

TELL ZEIDAN

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In summer 2008, the Oriental Institute conducted the first field season of excavations in the Joint Syrian-American Archaeological Research Project at Tell Zeidan in the Euphrates River valley, 5 km east of the modern Syrian city of Raqqa. Our project seeks to study the Ubaid period of north Syria and its relationship with both the earlier Halaf and later Late Chalcolithic 1–2 periods from the sixth through the fourth millennia B.C. The Late Chalcolithic 1–2 periods in the later part of this sequence are also known from the Oriental Institute’s excavations at Tell Hamoukar in north-east Syria, under the direction of Clemens Reichel. By documenting the whole sequence from Halaf through Ubaid through Late Chalcolithic 1–2 at Tell Zeidan, and comparing it with parallel developments at Hamoukar and other sites such as Tell Brak, we hope to understand the earliest development of towns and cities in north Syria.

The Ubaid culture is particularly important as a focus of research for the Tell Zeidan project. The Ubaid is the earliest known complex society in southern Mesopotamia, and leads directly to the emergence of the first urbanized states in the subsequent Uruk period. Ubaid southern Mesopotamia is best known from excavations at the sites of Eridu and Oueili. The Ubaid period

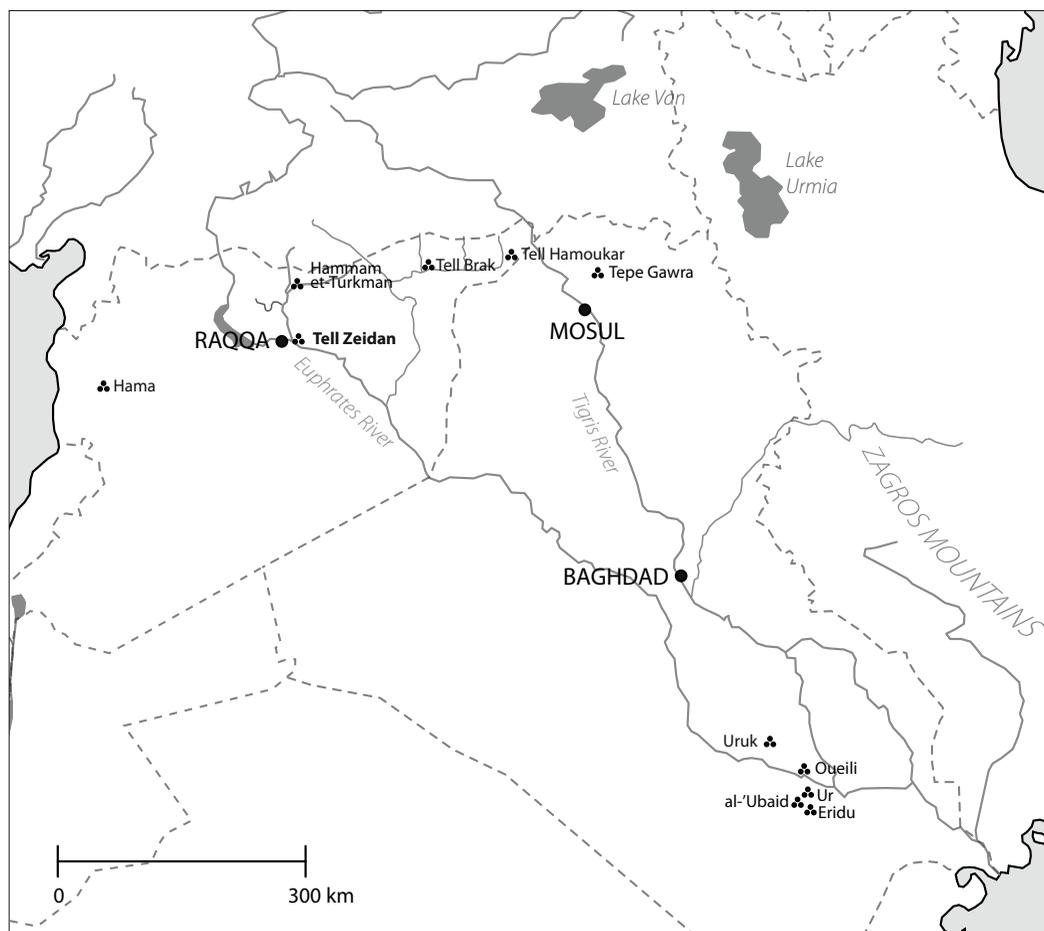


Figure 1. Map of Ubaid-period Near East showing the location of Tell Zeidan

provides the first evidence for political leadership, irrigation economies, regional centers dominating clusters of satellite villages, the development of temples in these centers, and the first community cemeteries as evidence for the emergence of a new form of social identity. Distinctive Ubaid material culture includes: brown painted ceramics made on a slow wheel, baked clay “mullers,” ceramic sickles, “Ophidian” figurines, tripartite houses, and niched-and-buttressed temples. These styles originated in southern Mesopotamia during the Ubaid 0, 1, and 2 phases; in the subsequent Ubaid 3–4 phases — roughly the later sixth millennium B.C. — Ubaid styles of material culture spread into Upper Mesopotamia (northern Iraq, north Syria, and southeast Turkey) and eastern Arabia, forming an Ubaid horizon that extended over 2,000 km from the Mediterranean to the base of the Persian Gulf (fig. 1).

