

SUMER AND THE SEA



ARATTA III STUDIES IN ARCHAEOLOGY & HISTORY, FROM MESOPOTAMIA TO THE INDUS VALLEY

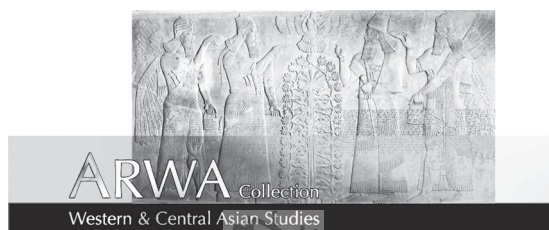
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VOLUME 3

SUMER AND THE SEA

DELTA, SHORELINE, AND URBAN WATER MANAGEMENT IN 3RD MILLENNIUM MESOPOTAMIA

PROCEEDINGS OF THE 1ST ARWA INTERNATIONAL
RESEARCH WORKSHOP (ROME, 2–4 JUNE 2021)

Edited by

Licia Romano



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8. HARBOURS, WATER GATES, AND CANALS IN ŠURUPPAK AND UR

New Results from Old Sites

Berthold Einwag, Adelheid Otto & Jörg W. E. Fassbinder

ABSTRACT – Renewed investigations at Ur and at Fara, ancient Šuruppak, included geophysical prospections and a survey of the lower towns. These have brought to light structures which – combined with archaeological and textual evidence from various sites – can be tentatively identified as canals, a harbour with a quay wall, and possibly a bridge. The joint chapter presents the combined geophysical, archaeological, and historical data of the structures.

KEYWORDS: Mesopotamia; water management; geophysical prospection; harbours; canals; Fara; Šuruppak; Ur; archaeology; environmental changes

Introduction

Fara, ancient Šuruppak, and Ur have always been connected with water and the sea, although in different ways. While the wealth of Ur throughout the millennia was primarily associated with its status as one of the most important trade centres, with intense overseas activities, Šuruppak has remained in the collective

memory mainly for being mentioned in the Sumerian King List as the seat of the last dynasty before the Flood, and as the city where Utnapištim built the ship in order to save humankind from ‘the Flood’ (Akkadian *Gilgamesh*, tablet XI). Indeed, flood levels were reportedly excavated at the site in 1902 and 1931.¹ The rise and fall of both cities was directly linked to the environmental conditions determined by the water. But what are the archaeological remains of these close connections with water and the sea, and how can we trace them today? Is it possible to detect structures other than canals with the help of modern methods? These questions were raised and discussed at an international conference, where the organizers – to whom our warmest thanks are due – had brought together specialists of various disciplines in order to advance our understanding of a crucial aspect of Mesopotamia, namely its relation to water and the sea.²

1 Martin 1988, 22–23. See also the contribution by Morozova, this volume.

2 Our thanks are due to the organizers Licia Romano, Franco D’Agostino, Holly Pittman, Reed Goodman, Marc Lebeau, and Cameron Petrie. Our special thanks go to Licia, who patiently and skillfully managed the publication of this volume.

This article was sent for publication when we received the sad news about the untimely death of the former SBAH General Director and former Minister of Culture Dr Abdulameer al-Hamdani, who initiated the new Ur project and invited us to participate at the Ur excavation. This article is dedicated to his memory.

Berthold Einwag Institute of Near Eastern Archaeology, Ludwig-Maximilians-Universität, Munich, Germany; einwag@lmu.de

Adelheid Otto Institute of Near Eastern Archaeology, Ludwig-Maximilians-Universität, Munich, Germany; aotto@lmu.de

Jörg W. E. Fassbinder Geophysics Dept. Earth & Environmental Sciences, Ludwig-Maximilians-Universität, Munich, Germany; joerg.fassbinder@lmu.de

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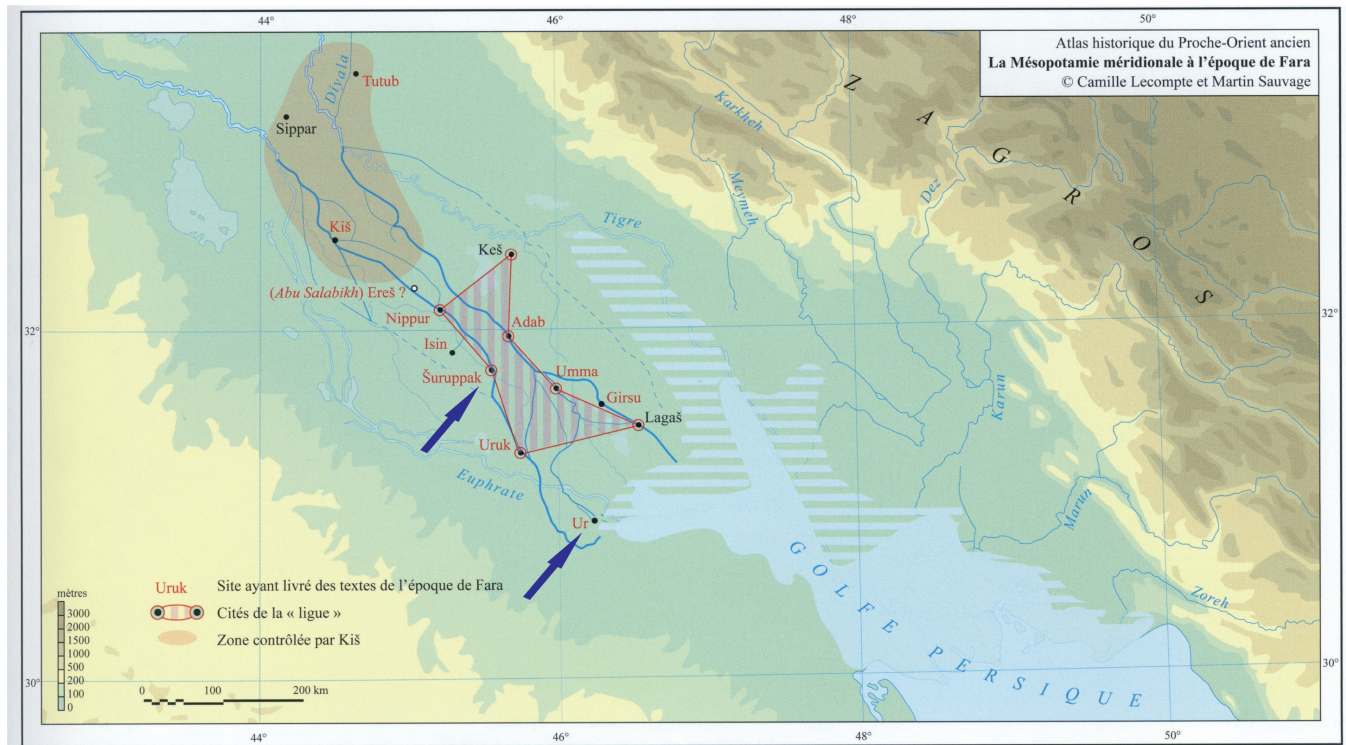


