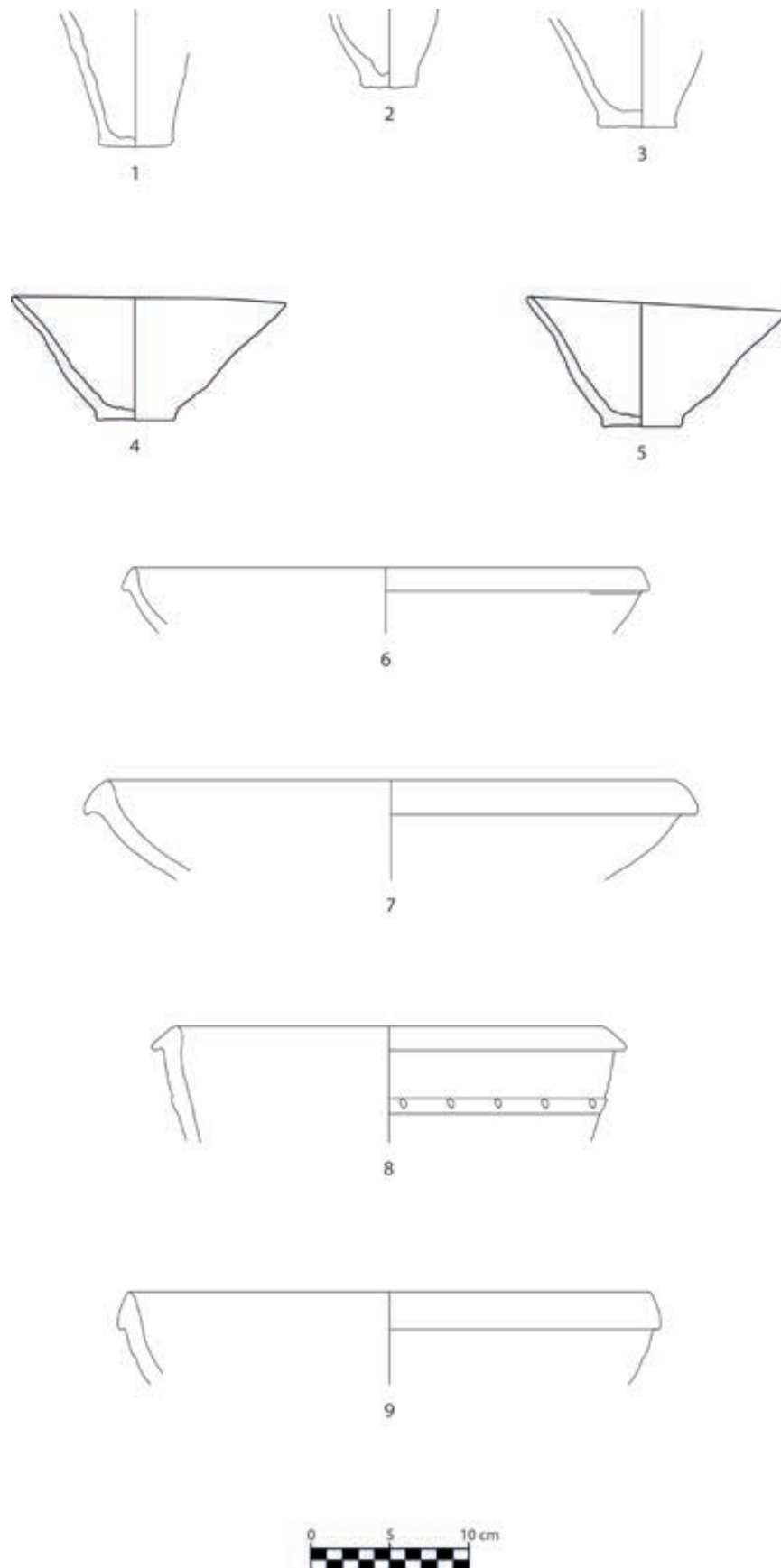
Pl. 3. Pottery Phase IX (nn. 1-10); Pottery Phase VIII (nn. 11-13). (courtesy of the Tello Archaeological Project).



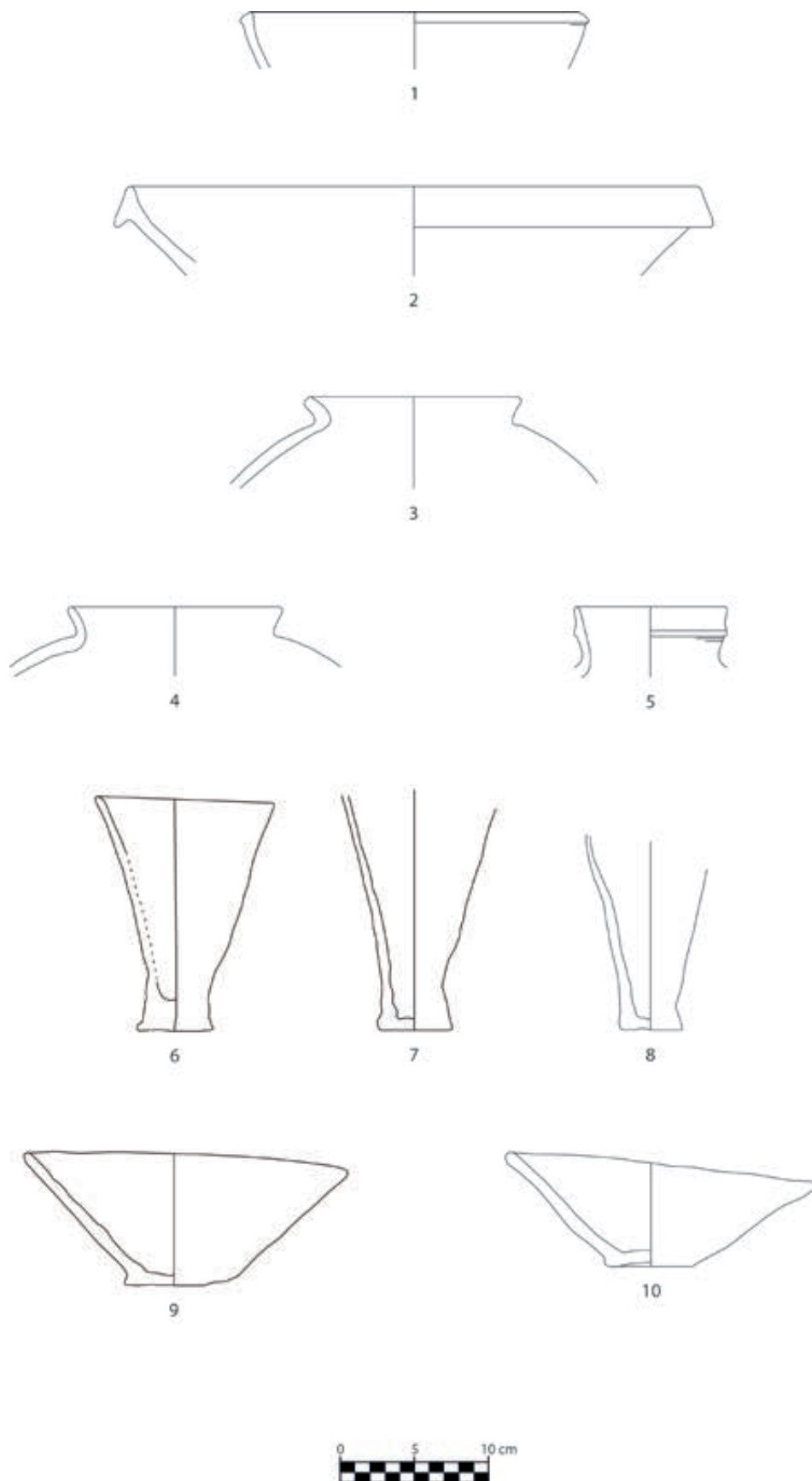
Pl. 4. Pottery Phase VIII. (courtesy of the Tello Archaeological Project).



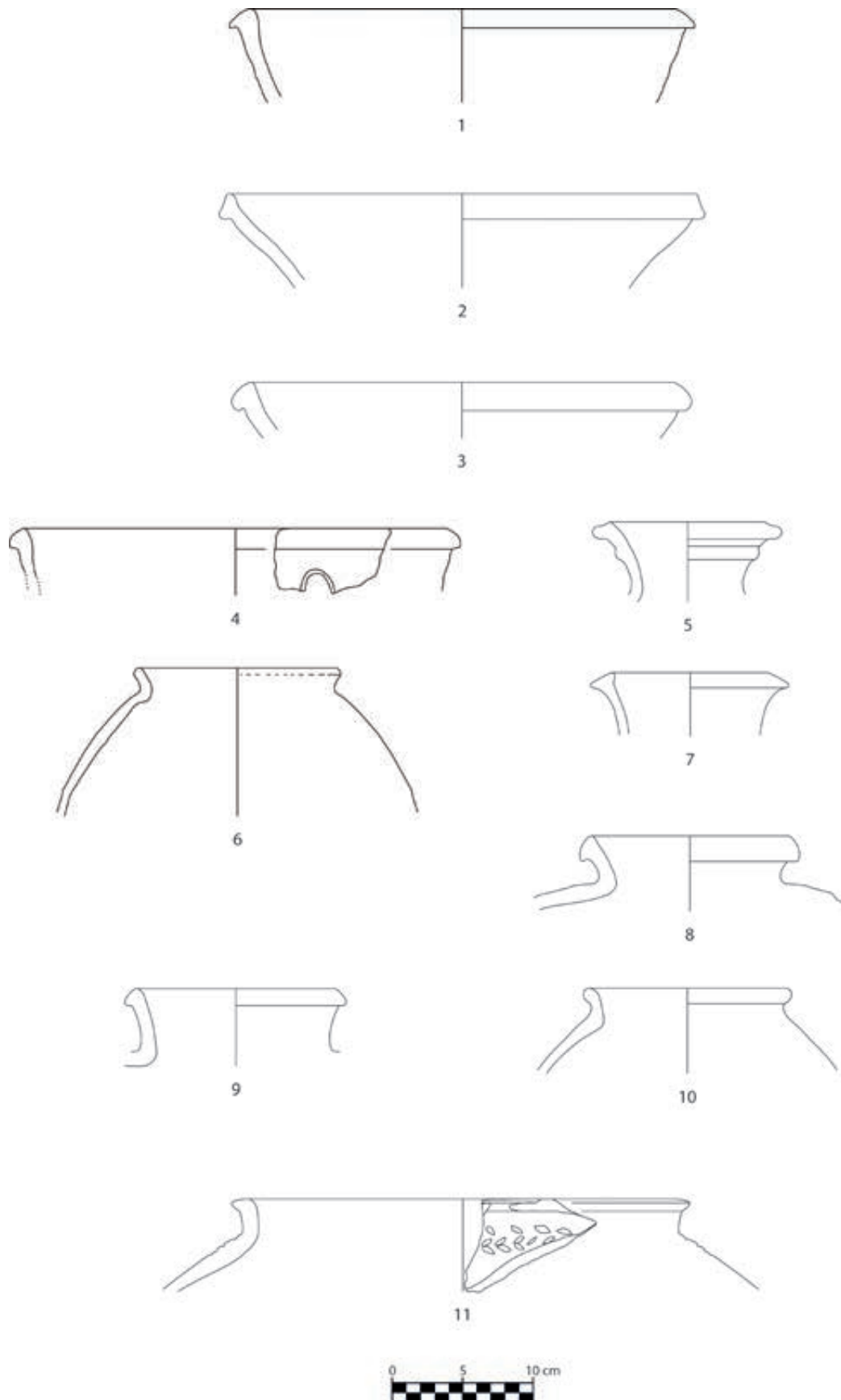
Pl. 5. Pottery Phase VIII (nn. 1-8); Pottery Phase VII (nn. 9-13). (courtesy of the Tello Archaeological Project).



Pl. 6. Pottery Phase VI. (courtesy of the Tello Archaeological Project).



Pl. 7. Pottery Phase VI (nn.1-5); Pottery Phase V (nn. 6-10) (courtesy of the Tello Archaeological Project).



Pl. 8. Pottery plate: Pottery Phase V. (courtesy of the Tello Archaeological Project).

bowls continued to be used, although incised decoration on outer walls is now more rarely encountered. Deep triangular-rimmed bowls have been found at sites such as Al-Hiba (Renette 2021, Type HF-9) and Nippur (McMahon 2006, Type O-3), whilst bowls with thickened rims are closely comparable to examples from Al-Hiba (Renette 2021, Type HF-7) and Uruk (Boehmer 1987, no.55). Hollow stands with a rib on the outer face below the rim are also seen in the pottery assemblage of Al-Hiba (Renette 2021, Type HH-2b). Short plain-rimmed jars are widespread on sites in southern Iraq. Low-necked jars with external angular rims have been published from Abu Salabikh (Moon 1987, no.339), Nippur (McMahon 2006, pl.98.7) and Uruk (Boehmer 1987, no.87). Finally, medium-necked jars with triangular rims have parallels at sites such as Al-Hiba (Renette 2021, Type HL-10a), Nippur (McMahon 2006, Type C-2), Tell Zurghul (Pizzimenti 2020b, fig.21.16) and Uruk (Pongratz-Leisten 1988, no.152). Jars with a ledge rim are similarly common in the pottery repertoire of Larsa (Calvet 2003, N9; Thalmann 2003, fig.38.5), Nippur (McMahon 2006, Type C-6 pl.100.1–6), Tell Zurghul (Pizzimenti 2020b, fig.18.9, 24.3) and Uruk (Boehmer 1987, nos.90–1; Pongratz-Leisten 1988, nos.107–8, 196–8).

The pottery sherds found in this phase seem to belong to the end of the Early Dynastic I – Early Dynastic IIIA chronological horizon. This is especially evident in the presence of hollow stands and closed shapes such as band-rimmed jars.

The following pottery phase VIII was distinguished by small carinated bowls which have parallels with the pottery assemblage of Al-Hiba (Renette 2021, Type HF-18). Deep bowls had a wider distribution and similar examples have been found at sites such as Al-Hiba (Renette 2021, Type HF-6 and Type HF-9), Larsa (Thalmann 2003, fig.38.4, 10), and Nippur (McMahon 2006, Type O-2 and Type O-3). Short plain-rimmed jars were used for a long period, whilst the triangular-rimmed jars are a type which, along with ledge-rimmed jars, persisted from the previous stage. Jars with narrow and flared necks below triangular rims have parallels with specimens attested in the assemblages of Al-Hiba (Renette, 2021, Type HL-3) and Nippur (McMahon 2006, Type C-10).

In short, this phase contains elements of continuity with the previous layers. However, in this period there is an increase of deep bowls with notched bands on the exterior of the vessel as well as the emergence of new shapes, such as small carinated bowls (which are observed only in this phase within Area B) and jars with flared necks and triangular rims. The repertoire of this phase fits chronologically in the Early Dynastic IIIA period.

The data provided by pottery phase VII represents a key element in the reconstruction of the relative sequence of B1 since this context provides an anchor on which to date the mud-brick terrace 1036. The visibility of mass-produced pottery (which constitutes over three-quarters of the diagnostic fragments recorded) is an indication of its considerable increase in this phase. The range of shapes was

drastically reduced mainly to conical beakers, conical bowls, and short plain-rimmed jars, other forms being very rare. These latter include cylindrical stands, paralleled on many southern Iraqi sites such as Al-Hiba (Renette 2021, Type HH-5), Abu Salabikh (Moon 1987, no.293), Abu Tbeirah (Romano and Zingale 2019, 328–9), Nippur (McMahon 2006, Type O-8) and Uruk (Nissen 1970, pl.47.4/5).

The context of this assemblage suggests a connection with the circumstances surrounding the construction of the white platform 1036, forming an essential marker of practices in the consumption of food and drink, especially the latter in which conical beakers played a central role (Jongsmas-Greenfield, Di Michele, Husain and Rey 2024). If we consider both the overall stratigraphic sequence and the resulting chronological periodisation provided by the pottery of B1, we can conclude that context 1051 can either be inserted into a final phase of the Early Dynastic IIIA period, or within a slightly later transitional phase between the Early Dynastic IIIA and IIIB periods.

The phase associated with the white mud-brick platform 1036 (pottery phase VI) was distinguished by deep bowls which have parallels with contemporary specimens from Al-Hiba (Renette 2021, Type HF-8c and Type HF-9), Abu Salabikh (Martin, Moon, and Postgate 1985, fig.134.29), Abu Tbeirah (Romano and Zingale 2019, 332–3), Larsa (Thalmann 2003, fig.35.1, 4) and Nippur (McMahon 2006, Type C-3), whilst jars with both short plain rims and triangular rims are also attested in earlier phases. The pottery data suggest the continuous use of this mud-brick platform from the Early Dynastic IIIB phase into the Early Akkadian period. Two trends can be recognised in this phase. On the one hand, there was a sharp contraction in the variety of pottery types, especially clear among the closed shapes, where short plain-rimmed jars represented the predominant type of jar. On the other hand, a reversal in the proportions of the two mass-produced pottery types can clearly be observed. In fact, conical beakers decreased significantly due to a substantial rise in conical bowls. We observe a new mass-produced ceramic shape, a goblet with flaring walls and a narrow base, in this phase. Unfortunately, the assemblage for this phase of Area B is too fragmented, and the data too limited to fully understand the impact of this pottery type and its connections with other mass-produced wares, especially conical beakers.

Although there is every indication of the continued use of platform 1036 between the Early Dynastic IIIB and Early Akkadian periods, this does not imply that the contemporary pottery assemblages are indistinguishable. However, in this part of the sacred area the diagnostic sherds found are essentially limited in number and show a continuity of use of some pottery types.

The Late Akkadian/Lagash II pottery assemblage (forming pottery phase V) was characterised by the presence of interesting changes within the mass-produced pottery types. Indeed, although conical bowls continued to be the most common type, goblets with a narrow base appeared for the

first time precisely in this phase. A comparison with the pottery sequence from al-Hiba shows that this pottery type was well attested by Early Dynastic III (Renette 2021, Type HA-1b). Goblets with narrow base have also been found at Umm el-Jir (Gibson 1972, pl.42m) and dated to the Late Akkadian period. By contrast, conical beakers decreased drastically to become much rarer within the Late Akkadian pottery repertoire. This sharp decline is also well recorded in al-Hiba's pottery assemblage (Renette 2021, Type HA-1a Table 3.1). Closed shapes are dominated by short plain-rimmed jars. These saw a long development throughout the third millennium in southern Iraq and their production continued beyond the end of the Akkadian period. Closed shapes also included other variants of jars. Amongst them, double ridged-rim jars are well attested in the pottery repertoire of Nippur (McMahon 2006, Type C-13b), Umm al-Jir (Gibson 1972, pl.42j-l), Al-Hiba (Renette 2021, Type HL-15a) and Tell Zurghul (Pizzimenti 2020a, fig.5.8). Jars with triangular or oval rims are also present in the assemblages from Nippur (McMahon 2006, Types C-9 and C-10), Al-Hiba (Renette 2021, Type HL-3) and Tell Zurghul (Pizzimenti 2020a, fig. 3.4). Although the previous jar types date to the Early Dynastic III or Early Akkadian periods, the rolled-rim jar (Fig. 11.8) is more securely dated to the Akkadian period, as attested by parallels with examples found in Area WF at Nippur (McMahon 2006, Type C-12) and al-Hiba (Renette 2021, Type HK-1). The data seem to suggest a dating of this occupation phase to the Akkadian period with most types to be assigned to the Late Akkadian period.

## Concluding remarks

The examination of the pottery repertoire of Area B also allows us to draw some preliminary conclusions about certain aspects of ceramic production of the third millennium BCE.

First of all, it must be noted that mass-production is the predominant mode of manufacture of this pottery assemblage. Starting from the earliest phase X, where it represented about 50% of the diagnostic ceramics recorded, this increased to 63% to 77% of the whole. Throughout phases X to V there were only three types of mass-produced wares: conical beakers, conical bowls and goblets with a narrow base. All of these had string-cut bases and a mixed manufacturing technique, beginning by forming the shape of the vessel with a coil before roughly finishing it on a turntable or wheel.

Initially the most common shape is the conical beaker, which predominated over the conical bowl during pottery phases X to VIII.

These proportions were reversed during pottery phase VII. It is noteworthy that the layers within pottery phase V indicate a reversal of the trend in the relative proportions between conical beakers and conical bowls, the two major types of mass-produced vessels. Conical beakers decreased considerably in this phase, while conical bowls suddenly became the primary form (representing about 50% of the total pottery sherds), a pattern that persisted. Another interesting trend is the progressive reduction in the variety

of pottery shapes, particularly evident in the closed shapes where plain-rimmed jars, of medium or small size, are almost the only forms present.

Although our information is limited, we can suggest that these trends began in the Early Dynastic IIIB phase and continued into the Early Akkadian period. In this period goblets with narrow bases also appeared but in very modest amounts. In fact, it is only in phase V that these goblets became the second most attested shape after conical bowls while conical beakers rarely appeared.

Other ceramic types represent (with the exception phase X) between 37% and 23% of the pottery assemblage. This includes both open and closed shapes. However, it is possible to identify some interesting trends even among the mass-produced ceramic materials. In fact, the pottery phases described above seem to suggest that phases VII and VI show a strong contraction in the pottery shapes, especially concerning the closed shapes. These preliminary findings from area B represent the first data set on ceramics of the third millennium following the resumption of archaeological investigations at Tello. The highlighted trends constitute an intriguing starting point for understanding the third millennium occupation, and the continuation of this research will allow us to compare this sequence with those that will shortly emerge from other areas of the site. Consequently, it will enable us to evaluate whether the trends of the ceramic assemblage described in this paper can be observed in other areas of the site or whether they are peculiar and unique to the sacred precinct of area B within Tell A.

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## Arabic Abstract

٧. تسلسل الفخار من الألفية الثالثة في المنطقة (B) في موقع تلّو (العراق): الثبات والتغيرات والتطور (أنجيلو. دي ميشيل)

استُوفيت أعمال التحقيق الأثري في موقع تلّو الحضري عام ٢٠١٥ وأسفرت عن مجموعة بياناتٍ جديدةٍ للفخار من سياقاتٍ طبقية واضحة. وأنتجت التحقيقات التي أُجريت في المنطقة (B) الواقعة داخل التل (A) عن كمية كبيرة من الفخار التي تمّ تحليله لإعادة بناء تسلسل الاستيطان في هذا الجزء من الموقع. وتمّ الكشف عن أقدم المستويات في مسار عميق (B1) والذي كشف عن تسلسلٍ طبقي يشمل جزءاً كبيراً من الألفية الثالثة مرتبطاً بمنصتين من الطابوق الطيني تمّ بناؤهما في فترتين مختلفتين. كما تمّ العثور على تسلسلات العصر الأكدي المبكر وخاصة المتأخر الموجودة في (B1) في المناطق من (B2) إلى (B11). وقد سمح هذا التسلسل غير المتقطع والذي يبدأ في أواخر فترة السلالات المبكرة الأولى بإجراء فحصٍ أوليٍ للاتجاهات التي تُميّز مخزون الفخار في الموقع في الألفية الثالثة قبل الميلاد.

## Abstract

This paper gives an overview of the Ur III and Old Babylonian pottery of the excavations on the South Mound of Ur. The excavations in Area 5, directed by Adelheid Otto (LMU Munich) as a part of the renewed Ur excavations under the direction of Elizabeth Stone (Stony Brook, NY), unearthed a house of the Isin-Larsa and Old Babylonian period with remains of the inventory in precisely datable contexts. This presents the opportunity to analyse the pottery in a clear context and establish a typology of early second millennium BCE pottery in southern Mesopotamia. The Ur III levels lie immediately beneath the Isin-Larsa house—a rare chance to study Ur III pottery in well-stratified contexts and compare them with the Old Babylonian assemblage. The material of both levels can be dated with the help of tablets and sealings. The new project on the pottery analysis of Area 5 aims to produce a clearer understanding of the differences and continuities of southern Mesopotamian pottery from the end of the third to the beginning of the second millennium BCE. Some exemplary and very promising contexts are shown to highlight the potential of this material.

