

EARLY LIVES

The Late Chalcolithic and Early Bronze Age at Çadır Höyük

Sharon R. Steadman
Laurel D. Hackley
Stephanie Selover
Burcu Yıldırım
Madelynn von Baeyer
Benjamin S. Arbuckle
Ryan Robinson
Alexia Smith

ABSTRACT

Çadır Höyük, located in the Yozgat Province of the north-central Anatolian plateau, was continuously occupied from the late sixth millennium BCE until at least the thirteenth century CE. This article focuses on the fourth millennium BCE during which the Uruk System in southern Mesopotamia emerged, flourished and then retracted, and the Kura-Araxes culture from Transcaucasia ventured into Anatolia and the Levant. A close investigation of the Çadır settlement reveals a population that embraced the opportunities afforded it through the expanded trade and intercultural connections available during the millennium; the community transitioned into new socioeconomic patterns accompanied by changes in socioreligious and possibly sociopolitical behaviors. The disappearance of such opportunities at the end of the fourth millennium, rather than decimating a village that had come to rely on them, revealed the resilience of the community as it once again reoriented its focus to more local endeavors.

KEYWORDS: Late Chalcolithic, transition, endurance, Uruk System, Kura-Araxes

Introduction to Çadır Höyük and Theme Issue

Çadır Höyük (Fig. 1a–b) is located in the north-central Anatolian plateau, 16 km from the town of Sorgun, in the Yozgat Province. It is a rural settlement, though it rested within several major imperial regions, as the articles in this issue will detail. Our earliest documented occupation dates back to ca. 5200 BCE (retrieved from a deep sounding), with final abandonment of the site occurring in the thirteenth or fourteenth century CE. Within that six-thousand-year time span the site was consistently occupied. While this treasure trove of occupation offers a tremendous opportunity to harvest data from every period stretching from the Middle Chalcolithic to the Middle Byzantine, this continuous occupation creates complicated stratigraphy. This first of seven articles reviews the earliest (thus far) exposed occupation at Çadır.

Endurance and Transition at Fourth-Millennium BCE Çadır Höyük

The Late Chalcolithic (ca. 4000–3000 BCE) and Early Bronze Age I (ca. 3000–2800 BCE) periods at Çadır Höyük (Fig. 2; Table 1), coincide with some major changes taking place in the larger region of Western Asia. During the fourth millennium Mesopotamia saw the expansion of the Uruk System, centered in southern Mesopotamia but encompassing many regions to the north, including southeastern



a

FIG. 1

(a) View of the Çadır mound. (b) Map of sites mentioned in all articles included in the issue. ([a] Photo courtesy of the Çadır Höyük Excavation. [b] Map by A. Lauricella. Photo and map courtesy of the Çadır Höyük Excavation.)

Anatolia. The socioeconomic vitality of the Uruk System, reaching a peak between 3600–3200 BCE, spurred further trade and interaction outside of its primary sphere, including stimulating exchange on the Anatolian plateau; among regions involved in these exchanges was the north-central plateau (Schoop 2015; Steadman et al. 2019). By the end of the fourth millennium the Uruk System had retracted; concurrent with this was a decrease in socioeconomic interaction on the Anatolian plateau. At some point during the late stages of the Uruk System, the Kura-Araxes culture, originating in the Transcaucasian region, began to venture into Anatolia and the northern Levant. The cultural impact of the arrival of this new entity is felt in the material culture and burials of settlements they encountered, including at Çadır Höyük, even as the connections to Uruk-based interactions began to fade.

One of the research goals over our decades of work at Çadır has been to measure how generations of residents in this rural community dealt with major changes in their world, whether ecological, economic, or social. This article examines a millennium of occupation at the settlement, beginning with our earliest horizontal exposure

(ca. 3800 BCE; the earlier occupation is documented only in our deep sounding) through the fourth millennium to the Early Bronze Age I period (ca. 2800 BCE). Evidence demonstrates how community residents managed the sometimes significant changes in circumstances occurring around them, allowing their settlement to remain stable and vibrant throughout.

The Earliest Occupation: The Agglutinated Phase (ca. 3800–3500 BCE)

The earliest occupation so far excavated at Çadır, termed the Agglutinated phase (c. 3800–3600 BCE) is found in trenches LSS 5 and SES 1–2; this phase consists of the remains of small, conjoined, semi-subterranean rooms clustered around small courtyards. Excavations at Çadır suggest that the residents in this earlier fourth-millennium settlement lived in residential “compounds” separated by a pathway or “street” running north/south between them (Fig. 3). The Eastern Compound has been more completely excavated; only the uppermost walls of structures in the Western Compound have been exposed.

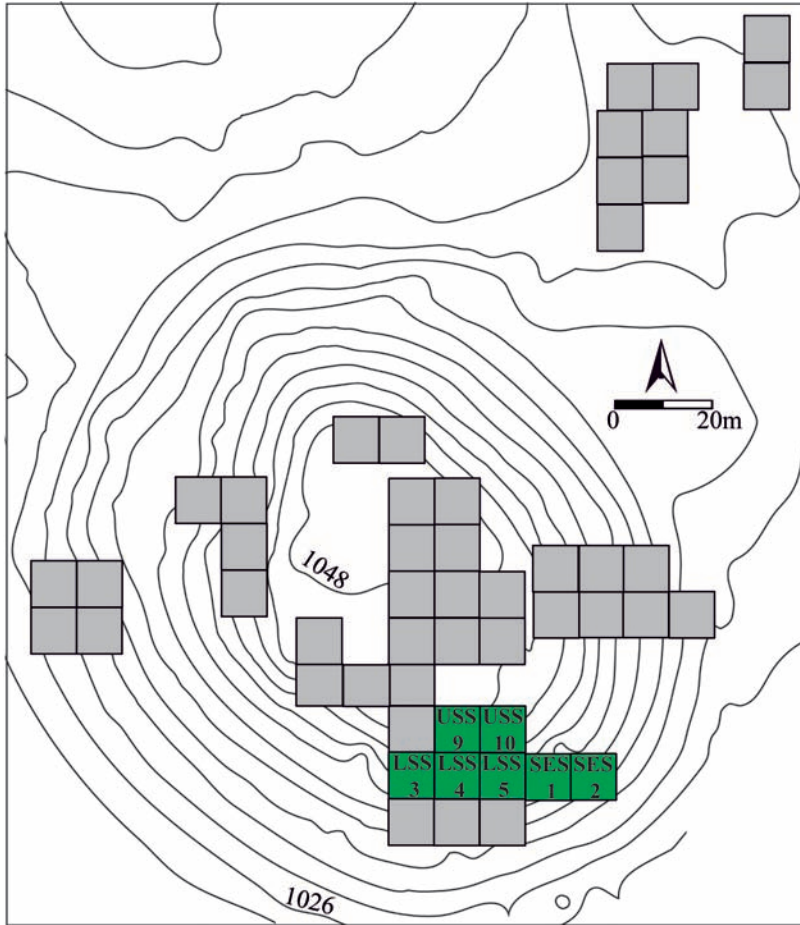


FIG. 2
Topographic map of Çadır Höyük highlighting the trenches discussed in this article.
(Courtesy of the Çadır Höyük Excavation.)

TABLE 1 ÇADIR EXCAVATION PHASES AND RELEVANT RADIOCARBON DATES THAT CORRESPOND TO URUK PERIODS MENTIONED IN THE TEXT

Çadır Höyük Phase	Relevant ¹⁴ C Dates	Corresponding Uruk Levels
Early Bronze I Phase ca. 3000–2800 BCE	(Beta 363833) 3030–2910 BC (Cal BP 4980–4860) USS 10 Oven	(Post-Uruk) Jemdet Nasr ca. 3000–2900 BCE
Transitional Phase ca. 3200/3100–3000 BCE	(Beta 363830) 3060–3030 BC (Cal BP 5010–4980) SES 1 Transitional Courtyard	Late Uruk ca. 3300–3000 BCE
Burnt House–Omphalos Building Phase ca. 3600–3300/3200 BCE	(Beta 159391) 3650–3340 BC (Cal BP 5600–5290) (Omphalos Bldg. Floor)	Middle Uruk ca. 3600–3300 BCE
Agglutinated Phase ca. 3800–3600 BCE	(Beta 134069) 3705–3620 BC (Cal BP 5655–5570) (LSS 5 Courtyard)	Early Uruk ca. 4200–3600 BCE