Figure 8.1: Map of Sumer in the Fara period, Šuruppak and Ur highlighted (after Lecompte & Sauvage 2021, pl. 65).

Figure 8.2: Drone photo of a part of the main mound of Fara showing the destruction by looting pits (by B. Einwag).



Both Ur and Fara were the subject of archaeological investigations almost a century ago when the methods and questions of research differed greatly from the modern ones. Renewed projects at these sites not only comprise excavations, but also surveys, remote sensing, and geophysical prospection. This chapter will present new results on some enigmatic features at Fara and Ur, which in our opinion are related to water (Fig. 8.1).

Harbours, Waterways, and Canals at Fara/Šuruppak

The site of Fara, situated in the province of Qadisiyah in southern Iraq, is today a vast and low 220–250 ha raised elevation in the middle of the dry steppe. The main mound rises only to a maximum height of 12 m above the present level of the plain, whereas the lower town

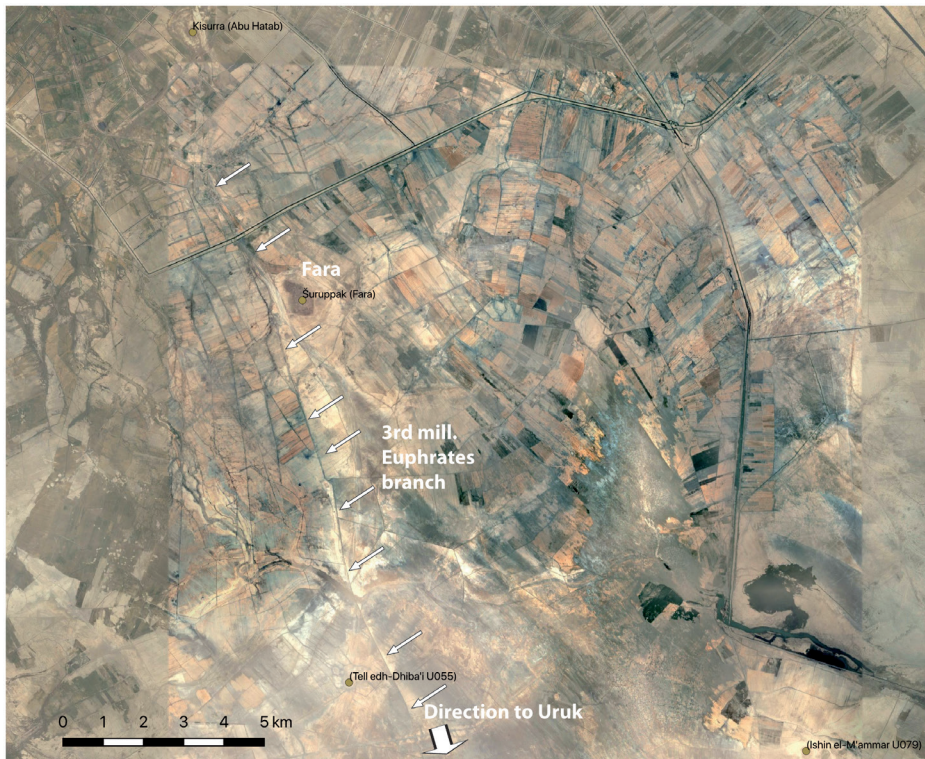


Figure 8.3: Map of the assumed course of the Euphrates River in the third millennium (map by Google Earth, modified).

is only slightly elevated and, in some places, even lies below the actual level of the plain. No one finds their way here today except for sheep or camels; there are no trees or bushes, no agriculture and no villages are to be found near Fara today. Unfortunately, the site was extensively looted between 2003 and 2006. Thousands of looting pits (Otto et al. 2018), some of them up to 5 m deep and 10 m in diameter, cover the surface of all the elevated areas today (Fig. 8.2).

Ancient Šuruppak, however, was a flourishing city throughout the third millennium. In the Early Dynastic I–IIIa periods, it was member of the ‘ki-en-gi city league’ which united many of the major Sumerian cities, including Nippur, Keš, Adab, Umma, Lagaš, Uruk-Kulaba (Jacobsen 1957; Steible 2015) (Fig. 8.1). In this period, the site was situated east of the main branch of the Euphrates, which led from Nippur to Uruk and constituted an important waterway for economic, religious, and political purposes. This branch is still visible today in aerial photos as a linear feature passing west of Fara (Fig. 8.3). When the river changed its course in the Old Babylonian period, the city was abandoned and never settled again.

The site was first investigated from June 1902 until March 1903 by the Deutsche Orient-Gesellschaft (DOG) under the direction of Robert Koldewey and Walter Andrae (published much later in Heinrich &

Andrae 1931), followed by a short excavation season from February–May 1931 by Erich Schmidt from the University of Pennsylvania, and by a survey conducted by Harriet Martin in 1973, who published and summarized all of the archaeological evidence known up to that date then (Martin 1988).