The Ubaid period in north Syria is known from excavations at only a handful of sites. At larger sites such as Hama, Hammam et-Turkman, and Tell Brak the enormous volume of later deposits has buried the earlier Ubaid levels so deeply that we can only expose tiny glimpses of them in narrow, deep soundings. Our only broad exposures of Ubaid settlements have been at smaller village-sized sites which lack the thick overlying layers of later occupations. Up until now, researchers have had very few opportunities to investigate the larger Ubaid towns or regional centers where we would expect to find the best evidence for leaders, temples, socioeconomic differences, and trade; all these are crucial lines of evidence for any understanding of how the Ubaid culture was developing the foundations of what would become Mesopotamian urban civilization.

The site of Tell Zeidan in north central Syria provides an almost unique opportunity to investigate a large Ubaid town and what it can tell us about the broader Ubaid society. Zeidan is a triple-mounded settlement on the east bank of the Balikh River, just north of its confluence with the Euphrates. The three mounds and lower town connecting them extend over an area of about 600 × 200 meters (12.5 hectares). The southernmost mound is the tallest, with a height of 15 meters (fig. 2). The three mounds enclose a lower town in the central portion of Tell Zeidan.



Figure 2. Tell Zeidan, view of the south mound

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Zeidan is located at the edge of the Balikh River floodplain. Agriculture in this semi-arid area is quite rich when the land is irrigated. The confluence of the Balikh and the Euphrates rivers has historically been a very important location because it lies at the juncture of two key trade routes — the Balikh River valley leads north to Harran, Urfa, and the resource-rich highland of eastern Anatolia; while the Euphrates is the primary route connecting Mesopotamia in the southeast with northwest Syria and the Mediterranean. As a result, this area has always been the setting for major settlements, including Tell Zeidan in the sixth to fifth millennia B.C. Zeidan's strategic location would have allowed the town to prosper through irrigation agriculture, herding, and trade.