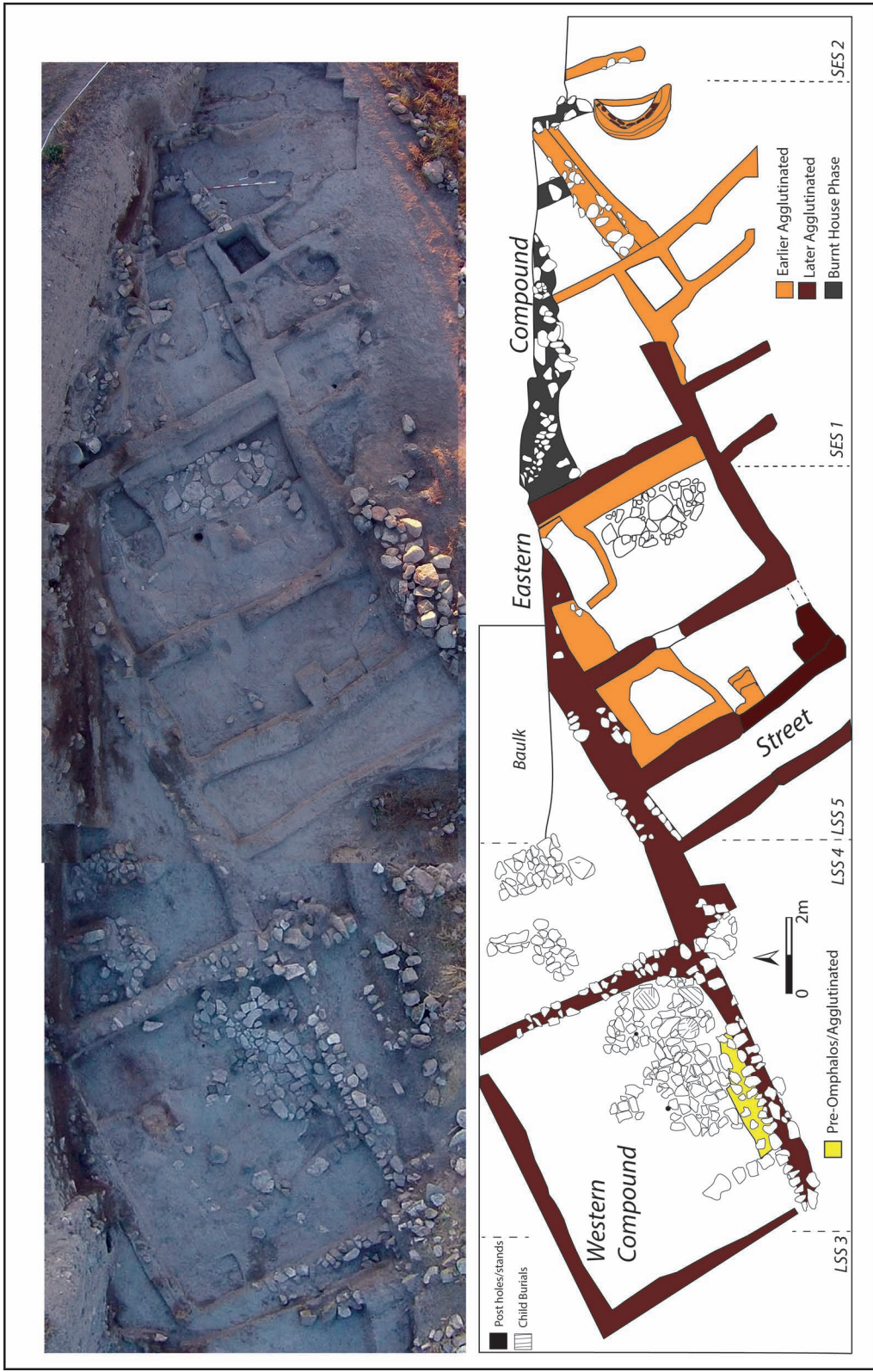


FIG. 3
 Top: Aerial view of Late Chalcolithic Lower Town at the end of the 2018 season; bottom: Plan of Lower Town, including Trenches LSS 3-5 and SES 1-2, showing the Agglutinated phase of occupation. (Photo and plan courtesy of the Çadır Höyük Excavation.)

The Eastern Compound walls are thick, suggesting the presence of a second story. The small rooms of the preserved first story seem mainly to have been used for grain storage, while the hearths, pottery, and lithic scatters suggest that the courtyards were used for food preparation and other production activities like knapping. The clustered architecture, with its small hearths and adjacent food storage, suggests a socioeconomic system based on small, self-sufficient kinship groups living closely together in a relatively egalitarian social system.

Material culture from this phase includes ceramics sufficient for household use. There is a higher frequency of large vessels including bowls and jars, suitable for cooking and storage, over smaller plates and bowls used for dining, perhaps reflecting a storage of surplus products for the compound. Decoration of the ceramics is a standard external burnishing of black, buff, brown, or occasionally red fabric, with sporadic internal burnish as well. There is minimal other decoration. Metal is largely absent from this earliest phase. A few spindle whorls suggest the household production of textiles.

While no extramural cemetery or adult burials have been located, several infant burials have been discovered in the Eastern Compound (Fig. 4). The burials occur in large storage jars inserted into the architecture, both at the time of building and as later modifications. The inclusion of infant burials in the walls at Çadır and at other contemporary sites seems to have a ritual significance (Yıldırım, Hackley, and Steadman 2018). Incorporated into the fabric of the settlement, these young family members could have served as foundation deposits, as protectors of the house, as offerings to household spirits or gods, or as signs of a kin group's physical and ritual investment in their homes.

Further evidence of ritual or religious activity may be found in the presence of a semicircular mudbrick installation to the east of the Agglutinated house. This solid, semicircular feature (Fig. 5), is incompletely preserved; it consists of hard-packed mud encased in a sloping mudbrick facing at least five brick courses high; a posthole at the apex is set into the mud-pack. It was surrounded by single-use hearths and several deposits that included ritual-use ceramics, beads, amulets, and chunks of ochre



FIG. 4 Photo of infant jar burial (excavated in 2012 as F99) tucked into the architecture associated with the Burnt House phase of occupation. (Courtesy of the Çadır Höyük Excavation.)

and obsidian. During the Agglutinated phase, it probably stood in an open area that was accessible to the community. Its distinctiveness from the rest of the Agglutinated architecture strongly suggests a non-domestic, likely ritual, use.

The community was surrounded, at least partially, by a mudbrick perimeter wall that was much more suited to preventing erosional collapse at the edge of the settlement (down the steep mound) than for defense. The architecture of this phase remains relatively constant through several remodelings, suggesting that this way of life was the norm for at least a few generations.

The Agglutinated phase residents relied on a combination of farming and herding to support their subsistence needs. Crops cultivated included cereals, primarily *Hordeum* sp. (barley) and *Triticum dicoccum* (emmer), possibly some *Triticum monococcum* (einkorn), *Lens culinaris* (lentils), and *Vicia ervilia* (bitter vetch). The complement of animals kept in this phase included domesticated sheep, goat, and pig, with some evidence of domesticated cattle present. Residents appear to have engaged in hunting and collecting as well, given the presence of badger,



FIG. 5

Photo of semicircular feature showing hard-packed mud interior, at least five courses of mudbrick (on opposite side away from camera) encasing the mud; a posthole at the top suggests an additional element to the feature once rested on top. (Courtesy of the Çadır Höyük Excavation.)

bird, and tortoise (Steadman et al. 2019). Overall, the subsistence strategies of the Agglutinated residents are representative of small-scale agriculture and animal husbandry activities consistent with economic strategies at contemporary sites across the plateau.

The lithic assemblage is reflective of the economy described by the faunal and botanical data. Residents acquired obsidian on a regular basis; approximately half of all lithic artifacts were made of obsidian. Blades and flakes constitute the majority of the assemblage, approximately half of which had been retouched. The majority of the stone tools came from the Eastern Compound residential area, including the courtyard. Interestingly, an obsidian denticulate was also recovered from this context, perhaps used in meat processing or other non-plant related activities. A partial chert core was found in the outer courtyard of the Eastern Compound (in a foundation deposit), suggesting that knapping did take place

somewhere in the settlement or in fact in the Eastern Compound itself.

This early Agglutinated phase fourth millennium community was a self-sufficient farming/herding community with residents living and cooperating in what were likely kin-related residential compounds. Trade relations allowed for the acquisition of obsidian for stone tool production, but few other imports are evident in this phase. The production of material culture occurred at the household level, within the compound. The belief system of the Çadır residents at this stage is largely opaque to us. The two clues include the insertion of infant burials into household walls, testifying to the importance of the home (Yıldırım, Hackley, and Steadman 2018), and the open-air space east of the compound. This is the one area that may have been devoted to more public activity, possibly where rituals conducted for or by the entire community took place. It is quite possible that the Çadır Agglutinated

community would have continued in a similar fashion throughout the remainder of the fourth millennium had not the world around them altered so dramatically in the centuries to come.

A Changing Community in the Mid-Fourth Millennium BCE

It is the second half of the fourth millennium BCE that sees the expansion of the southern Mesopotamian Uruk System and the development of contacts and trade networks into southeastern Anatolia. This increase in the network of trade and exchange opportunities appears to have reached beyond the limits of Uruk influence, creating secondary markets and spurring interaction between settlements on the Anatolian plateau (Steadman et al. 2019). Contemporary with the rise of the Uruk System in the middle of the fourth millennium, the architectural footprint at Çadır began to change. These alterations reflect transitions in socioeconomic, sociopolitical, and even socioreligious behavior.

The Burnt House Phase in the Eastern Compound—ca. 3500–3200 BCE

The Agglutinated architecture in the Eastern Compound is replaced by a large structure referred to as the Burnt House (Fig. 6, in blue). This phase of occupation has two stages; the first is the construction of the Burnt House and Courtyard. The second is the addition of what we term the Southern Courtyard. The Burnt House was built over the core of the earlier Agglutinated complex, the outer rooms of which were razed and leveled, accomplished by placing mudbrick packing into the first floor subterranean rooms, in order to create a large courtyard between the Burnt House and the settlement's street. The walls of the Burnt House were thick, suggesting the presence of a second story or usable rooftop; evidence suggests that textile production was part of the activities taking place above the ground floor.

The Burnt House Courtyard contained a central hearth (which was the source of the fire that created its namesake), evidence of lithic production (a scatter of tools, flakes, and debitage), and baskets of stored

grain (burned in the fire) (Steadman, McMahon, and Ross 2007; Steadman et al. 2013). Textile equipment was part of the contents of the Burnt House, including metal needles, loom weights, and spindle whorls. Textile production appears to have been an important aspect of household production, perhaps performed at an extra-household level for distribution or trade beyond the household. Also found in the Burnt House were bits of metal, stone, and bone jewelry, which may have been produced in the compound or acquired through trade. The ceramic assemblage contains a number of well-made bowls, cups, and a regular complement of storage and cooking vessels. In addition to the normal burnished interior and exterior, incised decoration and the frequent addition of ochre-based red and lime-based white paint were added as decorative elements. We have interpreted this house and its private courtyard as a residence of some importance in the mid-fourth-millennium Çadır community (Steadman et al. 2008, 2015).

The residents of the Burnt House also seem to have assumed control of access to the semicircular mudbrick feature discussed above. In this phase, the previously open area around this feature is enclosed by stone-and-mudbrick walls that attach to the Burnt House. Entrance into this structure (now called the “Non-Domestic Building”) is gained either from a doorway east of the Southern Courtyard (perhaps between two flat stones that may have supported pillars) or from a side door next to the Burnt House. When the walls to the Non-Domestic Building were constructed in the Burnt House phase, several new foundation deposits were made, including three infant burials. The enclosure of the mudbrick feature and continued use of this space suggests a continuity of ritual practice, which is nevertheless responding to social change. Ritual activity may have remained consistent, but who had access to the interior of the building, and who carried out the rituals may have transitioned from “anyone in the village” during the Agglutinated phase to those resident in the Burnt House in this phase.

