

The Archaeology of Anatolia:

Recent Discoveries (2011-2014)
Volume I

Edited by

Sharon R. Steadman
and Gregory McMahon

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CHAPTER SIX

KINIK HÖYÜK, NIĞDE: A NEW ARCHAEOLOGICAL PROJECT IN SOUTHERN CAPPADOCIA

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Introduction (L. d'Alfonso, N. Highcock)

The site of Kınık Höyük is located in southern Cappadocia, in the province of Niğde at the foot of the Melendiz Dağları at the eastern edge of the Konya Plain. Southern Cappadocia was a crossroads of crucial importance from prehistory to the Medieval Period due to its control over the Cilician Gates, the main pass through the Taurus Mountains providing a thriving corridor between the Levant and greater Anatolia (d'Alfonso 2010: 28). Archaeological research on southern Cappadocia has often focused on mineral extraction, processing, and trade and has demonstrated that this region has always been integral to long-distance trade (Balkan-Atlı and Cauvin 2007; Yener 2000). While the excavation of Neolithic and Chalcolithic sites has greatly improved our knowledge of the prehistory of this region (lastly Düring 2010: chapters 4-5), until recently, the lack of excavations of proto-historical and historical sites has created a mischaracterization of southern Cappadocia as somewhat isolated from the greater socio-political developments of the ancient world. Excavations at the site of Tyana Kemerhisar (Rosada and Lachin 2010), 30 km from Kınık Höyük, have since captured a more dynamic picture of the Roman

and Byzantine Periods in southern Cappadocia, but the Bronze and Iron Ages, and the Hellenistic Period (HP) are still underrepresented in the archaeological literature. It is the work of the French mission at Zeyve Höyük Porsuk (Beyer 2010 with references therein) and now the mission at Kınık Höyük that is beginning to fill many historical gaps and build up a new diachronic view of this region. The excavations at Kınık, which began in 2011, have already provided invaluable information for interpreting the regional dynamics from the Late Bronze Age (LBA) to the HP and the Medieval Period (MP).

Scientific interest in Kınık stemmed from a survey of the area that was conducted by the University of Pavia from 2006-2009. Covering 800 km² from the southern slopes of the Melendiz Dağları to the northern bounds of the Bor-Ereğli Plain, this survey recorded 37 new sites ranging from the Chalcolithic to the MP, of which Kınık proved to be the largest site with significant pre-Classical surface ceramics (d'Alfonso 2010). The mound itself, rising into a roughly square terrace, measures 20 m high and 180 m in diameter at its widest. Furthermore, intensive survey indicated that the site included a substantial "lower town" which when taken together with the central mound, represents a settlement 24 ha in size. Though the survey recorded ceramics dating from the Early Bronze Age (EBA) up through the MP, the bulk of analyzed sherds dated to the LBA and Iron Age, a period in which this region transformed from a strategic periphery of the Hittite empire to a rich and cultivated small polity, the buffer kingdom of Tuwana (Mora and d'Alfonso 2012).

Excavations commenced with the aim of reinserting a prominent southern Cappadocian settlement back into the socio-political landscape of Anatolia with particular interest in the transition from the Hittite Empire of the LBA to the Early Iron Age (EIA) world of the localized post-Hittite kingdoms. Results from the first four years of fieldwork required the team to consider the contribution of our site to the history of Hellenistic Cappadocia (HP) and of Achaemenid Anatolia (Late Iron Age [LIA] II). It is now clear that apart from a poor Seljuk to early Ottoman occupation level (KH-Period I), the site presents a continuity of occupation of the central mound from at least the 15th to the 1st century BCE. Over these centuries major changes in the function and architecture of the mound suggest a division of this occupation into 6 more periods: KH-Period II (HP), KH-Period III (LIA II), KH-Period IV (LIA I, ca. 7th-6th c. BCE), KH-Period V (EIA-MIA), and Period VI (LBA). Another goal of the project has focused on integrating palaeobotanical and zooarchaeological evidence from Kınık into a diachronic study of human interaction with the local landscape; this is discussed toward the end of this chapter.

There are four ongoing operations at Kınık Höyük (Figs. 6-1 and 6-2):

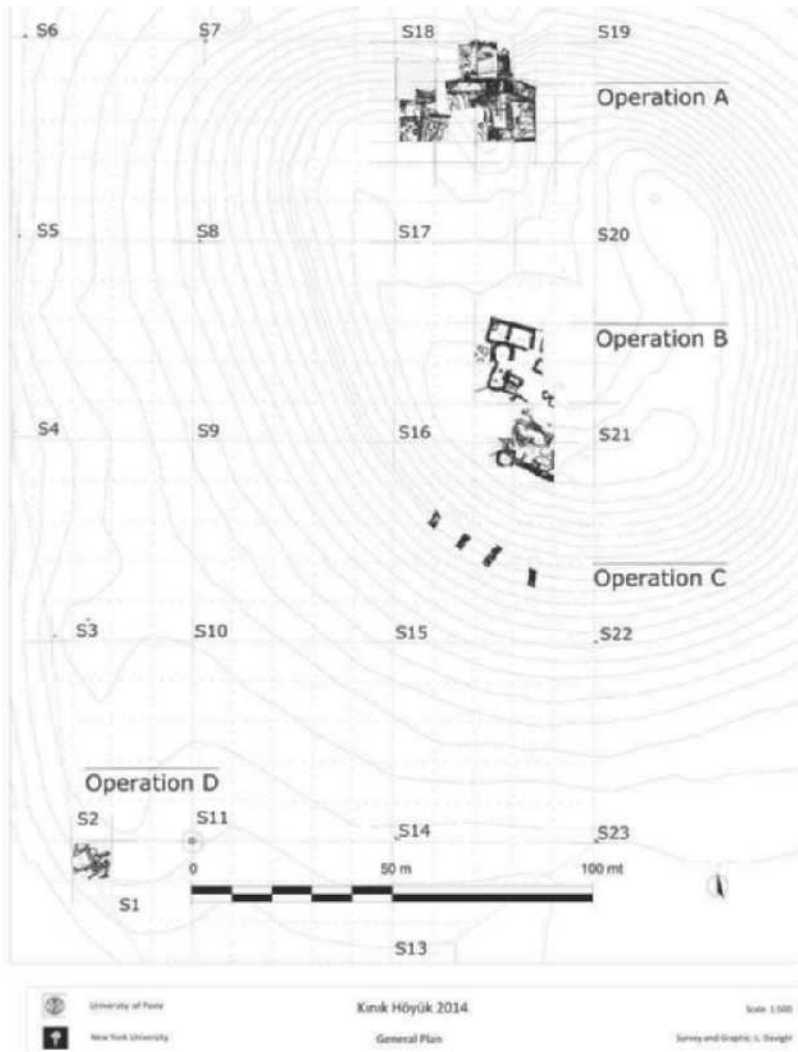


Figure 6-1. Operation sectors at Kınık Höyük.