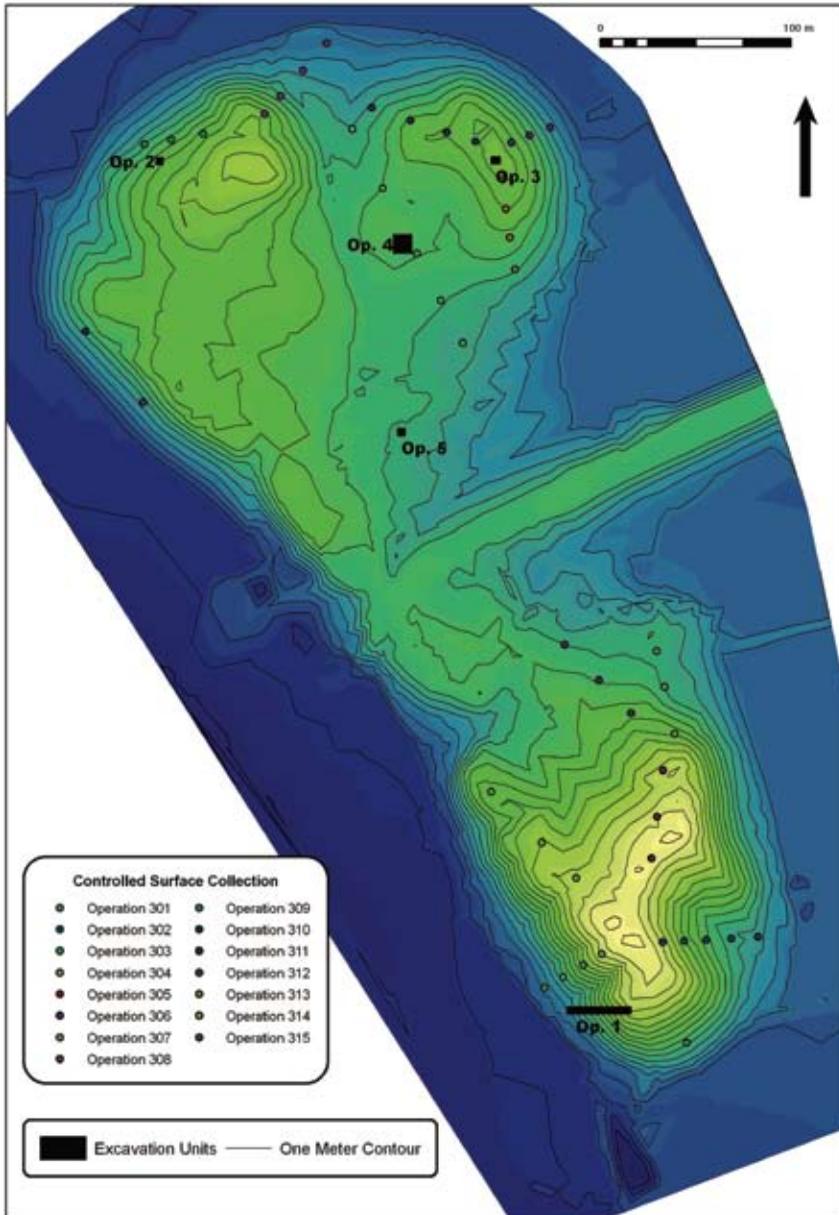


Figure 3. Topographic map of Tell Zeidan showing the 2008 excavation areas (Operations) and the locations of 100 sq. m collection units for surface ceramics

Tell Zeidan was visited and described in the late 1930s by the British archaeologist Max Mallowan and was investigated more systematically in 1983 by the Dutch Balikh Valley Regional Archaeological Survey conducted by Maurits van Loon. The 1983 Dutch survey recorded Zeidan as a large prehistoric settlement of 10–12 hectares dating to the Halaf and Ubaid periods.

In 2008, the Syrian General Directorate of Antiquities and Museums granted the permit for archaeological excavations at Tell Zeidan by a joint Syrian-American project co-directed by Annas al-Khabour from the Raqqa Museum and Gil Stein from the Oriental Institute. The first excavation season took place in July–August 2008 with two main goals: (a) documenting the stratigraphic sequence of the site, and (b) establishing the extent and degree of preservation of the Ubaid occupation at Zeidan.

2008 Mapping, Surface Survey, and Excavations

As the first step in our fieldwork, we made a detailed topographic map of Tell Zeidan and conducted systematic collections of the ceramics lying on the surface of the three mounds and the lower town (fig. 3). We laid out forty-five sampling units, each measuring 100 sq. m, across the mound, and collected every potsherd we found inside its boundaries. We then analyzed the ceramics to see the period to which they belonged. Our preliminary dating and counting of the distinctive ceramics of the Ubaid period from these controlled surface collections confirmed that the full 12.5 hectare extent of the site was occupied during the Ubaid 3–4 period. This is important because it shows that Tell Zeidan was a major regional center at this time — as large as the Ubaid temple-towns such as Eridu in southern Mesopotamia.

Once the mapping and surface collections were complete, we opened five excavation areas (Operations 1–5) in order to investigate the stratigraphic sequences of the three mounds and lower town at the site (fig. 4).



