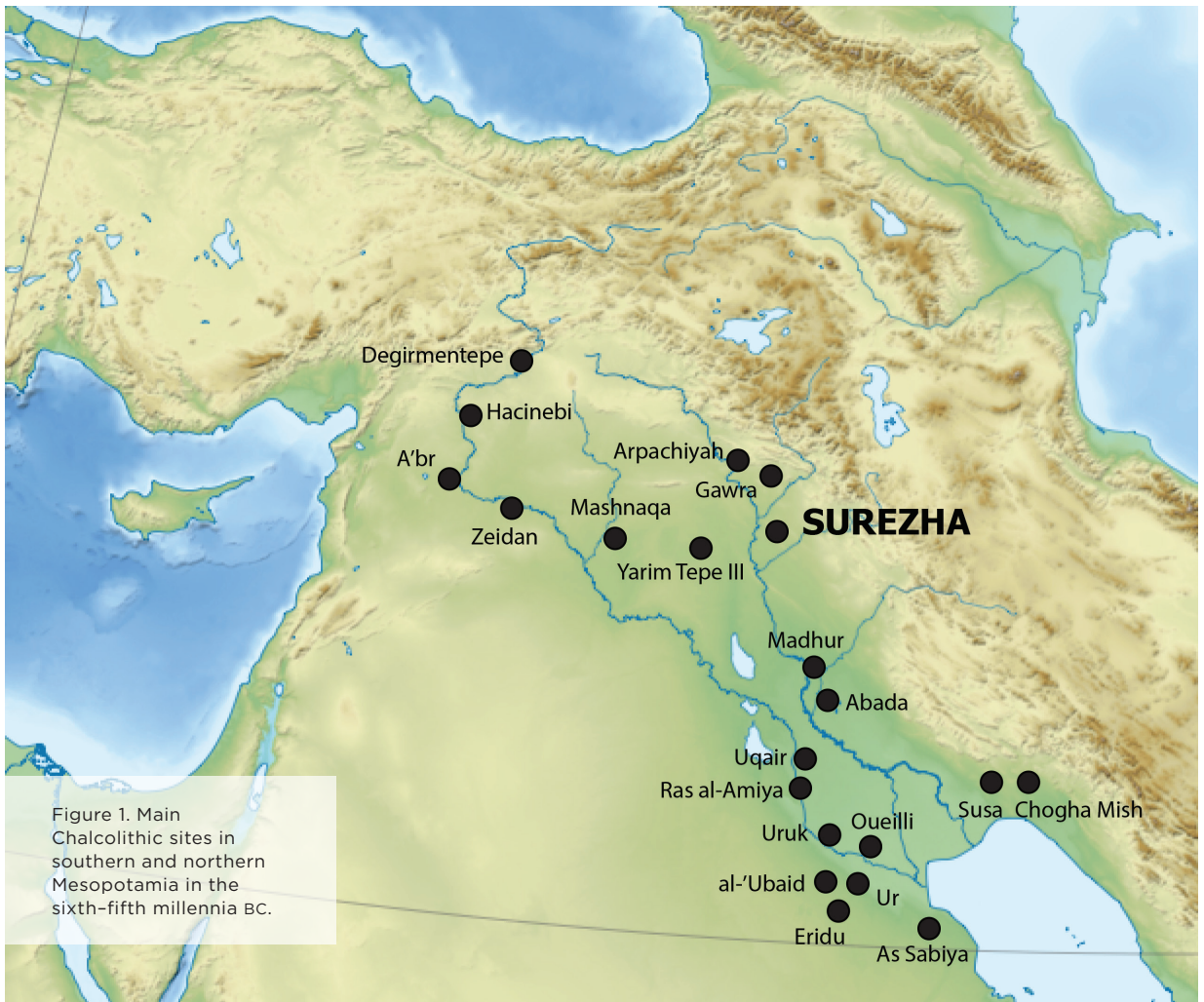


SUREZHA EXCAVATIONS 2018

Erbil Plain, Kurdistan Region, Iraq

GIL J. STEIN AND MICHAEL T. FISHER

The Surezha excavations investigate the key phases in the origins of towns and later cities in northern Mesopotamia during the Chalcolithic period from roughly 5500 to 3500 BC (fig. 1). Surezha is an ideal site to define the Chalcolithic chronology and developmental sequence of the Erbil plain and the Assyrian heartland region east of the Tigris because the high mound at Surezha is largely prehistoric, with only limited later occupation from the Middle Assyrian period and the Iron Age. This means that the houses and other occupation levels of the fifth millennium BC lie very close to the surface and are thus easily accessible for archaeological excavations.