Operation A1	Operation A2	Operation A-walls	Operation B	Operation C	Operation D	Periodization
		Level A.1	Level B.1 Level B.2		Level D.1	KH-Period I Middle Ages
Level A1.0 ^{??}						
Level A1.1	Level A2.1	Level A.2	Level B.3 Level B.4		Level D.2	KH-Period II Hellenistic (4 th BC - 1 st AD)
			Level B.5 Level B.6 Level B.7			
Level A1.2	Level A2.2	Level A.3			Level D.3	KH-Period III Achaemenid (6 th - 4 th BC)
	Level A2.3				Level D.4	
	Level A2.4	Level A.4		Level C.1 Level C.2		KH-Period IV Middle & Late Iron Age (8 th - 6 th BC)
	Level A2.5	Level A.5				
		Level A.6		Level C.3		KH-Period V Early & Middle Iron Ages (11 th - 9 th BC)
		Level A.7		Level C.3		
		Level A.8				KH-Period VI Late Bronze Age II - Early Iron Age I (15 th -12 th BC)
						KH-Period VII ???

Table 6-1. Periods and Levels at Kınık Höyük.

Operation A, on the northern slope of the mound, investigates the citadel fortifications as well as the intramural occupation abutting the walls; Operation B focuses on the occupation sequence on the summit of the mound. Four sounding trenches from operation C, opened in 2011 on the SW slope as part of a wider investigation of the citadel walls which will be reopened in 2015; Operation D was started in 2013 on the lower terrace in order to better understand social diversity and use of space within the greater settlement. Several occupation periods are represented in all current operations and are denoted by levels and their more specific phases where possible (Table 6-1).



Figure 6-2. View of Kınık Höyük (Operations A and B visible).

Operation A (L. d'Alfonso, M. Capardoni)

Operation A was opened in 2011 on the northern slope of the mound above the edges of a bulldozer cut. In just a few days the excavation suddenly reached the top of the stone socle of the citadel walls of Kınık. After four campaigns, the excavated area directly concerned with the fortification system covers almost 300 m², (S17.9, 17.10, 17.14, 17.15, and 17.19). It represents the core of the operation (sector A-walls), while two expansions towards the SW (sector A1) and the SE (sector A2) investigate the intramural occupation of the citadel.



Figure 6-3. Stratigraphy of Citadel Walls.

The stratigraphy of the fortification system thus far investigated spans from the HP back to the LBA. It consists of seven levels (Level A.1-7, Fig. 6-3). Level A.1 emerges directly after the removal of the humotic surface of the mound. It is the upper surface of an accumulation of broken yellowish mudbricks that are sometimes mixed with stones of small to medium dimensions. The yellowish mudbricks originally belonged to the superstructure of the citadel walls, but in ancient times they were removed and repurposed as a robber trench filling before finally forming a slanting surface of the slope similar in inclination to the modern one.

Under this accumulation, the remains of Level A.2 correspond to a time when the walls were visible on the northern slopes of the mound, but they were no more than ruins (Fig. 6-4). North of the walls, an outer surface slanted down gently towards the NW. The western portion of this surface was paved with medium-sized stones and possibly functioned as a street (A1805). In correspondence to this badly paved area, a breach in the

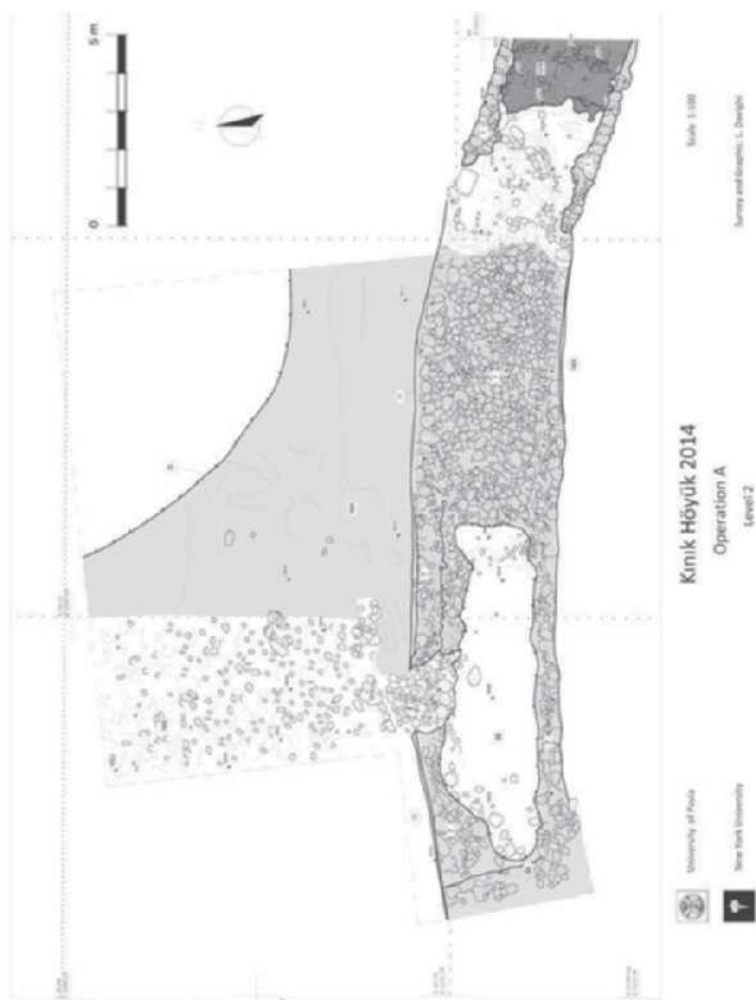


Figure 6-4. Operation A.2 Walls (Survey and Plan L. Davighi).

outer façade marks the access to a quarry trench in the walls. In this portion of the citadel walls, stones forming the core of the walls had been removed, and the trench was then refilled by earth and broken mudbricks. Sherds found on the outer surface and at the bottom of the quarry trench support a dating of level A.2 to the HP (KH-Period II).

Level A.3 is possibly the latest level of use of the walls. Preliminary analysis of the pottery found in the accumulation A152, outside the walls, suggests a dating to the Achaemenid occupation (KH-Period III). In Level A.3, a 30 cm wide channel (A1808) ran along the outer face of the walls, which possibly represents part of a system for collecting rainwater. Outside the channel, the outer surface A1806 descended uniformly towards the north with a 30° inclination.

Levels A.4-5 underneath are gently slanting outer surfaces abutting the walls, characterized by an underground system of drainage and stabilization of the whole area. The most elaborate system belongs to Level A.4, obtained by cutting a step in the slanting surface of an earlier rampart, and filling it with yellow, non-local, permeable earth and large unshaped stones, set at irregular distances from one another along the cut. The ceramics found in this accumulation mainly date to the MIA and LIA I (KH-Period IV).

The surface of the underlying Level A.6 is horizontal for a length of two meters from the walls, where it slants down at ca. 45° of inclination.