Walter Andrae mapped the environment of Fara in 1902 as part of his journey on horseback (Andrae 1902). He marked a waterway north-west and south of Fara, marshes (‘Hôr’) east of Fara, and a few marshes south-east of Fara which had dried out by 1903; west of Fara he marked bushland and fields, and steppe or desert only in the south-west (Fig. 8.4). If we compare this to the environment of Fara today, it seems that the area around Fara has become even drier over the past 120 years.

When working at the completely deserted site of Fara today, it is difficult to imagine the watery environment around Šuruppak in the third millennium, which, however, has been attested both in the arts and in texts. Numerous cylinder seals and sealings as well as a few votive plaques of the Mesilim and Fara periods depict boat journeys, some of them clearly ritual (Heinrich & Andrae 1931, pl. 21 a–b, F 406; pl. 56, VA 6700), and more profane boat scenes e.g., for hunting boar in the marshes (Heinrich & Andrae 1931, pl. 65, VA 8593, 8737) (Fig. 8.5a, b). A handmade terracotta model of a boat,

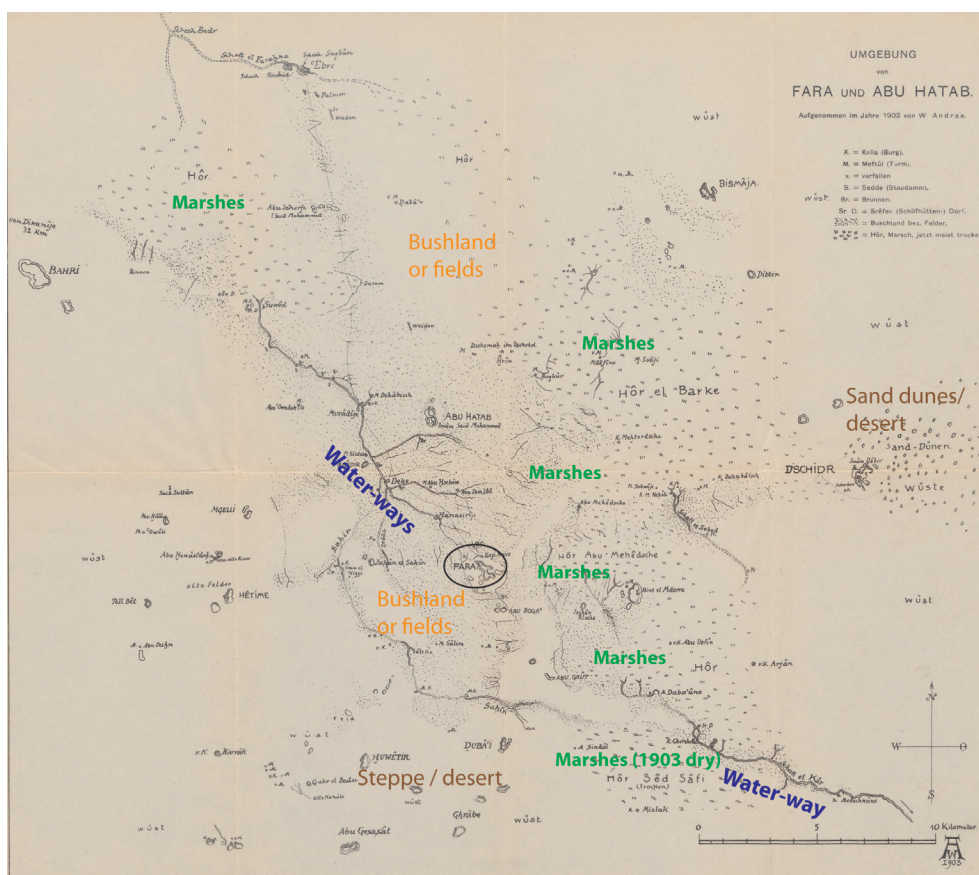


Figure 8.4: The environment of Fara in 1902 (map by Andrae 1902, modified by the authors).

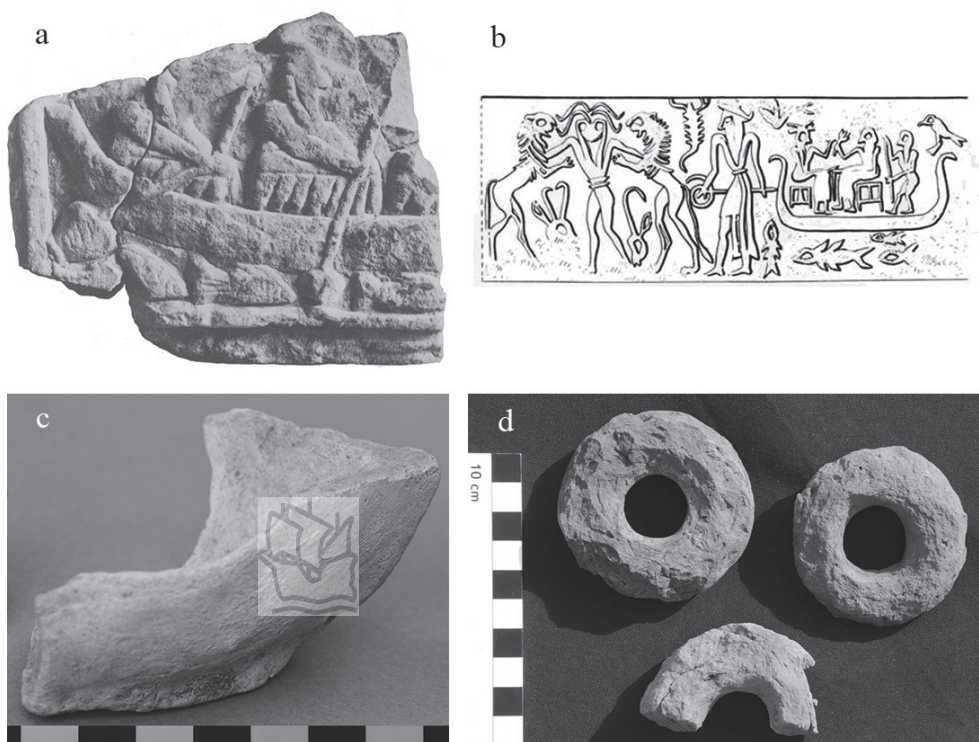


Figure 8.5: Archaeological indications of the watery environment of Šuruppak in the third millennium: a votive plaque and a cylinder seal from the 1902 excavations (Heinrich & Andrae 1931, pl. 21 a, pl. 56), terracotta boat model and net sinkers from the 2017 survey at Fara (by A. Otto).