The practice of inserting infant burials into architecture marks almost every incidence of architectural modification in this phase (Fig. 7). As in the earlier period, the infants are buried in large black-burnished jars, and their frequent association with caches of obsidian, ochre, animal bone, and in one case, a copper ring, suggests their

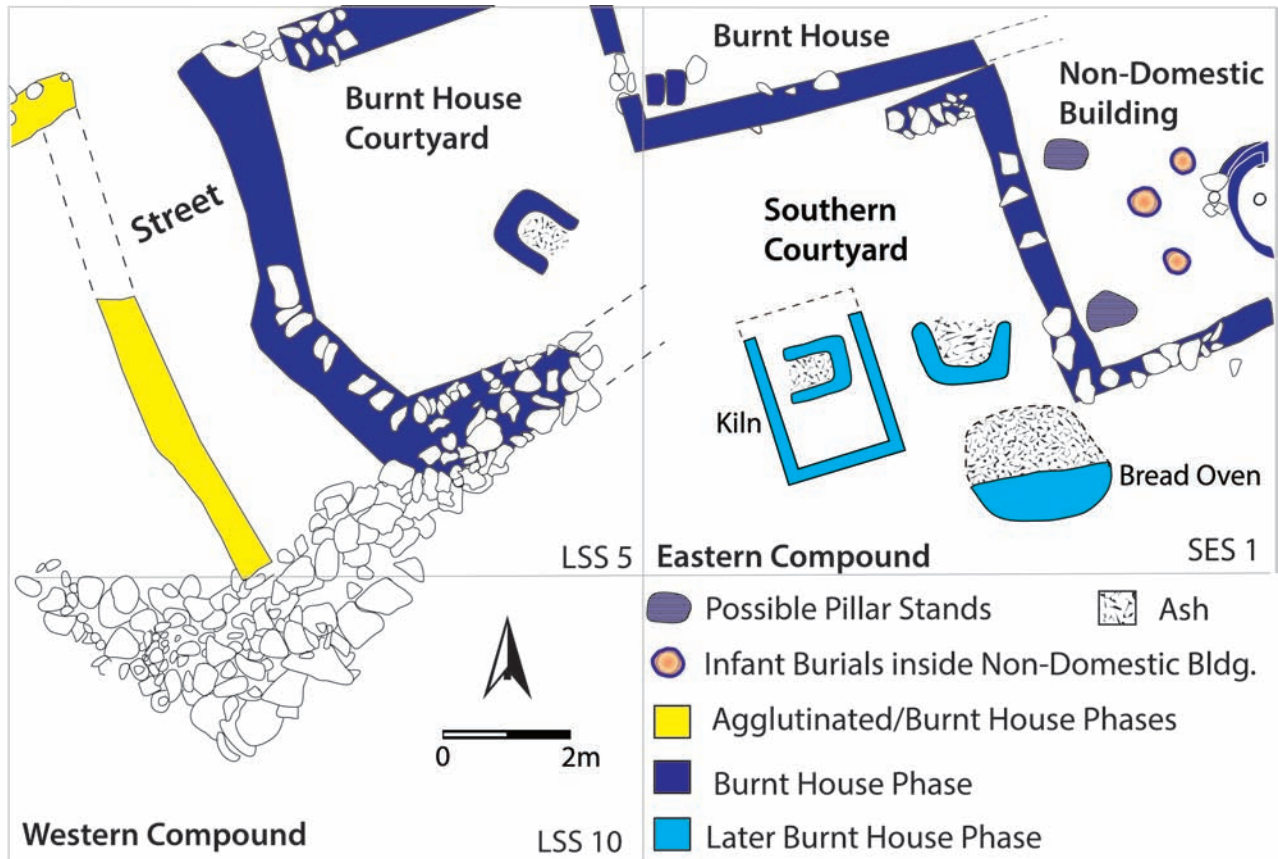


FIG. 6
Plan of the Burnt House and Courtyard phase in the Eastern Compound.
(Courtesy of the Çadır Höyük Excavation.)

ritual significance as foundation and offering deposits (Yıldırım, Hackley, and Steadman 2018). The continuation of this practice in the face of both social and spatial changes in the settlement provides an additional argument for the stability of symbolic practices in the Late Chalcolithic.

At some point during the Burnt House period, possibly late in the phase (ca. 3350/3300 BCE), the area to the south came into significant use. This area and subphase is termed the Southern Courtyard. In the courtyard were several hearths, including one that was probably a bread oven, and a pottery kiln with associated ceramic-production materials. The production infrastructure in the Southern Courtyard is greater than that required by a single household. This courtyard may have been open to public use. However, its proximity to the Burnt House suggests that activities in the Southern Courtyard may

have been carried out under the auspices of the Burnt House residents.

Archaeobotanical analyses of this occupational phase indicate that residents continued to cultivate the crops noted above, with several other plants also appearing, including *Triticum aestivum/durum* (free threshing wheat) and *Linum usitatissimum* (flax). This profile of cultivars is similar to other contemporaneous Late Chalcolithic sites from Anatolia including Çamlıbel Tarlası (Papadopoulou and Bogaard 2012), Korucutepe (van Zeist and Bakker-Heeres 1975), and Kuruçay Höyük (Nesbitt 1996). Sampling data from this phase offers us information on how food processing was carried out. The hearth in the Burnt House Courtyard was regularly cleaned, as it contained very few plant specimens with low species diversity, whereas the pit fill samples contained many specimens and had high species diversity.



FIG. 7

Photo of infant jar burial inserted into architecture in Burnt House phase (F164, Trench SES 1). Note the unusually shaped, square vessel. (Courtesy of the Çadır Höyük Excavation.)

This suggests a single-household usage employing strict refuse disposal with time and care given to food preparation for the Burnt House residents.

In the Southern Courtyard, however, circumstances are quite different. The samples from the hearths matched those from pit and fill, meaning that multiple specimens were found in each (von Baeyer 2018). This might suggest that the Southern Courtyard hearths were used by several individuals; since the hearth was not “owned” by a single individual, hearth-cleaning may not have been carried out as assiduously as in the singly-owned private Burnt House Courtyard.

This differential in the habitual cleaning of pyric features versus lack of maintenance of such features fits with a pattern observed by C. Hastorf (1991) in pre-Incan Sausa, Peru. Hastorf observed that as centralization and social hierarchies developed and were concretized into cultural traditions, plant remains became more and more confined to specific areas of the site due to increasing social restriction on labor roles surrounding plant use. At Çadır, the opposite may have occurred. The more rigid behavioral pattern found in the Burnt House assemblage may correspond with the incipient social hierarchy developing at Çadır observed through the robust

architecture, fine ceramics, and metallurgical assemblages found associated with the Burnt House (Steadman et al. 2008). In the later Burnt House phase, as work in the Southern Courtyard began, expedient food production took priority over careful management, as might occur in an area where labor was managed.

Faunal evidence indicates a substantially increased reliance on sheep in this occupation (see Appendix A). Çadır residents in the Burnt House and contemporary Omphalos Building phases raised herds of large-bodied sheep, significantly larger in size than animals found in earlier Chalcolithic central Anatolian flocks at other sites (Arbuckle, Öztan, and Gülçür 2009). Further, the faunal assemblage reflects a small number of juvenile animals and a dominance of mature, adult animals 3–5 years of age (Fig. 8). A trend toward the keeping of large-bodied adult sheep is reflective of the utilization of herds for wool production and has been suggested as an explanation for similarly large sheep herds in northern Mesopotamia during this phase of the Uruk period (Vila and Helmer 2014).

Goat herding was also an important component of the Çadır animal economy. In contrast to the situation for sheep, however, goat herding represents a more conservative approach targeting a range of primary and secondary products as well as herd security (Redding 1981). Biometric patterns suggest that goats at Çadır were small-bodied with a predominance of adult female goats in the assemblage. This is probably reflective of a strategy of young male culling typical for household-scale goat management. Çadır residents also applied a conservative approach to raising cattle. Only 26% of the assemblage represents juvenile animals, whereas the majority of the samples indicate skeletally mature adults. Among the adults, the majority of animals are likely female, based on size, reflecting their use for labor (and perhaps also milk) and only secondarily as a source of meat.

The biometric data for pigs indicate the presence of small-bodied domestic pigs at Late Chalcolithic Çadır, comparable to those from Bronze Age sites in the region and much smaller than the boar documented on the Anatolian plateau at Chalcolithic Köşk Höyük (Arbuckle 2013). Among the pig remains 63% of epiphyses are unfused (N=60) indicating a rather intensive exploitation

of young animals for products including meat, fat, and skins. Of note is the burial of a two-year old pig under the floor of the Non-Domestic Building in this phase; this may be indicative of the growing importance of this animal in the Çadır socioeconomy at this stage.

Overall, the faunal evidence at fourth-millennium Çadır indicates that the animal economy was designed to address local labor and agricultural needs but also involved more specialized production of regionally significant commodities. Cattle were central features of the agricultural economy, providing labor in the fields, for processing crops, and for transporting bulk foodstuffs. Older females dominated the faunal assemblage, suggesting a small-scale system using cows for a wide range of tasks. Sheep management at Çadır seems to have been a more specialized activity focused on the production of wool. With its focus on large-bodied animals and culling at a very old age after multiple seasons of wool plucking, sheep herding at Çadır was overtly focused on commodity production rather than local subsistence. This is quite different from contemporary husbandry regimes on the Anatolian plateau, such as at Çamlıbel Tarlası and Yarıkaya-Boğazköy (Bartosiewicz and Gillis 2011; Boessneck and Wiedemann 1977), and suggests that this community was involved in larger regional networks participating in the movement of textiles at this early date. However, sheep production was not dominant at Çadır but was rather paired with the more conservative production of goats likely designed to buffer risks and to meet local subsistence needs. Similarly, pig husbandry focused on the small scale, local production of meat and fat resources.

The lithic data is consistent with the subsistence activities described above. As noted earlier, there is strong evidence of lithic production in the Burnt House Courtyard (west of the house). Though obsidian remains at a consistent percentage of the assemblage from the Agglutinated to the Burnt House phase (ca. 50%), the *number* of individual artifacts (flakes, tools, cores) is much higher in the Burnt House phase, as much as four times as many artifacts as in the Agglutinated (Steadman, Arbuckle, and McMahon 2018). This suggests that residents are acquiring a greater quantity of obsidian through trade connections in this phase of occupation.