Albert Dietz

# 8. Reconsidering the Ur III and Old Babylonian pottery of Ur: new information from Area 5 on the Southern Mound of Ur

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## 1. Introduction<sup>1</sup>

Ur (Tell el-Muqayyar), 15 km from the modern city of Nasiriya, is one of the most important cities in Mesopotamia (Fig. 1). Occupied from the 'Ubaid to the Achaemenid period, Ur achieved supraregional importance as the main cult site of the moon god Nanna (Akkadian: *Sîn*). The city experienced a major flourishing in the late third and early second millennia BCE (Zettler and Hafford 2014–16).<sup>2</sup> From ca. 2100–2000 BCE,<sup>3</sup> it was the centre of southern Mesopotamia as the capital of the Third Dynasty of Ur. This period's politics, society, and economy are well known from thousands of detailed, primarily administrative cuneiform texts (Sallaberger 1999; Taylor 2021, 43–6). However, the material culture is not well understood. There are no fully excavated Ur III period dwellings in all of southern Mesopotamia—even at Ur itself, mainly sacred or royal buildings of this period have been excavated (Woolley 1974)—nor is the most numerically significant material category, Ur III period pottery, well

known.<sup>4</sup> Consequently, the pottery of the Ur III period, especially in southern Babylonia, is still poorly understood (Armstrong and Gasche 2014, 11; Casadei 2020, 42–4).<sup>5</sup>

With the collapse of the Third Dynasty, Ur lost its status as a capital and residence city. In the ensuing struggle for supremacy in southern Mesopotamia, Ur retained its function as a place of worship but fell alternately into the political sphere of influence of the respective dominant dynasties of

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<sup>1</sup> This article is based on the pottery discovered and preliminarily processed during and after the 2017 and 2019 campaigns. At the time of writing, new information from the 2022 campaign, as well as further work on the corpus and the development of a typology, was not yet available.

<sup>2</sup> For the history of Ur at the early second millennium see most recently De Graef (2021) with extended references on the history of Babylonia and Ur in the first half of the second millennium.

<sup>3</sup> All dates follow the Middle Chronology (MC). For an overview and a critical discussion of chronologies with a preference for the Middle Chronology, see Roaf (2012) and Sallaberger and Schrakamp (2015, 5–11).

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<sup>4</sup> Only at Tell ed-Dēr in central Mesopotamia, has a residential area occupied from the Ur III period into Old Babylonian times been uncovered (Gasche 1978; 1984); however, because of the overlying younger buildings and numerous disturbances, only a small portion of Ur III period architecture could be documented (Gasche 1984, 1–21, figs. 1–4). At Nippur, Ur III period strata were also documented, but primarily in deep sections over a small area (McMahon 2006, 5–10). 'It should be noted at the outset that the *archaeological* record of the Ur III period is exceptionally weak' (Stone 2002, 81). Area WF in Nippur remains the only excavation with a well published and analysed pottery sequence allowing a chrono-stratigraphic analysis (Casadei 2020, 49).

<sup>5</sup> Even with the very influential and helpful handbook of Armstrong and Gasche (2014), it is still difficult to recognize and work with Ur III pottery. '[...] very little information is available about the pottery from southeastern Babylonia in the early 2nd millennium' (Armstrong and Gasche 2014, 11). It should be noted that for Armstrong and Gasche, Ur III pottery belongs to the beginning of the second millennium because they use the New Low Chronology. In our project we use the Middle Chronology (MC), which dates Ur III pottery to the last century of the third millennium.

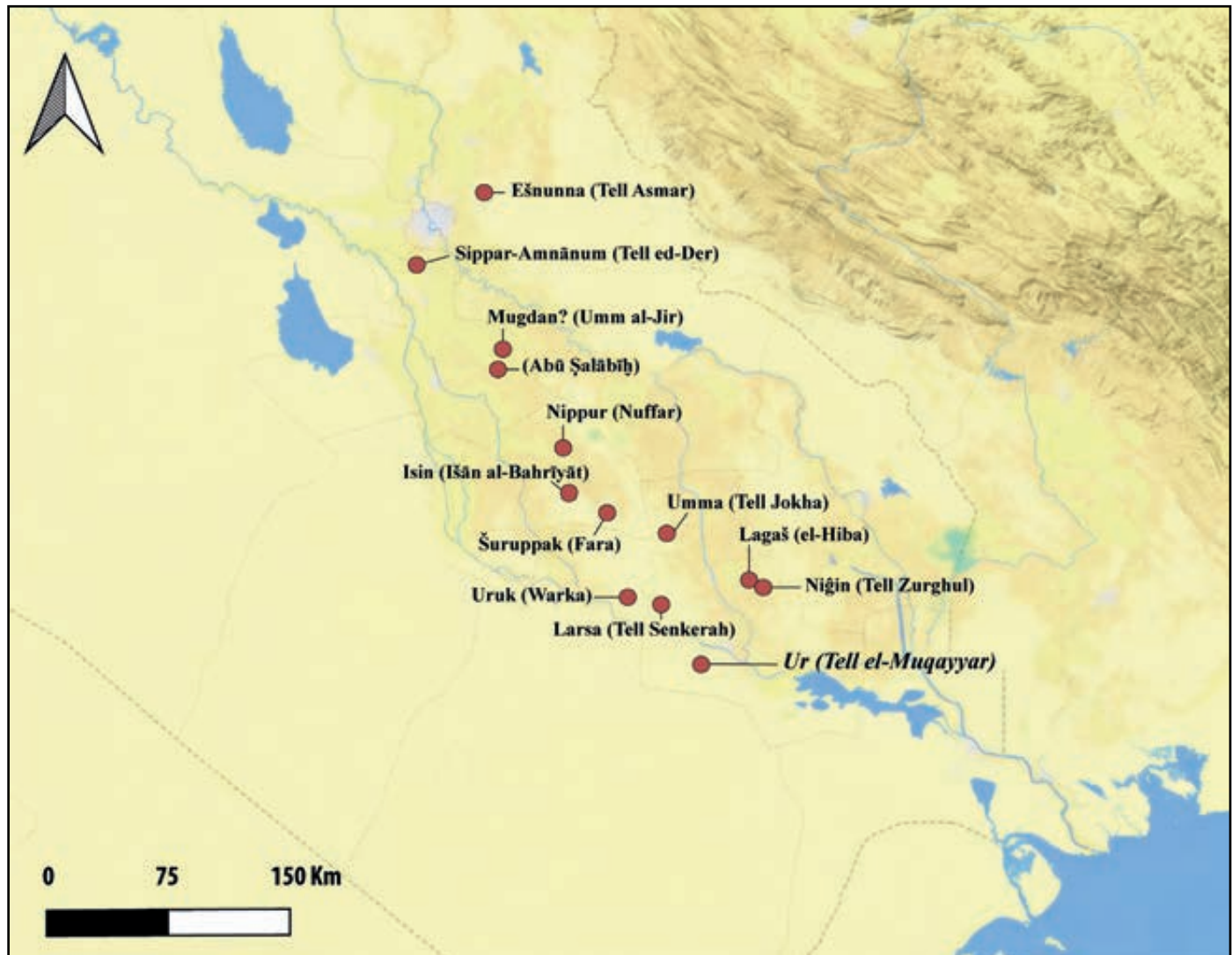


Fig. 1. Map showing the location of Ur and important reference sites.

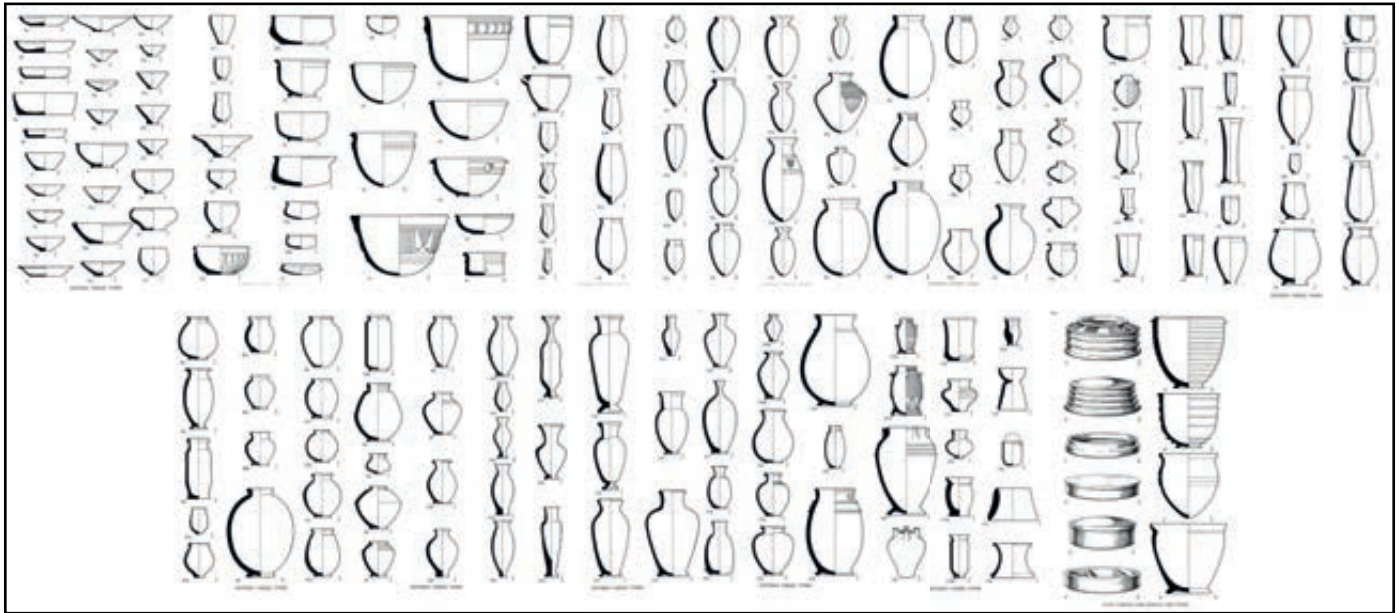
Isin and Larsa (ca.2000–1800 BCE) (De Graef 2021). However, the city continued to be extremely prosperous even after the conquest of southern Mesopotamia by Hammurapi and only ended under Samsu-iluna as a result of the rebellion of the southern Mesopotamian cities around 1740 BCE.<sup>6</sup> From this so-called Isin-Larsa and Old Babylonian period, large-scale excavations of residential buildings are known, especially in the areas AH ('Abraham's Housing'; ca.50 houses) and EM (ca.12 houses) at Ur (Woolley and Mallowan 1976; Miglus 1999, 23–32).<sup>7</sup> To this day, they represent one of the most important residential excavations in Southwest Asia and allow us to reconstruct ancient Babylonian everyday life quite well. However, the pottery in the houses has received particularly little attention.

## 2. Assessing pottery from Ur through the lens of Woolley's legacy data

Woolley's excavation of the Isin-Larsa/Old Babylonian residential city was indeed groundbreaking for the knowledge of residential architecture in southern Mesopotamia. The work endures because of the attention to documenting the stratigraphy and architecture. Though ceramic material seems to have been abundant in the houses, it was rarely mentioned, let alone evaluated. Many houses and so-called chapels of the early second millennium were presented room by room, by architecture, and the installations, with only sporadic finds discussed. A closer look is needed to assess how helpful the pottery of the Woolley excavations is still

<sup>6</sup> For a study on economical wealth and growth despite political instability in Ur and in general, see De Graef 2021, 58–79.

<sup>7</sup> For a concise overview of the excavations in Ur, see Taylor 2021, 36–42.



**Fig. 2.** Pottery types of the Isin-Larsa and Old Babylonian Period according to Woolley and Mallowan (after Woolley–Mallowan 1976: pl. 100–114).

today, posing once again the question of the values and limits of old excavation data.<sup>8</sup>

Ceramic sherds were not recorded, rather mentioned as a collective term within fill layers (debris): ‘[...] broken brick and mixed rubbish, potsherds etc. which constituted the ordinary debris spread over the whole quarter’ (Woolley and Mallowan 1976, 126). Only some complete vessels were listed. There is a single drawing of one painted body sherd in the text, which was included because of its polychrome decoration (Woolley and Mallowan 1976, 56, fig. 8). Otherwise, no sherds were published or discussed. Even in the excavation photographs, only complete or nearly complete vessels are shown (e.g. Woolley and Mallowan 1976, pls. 29, 35, 39, 48). Excavated vessels are mentioned in the main text without a detailed description of their shape or are directly assigned to a type without a short description, which obscures the actual shape of the individual vessel and deprives it of subsequent verification (Woolley and Mallowan 1976, 95–168). The complete vessels were treated in a separate chapter with a short introduction and a table of the types on eight pages (Woolley and Mallowan 1976, 186–93, chapter VI). Woolley and Mallowan subdivided the pottery of the Old Babylonian period (20th–18th centuries, called ‘Larsa period’ by the excavators) into 138 types (Fig. 2). At first, this seems to be quite a lot, but the

majority of the vessels originate from funerary contexts (an LG number indicates the Larsa period grave from which the vessel came; Woolley and Mallowan 1976, 187 and 195–213). To what extent these types were representative, especially for private housing contexts, and by which amount each type was represented, is not mentioned. Usually only one vessel or a few specimens represent the respective type (Woolley and Mallowan 1976, 187–93, pls. 100–14).

Woolley did mention that many houses had a long building history from the twentieth to eighteenth centuries, as well as numerous floors and building modifications. However, the exact dating of the residential areas seems to have been done using dated clay tablets (Woolley and Mallowan 1976, 14). Unfortunately, the features and associated finds were not presented in phases, which is why a gradual or abrupt evolution of the material relics, especially the ceramic vessels, cannot be observed. The gradual changes in vessel forms that must have taken place during this period are also not tangible due to the grouping into types.

Therefore, the Woolley–Mallowan typology is a purely morphological vessel selection, not an objective and statistically relevant typology. Moreover, the authors only depicted vessels they believed belonged exclusively to the Old Babylonian period (Woolley and Mallowan 1976, 187). Some long-lived forms were sorted out right away and not published. Thus, unless explicitly mentioned by the excavators, no special forms or unusual vessels can be identified today from their publications. The typology presented was intended to cover the typical Old Babylonian vessel forms, so no special attention was paid to the design of the rim, despite being the most essential part for determining and dating. Moreover, the rim shapes are drawn in such an angular-abstract manner that the Woolley–Mallowan typology cannot be used at all when working in the field.

<sup>8</sup> On how to deal with old excavation data, see Aspöck et al. (2020) with many different examples ranging from single researcher projects, like third millennium Kiš (Zaina 2020a) to big projects like Ur-online (Helgestad 2020). Meanwhile the monograph on the work about early Kiš was published by Zaina (2020b), showing in detail the value and problems of working with unpublished field notes, with a separate chapter on pottery (Zaina 2020b, 177–230). Very recently the third and early second millennium pottery of al-Hiba/Lagaš, excavated in 1968–90, was analysed and published by Renette (2021).

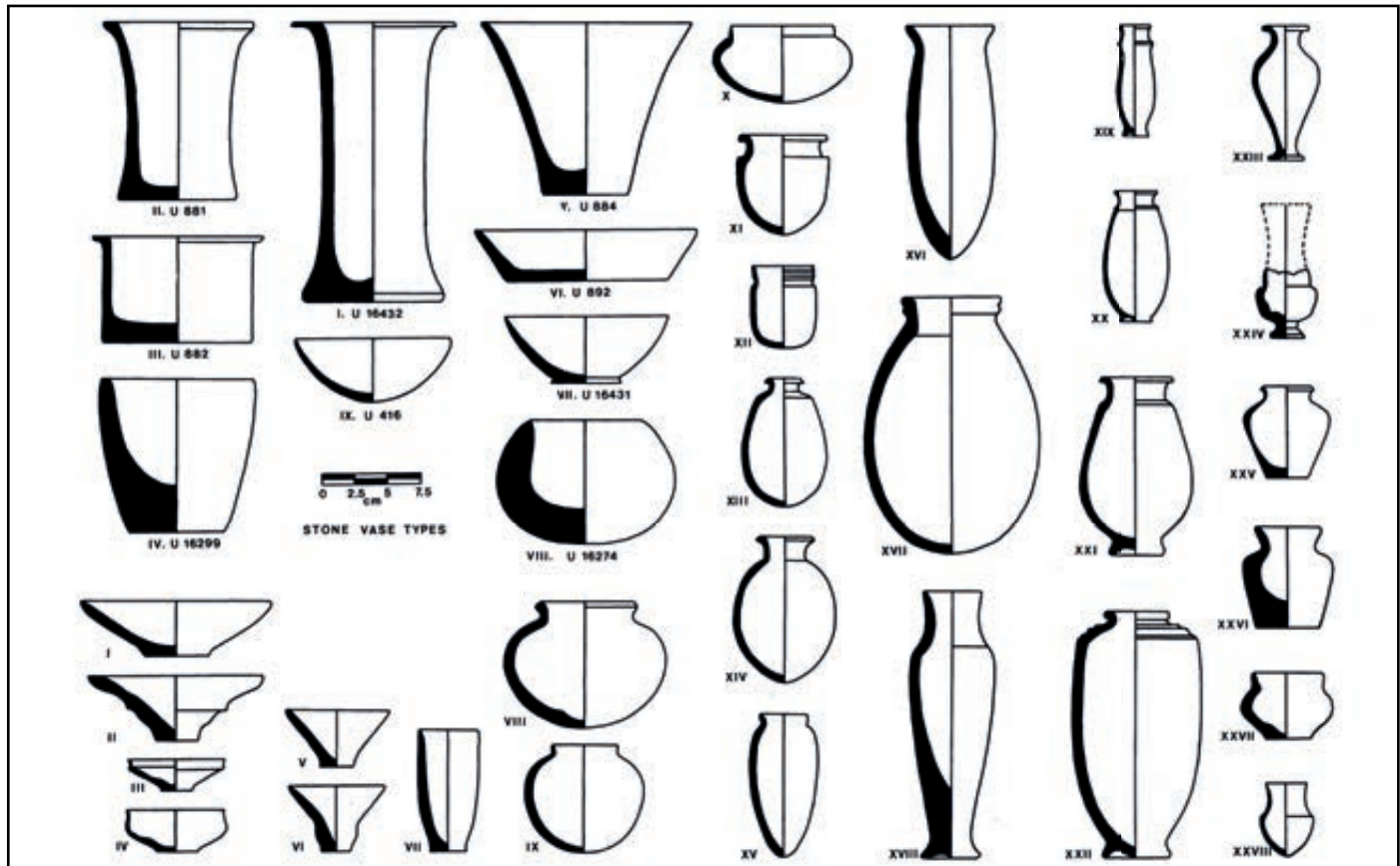


Fig. 3. Pottery types of the Ur III period according to Woolley (after Woolley 1974, pls. 51–2).

In the publication of the Ur III remains, Woolley (1974) focused on the architecture and installations of the structures, in the case of the small finds on inscribed and high-quality individual objects as well as objects that were part of the architecture or installations (nails, mosaic fragments, etc). Ceramic vessels are, if at all, no more than a marginal note with no further description of shape, often labelled only as 'vase', 'vessel', or 'pot', often without type reference. In rare cases, for example at the 'Šulgi Mausoleum', one of the most detailed reports can be read: '[...] inside the door were many pottery fragments and a few complete vessels; the following could be identified: Types III, XIII, XVII, XXI' (Woolley 1974, 17). From this statement, the procedure of pottery processing becomes apparent. Individual sherds or damaged vessels were not recorded, whereas an attempt was made to identify complete vessels. The standards used for these identifications remain unexplained. It seems as if vessels were recorded with a finished typology and deviating forms were excluded and not recorded further. A single compilation of three sherds, reproduced in profile and perspective to show their decoration, is found in the text (Woolley 1974, 29, figs. 15–17). For Woolley (1974, 28, fig. 15), these were 'unidentifiable pots', bowls or bottle rims decorated with comb marks, which have not been treated further except for their mention and thus are among the few witnesses to the 'fairly numerous' (Woolley 1974, 29) pottery sherds. For these reasons, the chapter on pottery also comprises only a

scant page (Woolley 1974, 82). A total of 28 types of Ur III period pottery were defined, half of which came from the mausoleums of Ur III rulers and the other from the E-nunmah (Fig. 3). Therefore, we know almost nothing about Ur III pottery from domestic or economic areas at Ur and in southern Mesopotamia in general.

For several types, Woolley assumes a continuation of Early Dynastic or Akkadian traditions and/or a continuation into Old Babylonian times,<sup>9</sup> concluding there was no typical Ur III pottery<sup>10</sup> and that '[...] it would be very hazardous to assign a building to the Third Dynasty on the evidence of the pottery found in it' (Woolley 1974, 82). Thus, the possibility to work closer with the pottery material from Ur III layers has been untenable.

<sup>9</sup> Akkadian ('Sargonid') types, some of them originating in ED period: Types III, IV, V, VIII, XI, XII, XIII, XV, XVIII, XX, XXII, XXVI, XXVIII. Types otherwise found in ED tombs (only represented by one sherd): VI, IX. Types attested from the Akkadian to the Old Babylonian Period: V, XI, XV, XVIII, XX. Types not known before the Ur III period but also present in Old Babylonian layers ('Third Dynasty originals inherited by Larsa'): I, II, X, XIV (Woolley 1974, 82).

<sup>10</sup> Although he names types VII, XVI, XXIII and XXIV as '[...] peculiar to the Third Dynasty in the sense that at Ur they have not been recorded as coming in any other horizon', but these seem to be 'individual pots' (Woolley 1974, 82).



Fig. 4. Location of Area 5 in Ur (map by B. Einwag).

What became clear is that there are certain limitations when using the published materials of the old excavations to work on pottery typologies and developments in Ur in the late third and early second millennium, especially when talking about statistics, distribution patterns and development of vessel shapes.

### 3. New excavations on the Southern Mound of Ur (2017, 2019)

At the start of the new excavations in Area 5 in Ur (Fig. 4), we attempted to assign the excavated sherds to Woolley and Mallowans' types. We found very few of their types in our pottery corpus. Some included vessels with very simple shapes and rim designs, such as simple bowls and bottles (Woolley and Mallowan 1976, pl. 100.8 and 9; pl. 101.12 and 13; pl. 104.44–5; pl. 105.51–2); however, these features likely apply to multiple vessels. One quickly reaches the limits of the Woolley and Mallowan typology if attempting to study the pottery in depth and document the great variety of shapes. The same is true for the Ur III pottery presented by Woolley (1974), which consists of only complete vessels, reproduced in highly stylized drawings, especially as far as the rims are concerned.



Fig. 5. The excavated private house of Level 4 (white) and the Ur III-building and open area of Level 5 (green) in Area 5 (map by B. Einwag).

But there are still important information and details from the old excavations, which should be considered and analysed as closely as possible. Very recently, it was L. Volpi (2020) who showed in his article about the late third millennium pottery from the royal cemetery that the unpublished field notes of the Woolley expedition still contain much information about the pottery, which was not included in the publications. Although it is a painstaking work, it is one of the only possibilities to get more information on the pottery repertoire excavated by Woolley, their findspots, and distribution. Additionally, R.L. Zettler (2021) published an article about the new possibilities when working with the inventory lists, field records and archival documents. Many of them are already integrated in the Ur-online project, making the unpublished material accessible to any researcher.<sup>11</sup> However, it must be kept in mind that it is a reconstruction of the processing of the old excavation that stays incomplete and must be treated with caution. Nevertheless, the old excavation data will be inserted in the project as much as possible.

<sup>11</sup> For the Ur-online project, see Helgestad (2020) and <http://www.ur-online.org> (last accessed 27.10.2021).



**Fig. 6.** Location of the open space and storage complex ('granary') of the Ur III period close to the city gate (map adapted from Woolley–Mallowan 1976, pl. 116).

In 2017, a German sub-team joined the American mission led by E. Stone (Stony Brook University), working in Ur since 2015 (Stone and Zimansky 2016; Stone et al. 2021a; Stone et al. 2021b). Excavations focused on Area 5, which is situated on the southern mound of Ur, close to the edge of the city (Fig. 4). More recent periods appear to be absent or heavily eroded at this edge of the city, making it promising to reach the old Babylonian and Ur III layers rather quickly. Furthermore, a comparison of private dwellings at the border of the city, close to the city wall, with those of the areas close to the city centre (AH and EM) might present interesting insights into social or economic differences.