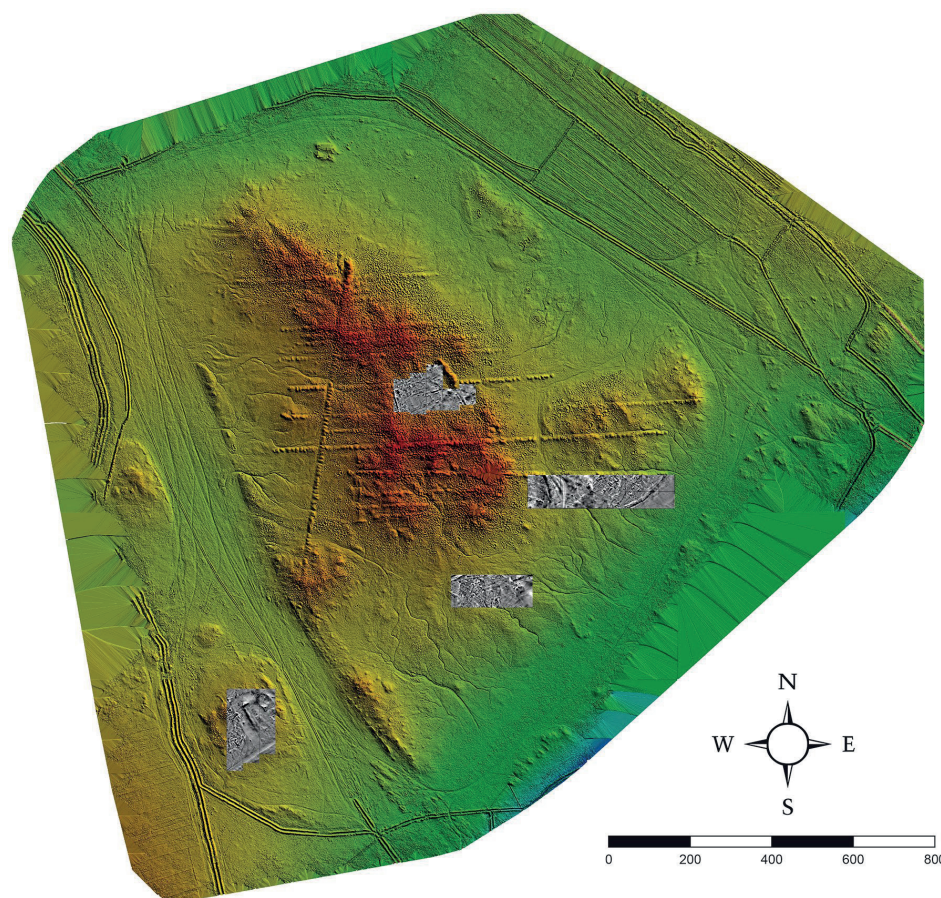


Figure 8.6: Digital elevation model of Fara with the four areas of the magnetometer prospection, 2018 (by G. Luglio and B. Einwag).

found in 2017 on the surface of the mound in an area with a high amount of Ur III pottery and probably dating to this period, also refers to water as one of the main axes of circulation (Fig. 8.5c). Numerous terracotta rings can be found today on the surface of the site (Fig. 8.5d); they are most probably fish net sinkers and testify to fishing activities.³ Fara period tablets mention traveling by boat and fish and birds related to water, and the *lú-má-eri-kas*,⁴ which probably means the incoming seamen or sailors of the trading quarters (Selz 2013).

A joint team from LMU Munich and the University of Qadisiyah resumed work at Fara in 2015, conducting a survey and geophysical prospection (2015–2018), and starting excavations in spring 2022.⁴ The digital elevation model shows the shape of the site, the trenches cut by the DOG team in 1902–1903 (one roughly from north to south, and twenty from west to east), and water

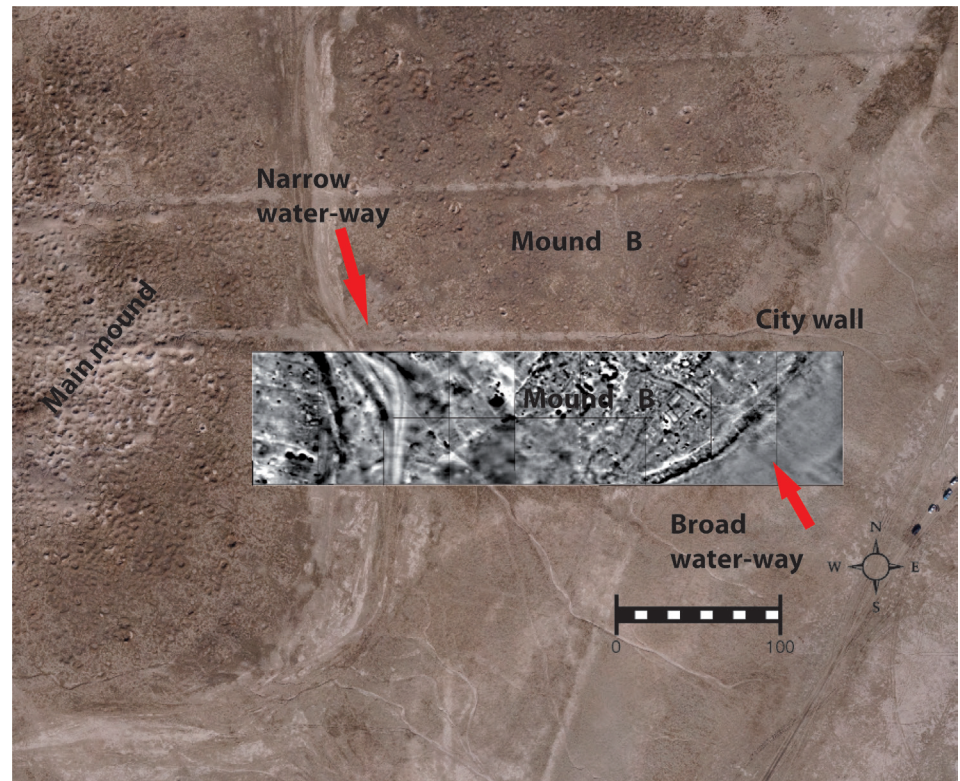
courses surrounding the entire site. The main mound (c. 1100 m by 600 m) is surrounded by a lower town, which forms a kind of a shallow belt (300 m–600 m) with a number of smaller mounds in places. Two especially prominent mounds, which are separated from the main mound, are Mound B to the east, and Mound E in the south-west, clearly situated beyond a large waterway. Geophysical prospections (Fig. 8.6) conducted by Jörg Fassbinder and his team, and a conventional surface survey revealed the use of the lower town for habitation and industrial activities (Otto & Einwag 2020).