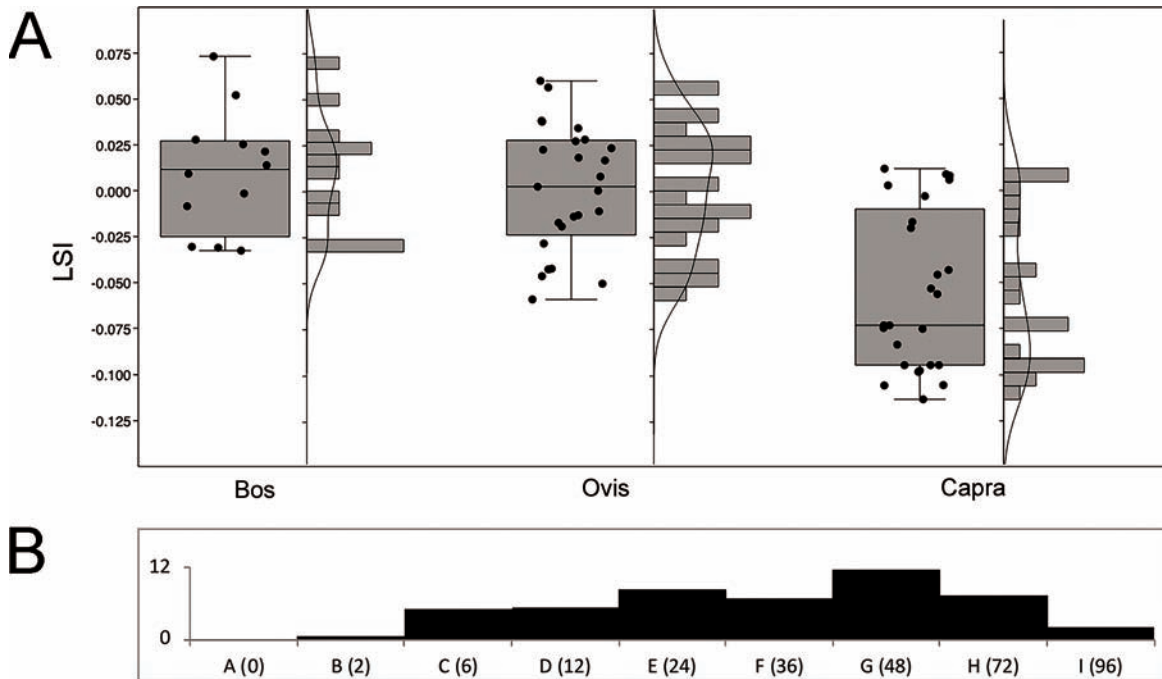


FIG. 8
 (A) Log size index values for cattle, sheep, and goats from Late Chalcolithic Çadır presented as boxplots as well as histograms;
 (B) mortality data based on mandibular wear stages (age in months) for sheep and goat mandibles from Late Chalcolithic Çadır (after Payne 1973; see also Appendix A below).

These combined data offer a picture of intertwined endurance and transition (Fig. 9). What was a set of connected rooms adjacent to an open courtyard in the Agglutinated phase, transitions to a singular home with its own private courtyard. This home is filled with fine goods, some of which were acquired through trade activities (metal items, obsidian). Subsistence activities were carefully managed by the residents in this home, with woolen textiles likely being produced at an extra-domestic level for trade purposes. Ritual behavior continued in similar fashion, including an intensification of infant jar burials, but can also be described as transitioning. The open-air area devoted to public ritual behavior in the Agglutinated phase transitions to an enclosed area whose access may now be controlled by the residents of the Burnt House. A further change appears in the socioeconomy of this phase, which suggests that at least some elements of village labor may have been harnessed in the Southern

Courtyard (ceramic production, possibly bread-making). These changes may represent rising social inequality in response to the emergence of new trade opportunities arising from the southern Mesopotamian Uruk System. In turn, new sociopolitical and socioreligious behaviors may have emerged as a result.

The Omphalos Building Phase in the Western Compound—ca. 3600/3500–3200 BCE

In the Western Compound similar architectural and socioeconomic changes took place during the centuries spanning the middle and later fourth millennium. As was the case in the Eastern Compound, residents filled in Agglutinated phase architecture with mudbrick to create a level area, and also used portions of the earlier Agglutinated architecture for their repurposed buildings. The two phases of occupation in the Western Compound are termed the “Pre-Omphalos” (ca. 3600/3500–3400



FIG. 9

Artistic rendering of the Çadır village at the time of the Burnt House and Courtyard phase. (Drawing by L. D. Hackley; courtesy of the Çadır Höyük Excavation.)

BCE) and the “Omphalos Building” phase (ca. 3400–3200 BCE). During both of these phases residents appear to have turned this area into one devoted to light industry, primarily related to ceramic production.

The Pre-Omphalos phase occupation reuses the earlier Agglutinated phase boundary walls (in yellow on Fig. 10); residents converted this area from Agglutinated to the Pre-Omphalos usage in concert with the conversion from Agglutinated to Burnt House in the Eastern Compound. The Pre-Omphalos phase features an oven (likely serving as a kiln), an oval ash dump, a storage building with three small rooms, pits, and a bin for storing the pottery production materials including ochre (for decorating vessels), clay ovoids, and burnishing stones. There are no domestic spaces apparent, and the entire area seems to be devoted to the production of ceramics.

The subsequent Omphalos Building phase has three subphases; the first two (on Fig. 11) are contemporary with the Burnt House phase to the east. The last falls into the “Transitional” phase described below. The earliest Omphalos Building, subphase 1 (ca. 3400–3300 BCE), consists of a single room (8.3 x 8.6 m) that may have been separated into a northern and southern space (Steadman et al. 2017); there was no wall evident, but the nature of the spaces was different enough to suggest an organic divider such as a curtain or wooden/matted wall. The northern room may have been devoted to storage as well as serving as a resting area, while the southern room, which provided the entrance to the structure, contained a variety of ceramics. No domestic features or cultural material were found in either room.

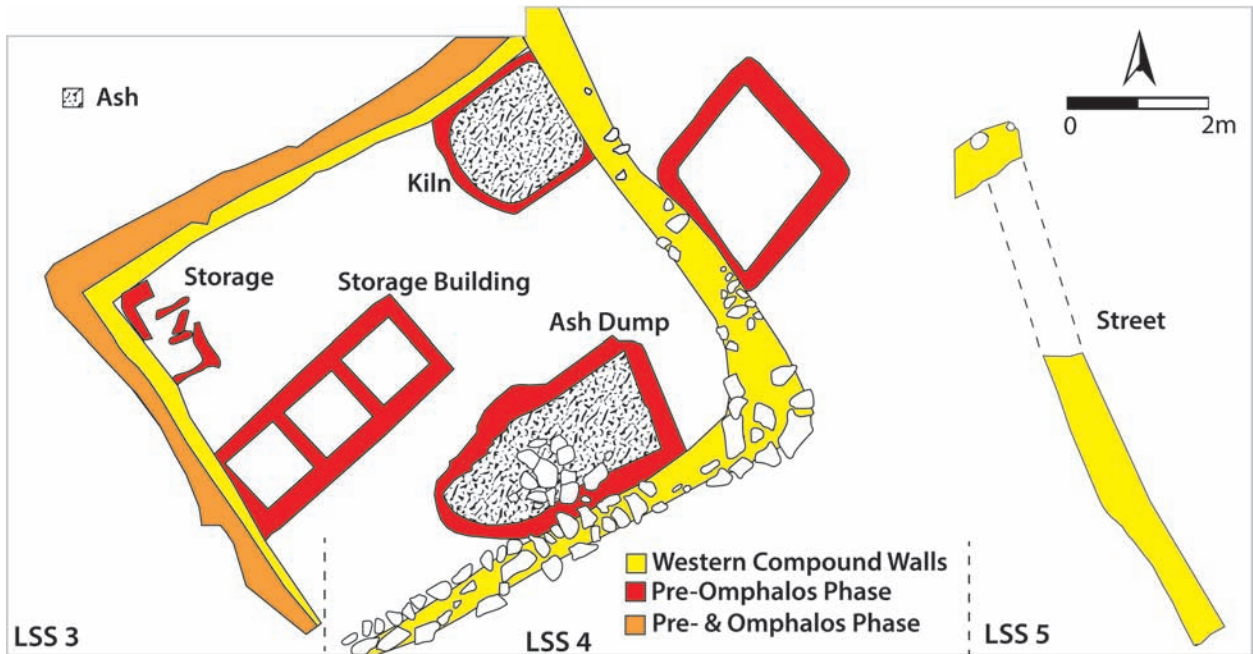


FIG. 10
Plan of the Agglutinated and Pre-Omphalos phases. (Courtesy of the Çadır Höyük Excavation.)

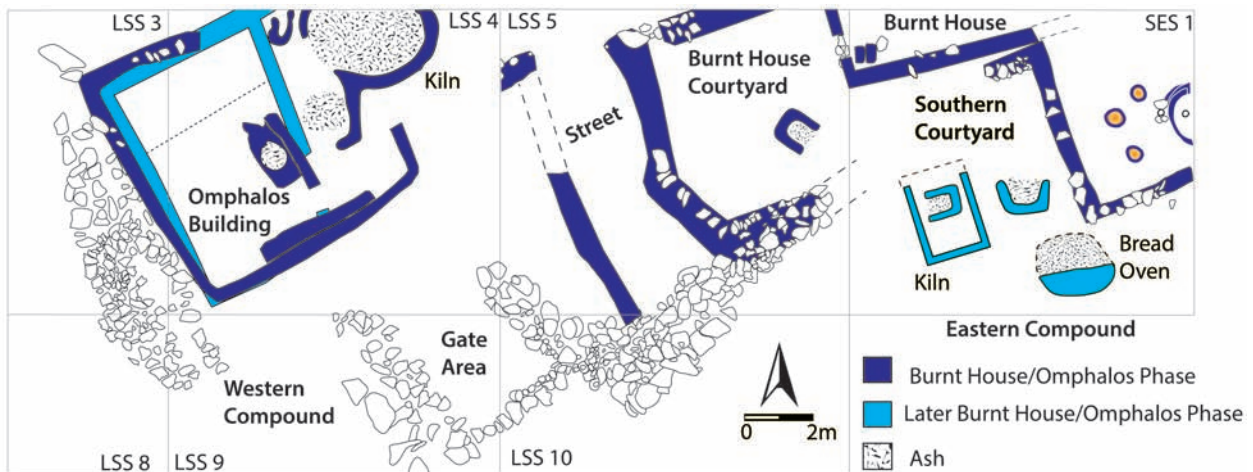


FIG. 11
Plan of two Omphalos Building subphases. (Courtesy of the Çadır Höyük Excavation.)

The second and main building stage of the Omphalos Building, subphase 2, retained the outer walls and became a recognizable two-roomed structure. A mudbrick wall divided the structure into a western and eastern room; a platform contained a small firepit

suitable for heating a small meal (or warming the room in winter), and a bench ran along the southernmost wall. The eastern room may have been used as a “porch” or roofed open area. The western room was filled with ceramics that once sat on wooden shelving (Fig. 12).



FIG. 12

Artistic rendering of the Omphalos Building as a ceramic distribution center. (Drawing by Y. Tovar, 2003; courtesy of the Çadır Höyük Excavation.)

Some of these vessels seem to have been used; burning was visible on the interior, especially of the bowls. Most, however, appeared “new” and ready for service. This structure seems to have been a ceramic distribution center.

A bin found under the subphase 2 Omphalos Building floor offered a very unusual item: an andiron (portable hearth). This was discovered in a bin which was detected only when we excavated the subphase 2 structure; we believe, however, that this item belonged to the subphase 1, later, occupation. The bin was dug, the item placed, and the subphase plaster floor was laid atop it. This andiron, so far unique in the Çadır assemblage, is decorated with incised designs, with an animal

head topping the squared piece (Fig. 13). We attribute this object’s form to influence from the Kura-Araxes culture from Transcaucasia, discussed at greater length below.