Overall, in Area 5, five levels with several sub-phases were detected. For this pottery project only levels I and II are of importance (Fig. 5). Level I dates to the Ur III period. Level II is the Old Babylonian layer and can be subdivided broadly into three phases. Phase 1 dates to the Isin-Larsa time, phases 2 and 3 are Old Babylonian.<sup>12</sup>

### 3.1 Level II: the Old Babylonian house

A single house comprises all of level II. Most of the walls lay directly under the modern surface. Due to the slope, the erosion varies (Fig. 5, white outlines). The house, measuring 236 sq. m, consisted of sixteen rooms around a courtyard and has three phases with structural changes in the form of door additions or breakthroughs and altered installations.<sup>13</sup> In phase 1 (Isin-Larsa period), which will be of relevance in this article, the house was occupied by the Ningal temple intendant *Sîn-nādā* and his wife *Nuṭṭuṭtum* (Stone et al. 2021a, 184–6). The identification of the inhabitants and the dating is derived from dated clay tablets and from sealings. *Sîn-nādā*, and *Nuṭṭuṭtum* abruptly abandoned the house in 1835 BCE. We obtain the exact dating of this drastic event from clay tablets, which can be precisely dated to 1836 and 1835 BCE on the basis of their contents, as well as from sealings of the house owner *Sîn-nādā*, who apparently used

<sup>12</sup> For a summary of the phases in level II see Otto (2021, 465–7).

<sup>13</sup> For a short description of the house and its history see Stone et al. (2021b, 184–6).

two different seals: on one he referred to himself as the servant of *Sîn-eribam* (1842–40 BCE), on the other as the servant of *Šilli-Adad* (1835 BCE) (Otto 2019, 767–9). This provides a precise dating of the moment when the house was abandoned; an exact *terminus ante quem* for all the material associated with the abandonment horizon, including the pottery—a unique chance for the dating of Isin-Larsa/early Old Babylonian material.

### 3.2 Level I: the Ur III layers

The ‘House of *Sîn-nādā*’ from level II lies directly on the Ur III period layer. Where mudbrick walls of the Ur III period were preserved, these seem to have been shaved off horizontally, then the brick walls of the house were placed directly on the very solid older mudbrick walls, which thus served as a foundation. The excavated Ur III period area lies to the south of the *Sîn-nādā* house, with no Isin-Larsa period architecture. However, this area, which according to the evidence of pottery, terracotta figurines and jewelry beads dates to the Ur III period, was not a private dwelling but an open space framed by rooms on at least three sides (Fig. 5, green outlines). At least the rooms on the east side of the open area reveal their function: they are narrow rooms, mostly without doors, in a structure with 1.10m wide walls, wider than the walls of the Old Babylonian dwellings. They appear to be storage rooms or granaries that may be related to the central Ur III administration.<sup>14</sup> The material on the walking surface of the open space, both the pottery and tools (saddle mills, pestles and other working stones, weight stones, hanging weights, whetstones, flint blades, etc.), as well as a large vessel set firmly into the ground containing an Ur III period bowl set (see §4.4), suggest an area that may have been used for delivering, registering, measuring and weighing and processing grain.

Considering the topography of Ur (Fig. 6), this large economical and maybe even administrative building is very close to the southern city gate. It might be possible that incoming goods from outside the city would be brought to this place to be registered in the courtyard and stored in the building.

There seems to have been a hiatus in the area’s settlement between the Ur III period level I and the level II house, which was probably built around 1850. It seems to be confirmed here on the outskirts that the town shrank considerably after the violent end of the Ur III period and was not settled again until the later Isin-Larsa period, right up to the edge of the town.<sup>15</sup> Therefore, Area 5 does not show a chronologically uninterrupted sequence of pottery, but level I contains pottery of the twenty-first century and level II pottery of the

nineteenth and eighteenth centuries. However, it cannot be ruled out that pottery of the intermediate period exists in the filling layers of level II containing mixed older material.

## 4. The pottery of the campaigns of 2017 and 2019: possibilities and prospects

In our short three-week-campaign in 2017, 19,502 sherds were registered in total (407.713 kg). 2,785 of those sherds were diagnostics and have been analysed more closely. During the eight-week excavation in 2019, we processed 55,788 sherds (1,210.344 kg), 10,105 of which were diagnostic.

Unable to rely on Woolley’s original typologies, we drew as many sherds as we could. Based on the 592 drawn diagnostics of 2017, we created a shape catalogue based solely on our Ur material used in the 2019 campaign. This shape catalogue will now be adapted and expanded with the 1738 new drawings done in 2019.<sup>16</sup> After this, a full typology will be established. From this rich material that will be studied in this project, three contexts are preliminarily presented in this article to show the great promise and possibilities the material provides.

### 4.1 House of *Sîn-nādā*: heap of garbage in Room 5 (Plate 1)

The house (Level II, Phase 1) was abruptly abandoned in 1835 BCE (see §3.1). Worthless things at that time, such as pottery or damaged objects (tools, figurines, clay tablets, and sealings), were partly left behind in the rooms, partly thrown on a large garbage heap in room 5 (Fig. 5). Excavations uncovered over 40 cuneiform tablets and fragments, about 20 sealed fragments of letter envelopes, and 25 labels with seal impressions from this accumulation of garbage left when *Sîn-nādā* and his family abandoned the house (Otto 2019). They were mixed with numerous animal bones, lumps of tablet clay, ashes, and extensive collections of pottery sherds, ranging from massive body sherds to thin, delicate vessel fragments. These precisely datable contexts of the heap of garbage (Table 1) present us with a rare opportunity to work with pottery collections of a period of time shortly before and in the year 1835 BCE. Additionally, some carbon samples were collected as well.

Plate 1 shows a representative selection of the pottery collections of the heap of garbage. Already the wide variety of all sorts of bowls will give us the chance to understand what shapes are present and how they differ from similar shapes excavated not only in the Ur III layers but hopefully also in the later occupations of the level II house (phases 2–3). For comments on shape development, a detailed analysis of all the precisely datable contexts and floor levels will be needed first. After this, the filling layers with mixed material can be examined and understood much clearer. All this will be done during the granted period of the project (2021–23) and published in an upcoming monograph.

<sup>14</sup> On storage practices and the identification of spaces involved in storage activities, see Casadei (2019).

<sup>15</sup> In a cylinder inscription from the antiquities market, *Sîn-iddinam* of Larsa (1849–43 BCE) claims to have restored the city wall and established new building areas (Volk 2011.37). On the question ‘When and how did Ur recover in the old Babylonian period?’ see Otto (2023).

<sup>16</sup> Most of the drawings and all digitization of the drawings were done by M. Lerchl.

Contexts	Collections	Non-diag.	Weight	Diag.	Weight
UR-083	0132	195	2.61 kg	59	1.36 kg
Ur-066	0177	211	3.18 kg	58	2.69 kg
UR-102	0273	818	12.67 kg	246	2.40 kg
UR-604	6012	523	5.60 kg	112	1.44 kg

**Table 1.** Main contexts of the garbage heap in Room 5 of the House of Sin-nāda.

#### 4.2 The Ur III storage complex/‘granary’ (Plates 2 & 3)

The excavated part of the building presented a row of very narrow rooms, with walls up to 1.10m wide, much wider than the ones of the Old Babylonian house. No doorways were located. The filling layers inside the rooms were densely packed with mudbrick debris and pottery sherds. The number of small brick fragments exceeds what would come from the collapsed walls and roof, indicating intentional filling. Almost no small finds could be collected from these contexts inside the structure, suggesting that the rooms were cleaned out before being intentionally filled. The question remains of whether the rooms were filled in Ur III or later times.

Beginning with context UR-424 (84 cm below surface, Table 2) of Room 22 (Fig. 7), a rapid increase of pottery was recorded. For one context, we collected 439 sherds. Not only was the large quantity of pottery in this context unusual (Coll. 4042), in comparison the following three contexts contained only 100 sherds each (see below), but a change in the repertoire was also immediately apparent. Already in the field, the change of shapes caught our attention.

Contexts	Collections	Non-diag.	Weight	Diag.	Weight
UR-424	4042	319	6.82 kg	120	2.91 kg
UR-428	4060	63	0.94 kg	18	0.62 kg
UR-432	4071	47	1.24 kg	9	0.18 kg
+ UR-434	+4074	71	1.50 kg	27	0.65 kg
UR-439	4085	83	1.36 kg	39	0.48 kg

**Table 2.** Discussed contexts inside Room 22 of the storage facility.

Plates 2 and 3 (3.1–3.5) show the prime sherds immediately recognized as different from the Isin-Larsa/Old Babylonian material.<sup>17</sup> Next to a variety of carinated

bowls (Pl. 2.1–2.5),<sup>18</sup> there were fragments of collared jars with everted rims and droop below (Pl. 2.10), comparable for example with finds from Nippur, Area WF (McMahon 2006, pl. 122, type C-29) and Area TB (McCown and Haines 1976, pl. 85.16), Ešnunna’s Northern Quarter (Delougaz 1952, C656.340) and Abu Salabikh, Pit 6G65 (Postgate and Moon 1984, pl. 78.50–51, 54). Sherds of jars with corrugated shoulder (Pl. 2.6–2.8)<sup>19</sup> compare to Ur III examples at Nippur, Area TB (McCown and Haines 1967, pl. 81.9), Ešnunna’s Northern Palace (Delougaz 1952, D.465.360, D.466.360) and Nigin, Area A, Trench 1 (Pizzimenti 2020, fig. 5.5). Sherds of long necks with a very sharp and prominent ridge (Pl. 2.9) belong to carinated-shoulder jars, attested from post-ED to Ur III period, with Akkad to Ur III examples known from Fara (Martin 1983, fig. 2.7) and Nippur Area WF (McMahon 2006, pl. 115, type C-20 with further comparanda). Sherds of heart-shaped jars with triple ridged rim (Pl. 2.11)<sup>20</sup> can best be compared to vessels from Umm el-Jir, area B (Gibson 1972, fig. 43.1) and Ešnunna’s Northern Palace (Delougaz 1952, B.645.540a). The pottery evidence indicates that we are dealing with Ur III layers. The filling of the building might have happened in Ur III times, when the building was abandoned, or with Ur III debris and garbage.

Complete carinated bowls (Pl. 3.2) were found on a possible supra-floor or walking surface (UR-428). These finds present the chance to analyse the type of the carinated bowl more precisely and in comparison, with the ones from secure contexts of the house of level II, to establish a possibility to analyse the development of this vastly distributed vessel shape during the end of the third and beginning of the second millennium (Schmidt 2014; Casadei 2020, 47–48).

We collected carbon samples from several filling layers within the building to get precise dates that could also help us refine the chronology and expand our understanding of long-lasting shapes and their development. Pottery shapes from further contexts below (UR-432+434, 439) can also be attributed to the Ur III period (Pls. 3.1, 3.3, 3.5), based on already mentioned comparisons from Nippur, Ešnunna, Ur, Umm el-Jir, Nigin and Fara.<sup>21</sup> Some pottery sherds, such as a fragment of a carinated flask (Pl. 3.4), might point to a

<sup>18</sup> On carinated bowls in general see Schmidt 2014. Casadei (2020, 47–8) elaborated on the type as a chronological marker and its distribution briefly.

<sup>19</sup> In general and for distribution see McMahon 2014.

<sup>20</sup> In general and for distribution see Arrivabeni 2014

<sup>21</sup> As Casadei (2020, 49–50, fig. 2) and several contributions (Arrivabeni 2014; McMahon 2014; Schmidt 2014) in the collective volume in the ARCANÉ Interregional Series about ceramics (Lebeau 2014) have shown, the ceramic horizon of the end of the third millennium is very homogeneous, with new types appearing and disappearing, creating the possibility to create sub-phases. Certain shapes can be found from western Iran to Syria and the Levant. Therefore, material from sites of northern Mesopotamia, Elam and Syria will be considered as well.

<sup>17</sup> Eloisa Casadei published the five most characteristic pottery shapes attributed to the Ur III period based on the material of the old excavations in Nippur, Ešnunna, Abu Salabikh and Ur (Casadei 2016, 32–4). More recently Casadei (2020) did an expanded study of the pottery sequences of the end of the third millennium between southern Mesopotamia and the Syrian Jezirah to establish two sub-phases for clear chronological markers in the pottery assemblages (see Casadei 2020, 47–49, fig. 2).



Fig. 7. Overview of the courtyard with installations marked.

date in the early phase of the Ur III period,<sup>22</sup> but this needs further investigation.

### 4.3 Installation in the Ur III Open Area (Plate 3)

When excavating a small part of this open area in 2017, we thought it might be a courtyard of an Ur III house or a working area connected to it, according to the tools and pottery found. In 2019, we enlarged the area up to the ‘granary’. The finds now indicate that grain processing, weighing, and measuring might have taken place in this area.<sup>23</sup> We uncovered a large grinding stone, a sherd pavement and two installations as well as more working stones. Some were discovered in the wadi but are probably only washed down from the courtyard. This courtyard presented us with valuable collections of pottery. In this article, the focus shall center on installation UR-486.

Installation UR-486 is a large storage jar (60 cm in diameter; 50 cm deep) without a hole in the bottom, set into the walking surface. It was maybe used for capacity measurements of incoming goods (grain?). While excavating, we uncovered three carinated bowls in the upper part of the fill (Pl. 3.6–8). During documentation, we realized all set into one another and represent a perfect bowl set that was purposefully(?) placed inside this installation (Fig. 8). At

<sup>22</sup> See McMahon 2006, pl. 114, type C-19 with further comparisons.

<sup>23</sup> Further hints for an economic use of this courtyard are the working stone, hanging weights, a gold bead, a cylinder seal and an unfinished duck weight.

Contexts	Collections	Non-diag.	Weight	Diag.	Weight
UR-486	4205	47	1.06 kg	13	0.58 kg

Table 3. Discussed context of the open area.

the bottom of the installation, we found a banded rim bowl (Pl. 3.9; Fig. 8) that can be perfectly compared to examples from Nippur, Area WF (McMahon 2006, pl. 94, type O-22), Area TB (McCown and Haines 1967, pl. 82.18, and 21–2) and Fara, Pit I (Martin 1988, 189, no. 134) and provides us with an Ur III date of the installation/e

## 5. Summary and outlook

The pottery from Area 5, close to the southern city border of Ur, spans over a timeframe from Ur III to Old Babylonian until the mid-eighteenth century. There is a hiatus between levels I (Ur III) and II (Isin Larsa/Old Babylonian), but pottery of this time might be present in the filling layers of the level II structures. Cuneiform texts and sealed objects associated with pottery allow for precise dating of specific contexts, thus presenting the rare opportunity to analyse the development of pottery shapes within a narrower chronology.

A re-evaluation of the old legacy data by Woolley remains a challenge, since the pottery of the excavations was poorly recorded and published and not analysed with the intent of understanding pottery chronology (see §2).<sup>24</sup> Merging the old and new pottery datasets will expand with the growing

<sup>24</sup> See also Zettler 2021, 28–30.



**Fig. 8.** Installation UR-458 with excavated bowl-set (left) and banded rim bowl (right).

availability of the digitized original field records, artifact inventories, and archival documentation (as shown by Volpi 2020 and Zettler 2021). However, this work is in the early stages and remains supplemental.

Our main goal is to establish a ceramic seriation of the Ur III and Isin Larsa/Old Babylonian levels of Area 5, providing both a fixed point when working with material from Ur and for the pottery of Babylonia of the end of the third and beginning of the second millennium generally. Possible gaps because of the hiatus between our levels will need to be filled in and expanded in the future, also with material from other sites that are publishing new results. Furthermore, a better examination of long-living types and their shape development might be possible. This will be achieved by 1) a contextual and statistical analysis of our pottery, recognizing distribution patterns, use of rooms, and development of shapes, 2) a closer analysis of the manufacture, provenance, and use of the pottery, and 3) a catalogue of all the shapes and a final typology.

### Acknowledgements

I would like to express my gratitude to Sarah Pizzimenti, Steve Renette and Angelo di Michele for organising this insightful workshop and for the invitation to participate in it. I am extremely grateful to Elizabeth Stone, Paul Zimansky and Dr Abdelmir Hamdani making it possible that the Institute of Near Eastern Archaeology of the Ludwig Maximilians University directed by Adelheid Otto was able to take part in the excavations in 2017 and 2019. I want to thank Adelheid Otto especially for entrusting me with the task to work on the pottery material of these excavations. Further thanks to Eloisa Casadei for many discussions on pottery and comments on an earlier draft as well as Melina Seabrook for comments on an earlier draft and my English. All mistakes remain my own. The project 'Die Ur III- und altbabylonische Keramik von Ur' is funded by the Deutsche Forschungsgemeinschaft (DFG).

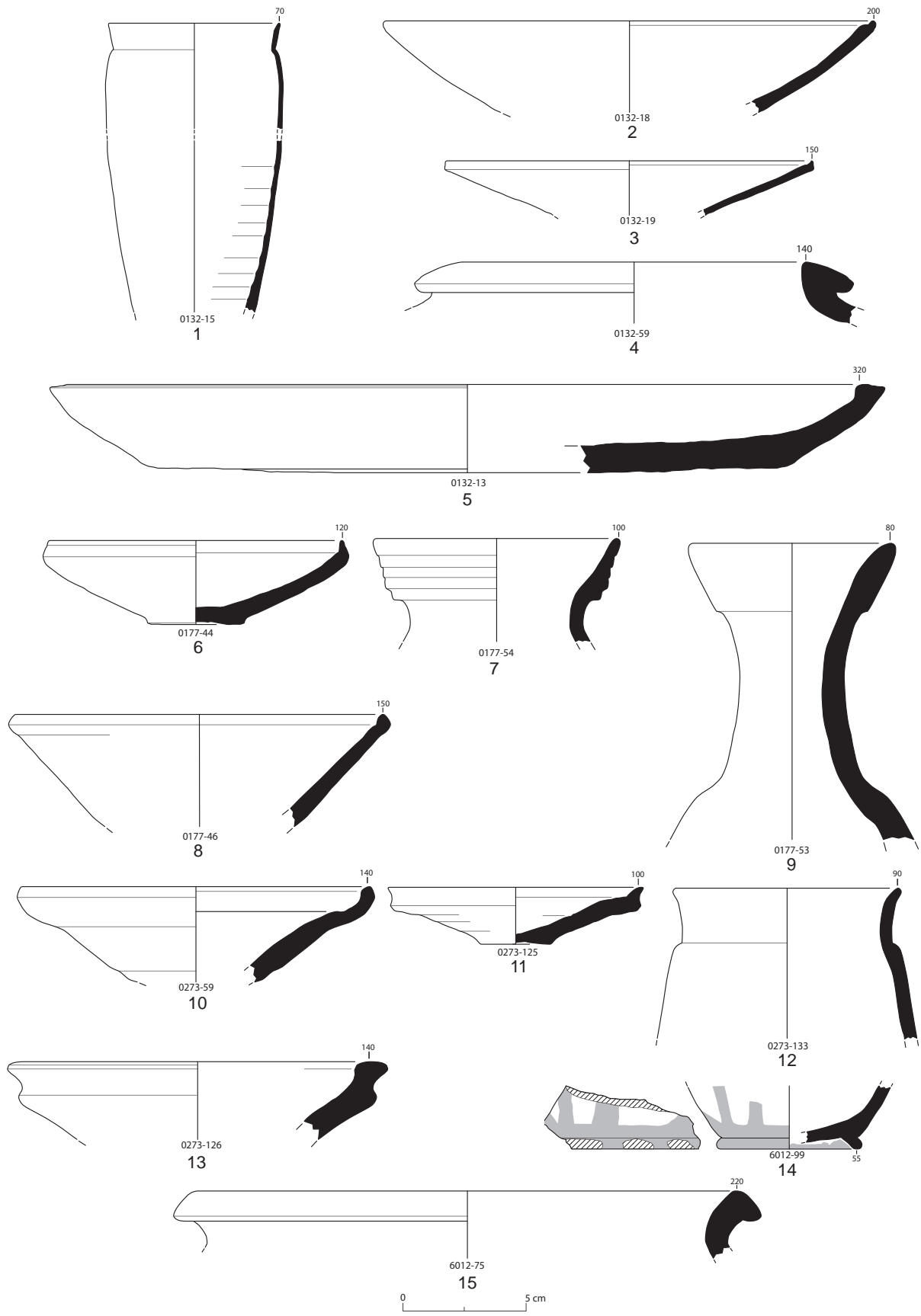


Plate 1. Representative overview of the pottery collections of the heap of garbage in Room 5.

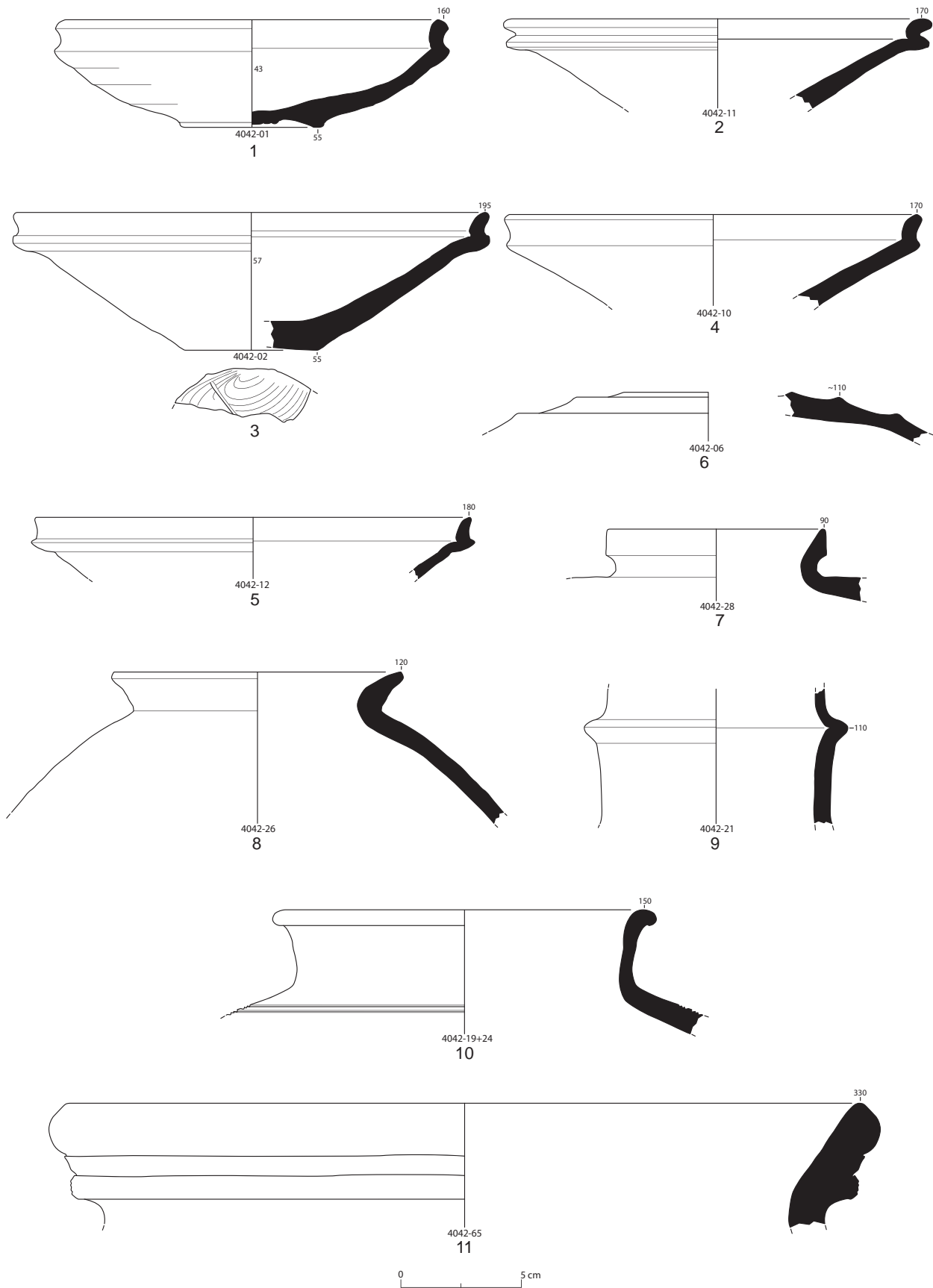


Plate 2. Pottery from Room 22 of the Storage Complex.