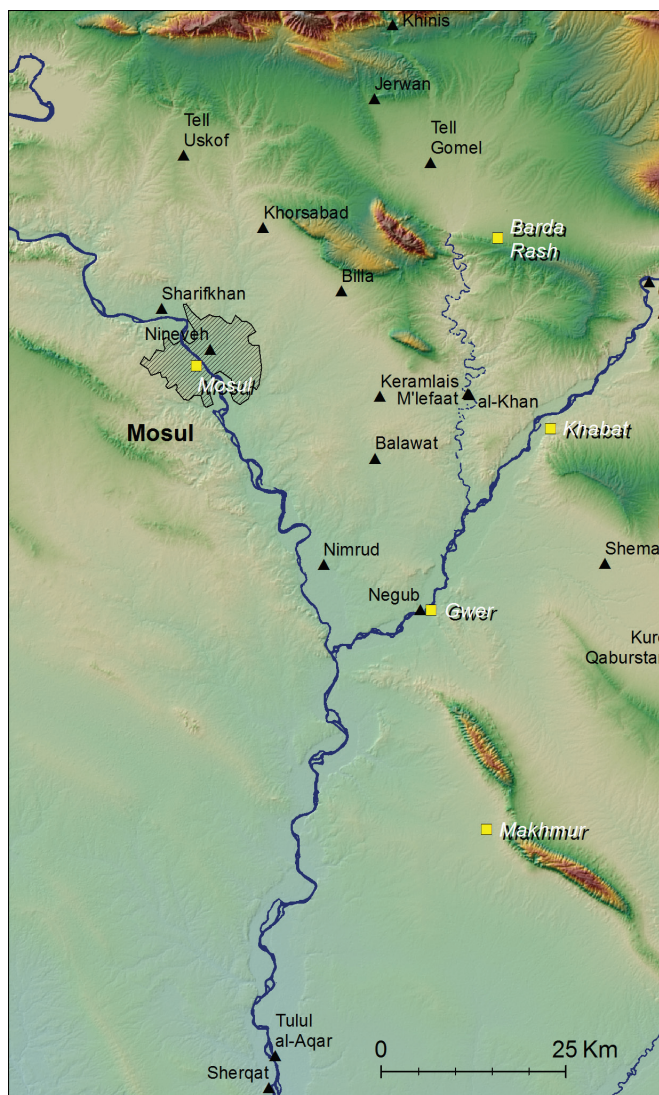


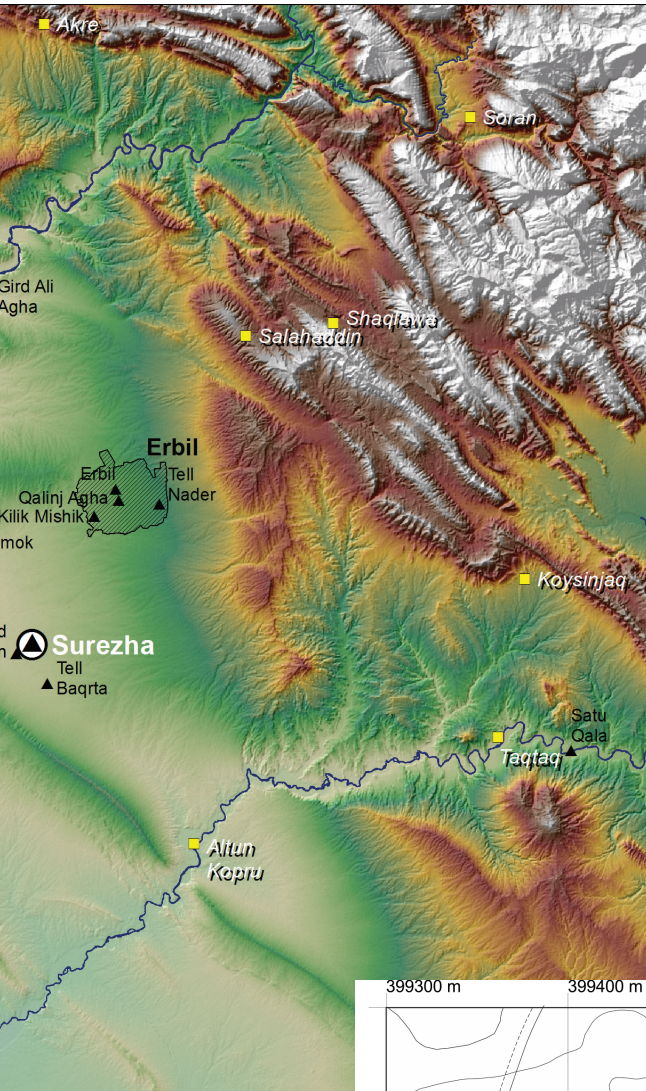
Surezha is a mounded settlement of circa 22 ha, located next to the modern village of Surezha, approximately 20 km south of the modern city of Erbil in the Assyrian heartland region east of the Tigris River and Nineveh (fig. 2). The Erbil plain has sufficient rainfall to support rich agricultural production of cereals without the need for irrigation. This in turn has supported a large population in the center of the plain at Erbil, the ancient city of Arbela, which seems to have been continuously occupied from Neolithic times to the present. The region surrounding Erbil historically supported a large rural population in agricultural villages from the Tigris River eastward toward the foothills of the Zagros Mountains and Iran. In a manner similar to the modern region of Kurdistan, the Erbil region has had strong cultural links north into Anatolia, east into the highlands of Iran, and west and south into Mesopotamia.

Surezha was first recorded by the Erbil Plain Archaeological Survey (EPAS). The ancient site has three parts: a) the high mound, b) the terrace, and c) the lower town. The conical-shaped high mound and terrace measure approximately 188 m NW-SE and 150 m from SW to NE, with an area of approximately 2.8 ha (fig. 3). The high mound rises to a height of 16 m above the terrace. The terrace surrounding the base of the high mound is about 2 m high and slopes gradually down over a distance of approximately 70 m to the lower town, which extends out from the terrace in all directions. Part of the lower town lies underneath the modern village of Surezha to the north and east.

Excavations at Surezha by the Oriental Institute began in 2013 with a two-year hiatus (2014–15) due to the conflict with ISIS/Da'ish in northern Iraq and the Mosul area. Excavations resumed in 2016 and have continued annually up through 2018. Our work on the conical high mound of Surezha has recovered evidence for almost two millennia of continuous occupation in the Chalcolithic period (5300–3400 BC), starting with its foundation on sterile deposits in the Halaf period, and continuing through the Ubaid (the period when the first town-sized settlements developed in Mesopotamia), Late Chalcolithic 1 (LC1), LC2, LC3, and LC4 periods. The LC4 period at Surezha is contemporaneous with the Middle Uruk period in southern Mesopotamia. The Chalcolithic period is difficult to investigate because these occupation levels are almost always deeply buried beneath anywhere from 5 to 30 m of later deposits. However, the abandonment of the Surezha high mound in 3400 BC and the absence of later occupations there affords us the rare opportunity to easily reach the buildings of an early town settlement dating back more than seven thousand years.