Aerial photos provide additional information on the structure and features of the site. Especially the drone photography in February 2018 after heavy rainfall made many features clearly visible, although only for a short period of three days. The combination of drone photography and magnetometer imagery allows for a much better understanding of those parts of the city that have been minimally disturbed by recent looting. It appears that Mound B was separated from the main mound by a canal approximately 10 m wide, or by a set of narrower, successive canals (Fig. 8.7). Mound B is bordered on its south-eastern side by a 10 m wide linear structure, which seems to have been the outer city's defensive

3 A cluster of similar terracotta rings with cords still attached were found in the Temple Oval of Hafaji (Delougaz 1940, figs 54, 55).

4 We thank our partner from Qadisiyah University Abbas al-Husainy for his great cooperation throughout the project. Our thanks are also due to the SBAH for the permit and to all the Iraqi and German staff members of the survey seasons.

Figure 8.7: Aerial photo and magnetometry at the eastern Mound B, 2018 (photo by F. Einwag; magnetometry by J. Fassbinder).



system, built as a casemate wall. Outside the city wall, a broad waterway is visible, which must have surrounded the city.

Another area was clearly linked to activities in connection with water. A small mound (Mound E) is situated at a lower elevation in the south-western corner of the city. It was separated from the main mound by a linear depression 50–100 m in width — clearly the course of a major waterway. Andrae had already documented on Mound E a more than 80 m long and over 12 m wide straight structure built from baked bricks (Fig. 8.8); he wondered if this could be the remains of the city wall for which he had been searching.⁵ The 2018 magnetometer prospection in this area revealed the same straight

structure, 115 m long and 15 m wide, and a rectangular plan 138 m long and 24 m wide, west of it (Fig. 8.9). The combined drone photos and magnetometry indicate the presence of a 9 m wide linear structure leading from the main watercourse toward the south-west and touching the rectangular plan. Our tentative interpretation of this structure is a canal that leads to a large basin west of the massive wall (Fig. 8.10). It is possible that the latter served as a quay wall for the harbour, which was situated west of the main mound of the city.⁶ This putative harbour area seems to have been intentionally separated from the main mound, perhaps in order to establish a kind of a *karum* area for foreign merchants outside the city wall. There is much work to be done to test such a hypothesis proposed here and indeed more generally for a better understanding of the city organization. Also, drilling is planned for future seasons in order to acquire evidence for one large or several minor flood events. It is evident, however, that water was the structuring power at Šuruppak: the city was situated east of the main course of the Euphrates; broad waterways and canals surrounded the city and smaller canals led through the city; a harbour was situated between the city canal and the main Euphrates River (Fig. 8.11).

⁵ Andrae in Heinrich & Andrae 1931, 6: 'Hinsichtlich der Flächenausdehnung der Siedlung von Fara beschäftigte uns die Frage nach einer Befestigung. Da ist nur im Süden des Hügels ein kurzes Stück einer an beiden Enden abbrechenden dicken Mauer gefunden, die den Anspruch erheben könnte, Festungsmauer genannt zu werden [...] Da es Mauerwerk und nicht bloß Erdschüttung ist, möchte ich den Bau in die letzte Epoche, also in Fara Z setzen' (With regard to the size of the settlement at Fara, we were concerned with the question of fortifications. Only a short piece of a thick wall, breaking off at both ends, has been found in the southern end of the tell that could claim to be called a fortification wall [...] Since it is masonry and not just earth, I would like to place the building in the last period, i.e. in Fara Z).

⁶ For a roughly contemporary harbour at Abu Theirah see Romano et al., this volume.

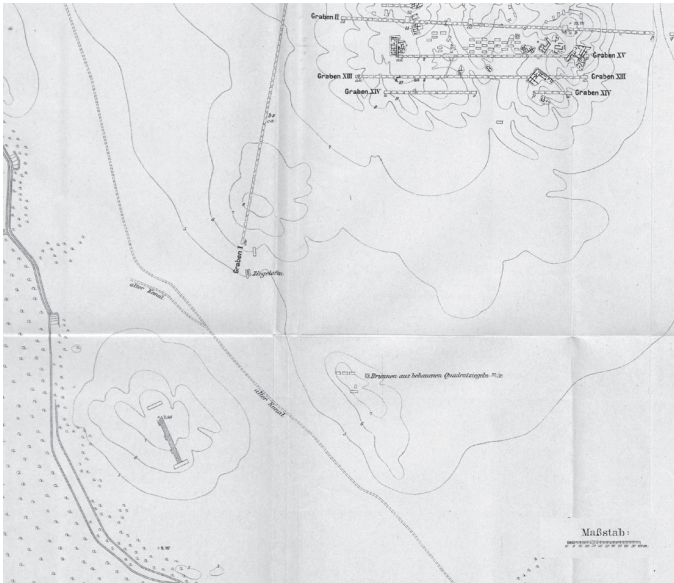


Figure 8.8: Enigmatic structure revealed in 1902/03 on the southwestern Mound E (detail from Heinrich & Andrae 1931, pl. 1).

