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THE ITALIAN ARCHAEOLOGICAL EXCAVATIONS
AT TELL ZURGHUL, ANCIENT NIGIN, IRAQ.
FINAL REPORT OF THE SEASONS 2015-2017

EDITED BY
DAVIDE NADALI AND ANDREA POLCARO

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FOREWORD

The Italian Archaeological Expedition to Nigin of Sapienza University of Rome and University of Perugia started excavations at Tell Zurghul in 2015: a survey and three excavations seasons were carried out in the period between 2016 and 2017. This volume presents the results of the archaeological explorations with the analysis of the stratigraphic and architectural contexts of Area A, B and D as well as the study of the pottery from the contexts so far investigated and the survey in Area C in the western sector of the site.

Tell Zurghul is a site of about 70 ha in the modern province of Dhi Qar in Southern Iraq; it belongs, together with Tello/Girsu and al-Hiba/Lagaš, to the ancient State of Lagaš: starting from the very beginning of the 3rd millennium BC, Tell Zurghul can in fact be identified with the ancient Sumerian city of Nigin. Cuneiform sources dating from the first and second dynasties of Lagaš testify the intensive building activities of the rulers, mainly related to the important temple dedicated to the city goddess Nanše. In fact, Nigin was an important religious centre of the ancient State of Lagaš, and Gudea states that he purposely dug a canal from Girsu to Nigin (the so-called “Canal going to Nigin”) he regularly used to reach the city on the occasion of festivals, ceremonies and visits to the temple. The regulation of water, with the digging of canals and the management of the area of the marshes around the settlement, is an activity that involved, at several times, the rulers of Lagaš: in this respect, it is interesting to point out that Nanše, the patron deity of Nigin, is not only Enki’s daughter, but she is specifically linked to aquatic species, birds and fish, with a clear indication of the importance of the ancient environment and landscape for the development and growth of the city.

The importance of the shape and features of the ancient environment and landscape has been at the centre of the archaeological investigations at Tell Zurghul: next to archaeological operations, the programme of research also encompassed the study of the ancient landscape, pointing to the reconstruction of the waterscape of the ancient State of Lagaš, in particular for what concerns the proximity of the sea and, more importantly, the phenomenon of the sea ingression that occurred in the Early- and Mid-Holocene period (about 6500-6000 yr BP). The reconstruction so far made showed that Tell Zurghul was in fact in the middle of a lagoon system of brackish water, an environment that favoured the life of species, such as the bull sharks, whose vertebrae have been found in the archaeological context of Area B.

The site had already been briefly investigated, in 1887, by Robert Koldewey during his visit to southern Iraq in the region of the ancient State of Lagaš: his works concentrated on the two mounds, with two narrow and deep soundings, and in other areas of the site (along the North-Western side and in the space in between the two mounds). Unfortunately, little information of his works is known: Koldewey published only one report, but he does not properly give any useful archaeological information, his conclusions on the nature and chronology of the site are misleading and untenable.

The explorations so far conducted, for example, on the two mounds (Area B and Area D), definitely showed a different pattern and picture of the occupation and development of the site. On the one hand, excavations of the top and South-Western slope of Mound B revealed the superimposition of at least 5 architectural phases of a sacred building dating

from the Ubaid 4 period, with the recovery of typical Ubaid findings such as clay cones, black painted vessels, clay sickles and both painted and unpainted censers. On the other, excavations on the Southern slope of the main Mound A, to the South of the soundings made by Koldewey, a system of artificial terracing has been identified: terraces and plastered platforms are probably to be ascribed to the work of rehabilitation of the area of the temple of Nanše by Gudea of Lagas. Investigation in this area also revealed what seems to be the latest occupation of the site at the very beginning of the 2nd millennium BC, as it is also documented by the finding of fragments of 2nd millennium pottery in the lower city, to the South of Mound A (those fragments collapsed, together with the baked bricks and clay cones with Gudea's inscriptions, from the uppermost layers of the mound) and in the survey Area C.

Area C was surveyed in 2015 and 2017 and, even if open area excavations have not already been performed, an extended part of the North-Western sector of the city was largely surveyed, with the collections of several surface materials and the identification of topographical and architectural features. The area seems quite well delimited to the East by a white large strip of what looks like an inner water canal running within the city, and possible changing its course during different chronological phases. Along the white strip on the ground, an elongated relief delimits on the ground this peripheral sector of the city, that, in particularly during the 2nd millennium BC, but also in earlier periods, seems to have been exclusively used as a productive area. This explains the presence of installations and workshops for the production and manufacture of goods, such as pottery and metals (different types of slags have been collected during the survey). In particular the presence of a small mound characterized by heavy deposits of ashy soil on the surface is noteworthy: here, a large kiln for the production of pottery has been discovered during the operation of scraping.

This volume is therefore the result of the combination of several works: in particular, it aims to present a comprehensive study and analysis of pottery types, from the contexts dating from the Ubaid period to the latest phases of occupation in the early centuries of 2nd millennium BC. We are in fact strongly convinced that a new wave of Mesopotamian archaeology must necessarily encompass and be founded on the systematic study of pottery: the identification of recurrent types, the modes of production, chronological issues. This can be precisely done thanks to the exam of material culture from sure and stratified contexts that can then be compared and integrated with textual data, architectural features and, when possible, C14 datings. At the same time, the volume presents the architectural evidence of the buildings so far discovered as well as the geological studies and the analysis of the faunal remains as to reconstruct the ancient landscape and environment of the site within the region of the ancient State of Lagas through the millennia.

Acknowledgements

We wish to warmly thank the Iraqi cultural authorities of the State Board of Antiquities and Heritage of Baghdad and the Ministry of Culture of the Republic of Iraq. We wish to specially thanks Dr. Ahmad Kamil, former General Director of the SBAH, who granted us with the permission for the excavation at Tell Zurghul in 2014 and constantly supported our work, and Dr. Qais Rasheed, former General Director of the SBAH, who renewed, in 2019, our permission for the continuation of the archaeological excavations and research at Tell Zurghul for the period 2019-2023. A very special thank goes to Dr. Abdulamir al-Hamdani, who has been recently appointed Minister of Culture of the Republic of Iraq, for his friendship, continuous support and suggestions, and to Prof. Abbas al-Hussainy for his friendship, priceless help, for sharing with us his knowledge of Mesopotamian archaeology.

Excavations have been made possible thanks to the financial support of the Italian Ministry of Foreign Affairs and the grant “Grandi Scavi di Ateneo” of Sapienza University of Rome. A financial support was also given by the Italian Ministry of University and Research thanks to the grant “FIRB – Futuro in Ricerca”, a joint research programme of Sapienza University of Rome, University of Perugia and University of Cagliari.

For the support of our research in Iraq, we wish to thank H.E. Ahmad A.H. Bamarni, Ambassador of the Republic of Iraq in Italy, and his predecessors, and H.E. Bruno Antonio Pasquino, Ambassador of the Republic of Italy in Iraq, and his predecessors: our work in Iraq has been made possible thanks to their important cooperation and help.

We wish to thank Prof. Lorenzo Nigro who, as scientific editor of *Quaderni di Vicino Oriente*, accepted the publication of our field report in the series and Dr Daria Montanari for her work of editing and her cooperation.

Finally, we wish to thank our Iraqi friends and workers of Zurghul who contributed to make Iraq our second home, with their warm friendship and hospitality: the results we are here presenting have been possible thanks to their cooperation and love for the archaeological heritage of their Country.

Davide Nadali
Andrea Polcaro

AREA B:
STRATIGRAPHY AND ARCHITECTURE
OF THE TEMPLES MOUND AT TELL ZURGHUL, IRAQ

Davide Nadali - Sapienza University of Rome

The chapter presents the results of the excavation carried out during the first and third season of excavations at Tell Zurghul in 2015 and 2017. Area B is located on the top and Western slope of Mound B. Archaeological evidence so far uncovered points to the existence of a stratified sequence of buildings that belong to the chronological phase of the Ubaid Period of Southern Mesopotamia. Moreover, although the knowledge of the architecture of the buildings is limited due to the levelling caused by continuous superimpositions and the heavy erosion of the mound (particularly to the West and South-West), the nature of the materials that have been registered suggests that the buildings can be identified with temples.

Keywords: Ubaid Period; Mesopotamian temple; waterscape; Lagaš; marshland

1. INTRODUCTION: TOPOGRAPHY, MORPHOLOGY AND PREVIOUS EXCAVATIONS OF MOUND B

Mound B is the second, smaller, hill of the site of Tell Zurghul: it occupies the Southern/South-Western part of the site, at about 200 m from the main Mound A (fig. 1). The second hill is about 4 m high and it was partially excavated by Robert Koldewey in his brief visit to the site in 1887. As happened for Mound A, Koldewey's operations partially affected the mound, with a trench on the Southern slope and, probably, a sounding on the top: when the explorations in the area of Mound B started in 2015, evidence of the old excavations was recognized while the trench on the Southern/South-Western flank of the hill is still visible and actually caused the heavy erosion of both mud-brick structures and related deposits of materials with the consequent loss of archaeological information that collapsed. In fact, not only materials can be detected and observed on the surface of the area; a small heap of soil can be recognised at the Southern base of the mound: this is probably the result of the accumulation of archaeological strata and materials coming from Koldewey's trench because of the action of rain and wind, particularly in autumn and winter (fig. 2).

Mound B covers a surface slightly larger than 0.7 ha, and it has been heavily eroded not only because of Koldewey's sounding which, necessarily, modified the morphology of the hill, but also because of the natural action of water: along the slope and in the central part of the area, heavy and quite deep cracks actually excavated part of the mound creating a central depression that separated Mound B from a smaller and low mound to the West which is also characterised by the frequent presence of archaeological materials on the surface and ashy deposit. It is in this central depression that the clay cones are mostly concentrated (fig. 3), sometimes with remains of clack paint, that were originally part of the decoration of external façades of buildings forming mosaic designs of lozenges and triangles: part of the painted clay cones can also be recovered to the North of the mound having been carried by water and this means that the original decoration of the structures has been lost, as the excavations carried out in 2015 and 2017 have quite extensively shown.

The presence of clay cones together with the information provided by the excavation of the trench on the top and Western slope on Mound B actually points to an ancient period of occupation and formation of the settlement in this area of the site: in fact, the excavation led to the identification of a multi-levelled stratification of phases dated to the Ubaid 4, with no trace of later stratifications – although one might infer that these have been affected by either Koldewey's operation in 1887 or the later heavy erosion. Surface materials were collected in 2015 before the start of the excavation: these materials can be dated to the Ubaid 4 and the Late Uruk/Jemdet Nasr periods, with a clear predominance of the former.¹ Late Uruk materials (together with many clay cones) were mostly scattered around the mound as the result of the continuous erosion.

The presence of ancient materials dated to the Chalcolithic Period was quite striking, particularly because they were largely present on the surface and the related archaeological deposits and strata have been identified a few centimetres below the surface: actually the archaeological situation of Mound B of Zurghul reflects a quite common event in Southern Mesopotamia, where the natural erosion caused by water and wind removes later superimpositions with the consequent exposition of the very old deposits.² Until now, excavation is confirming that Mound B has been occupied in the most ancient phases of Zurghul, from the beginning of the 5th millennium BCE – according to the materials collected in 2015 and 2017: later superimpositions have been cancelled by the erosion and surely they suffered from Koldewey's soundings but one might infer that those later occupations were not so extensively and massively present on the Mound. In fact, the few hints for a later occupation of the mound come from the materials collected by Koldewey in his sounding in 1887 – or at least from the reconstruction of his research in the field at Zurghul³ – and a fragmentary baked brick with an inscription of Eannatum of Lagaš (SG.17.BN.185):⁴ however, they are too few to enable a reconstruction of the stratigraphy of the occupation of the mound across time. It is more logical to suggest that the area deeply changed across time because of natural conditions and causes (mostly the action of water and wind) and even Koldewey's operations did not so much and so heavily affect the archaeological deposits. At the same time – but information is still too scanty – one might also suggest that the entire area of Mound B has been extensively occupied in the most ancient phases of Zurghul only, when this was probably the only spot emerging from the surrounding environment of marine marshes. Water (in all its forms and shapes) characterized and influenced the development of the area, modifying the morphology of the landscape and sites, conditioning or favouring the exploitation of arable lands, allowing people to move and to transport goods.⁵

In the region of the ancient State of Lagaš, marshes or lagoons were a pre-existing feature of the landscape, at least starting from the early Holocene. The fact that the Ubaid

¹ On the Ubaid pottery horizon from Area B in a regional historical perspective, see the contribution by Volpi in this volume.

² Pournelle 2013, 20-21.

³ On the re-examination of Koldewey's research at Zurghul, see Huh 2008.

⁴ See the contribution by Verderame in this volume.

⁵ Widell - Hritz - Ur - Wilkinson 2013; Wilkinson - Rayne - Jotheri 2015.

phases so far recovered at Zurghul are located on the small mound actually fits in with hypothesis thus far advanced by scholars, that the general outline of the sites of lower Mesopotamia was characterised by settlements that mainly occupied exposed surfaces of Pleistocene “turtlebacks” emerging from the surrounding waterscape of marshes.⁶ Recent reconsiderations of the nature of the area of southern Iraq, concerning the waterscape encompassing the analysis of the sea transgression and position of the coast, can explain the morphology of Tell Zurghul in the Chalcolithic period: scholars agree that the maximum sea transgression occurred in the Holocene, around 6000 yr BP, actually corresponding to the Chalcolithic period.⁷ This datum shows that Zurghul was a site, probably already occupied, next to a deltaic system. When the area started to be affected by the Holocene sea level rise – with tides invading inland via existing channels and rivers, thus with an upstream movement – this phenomenon pushed people to move their settlements to higher mounds, probably exposed Pleistocene surfaces that were then reinforced and raised to combat the increasing sea level. The sea transgression contributed to the creation and formation of the typical marsh area, with quite large lagoons and lakes actually surrounding the settlements that looked like islands floating in the water.⁸

Investigation in the area of Mound B can contribute to explaining the evolution and change of the landscape in the region of the ancient State of Lagaš in relation to the growth of the settlement, from an initial turtleback or a system of several turtlebacks to a more complex urban centre when water started to be regulated more systematically. Although incomplete and very partial, Koldewey’s results can be somewhat compared with the most recent outcomes of the Italian excavation: Mound B, until now, is a coherent Ubaid context with features and items that point to a continuous occupation of the mound across the Chalcolithic Period, which was then abandoned when the settlement enlarged and moved to other spots and hills of the site which were no longer covered by water.

2. STRATIGRAPHY AND ARCHITECTURE

Two main architectural levels (1-2) were identified in 2015,⁹ immediately underneath the sequence of heavily eroded layers of accumulation (SU 501, 502, 504, 505, 507, and 512), with poor materials except for SU 504 that delivered a consistent number of pottery fragments that can be dated to the Ubaid 3-4 period. Both levels consist of two sub-phases: a) a collapse layer (phases 1a and 2a) and an architectural layer with mud-brick structures

⁶ Adams 2001; Pournelle 2003; 2007, 53-54.

⁷ Lambeck 1996.

⁸ Research on the waterscape of ancient Southern Mesopotamia and the reconstruction of the water presence in the area of Tell Zurghul and the ancient State of Lagaš is currently conducted by the team of geologists and geomorphologists of Sapienza University of Rome. Analyses of the samples of geological deposits collected, in and off site, at Tell Zurghul in 2017 are currently conducted by the geologists of the University of Perugia. On the morphology and feature of the ancient waterscape of Southern Mesopotamia from the Holocene Period (in connection with the development and growth of the occupation of the area by humans), see Cooke 1987; Sanlaville 1989; Lambeck 1996; Aqrawi 2001; Sanlaville - Dalongeville 2005; Kennett - Kennett 2006; Bogemans - Janssens - Baeteman 2017.

⁹ On the excavation of Area B in 2015, see Nadali - Polcaro 2016.

and floors (phases 1b and 2b). Mud-brick structures are however too poorly preserved, being heavily eroded and artificially levelled by later reconstruction: despite the restricted area excavated, it was already possible in 2015, to recognize two distinct architectural phases, the more recent being built upon the older with a slightly different position and orientation.

Level 1 (fig. 4a): W.26 is a North/South wall made of mud-brick walls and strata of *pisé* and it has been exposed for a total length of 6 m and is 1.02 m wide; W.28 is an East/West wall on the Northern side of the trench. W.26 and W.28 form the corner of a room. To the West of the wall W.26, once the strata of collapse SU 516 and 511 have been completely excavated and removed, the floor L.27 is brought to light: the floor is clearly associated with wall W.26. A thin stratum of ash (SU 503) with several fragments of pottery, animal bones, fishbones, and charcoal also covered the floor L.27.

Level 2 (fig. 4b): a North/South wall (W.32) underneath W.26 and an East/West wall (W.29) that was covered by the collapsed stratum SU 515. The excavation of the SU 515 and 517 allows clear identification of the new structures: W.29 is an East/West wall made of pinkish and greenish mud-bricks (about 45 × 40 cm) – some of the bricks are clearly *in situ*, so W.29 could be the Northern limit of a building, as W.28 in fact was, whose precise limits must be clarified; W.32 is a North/South wall, covered by the later W.26, and presents, on the Western façade, a decoration with niches and buttresses.

However, it was only in 2017 that new extensive excavations – with three sectors (B North, B South and B North-East, respectively) and a step trench sounding (B East) – allowed a re-elaboration of the stratigraphic sequence, confirming that the mound is the result of the superimposition of continuous remaking of a sacred building, slightly shifted to the East. In particular, five phases were identified, named phases 5-1 (see Tab. 1), from the earliest to the latest (fig. 5). Phases 1 and 2 identified in 2015 can be now stratigraphically related to Phase 2 and 3, respectively. New findings confirm the chronological span time already identified in 2015 fitting in with Ubaid 4 Period.

2.1. Sector B South

The earliest phase (Phase 5) consists in a wide room (L.278), delimited by two mud-bricks walls, W.276 and W.277. Next to the Western corner, two censers were found lying directly on the floor, SG.17.BS.627/1 and SG.17.BS.627/2 (fig. 6). Both W.276 and W.277 seem to continue to the West and South, but they are severely damaged because of the erosion of the slope of the mound. The recovery of other censers, although different in typology and style from those found in 2015,¹⁰ is another indication that the sequence of superimposed buildings might be recognized as temples: indeed, the new censers have been found on an earlier floor that was covered by the late paving which the censers found in 2015 belong to (Phase 4).

Phase 4 is a general reconstruction of the previous walls, renamed as W.257 and W.275. The new walls seem to adjoin the older W.276 and W.277. At this level, more censers were

¹⁰ Nadali - Polcaro 2016; 2018, 41.

found in the south-eastern corner during the 2015 campaign. A compact layer of clay soil divided the two floors. The North-Western part of the room was covered by later structures.

In Phase 3, a great wall (W.264), with a North-Western/South-Eastern orientation, was built, crossing the whole 2017 trench (fig. 7a). The wall measures 11 m long and 70-80 cm wide. At its extremities, two parallel walls, W.330 on the North-West and W.284 on the South-East, enclose a wide room, L.266. On the South-Western side of W.264, another small room was found, L.273, enclosed by three thinner walls, W.282, W.256, and W.284. The room was found full of ashy soil and charcoals, with a small fire installation in the Southern corner. In Phase 3, the presence of two fire pits, partially cutting W.264 and L.266, document later activities. The pits (P.279 and P.280) were filled with ashy soil, charcoal, and animal bones.

In Phase 2, W.264 was reconstructed, slightly larger and with a different technique (fig. 7b). The new wall, W.270 (corresponding to W.26 identified in the 2015 campaign), is made with a mixed technique of mud-bricks and *piseé*. To the North, two superimposed floors were recognized, L.263 and L.271. The former was found in the whole area, while L.271 was preserved only in the South-Eastern corner, between W.270 and W.272. It is made of three different layers of reed matting, above which charcoal, fish and animal bones, and few pottery sherds have been found. No floor has been identified south of W.270, while during 2015 a beaten earthen floor was found, L.27.

Finally, a small rectangular room was found immediately below the surface in the Northern square of the trench (Phase 1). Inside the room, two different floors were recognized, L.250 and L.253: none of them are well-preserved.

Phase	Sub-phase	Associated Loci	Architectural Phase
Phase 1	1a	L.250, W.251, W.252, W.254, W.255	Building 1
	1b	L.253, W.251, W.252, W.254, W.255	
Phase 2	2a	L.263, W.270; W.272; W.281	Building 2
	2b	L.271, W.270; L.271; W.281	
	2c	P.279; P.280	
Phase 3	/	W.264; L.273; W.256; H.282; W.283; W.284	Building 3
Phase 4	/	W.257; L.258(?); W.275	
Phase 5	/	W.276; W.277; L.278	

Tab. 1 - Phases in Area B South.

2.2. Sector B North

In the Northern sector, excavations brought to light a structure made of three rooms connected to each other (fig. 8). The plan of the small building, clearly differently oriented with respect to the later temple discovered in 2015, has not been completely excavated due to the superimpositions of the later structures: because of the construction technique (walls made of one single row of bricks) and the shape of the building, a comparison can be found with one of the most ancient phases of the temples of Eridu, more specifically with temple XVI.¹¹ However, from pottery sherds (mostly painted plates with carinated rims) and other findings, the building can be also coherently dated to the Ubaid 4 Period.

The larger Northern room (2.87 m long, 1.16 m wide on the Western side, 1.48 m wide on the Eastern one) is marked by the walls W.321 (max. length 3.25 m, only one brick row, the bricks measure 30 × 20 cm each), W.309 (max. length 3.30m, only one brick row, the bricks measure 28 × 30 cm each), W.324 (max. length 3.10m, only one brick row, the bricks measure 20 × 38 cm each). A threshold, 0.85 m wide, is present on the Western side and it can be reasonably interpreted as an opening between W.323 (max. length 0.65m, two brick rows, the bricks measure 25 × 25 cm each) and W.315. Against W.321, a rectangular bench was found (L.322: 47 × 30 cm). A similar bench was also identified in front of W.324 (L.307: 42 × 24 cm). L.307 was covered with a huge amount of fish vertebrae together with a base of a jar and 84 fishing net clay weights (SU 717) (figs. 9-10).¹²

To the South of W.324 two additional smaller quadrangular rooms are present. The room in the South-Western portion (1.31 m long and 1.58 m wide) is limited by walls W.324, W.309 and W.318 (max. length 1.55 m, only one brick row, the bricks measure 25 × 25 cm each). The Southern limit of the room was not identified because it is covered by W.330 (Phase 3 of the adjacent Sector B South). The room in the South-Eastern portion (1.85 m long and 0.86 m wide) is marked by the walls W.324, W.318 and W.315 (max. length 1.48m, only one brick row, the bricks measure 25 × 25 cm each). Again, the Southern limit of the room is covered W.330.

Two filling layers of soft sandy grey soil covered the floors: SU 705 in the Northern part and SU 706 in the Southern part. Those two layers are characterized by the presence of many fishing net clay weights, shells and fish vertebrae, and some preserved fish skins. Two sickles and two grinding stones, almost complete, were also found together with a small worked crystal (fig. 11).¹³

The small building in the Northern sector of Mound B has all characteristics of an annex to the main temple or of a storage area dedicated to specific activities such as fishing, as the findings suggest: it is impossible to ascertain whether such an activity had a religious and cultic implication – if fish were for example part of offerings or banqueting. The nature of

¹¹ Safar - Mustafa - Lloyd 1981, 88, figs. 40-41.

¹² Fishing net clay weights were also recovered by Koldewey in the area of Mound B: according to the reconstruction of his “stratigraphy”, his fishing net clay weights come from an Ubaid context, so they are perfectly coherent with the ones found in 2017 in the Northern sector of Mound B (Huh 2008, 246, n. 187, pl. 12).

¹³ On the analysis of faunal remains found in Sector B North in 2017, see the contribution by Carosi - Lorenzoni in the volume.

the finding (faunal remains together with the tools for fishing – among the filling of the room it was possible to recognise decomposed parts of a net, clay fish net weights, and clay sickles that were probably used to cut marsh reeds to make fishing and movement by boats easier) actually points to the use of the small building as a storage and working place that might then also have a religious function.

Concerning the stratigraphy of the mound and the phases that were identified in the large trench in Sector B South, the small quadrangular building of Sector B North looks like, from an architectural point of view, temple XVI of Eridu, but it is not of the same age (Ubaid 2). Indeed, being covered by the later phases 3-1 of the main building uncovered in Sector B South, the annex of the Northern sector of Mound B can therefore be related to the oldest phases 4 and 5, that is to the rest of the buildings that delivered the cultic censers found *in situ*. In this respect, the small quadrangular building belongs to the oldest phases so far uncovered in the excavation of Mound B, but it still fits in perfectly with the Ubaid 4 Period thanks to the evidence of the material culture collected.

2.3. Sector B North-East

In the Northern and higher part of Mound B a fragment of a plastered white floor (L.314), delimited by two mud-bricks walls (W.318 and W.331), has been discovered (fig. 12). This feature could indicate a further later reconstruction of the building, but the proximity to the Northern limit of the excavation trench does not permit us to fully clarify this phase. Moreover, the cut of a pit (P.313, probably Koldewey's trench) additionally affected the preservation of the plastered floor. The pit is filled with broken and collapsed baked bricks: the end of the pit has been discovered at ca. 1 m deep from the actual upper soil of the mound (fig. 13). In the filling, a fragment of an inscribed baked brick (SG.17.BN.185) has been recovered: based on the *ductus* of the cuneiform signs, it is likely that the brick is dated to the Early Dynastic Period.¹⁴ Could this datum suggest that later buildings dated to the Early Dynastic Period were once built on Mound B? Can we therefore ascribe the absence of any archaeological and architectural evidence of the Early Dynastic levels to the erosion of the mound and the destruction of Koldewey's excavations? At the same time, one cannot totally exclude that the filling of the pit might have occurred later, with materials collected from other spots of the site.

2.4. Sector B East

The excavation of a step-trench (2 × 8 m) allowed us to identify the Eastern limit of pit P.313 in the Western sector of the excavation area, together with its filling (SU 811). The excavations allowed to identify a wall (W.350), oriented North/South, and an associated floor layer (L.351). Both are poorly preserved and seem to continue beyond the limits of the excavation area.

In the Western sector of the step-trench, under a collapse layer (SU 807), another wall (W.352) was identified, with the same North-South orientation. The wall is marked to the

¹⁴ See the contribution by Verderame in this volume.

West by an accumulation layer with few pottery inclusions, SU 809, and to the East by what it was presumed to be the collapse layer (SU 810) of the very same wall. W.352 seems also to continue beyond the Southern limit of the excavation area.

Between the two aforementioned walls there were clayish accumulation layers, with very few pottery inclusions. As a matter of fact, pottery seems to be scarce on the whole excavated area. The few collected sherds are all dated to the Ubaid 4 Period. The sounding is actually important because it led to the discovery of portions of two North/South walls that could be either part of the structures so far identified on the Western side of the mound, or two retaining walls for the artificial terracing of the hill.

3. THE UBAID PERIOD IN THE REGION OF LAGAŠ: FUTURE PERSPECTIVES FROM TELL ZURGHUL

The presence of well preserved and undisturbed Ubaid layers just below the surface of the mound is not surprising: wind and heavy rain can contribute to the remodelling of ancient mound.¹⁵ Interestingly, the preliminary data pointing to the occupation of mound B of Tell Zurghul in the Late Ubaid Period fits in with the results of the survey of Abdulamir al-Hamdani, which revealed that the area of Lagaš was occupied in the Late Ubaid Period, with settlements of no more than 3 hectares, mainly located around the city of Girsu and Bad-Tibira, as well as al-Hiba itself, and the southern city of Tell Zurghul, and having the shape of turtlebacks emerging from the water.¹⁶

The settlement dated to the Late Ubaid Period so far excavated at Tell Zurghul seems to have the characteristic of a small turtleback mound: it might be inferred that the proximity of Tell Zurghul to the sea (actually Tell Zurghul emerged from the water being the line of the coast to the North), within a waterscape characterized by marshes, definitely forced the occupation of the pre-existing natural mounds; at the same time, earlier phases of occupation,¹⁷ as well as levelling and rebuilding, led to the increasing and enlargement of both the mound and the settlement, with a second lower hill to the south-west. The large presence of clay cones on the surface, mostly found within gullies, indicates the existence of public buildings, the pottery being coherent with the Ubaid phase. The finding of fish net weights implies the existence of activities such as fishing and reflects the nature of the landscape and environment around Zurghul in its oldest period of life, when in fact a settlement was first established and then grew, changed and adapted to new environmental conditions (progressive movement of the coast line to the South and exploitation of water resources and arable lands by human people).

¹⁵ Pournelle 2013, 20.

¹⁶ Al-Hamdani 2014; Hritz - Pournelle - Smith 2012; Nadali - Polcaro 2016, 82.

¹⁷ Sherds dating to the phase Ubaid 2 have been collected on the surface of Mound B: this datum therefore points to previous occupation of the area.

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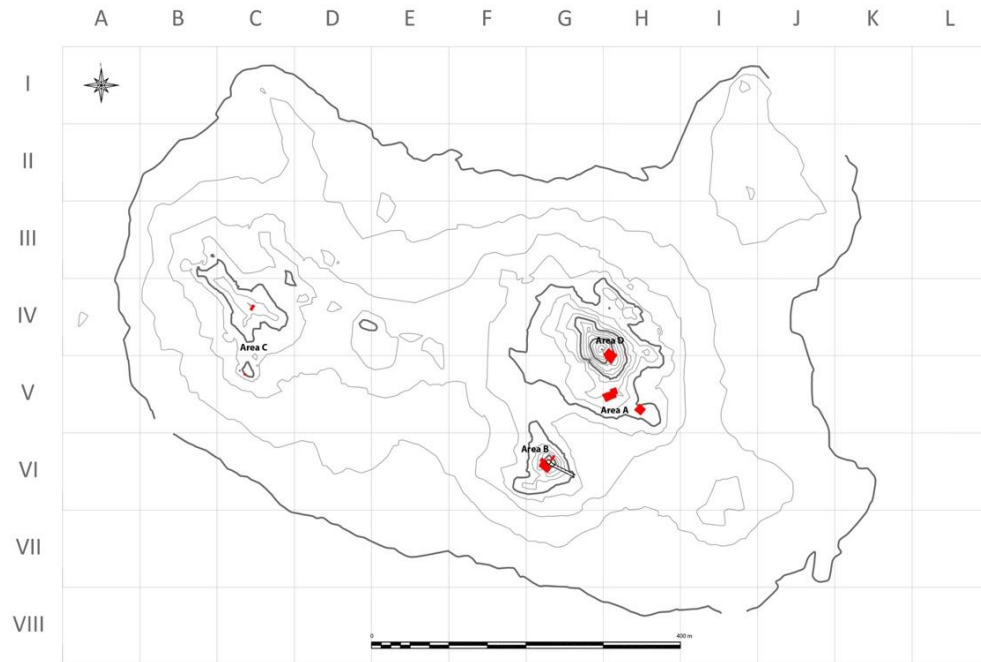


Fig. 1 - Topographic plan of Tell Zurghul.



Fig. 2 - The small mound on the Southern side of Mound B.



Fig. 3 - Clay cones in the depressions caused by water.

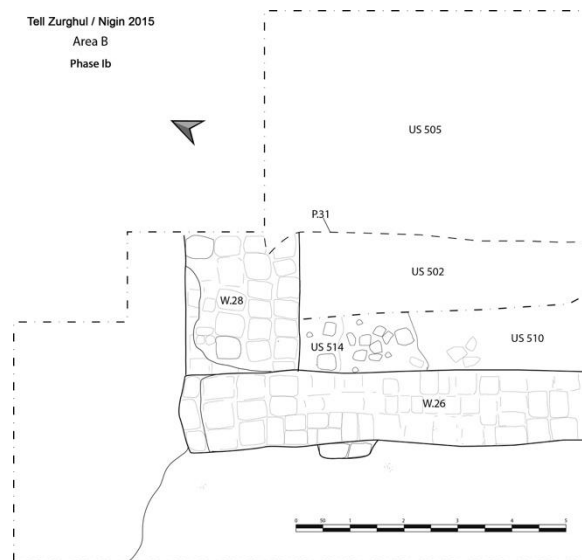


Fig. 4a - Area B, plan of the structures of phase Ib recovered in 2015.

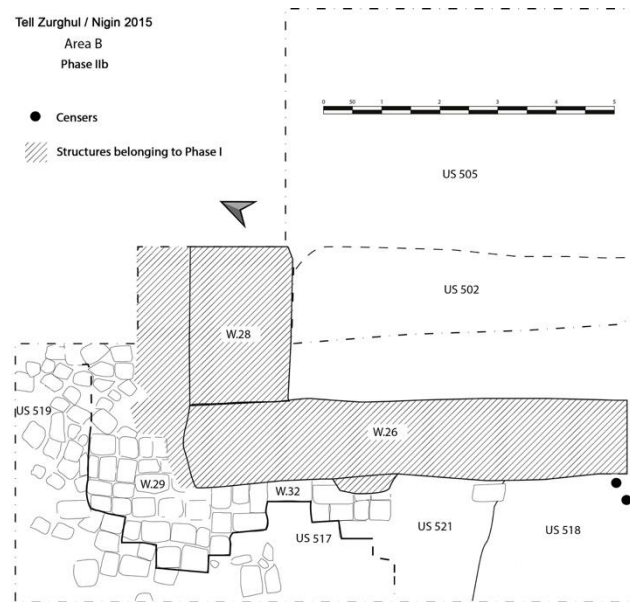


Fig. 4b - Area B, plan of the structures of phase IIb recovered in 2015.

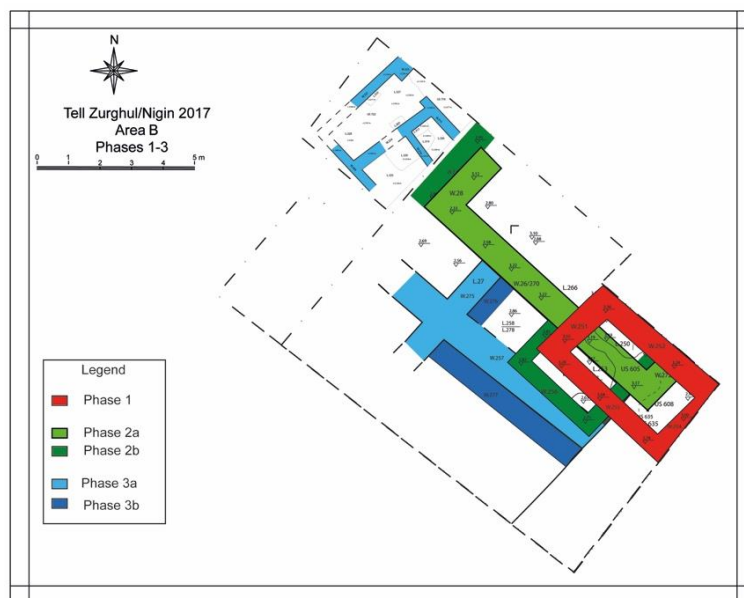


Fig. 5 - Area B, plan of the phases so far identified in the excavations in 2015 and 2017.



Fig. 6 - The two censors *in situ* found in 2017, Area B, phase 5.

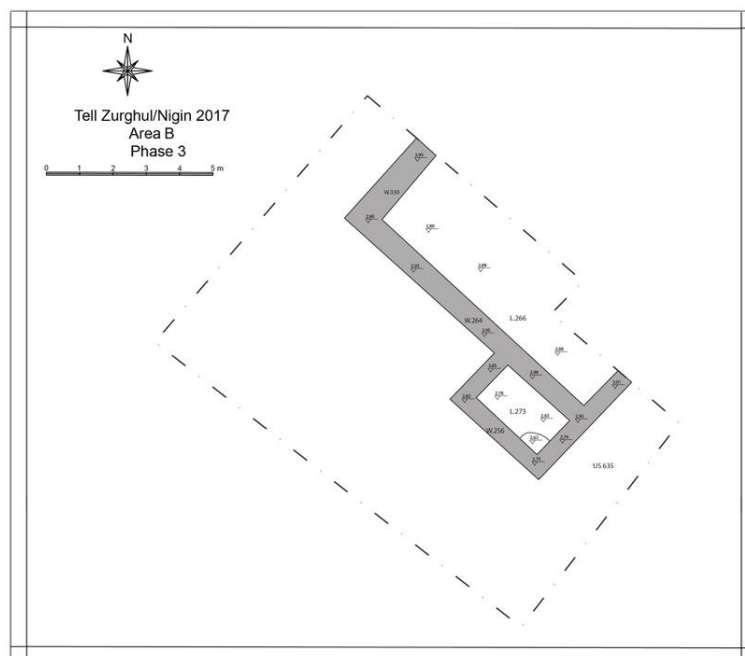


Fig. 7a - Area B, plan of the structures of phase 3 recovered in 2017.

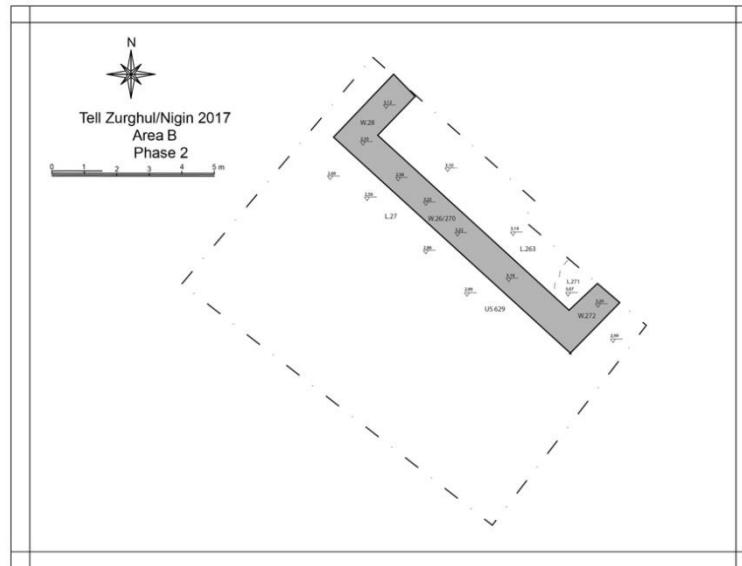


Fig. 7b - Area B, plan of the structures of phase 2 recovered in 2017.

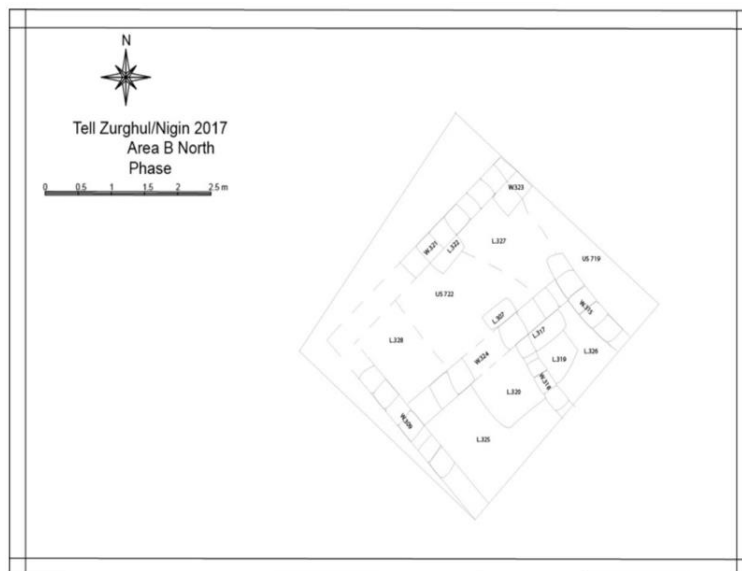


Fig. 8 - Area B, plan of the structures of the sector B North, recovered in 2017.



Fig. 9 - Area B, clay sickles and group of fishing net clay weights from the sector B North, 2017.



Fig. 10 - Area B, the rest of shark vertebrae *in situ*, sector B North, 2017.



Fig. 11 - Area B, fragment of crystal from sector B North, SG.17.BN.089.



Fig. 12 - The higher phase of Mound B, with fragments of plaster and mud-brick walls damaged by erosion and cut by Koldewey's sounding.



Fig. 13 - Detail of Koldewey's soundings with the filling of baked bricks.

THE EXCAVATIONS IN AREA A:
THE DISCOVERY OF A MULTIFUNCTIONAL BUILDING
OF THE 4TH-3RD MILLENNIUM BC

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Hereby are summarized three years of excavations in Area A of Tell Zurghul, where, in Trench 2, a multifunctional building (Building A) with several phases of construction and use, dated from the passage between Late Uruk and Jemdet Nasr Period to the Early Dynastic I Period, has been discovered. The building was connected with the food production, storage and redistribution activities for a large amount of.

Keywords: Tell Zurghul; Area A; Jemdet Nasr; Late Uruk; food production

Area A is located in the centre of Tell Zurghul, close to the southern slope of the main Mound A (fig. 1). During the 2015-2017 archaeological campaigns two open air trenches have been opened in this area (Trench 1 and Trench 2).

1. TRENCH 1

During the 2015 archaeological campaign a first sounding (10 × 10m) was opened close to the southern slope of the main Mound A, along the northern limit of a long white zone, in which several baked bricks bearing the inscription of Gudea, king of Lagaš, have been collected directly on the surface.¹

The removal of the upper stratum revealed a cut (P.1) running east-west and delimiting what appeared to be the remaining of the destroyed northern edge of a canal (D.2). In fact, the cut was completely filled by fine sand and loam.

Immediately north of the cut P.1 a further sounding of 5 × 5 m has been opened in the area, to better investigate its occupation and dating. The excavation revealed the presence of no structures, but a stratigraphy composed mainly by accumulation layers with some pieces of mud-bricks together with rest of a vegetal reed and several Early Dynastic pottery sherds, probably coming from structures originally present in the upper part of Mound A and then collapsed in the canal (fig. 2).

2. TRENCH 2

2.1. *Phases and Chronology*

During the last part of the 2015 archaeological campaign a second trench have been opened in area A, closer to the southern slope of the Mound A, where a white gypsum brick alignment was visible at the bottom of a small seasonal water stream. From the end of the 2015 to the 2017 seasons this sounding has been continuously investigated (about 150 sqm in total at the end of 2017), revealing seven main phases, dating from the late Late Uruk to the transitional Jemdet Nasr/Early Dynastic I period:

¹ See Nadali - Polcaro - Verderame 2016.

Phase 1: Late Uruk
 Phase 2: Transitional Late Uruk/Jemdet Nasr
 Phase 3: Jemdet Nasr
 Phase 4: Jemdet Nasr
 Phase 5a-b: Early Dynastic I
 Phase 6a-b: Early Dynastic I
 Phase 7a-b-c: Early Dynastic I

The entire area is affected by seasonal atmospheric agents – especially in winter – such as the heavy rain, together with the natural formations of deep seasonal water streams coming down from the top of the main mound. In particular, one of these streams (P. 7) caused a heavy erosion in the central part of area A, where the upper phases are barely attested, while well preserved to the east and west of the stream; however, strong surface erosion is clearly recognizable over the entire area (fig. 3).

2.2. *Architecture and findings*

2.2.1 Phase 1 (Late Uruk)

The earliest structural phase has been identified on a sounding of 5x5 m in the centre of the area. It consists in part of a building (Building A1) of which only three rooms, delimited by mud-bricks walls, have been identified, two of which (L.6, L.20) partially excavated (fig. 4). The presence of collapsed gypsum bricks inside the only room extensively excavated, room L.20, and the presence of a line of gypsum bricks above the mud-brick foundations of wall W.3, suggests that the raising of the walls was composed by this particular material of construction, distinctive of the Late Uruk Period.² More than 40 Conical Bowls and few Bevelled-Rim Bowls were recovered piled upside-down one above the other mostly in the corner between W. 3 and W. 18 and on the beaten earthen floor L.20. A thick ashy layer covered sealed the phase, suggesting a destruction by fire of the wooden supports where the vessels were originally stocked.

2.2.2. Phase 2 (Transitional Late Uruk/Jemdet Nasr)

Phase 2 has been extensively investigated in almost the entire surface of the area. During this phase Building A1 was sealed, and obliterated. A new building (Building A2), was built in the north-eastern part of the area (fig. 5), connected to an open area divided in two courtyards (L.130 and L.12) by a mud-brick wall (W.4), through a small door. The building, which continues beyond the eastern limit of excavation, has been investigated in its western part, in which three rooms, we decided to call Courtyard 1, Room 2 and Room 3 have been identified. While no particular features or materials have been recovered inside the rooms of Building A2, numerous discovering in the open areas helped in the interpretation of the structure also in this phase. In particular, in the courtyard L.12, a *tannur*, with the traces of a wooden table close to it (I.118), have been identified (fig. 6). Very close to this installations, along the western delimiting wall of Building A2 (W.105),

² Moorey 1994, 332.

several Conical Bowls have been discovered, quite all piled one on the top of the other, as in Phase 1, together with several small holes in the beaten earthen floor, quite regularly distant from W.105, suggesting the presence of a wooden structure against it, probably containing the bowls. Moreover, in Courtyard L. 130, three circular fireplaces (I.132, I.133 and I.134) have been discovered (fig. 7). Two of them have the same dimensions, while the last one (I.132) is quite smaller, maybe indicating different purposes in terms of cooking. The shape of these fireplaces suggests that they should be used as cooking fires for some kind pots or containers, a different way to cook aliments compared to the *tannur* of the other courtyard. The presence of both the conical bowls, a *tannur* and the fireplaces in this area seems to suggest an activity of production and fast distribution of food, more than the production of aliments to be stocked in storerooms and large closed vessels.

2.2.3. Phase 3 (Jemdet Nasr)

In Phase 3 (fig. 8) Building A2 continue to be in use, with no change in planimetry but new superimposed beaten earthen floors: L.131 in the main inner courtyard (Courtyard 1), L.108 in Room 2 and L.110 in Room 3. Also the walls present some new operation on them, with different alignment of mud-bricks and, in some instances, the colour of the clay, that single out the difference and border between the old and the new phase of construction and use of the walls and the building.

On the other hand, in this phase, the western courtyard is unified in a single open area (L.125) which obliterate the division wall W.4. However, the cooking activities for this area continue to be attested thanks to the recovery of a rectangular oven (I.124) in the north western corner of the area (fig. 9). The access from the courtyard L.125 to the Building A2 was possible also during this phase, even if the old door was closed and two new ones opened: one larger to the north and one smaller to the south.

The most important findings in this phase are at least six complete rounded ledge-rim jars of the Jemdet Nasr Period, all red-slip and painted (fig. 10), recovered crashed on the floors L.131 and L.108. These jars have many comparisons with the materials discovered inside the rooms of the multifunctional Langdon's large building on Mound B of Jemdet Nasr site.³ Very interesting is the location of these jars apparently stored in the corner of the rooms in the same way of the Jemdet Nasr so-called palace. Even if it is not clear the content of these kind of vessels, their association with public buildings, not only in Jemdet Nasr, but also in Tell Uqair and Nippur,⁴ suggest a probable high-status role for these decorated pots and their contents. Together with the jars, a small stone bull figurine has been discovered (fig. 11): also this object has comparisons for the typology and craftwork with other kinds of stone animal figures attested in the Langdon's large building on Mound B of Jemdet Nasr site.⁵

The presence of this small rectangular oven is also very interesting, because it attests another way of cooking (perhaps grilling more than baking), compared to the *tannur* (surely baking) and the fireplaces of the older phase (probably boiling), possibly to be used

³ See Matthews 2002, figs. 14-15.

⁴ See Matthews 2002, 21.

⁵ See Matthews 2002, fig. 58.

in the same place. This is in our view a strong prove of the dedication of this area to the food processing, involving different kind of cooking and different kind products.

2.2.4. Phases 4 (Jemdet Nasr)

Also in phase 4 Building A2 continue to be in use. However, due to the erosion it is preserved only in the north-eastern sector of the area. Phase 4 just sealed Phase 3 directly rising a new floor above the smashed JN painted jars in Room 1 and 2.

2.2.5. Phase 5 (Early Dynastic I)

Phase 5 is preserved only in the north-eastern-eastern sector of the area (fig. 12), where the previous phases 4-1 have not been investigated. During this phase Building A2 continue to be in use, although in some cases the walls have been raised using a different construction technique. The *Riemchen* mud-brick technique, in fact, is in one case (W.140) substituted by the squared mud-brick technique. This kind of mud-bricks start appearing at the end of the Jemdet Nasr period, and continue to be used during the following Early Dynastic I period, as a transition to the plano-convex mud-bricks typical of the Early Dynastic period.⁶

The Courtyard 1 continue to be in use, with a superimposed beaten earthen floor (L.403), and delimited to the north by W.140. Immediately north of it three rooms have been recovered (Rooms 1, 2 and 3). Only Rooms 2 and 3 have been completely excavated in 2017 season: in Room 3 a large installation (I.409) was discovered against the southern wall of the room (W.140), with an associated earth-beaten floor (L.417). The installation is composed by an oval large plastered basin, with two small circular installations connected to it (fig. 13). One of these two smaller installations was discovered filled with soft ash and was probably a small oven. This was proved also by the strong signs of fire discovered in the corner of wall close to I.409. It is thus probable that this installation was used to work aliments in a large plastered basin, heated by the small circular oven connected to it. Looking to the comparisons in Upper Mesopotamia, this installation seems similar to ones discovered in Tell Beydar and Mari. At Tell Beydar the white plastered oval installations were interpreted as spaces devoted to the preparation of flour or its processing into dough by mixing it with different ingredients, and to dough kneading, while at Mari a large bitumen-coated basin surrounded by smaller receptacles, was interpreted as an area for preparing the bread loaves.⁷ In some area of the Near East, for example in the Levant and Cyprus, similar installations composed by heated basins, are used for the production of beer.⁸

In Room 2 a rounded fireplace (I.420) was discovered in the centre of its floor L.421 (fig. 14). This was a circular depression in the floor, composed by a small pit coated with pottery sherds and filled with ash. Several seeds and charcoals have been recovered into it. In this case the analysis of the carbonized seeds inside T.420, actually under study in the

⁶ Moorey 1994, 306-308.

⁷ Rova 2014.

⁸ See for instance an example from in the Early-Middle Bronze Age Cyprus, at Kissonerga-Skalia (Crewe - Hill 2012, fig. 5).

laboratories of Perugia University, could help in recognizing to which aliment they pertain, probably a kind of barley or wheat toasted on fire before. From the filling of installation T.420 (Building A, Phase 5, Room 2), comes a confirmation about the chronology of Building A. In fact, from a carbonized seed in this room comes the first C14 data from Tell Zurghul, corresponding to 3104-2850 BC,⁹ that fits perfectly with the Jemdet Nasr Period.

Finally, very interesting was also the discovery in these rooms of several bitumen cretulae, with the impression of ropes, reed, and the profile of containers they were originally attached to (fig. 15).

2.2.6. Phase 6 (Early Dynastic I)

During Phase 6 Building A2 continue to be in use. In Room 2 the fireplace T.420 is obliterated by a superimposing beaten earthen floor (L.411), while a door is opened in W.142, connecting Room 2 and Room 3. In Room 3 the oven I.409 is no more in use, and a drastic change in use has been detected. The room, in fact, has been made smaller through the construction of a new mud-brick wall (W.145) and now dedicated to the storage of several conical bowls piled one above the other on a beaten earthen floor (L.404).

2.2.7. Phase 7 (Early Dynastic I)

Due to the rising of the slope of the ground from west to east in Area A, only in the north eastern corner of the excavation trench phase 7 have been recognized (fig. 16). Building 2 seems to be no more in use, but obliterated by a levelling layer over which part of a wall in *Riemchen* mud-bricks (W.145) then extended by a row of squared mud-bricks (W.146) have been built, probably belonging to a new building (Building A3). Part of a beaten earthen floor (L.147), over which two small holes were cut, probably belonging to wooden structures.

3. CONCLUSION

In conclusions, Building A was continuously used for centuries, with several interventions on its walls, characterized by mud-brick of *Riemchen* typology ($16 \times 10 \times 10$ cm),¹⁰ perpendicularly arranged, alternately each course, but few changes in the plan. Some rooms apparently changed their purposes but, at least this hall of the building, it didn't change in time its main function: a place to produce and to store food of different nature. Moreover, the dimension of the building and its location very close to Mound A, recognized as the main temple of the Sumerian city in later periods and probably hiding the

⁹ The C14 analysis was performed by the "Laboratorio preparazione campioni per misure isotopiche" of the "Dipartimento di Scienze e Tecnologie Ambientali, Biologiche e Farmaceutiche" of the Università della Campania "L. Vanvitelli", at the facility AMS of the Laboratory INFN - LABEC ("Laboratorio di tecniche nucleari per l'Ambiente e i Beni Culturali") of Florence, it will be published soon in a dedicated journal together with other C14 dates from Tell Zurghul.

¹⁰ *Riemchen* mud-bricks start to appear in Mesopotamia from the Late Uruk Period, they predominate in Uruk Level IV and persist till Level III. *Riemchen* have a height equal to their breadth: but a length always greater than double their breadth (see on this topic Moorey 1994, 307).

remains of a main sacred area of the site also in the IV millennium BC,¹¹ suggest that it had a public nature, like a centralized factory for the production of large quantities of aliments. The so far exposed plan of Building A, with a courtyard, a system of rooms departing from it, and open air sectors, also suggests that this was a multifunctional structure that, according to the findings, was specifically devoted to the processing, storage and distribution of different kind of food for a large amount of people.

This implicates a public function, possible in relationship with the redistribution of aliments during religious festivities. Looking to the later cuneiform texts, like the hymn dedicated to Nanše, dated to the Ur III Period, it is attested in Nigin the use of large ovens dedicated to the goddess during the New Year Festival. In particular it is quoted in the text a building, called Bur-sag, a structure specifically used for the storage of regular offering.¹² Even if the text describe the Nigin of the Ur III Period, not attested till now in Area A, it is possible that in the city of the Jemdet Nasr Period similar structures were already in use; the Bur-sag is in fact attested at least since the Kingdom of Urukagina, in the Early Dynastic III Period.¹³

Whatever it was the name of Building A in the Jemdet Nasr Period city of Tell Zurghul, its public nature cannot be discussed. In fact, there are many comparisons between the building of Area A and the Langdon's large building on Mound B of Jemdet Nasr, not only the findings, already mentioned before in relation to Phase 3 of Building A. In particular, even if the majority of the large kilns identify by the excavators were interpreted as installations for industrial activities, like pottery or brick firing,¹⁴ R. Matthews ascribes to the Langdon's building of Jemdet Nasr also a function connected with cooking and storing of food.¹⁵ Furthermore, the numerous cuneiform tablets discovered in the Langsdon's building at Jemdet Nasr mentioned several kind of aliments stored inside, such as barley and cereal products like beer, livestock, spices, dates, fish, and fruits;¹⁶ moreover, at least in two cases, remains of charred barley grains and charred grains of wheat were discovered inside small jars stored in the room of the building.¹⁷

In conclusion, concerning Building A of Tell Zurghul, the mud-bricks structures exposed till now could be part of a larger complex, very similar to the Langsdon's building at Jemdet Nasr, with a main function of food processing of aliments and products, including open spaces, inner courtyards and small rooms, maintaining its functions for the whole Jemdet Nasr Period. In fact, looking to the plan of Building A, it is evident that, except perhaps for the western limit of the complex, no closing walls of the building have been since now discovered and probably Building A was extended further east and north, under Mound A. Even if no seal impressions have been recognized since now in Building

¹¹ See Nadali in this volume.

¹² See the Nanše Hymn, lines 45-65 (Heimpel 1981).

¹³ Heimpel 1981.

¹⁴ In particular in connection with the manufacturing of the JN painted pottery (Moorey 1976, 100; Matthews 2002, 13).

¹⁵ Matthews 2002, 13.

¹⁶ Matthews 2002, 16.

¹⁷ Matthews 2002, 12.

A, the recovery of the bitumen cretulae strongly suggests that the building had also a storage function, perhaps under a central administration.¹⁸

In absence of cuneiform sources and waiting the final results of the paleobotanical analysis on the vegetal remains discovered inside the rooms of Building A, the interpretation of what kind of aliments were produced inside the complex in Area A of Zurgul is more complicated. At the actual state of art, it is only possible to note the presence of animal and fish bones in the layers excavated in the outer courtyards L.12 and L.20 in connection with fireplaces and ovens, together with the presence of numerous conical bowls, some discovered with crystallized small bones inside, that seems to suggest the production of solid and semi-liquid aliments outside of Building A. Instead, the complex oval installation of Phase 5 discovered inside Room 3 of Building A, close to the fireplace of Room 2, could be interpreted as a space dedicated to the production of some kind of beverages, perhaps specialized fermented drinks or beer. In this case, if the continuation of excavations will confirm the use of the same typology of installation also in Phase 3, the painted rounded ledge-rim jars discovered in the inner Courtyard 1 could be the containers of this kind of product. Looking to the Hymn of Ninkasi, in its translation accepted by most of the scholars and assyriologists, the Sumerian beer production involved the cooking of a preparatory mesh (called *babbir*) in an oven,¹⁹ but the lack of archaeological attestations in Southern Mesopotamia and of more detailed proto-cuneiform texts dated to 3200-3000 BC related to brewing do not permit to advance further hypothesis on the installations of Rooms 2-3 of Building A for that specific purpose.

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¹⁸ No seal impressions have been since now discovered, but the types of bitumen cretulae clearly had impressions of textures and ropes attesting a closing system of the vessel stored in Building A in an identical way of the clay sealing system comment in Mesopotamian site, see e.g. the cretulae of the jars in the Innana Temple at Nippur of the Third Dynasty of Ur Period (Zettler 1987, fig. 11).

¹⁹ Damerow 2012.

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Fig. 1 - General view or Area A of Tell Zurghul from the air.

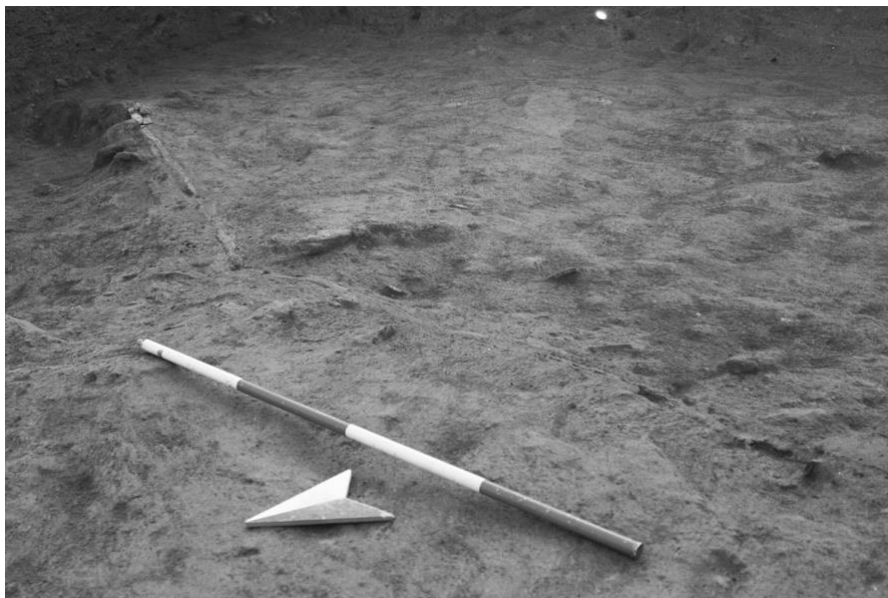


Fig. 2 - Reeds remains in Trench 1.



Fig. 3 - General picture of Area A (Trench 2) in 2016.

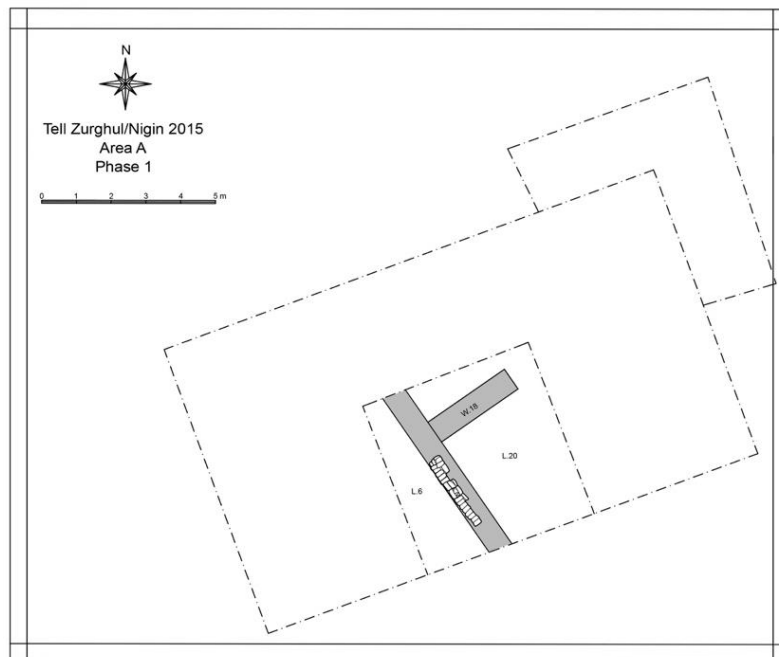


Fig. 4 - Schematic plan of Phase 1, Area A.

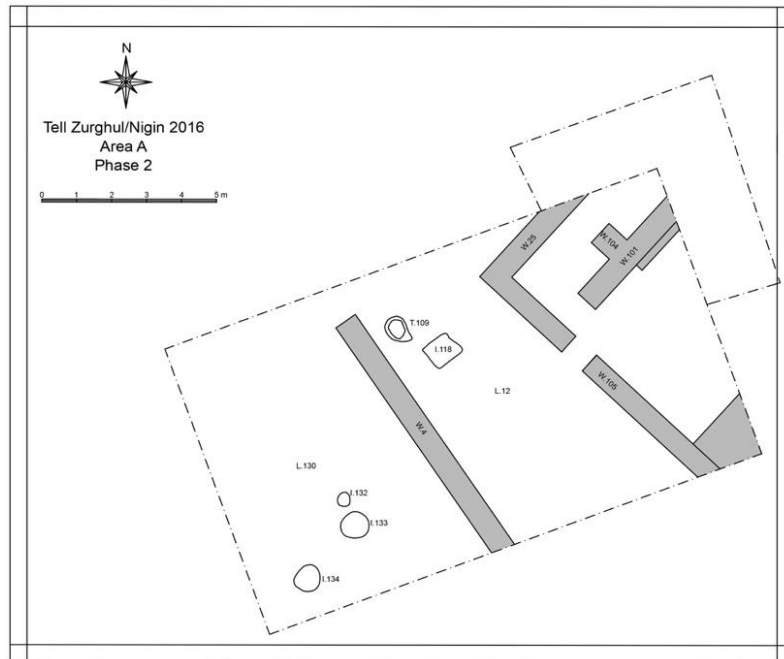


Fig. 5 - Schematic plan of Phase 2, Area A.

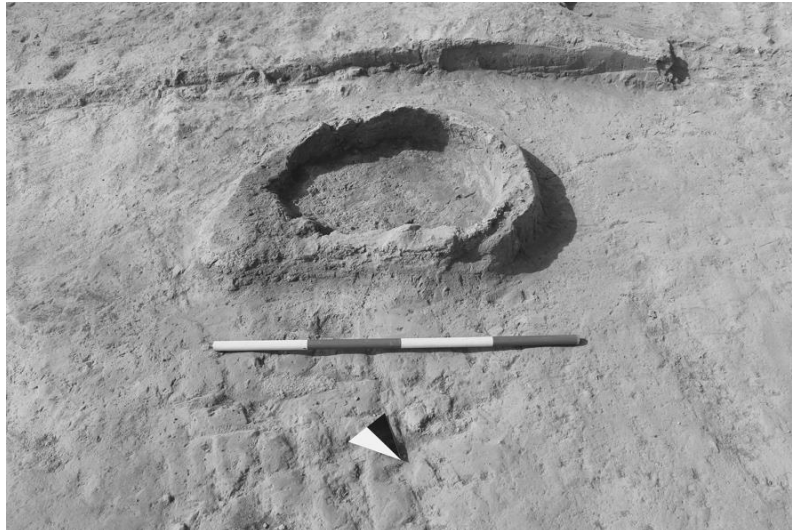


Fig. 6 - The *tannur* discovered in Courtyard L.12.



