



FRIENDS OF GORDION

NEWSLETTER



Figure 1: The “Golden Age of King Midas” exhibit in the Penn Museum. Photo by Tom Stanley.

As many of you know, 2016 has been an especially active year for the Gordion Project in that it witnessed the opening of a new exhibit celebrating the Penn Museum’s 65 years of fieldwork at Gordion (fig. 1). Entitled “The Golden Age of King Midas,” the exhibit features over 120 objects loaned from four museums in Turkey—the Museum of Anatolian Civilizations in Ankara, the Gordion site museum, the Istanbul Archaeological Museum, and the Antalya Archaeologi-

cal Museum. To these we added over 100 objects from the Penn Museum’s own collection, as well as an ivory figurine from the Delphi Archaeological Museum and an inscribed cylinder of the Assyrian king Sargon II from the Oriental Institute of the University of Chicago. The exhibit will continue until the 27th of November, and nearly 30,000 have already seen it.

The focus of the exhibit is Tumulus MM (the “Midas Mound”, ca. 740 B.C.),

one of the largest burial mounds in Turkey, which was excavated by Penn in 1957. Within it is the oldest standing wooden building in the world, and it contained the complete assemblage of gifts that were deposited during the funeral of a man who we assume was Midas’ father. The exhibit has also given us an opportunity to highlight the other great kingdoms and states with which the Phrygians interacted during the Iron Age and Archaic periods (ca. 950–540 B.C.), such



Figure 2: Architectural conservation of the Early Phrygian Citadel Gate, looking east toward Tumulus W. The walls of the Early Phrygian Terrace Building are visible at the bottom. Photo by Brian Rose.

as Assyria, Urartu, Persia, Lydia, Greece, and the Neo-Hittite city-states of North Syria, among others. In essence, the Phrygian kingdom has been placed in its Mediterranean and Near Eastern context for the first time.

We would not have been able to construct such a rich narrative without the generosity of the Turkish Ministry of Culture and Tourism, which has made it possible for us to exhibit the majority of the discoveries from the “Midas Mound” as well as a wealth of other artifacts associated with the Phrygians. Needless to say, this exhibition relied heavily on the energy of a dedicated team of archaeologists

and students at Gordion and in the Penn Museum, and we hope it will prompt all of you to visit Gordion and see these spectacular monuments for yourselves.

The Midas exhibit propelled us into the field with even greater energy than in the past, and we were again fortunate in having an unusually rewarding campaign balanced between conservation and excavation. As in 2015, our attention focused primarily on reconstructing Gordion’s city plan and fortifications during the Early, Middle, and Late Phrygian periods (9th–6th centuries B.C.), and nearly forty scholars and scientists worked in five different sectors on the Citadel Mound

during June, July, and the first half of August. One of the most fascinating components of this year’s project is that videos of the current fieldwork are being shown in the Midas exhibition, thereby highlighting the fact that the Penn Museum’s exploration of ancient Gordion is an ongoing process with discoveries that continue to surprise and confound us.

Architectural Conservation and Restoration

Those of you who have attended the Midas exhibit will be familiar with the monumental Early Phrygian Citadel

Gate, which is the best-preserved Iron Age citadel gate in Asia Minor, dating to the 9th century B.C. (figs. 2-5). The stability of the gate has been at risk since the early 8th century B.C., when an even larger (Middle Phrygian) gate was built directly over the Early Phrygian stone walls, but the condition of the gate's south bastion worsened after an earthquake in 1999, which caused a large and steadily increasing bulge to develop in the limestone masonry. The only way to eliminate the bulge was to remove the eleven courses of stones that formed part of it, row by row, and to reinsert them once they had been conserved. This required the erection of a 10 m high scaffold topped by an aluminum gantry crane capable of lifting 1500 kilos, which made it possible for us to safely remove the damaged stones from the south bastion and conserve them next to their original position (figs. 2-4).

With the generous support supplied by the J. M. Kaplan Fund, the Merops Foundation, and the Selz Foundation, we made substantial progress on the repair of the facing stones and will certainly complete our work here next year. As a reminder, we had started on the project in earnest in 2015 by peeling off the modern concrete that has covered the south bastion since the 1950s, and we then removed the first two courses of stones. By the end of the 2016 season, we had removed and conserved seven courses of stones, a total of 91 veneer blocks (fig. 4). The blocks that were intact were transported with the gantry crane, while all broken blocks were removed by hand and consolidated with an epoxy resin mixed with calcium carbonate, followed by the insertion of stainless steel bars to pin the fragments together. This conservation treatment made it possible to save most of the fractured blocks on the gate, which means that only a few new replacement blocks will be needed for the

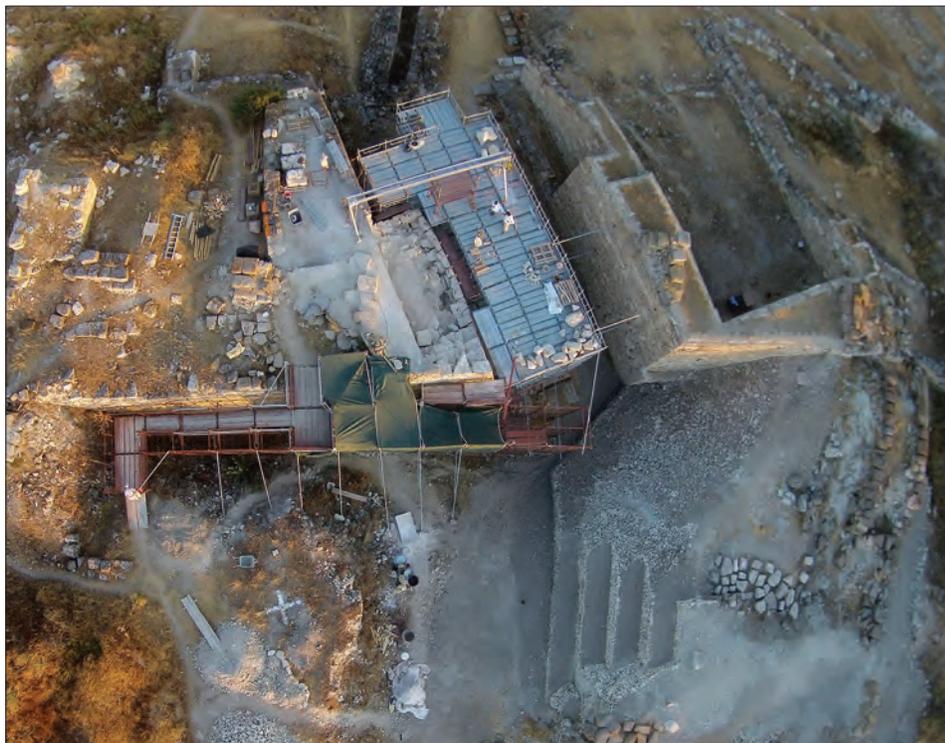


Figure 3: Aerial view of the Early Phrygian Citadel Gate, with west at the top of the photo. The focus of conservation was the south bastion, at upper center. The newly stabilized rubble fill is visible at lower right. Photo by Lucas Stephens.

south bastion's reconstruction.