The earth accumulation under this surface (A9 = A158+A161) contains a collection of ceramics that have been dated between the LBA and the early MIA (d'Alfonso et al. 2014, §4.4). This dating is today confirmed by two ¹⁴C samples, hinting at a date between the 10th and the 9th century BCE.¹ Interestingly the earlier of these two dates belongs to a sample from the upper, and therefore more recently deposited stratum. While the composition of these deposits identifies them as trash, the coherence of dating of ceramics and ¹⁴C samples, as well as the position of the samples in the deposits, may suggest that this steep surface was deliberately constructed in a short time as a defensive rampart, but also to offer stability to the endangered stone socle of the walls. Our 2014 analysis of some cracks in the single stones of the socle showed that structural problems were present in the walls already in ancient times.

The main structure of the citadel walls belongs to Level A.7 (KH-Period VI). The walls consist of a stone socle and a poorly preserved mudbrick superstructure. The socle is about 4.5 m wide and was originally filled with unshaped river stones (Ø ca. 35 cm), retained by two 70 cm thick side-walls of equally unshaped stones, bigger at the base of the

¹ KIN14A158s18 (UBA-28266) 2 sigma cal. 1006-834 BCE; KIN14A161.S17a (UBA-28267) 2 sigma cal. 916-815 BCE. Samples dated by CHRONO Centre, School of Geography, Archaeology & Palaeoecology, Queen's University Belfast. I wish to thank L. Castellano who calibrated the dates with the program CALIB (v. 7.0, Queen's Univ. of Belfast), using the IntCal13 calibration data set (Reimer et al., 2013).

structure. The central fill of stones has many significant voids suggesting the lack of mortar joints (dry-stone, rubble masonry). Both faces of the walls were plastered, but only the plastering of the outer façade was exposed. Here the plastering is about 10 cm thick and is made of mud, tempered with organic inclusions. After exposure, sets of holes became visible at regular distances. They are the remains of original rows of timber, small stones, and mud placed at ca. 0.5 m one from one another and spaced out by rows of unshaped stones.

Two elements provide information on its construction date: the ¹⁴C analysis of a wooden sample from the wall itself, (ca. 1400+/-50 BCE: d'Alfonso et al, in press), providing a *terminus post quem*; secondly the deposits of the rampart of Level A.6 which cover Level A.7 and therefore offer a *terminus ante quem* for the construction of these walls. This makes the construction date of these walls in the LBA II very likely (15th-13th century BCE), even though a dating in the EIA I (12th-11th century BCE) cannot be excluded. In a deep trench we removed the external surface of Level A.7, and beneath it the remains of an earlier fortification came to light. This consists of a stone wall, whose width is slightly larger than that of the socle of the Level A.7 walls. From this wall, a stone structure juts out to the north; it is a rectangle of stones (only partially excavated), belonging to a bastion, or more likely a tower. The dating of this Level (A.8) is still unknown.

Operation A, Sector A1 (A. Trameri)

Sector A1 was opened in 2013 southwest of the area of Operation A-walls. In S17.4, below the Hellenistic Level A1.1, noteworthy evidence came from an impressive series of alternating accumulations rich in ashes, animal bones, and pottery sherds. The large assemblage of animal bone remains, in particular, constitutes the most distinctive feature of this limited area of deposits and is unparalleled in the site. This 50-80 cm accumulation pattern of ashes and charcoal, bones, and soil layers, which is still being excavated, indicates a compacted trash deposit. The accumulations were associated with two poorly preserved walls that join in the NE corner of a room with a passage opening to the east. This entire level (A1.2) can be dated to between the second half of the 5th and early 3rd century BCE on the basis of the material evidence. In addition to the ceramic assemblage, which consists mostly of fragments of fine tableware and kitchenware, a number of fragmentary terracotta animal figurines and fragments of at least two elaborate zoomorphic vessels and a solid ceramic statuette representing birds were found (Fig. 6-5). The depositional

sequence patterning and distinct faunal collection (§7 below), together with the material assemblage that includes a decorative architectural stone element, molded clay female statuette of excellent craftsmanship and a gold foil piece of jewelry, suggest an interpretation of this context as a cultic trash level (d’Alfonso et al. 2014; d’Alfonso et al. in press).



Figure 6-5. Fragmentary zoomorphic vessels: base with body of bird with geometric decoration (KIN 13A.178.F53+178.F57); head of bird with geometric decoration (KIN13A.135.F7+139.F58).

In 2014, the excavation was extended towards the south (S17.3) in order to further investigate the Levels A1.1-2. Level A1.1 (Fig. 6-6) consists of a terraced platform defined to the north by a mudbrick wall, and to the east by a stone wall. The terrace likely represented a court with a storage function, with at least three phases of use. Five big *pithoi* were sunk into the floor of the court. Ceramic types excavated from the court’s clay surface date in the HP. A group of fragments of a female terracotta figurine from the same context is identified with an Aphrodite dating to the 2nd century BCE (d’Alfonso et al. in press). East of the stone wall a well-preserved floor was built at a lower elevation than the platform. This space was possibly a room, and the presence of many postholes and a central fireplace seems to suggest that the room was at least partially roofed. Above

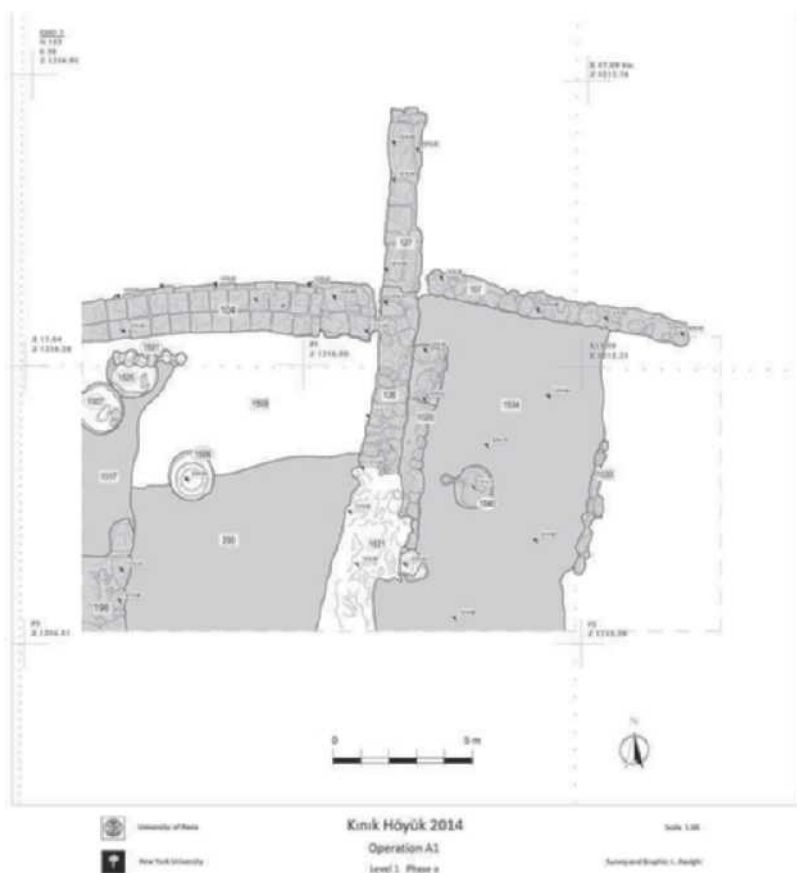


Figure 6-6. Plan of Level A1.1 (Hellenistic).