The 2018 field season took place from September 13 to October 14, 2018, codirected by Gil Stein and Michael Fisher along with project staff members John Alden, Taos Babour, Sam Harris, David



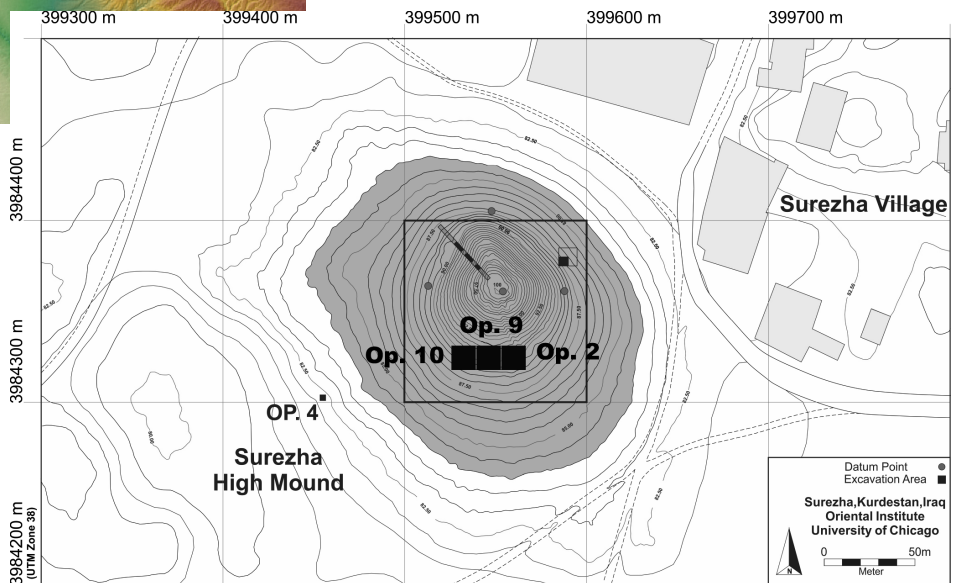


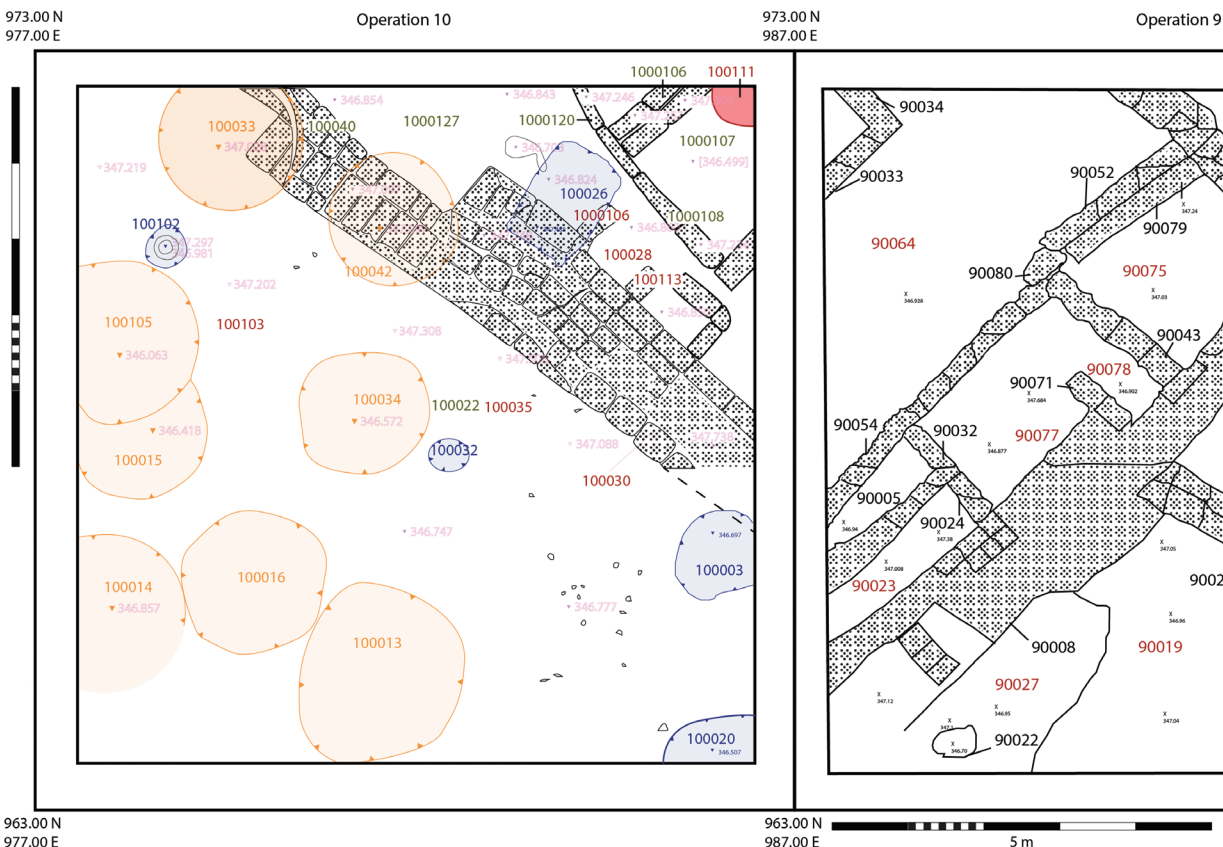
Usieto, and Ramin Yashmy. Our government representatives were Rozhgar Rashid and Nader Babakr. Site excavations were carried out by fifteen workers from the Erbil Department of Antiquities and the village of Surezha. We are grateful to the general director of antiquities, Mr. Kayfi Ali, and to Mr. Nader Babakr, director of antiquities for Erbil Governorate, for permission to excavate at Surezha and for the numerous ways in which they have facilitated our work.