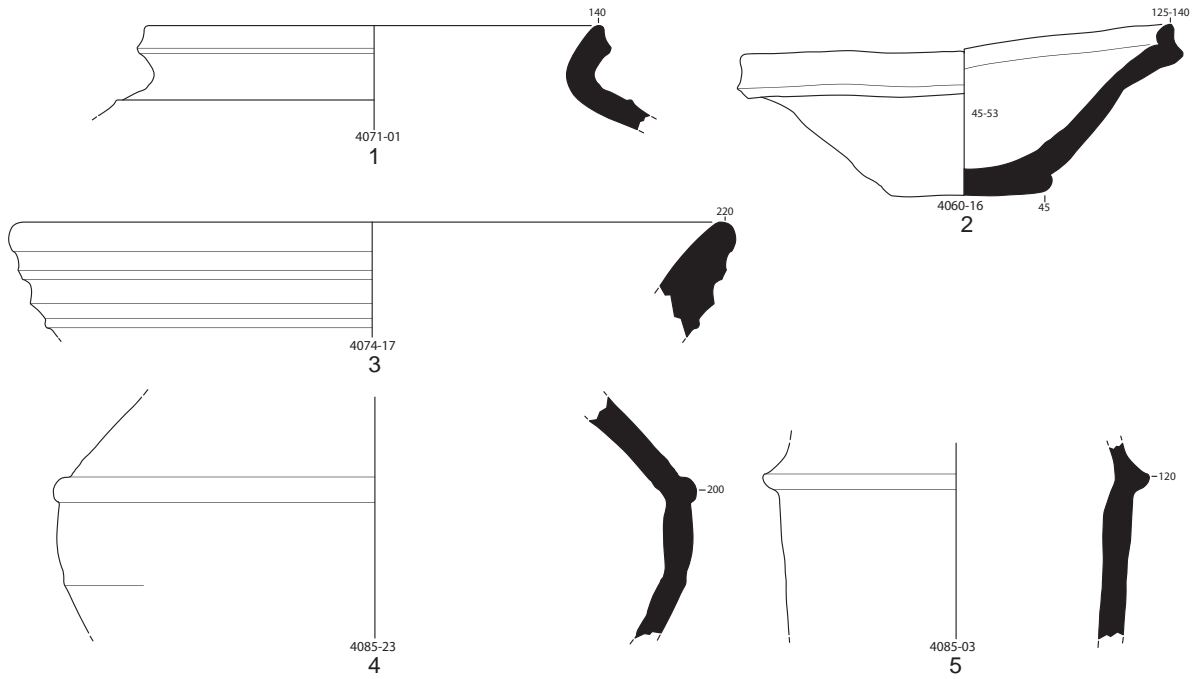


Plate 3: Pottery from Room 22 of the Storage Complex

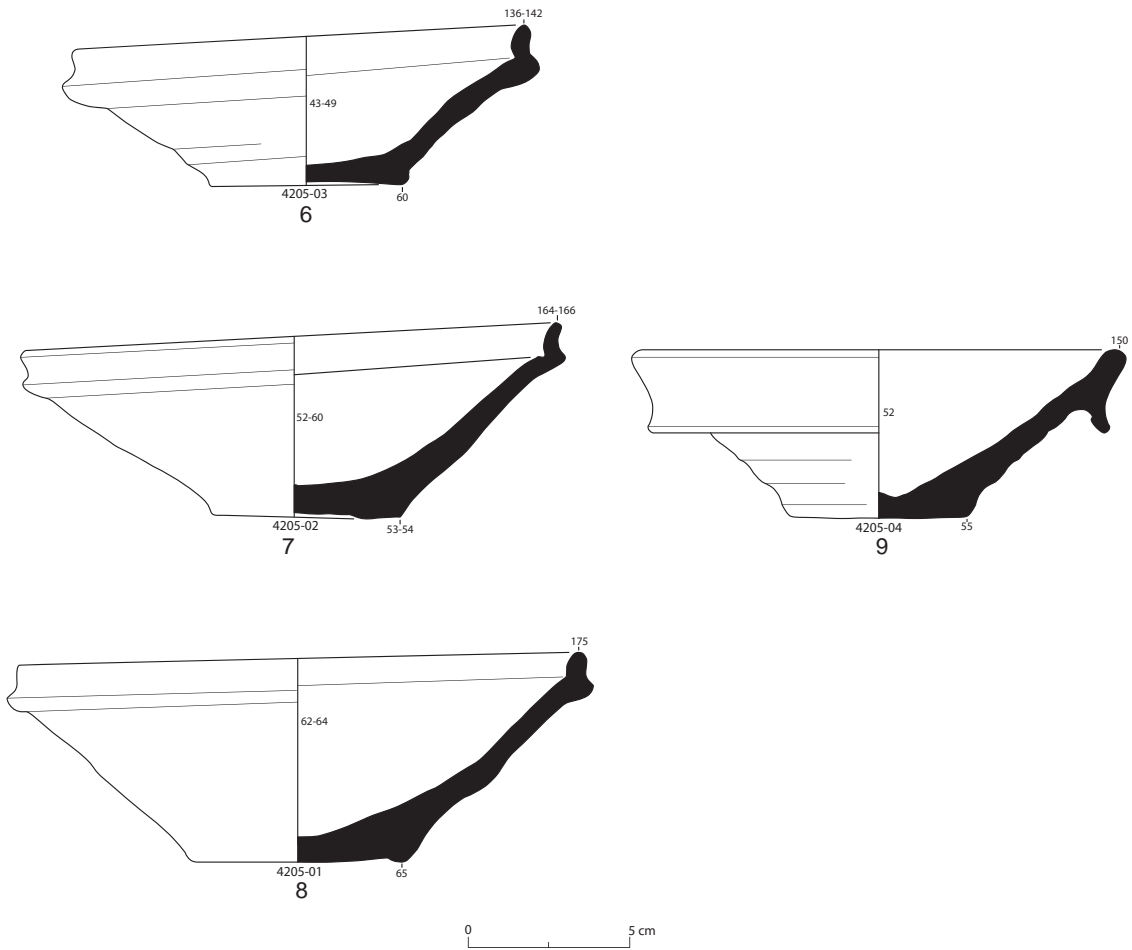


Plate 3. Pottery from Installation UR-486 in the open space.

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## Arabic Abstract

## ٨. إعادة النظر في فخار فترة أور الثالثة والفخار البابلي القديم في مدينة أور: معلومات جديدة من المنطقة (5) في التل الجنوبي لمدينة أور (ألبرت ديترز)

تُقدِّم هذه الورقة البحثية نظرةً عامةً على فخار فترة أور الثالثة والفخار البابلي القديم الذي تمَّ اكتشافه في التنقيبات التي أُجريت في تل أور الجنوبي. وكشفت التنقيبات في المنطقة (5) التي أشرفت عليها أديلهيد أوتو (جامعة لودفيغ ماكسيميليان في ميونخ) كجزءٍ من أعمال التنقيب المُتجدِّدة في مدينة أور تحت إشراف إليزابيث ستون (جامعة ستوني بروك في نيويورك)، في عامي (٢٠١٧ و ٢٠١٩) عن منزلٍ يعودُ إلى فترة إيسين-لارسا والفترة البابلية القديمة مع بقايا المخزون في سياقاتٍ قابلةٍ لتحديد تاريخها بِدقَّة. وهذا الأمر يُتيحُ الفرصةً لتحليل الفخار في سياقٍ واضحٍ وإنشاء تصنيفٍ لأنواع الفخار في أوائل الألفية الثانية قبل الميلاد في جنوب بلاد ما بين النهرين. هذا وتقع مستويات فترة أور الثالثة مباشرةً أسفل منزل إيسين-لارسا ممَّا يُمثِّلُ فرصةً نادرةً لدراسة فخار فترة أور الثالثة في سياقاتٍ طبقيَّةٍ واضحةٍ ومقارنتها بمجموعة الفخار البابلي القديم. ويُمكنُ تحديدُ تاريخ المواد في كلا المستويين باستخدام الألواح الطينية والأختام. ويهدفُ المشروعُ الجديد لتحليل الفخار في المنطقة (5) إلى إنتاج فهمٍ أوضحٍ للاختلافات والاستمرارية في صناعة فخار جنوب بلاد ما بين النهرين من نهاية الألفية الثالثة إلى بداية الألفية الثانية قبل الميلاد. وقد تمَّ عرضُ بعض السياقات النمذجية والواعدة في هذا المشروع لتسليط الضوء على إمكانات هذه المادة.

## Abstract

Over the course of four seasons, the Umma Survey Project surveyed numerous sites in the Al-Rifai district, Dhi Qar province. One of these sites, Abu Jarabie, yielded an intriguing pottery assemblage that demonstrates the site's continuous occupation from Ubaid 4 through the Early Dynastic I period, with evidence of a reoccupation during the Seleucid/Parthian period. This site provides a crucial sequence for reconstructing its occupation history and enables us to outline a preliminary framework for the region's pottery assemblage between the fifth and the first half of the third millennium BCE.

Angelo Di Michele and Stephanie Rost

# 9. Systematic sampling of surface pottery and its potential to inform local ceramic typology of the Umma region (southern Iraq)

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## 1. Introduction

The Umma Survey Project aims at conducting a full archaeological reconnaissance of an approximately 2400 km<sup>2</sup> area in Dhi Qar province in the vicinity of Al-Rifai. Historically this region once constituted the city-state of Umma in the late third millennium BCE and became shortly thereafter a province of the Akkadian state, with the city Umma itself being among the most important regional centers of the Akkadian Period (2350–2130 BCE) (Frayne 1993, 261–2; Foster 1982). After a period of political fragmentation, the Umma region was integrated into kingdom of the Third Dynasty of Ur (aka Ur III) as one of its major provinces (Dahl 2007; Sallaberger and Westenholz 1999; Steinkeller 2007; 1987). The study area extends from the ancient site Tell Jidr in the north to Bad Tibira in the south, and from the general drainage area of the Shatt al-Gharraf to the east up to Tell Muhalliqiya and Tell Jid in the west (see Fig. 1). Only the western part of this region was covered by the regional surveys of Adams (1981) and Adams and Nissen (1972) as the eastern part was at the time under intensive cultivation. As part of a broad cultural heritage protection effort, al-Hamdani (2008, 2019; Ur and al-Hamdani 2014) and his team resurveyed the entirety of Dhi Qar Province, including the Umma region, adding numerous previously unknown sites to the inventory of archaeological sites in the region. The goal of the Umma Survey Project is to resurvey the area by applying systematic sampling strategies of the surface remains to establish the occupation span of individual sites with greater precision and to date these sites with greater accuracy. The latter objective is geared towards providing the archaeological counterpart to the abundant written sources

from this area to build a more nuanced and comprehensive reconstruction of the region's history.

The methods applied included an initial remote-sensing reconnaissance using settlement data previously collected by Adams (1981), Adams and Nissen (1972) and Hamdani (2008) as reference points to aid the planning of fieldwork. Features identified by satellite imagery were then investigated by means of a pedestrian survey on a 50 x 50 m grid to collect systematically diagnostic surface material (e.g., identifiable pottery fragments, tools, objects, inscriptions, etc.) to establish the occupational history of ancient sites and related landscape features. While the systematic sampling of the surface record is time-consuming it produces results relevant to improving the pottery typology of southern Mesopotamia, and more particularly the Umma region, and refining its chronological distinctions (see below, also discussed in detail in Rost and Di Michele in 2022).

We conducted the first two seasons of this project in 2018, focusing on a triangular area between the ancient site of Zabalam (Tell Bsirh), Tell Shmidt and Umma (Fig. 1). We were able to survey systematically eighteen archaeological sites dating as far back as the fifth millennium BCE and as late as the first millennium CE. We were also able to confirm a gap in the occupation of this region in the mid-second to the mid-first millennia BCE, a finding also reported by Robert McCormick Adams and Hans Jörg Nissen (1981; Adams and Nissen 1972). The site of Abu Jarabie is located 3 km northwest of the ancient city of Umma and it covers an area of ca.80ha. This site was first documented by al-Hamdani and his team (2008, 2019; Ur and al-Hamdani 2014) who divided the site between the

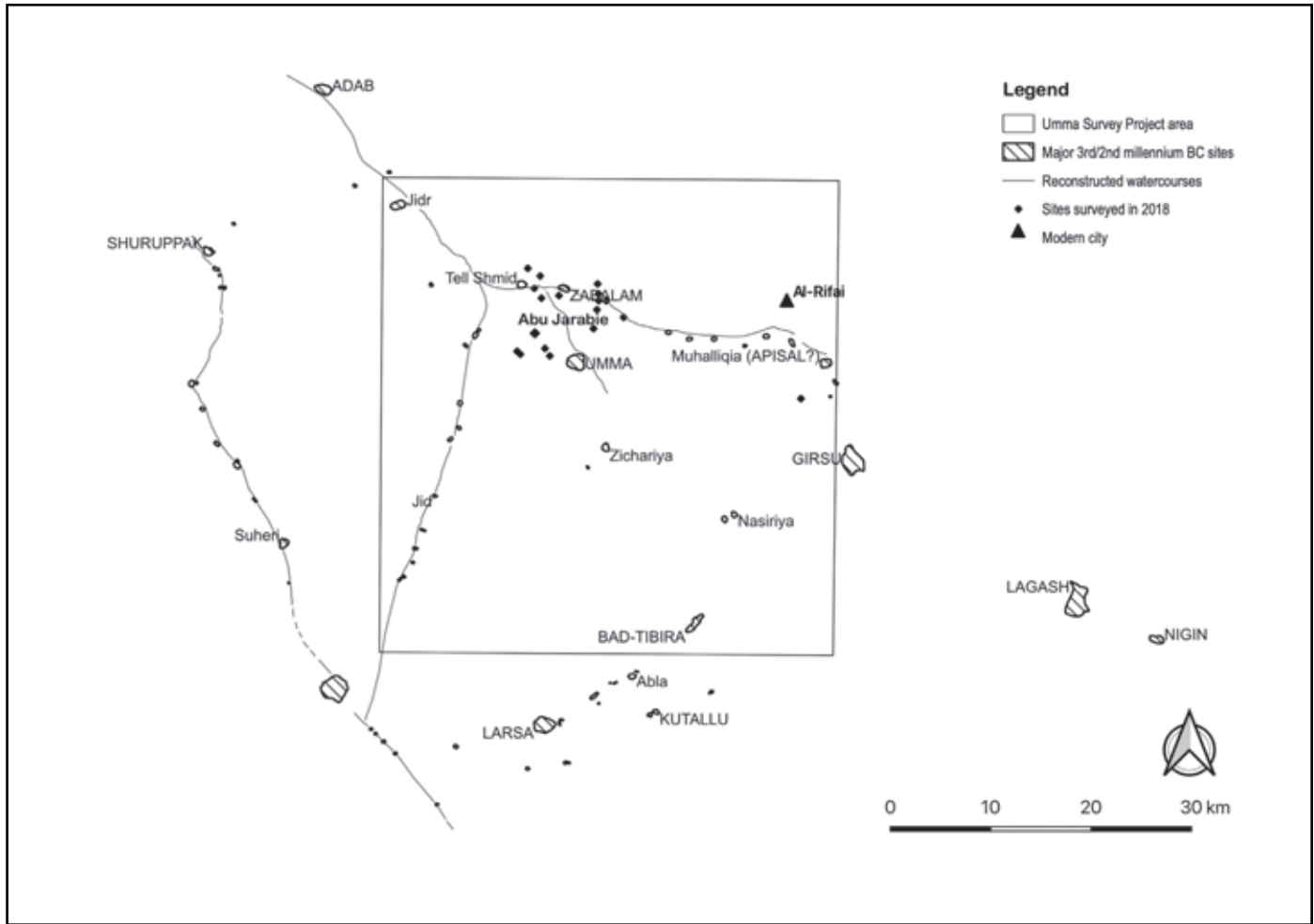


Fig. 1. USP Survey Area.

main site of Abu Jarabie itself and two subsidiary sites, Abu Rowaish 1 and Abu Rowaish 2. Abu Jarabie was occupied for a very long time, starting in the Ubaid (5000–4000 BCE) and remained inhabited until the Early Dynastic I Period (2900–2700 BCE). A very small portion of the site was re-occupied in the late Seleucid–Parthian Period (300 BCE–224 CE).

The systematic collection and documentation of surface finds allowed us to record shifts in the occupation across the site, generally from north to south. Similar observations have also been made at Kish (Gibson 1972, 111) and Umm Al-Hafriyat, near Nippur (Gibson 1977, 20–1). Knowing the extent and location of the occupation of the site in different periods in turn allowed us to date the surface material (a total of 411 diagnostic pottery sherds) with greater confidence and isolate features in the pottery assemblage which might be specific to the Umma region and/or diagnostic for the wider ceramic repertoire southern Mesopotamia in specific time periods.

New excavations at Tell Jokha (Hulínek and Hulínková Ťuchová 2018), Girsu (Rey 2024), Tell Zhurgul (Nadali and Polcaro 2020), Uruk, Abu Tbeirah (Romano and D’Agostino 2019) and new studies (Armstrong, Gasche 2014 Casadei 2020, Zaina 2020, Renette 2021) of the region have added

to our more comprehensive understanding of the pottery chronology of southern Mesopotamia, and will continue to do so. In this paper we want to present the insights gained from the pottery assemblage of Abu Jarabie and how they inform our understanding of the local Umma pottery typology as well as the overall southern Mesopotamian pottery chronology.

## 2. Abu Jarabie pottery assemblage

The most notable feature of the site was the 20 ha Ubaid settlement located on the highest point of the site (Fig. 2). This Ubaid surface scatter was very dense, owed to the fact that the Ubaid occupation layer was located just below the surface. 3 ha out of the approx. 20 ha occupation was disturbed by looting which has contributed to the surface scatter density.

### 2a. Ubaid period

Numerous Ubaid period fragments were collected to reconstruct the site’s pottery assemblage. Both open and closed forms were recovered, although there was a clear prevalence of the former among the diagnostic fragments. These included shallow bowls with a plain rim (Figs. 3.1–2, 9),

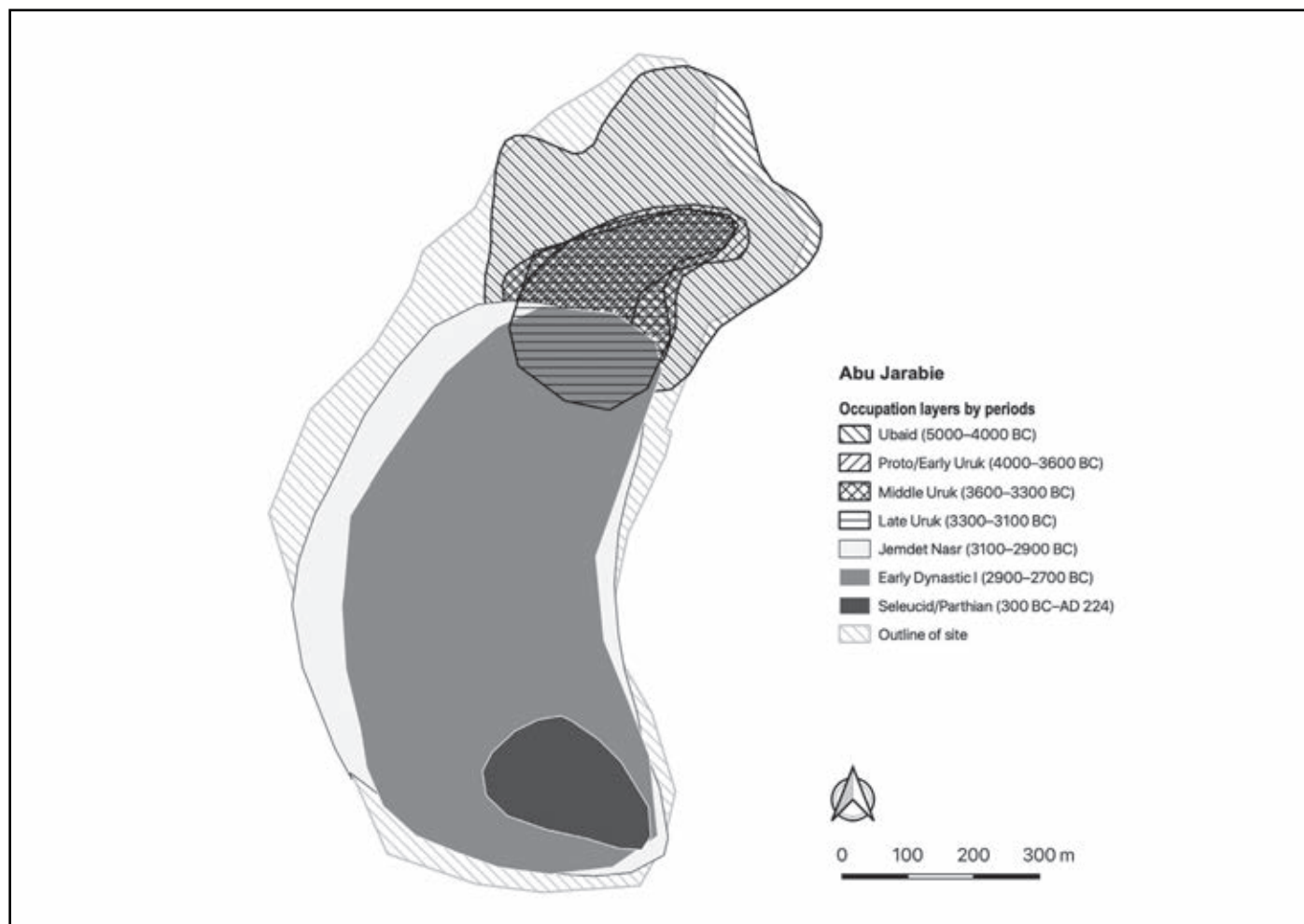


Fig. 2. Map of Abu Jarabie.

which were decorated with an internal and external narrow band confined to the upper part of the vase just below the rim. This type of vessel was also recorded in the Steingebäude area of Uruk which was dated to the Ubaid 4 period (bowl with thickened rim: Boehmer 1972, figs. 44.1–3, 47.77).

Quite common among the shallow bowls were two types: one with an inwardly thickened rim (Figs. 3.3–6) and another with an inwardly thickened bevelled rim (Figs. 3.7–8). The painted decoration of these types of bowls consisted of monochrome bands arranged in identical fashion, with a wider horizontal band found in the interior of the vase, the upper and flat surface of the rim being always completely painted, and a narrower band on the exterior of the vessel. This type of bowl has been found in numerous sites in southern Iraq. In fact, parallels have been found in various areas of Uruk, both in the Steingebäude (the type with an inwardly thickened rim: Boehmer 1972, figs. 44.4–9, 47.82–84) and in the Eanna Tiefschnitt (of the same type: Hermansen 1990, figs. 1.8, 47.82–84 and bowls with inwardly thickened bevelled rims: Hermansen 1990, figs. 1.9–10, 2.11–12), as well as in sites such as Eridu (bowls with inwardly thickened rims: Safar et al. 1981, figs. 75.1, 129.6, 130.8, 132.16–17, and bowls with inwardly thickened bevelled

rims: Safar et al. 1981, 132.14–15), Tell Uwaili (bowls with inwardly thickened bevelled rims: Lebeau 1983, figs. 2.3–4; Calvet 1991, fig. 16.159) and Tell Zurghul (bowls with inwardly thickened rims: Volpi 2020, figs. 2.10–11, 3.11–12).

Although this type of bowl is certainly an important part of the ceramic repertoire of the Ubaid 4 period (Finkbeiner 2001, 151 Type UB-1 figs. 1.UB-1/1a and UB-1/1c.), some specimens from Uruk (Steingebäude Sondagen I-I' Schichten 4: Boehmer 1972, fig. 51.172; Steingebäude Sondagen II-II' Schichten 5-3: Boehmer 1972, fig. 53.320, figs. 54.359, 390 and 392) and Tell Uwaili (Sondage Y 27, couche C: Calvet 1991, figs. 9.88–9) were found in post-Ubaid 4 contexts, which seems to indicate that these vessels remained in use for a while. The stratigraphy of several sites<sup>1</sup> indicates a transitional period between the end of the Ubaid and the beginning of the Early Uruk which has provisionally been

<sup>1</sup> Finkbeiner 2001. This period is defined by the ceramic material found in the sites of: Tell Uwaili sondage X 36, level C (Calvet 1991); Uruk: Eanna Tiefschnitt schichten 16–13 (Sürenhagen 1986) and Steingebäude sondagen I-I' schichten 4–2 and Steingebäude sondagen II-II' schichten 5 (Boehmer 1972); Tülül al-Baqarat TB7 mound (Bruno 2020).

named Ubaid 5. This term will be used in this paper to refer to material which dates to this transitional phase. This transitional period is still poorly understood and diagnostic indicators defining it have yet to be isolated with confidence.