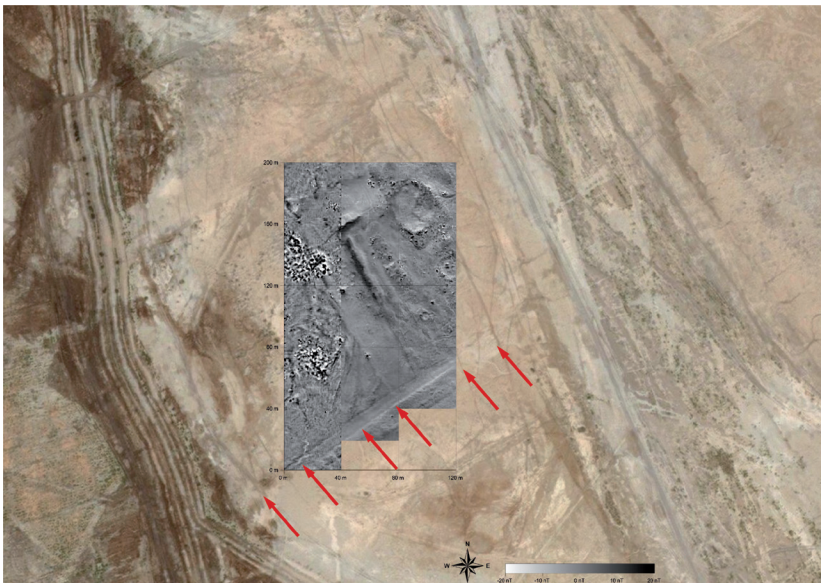


Figure 8.9: The structures of Mound E visible in magnetometry and aerial photos (by the authors).

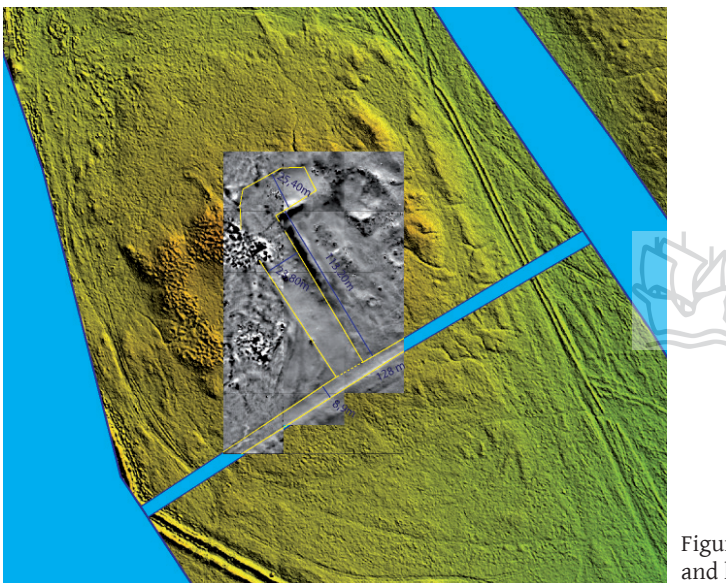


Figure 8.10: Tentative reconstruction of the waterways, canals, and harbour (by the authors).

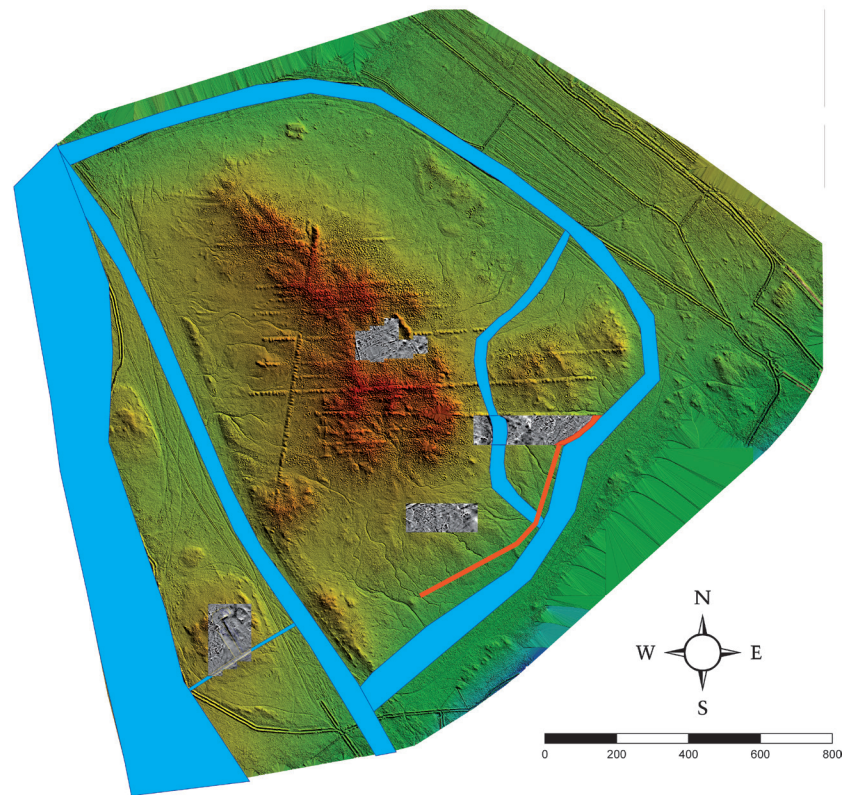


Figure 8.11: Interpretation of the features on Mound E (by the authors).