Since 2017, we have focused our excavations on area B—ops. 2, 9, and 10 (each 10 × 10 m trenches) at the southern base of the high mound. In this area, Late Chalcolithic 1 (LC1) deposits are accessible immediately beneath the present-day ground surface. The LC1 period forms the transition between the first emergence of towns in the preceding Ubaid period and the emergence of the first cities in the LC2 period (corresponding to the Early Uruk period in southern Mesopotamia, ca. 3900 BC). However, for all its potential importance, the LC1 remains poorly understood because it is usually so difficult to reach the deeply buried deposits from this period. Fortunately, at Surezha, the very early deposits of the LC1 can be reached immediately beneath the surface in area B, allow-

ABOVE: Figure 2. The Erbil Plain and the location of Surezha.

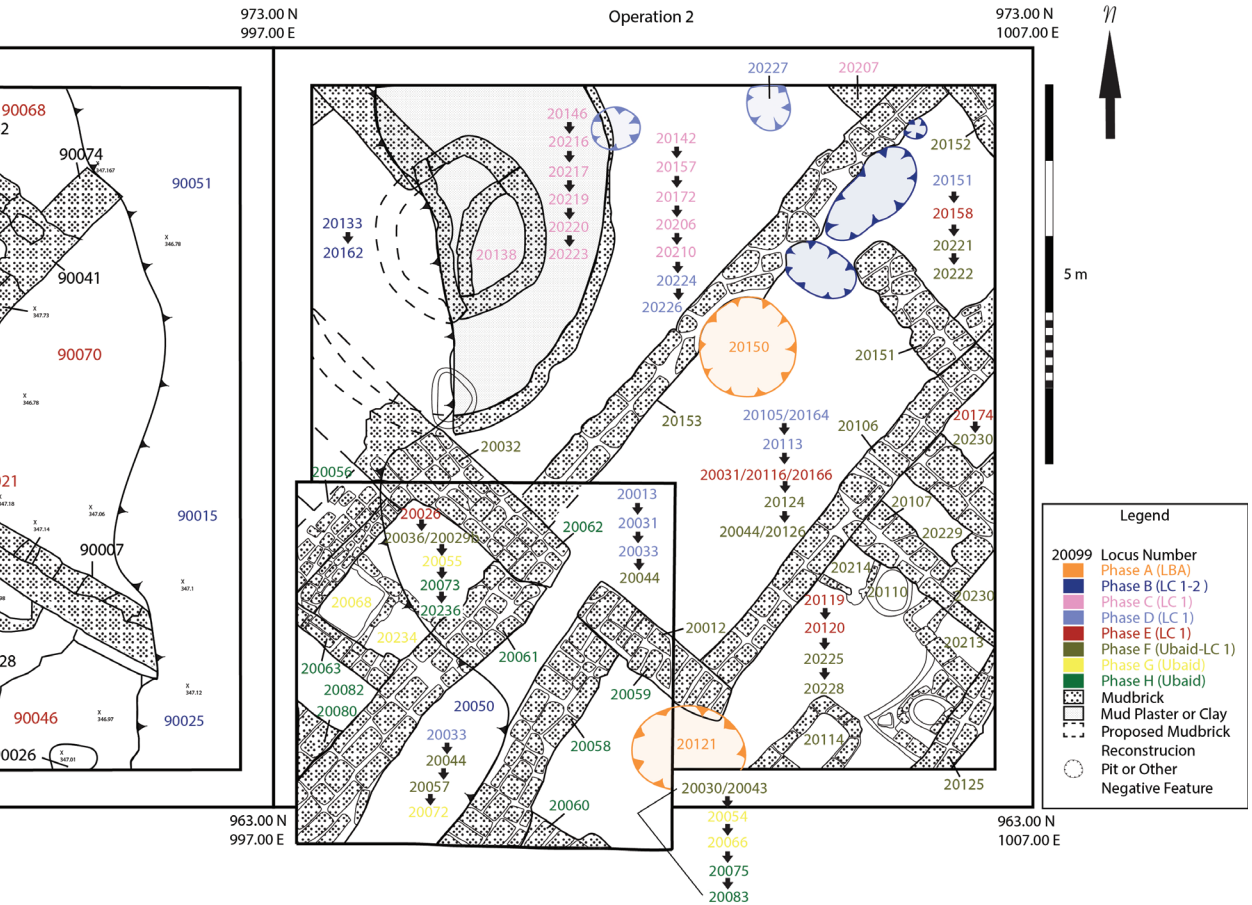
RIGHT: Figure 3. Topographic map of the site of Surezha, showing the location of ops. 2, 9, and 10 in area B.





ing us to make a broad contiguous horizontal exposure of 300 m² of architecture, open-air spaces, and streets dating to the LC1 period (figs. 4 and 5).

One of our most important discoveries of the 2018 season was the realization that there appears to be a major functional difference between the eastern and western parts of area B during the LC1 phase. Op. 2 at the east end of area B seems to be entirely composed of domestic architecture—houses, courtyards, and open-air work surfaces. By contrast, the architecture of op. 9 in the center of area B and op. 10 at the west end together comprise a large mudbrick walled enclosure that appears to have been non-domestic in function.



OPPOSITE BOTTOM: Figure 4. Orthomosaic photo of LC1 architecture in area B, showing the contrast between the domestic architecture of op. 2 at the right edge of area B, and the large, non-domestic enclosure in ops. 9 and 10 at the center and left. ABOVE: Figure 5. Composite top plan of the LC1 architecture in area B.