The consolidation of some of the masonry here required a less dramatic intervention. Voids behind the masonry were filled with grout, stone rubble, and mortar; open joints were repointed; and cracks in the veneer blocks were closed by micro-injections and mortar infill (fig. 5). One of the most important by-products of this conservation project is that we are acquiring considerable information regarding ancient Phrygian building techniques. Part of the core of the gate, for example, is occupied by blocks that broke during the construction process—in some cases after the cutting of their faces was nearly finished. Many of these were simply added to the interior fill, especially at the corners, to provide greater stability for the bastion's walls.

Also situated sporadically throughout the gate's core material were wooden beams of juniper intended to stabilize the

fill, a practice that continued throughout the 8th c. B.C., as we realized this year when we stabilized the Middle Phrygian rubble fill that surrounds the Early Phrygian Gate (figs. 3, 6, 7). This extensive stone filling has consistently been a problem, and is related to the unusual history of construction at the site. At the beginning of the 8th century B.C., when Gordion's rulers made the decision to rebuild their citadel with a higher and more commanding appearance, five meters of stone rubble was placed within and around the Early Phrygian Gate. As it disappeared from view, a new Middle Phrygian Gate was constructed above it. When the Early Phrygian Gate was excavated in the 1950s, the surrounding rubble was left in a dangerous and unstable state (fig. 6), and large sections of stones collapsed during the winter of 2016, thereby endangering the remains of the Middle Phrygian Gate still preserved above it.

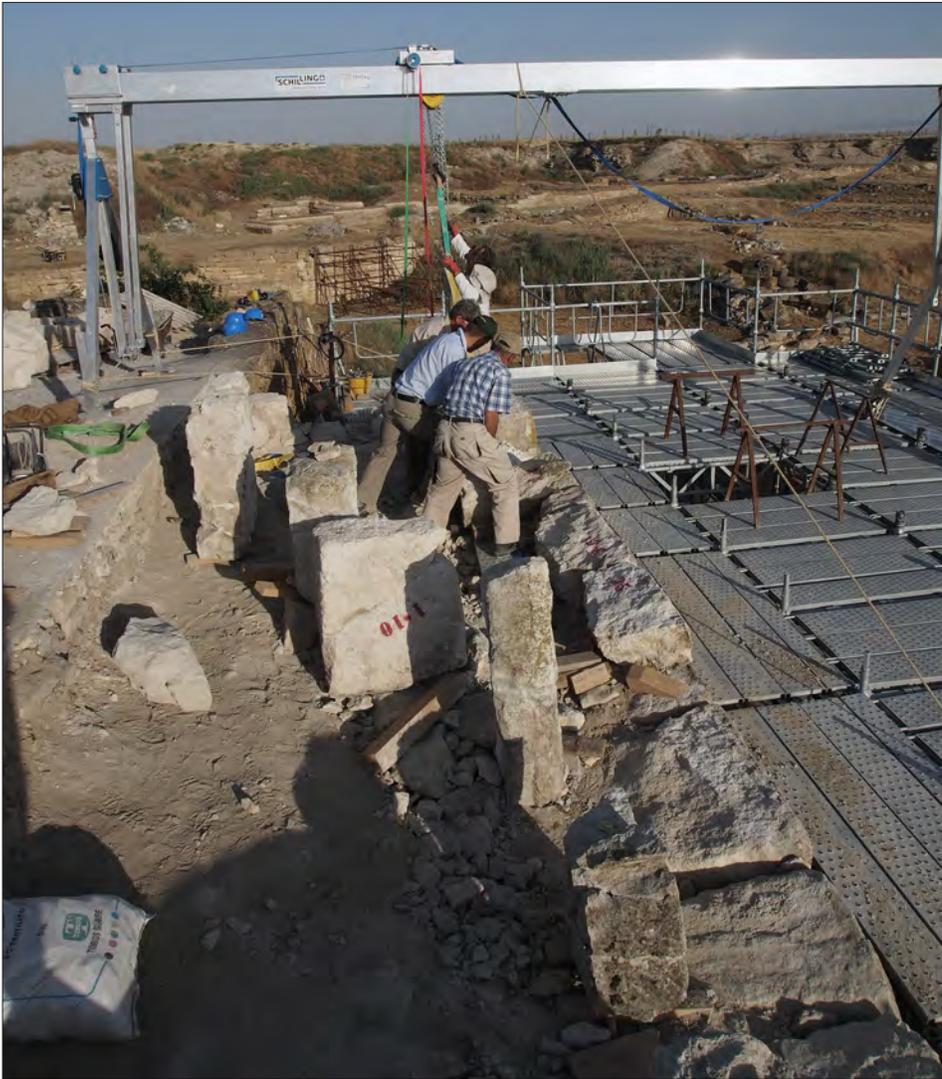


Figure 4: Angelo Lanza and his team remove a course of stones from the damaged wall of the Early Phrygian Citadel Gate. Several of the newly conserved stones appear behind them.
Photo by Elisa del Bono.

With the permission of Ankara’s Historic Preservation Commission, we began and completed a project with two principal goals: reshaping the rubble fill so that it was stable (figs. 3, 7), and moving one corner of the Middle Phrygian Gate to a more secure location, although still within the original footprint of the gate (fig. 8). The latter activity was particularly difficult, in that it required us to dismantle the southwest corner of the gate, five courses of which were still standing, and move it to the northeast corner, although as a result, the plan of the Middle Phry-

gian Gate is now much clearer and easier for visitors to comprehend.

While conducting research for this project, we realized that the 8th century builders had originally laid the rubble in a series of steps, a technique that we duplicated in the course of our reconstruction (figs. 3, 7). Moreover, during the original 8th century construction, juniper logs had been placed every 1.2–1.4 m within the rubble fill to increase its stability (fig. 6). A few of these logs were as long as 2 m, and the sample that is currently being subjected to dendrochronological ex-

amination should provide the date of the Middle Phrygian Gate’s construction, or at least a date after which that construction occurred.