Figure 4. Tell Zeidan, view of the northwest mound (left), Operation 4 (center), and Operation 3 on top of the northeast mound (at right)



Figure 5. Operation 1 step trench, view from the west

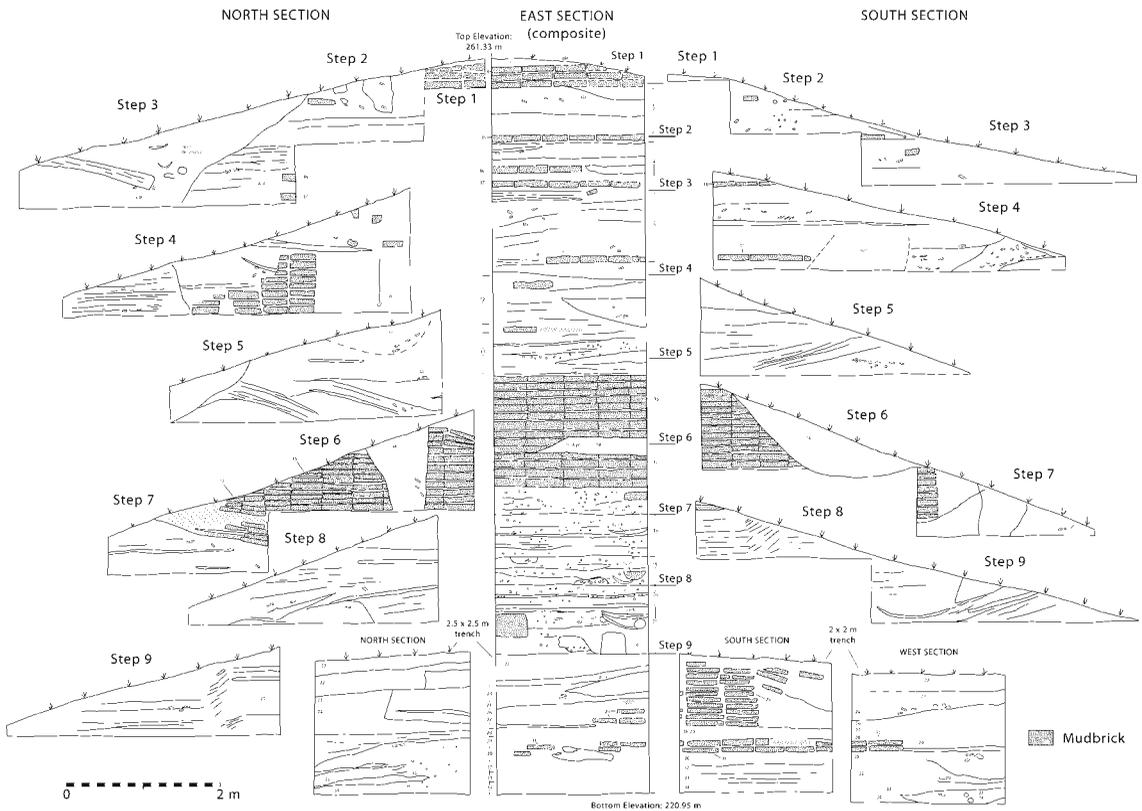


Figure 6. Operation 1 stratigraphic section. Note the large mudbrick wall dating to the Ubaid period at the center of the stratigraphic column

The Excavations

Oriental Institute Research Associate Abbas Alizadeh excavated Operation 1, a 2×22 m step trench located in the southwest corner of the southern mound — the largest of the three mounds that make up Tell Zeidan. Excavation of Operation 1 was designed to document the prehistoric occupational sequence of the site, especially the Ubaid occupation and the periods immediately above and below it. The eight excavated steps of the trench extended down 12 m, and by the end of the season had reached the top of Halaf deposits about 2 m above the Balikh River floodplain (fig. 5).

We determined that the site was occupied more or less continuously from about 5800 B.C. until 3800 B.C. This two-millennium-long occupation spans four key periods: the late Chalcolithic 1–2 on top, the Ubaid period in the middle, and the Halaf period at the bottom. Because Zeidan seems to have been occupied without interruption for two millennia, we have a very rare opportunity to study the development of civilizations in north Syria during the crucial time periods leading up to the emergence of the first cities and states.

In particular, the step trench shows that Tell Zeidan has great potential to enrich our understanding of the Ubaid period. Approximately 6 m of well-preserved Ubaid deposits are present in Operation 1 (fig. 6). Fifteen of these layers are the remains of house floors with hearths, fragments of small mudbrick house walls, and the ash and trash deposits that are so valuable to archaeologists for the artifactual record they give us about ancient daily life. These deposits were rich with the distinctive painted pottery of the Ubaid period (figs. 7 and 8).