OPERATION 2

Excavations in op. 2 is a 10 × 10 m trench at the eastern end of area B supervised by Michael Fisher and Ramin Yashmy. Op. 2 is especially important because it is a domestic area with a long, continuous occupation that spans the vast majority of the LC1 period (op. 2, phases F through C), and extends back in time into the Ubaid period (op. 2, phases H and G). The houses of the LC1 period phases closely follow the wall alignments, NE–SW orientation, and function of the earlier Ubaid domestic architecture that had been exposed in the southwest 5 × 5 m of the trench in 2013 and 2016. The LC1 house exposed in op. 2 comprises a series of small rooms oriented around the south, east, and north sides of a central room or courtyard measuring 3.5 m (NW–SE) by 6 m (NE–SW). The floor of this room is cut through by a deep well (locus 150) dug down into the long-buried LC1 deposits during the Middle Assyrian period (second millennium BC). The western wall (locus 153) of this courtyard was constructed in the earliest stages of the LC1, immediately on top of the earlier Ubaid houses. To the northwest of the courtyard and wall 153 is a series of outdoor surfaces with features such as tannurs (ovens) and small pits. To the southeast of the LC1 courtyard was a small room, possibly a kitchen, with a hearth (locus 114) along its south wall, and a series of basins and bins (loci 213 and

214) constructed along its north wall. The house was in use for an extended period in the LC1 (op. 2, phases F through C), during which its rooms and their features underwent periodic small modifications as doors were bricked up and new interior walls or floor features were built. Late in the LC1 occupation, a large oval-shaped, flat-topped platform (locus 146) was constructed of packed mud/terre pisé in the center of the open-air work surface 210. A small circular feature of mudbricks with two small internal walls was built on top of platform 146. The function of this small mudbrick feature and of the platform itself remains unknown.

Although the architecture and associated surfaces in op. 2 were domestic spaces, it is important to note that a number of artifacts were found there as well—notably two carved stone stamp seals with incised crosshatched geometric decorations (fig. 6) and at least eight stamp seal impressed fragments of shaped clay container closures. The same styles of incised crosshatched geometric designs were found on stamp seals and seal impressed clay artifacts in both op. 2 and op. 9. One should recall, however, that seals were originally developed in the Neolithic Period and were most commonly used as markers of personal ownership; only in later periods were seals also used for administrative/bureaucratic purposes.



The long, continuous sequence of domestic architecture in op. 2 ended in late phase C with what appears to be the localized abandonment of this part of the site. The platforms, surfaces, and houses were gradually covered over with wash deposits. In the subsequent op. 2, phase B, a 2 m wide erosional gully (loci 133–135) cut down to a depth of 50 cm and extended for about 5 m from north to south along both sides of the grid line between ops. 2 and 9. The gully was filled with erosional wash from upslope deposits that apparently predate the LC2 (no LC2 diagnostics have been identified in the gully deposits) and can be assigned instead to the final phase of the LC1 period at Surezha, which was probably located in the area immediately to the north of ops. 2 and 9.

In addition to the local Surezha LC1 wares, the gully cut ceramic assemblage also included Dalma impressed wares and Dalma painted wares deriving from Iranian Azerbaijan in the region just south of Lake Urmia. This area lies immediately to the east of the mountain passes that connect Iraqi Kurdistan and western Iran. Dalma wares have been found in the latest LC1 levels in all three operations in area B at Surezha. They represent the earliest material and cultural connections between the Erbil plain and northwestern Iran, and date to the period between 5000 and 4500 BC. The Dalma wares from Surezha are currently undergoing geochemical studies through Instrumental Neutron Activation Analysis (INAA) to determine if these wares were locally manufactured at Surezha or if they are imports from Iran.

OPERATION 9

Op. 9 is a 10 × 10 m trench at the central part of area B, between op. 2 to the east and op. 10 to the west. The 2018 excavations in this trench were supervised by Sam Harris and David Usieto. Ops. 9 and 10 are distinctive in having a large mudbrick enclosure wall, associated rooms, and a free-standing structure inside the enclosure, all of which are non-domestic in character. This architecture differs significantly from the contemporaneous LC1 houses and outdoor work surfaces in op. 2 to the east (see figs. 4 and 5). At the same time, regardless of the differences in function, all the buildings in ops. 2, 9, and 10 share a common orientation for their walls and rooms, so that the corners of all structures are aligned to the cardinal points of the compass.

The mudbrick enclosure in ops. 9 and 10 measures 11 m (NW–SE) by 9 m (SW–NE). It is composed of a series of walls approximately 1.5 m wide, constructed of four to five rows of rectangular bricks, and preserved to a height of at least 50 cm. The SW wall (op. 10, wall 30) and the SE walls (op. 9, walls 8 and 41) have been completely exposed, along with 4 m of the NE wall 42. The remainder of the NE wall and the entire NW wall are in the as-yet unexcavated area to the north of area B. The walls of the enclosure were not built as a unit, but were instead constructed separately, and possibly at dif-



OPPOSITE: Figure 6. LC1 carved stone stamp seals with geometric motifs from ops. 2 and 9, along with modern impressions in modeling clay. LEFT: Figure 7. Op. 9: SR7368 stone mortar and pestle and SR7171 painted lenticular vessel with broken spout, found in the abandonment deposit inside room 1 in the large mudbrick enclosure.

ferent times. The enclosure and its associated rooms remained in use for a long time over the course of the LC1 period, and the entire complex seems to have undergone several phases of architectural modification over this time span. The 2018 excavations exposed the latest of these phases.

To the east and southeast of the enclosure is a series of outdoor surfaces sloping gently down to the east, and partially covered by wash deposits from the erosion/decay of the exterior (southeast) face of walls 8 and 41. These wash layers and outdoor work surfaces had been cut through by the bottom of the north–south gully that cut through the east edge of op. 9 and the west edge of op. 2.

Inside the enclosure, four rooms were constructed against the interior of SE conjoining walls 8/41. The mudbrick walls were one course wide, and in some places were preserved to a height of at least 60 cm. As was the case with the enclosure itself, the rooms along its SW wall were built separately and not as part of a unified plan. The two long, narrow, parallel rooms at the south end shared a common wall and appear to have been used for storage. The central room yielded few artifacts. It had what looks like a blocked doorway in its north corner and might have functioned as the entry room from the open courtyard area inside the enclosure to the northwest. The central room may have functioned as a small foyer, giving access to the adjacent rooms to the northeast and southwest.