In the courtyard east of the Omphalos Building, but still within the compound, was a single-chambered kiln (Figs. 11, 14), an area for ash dumps, and materials associated with ceramic production including prepared clay and burnishing stones. Many of the ceramics in the building may have come directly from this kiln. In the southeastern corner of the courtyard was a white limestone pavement nearly identical to one also present in the Eastern Compound. The Western Compound pavement slopes upward from north to south, with



FIG. 13

Photo of bull-(?) headed andiron from a “bin” in the Omphalos Building floor. (Courtesy of the Çadır Höyük Excavation.)

the apex in the southeastern corner of the compound courtyard.

During the later Burnt House/Omphalos Building phase, Çadır residents built a stone and mudbrick perimeter wall, named the “enclosure wall,” with a rather impressive gate (Figs. 11, 15). The enclosure wall was

built so that access to the street separating the two compounds was now from *within* the settlement rather than outside of it, offering a measure of privacy for Burnt House residents. The gate allowed entry into the Western Compound near where the Omphalos Building stood. Those entering the community could either go straight



FIG. 14
Photo of kiln associated with main Omphalos Building subphases. (Courtesy of the Çadır Höyük Excavation.)

into the courtyard of the Omphalos Building, or turn immediately right and follow a pathway to the street, allowing access to the Burnt House and Courtyard. This interior pathway could be gated, denying access to anything but the Omphalos Building. Another item of note was discovered in the gate area. This was a double-spiral metal pin that also has parallels to Kura-Araxes styles (Steadman, Arbuckle, and McMahon 2018; Steadman et al. 2019), offering further evidence of interaction with the Kura-Araxes culture.

Four infant jar burials were found near the gate complex and one was placed near the kiln. Each was in a black-burnished storage jar. The four near the gate

complex were under stones associated either with the gate construction, the southern wall of the Omphalos Building compound, or possibly both. As was the case in the Eastern Compound, the burial of infants appears to be an important element associated with newly constructed, or reconstructed, buildings and architecture at Late Chalcolithic Çadır. The infant jar burial near the kiln may have coincided with the creation of the courtyard floor on which the kiln was constructed, sealing the earlier Agglutinated phase.

At some point in the last several centuries of the fourth millennium, three additional child burials were introduced to the Omphalos Building Western



FIG. 15
Artistic rendering of the Çadır gate and enclosure wall. (Drawing by Y. Tovar, 2003; courtesy of the Çadır Höyük Excavation.)

Compound (Fig. 16a–b). Residents removed stones from the white limestone paving and inserted three child burials, all of which were in primary and contracted position. Each was buried inside a black burnished storage jar surrounded by packed mud. The three children ranged from one to three years of age; evidence of cranial modification has been detected as well (see Erdal, this issue). All three were equipped with at least five individual personal adornments as funerary gifts, including copper rings, bracelets, and hair spirals. One burial included a bowl containing an animal bone. These burials differ from the others discussed above in several important ways. First, they do not appear to have been placed at the *time* of building the stone paving, but inserted *after* its construction. Thus they are not associated with the new construction of a house or (courtyard) surface, but instead were placed into a preexisting architectural feature. These child burials at Çadır are not associated with new or renewed construction. The wealth of burial goods is also an element that sets these burials apart from all others at the site.

The hair spirals (Fig. 16c) found in these burials are of particular interest given their similarity to those

from Kura-Araxes contexts (Steadman et al. 2019). The placement of these burials, in the paving rather than in house walls, and the wealth of burial goods associated with them, cause them to stand out as quite special. These child burials took place at a time when the previously robust trade interaction, connected to the vast Uruk-period exchange network, may have been waning. New contacts to the east, namely with the Kura-Araxes culture, may have arrived bringing new opportunities and new ideas.

The Çadır residents also had access to an Upper Town in the latter half of the fourth millennium, built at some point in the last several centuries of the fourth millennium, or possibly earlier. This Upper Town was built on a constructed terrace consisting of clay, mud, and mudbrick, offering a new occupational area resting approximately 1.5 m above the Lower Town. The street in the Lower Town led to a pathway upward, allowing access from the center of the Lower Town to the center of the Upper Town. Excavations in this Upper Town region suggest that the Late Chalcolithic occupation here was largely residential (only the very tops of mudbrick structures

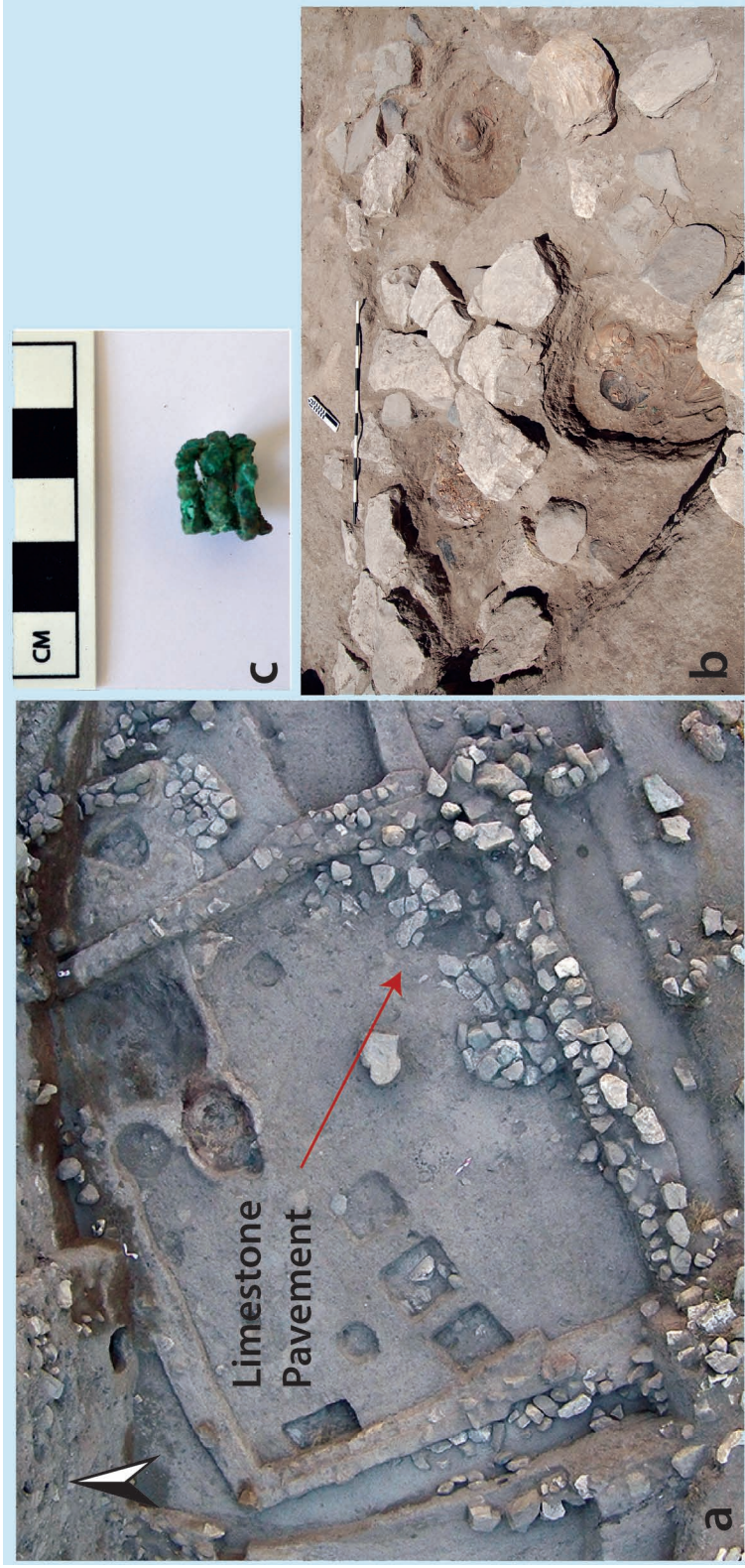


FIG. 16

(a) Western Compound showing the white limestone pavement in the southeast corner of the courtyard in which three child burials were placed; (b) close-up photo of the three child burials; (c) photo of a hair spiral found in one of the child burials. (Photos courtesy of the Çadır Höyük Excavation.)

have thus far been exposed). As is described below, this Upper Town transitions to one devoted heavily to industrial functions by the end of the millennium.

The residents in the Western Compound appear to have been engaged in the industrial production of ceramics during the Pre-Omphalos and Omphalos Building phases. While ceramic production in the Pre-Omphalos phase appears steady and may have served the community, it appears that the level of production transitioned to a higher level in the Omphalos subphases, perhaps serving the entire community, and nearby settlements. Survey in previous years demonstrated that several small Late Chalcolithic settlements ring Çadır (Steadman, McMahon, and Ross 2007); as trade opportunities increased in the second half of the fourth millennium, the larger settlement at Çadır may have served as a type of distribution center for the local region. These changes in production level occur in concert with the transitions described above for the Burnt House phase in the Eastern Compound. The socioeconomic strategies at Çadır in the mid- and later fourth millennium were modified rapidly to meet what appears to be a host of material culture exchange across the plateau, due at least in part to the expanding Uruk System to the south.

In the later centuries of the fourth millennium yet another new element seems to have appeared in the midst of the Çadır realm: visitors or new residents, or at least their material culture, from the Kura-Araxes region in Transcaucasia. The presence of the animal-headed andiron, the double-spiral pin, and the three child burials with metal jewelry speak to the interaction that may have been taking place between Çadır and the Kura-Araxes region (Steadman et al. 2018). All of these opportunities were met with enthusiasm and industry by Çadır residents who stepped up ceramic production, built an impressive entryway into the settlement, and organized labor to meet the needs of this new socioeconomic reality in the later fourth millennium BCE.

The Community Endures: The Transitional and Early Bronze I Ages (ca. 3200–2900 BCE)

Near the end of the fourth millennium, commensurate with the retraction of the Uruk System in Mesopotamia,

there is rather noticeable change in the Çadır community. The last century or two of the fourth millennium (ca. 3200/3100–3000 BCE) is termed the “Transitional phase” at Çadır. This is followed by the Early Bronze I period, extant on Çadır’s southern slope from ca. 3000–2800 BCE.

The Lower Town Transitional and Early Bronze Age I Phases—ca. 3200–2900 BCE

In the Eastern Compound, a fire destroyed the Burnt House and its associated private courtyard; the Southern Courtyard fell out of use. After a short interval, two apse-shaped structures were built in this area (Fig. 17), each with an attached external hearth. Their use is brief and not well understood, but is connected to activity taking place at the margins of the settlement, rather than what was previously a vibrant center (Steadman et al. 2017; Steadman and McMahon 2017).