Figure 7. Ubaid-period brown painted ceramics from Operation 1

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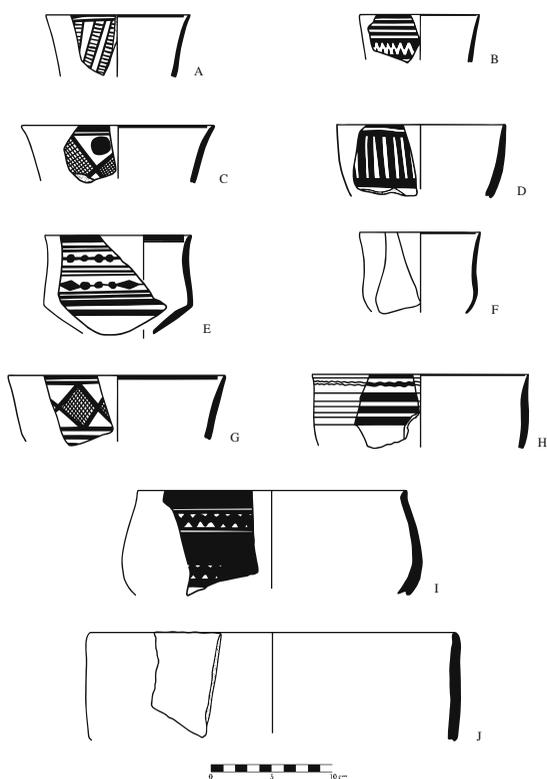


Figure 8. Selected Ubaid bowl types from Tell Zeidan

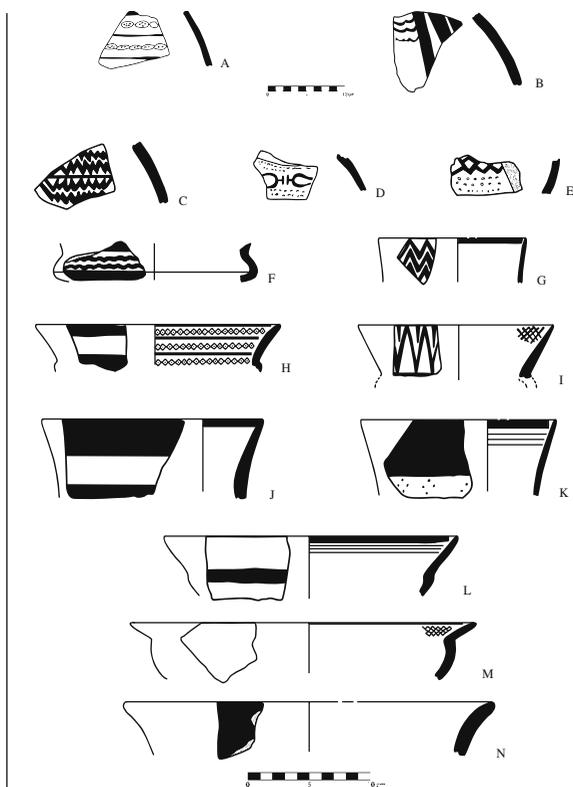


Figure 9. Late Halaf ceramics from Operations 1 and 4

However, capping off these house remains was evidence for something quite different — monumental public architecture dating to the later phases of the Ubaid occupation at Zeidan. In steps 6 and 7 of the step trench, we found part of a large mudbrick wall oriented roughly north–south. The wall was about 3.5 m wide and was preserved to a height of 1.5 m. The preserved portion consisted of sixteen courses of dark brown mudbricks. Unfortunately, we could not determine the full extent of the wall because it was eroded away to the north and south, in the areas outside the step trench. By scraping and cleaning outside the step trench we were able to determine that the wall did extend at least 5 m before disappearing at the eroded edge of the mound slope. Was this part of a fortification wall encompassing Tell Zeidan, or was it a massive public building of some sort? At this point we cannot say without further excavation. Fortunately, we can date the wall with certainty to the Ubaid period, both by the ceramics we found in association with it and because we were able to collect two radiocarbon (carbon 14) samples that gave calibrated Accelerator Mass Spectrometry (AMS) dates of 4940 ± 40 B.C. and 5055 ± 40 B.C.