One regular component of our conservation program, the Early Phrygian Terrace Building or industrial district, witnessed only limited work this summer since nearly all attention was focused on the Citadel Gate. This complex contains eight adjoining rooms that were badly damaged by the fire of 800 B.C., and five of the rooms have been conserved during the last six years. In June of 2016 we documented meticulously the damaged walls of the sixth room in preparation for their stone-by-stone conservation next summer, after which they will be covered by a “soft cap” of vegetation like the other walls in the complex.

Object Conservation

In terms of object conservation, the primary reconstruction project involved a large terracotta object that was discovered in two adjacent trenches on the southwest side of the Citadel Mound, one dug by Mary Voigt in the 1990s (Operation 17), and the other by Rodney Young in 1950 (the South Trench). The object in question resembled the wooden bier that had been used for the decedent in the Midas Mound tumulus, and we therefore began to refer to it as a bier, although why it would have been deposited where Young and Voigt found it was a mystery, and as we studied it further, the nature of its original use became increasingly unclear (fig. 9).

The most distinctive feature is a rounded, trough-like depression surrounded by a broad arched ledge that is decorated with relief bosses, rows of studs, and a rope moulding. The handles on the top of the ledge are decorative, but thick loop-handles are found on its underside, with both vertical and horizontal

orientations. The object has a width of .72 m and a preserved length of 1.35 m. We do not know its original length, but it probably had a flat end opposite the preserved arched one, and it may have been intended to stand upright on that end, at least occasionally.

Based on the stratum in which the object was found, a date between 600 and 550 B.C. seems certain, and its context included a large number of vessels intended for the presentation and consumption of food, possibly tied to ritual. Since nearly two-thirds of the object survives, and its original purpose presented such challenging questions, we made it a priority for conservation with the aim of preparing it for exhibition in the Gordion Museum. An article on both the object and its context will be forthcoming from Beth Dusingberre, Kathleen Lynch, and Mary Voigt.

Positioning the large ceramic object so that the pieces could be joined required construction and testing of a variety of support systems, all of which were developed by conservators Jessie Johnson, Cricket Harbeck, and intern Julia Commander (fig. 10). A first reconstruction was carried out with the object in a face-down horizontal position on a pallet constructed of plywood and high-density polyethylene foam, but this was unsuccessful.

A second reconstruction was carried out in a vertical orientation, with the top arch nested in a large box, to allow for better alignment and maximize the horizontal joint strength. This reconstruction was much more successful, and the object will be left in its current orientation until next season in order to allow the adhesive to fully set. In 2017, structural support for the large heavy object may be added by filling gaps where pieces of the object are missing, thereby making it safe for a long-term exhibit in the museum.

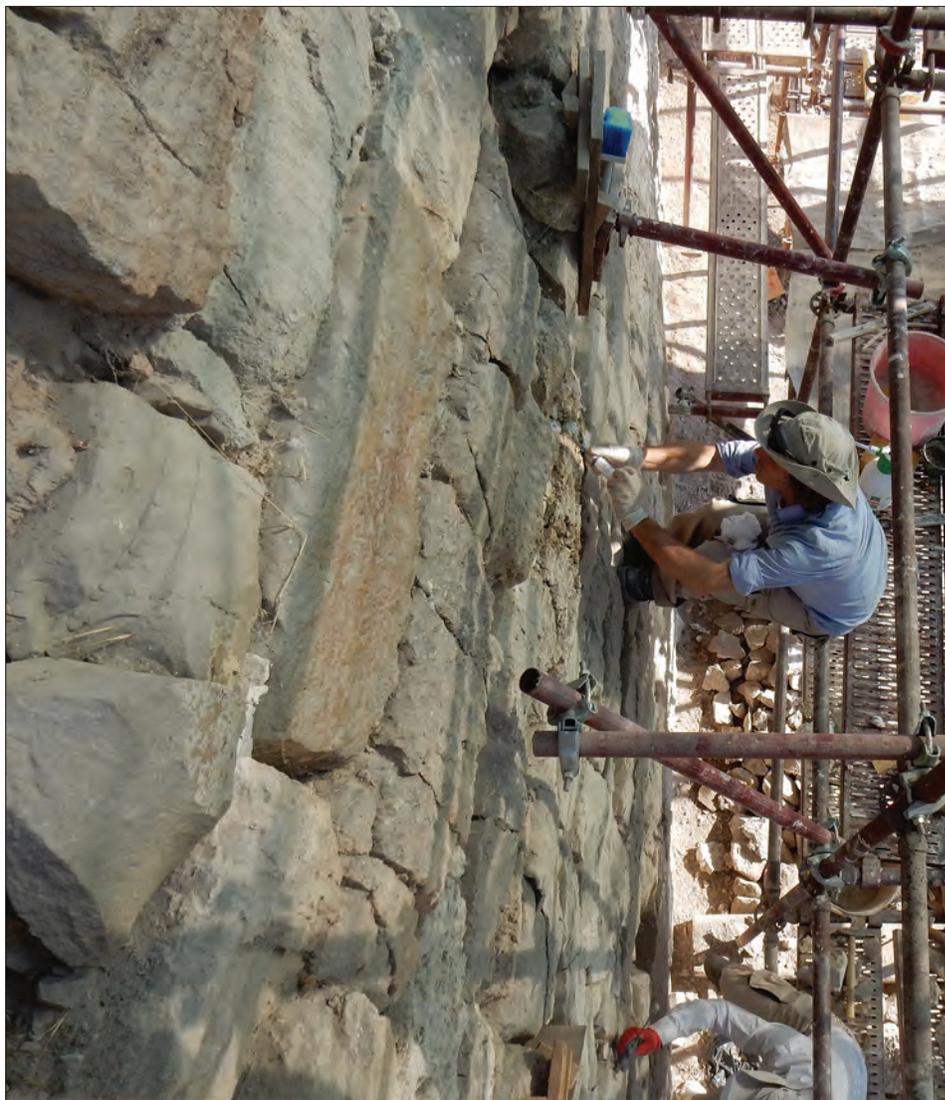


Figure 5: Conservator Giuseppe Bomba consolidates the damaged masonry of the Early Phrygian Citadel Gate. Photo by Brian Rose.