Waterways and Water Gates at Tall Al-Muqayyar/Ur

The history of the exploration of Ur does not need to be repeated here, since this major city and sanctuary of the moon god is well known. After the legendary excavations by Woolley in 1922–1934, renewed research was directed from 2015–2019 by Elizabeth Stone (Stony Brook University) and the late Abdulameer al-Hamdani (Stone & Zimansky 2016; Stone et al. 2021).

Ur profited from its location on the Euphrates near the sea. Harbours — textually and archaeologically documented — and waterways facilitated its role as a wealthy international trade centre over the millennia (Fig. 8.12). Remote sensing makes the system of watercourses around Ur visible (Di Giacomo et al. 2012; Hammer 2019).

Our own work in Ur during 2017 and 2019, following an invitation by Stone and al-Hamdani, included excavations in Area 5, aerial photography by drone (Fig. 8.13), and the geophysical prospection of the whole South Mound and of some unexcavated areas of the North Mound (Fig. 8.14). The results of the magnetometer prospection indicate that the South Mound was covered in most places with buildings of various kind, size, and date, and was surrounded by an oval city wall. A broad



Figure 8.12: The main mound of Ur with traces of surrounding water (Ur expedition LMU Munich).

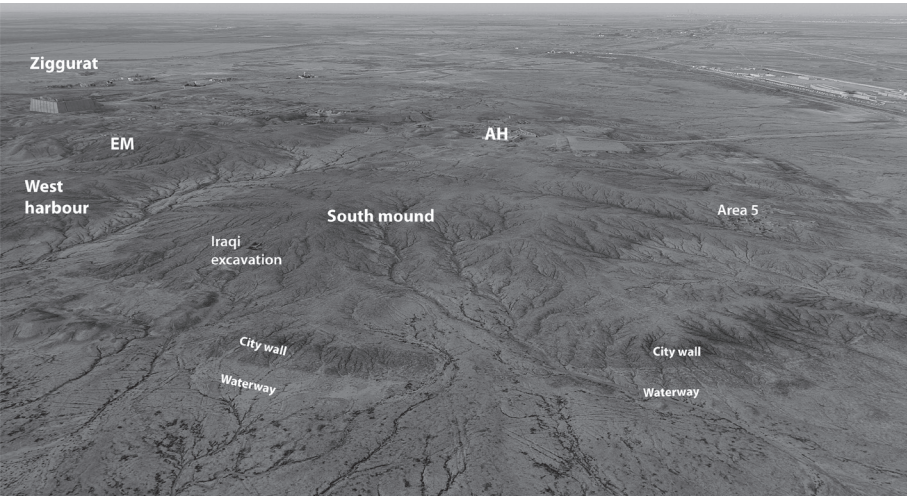


Figure 8.13: The South Mound of Ur, drone photo from outside the city wall (B. Einwag).

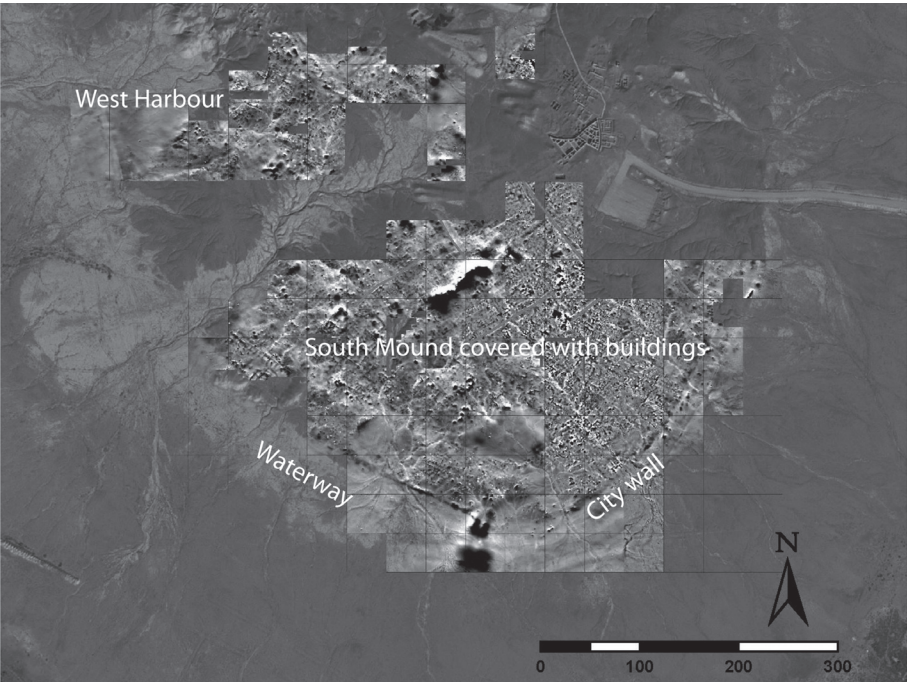


Figure 8.14: Results of the magnetometer prospection of the South Mound, 2017 and 2019 (by authors).

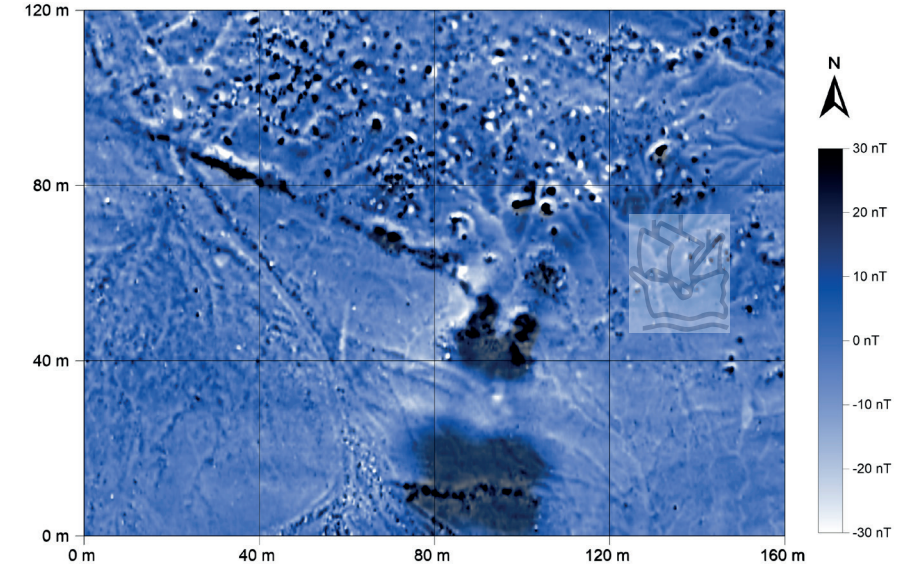


Figure 8.15: Water gate or bridge at the southern edge of the city wall (magnetometer prospection by J. Fassbinder).