Some of the bowl fragments collected at Abu Jarabie have their inner lower surfaces featured by combed irregular lines (Figs. 3.10–12) and can have either rim type, described above (Figs. 3.11–12 and Fig. 3.10 respectively). These specimens have parallels with bowls found at Tell Uwaili in contexts dated to the Ubaid 4 period (Lebeau 1983, figs. 14.5–8). However, this treatment of the inner surface of the bowls is also attested in bowls with a different type of rim, also found at Tell Uwaili<sup>2</sup>, as well as the Steingebäude of Uruk (Boehmer 1972, figs. 44.17, 57.643) and Ur (Woolley 1955, fig. 17. U.15371). Large bowls with outwardly flattened ledge rims (Figs. 4.1–5) form another well-attested group of vessels. These ledge rims have either a high-carinated or slightly more rounded profile, and both painted and unpainted fragments of this type have been collected. The applied paint is monochrome and can either consist of geometric patterns of broad bands on the inside of the vase or a more elaborate decoration on the flat surface of the rim. Furthermore, the exterior of the rim is often more plainly decorated with a thick painted band. This type of vessel and the painted decorations have parallels in the repertoire found in the Steingebäude of Uruk (Boehmer 1972, figs. 46.60, 47.87–88), Eridu (Safar et al. 1981, 75.2–9, 77.4), Tell Uwaili (Lebeau 1983, figs. 3.2–7, 9–10) and Tell Zurghul (Volpi 2020, figs. 4.2–3), all of which have been dated to the Ubaid 4 period.

Cups and small bowls complete the repertoire of open shapes. The cups differ with respect to the inclinations of the walls, which are either straight (Figs. 5.1, 3) or inverted (Fig. 5.2), but both variants have thin rims. The small bowls found in Abu Jarabie were almost exclusively low carinated bowls with straight walls and thin rims (Figs. 5.6–11). Smaller bowls with sinuous walls and thin rims are less common (Figs. 5.4–5). Finally, very few fragments of deep bowls were retrieved, and the profile of only one could be reconstructed (Fig. 5.12). These shapes are similar to items from the Ubaid 4 ceramic assemblages of Uruk's Steingebäude (low carinated bowls: Boehmer 1972, figs. 46.50–51, 49.121, 128; small bowls with sinuous walls: Boehmer 1972, fig. 46.53) and Tiefschnitt (cups with straight walls: Hermansen 1990, figs. 6.52, 7.61–63, 8.67, 69; cups with inclined walls: Hermansen 1990, figs. 7.60, 8.68, 70; low carinated bowls: Hermansen 1990, figs. 6.48–49), from Eridu (cups with straight walls: Safar et al. 1981, fig. 78.4; low carinated bowls: Safar et al. 1981, figs. 78.5–8), Tell Uwaili (low carinated bowls: Lebeau 1983, figs. 7.1–4, 8.4–5; small bowls with sinuous walls: Lebeau 1983, figs. 7.5, 7–8; 9.1) and Tell Zurghul (Volpi 2020, figs. 5.1–8).

Finally, turning to the closed forms, noticeably few types of jars were collected from the surface, and these appear to

have played a minor role in the Ubaid ceramic repertoire used at Abu Jarabie. The first type has either a short vertical or flared neck, a thinned rim, and either rounded or horizontal shoulders (Figs. 6.1–3). All the fragments that could be assigned to this group have a geometric decoration which extends from the interior of the vessel to the external shoulder of the vase, also covering the lugs when present (Fig. 6.4). The geometric decorations are composed of horizontal and oblique lines, horizontal bands, stylized strokes, and wavy lines. This type of jar is also very common in the Ubaid pottery repertoires of sites in southern Iraq: Tell Uwaili (Lebeau 1983, figs. 18.8–11; Calvet 1991, figs. 13.128, 16.167–168); Uruk Steingebäude (Boehmer 1972, figs. 57.567–568, 58.684) and Tiefschnitt (Hermansen 1990, figs. 10.86–89, 9.84–85).

Another group consists of hole-mouth jars with large shoulders and a simple ridge placed on the outer wall just below the rim. The rims of these jars can have a variety of shapes, either inwardly thickened (Figs. 6.7, 10), inwardly bevelled (Fig. 6.9), or outwardly thickened (Fig. 6.8). The closest parallel for this type of jar is a group found at Tell Uwaili (Calvet 1991, figs. 10.108–109, 17.172) from both level C (dated to Ubaid 5) and from the D-G level (dated to Ubaid 4), as well as from Uruk's Steingebäude (Boehmer 1972, figs. 56.511, 555).

A necked jar with flared neck and thinned or plain rim (Figs. 7.1–2) has a very similar chronological range. Parallels have been found at numerous sites in both Ubaid 4 layers (Tell Uwaili (Lebeau 1983, figs. 16.3, 5; Calvet 1991, fig. 16.171), Tell Zurghul (Volpi 2020, figs. 8.3–4), Uruk's Steingebäude (Boehmer 1972, figs. 45.25–26, 51.211), and Uruk's deep sounding (Tiefschnitt, Hermansen 1990, figs. 9.77–81)); and Ubaid 5 contexts (Tell Uwaili (Calvet 1991, fig. 13.134), Tūlūl al-Baqarat (Bruno 2020, figs. 33.12–19) and Uruk's Steingebäude (Boehmer 1972, fig. 52.244)). This confirms the results of the re-analysis of the ceramic material from levels 18–13 of the Eanna deep sounding (Tiefschnitt) as dating to Ubaid 4 and Ubaid 5 by Finkbeiner (2001, 152 Type UB-4/1b fig. 1.UB-4/1b).

Distinguishing the characteristics of the Ubaid 5 pottery assemblage from that of the Early Uruk period is more problematic. Some shapes, such as vessels with pointed bases (Fig. 7.3), are distinct to that period and parallels are found in the contemporary pottery repertoire of Tell Uwaili (Calvet 1991, fig. 10.105) and Uruk's Steingebäude (Boehmer 1972, fig. 53.350). However, the narrow-necked and everted plain rimmed jars (Figs. 7.5–6) with straight cylindrical spouts (Fig. 7.4) first appear in the Ubaid 5 period (and are attested also in Ubaid 5 layers at Tell Uwaili (Calvet 1991, fig. 10.110), Tūlūl al-Baqarat (Bruno 2020, figs. 33.20–23), Uruk's Steingebäude (Boehmer 1972, fig. 53.347) and the deep sounding (Tiefschnitt, Sürenhagen 1986, T/359)) but continue into the Early Uruk phase as attested at both sites in Uruk. (Steingebäude, Boehmer 1972, figs. 54.377–379, 55.431–432, and Tiefschnitt, Sürenhagen 1986, T/304, T/308).

<sup>2</sup> Lebeau 1983, figs. 14.1–4. From Trench Y 27 di Tell Uweili, from couche C, dated to the Ubaid 5 period, unpainted specimens with grooved inner surface also come from: Calvet 1991, figs. 8.79–80.

## 2b. The Uruk period occupation

The Uruk occupation (4000–3100 BCE) of Abu Jarabie overlaps on its southern half with the Ubaid occupation and appears to shift very little subsequently over the course of the Uruk period (Fig. 2). The total occupied area in the different phases of the Uruk period (Early, Middle and Late) appears to have remained fairly stable and ranged between 6–7 ha.

As mentioned above, some Ubaid 5 forms continued into the Early Uruk. However, large deep bowls are highly diagnostic of the Early Uruk period. These bowls have thickened rims and a large applied ridge on outer wall located just below the rim. These ridges are featured by either fingertip or fingernail impressions or, more rarely, by geometric incised patterns (Figs. 7.7–9). Although they seem to have been used predominantly in the Early Uruk period (Finkbeiner 2001, 152 and fig. 2. UR-6/1b; Boehmer 1972, fig. 54.357; Sürenhagen 1986, T/242, T/317–326.), evidence from Tell Uwaili (Calvet 1991, fig. 12.119.) and from TB7 of Tūlūl al-Baqarat (Di Michele 2016, figs. 1.6, 9; Bruno 2020, figs. 34.30–32) suggests that they might have appeared before the Early Uruk period. The occurrence of large deep bowls with a grey fabric in the Abu Jarabie assemblage also indicates an earlier date, possibly in the late Ubaid 5 period. As in all sites where Uruk pottery is found, the classic indicator is the bevelled rim bowl (Figs. 8.1–2). This mass-produced bowl has been the subject of numerous specialized studies which have thoroughly investigated its technological characteristics and proposed numerous hypotheses on its function and use (Helwing 2013 with previous bibliography).

Other forms are more typical of the Middle Uruk period. Short-necked jars with band rims or with concave band rims (Fig. 8.3), and low-necked jars with an everted ledge squared rim (Fig. 8.4) are common among the closed forms. Large bowls with a hammer rim (Fig. 8.5) are equally frequent among the open forms. These types are also well attested in the sequence of the deep sounding of the Eanna district of Uruk (Sürenhagen 1986, T/128, S/28, T/49–50, T/14, T/65; Sürenhagen 1987, E/15) and other sites in southern Iraq, such as Abu Salabikh (Pollock 1990, figs. 7.t–u; McAdam 1983, no. 200).

Finally, some of the most typical Late Uruk period ceramic indicators were encountered in the surface collection from Abu Jarabie, such as drooping spouts (Fig. 8.7). This type of spout is widely attested in other southern Iraqi sites, for example at Tell Uwaili (Calvet 1991, 4.40 Couche A), Tell Zhurgul (Pizzimenti 2020, figs. 3.6, 9.2–3) and Nippur (Wilson 1986, fig. 4.10). Two closed forms also belong to this chronological horizon, namely globular jars with plain rims and vertical handles, and small jars with twisted handles (Fig. 8.6). The latter has parallels within the pottery assemblages from sites such as Tell Uwaili (Calvet 1991, fig. 3.37 Couche A) and Nippur (Wilson 1986, fig. 4.9).

Numerous neckless jar rims were also found on the surface of Abu Jarabie. These typically had a ledge rim and with a ridge and an impressed fingernail row located just below it (Figs. 8.8–10). This type of jar is also attested in

the pottery assemblages of some sites elsewhere. However, it also shows considerable variations, as neckless jars exist with or without the exterior rib and some with a thickened and flat, rather than a ledge-shaped, rim. It is possible that these variations are of chronological significance, with those attested from sites such as Tell Uwaili (Calvet 1991, figs. 3.30, 32 Couche A), Tell Zhurgul (Pizzimenti 2020, fig. 3.1), Eridu (Safar et al. 1981, figs. 71.48–52) and Abu Salabikh (McAdam 1983, no. 81; Pollock 1990, figs. 7.r–s) representing a later evolution, while the specimens exhibiting characteristics closer to those from Abu Jarabie are perhaps older. In fact, these specimens can be compared with examples from Tell Uwaili (Calvet 1991, figs. 7.72, 78 Couche B), Uruk (Boehmer 1972, figs. 54.368–373), Abu Salabikh (McAdam 1983, no. 61) and Tūlūl al-Baqarat (Di Michele 2016, fig. 2.3) which seem to suggest their diffusion in a period dating back to an early phase of the Uruk period. However, this is still a working hypothesis pending further research.

## 2c. The Jemdet Nasr/Early Dynastic I Period occupation

The Jemdet Nasr (3100–2900 BCE) and Early Dynastic I occupation (2900–2700 BCE) is located on the more southern and lower part of the site and does not encroach onto the mound with Ubaid and Uruk occupation. Occupation during the Jemdet Nasr period covered an area of 42 ha and contracted slightly to 36 ha in the Early Dynastic I period (Fig. 2). According to the size categories of Adams (1981, 82), Abu Jarabie would have been a substantial urban centre in both periods, which may reflect the general trend in the settlement history of the southern alluvial plain towards urbanisation.

All the types of mass-produced wares which are characteristic of those periods were found on the surface of the site. Among them, solid-footed goblets (Figs. 9.1–3) were the most common, while conical beakers (Fig. 9.4) and conical bowls (Fig. 9.5) appeared less frequently, but still in great numbers. This type of mass-produced pottery is present in most contemporary sites of southern Mesopotamia such as Abu Salabikh (Moon 1987, nos. 97–107), Jemdet Nasr (Matthews 1988, fig. 2.5), Larsa (Calvet 2003, N34–35, N36), Nippur (Wilson 1986, fig. 5.6), Tell Khaiber (Calderbank, Moon 2017, figs. 1.1–3), Tell Zurghul (Pizzimenti 2020, figs. 15.1, 4, 19.12–13) and Uruk (Pongratz-Leisten 1988, 38–39, nos. 121, 368–378, 390–392, 421).

However, there was more variety among the closed shapes, with the most common type being a medium- and narrow-necked jar featuring a range of different rim shapes. Examples with everted ledge rims (Figs. 9.6, 8) and triangular rims (Fig. 9.7) were the most common. These jars often have a row of fingernail impressions at the base of the neck, right at the junction with the shoulder (Figs. 9.6–7). Jars with a radial reserved slip decoration were less frequent. Only seven fragments of Abu Jarabie's pottery assemblage had this type of surface treatment and in just two of these was it possible to reconstruct the complete profile. Both

of them are associated with an everted ledge rim (Fig. 9.8). Both types of jars are widely distributed during the periods under discussion. They have parallels in pottery assemblages from Al-Hiba (Renette 2021, Type HL-8, Type HL-12 and HL-12d), Abu Salabikh (Moon 1987, no. 793), Jemdet Nasr (Matthews 1988, fig. 3.6), Larsa (Calvet 2003, N56), Nippur (Wilson 1986, fig. 8.12), Tell Fara (Martin 1988, no. 69), Tell Khaiber (Calderbank and Moon 2017, fig. 1.13), Tell Zurghul (Pizzimenti 2020, figs. 18.10, 21.8–13), and Uruk (Pongratz-Leisten 1988, nos. 23, 33, 107–108, 161, 225, 269).

Two jar forms distinctive of the Jemdet Nasr period were collected. The first is jar a medium-necked jar with a protruding band rim, internally stepped to support a lid (Fig. 9.10). This has parallels in Nippur (Wilson 1986, fig. 8.9) and Tell Khaiber (Calderbank and Moon 2017, fig. 1.13). The second is represented by a jar with a tall neck and everted ledge rim (Fig. 9.9), which usually has an ovoid body. This is well attested in contemporary pottery repertoires of Abu Salabikh (Pollock 1990, figs. 5f, h), Nippur (Wilson 1986, fig. 7.14), and Tell Khaiber (Calderbank and Moon 2017, fig. 1.17).

The Early Dynastic I pottery assemblage is commonly distinguished by tab-rimmed jars with plain rims (Fig. 9.11), frequently seen on the surface of Abu Jarabie and widely attested in the pottery repertoires from Al-Hiba (Renette 2021, Type HK-7), Abu Salabikh (Moon 1987, nos. 331–332), Larsa (Calvet 2003, N145), Nippur (Wilson 1986, fig. 11.3), and Uruk (Pongratz-Leisten 1988, nos. 131, 245). Other types of jars were preserved in a more fragmentary fashion but appeared to have lacked rims. These included two shoulder fragments of jars (Fig. 10.1) with elaborate geometric decoration in incised lines and excised triangles. Similar specimens have been recorded at sites such as Al-Hiba (Renette 2021, type HJ-8), Abu Salabikh (Moon 1987, no. 798), Larsa (Calvet 2003, N146), Nippur (Wilson 1986, fig. 11.5) and Uruk (Pongratz-Leisten 1988, no. 83). Two shoulder sherds from jars were also recovered, in both cases with a dark brown monochrome painted decoration in a floral motif (Fig. 10.2). The best-preserved example shows a plant or tree within a metope delimited by a double vertical line. This decorative pattern finds a nearly exact parallel in the assemblage from Uruk (Nissen 1970, fig. 72.20/16). Finally, a fragment of a large jar coated with a cream/yellowish slip, and decorated with a geometric pattern in a reserved slip consisting of rectangles and bands (Fig. 10.3). This fragment also has parallels from some southern Mesopotamian sites, again including Uruk (Pongratz-Leisten 1988, no. 113).

## 2d. The Seleucid–Parthian re-occupation of Abu Jarabie

Occupation at Abu Jarabie experiences a hiatus after the Early Dynastic I period until its re-occupation in the Seleucid/Parthian period. The repertoire of diagnostic sherds belonging to the later period is rather limited and reflects a limited occupation in both settlement size and chronology (Fig. 2).

Among the most representative forms of this phase are fragments of glazed bowls and so-called fish-plates (Fig. 10.4) with overhanging rims (Uruk: Finkbeiner 1991, no. 80; Larsa: Lecomte 1987, figs. 2.6–7, 3.1–4). A low carinated bowl with a plain rim appears among the more common fine wares (Fig. 10.5) (Uruk: Finkbeiner 1991, no. 188; Larsa: Lecomte 1987, fig. 1.2). However, large bowls and carinated bowls with an outside thickened rim are the most common types among the open forms (Figs. 10.6–7) (Uruk: Finkbeiner 1991, no. 5; Larsa: Lecomte 1987, fig. 19.29). Within the assemblage collected from the surface, vessel walls with impressed decorative patterns were noteworthy (Fig. 10.8). Among closed forms, of which very few specimens were recorded, the best-preserved shape belonged to a tall narrow-necked jar with an external thickened rim ornamented with a simple ridge just below it (Fig. 10.9) (Uruk: Finkbeiner 1991, no. 34; Larsa: Lecomte 1987, fig. 23.1).

## 3. Conclusion

The pottery sherds collected from the surface of Abu Jarabie show an uninterrupted occupational sequence from Ubaid 4 until the Early Dynastic I period. The pottery assemblage suggests that the settlement was abandoned prior to the Early Dynastic III period as no pottery indicators of this or subsequent periods have been found. A chronologically limited occupation of a much smaller area of the site resumed during the Seleucid/Parthian period. As described above, the systematic collection of diagnostic pottery sherds allowed to distinguish each phase of occupation and also to identify the transitional phase, Ubaid 5, which is still little known in southern Mesopotamia and which shows evident similarities with the contemporary pottery repertoire from Trench Y 27 Level C of Tell Uweili. The data collected and presented here represent a key sequence in this region for the fifth, fourth and first half of the third millennium BCE. Further research in this field will allow a better understanding of the role played by this site during its periods of occupation.

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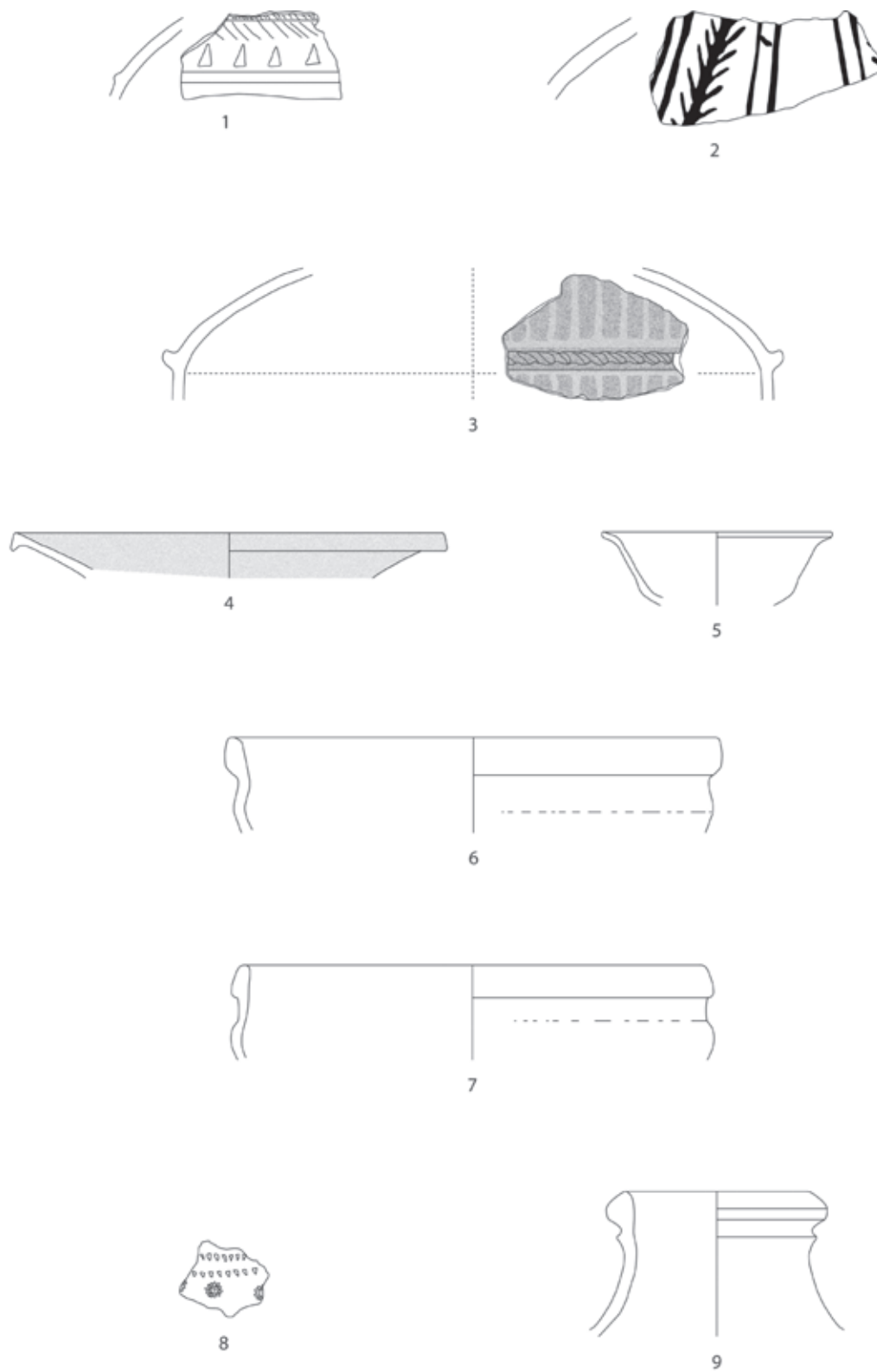


Fig. 3. Ubaid Pottery from Abu Jarabie.