Fig. 7 - The three circular fireplaces (L.132, L.133 and L.134), discovered in Courtyard L. 130.

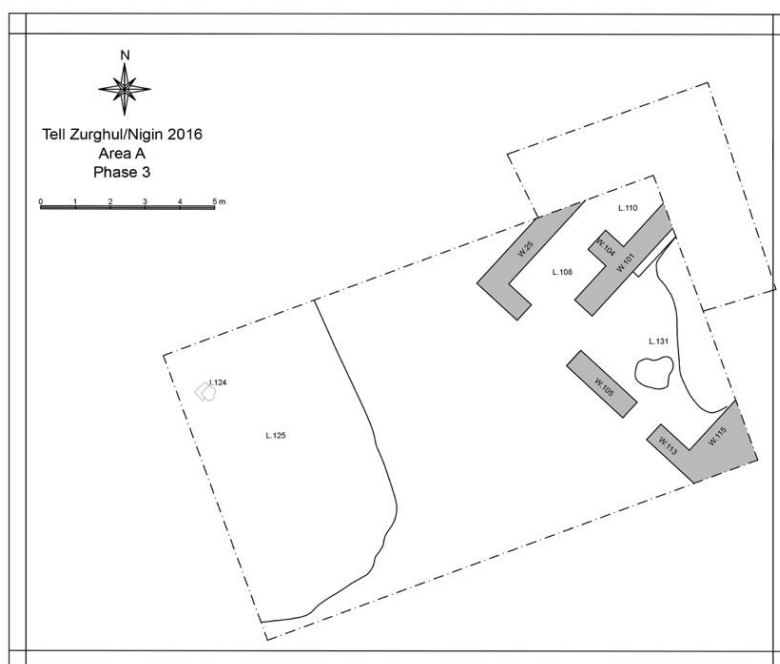


Fig. 8 - Schematic plan of Phase 3, Area A.

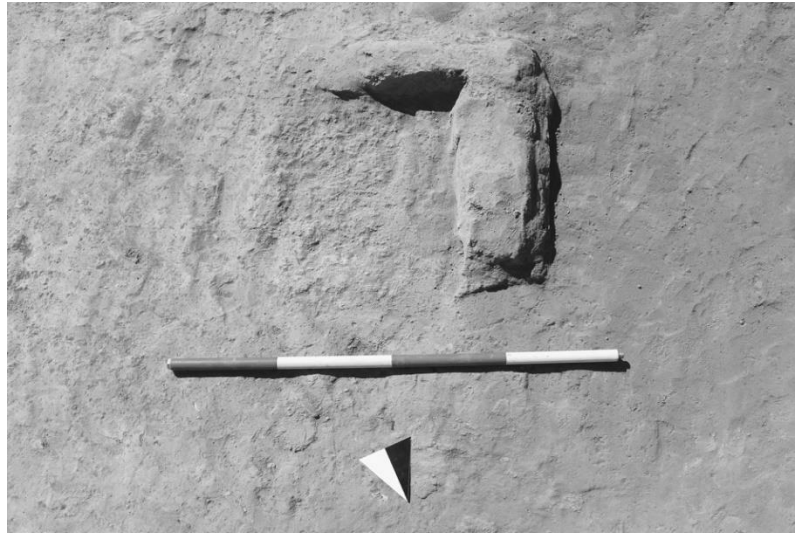


Fig. 9 - The rectangular oven (I.124) discovered in the north western corner of Area A.



Fig. 10 - The rounded ledge-rim painted jars of the Jemdet Nasr Period, recovered crashed on the floors L.131 and L.108.



Fig. 11 - The stone bull figurine discovered in Building A, Phase 3.

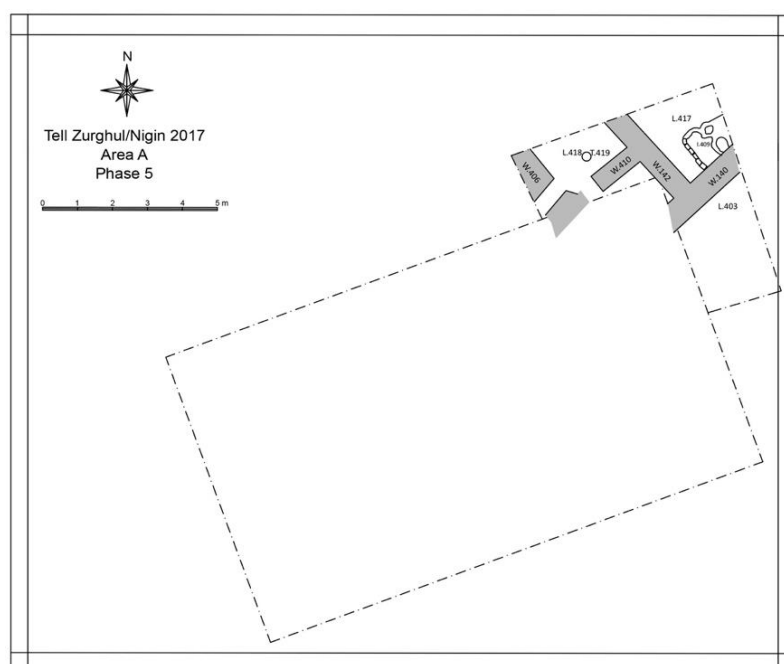


Fig. 12 - Schematic plan of Phase 5, Area A.



Fig. 13 - The installation (I.409), discovered against the southern wall of Room 3 in Building A (W.140).

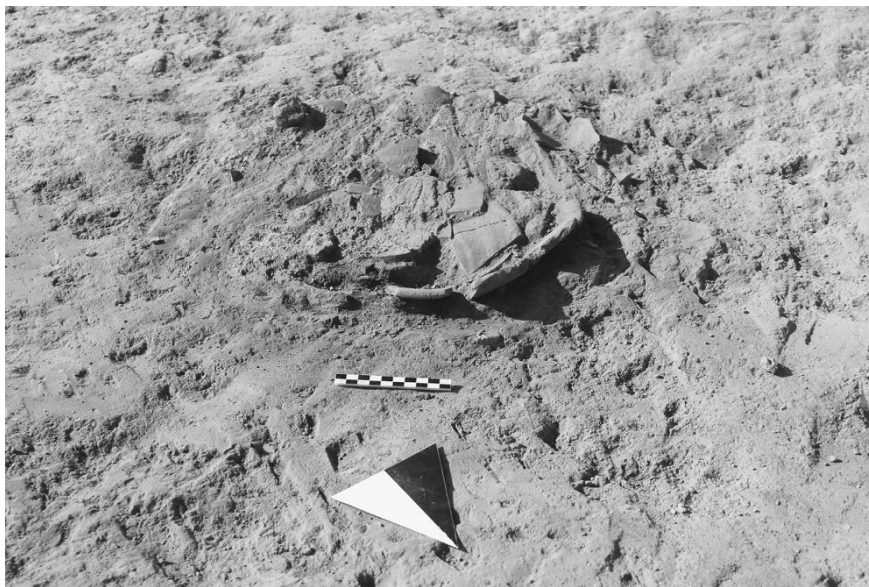


Fig. 14 - The rounded fireplace (I.420), discovered in the center of floor L.421, Room 2 of Building A.



Fig. 15 - Bitumen sealings, with the impression of ropes and reed, discovered in Building A.

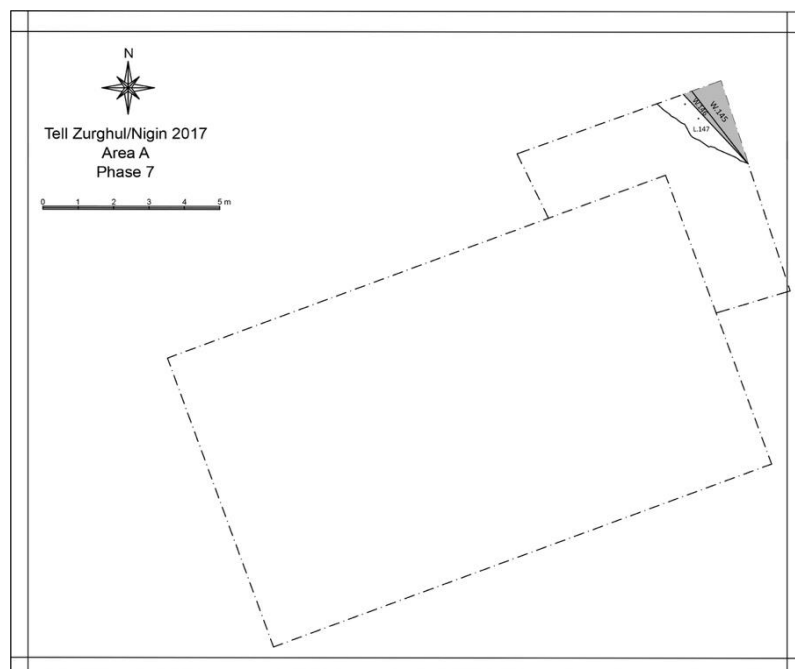


Fig. 16 - Schematic plan of Phase 7, Area A.

AREA D:
STRATIGRAPHY AND ARCHITECTURE
OF THE “MOUNTAIN LIFTED ABOVE ALL (OTHER) HOUSES”
AT TELL ZURGHUL, ANCIENT NIGIN, IRAQ

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The chapter presents the results of the excavation carried out during the second season of excavations at Tell Zurghul in 2016. Area D is located on the top and South-Western slope of Mound A, that is nearly at the centre of the site. Archaeological evidence, although scanty and poorly preserved due to the heavy erosion of the mound, and written evidence dated to Gudea of Lagash actually confirm that Mound A is the result of artificial superimposition of strata and buildings dating back at least to the beginning of the 3rd millennium BC; on its top the temple Sirara of the goddess Nanše, celebrated by Gudea in his inscriptions, was built.

Keywords: Sirara; Gudea; Nanše; Mesopotamian temple; Lagash

1. INTRODUCTION: TOPOGRAPHY, MORPHOLOGY AND PREVIOUS EXCAVATIONS OF MOUND A

Mound A rises up nearly at the centre of the site, slightly to the East (fig. 1): heavily eroded and partially excavated in 1887 during the brief exploration of the German archaeologist Robert Koldewey, the mound still has a height of around 12 m with an elongated ramp-shaped structure on its north-western side. This particular shape and the presence of the “ramp” actually lead the modern people living next to the site, in the modern village of Zurghul, to name the hill as a ziqqurat, the typical Mesopotamian tower-like structure:¹ indeed, looking from the Western side (fig. 2), the profile of Mound A looks very similar to an ancient ziqqurat, but information so far provided by the interpretation of the results of Koldewey’s soundings as well as the recent exploration of the Italian expedition in 2016 definitely have shown that Mound A cannot be considered to be a ziqqurat.

The height of Mound A can be detected from a distance (fig. 3) and the hill therefore not only characterizes the site itself but, more generally, the whole landscape of the ancient region of the State of Lagash, at least from mid-3rd millennium BC: this is particularly significant if one thinks of the general morphology of the landscape of Southern Mesopotamia where sites are quite flat and no hills and mountains are visible. This special feature of the Mesopotamian landscape explains the distinctive role mountains had in ancient Sumerian religion and mythology, on one hand, and the explicit intention of the inhabitants of Mesopotamian floodplain of building high artificial terraces and ziqqurats with the main temple of the city god/goddess in the top.² Moreover, the presence of the high hill within the cityscape of the ancient city of the 3rd millennium BC is also recorded and emphasized by the words of the ruler Gudea when he specifically refers to and quotes his construction and restoration of the temple Sirara for the city goddess Nanše.

¹ Sauvage 1998.

² Nadali - Polcaro 2016.

At the same time, the emergence of hills in a flat landscape might be the result of anthropic stratification on pre-existing sediments and turtlebacks that characterised Southern Mesopotamian landscape and water environment since the Pleistocene;³ therefore, Mound A – as in fact the partial archaeological exploration in 2016 showed – is precisely the result of this artificial stratification and continuous construction and reconstruction of buildings and terraces. A similar situation can be observed in Area B, where the lower mound is also the result of the superimposition of remaking of building on a probably pre-existing turtleback.⁴

Robert Koldewey, in his very brief exploration of the site of Zurghul (Surghul),⁵ worked on the main central mound operating two kinds of operations: first, he operated a sounding (1 m wide and 75 m long), actually crossing the entire hill from the North-Eastern to the South-Western side (fig. 4); moreover, on the top of the mound, he decided to deepen the investigation with a sounding 10 m deep as he was convinced the mound was indeed a funerary monument that could have, in its innermost and central part, the main funerary chamber.⁶ The report Koldewey published on his works at Zurghul is indeed too schematic and lacks of substantial information, due of course to the insufficient methodology of archaeological research, on one hand, and the almost-absent knowledge of ancient Southern Mesopotamian history, on the other: the results reached by Koldewey on the nature of the site, its use, and the chronology are of course totally useless. Nevertheless, the materials he collected from the soundings he made on different spots can be compared, although decontextualized,⁷ to the archaeological information and the stratified contexts of the most recent Italian investigations.

In particular, concerning the description of the contexts and strata and the types of materials Koldewey unearthed in the soundings on the main central mound, it can be clearly stated that the hill is not a funerary monument – as Koldewey initially thought – nor can the monument be considered a ziqqurat, despite the ziqqurat-shape and the presence, on the northern side, of a kind of ramp that, seen from Western side, looks very similar to the typical frontal staircase of the temple-ziqqurats in Mesopotamia.⁸ In fact, although partial and restricted, Koldewey was able to recover architectural features and objects that do not correspond to the context of a common ziqqurat in Mesopotamia: as confirmed by the excavations carried out in 2016, the German archaeologist did not find any recurrent elements that are known from other ziqqurats (such as not only mud and baked bricks, but also weeper holes, reeds, and other fundamental architectural features and building techniques).⁹ Moreover, it is even more striking that, as Koldewey pointed out in his

³ Pournelle 2007, 34-35.

⁴ See the contribution by Nadali on Area B in this volume.

⁵ On the modern name of the site see Black 1989-90, 71.

⁶ Koldewey 1887, 428.

⁷ See the analysis and study by Huh (2008, 240-246, 751-753, 756-762, 781-792) on the re-examination of Koldewey's operations at Zurghul and the presentation of the materials he discovered and partially brought to Berlin.

⁸ Sauvage 1998, 49.

⁹ Sauvage 1998, 50-54.

report,¹⁰ no baked bricks have been found, while those architectural elements are essential for the statics and solidity of building.¹¹ At the same time, the recovery of objects (according at least to the list that von Haller was able to reconstruct with items – pottery, cylinder seals, clay cones – dating from the span of time from the mid-3rd to the late 3rd millennium BC)¹² is a clear indication that the strata of the mound are the result of different phases of occupation belonging to the different buildings and they cannot be considered structural parts and components of a ziqqurat. As we will see, this conclusion is not only confirmed by the morphology and archaeological data from the mound, but also by textual evidence dating from the mid-3rd millennium BC up to celebratory inscriptions of Gudea who devoted himself to the construction and restoration of the temple of the goddess Nanše.

In 2015, many fragments of clay cones and baked bricks with the inscription of Gudea commemorating the construction and restoration of the Sirara of Nanše at Nigin were collected at the bottom of the mound, mostly on the southern side (fig. 5).¹³ It was immediately clear that cones and bricks were the result of the collapse and erosion of the original sacred building that was built on the top of the mound: clay cones were in fact originally part of the walls of the temple, that is they were directly inserted into mud-bricks with the rounded terminal part jutting out, while the content of the inscription was essentially invisible;¹⁴ baked bricks were surely employed in the construction, probably as part of the revetment of the temple or placed as foundation deposit at the time of Gudea's intervention of restoration. In fact, while both cones and bricks basically bear the same inscription, baked bricks have an additional line stating that Gudea restored the Sirara of Nanše.¹⁵ Although speculative, this datum possibly suggests that Gudea operated twice and at different times at the temple of the goddess of Nigin:¹⁶ first, he rebuilt the temple making “a fitting thing resplendent for her, (namely) in Niĝin, her beloved city, her Sirara temple, a mountain lifted above all (other) houses”.¹⁷ Later, he must have restored the temple, and this operation actually reflects the general attitude of Mesopotamian rulers who had the duty of not only erecting new buildings and cities, but of also restoring and preserving pre-existing works to avoid collapse and ruin.¹⁸

¹⁰ Koldewey 1887, 404.

¹¹ Sauvage 1998, 50.

¹² Huh 2008, 242-243.

¹³ For the edition of the inscriptions so far found at Tell Zurghul, see Nadali - Polcaro - Verderame 2016 and the contribution by Verderame in this volume.

¹⁴ As it can be seen in the recent works in the *Eninnu* of Girsu by the British Museum expedition (MacGinnis - Rey 2018, fig. 7).

¹⁵ The inscription stamped on baked bricks corresponds to the inscription Gudea 30 = RIME 3/1.1.7.25 (Edzard 1997; Nadali - Polcaro - Verderame 2016).

¹⁶ Nadali - Polcaro - Verderame 2016, 20.

¹⁷ Nadali - Polcaro - Verderame 2016, 18.

¹⁸ In this respect, the care of canals and waterways is exemplary: Mesopotamian rulers not only excavated new canals and regulated rivers, but they constantly operated, via supervisors and superintendents, careful checks so that water could purposely be used for arable lands, without affecting the life of cities and countryside with overflow because of obstruction.

Based on the content of Gudea's inscription that precisely refers to the temple of Nanše as "a mountain lifted above all (other) houses" and on the assumption that the clay cones and baked bricks found in the lower city on the southern side of the mound slid from the top of the hill after the collapse of the temple,¹⁹ because of the effect of the heavy erosion caused by rain, we decided to open a large trench (11 × 10 m) on the top – to the south of the limit of the still visible Koldewey's narrow trench – and southern slope of Mound A to verify the rest of the building dedicated to Nanše and to investigate the stratigraphy of the mound.

2. STRATIGRAPHY AND ARCHITECTURE

The trench mostly occupies the central portion of the southern slope, starting from the top (fig. 6): the natural erosion of wind and water heavily damaged the Eastern side of the mound where the structures are less preserved or even completely absent. On the Eastern side, a step trench, made of three steps 1 m deep and 2 m long, has been excavated (figs. 7a-b): this operation aimed to understand the stratigraphy and the way the mound has been formed, confirming the existence of a superimposition of levels of terracing of mud that stand upon flat levelled surfaces.

On the Northern limit of the trench, the southern cut of Koldewey's trench (fig. 8) – that affected the original stratigraphy of the mound – has been identified. The filling of the trench is made of sandy soil with few pottery sherds and fragments of straws: actually, it must be considered that the trench, opened in 1887 and 1 m wide, has been filled up over nearly 130 years causing the heavy erosion of the upper strata of the mound and, presumably, the collapse of the uppermost structures. Compared to the situation recognised to the South and knowing the depth of Koldewey's sounding, it might be presumed that the deep trench not only cut the terracing of the mound, but it also affected the plaster platform as well as the structures that were built upon it.²⁰

Excavation allowed the identification of two phases of terracing and levelling of the mound: from the North, the first phase is made of a massive terracing of mud (W.155) that lies directly on a well-preserved plaster floor (L.151+L.152), heavily eroded to the South and East (fig. 9) – indeed it is clear how the erosion follows the circular outline of the mound. The terracing has been affected by the reuse and the destruction that occurred at the end of the 3rd millennium BC. In its original use and shape, terracing wall W.155 served as the base for upper mud-brick structures (W.158) that are however badly preserved and once occupied the entire extension of the trench: its Northern limit has been affected by Koldewey's sounding while the Western and Eastern limits suffered from the natural erosion of the mound.

¹⁹ The temple, according to the poem *The Lamentation over the Destruction of Sumer and Ur*, was heavily sacked and destroyed at the end of the 3rd millennium BC on the occasion of the Elamite invasion that caused the fall of the Third Dynasty of Ur and the goddess Nanše lost forever her abode in Nigin (Michalowski 1989, 47 ll. 167 and 180-182). Moreover, it is interesting to point out that, after the decline of the Third Dynasty of Ur, Nanše lost importance up to disappearing from the Mesopotamian pantheon, actually surviving as a name (Heimpel 1998, 160).

²⁰ In his report, Koldewey does not mention any specific brick structure (1887) but this probably is because of the difficulty of detecting mud-bricks, and also because of the very limited extension of the sounding.

The second phase is built immediately underneath the first one: although less preserved and heavily levelled by the construction of the first phase, it has been possible to detect part of a terracing of mud with fragments of baked bricks and a platform (L.162), less imposing than L.151+L.152 (fig. 10). The Western section of the step trench confirms the superimposition.

Stratigraphy of Area D is indeed quite simple: notwithstanding the heavy erosion that cut the strata with the consequent loss of materials that have been mostly washed downstream, excavation allowed us to understand the morphology and the technique of construction of the mound: moreover, thanks to the step trench sounding on the Eastern side on the main operation, the hypothesis that the entire mound is the result of the stratification of architectural phases and buildings – which the materials collected by Koldewey should belong to – and artificial anthropic accumulation (by terracing and levelling) can be advanced.

Where is the temple of the goddess Nanše? If one relies on Gudea's words, who describes the Sirara of the goddess as a mountain, this mountain can only be Mound A, actually the highest place not only within the city but in the neighbouring area, well visible from the distance. The temple that originally occupied the highest part of the mound totally disappeared because of the destruction it suffered by the hands of Elamites at the end of 3rd millennium BC, natural erosion, and eventually Koldewey's deep sounding. If one wants to see partial rests of the temple in the excavation in Area D, one might suggest that W.158 could be belong to sacred building of Nanše or to one of its later phases, but there are no clear hints for such a conclusion. However, it seems that the scant rest of W.158 as well as the terracing of mud W.155 can be dated to a late phase, more plausibly after the destruction of the temple, definitely after the fall of the Third Dynasty of Ur, at the very beginning of the 2nd millennium BC. Unfortunately, data to support this possible reconstruction are scanty: the few diagnostic materials collected are not enough to clearly indicate a more restricted span of time, although fragments of pottery dated to the very beginning of the 2nd millennium BC show that an occupation of the mound in that period can be documented.²¹ Can we therefore infer that, after the destruction of the temple, a very brief occupation of the top of "Gudea's mountain" occurred in the first centuries of the 2nd millennium BC, with the attempt of repairing the temple after the destruction? Indeed, an incomplete inscribed baked brick with the inscription of Gudea celebrating the construction of the Sirara (fig. 11) has been found within the mud terracing W.155: the brick is broken on all its sides and it has been found re-used within the mud blocks of the terrace. This proves that the terrace can be dated after the time of Gudea and after the temple was no longer used, when the area was provisionally restored and reinforced to avoid an irremediable total collapse of the mountain using blocks of pure clay – actually the inscribed brick of Gudea is the only alien element within W.155. The new terrace covers and seals the platform (L.151+L.152) that can be dated to the previous phase, when the temple of Nanše was in current use, dating to the time of works of Gudea and the following period of the Third Dynasty of Ur.

²¹ For an overview of early 2nd millennium evidence at Tell Zurghul, see the contribution by Casadei - Oselini in this volume.

In the end, there is no direct information on the last temple built by Gudea. However, stratigraphy clarified how the mound was conceived and built: clearly, it is neither a ziqqurat nor a funerary monument, but a terraced hill formed upwards by the continuous stratification of buildings at least from the mid-3rd millennium BC (Early Dynastic Period III), as cuneiform sources of the rulers of the First Dynasty of Lagaš confirm.²² Based on the recent works at Tell Zurghul, with the discovery of phases of the settlement dating back to the Chalcolithic Period/Ubaid Period (Area B) and very beginning of 3rd millennium BC/Jemdet Nasr Period (Area A),²³ one might even suggest that the stratification of Mound A also goes back to phases before the Early Dynastic Period.

Mound A has been created by the accumulation of strata of architectural phases of buildings continuously made, levelled, and rebuilt: during the campaign carried out in 2017, after a day of rain, it was possible to clearly recognize, on the Western flank of the mound, some horizontal lines that probably mark the different processes of levelling and raising of the hill; indeed, also the different colour of soil helps in distinguishing the different levels and, one might infer, moments of construction.²⁴ Mound A has a long occupation and stratification: the uppermost part was probably the result of the works by Gudea who explicitly says he raised the Sirara of the goddess Nanše as a mountain. The Sirara, dating back to Ur-Nanše,²⁵ was probably completely rebuilt and renewed by Gudea who levelled the old construction, raised a mountain and built a new temple on the top. Actually, evidence of 3rd millennium data is not only known from cuneiform sources, but it is also confirmed by the decontextualized materials of Koldewey and the contextualized archaeological information from Operation A1, carried out in 2015 in the lower city to the south of Mound A.²⁶ In this area, where the majority of inscribed clay cones and baked bricks have been collected on the surface, several strata of accumulation (clay) with rich quantity of pottery sherds (mostly dated to the second half of the 3rd millennium BC, Early Dynastic III/Akkadian Period) have been recognized and excavated: it is clear that those materials originally belonged to northernmost contexts (the southern slope of Mound A) and have been affected by erosion and the effect of heavy rain.

²² See the contribution by Verderame in this volume. See also Edzard 1998, Heimpel 1998 and Huber Vulliet 2009-2011.

²³ For the analysis of Ubaid and Jemdet Nasr materials at Tell Zurghul, see the contribution by Volpi and Pizzimenti in this volume, respectively.

²⁴ The observation of the Western flank of the main mound of Tell Zurghul is similar to the archaeological situation detected by the French archaeologists while working at the monumental complex of the *Massif rouge* at Mari, in Syria. Two different levels, one characterized by red mud-bricks, the other by grey-greenish mud-bricks, actually correspond to two distinguished chronological moments of the use of the monument: built at the time of the *Ville 2* (red mud-bricks), the *Massif rouge* has been restored and covered with grey-greenish mud-bricks at the time of the *Ville 3*. Moreover, at the exact point of contact between the oldest and most recent architectural phases, the French archaeologists recovered a foundation deposit (a bronze plaque and a large bronze cone) marking the spot, in space and time, of the renewal of the monument (Butterlin 2010-11, 187-189).

²⁵ Selz 1995, 184-186; Heimpel 1998, 156; Huber Vulliet 2009-11, 552-553.

²⁶ Nadali - Polcaro 2018, 27-28.

3. THE QUESTION OF CHRONOLOGY

Because of the heavy erosion, few diagnostic archaeological materials have been properly recovered *in situ* as to give a clear chronological indication. As previously mentioned, the finding of a broken inscribed bricks of Gudea within the compact clay mass (W.155) seems to indicate that the brick has been reused in a later remake (quite likely at the very beginning of the 2nd millennium BC) and reassessment of the top the mound after the destruction of the temple of Nanše. However, not enough diagnostic 2nd millennium materials have been recovered to define the precise span of time of the use of the top of the mound in that period.

On the other hand, although also scanty, a few diagnostic sherds directly lying on the platform (L.151+L.152) and sealed by W.155, are particularly interesting as they point to a chronological phase that actually fits in with the time of the refurbishment of the Sirara of Nanše by Gudea (fig. 12).

Despite the small amount of stratified archaeological materials that could more precisely point to a more refined and sound chronological sequence of the occupation and formation of the mound, it seems quite plausible to suggest that, after a long process of stratification already started in the first half (or even at the very beginning) of the 3rd millennium BC, the mound has been deeply and largely refurbished in the time of Gudea of Lagaš when the hill was elevated as a mountain and the Sirara was finally built on the top.

The materials recovered on the platform are the evidence that has been sealed by later reconstruction and occupation that occurred at the very beginning of the 2nd millennium BC: not only the temple of the goddess Nanše of the time of Gudea has been heavily damaged until it collapsed, but the platform has been quite extensively cleaned or it can be inferred that most of the materials actually has been dispersed because of the erosion and action of atmospheric agents.

Together with the few sherds found in the Western part of the platform, a fragment of a clay plaque has been recovered in the Eastern sector (fig. 13): the plaque shows a frontal bull-man with curly hair in braids and a horned headgear, while he is holding, with both hands, a pole (probably a ring pole, although the terminal upper part is lost). The details of the face and partially of the headgear have been a little ruined: nevertheless, the high quality of the relief, particularly the care of anatomic attention for the musculature, actually fits in with the style of late Akkadian and Neo-Sumerian art, as one can for example detect in the physical rendering of the body of the ruler in Gudea's statues.²⁷

4. SIRARA AND THE GODDESS NANŠE

What is Sirara? Despite the still unclear meaning of the Sumerian word, the term is employed in the inscriptions of the rulers of the First and Second Dynasty of Lagaš (3rd millennium BC)²⁸ to indicate the temple dedicated to the goddess Nanše, patron deity of the city of Nigin. As already said, no archaeological evidence has been recovered in the excavation of Mound A that definitely can be, with no doubt, be identified with the

²⁷ Winter 1989.

²⁸ Starting from the time of Enmetena (Huber Vulliet 2009-2011, 552).

“mountain lifted above the houses” as described by Gudea: however, one can further speculate whether the term *Sirara* not only identifies the main temple (Sumerian *é*) of the goddess, but it defines a more complex system of buildings, a sacred precinct, encompassing the temple and other constructions having different complementary functions (there might have been smaller shrines and households devoted to the productions of goods that were not necessarily be used by the temple for religious purposes only).

Further investigations on Mound A – with more extensive operations on the top and slope of the hill to verify the superimposition of different architectural phases across time that are, indirectly, evidenced by Koldewey’s findings in his sounding – are needed to comprehend the architectural evolution and occupation of the mound at least from the very beginning of the 3rd millennium BC, to verify the nature of the Northern “ramp” as well as the connections with the neighbouring structures at the foot of the hill, as it is happens with the multifunctional building that has been uncovered in Area A.

The goddess *Nanše* is strictly bound to the city of *Nigin*: indeed, even the cuneiform signs for the name of both the deity and city are the same, with the very interesting presence of the sign *KU*₆ (“fish”),²⁹ tangibly expressing the very special link of *Nanše* and *Nigin* with the aquatic landscape of ancient Southern Mesopotamian in the 3rd millennium BC – a natural feature that characterised the settlement already in its most ancient phase of occupation in the Ubaid Period.

Not only was *Nigin* a city within a marsh landscape – indeed, in its most ancient phase, the settlement was an inland within the marine marshes of ancient Southern Mesopotamia – but rulers of the First and Second Dynasty of *Lagaš* clearly refer, in their inscriptions, to the digging of canals: the most important hydraulic work or waterway was the so-called “Canal-going-to-*Nigin*” that was used by Gudea to reach, from *Girsu*, the city of *Nigin* and, therefore, the temple of *Nanše* by boat.³⁰

In this very special aquatic context, it seems therefore logical and consequential that *Nanše* has been considered the patron deity of aquatic fauna (birds and fish) as the Sumerian composition «*Nanše and the Birds*» precisely recalls: in this respect, even the iconography of the deity refers to this aspect with the representation of birds (geese).³¹

The excavation of the main Mound A can restore the stratigraphy of the sacred mountain of *Nigin* that was high enough in a completely flat neighbouring landscape to overlook the surrounding houses and waterscape: in particular, since the last phase of the *Sirara* has been destroyed in the past and then completely collapsed because of the absence of later restorations that caused the total erosion of the temple, it can be inferred that the oldest phases, although levelled and continuously rebuilt, are still preserved with the possibility of obtaining the entire stratigraphic sequence of buildings across time.

²⁹ Heimpel 1998, 152; Veldhuis 2004, 19; Asher-Greve - Westenholz 2013, 40-41.

³⁰ On the “Canal-going-to-*Nigin*” see the reconstruction by Rost 2011.

³¹ Battini 2006; Asher-Greve - Westenholz 2013, 211.

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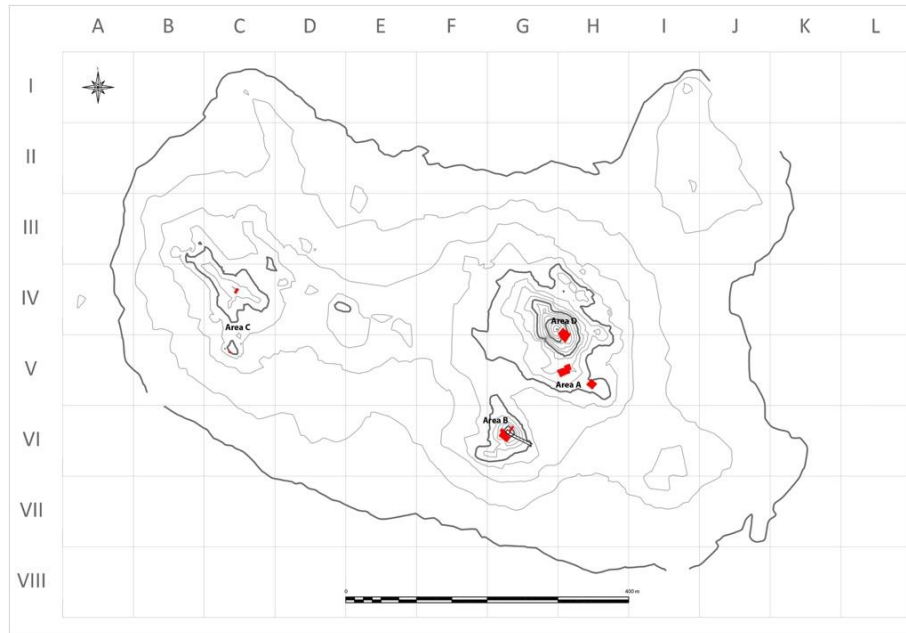


Fig. 1 - Topographic plan of Tell Zurghul.



Fig. 2 - General view of Mound A from the West.



Fig. 3 - General view of Mounds A and B from distance, against the flat surrounding landscape, from the West.



Fig. 4 - Koldewey's sounding on the top and Eastern flank of Mound A.

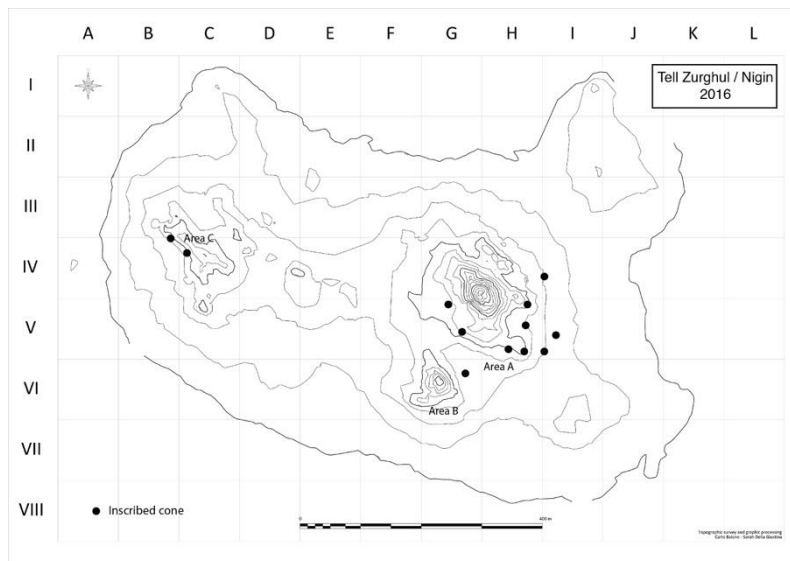


Fig. 5 - Topographic plan of Tell Zurghul with the indication of the spots of Gudea's inscribed clay cones.

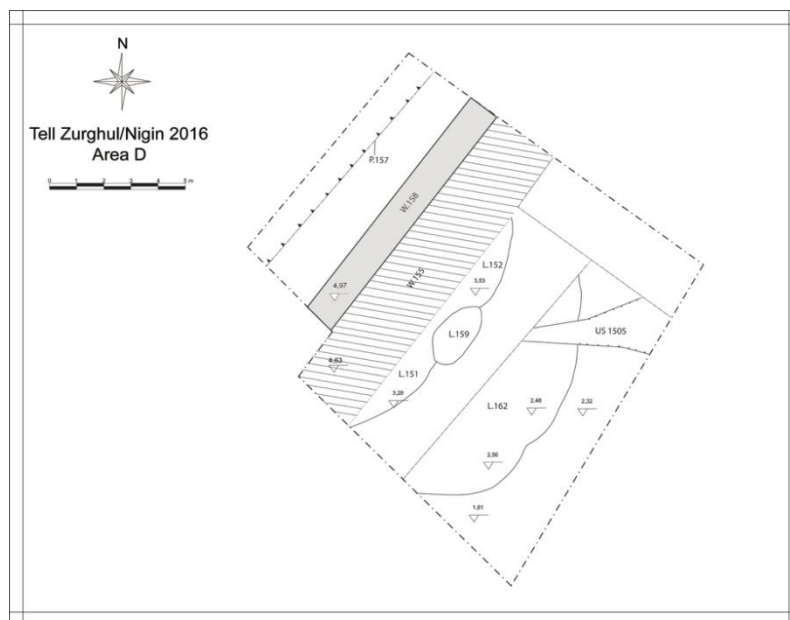


Fig. 6 - General plan of Area D, 2016.



Fig. 7a - The step trench of the Eastern side of the operation, 2016, from the South.



Fig. 7b - Detail of the section of the step trench, 2016, from the East.



Fig. 8 - Koldewey's sounding on the top of Mound A, 2016.



Fig. 9 - Area D, the terracing of mud (W.155) on the plaster floor (L.151+L.152), 2016, from the East.



Fig. 10 - Area D, second level of terracing, with platform L.162, 2016, from the South-West.



Fig. 11 - Area D, fragment of Gudea's inscribed brick (SG.16.D.50), 2016.

No.	Inventory No.	Shape/Type	Comparanda
1	SG.16.D.1529/3	bowl	McMahon 2006, 80, pl. 90, Type O-17:3
2	SG.16.D.1529/16	jar	McMahon 2006, 69-70, pl. 106, Type C-13b
3	SG.16.D.1529/18	collared jar	McMahon 2006, 76, pl. 115, Type C-20
4	SG.16.D.1507/1	jar	McMahon 2006, 72-73, pl. 110, Type C-16b



Fig. 12 - Area D, diagnostic pottery fragments from the plaster floor L.151+L.152, 2016.



Fig. 13 - Area D, fragment of clay plaque with frontal bull man (SG.16.D.24).

AN ASSESSMENT ON THE UBAID POTTERY FROM AREA B,
TELL ZURGHUL (SOUTHERN IRAQ)

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This paper presents preliminary results from the research on Ubaid pottery found during the 2015 and 2017 campaigns at Tell Zurghul. The report aims to provide an initial overview of the materials, assigned to the Ubaid 4 - Late Ubaid phase, on the basis of parallels with Southern Mesopotamia assemblages.

Keywords: Tell Zurghul; Area B; Ubaid pottery; black-on-buff pottery; Southern Mesopotamia

1. INTRODUCTION

The Italian Archaeological Expedition to Nigin (modern Tell Zurghul, southern Iraq) focused on excavations at Mound B over the course of two campaigns (2015 and 2017).¹

A long sequence dated to the 'Ubaid period was uncovered a few centimetres below the soil surface. Soil erosion and the deep sounding excavated by R. Koldewey in 1887² damaged the remains of upper phases in this location.³

Mound B is the only place where it was possible to recognize a settlement dated to the Middle Chalcolithic period;⁴ no Ubaid pottery sherds were found in the surveyed area⁵ nor on the site surface.

Thus far, the south-western portion of the mound was investigated in two main areas: Area B South, where the operations focused on the extension of the area and deepening of the sounding already explored in 2015, and Area B North, a small sounding excavated north of 2015 trench. At present, five occupational levels have been recovered, corresponding to three main architectural phases. The first one, immediately below the surface, was badly damaged. The second and the third one, exposed only on one side of the mound, both are composed by two occupational levels.⁶

All levels can be assigned to the Ubaid 4 - Late Ubaid phase based on the pottery assemblage.

¹ Nadali - Polcaro 2016, 80-90; Vacca in press; Nadali - Polcaro 2018.

² The trench had been excavated from the top of the mound down and through its eastern slope. See Koldewey 1887.

³ Some sherds dated to the Uruk and to the ED period have been found on the surface of the mound, as well as an inscribed brick also dated to the ED period (for the latter, see Verderame in this volume).

⁴ In order to avoid confusion, I have decided to use the term "Middle Chalcolithic" for defining the period around the 6th and the 5th Millennium BC in Mesopotamia and for distinguishing between a chronological and a cultural terminology for this time span. In Northern and Southern Mesopotamia, in fact, this period is frequently labelled as "Halaf" and "Ubaid period", referring to it with the terminology used to indicate the main archaeological cultures of the region. Chronologically, the Chalcolithic is a period between the Neolithic and the Early Bronze Age characterized by an extensive use of copper. The term is mainly used for the period around the 4th Millennium BC in Northern Mesopotamia (defined as "Late Chalcolithic"). I refer to the previous period as "Middle Chalcolithic", following i.e. Thomas 1992, 507-509. See also Vértessalji 1984, 17-18; tab. 4.

⁵ Zingarello in press. Casadei - Oselini in this volume.

⁶ See the contribution on Area B by Nadali in this volume, fig. 5.

The pottery recovered in 2015 and 2017 is not abundant,⁷ and it mainly consists of a high quantity of sherds (a very low percentage of complete vessels have been found). This might be a sign of a slow abandonment or a voluntary rebuilding of the structures rather than a sudden abandonment due to violent events. Moreover, no traces of violent destruction of the structures have been found; also the floors associated with the different levels (although not exposed in great extension) appear to have been willingly cleared out.⁸ The voluntary rebuilding of the structures is also exemplified by the recovery of the so-called “censers”, probably cultic vases deliberately left in place on the floors.⁹

The chance to have new material from Southern Mesopotamia dating to the Middle Chalcolithic (6th-5th Millennium BC ca.)¹⁰ will help to shed new light on this period, characterized by its diagnostic black painted pottery.

The analysis is still ongoing, and the results here presented will be improved with the materials from next campaigns at Tell Zurghul.

1.1. *Ubaid: a definition*

There is a terminological question behind the use of the term “Ubaid” in scholarly literature.¹¹ The term has been used to define at once a *ceramic style*, with its characteristic “black-on-buff” painted pottery; a *period*;¹² and a *culture*.¹³

Given the ongoing debate, in the present paper I use the term with reference to the entire pottery assemblage (both painted and unpainted) for defining an archaeological phase found in Area B at Tell Zurghul and dated to the Middle Chalcolithic period.

1.2. *The Ubaid pottery in Southern Mesopotamia: a regional perspective*

In the alluvial plain of Southern Mesopotamia, the Ubaid material culture assemblage first developed in the second half of 7th - early 6th Millennium BC (Ubaid 0-2).¹⁴ This is the earliest period of occupation of Southern Mesopotamia known thus far and it is only attested in the deep soundings excavated at Eridu¹⁵ and Tell Oueili.¹⁶ The Ubaid 2 material

⁷ Approximately 500 diagnostic sherds and 1600 body fragments have been found.

⁸ This is true for Area B South. A different situation obtained in Area B North (see Nadali in this volume).

⁹ The censers found during the 2017 campaign were found underneath a wall of a more recent phase. A group of four censers was also found during the 2015 campaign; see Nadali - Polcaro 2016; Vacca in press; Nadali in this volume.

¹⁰ For an overview of the absolute chronology of the period, see to Porada - Hansen - Dunham 1992, 92.

¹¹ For a more comprehensive summary, see Carter - Philip 2010, 2-4.

¹² The sequence of four phases initially formulated by J. Oates (Oates 1960) has been subsequently updated with the introduction of an “Ubaid 0” and another “Ubaid 5” phase (see also Calvet 1987b; Forest 1996; Oates 1976; 1983; 1987; 2004). This is a distinction into five archaeological phases. In addition, the term “Ubaid” has been used to define a chronological period (see note n. 4).

¹³ In some cases, the “black-on-buff” painted pottery has been found in association with other cultural features, as well as tripartite-plan buildings, the so-called “ophidian” figurines, headshaping modification and communal cemeteries. See Lorentz 2010; Oates 2010; Stein - Özbal 2007; Stein 2010.

¹⁴ Stein-Özbal 2007, 331; Stein 2010, 23-24.

¹⁵ Only the Temple Sounding yielded architectural remains and material dating from the Ubaid 1 period (Eridu XIX-XV; Lloyd - Safar 1948; Safar - Mustafa - Lloyd 1981). See also Huot 1989, 19.

¹⁶ Soundings Y 27, lev. 9-11 (Ubaid 1) and sounding X 36, lev. 10-12 (Ubaid 1) and lev. 13-19 (Ubaid 0). See Calvet 1983; 1987a. For extensive excavations related to these phases see Huot (ed.) 1991; 1996.

assemblage is also represented at the site of Qal'at Hajji Muhammad, 18 km southwest of Uruk/Warka,¹⁷ and on the basis of limited soundings carried out at the site of Ras al-Amiya (Kish area), which only took place for three weeks.¹⁸

The more recent phases characterized by Ubaid materials (Ubaid 3-5) are better represented.

The site of Tell Oueili (identified in 1967 and excavated from 1976 to 1989)¹⁹ is the only site at which extended excavations have been recently carried out.²⁰ These phases are also well represented at Eridu in the "Temple Sounding",²¹ in the "Hut Sounding",²² and in the Cemetery Area.²³

At a few other sites the prehistoric levels have been reached only in deep soundings or in small trenches.

The site of Tell al-'Ubaid was discovered in 1919 by H.R. Hall and excavated by Sir C.L. Woolley in 1923-24. A trench exposed part of the prehistoric settlement with hut-dwellings,²⁴ and two graves with black painted pottery were found in the Early Dynastic cemetery.²⁵

At Tell al-Muqayyar (Ur), a group of 46 graves with painted Ubaid pottery were found in Pit F.²⁶ Two groups of graves were recognized. The pottery from the two groups has been labelled respectively, Ur-Al 'Ubaid I and II. Ur-Al 'Ubaid II is contemporary to Eridu "Temple Sounding" lev. VII-VI. On the contrary, little material has been associated with Ur-Al 'Ubaid I graves. According to Oates, they certainly are not earlier than Eridu "Temple Sounding" lev. XII.²⁷

At Warka (Uruk), painted Ubaid materials appeared for the first time (1931-32) in the deep sounding in the Eanna precinct.²⁸ Lev. XIX-XVII of the Eanna deep sounding have been assigned to the Ubaid 4 phase on the basis of pottery material.²⁹ Lev. XVI-XIII represent an intermediate phase between the Late Ubaid phase and the Uruk period.³⁰ In

¹⁷ Ziegler 1953. See also Heinrich-Falkenstein 1938; Nöldeke - Heinrich - Lenzen 1939 and Nöldeke - Lenzen 1940. According to Oates 1960, Ubaid 2 materials corresponding to that distinguished at Qal'at Hajji Muhammad have been found in Eridu lev. XIV-XII of the Temple Sounding.

¹⁸ Stronach 1961.

¹⁹ The excavations were stopped by the outbreak of the first Gulf War in 1990.

²⁰ Huot (ed.) 1983; 1987; 1991; 1996.

²¹ Lev. XII-VIII (Ubaid 3) and lev. VII-VI (Ubaid 4). See Oates 1960.

²² In which 14 levels have been found that correspond to Temple Sounding lev. XII-VI (Ubaid 3-4). See Safar - Mustafa - Lloyd 1981, 247-270.

²³ Located in the southwest portion of Mound 1, the cemetery is contemporary to Temple Sounding lev. VI-VII. 193 graves have been excavated, probably one forth or one fifth of the whole cemetery (see Safar - Mustafa - Lloyd 1981, 115-141 and Vértesalji 1989).

²⁴ Hall - Woolley 1927, 129.

²⁵ Graves C.8 and C.9 (Hall - Woolley 1927, 156, 177).

²⁶ Woolley 1955, 7-22; 87-102. Limited Ubaid materials have been found also in the other deep soundings (at the bottom of Pit A, B, G, K, L, W, X and Pit Z; *ivi*, 54-80). See also Lloyd 1960, 25-27.

²⁷ Oates 1960, 40-41.

²⁸ Nineteen levels have been reached in the deep sounding. Lev. XX seems to be composed by virgin soil. For the excavation in the Eanna area see: Jordan 1932 and Nöldeke - Heinrich - Lenzen - Haller 1932.

²⁹ See Hermansen 1990 and Finkbeiner 2001. Their works are based on the re-analysis of pottery materials from the deep sounding first published by Haller (1932).

³⁰ For the analysis of pottery materials from lev. XVI see Sürenhagen 1986 and Finkbeiner 2001.

1972, other Ubaid painted materials were found in Sounding K XVII in the Area of the Anu Ziqqurat.³¹

The excavations in Trench IV at Tell Uqair (1940-41), exposed a complex of private dwellings and a street of the Late Ubaid phase.³² Moreover, a deep sounding between the Ubaid buildings and the street was excavated, reaching the virgin soil at a depth of 7 m beneath the surface. In the sounding, 7 levels (I-VII) have been encountered, with lev. I and II corresponding with the use levels of the dwellings.

As summarised, we have only a partial knowledge of the period for Southern Mesopotamia. The sites recalled above are the main sites of the region, and (except for Eridu and Tell Oueili) they are known primarily from deep soundings and trenches.

Many other sites with Ubaid painted pottery materials have been recorded during surveys (fig. 1)³³ but the evidences are very limited, and they do not improve our knowledge of the period, at least from the point of view of pottery material.

Therefore, we can agree with Huot that “the ‘Ubaid period in lower Mesopotamia is poorly documented”,³⁴ although this region was considered as the “heartland” where the black-on-buff painted pottery developed.³⁵ Without referring to a centre/periphery system, I agree with Stein that many regional groups using black painted pottery materials can be identified during the Middle Chalcolithic. Only detailed knowledge of every single region can help us in analysing the similarities and differences between regions, especially from the perspective of pottery assemblages. For this reason, I decided to focus on lower Mesopotamia. The sites located in different regions have, consequently, not been considered in this paper.

The presence and the recognition of the Ubaid pottery in the Lagaš region will be summarized in the following section.

³¹ For the excavations in Area K XVII see Heinrich 1937; the pottery has been analysed by Boehmer 1972 and Sørensen 1987. Other Ubaid fragments have been found in the K-L XII-XIII (Sørensen 1987) and in the survey carried out in the years 1982-84 (Finkbeiner 1991).

³² Lloyd - Safar 1943, 137-138, 149-150; Lloyd 1960.

³³ In the figure, I indicate the sites recognized during the surveys carried out in Southern and Central Mesopotamia from 1953 (the first scientific survey was realized by Jacobsen in the Girsu region; Jacobsen 1969) to present days (Al-Hamdani 2008; 2014). I have selected all the sites that have been recognized as “Ubaid” mostly on the basis of pottery sherds. In the case of the Wright’s survey in the Ur-Eridu region, I have avoided to cite all the sites dated by him on the basis of the recovery of clay sickles. Although they have been considered by Wright (1981) a diagnostic feature of an Ubaid settlement, they, as already pointed out by Adams, «were in common use during the Late Ubaid period as well as in Uruk (and to a rapidly declining extent, also later) times» so «the chronological position of these isolated occurrences cannot be exactly assigned» (Adams 1981, 68). After 2003, the Iraqi State Board of Antiquities conducted a series of new surveys in areas of southern Iraq never surveyed, adding about 1200 new archaeological sites to the *Atlas of the archaeological sites in Iraq* of 1975. For the developing of the updated version of the *Atlas* and the related digital database see Al-Hamdani 2014-2015. For the first version of the *Atlas* see Salman 1975.

³⁴ Huot 1989, 19.

³⁵ Stein 2010, 24.

1.3. *Ubaid pottery in the Lagaš region: the history of research*

A re-evaluation of the ancient works in the Lagaš region has been carried out by S.K. Huh. Her study offers an up-to-date overview of the main sites of the area (Tello, Lagaš, Tell Zurghul and Medain) from the Ubaid to the Old Babylonian period.³⁶

Other than Parrot's reconstruction of previous excavations at Tello (Girsu) provided in his volume,³⁷ the presence of the prehistoric phase at the site has been almost completely neglected in the former excavation campaigns by E. de Sarzec (1877-1900).³⁸ G. Cros (1903-1909) the first to publish some painted sherds of Ubaid tradition in his excavation report.³⁹ During excavations led by H. de Genouillac (1929-1931), some Ubaid material was recorded from the sounding at "tell de l'Est", the first stratified materials from Tello.⁴⁰ A. Parrot⁴¹ deepened the sounding at "tell de l'Est", recovering - from 6.80 to 7.40 m. below the surface - sherds of unpainted simple ware and suggesting an earlier phase for the settlement, but no more information can be obtained from earlier excavations at Tello. In recent years (2015 – present), the British Museum "Iraq Scheme" expedition, has resumed excavations at Tello under the supervision of S. Rey. In autumn 2017, during the conservation work on the Bridge of Girsu in the "tell de l'Est", some deposits of Ubaid materials were found.⁴² In addition to the materials from Tell Zurghul, these are the first stratified Ubaid materials from the region.

The expedition of Tell al-Hiba (Lagaš), led by D. Hansen, conducted six excavation campaigns (from 1968-1978 and in 1990), without reaching any archaeological level dated to the Ubaid period. The knowledge of the period at the site of al-Hiba is confined to a couple of painted sherds, and an Ubaid sickle cited by Hansen in his first season.⁴³

At Tell Zurghul, the presence of an Ubaid settlement is only partially reported in previous studies, also in the area of Mound B.⁴⁴

³⁶ Huh 2008. The resumed works in the Lagaš region, with the expeditions at al-Hiba/Lagaš (collaboration between University of Cambridge, University of Pennsylvania and Iraq State Board of Antiquities and Heritage), Tello/Girsu (British Museum) and Tell Zurghul/Nigin, will shed new light on the archaeology of the region. See Altaweel - McMahon 2018.

³⁷ Parrot 1948, 35-40.

³⁸ De Sarzec 1884-1912.

³⁹ Cros 1910-1914, 35, 231, 310.

⁴⁰ De Genouillac 1934, 2; Parrot 1948, 30-33. De Genouillac reported also that some Ubaid painted materials was recovered in the deep sounding in Tell K, at the centre of the settlement. In contrast, in his re-examination of previous excavations at Tello, Parrot realized that the Ubaid levels were never reached at Tell K. The earliest levels could correspond better to the Uruk levels in the Eanna sounding at Warka/Uruk (lev. IX-VIII. Parrot 1948, 42). This information was reported by Buchanan (1967, 532) and, afterward, by Huot (1987, 296).

⁴¹ Parrot 1948, 35.

⁴² The notice appeared on the British Museum website:

www.britishmuseum.org/about_us/museum_activity/middle_east/iraq_scheme/tello_-_ancient_girsu.aspx.

⁴³ Hansen 1970, 244. Also, during the survey of the site undertaken by E. Carter in 1984 (Carter 1989-1990), no sherds of Ubaid pottery were recognized. See also Huh 2008, 221.

⁴⁴ Koldewey 1887, 419; Huh 2008, 245-246, 252, 269, Abb. 60. It is interesting to emphasize the remark by Huh: "Da wahrscheinlich auch keine Ubaid-Keramik vorhanden war, werden auch die gebogenen Tonnägel in die Uruk-Zeit datiert werden müssen" (2008, 252).

The Middle Chalcolithic period seems to be under-represented also in previously surveyed areas within the Lagaš territory. In the survey of the Girsu region, Jacobsen reported only one site with Ubaid pottery on the surface.⁴⁵

2. POTTERY ASSEMBLAGE FROM TELL ZURGHUL, MOUND B

The analysis of the Ubaid pottery assemblage recovered during 2015-2017 excavations in Mound B has considered technological and morphological aspects. The classification has been formulated according to classes of fabrics and on the basis of open and closed shapes.

The diagnostic repertoire is composed for the most part by rim sherds. A very low percentage of complete vessels have been found in 2015 and 2017 campaigns at Tell Zurghul, Area B. The following description is, therefore, affected by this situation. I have classified the sherds mainly based on the shape of the lip, the rim and body profile. The characteristics of the bases have also been taken into account, when preserved.

Three macro-fabrics have been detected: Fine Ware (FW), Simple Ware (SW) and Coarse Ware (CW). Within the class SW, I have identified two different groups (*a* and *b*), each with two sub-groups (*a_1* and *a_2*, *b_1* and *b_2*).

Regarding the morphological analysis, the open shapes are all the shapes with the rim diameter greater than (or roughly equal to) every other diameter measured at the body. This group contains plates, bowls and cups. The closed shapes group includes a rim diameter smaller than the diameter measured at the body and it contains mostly jars and necked jars.

Based on the function of the vessels, I have classified the sherds into “table”, “storage” and “cooking ware”, although it is not always possible to determine the specific function that the vessels should have had according to their overall shape.

2.1. *Fabric analysis*

Regarding the analysis of fabrics, three macro-fabrics can be recognized on the basis of macroscopic observation. They have been labelled as follows:

Fine Ware (FW): very pure and compact fabric; no visible mineral and chaff inclusions; medium-high firing temperature (metallic sound); whitish-pale yellowish fabric colour (generally from 2.5Y 8/3 to 5Y 8/2 according to the Munsell Soil Colour Chart); thickness from 0.1 to 0.3 cm (defined as “egg-shell”); percentage of frequency: 1%.

Simple – mineral tempered – Ware (SW): compact matrix; very small, pointed, mineral inclusions of grey, black, white and reddish colour, medium-high frequency, very low frequency of chaff inclusions; medium-high firing temperature; ranging from greenish-yellowish to pinkish-reddish fabric colour; thickness from 0.3 to more than 1 cm.

I have recognized two different groups (*a* and *b*) on the basis of the colour of the fabric. Two main sub-groups can be identified within this group: *a_1*, *a_2* and *b_1*, *b_2*. The group *a* is characterized by a greyish-greenish, pale yellow colour (from 2.5Y 5/2 to 7.5Y 5/3). The main visible inclusions include small white and reddish mineral inclusions of small (point) dimensions. The sub-group *a_2* shows a more consistent frequency of reddish mineral inclusions. The group *b* is characterized by a pale yellow-pinkish colour (from

⁴⁵ N. 40 – Krainisiyat, near the modern city of Al-Rifai (Jacobsen 1969, 107).

10YR 5/3 to 2.5YR 5/4) with whitish-greyish mineral inclusions of small dimensions. The sub-group *b_2* shows a more visible and consistent frequency of white mineral inclusions. This distinction, mainly based on the colour of the fabric and the inclusions, is probably due to different ranges of temperatures reached during the firing processes; or it could be the result of different clay sources. From a preliminary analysis, these two groups and sub-groups seem to be (morphologically) used for the same range of forms; petrographic and archaeometric analyses that will be conducted in the future could be relevant to solve this question. Percentage of frequency: 95%.

Coarse – chaff tempered – Ware (CW): coarse ware; high frequency of chaff inclusions and low-medium frequency of mineral inclusions; low firing temperature; colour ranging from black (core) to brown-reddish (surfaces). In general, the colour of the fabric is more varied, ranging from 5YR 4/2 to 7.5YR 7/4; thickness larger than 0.8 cm. Percentage of frequency: 4%.

2.2. Morphological analysis

The Ubaid repertoire collected in the Mound B excavations is characterized by a very high percentage of open shapes.⁴⁶ The main open shapes are:

plates - open shapes with an everted rim and a flat or slightly round base; the plates present a great difference in value between rim diameter and height;

bowls - open shapes with an everted rim and a flat or slightly round base; the bowls have a lower difference ratio between rim diameter and height;⁴⁷

cups - open shapes characterized by a rim diameter roughly similar to the maximum one. Cups with straight-sided walls have a diameter generally ranging from 8 to 11 cm and the height greater than the maximum diameter. Cups with globular, flattened (sometimes carinated) walls have a diameter generally ranging from 14 to 18 cm.⁴⁸

The closed shapes are mainly composed by:

jars - neckless jars with globular body generally rounded base;

necked jars - characterized by the presence of an everted or vertical neck.

Other forms (like basins, trays and spouted vessels) are present, although less common.

According to this distinction, the repertoire is mainly composed by:

- Plates with plain (fig. 2:1-2), flattened (fig. 2:3), outwardly (fig. 2:4) or inwardly bevelled lip (fig. 2:5-8); simple or slightly incurving rim; simple or carinated walls.

⁴⁶ 65% are open shapes while 14% are closed shapes. The remaining 21% is characterized mostly by decorated wall fragments, and to a lesser extent by spouts, handles and special pottery shapes like censers.

⁴⁷ This distinction could be relevant to distinguish shapes functionally used to contain only solid goods (plates) and shapes that can be used to contain both solid and liquid goods (bowls; Cocchi Genick 2012). Unfortunately, due to the high fragmentation of the sherds, it is not always possible to reconstruct the height of the vessels and to distinguish between one form or another. Furthermore, the distinctive features (plain, thinned or flat rim and simple or slightly-carinated body) are somewhat the same for both shapes (plates and bowls).

⁴⁸ Based on comparisons, it is possible to assume that this shape mostly presents a ring base.

- Plates with thickened-inside rim, round (fig. 2:9) or flattened lip (fig. 2:10); sometimes with carinated walls.
- Plates with thickened-outside rim and flattened lip (fig. 2:11).
- Small bowls with plain or thinned lip and straight or flared rim; hemispherical (fig. 3:1-2) or conical walls (fig. 3:3-4).
- Bowls (larger than the ones in the previous group) with plain or thinned lip, straight or flared rim and hemispherical (fig. 3:5-6) or conical walls (fig. 3:7-8).
- Bowls with thickened-inside, outwardly bevelled lip and straight walls (fig. 3:9-10).
- Bowls with thickened-inside lip, slightly incurving rim and simple or carinated walls (fig. 3:11-12).
- Bowls with a thickened-outside rim (fig. 3:13-14).
- Bowls with everted and flattened rim (the so-called “assiette à marli” identified at Tell Oueili;⁴⁹ fig. 4:1-4).
- Bell-shaped bowls with thinned lip and everted rim (fig. 4:5-6).
- Deep bowls with externally pinched lip (fig. 4:7-9). Two of them (fig. 4:7-8) have a large diameter, thick walls and a very deep vat.
- Large, hemispherical bowl with thick walls and a protrusion on the inner rim (fig. 4:10).
- Cups with plain or thinned lip, vertical (fig. 5:1-2) or inverted rim (fig. 5:3-5) and straight (fig. 5:6-8) or incurved walls (fig. 5:9-11). One of them, for which the base has been preserved, have a flat base (SG.17.BS.627/11; fig. 5:5).
- Cups with thinned lip and flattened, carinated walls (fig. 5:12-15).
- Cups with thinned lip and “S-shaped” inverted rim (fig. 5:16-18).
- Cups with plain or thinned lip, slightly inverted rim and globular, deep walls (fig. 6:1-4).
- Cups with thinned lip, slightly inverted rim and flattened walls with a pronounced carination (fig. 6:5-6).
- Cup with thinned lip, “S-shaped” inverted rim and deep walls. (fig. 6:7).
- Cup with plain rim and exterior ridge below the rim (fig. 6:8).⁵⁰
- “Bell-shaped beakers” with thinned lip, everted rim and “bell-shaped” walls (fig. 6:9-14). The round base shown in fig. 9:7 is probably part of a “bell-shaped beaker”.
- Hole-mouth jars (fig. 7:1-5). The lip is plain or inwardly bevelled. Some specimens have applied knobs (fig. 7:2-3). One of them is a spouted vessel (with the trace of a spout no longer preserved; fig. 7:4).
- Neckless jars with flat lip and thickened-outside rim (fig. 7:6-7).
- Jar with plain lip and short, vertical rim. (fig. 8:1).

⁴⁹ Lebeau 1983a, 37, pl. III, V,1; Lebeau 1983b, 83, pl. III, V,1.

⁵⁰ The shape is defined by Hermansen as “basin” (Hermansen 1990, 9; Ty. 14; fig. 6:44). In contrast to this latter, the specimen from Tell Zurghul is unpainted.