Beneath the Ubaid deposits in Operation 1 we found a series of floors, walls, and trash deposits that date to the important transitional phase between the Ubaid and the earlier Halaf period. This transitional phase is extremely important because it has the potential to help us understand what happened when the Ubaid culture spread out from its original homeland in southern Mesopotamia and replaced the pre-existing local Halaf culture in north Syria. We can see hints that this was a peaceful transition by the fact that there is no destruction layer between the two phases, and by the fact that there seems to be a gradual replacement of Halaf ceramic styles by Ubaid style. Most interesting of all, even after the Ubaid pottery styles have completely replaced the Halaf, the deco-

rations on the Ubaid-style vessels still preserve distinctive painted motifs from the earlier Halaf. We were able to radiocarbon date our uppermost Halaf levels to about 5500/5400 B.C.

As excavations proceeded deeper beneath the transitional phase toward the underlying ashy deposits of pure Halaf material (fig. 9), we began to get closer to the water table at the level of the Balikh River at the base of the mound. The sediments were extremely wet and took a day or so to dry out, thereby making it increasingly difficult to excavate. By the end of the season, Operation 1 had reached an elevation about 2 m above the river. We had to stop at that point. In our next field season we hope to finish excavating Operation 1 down to sterile/natural soil or bedrock.

In addition to the Operation 1 step trench on the south mound, we excavated four additional trenches across the other mounds and the lower town of Tell Zeidan. Operations 2, 3, 4, and 5 were important because they allowed us to see more of the actual workings of the ancient community, while confirming that the Ubaid settlement at Zeidan extended over the entire 12.5 hectare mound.

Operation 3 on the northwest mound was a 3 × 4 m trench that recovered a sequence of well-preserved houses (e.g., fig. 10), each built on top of the ruins of the earlier homes, while Operation 2 (a 3 × 3 m trench) exposed the outdoor surfaces where people cooked and worked. Together these gave us a 500-year-long record of what everyday life was like for the common people at Tell Zeidan during the Late Chalcolithic 1 and 2 periods, roughly from 4500 to 4000 B.C. The Late Chalcolithic 1 period at Zeidan shows interesting continuities with the immediately preceding Ubaid period. One surprising link between the two periods is that the people of the Late Chalcolithic 1 period continued the earlier Ubaid practice of making and using baked clay “mullers,” the distinctive nail-shaped object with a rounded head — perhaps a pestle of some kind (fig. 11).

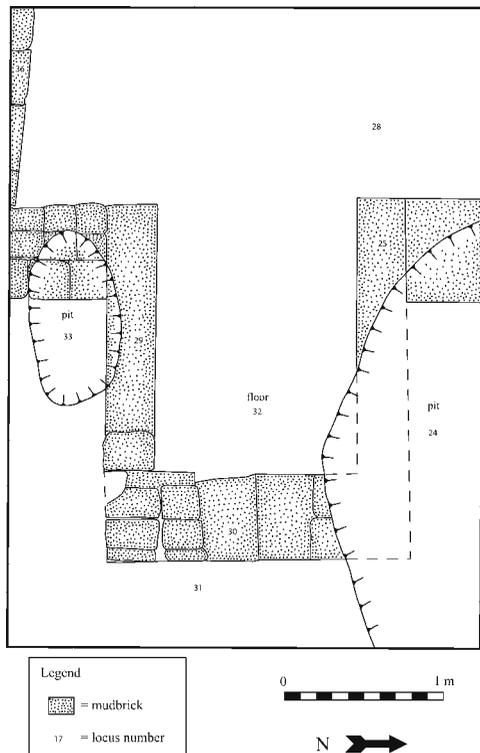


Figure 10. Mudbrick domestic architecture from Operation 3 dating to the Late Chalcolithic 2 period



Figure 11. Fragments of baked clay “mullers” dating to the Late Chalcolithic 1 period. The Late Chalcolithic 1 mullers presumably represent a continuation of the Ubaid practices, since this type of artifact is typical of the Ubaid period