The northeast room (room 1) was significantly different from the other three rooms along the interior of the SE wall of the enclosure. The room interior had been burned in an intense fire that partially vitrified the mud plaster along the NE corner. Afterwards, the room was cleaned, mudbrick bench 79 was constructed along its NW wall (wall 52), and the room continued in use, with large amounts of small finds in floor and trash deposits, including two stamp seals (fig. 6) and seal impressed clay container sealings. At a certain point, the room was abandoned. A large amount of clay, ceramic, and stone objects were found in related abandonment deposit loci 69 and 72—far more than in any other room in op. 9. Immediately to the east of bench 79, a nearly complete lenticular jar (SR7171—lacking only the spout) in a style similar of those from Gawra and Eridu was placed upside down, along with an overturned grinding stone and an upside down stone mortar and pestle (fig. 7). It is still unclear whether the number, nature, and placement of these objects represent “normal” discard or perhaps a more deliberate ritual associated with the abandonment and “closing” of the room.

OPERATION 10

Op. 10 is a 10 × 10 m trench at the western end of area B. The 2018 excavations were supervised by Taos Babour. Excavations focused on the northern half of the trench in order to explore the large mudbrick walled enclosure and its interior. Three aspects of the enclosure were investigated: a) the conjoining SW walls 28/30 of the enclosure, b) a street or passageway running along the north face of the wall inside the enclosure, and c) a free standing multi-roomed structure that bounded the street on its north side and extended into the northeast corner of the trench (see figs. 4 and 5).

The 11-m-long south walls 28/30 of the enclosure extend from the north baulk in the NW corner of op. 10, running SE until they enter the east baulk, and seems to form a corner on the other side of the baulk in op. 9 with wall 8, the SW wall of the enclosure. Mudbrick wall 30 was at least three to four courses wide, and preserved to a width of 1.4–1.5 m. The height of the wall is uncertain, since excavations in 2018 did not reach its base. The red clay matrix of the wall bricks is crumbly and badly eroded on its south face. Wall 28 runs along the north face of wall 30. It is a narrow wall, one course wide, constructed from longer, narrower brownish-gray bricks along the north face of wall 30. Two small buttresses, one brick wide, abutted the north face of wall 28. The area outside of the enclosure to the southwest of walls 28/30 appears to have been an open-air work surface, sloping down gradually to the south.

A narrow passageway or street ran along the length of the north face of conjoining walls 28/30 on the inside of the enclosure. Wash and trash deposit locus 112 overlay street surface 127. The northern edge of the street/passageway was defined by wall 108. Walls 108 and 120 formed the south wall of the free-standing structure inside the enclosure. The structure had at least two rooms (the “west room” and the “east room”), divided by double walls 106 and 107, which abutted the north face of walls 108/120. Walls 108/120 are made of long, narrow bricks laid one course wide. Only a small corner



Figure 8. Op. 10: Free-standing mudbrick structure and adjacent passageway or street inside the large mudbrick enclosure to the north of conjoining enclosure walls 28/30. Note the small buttresses constructed against the face of wall 28. OPPOSITE: Figure 9. Sam Harris collecting microarchaeological samples from floor surface in 50 cm grid squares for spatial-functional analysis.

of the west room was exposed inside op. 10. A larger area of the east room was exposed through the excavation of room deposit locus 109 (fig. 8). A later LC1 pit locus 111 cut down into room deposit 109. Wall 108 continued into the east baulk that forms the boundary between ops 9 and 10. The northeast corner of this structure was exposed in op. 10, where the east wall 33 formed a corner with the north wall 34, giving us portions of three out of the four walls of the structure (see figs. 4 and 5).

The latest deposits excavated in op. 10 are a series of eight circular grain storage pits whose ceramics, such as button bases, date them to the later second millennium BC Middle Assyrian period. Heavy erosion had washed away the original ground surface from which these pits were dug, so that only the shallow pit bottoms were preserved.

MICROARCHAEOLOGY

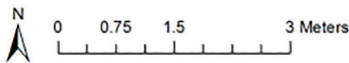
In 2018, Sam Harris (University of Chicago) continued work on collecting microarchaeological samples from rooms, courtyards, and open-air work surfaces in ops. 2, 9, and 10. Microarchaeology involves the collection and analysis of very small fragments (under 1 cm in size) of ceramics, bone, chipped stone, and shell that had been dropped and then incorporated into the floor surfaces. This micro-debris is valuable because it reflects the actual locations where ancient economic activities took place.

Whenever distinct indoor or outdoor surfaces were exposed by excavators, the surface was divided into a 50 cm grid, and samples of sediment were collected from the top 2–3 cm of the floor matrix in each grid square (fig. 9). The analyzed samples of the different types of materials can then be used to map the distribution of the materials across the floors and surfaces to reconstruct the patterning of ancient economic activities at Surezha.





Figure 10. Comparison of microdebris patterning in the work surface to the north of wall 153 (at the top of the photo) versus the patterning inside the small room, possibly a kitchen, to the southeast of the courtyard (at the bottom right of the photo).



tion System) software to help identify the patterning of different activities such as flint tool manufacture, food preparation, and craft production.

Although analyses are ongoing, Sam has been able to draw some promising preliminary conclusions. First, and most importantly, there is clear patterning in the overall distribution of microartifacts across area B, with microartifacts tending to collect along walls and in corners or niches (presumably as a result of sweeping). Additionally, there is a clear difference in the cleanliness of indoor room floors (fig. 10 at top) and outdoor/courtyard surfaces (fig. 10, bottom right). As one might expect, both the indoor and outdoor spaces in the houses and courtyards of op. 2 were used for multiple functions rather than for just one specialized activity.

ZOOARCHAEOLOGY

Analysis of the Surezha animal bone remains is being conducted by Max Price (Massachusetts Institute of Technology). To date, 733 bone fragments from the Ubaid, LC1, LC2, and LC3 periods have been identified to the genus or species level (table 1).

In 2018, eighty-four microarchaeological samples were collected and processed from fourteen distinct LC1 contexts in ops. 2, 9, and 10 (with the vast majority coming from op. 2), including rooms, courtyards, outdoor surfaces, and a mudbrick platform. The floor matrix samples were processed in a flotation machine to separate the “light fractions” (charcoal and burnt seeds) from the “heavy fraction” used for microarchaeological analyses. The light fractions were sent to project archaeobotanist Lucas Proctor at the University of Connecticut for analysis, while the heavy fractions were analyzed by Sam Harris at the University of Chicago.