- Jar with plain lip and short, vertical neck. Gradual transition between the body and the neck (fig. 8:2).
- Necked jars with plain or thinned lip and everted, distinct neck (fig. 8:3-8).
- Basins with incurving body. One specimen with inwardly bevelled lip (fig. 8:9). Another one with thinned lip and a “S-shaped” rim (fig. 8:10).
- Vats with hammered rim (fig. 9:1).
- Flat bases in coarse ware (CW). Probably part of jars or trays (storage or cooking ware). Unfortunately, no rim sherds belonging to these vessels have been found. (fig. 9:2-5).
- Round bases. SG.17.BS.703/9 is in SW with traces of fire on the outer surface and it probably belongs to a cooking pot (fig. 9:6). SG.17.BN.706/14 belongs to a “bell-shaped beaker” (fig. 9:7).
- Ring bases. Probably belonging to cups. The ring is applied in a second stage (fig. 9:8-11).
- Spouts (fig. 9:12-13) and a pouring lip (fig. 9:14) of spouted vessels.

There is a wide, internal variability of shapes due to a predominant handmade production. If we consider the ideal type as the closest representation of the model that the potter might have followed during the production of every single vessel, it is interesting to notice that the plates and the bowls follow the same outline. They share the same typological characteristics of the rim, so that they have probably been considered as the same “thing” but used for different purposes, according to their depth.

To this point, no bowls and plates with wavy combed incisions on the inner surface, attested at Tell Oueili in levels assigned to the Ubaid 4 period,⁵¹ have been found.

The bowls with everted and flattened rim (“assiette à marli”), diagnostic of the Ubaid 4 phase, have been found only in the sounding of Area B North. This may be due to the peculiar function of the area recovered in the sounding, that seems to be contemporary with the lowest phase reached in Area B South.⁵²

2.3. *Functional categories*

The distinction into functional categories is a logical distinction based on the shape of the vessels and useful for their morphological categorization.

I defined “table ware” all the vessels that could have been used for eating/drinking (plates, bowls, and cups); among the open shapes, the trays in CW were probably used for cooking or baking.

Among the closed shapes, the necked jars (that often present a painted decoration on the inner and outer rim) could also be included into the “table ware” group, because they have probably been used to serve some liquids during meals.

The jars are more uncertain, because they can be used to store goods and/or to prepare meals. The jars in CW could have been used for this latter purpose or to contain some dried

⁵¹ Lebeau 1983a, 37, pl. XIV; Lebeau 1983b, 83, pl. XIV.

⁵² Nadali in this volume.

goods; the jars in SW (two of them also preserve traces of fire on the surfaces, *i.e.* of SG.17.BN.703/9 or SG.17.BN.719/2, respectively fig. 9:6 and fig. 8:2) might also have been used for cooking purposes or as containers for semi-solid goods or liquids.

From a direct observation, it is virtually impossible to recognize a class of fabric characteristic of storage ware. Vessels recognized on the basis of their overall shape appear to have the same compact fabric, with a medium/high frequency of small mineral inclusions and a somewhat higher percentage of small voids. Possibly, the same SW fabric was used for storage forms, by increasing the thickness of the walls. Thin walls (ranging from 0.3 to 0.7 cm) of SW might be associated with open shapes; based on diagnostic sherds, thick walls (more than 0.7 cm) of SW might be associated with closed forms and with very wide (probably communal) plates and bowls.

In the analysis of the Ubaid pottery materials, the focus on the painted assemblage (and, therefore, on the so-called “table ware”) has created a vacuum of knowledge on the categories of the “cooking” and “storage ware”.

It is important to underline that the distinction into functional categories applied so far does not correspond to the analyses of the “real use” of these materials, analyses that can be carried out through chemical studies and that focus on the shape of the vessel only partially.

Fig.	O/C	Shape	Fabric class	Fabric group	Fabric colour	Function	Ø
2.1	O	Plate	SW	a_1	2.5Y 7/4	Table	18
2.2	O	Plate	SW	a_1	5Y 8/3	Table	18
2.3	O	Plate	SW	a_1	2.5Y 7/3	Table	17
2.4	O	Plate	SW	b_1	10YR 7/2	Table	18
2.5	O	Plate	SW	b_1	10YR 7/3	Table	24
2.6	O	Plate	SW	b_1	10YR 5/3	Table	24
2.7	O	Plate	SW	b_1	10YR 7/4	Table	24
2.8	O	Plate	SW	b_1	10YR 7/4	Table	28
2.9	O	Plate	SW	b_1	7.5YR 7/2	Table	23
2.10	O	Plate	SW	a_1	5Y 7/4	Table	40
2.11	O	Plate	SW	a_1	2.5Y 7/3	Table	25
3.1	O	Bowl	SW	b_1	5YR 8/3	Table	12
3.2	O	Bowl	SW	b_1	7.5YR 6/3	Table	14
3.3	O	Bowl	SW	a_1	2.5Y 8/2	Table	9
3.4	O	Bowl	SW	b_1	10YR 8/4	Table	15
3.5	O	Bowl	SW	b_1	7.5YR 6/4	Table	17
3.6	O	Bowl	SW	b_1	10YR 7/3	Table	17
3.7	O	Bowl	SW	a_1	2.5Y 8/4	Table	14
3.8	O	Bowl	SW	b_1	5YR 6/4	Table	19
3.9	O	Bowl	SW	a_1	2.5Y 8/3	Table	18
3.10	O	Bowl	SW	b_1	5YR 6/4	Table	19
3.11	O	Bowl	SW	a_1	2.5Y 7/2	Table	28
3.12	O	Bowl	SW	a_1	2.5Y 8/4	Table	27
3.13	O	Bowl	SW	a_1	5Y 8/2	Table	16
3.14	O	Bowl	SW	b_2	5YR 6/4	Table	18
4.1	O	Bowl	SW	a_1	5Y 8/3	Table	24
4.2	O	Bowl	SW	a_1	5Y 8/2	Table	28
4.3	O	Bowl	SW	b_1	5YR 6/4	Table	32
4.4	O	Bowl	SW	a_1	2.5Y 8/4	Table	30
4.5	O	Bowl	SW	a_1	2.5Y 7/4	Table	17
4.6	O	Bowl	SW	a_1	2.5Y 7/3	Table	20
4.7	O	Bowl	SW	a_1	5Y 8/3	Table	25
4.8	O	Bowl	SW	a_1	2.5Y 8/2	Table	24
4.9	O	Bowl	SW	a_1	5Y 7/3	Table	18
4.10	O	Bowl	SW	a_1	2.5Y 7/2	Table	28
5.1	O	Cup	SW	a_1	2.5Y 7/3	Table	9
5.2	O	Cup	SW	b_1	5YR 7/3	Table	8
5.3	O	Cup	SW	b_1	7.5YR 7/2	Table	8
5.4	O	Cup	FW	-	5Y 8/2	Table	9
5.5	O	Cup	SW	a_1	5Y 8/2	Table	14
5.6	O	Cup	SW	a_1	5Y 8/2	Table	11
5.7	O	Cup	SW	a_1	2.5Y 8/2	Table	11
5.8	O	Cup	SW	b_1	7.5YR 7/3	Table	11
5.9	O	Cup	SW	a_1	5Y 7/4	Table	10
5.10	O	Cup	FW	-	2.5Y 8/3	Table	10
5.11	O	Cup	SW	b_1	2.5YR 7/4	Table	12

5.12	O	Cup	SW	a_1	5Y 7/4	Table	8	8.1	C	Jar	SW	-	-	Storage	nd
5.13	O	Cup	SW	a_1	5Y 7/2	Table	9	8.2	C	Jar	SW	b_1	10YR 7/3	Cooking	22
5.14	O	Cup	SW	b_1	10YR 7/3	Table	12	8.3	C	Jar	SW	a_1	5Y 7/4	Storage	16
5.15	O	Cup	SW	a_1	2.5Y 8/3	Table	12	8.4	C	Jar	SW	b_1	10YR 7/4	Storage	13
5.16	O	Cup	SW	a_1	2.5Y 8/4	Table	8	8.5	C	Jar	SW	b_1	2.5YR 5/6	Storage	15
5.17	O	Cup	SW	a_1	2.5Y 7/2	Table	nd	8.6	C	Jar	SW	a_1	5Y 8/4	Storage	20
5.18	O	Cup	SW	a_1	5Y 8/4	Table	8	8.7	C	Jar	SW	a_1	5Y 8/3	Table	25
6.1	O	Cup	SW	a_1	5Y 7/3	Table	14	8.8	C	Jar	SW	a_1	2.5Y 8/4	Storage	18
6.2	O	Cup	SW	a_1	2.5Y 8/2	Table	16	8.9	C	Basin	SW	a_1	2.5Y 7/3	Storage	30
6.3	O	Cup	SW	a_1	5Y 8/2	Table	15	9.1	O	Vat	SW	a_1	2.5Y 7/4	Storage	27
6.4	O	Cup	SW	a_1	5Y 2.5/1	Table	18	9.2	-	Base	CW	-	7.5YR 6/4	-	-
6.5	O	Cup	SW	b_1	10YR 7/3	Table	15	9.3	-	Base	CW	-	7.5YR 7/3	-	-
6.6	O	Cup	SW	a_1	5Y 2.5/1	Table	18	9.4	-	Base	CW	-	5YR 6/3	-	-
6.7	O	Cup	SW	b_1	2.5YR 7/4	Table	14	9.5	-	Base	CW	-	2.5Y 6/2	-	-
6.8	C	Cup	SW	b_1	10YR 8/3	Storage	15	9.6	-	Base	SW	b_1	7.5YR 6/4	-	-
6.9	O	Cup	SW	a_1	5Y 7/3	Table	9	9.7	-	Base	SW	b_1	10YR 7/3	Table	-
7.1	C	Jar	SW	b_1	7.5YR 7/6	Cooking	19	9.8	-	Base	SW	b_1	7.5YR 7/3	Table	-
7.2	C	Jar	SW	b_1	5YR 7/4	Storage	18	9.9	-	Base	SW	a_1	5Y 8/2	Table	-
7.3	C	Jar	CW	-	7.5YR 4/2	Cooking	25	9.10	-	Base	SW	b_1	10YR 6/3	Table	-
7.4	C	Spout vessel	SW	a_1	2.5Y 7/3	Table	nd	9.11	-	Base	SW	b_1	10YR 7/4	Table	-
7.5	C	Jar	CW	-	7.5YR 6/2	Cooking	25	9.12	-	Spout	SW	b_1	10YR 7/3	Other	-
7.6	C	Jar	SW	b_1	2.5YR 6/4	Storage	19	9.13	-	Spout	SW	b_1	5YR 6/4	Other	-
7.7	C	Jar	SW	b_1	2.5YR 5/4	Storage	28	9.14	-	Pouring lip	SW	b_1	10YR 7/3	Other	-

Tab. 1 - Summary table with the recognition of shapes, fabric classes and groups, fabric colours, functional categories and approximate diameters of published sherds.

2.4. The decorative motifs

Ubaid pottery has always been recognized based on the distinctive black painted decoration. This feature represents only a small amount of the repertoire, while the rest is characterized by unpainted pottery. On the contrary, in most of the publications the painted production has been over-estimated, providing a partial and distorted vision of the pottery production of the period. The first site in which much attention was paid to the unpainted pottery is Tell Oueili. According to Huot, unpainted pottery constitutes 88% of pottery materials found in Ubaid 4 levels.⁵³ Also at Eridu, in the latest encountered phase of the period (Temple VI), “the proportion of painted sherds to unpainted was not high (76:579)”.⁵⁴

⁵³ Huot 1987, 296.

⁵⁴ Safar - Mustafa - Lloyd 1981, 160. The percentage of painted pottery is the 13% of the total.

In the case of Tell Zurghul, based on a sample of 490 diagnostic, selected sherds, 190 are painted (38%). It should be considered that this number includes also 84 fragments of painted walls selected just because they present a painted decoration. The total number of selected and painted sherds whose shape is recognizable amounts to 106 fragments (26% of the total).⁵⁵

The painted decorations are almost entirely geometrical, mainly consisting of horizontal bands, diagonal or vertical lines and geometrical motifs as “arrow”, “herringbone”, “net/grid” and “lozenge” motifs, as well as waves and wavy lines and “zig zag” lines. Only some fragments have a decoration that cannot be traced back to the categories mentioned above.⁵⁶

Looking at bowls with everted and flattened rim (“assiette à marli”) and with flattened and thickened-inside lip, we usually find a horizontal band on the inner rim and, less frequently, a band on the outer rim. In some cases (i.e. fig. 4:4) these shapes also have a decoration on the lip, composed of diagonal lines.⁵⁷

A single bowl with plain lip (fig. 3:2) has a “net/grid” decorative painted motif on the inner surface. This type of decoration, associated with a plain bowl, has also been found at Eridu (Cemetery area)⁵⁸, dated to the Late Ubaid phase (Ubaid 4).⁵⁹

Cups present frequently a decoration on the outer surface of the vessel. It can be composed of a horizontal band on the outer rim and two or more horizontal bands on the body, at the point of maximum diameter. In many cases, cups also have a thin, horizontal, painted line on the inner rim, and they also present different decorative motifs on the outer walls: the “arrow” motif (fig. 6:6), the “herringbone” motif (fig. 5:13-14), waves and decorative patterns of wavy lines (fig. 5:18).

The necked jars sometimes have a thin, horizontal painted band on the inner and outer rim (fig. 8:3, 6-8).

The two basins are decorated: the first with a painted band on the inner and outer rim (fig. 8:9), the second with some vertical lines on the inner surface of the vessel and a horizontal and diagonal band on the outer surface (fig. 8:10).

A neckless jar with a slightly thickened rim (fig. 7:7) presents two wide black bands on the outer surface.

3. CONCLUSIONS

The present analysis is part of an ongoing work on pottery materials from Tell Zurghul, Area B. Excavations, conducted in 2015 and 2017, revealed a sequence of superimposed phases and levels dated the Middle Chalcolithic. Based on pottery materials, the three main archaeological phases so far discovered can be assigned to the Ubaid 4 - Late Ubaid phase. For purposes of relative chronology, the pottery assemblage finds its best comparisons in

⁵⁵ A number that closely parallels the situation at Tell Oueili.

⁵⁶ For some of them, see: fig. 3:13; fig. 4:5-6; fig. 5:6, 12, 17, 18.

⁵⁷ There are other specimens (SG.17.BN.703/2 and SG.17.BN.706/8) with the same decorative pattern not selected for the present work.

⁵⁸ Safar - Mustafa - Lloyd 1981, fig. 76:4-6; fig. 77:1-3.

⁵⁹ The Cemetery area at Eridu is contemporary to Temple VII-VI.

Tell Oueili, Ubaid 4 phase; in Uruk/Warka, “Eanna Sounding” lev. XIX-XVII and in Eridu, Cemetery Area, “Temple Sounding” lev. VI-VII and “Hut Sounding” lev. VIII-I.⁶⁰

The paucity of data from the Lagaš region emphasises the importance of the discoveries at the site of Tell Zurghul, Area B. For the first time, it is possible to carry out extended excavations of the Ubaid phases in this area. Moreover, before the excavations at Tell Zurghul, a large exposure of the Ubaid stratum was achieved only at Eridu in the 40's and at Tell Oueili in the 80's.

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⁶⁰ See § 1.2.

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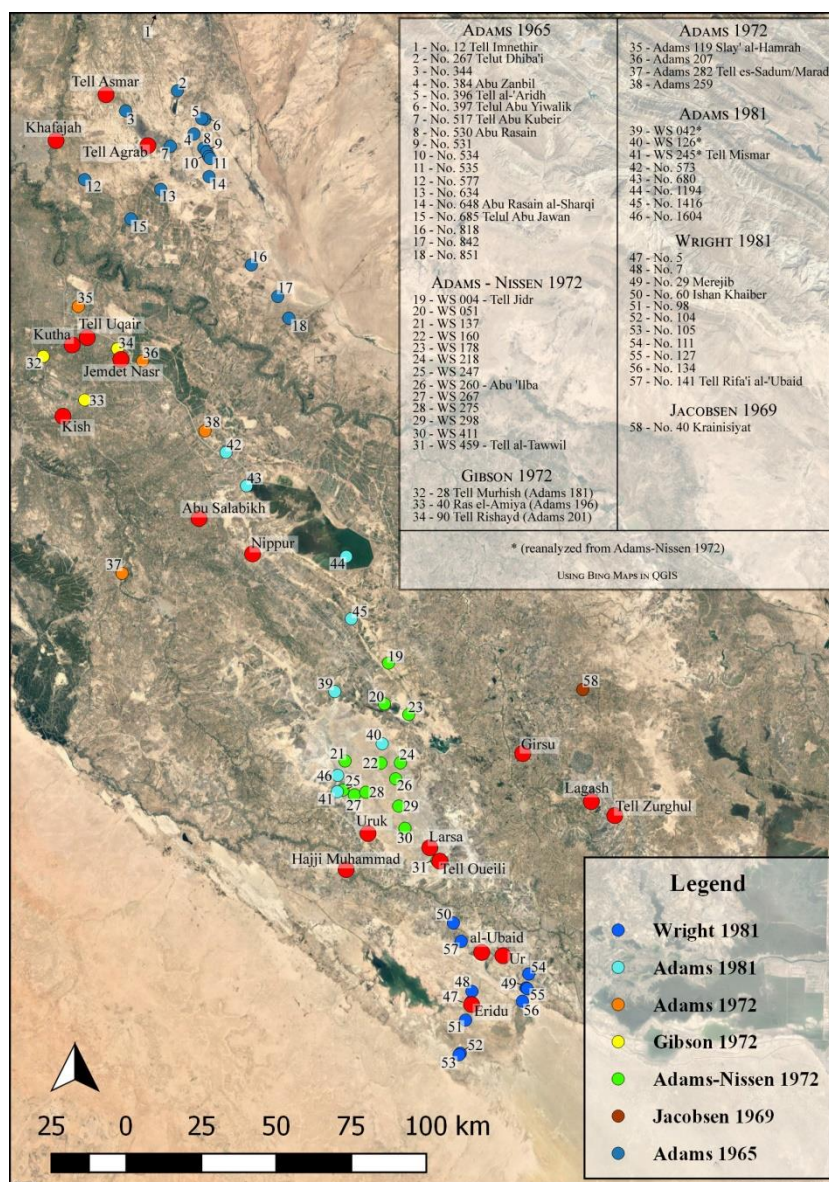


Fig. 1 - Map showing the main sites of the region (red dots). Coloured dots represent Ubaid sites recovered during the surveys according to the presence of the “black-on-buff” painted pottery. Map realized by the author after Adams 1965; 1972; 1981; Adams - Nissen 1972; Gibson 1972; Jacobsen 1969; Wright 1981.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BS.627/10	Plate with plain rim	Safar <i>et al.</i> 1981, fig. 76:6; Boehmer 1972, pl. 44:13w-14
2	SG.17.BS.620/8	Plate with plain rim	
3	SG.17.BS.629/3	Plate with flattened rim	
4	SG.17.BN.715/13	Plate with outwardly bevelled rim	
5	SG.17.BN.705/11	Plate with inwardly bevelled rim	Hermansen 1990, fig. 2:12; Safar <i>et al.</i> 1981, fig. 75:1; Lebeau 1983b, pl. II:3-4
6	SG.17.BN.706/40	Plate with inwardly bevelled rim	
7	SG.15.B.511/5	Plate with inwardly bevelled rim	
8	SG.17.BN.719/1	Plate with inwardly bevelled rim	
9	SG.17.BN.706/3	Plate with thickened-inside rim	Hermansen 1990, fig. 1:8; Boehmer 1972, pl. 44:5-6; pl. 47:82-83; Safar <i>et al.</i> 1981, fig. 76:4
10	SG.15.B.511/14	Plate with thickened-inside rim	
11	SG.17.BN.702/6	Plate with thickened-outside rim	

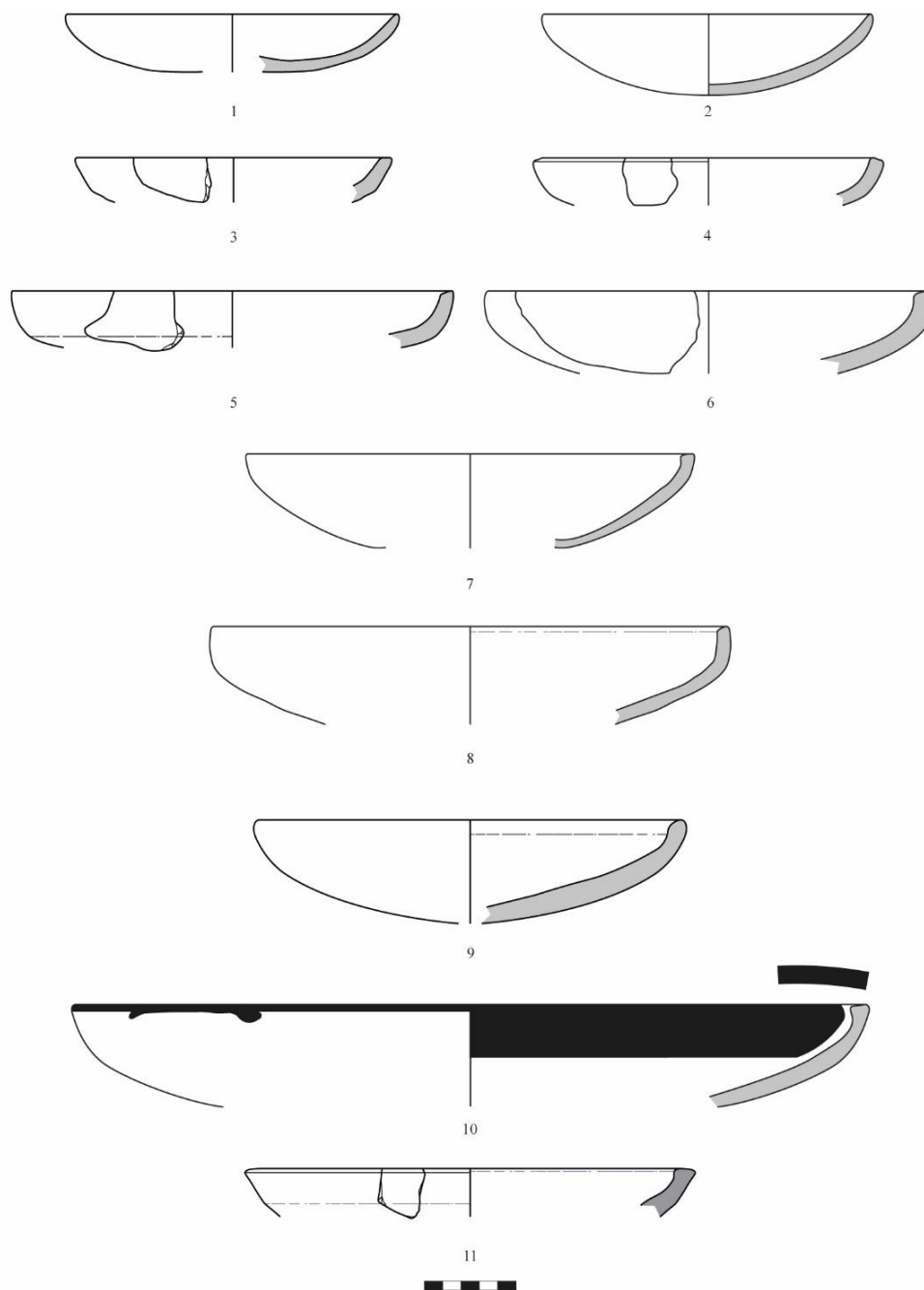


Fig. 2 - Plates.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BN.715/10	Small, hemispherical bowl	Lebeau 1983b, pl. I:2-4; pl. I:1, 6
2	SG.17.BN.706/1	Small, hemispherical bowl	
3	SG.17.BS.602/5	Small, conical bowl	
4	SG.17.BN.714/1	Small, conical bowl	
5	SG.17.BN.700/12	Hemispherical bowl	Lebeau 1983b, pl. I:1-6
6	SG.17.BS.627/18	Hemispherical bowl	
7	SG.15.B.518/6	Conical bowl	
8	SG.17.BS.W264/3	Conical bowl	
9	SG.15.B.510/3	Bowl with outwardly bevelled rim	
10	SG.17.BN.707/5	Bowl with outwardly bevelled rim	
11	SG.17.BS.625/4	Bowl with thickened-inside rim	Lebeau 1983b, pl. II:4; Hermansen 1990, fig. 2:11
12	SG.17.BS.627/14	Bowl with thickened-inside rim	
13	SG.17.BN.709/6	Bowl with thickened-outside rim	Lebeau 1983b, pl. IV:1; Safar <i>et al.</i> 1981, fig. 76:2
14	SG.17.BE.804/3	Bowl with thickened-outside rim	

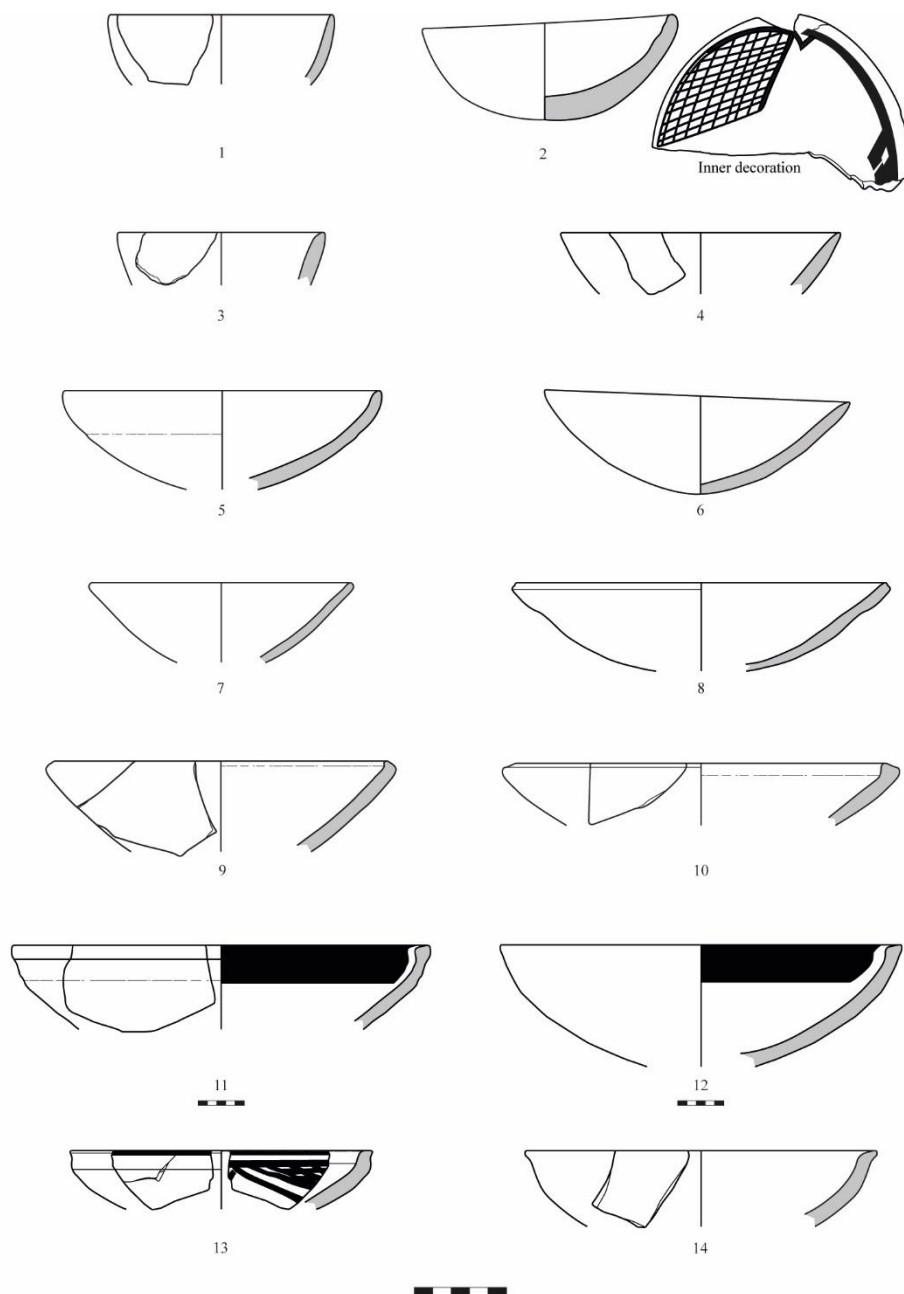


Fig. 3 - Bowls.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BN.706/26	Bowl with everted and flattened rim ("assiette à marli")	Lebeau 1983b, pl. III:1-10; Safar <i>et al.</i> 1981, fig. 75:2-9; fig. 77:4-6
2	SG.17.BN.703/1	Bowl with everted and flattened rim ("assiette à marli")	
3	SG.17.BN.703/5	Bowl with everted and flattened rim ("assiette à marli")	
4	SG.17.BN.706/7	Bowl with everted and flattened rim ("assiette à marli")	
5	SG.15.B.515/3	Bell-shaped bowl with everted rim	
6	SG.15.B.519/4	Bell-shaped bowl with everted rim	
7	SG.15.B.515/5	Deep bowl	Hermansen 1990, fig. 1:5
8	SG.15.B.518/9	Deep bowl	
9	SG.17.BN.701/5	Deep bowl	Boehmer 1972, pl. 53:340
10	SG.17.BN.705/18	Bowl with protrusion on the inner rim	Lebeau 1983b, pl. XI:6; Calvet 1991, pl. XVII:177, 179

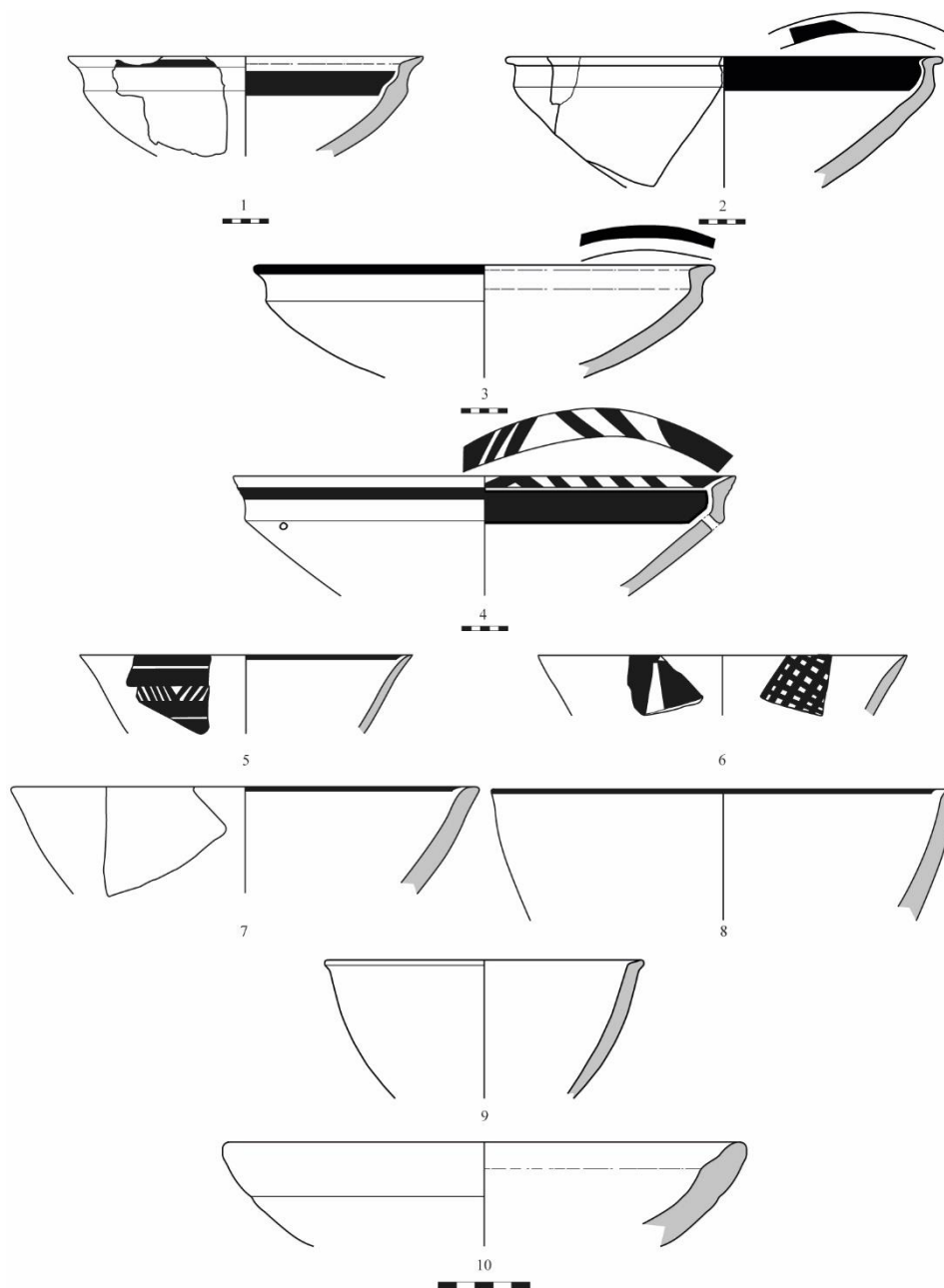


Fig. 4 - Bowls.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BN.718/15	Straight cup	Hermansen 1990, fig. 7:60-71; Safar <i>et al.</i> 1981, fig. 80:4
2	SG.17.BS.633/2	Straight cup	
3	SG.17.BS.607/2	Straight cup	
4	SG.17.BS.627/3	Straight cup	
5	SG.17.BS.627/11	Straight cup	
6	SG.17.BN.707/1	Straight cup with inverted rim	Lebeau 1983b, pl. X:1-8; Safar <i>et al.</i> 1981, fig. 78:9, 11, 13; Boehmer 1972, pl. 46:52
7	SG.15.B.512/4	Straight cup with inverted rim	
8	SG.17.BN.718/5	Straight cup with inverted rim	
9	SG.15.B.511/11	Small globular cup	Lebeau 1983b, pl. VII:1-3; pl. VIII:1-5; Safar <i>et al.</i> 1981, fig. 78:2-8; Hermansen 1990, fig. 6: 49, 51; Calvet 1991, pl. XVI:162, 164, 166
10	SG.15.B.510/6	Small globular cup	
11	SG.15.B.501/10	Small globular cup	
12	SG.15.B.512/6	Small carinated cup	
13	SG.17.BN.718/1	Small carinated cup	
14	SG.15.B.519/2	Small carinated cup	
15	SG.15.B.517/1	Small carinated cup	
16	SG.15.B.518/8	Small cup with “S-shaped” rim	Boehmer 1972, pl. 46:53; Lebeau 1983b, pl. XI:1
17	SG.17.BN.702/1	Small cup with “S-shaped” rim	
18	SG.15.B.501/8	Small cup with “S-shaped” rim	

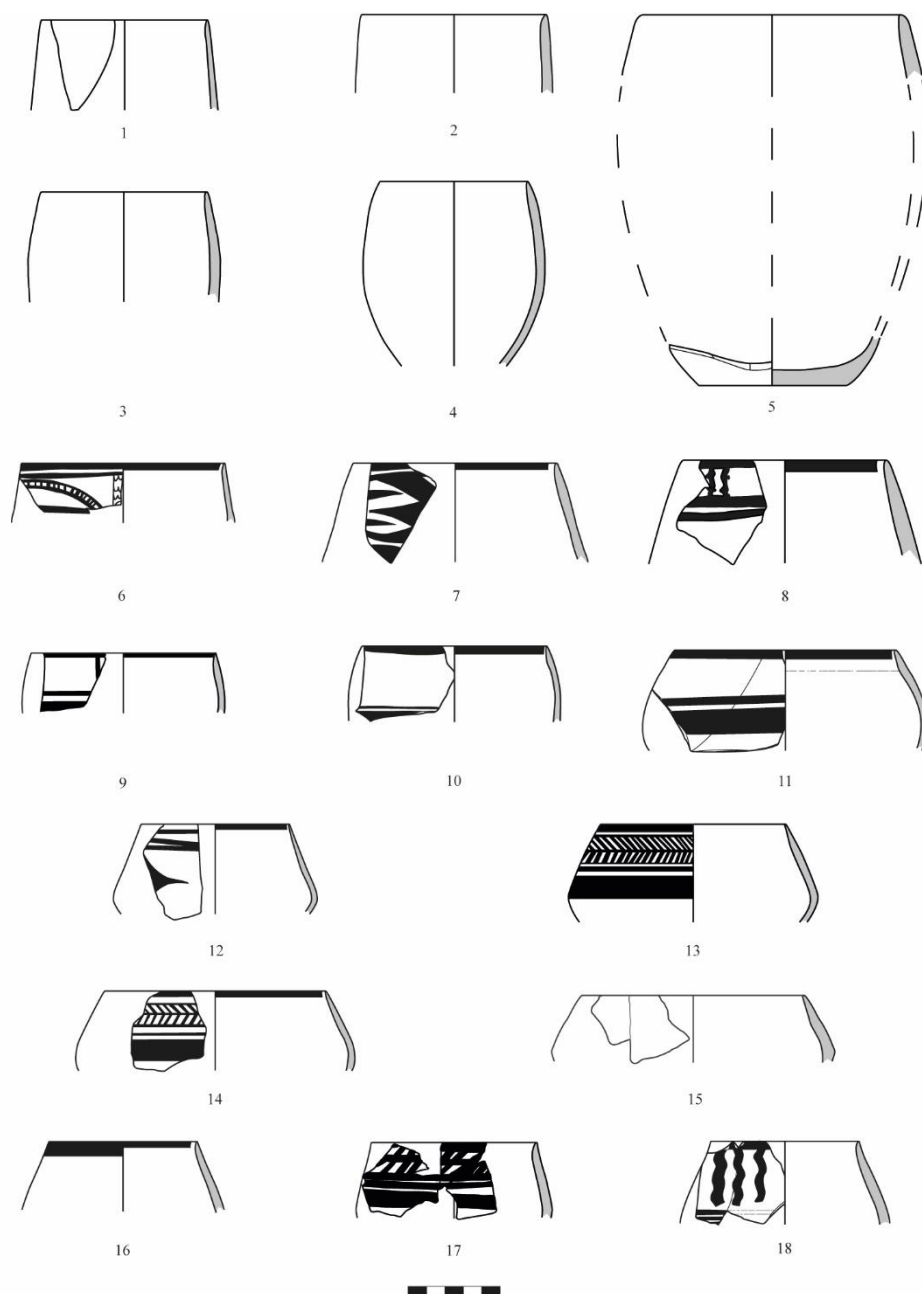


Fig. 5 - Cups.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.15.B.518/4	Globular cup	Lebeau 1983b, pl. VII:1-3; pl. VIII:1-5; Safar et al. 1981, fig. 78:2-8; Hermansen 1990, fig. 6:49, 51; Calvet 1991, pl. XVI:162, 164, 166
2	SG.15.B.518/3	Globular cup	
3	SG.17.BN.707/2	Globular cup	
4	SG.17.BN.705/2	Globular cup	
5	SG.17.BN.706/17	Globular, carinated cup	
6	SG.17.BN.705/1	Globular, carinated cup	
7	SG.15.B.501/9	Globular cup with “S-shaped” rim	
8	SG.17.BS.627/13	Cup with ridge	Boehmer 1972, pl. 58:659; Hermansen 1990, fig. 6:44
9	SG.17.BN.702/3	“Bell-shaped beaker”	Lebeau 1983b, pl. X:1-8; Safar et al. 1981, fig. 78:9, 11, 13
10	SG.17.BN.706/27	“Bell-shaped beaker”	
11	SG.17.BN.715/2	“Bell-shaped beaker”	
12	SG.17.BN.706/32	“Bell-shaped beaker”	
13	SG.17.BN.706/18	“Bell-shaped beaker”	
14	SG.17.BN.706/37	“Bell-shaped beaker”	

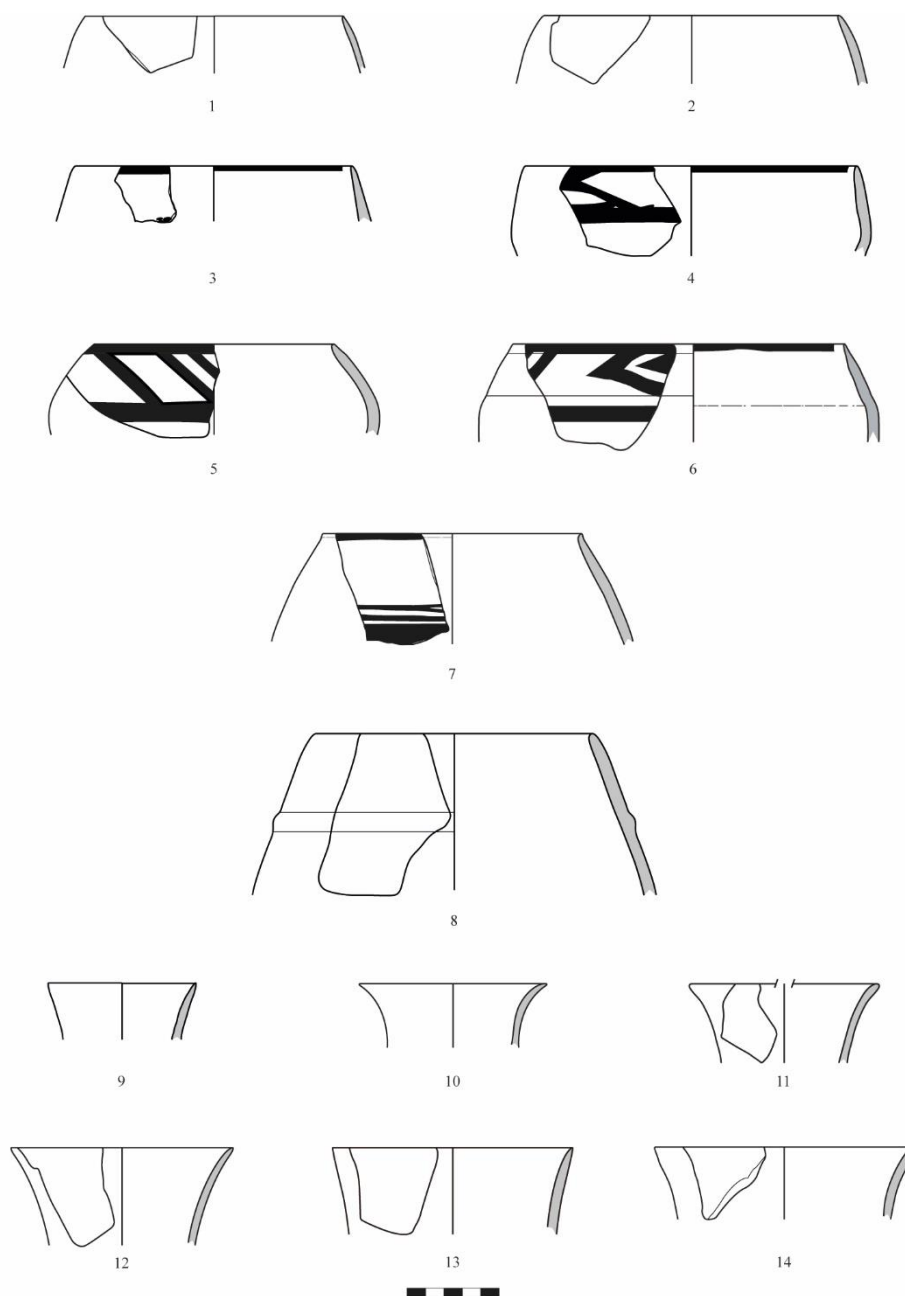


Fig. 6 - Cups and “bell-shaped beakers”.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.15.B.518/10	Hole-mouth jar	Lebeau 1983b, pl. XVIII:2; Hermansen 1990, fig. 8:75
2	SG.17.BS.L250/1	Hole-mouth jar with applied knob	
3	SG.17.BN.705/24	Hole-mouth jar with applied knob	
4	SG.17.BN.705/15	Spouted vessel with plain rim	
5	SG.17.BN.706/39	Deep hole-mouth jar	
6	SG.17.BN.706/2	Jar with thickened-outside rim	Lebeau 1983b, pl. XV:4; pl. XIX:2; Boehmer 1972, pl. 54:368
7	SG.17.BN.705/19	Jar with thickened-outside rim	

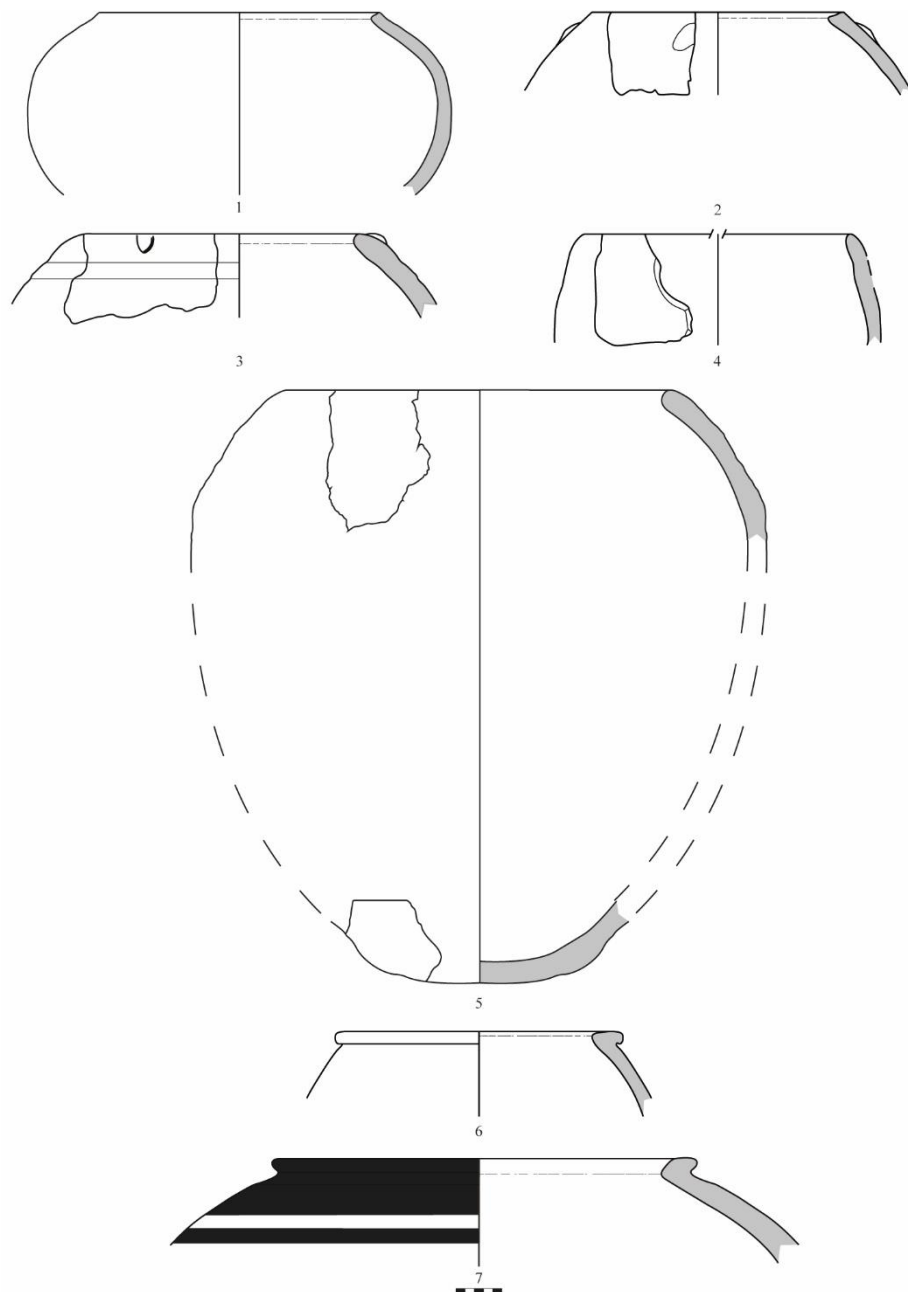


Fig. 7 - Jars.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BS.609/2	Jar with vertical rim	
2	SG.17.BN.719/2	Jar with short, vertical neck	
3	SG.15.B.501/13	Necked jar with everted neck	Lebeau 1983b, pl. XVI:3, 5; pl. XVII:8-10; Calvet 1991, pl. XVI:171; Boehmer 1972, pl. 45:24-25; Hermansen 1990, fig. 9:77-78, 80-81; Safar <i>et al.</i> 1981, fig. 79:9
4	SG.17.BN.715/14	Necked jar with everted neck	
5	SG.17.BS.601/3	Necked jar with everted neck	
6	SG.15.B.511/15	Necked jar with everted neck	
7	SG.15.B.515/4	Necked jar with everted neck	
8	SG.15.B.515/8	Necked jar with everted neck	
9	SG.17.BS.633/9	Basin with inwardly bevelled lip	
10	SG.17.BN.706/10	Basin with “S-shaped” rim	

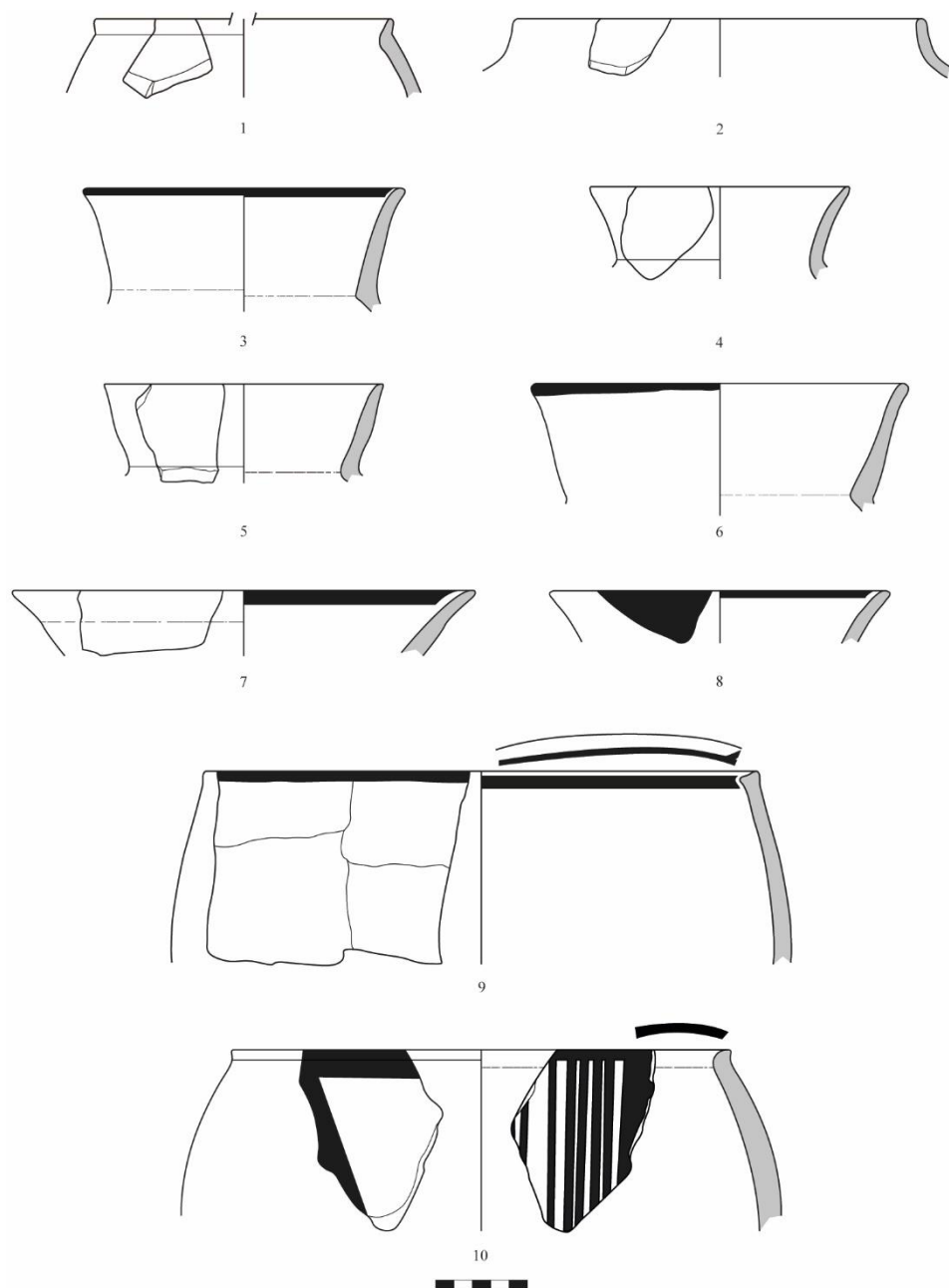


Fig. 8 - Jars, necked jars and basins.

No.	Exc. No.	Shape / Type	Comparanda
1	SG.17.BS.607/1	Vat with hammered rim	
2	SG.17.BN.706/15	Flat base	
3	SG.17.BN.721/3	Flat base	
4	SG.17.BN.700/8	Flat base	
5	SG.17.BN.700/9	Flat base	
6	SG.17.BN.703/9	Round base	Lebeau 1983b, pl. XXI:1
7	SG.17.BN.706/14	Round base	Lebeau 1983b, pl. X:1-3
8	SG.17.BS.633/8	Ring base	Lebeau 1983b, pl. XXI:5-19; Boehmer 1972, pl. 49:115-117
9	SG.17.BS.620/7	Ring base	
10	SG.17.BN.717/1	Ring base	
11	SG.17.BN.706/9	Ring base	
12	SG.17.BN.715/19	Spout	Boehmer 1972, pl. 45:36-37
13	SG.17.BN.703/11	Spout	
14	SG.17.BN.715/18	Pouring lip	

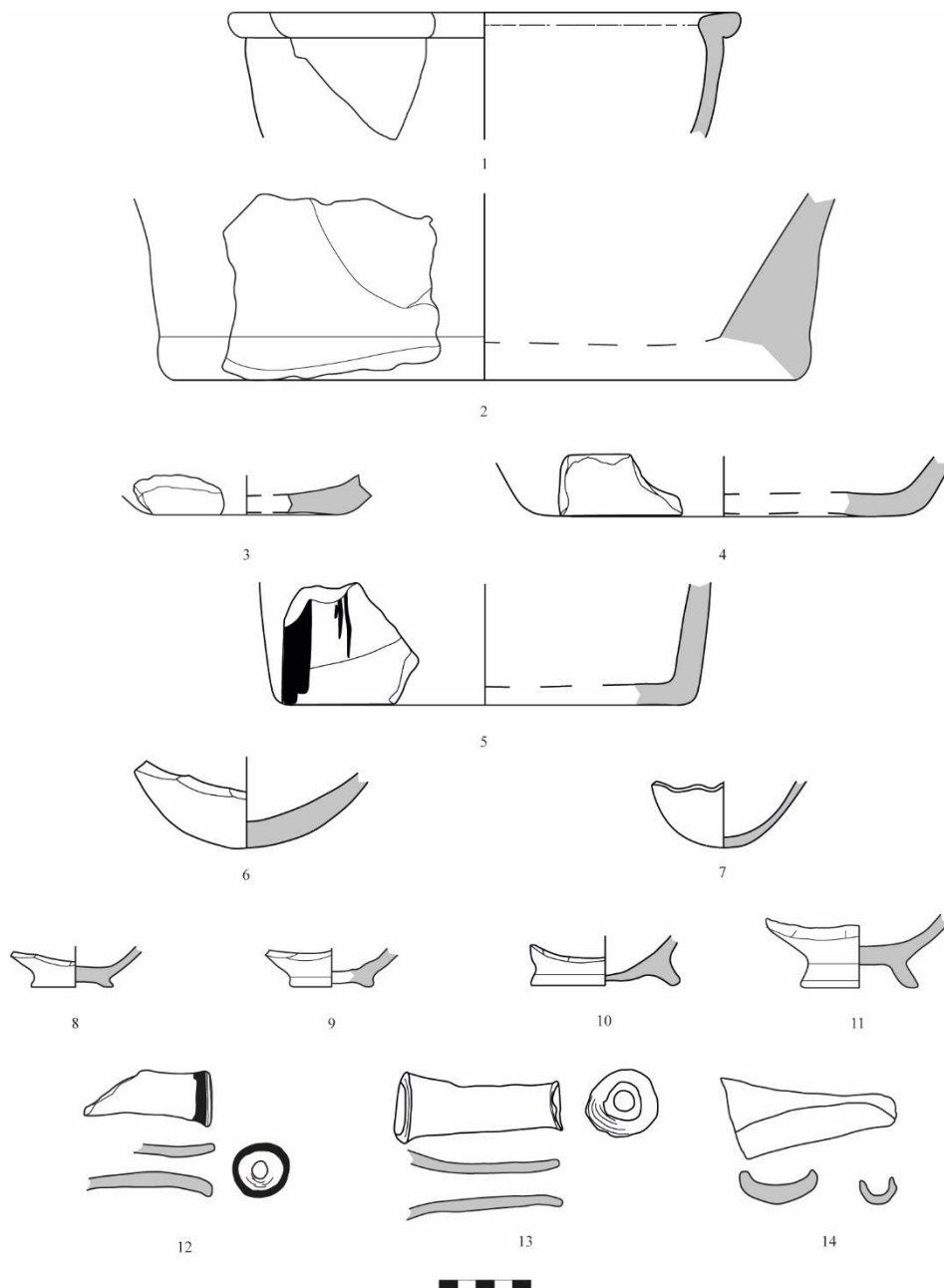


Fig. 9 - Vat, bases and spouts.

FROM THE 3RD TO THE 2ND MILLENNIUM BC:
AN ASSESSMENT ON AREA A POTTERY ASSEMBLAGE
FROM TRENCH 1

Sara Pizzimenti - University of Pisa

The archaeological excavation conducted in 2015 in Trench 1 in area A, at the southeastern footstep of the main Mound A revealed no structural evidence, but a series of accumulation layers probably coming from the collapse and the erosion of the upper part of the mound itself. A preliminary analysis of the pottery assemblage recovered shown the presence of materials dated from the Early Dynastic I period to the Isin-Larsa/Old Babylonian Period, revealing that this part of the site was probably occupied until the first half of the 2nd millennium BC.

Keywords: 3rd millennium BC; 2nd millennium BC; Area A; Southern Mesopotamia; Lagaš region

1. INTRODUCTION

During the beginning of the 2015 archaeological campaign, carried out by the Italian archaeological Mission at Tell Zurghul/Nigin, a sounding of 10 × 10 m (Trench 1) was opened close to the southeastern slope of Mound A.¹ Although no structural evidence has been revealed, several pottery sherds have been collected from the stratigraphy, mainly composed by several accumulation layers, probably coming from the collapse and erosion of the main mound.²

A total of 660 diagnostic pottery sherds were collected, photographed and registered (mostly rims and bases), 172 of which have been selected for drawings. The repertoire includes a wide range of shapes, spanning from the beginning of the 3rd millennium BC (Early Dynastic Period) to the first half of the 2nd millennium BC (Isin-Larsa Period). The most represented ware type is Simple Ware (91%), followed by Preservation Ware (9%), while Kitchen Ware consists only of 2 sherds.

Surface treatments are present only on 21% of the sherds recovered and include mostly slip (15%) followed by polish (6%). The total of the Simple Ware has a fine homogeneous fabric with a low frequency (<3%) of small (<0.5mm) mineral inclusions, while two different fabric types can be distinguished for the Preservation Ware. About the 80% of the collected Preservation Ware sherds have a fine fabric with a low frequency (<3%) of small (<0.5%) mineral inclusions, while the 20% present a low frequency (<3%) of medium (0.5-1mm) inclusions. Among fabric colors pale brown (10YR 7/3-4, 6/3-4), light brown (7.5YR 6/3-4) and pinkish (7.5YR 7/3-4) are the most frequently attested.

¹ I would like to deeply thank the co-directors of the Italian Archaeological Mission at Nigin, Prof. Davide Nadali (Sapienza University of Rome) and Dr. Andrea Polcaro (University of Perugia), for giving me the opportunity to study the pottery assemblage from Trench 1 in Area A.

² For a complete analysis of the excavations in Trench 1 see Polcaro, in this volume. For the excavation carried out at the top of the Mound A (area D) see Nadali, in this volume.

2. THE EARLY DYNASTIC POTTERY ASSEMBLAGE

The majority of the ceramic materials recovered in Trench 1 can be dated to the Early Dynastic Period³ (97%) (ranging from the ED I to the ED III period), which represent the majority of them.

Simple Ware includes a wide range of open and closed shapes, with the latter accounting for most of the morphological and functional repertoire. Open shapes include mainly conical bowls (375 sherds) and few sherds of conical beakers (3 sherds).

Two types of beakers have been identified. The first represents the most common and typical version of conical beakers with thin straight walls and a slightly plain flaring rim with thinned lip (fig. 1:1). This is a very common Early Dynastic shape, which spread throughout Mesopotamia, with a main occurrence in the earliest levels. The chronological range of this type, in fact, spans from the ED I through the ED IIIa period, with a decreasing of frequency in the second half of the 2nd millennium BC.⁴ ‘Solid footed goblet’ is the second and last type of beaker attested (fig. 1:2). This shape made its first appearance in Jemdet Nasr period, becoming then very popular especially during the first half of the ED I.⁵

Conical bowls represent the majority of the open shapes recovered in Trench 1, mostly with a diameter ranging from 14 cm to 18 cm, with few outliers. These vessels are the shallower version of the continuum of mass-produced shapes with a string-cut base, which tends to become shallow through time.⁶ Looking at the diameter/height ratio of the specimens recovered, they should be dated to the ED III-Akkadian period, during which they were especially common. They all have a string-cut base and they are frequently tapped, resulting in the appearance of a slight foot, while the rim could present some few differences. It could be in fact a plain rim with thinned lip (fig. 1:3-6), rounded lip (fig. 1:7-10) or rounded thickened lip (fig. 1:11-12). Comparisons with this type come throughout Mesopotamian sites with 3rd millennium BC occupation.⁷

Closed shapes include only jars, which could be divided into three main groups: neckless jars, low-necked jars, and medium- to high-necked jars.

Neckless jars are the less attested. They include neckless jars with inward sloping rim⁸ (fig. 2:1) and a very thin swollen rim (fig. 2:2). The former is a very rare type with a restricted lifespan within the ED III. It is well attested only at Nippur⁹ although other comparisons can be found at Larsa.

Low-necked jars are more frequent. They include globular jars with flaring neck and a plain rim with rounded lip (fig. 2:3-5); jars with flaring neck and squared rim (fig. 2:6); jars

³ Henceforth ED.

⁴ Parallels can be found at Abu Salabikh (Moon 1987, nos 89-92), Diyala (Delougaz 1952, B.003,200b, C.084.200), Lagaš (Bahrani 1989, pl. I:2, 4-8).

⁵ Delougaz 1952; Matthews 1997, 113. Parallels can be found at Abu Salabikh (Moon 1987, nos. 97-107), Diyala (Delougaz 1952, B-007.700, B.076.700, B.077.700), Fara (Martin 1988, no. 36) and Uruk (Pongratz-Leisten 1988, 38, 39, 419-421).

⁶ Gruber 2015.

⁷ McMahon 2006, type O-1; Moon 1987, nos 1-78.

⁸ Parallels mainly come from Abu Salabikh (Moon 1987, 342), where it is considered as a cooking pot.

⁹ McMahon 2006, type C-5.

with flaring neck and rounded lip (fig. 2:7; fig. 3:1, 4). Jars with flaring neck and triangular rim are also attested (fig. 3:2-3), one of which has also part of the high carination of the body still preserved (fig. 3:3).¹⁰

Medium-to high necked jars are quite well attested, with a repertoire mainly dated to the ED III. They include jars with medium neck and flaring triangular rim¹¹ (fig. 3:5), jars with high neck and everted rounded rim (fig. 3:6). High necked jar with oval band rim (fig. 3:7) or plain rim with rounded lip and a high carined body are also attested (fig. 3:8). The latter has its strong comparisons with the substantial corpus of ED IIIa spouted jars from Abu Salabikh,¹² although the sherds so far collected at Tell Zurghul lack of the spout.

Fruit-stands are barely attested (4 sherds in total) (fig. 4:1), but with no decoration of the rim or below it. Parallels can be found in the ED IIIa-b pottery assemblages from Abu Salabikh,¹³ Fara,¹⁴ Nippur,¹⁵ Ur,¹⁶ and Lagaš.¹⁷

Preservation Ware is poorly attested, at it is represented by *pithoi* with short flared neck and triple-ridged rim (fig. 4:2),¹⁸ rounded thickened rim (fig. 4:3) and expanded rounded rim (fig. 4:4).