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The potsherds, tools, animal bones, and other artifacts from these houses give us a fascinating picture of a large community whose wealth derived from the abundance of irrigation agriculture and the benefits of craft production and trade. We found flint sickle blades everywhere, easily recognizable from the glossy sheen where they had been polished by the silica in the stems of the wheat they were used to harvest. The sickle blades were hafted in bitumen, a natural petroleum-based tar like that found in the La Brea Tar Pits in Los Angeles. The people of Zeidan obtained the bitumen for their sickles from a source over 70 km to the south, either by trade or by long expeditions to collect the bitumen for themselves. The trade connections of Tell Zeidan ranged farther afield as well. About 5 percent of the chipped stone at Zeidan is obsidian, the natural volcanic glass that was highly prized and widely traded in the ancient world (fig. 12). The obsidian at Tell Zeidan has the characteristic greenish black color and chemical composition that mark it as having been mined at either the Bingöl or Nemrut Dag sources along the shores of Lake Van in eastern Turkey and traded over a distance of more than 400 km to Zeidan.

Some of our most interesting evidence for craft production comes in the form of a ceramic *tuyere* or blowpipe used to smelt copper (fig. 13). The Chalcolithic was the period when people in the Near East took the first major steps in using pyrotechnology to smelt copper from its parent ores and cast the refined copper into molds to make tools and ornaments. The discovery of a *tuyere* at Zeidan also indicates that the people of this town were trading over distances of 300–400 km to obtain copper (most probably from the Ergani Maden area near Diyarbakir in eastern Turkey) and then were manufacturing their own metal tools using the most advanced technology of the fifth millennium B.C.

Finally, we have recovered evidence for administrative activity by people with a high social rank — perhaps the emerging class of elites who ruled over Tell Zeidan and its surrounding region in the Late Chalcolithic 2 period, about 4100 B.C. Our most remarkable find of the 2008 field season was a stone stamp seal (ZD585) depicting a deer (fig. 14). The seal is unusually large, 5.4 × 5.8 cm, and it is carved from a red stone not native to the Raqqa region. The carving on seal ZD585 has a very close parallel in the iconography of a published seal impression found 300 km to the east at the site of Tepe Gawra near Mosul in northern Iraq. The existence of very elaborate



Figure 12. Obsidian blades and waste flakes (debitage). Obsidian was imported to the site over a distance of 400 km from volcanic source areas in eastern Turkey

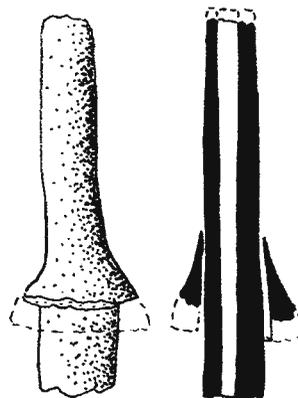


Figure 13. Late Chalcolithic 2 tuyere or blowpipe mouthpiece used in the smelting of copper. The tuyere mouthpiece would have been inserted in a long reed with a pieced clay bulb at the far end so the reed would not burn up in the heat of the smelting furnace

seals with near-identical motifs at two widely separated sites suggests that in this period, high-ranking elites were assuming leadership positions at places like Zeidan and Gawra, and that those widely dispersed elites shared a common set of symbols and perhaps even a common ideology of superior social status.

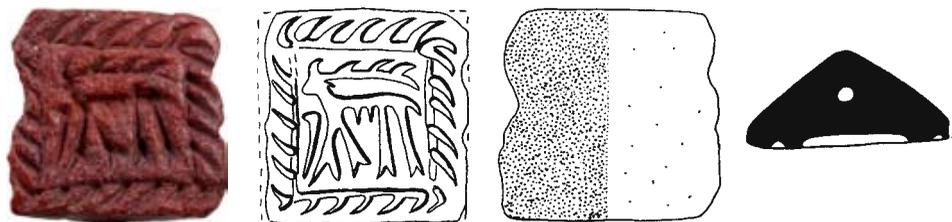


Figure 14. Late Chalcolithic 2 gabled stamp seal with cervid motif from Operation 2 (northwest mound). Scale 1:2

Chronology

Some of the most important results we were able to obtain from the 2008 field season lie in the realm of chronology. We processed twelve radiocarbon samples through Beta Analytic Laboratory and on that basis were able to assign chronological ranges for the key occupational periods at Tell Zeidan (table 1).