In the lab, the heavy fraction samples were sorted to identify and count the ceramics, bones, chipped stone, shell, and other microartifacts. The counts were plotted spatially using GIS (Geographic Information

Table 1. Surezha Chalcolithic fauna identified to the genus/species level.

Identified Taxa	Ubaid	Ubaid %	LC 1	LC 1 %	LC 2	LC 3	LC 3%
Ovis/Capra	55	43%	221	51%	17	83	48%
Ovis	(3)	—	(28)	—	(2)	(9 ^A)	—
Capra	(1)	—	(29)	—	(8 ^B)	(2)	—
Sus	51	39%	128	30%	0	67	39%
Bos	19	15%	45	10%	0	22	13%
Gazella	1	1%	3	1%	3	1	<1%
Capreolus	0	—	1	<1%	—	—	—
Cervid	0	—	0	—	0	0	—
Canis	3	2%	32	7%	0	1	<1%
Total	129	100%	430	100%	20	174	100%

Although the sample sizes remain small (especially for the LC2 period), we can see several significant changes in the animal economy of the site from the earlier Ubaid into the LC1 period. Most notably, sheep and goats increase as a percentage of the overall assemblage from 43 percent in the Ubaid period up to 51 percent in the LC1. At the same time, pigs decline from 39 percent to 30 percent, while cattle decrease in abundance from 15 percent to 10 percent. The reason for these changes remains unclear.

It is tempting to conclude that the increase in sheep and goats represents a shift toward economic intensification in the form of a developing focus on wool production. This is a reasonable hypothesis; however, it would have to be verified by examining a) the ratio of sheep:goats; b) the ratio of male:female sheep; and the ages at which the animals were culled, to see if the data matched the age and sex profiles characteristic of managing sheep to maximize wool production. Hopefully, as we continue excavating and increase the faunal sample sizes from LC1 and Ubaid contexts, we will be able to determine whether or not this important shift to wool production took place in the LC1 period at Surezha.

ARCHAEOBOTANY

LUCAS PROCTOR

Analyses of the archaeobotanical remains from Surezha are being conducted by Lucas Proctor (University of Connecticut). Archaeobotanical remains were processed with water-based flotation, and the light fractions examined for charred remains of wood charcoal, seeds, and other plant fragments (fig. 11). Based on the identification of botanical remains from seventy-five samples, the evidence suggests that the

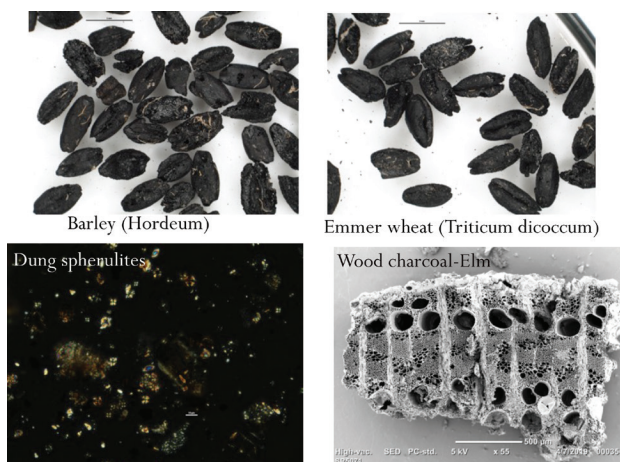


Figure 11. Archaeobotanical remains from Surezha: barley grains, emmer wheat grains, dung spherulites, and wood charcoal.

inhabitants of Surezha practiced rain-fed agriculture focusing primarily on drought tolerant crops such as barley and emmer wheat.

The Ubaid and LC1 archaeobotanical data also provide useful insights into changing patterns of fuel use as a key aspect of the Chalcolithic economic system at Surezha. Archaeobotanists can detect the use of wood fuel through finds of charcoal, and dung fuel through the presence and ubiquity of dung spherulites—small spherical pieces of slightly calcified sheep, goat, or cattle dung. Generally speaking, ancient Near Eastern sites show a gradual transition from a heavy reliance on wood charcoal as fuel to an increasing dependence on animal dung fuel. This transition appears to stem, in many cases, from the increasing scarcity of wood due to deforestation. However, at Surezha, wood fuel was rare in both the Ubaid and the LC1, while dung fuel was much more common in both periods, and actually increased in the LC1. This early, heavy reliance on dung fuel is most likely due to the environment of the Erbil plain as a grassy steppe where trees may have only grown along water courses. The increase in dung fuel use in the LC1 might indicate progressive depletion of these riparian wood resources or environmental stresses such as desiccation or periodic droughts. To better understand these processes, we need to collect better paleoenvironmental data for the Erbil plain through pollen coring, hydrological, and geomorphological studies.