3. LATE 3RD MILLENNIUM POTTERY ASSEMBLAGE

Late 3rd millennium in Trench 1 is represented by a very small group of Simple Ware sherds (fig. 5) dating to the Akkadian and Ur III period.

Open shapes include conical bowls with profiled rims (fig. 5:1-2), a well-attested shape in Southern Mesopotamian region since the final centuries of the 3rd millennium BC.¹⁹

Close shapes are so far the most attested and they include low and high necked jars.

Low necked jars include jars with a globular body, slightly flaring neck and plain rounded rim²⁰ (fig. 5:3-4) and a single sherd of a jar with a sharp triangular rim on a short, angled neck (fig. 5:5), chronological marker for the Late Akkadian/Ur III period.²¹

High necked jars include a single sherd of a jar with a thickened triangular rim (fig. 5:6), corresponding to the Armstrong - Gasche 250B2 type, which they considered to be diagnostic of the Ur III and early Isin-Larsa period in the southern alluvium.²²

¹⁰ These types are attested from ED I to the transition to the Akkadian period. See parallels from Nippur (Gibson - Armstrong - McMahon 1998, fig. 26.6; McMahon 2009, type C-3), Lagaš (Bahrani 1989, pl. 4:1-2, pl. 17:1, 3, pl. 18:1, 7) and Umm el-Jir (Gibson 1975, fig. 44:B-7:23).

¹¹ This type can be equated to McMahon C-9 (McMahon 2009, type C-9), which date to the last quarter of the 3rd millennium BC. However in the Lagaš region it appears during ED IIIb. Comparison can also be found at Abu Salabikh (Moon 1987, n.548).

¹² Moon 1987, nos. 618, 676-685.

¹³ Moon 1987, 232-261.

¹⁴ Martin 1988, no. 100.

¹⁵ Nippur 7NP41 (IT VIII).

¹⁶ Moon 1982, 56-62.

¹⁷ Bahrani 1989, pl. VIII.

¹⁸ See parallels from Nippur (McMahon 2009, C-28).

¹⁹ For the type's description and comparison see McMahon 2006, pl. 90; Schmidt 2014; Casadei 2016, 34-36. Considerations on the appearance of this type during the Akkadian period can be found in Armstrong - Gasche 2014, 26, note 148. Cf. also Schmidt 2014, 413-414.

²⁰ For comparisons see McMahon 2006, pl. 98.

²¹ For a brief analysis of this type see McMahon 2014.

Another diagnostic element for the Late Akkadian/Ur III period is the double ridged rim characterizing the so-called ‘heart-shaped jar’ (fig. 5:7-8), which also presents, in the sherds recovered, a thick red slip.²³

4. 2ND MILLENNIUM POTTERY ASSEMBLAGE

A small group composed of 10 Simple Ware sherds can be dated to the 2nd millennium BC, composed both of open and closed shapes.²⁴

Open shapes include three types of bowl. The first one is a slightly rounded conical bowl (fig. 6:1-3) with plain rounded rim, which can be dated to the Isin-Larsa period.²⁵ Deep carinated bowl with thickened rounded out-turned rim, diagnostic shape of the period from late 3rd millennium and early 2nd millennium BC, is also attested (fig. 6:4).²⁶ Large bowls with thickened triangular out-turning rim are the last type of bowl within the present assemblage (fig. 6:5-6).²⁷

Closed shapes include jars with high neck and everted squared rim (fig. 6:7-8) and a globular cooking pot with ledge shoulder and flattened rim (fig. 6:9-10). The former has several parallels dated to the end of the Isin-Larsa/beginning of the Old Babylonian period from Uruk²⁸ and Tello,²⁹ while the latter finds a perfect parallel from level VI in area WF at Nippur, dated to the late Ur III period or at the very beginning of Isin-Larsa period.³⁰

5. CONCLUSION

Trench 1 in area A revealed no structural evidence, but several accumulation layers coming from the collapse of the upper part of Mound A, and probably partially eroded by an ancient canal. Nevertheless, the huge amount of pottery recovered gave information about the chronological sequence of that part of the site.

The pottery assemblage provided a wide chronological range spanning from the ED I to the Isin-Larsa period. The greatest part of the sherds (97%) can be attributed to the Early dynastic Period - mostly ED III -, while 1% is dated to the end of the 3rd millennium BC - Akkadian and Ur III - and 2% to the beginning of the 2nd millennium BC. Comparisons between the pottery from Tell Zurghul and the various ceramic assemblages suggest a

²² Armstrong - Gasche 2014. For a consideration of the presence of this type of jar in II millennium BC contexts in southern Mesopotamia, see the considerations on type jar 2 in the contribution by Casadei - Oselini in this volume.

²³ For an overview of this type of jar, often defined as bottle or beaker, see Arrivabeni 2014.

²⁴ For a detailed analysis of II millennium BC pottery materials from Zurghul and related comparanda, see the contribution by Casadei - Oselini in this volume.

²⁵ For parallel see Armstrong - Gasche 2014, type 15A1.

²⁶ Parallels can be found in several southern Mesopotamian sites, among which Nippur presents a perfect comparison (Gibson 1975, 39:020127).

²⁷ For comparisons see Armstrong - Gasche 2014: pl. 29: type 15H.

²⁸ Van Ess 1988, fig. 8:40.

²⁹ De Genouillac 1936, pl. XXVIII, 3201.

³⁰ McMahon 2006: pl. 116:16. Similar rims are also attested Isin Larsa layers at Lagaš (Armstrong - Gasche 2014, pl. 50:13).

strong homogeneity within the southern Mesopotamian repertoires for both the 3rd millennium and the beginning of the 2nd millennium BC.

Although the real extension of the settlement during the centuries has not been identified so far, the pottery evidence from Trench 1 in Area A suggests a continuity in occupation without gaps from the 3rd millennium to the beginning of the 2nd millennium in this part of the site.

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No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.5/47	Goblet	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421.
2	SG.15.A.5/46	Goblet	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421.
3	SG.15.A.5/29	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78.
4	SG.15.A.5/2	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
5	SG.15.A.7/2	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
6	SG.15.A.5/21	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
7	SG.15.A.7/5	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
8	SG.15.A.7/1	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
9	SG.15.A.7/4	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
10	SG.15.A.7/3	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
11	SG.15.A.5/10	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78
12	SG.15.A.5/9	Conical bowl	McMahon 2006, type O-1; Moon 1987, nos 1-78

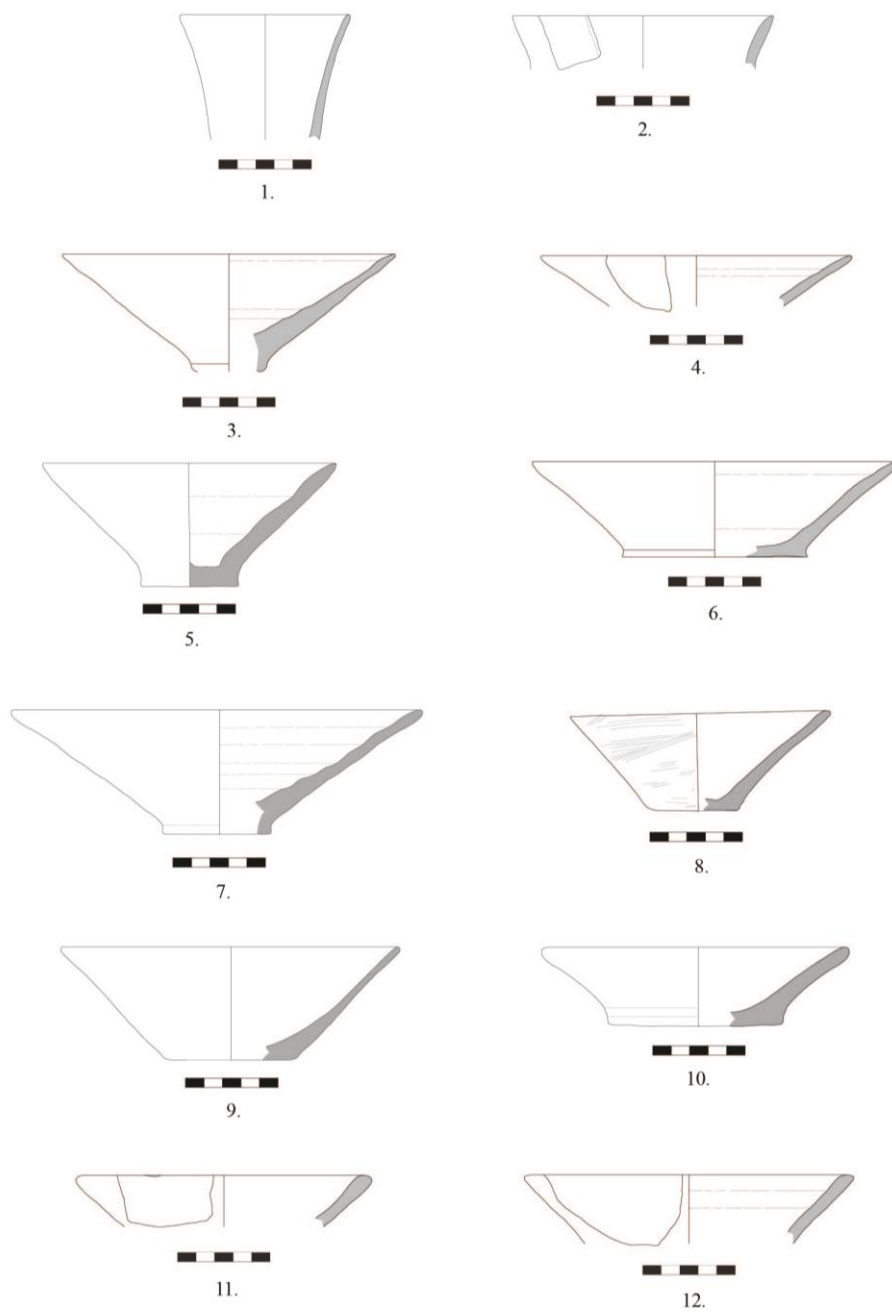


Fig. 1 - Early Dynastic Simple Ware open shapes: goblets and conical bowls.

No.	Exc. No.	Shape	Comparanda
1	SG.15.A.5/59	Neckless jar	Abu Salabikh: Moon 1987, 342; Nippur: McMahon 2006, type C-5.
2	SG.15.A.5/61	Neckless jar	-
3	SG.15.A.5/53	Low-necked jar	-
4	SG.15.A.6/4	Low-necked jar	-
5	SG.15.A.6/5	Low-necked jar	-
6	SG.15.A.5/67	Low-necked jar	-
7	SG.15.A.5/62	Low-necked jar	-

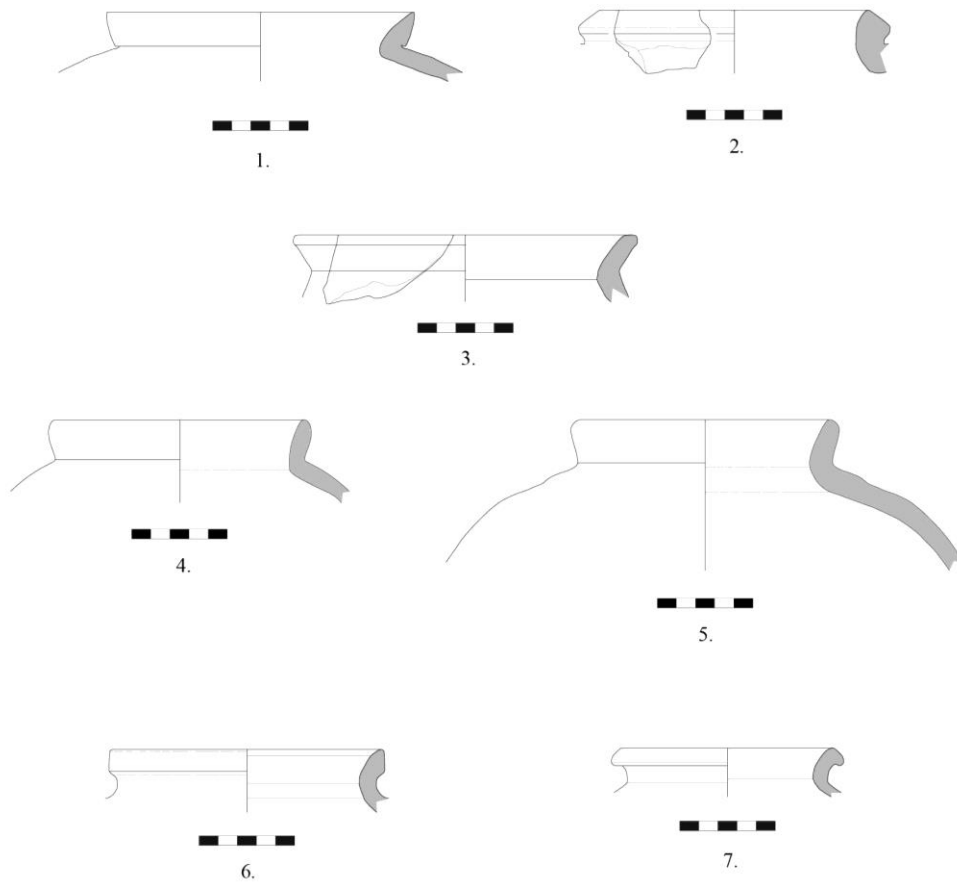


Fig. 2 - Early Dynastic Simple Ware closed shapes: neckless jars and low-necked jars.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.5/49	Low-necked jar	-
2	SG.15.A.5/63	Low-necked jar	-
3	SG.15.A.7/19	Low-necked jar	Nippur: Gibson - Armstrong - McMahon 1998, fig. 26:6; McMahon 2006, type C-3; Lagaš: Bahrani 1989, pl. 4:1-2, pl. 17:1, 3, pl. 18:1, 7; Umm el-Jir: Gibson 1972, fig. 44:B-7:23
4	SG.15.A.5/50	Low-necked jar	-
5	SG.15.A.6/3	Medium- to high necked jar	McMahon 2006, type C-9; Moon 1987, n. 548
6	SG.15.A.5/48	Medium- to high necked jar	-
7	SG.15.A.5/57	Medium- to high necked jar	-
8	SG.15.A.5/80	Medium- to high necked jar	Moon 1987, nos 618, 676-685

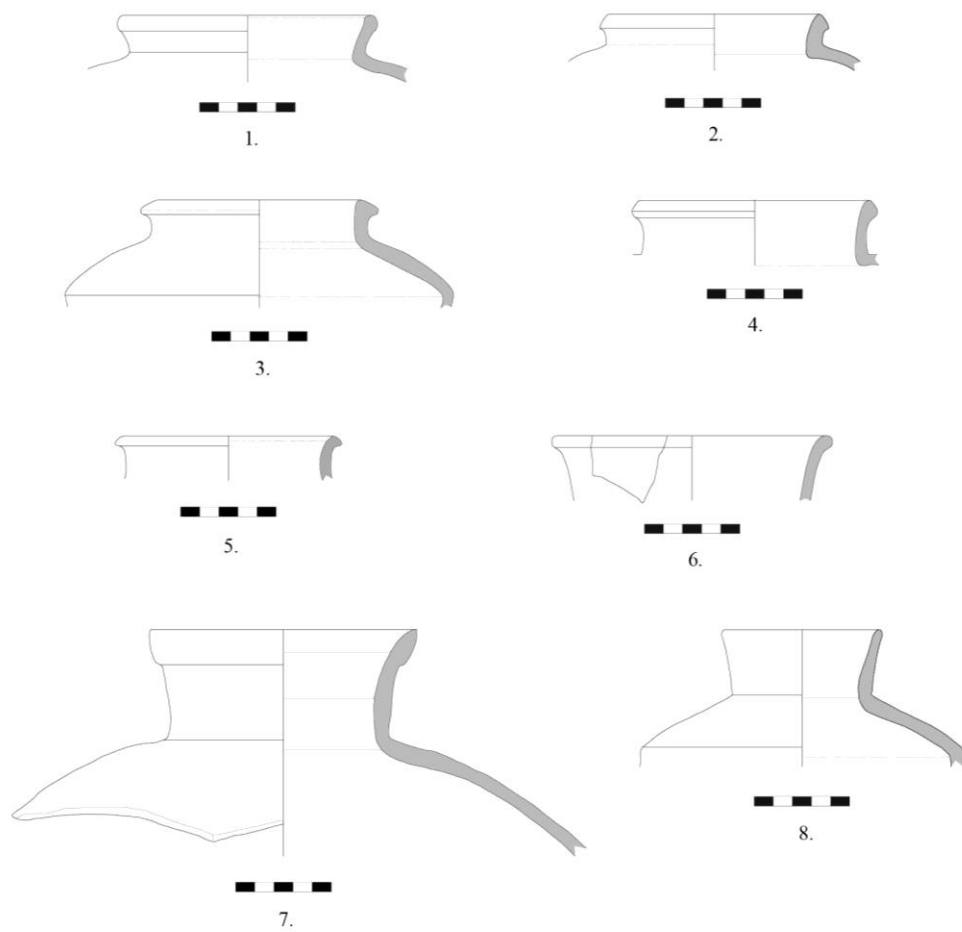


Fig. 3 - Early Dynastic Simple Ware closed shapes: low-necked jars and medium-high necked jars.

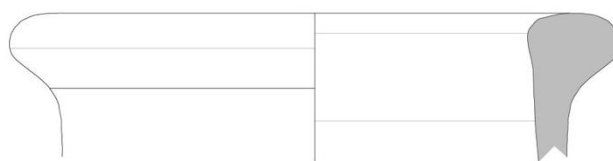
No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.5/43	Fruit-stand	Abu Salabikh: Moon 1987, 232-261; Fara: Martin 1988, no. 100; Ur: Moon 1982, 56-62; Lagaš: Bahrani 1989, pl. VIII
2	SG.15.A.6/17	<i>Pithos</i>	Nippur: McMahon 2006, C-28
3	SG.15.A.5/81	<i>Pithos</i>	-
4	SG.15.A.5/82	<i>Pithos</i>	-



1.



2.



3.



4.

Fig. 4 - Early Dynastic pottery: fruit stand and Preservation Ware *pithoi*.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.5/13	Bowl	McMahon 2006, pl. 90; Schmidt 2014; Casadei 2016, 34-36
2	SG.15.A.5/25	Bowl	McMahon 2006, pl. 90; Schmidt 2014; Casadei 2016, 34-36
3	SG.15.A.6/11	Low-necked jar	McMahon 2006, pl. 98
4	SG.15.A.7/7	Low-necked jar	McMahon 2006, pl. 98
5	SG.15.A.5/64	Low-necked jar	McMahon 2014
6	SG.15.A.6/9	High-necked jar	Armstrong - Gasche 2014, 250, type B2
7	SG.15.A.5/68	'hearth-shaped' jar	Arrivabeni 2014
8	SG.15.A.7/26	'hearth-shaped' jar	Arrivabeni 2014

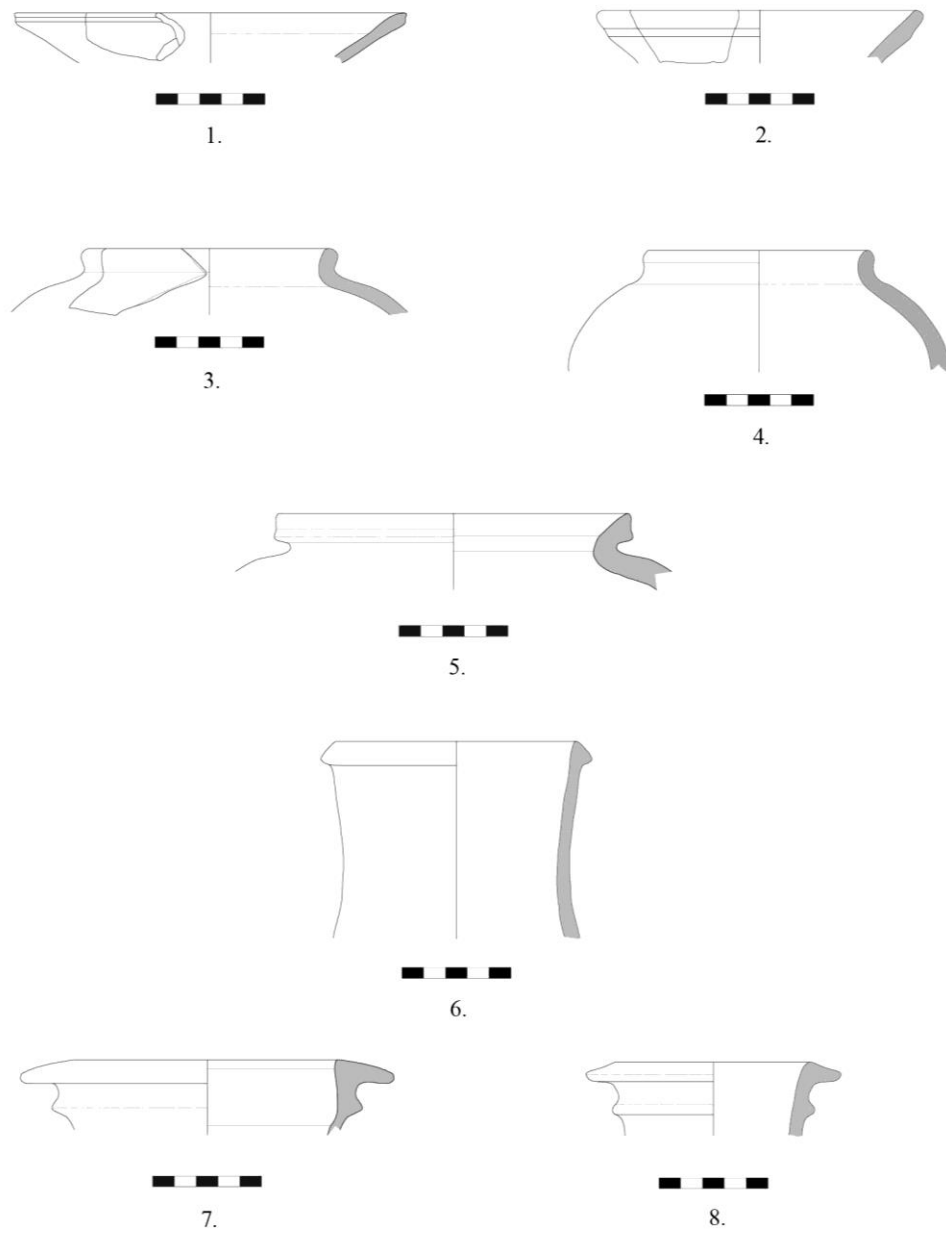


Fig. 5 - Late 3rd millennium BC pottery assemblage.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.5/37	Bowl	Armstrong - Gasche 2014, type 15A1
2	SG.15.A.5/18	Bowl	Armstrong - Gasche 2014, type 15A1
3	SG.15.A.5/33	Bowl	Armstrong - Gasche 2014, type 15A1
4	SG.15.A.5/42	Bowl	Nippur: Gibson 1975, fig. 39:020127
5	SG.15.A.5/40	Bowl	Armstrong - Gasche 2014, pl. 29, type 15H
6	SG.15.A.5/39	Bowl	Armstrong - Gasche 2014, pl. 29, type 15H
7	SG.15.A.5/51	High-necked jar	Uruk: Van Ess 1988, fig. 8:40; Tello: De Genouillac 1936, pl. XXVIII:3201
8	SG.15.A.5/52	High-necked jar	Uruk: Van Ess 1988, fig. 8:40; Tello: De Genouillac 1936, pl. XXVIII:3201
9	SG.15.A.6/6	Cooking pot	McMahon 2006, pl. 116:16; Armstrong - Gasche 2014, pl. 50:13
10	SG.15.A.7/16	Cooking pot	McMahon 2006, pl. 116:16; Armstrong - Gasche 2014, pl. 50:13

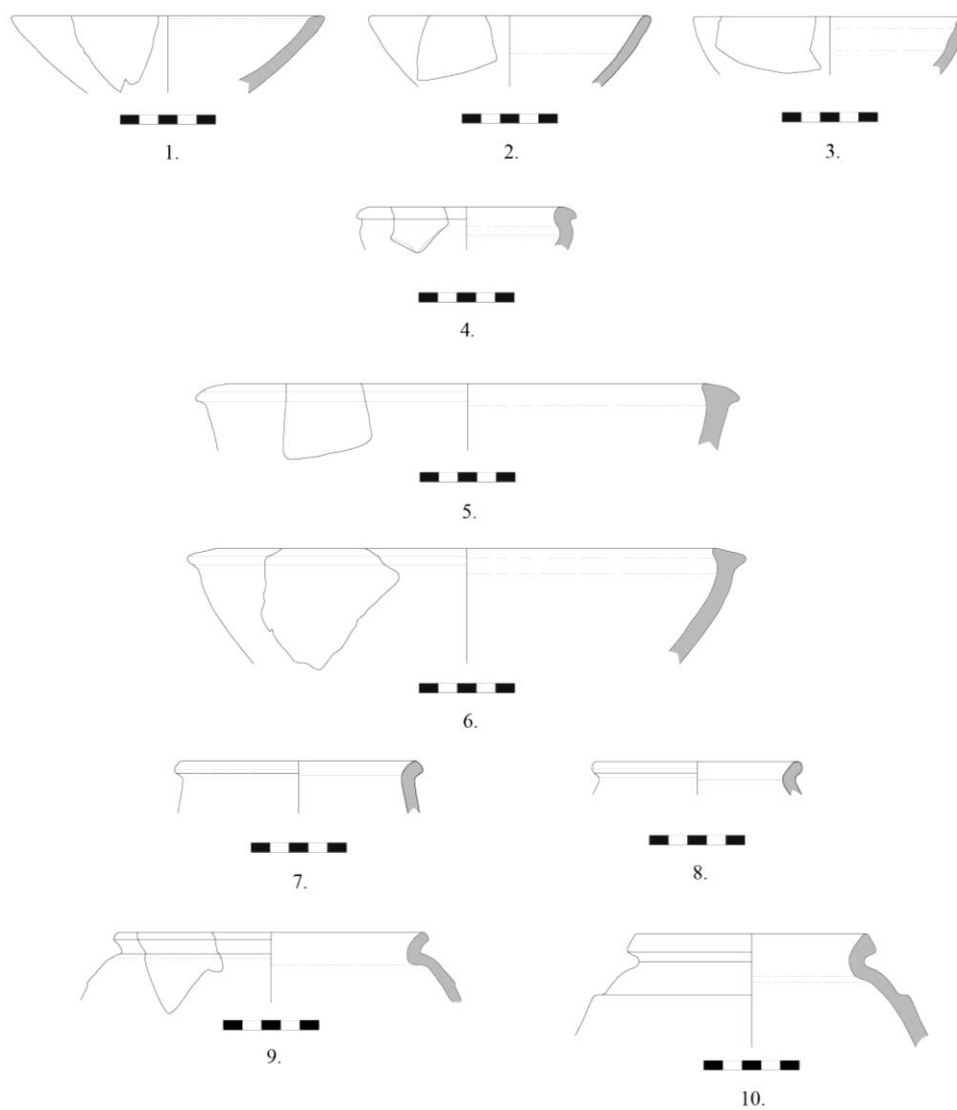


Fig. 6 - Early 2nd millennium BC pottery assemblage.

FROM THE 4TH TO THE 3RD MILLENNIUM BC:
AN ASSESSMENT ON AREA A POTTERY ASSEMBLAGE
FROM TRENCH 2

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The 2015-2017 archaeological campaigns conducted Trench 2 in Area A, at the south-eastern footstep of the main Mound A revealed a complex and continuous stratigraphic sequence of 7 main structural phases dated from the Late Uruk to the beginning of the Early Dynastic I Period. A preliminary analysis of the pottery assemblage recovered revealed interesting data about the evolution and the frequency of the shapes between the Late Uruk, Jemdet Nasr and Early Dynastic I period, showing a strong continuity through changes in the passage from the end of the 4th and the beginning of the 3rd millennium BC.

Keywords: Jemdet Nasr; Late Uruk; Early Dynastic I; Southern Mesopotamia; Lagaš region

1. INTRODUCTION

During the 2015-2017 archaeological campaigns, carried out by the Italian archaeological Mission at Tell Zurghul/Nigin, an open area of 18 × 15 m (Trench 2) have been opened close to the South-Eastern slope of Mound A.¹ So far, 7 main structural phases have been identified, revealing a continuous occupation of the area from the Late Uruk to the Early Dynastic I period.²

A total of 1956 diagnostic pottery sherds were collected, photographed and registered (mostly rims and bases), 1135 of which have been selected for drawings. The repertoire includes a wide range of shapes, spanning from the end of the 4th millennium BC (Late Uruk Period) to the first half of the 3rd millennium BC (Early Dynastic I³ Period).

2. THE LATE URUK POTTERY ASSEMBLAGE (PHASE 1)

Simple Ware is the only ware type represented, while Kitchen Ware and Preservation Ware are not attested.

Surface treatments consist only in Slip (24% of the sherds recovered), attested only on the outer surface of closed shapes. The total of the sherds has a coarse homogeneous fabric with a low frequency (<3%) of medium (0.5-1mm) vegetal inclusions, with the exception of one single sherd of bowl (fig. 1:4), which presents a fine fabric with a low frequency (<3%) of small (<0.5%) mineral inclusions. Among fabric colours pale brown (10YR 7/3-4, 6/3-4), light brown (7.5YR 6/3-4) and pinkish (7.5YR 7/3-4) are the most frequently attested.

¹ I would like to deeply thank the co-directors of the Italian Archaeological Mission at Nigin, Prof. Davide Nadali (Sapienza University of Rome) and Dr. Andrea Polcaro (University of Perugia), for giving me the opportunity to study the pottery assemblage from Trench 2 in Area A. The study of this assemblage has also been possible thanks to the funding of the ASOR Mesopotamian Fellowship for the 2018-19 academic year.

² For a complete analysis of the excavations in Trench 2 see Polcaro, in this volume.

³ Henceforth ED I.

A range of open and closed shapes, with the former accounting for most of the morphological and functional repertoire.

Open shapes (Bevelled Rim Bowls and “Flower Pots”) are the most attested, followed by the closed shapes (jars).

Regarding the morphological repertoire of shapes, the most common are the “Flower Pots”, both with a triangular rim (figs. 1:3-8, 2: 1-2) and with a pointed plain rim (fig. 2:3), all with a flat string-cut base,⁴ and the Bevelled Rim Bowls (fig. 1:1-2)⁵ mass-produced common ware, considered as an Uruk period ‘trademark’.⁶ One single sherd of a shallow bowl with a triangular rim with an incised decoration (fig. 2:4) is also attested.

Closed shapes include only jars which could be divided in three main groups: neckless jars, low-necked jars, and medium- to high-necked jars.

Neckless jar and medium- to high-necked jars are the less attested, including the former a single sherd of a hole-mouth jar with band rim (fig. 3:1),⁷ and the latter spouted jars – droop spout – with inward neck and band rim (fig. 3:5).

Low-necked jars include jars with plain rim and flaring low neck (fig. 3:2),⁸ triangular rim and flaring low neck (fig. 3:3) and jars with everted squared rim (fig. 3:4).

Several detached droop spouts have also been found (fig. 3:6).

3. THE TRANSITIONAL LATE URUK/JEMDET NASR POTTERY ASSEMBLAGE (PHASE 2)

Simple Ware is the only ware type represented, while Kitchen Ware and Preservation Ware are not attested.

Surface treatments consist in Slip (7% of the sherds recovered) and Self-Slip (30% of the sherds recovered). The Self-Slip is attested only on open shapes, such as beaker and Conical Bowls, while the Slip seems to be used only on the outer servers of closed shapes.

Two different fabric types can be distinguished: about the 70% of the sherds recovered present a fine fabric with a low frequency (<3%) of small (<0.5%) mineral inclusions, while the 30% has a coarse homogeneous fabric with a low frequency (<3%) of medium (0.5-1mm) vegetal inclusions.⁹ Among fabric colours pale brown (10YR 7/3-4, 6/3-4), light brown (7.5YR 6/3-4) and pinkish (7.5YR 7/3-4) are the most frequently attested.

A range of open and closed shapes is attested, with the former accounting for most of the morphological and functional repertoire.

Open shapes (Bevelled Rim Bowls, “Flower Pots”, Conical Bowls, beakers, deep bowls and cups) are the most attested, followed by the closed shapes (jars).

Regarding the morphological repertoire of shapes, Bevelled Rim Bowls (fig. 4:1-3) and “Flower Pots” (fig. 4: 4-9) continue to be attested, although with a lesser frequency and few

⁴ See parallel from Tell el-‘Oueili (Calvet 1991, pl. 171:6) and Tulul al-Baqarat (Di Michele 2016, fig. 1:5). All the “Flower Pots” recovered are wheel-coiled (low-wheel), with the inner part refined and with a flat spatula.

⁵ See parallels from Uruk (Sürenhagen 1986, fig. 7:4).

⁶ For a full definition of this pottery shape, its technological and morphological features, and its distribution throughout Near Eastern sites see Helwing 2014.

⁷ See parallels from Eridu (Safar - Musafa - Lloyd 1981, fig. 71:48-50).

⁸ See parallels from Uruk (Sürenhagen 1986, nos. T/48, 77, 93).

⁹ The coarse fabric is attested only in the Beveled Rim Bowls and the “Flower Pots”.

changes, such as a peculiar sub-type of the latter, with a single groove in the upper part of the rim (fig. 4:8).

Conical Bowls make their first appearance in this phase (figs. 5:2-9; 7:3), representing the most common mass-produced pottery type throughout the 3rd millennium BC.¹⁰ All Conical Bowls of this phase present a string-cut base and a diameter included between 13 cm and 18 cm, but a considerable variety of rims: plain (fig. 5: 2-6, 9; 7:3), band (fig. 5:7) and bevelled (fig. 5:8). Furthermore, they are all roughly wheel-coiled, with visible traces of the coiling both on the outer and inner surface.¹¹

Hemispheric bowls with plain rim (fig. 7:5) or thickened rounded rim (fig. 7:4) are also attested.

Deep Bowls (diameter >20cm) with plain, both conical (fig. 6:1-6) and shallow (fig. 6:7) have been recovered.

Beakers are poorly attested (fig. 5:1), and they consist in conical slightly squat beakers (diameter/height ratio 1-1.30) with plain rim and string-cut base.

Cups are barely attested (2 sherds), consisting in cups with globular body and vertical plain rim (fig. 7:1) and cups with flaring plain rim (fig. 7:2).

Closed shapes include mostly jars, which could be divided in two main groups: low-necked and medium- to high-necked jars. The former include jars with vertical low neck and plain rim both with ovoidal (fig. 8:1) and globular body (fig. 8:2),¹² jars with flared low neck and plain rim (fig. 8:3), jars with flared low neck and flat rim (fig. 8:4), jars with everted neck and plain rim (fig. 8:5-6) and spouted jars with everted rim (fig. 8:7). On the other hand, medium- to high-necked jars include jars with everted rim and inward high-neck (fig. 8:8), jars with protruding band rim and lid support and slightly inward high-neck (fig. 8:9), jars with triangular rim and slightly flared medium-neck (fig. 8:10-11)¹³ and jars with squared triangular rim and vertical medium-neck (fig. 8:12).

One miniaturistic bottle with globular body, rounded base and 4 small nose lugs has been recovered (fig. 9:1).

Droop-spouts continue to be attested (fig. 9:2-3), while short vertical spouts make their first appearance (fig. 9:4).¹⁴

¹⁰ The earliest known Conical Bowls are probably dated to the Late Uruk, but they did not become frequent until the Jemdet Nasr period (Gruber 2015, 130). At Ur Conical Bowls are first attested in Pit F, stratum 5 (Woolley 1955, 66, types RC 5b and TC 7a): they are dated to the Late Uruk period by Sørensen (1999, 201, 247), while Dittmann (2006, 29, 36, tab.1) points to a Jemdet Nasr date. Also at Uruk the first Conical Bowls are observed in the Archaic IVa (Late Uruk) (Sørensen 1999, 100). At Nippur Conical Bowls are attested from Inanna temple lev. XIV, but became integral part of the pottery assemblage during the Jemdet Nasr period (Wilson 1986, 60, fig. 5:5-6). Finally, the surface survey of the Uruk Mount at Abu Salabikh seems to confirm their first appearance during the Late Uruk period (Postgate 1983, 46; Pollock 1987, 129). For a reconstruction of the manufacturing process of Conical Bowls see Nissen 1970, 139-140. For a recent analysis on the evolution of the Conical Bowls throughout the 3rd millennium BC see Gruber 2015.

¹¹ Both the "Flower Pots" and the Conical Bowls are similar in dimension – same diameter range and same diameter/height ratio – and in manufacturing technique – wheel-coiled – but differ in fabric type – chaff versus grit.

¹² See parallels from Ur (Woolley 1955, pl. 62:JN 131) and Nippur (Wilson 1986, fig. 6:10).

¹³ See parallels from Nippur (Wilson 1986, fig. 4:11) and Jemdet Nasr (Matthews 2002, fig. 35:13).

¹⁴ Spouted vessels are present in a great range of shapes and sizes in the Jemdet Nasr assemblage of Jemdet Nasr. See for example Matthews 1992, figs. 5-6.

4. THE JEMDET NASR POTTERY ASSEMBLAGE (PHASES 3-4)

Simple Ware is the only ware type represented, while Kitchen Ware and Preservation Ware are not attested.

Surface treatments consist in Slip (6% of the sherds recovered), Self-Slip (23% of the sherds recovered) and the typical Jemdet Nasr thick Red Slip. The Self-Slip is attested only on open shapes, such as beakers and Conical Bowls, while the Slip and the Jemdet Nasr thick Red Slip seems to be used only on the outer servers of closed shapes (jars).

All the sherds recovered present a fine fabric with a low frequency (<3%) of small (<0.5%) mineral inclusions, while among fabric colours pale brown (10YR 7/3-4, 6/3-4), light brown (7.5YR 6/3-4) and pinkish (7.5YR 7/3-4) are the most frequently attested, in continuity with the previous phases.

Open shapes are the most attested, with a variety of shapes which attests a strong continuity with the previous phases.

Conical Bowls are the most frequent open shape. However, in comparison with phase 2, the Conical Bowls in phases 3 and 4 they are finer and present a stronger homogeneity in production. The coiling traces become less evident, probably indicating an increasing in the speed of the wheel, while the majority of the Conical Bowls has a plain rim (figs. 10:1-5, 7-8; 15:6-12; 17:3-14), with only three exceptions: 1 bevelled rim (figs. 10:6; 16:5), 1 flaring rim (fig. 15:13) and 1 band rim (fig. 10:9). Both “Flower Pots” (fig. 10:10) and Bevelled Rim Bowls (figs. 10:11-12; 16:2-4; 17:15) are barely attested. In particular, the Bevelled Rim Bowls become finer, with a reduction of the rim and walls thickness.

Deep Bowls with shallow body continue to be attested (fig. 16:1).

Beakers continue to be attested (figs. 15:1-5; 17:1-2), but they become finer, while the “Solid footed goblet” makes its first appearance (fig. 15:1,4).¹⁵

Closed shapes include only jars which can be divided in two main groups: low-necked jars and medium- to high-necked jars.

Low-necked jars include jars with triangular rim, low vertical neck and nose lugs on the upper part of the globular body (fig. 11:1-2)¹⁶ and jars with triangular rim, low vertical neck and nose lugs on the upper part of the carinated body (fig. 11:3).¹⁷ The latter can present the typical Jemdet Nasr thick Red Slip.

Medium- to high-necked jars are the most attested, especially jars with ledge rim which make their first appearance in these phases. Between them jars with short squared ledge rim and medium vertical neck (fig. 11:4-5), jars with squared ledge rim and vertical to slightly inward neck (fig. 12:1-2) and jars with rounded ledge rim and vertical to slightly inward neck (fig. 13). The jars squared ledge rim and vertical to slightly inward neck could have thick Red Slip or red paint. One specimen in particular (fig. 12:2) is characterized by 4 groups of 4 vertical ridges each on the upper part of the shoulder. Painted decoration (both

¹⁵ “Solid footed goblets” make its first appearance in Jemdet Nasr period, becoming very popular during the following ED I period (Delougaz 1952; Matthews 1997, 113). Parallels can be found at Abu Salabikh (Moon 1987, nos. 97-107), Diyala (Delougaz 1952, B-007.700, B.076.700, B.077.700), Fara (Martin 1988, no. 36) and Uruk (Pongratz-Leisten 1989, 38, 39, 419-421).

¹⁶ See parallels from Jemdet Nasr (Matthews 2002, fig. 17:1-6).

¹⁷ See parallels from Jemdet Nasr (Matthews 2002, fig. 19:7, 9-10).

red and black (figs. 12, 14) is thus strongly attested in this phase, and it is mainly composed by squared bands and horizontal (fig. 14:1-2,6) or vertical (fig. 14:4) lines, or horizontal bands with squares or triangle filled with a net decoration (fig. 14:3,5).¹⁸ Wavy (fig. 14:8)¹⁹ or oblique lines (fig. 14:7) are also attested. One whole painted jar with rounded ledge rim and slightly inward neck and a globular body (fig. 13) have been recovered. Its decoration is composed of a red painted base over which black triangles filled with a net and each one flanked on both sides by 5 vertical lines are placed on the upper part of the body.²⁰ Jars with oblique short ledge rim and flaring neck and a short vertical spout are also attested (fig. 11:6), as well as jars with bevelled band rim and inward neck (fig. 16:6).

5. THE EARLY DYNASTIC I POTTERY ASSEMBLAGE (PHASES 5-7)

Simple Ware is the only ware type represented, while Kitchen Ware and Preservation Ware are not attested.

Surface treatments consist in Slip (30% of the sherds recovered), Self-Slip (59% of the sherds recovered). The Self-Slip is attested only on open shapes, such as beakers and Conical Bowls, while the Slip seems to be used only on the outer servers of closed shapes (jars). Decorations include combed (fig. 22:2-3), roped (fig. 22:7) and finger-nail (fig. 22:4-6).

All the sherds recovered present a fine fabric with a low frequency (<3%) of small (<0.5%) mineral inclusions, while among fabric colours pale brown (10YR 7/3-4, 6/3-4), light brown (7.5YR 6/3-4) and pinkish (7.5YR 7/3-4) are the most frequently attested, in continuity with the previous phases.

Open shapes continue to be the most attested, although closed shapes increase.

Conical Bowls continue to be the most frequent open shape (figs. 17:3-15, 19:3-11, 23:4-8), together with the slightly rounded Conical Bowl (fig. 20:1-3). Carinated bowls (fig. 23:10) are barely attested as well as Bevelled Rim Bowls (figs. 17:15, 23:3). Beakers (figs. 17: 1-2, 19:1-2,12-13, 23:1-2,12) continue to be largely attested, with and increasing of the presence of "Solid footed goblet" (fig. 19:12-13). Cups include cups with plain rim (figs. 20:4-5, 23:9). Deep bowls are barely attested, and they include deep bowl with beveled triangular rim (fig. 23:11) and deep bowl with a notched band below a triangular rim (fig. 24:7).²¹

Closed shapes include only jars which can be divided in two main groups: low-necked jars and medium- to high-necked jars.

Low-necked jars include jars with everted rim and low vertical neck (fig. 18:1), jars with plain rim and low vertical neck (fig. 21:1,3), jars with plain rim and flaring low neck (figs. 18:3-5; fig. 21:2), jars with beveled rim and flaring low neck (fig. 18:6), jars with moulded rim and low everted neck (figs. 18:7; 24:2) and jars with low vertical neck and thickened rounded (fig. 22:1) or beveled (figs. 18:2; 24:5).

¹⁸ For comparisons see for examples Matthews 2002, figs. 21-22.

¹⁹ For comparisons see Matthews 2002, fig. 22:10.

²⁰ For comparisons see for examples Delougaz 1952, pls. 8, 53; Matthews 2002, fig. 14:3.

²¹ For comparisons see Pongratz-Leisten 1988: no.48.

Medium to high necked jars are the most attested and include jars with ledge rim, which continue to be attested, although the ledge starts to be pointed (figs. 18:9; 24:3), jars with plain rim and flaring neck (figs. 21:5-6), jars with moulded rim and flaring neck (fig. 24:1), jars with band rim and flaring neck (figs. 18:8; 20:6) and jars with bevelled band rim and vertical to slightly flared neck, which is the most frequent (figs. 18:10-11, 21:7-16; 24:4).²²

A single spouted jar with plain rim and a low vertical neck (fig. 18:12), and several single short vertical spouts have also been recovered (fig. 22:6-10).

Decorations are barely attested: only one combed (fig. 18:13) and one incised (fig. 24:6) pottery sherds have been recovered.

6. CONCLUSION

Trench 2 in Area A revealed a complex and continuous stratigraphic sequence of 7 main structural phases dated from the Late Uruk to the beginning of the Early Dynastic I period, providing data and evidence on the evolution of the pottery assemblage from the end of the 4th to the first half of the 3rd millennium BC.

In general, with the exception of the Late Uruk phase 1, it is possible to notice a substantial continuity for most of the ceramic horizons, with few new types appearing during each period and nuanced morphological and technological variations within the phases, as particularly highlighted by the evolution of the Conical Bowls from the transitional Late Uruk/Early Dynastic I phase 2 to the Early Dynastic I phases (5-7).

However, further studies and analysis are necessary to shed new light on the evolution of the pottery assemblage from the end of the 4th to the first half of the 3rd millennium BC.

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²² For parallel see Abu Salabikh (Moon 1987, ABS 552) and Nippur 7NP147, 7NP99, 7NP107).

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No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.28/35	Beveled Rim Bowl	Uruk: Sörenhagen 1986, fig. 7:4
2	SG.15.A.27/2	Beveled Rim Bowl	Uruk: Sörenhagen 1986, fig. 7:4
3	SG.15.A.28/23	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
4	SG.15.A.28/2	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
5	SG.15.A.28/21	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
6	SG.15.A.28/37	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
7	SG.15.A.28/40	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
8	SG.15.A.28/24	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5

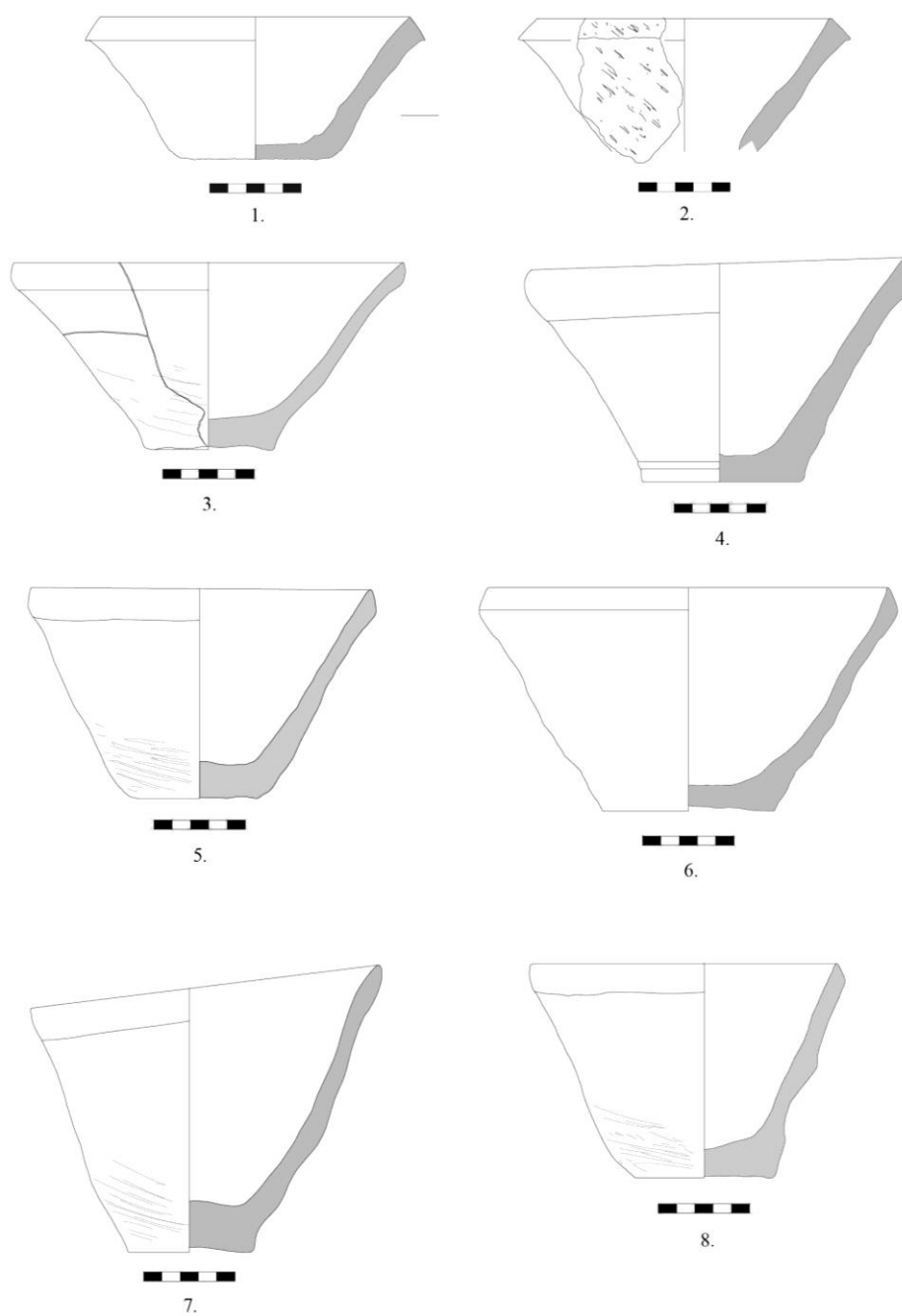


Fig. 1 - The Late Uruk pottery assemblage (phase 1).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.28/41	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
2	SG.15.A.28/34	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
3	SG.15.A.28/43	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
4	SG.15.A.28/54	Bowl	-

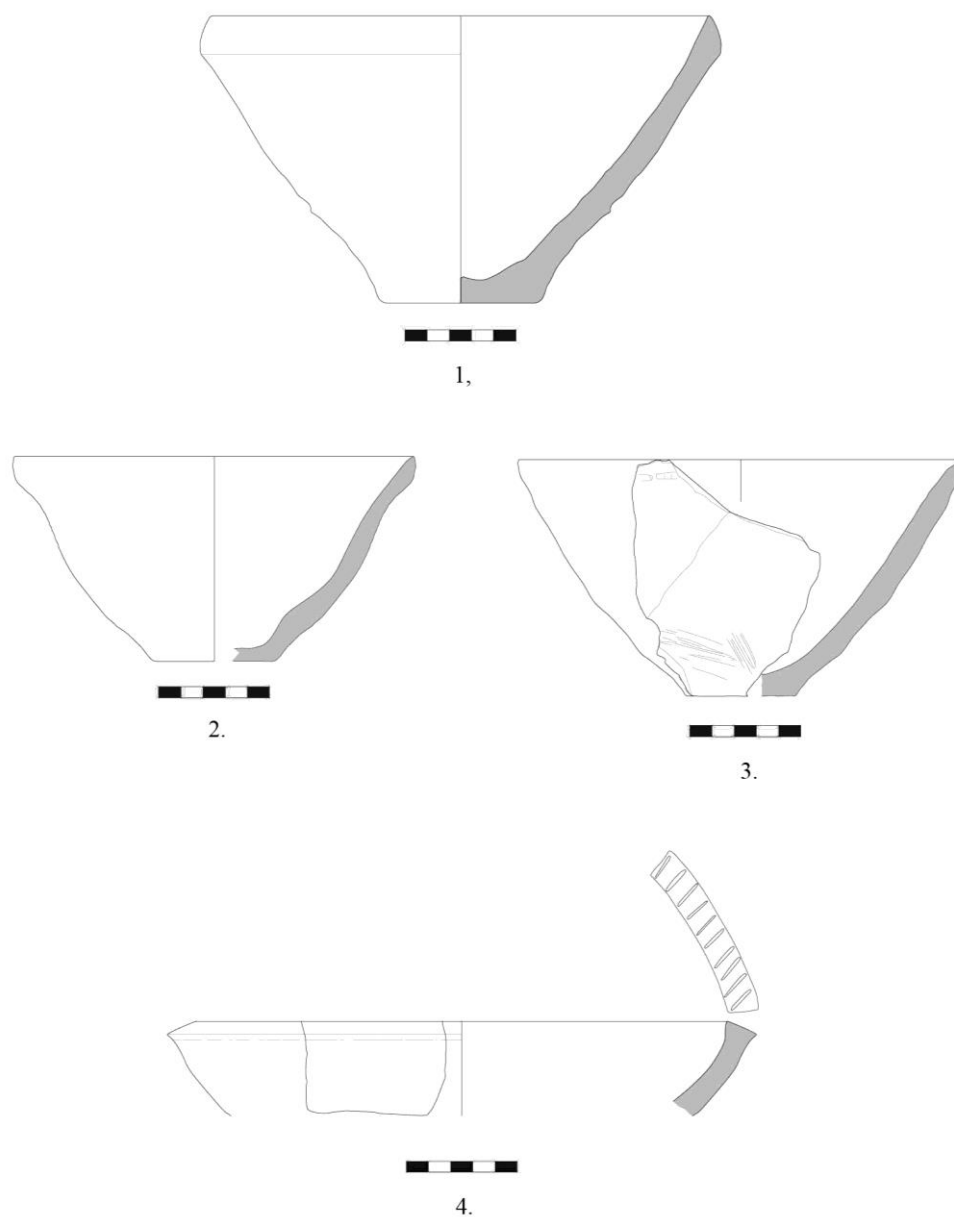


Fig. 2 - The Late Uruk pottery assemblage (phase 1).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.28/12	Neckless jar	Eridu: Safar - Musfafa - Lloyd 1981, fig. 71:48-50
2	SG.15.A.28/48	Low-necked jar	Uruk: Sürenhagen 1986, nos. T/48, 77, 93
3	SG.15.A.27/3	Low-necked jar	-
4	SG.15.A.28/55	Low-necked jar	-
5	SG.15.A.28/47	Spouted jar	-
6	SG.15.A.28/49	Spout	-

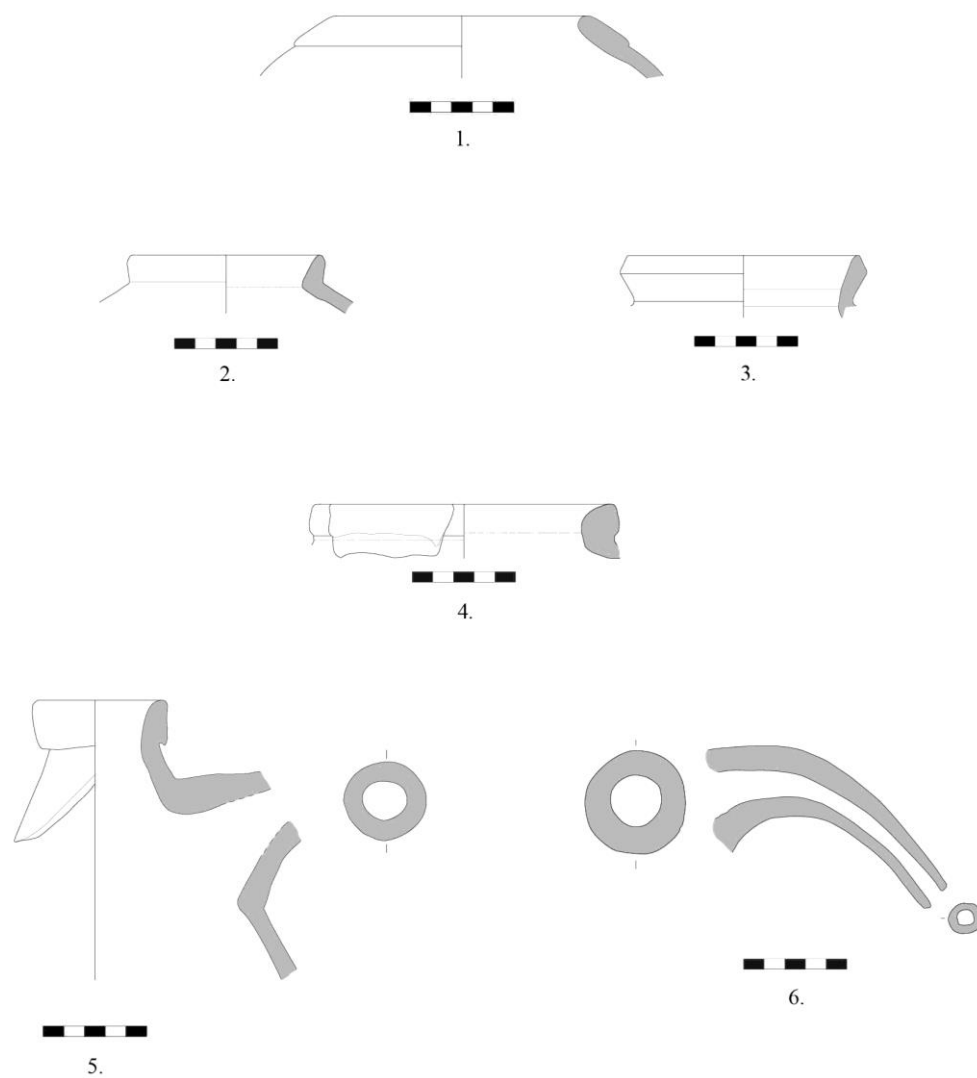


Fig. 3 - The Late Uruk pottery assemblage (phase 1).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.18/1	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
2	SG.15.A.16/2	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
3	SG.15.A.48/14	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
4	SG.15.A.15/6	“Flower Pot”	Tell el-’Oueili: Calvet 1991 pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
5	SG.15.A.16/6	“Flower Pot”	Tell el-’Oueili: Calvet 1991 pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
6	SG.15.A.16/3	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
7	SG.15.A.16/5	“Flower Pot”	Tell el-’Oueili: Calvet 1991 pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
8	SG.15.A.16/15	“Flower Pot”	-
9	SG.15.A.16/14	“Flower Pot”	-

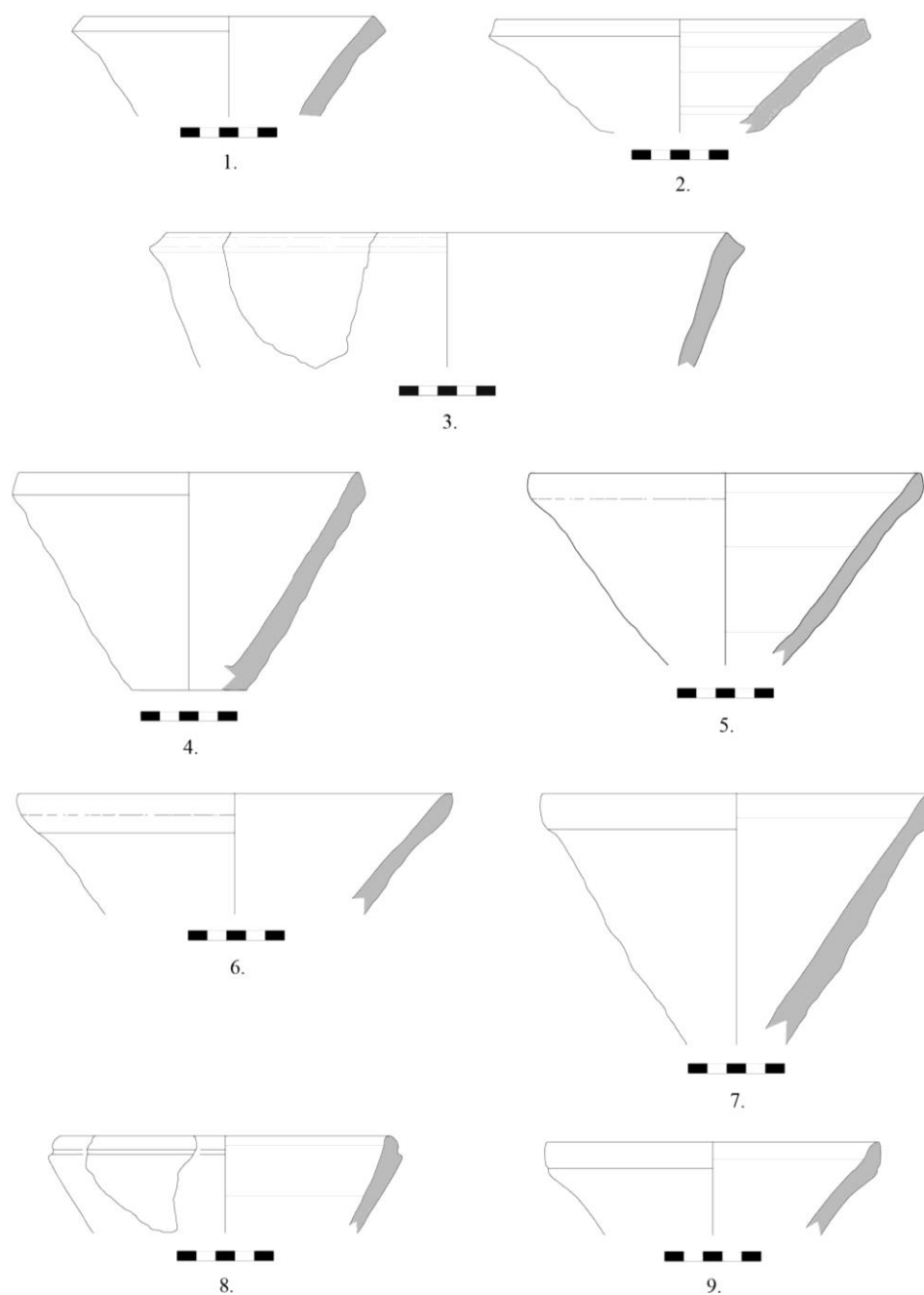


Fig. 4 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.47/75	Beaker	-
2	SG.16.A.47/18	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
3	SG.16.A.48/12	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
4	SG.16.A.48/11	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
5	SG.15.A.18/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
6	SG.15.A.15/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
7	SG.15.A.15/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
8	SG.15.A.15/2	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
9	SG.16.A.47/5	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a

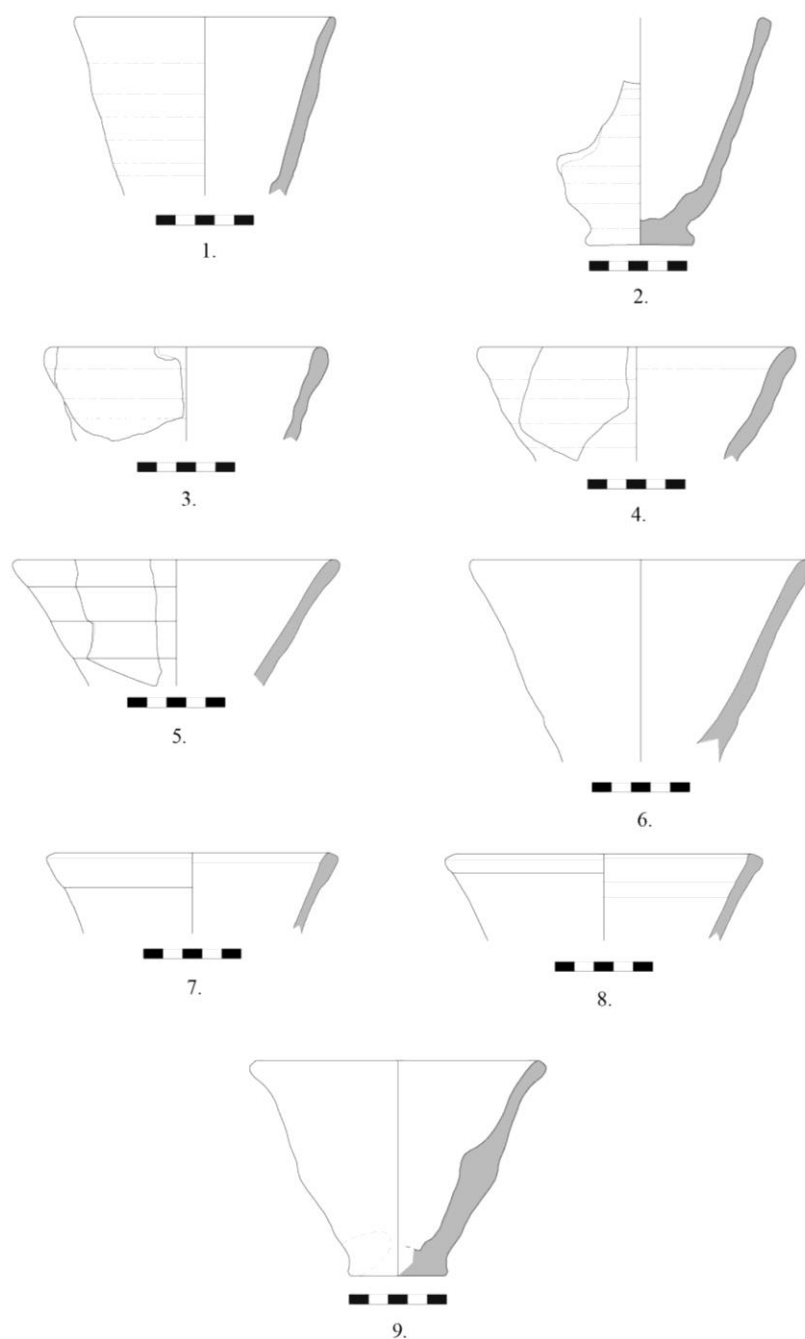


Fig. 5 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.48/15	Deep bowl	-
2	SG.16.A.47/20	Deep bowl	-
3	SG.16.A.47/4	Deep bowl	-
4	SG.16.A.48/1	Deep bowl	-
5	SG.15.A.16/20	Deep bowl	-
6	SG.16.A.47/24	Deep bowl	-
7	SG.16.A.47/94	Deep bowl	-