this floor is a bench or a walled stone chest, built with a course of stones running parallel to the stone wall to the west, some 30 cm apart, and filled with earth. A bronze coin hoard (“Hoard Ibis”) of 17 coins was discovered inside the filling of this installation and was sealed from above with mudbricks. Thirteen additional bronze coins found in 2013 likely belong to the same hoard (d’Alfonso et al. in press). In fact, the whole area around the bench yielded a significant number of coins (189 coins overall), mainly grouped into small hoards: “Hoard II,” counting 37 coins, was buried right beneath the bench installation and 60 coins of “Hoard III” were buried in a small hole dug below the floor, near

the central shallow fireplace. Other coins were found scattered around the room, but mainly inside the very same bench connected to the wall. If the hoards were not the consequence of political instability, they could be foundation deposits. After a preliminary cleaning, a few of the coins could be assigned to mints at Tarsus, Eusebeia-Kayseri, and Aigeai in Cilicia, dating to the mid-late 2nd century BCE (d'Alfonso et al. in press).

Under the clay floor of Level A1.1, excavations reached Level A1.2 which consists of another floor originally carefully plastered with gypsum, but whose eastern portion is damaged by later pits. This room is contemporary with a second room located north of the wall (S17.14). On the floor of the latter a red painted base of a terracotta statuette was found: its production technique, fabric, and decoration are compatible with the two bases of zoomorphic vessels found in 2013 (d'Alfonso et al. 2014), likely dating to the Late Achaemenid Period.

Operation A, Sector A2 (A. Lanaro)

The aim of sector A2 is to investigate the intramural strata situated along the northern slope of the mound to the southeast of the citadel walls (S17.13, 17.14, 17.18 and 17.19). The Hellenistic Level A2.1, lying right below the surface, was very poorly preserved because of erosion. Only the southeastern corner of a large room was preserved, partly built by reusing some squared tuff blocks probably coming from a still unknown building. During the campaigns 2012-2014, three levels dating from the Achaemenid to the Middle Iron Age (MIA) could be identified. A2.2 is an irregular outer surface associated with a system of pits. At least one of the pits was a hearth or a kiln, provided with a superstructure of mudbricks, in which a complete red-burnished, flared plate was found. It is plausible that this was an open air production area, possibly dedicated to ceramic production, as some ashy trash deposits directly connected with the pits, as well as a notable amount of dark grey and vitreous slags (concentrated in pit A220), seem to indicate. The fill of other pits also contained glass and faience beads as well as one complete spherical cooking pot. In Level A2.3, the area was occupied by modest architecture comprising a narrow stone wall (A227) oriented W-E and abutted on both sides by a clay floor with ash traces. Several postholes were dug into the southernmost area of the floor. The wall was abutting stone debris running below the eastern section of sector A2 resulting from a stone wall (A1244) of level A2.4b (see below).



Figure 6-7. Decorated juglet fragments of KIN12A282.1 from Level A2.4; 7th-6th century BCE.

Level A2.4 has been divided into two phases, which are both to be interpreted as occupational phases of a building constructed against the inner face of the citadel walls. In Phase A2.4a, only the mudbrick walls A234 and A300 and the stone debris A244, delimitating this area respectively along the western and eastern side, were in use. Associated to these walls was the well-constructed clay floor A282 with abundant potsherds *in situ*. Some of them belonged to an exquisite trilobite juglet (Fig. 6-7) found lying next to a knife blade. The body of the red polished vessel presents two rows of white plastered panels with a polychrome decoration: one panel shows a lozenge composed of four lotus flowers arranged at the four corners. This juglet is a very fine local production, and can be assigned to the end of the seventh or the beginning of the sixth century BCE (d'Alfonso 2014). This find allows us to date Level A2.4a to the LIA I (KH-Period IV), and assign A2.2 and A2.3 to the LIA II (KH-Period III).

After removing the floor A282 and the preparation layers below it, the whole court of phase A2.4b, named Room 1, was unearthed (Fig. 6-8). The northern wall of the court was constructed against the internal red-painted plastering of the citadel walls, obliterating it. It was coated with many layers of fine, white-painted plaster, traces of which were also identified on the western wall A234. The walls delimitating the court show

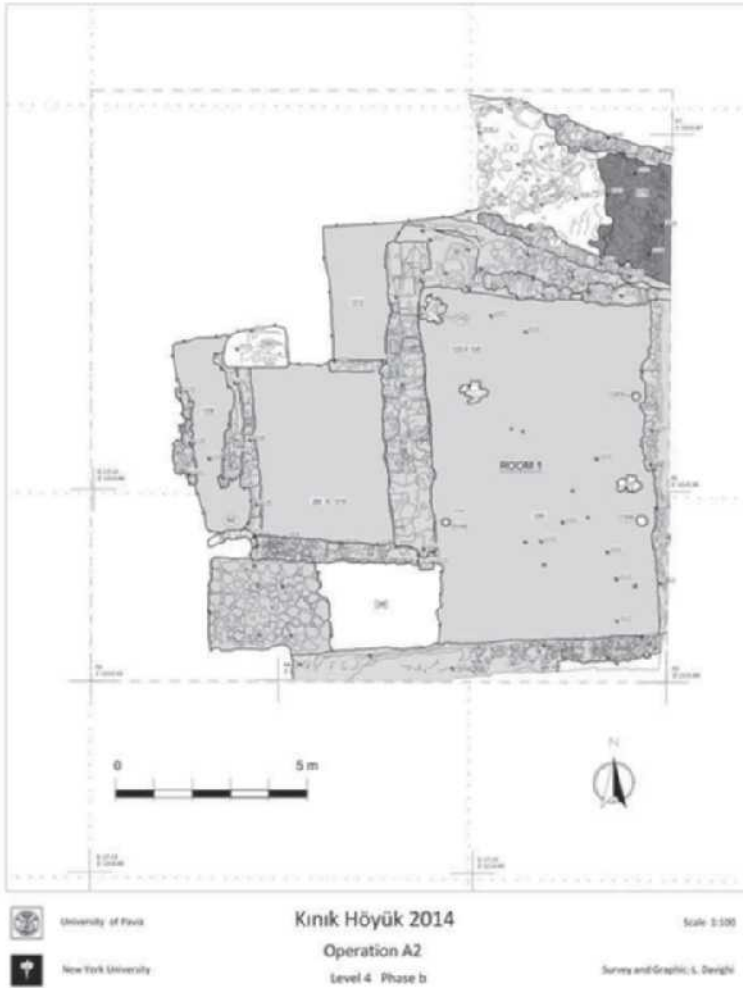


Figure 6-8. Plan of Level A2.4b (Achaemenid or early Late Iron Age), Room 1.