Excavation: The South Gate in Area 1

The most exciting project in the new campaign of excavation is located on the south side of the Citadel Mound (Area 1), which has been in operation since 2013 (figs. 11–15). There we uncovered a second citadel gate (the “South Gate”) that had first been constructed in the Early Phrygian period (9th c. B.C.) and modified continually during the Middle and Late Phrygian periods (between the 8th and the 6th centuries B.C.). This summer we expand-

ed the trench to the northeast, southeast, and southwest, so that it now measures 40 x 20 m (figs. 12, 13). The fact that we were able to acquire a wealth of information about both the gate and its relationship to the citadel is due to the masterful technique of Simon Greenslade, who directed excavations there.

With regard to the Early Phrygian phase of the gate, we had earlier discovered a well-preserved fortification wall supported by a cut stone glacis or terrace wall (figs. 12, 13, no. 1). This year, slightly

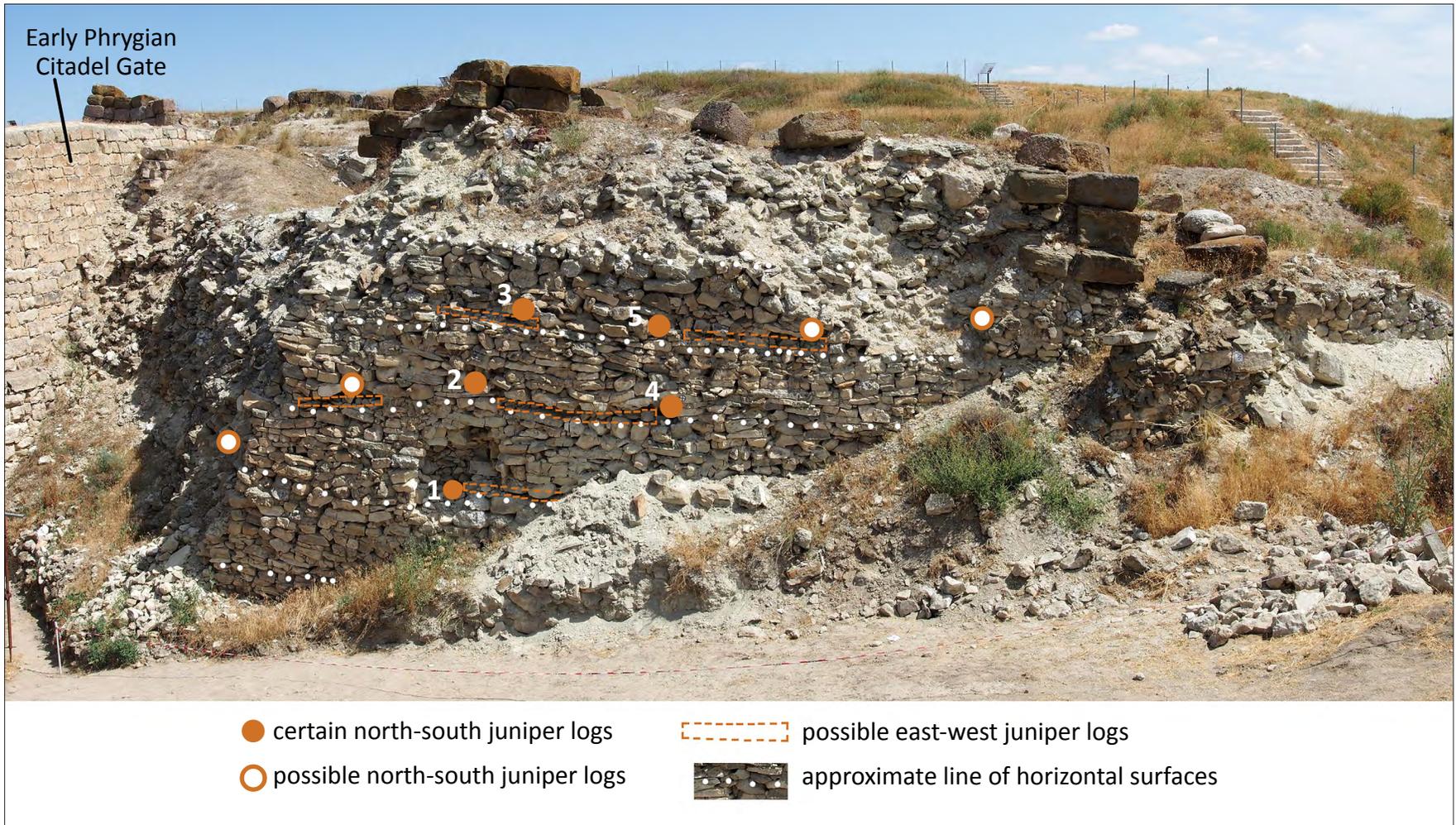


Figure 6: Middle Phrygian rubble fill to the east of the Early Phrygian Citadel Gate, looking north. The positions of the wooden beams within the fill are indicated. Photo by Gebhard Bieg with annotations by Beth Dusingberre, Semih Gönen, and Richard Liebhart.

over 6 m to the north of it, we found the opposing wall of the passageway (figs. 12, 13, no. 2; figs. 14, 15). Eight courses of the wall have been exposed to a height of 3 m, and it stretches for a length of more than 17 m. At its widest, this wall and the small stone packing behind it indicate a thickness of nearly 4 m. The east end of the wall forms a right angle that appears to be aligned with the point at which the opposing Early Phrygian glacis turns toward the southwest (fig. 14). Consequently, this should mark the beginning of the road that led to the actual gatehouse during the Early Phrygian period. A particularly interesting discovery was a horizontal course of burned wooden beams between two of the stone courses (figs. 14, 15). Although this strikes us as a highly unusual construction technique, the Phrygians consistently employed it during the Early and Middle Phrygian periods: both burned and unburned timbers were laid directly beneath the stone foundations of their buildings, probably in the belief that it provided greater flexibility during seismic disturbances.

In the Middle Phrygian period (8th century B.C.), this configuration was altered. The southern Early Phrygian fortification wall and its glacis were covered by a large bastion nearly 8 m thick (figs. 12, 13, no. 3). We had assumed that the new bastion would have been fronted by a glacis, and this year we found it, approximately 5 m to the south of the Early Phrygian glacis (figs. 12, 13, no. 4). At the north, the Early Phrygian wall (figs. 12, 13, no. 2) was maintained, but a new ashlar masonry wall with both white and red stones was built against its eastern end (figs. 12, 13, no. 5; fig. 15). A small part of this wall was exposed in 2015, but the expansion of excavation in 2016 has substantially clarified its configuration. The wall continues from west to east for a distance of 10.5 m, then angles toward the southeast for another 8.5 m, ending in a



Figure 7: The stabilized Middle Phrygian rubble fill to the east of the Early Phrygian Citadel Gate, looking north. Photo by Brian Rose.