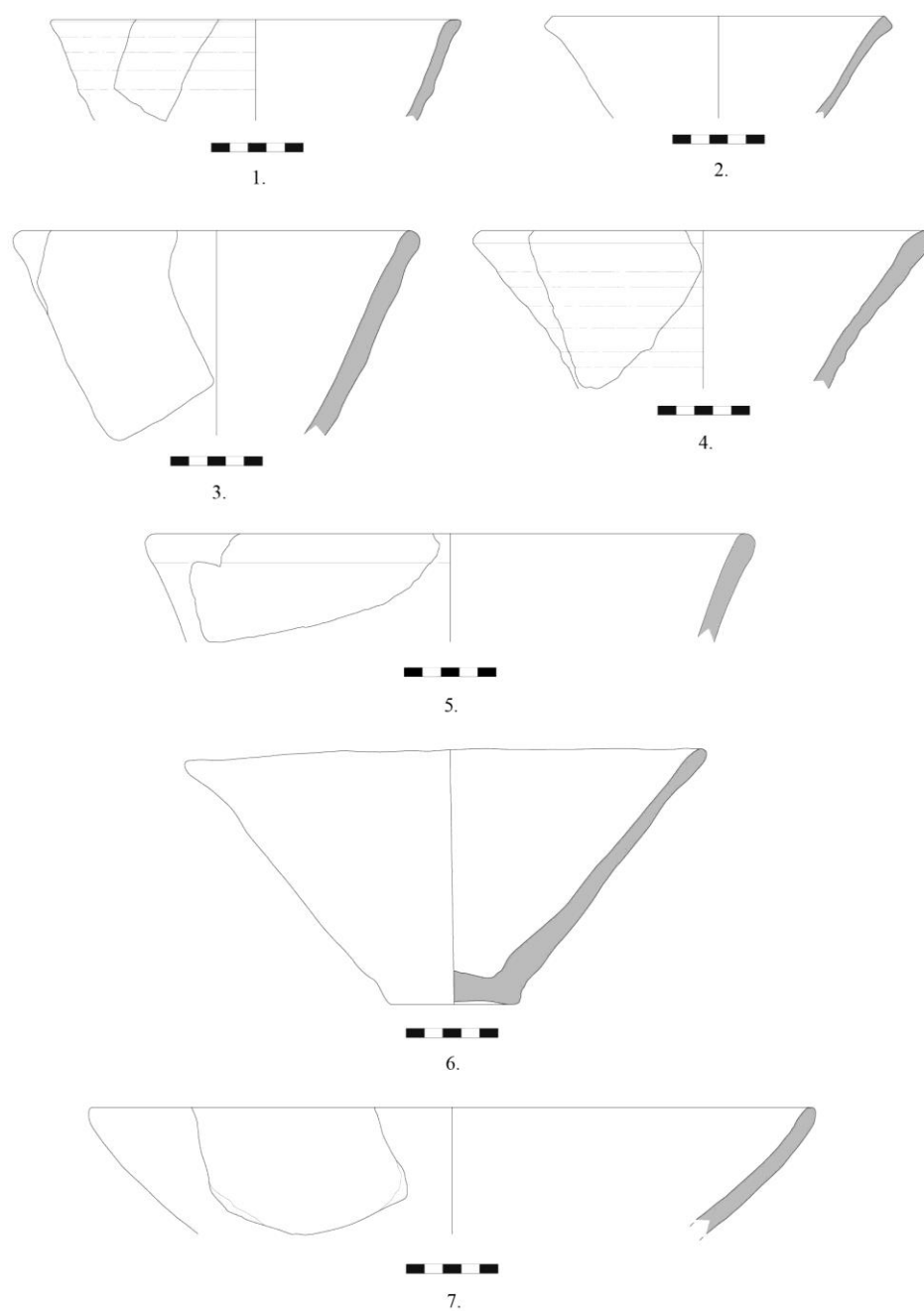


Fig. 6 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.47/85	Cup	-
2	SG.16.A.48/2	Cup	-
3	SG.15.A.16/21	Bowl	-
4	SG.15.A.15/1	Bowl	-
5	SG.15.A.16/9	Bowl	-

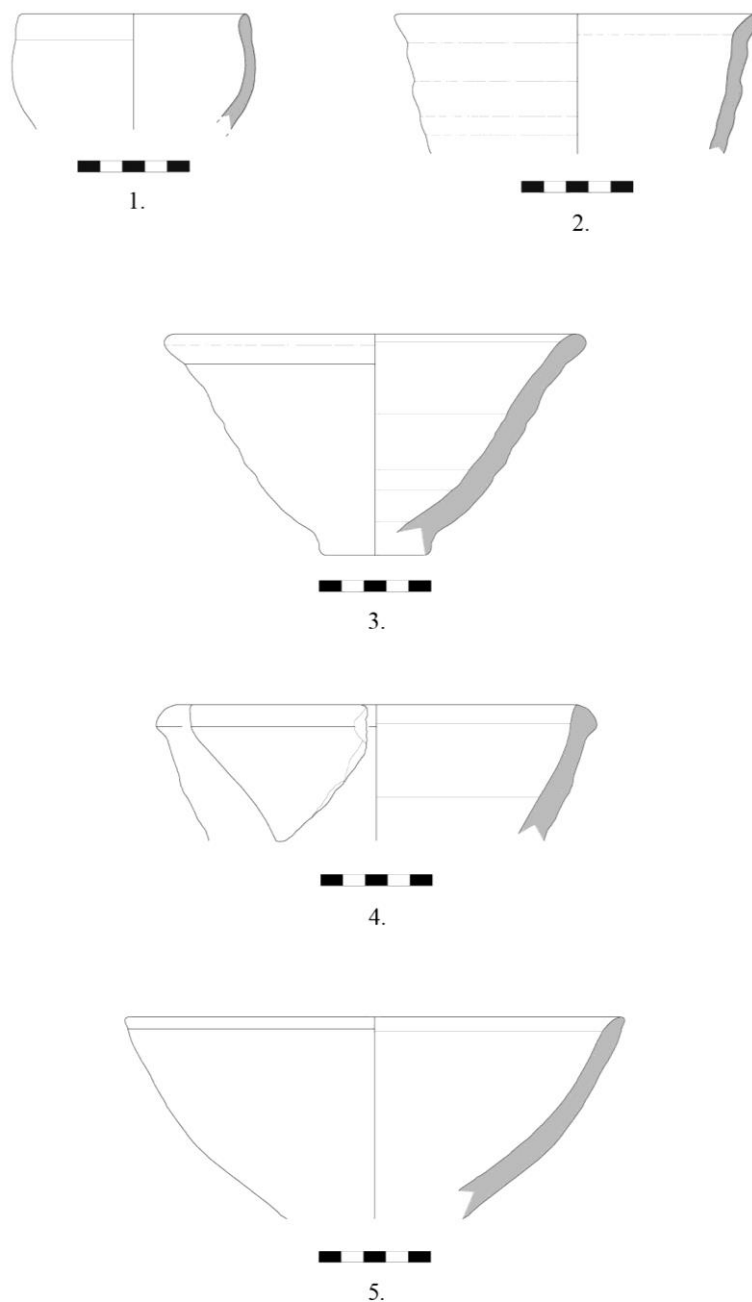


Fig. 7 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.16/22	Low-necked jar	Nippur: Wilson 1986, fig. 6:10; Ur: Woolley 1955, pl. 62:JN 131
2	SG.15.A.16/24	Low-necked jar	Nippur: Wilson 1986, fig. 6:10; Ur: Woolley 1955, pl. 62:JN 131
3	SG.15.A.16/23	Low-necked jar	-
4	SG.16.A.44.6	Low-necked jar	-
5	SG.16.A.44/1	Low-necked jar	-
6	SG.16.A.44/3	Low-necked jar	-
7	SG.15.A.16/26	Tea-pot	-
8	SG.15.A.18/5	High-necked jar	-
9	SG.16.A.44/4	High-necked jar	-
10	SG.15.A.15/8	Medium-necked jar	Jemdet Nasr: Matthews 2002, fig. 35:13; Nippur: Wilson 1986, fig. 4:11
11	SG.16.A.44/2	Medium-necked jar	Jemdet Nasr: Matthews 2002, fig. 35:13; Nippur: Wilson 1986, fig. 4:11
12	SG.15.A.11/12	Medium-necked jar	-

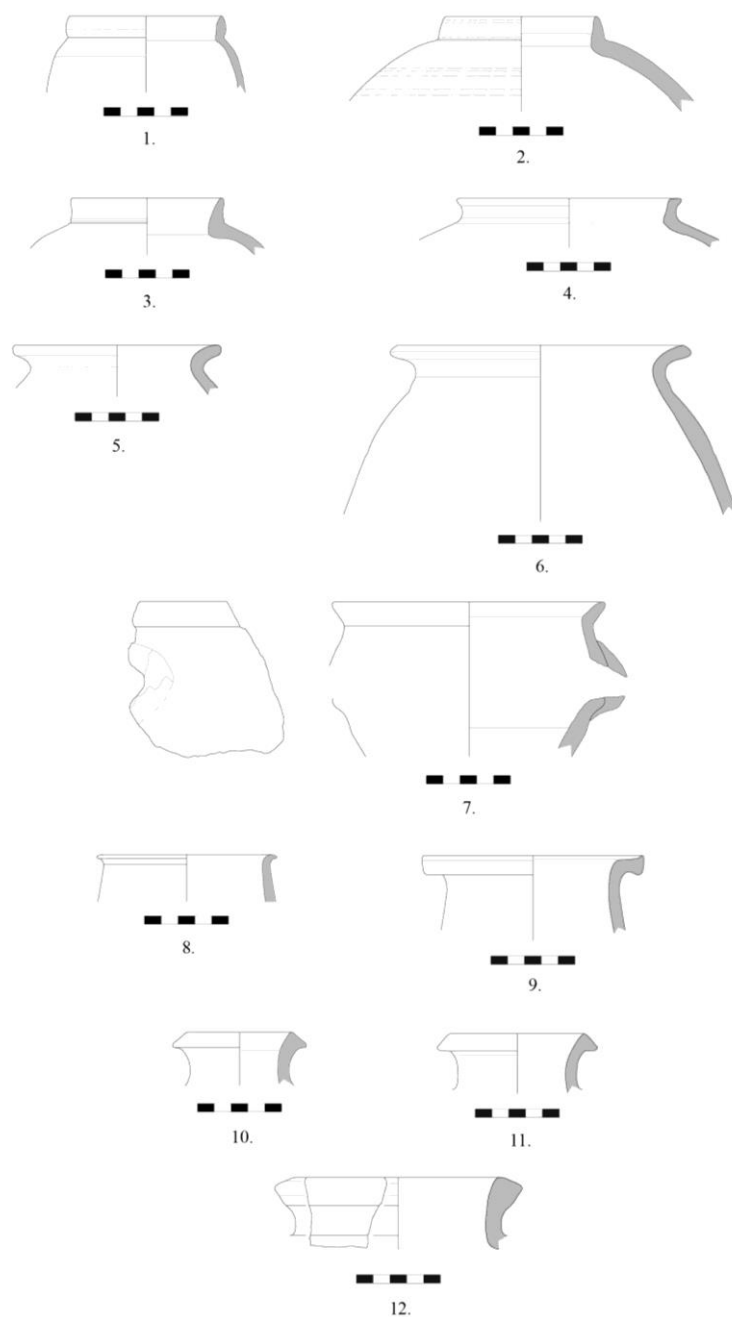


Fig. 8 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.A.16/37	Small bottle	-
2	SG.15.A.16/21	Spout	-
3	SG.15.A.16/30	Spout	-
4	SG.15.A.16/28	Spout	Jemdet Nasr: Matthews 1992, figs. 5-6
5	SG.15.A.16/38	-	-
6	SG.15.A.16/39	-	-

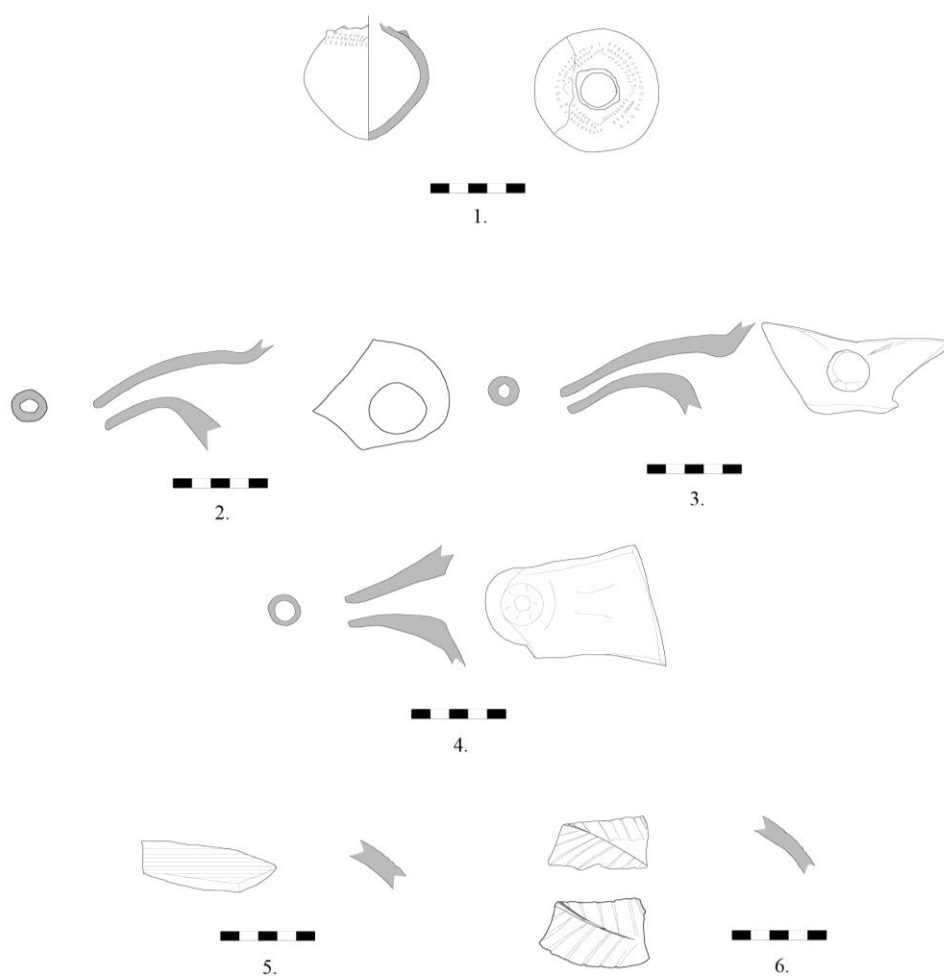


Fig. 9 - The transitional Late Uruk/Jemdet Nasr pottery assemblage (phase 2).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.42/7	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
2	SG.16.A.42/1	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
3	SG.16.A.43/11	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
4	SG.16.A.42/8	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
5	SG.16.A.42/7	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
6	SG.16.A.42/6	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
7	SG.16.A.42/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
8	SG.16.A.42/10	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
9	SG.16.A.42/9	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-66; Ur: Woolley 1955, 66, types RC 5b and TC 7a
10	SG.16.A.42/18	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
11	SG.16.A.42/13	Beveled Rim Bowl	Uruk: Sørenhagen 1986, fig. 7:4
12	SG.16.A.42/14	Beveled Rim Bowl	Uruk: Sørenhagen 1986, fig. 7:4

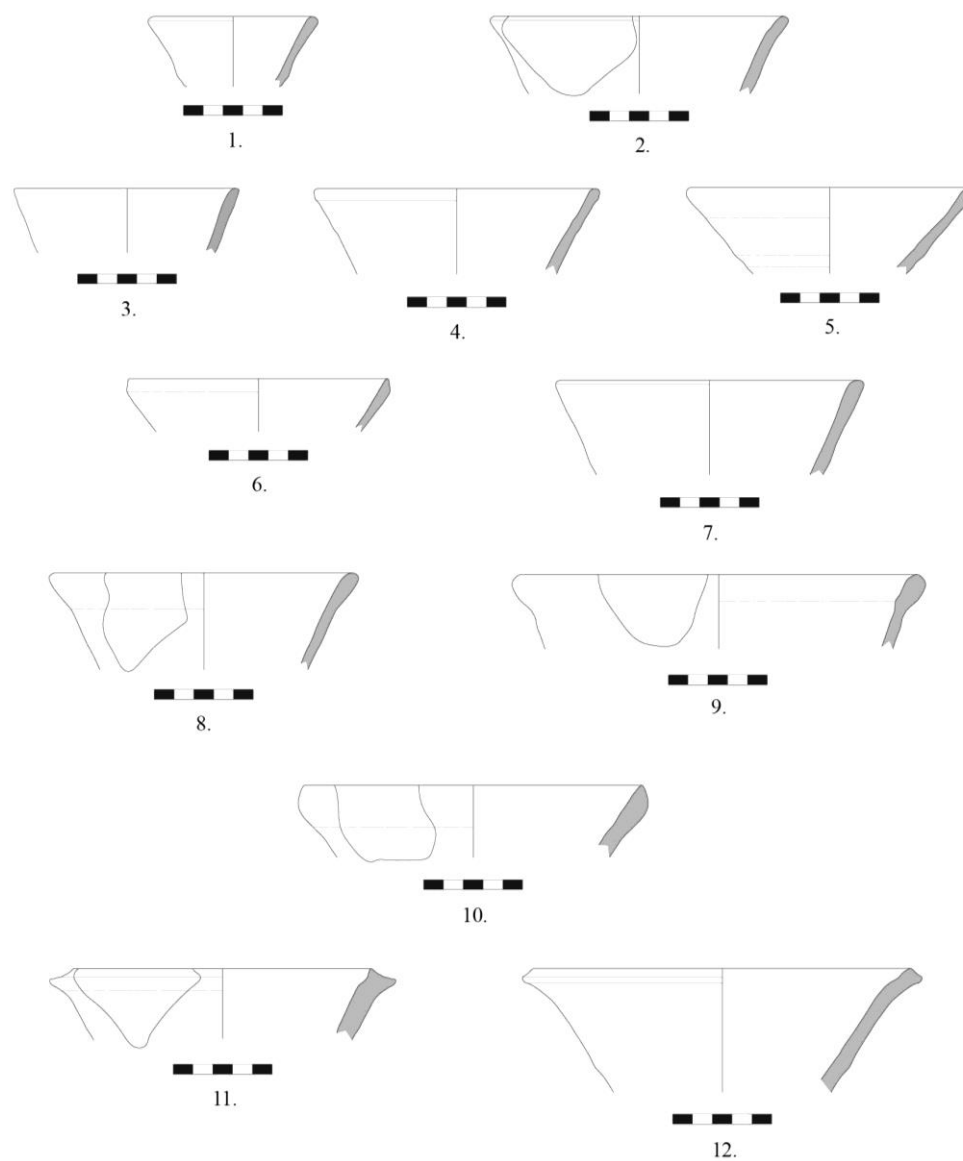


Fig. 10 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.43/42	Low-necked jar	Jemdet Nasr: Matthews 2002, fig. 17:1-6.
2	SG.16.A.43/3	Low-necked jar	Jemdet Nasr: Matthews 2002, fig. 17:1-6
3	SG.16.A.43/96	Low-necked jar	Jemdet Nasr: Matthews 2002, fig. 19:7,9-10
4	SG.16.A.43/92	Medium-necked jar	-
5	SG.16.A.42/32	Medium-necked jar	-
6	SG.16.A.43/4	Medium-necked spouted jar	-

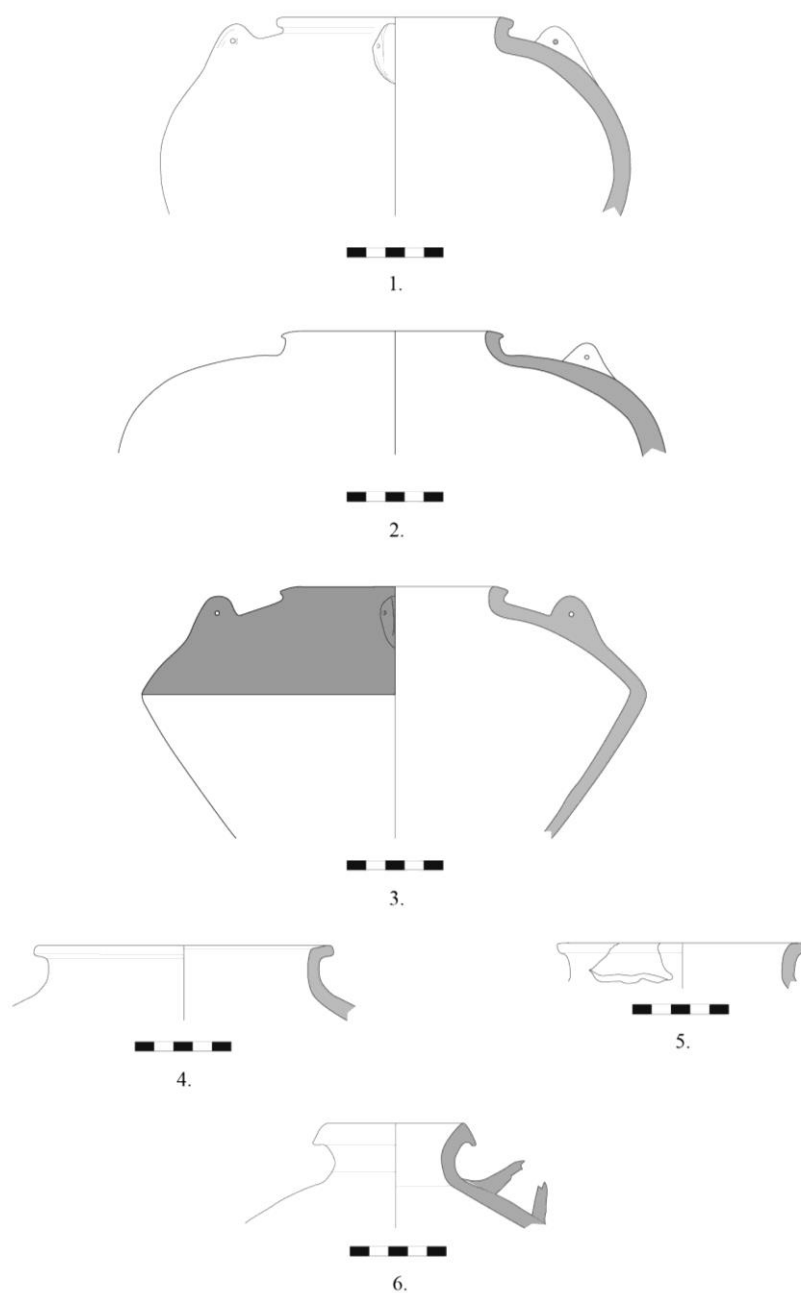


Fig. 11 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.42/44	Medium-necked jar	-
2	SG.16.A.43/2	Medium-necked jar	-

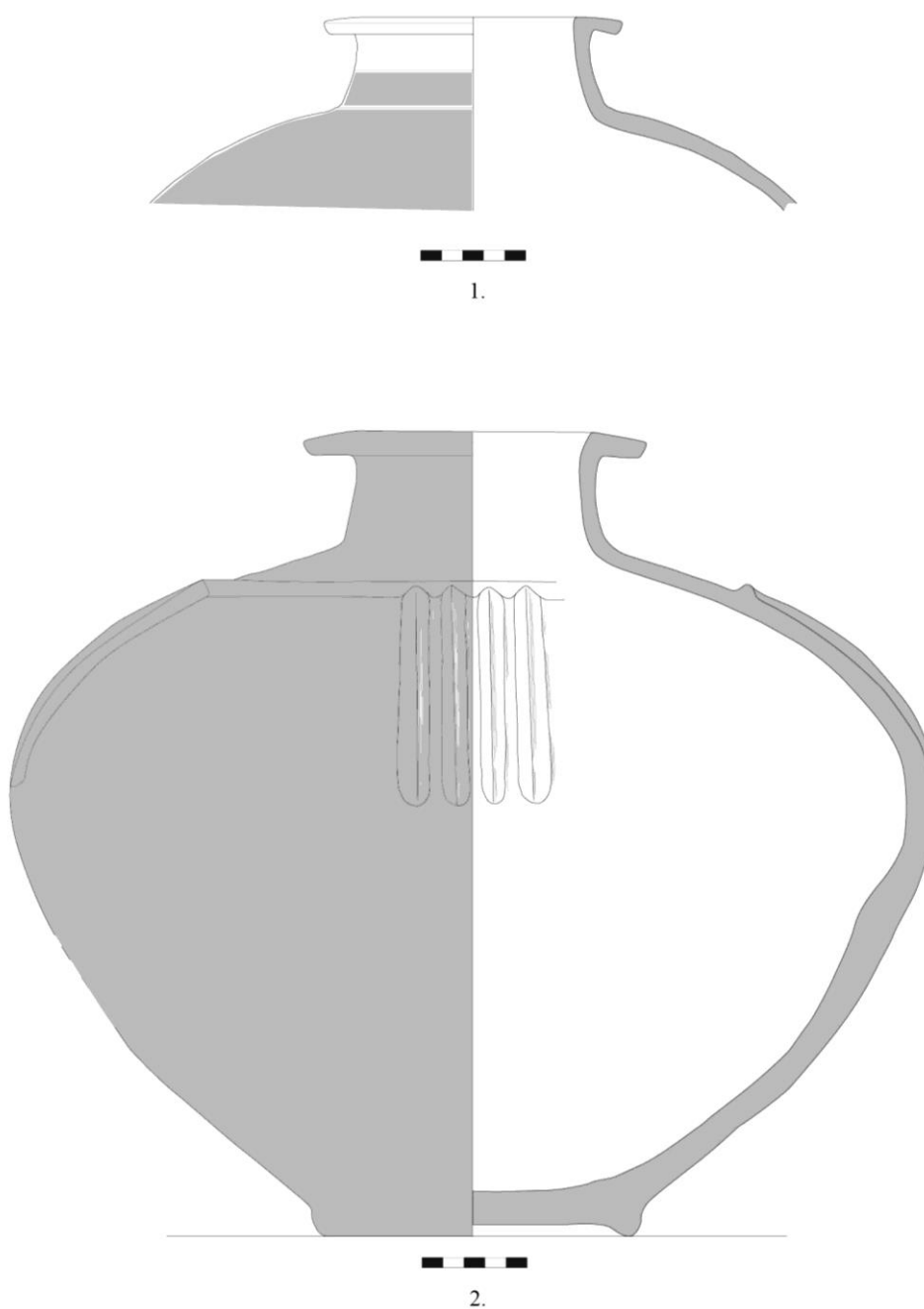


Fig. 12 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.43/1	Medium-necked jar	Diyala: Delougaz 1952, pls. 8, 53; Jemdet Nasr: Matthews 2002, fig. 14:3

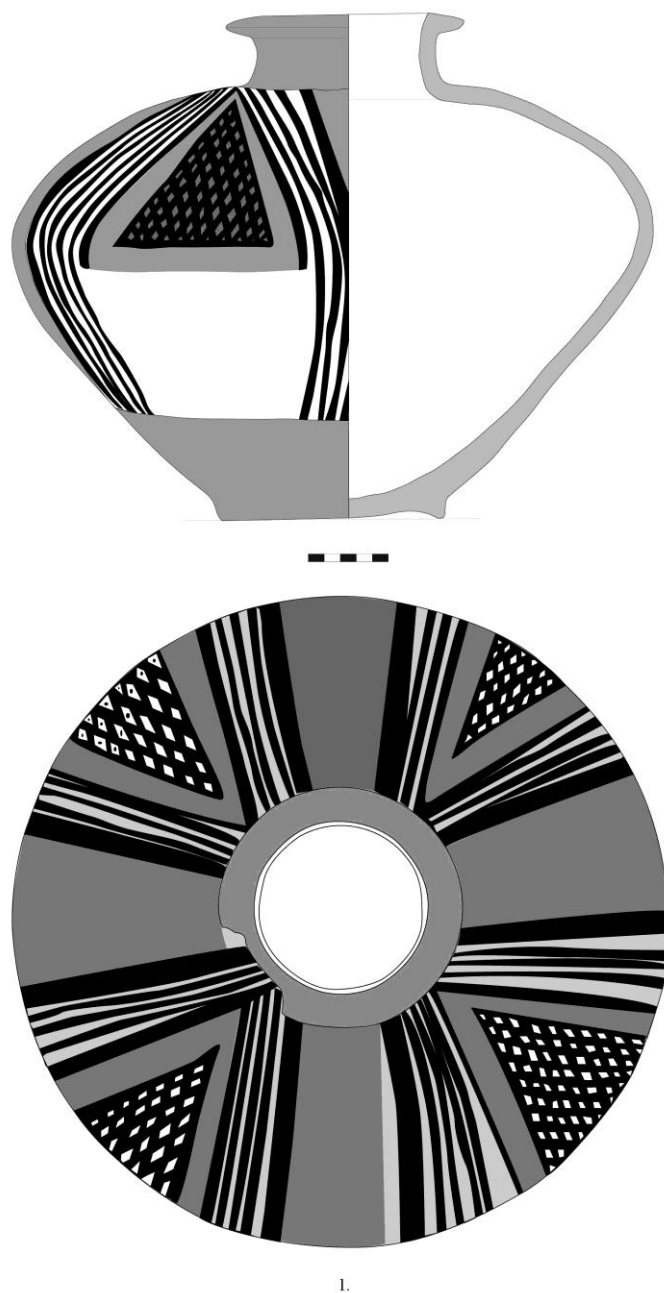


Fig. 13 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.43/56	Jar	-
2	SG.16.A.43/90	Beaker	-
3	SG.16.A.43/64	Jar	Jemdet Nasr: Matthews 2002, figs. 21-22
4	SG.16.A.43/75	Jar	-
5	SG.16.A.43/64c	Jar	Jemdet Nasr: Matthews 2002, figs. 21-22
6	SG.16.A.42/35	Jar	-
7	SG.16.A.43/79	Jar	-
8	SG.16.A.43/80	Jar	Jemdet Nasr: Matthews, fig. 22:10

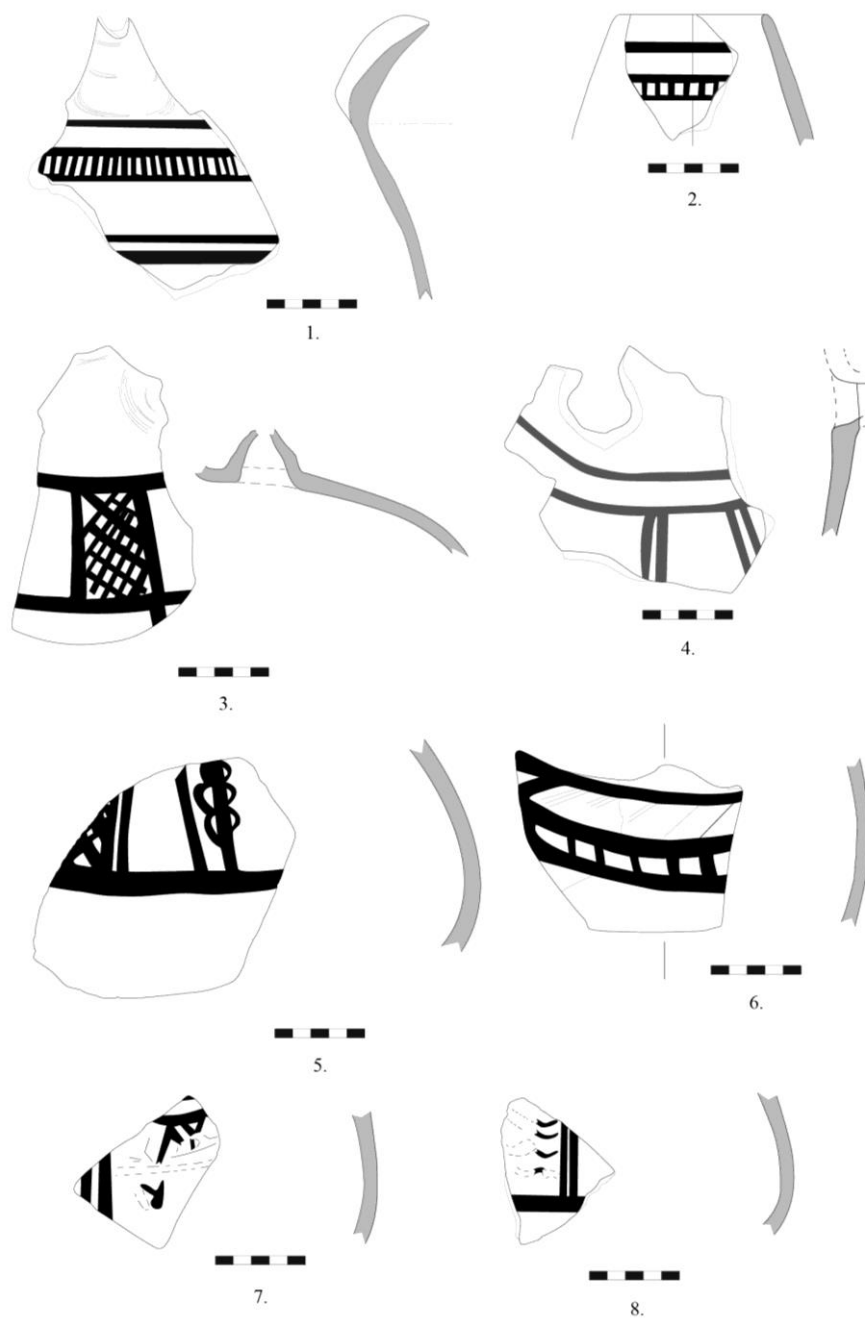


Fig. 14 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.40/1	“Solid Footed Goblet”	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421
2	SG.16.A.41/9	Beaker	-
3	SG.16.A.38/2	Beaker	-
4	SG.16.A.38/11	“Solid Footed Goblet”	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421
5	SG.16.A.38/1	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
6	SG.16.A.41/10	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
7	SG.16.A.41/1	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
8	SG.16.A.38/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
9	SG.16.A.41/6	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
10	SG.16.A.40/6	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
11	SG.16.A.41/20	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
12	SG.16.A.41/18	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
13	SG.16.A.38/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a

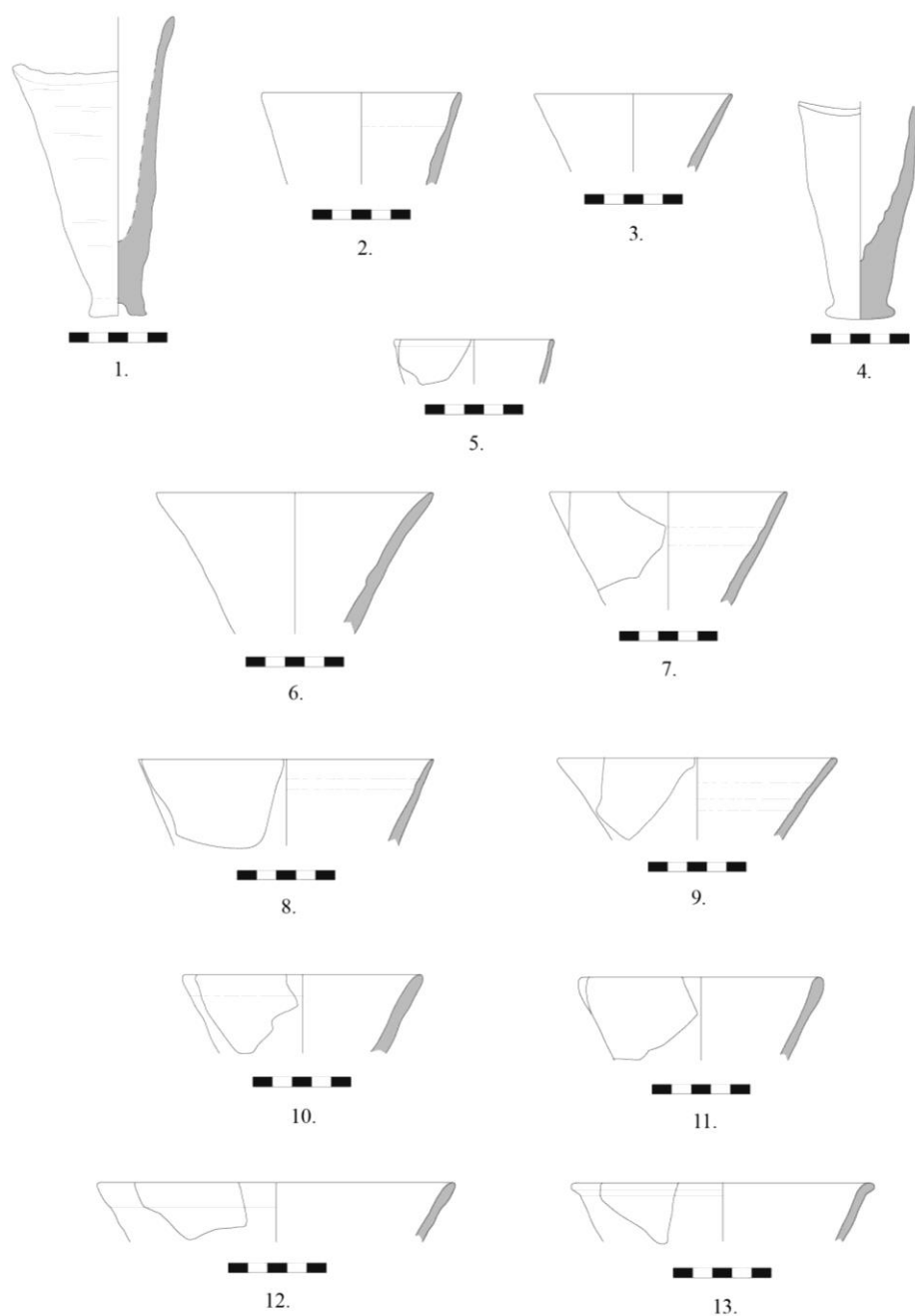


Fig. 15 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.A.39/1	Deep bowl	-
2	SG.16.A.40/7	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
3	SG.16.A.41/21	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
4	SG.16.A.38/10	Beveled Rim Bowl	Uruk: Sürenhagen 1986, fig. 7:4
5	SG.16.A.40/5	“Flower Pot”	Tell el-’Oueili: Calvet 1991, pl. 171:6; Tulul al-Baqarat: Di Michele 2016, fig. 1:5
6	SG.16.A.39/2	High-necked jar	-

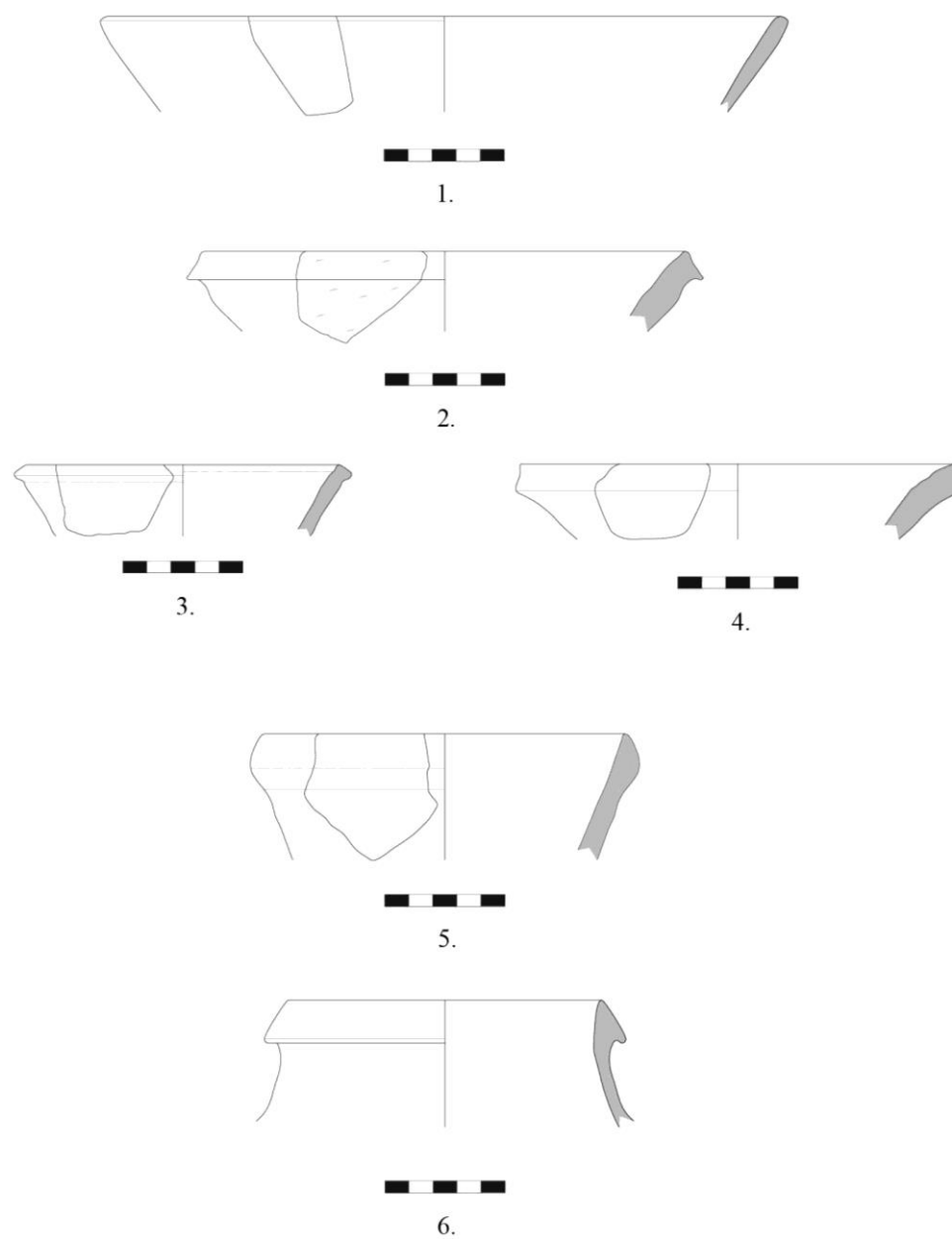


Fig. 16 - The Jemdet Nasr pottery assemblage (phases 3-4).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.127/1	Beaker	-
2	SG.17.A.121/2	Beaker	-
3	SG.17.A.117/2	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
4	SG.17.A.126/12	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
5	SG.17.A.119/54	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
6	SG.17.A.126/9	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
7	SG.17.A.117/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
8	SG.17.A.121/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
9	SG.17.A.121/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
10	SG.17.A.126/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
11	SG.17.A.122/2	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
12	SG.17.A.122/4	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
13	SG.17.A.119/51	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
14	SG.17.A.123/2	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-66; Ur: Woolley 1955, 66, types RC 5b and TC 7a
15	SG.17.A.122/1	Beveled Rim Bowl	Uruk: Sørenhagen 1986, fig. 7:4

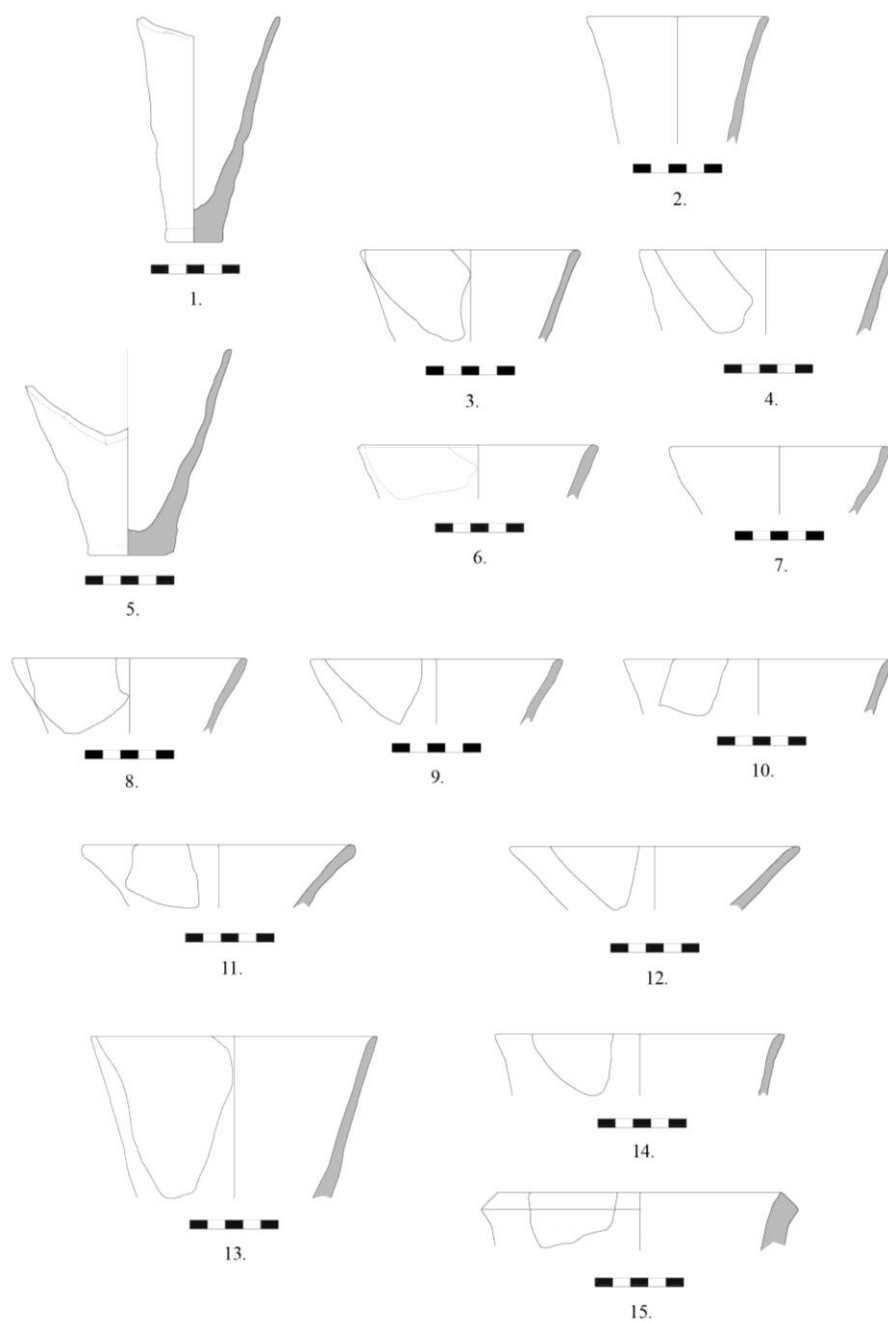


Fig. 17 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.T.420/5	Low-necked jar	-
2	SG.17.A.127/4	Low-necked jar	-
3	SG.17.A.119/129	Low-necked jar	-
4	SG.17.A.L.418/1	Low-necked jar	-
5	SG.17.A.117/7	Medium-necked jar	-
6	SG.17.A.122/5	Medium-necked jar	-
7	SG.17.A.126/13	Medium-necked jar	-
8	SG.17.A.119/27	Medium-necked jar	-
9	SG.17.A.119/32	Medium-necked jar	-
10	SG.17.A.119/30	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
11	SG.17.A.119/31	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
12	SG.17.A.121/8	Medium-necked jar	-
13	SG.17.A.119/33	Medium-necked jar	-

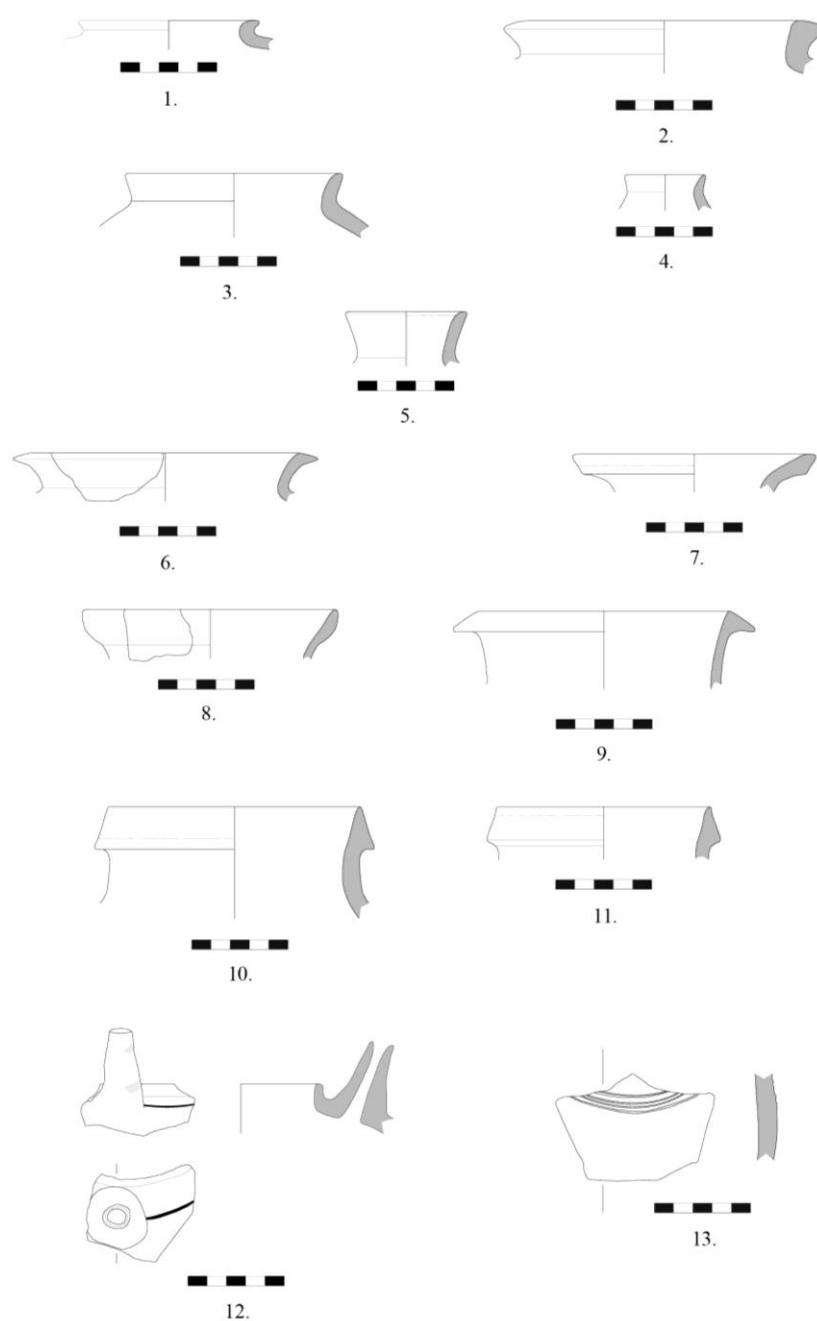


Fig. 18 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.L.404/2	Beaker	-
2	SG.17.A.116/24	Beaker	-
3	SG.17.A.116/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
4	SG.17.A.116/6	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
5	SG.17.A.114/18	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
6	SG.17.A.114/3	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
7	SG.17.A.113/2	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
8	SG.17.A.116/1	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
9	SG.17.A.113/34	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
10	SG.17.A.113/38	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
11	SG.17.A.114/10	Bowl	Nippur: Wilson 1986, 60, fig. 5:5-6; Ur: Woolley 1955, 66, types RC 5b and TC 7a
12	SG.17.A.111/1	“Solid Footed Goblet”	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421
13	SG.17.A.111/3	“Solid Footed Goblet”	Abu Salabikh: Moon 1987, nos. 97-107; Diyala: Delougaz 1952, B-007.700, B.076.700, B.077.700; Fara: Martin 1988, no. 36; Uruk: Pongratz-Leisten 1989, 38, 39, 419-421

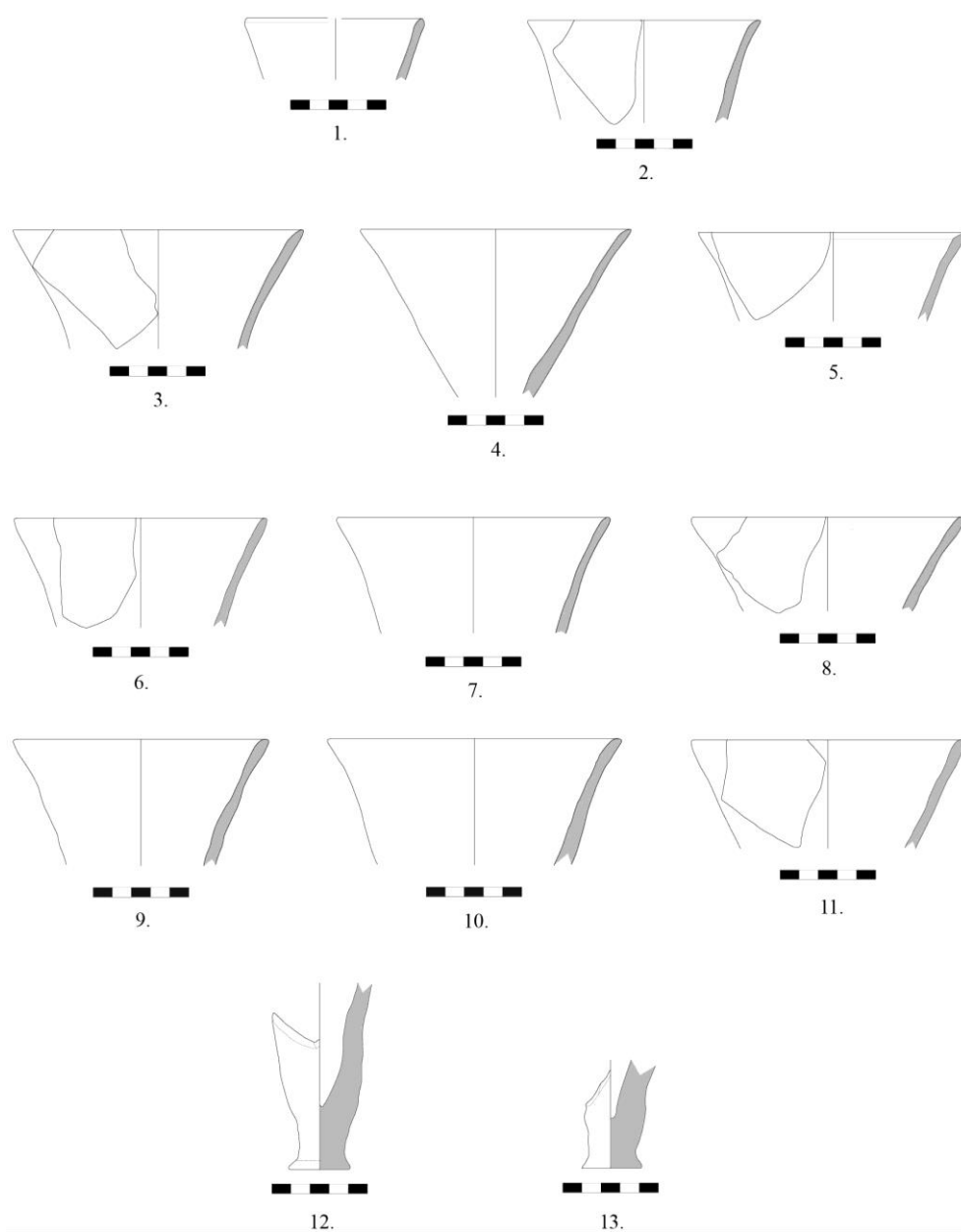


Fig. 19 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.116/31	Bowl	-
2	SG.17.A.116/17	Bowl	-
3	SG.17.A.114/30	Bowl	-
4	SG.17.A.116/7	Cup	-
5	SG.17.A.114/20	Cup	-
6	SG.17.A.115/10	Jar	-

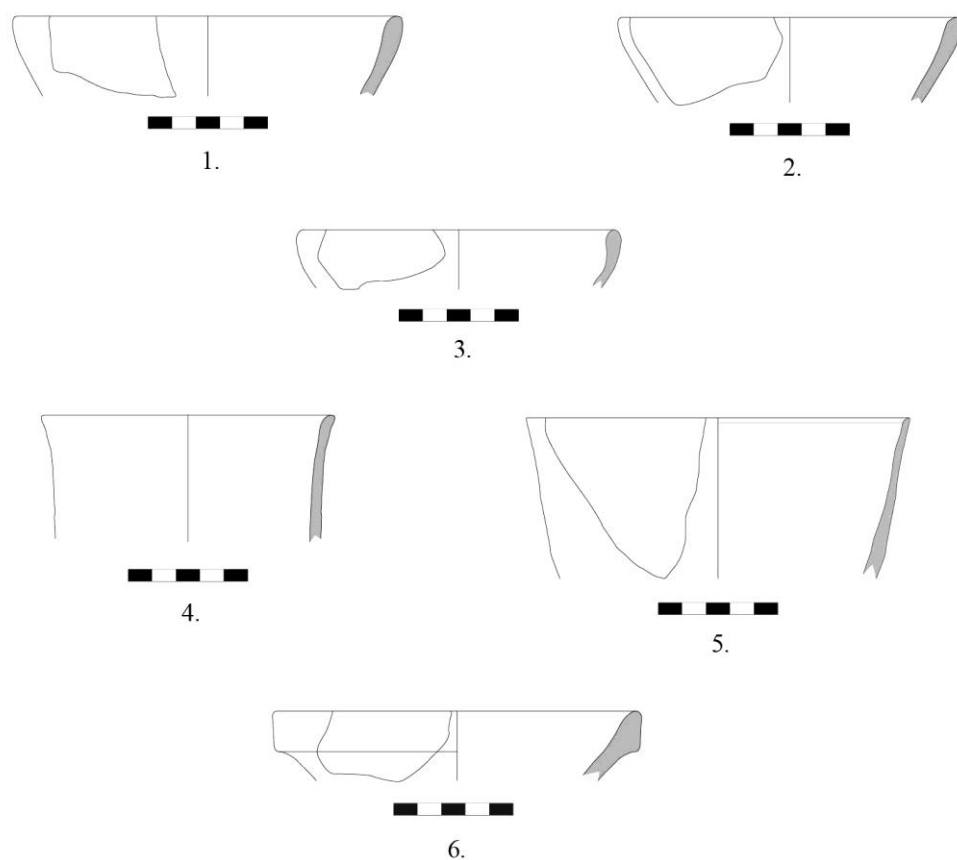


Fig. 20 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.113/40	Low-necked jar	-
2	SG.17.A.114/34	Low-necked jar	-
3	SG.17.A.111/7	Low-necked jar	-
4	SG.17.A.115/11	Low-necked jar	-
5	SG.17.A.116/40	Medium-necked jar	-
6	SG.17.A.113/41	Medium-necked jar	-
7	SG.17.A.111/4	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
8	SG.17.A.113/44	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
9	SG.17.A.113/45	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
10	SG.17.A.114/31	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
11	SG.17.A.113/42	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
12	SG.17.A.113/43	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
13	SG.17.A.114/33	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
14	SG.17.A.111/5	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
15	SG.17.A.113/46	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
16	SG.17.A.111/6	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107

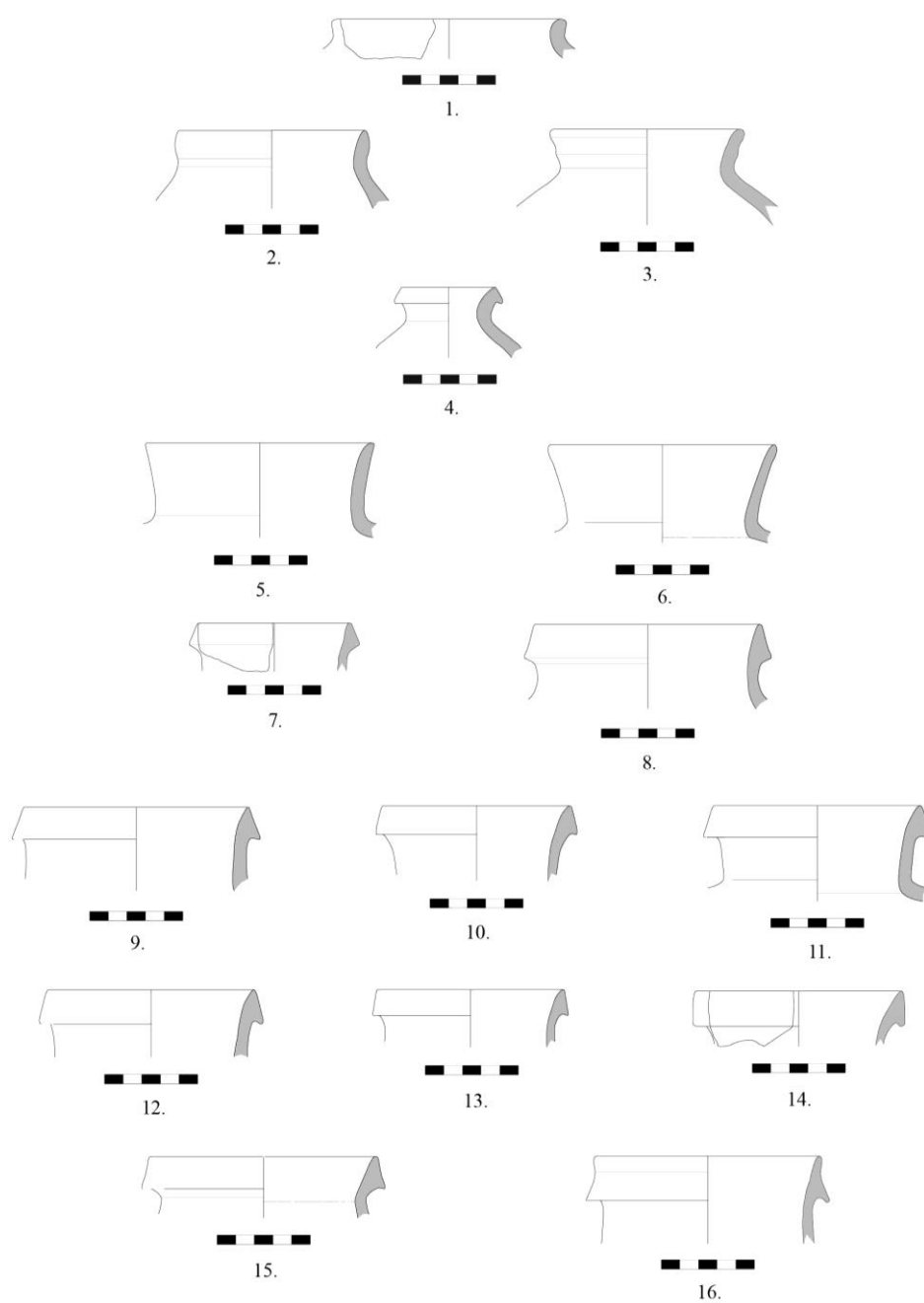


Fig. 21 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.116/41	Low-necked jar	-
2	SG.17.A.115/18	Jar	-
3	SG.17.A.115/17	Jar	-
4	SG.17.A.114/36	Jar	-
5	SG.17.A.115/37	Jar	-
6	SG.17.A.113/48	Spout	-
7	SG.17.A.114/38	Spout	-
8	SG.17.A.113/50	Spout	-
9	SG.17.A.113/49	Spout	-
10	SG.17.A.114/35	Spout	-

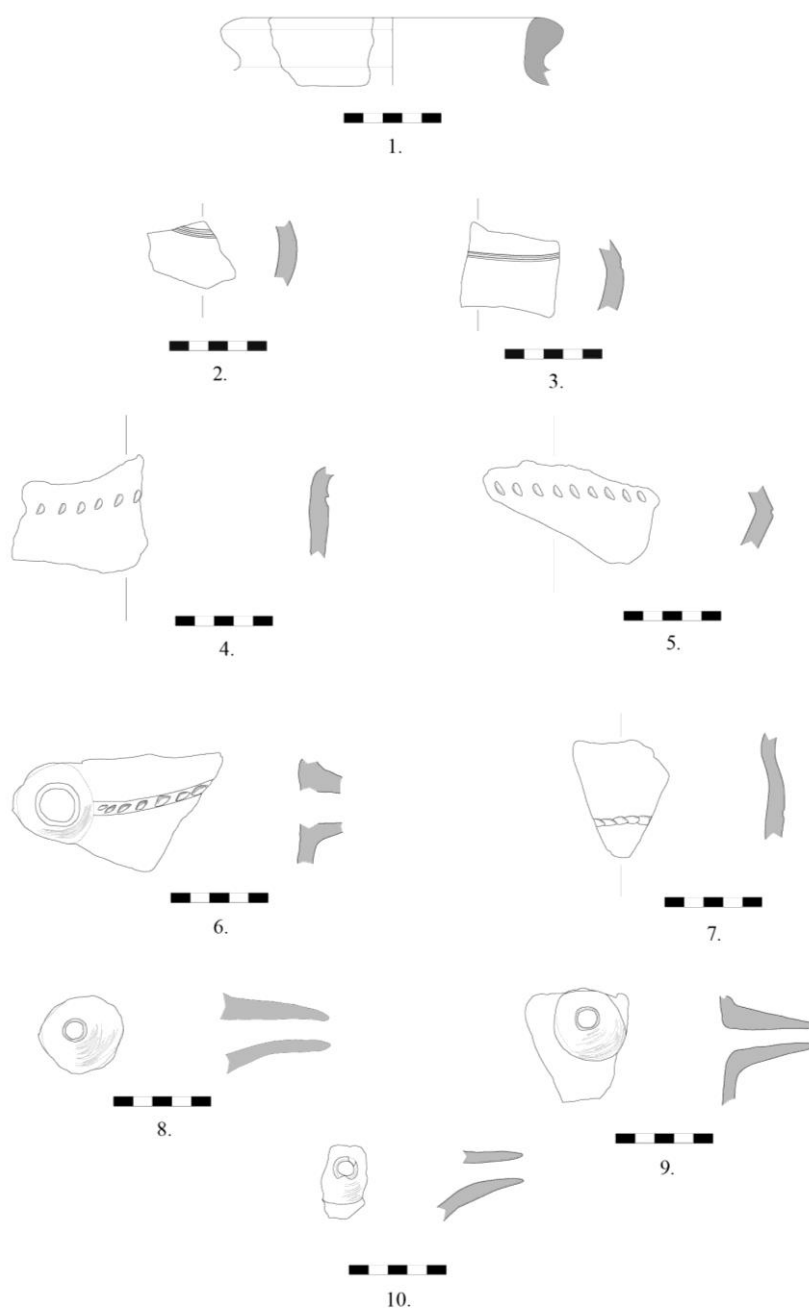


Fig. 22 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.109/3	Beaker	-
2	SG.17.A.L.400/12	Beaker	-
3	SG.17.A.107/1	Beveled Rim Bowl	-
4	SG.17.A.L.400/3	Bowl	-
5	SG.17.A.L.400/6	Bowl	-
6	SG.17.A.L.400/2	Bowl	-
7	SG.17.A.109/1	Bowl	-
8	SG.17.A.L.400/5	Bowl	-
9	SG.17.A.L.400/1	Cup	-
10	SG.17.A.107/4	Carinated bowl	-
11	SG.17.A.108/1	Jar	-
12	SG.17.A.108/9	“Solid Footed Goblet”	Abu Salabikh: Postgate 1983, fig. 16:6; Diyala: Delougaz 1952, 148:2; Ur: Woolley 1956, pl. 56:7

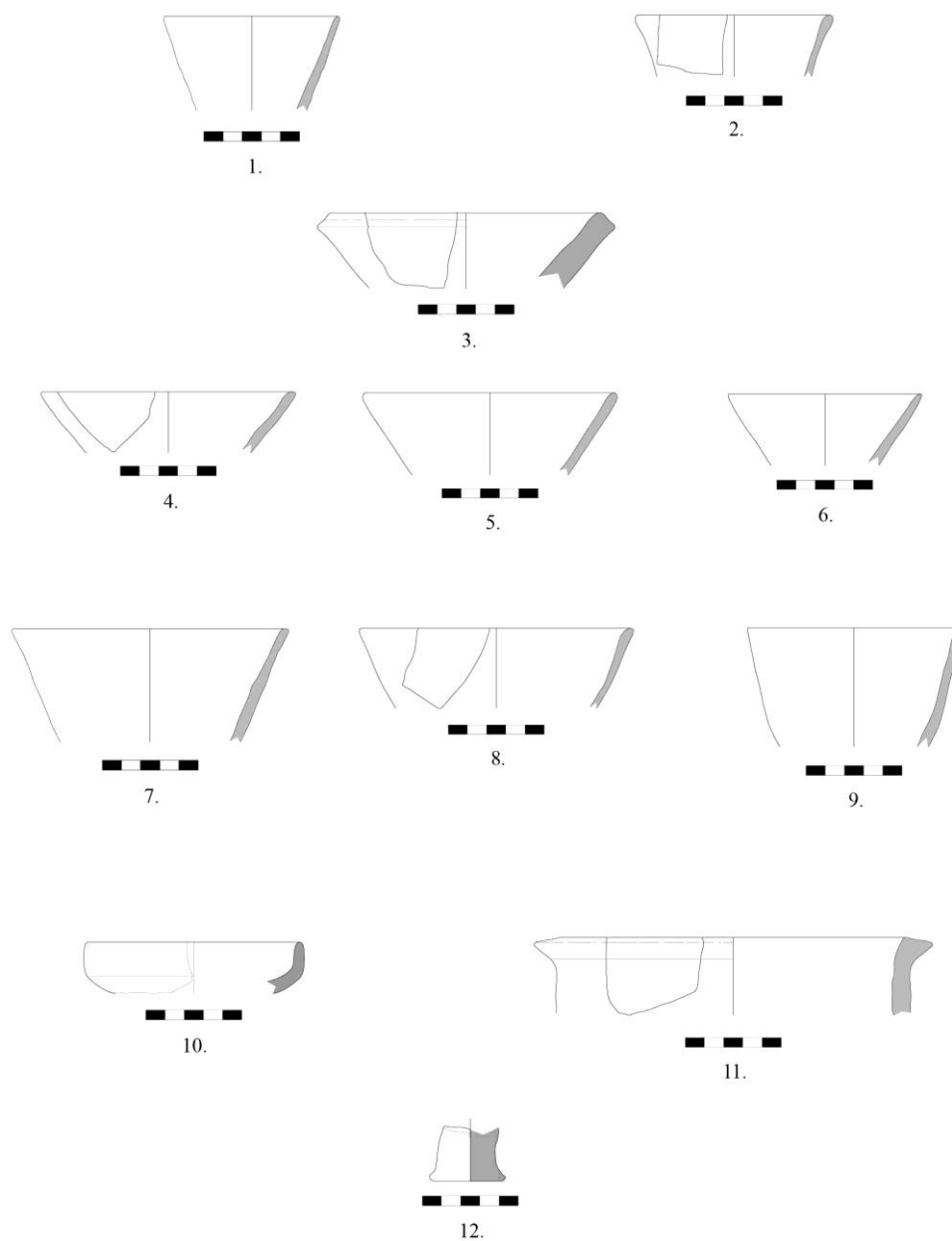


Fig. 23 - The Early Dynastic I pottery assemblage (phases 5-7).