In the Western Compound the third and final sub-phase of the Omphalos Building results in a one-roomed structure with thinner walls than in the previous phases (Steadman et al. 2008). No kiln or other production-related materials are evident in the courtyard, and the room is largely devoid of much more than broken ceramics. Over the course of the Transitional phase, the gate was first narrowed, and then completely blocked. Normal access into the community at this time may have moved to the far west where a path (likely used throughout the fourth millennium) leads to the Upper Town.

By the Early Bronze I phase (ca. 3000–2800 BCE) the Lower Town is all but abandoned. Small one-roomed structures with thin and crooked walls are scattered across the expanse of the Lower Town; small fire pits are interspersed between them (see Fig. 17). Ceramics are of a low quality, lacking surface decoration, and some are quite friable (having been very low fired). Metal items are entirely gone, as is any evidence of ceramic or textile production.

Archaeobotanical data show that the species cultivated remained stable throughout this period. In addition, residents in the Transitional and Early Bronze phases continued the Southern Courtyard pattern of irregular refuse disposal, meaning hearth and firepit cleaning

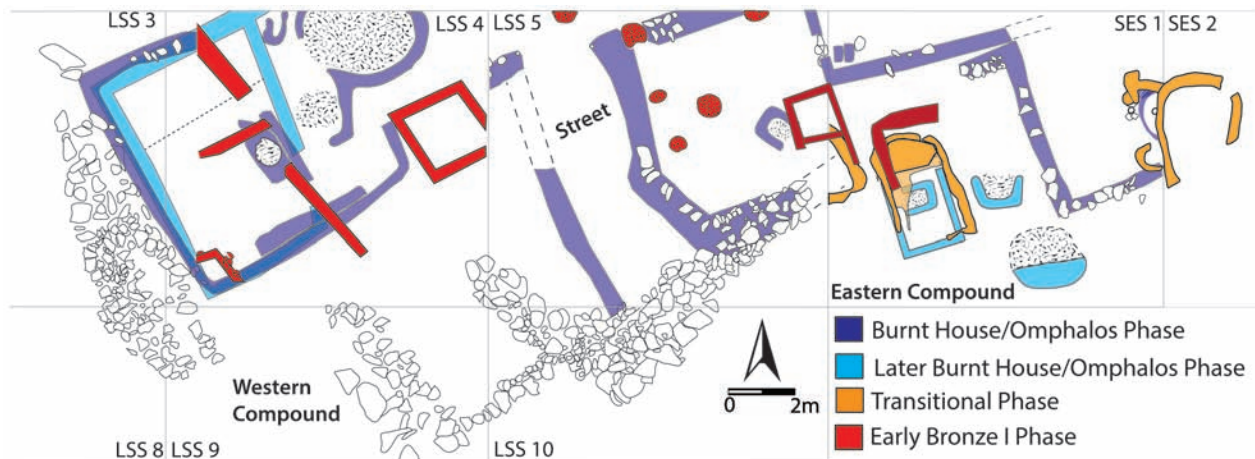


FIG. 17
 Plan showing the Transitional (Apsidal structures) and Early Bronze I phases built atop remains of the Burnt House and Omphalos Building remains. (Courtesy of the Çadır Höyük Excavation.)

was not conducted frequently or efficiently. The difference between Southern Courtyard use and Transitional/Early Bronze phase usage is that in the former, the area was likely a more “public” space with several users of the hearths, perhaps in shifts. The latter, however, were more likely individual hearths/firepits associated with the Apsidal and single-roomed structures, suggesting that residents of these buildings and users of the hearths appear to have taken less care in their food production activities. This may reflect the less stable economic circumstances affecting the Lower Town residents at the end of the fourth millennium.

Though agricultural strategies remained consistent, there was a noticeable shift in livestock management in this phase. For the first time goats outnumber sheep in the faunal assemblage, and there is a significant increase in the frequencies of cattle and pig remains (Steadman et al. 2019). A decrease in the number of sheep and a greater reliance on goat suggests a dwindling emphasis on the production of wool as a commodity in favor of a stronger desire to focus on a basic household-level production of secondary products. The increase in the percentage of cattle may also indicate a greater reliance on the production of a range of primary and secondary products. The increase in cattle may reflect a shift in the animal economy towards a greater investment in agricultural production over the production of surplus wool and/or textiles at an extra-household level.

Lithic data indicate that residents in the Lower Town continued subsistence activities as before. However, evidence of stone tool production is lacking. In addition, the percentage of obsidian in the assemblage drops to approximately 30%, reflecting a weakening of access to this material through trade connections. These data are consistent with a changing socioeconomy at Çadır that reflects a decline in the exchange of goods. The decline occurs as the Uruk System retracts from northern to southern Mesopotamia.

Over the course of the last century or so of the fourth millennium Çadır residents weathered a substantial transition. The volume of long-distance trade opportunities appears to have diminished if not disappeared. Need or desire for and maintenance of a substantial wall and wide gate system for entry into the community evaporated. The production of extra-domestic goods ceased, and the areas devoted to these activities transitioned into small spaces for extremely modest one-roomed domestic structures and firepits. The retraction of the Uruk System in the later fourth millennium (transitioning into a new entity in the early third) roughly coincided with a reorientation of the Kura-Araxes attention to southeastern Anatolia and the Levant (Gerritsen et al. 2008; Palumbi and Chataigner 2014; Philip 1999). These more “global” changes may have had a drastic impact on the Çadır socioeconomic, sociopolitical, and possibly cultic organization. In earlier years of the project, it appeared

to us that by the Early Bronze I period Çadır had transitioned to nearly wholesale abandonment, left fallow until reoccupation in the Early Bronze III period elsewhere on the mound (Steadman et al. 2008). However, excavations over the last five seasons have offered a new picture of a Transitional and Early Bronze Çadır community committed to endurance and fortitude.

The Move Up-Town in The Late Fourth/Early Third Millennium

It was in our 2012 excavations that we began to shift our interpretation of large-scale settlement abandonment in the Transitional and Early Bronze occupation at Çadır. Excavations higher on the mound, just above this area, revealed that Çadır residents adapted to a changing social, economic, and possibly political environment by vacating the lower, more accessible, area of the community and moving upward and inward. Excavations here have revealed the “new” perimeter of the very late fourth and early third millennium BCE settlement. Residents appear to have moved their entire domestic area to the Upper Town interior of the mound (now buried under meters of later occupation). Industrial activities were moved to the outer Upper Town, and steps were taken to protect the interior community.

The terrace constructed north of the Burnt House and Omphalos Building structures offered an additional space for what appears to be a “Northern Compound,” though only the very tops of architectural features are currently visible. Access to this compound was via the street, from a pathway skirting the western end of the settlement, and possibly from the east as well. While this area may have been initially devoted to residential use, by the Transitional period a dramatic transition had taken place.

The Upper Town Transitional Phase—ca. 3200–3000 BCE

As just noted, we have only begun to expose the tops of what is probably the Late Chalcolithic (prior to 3200 BCE) phase in the Upper Town trenches that perhaps represents a “Northern Compound” (Steadman et al. 2019).

What is clearly evident at this earliest Upper Town phase, however, is that the street was still functional, flanked by stone and mudbrick architecture on the east and west during the final centuries of the fourth millennium (Fig. 18). The street remained in use for several more decades, likely coinciding with the last generation or two of the Burnt House and Omphalos Building phase in the Lower Town.

During the earlier Transitional phase in the Upper Town, the street continued to serve as an access to the area, flanked by open-air workshop courtyard spaces. Both the courtyards and street consisted of a series of replastered surfaces containing evidence of pottery and stone tool production. East of the street complex was a series of smaller rooms with sloped clay floors, near to a large oven that was likely a kiln (several iterations of ovens were found in the same place, one with ceramics still *in situ*). Initially walls of these work spaces were somewhat haphazard, as if quickly built, but over time the rooms became more spacious and regular.

In the later Upper Town Transitional phase, the street and the larger open courtyard were blocked by a stone and mudbrick wall. Industrial work continued to take place to the east; an oven, pot emplacements, and evidence of ceramic-related tools (burnishing stones) suggest that ceramic production was carried out. An infant jar burial was placed within one of the walls, perhaps “dedicating” the space as had once been the norm in the Lower Town. It is unclear how the street, now enclosed and blocked by the wall, was used.

Near the end of the fourth millennium circumstances were such that residents undertook a massive rearrangement of their settlement, essentially abandoning the large-scale industrial compound in the western Lower Town and the fine house and work area in the eastern section of the Lower Town. The industrial area was moved to the *new* edge of town to the north and above, and residents must have relocated into the interior settlement, away from the street. Eventually even the street, the access into town for the entire fourth millennium, was blocked. The decline in trade, a possible climatic shift (von Baeyer 2018), and other as yet undetermined circumstances created the need for substantial transition at Late Chalcolithic/Transitional period Çadır.

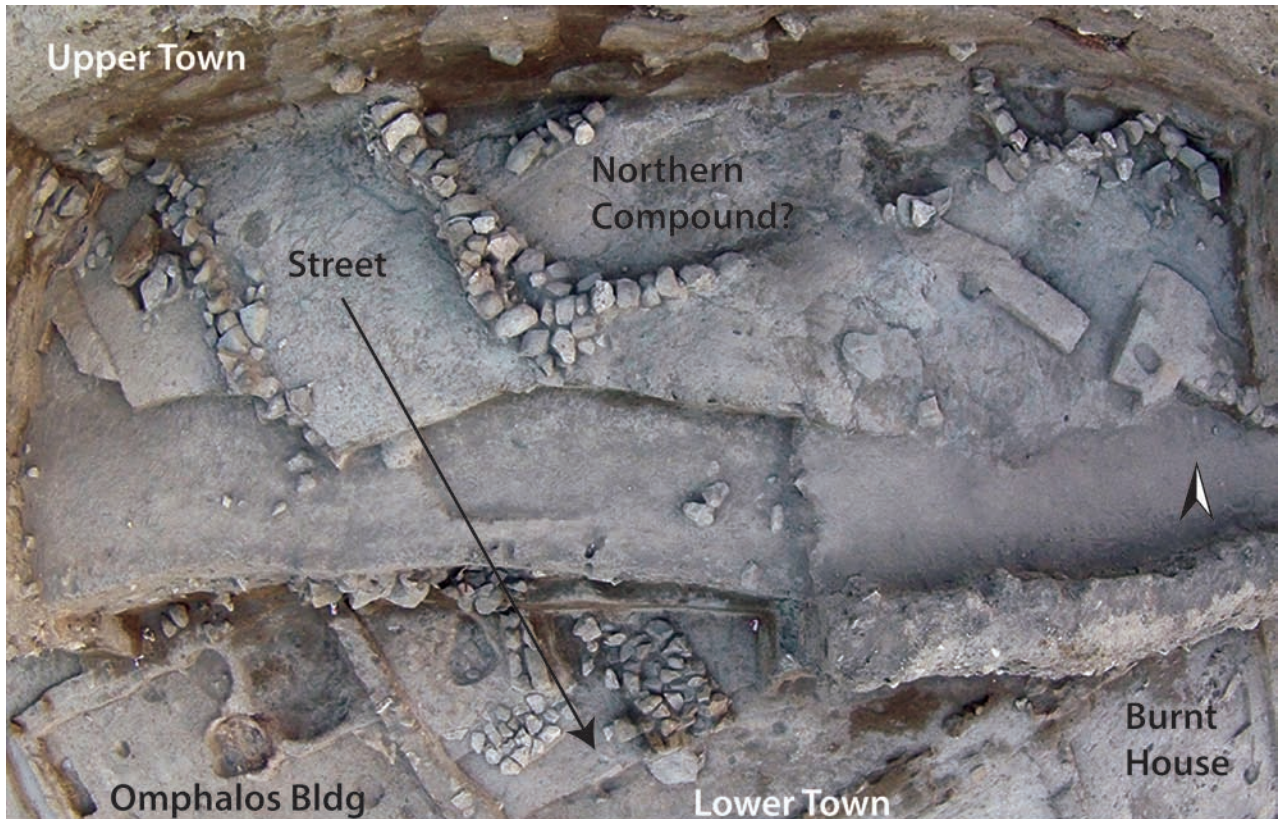


FIG. 18
Aerial photo of the Late Chalcolithic/Transitional phase Upper Town showing the street that continues from Lower to Upper Town and the boundary of the possible Northern Compound. (Courtesy of the Çadır Höyük Excavation.)