Figure 8: The transport and reconstruction of one corner of the Middle Phrygian Citadel Gate, looking west. Photo by Brian Rose.

bastion (figs. 12, 13, no. 6) that was intended to complement the similar one at the west (figs. 12, 13, no. 3).

At the northern end of this bastion we discovered the termination of the Middle Phrygian glacis revealed by Rodney Young in a trench 9 m to the northeast

of ours (figs. 12, 13, no. 7). The seven excavated steps of the newly unearthed glacis were formed by sandstones of various colors, including grey, red, and white, so the colored stones that vividly distinguished the main Middle Phrygian Citadel Gate and its glacis were repeated to dazzling



Figure 9: The large terracotta “bier”, found on the southwest side of the Citadel Mound. Photo by Gebhard Bieg.

effect on the South Gate. Altogether, the new walls of the South Gate spanned a distance of nearly 20 m, and the approach road leading to the actual gatehouse would therefore have been more than 36 m in length, at least in the Middle Phrygian period.

We cannot provide the precise length of the approach road because the gatehouse itself has not yet been found, and this ties into the citadel’s road system. Rodney Young had proposed that a broad road cut through the center of the Citadel Mound on a northwest-southeast axis, directly west of the Terrace Building zone, effectively dividing the citadel into eastern and western districts. We believed that such an unusual proposition



Figure 10: Conservators Julian Commander (left) and Jessica Johnson (right) conserve the large terracotta “bier” that was found on the southwest side of the Citadel Mound. Photo by Brian Rose.

needed to be tested, so we situated our Area 1 trench at the southern end of the road’s projected line.

Although we have uncovered evidence of a very sophisticated citadel entrance that was in operation for at least six centuries, the location of the actual gatehouse and its associated road within the citadel has still not been determined. We have been gradually following the approach road from the Lower Town that we think must lead to the gatehouse, but it clearly lies somewhere to the west of our expanded trench. In any event, although there was clearly a gate connecting the southern side of the citadel with the Lower Town, the road that was attached to it cannot have followed the course proposed by Young, which is the course that appears on all of our plans. In time, we will be able to solve the mystery of how this road intersects with the buildings in the center of the citadel, but in the meantime, we need to acknowl-

edge that our reconstruction of Gordion’s citadel plan is not as clear-cut as Young had assumed.

In the Late Phrygian period, shortly after the Persian attack in the 540s, the layout of the roadway was altered again with the construction of two new bastions that further restricted access to the approach road (figs. 12, 13, nos. 8 and 9). The full extent of the southern bastion (no. 8) was found this year, proving it to be a polygonal construction with both the eastern and southern sides measuring just under 9 m in length. The bastion was constructed with numerous re-used blocks; there were also tiles with relief decoration dating to the first half of the 6th century B.C., and a fragmentary Ionian cup produced sometime between 550-525 B.C.

Two of the reused blocks in the Late Phrygian bastion were especially intriguing: one was a red sandstone relief depicting the right paw of a lion; the other was an unfluted half column shaft in

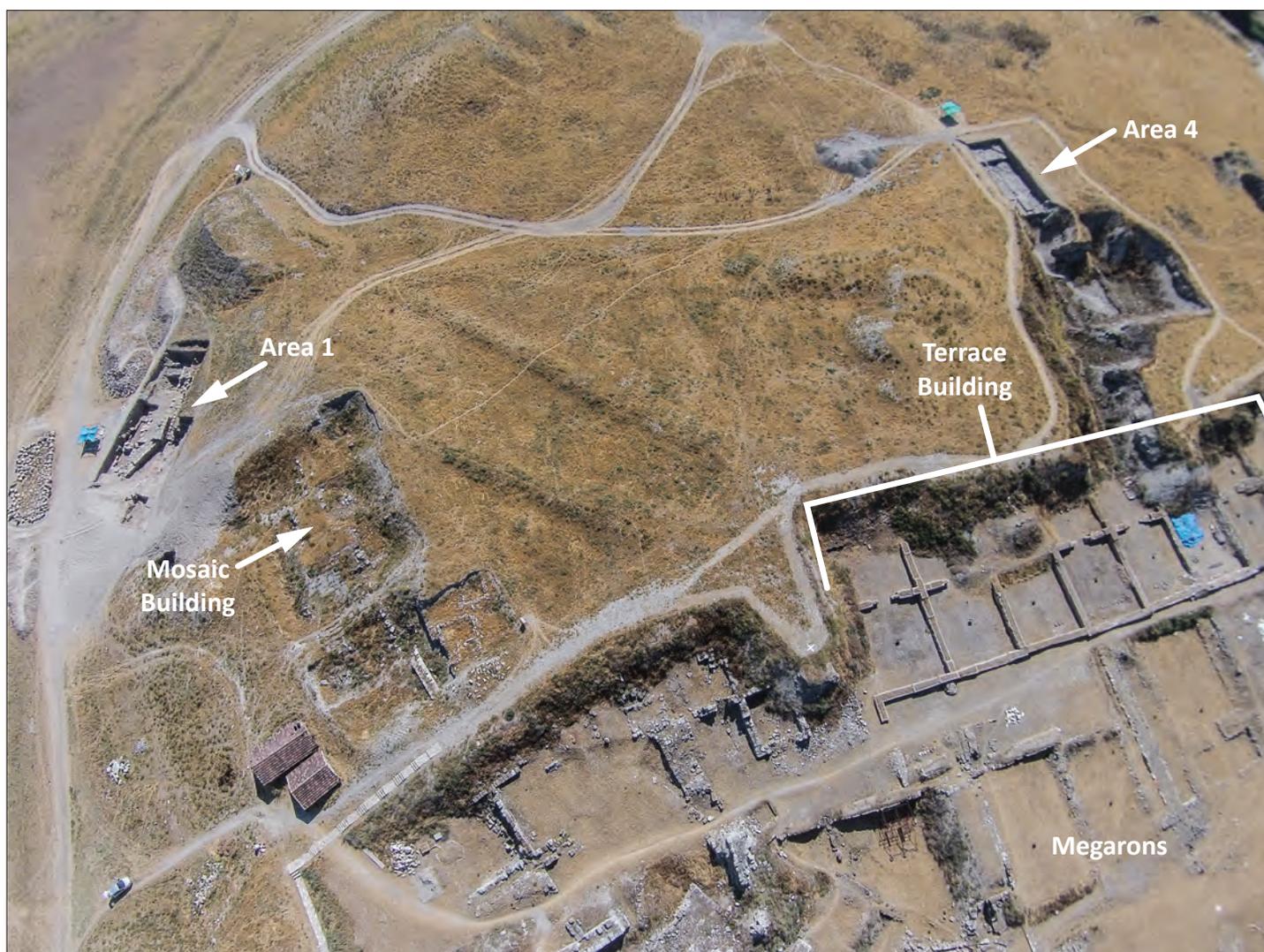


Figure 11: Aerial view of the Citadel Mound showing Areas 1 and 4, looking west. Photo by Lucas Stephens.