CERAMICS

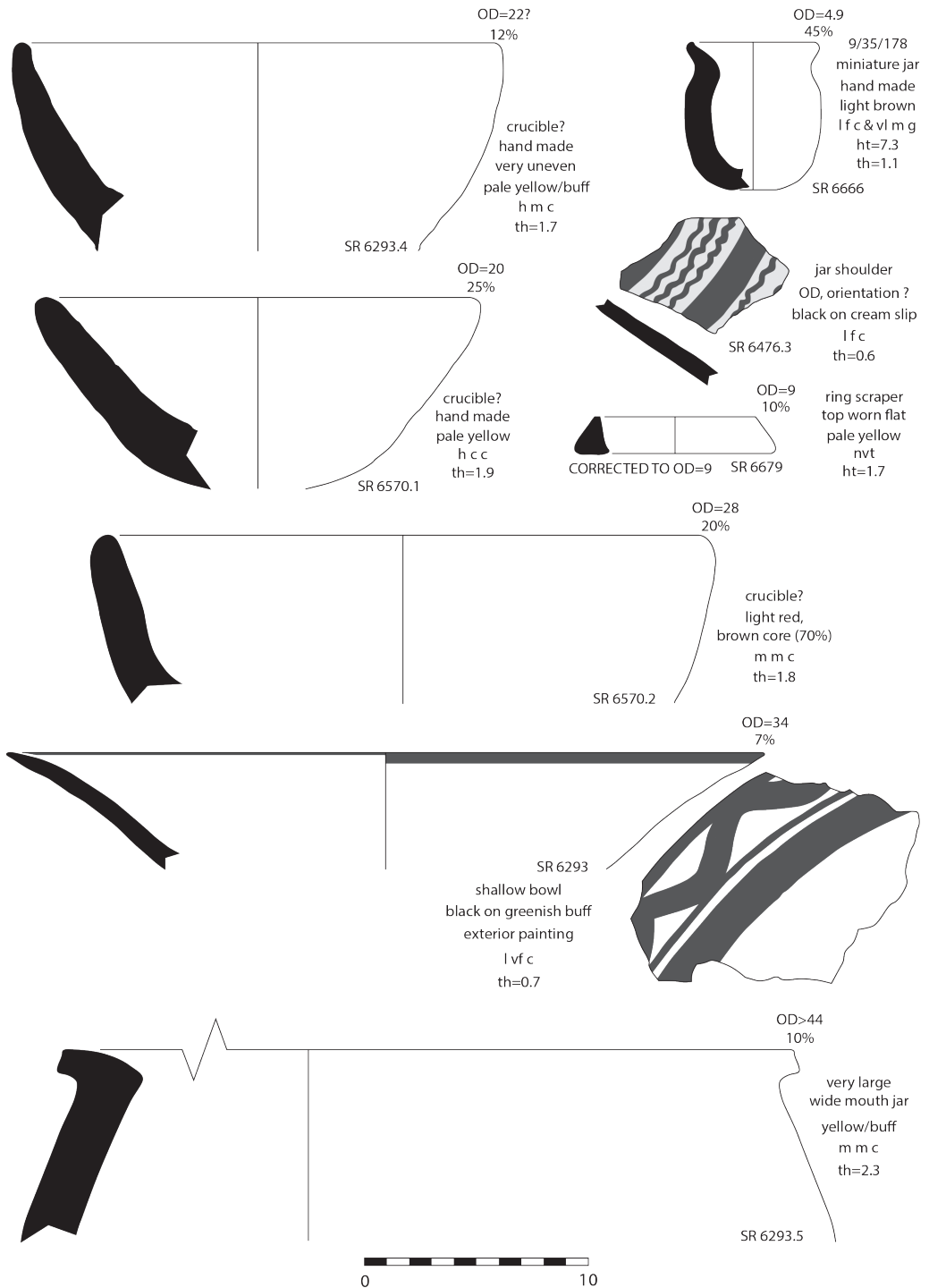
The 2018 analyses of the Surezha ceramics were conducted by John Alden (University of Michigan), Gil Stein (University of Chicago), and Taos Babour (Sorbonne University).

289 pottery lots were processed, totaling 9,087 sherds, of which 2,849 were diagnostic forms such as rims, bases, or sherds with surface treatment such as painting, incision, or impressed decoration.

We were surprised to find that painting as a form of decoration persisted throughout the LC1 period, continuing a tradition of surface treatment and motifs that continued and evolved from its origins in the earlier Ubaid period. Painting was common even in the latest LC1 phases (fig. 12). This is noteworthy because in other regions of northern Mesopotamia (e.g., the Euphrates and Balikh valleys and the Khabur headwaters region around Tell Brak), painted decoration disappeared rapidly in the early stages of the LC1 period. The continuing presence of painting in the LC1 at Surezha suggests that the Erbil plain maintained its own highly localized traditions of ceramic production that differed in significant ways from neighboring, contemporaneous regions. The Erbil plain also differed from neighboring regions through the absence of “sprig ware,” internally crosshatch incised bowls, flint scraping as a manufacturing technique, Coba bowls, and “wide mouthed flower pot” bowls, even though these forms are common diagnostics of the LC1 period elsewhere in northern Mesopotamia.

An additional locally distinctive characteristic of the LC1 ceramics at Surezha was the presence of small amounts of Dalma ware as a foreign ceramic style characteristic of the Zagros mountains in northwestern Iran just south of Lake Urmia and adjacent to the present-day border between Iran and Iraqi Kurdistan. We first discovered the presence of Dalma impressed ware in the 2017 season. In 2018 we identified Dalma painted ware as a second ceramic style originating in the same region (fig. 13). Both forms of Dalma ware appear only in the uppermost LC1 deposits at Surezha, and apparently date between 5000 and 4500 BC.





ABOVE: Figure 12. Ceramics from the later LC1 phases at Surezha, showing the continued presence of painted decoration on serving bowls and jars.

LEFT: Figure 13. Dalma impressed wares (TOP) and painted wares (BOTTOM) found at Surezha. This style of pottery is characteristic of northwestern Iran, adjacent to the modern border between Iran and Iraqi Kurdistan. The appearance of Dalma wares at Surezha indicates that cultural and economic connections between the two regions had begun as early as the end of the LC1 period, circa 5000-4500 BC.

CONCLUSIONS

In the 2018 field season at Surezha our focus on operations 2, 9, and 10 in area B at the south end of the high mound allowed us to expose a contiguous area of 300 m² of the LC1 settlement. We found clear evidence for functional differences between the domestic area in op. 2 and the non-domestic large mudbrick enclosure that extended across ops. 9 and 10.

Economic evidence showed gradual changes in the agricultural and herding economies in the shift from the Ubaid to the LC1 period. We recovered additional evidence for the development of cultural contacts across the mountain passes into northwestern Iran. Finally, the available evidence indicates a short episode of localized abandonment of this part of the site, with gully-cutting and erosion at the very end of the LC1 period.