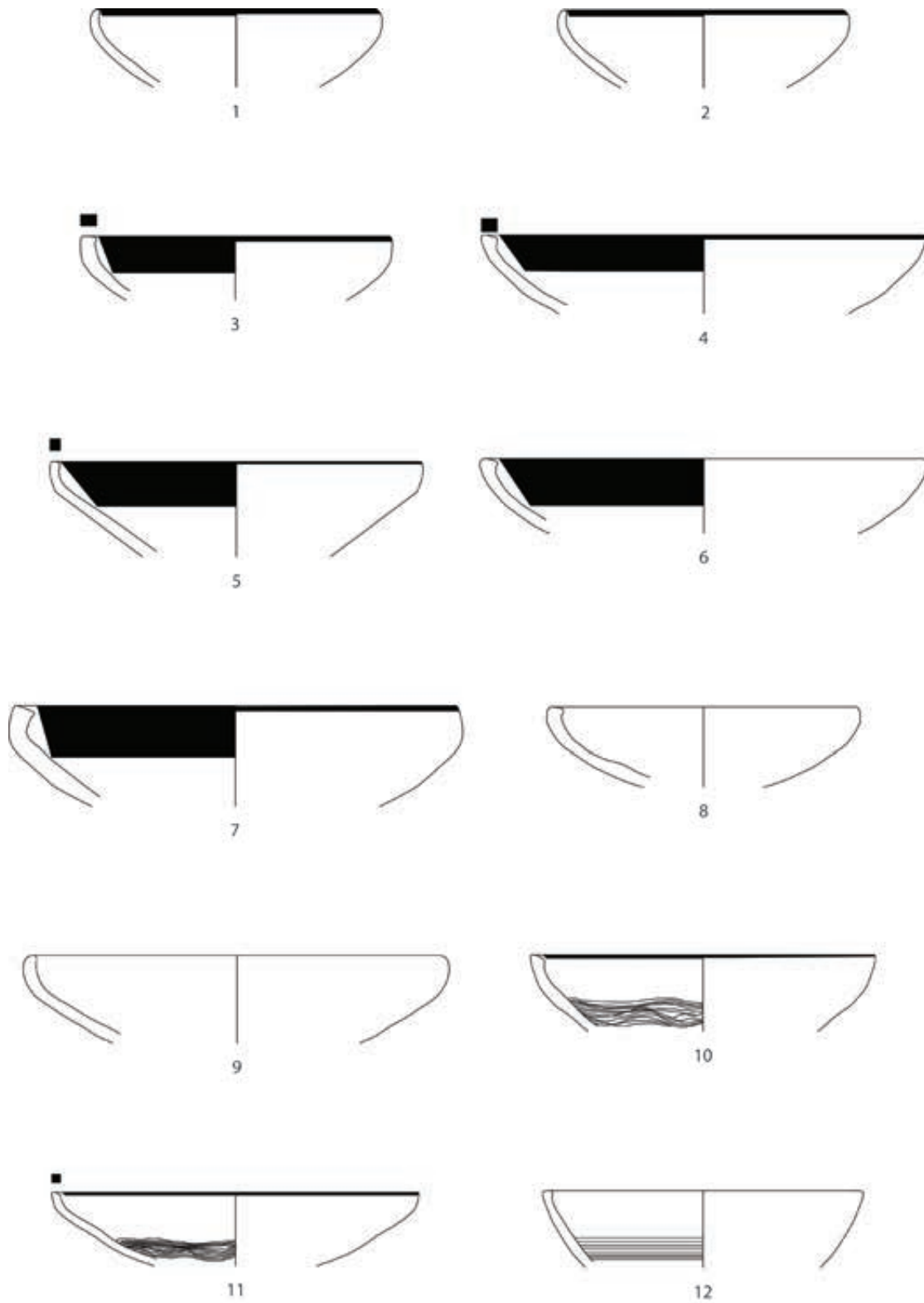


Fig. 4. Ubaid Pottery from Abu Jarabie.

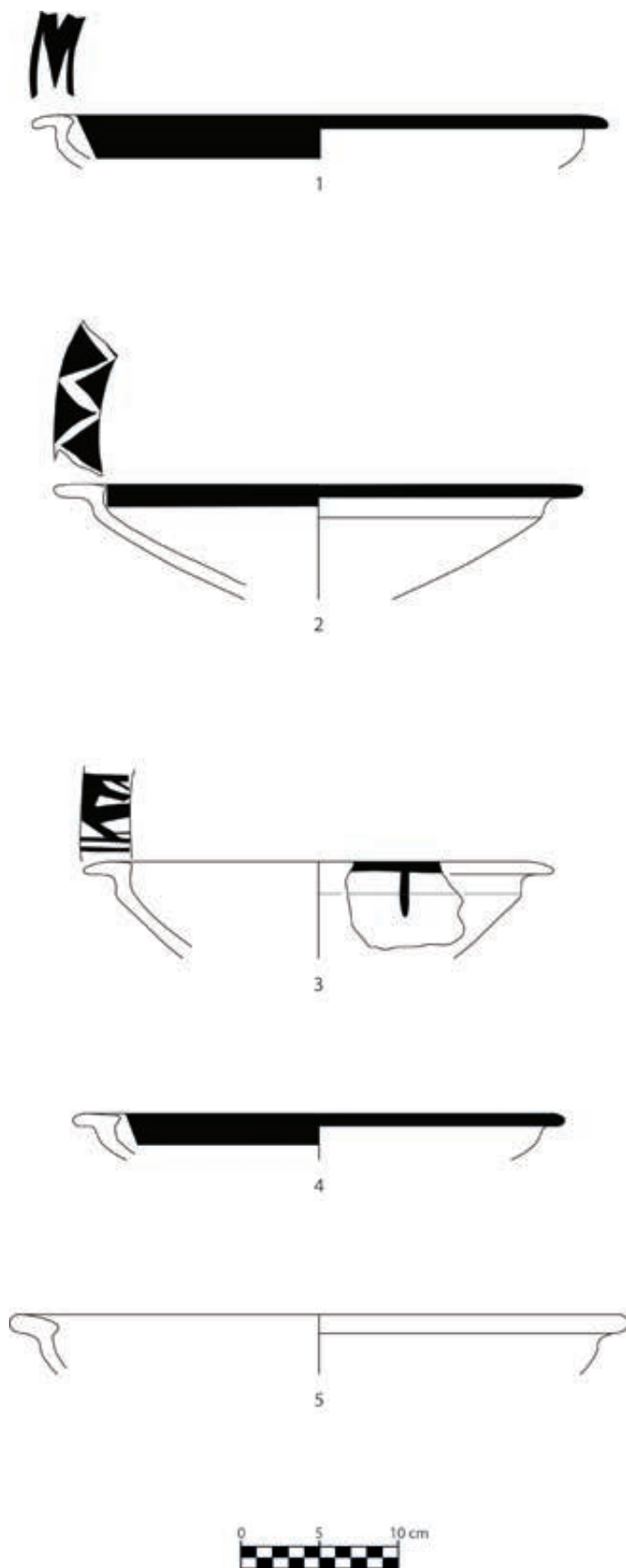


Fig. 5. Ubaid Pottery from Abu Jarabie.

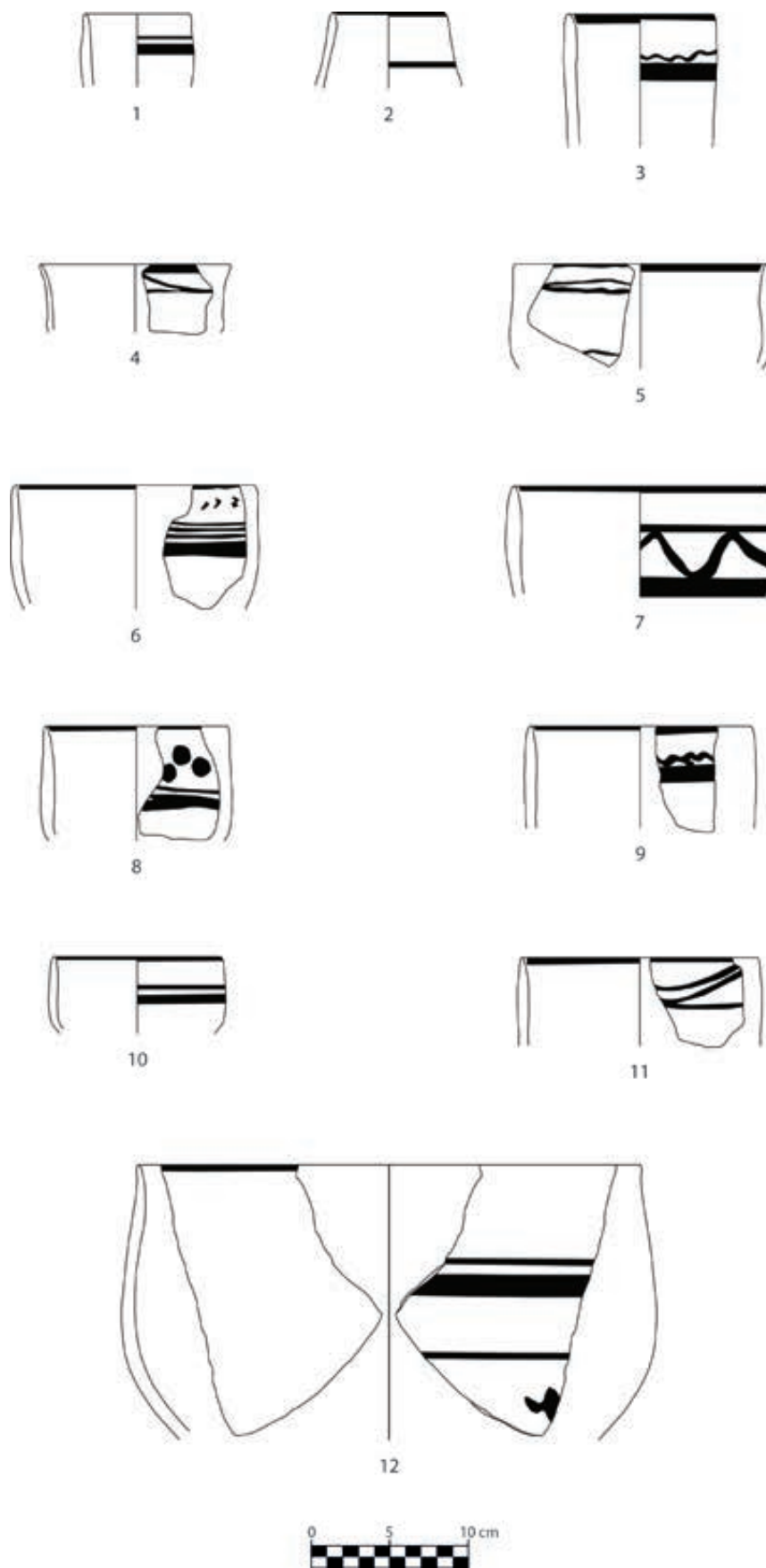


Fig. 6. Ubaid Pottery from Abu Jarabie.

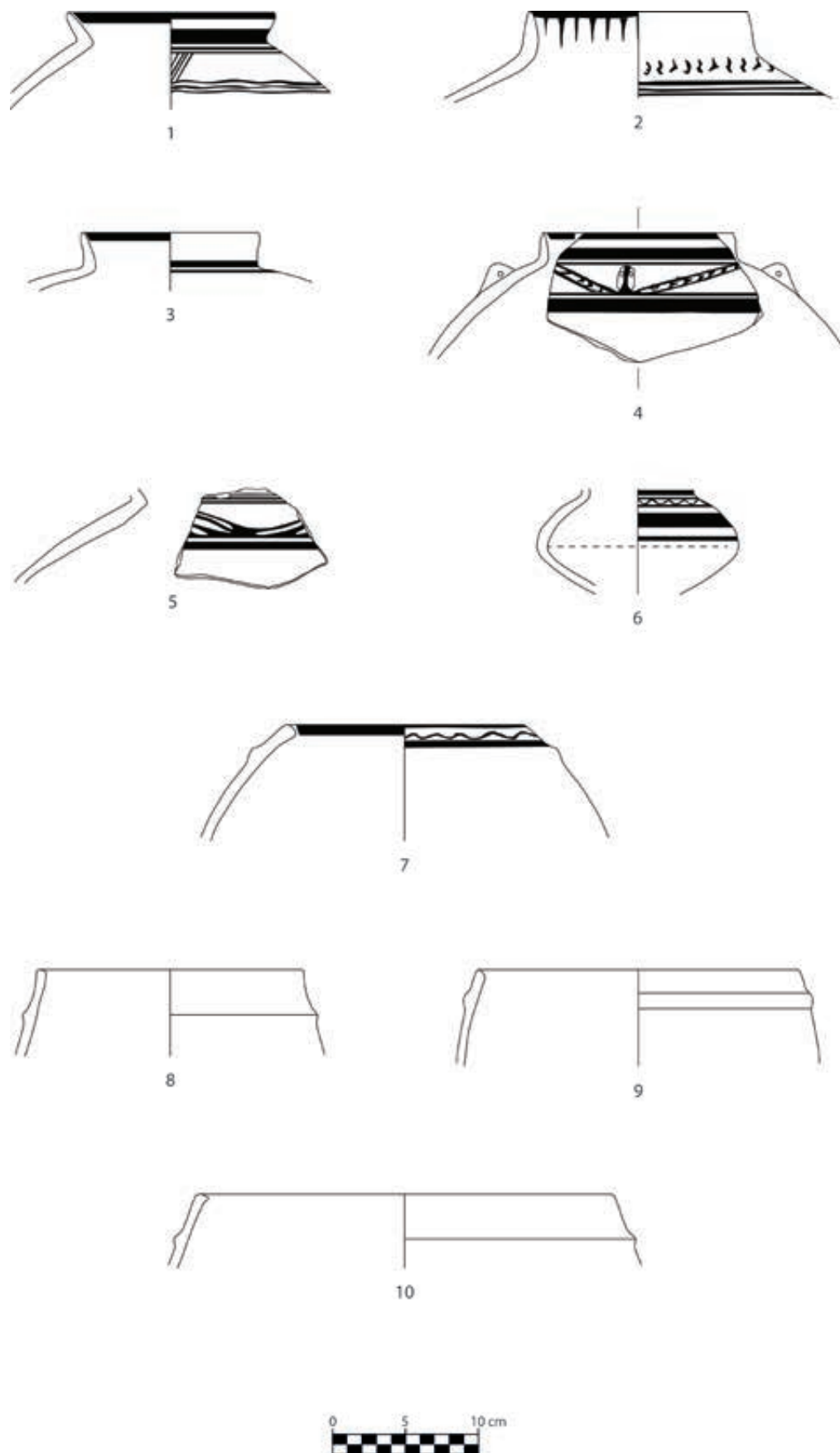


Fig. 7. Ubaid and Uruk Pottery from Abu Jarabie.

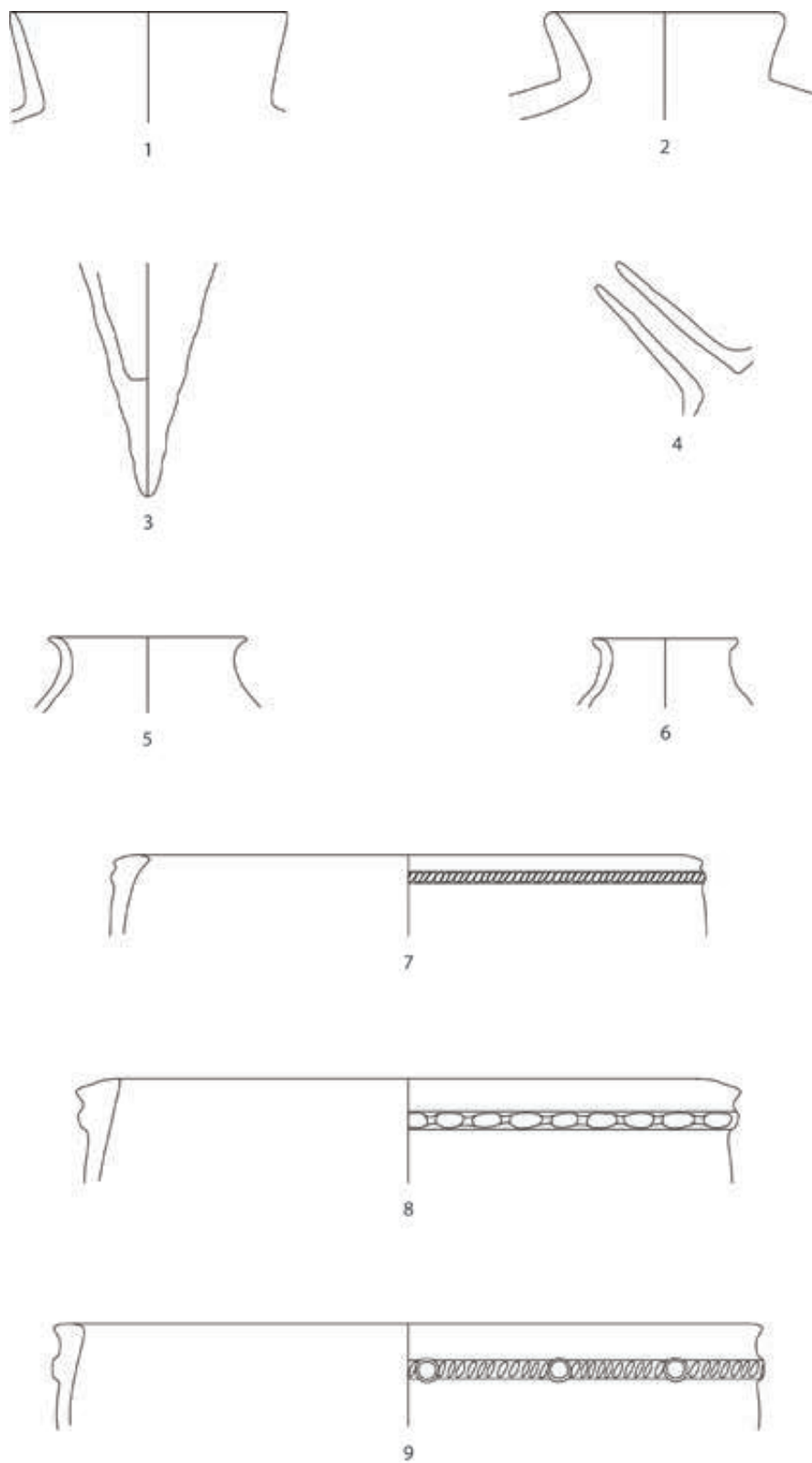


Fig. 8. Uruk Pottery from Abu Jarabie.

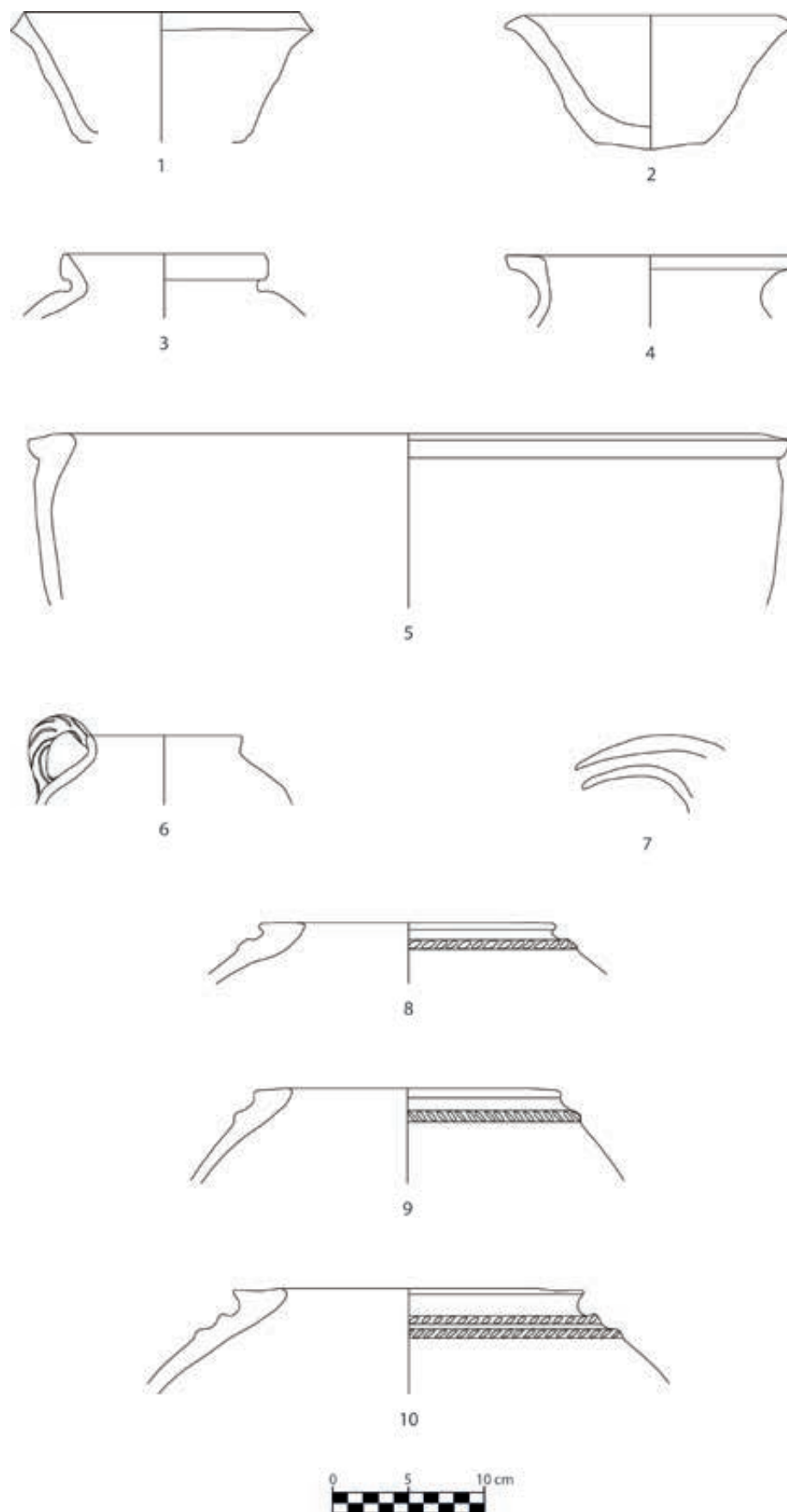


Fig.9. Jemdet Nasr and Early Dynastic I Pottery from Abu Jarabie.

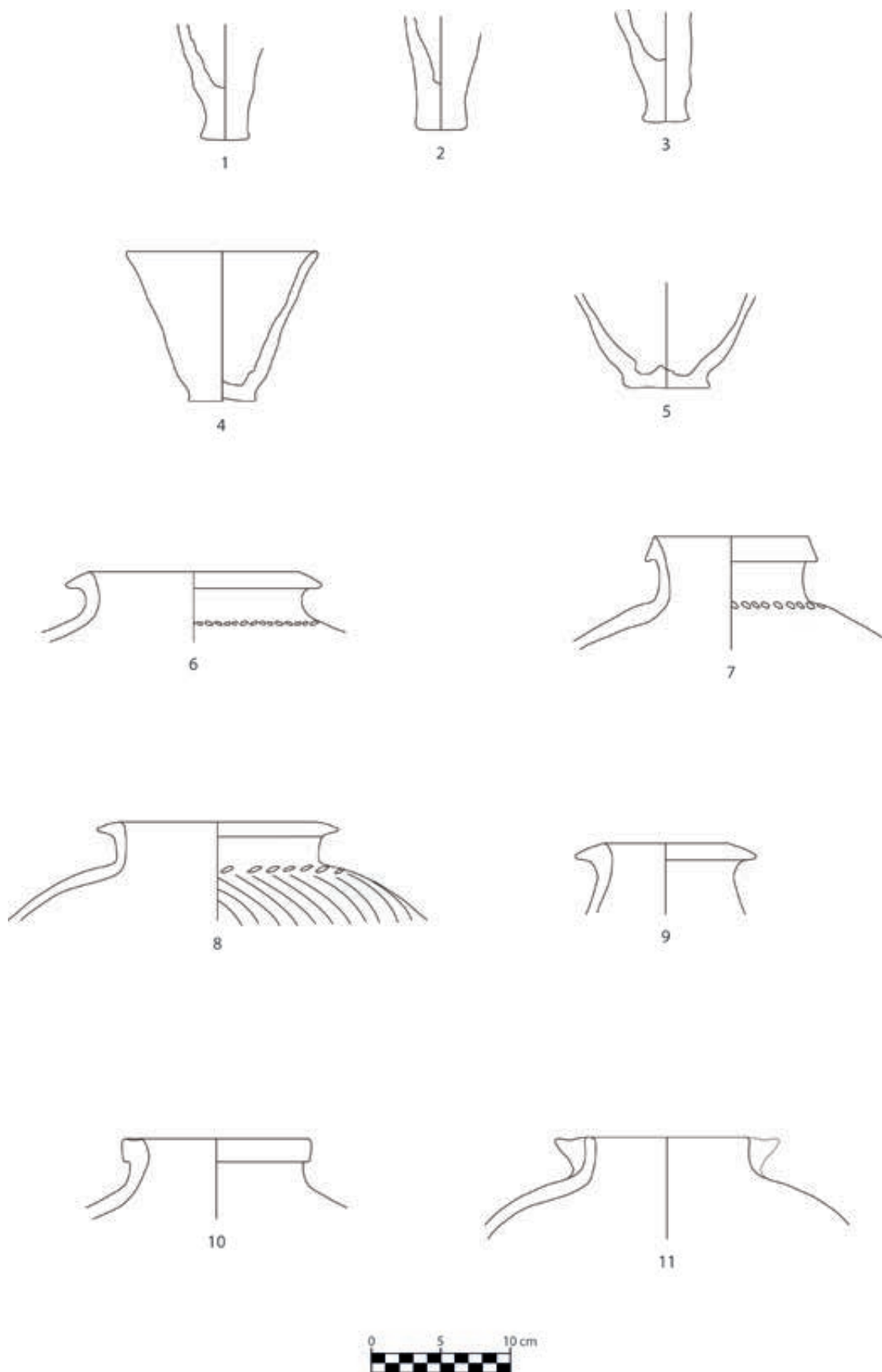


Fig. 10. Early Dynastic I and Seleucid/Parthian Pottery from Abu Jarabie.