The Upper Town Early Bronze I Phase—ca. 3000–2800 BCE

The Early Bronze I period sees even more changes in the Upper Town (Fig. 19). The wall that blocked the street was thickened to at least two meters in width, and stretched lengthwise across what was the new settlement perimeter. The new wall was of good construction, made with large, boulder-like foundation stones, a mudbrick superstructure and a thick white-plastered facing. Enough evidence exists to identify this as a new Early Bronze Age fortification wall, though it remains unknown if the wall originally encircled the entire settlement. The fortification wall remained in use throughout the Early Bronze Age and became the foundation of the Late Bronze Age Hittite era fortification wall on the southern slope

(see Ross et al., this issue). The Early Bronze I settlement contained within the wall is not available to us as it rests under meters of later occupation. The Lower Town is filled with only haphazard one-roomed shacks and fire pits.

Next to the outer face of the defensive wall, to the east, the work area remained intact. Small rooms contained artifacts such as ground stones, loom weights, balls of ochre (for paint/ceramic decoration), and many ceramics. Clay-lined bins and benches dotted the area. Yet another oven, in the same place, continued to bake ceramics. An infant jar burial was recovered from the area, and interestingly, another burial of an infant, this time in a clay box, was resting *on* the floor of one room. Whether this infant was held in preparation for insertion into architecture, or demonstrates a change in ritual behavior, is unknown.

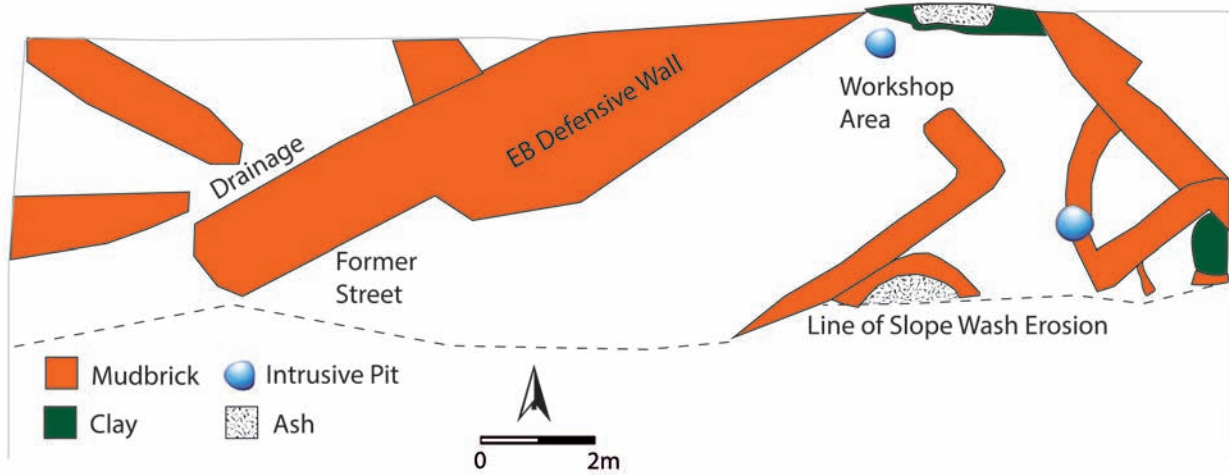


FIG. 19
 Plan of the Early Bronze I Upper Town showing new perimeter/defensive wall blocking former street access and new workshop/industrial area to the east (top); (bottom) photo of same Early Bronze phase architecture (north is to the right of the photo). (Plan and photo courtesy of the Çadır Höyük Excavation.)

As the Early Bronze I period progressed, residents felt the need to increase the size of the fortification wall; large boulders likely mark an open gate, much of which has been destroyed by slope wash. This led to a newly created large open courtyard entryway into the settlement. A series of drains were built under the courtyard to allow water to drain outside of the defensive wall.

Outside the wall, larger, more open rooms with flat clay floors and small, clay-lined bins were found. Two very large ovens, larger than any found in the Late Chalcolithic periods, were constructed, one directly inside the fortification wall, and one directly outside, indicating a continued industrial zone directly outside the wall. The residential compounds were surely to the north, inside the defensive wall.

Conclusion

The picture presented above creates a circle. Çadır's farming and herding residents in the earliest Agglutinated phase took advantage of new trade opportunities and encounters with new peoples to effect transitions in their socioeconomic organization. This may have occasioned changes in the sociopolitical realm as well and spurred new methods of carrying out socioreligious activities. Building activity experienced a crescendo as did industrial endeavors. By the mid- and later fourth millennium, Çadır was a bustling settlement with a Lower Town and a terraced Upper Town. Within just a couple of centuries a substantial transition took place, perhaps due to external factors, occasioning a total reorganization of residential and work areas away from the easily accessible Lower Town and up to the perhaps more defensible Upper Town. Here industry was rebuilt and life continued, in many ways the same as it had before; Çadır endured.

Appendix A

The faunal samples from the Late Chalcolithic occupation of Çadır provide a unique window into the use of animals in the fourth millennium BCE on the north-central Anatolian plateau. Since changes in the proportions of taxa through the fourth millennium BCE at Çadır are described elsewhere (Steadman et al. 2019) here we

consider the Late Chalcolithic assemblage as a whole. This assemblage, represented by remains from seven trenches including loci associated with structures of the Agglutinated phase, the Burnt House and Courtyard, and the Ompholos and Non-Domestic buildings reflect a wide sample of depositional context spanning the period ca. 3800–3200 BC. Based on number of specimens identified to the genus or species level, sheep and goats are the most abundant taxa representing 55% of the Late Chalcolithic assemblage with sheep only slightly outnumbering goats, followed by pigs at 21%, cattle 16% and other economically important wild taxa including equids, deer, and hare representing 4%.

A combination of biometric and aging data provide evidence for how the major livestock at Çadır were utilized in the Late Chalcolithic. In Figure 8 (A), biometric data for cattle, sheep, and goats are presented as log-transformed Log Size Index (LSI) values, which compare epiphyseal breadth measurements with those from a standard animal representing "o" on the scale (Meadow 1999) (in this case the standards are a nineteenth-century Pinzgau cow, a wild Anatolian sheep, and the averaged measurements of a wild male and female goat from the Taurus mountains [after Uerpmann and Uerpmann 1994]).

For cattle, the biometric data are positively skewed (0.36) with a mean value (0.009) close to the female standard. The modal value, -0.025 on the LSI scale, is the size of a small female, whereas the larger specimens (>0.05) likely represent bulls or oxen. This distribution suggests that the cattle at Late Chalcolithic Çadır are composed of slightly more females than males. Based on the state of epiphyseal fusion of cattle long bones (N=17), only 26% of the cattle specimens represent juvenile animals whereas the majority represent skeletally mature adults. The presence of adult, female cattle likely reflects the use of these animals primarily for labor (and perhaps also milk) and only secondarily as a source of meat.

For sheep, biometrics show a distribution with negative skewness (-0.11) indicating a predominance of larger specimens and a mean (0.0009) slightly larger than the standard, reflecting a very large-bodied population. There are two modes, one on either side of "o" on the LSI scale indicating the presence of roughly equal numbers of larger males and smaller females. Epiphyseal fusion shows that only 18% of specimens are unfused (N=22) reflecting a

very small sample of juvenile animals. In addition, age data based on mandibular tooth eruption and wear from combined sheep and goats indicates a dominance of mature, adult animals 3–5 years of age (Fig. 8B).

For goats, the biometric pattern is quite different from that of sheep indicating an alternate husbandry regime. The goats at Çadır are small in stature, and the biometrics display a positive skewness (0.38) indicating a dominance of small female specimens; in addition, the mean (-0.055) is well below the standard. The biometric distribution is bimodal with modes at the extreme ends of the size range at -0.1 and 0.01 reflecting the presence of small females and large males. The cluster of specimens larger than -0.025 on the LSI scale probably represents a limited number of male animals. Among the goats, 21% of long-bone epiphyses are unfused (N=32) indicating a low frequency of juvenile animals—a pattern also reflected in the combined sheep/goat tooth wear (see Fig. 8B).