Table 1. Calibrated AMS radiocarbon dates from Tell Zeidan

Beta number	Zeidan number	Op.	Locus	Conventional radiocarbon age B.P.	2 sigma B.C. calibrated maximum	2 sigma B.C. calibrated minimum	2 sigma B.C. calibrated mean	Notes on cultural period and context
248972	381	2	8	5,280 ± 40	4240	3980	4110	Late Chalcolithic 2
248973	533	3	24	5,380 ± 40	4330	4060	4195	Late Chalcolithic 2
248976	745	2	32	5,430 ± 40	4350	4230	4290	Late Chalcolithic 1
248971	278	3	39	5,710 ± 40	4680	4460	4570	Late Chalcolithic 1
248981	1273	3	63	5,910 ± 40	4880	4700	4790	Ubaid–Late Chalcolithic 1 transitional
248974	615	1	21	5,990 ± 40	4990	4790	4890	—
248969	147	1	15	6,040 ± 40	5040	4840	4940	Brick wall at top of Ubaid strata
248970	220	1	16	6,090 ± 40	5200	4910	5055	Ubaid deposit beneath wall 16

Table 1. Calibrated AMS radiocarbon dates from Tell Zeidan (cont.)

<i>Beta number</i>	<i>Zeidan number</i>	<i>Op.</i>	<i>Locus</i>	<i>Conventional radiocarbon age B.P.</i>	<i>2 sigma B.C. calibrated maximum</i>	<i>2 sigma B.C. calibrated minimum</i>	<i>2 sigma B.C. calibrated mean</i>	<i>Notes on cultural period and context</i>
248977	813	1	27	6,180 ± 40	5220	5010	5115	Earliest Ubaid
248979	838	1	33	6,510 ± 40	5530	5380	5455	Halaf–Ubaid transition
248978	831	1	33	6,540 ± 40	5550	5470	5510	Halaf–Ubaid transition
248980	1086	4	30	6,900 ± 50	5890	5710	5800	Halaf

The radiocarbon dates from Zeidan fit well with what we know from radiocarbon dates obtained from Halaf, Ubaid, and Late Chalcolithic 1–2 sites in north Syria. These calibrated radiocarbon dates show that the spread of the Ubaid out of Mesopotamia into north Syria took place sometime around 5300–5400 B.C. — almost 900 years earlier than the date of 4500 B.C. that has been widely accepted for many years.

Conclusions and Plans for Future Work

The first field season at Tell Zeidan in 2008 confirmed the great potential of this site for research focused on Ubaid society and economy. The site was apparently a large town or regional center located on a fertile floodplain at the juncture of two major riverine trade routes. We found a complete stratigraphic sequence spanning the Halaf, Ubaid, Late Chalcolithic 1, and Late Chalcolithic 2 periods, radiocarbon dated from about 6000 B.C. to 3800 B.C. when the site was abandoned. Our preliminary work confirmed that the entire 12.5 hectare area of Tell Zeidan was occupied in the later Ubaid periods 3–4. The step trench shows that over 6 m of intact, well-stratified Ubaid deposits are present on the south mound. The other four soundings and the controlled surface collections confirm that the Ubaid occupation extended over the entire 12.5 hectare area of the site. Traces of large-scale mudbrick architecture with walls 3.5 m wide were found in the later Ubaid strata in the step trench. Obsidian, basalt, and bitumen artifacts provide good evidence for local and long-distance trade networks during this period. The Ubaid occupation shows great cultural continuity and a smooth transition into the immediately succeeding Late Chalcolithic 1 and 2 phases. Late Chalcolithic 2 deposits at Zeidan produced evidence for long-distance trade in copper and on-site smelting, while a large, elaborately carved stone stamp seal with good parallels at Gawra in northern Iraq is evidence for the presence of emergent elites with strong ideological ties across a broad area of northern Mesopotamia.

The continuous stratigraphic sequence at Tell Zeidan allows us to study both the earliest spread of the Ubaid into this area, and the ways that the Ubaid culture evolved over the course of the fifth millennium B.C. into the earliest urbanized societies of northern Mesopotamia during the Late Chalcolithic 2 period. We hope to conduct a long-term program of excavations and regional survey at Tell Zeidan in order to develop a balanced picture of the different neighborhoods and areas of public buildings in this ancient town on the threshold of urban civilization.

Acknowledgments

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