No.	Exc. No.	Shape/Type	Comparanda
1	SG.17.A.L.400/14	Medium-necked jar	-
2	SG.17.A.107/6	Medium-necked jar	-
3	SG.17.A.109/4	Medium-necked jar	-
4	SG.17.A.107/5	Medium-necked jar	Abu Salabikh: Moon 1987, ABS 552; Nippur: 7NP147, 7NP99, 7NP107
5	SG.17.A.108/3	Loe-necked jar	-
6	SG.17.A.108/4	Jar	-
7	SG.17.A.107/7	Vat	Uruk: Pongratz-Leisten 1988, no.48

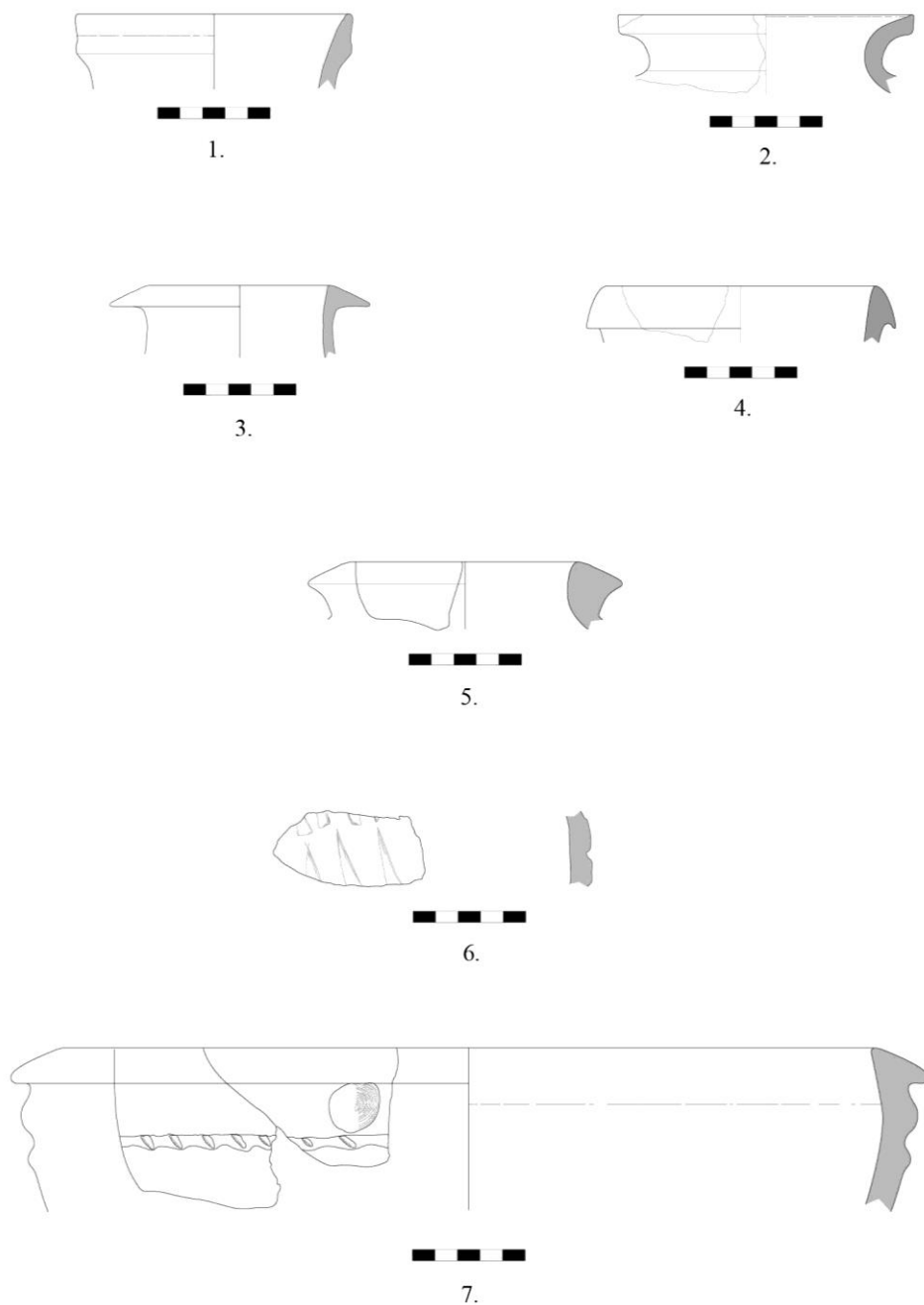


Fig. 24 - The Early Dynastic I pottery assemblage (phases 5-7).

IS THERE A 2ND MILLENNIUM BC PHASE AT TELL ZURGHUL? AN ASSESSMENT ON AREA C POTTERY ASSEMBLAGE

Eloisa Casadei - Valentina Oselini - Sapienza University of Rome¹

The survey carried out in 2015 and 2016 in the western part of the site (Area C) revealed the presence of materials attributed to the first half of the 2nd millennium BC. Comparisons allow us to date this assemblage to a chronological range between 1800 and 1600 BC, showing that at least this part of the site was occupied during the Isin-Larsa and Old Babylonian periods. The types of structures identified on the surface and related to 2nd millennium BC pottery - mainly represented by pottery drains, small fragment of walls, and traces of kilns - suggest that this area was possibly used for craft activities, particularly concentrated on the small Mound C and in the central part of Area C.

Keywords: 2nd millennium BC; Area C; survey; Southern Mesopotamia; Lagaš region

During the 2015 and 2016 archaeological fieldworks at Tell Zurghul, a surface survey was conducted in Area C, in the western part of the site.² The ceramic materials collected are mainly dated to the 3rd millennium BC, from the earliest phase of the Early Dynastic to the Ur III period.³ Nevertheless, a small group of shards can be related to the 2nd millennium BC, a fact of great interest for the reconstruction of the Lagaš region during the Isin-Larsa and Old Babylonian periods (henceforth IL and OB respectively).

1. THE LAGAŠ REGION AT THE BEGINNING OF THE 2ND MILLENNIUM BC

According to textual sources, at the beginning of the 2nd millennium BC, immediately after the incursion of the Elamites, the area previously pertained to the political entity of the State of Lagaš was under the direct control of the king of Larsa.⁴ The archaeological evidence dated to this period from the two main sites, al-Hiba and Tello, are scanty and very bad preserved.⁵ At al-Hiba, ancient Lagaš, traces of early 2nd millennium BC occupation were found in area B only. They consist in a mud-brick terrace, built above the 3rd millennium BC remains of the Bagara Temple, and in a small group of graves that originally were related to domestic structures.⁶ The textual data dated to the reign of Sin-Iddinam (1849-1843 BC) found among the grave goods of a child burial, represent a *terminus ante quem* for the later occupation of the site.⁷ At Tello, ancient Girsu, the

¹ The article is the product of a joint work; V. Oselini wrote § 3 and E. Casadei § 4; § 1, 2, 5 have been written jointly. However, the different parts have been conceived together.

² We wish to thank the directors of the Italian Archaeological Expedition to Nigin, Davide Nadali (Sapienza University of Rome) and Andrea Polcaro (Perugia University), for giving us the opportunity to study the 2nd mill. BC assemblage from the survey in Area C. We are also grateful to the members of the expedition for kindly help in the documentation of the shards.

³ Zingarello in press. For a general overview of the site see Nadali - Polcaro 2018.

⁴ For the historical background of the Southern Mesopotamia during the 2nd millennium BC, see: Charpin - Edzard - Stol 2004; Liverani 2015, 267.

⁵ For a general discussion about the extension of the occupation in the Southern Alluvial Plain, see: Adams 1981, 171; Adams - Nissen 1975, 35-54. For an overview on the period, see also Stone 2002.

⁶ Hansen 1978, 80-83.

⁷ Hansen 1978, 83.

chronological definition of the evidence is often problematic. Parrot recognized the OB level of the domestic quarter in the *Tell de l'Est* and the related graves excavated by Cross in the Tell H.⁸ The presence of some scattered evidence, i.e. of grey ware small jars decorated with white filled incisions, discovered by de Sarzec in 1900 expedition on the so called *Tell de Tablettes*, bears witness to a larger extension of the settlement, during the IL-OB period.⁹ At Tell Zurghul, Koldewey in his first exploration of the site, mentioned the presence of OB graves, although their exact position on the site is not yet clear.¹⁰

2. THE AREA C AT TELL ZURGHUL: METHODOLOGY AND DATA FROM THE SURVEY

Area C is located in the western part of the site, immediately to the South-West of a possible dried-up watercourse. It consists of a terrain with a slope in an East-West direction, three major ridges with a convex cross-section, and a small heap called Mound C, which is characterized by ashy soil located in front of the central and southern ridges.¹¹ A total area of about 250 × 170 m was delimited and subdivided in topographical units (TU), transects, and collection units (fig. 1). The topographical units were used only during the 2016 season, they are 9 and have been chosen according to the topography of the site. TU 1 and 2 were chosen as test-units during the first day of survey, TU 3-6 represent the quadrant of the small Mound C, TU 7-9 are the larger and cover the rest of the area. Transects are smaller, North-East/South-West lines ca. 5 m wide. Topographical units and transects were useful for the creation of a grids that helped the collection of the materials from the surface. Finally, the collection units represent the smallest unit of observation and collection. A collection unit can be represented by an archaeological feature, or by a significant concentration of pottery shards.¹²

3. CERAMIC MATERIALS DATED AT THE 2ND MILLENNIUM BC FROM THE AREA C AT TELL ZURGHUL

During the survey carried out in 2015 and 2016 at Tell Zurghul, a total amount of 657 (343+314) shards was collected. Among them, 67 diagnostic fragments (about 10%) can be related to the early 2nd millennium BC Mesopotamian ceramic tradition. A preliminary classification of those fragments is presented here, based on the morphological variations of shapes and profiles. The fragments have been subdivided in different functional shapes, that are Platters, Bowls, Casseroles, Cups, Jars, Pots and Vats. Each shape consists of many types, according to the shape of the entire profile, and sub-types, which mainly correspond to the morphology of rims and bases.

⁸ Parrot 1948, 281.

⁹ For a general reassessment of the Lagaš area, see Huh 2008.

¹⁰ Koldewey 1887, 417. For the evidence of the additional presence of few 2nd millennium BC pottery materials from Tell Zurghul, see the contribution by S. Pizzimenti in this volume on Trench 1 in Area A.

¹¹ Zingarello in press.

¹² In the tag of the pottery shards, capital letters have been used to distinguish the different types of collection unit: D for drain, CU for concentration of pottery shards, S for shaft, W for wall. In 2015, two transects have been subdivided in smaller units, 5 m long, and considered as test-transects. Each unit has been considered as a collection unit by itself (letter tag used was C).

Platters are small shallow vessels with flaring walls characterized by inward (Platter 1a), externally folded (Platter 1b) or carinated rims (Platter 1c) (fig. 3:1-3).

Six types of bowls have been identified. The first (Bowl 1) is a deep conical bowl with narrow diameter (ca. 15 cm), straight walls, and slightly thickened rim (fig. 3:4-5). The second type (Bowl 2) consists of conical bowls with wide diameter (more than 18 cm), and straight walls (fig. 3:6-8). The profile of the rim can be simple (type 2a), inward (type 2b) and externally folded (type 2c). One of the most diagnostic shape collected at Tell Zurghul during the survey in Area C is the conical bowl with profiled rim and, where preserved, flat base (type Bowl 3, fig. 3:9-12). Other bowls are characterized by incurved walls and profiled rim. The deep carinated bowls with narrow diameter (ca. 15 cm) have both thickened and protruding or bevelled rim (fig. 3:13-15), while the large conical bowls with straight side and thickened protruding rim represent the last type of bowls within the assemblage (fig. 4:1-3).

The presence of cups at Tell Zurghul confirms the later occupation of the site, although the potshards collected during the survey are fragmented. In general, cups are characterized by tall body and straight or slightly incurving walls. The first type (Cup 1) has a small cylindrical body with thickened protruding rim, top flattened, and thin walls, and the second type (Cup 2) consists in a deep cup with incurved walls and thickened rim (fig. 3:16-17). Two disk bases belonging to cups with probably cylindrical bodies constitute the third type (Cup 3, fig. 3:18-19), while a ring base with ovoid body represent the last type of cups (Cup 4, fig. 3:20).

A peculiar shape of Area C is the tall cylindrical vessel with outwardly thickened and flattened rim. The two specimens here presented are incomplete and the interpretation of their function is still undefined (fig. 5:1-2).

Storage vessels of small and medium size consist of jars with cylindrical neck and thickened protruding rounded rim (Jar 1; fig. 5:3-4) and one fragmented jar with tall flaring neck, thickened and flattened rim (Jar 2; fig. 5:8). Among the jars with short neck and out-flared rim it is possible to distinguish three variants which depends on the shape of the neck, which is flaring, incurved or cylindrical (Jar 3; fig. 5:5-7). The upper part of a jar with thickened flattened rim, with protruding triangular ribbed band on the upper neck is Jar 4 (fig. 5:9). Finally, Jar 5 consists of a fragmented jar with ledge shoulder and flaring neck and triangular-shaped rim (fig. 5:10).

The storage vessels of possibly large size consist of jars characterized by short inward neck and thickened protruding rim (fig. 5:11-14).

Globular hole-mouth pots with thickened rim should represent one of the two types belonging to the cooking ware assemblage and, according to their morphology, two variants occur, with rounded or thickened and profiled rim (fig. 5:15-17). A second type of cooking ware consists of a singular shard belonging to a globular pot with ledge shoulder and flattened rim (fig. 5:18).

Vats are the most common shapes found in the Area C collection, as represent the 28% of the entire assemblage here presented. This functional shape includes two main groups of shapes: the small containers probably used in food processing and preparation (Vat 1-5) and the thickened rims corresponding to the top of the drain-pipes, which are very frequent and visible on the surface of the surveyed area (Vat 6). Unfortunately, whole profiles are

missing, and we are not able to clearly distinguish the two functional shapes so far, thus they have been considered together in this preliminary report. The first type of vat is small, it has ovoid body and thickened protruding rim, and it is characterized by several horizontal ridges applied on the external surface (fig. 6:1). Vat 2 has ovoid walls and protruding rim. The unique shard belonging to this type is decorated by a line of vertical thumb incisions under the rim (fig. 6:3). Vats with globular or ovoid body with bent inward walls, thickened and protruding rim represent the third group belonging to this shape (fig. 6:2, 4, 5). They are usually characterized by two ribs under the rim and they present outward inclined or top flattened rim. Type Vat 4 has vertical straight sides, protruding rim, profiled on the top. Same as the previous type, it is characterized by external ribs under the rim. The external surface of the only shard belonging to this type is covered with bitumen (fig. 6:6). Type Vat 5 differs from the previous types because of the thickness of its walls, and it has hemispheric body, thickened protruding rim, top flattened (fig. 6:7). Vat 6 consists of shards probably belonging to basins or drains, characterized by thickened and protruding rim, flattened and occasionally profiled on top, and by ridges under the rim. Three sub-types of this shape have been identified, the first presents thinner and bent inward walls with slightly thinner and outward inclined rim. The second has bent inward walls, and the third can be distinguished thanks to the flaring walls and to the thickness of the rim (fig. 6:8-14).

From a preliminary and first-hand observation on fabrics, simple ware, which includes the table and the storage vessels, is characterized by a compact texture, ranging from light yellowish-brown (2.5Y6/4) to greenish (5Y5/6), with 5-7% of fine and very fine mineral inclusions (less than 1 mm and between 1-2 mm, diameter). Bowls of type 3 (fig. 3:9-12) are characterized by a similar fabric, which differs for the light reddish-brown colour (5YR6/4). Only some of the shards, especially belonging to cups, are also characterized by about the 5% of very fine and fine organic inclusions (less than 1 mm and between 1-2 mm, thick) visible both in section and on the surface (fig. 3:17, 18).¹³

The potshards related to cooking activities, and possibly to be defined as cooking ware, are distinguishable by dark reddish grey (2.5YR4/1) fabric, characterized by the 7-10% of very fine and fine mineral inclusions (less than 1 mm and between 1-2 mm, diameter) of white and grey colour (fig. 5:15-18).

Coarser ware is characterized by the presence of abundant very fine to medium organic inclusions (from less than 1 mm to 3 mm, thick), about the 10% of frequency, and by ca. the 10% of very fine mineral inclusions (less than 1 mm, thick). This fabric is related to the Vats (fig. 6) and it has a range of colour between light yellowish brown (2.5Y6/3) and pale brown (10YR6/3).

¹³ The reference for the estimation of the size and abundance of inclusions and of the colours is the Munsell Soil Color Charts 2015.

4. COMPARISONS AND RELATIVE CHRONOLOGY

The main reference for the 2nd millennium BC Mesopotamian pottery is the volume edited by Armstrong and Gasche in 2014.¹⁴ They show a consistent assemblage of pottery shapes and types dated since the Ur III to the late Kassite periods from the entire Mesopotamian area.¹⁵

The so called “Southern Alluvium” is the region which gives more parallels for the pottery repertoire of Area C at Tell Zurghul. Tello and al-Hiba are geographically the nearest contexts. The area of Sinkashid and the PXIII area at Uruk, the Old Babylonian houses and the soundings excavated at Larsa are the main references dating to the first half of the 2nd millennium BC in the “Southern Alluvium” because they returned a consistent assemblage of pottery useful for chronological and typological comparisons.¹⁶ Further north, the ceramic assemblages from Tell ed-Der, Areas A, B, E, E2, E3, F and Nippur, Area WA, can be considered as good comparisons for relatively dating our surface materials and are associated with well-preserved archaeological sequences.

All the contexts used for parallels are represented in table 1,¹⁷ and the chronological attribution follows the one proposed for the stratigraphic sequence of each site, as proposed in the archaeological reports. In general, here the Middle Chronology is used as absolute reference.

HP	MC	NLC	Der		Larsa		Susa		Nippur			Uruk				
			A	E	house 59	JVIII	A	B	WA	WB	WF	TB	Sinkhashid	P XIII		
UR III	2024 - 1996 BC	2000 - 1900 BC	IVb					VII					IX-IV		VI-VII	
			IVa													
			IIIId													
II	1996 - 1790 BC	1900 - 1750 BC	IIIb					VII							VIII-XI	
			IIg										III 2	1		
			IIe													
			IIc						V					III 1	2	XII-XIII
			IIa													
			Ii				3			V				II	3	
			Ig					XV						4		
			Ie				x							I		
OB	1790 - 1595 BC	1750 - 1500 BC	Ic			x	2								XIV-XVII	
			Ia			x	1					IV				
					IIIId			XIV								
					IIIc											
					IIId											

Tab. 1 - Stratigraphic sequences of the sites mentioned in the texts.

¹⁴ The chronology proposed by the authors is still not always accepted by scholar. For a recent general discussion on the absolute chronology for the Southern Mesopotamian contexts see Warburton 2011; 2013.

¹⁵ A significant quantity of data is also provided in the volume published by Ayoub (1982), but it still suffers the absence of punctual chronological attribution of the contexts analysed.

¹⁶ A considerable quantity of ceramic materials was also found in graves (Bohmer 1995; Van Ess 1993). The site of Ur is also closed to Tell Zurghul, but it is still difficult to determine a precise chronology of the contexts (see Woolley - Mallowan 1976).

¹⁷ To the reading of Table 1: HP = Historical Period; MC = Middle Chronology; NLC = New Low Chronology (proposed by Armstrong - Gasche 2014, tab. 9).

The platters are well attested at Nippur, area WA level V, dated between 1800 and 1700 BC. They are also common in layers dating to the same period at Tell ed-Der, Isin and Umm al-Hafryat.¹⁸ Platter type 1c has another comparison with a drawing illustrated by H. de Genouillac from the Ur III-IL levels at Tello.¹⁹

Bowl type 1 has a perfect comparison with one of the bowls from house B 59 at Larsa, dated to the first half of the 18th century BC.²⁰ Bowl type 2 is a quite common and simple shape, well attested in the entire Southern Mesopotamian region starting from the final centuries of the 3rd millennium BC. Bowl 2b, in particular, finds a perfect comparison with a shard from Der found in area A, level Ig and dated by the authors at the end of the 18th century BC.²¹ The bowls with carinated and profiled rim (Bowl type 3 and 4) represent one of the most typical shapes dating to the period from the late 3rd and the early 2nd millennium BC, being rather ubiquitous. 2nd millennium BC comparisons can be found with several shapes from sounding J VIII levs 3-1, at Larsa, dating since the beginning of the 2nd millennium to the mid-18th century BC.²² SG.16.C.TU3/6, in particular, finds a perfect match with shapes found in several southern sites, among which a shard from Nippur, area WA level V.²³

Bowl 5a finds some parallels from areas WA lev. V at Nippur, from Tell ed Der, lev. II, and from the lev. 3 of the sounding J VIII at Larsa, dated between 1900 and 1700 BC.²⁴ Bowl type 5b finds more comparisons among the painted vessels, as well illustrated by the repertoire from Der, dated between 1700 and 1600 BC.²⁵ Bowl type 6 consists of three potshards which can be associated both to 3rd and 2nd millennium BC shapes.²⁶ Considering the comparison with similar vessels related to funerary contexts from area A at Der dating to 1850-1750 BC, we cannot exclude that these specimens are dating to this period as well.²⁷

The cup type 2 represents a typical early 2nd millennium BC shape. Parallels dated at the ca. 1700 BC are attested at Uruk, area PXIII lev. XIII - XIV.²⁸ It is possible that the vessel published by de Genouillac and dated by Parrot to the IL period pertains to the same type.²⁹ Cup types 3 and 4 are represented only by bases, but they can be associated to typical IL

¹⁸ See types 10G (Platters 1a), 20B (Platters 1b), and 20C (Platters 1c) from Armstrong - Gasche (2014, pl. 18:6-9; 31:6-9; 32:9-11).

¹⁹ de Genouillac 1936, pl. XXXIII:852. Unfortunately, because of the inaccuracy of the excavation methods, it is impossible at present to distinguish between Ur III and IL levels of the de Genouillac works at Tello. Nevertheless, Parrot attributed this shape at the Ur III phase of the site (Parrot 1948, fig. 56:852).

²⁰ The OB houses at Larsa have been dated between the reigns of Rim-Sin and Samsu-Iluna (Calvet 2003, 186). Armstrong - Gasche (2014, 11) dated these contexts at the middle of 17th Century BC, according to the New Low Chronology. For comparisons with Bowl 1 see Calvet 2003, fig. 63:59.147.

²¹ N. 102622, Armstrong - Gasche 2014, pl. 16:16.

²² Calvet *et al.* 2003, fig. 16.

²³ Gibson 1975, fig. 39:020127.

²⁴ Armstrong - Gasche 2014, pl. 25:1, 20; Calvet *et al.* 2003, fig. 10:d.

²⁵ See type 25A from Armstrong - Gasche 2014, pl. 41:4, 19.

²⁶ For the comparisons dating to the 3rd millennium BC, see Nippur, area WF levels XIX and XVIII, McMahon 2006: pl. 78:1-3. Moreover, see Larsa, house B 33, Thalmann 2003, fig. 35:3, 5.

²⁷ Armstrong - Gasche 2014, pl. 29, type 15H.

²⁸ Van Ess 1988a, fig. 7:35, 36.

²⁹ de Genouillac 1936, pl. XXXIV:3902; Parrot 1948, fig. 60:3902.

shapes. Type 3, indeed, finds comparisons with two specimens from Larsa, sounding J VIII lev. 3.³⁰ Although the unique specimen characterizing cup type 4 is fragmented, the shape of this base possibly must be related to a typical southern Mesopotamian goblet, very common within the early 2nd millennium repertoires, especially dating to the 18th century BC. Comparisons can be found at Larsa, in the house B 27³¹ and in the Isin-Larsa layers of sounding H XI.³² Moreover, one vessel with a type 4 base at least is attested at Tello³³ and another at Lagaš,³⁴ the last one being slightly later (ca. 1650 BC).

The cylindrical vessels seem to have a later dating, according to the parallels from Der, area E lev. III d.³⁵

Among the storage vessels, jar types 1 and 2 finds several parallels dated to the 1750-1700 BC, e.g. Larsa sounding J VIII lev. 1,³⁶ Uruk area PXII-XIII,³⁷ Tel ed-Der area A lev. Ii,³⁸ and Tello.³⁹ Jar type 3 is characterized by three sub-types which differ according to the shape of the rim. The small potsherds belonging to this type possibly are related to a typical early 2nd millennium shape, spread in southern Mesopotamia and Susiana.⁴⁰

The so-called collared jar (type 4) represents a marker of the long phase between late Akkadian and early IL, and it is still difficult to identify sub-types dating to the different phases. However, the shallow diameter of the body of SG.16.C.D92/2 seems typical of the early 2nd millennium BC, as suggested by comparisons with vessels from PXIII at Uruk.⁴¹ The type of jar with carinated shoulder (type 5) is characteristic of the IL period at several sites in southern Mesopotamia at Larsa, Uruk, area Pb 12-4, Tello, Tel ed-Der area A lev. Ie, and Nippur area TA lev. XII 1.⁴²

Finally, jar type 6 represent a very distinctive rim, that can be possibly associated to large storage vessels as are the vessels from Der, area A Ie and II, and the two potsherds found in the house B 59 and in the sounding H XI at Larsa.⁴³

Among the pots, type 1 can be associated to the type 45A of Armstrong and Gasche, that at Tel ed-Der covers a chronological range between 1800 and 1500 BC.⁴⁴ A rim shard from lev. VI of area WF at Nippur is identical to SG.16.C.TU6/13, and so it can be dated at

³⁰ Calvet *et al.* 2003, fig. 16:e, g.

³¹ Calvet 2003, fig. 51:27.526.

³² For type 4 see Calvet *et al.* 2003, fig. 31:h.

³³ Armstrong - Gasche 2014, pl. 58:6.

³⁴ Armstrong - Gasche 2014, pl. 58:3.

³⁵ According to epigraphic evidences, this layer is contemporaneous to the beginning of the reign of Ammisaduqa (Armstrong - Gasche 2014, 7; pl. 56).

³⁶ Calvet *et al.* 2003, fig. 28:a, b.

³⁷ Van Ess 1988a, fig. 7:34; 8:40.

³⁸ Armstrong - Gasche 2014, pl. 111:3.

³⁹ de Genouillac 1936, pl. XXVIII:3201.

⁴⁰ For the closest comparisons with Der, Nippur and Susa see Armstrong - Gasche 2014, pl. 74:1, 9, 15.

⁴¹ Van Ess 1988a, fig. 9: 48.

⁴² In the typology elaborated by Armstrong - Gasche (2014), this rim can be associated with both type 105B and 160A, dated by the authors around 1700 BC. For other parallels see: Armstrong - Gasche 2014, pl. 68:5; pl. 79:7; Calvet *et al.* 2003, fig. 17:h, k; Van Ess 1988a, fig. 7:30; de Genouillac 1936, pl. XXVIII: bottom; McCown - Haines 1967, pl. 84:10.

⁴³ Armstrong - Gasche 2014, pls. 134:4; 135:2; Calvet 2003, fig. 70:59.25; Calvet *et al.* 2003, pl. 33:k.

⁴⁴ Armstrong - Gasche 2014, pl. 49:1-8.

the very late stage of the Ur III or at the very beginning of the IL period.⁴⁵ Similar rims are also attested in early 2nd mill. BC contexts from Larsa and al-Hiba.⁴⁶ For what regards the vats, this peculiar shape is attested for the first time during the late Akkadian period, but it has been found both in funerary and domestic contexts dating to the 2nd millennium BC. Type 1 finds a perfect match with B180 from area WB lev. IV at Nippur.⁴⁷ Type 2 has its parallel at level IX of area PXIII at Uruk.⁴⁸ Type 3a is comparable to one shape from Uruk, found in the Sinkashid palace area.⁴⁹ Moreover, a rim belonging to a shape like type 3 was also found in area A, lev. II at Umm al-Hafryat.⁵⁰ The morphology of vat, type 4, reminds to similar shapes dating to the beginning of the 2nd millennium BC from Larsa.⁵¹

The thick rim and the ridges that characterize type 5 must be related to type 260A of Armstrong and Gasche typology. In particular, the orientation of the rim is like a vat from Tel ed-Der, area A, lev. Ie, and one from Susa, area A, lev. XV both dated at ca. 1850 BC.⁵² Type 6a again can be related to shapes found in area A at Susa, although they seem to have a later dating.⁵³ While the orientation of type 6b apparently has no parallels, type 6c is comparable with two examples from Nippur area WA, lev. VIA, even though the shape of the body of the examples from Zurghul seems to be more ovoid than its parallels from the other sites.⁵⁴

5. CONCLUSION

Looking at the parallels here proposed, it is possible to provide a chronological range for the 2nd millennium BC ceramic repertoire from Tell Zurghul. As shown in fig. 2, the greatest part of the shards (48%) can be attributed to the 18th century BC, rather corresponding to the last phase of the IL and the beginning of the OB period, while 13% is dating to the 17th century BC (OB).

The presence of lingering ceramic types which were in use since the UR III to the OB period (tab. 2) does not allow us to focus on typical early 2nd millennium BC (20th – 19th centuries BC) shapes within the pottery assemblage collected in Area C.

The parallelisms found between the pottery from Tell Zurghul and the various ceramic assemblages considered suggest a high range of homogeneity within the southern Mesopotamian repertoires at the beginning of the 2nd millennium BC.

⁴⁵ McMahon 2006, pl. 116:16.

⁴⁶ From Larsa see sounding J VIII, levs 3-2, see Calvet *et al.* 2003, fig. 21:d. From al-Hiba see e.g. 1H131, from the IL layer of area B, Armstrong - Gasche 2014, pl. 50:13; one sherd similar to pot type 1 was found in a fill of an early 2nd millennium burial, and more sherd from the same type are attributed to late III mill. levels (Renette, personal communication).

⁴⁷ Gibson *et al.* 1978, pl. 45:9.

⁴⁸ Van Ess 1988a, fig. 5:20.

⁴⁹ Van Ess 1988b, fig. 7:70.

⁵⁰ Armstrong - Gasche 2014, pl. 45:11.

⁵¹ See Calvet *et al.* 2003, fig. 22.

⁵² This date is according to NLC (Armstrong - Gasche 2014, pl. 117:3, 8) and corresponds to the beginning of the 2nd millennium BC, following the Middle Chronology.

⁵³ Level XIV, Armstrong - Gasche 2014, pl. 117:7.

⁵⁴ Armstrong - Gasche 2014, pl. 116:5-6.

	M C	N L C	pot. 1	vat. 3b	vat. 5	bowl 4	bowl 2b	bowl 2c	plate 1a	plate 1b	plate 1c	jar 6	bowl 3b	jar 2	cop. 2	bowl 5a	jar 5	vat. 1	bowl 1	cop. 4	bowl 6	vat. 6a	cop. 1	bowl 2	bowl 2a
UR III	2024 - 1996	2000 - 1900																							
IL	1996 - 1790	1900 - 1750																							
OB	1790 - 1595	1750 - 1500																							

Tab. 2 - Chronological range of the parallels. In the present paper, only precise parallels are taken into consideration.

The distribution of shards in Area C (fig. 1) indicates that Tell Zurghul was still occupied in the first half of the 2nd millennium BC, although the extension and interpretation of the settlement is hard to define so far. Ceramic types dated to the IL-OB periods, in general, are less represented than the earlier types, and they are spread on the entire surface surveyed. Two areas seem characterized by significant concentrations of 2nd millennium BC potshards. The first cluster is in the central part of the surveyed area, in connection with specific installations. The second cluster is located on the Mound C, where probably archaeological structures and buildings of the later phase of occupation should be better preserved.

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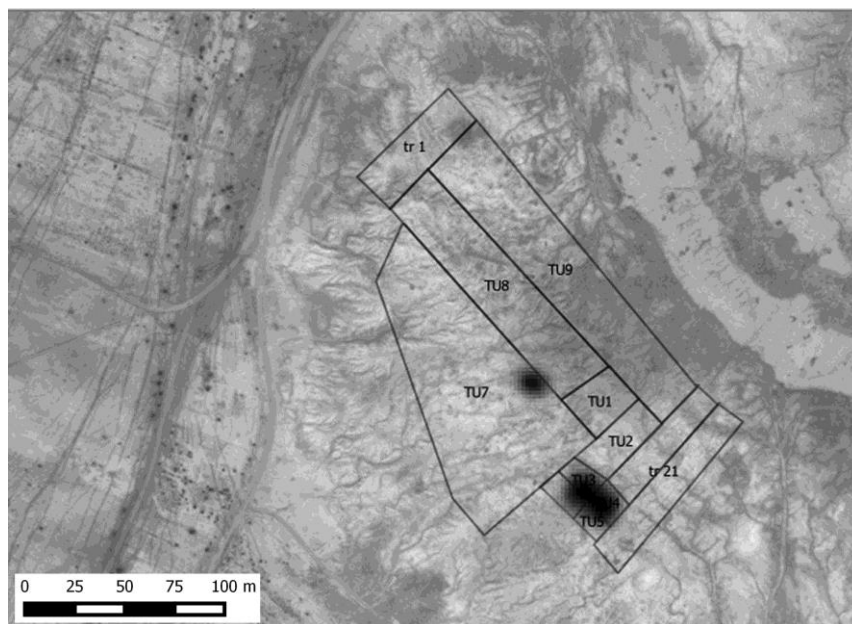


Fig. 1 - Satellite image of area C. The black lines mark the limits of the different Topographical Units. The concentration of the 2nd mill. BC pottery is represented by the two black points (image by the authors, ©Google maps and ©QGIS).

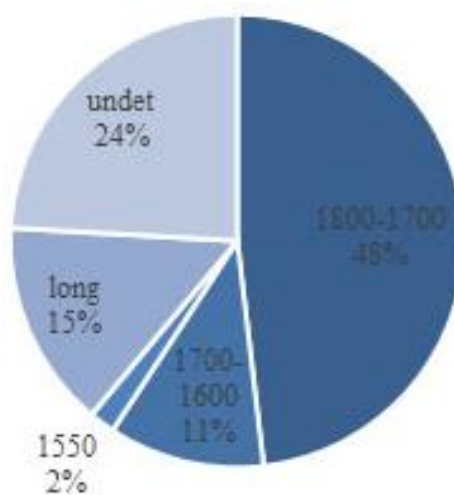


Fig. 2 - Number of shards according to chronological phases.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.15.C.21F/1	Platter 1a	Armstrong - Gasche 2014, pls. 18:6-9; 31:6-9; 32:9-11; for Platter 1c see de Genouillac 1936, pl. XXXIII:852
2	SG.15.C.21E/1	Platter 1b	
3	SG.16.C.TU3/1	Platter 1c	
4	SG.16.C.TU1/4	Bowl 1	Calvet 2003, fig. 63:59.147
5	SG.16.C.TU2/2	Bowl 1	
6	SG.16.C.D91/1	Bowl 2a	Armstrong - Gasche 2014, pl. 16; for bowl 2b see Armstrong - Gasche 2014, pl. 16:16
7	SG.16.C.TU6/3	Bowl 2b	
8	SG.16.C.TU4/4	Bowl 2c	
9	SG.16.C.TU3/6	Bowl 3	Armstrong - Gasche 2014, pls. 33:33; 34:5, 6, 9, 11; Calvet <i>et al.</i> 2003, fig. 16
10	SG.15.C.22C/1	Bowl 3	
11	SG.15.C.21D/1	Bowl 3	
12	SG.16.C.D92/1	Bowl 3	
13	SG.16.C.TU4/3	Bowl 4	
14	SG.16.C.TU6/7	Bowl 5a	Armstrong - Gasche 2014, pl. 25:1, 20; Calvet <i>et al.</i> 2003, fig. 10:d
15	SG.15.C.22E/1	Bowl 5b	Armstrong - Gasche 2014, pl. 41: 4, 19
16	SG.16.C.TU3/10	Cup 1	-
17	SG.16.C.TU3/13	Cup 2	Van Ess 1988a, fig. 7:35, 36
18	SG.16.C.TU4/18	Cup 3	Calvet <i>et al.</i> 2003, fig. 16:e, g
19	SG.15.C.21E/5	Cup 3	
20	SG.15.C.21A/6	Cup 4	Armstrong - Gasche 2014, pl. 58:3, 6; Calvet 2003, fig. 51:27.526; Calvet <i>et al.</i> 2003, fig. 31:h

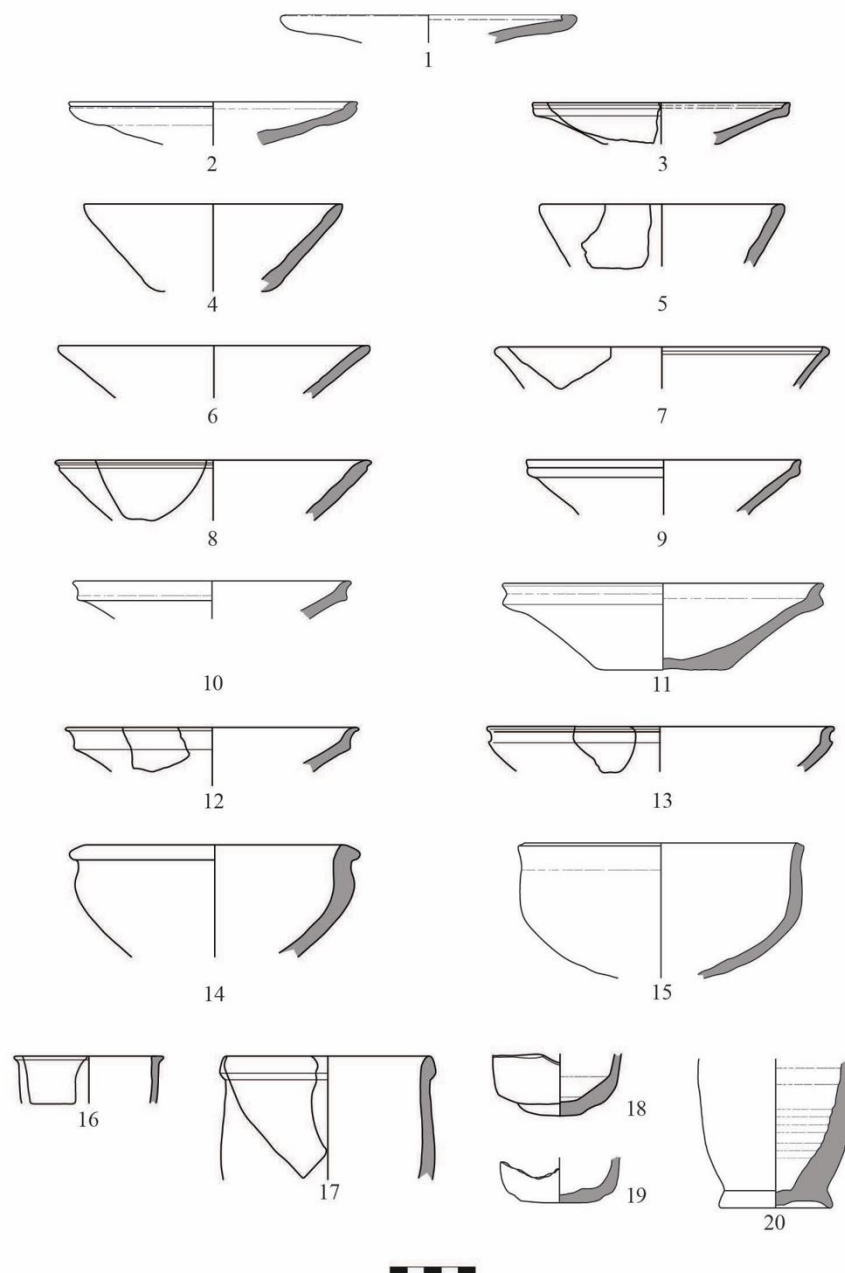


Fig. 3 - Platters, bowls and cups.

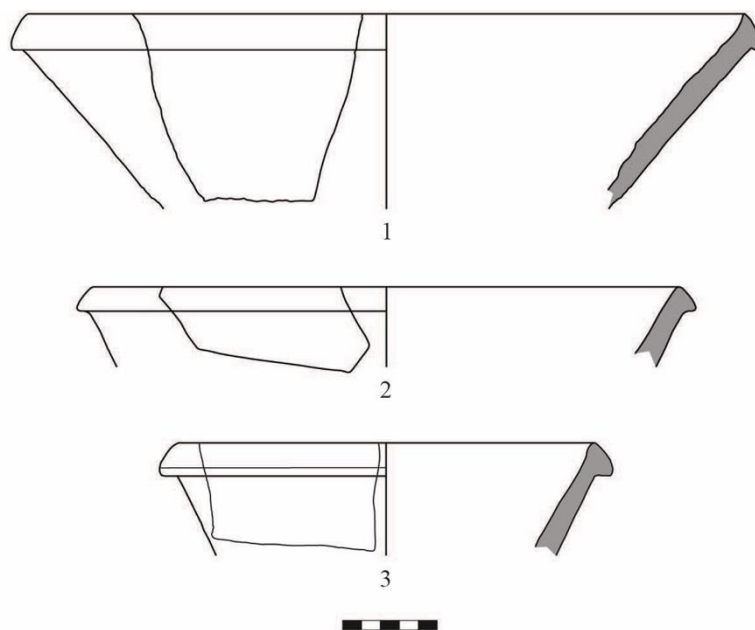


Fig. 4 - Large bowls.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.C.CU89/1	Bowl 6	Armstrong - Gasche 2014, pl. 29, Type 15H
2	SG.16.C.CU97/2	Bowl 6	
3	SG.16.C.CU201/2	Bowl 6	

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.C.TU5/5	Cyl. Ves. 1	Armstrong - Gasche 2014, pl. 56:3
2	SG.15.C.21B/10	Cyl. Ves. 1	
3	SG.16.C.TU5/4	Jar 1	Armstrong - Gasche 2014, pl. 111: 3; Calvet <i>et al.</i> 2003, fig. 28:a, b; de Genouillac 1936, pl. XXVIII:3201
4	SG.16.C.D91/2	Jar 1	
5	SG.16.C.TU4/15	Jar 3a	Armstrong - Gasche 2014, pl. 74:1, 9, 15
6	SG.16.C.CU99/1	Jar 3b	
7	SG.16.C.TU4/7	Jar 3c	
8	SG.16.C.D234/2	Jar 2	Van Ess 1988a, fig. 7:34; 8:40
9	SG.16.C.D92/2	Jar 4	Van Ess 1988a, fig. 9:48
10	SG.16.C.TU5/7	Jar 5	Armstrong - Gasche 2014, pls. 68:5; 79:7; Calvet <i>et al.</i> 2003, fig. 17:h, k; de Genouillac 1936, pl. XXVIII: bottom; McCown - Hines 1967, pl. 84:10; van Ess 1988a, fig. 7:30
11	SG.16.C.TU6/25	Jar 6	Armstrong - Gasche 2014, 134:4; Calvet 2003, fig. 70:59.25; Calvet <i>et al.</i> 2003, pl. 33:k
12	SG.16.C.TU6/17	Jar 6	
13	SG.15.C.21F/5	Jar 6	
14	SG.16.C.TU5/13	Jar 6	
15	SG.15.C.21A/3	Pot 1a	Armstrong - Gasche 2014, pls. 49:1-8; 50:13; Calvet <i>et al.</i> 2003, fig 21:d, h
16	SG.16.C.TU6/19	Pot 1b	
17	SG.16.C.D92/4	Pot 1b	
18	SG.16.C.TU6/13	Pot 2	McMahon 2006, pl. 116:16

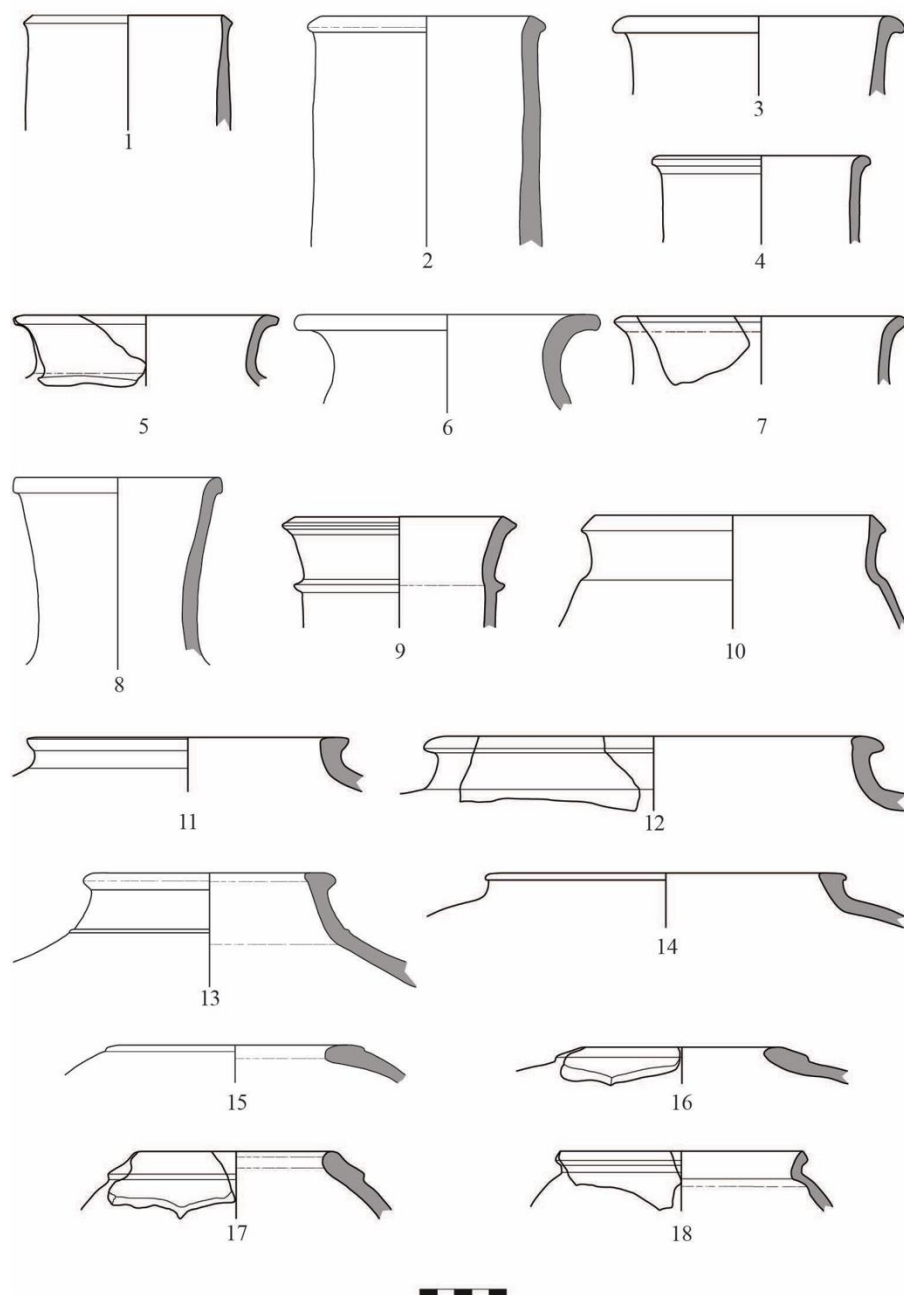


Fig. 5 - Cylindrical vessels, jars, and pots.

No.	Exc. No.	Shape/Type	Comparanda
1	SG.16.C.TU3/14	Vat 1	Gibson <i>et al.</i> 1978: pl. 45:9
2	SG.16.C.TU3/23	Vat 3b	See vat 3a, 3c
3	SG.16.C.TU2/9	Vat 2	Van Ess 1988a, fig. 5:20
4	SG.15.C.1A/12	Vat 3a	Armstrong - Gasche 2014, pl. 45:11. Van Ess 1988b, fig. 7:70
5	SG.16.C.TU4/23	Vat 3c	
6	SG.16.C.TU4/24	Vat 4	Calvet et al. 2003, fig. 22
7	SG.16.C.D207/1	Vat 5	Armstrong - Gasche 2014, pls. 116-118
8	SG.15.C.21A/7	Vat 6a	Armstrong - Gasche 2014, pl. 117:7
9	SG.16.C.CU60/1	Vat 6b	Armstrong - Gasche 2014, pl. 116:5, 6
10	SG.16.C.TU3/22	Vat 6b	
11	SG.16.C.TU1/25	Vat 6c	
12	SG.16.C.D91/5	Vat 6c	
13	SG.16.C.TU6/27	Vat 6c	
14	SG.16.C.TU5/24	Vat 6c	

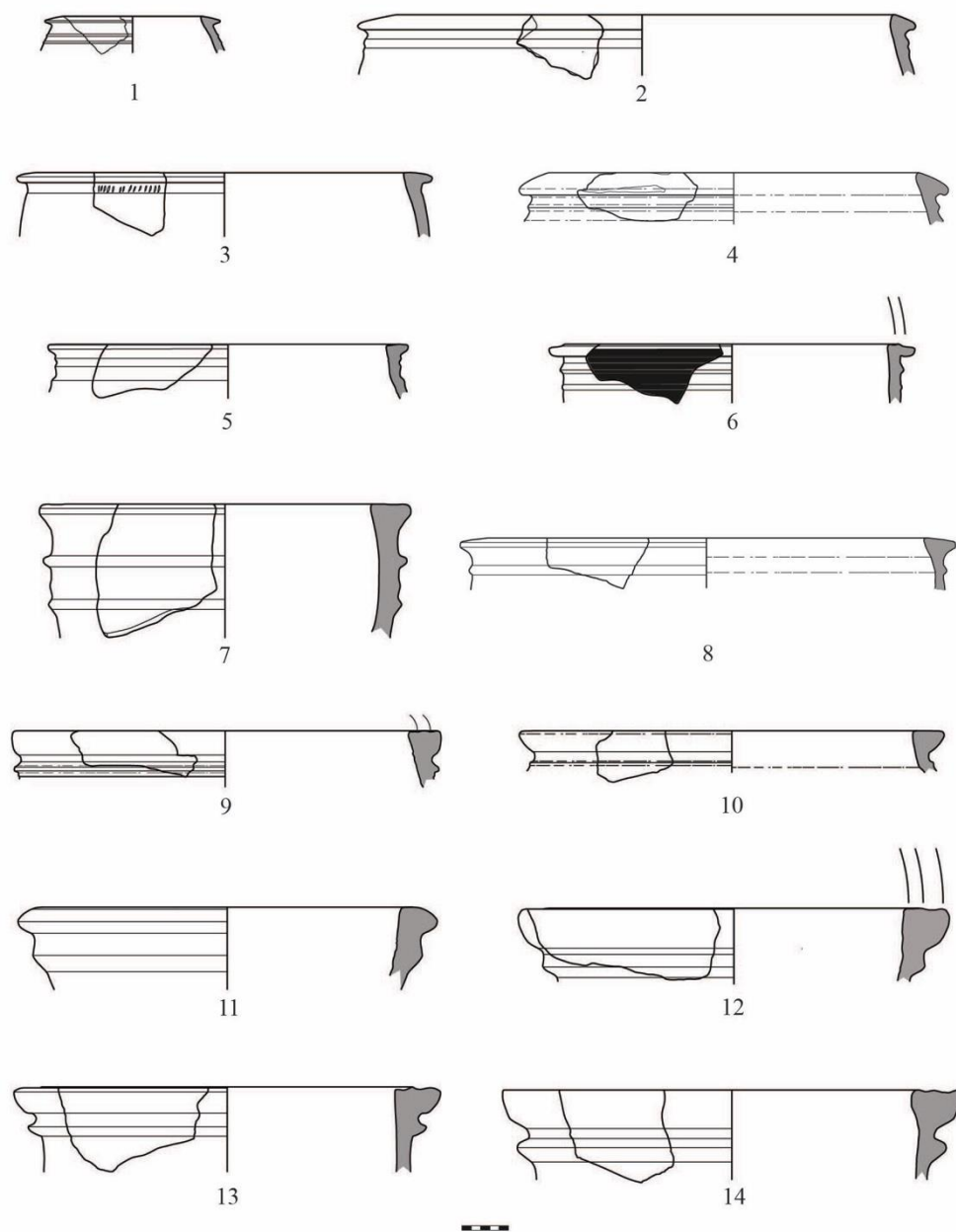


Fig. 6 - Vats.

TOOLS AND OBJECTS FROM TELL ZURGHUL EXCAVATIONS (2015-2017)

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This chapter presents some considerations on the tools found at Tell Zurghul. After a brief explanation of the objects inventory process, we will discuss clay and stone tools in detail with particular attention to fishing net weights, sickles, worked and chipped stone.

Keywords: Southern Mesopotamia; Tell Zurghul; tools; clay objects; worked stone objects

1. INTRODUCTION

The present chapter aims at presenting, in the most comprehensive way, the objects recovered during the campaigns in 2015, 2016 and 2017. During these three years, approximately 600 objects were collected on the site while excavating areas A, B, D and during the survey of area C. Those objects include stone objects, clay objects, stone and clay tools, sealings and stone vessel's fragments. During the expeditions, all objects were registered on the field using dedicated sheets: on them, the finding date was written down and a unique progressive number was assigned to every single object. The number was associated with the excavation area and Stratigraphic Unit (SU). Typology and raw material were also registered on the sheets.² Every day, an inventory of the objects was made: each one of them was signed following a unique and progressive enumeration and registered in an Access database. In the latter, a univocal entry and number (the same as the signature on the object) were assigned to each object. In each database entry measures, raw material, state of preservation, colour (following the Munsell colour chart for clay objects), weight (if relevant) and every information that was on the object sheet. For each object, a short description was written down together with any additional notes. All objects were later photographed, and a drawing was made for the most relevant ones.

Given that the objects are still under study, this chapter will be organized mainly in a descriptive way, by subdividing the objects by raw material, highlighting their finding context and dating (when possible). Some comparisons with relevant sites and areas will also be carried out when possible. We will present here only a selection of objects that can be defined as "tools": this is because a more detailed presentation of all the objects from the site of Tell Zurghul would require more time and space.

2. CLAY OBJECTS

We will present here all clay tools recovered during campaigns 2015-2017. Clay tools and objects are the majority of objects recovered during the excavations (roughly 53% of objects are made of clay): in fact, 320 clay objects were recovered during the three years (171 in 2015, 31 in 2016, and 118 in 2017), of which 162 can be classified as tools. A

¹ Alessandra Caselli wrote §§ 2.3., 3-3.2.; Andrea Titolo wrote §§ 2., 2.1.-2.2., both have written §§1. and 4.

² As common in the Near East, it often happens that some objects are recovered from workers or visitors around the site (e.g. Stone - Zimansky 2004); for those objects it was followed the same procedure described above. Of course, it wasn't possible to register the exact finding spot of the objects.

detailed description of the most significant objects (net weights and sickles) will be provided here, while all the other objects will be listed in tab. 1. This choice is because, at the current state of the excavation, only these two types of objects can provide interesting results, as they were recovered in a significant number in respect to other clay objects.

2.1. *Fishing net weights* (figs. 1-3)

During the three years of excavations, a surprisingly large number of rounded or oval clay objects with one or two holes were recovered. Sometimes linear traces of use incised in the clay are present at the edges of these holes. In some cases, on the surface of these objects traces of thin bitumen coating were preserved. All objects were found during the excavation of area B, in Ubaid 4 archaeological contexts.³ From 2015 campaign only 4 weights were found, of which 2 are fully preserved. It is from the 2017 campaign that most of the objects come from: in fact, 82 objects were recovered. Many of these weights were found in SU 706 and 705 in the North sector of the area, associated with a large number of faunal remains, in particular, fish bones.⁴ Three objects were also found in the Southern sector of the same area.⁵ Given the archaeological context in which the objects were found and thanks to comparisons with other sites like Eridu,⁶ Ur,⁷ Khafaja⁸ and Ubaid,⁹ these tools can be interpreted as clay weights for fishing nets. Their obvious function would be to help the net to sink into the water (therefore they are also known as “sinkers”).