References

- Arbuckle, B. S. 2013. The Late Adoption of Cattle and Pig Husbandry in Neolithic Central Turkey. *Journal of Archaeological Science* 40:1805–15.
- , A. Öztan, and S. Gülçur. 2009. The Evolution of Sheep and Goat Husbandry in Central Anatolia. *Anthropozoologica* 44: 129–57.
- Bartosiewicz, L., and R. Gillis. 2011. Preliminary Report of the Animal Remains from Çamlıbel Tarlası, Central Anatolia. *Archäologischer Anzeiger* (1):76–79.
- Boessneck, J., and U. Wiedemann. 1977. Tierknochen aus Yarıkkaya bei Bogazköy, Anatolien. *Archäologie und Naturwissenschaften* 1:106–43.
- Gerritsen, F., A. De Giorgi, A. Eger, R. Özbal, and T. Vorderstrasse. 2008. Settlement and Landscape Transformations in the Amuq Valley, Hatay: A Long-Term Perspective. *Anatolica* 34:241–314.
- Hastorf, C. A. 1991. Gender, Space, and Food in Prehistory. In *Engendering Archaeology: Women and Prehistory*, ed. J. M. Gero and M. W. Conkey, 132–59. Oxford: Blackwell.
- Meadow, R. H. 1999. The Use of Size Index Scaling Techniques for Research on Archaeozoological Collections from the Middle East. In *Historia animalium ex ossibus: Beitrage zur*

SHARON R. STEADMAN is a SUNY Distinguished Professor of Anthropology at the State University of New York, College at Cortland. She received her PhD from the University of California, Berkeley. She has participated in archaeological projects in Cyprus, Israel, Jordan, Azerbaijan, Armenia, and Turkey. She currently codirects excavations at Çadır Höyük and serves as field director. Her research focuses on domestic architecture and spatial analysis in prehistoric settlements. Recent books include *The Archaeology of Architecture and the Human Use of Space* (Routledge, 2015), *Ancient Complex Societies* (with J. C. Ross; Routledge, 2017), and the *The Archaeology of Anatolia: Recent Discoveries* series (coedited with G. McMahon, Cambridge Scholars Publishing). (Department of Sociology/Anthropology, SUNY Cortland, Cortland, NY 13045; sharon.steadman@cortland.edu)

LAUREL DARCY HACKLEY is a PhD candidate in archaeology at the Joukowsky Institute for Archaeology and the Ancient World at Brown University. Her research focuses on the archaeology of arid landscapes and on the Chalcolithic of Egypt and Turkey. She has worked on archaeological projects in Egypt, Turkey, and Sudan and is a trench supervisor at Çadır Höyük. (Joukowsky Institute for Archaeology and the Ancient World, Brown University, Providence, RI, 02912; laurel_hackley@brown.com)

STEPHANIE SELOVER is an assistant professor at the University of Washington in the Department of Near Eastern Languages and Civilization. She received her PhD from the University of Chicago. She worked on excavations in Turkey, Syria, Israel, Italy, and the United States, and is currently an assistant director at Çadır Höyük. Her research is focused on evidence of warfare and violence in prehistoric Anatolia. Notable works include “The Persistence of Social and Spatial Memory at Ancient Çadır Höyük” (with L. D. Hackley and S. R. Steadman, *International Journal of the Constructed Environment*, 2018) and “Stability and Change at Çadır Höyük in Central Anatolia: A Case of Late Chalcolithic Globalisation?” (with multiple authors, *Anatolian Studies*, 2019). (Department of Near Eastern Languages and Civilization, University of Washington, 220-D Denny Hall, Seattle, WA 98195; sselover@uw.edu)

BURCU YILDIRIM is a PhD candidate at the Department of Settlement Archaeology, Middle East Technical University at Ankara. She works as an area supervisor at Çadır Höyük. Her research focuses on symbolic communication and spatial models in prehistoric settlements. (Department of Settlement Archaeology, Middle East Technical University, Mimarlık Fakültesi, Yeni Bina, No.410, 06800, Çankaya, Ankara, Turkey; buruyildirim@yahoo.co.uk)

- Paläoanatomie, Archäologie, Ägyptologie, Ethnologie und Geschichte der Tiermedizin*, ed. C. Becker, H. Manhart, J. Peters, and J. Schibler, 285–300. Rahden/Westf., Germany: Marie Leidorf.
- Nesbitt, M. 1996. Chalcolithic Crops from Kuruçay Höyük: An Interim Report. In *Kuruçay Höyük II: Results of the Excavations 1978–1988. The Late Chalcolithic and Early Bronze Settlements*, ed. R. Duru, 134–37. Ankara: Türk Tarih Kurumu Basımevi.
- Palumbi, G., and C. Chataigner. 2014. The Kura–Araxes Culture from the Caucasus to Iran, Anatolia and the Levant: Between Unity and Diversity. A Synthesis. *Paléorient* 40(2):247–60.
- Papadopoulou, I., and A. Bogaard. 2012. A Preliminary Study of the Charred Macrobotanical Assemblage from Çamlıbel Tarlası, North-Central Anatolia. *Archäologischer Anzeiger* (1):123–32.
- Philip, G. 1999. Complexity and Diversity in the Southern Levant During the Third Millennium BC: The Evidence of Khirbet Kerak Ware. *Journal of Mediterranean Archaeology* 12:26–57.
- Redding, R. W. 1981. *Decision Making in Subsistence Herding of Sheep and Goats in the Middle East*. Ann Arbor, MI: University Microfilms International.
- Schoop, U.-D. 2015. Çamlıbel Tarlası: Late Chalcolithic Settlement and Economy in the Budaközü Valley (North–Central Anatolia). In *The Archaeology of Anatolia: Recent Work (2011–2014)*, Vol. 1, ed. S. R. Steadman and G. McMahon, 46–68. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Steadman, S. R., B. S. Arbuckle, and G. McMahon. 2018. Pivoting East: Çadır Höyük, Transcaucasia, and Complex Connectivity in the Late Chalcolithic. *Documenta Praehistorica* 45:64–85.
- , and G. McMahon. 2017. The 2015–2016 Seasons at Çadır Höyük on the North Central Plateau. In *The Archaeology of Anatolia: Recent Discoveries (2015–2016)*, Vol. 2, ed. S. R. Steadman and G. McMahon, 94–116. Newcastle upon Tyne: Cambridge Scholars Publishing.
- , G. McMahon, B. S. Arbuckle, M. von Baeyer, A. Smith, B. Yıldırım, L. D. Hackley, S. Selover, and S. Spagni. 2019. Stability and Change at Çadır Höyük in Central Anatolia: A Case of Globalisation? *Anatolian Studies* 69:21–57.
- , G. McMahon, and J. C. Ross. 2007. The Late Chalcolithic at Çadır Höyük in Central Anatolia. *Journal of Field Archaeology* 32:385–406.
- , G. McMahon, J. C. Ross, M. Cassis, J. D. Geyer, B. Arbuckle, and M. von Baeyer. 2013. The 2009 and 2012

MADELYNN VON BAEYER is an archaeobotanist and a research fellow at the Harvard University Herbaria. She received her PhD from the University of Connecticut. Her research examines ancient plant macrofossils (seeds, miscellaneous plant parts, and wood) throughout the eastern Mediterranean, specifically in Turkey and Greece. Her research interests include understanding social complexity, identity, and cultural resilience in response to climate change through plant use. (Harvard University, Harvard University Herbaria, 22 Divinity Avenue, Cambridge, MA 02138; vonbaeyer@fas.harvard.edu)

BENJAMIN S. ARBUCKLE is an associate professor of anthropology at the University of North Carolina at Chapel Hill. He received his PhD from Harvard University. His research interests focus on human-animal relationships including the origins of domestic animals and the uses of livestock in early complex societies. Recent publications include *Animals and Inequality in the Ancient World* (with Sue McCarty; University Press of Colorado, 2015), “Early History of Animal Domestication” (*Oxford Research Encyclopedia*, 2018) and “The Rise of Pastoralism in the Ancient Near East” (with Emily Hammer; *Journal of Archaeological Research*, 2019). (Department of Anthropology, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599; bsarbu@email.unc.edu)

RYAN ROBINSON is an undergraduate at the University of Washington in Seattle double-majoring with honors in Archaeological Sciences and Near Eastern Languages & Civilization. He has participated in archaeological projects in Turkey and Cyprus, including two seasons at Çadır Höyük, during which he specialized in lithic identification and analysis. Recent research projects include further analysis of Çadır Höyük’s stone-tool assemblage and numismatic-based inquiries into ancient power structures. (University of Washington, Department of Anthropology, Seattle, WA 98195; ryan2014robinson@gmail.com)

ALEXIA SMITH is an associate professor of anthropology at the University of Connecticut. She received her PhD in archaeology from Boston University. She has conducted research on early agriculture in Turkey, Syria, Armenia, and northern Iraq, and research on modern irrigation engineering and the social implications of irrigated agriculture in Malaysia. Her current research focuses on the dynamic relationship between food production, climate flux, and changes in early social complexity at both regional and site-based levels. Her most recent publications integrate archaeobotanical method and theory with geoarchaeological approaches to examine food production, crop processing, food preparation, and fuel use from a social and functional perspective. (Department of Anthropology, University of Connecticut, 354 Mansfield Road, Unit 1176, Storrs, CT 06269-1176; alexia.smith@uconn.edu)

- Seasons of Excavation at Çadır Höyük on the Anatolian North Central Plateau. *Anatolica* 39:113–67.
- , G. McMahon, J. C. Ross, M. Cassis, T. E. Şerifoğlu, B. S. Arbuckle, S. E. Adcock, S. Alpaslan Roodenberg, M. von Baeyer, and A. J. Lauricella. 2015. The 2013 and 2014 Excavation Seasons at Çadır Höyük on the Anatolian North Central Plateau. *Anatolica* 41:87–124.
- , J. C. Ross, G. McMahon, and R. L. Gorny. 2008. Excavations on the North-Central Plateau: The Chalcolithic and Early Bronze Age at Çadır Höyük. *Anatolian Studies* 58:47–86.
- , T. E. Şerifoğlu, G. McMahon, S. Selover, L. D. Hackley, B. Yıldırım, A. J. Lauricella, B. S. Arbuckle, S. E. Adcock, K. Tardio, E. Dinç, and M. Cassis. 2017. Recent Discoveries (2015–2016) at Çadır Höyük on the North Central Plateau. *Anatolica* 43:203–50.
- Uerpmann, M., and H.-P. Uerpmann. 1994. Animal Bone Finds from Excavation 520 at Qala'at al-Bahrain. In *Qala'at al-Bahrain I: The Northern City Wall and the Islamic Fortress*, ed. R. Højlund and H. H. Andersen, 417–44. *Jutland Archaeological Society Publications* 30.1. Aarhus: Aarhus University Press.
- van Zeist, W., and J. A. H. Bakker-Heeres. 1975. Prehistoric and Early Historic Plant Husbandry in the Altınova Plain, Southeastern Turkey. In *Korucutepe*, Vol. 1., ed. M. N. van Loon, 224–57. Amsterdam: North-Holland Publishing Company.
- Vila, E., and D. Helmer. 2014. The Expansion of Sheep Herding and the Development of Wool Production in the Ancient Near East: An Archaeozoological and Iconographical Approach. In *Wool Economy in the Ancient Near East and the Aegean*, ed. C. Breniquet and C. Michel, 22–40. Oxford: Oxbow.
- von Baeyer, M. 2018. *Seeds of Complexity: An Archaeobotanical Study of Incipient Social Complexity at Late Chalcolithic Çadır Höyük, Turkey*. PhD diss., University of Connecticut.
- Yıldırım, B., L. D. Hackley, and S. R. Steadman. 2018. Sanctifying the House: Child Burial in Prehistoric Anatolia. *Near Eastern Archaeology* 81:164–73.