limestone. The relief probably decorated an adjacent building of Middle Phrygian date, and it is tempting to link it to the cult of the Anatolian fertility goddess Matar/Cybele, whose sacred animal was the lion. The half column is one of two discovered in this area, the second having fallen here from a higher point on the citadel, and they too undoubtedly derive from a Middle Phrygian building in the area. These are particularly exciting discoveries in that stone half columns are not attested in ancient architecture prior to the sixth century, and the Gordion examples must date to an earlier period.

Between these two Late Phrygian bastions we came down on a well-preserved road surface composed of small rounded pebbles (figs. 12, 13, no. 10). Four meters of this road have been excavated thus far, and it rises approximately 10 cm per meter. Three sondages dug beneath the road surface yielded material dating to the 6th c. B.C., including a Middle Phrygian bronze fibula, and it seems clear that the new road surface was laid down at the same time in which the flanking bastions were constructed, not long after the Persian attack. At a depth of slightly over .50 m below this surface, an earlier

gravel road was discovered, again comprised of rounded pebbles and dating to the Middle Phrygian period. Both roads will be completely uncovered and documented next year.

The Late Phrygian building program was the last one to have occurred here, although it seems likely that the approach road and most of its surrounding fortifications continued to stand through the Hellenistic period. Nevertheless, it looks as if part of the northern bastion of Late Phrygian date (figs. 12, 13, no. 9) was targeted for stone robbing at the beginning of the Hellenistic period (late 4th century B.C.),



Figure 12: Aerial view of the Early, Middle, and Late Phrygian components of the South Gate complex in Area 1 (9th-6th c. B.C.). See Figure 13 for plan. Photo by Lucas Stephens.

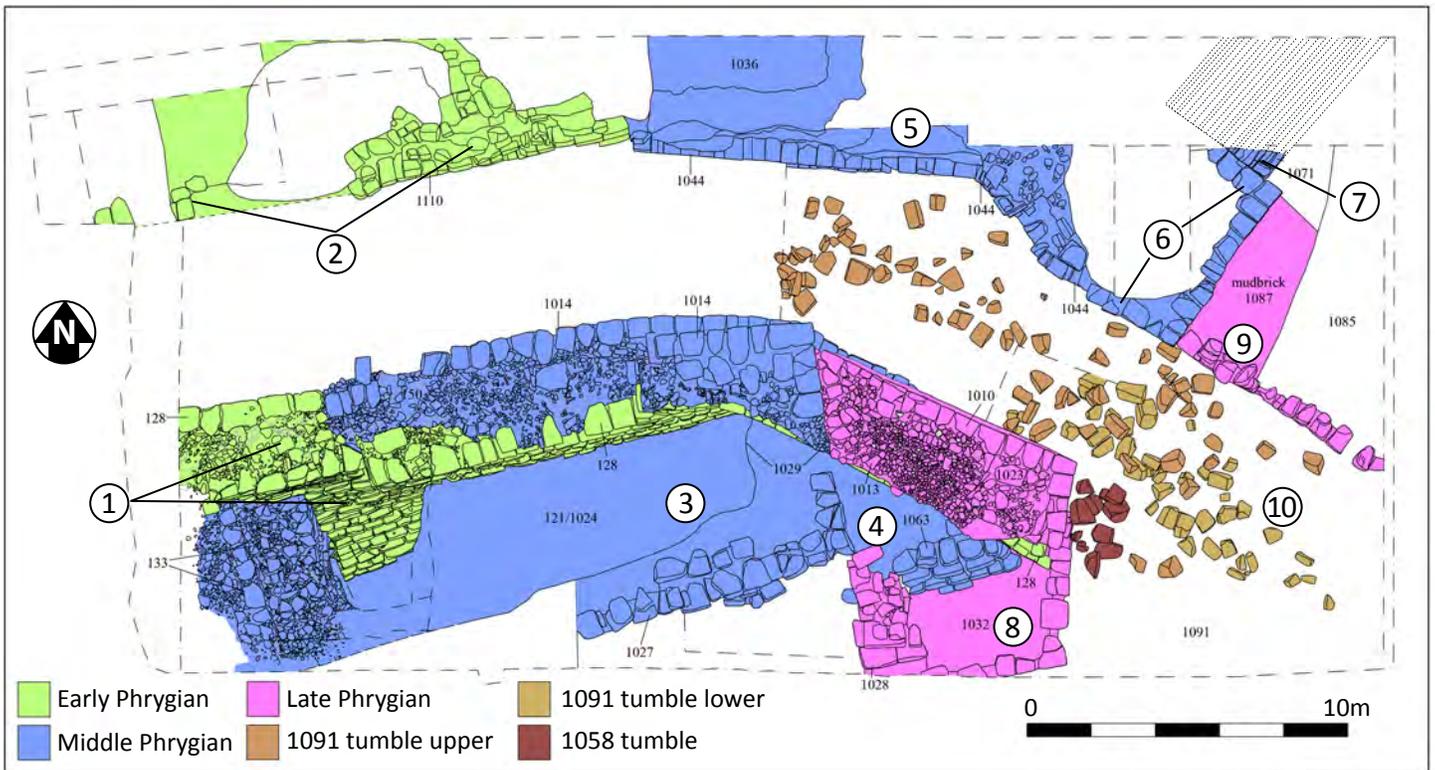


Figure 13: Color phase plan of the Early, Middle, and Late Phrygian components of the South Gate complex in Area 1 (9th-6th c. B.C.). See Figure 12 for photo. Plan by Simon Greenslade.

and over it we discovered large trash dumps stemming from the robbing of the Mosaic Building directly to the north, along the upper edge of the citadel (figs.