multiple phases of construction, possibly due to earthquakes or the instability of the area (possibly even the walls, see §2 above). Interestingly, the mudbrick walls A234 and A997, representing the western and southern limit of the court, exhibit a similar architectural technique with a high socle of rather small stones (about 20 cm in diameter)

and a thick clay plaster. The court was accessed from a large passageway on the southwestern corner that preserved part of a nicely smoothed, regularly set stone pavement. Three floors in the court were exposed, all with very few materials, dating to the LIA I and MIA (KH-Period IV). The discovery of fragments of at least three *pithoi* on the floor A1222 = A1245 suggests that the court played a part in storage for this building.

Operation B (A. Matessi)

Operation B was established in 2011 as an extensive excavation on the summit of the mound (Matessi et al. 2014), and after four campaigns it has expanded over seven of the 10 x 10 m squares of the site's topographic grid, namely S15.15, 15.20, 16.12-13, and 16.16-18, for a surface of ca. 630 m² (d'Alfonso et al. 2014). Operation B has identified seven levels of occupation (Levels B.1-7). Levels B.1-2, belonging to the Seljuk and early Ottoman times (KH-Period I, see also §7), directly sit upon or intrude into the Hellenistic levels (B.3-4). This sequence indicates a significant gap in the occupation of the mound corresponding to the Byzantine and Roman periods. Underneath, the earliest levels so far exposed in Operation B (Levels B.5-7) date to the Achaemenid Period (LIA II, KH-Period III).

The Medieval occupation of Levels B.1 and B.2 is represented by stone architecture, seemingly pertaining to a modest rural settlement lacking major public buildings. Domestic structures (Room 3) and livestock facilities (Halls 1-3) are arranged in and around an abandoned Level B.3 house (Rooms 1 and 2), resulting in significant modifications in the latter's layout. To the south, Room 5 was used during both Levels B.1 and B.2 as a modified edition of an earlier structure, whose foundations date back to the HP (Level B.3). The spatial organization of Room 5 was more complex in Level B.2 than in B.1 with three compartments (Rooms 5.1-3) defined by two walls (B330 and B531). In addition to these dwellings, Level B.1 is characterized by the presence of two pit houses whose foundations also cut into the earlier Hellenistic level. These structures include features such as postholes for roofing structures and hearths. The defining characteristic of Level B2 is a series of pits of various sizes and function, many of which are filled with fragments of broken *pithoi* (B577, B538, and B319), or stone-lined at their edges (Matney et al. 2011). Very few material remains were found in primary contexts in both Levels B.1 and B.2. However, consistent with the episodes of reuse between the HP and MP, deposits and fillings produced mixed ceramic assemblages of both periods.

The intrusion of the Medieval occupation significantly hinders our understanding of the Hellenistic stratigraphy, corresponding to Levels B.3

and B.4 (KH-Period II). The architecture of Level B.3, primarily stone masonry, is best preserved in the northern portion of the excavated area, where it has been reused and modified in later periods but not completely obscured. Room 1, in particular, remained untouched and sealed by stone debris. Excavation of this debris produced a homogeneous assemblage of black glazed and other Hellenistic pottery and uncovered a semi-circular installation in the northwestern corner (B718) in connection with a gap in the walls. Similar arrangements are found for Early Hellenistic storage-bins at Gordion (Wells 2012: 66-67; Lawall 2013). An open narrow passage between the eastern and southern walls of Room 1 led to Room 2; the latter also opened into a lane through a doorway in the eastern wall, whose door-socket and limestone threshold were still found *in situ* (B412). To the south are the poor remains of Room 6, later reused to construct Room 5 in the MP (Level B.1-2). A series of postholes, irregularly piercing one of the two floors excavated in the room, possibly housed the braces of temporary roofs. The Level B.3 settlement was potentially provided with a fortification system, if this proves to be the function of the 1.5 m thick stone wall B487 running along the southern edge of the mound's summit.

The floor of Level B.4 defines a clear change in the architecture and organization of the summit of Kınık's citadel. This level was created by cutting the walls of the earlier levels at a uniform elevation and filling them with ashy deposits to construct a new terrace. The currently excavated levels beneath (B.5-7) are dominated by an imposing structure dating to the Achaemenid Period. Common features for all the three levels are the mudbrick walls B397 and B673. These are particularly well preserved, ca. 2 m high and 1 m wide, with some spots displaying a robust colored plastering (d'Alfonso et al. in press, §2). The latest phase of use of the mudbrick structure, Level B.5, is defined by two additional walls (B815 and B892), which join with B397 and B673 to form a large room measuring ca. 10 m by 3-4 m (Room 7). The corner between B892 and B815 is heavily disturbed by Medieval pits, but there are clear remains of a circular structure (B2043) similar to the one excavated in the opposite corner of the room, in Level B.7. Below, in Level B.6, the main architectural feature of this room is the wall B897. This wall, comprising a stone socle and mudbrick superstructure, runs NW-SE just below the later wall B892 and is coated by a thick layer of plaster. The earliest floor of Level B.6 (phase *b*) was provided with an oven (B2001), equipped with a lateral stone installation (B2010). In the oven a whole ceramic form was found (KIN14B.2002.F23): this flared bowl had a secondary use as a lid, possibly for a cooking pot, as also indicated by the hole on its base.

Toward the northwestern corner of the room the bottom of a mill was found upside down on the floor. The presence of a mill, oven, and several ashy fireplaces indicate that this space was associated with food preparation during Level B.6. Level B.7 is currently exposed only in the eastern half of Room 7 (Fig. 6-9). In the northeastern corner of the room a circular installation (B806) was uncovered in 2013. Archaeobotanical analyses of the remains from its fill allowed us to confirm its interpretation as a trash bin (pers. com. F. Fantone). Among the discards in the bin were two whole ceramic bowl forms with internally thickened or incurved rims (KIN.13B.807.F37 and KIN.13B.807.F45). The plaster-like floor (B876) yielded few remains apart from a fine glass bead with eye decoration.