waterway is visible outside the city wall (see also the contribution by Fassbinder, Hahn, and Parsi, this volume).

One peculiar structure, of which nothing was visible on the surface, was revealed by magnetometry (Figs 8.14–8.15): two structures, clearly standing in relation to each other, and consisting of four anomalies each. The northern structure is attached to or situated near the city wall and measures approximately 19 m by 16 m. The other one, approximately 20 m south of it, was situated in the waterway and has therefore been dispersed much more. The remains still visible in magnetometry cover an area of approximately 20 m by 26 m, but it is difficult to say what used to be the core of this structure, which has been heavily damaged by water. While we (Einwag and Otto) initially assumed that this might have been a bridge consisting of two sets of four pillars each, the doubts formulated by Fassbinder are worth considering: he thinks that the distance between the two structures is too large to be spanned by any built construction, even by an arch of baked bricks, and that a more plausible explanation would be a water gate or another similar construction connected with water.⁷ However, if Ur did indeed used to be surrounded by water, as has been suggested several times, there must have been a way of entering the city by foot. Thus, there must have existed constructions enabling access to the city across the ‘water shield’ around it. If the two enig-

matic structures were indeed foundations of a bridge, it might have been possible to span the distance with the help of a boat or several boats serving as the mobile pillars in between, thus forming a semi-mobile bridge.

Conclusions

Recent work at Ur and Fara have brought to light new evidence for the eminent role water played for these important Sumerian and Babylonian cities. A large construction outside the city wall of Ur, situated at the edge of and inside the broad waterway surrounding the mound, must be interpreted as a structure linked to the crossing of the waterway or to the water management of the city. The exact function and date of this structure need to be defined by further investigations.

The city structure of Fara/Šuruppak is slowly beginning to emerge. If our interpretation is correct, in the third and early second millennia, the site was surrounded by water and crossed by interior channels in some places. Most probably, a harbour was situated south-west of the main mound, furnished with a massive quay wall and a basin where the ships could anchor. This structure certainly dates to the third millennium, but a more precise dating must await further archaeological work in this area.



⁷ The water gate or bridge in Tello/Girsu has been investigated recently (Rey et al. 2021). A structure that enables a canal to cross the city wall was discovered at Larsa (Vallet et al. 2020, fig. 9). The bridge of Babylon was 126 m long and consisted of eight pillars of 21 m by 9 m built from baked bricks and bitumen. Herodotus (*Hist.* 1.187) described the bridge as having solid pillars and wooden planks which were removed at night (Pedersén 2021, 205–06).

ABOUT ARWA AND THE SUMER AND THE SEA CONFERENCE

The International Association for Archaeological Research in Western & Central Asia (ARWA) is a global network aimed at establishing connections among archaeologists and students worldwide. It was established in 2022 with its headquarters in Brussels. ARWA's mission includes fostering collaboration, information dissemination, support for joint projects, mentorship for promising students, and providing advisory services to international organizations.

ARWA is governed by a democratically elected Board with a limited-time mandate and operates transparently, involving all regularly affiliated members. The association proposes a general and regular Congress, along with a series of regional and transversal workshops at venues decided by its members and Executive Board.

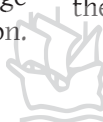
ARWA acts as an advisory body for contacts with organizations such as the UNO, UNESCO, ICOMOS, ICCROM, WMF, and more. It also promotes dialogue with sister associations, advises on matters related to its scientific and social objectives, and encourages the adoption of an ethics charter for archaeology and related disciplines. The association supports publication, proposes archaeological fieldwork training and other activities for students, and encourages career development and mentorship for promising students. It stands for the defence of affiliates in difficult circumstances, provides assistance to colleagues and students in countries in a state of war, recommends international project funding, contacts the press, and produces press releases. ARWA encourages international cooperation and projects, including their publication, and ensures the coverage of international projects supported by the association.

It promotes the sharing of information between archaeological missions and host countries and supports the social and environmental sustainability of archaeological research.

As an international association of scholars and advanced students, ARWA aims to promote and encourage the collaboration of scientists from all countries through initiatives that contribute to the progress of archaeological research and related disciplines. ARWA firmly endorses the principles of academic freedom, rejects any form of discrimination, and opposes historical revisionism.

The 'Sumer and the Sea: Deltas, Shoreline, and Urban Water Management in Third Millennium BC Mesopotamia' workshop was a significant milestone for ARWA. Held online from 2 June to 4 June 2021, it was the association's first completely online international event. Despite the challenges posed by the pandemic, the workshop proved to be a resounding success with more than 170 attendees participating from twenty-six different countries. Attendees enjoyed engaging in common coffee breaks on the Wonder platform and took part in a Virtual Escape Room activity.

Additionally, thanks to a collaborative effort with ETRU, the Museo Nazionale Etrusco of Rome, and its director Dr Valentino Nizzo, participants were treated to a customized visit to the museum's collection, centred around the workshop's theme. The guided tour, titled 'Etruschi, navigatori di fiumi e di mari / Etruscan, Sailing Rivers and Seas', was led by Dr Vittoria Lecce and Dr Alessia Argento, who also answered questions at the conclusion of the visit.





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