11, 16). This building was elaborately decorated with pebble mosaic floors featuring geometric patterns; it must also have served as Gordion's administrative center

during the Persian period, and may have housed the wagon with the Gordion Knot that was cut by Alexander in 333 B.C.

When the Mosaic Building was

robbed in the early third century B.C., its stone foundations, mudbrick walls, and roof tiles were dumped over the Late Phrygian bastion of the South Gate's approach road. Also contained within this deposit were over 900 colored ceramic pegs that had originally formed part of a wall mosaic in one of the rooms of the Mosaic Building (fig. 17). This was a popular decorative scheme in Persian-period Gordion, and Penn graduate student Sam Holzman will discuss the nature and extent of this practice in a forthcoming article.

The more extensive stone robbing of the northern side of the approach road dates to the second half of the first century A.D., when the new Roman settlement was being constructed. Probably around this time or shortly thereafter, the walls flanking the road began to collapse and the road itself was filled with stones that had fallen from buildings on the citadel. We had earlier speculated that these collapses were caused by earthquakes, and this remains a possibility, but one of the primary reasons for the destabilization of the citadel's structures was the unusual nature of Phrygian building practice. During the Middle Phrygian period, in particular, the builders used gypsum in the foundations that disintegrates quickly when it comes into contact with rainwater. This leads to a gradual settling of the foundations, as does the fact that the Middle Phrygian buildings were constructed on 4-5 m of clay that had been added to the citadel in the early 8th century B.C. In any event, it seems clear that this area was more of a stone quarry than a passageway during the Roman empire, although the robbers fortunately left enough walls intact for us to reconstruct the general sequence of construction activity.



Figure 14: The Early Phrygian (9th century B.C.) walls in Area 1, looking north.
Photo by Gebhard Bieg.

Area 4: The Center of the Citadel Mound

Our discoveries in Area 1 were complemented by those in Area 4, which yielded primarily Hellenistic and Early Roman material (figs. 11, 18-20). This trench lies directly west of the paved area that Rodney Young identified as the road that cut through the Citadel Mound, and we began digging there last year in the hope that we could assess the viability of the road identification, and determine what lay to its west during the Early, Middle, and Late Phrygian periods. We realized that the journey from the surface of the mound to Early Phrygian levels would take us through at least 8 m of fill, and most of what we uncovered last year in the upper 1.6 m of the trench dated to the

Selçuk period (13th-early 14th centuries A.D.). During the 2016 season we excavated over two more meters of fill and unearthed evidence of seven different phases of habitation: three that were Early Hellenistic (ca. 330-250 B.C.), two of Middle Hellenistic date (ca. 250-189 B.C.), and two of Early Roman date (ca. 60-120 A.D.), all of which were meticulously excavated and documented by Sarah Leppard and Ramon Navas. In the description that follows, I proceed chronologically from Early Hellenistic to Early Roman, and then consider the earlier, still unexcavated levels.

The first of the Early Hellenistic phases consisted of two structures separated by an open area or courtyard that they presumably shared. We uncovered only one room in each structure, although with-



Figure 15: Conservation of the Early and Middle Phrygian road walls in Area 1, looking north. The Early Phrygian wall, at left, contains a central course of burned timber. The ashlar masonry walls at right are Middle Phrygian in date (8th century B.C.). Photo by Brian Rose.



Figure 16: The Mosaic Building on the southern side of the Citadel Mound, looking northeast. The pebble mosaic floors, uncovered by Young in 1952, featured geometric decoration. Gordion Project photo G-674.

in the courtyard was a rectangular oven flanked by a stone platform that probably served as a working surface for the products that were to be baked. In the early third century, one of the structures was enlarged and a sizable new building with flagstone floor was constructed on the northwest side of the courtyard, which also received a new rectangular oven with two flues (fig. 19). The burnt organic material within this courtyard should probably be linked to a fire that destroyed the thatched roofs covering the surrounding structures. At the end of the Early Hellenistic period, the stones of the walls appear to have been taken away as building material, and the whole area was levelled with mixed fill that must have come from other nearby occupation or workshop levels. The fill included substantial quantities of burned mudbrick, charcoal and ash patches, alabaster lathe butts and broken alabaster objects and vessels. This suggests that at least some of this material was taken from a demolished alabaster workshop somewhere nearby.

The beginning of the Middle Hellenistic period, ca. 250 B.C., coincides roughly with the arrival of the Celts or Galatians in Gordion, and although the evidence for construction in Area 4 was less extensive than we hoped, the new buildings were clearly substantial. One of the walls of a new structure on the eastern side of the trench was at least nine meters long, with sub-floor postpads that were probably intended as scaffold supports during construction.

Hellenistic occupation presumably ended in 189 B.C., when the Galatians were routed by the Roman commander Manlius Vulso. There appears to have been a fire although no significant destruction level was unearthed. Habitation resumed only in the first century A.D., when levelling fills with burned mudbrick, ash, charcoal, and clay were de-



Figure 17: Simon Greenslade and Mackenzie Heglar examine the large quantities of colored ceramic pegs unearthed in Area 1. These decorated the wall of one of the rooms in the Mosaic Building. Photo by Gebhard Bieg.

posited here. Some of these contained a large number of alabaster vessels, objects, and lathe butts, very similar to those in the earlier fills, and they are all probably products of the same nearby workshop. One of the most remarkable discoveries, which lay beneath the levelling layers, was a first century A.D. gold pendant, of a type that has been found at Troy, Eleutheropolis in Israel, and Pompeii and Herculaneum (fig. 20).

Roman structures in this trench were unfortunately poorly preserved. The most substantial feature was a circular oven,

1.40 m in diameter, which yielded numerous fragments of ram horns and appears to have been built in the second half of the first century A.D. From what we can tell, there was no activity in the area from ca. 100 to 1200 A.D.—a span of 1,100 years.