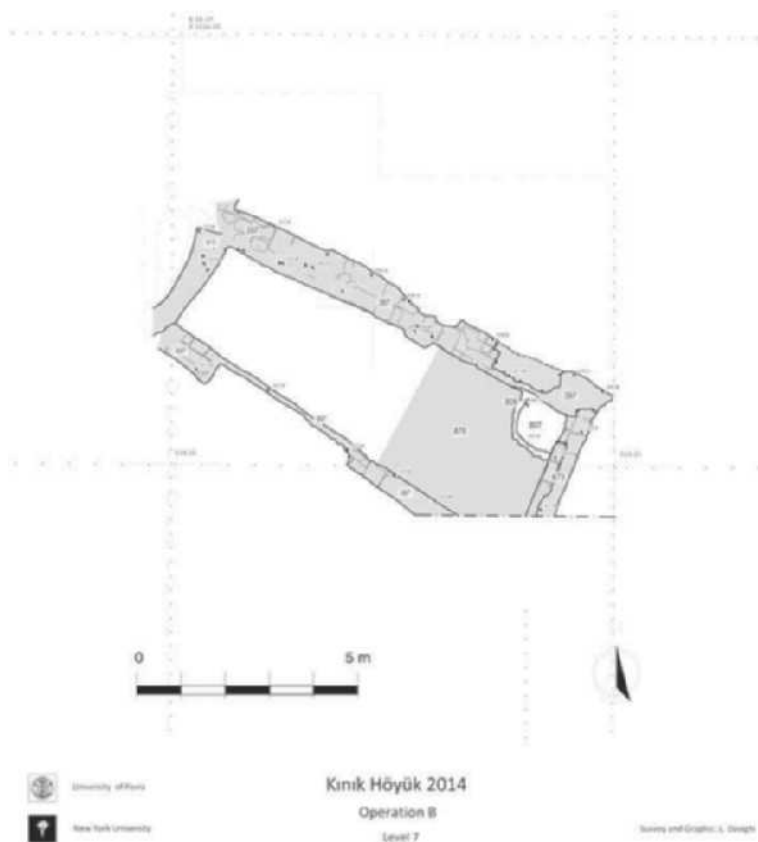


Figure 6-9. Plan of Room 7 in Level B7 (Achaemenid).

Operation D (N. Highcock)

The 2013 season launched Operation D at the bottom of the western slope of the mound in an area identified as the lower town of the settlement (S1.15). The survey had indicated that this area was rich in ceramic material and architectural remains, including the possible outer walls of the site. This 10 m² operation has generated initial data on occupation patterns in a domestic context that complements the ongoing excavations on the top of the mound. Thus far, three definitive periods of occupation, represented by three different levels with subphases, have been identified based on ceramic material and architectural features. The earliest level D.4, perhaps corresponding to the LIA I, was reached at the very end of the 2014 season and will be the focus of next year's campaign. Level D.1, located just beneath the surface soil, was poorly preserved, and the extant stone debris difficult to reconstruct. The ceramic assemblage included types different from those found in comparative Medieval levels on the mound and suggests a Byzantine Period occupation in the lower town that is still uncertain within the citadel walls.

Beneath this very disturbed level, we unearthed part of a dry stone-walled room (Room 1) in the northeastern corner of the excavation area. Room 1 was associated with three phases of clay floors and an external surface (D1026) south and west of the room. The main feature of this room was a rectangular mudbrick installation (D1046, Wells 2012: 237), open to the east, which was filled with fine white ash and ceramic sherds including a fragment decorated with a painted ivy leaf (KIND13 D1070.F3). The decoration of this sherd is comparable to the West Slope type (Rotroff 2002) from Athens, and together with other Hellenistic sherds found in this level, indicates a dating to the 2nd-1st century BCE. The other installation of note in this room was a partially collapsed mudbrick oven-like structure (D1080) filled with dark ash, ceramic sherds, and very small glass fragments. Flotation of the ashy accumulations from both installations suggests that they were not used for food production or storage, or had been thoroughly cleaned of botanical remains before reuse.

The later occupation phase D.2a of this level is noteworthy for yielding thirty loom weights of various sizes and types. The majority of the objects were found beneath mudbrick debris in a depression on an external surface west of Room 1, but a small number were also found inside the room. One cluster of loom weights was even found with a polished bone weaving shuttle (KIN13D1050.F28). Additionally, in the external surface (D1026) south of Room 1 we uncovered several small postholes (< 5 cm diameter) placed at irregular intervals. It is possible that these postholes represent the

presence of a wooden installation such as a loom. Though Level D.2 was poorly preserved apart from Room 1, it is clear from the high concentration of loom weights that this area was associated with textile production.

The transition between Levels D.2 and D.3 is characterized by the ashy layers and fire damaged mudbrick first encountered in the western half of the sector in 2013, and excavated in 2014 throughout the entire operation (phase D.2b). Under these deposits, Level D.3 dates to the Achaemenid Period. In 2013, D.3 was first uncovered also in the western half of the sector and was represented by a portion of a room (Room 2) ca. 3.5 m wide defined by two sturdy mudbrick walls running SW-NE and joined by a later stone wall running S-N (D1114). The hardness of the mudbrick and the ashy accumulations around the perimeter of the room hinted at exposure to extreme temperatures. To the north of the wall in an ashy accumulation several ceramic sherds comparable to those of Achaemenid Gordion (d'Alfonso et al. 2014) were recovered including a *lekythos* fragment (KIN13D1057.F81) which provided an early 5th century BCE date as well as evidence for the lower town's involvement in the long-distance trade of elite wares (see d'Alfonso et al. 2014 §4.2-3). Room 2 housed a "kitchen" installation in its SW corner comprising a circular oven, a smaller domed oven, stone working surface, and built up clay shelf exhibiting a clear vessel depression. The entire installation was separated from the rest of the open room by a low mudbrick wall. Excavation of the circular oven (D1029) revealed that it was originally made of ceramic and comprised two chambers separated by a mudbrick shelf. Though damaged, it seems that fuel was placed through an opening at its base and indeed, a ceramic vessel with an extremely burnt base was found resting on the shelf. The entire oven was packed with *pithoi* and other large sherds in order to insulate it and perhaps maintain its structural integrity.

In 2014, east of Room 2, we excavated a large domed mudbrick oven (D1161) with a collapsed roof built against a mudbrick wall D1098, an extension of stone wall D1114. The fill inside the oven was rich in charcoal, burnt faunal remains, and burnt cooking pot fragments. Directly north was an Olynthus type basalt mill, consisting of a hopper and lower curved grinding stone, (d'Alfonso et al. 2014, 569; Frankel 2003) which is compatible with a 5th century BCE dating for Level D.3a (Fig. 6-10). A wooden pole fit into the horizontal notches of the hopper which was powered by the operator to grind grain between the two parts. The Level D.3b directly below also corresponds to the Achaemenid Period (KH-Period III), and another domed oven (D1191) built against a wall was exposed. The fine ashy fill of this oven may have been used to cook meat;

any botanical matter may have been incinerated due to high temperatures (pers. comm. F. Fantone). Though we have not completed uncovering Level D.3 in the south and north of the sector, it is clear that this level was associated with food processing and was a thriving location of domestic activity.



Figure 6-10. Basalt Olynthus mill hopper dated to Level D3.a (Achaemenid).