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## Arabic Abstract

٩. أخذ عيّناتٍ منهجيّةٍ من الفخار السطحي وإمكانية إسهامها في تحديد وإثراء التصنيف النّمطي للسيراميك المحلي في منطقة أوما (في جنوب العراق) (ستيفاني رُوست وأنجيلو دي ميشيل)

قام مشروع مسح مدينة أوما على مدار موسمين بمسح العديد من المواقع في منطقة قضاء الرفاعي في محافظة ذي قار. وقد قدّم أحد هذه المواقع وهو موقع أبو جرابيع مجموعةً فخاريةً مثيرةً للاهتمام، تُوضّح استمرار الاستيطان في الموقع منذ فترة العبيد الرابعة على الأقل وحتى فترة السلالة المبكرة الأولى مع إعادة استيطان الموقع في فترة العصر السلوقي/ الفرثي. ويُوفّر الموقع تسلسلاً زمنياً أساسياً لإعادة بناء تاريخ الاستيطان فيه ويسمح لنا برسم مخطّطٍ أولي لمجموعة الفخار في المنطقة الواقعة بين النصف الخامس والنصف الأوّل من الألفية الثالثة قبل الميلاد.



## Abstract

The 2016–2018 QADIS survey project, conducted jointly by the University of Bologna and the Iraqi State Board of Antiquities and Heritage (SBAH), has investigated the southeastern quarter of the Al Qadisiyah province. The main activities conducted there included analysis of satellite imagery in order to identify potential archaeological sites, ground-truthing, random collection of diagnostic surface materials from sites, intensive collection of diagnostic surface materials at ten sites and some shallow test soundings at four sites. This paper discusses not only the chronological reliability of the current ceramic indicators in southern Mesopotamia for the Early Bronze IV period, but also, according to the so-defined pottery assemblage, starting from the data of the intensive collection of surface materials carried out at the site of QD049–Bismaya/Adab, integrated by the superficial test soundings conducted there, the EB IV settlement patterns in the QADIS survey region.

Eleonora Mariani

# 10. Defining the Early Bronze IV pottery assemblage in southern Mesopotamia and settlement patterns in the QADIS Survey Project

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## 1. Introduction

The significant positive development, in recent years, of the social, military and political situation in Iraq has led to a new prosperous season of archaeological researches in the country. In southern Mesopotamia, new research projects regarding the study of ancient settlement dynamics and landscapes have been conducted (Otto et al. 2018; Lippolis 2020; Maner, Al-Lami and Zaina in press). Among them, the QADIS survey project has been carried out between 2016–18 by the University of Bologna and the Iraqi State Board of Antiquities and Heritage (SBAH), and its general aim is to investigate and study the landscape transformations, the evolution of settlement patterns and the material culture in the Qadisiyah region, along with protecting and enhancing the cultural and archaeological heritage of the region (Marchetti et al. 2017, 2018, 2019, in press; Marchetti and Zaina 2020).

The QADIS survey area (Map 1) extends over 1829 sq.km and is located in the southeastern region of Qadisiyah, territorially delimited to the south and east by the administrative borders of Qadisiyah, to the west by the FARSUP survey area (Otto et al. 2018) and to the north by the town of Afak.

Starting from the previous surveys carried out in the region (Adams and Nissen 1972; Adams 1981; Al-Shukri 1974), the QADIS project began by georeferencing Adams' maps in UTM 38S Zone with GIS software, using, in order to be as accurate as possible, both the georeferenced points on the maps and the most recognizable features of the area (e.g. junctions of watercourses). Subsequently, these data were combined with different spatial dataset, such as

declassified Corona, Landsat and satellite imagery provided by the Bing Maps Tyle System.

The sites were positioned on the newly georeferenced maps by Adams, then, using photo-interpretation of satellite images, any shifts in site location (1 km at the maximum) were corrected. Through the integration of 1:50,000 and 1:100,000 topographic maps and ESRI satellite imagery provided by the local SBAH, a digital base map was created, essential for the identification of archeological and anthropic anomalies. In fact, with the support of this tool, we were able to identify 208 anomalies (Marchetti et al. 2019, 218); this step was followed by extensive and intensive surface survey, in order to verify on the ground the data obtained by remote sensing. Combining these two methods, as underlined by Marchetti et al. (2019, 218), 146 settled mounds, corresponding to 120 single or multi-period archeological sites, were identified.

In addition, a strategy of survey-resurvey was applied in the area: in fact, 57 sites previously investigated by Adams (Adams 1981; Adams and Nissen 1972) were surveyed and documented again by the QADIS project, in order to confirm or reevaluate the chronological attribution of the sites previously given by Adams (Marchetti et al. 2019, 220). One of the focal points of the project is the documentation and study of the region's material culture, with particular regard to the pottery sherds, which are a useful tool both as chronological indicator and for determining the limits of each site relying on their presence/absence on the surface.

The great majority of sites was documented through a non-intensive collection of diagnostic pottery sherds (rims, bases, decorated sherds) and materials; afterwards, the collected materials were washed and analysed at the

expedition house. The materials, in particular the pottery sherds, were then selected and chronologically determined in order to define the dating of each surveyed site. The chronological determination of the survey materials initially relied on the data from published excavated sequence from neighbouring sites, such as Abu Salabikh, Tell al-Wilayah, Umm al-Jir, Nippur, Isin, Larsa, Tell ed-Der, Babylon and the Diyala region.

The periodisation of the historical phases in central-southern Mesopotamia is strictly correlated, in the scientific literature, with the political events in the region, known through the epigraphic documentation, and this applies also to art-historical data, such as the glyptic and the statuary (Marchetti 2005). However, a periodisation based on a historical terminology cannot be superimposed on the material culture, as it could be limiting and misleading in most cases due to the highly differential rates of change. Faced with this problem, I decided to use the definition of Early Bronze IV (hereafter, EB IV, in accordance with most terminologies of the Levant) to identify the material culture of the phase traditionally called Akkadian.

The materials from different locations, first of all, area WF in Nippur, a deep sounding on the West Mound dug between 1989 and 1990 by the University of Chicago (McMahon 2006), were essential for the chronology of the EB IV assemblages. Furthermore, the excavations carried out at Umm el-Jir are of undeniable importance for the pottery horizons of the EB III and EB IV periods. In fact, between December 1966 and January 1967, five areas were opened, among which Area B, the stratigraphic pit, and Area D, the most extensive operation carried out in the site to expose horizontally EB IV period, provided the most significant materials (Gibson 1972). Parallels have also been sought among the ceramic assemblage and small finds retrieved from excavations in the Diyala (Tell Asmar and Khafajah, Delougaz 1952; Gibson 1982) and in the Hamrin regions (Tell Yelkhi, Bergamini 2002–2003).

As for the fieldwork routine of the QADIS survey project, the technical drawing of the pottery fragments and the morphological (shape, preservation, measurements) and technical (fabric color, inclusions, surface treatment, decoration, firing) analysis of the sherds were the standard procedures, followed by their digital storage in a standardized database.

To provide an interpretation of the use of vessels, several elements, such as the morphological aspects (shapes and measurements) and the technological aspects (fabric, inclusions, surface treatments and decorations), have been taken into account and correlated. Based on this theoretical framework, three functional classes<sup>1</sup> have been recognized<sup>2</sup>:

- Simple Ware (SW): this functional class comprises the vessels for serving/eating and activities related to food production without subjecting to cooking. These are fired at medium/high (600–900°) temperature and are characterised by different kinds of decorations and surface treatments.
- Kitchen Ware (KW): this class encompasses the vessels used in the activities involved with the processing of foods with cooking. These are fired at approximately 500° and comprises mostly cooking pots, with surface treatments and decoration scarcely attested.
- Preservation Ware (PW): this class includes containers used for transport and/or storage of foods and liquids, among which jars and pythoi are the most attested shapes. Different kinds of decorations and surface treatments can be present.

Subsequently, we proceeded with the analysis of the pottery assemblage, in order to identify typologies.

In the present work, a preliminary result of the typological analysis on the EB IV pottery assemblage from the QADIS surface survey and from the test soundings at Bismaya/Adab is provided, followed by a regional picture of the settlement patterns during the same period.

## 2. The Early Bronze IV pottery assemblage

The whole corpus of the QADIS survey project EB IV ceramic assemblage consists of 861 sherds, coming from 19 sites (Fig. 1). Among the QADIS survey materials, it was possible to identify EB IV diagnostic types through parallels and comparisons with published stratified materials. The most represented class is Simple Ware, which is characterised by a highly fired (even, in some cases, over-fired) greenish fabric, with small (<0.5/0.5–1 mm) sporadic (<3/3–10%) mineral or mineral and vegetal inclusions. Among open shapes, a widespread type, which is present within southern Mesopotamia pottery assemblages through all the Early Dynastic and EB IV periods, is the conical bowl with plain rim, straight sides and flat string-cut base (Fig. 2). This shape is characterised by slight morphological variants through time, mostly concerning height and diameter. Comparisons can be found from many sites, of which the most representative are Nippur, area WF, levels XIX–VI (McMahon 2006, pl. 76, pl. 123.8–14, pls. 124–5, pls. 129–131, pl. 140), Umm el Jir (Gibson 1972, fig. 44: B-7:1, B-8:1 and 3, B-10:1–3, fig. 46: D-III: 4, 7–8), Tell Asmar (Delougaz 1952, B.002.200b), and Tell Yelkhi (Bergamini 2002–2003, tav. 1 and tav. 2.1–11).

Typical EB IV sherds include also conical bowls with a thickened rim beveled on the outside and flat string-cut base; the sides are generally straight (Fig. 3). Parallels are attested mostly at Nippur, where the shape is well known from levels XIVa–VIII of the WF sounding (McMahon 2006, pl. 84.5, pl. 85.2, pl. 87, pl. 125.9–10, pl. 142.2–3, pl. 153.7, 9 and 11).

Other diagnostic open shapes include large size bowls with everted triangular rim and curving sides (Fig. 4) and large

<sup>1</sup> The approach applied by the QADIS project to functional classes follows the work of P. Rice (1987, 2008–9, table 7.2).

<sup>2</sup> For more details on three functional classes, see also Zaina 2013.

size bowls with elongated triangular rim and decorated with horizontal applied ridges and comb-incised wavy lines (Fig. 5).

Another diagnostic type, that undoubtedly is very distinctive in southern Mesopotamia during the EB IV, is the krater with ridged rim decorated with comb-incised wavy lines on the sides (Fig. 6). This shape has been widely documented in the QADIS survey area, especially at QD049–Bismaya/Adab and recalls the specimens retrieved at Tell Yelkhi, in the Hamrin region, broadly attested from the EB IV through the MB I levels (Bergamini 2002–2003, tav. 7.3, 9–14 and 30–1).

Among closed shapes, the most diagnostic type is the jar with triangular rim, short angled neck and shoulder decorated with horizontal applied ridges, which is a typical EB IV shape, although some specimens are also corroborated during the MB I period (Fig. 7). This type is widely attested in southern Mesopotamia and in the Diyala region, as shown by parallels from Nippur (McCown and Haines 1967, pl. 81.9, McMahon 2006, pl. 110), Tell Yelkhi (Bergamini 2002–2003, tav. 11.26–27, tav. 12, 7–8 and 13–20), Tell Sabra (Tunca 1987, pl. 54:2 and 4) and Tell Asmar (Delougaz 1952, C.466.450; D.465.360, D.465.550, D.466.360).

The double-ridged rim jars, which are characterised by a thickened rim with an applied ridge just below it, are commonly attested during the EB IV period (Fig. 8). Parallels are shown with specimens from area WF at Nippur, where the type is widely attested starting from the EB IV levels (specifically from level XVIIa; McMahon 2006, pls. 105–6). Furthermore, jars with a multiple ridged rim (Fig. 9) are broadly attested and represent a hallmark of the EB IV period (McMahon 2006, pl. 120.5–6; Bergamini 2002–2003, tav. 9.8, tav. 17.2 and 4). The EB IV pottery assemblage in the QADIS region also encompasses jar with rectangular everted rim with short vertical neck and high shoulder (Fig. 10), which can be corroborated by the evidence from Nippur (McMahon 2006, pl. 119, pl. 120.1–4), Umm el-Jir (Gibson 1972, fig. 45: B-18:3, fig. 46: D-I:8 and D-III:3) and Tell Yelkhi (Bergamini 2002–2003, tav. 16.2, 18–19, 21–22, tav. 17.10–11). Another diagnostic type is represented by the medium size jar with everted triangular rim, on a medium or long slightly flaring neck (Fig. 11). Among the EB IV shapes found in the QADIS survey area, also oval rim jars are attested. This rim has two variants, both corroborated by the evidence at Nippur (McMahon 2006: pl. 102: 2, 6, 8–12, 14–17), Umm el-Jir (Gibson 1972, fig. 44: B-7 and 16–20) and Tell Yelkhi (Bergamini 2002–2003, tav. 16.1, 3, 6, 8, 20, and 23–4): one is characterised by a flared neck of medium size, while the other presents the same rim on a short neck with a high shoulder (Fig. 12). The EB IV horizon comprises also jars with plain rim, slightly flared short angled neck and high shoulder (Fig. 13). This type is very common in southern Mesopotamia from the Early Dynastic through the EB IV periods, although the specimen with the rim on a short-angled neck is mostly attested during the EB IV period (Nippur: McMahon 2006, pl. 98.6–14; Tell Yelkhi, tav. 11.1, 2, 4, 9, 11; Diyala: Delougaz 1952, D.546.540a, D.546.540b). Typical EB IV closed shapes

encompass also jars with a band-rim on a short/medium angled neck (Fig. 14), which are very common at different sites, such as Nippur (McMahon 2006, pl. 117.1–3, 5–8, 10–12), Umm el-Jir (Gibson 1972, fig. 43: B-6: 2–4) and the sites of the Diyala region (Delougaz 1952, B.555.540b, C.555.510).

### 3. Intensive surface collection and test soundings: Bismaya/Adab

Although the great majority of sites was documented through a non-intensive collection of materials, we carried out an intensive surface survey at eight medium-sized and large sites, which showed extensive superficial structural evidence. In order to characterise these features, it was crucial the use of aerial documentation: during the six campaigns of the QADIS project, a team of topographers mapped these sites with DJI Phantom 3 and 4 Pro UAVs (Unmanned Aerial Vehicles), with the aim of better understanding the layout of these sites. In particular, drone imagery at QD049–Bismaya/Adab revealed the presence of a large building, probably a public complex (Fig. 15), to the north, and houses to the northwest. Thus, we carried out an intensive surface collection at the site, followed by some superficial test soundings. The aim both of the intensive surface collection and the soundings was not just to identify on the ground the structural evidence detected through UAV imagery, but rather to provide more accurate chronological data for them.

QD049–Bismaya/Adab lies on the eastern branch of the ancient course of the Tigris River in the southeastern region of the QADIS area. The maximum settled area consists of 460 ha and, according to the new research carried out by the QADIS project, it corresponds to a large multi-period megacity, extending for 2.5 x 1.2 km (Map 2). The site has greatly suffered from illicit digging and systematic looting. During the 2017 and 2018 campaigns, we documented the looted evidence, integrating satellite and drone imagery, ground-truth investigation and test soundings/scraping in three different spots; the results revealed the catastrophic situation at the site: more than 18,000 illicit pits have been mapped, corresponding to 90 ha of site looted (Marchetti and Zaina 2020, 214). However, this dramatic situation didn't only entail new challenges, such as the mapping of threats and the elaboration of new strategies for the preservation of Iraqi cultural heritage, but also provided us with new opportunities: in fact, as in the case of the EB IV pottery assemblage in the northern sector of QD049–Bismaya/Adab, several materials have been brought to light by illicit digging, that otherwise we would have never seen during the surface survey.

The QADIS survey team carried out three superficial test soundings in the site: Soundings A, B and C. The preliminary data provided by the intensive surface collection of materials in the northern sector highlighted a concentration of pottery sherds dated to the EB IV period. The three areas scraped superficially confirmed on one side the presence of structures related to a large public complex, probably of palatial nature (Soundings A and B), and on the other side revealed evidence

of domestic architecture (Sounding C), with the excavated pottery assemblage confirming the results of the intensive surface collection.

#### 4. Settlement patterns during the EB IV

The QADIS project surveyed and identified nineteen settlements dating to the EB IV period (some of which had also been previously investigated by Adams). The site of Adab is, in this period, a major urban site of regional importance, together with Nippur and Umma; then we have several small to medium-size settlements, such as QD013–Tell Jidr/Karkara, QD019, QD020a, QD033–Umm al-Hafriyat/Maskan-ili-Akkade(?). In the QADIS survey area, very few settlements of EBIII continued to be occupied in EBIV. The high number of sites settled during the EB IV period shows an overall increase of the total settled area during the MB I period. Most sites in the QADIS area during the EB IV period can be classified as small rural settlements, which underlines an increase in the rural population, as compared with the previous EB III period (Marchetti et al. 2019, 224). Furthermore, during the EB IV period, there seems to be an abandonment of the network of subsidiary channels crossing the floodplain between the Tigris and the Euphrates (Marchetti et al. 2019, 224), with settlements now clustering along the major waterways, in particular along the Tigris.

The EB IV landscape is characterised by a harsh overall decrease of settlements when compared with the EB III period, marked by a major urban density, and with the MB I situation, when the number of settlements grows sharply (Map 3). In addition, during the EB IV period, the sites in the QADIS region are characterised by a reduction of the total settled surface. The EB IV overall decrease finds reflection in the changes connected to the 4.2 KA BP event, a major climatic shift towards drier condition, with the consequent decrease of water availability that overtook the Mesopotamian floodplains starting from 2250 BCE (Cookson et al. 2019; Rost 2017, 12; Weiss 2017). This event had a strong impact on the communities located along the branches of the Tigris and the Euphrates, causing a reduction of settlements connected to the branch of the Euphrates flowing to the south of Nippur and a relevant clustering of sites along the southern branch of the Tigris.

#### 5. Conclusions

The preliminary analysis of the QADIS survey project EB IV pottery horizon and settlement patterns allowed us to put forward hypotheses about the archaeological landscape in the region during that period. It was possible to identify with far more precision than in the previous surveys the EB IV pottery assemblage, thanks not only to the study of published excavated sequences from neighbouring sites, but also because of the presence of a large amount of EB IV materials on the surface, due, in most cases, to illicit digging (as for QD049–Bismaya/Adab and QD123). Otherwise, it would have been much more difficult to recognize the EB IV

horizon on the surface of multi-period archaeological sites such as QD049–Bismaya/Adab.

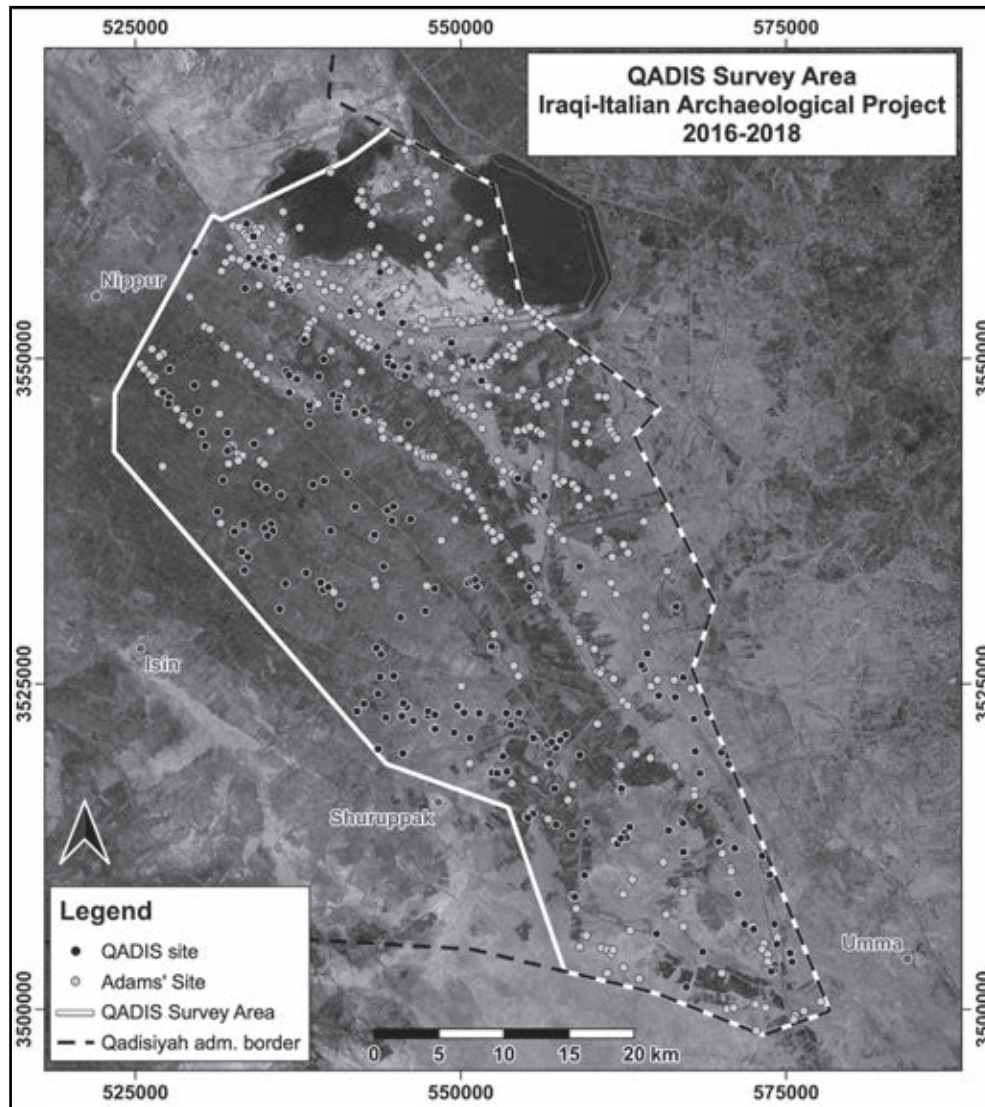
Although the results of the EB IV pottery analysis in the QADIS region are still preliminary, they underline a strong unity of material culture with the excavated sites of southern Mesopotamia, such as Nippur, Umm el-Jir and Tell al-Wilaya, and a durable connection with the Diyala and Hamrin regions; a further step will be to investigate and clarify the modes of connection between the two regions.

From the results concerning QD049–Bismaya/Adab, it is evident that the site held a major importance during the EB IV period. The occurrence of a large amount of EB IV pottery brought to light by illicit digging and the presence of a large building, probably pertaining to a public complex of palatial nature, emphasises the importance of the site during the EB IV period.

As for EB IV settlement patterns, the situation in the QADIS region underlines, on the one hand, a harsh decrease of settlements in the Mesopotamian floodplain, which seems strictly correlated with the 4.2 Ka BP event, the resulting reduction of water availability caused by a drier climatic condition, and the subsequent abandonment of the subsidiary channels flowing between the Tigris and Euphrates branches during the previous EB III period. On the other hand, if we suppose a correlation between the network and extension of the sites and state power, the decrease of settled sites during the EB IV period may suggest a contraction of the central state power in our region, followed by a strong reorganisation of the state apparatus during the MB I period.

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Map 1. Map of the area surveyed by the QADIS project, 2016–18.