Here we can separate objects according to their morphology and number of holes, even if it is worth remembering that this subdivision should not be taken as a functional division or something indicating different typologies of objects, as we will see later. On a more general level, the objects are never perfectly rounded, and their dimensions vary from being very small (ca. $4 \times 3 \times 1.6$ cm) to be almost three times larger (the largest weight – SG.17.BS.063 – measures $11.2 \times 11.7 \times 2.2$ cm). In between these two, the remaining 84 weights are uniformly distributed and do not show dimensional clusters that can indicate different typologies. For obvious reasons, we will take into consideration here only the completely preserved objects or those that can be reconstructed for at least 90% of their original shape.¹⁰

For the 51 complete or reconstructed weights, 18 have only one hole, while 33 have two. The almost rounded weights are 36, of which 24 have two holes and 12 only one. Oval shaped weights are, on the contrary, 15, of which 10 show two holes and 5 show one hole only. No uniformity can be recognised in the choice of using one or two holes in relation to

³ See the contributions by Nadali and Volpi in this volume, respectively.

⁴ See the contribution by Carosi - Lorenzoni in this volume.

⁵ Additional SU in which fishing net weights were found are SU 716, 717, 719, 720 (1 for each SU). Objects found in SU 706 and 705 are therefore 75.

⁶ Safar - Mustafa - Lloyd 1981.

⁷ Woolley 1955.

⁸ Delougaz 1940.

⁹ Hall - Woolley 1927.

¹⁰ Even if the presence of one or two holes can be clearly hinted in fragmentary weights, we decided not to include them in this description, so to have a more coherent picture of the relation between dimensions and holes.

the dimensions of the object: as a matter of fact, there are both small weights with two holes and larger weights with one hole. The dimensions of the holes themselves are not helpful in reconstructing a typology: the diameter of the holes can reach from 0.7 cm to 1.9 cm. Larger holes are obviously found in larger weights, but it could simply be a choice dictated by the larger surface available more than a different kind of choice. Moreover, it is impossible to guess which difference the dimensions of the hole could have in relation to the purpose of the weights. In this way, it can be noted how rounded weights do not have any substantial difference with the oval ones, as the dimensions of both categories are relatively similar and, moreover, it doesn't seem to exist a relation that ties dimensions and weights morphology. The weight of the objects does not seem to be a good discerning parameter either: the objects found during the excavation weight between 40g and 180g but both weights with one hole and weights with two holes are evenly distributed between these two measures. Thus, this category of objects seems to be extremely functional and not tied to specific choices for the use of one or two holes, or of a specifically circular or oval shape. It must be also stressed that, with our present knowledge and the lack of sources on the practical use of the weights, it is difficult to hypothesize if the number of holes or the morphology could have had a significant role when it comes to the use of the objects themselves.

Objects of the same type as those just described but labelled "net sinkers" were found during the excavations at Eridu, in particular in the hut sounding and sometimes simply labelled as "pottery discs with two holes". Nine objects of this type come from levels X-XIII, dated to Ubaid 3-4 (and contemporaries to levels XI-IX of the Temple), and they were associated with faunal remains as at Tell Zurghul. It seems that at the site of Eridu only weights with two holes were found, even if no information were given about the dimensions of these objects.¹¹ Similar objects to the net weights of Tell Zurghul were found at Ur. where *net sinkers* were reported inside Grave EE (2 objects), from the so-called habitation levels of Pit F, Pit K, Pit Z and in Merejib 10 miles from Ur.¹² Unfortunately, the exact number and dimensions of the objects are rarely mentioned here too, as in the case of Eridu. Nonetheless, it is mentioned that two types of these objects exist: simple ring type and disc type with two holes. It is this latter type that can be compared with the weights from Tell Zurghul, as they appear (at least from the published drawings) similar to those found by the Italian Expedition at Nigin.¹³ Another Lower Mesopotamian site from which comparisons can be made on these weights is that of Ubaid: 6 flat clay discs come from the

¹¹ See Safar - Mustafa - Lloyd 1981, 249, 260 and fig. 127. The total number of weights in the sounding is 17, the remaining 8 objects were found in the later levels (VII-I), but no clarification about the context was given. It is interesting to note that, together with the clay net sinkers, there were also other objects labelled as net sinkers, but in stone. The latter are most common in the oldest levels of the hut sounding, decreasing in number in the later levels (Safar - Mustafa - Lloyd 1981, 260).

¹² See Woolley 1955, 11, 20, 84.

¹³ Woolley 1955, fig. 4. At Merejib Woolley reports that there was a greater number of objects belonging to the second type (disc with two holes), sometimes with pieces of net preserved inside the hole. Here as well, unfortunately, no more details were given.

Ubaid cemetery, pierced once or twice. Dimensions – usually 7 cm of diameter and roughly 1.5 cm of thickness – are consistent with the weights from Nigin.¹⁴

Finally, it must be said that fishing net weights were found also in the Diyala region, at Tell Asmar and Khafaja. At Khafaja, they were associated with the remains of a net.¹⁵ The weights belong to the first typology found at Ur, that is the simple ring weight and cannot be properly compared with the materials from Zurghul.¹⁶

In the end, it can be stated that the weights from Tell Zurghul can be inserted in a well-known category of objects produced for fishing activities. It should be remembered that no systematic study has been carried out on these types of objects and that the sheer number of weights found by the MAIN – until now the largest finding (or at least the largest registered finding) for Southern Mesopotamia – will surely offer additional data on this particular typology of artifacts, still poorly known in the Mesopotamian context.

Even if the material is different, we should also mention the presence of two objects found in the same context of the weights (Area B, SU 706, Ubaid 4). They seem to belong to the same typology of fishing net weights but made entirely in bitumen. Weights and dimensions of the only complete object, relatively small ($5.5 \times 5.3 \times 1.7$ cm and 45g) are consistent with those of the clay weights. Given the extremely limited number of objects of this type, it is impossible to elaborate further hypotheses, but the presence of these objects it's surely worth noting as it may hint at a different use of the two bitumen weights, maybe in conjunction with the clay weights.

	Round Weights	Oval Weights
Number of Weights	36	15
Mean Length (cm)	7.6	7.9
Mean Width (cm)	7.5	5.7
Mean Diameter (cm)	7.6	-
Number of Weights (1 Hole)	12	5
Number of Weights (2 Holes)	24	10
Mean Weight (g)	92	111
Mean Thickness (cm)	1.7	1.5
Mean Holes Diameter (cm)	1	1.3

Tab. 1 - Data on Round and Oval fishing net weights.

¹⁴ Hall - Woolley 1927, 210, pl. XXXVII. These clay objects were unfortunately recovered out of their context.

¹⁵ Delougaz 1940, 55, figs. 54-55.

¹⁶ Delougaz 1940, 54-56.

2.2. Sickles (fig. 4)

During the three excavation seasons, 17 clay sickles were recovered, all belonging to that typology of objects said to be typical of the Ubaid period.¹⁷ These objects should have appeared in the Lower Mesopotamia during the Ubaid 2 period while becoming more common during Ubaid 3-4.¹⁸ They have been always considered to witness agricultural activity (harvesting in particular) but use-wear analyses have proven that some sickles have been used for cutting more resistant, siliceous plant, like marsh plants.¹⁹

During the excavation seasons, clay sickles were recovered in excavation areas A, B, and D, and from the survey in area C. The majority of sickles (11) were found in Area B, from layers dated to Ubaid 4 period. Only one sickle comes from Area D, while the remaining 5 sickles were found in Area A, from layers dated to Uruk and Jemdet Nasr period. All sickles were found in a fragmentary state of preservation, even if those coming from Area B are usually better preserved than the others. These objects are usually found associated with Ubaid bent-nails,²⁰ but during the excavations at Zurghul sickles were never directly associated with this kind of artifacts. An interesting archaeological context is that of SU 705 and SU 706, in the Northern sector of Area B (excavated in 2017): the association of sickles – found almost preserved with only the tip of the blade missing – with fishing net weights and numerous fish bones (see above), could support the hypothesis that some sickles may have been used to cut the plants and reeds of marshes, which probably formed the main part of the ancient landscape of Zurghul.²¹ Detailed studies on the sickles from Oueili demonstrated that at least one sickle with a “closed shape” and a thin blade was used for cutting reeds, while another with an “open shape” was used for harvesting the wheat. Data from Tell Zurghul show how the sickles are rarely longer than 20 cm, with the only exception of those from the SU 705 and SU 706 which are between 20 and 22 cm long.²² The blade of these two artifacts is between 4 and 5 cm wide and their shape seems to be a “closed” one. It should be noted that the absence of better-preserved sickles from the other areas of the site makes the internal comparison impossible.

As already said, clay sickles are a common finding in Ubaid and Uruk context in Southern Mesopotamia; in fact, comparisons with the tools from Zurghul are found in many nearby sites. At Eridu, from levels VIII-I of the hut sounding, more than one hundred

¹⁷ Moorey 1994, 165.

¹⁸ It should be noted that these objects were recorded at least until the Uruk period, while it is not clear whether the samples from Jemdet Nasr and Early Dynastic contexts were only strays of earlier productions or they were still in use (Moorey 1994, 165-166).

¹⁹ Moorey 1994, 165; Anderson-Gerfaud 1983, 180-181.

²⁰ Moorey 1994, 165.

²¹ The hypothesis of the use of the sickles for cutting marsh plants was already proposed for the sickles from Tell Oueili, see Anderson-Gerfaud 1983. On the ancient landscape of Southern Iraq with reference to the Ubaid period, see Pournelle 2003, 195-211.

²² A sickle found in 2015 (SG.15.B.108) shows interesting differences between those found in 2017. Even if the shape of the former seems partially similar (the fragmentary state of preservation prevents from a precise comparison), the darker colour of the clay could have been caused by the different kind of heating, while the blade seems to be slightly larger than those of Area B North. Thickness and manufacture seem to be also different, but it is difficult to assess if all of this could depend on a different function of the sickle.

sickles were found, but no detailed description was given.²³ Many other sickles were found in different soundings at the site of Ur, almost always associated with bent-nails,²⁴ while more details were given for those found at the site of Tell Oueili. Here, from layers dated to Ubaid 3 and 4, many sickles were recovered, and some of them seem to show chronological differences: those dated to older levels are usually larger (with a blade max. 7 cm large), while those coming from later levels possess a blade rarely larger than 5 cm.²⁵ From the site of Ubaid 19 sickles were found but here too, no clear information on the context of the finding was given.²⁶ As far as the Uruk contexts are concerned, from the site of Abu Salabikh and more precisely from the Uruk Mound, more than one thousand sickles were found, even if only 28 come from excavation.²⁷

The sickles from Tell Zurghul, in particular those found in Area B, have characteristics similar to those reported from Oueili. It is impossible, for now, and without more detailed studies and a larger sample of objects to assess if the objects found in Ubaid and Uruk layers show morphological and dimensional differences. It is nonetheless interesting to note that the finding of sickles with a “closed shape” and a thin blade associated within a context of the activity of fishing (probably in the marshes) may allow to support the hypothesis obtained from the wear-use analyses, that is that these objects might have been produced for uses others than harvesting.

2.3. *Spindle whorl and loom weights* (fig. 5)

During the excavations at Tell Zurghul, a number of loom weights and spindle whorls was also found. They come from Area D (SG. 16.D.29; SG. 16.D.82) and Area C (SG.16.C.16). The size of these objects is mostly fixed, with a maximum diameter of ca. 7 cm and a 2 cm-wide hole at the centre. Different from the others is object SG.16.A.82, made of stone and quite larger than the others, as it reaches a width of 11 cm. It is interesting to note that the only spool found on the site comes from Area B North (SG.17.BN.60), from the same levels of the aforementioned fishing net weights. The spool has a diameter of 2.8 cm and a concave body with both endings flattened. Similar objects were found also in a Late Uruk building at Tell Brak, in a room where flints tools were probably worked.²⁸ The spool from Tell Zurghul was found in a productive area and was linked to the activities performed in the room where fish bones and fishing net weights were found.²⁹

²³ Safar - Mustafa - Lloyd 1981, 252, fig. 72.

²⁴ Woolley 1955, 67-75, 84. Woolley mentions the presence of sickles decorated with a black painted band that he interprets as votive objects. No examples of this type were found at Tell Zurghul.

²⁵ Huot 1985, 123; Breniquet 1991.

²⁶ Hall - Woolley 1927, 48, pl. XV.4. Other illustrations of similar findings are given in Parrot 1948, 37, fig. 7.4.

²⁷ Benco 1992, 121. Sickles found in Uruk layers seem to be slightly bigger than the Ubaid ones, a fact that may point to chronological differences (Benco 1992, 131). At present it is impossible to properly compare these data with those of Tell Zurghul, as here no complete sickles were found in Late Uruk/Jemdet Nasr layers of Area A.

²⁸ Emberling - McDonald 2003, 3.

²⁹ The object is the only spool found in the site from 2015. R. Koldewey, during his expedition collected some spools but unfortunately it is not clear in which context he found them (see Huh 2008).

3. STONE OBJECTS

3.1. *Worked stone*

During the three years of excavation, few grinding stones were recovered. This could probably be related to the difficulties of finding stones in Lower Mesopotamia. It is nonetheless possible to highlight different kinds of stones, as both limestone and basalt objects were found. The scarcity of worked stone objects does not allow to notice a different use of limestone and basalt for this kind of tools.

3.1.1. Grinding Slabs (figs. 6-7)

Most of these objects were recovered in a fragmentary state of preservation and it is impossible to reconstruct their original size. Some grinding slabs are composed of flat quern, four samples are made of limestone and were found in areas D (SG.16.D.81; SG.16.D.84) and B (SG.17.BN.135, SG.17.BN.77, SG.17.BS.169); the other 2 objects are made of basaltic stone and were found in areas C (SG.16.C.31) and D (SG.16.D.97). Some saddle-quern are also attested: one is made of limestone and was found in Area D (SG.16.D.79); the others are made of basaltic stone and come from Areas C (SG.16.C.15, SG.15.C.109) and A (SG.17.A.173).

Among the aforementioned objects, a notable one is SG.16.C.15, which is very different from the others as the surface is well smoothed and the basaltic stone of which is made is of better quality than that the other querns. A last note has to be made for the highly fragmented object SG.15.A.129, which is too small to be identified as saddle-quern or a flat quern.

3.1.2. Handstone (figs. 7-8)

Different types of handstone were recovered during the excavation, but most of them can be identified as polishing tools. The objects recovered during the 2016 season mainly come from Area D and the survey in Area C. Among the objects found, we can mention a worked stone, possibly a limestone *pounder* (SG.16.D.80), a polishing tool made of hard stone (possibly limestone as well) and with an ovoid shape and smoothed surface (SG.16.C.8), or with a circular shape (SG.17.C.54), a pounder in hardstone (possibly limestone) SG.16.D.102, and finally limestone pounder of spherical shape (SG.17.C.163; SG.17.C.76; SG.17.C.95).

3.1.3. Pestles (fig. 8)

Among the handstones it is possible to identify a limestone pestle from the 2016 excavation in Area D (SG.16.D.77). This object has a roughly ovoid shape, a smoothed surface and one side smoother and more flattened than the others, probably because of its use.

3.1.4. Mortars (fig. 8)

During the excavation only one basaltic mortar was recovered: it comes from the 2016 excavation of Area D on the main mound (SG.16.D.85). Its fragmentary state of

preservation, however, makes any reconstruction of the shape or estimation of its diameter impossible.

Given these descriptions, it is interesting to note that the majority of grinding stones from 2017 excavation come from the older levels of Area B, dated to the Ubaid period. The stone objects were found in the same layers where the fishing net weights and animal (fish) bones were found. This could suggest a functional use of the rooms where these artefacts were found, possibly dedicated to productive activities.

Unfortunately, earlier reports of excavations from nearby sites from the beginning of the 20th century do not provide any information on this kind of stone objects, so it is impossible to understand whether there is any difference in the style or manufacturing technique of these tools or not. It is nonetheless possible to highlight some differences among the objects found at Tell Zurghul, either in the type of stone used (basalt or limestone) or in their different shapes. As an example, even if most of the grinding slabs has a flattened shape, the saddle-shaped grinding stones are also attested (e.g. SG.16.C.15). It is unfortunate that, at the present day, it is impossible to distinguish any typology that could be linked to a precise historical period.

3.1.5. Mace heads (fig. 8)

During the three years of excavations, only one mace head was recovered (SG.16.A.52). It was found in Area A during the excavation of the Jemdet Nasr levels and it is made of white hard stone; only half of the object is preserved, but it is possible to highlight its slightly pointed spherical shape.

3.2. *Chipped stones*

Both flint and obsidian blades and scrapers were recovered during the excavation. Flint and obsidian tools come mainly from Area B and Area A, respectively the Ubaid complex and the Late Uruk/Jemdet Nasr structure.

3.2.1. Flint blades (figs. 9-10)

Most of the chipped stone objects are blades in a fragmentary state of preservation: they are usually retouched on both sides and can be divided in blades with a flat rib or blades with a triangular section.

The larger group of blades is composed of those that are less than 1 cm thick and show a barely emphasized triangular section or a flattened surface. 70% of these objects come from Area A, while the remaining 30% were found in Area B North.

There are also blades with a thickness bigger than 1 cm: these are characterized by a thinner upper part and a larger lower part. These are highly fragmented tools that show only a triangular section. Two of those objects were found in Area A, two in Area B North and only one in Area B.

Few blades with a trapezoidal section were also found, two of them in Area A and one in Area D.

Denticulate flint blades are present among the findings as well. Among these, one object from Area C has a maximum width of ca. 1 cm and shows a denticulate blade on both sides (SG.16.C.19). Another one, from Area A (SG.16.A.62), has a maximum width of ca. 1.5

cm and shows a denticulate blade only on the left side; this object seems to be part of a sickle blade, judging also by the curve and direction of the object towards the left. In these two tools, the thickness of the portions of the blade and the space between them is somewhat regular: the teeth are ca. 1mm thick and the space between them is roughly 3 mm.

3.2.2. Flint burins (fig. 10)

During the excavation two small stone objects were found: these tools can be identified as burins or arrowheads. One object was found in Area A (SG.16.A.66), the other in Area B North (SG.17.BN.165).

3.2.3. Obsidian

While it is still not sure where the obsidian sources were located in Mesopotamia during ancient times, it is known that obsidian was used for ornaments and to create tools, thanks to its chemical and physical characteristics. As a matter of fact, the obsidian fractures conically as the flint, a behaviour that makes it easier to use. Moreover, even if less resistant than the flint, it allows the making of thinner and sharper blades.³⁰ From the beginning of the 4th Millennium BC, the use of obsidian for making tools diminishes, to the advantage of metal, but it was still employed to make ornaments.³¹ In Southern Mesopotamia, obsidian objects were found in many sites but only rarely their finding was registered and inserted in the publications of the excavations. As an example, Woolley noted the use of obsidian during Ubaid and later periods at Ur to make personal ornaments. Indications of the use of this material are present also in the publications of the sites of Eridu, Oueili ad Ubaid.³²

3.2.4. Obsidian blades (fig. 11)

Most of the objects recovered during excavations at Tell Zurghul are blades which can be divided into two main types, just as the flint blades.

The first type encompasses very narrow blades (max. 1 cm wide) with a trapezoidal section. The blades show a more or less accentuated curve towards one of the sides, due to their possible use as part of sickle blades. More specifically, one of them (SG.17.BN.170), from Area B North, seems to belong to the upper end of a sickle. The other objects of this type were found in Area B (SG.17.BN.184, SG.15.B.234) and Area A (SG.16.A.59), which are the areas with the oldest attested occupations at the site.

The second type encompasses those blades characterized by a larger blade compared to those of the first group (even more than 1 cm wide) with trapezoidal section. In this case, the blades do not show any curve towards one the sides. Blades of this type were found in Area B North (SG.17.BN.62, SG.17.BN.194), Area A (SG.15.A.145) and Area D (SG.16.D.99, SG.16.D.91).

³⁰ Moorey 1994, 64.

³¹ Finds from Tell Zurghul testify this tendency. In fact, most of the obsidian blades come from Area B (66%), where the Ubaid phase was investigated.

³² Moorey 1994, 69.

At Tell Zurghul no obsidian cores were found: this data suggest that obsidian blades weren't realized locally but were probably crafted close to the sources and then traded. The trade of obsidian was performed since the Neolithic period and, at the beginning, it was mainly a utilitarian trade. In fact, obsidian was used to realize blades with sharp edges and it was observed that obsidian was not imported where flint was available. Sources of obsidian were located mainly in Anatolia and, during Neolithic and Chalcolithic, objects were exchanged through a "person-to-person" trade,³³ mainly overland.³⁴

4. CONCLUSIONS

The analysis of the tool assemblages from 2015-2017 expeditions at Tell Zurghul could be important to delineate the functionality of the excavated contexts of the site. For this reason, one of the main aims of this study was to analyze the distribution of the different typologies of objects in the areas. The first interesting data was the presence of around 80 fishing net weights (51 of them were intact) in the Area B North. Those objects were found together with many fish bones and pottery sherds.³⁵ The peculiarity of the context is testified also by the other typologies of objects collected in the Area B North. In fact, during the 2017 campaign, the majority of the worked stone tools, used for productive activities, were found in the same context,³⁶ as much as two clay sickles and the spool. This data suggest that Area B North had a productive function.³⁷

In the following catalogue the details of the objects already described. The table (tab. 2) includes the excavation number, the context where the object was found, a synthetic description and some comparisons based on published data from other Southern Mesopotamia sites.

³³ On the trade routes in the Ancient Near East see Wilkinson 2014.

³⁴ Despite this tendency, during his investigation in South Arabia, J. Oates recognized Southern Mesopotamian Ubaid pottery in the Gulf repertoire, and he suggested that the trade was performed also through the Gulf (Oates *et al.* 1977, 221). Later, several archaeological evidences testified the existence of the trade through the Gulf (Ratnagar 2006, 24-25).

³⁵ See the contribution by Volpi in this volume.

³⁶ Among the 2017 worked stone assemblage, the 66% of the grinding tools come from Area B North.

³⁷ See the contribution by Nadali in this volume.

Fig.	Exc. No.	Area	Description	Parallels
1:1	SG.17.BN.18	B North	Fishing Net Weight	
1:2	SG.17.BN.64	B North	Fishing Net Weight	
1:3	SG.17.BN.32	B North	Fishing Net Weight	
1:4	SG.17.BN.38	B North	Fishing Net Weight	
1:5	SG.17.BN.42	B North	Fishing Net Weight	
1:6	SG.17.BN.45	B North	Fishing Net Weight	
2:1	SG.17.BN.50	B North	Fishing Net Weight	Hall - Woolley 1927, pl. XXXVII, T.O.385; Huh 2008, pl. 12:187
2:2	SG.17.BN.37	B North	Fishing Net Weight	Woolley 1955, fig. 4; Huh 2008, pl. 12:187
2:3	SG.17.BN.56	B North	Fishing Net Weight	Hall - Woolley 1927, pl. XXXVII, T.O.385; Huh 2008, pl. 12:187
2:4	SG.17.BN.64	B North	Fishing Net Weight	Hall - Woolley 1927, pl. XXXVII, T.O.385; Huh 2008, pl. 12:187
3:1	SG.17.BN.66	B North	Fishing Net Weight	Woolley 1955, fig. 4
3:2	SG.17.BN.65	B North	Fishing Net Weight	
3:3	SG.17.BN.69	B North	Fishing Net Weight	Hall - Woolley 1927, pl. XXXVII, T.O.385
3:4	SG.17.BN.92	B North	Fishing Net Weight	
3:5	SG.17.BN.25	B North	Fishing Net Weight	
4:1	SG.17.BN.110	B North	Sickle	Hall - Woolley 1927, pl. XV:4; Parrot 1948, fig. 7q
4:2	SG.17.BN.133	B North	Sickle	Hall - Woolley 1927, pl. XV:4; Parrot 1948, fig. 7q
5:1	SG.16.C.16	C	Loom weight	Hout 1983, 53, pl. C; Huh 2008, pl. 33:184-185
5:2	SG.16.A.82	A	Loom weight	Hout 1983, 53, pl. C; Huh 2008, pl. 33:184-185
5:3	SG.16.D.29	D	Loom weight	Hout 1983, 53, pl. C; Huh 2008, pl. 33:184-185
5:4	SG.17.BN.60	B North	Spool	Hout 1996, 161, pls. V:5; C; Emberling - McDonald 2003, 7, fig. 6; Huh 2008, pl. 12:178-179
6:1	SG.16.D.81	D	Flat quern (limestone)	Huot 2003, 117, fig. 46
6:2	SG.16.D.84	D	Flat quern (limestone)	Huot 2003, 117, fig. 46
6:3	SG.17.BN.177	B North	Flat quern (limestone)	Huot 2003, 117, fig. 46
6:4	SG.17.BN.135	B North	Flat quern (limestone)	Huot 2003, 117, fig. 46
6:5	SG.17.BS.169	B South	Flat quern (limestone)	Huot 2003, 117, fig. 46
6:6	SG.16.C.31	C	Flat quern (basalt)	Huot 2003, 117, fig. 46
6:7	SG.16.D.96	D	Flat quern (basalt)	Huot 2003, 117, fig. 46
7:1	17.A.173	A	Limestone quern	Huot 2003, 117, fig. 46
7:2	16.D.79	D	Limestone quern	Huot 2003, 117, fig. 46
7:3	15.C.109	C	Basalt quern	Huot 2003, 117, fig. 46
7:4	15.A.129	A	Basalt quern	Huot 2003, 117, fig. 46
7:5	16.C.15	C	Basalt quern	Huot 2003, 117, fig. 46
7:6	16.D.80	D	Limestone handstone	Hall - Woolley 1927, pl. XIV, fig. 6
7:7	16.D.102	D	Limestone handstone	Hall - Woolley 1927, pl. XIV, fig. 6
8:1	SG.16.C.08	C	Handstone/polishing tool	Stone - Zimanski 2004, 129-131, figs. 75-77; Matthews 2002, fig. 43:1-10
8:2	SG.17.BS.54	B South	Handstone/polishing tool	Matthews 2002, fig. 43:1-10
8:3	SG.17.BN.163	B North	Handstone/polishing tool	Matthews 2002, fig. 43:1-10

8:4	SG.17.BN.76	B North	Handstone	Matthews 2002, fig. 43:1-10
8:5	SG.17.BN.95	B North	Handstone	Matthews 2002, fig. 43:1-10
8:6	SG.16.D.77	D	Handstone/ pestle	Stone - Zimanski 2004, 129-131, figs. 75-77; Matthews 2002, fig. 43:1-10
8:7	SG.16.D.85	D	Basalt mortar	Hout 2003, fig. 46:1
8:8	SG.16.A.52	A	Macehead pierced stone	Matthews 2002, fig. 44,4; Emberling - McDonald 2003, fig. 15
9:1	SG.17.A.179	A	Flint blade	Huot 1996, 297, fig. 1:11
9:2	SG.17.BN.05	B North	Flint blade	Huot 1996, 297, fig. 1:11
9:3	SG.16.A.64	A	Flint blade	Huot 1996, 297, fig. 1:11
9:4	SG.16.A.46	A	Flint blade	Huot 1996, 297, fig. 1:11
9:5	SG.16.A.22	A	Flint blade	Huot 1996, 297, fig. 1:11
9:6	SG.17.BN.51	B North	Flint blade	Huot 1996, 297, fig. 1:09
9:7	SG.17.BN.62	B North	Flint blade	Huot 1996, 297, fig. 1:09
9:8	SG.16.A.69	A	Flint blade	Wright 1981, 44, fig. 25:m
9:9	SG.17.BN.178	B North	Flint blade	Huot 1996, 297, fig. 1:11; Emberling - McDonald 2003, fig. 65
9:10	SG.17.A.222	A	Flint blade	Wright 1981, 44, fig. 25:m; Huh 2008, pl. 2:55
9:11	SG.16.A.70	A	Flint blade	Wright 1981, 44, fig. 25:m
9:12	SG.17.A.183	A	Flint blade	Wright 1981, 44, fig. 25:m
9:13	SG.16.A.64	A	Flint blade	Huot 1996, 297, fig. 1:11
9:14	SG.16.A.06	A	Flint blade	Huot 1996, 297, fig. 1:11
10:1	SG.16.A.63	A	Flint blade	Woolley 1955, pl. 12:b
10:2	SG.16.D.106	D	Flint blade	Woolley 1955, pl. 12:b
10:3	SG.17.BN.195	B North	Flint blade	Huot 1996, 297, fig. 2:14
10:4	SG.17.BN.132	B North	Flint blade	Woolley 1955, pl. 13
10:5	SG.16.A.65	A	Flint blade	Hall - Woolley 1927, pl. XIII:5
10:6	SG.16.A.44	A	Flint blade	Woolley 1955, pl. 12:b
10:7	SG.16.A.40	A	Flint blade	Woolley 1955: pl. 12:b; Emberling - McDonald 2003, fig. 65
10:8	SG.16.A.66	A	Flint burin/point	Wright 1981, 45, fig. 26:l; Hall - Woolley 1927, pl. XIII:5
10:9	SG.17.BN.165	B North	Flint burin	Hall - Woolley 1927, pl. XIII:5
10:10	SG.16.C.19	C	Flint blade	Stone - Zimanski 2004, 126, fig. 74 AbD 90-232; Woolley 1955, pl. 12:b; Huh 2008, pl. 21:500
10:11	SG.16.A.62	A	Flint blade	Woolley 1955, pl. 12:b
11:1	SG.15.B.234	B	Obsidian sickle blade	Huot 1996, 297, fig. 1:06
11:2	SG.17.BN.170	B North	Obsidian sickle blade	Huot 1996, 297, fig. 1:06
11:3	SG.17.BN.184	B North	Obsidian blade	Huot 1996, 297, fig. 1:02
11:4	SG.16.A.59	A	Obsidian blade	Huot 1996, 297, fig. 1:06; Khalidi 2014: fig. 5:13e
11:5	SG.17.BN.194	B North	Obsidian blade	Huot 1996, 297, fig. 1:03; Khalidi 2014, fig. 5:16a
11:6	SG.16.D.99	D	Obsidian blade	Huot 1996, 297, fig. 1:03; Khalidi 2014, fig. 5:16a
11:7	SG.17.BN.62	B North	Obsidian blade	Huot 1996, 297, fig. 1:06
11:8	SG.16.D.91	D	Obsidian blade	Huot 1996, 297, fig. 1:03
11:9	SG.15.A.145	A	Obsidian blade	Huot 1996, 297, fig. 1:03

Tab. 2 - Catalogue of the objects with reference to the figures.

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Fig. 1	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)
1:1	SG.17.BN.18	B North	Fishing Net Weight	5.5 × 5.5 × 1.4 cm
1:2	SG.17.BN.64	B North	Fishing Net Weight	5.4 × 5.3 × 1.7 cm
1:3	SG.17.BN.32	B North	Fishing Net Weight	7.2 × 6.8 × 1.2 cm
1:4	SG.17.BN.38	B North	Fishing Net Weight	6.7 × 6.6 × 2.2 cm
1:5	SG.17.BN.42	B North	Fishing Net Weight	7.3 × 7 × 1.5 cm
1:6	SG.17.BN.45	B North	Fishing Net Weight	6.7 × 6.4 × 2.3 cm

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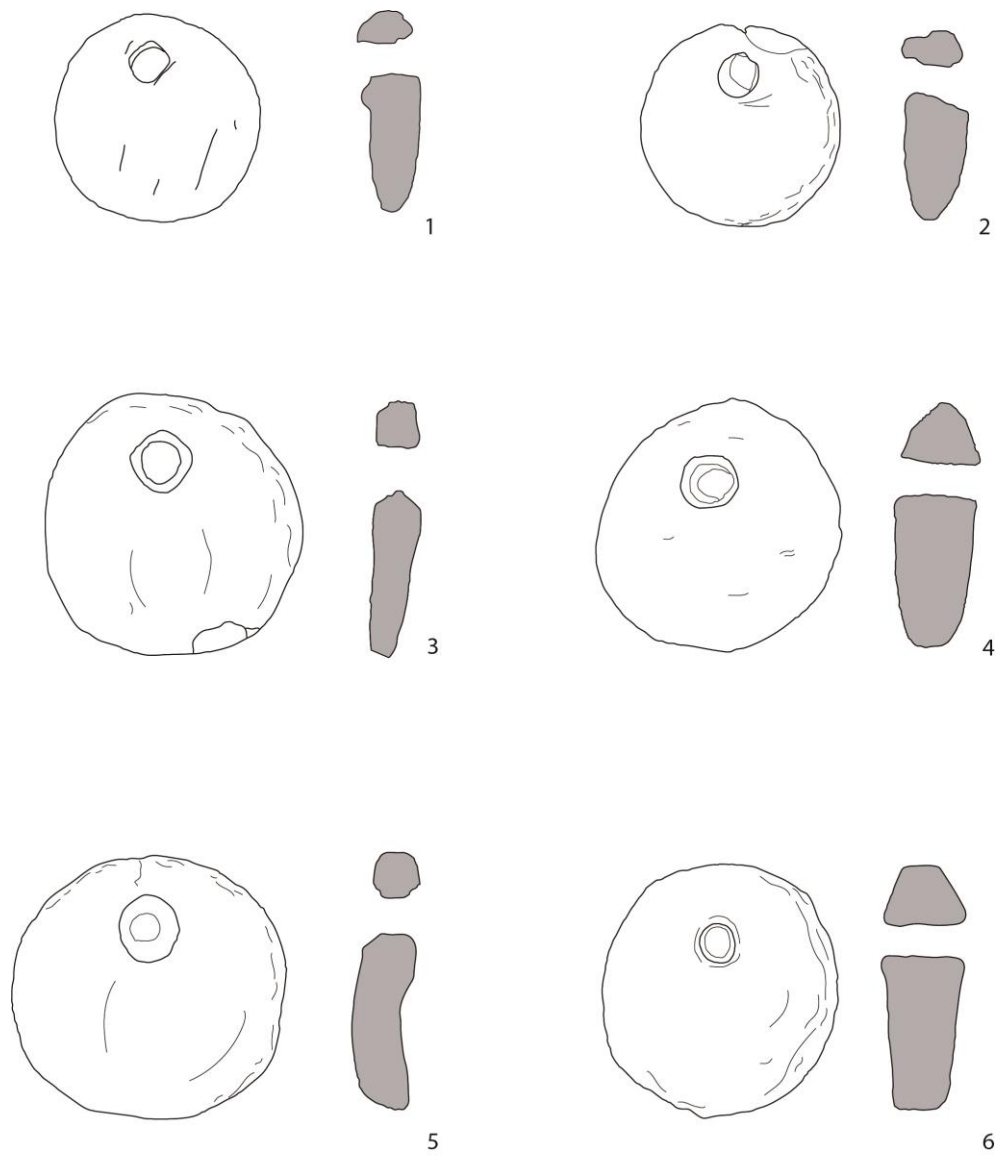


Fig. 1 - Fishing net weights.

Fig. 2	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
2:1	SG.17.BN.50	B North	Fishing Net Weight	5.7 × 6.3 × 2.3 cm	Tell Zurghul (Huh 2008, pl. 12:187); Al-Ubaid (Hall - Woolley 1927, pl. XXXVII, T.O.385)
2:2	SG.17.BN.37	B North	Fishing Net Weight	9.4 × 9.7 × 1.6 cm	Tell Zurghul (Huh 2008, pl. 12:187); Ur (Woolley 1955, fig. 4)
2:3	SG.17.BN.56	B North	Fishing Net Weight	6.6 × 6.8 × 1.7 cm	Tell Zurghul (Huh 2008, pl. 12:187); Al-Ubaid (Hall - Woolley 1927, pl. XXXVII, T.O.385)
2:4	SG.17.BN.64	B North	Fishing Net Weight	5.4 × 5.3 × 1.7 cm	Tell Zurghul (Huh 2008, pl. 12:187); Al-Ubaid (Hall - Woolley 1927, pl. XXXVII, T.O.385)

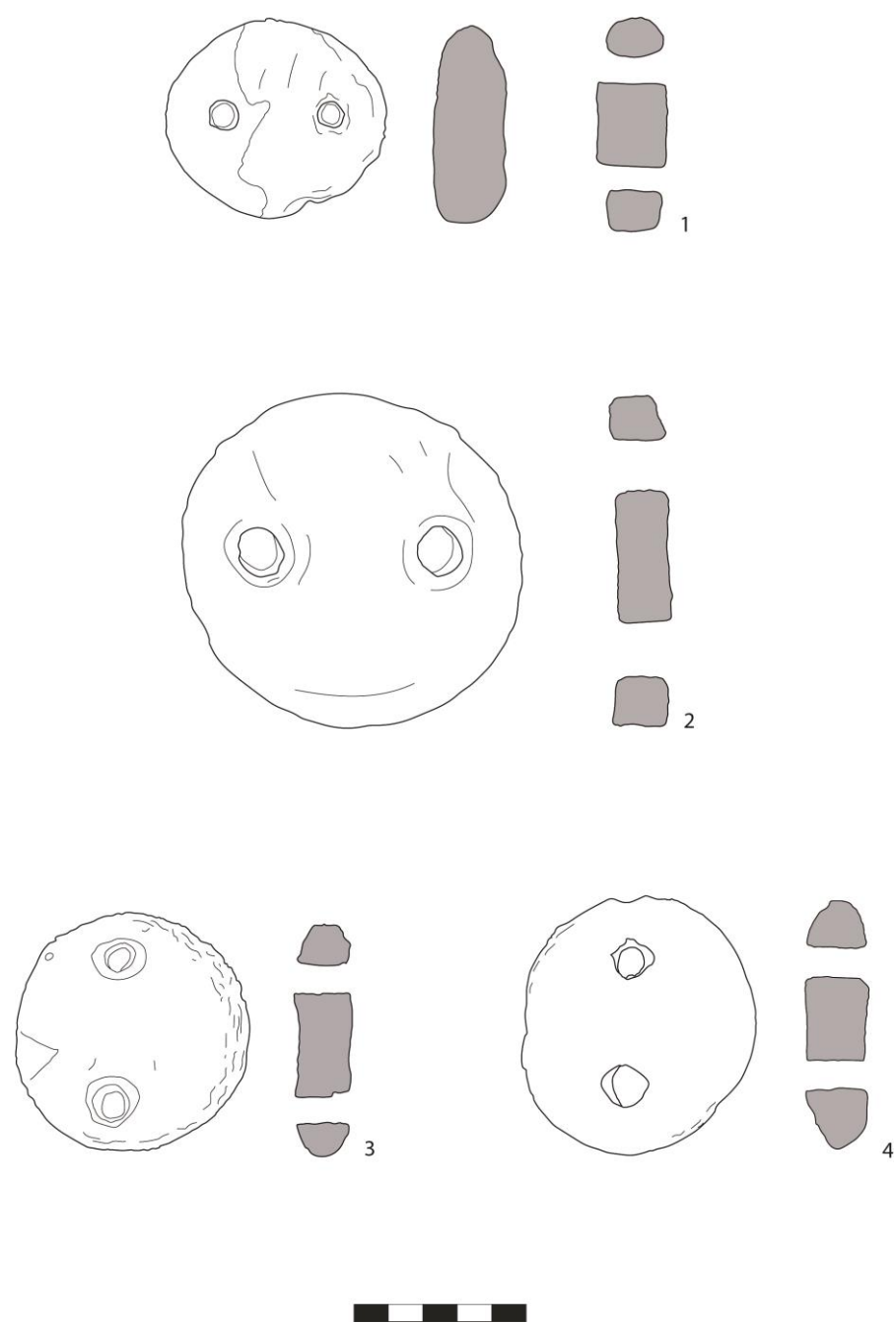


Fig. 2 - Fishing net weights.

Fig. 3	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
3:1	SG.17.BN.66	B North	Fishing Net Weight	6.9 × 7.1 × 2.1 cm	Ur (Woolley 1955, fig. 4)
3:2	SG.17.BN.65	B North	Fishing Net Weight	6.2 × 5.4 × 1.5 cm	-
3:3	SG.17.BN.69	B North	Fishing Net Weight	5.2 × 5 × 1.8 cm	Al-Ubaid (Hall - Woolley 1927, pl. XXXVII, T.O.385)
3:4	SG.17.BN.92	B North	Fishing Net Weight	7.9 × 6.3 × 1.8 cm	-
3:5	SG.17.BN.25	B North	Fishing Net Weight	5.5 × 5.3 × 1.7 cm	-

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Fig. 3 - Fishing net weights.

Fig. 4	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
4:1	SG.17.BN.110	B North	Sickle	20 × 5.5 × 2.4 cm	Tello (Parrot 1948, fig 7:q); Ubaid (Hall - Woolley 1927, pl. XV:4)
4:2	SG.17.BN.133	B North	Sickle	22.5 × 4.6 × 1.7 cm	Tello (Parrot 1948, fig 7:q); Ubaid (Hall - Woolley 1927, pl. XV:4)



Fig. 4 - Clay sickles.

Fig. 5	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
5:1	SG.16.C.16	C	Loom weight	2.1 cm (thickness); 6.9 cm (diameter)	Oueili (Huot 1983, 53, pl. C); Tell Zurghul (Huh 2008, pl. 33:184-185)
5:2	SG.16.D.82	D	Loom weight	11.9 × 5.5 × 5.6 cm	Oueili (Huot 1983, 53, pl. C); Tell Zurghul (Huh 2008, pl. 33:184-185)
5:3	SG.16.D.29	D	Loom weight	1.8 cm (thickness); 7 cm (diamater)	Oueili (Huot 1983, 53, pl. C); Tell Zurghul (Huh 2008, pl. 33:184-185)
5:4	SG.17.BN.60	B North	Spindle whorl	1.5 × 2.8 × 1.6 cm	Oueili (Huot 1996, 161, pl. V:5); Tell Brak (Emberling - McDonald 2003, 7, fig. 6); Tell Zurghul (Huh 2008, pl. 12:178- 179)



Fig. 5 - Loom weights (1-3), spindle whorls (4).

Fig. 6	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
6:1	SG.16.D.81	D	Flat quern (limestone)	10 × 6.8 × 3.5 cm	Larsa (Huot 2003, 117, fig. 46)
6:2	SG.16.D.84	D	Flat quern (limestone)	3.4 cm (thickness)	Larsa (Huot 2003, 117, fig. 46)
6:3	SG.17.BN.77	B North	Flat quern (limestone)	10 × 9 × 4.4 cm	Larsa (Huot 2003, 117, fig. 46)
6:4	SG.17.BN.135	B North	Flat quern (limestone)	23.8 × 20.7 × 4.7 cm	Larsa (Huot 2003, 117, fig. 46)
6:5	SG.17.BS.169	B South	Flat quern (limestone)	10.2 × 6.4 × 2.6 cm	Larsa (Huot 2003, 117, fig. 46)
6:6	SG.16.C.31	C	Flat quern (basalt)	9.1 × 4.8 × 4.1 cm	Larsa (Huot 2003, 117, fig. 46)
6:7	SG.16.D.96	D	Flat quern (basalt)	19.9 × 13.3 × 2 cm	Larsa (Huot 2003, 117, fig. 46)

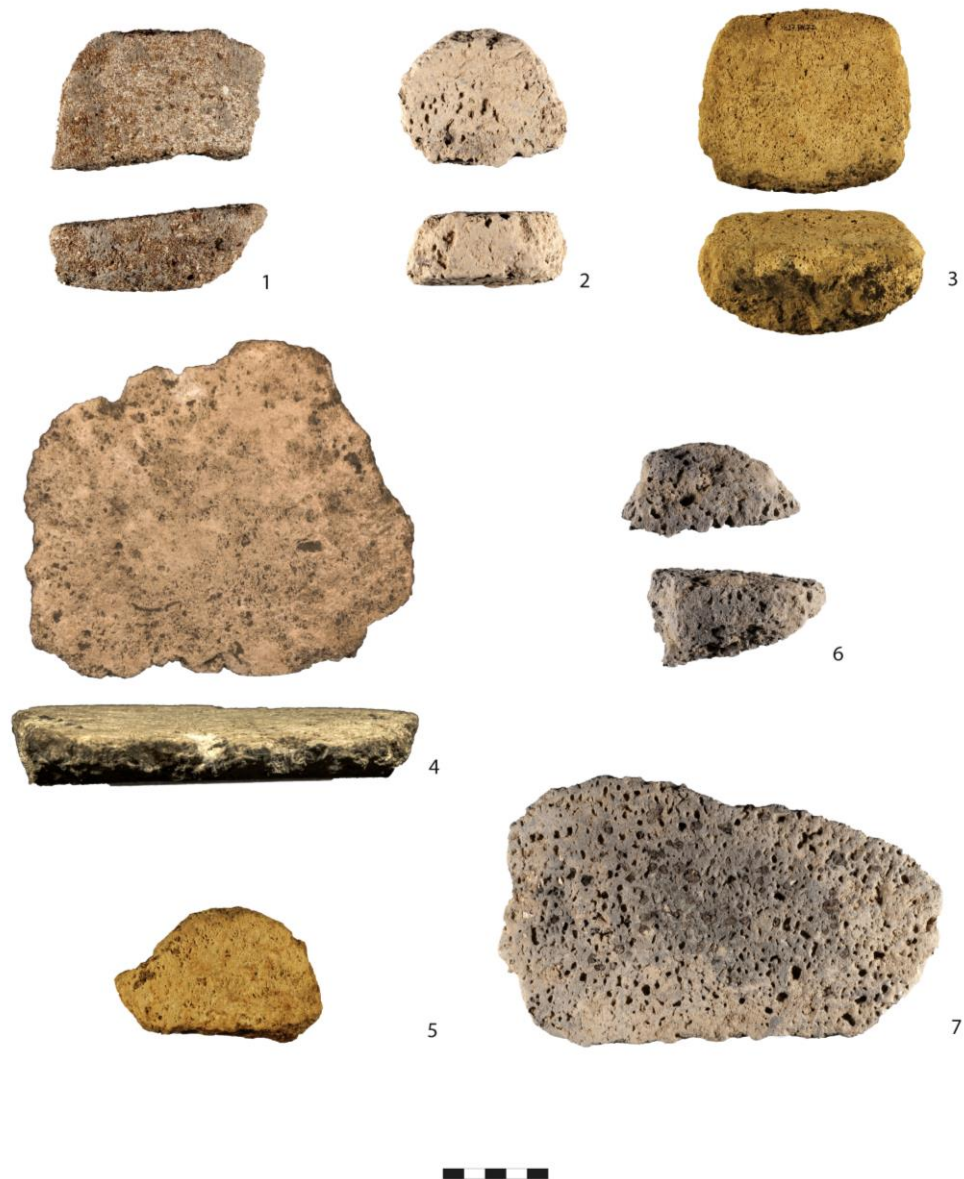


Fig. 6 - Grinding stones (flat querns).

Fig. 7	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
7:1	SG.17.A.173	A	Limestone quern	6.4 × 4.4 × 2.9 cm	Larsa (Huot 2003, 117, fig. 46)
7:2	SG.16.D.79	D	Limestone quern	7.6 × 4.9 × 2 cm	Larsa (Huot 2003, 117, fig. 46)
7:3	SG.15.C.109	C	Basalt quern	31.9 × 14.4 × 5.1 cm	Larsa (Huot 2003, 117, fig. 46)
7:4	SG.15.A.129	A	Basalt quern	13.8 × 8.5 × 4 cm	Larsa (Huot 2003, 117, fig. 46)
7:5	SG.16.C.15	C	Basalt quern	8.1 × 5.8 × 4.7 cm	Larsa (Huot 2003, 117, fig. 46)
7:6	SG.16.D.80	D	Limestone handstone	5.8 × 8.2 × 3.5 cm	Al-Ubaid (Hall - Woolley 1927, pl. XIV, fig. 6)
7:7	SG.16.D.102	D	Limestone handstone	5.2 cm (thickness)	Al-Ubaid (Hall - Woolley 1927, pl. XIV, fig. 6)



Fig. 7 - Grinding stones (1-5 saddle querns; 6-7 handstones).

Fig. 8	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
8:1	SG.16.C.08	C	Handstone/ polishing tool	6.9 × 5.3 × 3.5 cm	Jemdet Nasr (Matthews 2002, fig. 43:1-10); Mashkan- shapir/Tell Abu Duwari (Stone - Zimanski 2004, 129-131, figs. 75-77)
8:2	SG.17.BS.54	B South	Handstone/ polishing tool	0.9 cm (thickness)	Jemdet Nasr (Matthews 2002, fig. 43:1-10)
8:3	SG.17.BN.163	B North	Handstone/ polishing tool	4.7 × 5.2 cm	Jemdet Nasr (Matthews 2002, fig. 43:1-10)
8:4	SG.17.BN.76	B North	Handstone	8.7 × 7 × 5 cm	Jemdet Nasr (Matthews 2002, fig. 43:1-10)
8:5	SG.17.BN.95	B North	Handstone	8.6 × 7 × 5.5 cm	Jemdet Nasr (Matthews 2002, fig. 43:1-10)
8:6	SG.16.D.77	D	Handstone/ pestle	4.5 cm (height)	Jemdet Nasr (Matthews 2002, fig. 43:1-10); Mashkan- shapir/Tell Abu Duwari (Stone - Zimanski 2004, 129-131, figs. 75-77)
8:7	SG.16.D.85	D	Basalt mortar	7.6 × 7.4 × 2.6 cm	Larsa (Huot 2003, fig. 46:1)
8:8	SG.16.A.52	A	Macehead/ pierced stone	8.5 × 11.1 × 7.8 cm	Jemdet Nasr (Matthews 2002, fig. 44:4); Tell Brak (Emberling - McDonald 2003, fig. 15)

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Fig. 8 - Grinding stones (1-6 handstones; 7 mortar); 8 mace-head.

Fig. 9	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
9:1	SG.17.A.179	A	Blade	2.6 × 0.7 × 0.4 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:2	SG.17.BN.05	B North	Blade	3.5 × 0.9 × 0.4 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:3	SG.16.A.54	A	Blade	3.4 × 0.9 × 0.2 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:4	SG.16.A.46	A	Blade	3.1 × 1.2 × 0.3 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:5	SG.16.A.22	A	Blade	1.9 × 1.4 × 0.4 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:6	SG.17.BN.51	B North	Blade	2.2 × 1.2 × 0.4 cm	Oueili (Huot 1996, 297, fig. 1:09)
9:7	SG.17.BN.62	B North	Blade	1.9 × 0.9 × 0.2 cm	Oueili (Huot 1996, 297, fig. 1:09)
9:8	SG.16.A.69	A	Blade	3.9 × 1.1 × 0.3 cm	Tepe Farukhabad (Wright 1981, 44, fig. 25:m)
9:9	SG.17.BN.178	B North	Blade	4.6 × 1.6 × 0.5 cm	Oueili (Huot 1996, 297, fig. 1:11); Tell Brak (Emberling - McDonald 2003, fig. 65)
9:10	SG.17.A.222	A	Blade	3.5 × 1.2 × 0.7 cm	Tell Zurghul (Huh 2008, pl. 2:55); Tepe Farukhabad (Wright 1981, 44, fig. 25:m)
9:11	SG.16.A.70	A	Blade	2.8 × 1.4 × 0.4 cm	Tepe Farukhabad (Wright 1981, 44, fig. 25:m)
9:12	SG.17.A.183	A	Blade	4 × 2.1 × 0.8 cm	Tepe Farukhabad (Wright 1981, 44, fig. 25:m)
9:13	SG.16.A.64	A	Blade	1.3 × 1.2 × 0.3 cm	Oueili (Huot 1996, 297, fig. 1:11)
9:14	SG.16.A.06	A	Blade	1 × 0.8 × 0.2 cm	Oueili (Huot 1996, 297, fig. 1:11)

Caselli - Titolo

QuadVO



Fig. 9 - Flint blades.

Fig. 10	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
10:1	SG.16.A.63	A	Blade	3.2 × 1.6 × 0.4 cm	Ur (Woolley 1955, pl. 12:b)
10:2	SG.16.D.106	D	Blade	3.9 × 1.9 × 0.4 cm	Ur (Woolley 1955, pl. 12:b)
10:3	SG.17.BN.19 5	B North	Blade	3.5 × 1.2 × 0.4 cm	Oueili (Hout 1996, 297, fig. 2:14)
10:4	SG.17.BN.13 2	B North	Blade	2.3 × 1.2 × 0.3 cm	Ur (Woolley 1955, pl. 13)
10:5	SG.16.A.65	A	Blade	2.4 × 1.2 × 0.5 cm	Al-Ubaid (Hall - Woolley 1927, pl. XIII:5)
10:6	SG.16.A.44	A	Blade	4.7 × 1.6 × 0.6 cm	Ur (Woolley 1955, pl. 12:b)
10:7	SG.16.A.40	A	Blade	6 × 2.3 × 0.3 cm	Tell Brak (Emberling - McDonald 2003, fig. 65); Ur (Woolley 1955: pl. 12:b)
10:8	SG.16.A.66	A	Burin/ Arrowhead	3.8 × 2.8 × 1 cm	Al-Ubaid (Hall - Woolley 1927: pl. XIII.5); Tepe Farukhabad (Wright 1981, 45, fig. 26.1)
10:9	SG.17.BN.16 5	B North	Burin	1.9 × 1.1 × 0.3 cm	Al-Ubaid (Hall - Woolley 1927, pl. XIII:5)
10:10	SG.16.C.19	C	Blade	2.5 × 0.8 × 0.2 cm	Lagaš/al-Hiba (Huh 2008, pl. 21 n. 500); Mashkan-shapir/Tell Abu Duwari (Stone - Zimanski 2004, 126, fig. 74 AbD 90-232); Ur (Woolley 1955, pl. 12:b)
10:11	SG.16.A.62	A	Blade	2.9 × 1.3 × 0.3 cm	Ur (Woolley 1955, pl. 12:b)

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QuadVO



Fig. 10 - Flint tools (1-7, 10-11 blade; 8-9 burin/arrowhead).

Fig. 11	Exc. No.	Area	Description	Dimensions (Height/Length × Width × Thickness)	Comparanda
11:1	SG.15.B.234	B	Sickle blade	4 × 1 × 0.2 cm	Oueili (Huot 1996, 297 fig. 1:06)
11:2	SG.17.BN.170	B North	Sickle blade	3.1 × 0.8 cm	Oueili (Huot 1996, 297 fig. 1:06)
11:3	SG.17.BN.184	B North	Blade	1.7 × 0.5 × 0.2 cm	Oueili (Huot 1996, 297, fig. 1:02)
11:4	SG.16.A.59	A	Blade	1.2 × 0.9 × 0.2 cm	Oueili (Huot 1996, 297 fig. 1:06); Tell Brak (Khalidi 2014: fig. 5:13e)
11:5	SG.17.BN.194	B North	Blade	2.5 × 0.9 × 0.3 cm	Oueili (Huot 1996, 297, fig. 1:03); Tell Brak (Khalidi 2014, fig. 5:16a)
11:6	SG.16.D.99	D	Blade	2.1 × 1 × 0.3 cm	Oueili (Huot 1996, 297, fig. 1:03); Tell Brak (Khalidi 2014, fig. 5:16a)
11:7	SG.17.BN.62	B North	Blade	1.9 × 0.9 × 0.2 cm	Oueili (Huot 1996, 297 fig. 1:06)
11:8	SG.16.D.91	D	Blade	3.7 × 1.9 × 0.5 cm	Oueili (Huot 1996, 297, fig. 1:03)
11:9	SG.15.A.145	A	Blade	3 × 1.6 × 0.4 cm	Oueili (Huot 1996, 297, fig. 1:03)

Caselli - Titolo

QuadVO



1



2



3



4



5



6



7



8



9



Fig. 11 - Obsidian blades.

INSCRIBED OBJECTS FROM ZURGHUL, ANCIENT NINA/NÎĠIN¹

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This article surveys the inscribed artefacts found in Tell Zurghul (Nina/NîĠin) for which an origin from this site can be advanced. A history of the archaeological excavations, early travellers' visits, and local peoples' frequentation of the site is sketched, and a discussion of the surface findings and the objects appeared in the antiquities market is provided.

Keywords: Mesopotamia; cuneiform; royal inscriptions; Gudea; early travellers

This article surveys the inscriptions found in Tell Zurghul or for which a provenance from Nina/NîĠin can be argued. Accordingly, the objects are distributed between those coming from excavations and those from random surveys of the site or from the antiquity market.

Systematic excavations of Tell Zurghul are limited to the brief campaign of Koldewey in 1887 (§ 1.1.) and the Italian Archaeological Expedition to NîĠin, which began in 2015 (§1.3), to which occasional surveys of the area by archaeological missions excavating other tells in the neighborhood can be added (§ 1.2.). All these archaeological activities on the tell have provided mainly Gudea's inscriptions commemorating the building of the Sirara temple for the goddess Nanše (§ 4.2.1.). The frequentation of the site by local people (§ 2.2.)² as well as by early voyagers and excavators (§ 2.1.), produced a series of inscribed objects that were acquired by European and American collections. Without secure provenance, the attribution of such objects to ancient Nina/NîĠin can be argued from the content of the inscription, and also by indirect references in documentary sources (travel notes, museum catalogues, etc.).

1. EXCAVATIONS OR CONTEMPORARY SURVEYS OF TELL ZURGHUL

1.1. Koldewey's excavation (1887)

The only excavation prior to the ongoing Italian Archaeological Expedition to NîĠin (§ 1.3.) is that of Robert Koldewey in 1887. The campaign lasted a month and a half, from 4th January to 26th February, and concentrated on the necropolis.³ Besides a brief article of Koldewey on the graves,⁴ the results of this campaign are unpublished.⁵ The surface findings include at least eight clay nails inscribed with the Gudea commemorative inscription for the building of the Sirara (§ 4.2.1.) which have been published in copy by L. Messerschmidt in the first volume of the *Vorderasiatische Schriftdenkmäler der*

¹ My gratitude goes to Benjamin Foster, Ulla Kasten, and Agnete Wissti Lassen for their support during my recent stay at Yale and research on the Dougherty archive files; and to Claudia Suter for bring to my attention Reade 2002.

² The site shows no traces of smuggling.

³ Koldewey 1887, 406; Huh 2008, 246.

⁴ Koldewey 1887.

⁵ See Nadali - Polcaro - Verderame 2016, 16, fn. 3.

Königlichen Museen zu Berlin.⁶ Part of Koldewey's findings is a fragment of a clay nail bearing the inscription of Gudea commemorating the building and restoration of the Eninnu (§ 4.2.2.)⁷, and an alabaster plaque said to have been bought in Zurghul (§ 4.2.4.).⁸

1.2. *Post-World War II fortuitous visits to the site*

The site of Zurghul has been visited since the rediscovery of ancient Mesopotamian civilization and even before (§ 2.). However, these early visitors, explorers, and archaeologists made scanty and vague references to the exact spot or even the place of their findings. Moreover, it is very difficult to divine where the objects picked up in these visits and surveys are currently held. Modern excavators are more careful in recording their findings, although the pieces may have ended up in the Iraq Museum without an accession number.

The site of Zurghul has been occasionally surveyed by excavation teams digging other sites nearby, particularly al-Hiba and Tello.⁹ This is the case for the joint mission of the Metropolitan Museum and New York University to Tell al-Hiba (Lagaš). In two brief visits to Tell Zurghul during the first two campaigns in the early 1970s, 20 inscribed objects were recovered. The objects were turned over the Directorate General of Antiquities and kept in the Iraq Museum, but their accession number is unknown.¹⁰ 18 of the 20 inscribed objects bear the dedicatory inscription of Gudea for the construction of the Sirara for Nanše (§ 4.2.1.); four of these objects are bricks and twelve are cones.¹¹ A clay nail bearing a Gudea building inscription for the god Nindub(a) (§ 4.2.3.) and an Enannatum I building inscription of the Ebgal for Inanna (§ 4.1.1.) was also found.

In 1984, the same mission again visited Tell Zurghul when, fragments of five clay nails and one brick were recovered on the surface of the tell.¹² They all bear Gudea's inscription commemorating the construction of the Sirara for Nanše (§ 4.2.1.).

1.3. *Italian Archaeological Expedition to Niġin (2015-2017)*

In 2015, the Italian Archaeological Expedition to Niġin begun its activity in Tell Zurghul. The epigraphic findings of the first campaign are surface fragments of 13 clay cones and 15 bricks bearing Gudea's inscription commemorating the construction of the

⁶ Messerschmidt - Ungnad 1907, vi, specify that the clay nails VA 2203 and VA 2332-2338 come from Zurghul, while for the other fragments listed (clay nails VA 2597, 3063, 3065, 3066; two bricks fragments, VA 66 and 67) they provide no further details.

⁷ VA 3060 (VS 1, 14); Gudea 48 = *RIME* 3/1.1.7.37 ex. 116; Black 1990, 72 3a. Messerschmidt - Ungnad 1907, vi, report "3060 (Fragment aus Surghul)." In Steible 1991, 307 source Z, the exemplar from Zurghul is wrongly recorded as VA 3062 and in Edzard 1997, 135 the provenance from Zurghul is omitted.

⁸ VA 2339 (VS 1, 13); Gudea 17 = *RIME* 3/1.1.7.14; Black 1990, 72, 4a.

⁹ I hereby mention only modern excavation missions, discussing in the successive section § 2. the discoveries of early excavators which have left no precise record of the findings, besides a generic reference to the site of Zurghul.

¹⁰ In the preface to the edition of the inscriptions, Biggs states that he collated the texts in the Iraq Museum in 1972 (Biggs 1976), proving that the objects are kept in the museum.

¹¹ Gudea 29 = *RIME* 3/1.1.7.26; see tab. 1. See Biggs 1976, 12; Black 1990, 72; Nadali - Polcaro - Verderame 2016, 18.

¹² Black 1990.

Sirara for Nanše (§ 4.2.1.).¹³ In 2017, a fragment of an inscribed brick bearing an inscription mentioning the gi-gu₃-na-mah of Nanše (§ 4.1.2.), possibly from the Early Dynastic period, was unearthed during the cleaning of one of the trenches opened by Koldewey.

2. EARLY EXPLORATIONS

2.1. *Early Western travellers and explorers*

The site of Zurghul was visited during the earliest excavations in Southern Iraq. In 1854, Taylor was the first to draw his “archaeological” interest toward Zurghul, but he never visited the site personally and instead sent one of his agents.¹⁴ According to a report of Taylor’s activities sent by Rawlinson to the “Principal Librarian” of the British Museum, Sir Henry Ellis, Taylor was not able to obtain “specimens of the inscribed bricks and pottery with which the ruins are said to be covered.”¹⁵ However, “an inventory, dated ‘Maagill June 1855’, of objects sent to London on board the *Christiana Cornell*,” refers to one brick and one clay nail from Zurghul collected by Taylor. Sollberger advances that other two clay nails of Gudea that accessed in the British Museum in 1856,¹⁶ may well be part of Taylor’s collection of objects from Zurghul.¹⁷ According to the British Museum internal catalogue, these objects come from Zurghul, but the dealer was W. K. Loftus. During his 1853 exploration, Loftus may well have visited Zurghul and recovered relics on the surface of the tell. However, there was no reference to Zurghul in his narrative of the exploration of Southern Iraq¹⁸, and it could be argued that for some reason these objects were gathered by Taylor but ended up delivered by, or registered under, Loftus at the British Museum¹⁹.

After Taylor, Tell Zurghul was visited by other “archaeologists” or mentioned in their travel reports.²⁰ In *Decouvertes en Chaldée*, E. de Sarzec gives a brief description of the

¹³ For an analysis of this inscription and its witnesses see Nadali - Polcaro - Verderame 2016, 17-19.

¹⁴ See the discussion below.

¹⁵ Sollberger 1972, 139, § 26.

¹⁶ BM 30064 = 56-9-3, 1478; BM 30067 = 56-9-3, 1481.

¹⁷ Sollberger 1972, 139, fn. 27. Note that Smith 1872, 33, gives the provenance of these clay nails as from “Zerghul.”

¹⁸ Loftus 1857.

¹⁹ See the discussion below (§ 3.4.).