Zooarchaeology at Kınık Höyük 2011-2014 (P. Crabtree and D. Campana)

The recovery and analysis of animal bone remains plays a crucial role in the Kınık Höyük project. Animal bones provide important information on past animal husbandry practices, hunting patterns, and diet, and when combined with the archaeobotanical record, the faunal remains can shed light on broader agropastoral strategies and environmental history. We joined the Kınık Höyük team during the 2013 field season funded by a New York University Research Challenge Fund (URCF) grant to Pam Crabtree and Lorenzo D'Alfonso. In 2013, we identified the faunal remains from the 2011 and 2012 excavation seasons. These results have been described elsewhere (Crabtree and Campana 2014) and will be summarized briefly here. This report will focus on the Achaemenid Period material from Operation A, sector A1 (see §3 above) which was recovered during the 2013 field season and was identified during 2014 research

funded by an American Research Institute in Turkey (ARIT) grant to Pam Crabtree.

A total of 12,599 animal bones and fragments were analyzed during the 2013 field season, and an additional 5673 were identified from Area A in 2014. All the animal bones and fragments were recorded using FAUNA, a specialized data-base manager for archaeozoology (Campana 2010). The basic information recorded for each specimen included the animal species, anatomical element, side of the body, portion of the bone present, degree of fragmentation, and the state of epiphyseal fusion of the limb bones. Higher order taxa, e.g., small artiodactyl (“sheep/goat-sized”), were used for those fragments that could not be identified to species. Tooth-wear was recorded following Grant (1982), and the mandibles were grouped into age classes following Payne (1973). Bone measurements were recorded following the recommendations of von den Driesch (1976). Any questionable specimens were photographed for further study.

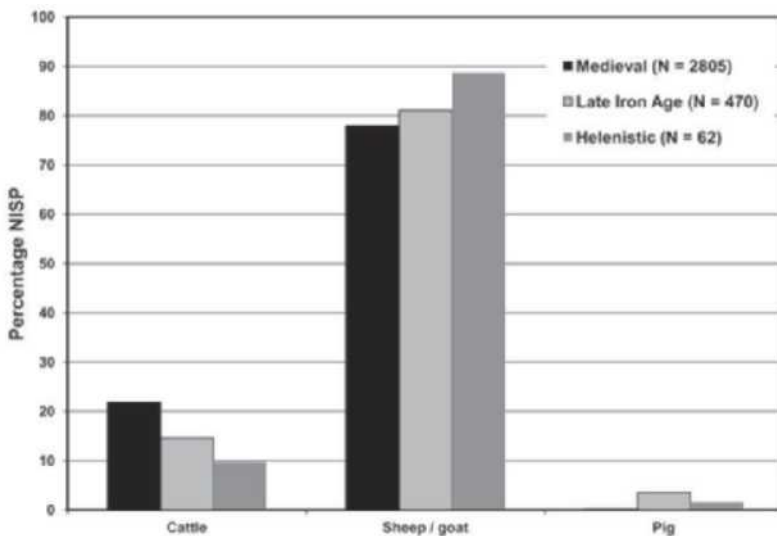


Figure 6-11. Species ratios for cattle, sheep/goat, and pig for the Late Iron Age, Hellenistic, and Medieval features excavated during 2011-12.

In 2013 we analyzed the animal remains recovered from Hellenistic, LIA, and Medieval contexts during the first two excavation seasons. All three assemblages were dominated by the remains of caprines (sheep and goats), followed by cattle. The species ratios for the cattle, caprines, and

pigs are shown in Figure 6-11. In all three periods, caprines make up about 80% of the large domestic mammal assemblages. These calculations are based on the number of identified specimens per taxon (NISP), following Lyman (2008). The large faunal assemblage from the Medieval features has been described in detail elsewhere (Crabtree and Campana 2014). Two points should be emphasized here. First, the bones of the large domestic food mammals were supplemented by a wide range of other animals, including the bones of horses, donkeys, camels, dogs, red deer, roe deer, hare, fox, chickens, geese, ducks, cranes, partridges, and a very small number of fish. However, sheep, goat, and cattle would have provided most of the Medieval diet. Second, the near absence of pig remains suggests that these animal bone remains are associated with the Islamic Seljuk Turk population in the area. The smaller Hellenistic and LIA assemblages provide less evidence for hunting, fowling, and poultry-keeping (Crabtree and Campana 2014).

Species Identified	NISP
Cattle (<i>Bos taurus</i>)	69
Sheep (<i>Ovis aries</i>)	112
Goat (<i>Capra hircus</i>)	36
Sheep/goat	878
Pig (<i>Sus scrofa</i>)	0
Horse (<i>Equus caballus</i>)	1
Donkey (<i>Equus asinus</i>)	2
Small artiodactyl	1785
Large ungulate	161
Unidentified mammal	2619
Chicken (<i>Gallus gallus</i>)	3
Pigeon or dove (<i>Columba</i> sp.)	1
Chicken-sized bird	4
Unidentified bird	2
Total	5673

Table 6-2. Animal bone remains identified from the Achaemenid features.

In 2013 a large quantity of animal bone was recovered from Area A in an ashy matrix and associated with ceramic figurines of birds. The context has been dated to the Achaemenid Period. The animal bone recovered from this area is shown in Table 6-2. The striking feature of this assemblage is that sheep and goats make up about 94% of the large domestic animal assemblage. Most of the rest are cattle bones; no pig bones were recovered from this area. The assemblage included many meaty elements, such as ribs, vertebrae, and limb bones. While sheep and goats of a number of different age classes were identified, suckling lambs and kids and elderly animals (8-10 years of age) were missing from this faunal collection. The high percentage of sheep and goats and the absence of the youngest and oldest age classes suggest that this deposit may be associated with feasting, possibly of a ritual nature. Additional faunal material was recovered from this area in 2014, and we plan to focus our studies on this material during the 2015 season.

Paleobotanical Report (N.F. Miller and P. Strosahal)

Kınık Höyük lies in the temperate steppe forest zone of Anatolia (Zohary 1973: Map 7). Annual precipitation at Niğde is under 350 mm/year.² Most precipitation falls in the autumn and into the late spring, with April and May being the months of heaviest rainfall. July, August, and September are the driest months. Grain crops like wheat and barley would have been planted in the autumn and harvested in the spring. Oak and pine probably grew in the uplands within view of the site, although there are relatively few trees growing naturally. Today, the region is covered with fruit orchards (presumably irrigation supplements natural precipitation). In the absence of direct ethnographic observation, Helburn (1955) provides a somewhat old-fashioned geographical view of the agropastoral economy of central Anatolian villages (see also Yakar 2000).

Of the thirty samples taken from Kınık, six have been analyzed fully. These samples, representing LIA I and II contexts, demonstrate that at least seven types of cultivated plants are represented in the seed assemblage, all of which could have been grown locally: barley, wheat, millet, lentil, pea, bitter vetch, and grape (Table 6-3).