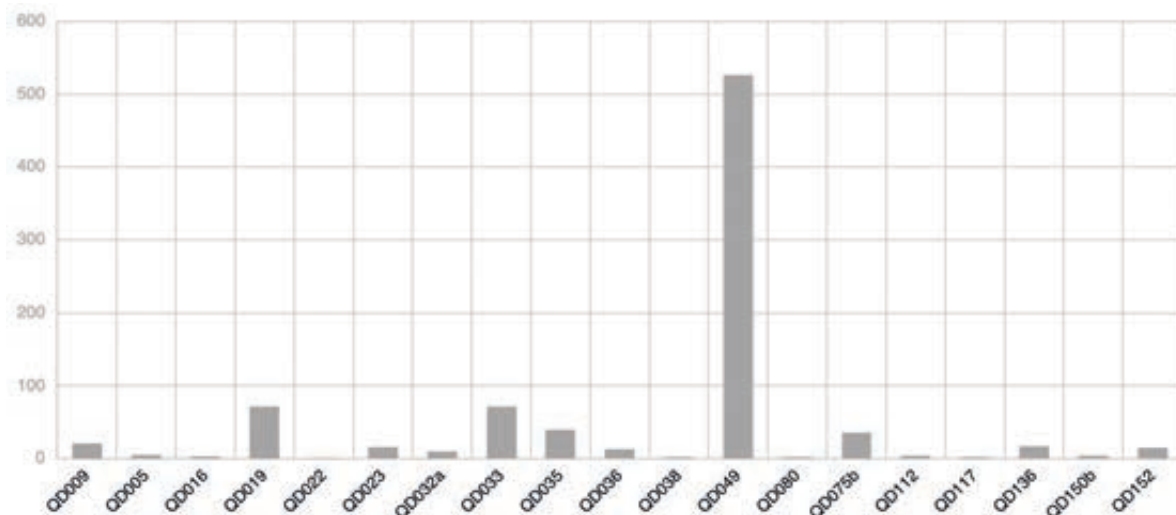


Fig. 1. Histogram displaying the frequency of sherds from the sites that showed evidence of EB IV in the QADIS survey area.

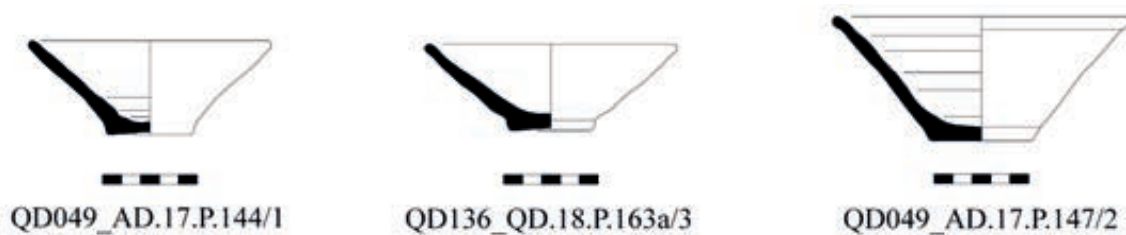


Fig.2. Conical bowls with plain rim.

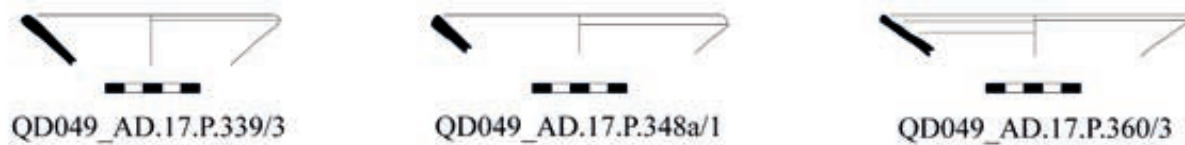


Fig.3. Conical bowls with thickened rim.

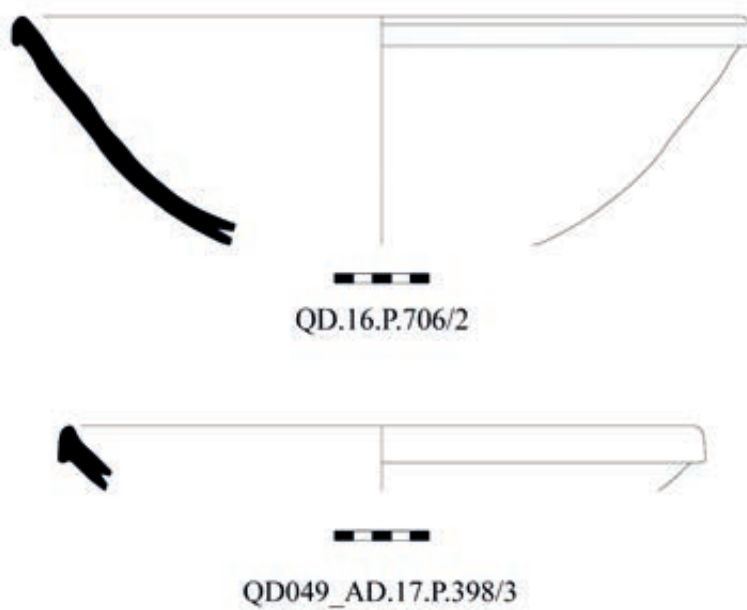


Fig.4. Large bowls with everted triangular rim.

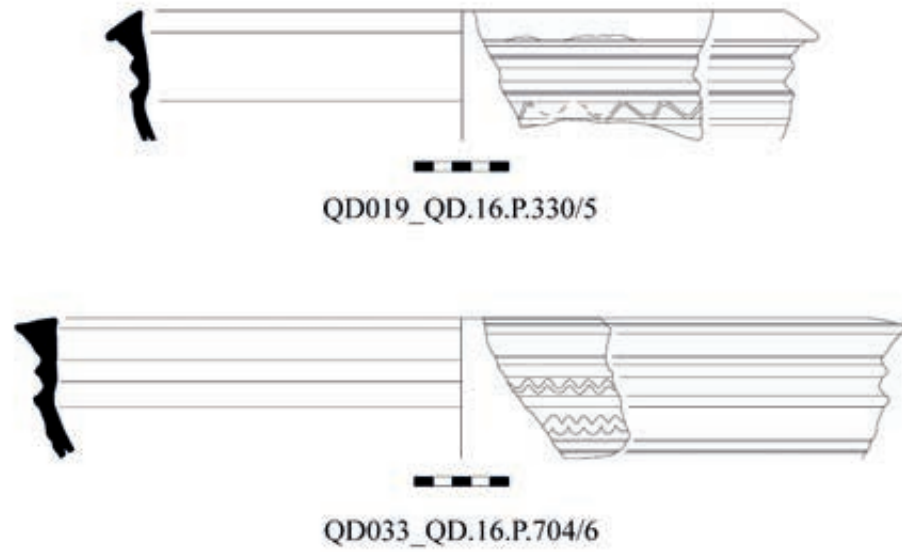


Fig. 5. Large bowls with elongated triangular rim and incised/combed decoration.

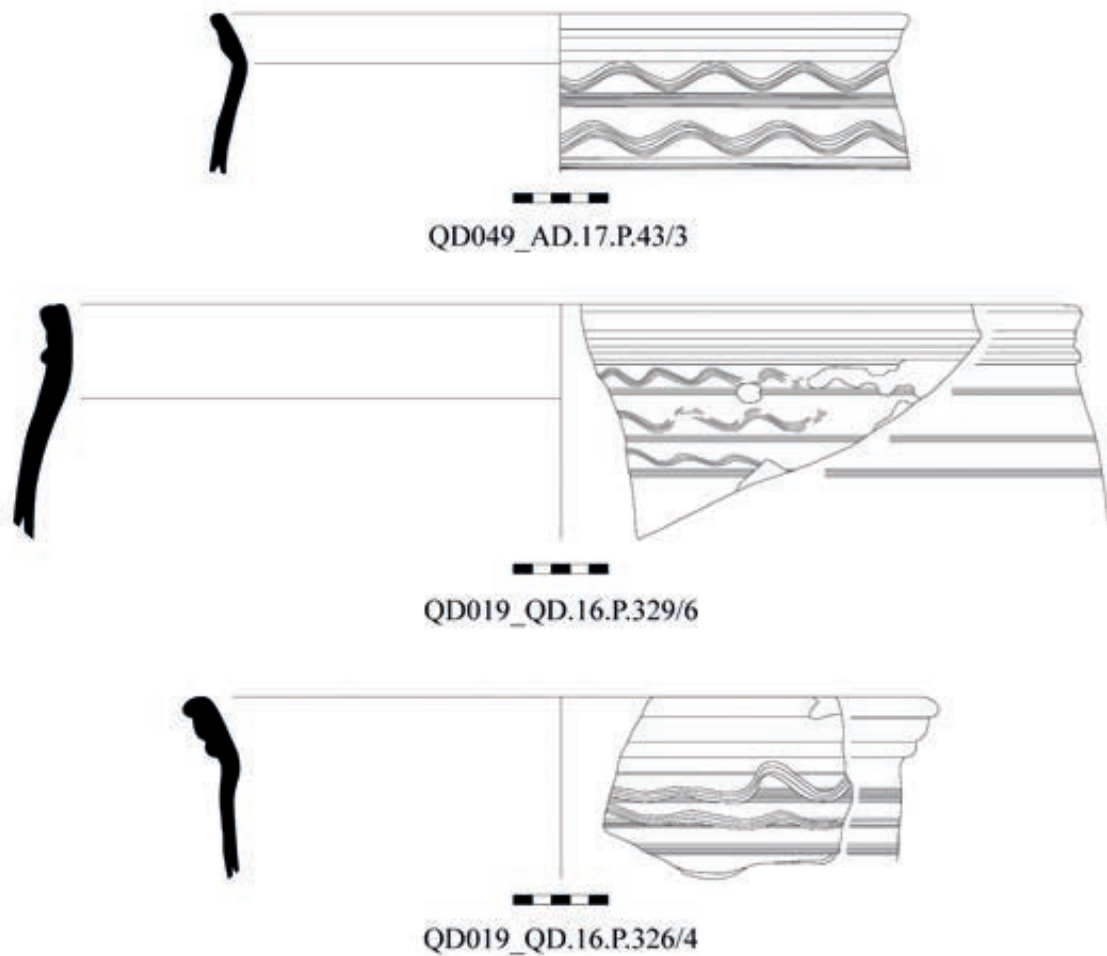


Fig. 6. Kraters with ridged rim and incised/combed decoration.



QD033\_QD.16.P.707/9



QD033\_QD.16.P.707/10

Fig. 7. Jars with ridged shoulder.



QD049\_AD.17.P.81/6



QD049\_AD.17.P.885/6

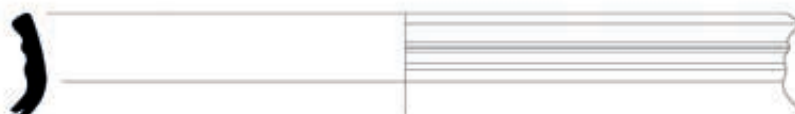
Fig. 8. Double ridged rim jars.



QD049\_AD.17.P.109/1



QD033\_QD.16.P.705/2



QD049\_AD.17.P.885/8

Fig. 9. Multiple ridged rim jars.



Fig. 10. Rectangular rim jars.

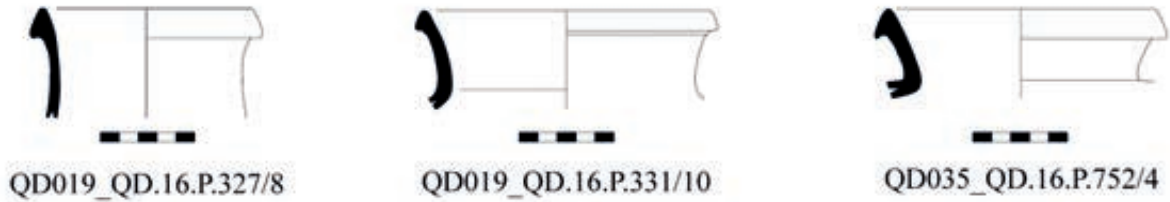


Fig. 11. Jars with everted triangular rim.

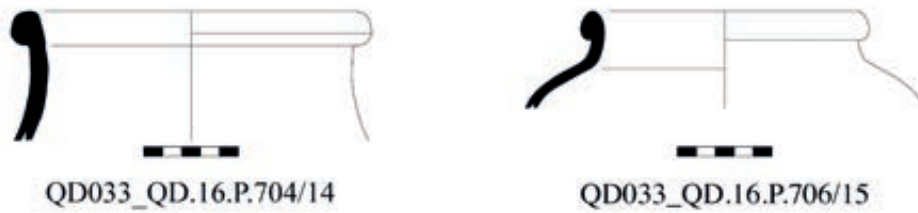


Fig. 12. Oval rim jars.



Fig. 13. Jars with vertical plain rim and high shoulder.



Fig. 14. Band rim jars with high shoulder.

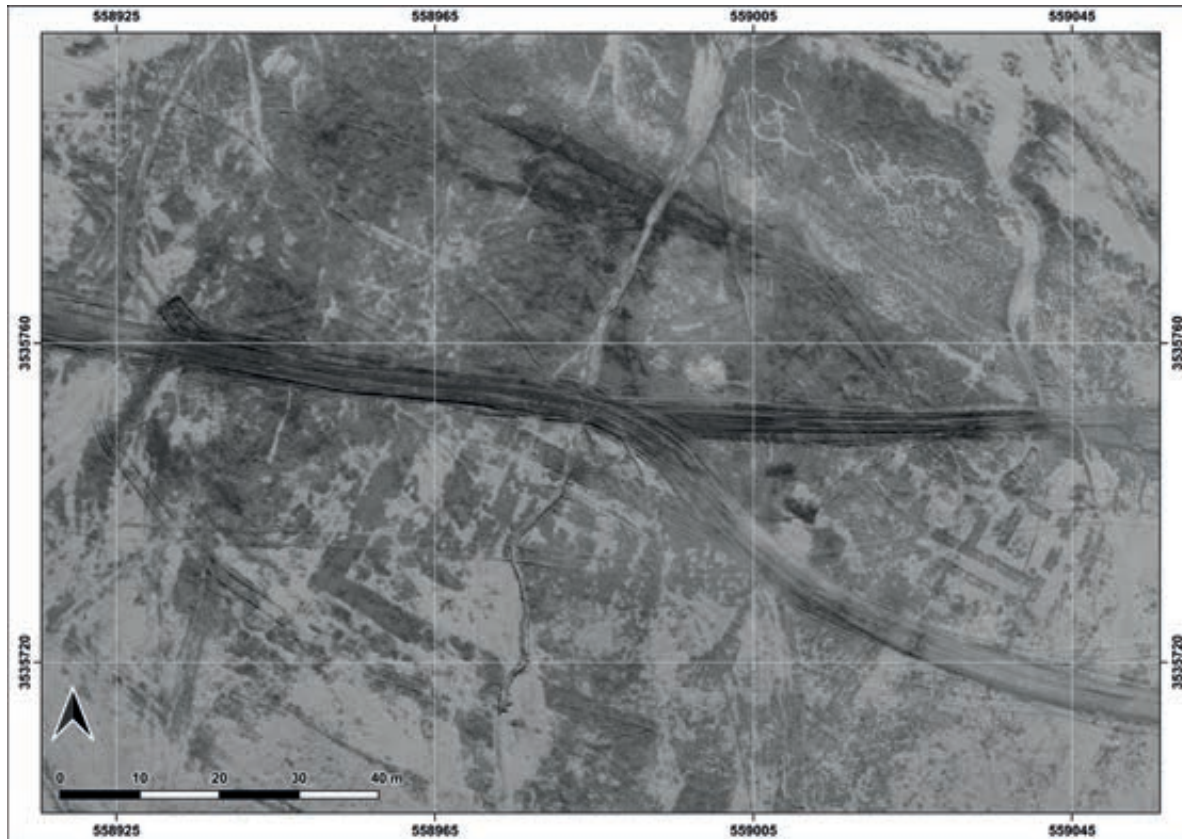
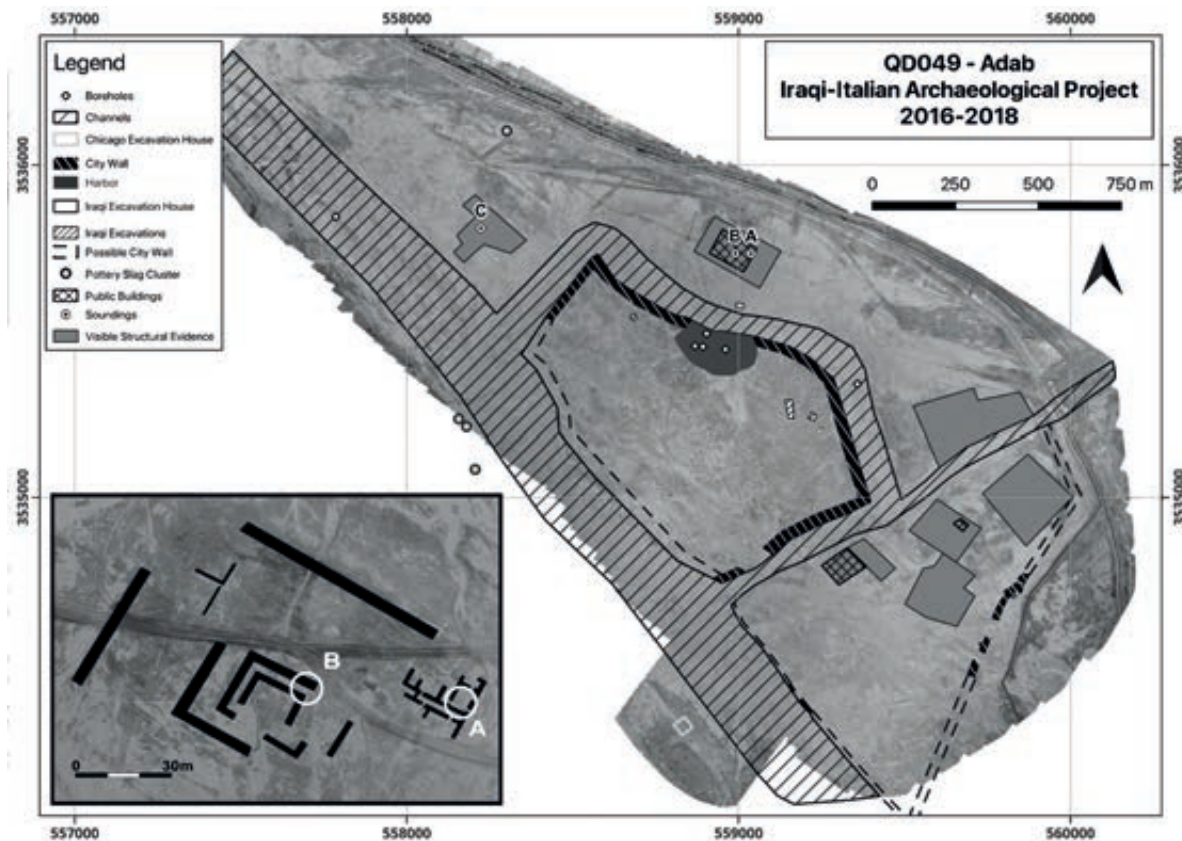
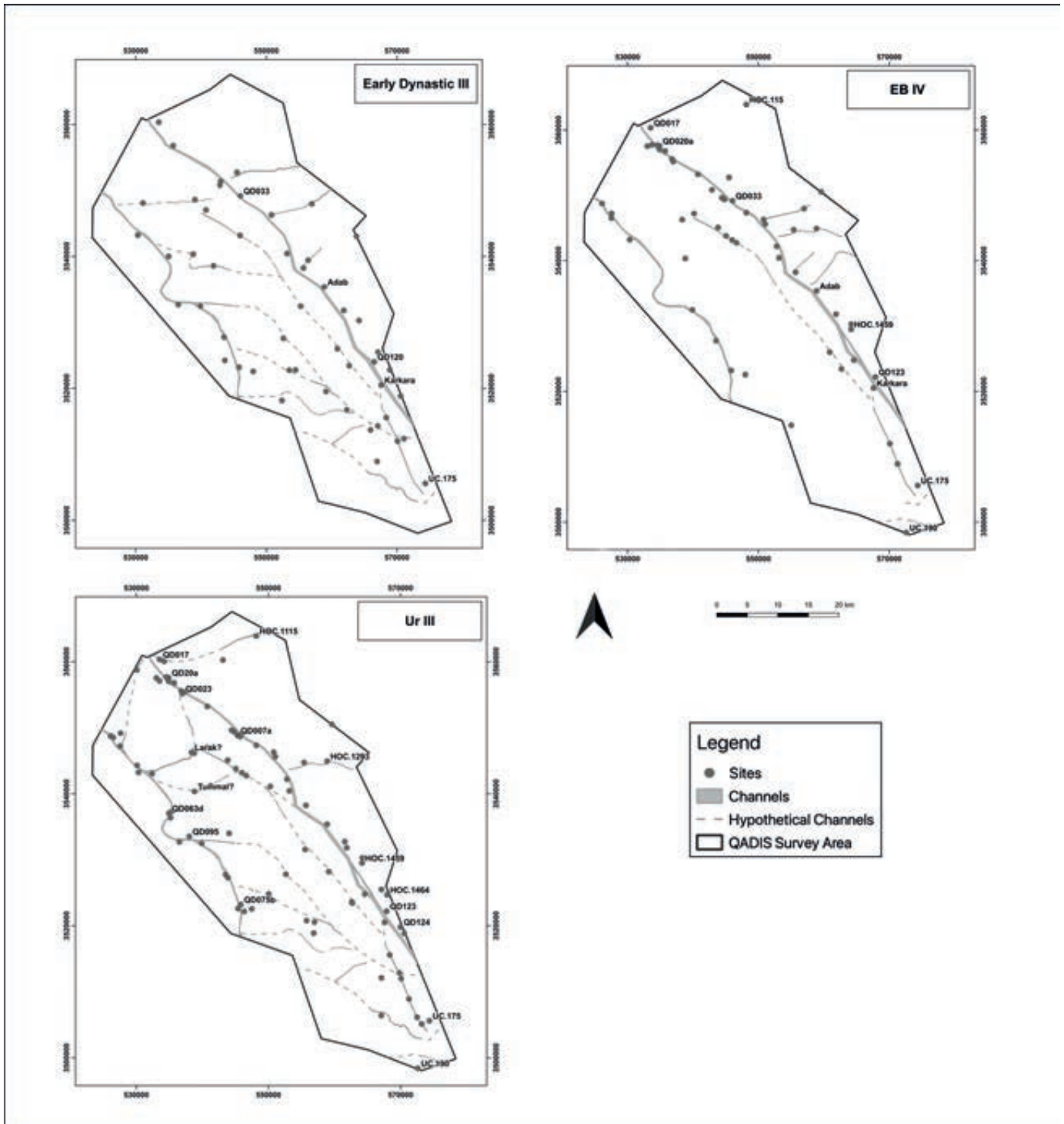


Fig. 15. Drone flight at QD049, Bismaya/Adab. evidence of a large building in the northern sector.



Map 2. Topographic map of QD049, Bismaya/Adab, with the ancient structures identified through drone flight and ground-truthing.



**Map 3.** Reconstruction of settlement patterns in the QADIS survey area through the EB III, the EB IV and the MB I periods, integrated with Adams 1981 and Adams and Nissen 1972.

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## Arabic Abstract

١٠. تحديد مجموعة الفخار من العصر البرونزي المبكر الرابع في جنوب بلاد ما بين النهرين وأنماط الإستهيطان الأكدّي في مشروع مسح القادسية (إيونورا مارياني)

قام مشروع مسح القادسية (QADIS) (٢٠١٦-٢٠١٨)، الذي أجرته جامعة بولونيا بالتعاون مع الهيئة العامة للآثار والتراث العراقي (SBAH) بالتحقيق في الحي الجنوبي الشرقي من محافظة القادسية. وشملت الأنشطة الرئيسية التي أُجريت هناك تحليل صور الأقمار الصناعية من أجل تحديد المواقع الأثرية المُحتملة والتحقق الميداني والجمع العشوائي لعينات المواد السطحية التشخيصية من المواقع والجمع المُكثف لعينات المواد السطحية التشخيصية المُكثفة من عشرة مواقع وإجراء بعض عمليات قياس العمق الاختبارية السطحية في أربعة مواقع. ولا تُناقش هذه الورقة البحثية الموثوقة الزمنية لمؤثرات السيراميك الحالية في جنوب بلاد ما بين النهرين لفترة العصر البرونزي المبكر الرابع فحسب، بل تُناقش أيضاً وفقاً لمجموعة الفخار المُحددة بدءاً من بيانات التجميع المُكثف للمواد السطحية التي أُجريت في موقع QD049 – بسماية / أدب، والتي تمّ دمجها من خلال عمليات المسح لإختبار قياس العمق السطحي التي أُجريت هناك وأنماط الإستهيطان في العصر البرونزي المبكر الرابع في منطقة مسح القادسية (QADIS).



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