²⁰ For instance, De Liedekerke-Beaufort 1914, 114-115, mentions Zurghul, but he does not specify if he visited the site. Similarly, in the British Museum catalogue, several objects from the Lagaš area are said to be the result of the final mission of George Smith (1876). Sayce 1867, 126, states that “he made his way to Bagdad, where he procured between two and three thousand tablets discovered by some Arabs in an ancient Babylonian library near Hillah;” among these tablets could well have been the artefacts from the Lagaš area. Rassam 1897, 276, refers to hands of a Gudea’s statue from Ġirsu (Tello) that were sold to Smith; see fn. 68. An article called “Babylonian Antiquities” by the London correspondent of the Manchester Guardian 1877, March 17 (republished with the same title in other British and American newspapers), reported: “The main portion of the Babylonian antiquities just received at the British Museum as the result of the last expedition of Mr. George Smith was found near Hillah, a town about three miles north from the site of Babylon. ... Among the antiquities are some early Babylonian bricks, and fragments of statuary of a king hitherto unknown in the city of Zergul, called at this day by the slightly-varied form of Zerghul.” However, it is highly improbable that Smith visited personally Zurghul and these objects may well be acquired by Smith through agents sent on the

ruins and hills dominating the site.²¹ Zurghul was then visited by W.H. Ward in 1885 (31st January) during the Wolfe Expedition led by the same Ward.²²

It is possible that both de Sarzec and Ward picked up relics from the surface of Zurghul.²³ Ward does not state it in his report, but J.P. Peters, who was part of the Wolfe expedition and who possibly visited the site together with Ward,²⁴ published an extract of Ward's diary where more details are given.

I found a few uninscribed cones to the south of the ziggurat, also a few fragments of inscribed cones ... The smaller hill north of the ziggurat has graves, and I found there a piece of an inscribed cone. A great field of graves to the northwest has been explored by Arabs, and there are burial pots also to the west and to the southwest. No flint saws were picked up, and only two small inscribed bricks were found here, badly worn, like the ones found on the platform, and apparently like some found at Tello, probably put in a grave. Afterward another brick was found, complete, with inscriptions in two columns, the left-hand side having seven single lines and one double ... On the hill I bought of an Arab a piece of a monstrous worn marble cylinder, which may have been the top of a staff, engraved in archaic style with bulls, and said to have been found on Zerghul.²⁵

In 1926, R.P. Dougherty surveyed the sites of Southern Iraq and visited Zurghul. "Portions of bricks" and a part of a clay nail with the Gudea dedicatory inscription for the Sirara of Nanše were picked up.²⁶ The clay nail mentioned by Dougherty may be the one kept in the Yale Babylonian collection and published by Ferris as YOS IX 104 (YBC 2306).²⁷ Dougherty became curator of the Yale Babylonian Collection from 1926 to 1933.

site or probably from antiques dealers. What the origin of these tablets may be, Smith's lot of Neo-Sumerian texts shows that the area of Lagaš was already digged by locals long before the expedition of de Sarzec.

²¹ de Sarzec 1912, 3-4.

²² Ward 1886, 21-22.

²³ In the case of de Sarzec, these objects may well be ended up with the findings of the Tello excavation; see the discussion below (§ 3.4.).

²⁴ Ward 1886, 5.

²⁵ Peters 1897, 341-342.

²⁶ Dougherty 1927, 56-57. In a recent visit to the Yale Babylonian Collection I viewed through Dougherty's belongings kept in the collection, particularly the original notes and negatives of the Mesopotamian survey. However, neither Dougherty's notes nor the Yale Babylonian Collection catalogue have yielded any clue about the objects collected by Dougherty in Mesopotamia. In the Yale Babylonian Collection catalogue, eight objects with Gudea inscriptions bear no information about the acquisition (MLC 267, MLC 2675, NBC 8670, NCBT 2274, YBC 2160, YBC 4654, YBC 4754, YBC 4755) and a provenance from Dougherty's survey for some of them can be hypothesised at least.

²⁷ Steible 1991, 279, Gudea 29 source D; *RIME* 3/1.01.07.026 ex. 40. In Steible 1991, 279, and CDLI the object is erroneously labeled as a brick (Backsteine). According to the Yale Babylonian Collection catalogue, the clay nail YBC 2306 joined the collection on 02.03.35.

No wonder the findings of his survey in Southern Iraq may have taken their way for the collection he was curator.²⁸

2.2. Frequentation of the site by locals

It is usually reported that the site of Tell Zurghul was “discovered” by J. G. Taylor,²⁹ during his survey of Southern Iraq sites in 1854. However, as for Tello,³⁰ the vestige of Zurghul were not a discovery of the Western travellers. Local people were accustomed with these ruins and may have recovered objects emerging from the surface and then sold it to antique dealers or to the Western visitors and archaeologists.³¹ On the contrary, early explorers and excavators were led by the information of local people. In his article on Taylor’s activities in Chaldaeia, Sollberger states that in Southern Iraq he “discovered many other sites, such as Zerghul.”³² However, in the final letters on Taylor’s activity transcribed by Sollberger in his article,³³ Rawlinson writes that

Mr Taylor also obtained information of another ruined city in the desert named “Zerghul” and further sent an Agent to examine it whose report was exceedingly favorable, but the necessity of his own immediate return to Bussorah to prepare for the reception of the new Persian Mission prevented his visiting the place in person or even obtaining specimens of the inscribed bricks and pottery with which the ruins are said to be covered.

In the report about his visit on the region, De Liedekerke-Beaufort writes that “Dans la region de Souq-esh-Shuyukh, ... Le commerce des antiquités y est très actif.”³⁴ Ancient sites were traditionally visited and pilled by local people. Gathering surface objects is a common and diffused practice in Iraq where ancient ruins are quarried for building materials, particularly stone. Occasional findings may occur during agricultural works, but intentional excavations date before the archaeological exploration of the region, when the

²⁸ Note, however, that there is no mention to Dougherty’s findings in the Yale Babylonian Collection catalogue; see fn. 26. As for the objects edited in *YOS IX*, Ferris 1937, vii, refers to pieces that “have been acquired by purchase from antiquity dealers throughout the periods of curatorship of the late Professor Albert T. Clay, the late Dr. Ettalene M. Grice, the late Professor Raymond P. Dougherty, and (since 1933) the writer.” In *YOS IX*, only one brick from the Gudea period is recorded. It is YBC 2334 (= *YOS IX* 107), bearing a copy of Gudea 48 (Steible 1991, 304, source B = RIME 3/1.01.07.037 ex. 2). It accessed the Babylonian collection a month after the clay nail YBC 2306 (see fn. 27). No picture or copy of the object has been published. Ferris 1937, 25, describes the brick as “wedge shaped, with a slightly curved base. It is such a brick as was used for the building of round pillars.” This cannot be the bricks found in Zurghul by Dougherty described as “portions of bricks” bearing the inscription of Gudea commemorating the building of the Sirara for Nanše (Dougherty 1927, 57 and fn. 137).

²⁹ Sollberger 1972, 131.

³⁰ See Verderame 2008, 240.

³¹ See the discussion below about the foundation tablet with “pseudo-arabic” inscription kept in the Schøyen collection (§ 3.4.).

³² Sollberger 1972, 131.

³³ Sollberger 1972, 139, § 26.

³⁴ De Liedekerke-Beaufort 1914, 114.

antiquity market spurred local initiative. Since ancient antiquity, the idea of treasures hidden in ancient mounds was widespread. The big statues emerging from the ground were part of the cultural geography of the region, which became part of local folklore. One of the Gudea statues from Tello was called by locals “the old Tello.”³⁵ Furthermore, big emerging statues were believed to hide treasures – and were used as targets for locals’ gun exercises.

3. “UNPROVENANCED” OBJECTS

Local frequentation of the ancient sites led to finds that were acquired by private collections or public museums via the antiquity markets, as were objects gathered by early travellers. For most of these objects, tracing their origin and subsequent journeys to their ultimate destination is almost impossible. A description of the object in the traveller’s notes, or details in the museum catalogue, may give clues to identify an “ancient” recovered object with a “modern” exemplar or to reconstruct the provenance of the artefacts; beyond this remains a matter of conjecture.

As for ancient Nina/Niġin, I would advance a provenance from Tell Zurghul for at least the four objects discussed below. It should be mentioned here, however, that the Lagaš rulers’ practice of depositing inscriptions elsewhere the commemorated building/site,³⁶ make more difficult fulfil this task based only on textual internal references. Inscriptions commemorating the building and restoration of the temple of Nanše by Gudea have been found in different sites,³⁷ thus the mention of Nina/Niġin or Sirara does not directly imply a provenance from Tell Zurghul.

3.1. *A clay nail from the de Briailles collection*

Two Gudea inscribed objects were kept in the private collection of Count Chandon de Briailles³⁸ and were published by M. Lambert.³⁹ One is a stone tablet bearing the dedication inscription of Gudea for the building of Ningišzida’s temple in Ġirsu;⁴⁰ the other is a clay nail bearing Gudea’s commemorative inscription for the building of Nanše’s temple (Gudea 32 = *RIME* 3/1.1.7.28). This is the only known example of this inscription.

It is not unequivocal,⁴¹ but can be considered as the most basic or abbreviated form of the Gudea inscriptions commemorating the building of the Sirara (§ 4.2.1.). Both objects in the Chandon de Briailles’ collection are unprovenanced, but an origin from Tell Zurghul for the clay nail with the dedication to Nanše cannot be excluded.

³⁵ de Sarzec 1912, 5; see fn. 68.

³⁶ This is well-known and documented for Gudea, see Braun-Holzinger 1997 and Nadali - Polcaro - Verderame 2016, 18-19. The clay nail of Enannatum I, commemorating the building of Eanna of Inanna found in Zurghul (§ 4.1.1.), seems to point at an older and radicated tradition.

³⁷ Braun-Holzinger 1997; Nadali - Polcaro - Verderame 2016, 18-19.

³⁸ The objects are no longer in this collection and went lost or sold; one of them (fn. 40) recently re-emerged on the antiquity market, see Földi 2013, § 4.1.

³⁹ Lambert 1953.

⁴⁰ Gudea 68C = *RIME* 3/1.1.7.64 ex. 3.

⁴¹ The town of Nina/Niġin is not mentioned and the text may well refer to another Nanše’s temple elsewhere in the Lagaš area.

1.	¹⁾	^d n an š e	For Nanše,
2.	²⁾	n in - u r u ₁₆	the powerful lady,
3.	³⁾	n in - a - n i	his mistress,
4.	⁴⁾	g u ₃ - d e ₂ - a	Gudea,
5.	⁵⁾	e n s i ₂ -	<i>ensi</i>
6.	⁶⁾	l a g a š ^{k1} - k e ₄	of Lagaš,
7.	⁷⁾	e ₂ - a - n i	her temple
8.	⁸⁾	m u - n a - d u ₃	he (re)built for her.

3.2. The London door socket

The story of the door socket with a dedicatory inscription of Gudea found in a London house's debris is a long, complicated, fascinating, and illuminating one.⁴² In 1890, B.T.A. Evetts wrote:

*During the destruction, in the course of the past year, of some old houses in Knightrider Street [London], dating from the seventeenth century, the workmen came upon some fragments of black stone bearing marks that looked to them like ancient inscriptions. These stones have now been acquired by the British Museum, and prove to be Chaldean monuments belonging to the earliest period of which we have any knowledge, namely, the pre-Semitic age of Ur-Nina and Gudea, when the Akkadian language was alone in use, and the characters employed in writing were of the most archaic form.*⁴³

Evetts wonders "How did these fragments arrive at the place where they were found?"⁴⁴ and, as in a detective story, Evetts brilliantly solves the question through stratigraphy applied to industrial archaeology or simply good logical reasoning. He argues that the Mesopotamian artefacts have been found under the layer of the house built after the great fire of London (1666), thus their deposition is prior to this event. Dutch tiles were also found in the house. Evetts concludes that the artefacts may have been the property of a Dutch merchant living in London who worked for the Dutch East India Company, which, at the time, had a factory in Basrah. Evetts concludes that

*Either by a Dutch or an English ship then, it is conceivable that the mysteriously inscribed stones may have reached the Port of London, and have been landed at Paul's Wharf at some time before 1666. They may have been shipped at Bassorah as ballast, or as objects of curiosity.*⁴⁵

⁴² Evetts 1890 and Sollberger 1975, 176.

⁴³ Evetts 1890, 54.

⁴⁴ Evetts 1890, 54.

⁴⁵ Evetts 1890, 55.

The three objects found in the house of Knightrider Street (London) are:⁴⁶

1. a fragment of a boundary stone;⁴⁷
2. the so-called ‘mortar’ of Eannatum;⁴⁸
3. and a door socket with Gudea’s inscription commemorating the construction of the Sirara.⁴⁹

The inscription on the door socket (Gudea 31 = *RIME* 3/1.1.7.27; § 4.2.1.) is an extended version of the one found on cones and bricks (§ 4.2.1.), to which two more lines referring to the wall of the sanctuary or of the town are added (ll. 11-12).⁵⁰

1.	¹⁾	^d nan še	For Nanše,
2.	²⁾	nin-uru ₁₆	the powerful lady,
3.	³⁾	nin-in-dub-ba	lady of the boundary marker,
4.	⁴⁾	nin-a-ni	his mistress,
5.	⁵⁾	gu ₃ -de ₂ -a	Gudea,
6.	⁶⁾	ensi ₂ -	<i>ensi</i>
7.	⁷⁾	la gaš ^{k1} -ke ₄	of Lagaš,
8.	⁸⁾	ni ₃ -du ₇ -e pa mu-na-e ₃	made a fitting thing resplendent for her, (namely)
9.	⁹⁾	ni ġin ^{k1} uru-ki-a ġ ₂ -ni	in Niġin, her beloved city,
10.	¹⁰⁾	e ₂ -sirara ₆	her Sirara temple,
11.	¹¹⁾	kur e ₂ -ta il ₂ -la-ni	a mountain lifted above all (other) houses,
12.	¹²⁾	mu-na-du ₃	for her he (re)built
13.	¹³⁾	ki-be ₂ mu-na-ġi ₄	and he restored.
14.	¹⁴⁾	[b] ad ₃ -mah-ni	The lofty wall of her (temple/city)
15.	¹⁵⁾	[ki-b]e ₂ mu-na-‘x’	he <i>restored</i> .

In discussing the door socket, Sollberger clearly states that it “came undoubtedly from Zergul.”⁵¹ His main argument is that

*whereas a brick or a clay-nail recording the building of a certain edifice may be found on other sites as well, a gate-socket can obviously only come from the building to which it belonged.*⁵²

⁴⁶ Sollberger 1975, 176, fn. 5-7.

⁴⁷ “Almost certainly BM 90836” according to Sollberger 1975, 176, fn. 7.

⁴⁸ BM 90832 (= 1890-10-4, 3); Ean. 62 = *RIME* 1.9.3.11.

⁴⁹ BM 90849 (= 1890-10-4, 2); Gudea 31 = *RIME* 3/1.1.7.27.

⁵⁰ See tab. 1.

⁵¹ Sollberger 1975, 176. Curiously, the provenance from Zurgul for the stone tablet (BM 135994) and the copper foundation peg (BM 135993) given by Sollberger 1975, has been taken for granted by Steible 1991, 281, Gudea 30 C-D, followed by Edzard 1997, 126 (*RIME* 3/1.1.7.25 ex. 3-4). For the door socket (BM 90849), instead, an unquestioned provenance from Ġirsu is given by Steible 1991, 282, Gudea 31, followed by Edzard 1997, 128. This is the case of a fragment of a brick (BM 90798) which is one of the four witnesses for Gudea 30 B = *RIME* 3/1.1.7.25 ex. 2, together with the above-mentioned stone tablet and copper peg and an unpublished brick (VA 66 = Gudea 30 A = *RIME* 3/1.1.7.25 ex. 1). BM 90798 was acquired by the British Museum from the antiquities market in 1979 (accession number 1979-12-20, 178). Besides its unknown provenance and the mention of Nanše, Nina/Niġin, and the Sirara, it is labelled by Walker 1981, 20-21, as coming from “Ġirsu (Tello).”

⁵² Sollberger 1975, 176.

3.3. A copper foundation peg (BM 135993) and a foundation stone tablet (BM 135994)

Based on the same assumption, namely that foundation objects “obviously only come from the building to which it belonged,”⁵³ Sollberger believes in a provenance from Zurghul for two recently acquired artefacts published in his article of the 1975. In 1974, the Trustees of the British Museum, with the aid of the National Art-Collections Fund, acquired a copper figurine and a limestone foundation tablet from the antiquities market,⁵⁴ but “nothing is known of its history, except that it had been in a Continental private collection for a considerable time before it reached the London art market.”⁵⁵

Both objects bear the extended version of the dedicatory inscription of Gudea for the Sirara of Nanše, which is found on bricks.⁵⁶

	A	B		
1.	1)	o. 1)	^d nanše	For Nanše,
2.	2)	2)	nin-uru ₁₆	the powerful lady,
3.	3)	3)	nin-in-dub-ba	lady of the boundary marker,
4.	4)	4)	nin-a-ni	his mistress,
5.	5)	5)	gu ₃ -de ₂ -a	Gudea,
6.	6)	6)	ensi ₂ -	ensi
7.	7)	7)	lagaš ^{k1} -ke ₄	of Lagaš,
8.	8)	8)	ni ₃ -du ₇ -e pa mu-na-e ₃	made a fitting thing resplendent for her, (namely)
9.	9)	r. 1)	niġin ^{k1} uru-ki-aġ ₂ -ġa ₂ -ni-a	in Niġin, her beloved city,
10.	10)	2)	e ₂ -sirara ₆	her Sirara temple,
11.	11)	3)	kur e ₂ -ta il ₂ -la-ni	a mountain lifted above all (other) houses,
12.	12)	4)	mu-na-du ₃	for her he (re)built
13.	13)	5)	ki-be ₂ mu-na-ġi ₄	and he restored.

A = BM 135993; B = BM 135994

3.4. The foundation tablet in the Schøyen collection

In 2011, P. Steinkeller published an inscribed object kept in the Schøyen Collection, Oslo (MS 2400).⁵⁷ The artefact is:

A rectangular piano-convex tablet of black stone. ... At its top the tablet has a hole ..., into which is inserted a copper peg, slightly protruding at both ends. It may be surmised that the peg terminated in a metal loop, now completely broken off, which enabled the tablet to

⁵³ This is stated by Sollberger only for the door socket. In introducing the two recently acquired objects, Sollberger 1975, 177, writes of “foundation deposits of the E-Siraran” and gives for granted their provenance from Zurghul.

⁵⁴ BM 135993 (= 1974-1-19, 1); BM 135994 (= 1974-1-19, 2). Both objects have been published and discussed by Sollberger 1975. The figurine is a peg which “supports a plinth on which a bull-calf is seen passing through (or standing amidst) tall reeds, one of them reaching to its nose” (Sollberger 1975, 178); for the description of the copper figurine see Sollberger 1975, 178-179, and Suter 2000, 291-292.

⁵⁵ Sollberger 1975, 177.

⁵⁶ Gudea 30 = RIME 3/1.1.7.25, § 4.2.1.; see the discussion in Nadali - Polcaro - Verderame 2016, 17-18 and 20.

For the inscription see below § 4.2.1. and tab. 1.

⁵⁷ Steinkeller 2011, 19-20 no. 15 pl. XI.

*be suspended on a chain or string, and then to be hung up somewhere or worn on the neck as an amulet.*⁵⁸

This is not the only peculiarity of the object. In fact, it is covered by seven lines of cuneiform writing on the obverse and one line on the reverse, for a total of eight lines reproducing a previously unknown inscription of Gudea. It is a dedicatory inscription for the building of the temple of Ninkar(a)⁵⁹ in Nina/Niĝin.

1.	^{o. 1)}	^d nin-kar ₂	To Ninkar(a),
2.	²⁾	diĝir-šuba ₃ -an-na	<i>the god – precious stone of the sky,</i> ⁶⁰
3.	³⁾	lugal-a-ni	his lord,
4.	⁴⁾	gu ₃ -de ₂ -a	Gudea,
5.	⁵⁾	ensi ₂ -	<i>ensi</i>
6.	⁶⁾	lagaš ^{k1}	of Lagaš,
7.	⁷⁾	e ₂ -niĝin ₆ ^{7k1} -ka-ni	his temple of Nina/Niĝin
8.	^{r. 1)}	mu-na-du ₃	(re)built.

An Arabic inscription is engraved successively on the surface of the object. The Arabic inscription is written on the space left by the cuneiform inscription, namely the left, right, and lower edge and most of the reverse. The upper edge has been left blank. The writing of this inscription is “pseudo-Arabic.” The lines are “strings of letters that make no sense, probably to give it an esoteric appearance.”⁶¹

Steinkeller gives no discussion on the provenance of the object or details about how it ended in the Schøyen collection. The mention of Nina/Niĝin may support an origin from Zurgul, particularly if we follow Sollberger’s postulate on foundation objects.⁶² The presence of secondary use of the artefact, namely as an amulet with the addition of a hole and the “pseudo-Arabic” inscription, means that the object was discovered in the past. This is an evidence for the frequentation of the sites by locals (§ 2.2.) and the collection of objects long before Western interest towards Mesopotamian relics.⁶³

⁵⁸ Steinkeller 2011, 19.

⁵⁹ Steinkeller 2011, 19, and Cavigneaux - Krebernik 2000b.

⁶⁰ Or according to Steinkeller 2011, 20, “the ‘Shining one of Heaven’” (^dšuba₃-an-na); compare Šulgi’s described as “the precious stone of the An/sky’s Irigal” (šuba₃-iri₁₂-gal-an-na-me-en₃; *Šulgi* X 55).

⁶¹ J.A. Bellamy *apud* Steinkeller 2011, 19.

⁶² See above.

⁶³ Little is known about the attention towards Mesopotamian history and antiquities in Aramaic, Arabic, and Byzantine literature. This topic is almost neglected in Near Eastern studies. Going back to the Western tradition, the circulation of Mesopotamian relics outside the Ancient Near East may be documented by the seals found in the Thebes (Greece) “treasure” (see most recently Kopanias 2008) and the one in the Templar treasure in the cathedral of Palermo (Italy), as well as the crescent shaped object with cuneiform inscription found in Malta (Cazzella - Pace - Recchia 2011), until the seventeenth century objects found in a London house discussed above (§ 3.2.).

3.5. *Some conclusions on unprovenanced objects*

In another contribution,⁶⁴ I have raised the question of inscriptions found elsewhere than those commemorated in the text. I propose two possible solutions to this question.

- a) Such inscriptions commemorating a building activity were voluntarily engraved on bricks and cones deposited in different sites for celebratory, ritual, or other unknown reasons.
- b) These objects were deposited in the site of which they commemorate the building and successively displaced from their original location to another one; this could have happened in ancient or modern times.⁶⁵

None of the two solutions can be excluded *a priori*. In the first case (a), if the archaeological context of these findings is correct, we must consider that the deposition of inscribed artefacts in places other than that celebrated in the inscription was a common practice of the Lagaš rulers,⁶⁶ not limited to the Gudea (Lagaš II) period. The inscription of Enannatum I, commemorating the building of Eanna found on the surface of Zurghul (§ 4.1.1.), would date this practice to the Early Dynastic and the foundation of the Lagaš kingship.

In the second case (b), there are a wide range of possibilities that may have caused these objects to be displaced from their original context. Limiting the hypothesis to those who were the most reliable or common, objects from one site may well be abandoned on another one for different reasons, such as being the result of legal or illegal excavations in modern times. An old habit from surveys was that to abandon “unimportant” findings on the site. For heavy objects, we know that unsuccessful attempts to remove them caused the displacement of the object around the site⁶⁷ or even worse, such as the removal of pieces of these objects. Rassam mentions a “largest statue” of Gudea from the site of Tello, whose “hands were cut off and sold to the late George Smith, and the bust ... was broken and carried away by the former gentleman”, that is de Sarzec.⁶⁸ Sydney Smith discussing statues of Gudea that have reached European museums at the beginning of 1930’ states that

these larger statues were buried between 1924 and 1929 owing to the expense and risk involved in moving them. Owing to circumstances which I need not recount it became urgently necessary to be rid of the statues that year, and for quite other reasons a rich man appeared - possibly more than one - who found the money. The details of the smuggling I was able as Director of Antiquities in Iraq to establish in only one case, that of the figure now in Paris; but there is no

⁶⁴ Nadali - Polcaro - Verderame 2016, 18-19.

⁶⁵ For instance, see the comment of Biggs 1976, 2, fn. 7.

⁶⁶ Braun-Holzinger 1997; Nadali - Polcaro - Verderame 2016, 18-19.

⁶⁷ This is the case of the door sockets of the temple of Nanna in Ur, which have been moved time after time by visitors (both archaeologists and smugglers) in an unsuccessful attempt to take the heavy stones away. This made them “itinerant” objects, traveling randomly on the site of Ur (Tell Muqayyar) dragged around by the enthusiast discoverer; see the odd account in Chiodi - Mazzei - Pettinato 2007, 403-412.

⁶⁸ Rassam 1897, 276, see also Verderame 2008, 242 and fn. 81. The statue in the Louvre is AO 1 (Gudea Statue D); see Reade 2002, 274-275, 13.

*reasonable doubt that Mr Burney's figure belongs to the same cache and has turned up about the same time for the same reasons ... The head of the statue now in Paris was obtained by the dealer many months before the body; but the identity of the stone has sufficed to convince experts that the two belong together ...*⁶⁹

In addition, we must consider that even for “legal” excavations, material from other sites may have been included in excavation shipping or in museum cataloguing.⁷⁰

In general, the above discussed objects are unprovenanced because their primary archaeological context is unknown. The original context of early findings is not recorded. Furthermore, note that most of the “modern” findings in Tell Zurghul are from the surface of the tell. Only in few cases is the secondary archaeological context of these objects known.⁷¹ Finally, in Assyriological studies a Ġirsu provenance of Gudea inscribed artefacts is given for granted even when the objects have been acquired from the antiquities market.⁷²

4. INSCRIBED OBJECTS FROM TELL ZURGHUL

Most of the epigraphic findings from Zurghul date to the reign of Gudea (§ 4.2.). On the surface of Zurghul were recovered several bricks and cones bearing the inscription of Gudea commemorating the building and restoration of the Sirara of Nanše (§ 4.2.1.). Others are dedicatory inscriptions to Nindub(a) (§ 4.2.3.) and Hendursaĝ(a) (§ 4.2.4.). All these inscriptions refer to Sirara or Nina/Niĝin (§ 4.2.1.) or to gods of the Nina/Niĝin pantheon (§ 4.2.3., § 4.2.4.). Among the Lagaš II findings recovered on the surface of Zurghul is also a cone bearing the Gudea's inscription commemorating the building of the Eninnu (§ 4.2.2.) or other inscriptions referring to buildings other than Nina/Niĝin (§ 4.1.1.).

Less representative are the Early Dynastic inscriptions in Zurghul. Today, only two examples are known. One is a long inscription of the chief-barber Šuni-aldugud for Enannatum I (§ 4.1.1.) recovered on the surface of the site during the al-Hiba mission in early 1970s (§ 1.2.). The second is a fragmentary inscription recovered during the 2017 campaign of the Italian Archaeological Expedition to Niĝin (§ 4.1.2.).

4.1. *ED Inscriptions*

4.1.1. En. I 30 = RIME 1.09.04.18

In early 1970s, the joint mission of the Metropolitan Museum and New York University to Tell al-Hiba recovered on the surface of Tell Zurghul a fragment of a clay nail bearing a dedicatory inscription of Šuni-aldugud, chief barber of Enannatum I, commemorating the

⁶⁹ The letter, dated 30 June 1931, has been published by Reade 2002, 281.

⁷⁰ For the Lagaš' findings, we have the well documented case of Rassam's surveys, or better raids, on the area. The cuneiform tablets ended up together with the Sippar (Abu Habbah) findings and thus so catalogued in the British Museum; see Verderame 2008.

⁷¹ For Gudea's objects found in Old Babylonian layers see Biggs 1976, 2, fn. 7.

⁷² See for instance Sollberger 1975, 176, fn. 10.

building of the Ebġal for Inanna by the *ensi* of Lagaš and the fashioning of clay nails by the same Šuni-aldugud.⁷³ The Zurghul witness preserves only the lines 13-16.⁷⁴

1.	I ¹⁾	en-an-na-tum ₂	Enannatum,
2.	2)	ensi ₂ -	<i>ensi</i>
3.	3)	lagaš ^{ki}	of Lagaš,
4.	4)	mu-pa ₃ -da-	chosen
5.	5)	^d inanna-ka-ke ₄	by Inanna,
6.	6)	eb-gal	the Great Oval
7.	7)	mu-du ₃	he (re)built.
8.	8)	e ₂ -an-na	When the Eanna
9.	9)	kur-kur-ra mu-na- <i>diri-ga-a</i>	he had made exceed over all the foreign countries,
10.	II ¹⁾	u ₄ -ba	in that day,
11.	2)	arad ₂ -ra-ni	his servant,
12.	3)	šu-ni-al-dugud	Šuni-aldugud,
13.	4)	gal-kinda	the chief barber,
14.	5)	nam-nu-banda ₃ -e ₂ -ša ₃ -ga	when the charge of inspector of the inner house
15.	6)	an-na-dah-ha	has been given to him in addition,
16.	7)	KIB mu-dim ₂ -dim ₂	he fashioned clay nails
17.	8)	e ₂ -an-na-ke ₄	and in the Eanna
18.	9)	mu-na-du ₁₁	he <i>affixed</i> them for her/him.

4.1.2. A recently discovered fragment of an Early Dynastic inscribed brick

In 2017, during the cleaning of one of the trenches opened by Koldewey, an inscribed brick fragment (SG.17.BN.185) was unearthed by the Italian Archaeological Expedition to Niġin. The ductus of the inscription suggests an Early Dynastic date. The inscription is fragmentary and the only relevant element is the reference to the gi-gu₃-na-mah of Nanše.⁷⁵ This is mentioned by Eannatum, who celebrates the provision of regular offerings.⁷⁶ Enmetena commemorates the provision of regular offerings and the rebuilding of the gi-gu₃-na-mah as well.⁷⁷ These are large inscriptions mentioning the gi-gu₃-na-mah together with other temples the *ensis* have rebuilt or provided with regular offerings. SG.17.BN.185 is a broken and worn fragment with only three lines of writing preserved, the readable signs do not parallel any of the formula expressions of the known inscription mentioning the gi-gu₃-na-mah.

⁷³ Biggs 1976, 13, no. 64.

⁷⁴ ¹⁾ [gal]-kinda ²⁾ [nam-nu-ban]da₃ e₂-[ša₃]-ga ³⁾ [an-n]a-da[h-ha] ⁴⁾ [KIB] mu-[dim₂]-dim₂.

⁷⁵ The gi-gu₃(-na) of Nanše is mentioned also by Gudea: “(For Nanše) he built her beloved gi-gu₃(-na) with aromatic *erin*-wood” (gi-gu₃-ki-aġ₂-(ġa₂)-ni \ šim-erin-na \ mu-na-ni-du₃; Gudea StU = *RIME* 3/1.1.7.StU ll. ii 2'-4' and FLP unn70 ll. r. 5-8).

⁷⁶ gi-gu₃-na-mah \ ^dnanše \ sa₂ še₃-[na]-du₁₁-[du₁₁] (Ean 62 = *RIME* 1.09.03.11 ll. v 2-4).

⁷⁷ ^dnanše \ gi-gu₃-na-mah-ni \ mu-na-du₃ (Ent 1 / *RIME* 1.09.05.17 ll. iii 1-3); ^dnanše gi-gu₃-na-mah-ni \ mu-na-du₃ (Ent 8 = *RIME* 1.09.05.12 ll. vii 5-6). See also Ent 23 = *RIME* 1.09.05.16 ll. 17-18 (gi-gu₃-na-ni \ mu-na-du₃).

4.2. *Lagaš II*

4.2.1. Gudea 29-30 = RIME 3/1.1.7.25-26

The inscription on most of the clay nails and bricks found in Zurghul is that of Gudea commemorating the construction of the Sirara for Nanše. Elsewhere, I have argued that this inscription is found in three variants (Tab. 1). The basic twelve lines inscription (a) is found on cones, while bricks add a further line (b). Another version (c) which adds two further lines referring to the restoration of the wall, for a total of 15 lines, is documented only from a door socket kept in the British Museum.⁷⁸

4.2.2. Gudea 48 = RIME 3/1.1.7.37

Among the findings of Koldewey's 1887 excavation (§ 1.1.) is an exemplar of a clay nail⁷⁹ bearing the inscription of Gudea commemorating the building of the Eninnu. This is one of the most diffused inscriptions of Gudea, found on different objects and from various sites.

1.	¹¹⁾	^d nin-ĝir ₂ -su	To Ningirsu,
2.	²⁾	ur-saĝ-kalag-ga-	the mighty hero
3.	³⁾	^d en-lil ₂ -la ₂ -ra	of Enlil,
4.	⁴⁾	gu ₃ -de ₂ -a	Gudea,
5.	⁵⁾	ensi ₂ -	<i>ensi</i>
6.	⁶⁾	lagaš ^{k1} -ke ₄	of Lagaš,
7.	⁷⁾	niĝ ₂ -du ₇ -e pa mu-na/-e ₃	he made a fitting thing resplendent for him:
8.	⁸⁾	e ₂ -ninnu-anzu ₂ (IM/. DUGUD) ^{muš^{en}} - babbar ₂ -ra-ni	his (temple) Eninnu-anzu-babbar
9.	¹¹¹⁾	mu-na-du ₃	he (re)built
10.	²⁾	ki-be ₂ mu-na/-gi ₄	and restored.

4.2.3. Gudea 39 = RIME 3/1.1.7.35

One⁸⁰ inscribed cone bearing an inscription of Gudea commemorating the construction of the temple for Nindub(a), was found on the surface of Zurghul's tell in the early 1970s.⁸¹ The god Nindub(a),⁸² a god of Nanše's entourage, is mentioned by Gudea in the Cylinder A vi 3-5.⁸³

⁷⁸ BM 90849, see discussion above (§ 3.2.).

⁷⁹ VA 3060 (VS 1, 14); see fn. 7.

⁸⁰ Steible 1991, 290-291, misleads Biggs 1976, 12, and lists 12 clay nails and four bricks respectively as source B and F.

⁸¹ Biggs 1976, 12-13, no. 63; see § 1.2.

⁸² See Selz 1995, 217-218; Cavigneaux - Krebern timer 2000a.

⁸³ 2-kam-ma ur-saĝ-am₃ a₂ mu-gur₈ / le-um za-gin₃ šu bi₂-du₈-a / ^dnin-dub-kam e₂-a ĝi₃-hur-ba im-mi-si₃-si₃-ge "The second one, who was a warrior and whose arm was bent, holding a lapis lazuli tablet in his hand, was Nindub(a), putting the plan of the house on the tablet."

1.	¹⁾	^d nin-dub	To Nindub(a),
2.	²⁾	lugal-a-ni	his lord,
3.	³⁾	gu ₃ -de ₂ -a	Gudea,
4.	⁴⁾	ensi ₂ -	<i>ensi</i>
5.	⁵⁾	lagaš ^{k1}	of Lagaš,
6.	⁶⁾	e ₂ -a-ni	his temple
7.	⁷⁾	mu-na-du ₃	he (re)built.

4.2.4. Gudea 17 = RIME 3/1.1.7.14

The alabaster plaque VA 2339 (VS 1, 13), was bought in Zurghul, possibly by Koldewey in 1887.⁸⁴ It might have been found by local people on the same site. In fact, it commemorates the building of a temple for Hendursaġa, a god of Nanše's entourage.

1.	¹⁾	^d hendur-saġ	To Hendursaġ(a),
2.	²⁾	lugal-a-ni	his lord,
3.	³⁾	gu ₃ -de ₂ -a	Gudea,
4.	⁴⁾	ensi ₂ -	<i>ensi</i>
5.	⁵⁾	lagaš ^{k1}	of Lagaš,
6.	⁶⁾	e ₂ -a-ni	his temple
7.	⁷⁾	mu-na-du ₃	he built.

5. A GHOST ENTRY: AN ALLEGEDLY UR-NAMMA INSCRIPTION FROM ZURGHUL

Among the inscriptions translated by Smith in his article published in the first volume of *Transactions of the Society of Biblical Archaeology* is an “unpublished brick from Zerghul(?)”.⁸⁵ No museum number or any other reference is provided, but the translation of the inscription, which reads:

“To (g.) Šar-ili his king, Uruk king of (c.) Ur, du [in Zir-]gulla built.”

Uruk or Ur-ukh was the old reading of Ur-Namma as Zirgulla was that of the sequence of signs ŠIR.BUR.LA, Lagaš. Thus, the updated reading and an approximate reconstructed transliteration would be:

1.	⁸⁶	^d ZAR.AN/i ₃ -li ₂ [?]	To the god Šar-ili,
2.		lugal-a-ni	his lord,
3.		ur- ^d namma	Ur-Namma,
4.		lugal-uri ₅ ^{k1} -ma	king of Ur,
5.		?	
6.		[...] -du ₃ [?]	he built
7.		?	
8.		[ŠIR].BUR.LA ^{k1}	[in La]gaš
9.		mu-na-du ₃	he (re)built for her/him.

⁸⁴ See above § 1.1. and fn. 8.

⁸⁵ Smith 1872, 35.

⁸⁶ Line numbering is very uncertain, particularly from line 5 to 9.

As far as I know, this inscription has not been edited and no parallels are known, of course admitting that such inscription exist(ed) and a minimum degree of accuracy by Smith. In this case, the text presents some peculiarities regarding the other known published inscriptions of Ur-Namma: this is the only Ur-Namma's inscription mentioning Lagaš.

1.	^{1 1)} ^d nanše	For Nanše,	
2.	²⁾ nin-uru ₁₆	the powerful lady,	
3.	³⁾ nin-in-dub-ba	lady of the boundary marker,	
4.	⁴⁾ nin-a-ni	his mistress,	
5.	⁵⁾ gu ₃ -de ₂ -a	Gudea,	
6.	⁶⁾ ensi ₂ -	<i>ensi</i>	
7.	⁷⁾ lagaš ^{ki} -ke ₄	of Lagaš,	
8.	⁸⁾ niĝ ₂ -du ₇ -e pa mu-na-e ₃	made a fitting thing resplendent for her, (namely)	
9.	^{II} niĝin ^{ki} uru-ki-aĝ ₂ - ¹⁾ ĝa ₂ -ni-a	in Niĝin, her beloved city,	
10.	²⁾ e ₂ -sirara ₆	her Sirara temple,	
11.	³⁾ kur e ₂ -ta il ₂ -la-ni	a mountain lifted above all (other) houses,	
12.	⁴⁾ mu-na-du ₃	he (re)built for her	a (Gudea 29 = RIME 3/1.1.7.26)
13.	⁵⁾ ki-be ₂ mu-na-gi ₄	and restored it,	b (Gudea 30 = RIME 3/1.1.7.25)
14.	⁶⁾ bad ₃ -mah-ni	the lofty wall of her (temple/city)	
15.	⁷⁾ [ki-b]e ₂ mu-na- ^r x ⁷	he [restored].	c (Gudea 31 = RIME 3/1.1.7.27)

Tab. 1 - Scheme of Gudea's dedicatory inscriptions (Nadali - Polcaro - Verderame 2016, tab. 3).

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FOSSIL SHARKS VERTEBRAL CENTRA

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The paper focuses on finding of 441 shark fossil vertebral centra, presumably belonging to 24 specimens. Age (6 age classes from 3 to 8 years) and genus of belonging (Carcharhinus) were estimated. This information is useful to understand the meaning of the archaeological findings within the site.

Keywords: sharks; fossil vertebral centra; morphological analysis; age estimation; systematic determination

1. INTRODUCTION

The fragments of shark fossil vertebral column collected during an archaeological excavation offer the opportunity to identify the species, through the morphological and genetic analysis of vertebral centra, and also they allow to estimate the age of the specimens detected. In fact, the growth zones deposited in the vertebral centra represent an effective tool for the determination of age in the Elasmobranchs.¹ Centrum rings patterns on the vertebral centra may be linked to physiological changes induced by variations in water temperature and photoperiod.²

Previous studies have shown that growth bands formed in the vertebral centra of fish during calcification processes are generally deposited annually,³ thus allowing to trace the number of years lived by the fish until the catch. The analysis of the shape and structure of the vertebral centra can also be effective as regards the systematic determination of the specimens at various levels (class, order, family or rarely species), although species-level determination should be confirmed by genetic analysis. Moreover, for some species are available equations that allow to estimate the total length of the shark from individual vertebral centra diameter.⁴ All this information is extremely useful for trying to understand the meaning of the archaeological finds of this area.

2. MORPHOLOGICAL CHARACTERISTICS OF THE CENTRA

In the present study a total of 401 vertebrae presumably belonging to 24 shark specimens were analysed (fig. 1). Each examined vertebral centra was cylindrical, double-cone-shaped⁵ with two dorsal foramina for insertion of neural arches, and two ventral foramina for insertion of the emal arches; while the vertebral centra was calcified thanks to the deposition of calcium phosphate and carbonates in the intercellular spaces,⁶ the emal and neural arches being cartilaginous have not been preserved, so the foramina resulted empty (fig. 2). The centra were aseptate, without partitions around the centrum in addition

¹ Cailliet *et al.* 1983.

² Goldman 2005.

³ Schwartz 1983; Natanson - Cailliet 1990; Goldman Branstetter - Musick 2006.

⁴ Gottfried - Compagno - Bowman 1996; Shimada 2008.

⁵ *Sensu* Ridewood 1921.

⁶ Kozuc - Fitzgerald 1989.

to the foramina. The diameter of the centra ranges from a minimum of 1.1 cm to a maximum of 2.2 cm. The vertebral centra appeared short in length, as the ratio between cranio-caudal length and the medio-lateral breadth resulted less than 0.625.⁷ Moreover, they can be classified as “round”, as the dorso-ventral height (DVH) resulted equal to the medio-lateral breadth (MLB) of the centrum (fig. 2). On the sides and between the foramina were small pores, occurring the entire surface of the centra and irregularly positioned. Based on the morphologic diagnostic characters listed above, the examined centra seemed to belong to individuals of the genus *Carcharhinus*.⁸

The shape and size of the vertebral centra vary in the same individual depending on the position occupied in the vertebral column. In particular caudal centra are smallest than mid-trunk centra in terms of diameter, they are more compressed cranio-caudally and the interforaminal distances are equal dorsally and ventrally. By contrast, on the pre-caudal vertebra the distance between the ventral foramina is much greater than the distance between the dorsal foramina. Therefore, following Kozuc and Fitzgerald,⁹ on the basis of the dorsal and ventral interforaminal width, it is possible to hypothesize that the examined vertebrae belong to the pre-caudal and caudal region of the vertebral column (fig. 3).

3. AGE ESTIMATION

For the age determination, concentric growth bands on the whole vertebral centra have been counted (fig. 4). At least two vertebral centra were used for each specimen, with a thickness greater than 0.5 cm. Following Cailliet *et al.*,¹⁰ in order to ensure an objective evaluation, the counts of growth bands in each centrum was applied by two different operators in independent way. In total, 6 age classes between 3 and 8 years were identified. The most represented age class resulted 8+, to which 8 specimens belong (tab. 1).

Age class (years)	Number of specimens
3+	1
4+	3
5+	5
6+	3
7+	4
8+	8

Tab.1 - Number of specimens attributed to each age class.

⁷ Kozuc - Fitzgerald 1989.

⁸ Kozuc - Fitzgerald 1989.

⁹ Kozuc - Fitzgerald 1989.

¹⁰ Cailliet *et al.* 1985.

4. CONCLUSION

Generally, complete fossil vertebral columns of sharks are associated with teeth, since they are calcified and therefore they often can preserve over time. In our case the lack of teeth and of the anterior portion of the vertebral column among the remains, suggests that the shark bodies were cut before being transported to the archaeological site.

The age determination allowed us to show that the examined specimens are juveniles. In fact, the older specimens reach 8 years of age, while sharks are usually much more long-lived. If there is not a specific reason related to their use by humans, this aspect could be linked to the location of the archaeological site and to the different ecology of juveniles, compared to adults, that characterizes some species of shark. For example, the juveniles of the bull shark, *Carcharhinus leucas*¹¹ often spend time in freshwater environments as a nursery, since there are no predators in these areas.¹² Another hypothesis is that the fishing nets used for the catch were selective towards small and young specimens.

The morphological analysis of the vertebrae for the systematic determination is certainly not conclusive but can be considered a starting point and certainly should be confirmed by genetic analysis.

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¹¹ Muller - Henle 1839.

¹² Jawad 2018.

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Fig. 1 - Fish vertebrae *in situ*, Area B, 2017.

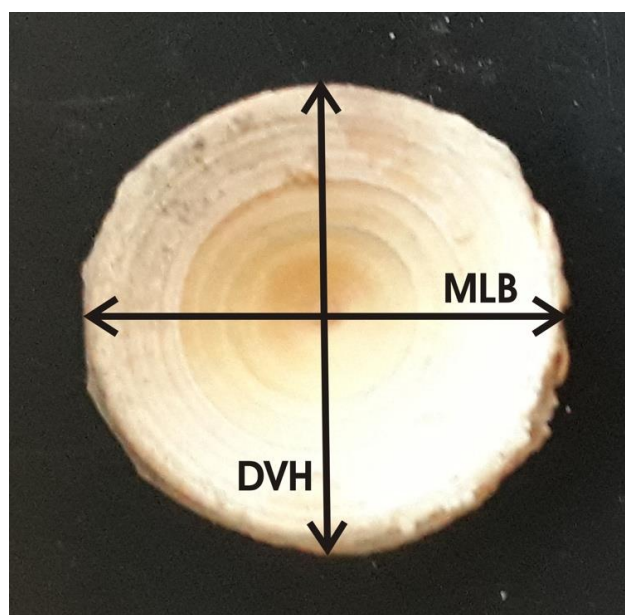


Fig. 2 - Analysis of the vertebral central from Zurghul.

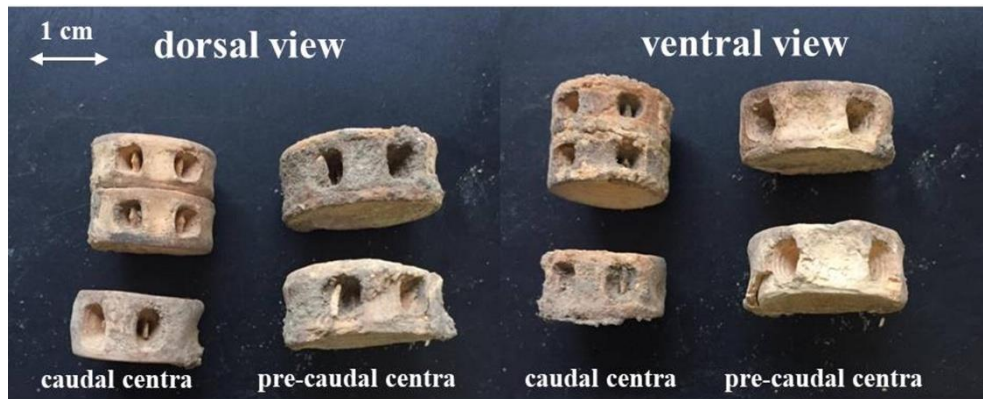


Fig. 3 - Dorsal and ventral view of vertebral centra from Zurghul.

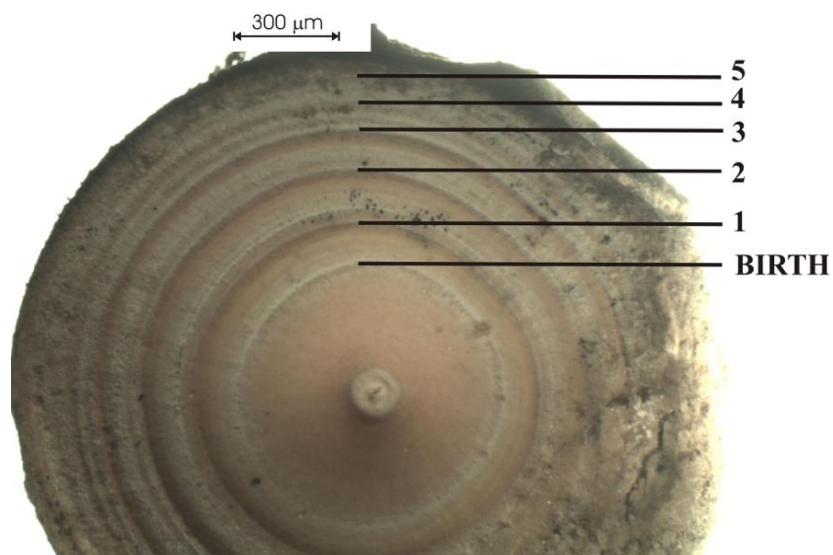


Fig. 4 - Age determination, concentric growth bands on the whole vertebral centra.

GRAIN SIZE CHARACTERIZATION OF TELL ZURGHUL (IRAQ)

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We provide the first results of a geological campaign aimed at classifying the shallow deposits at the archaeological site of Tell Zurghul (Iraq). 12 core samples were collected and analysed and the variation of the paleoenvironment has been highlighted along two profiles.

Keywords: Tell Zurghul; grain size analysis; stratigraphy; paleoenvironmental; landscape evolution

1. TELL ZURGHUL

The city at Tell Zurghul (the ancient Nigin) has been the object of recent archaeological expeditions. The most relevant results of the archaeological surveys reveal the existence of new sites and settlements that were once covered by former marshes, highlighting the importance of reconstructing the paleoenvironmental setting of the southern Mesopotamian landscape. A key role in the morphologic modification of the area is the movement of wind and water that over time has strongly changed the landscape: evidence of its predominant presence is recognized all around sites in the alluvium of Iraq.

To reconstruct the landscape's evolution over time, a first step was to analyse the type of terrain through topographic modelling and define the grain size of the samples to trace their genesis. Several chromatic changes are visible on the satellite photos that, together with qualitative observations on site, suggest differences in the grain size and mineralogical contents of the Quaternary deposits. Such differences can be related to the presence of sedimentary channels whose deposition or (re?)-deposition (due to strong erosion rates on-site) may be driven by pre-existing topography or human modification of the local environment. Therefore, following these considerations, a quantitative analysis and classification of such deposits are mandatory. For this reason, during the 2017 campaign, 12 core samples were taken from 12 separate locations, distributed across the archaeological site, informed by remotely sensed datasets and walking survey (fig.1).

1.1. Methodology

A first analysis of the site was done through the creation of a GIS project (SR: EPSG 32638), using satellite data such as images provided by GoogleEarth (last access 12 March 2019), accurate topographic surveys done on-site through a total station, and a high-resolution photogrammetric photomosaic obtained after drone survey, captured over a period of one month in mid-late November 2017 using a DJI Mavic Pro at an altitude of 60 meters.

The cores have been sampled along two transects (P1 and P2 in fig. 1), generated in order to intercept different deposits after the remote sensing analysis. Coordinates from all

sampled locations provided after the fieldwork have been added to the GIS project and two topographic profiles were extracted intercepting the core locations.

About 39 soil samples were selected and tested for particle-size distribution. Analyses have been carried out at the Laboratory of Applied Geology (Department of Physics and Geology, University of Perugia) following ASTM D422-63(2007)e2 standard. Being that most of the soil samples are sandy soils with fine fraction (passing to #200 sieve, 0.075 mm) lower than 5%, only the sieve analysis has been performed. Before sieving, samples were dried in a thermostatically controlled hot air oven (Temperature between 105° to 110° C).

By using a series of sieves with progressively smaller openings, the percentage of soil retained in each sieve is calculated on the basis of total weight of the soil sample. Then, cumulative percentage of soil passing to each sieve is calculated allowing the reconstruction of the grain size distribution within the soil.

1.1.1. Methods of coring *in situ*

The nearly 70 ha Bronze Age site of Tell Zurghul, ca. 7-kilometers to the southeast of Tell al-Hiba, ancient Lagaš, once sat where the Tigris's interior delta debouched into an interconnected network of marshes, estuaries and intertidal flats. These wetlands quickly transitioned into the Middle Holocene shoreline of the Persian Gulf, providing Zurghul with tremendous opportunities for waterborne commerce and transportation, and therefore encouraged the settlement's precocious development into a full-fledged city with interregional connections through trade and diplomacy.¹ The degree and rate of these landscape transitions, however, are poorly understood in time and space. Therefore, in coordination with officials from Iraq's State Board of Antiquities and Heritage, we instituted a geo-archaeological research program during the 2017 field season as the opportunity presented itself.

Because of the remote location of Tell Zurghul, the opportunistic nature of the data collection, and the difficulty of purchasing materials in al-Duwaya, the modern city located nearest to the site, the campaign contracted with Dr. Jennifer Pournelle, University of South Carolina, School of the Environment, and Dr. Badir Albadran from the Department of Geography, University of Basrah, to borrow equipment, use laboratory space, and ensure proper methodological procedures were followed and permissions obtained. Following fieldwork, the cores were split and sub-sampled at the University of Basrah in preparation for export. Dr. Albadran supervised all laboratory work in Iraq. Our sampling strategy consisted of placing 12 cores - including 3 off-site 'deep' cores - that targeted locations recognized as being in-line with, or contiguous to, relict fluvial features. Off-site cores were positioned to capture the ancient marine layer, so as to assess deltaic progradation and marsh formation through the characterization of sediment and collection of datable inclusions. On-site locations were placed at evenly spaced transects whenever possible, to investigate the possibility that relict channels were emplaced, maintained and/or diverted during the site's Bronze Age occupation. All locations were sampled with 1m long,

¹ On the early stages and further developments of Tell Zurghul see Nadali - Polcaro 2016; 2018.

galvanized steel pipes, 3" in diameter. Pipes were threaded and coupled together to reach the desired length at a given location. A jack hammer with a tamper plate drove the pipes into the soil and their retrieval was assisted by means of farm jack and shackle bolts.

Core locations 1-9 were sunk to a depth of 2m. Core locations 12, 11 and 10 were sunk to depths of 3, 4 and 5 m, respectively. The water table was encountered and surpassed at all off-site locations. Material culture—especially diagnostic pottery types—in a given bore pipe's soil matrix was registered and left for future study. Sediment was visually characterized and subsampled with U-channels.

Going forward, different geo-archaeological equipment will be used to achieve greater depth and control over coring locations. In particular, levigated clays on the outskirts of the site made it very difficult to achieve the full extent of our research goals. We would also like to increase the spatial coverage of our cores to locations farther off-site, probing major relict levees and agricultural fields, and increase the depth of cores on-site, to assess the extent and intensity of cultural material across the tell, in addition to investigating the possibility of an intrasite harbour in-between what is now the Chalcolithic and Bronze Age mounds.

2. RESULTS AND CONCLUSIONS

We present the results of the laboratory analyses, focusing on the samples from sites 1-2-3-4 and 8, located along the two selected profiles, as shown in fig. 1.

According to the ASTM E11-09e1 classification standard, all the samples recovered from the drilling sites along the two profiles are mostly composed of fine sands with fractions spanning from 53% (site 1 at depth of 0-20 cm) to 94 % (site 8 at depth of 20-40 cm). The depth of the cores is varied reaching a maximum of about 340 cm of depth (site 4).

Fine sands represent the most important component also in deep samples recovered in sites 11 and 12 outside of the study area with fractions comprised between 56% at site 12 at a depth of 203-223 cm and ~87% as recovered at site 11, sampled at a depth of 285-305 cm. The other dominant soil component in both samples recovered in the study area and outside is medium sand with fractions ranging between 2.7% (site 8, depth of 20-40 cm) and 31% (site 1, depth of 0-20 cm). Finally, the other component that locally is found above 10% is silt and clay.

In sampling site 1 the fine sand ranges between 54% and 78% with the other major component being the medium sand (ranging between 18% and 31%), whereas the silt and clay are between 0.9 and 13%. Location 2 shows fine sands ranging between 75% and 85% and silt and clay (12-18%) rather than medium sands (0.5-7%). In sampling site 3 the fine sand ranges between 65 and 85%, the medium sand between 1 and 20% and silt/clay component is within the 6-20% range. Results from site 4 show the fine sand content ranging between 78-92%, the medium sand between 0.3 and 11% and the silt and clay component ranges 4 and 11%. In sampling site 8 the fine sand ranges between 87 and 94%, the medium sand ranges between 1.2 and 2.7% and the silt and clay component ranges between 3 and 11%. Sampling location 9 shows fine sands both at shallow and deeper depths, ranging between 67 and 78% whilst the deeper sample (collected at 191-211 cm)

shows a higher silt and clay component (20%), rather than the 8% recovered at the 0-20 cm depth.

Following the detailed analysis of each core sample, we have created stratigraphic logs summarizing the results of the laboratory analyses obtained at about every 0.20 m.

We decided to divide the main units considering the most representative soil types, such as medium/fine sand and silt/clays. Then, we have grouped the medium and fine sands in a single unit and we have classified the deposits, considering the total amount of silt/clay for each level. Therefore, we propose a classification using sands with < 10% of fineness, sands with fineness between the 10-20 % and fineness more than 20%, finally merging the levels with similar contents.

On such a basis, we have created the logs visible in fig. 2, plotted in their positions along the transects. An accurate correlation of these logs is currently hampered by the sub-metric accuracy of the topographic relief used to extract the DTM; further extensive and accurate topographic surveys of the area will improve the current results.

However, it can be noticed that the most heterogeneous log is the S3 location. In fact, it shows two levels richer in silt/clay (> 20%), about 20 cm thick; on the contrary, the close S2 is more homogenous but with a lower silt/clay content, between 10% and 20 %.

Independently of the topographic height, it can be seen how in point S2 the deposits are characterized by more than 1.6 m of a medium/fine sand to indicate the possible presence of a depositional environment constant over time. Instead, the alternation of more or less fine deposits located just below the main mound (S4 and S3, fig.1 and fig.2), seems to indicate the succession of various depositional environments characterized by different energy. Moving away from the main mound and the interpreted channel, the sedimentation appears more uniform and constant. Profile 2, sites S8 and S1 in fig.1 and fig. 2.

In this first reconstruction a picture seems to emerge in which the area affected by the main mound is the one in which more depositional changes have taken place which have determined the alternation of sands with different clay content. The sedimentation perhaps has been guided by the probable channels present all around the study area.

In conclusion, the complex logistic conditions encountered during soil sampling and the limited amount of material transferred from Iraq to Italy, currently hamper an exhaustive and accurate geological reconstruction of the area. Nevertheless, these data provide the first quantitative information on the main geological and geotechnical properties of the shallow sedimentary deposits of the study site.

New integrated analysis of the collected samples can certainly provide, together with further acquisition of high-resolution topographic and geophysical data, a more complete picture of the evolving landscape of such an important archaeological site.

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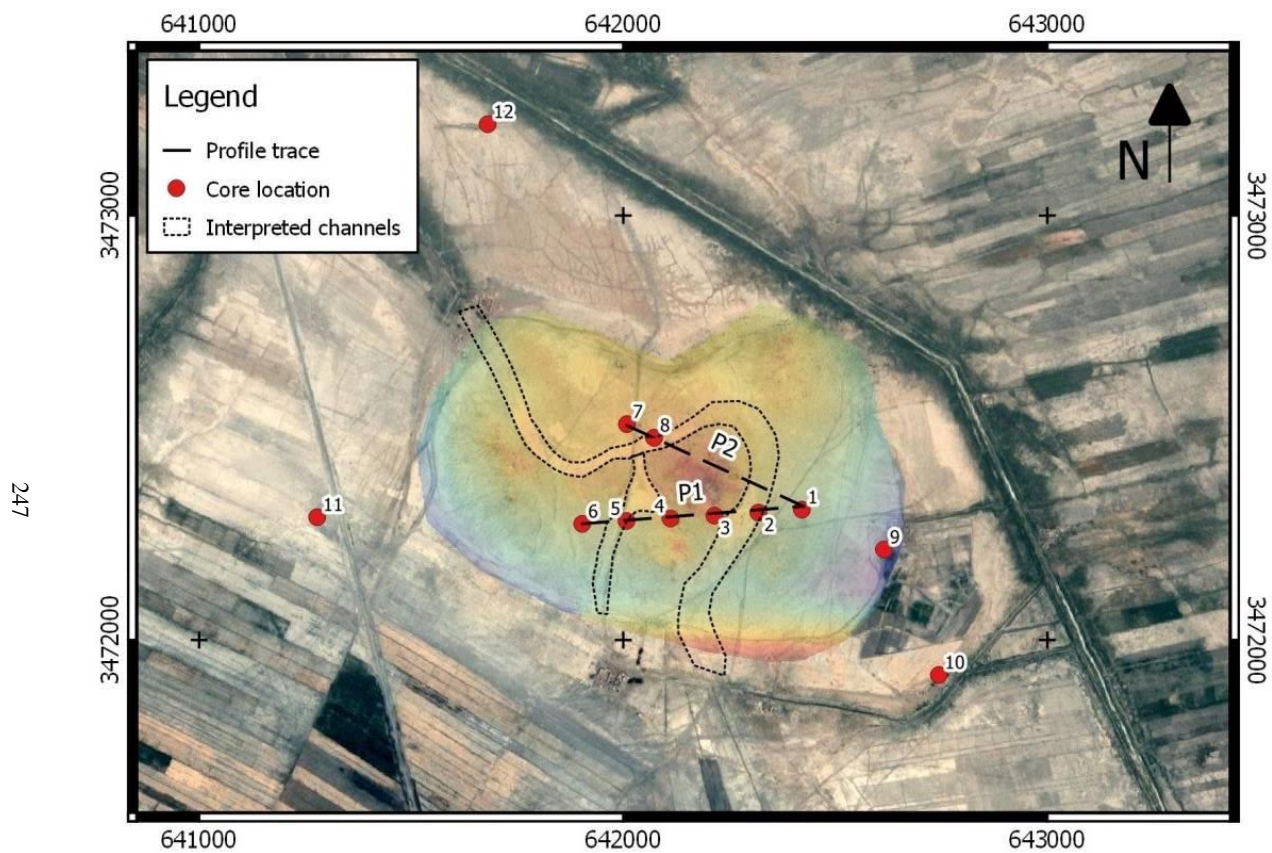


Fig. 1 - Location map of the survey area with Google Earth satellite image as a basemap. Cores (red dots) and profile locations (P1 and P2) are reported in the map close to the main mound (center). The dashed lines highlight the interpreted channels, while the semitransparent map is the photogrammetric relief (red: topographic high, green/blue topographic low).

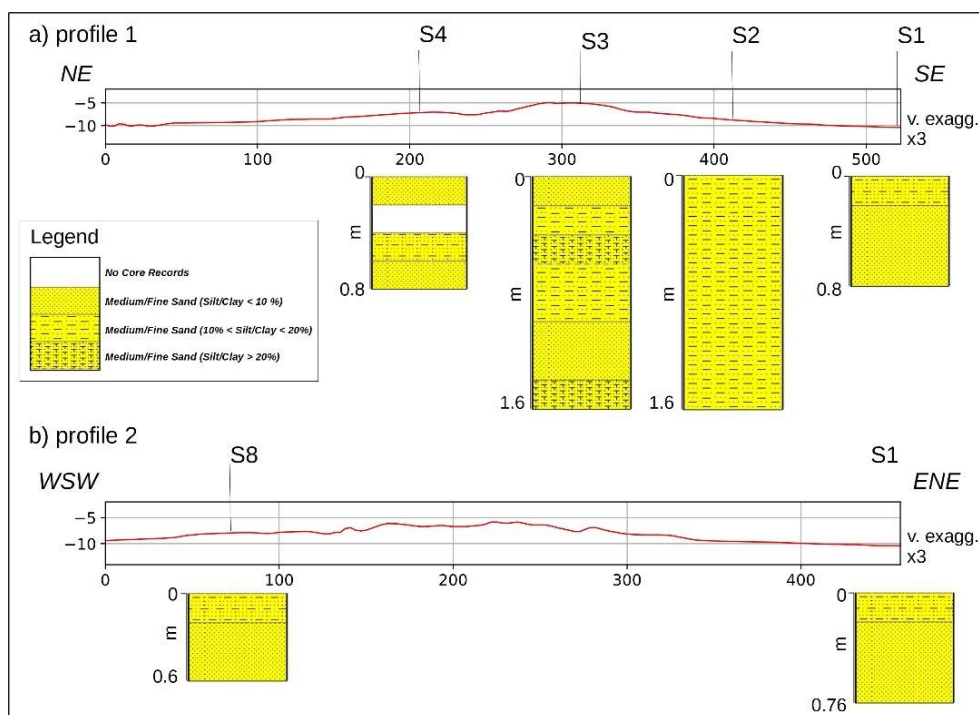


Fig.2 - Stratigraphic logs obtained for several of the most representative locations, along the two transects P1 and P2. Alternation of unconsolidated deposits mainly composed by medium/fine sand and different content of silt/clay, that in a few cases are higher than 20 %, likely visible at the S3 sampled location on the main mound.