² Meteoroloji İşleri (1974) reports a 35-year average of annual precipitation, 1935–1970 of 348.8 mm (May–October: 125.4 mm); modern Turkish government statistics give a 42-year average, 1960–2000, of 333.6 mm (May–October: 116.9 mm) (<http://www.dmi.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?m=NIGDE>; August 27, 2013)

- Cereals and millets: The two most important cultigens are wheat and barley (*Hordeum vulgare*). The wheat is most probably bread wheat (*Triticum aestivum*), though macaroni wheat (*T. durum*) cannot be excluded. A single grain of broomcorn millet was also seen.
- Pulses. Small amounts of lentil (*Lens*), pea (*Pisum*), and bitter vetch (*Vicia ervilia*).
- Fruit. The only fruit remains were from grape (*Vitis vinifera*), both seeds and peduncles (fruit stems).

	Kınık LIA I	Kınık LIA II	Kınık (total)	Gordion YHSS 5 c. 800– 540 BC	Gordion YHSS 4 c. 540– 330 BC
no. samples	3	3	6	15	53
Mean density (g/liter)	0.30	0.39	0.35	3.49	1.23
Median seed:charcoal (g/g)	0.05	0.10	0.09	0.02	0.05
Median wild:charcoal (no./g)	25	23	24	2	7
Median wild:cereal (no./g)	n/c	152	n/c	97	132
% Barley relative to wheat: B/(B+W)	26	50	38	65	62
Median % Cyperaceae	35	7	19	15	16

Table 6-3. Comparison between Gordion and Kınık Höyük archaeobotanical assemblages; Late Iron Age I and II samples are treated as one unit in this table. (Gordion data source: Miller and Marston 2012.)

The seed remains of wild and weedy plants represent more than 35 genera from at least 18 plant families. Several genera are most likely to

have originated in relatively undisturbed steppe: *Artemisia*, *Trigonella*, *Ziziphora*, *Stipa*, *Androsace*, and *Valerianella*. Plants of streamside, moist ground, and irrigated fields include: *Carex*, *Scirpus*, Cyperaceae unspecified, *Trifolium/Melilotus*, *Fumaria*, *Setaria*, *Rumex*, *Potentilla*. Ruderals (plants of disturbed ground), and field weeds include: *Vaccaria*, *Chenopodium*, *Trifolium/Melilotus*, *Medicago*, *Plantago*, *Avena*, *Rumex*, and *Galium* (see Miller 2010: Table 5.8)

Archaeobotanical studies of LBA and IA sites in central Anatolia provide a framework for understanding the Kınık material: Gordion (Miller 2010), Kaman-Kalehöyük (lastly Fairbairn and Bradley 2008, references to previous reports therein), Kuşaklı, and Boğazköy (Dörfler et al. 2011 with references therein). By the LBA, the primary crops included einkorn, bread wheat, and barley. Pulses such as lentil and bitter vetch occur in flotation samples with some regularity. Flax and grape appear at all these sites. In the absence of closer comparanda, it is reasonable to compare the contemporary Gordion (YHSS 5 and YHSS 4, “Middle Phrygian” and “Late Phrygian”) and Kınık assemblages quantitatively.

The density of charred material at Kınık is lower than that at Gordion, possibly because the samples were relatively close to the surface and thus subject to wetting/drying and freezing/thawing. Alternatively, the higher values at Kınık of seed:charcoal and wild seed:charcoal are indicative of relatively more use of dung fuel, which tends to produce a lower overall density of charred material. For the ratios discussed below, median rather than mean is compared (see Miller and Marston 2012). Both sites share a relatively low seed:charcoal and wild seed:charcoal ratio, which suggests that wood fuel was available (Miller and Marston 2012: 98). The median wild:cereal ratio is similar to west Asian sites where a mixed agropastoral economy prevailed. The presence of sedges and a few other plants that favor moist areas along with crops that might have required supplemental irrigation in the summer (e.g., grape, millet), suggests that irrigation was present; minimally the moisture-loving wild plants show that streams or wetland areas were close to the site. At both Gordion and Kınık, wheat and barley are of similar importance; this is fully consistent with the Central Anatolian ethnographically known pattern for dry-farming (Helburn 1955). The most common and numerous families in the category wild/weedy represented in the Kınık samples are legumes, grasses, and sedges; all are well-represented at Gordion, too, and include common fodder plants.

Conclusions

We can now start integrating the early results of the Kınık Höyük project into the general picture of the archaeology of the Anatolian Plateau. In the *longue durée* perspective, the geo-morphological and archaeological investigations emphasized that specific features of the Bor Plain made its landscape sensitive to the slightest environmental change; for instance, a large lake, a river, ponds, marshes, and steppe all waxed and waned, at times disappearing completely, throughout the centuries (Kuzucuoğlu et al. forthcoming). These environmental shifts directly disrupted the main routes crossing the area, as well as affected the degree of isolation vs. centrality of the site, and thus its economy, through time. Despite these facts, the first results from the excavations of the fortifications of the citadel of Kınık show clues of continuity from the LBA towards the HP. This is firstly relevant for the interpretation of the transition in Southern Cappadocia between the LBA and the IA (Mora and d'Alfonso 2012); it hints at a continuity of use and implementation of this defensive public structure from the LBA to the LIA on the site, not attested in North-Central Anatolia. The construction technique of the Level A.7 walls does not correspond to the casemate walls typical of the Hittite fortifications (lastly Seeher 2010), hinting at either the lack of strong connections between this area with the core of the empire, as previously thought (Glatz 2009), or the introduction of a sudden technological change of foreign influence.

While the existence of a well-preserved stratigraphy of the whole IA will help shed more light on the archaeology and history of South-Central Anatolia during the late 2nd and 1st millennium BCE, the LIA II and HP on the site deserve due attention. We adopted the term Achaemenid for our KH-Period III because of the presence of ceramic classes similar to those of Gordion in the Achaemenid Period, but also because of the lekythos found in a household context in the lower town (Operation D), typical of the taste of the Achaemenid élites. The next campaigns will have to confirm and better define the significance of this occupation period.

On the other hand, Hellenistic Kınık appears as a rich, relatively large, although not well-defended nor particularly monumental town. We can best appreciate the late phase of this occupation, dating to the end of the 2nd century–first half of the 1st century BCE. The connections with the region of Kayseri and with Cilicia are emerging in the study of the finds, in particular coins and terracotta figurines, and in our study of the pottery. With even the few remains we have brought to light, Kınık has already contributed enormously to the archaeology of the Hellenistic kingdom of

Cappadocia that is so little known. The cultic trash deposits on the northern slopes of the citadel could hint at the existence of a cult of a goddess on the site. The IA stela representing a goddess seated on a lion found in the 1980s north of the site, at the pass of the Altunhisar Valley is also connected with the community of Kınık Höyük, because no other IA sites were identified in the area (Lanaro 2015); further research will ascertain whether the cult of the IA goddess then transformed and survived until the HP.

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