The eastern side of our trench coincided with the western end of Young's 1969 trench over the "Clay Cut" Terrace Building. We cleaned the east profile of our trench down to a level roughly 4 m lower than the earliest of the Hellenistic levels, thereby obtaining a window on the earlier Phrygian layers that had not yet been

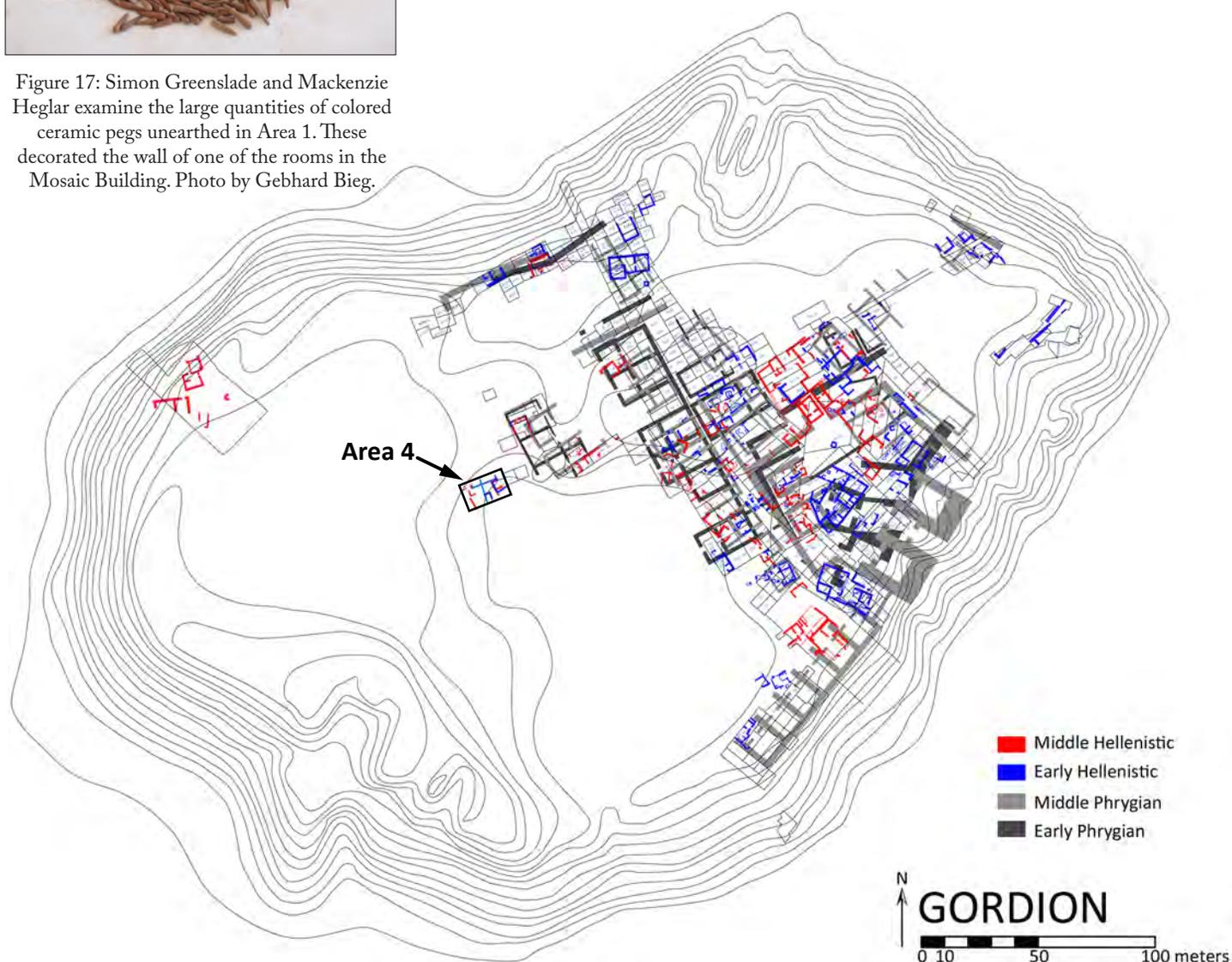


Figure 18: Plan of the Early (blue) and Middle (red) Hellenistic buildings on the Citadel Mound. The Early (black) and Middle (gray) Phrygian buildings have also been included. Plan by Martin Wells with additions by Sarah Leppard.



Figure 19: Newly excavated Early Hellenistic structures in the Area 4 trench, looking southwest. The collapse of a Late Phrygian building is visible near the bottom of the east profile in the lower center of the photo. The Middle Phrygian terrace wall uncovered by Young is visible at lower left. Photo by Brian Rose.

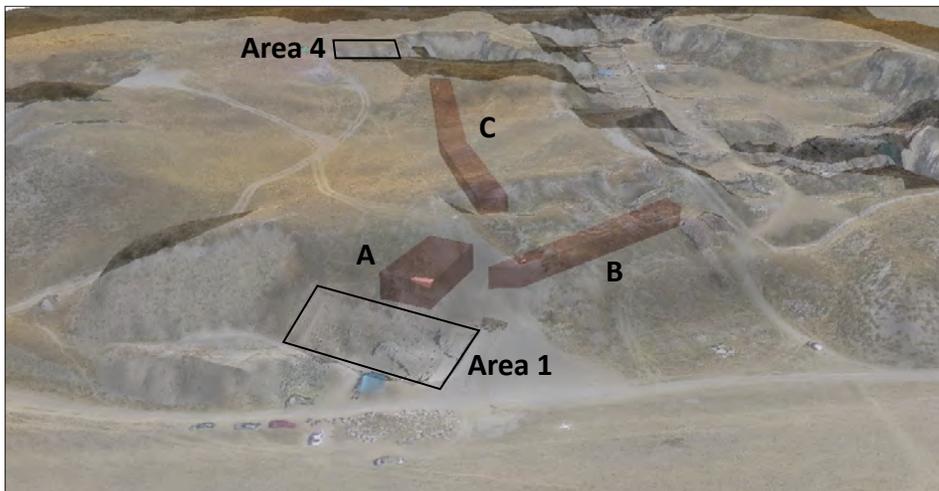


Figure 21: Interpretive reconstruction by GGH of the architectural features on the Citadel Mound that were newly discovered by remote sensing. Image courtesy of GGH.

excavated (fig. 19). We were thus able to determine that the Early Hellenistic occupation level was built on approximately 2 m of fill that evinced very few signs of occupation. Below this, however, was a thick layer containing evidence of burned destruction and a building collapse, with-

in which were roof tiles with relief decoration datable to the fifth century B.C. In other words, it seemed clear that we had uncovered evidence of a sizeable Late Phrygian building that was destroyed in a fire at some point in the 4th century B.C. We also cleared the area directly to the



Figure 20: Gold pendant of Early Roman date from the Area 4 trench. Photo by Gebhard Bieg.

east, excavated by Young, which included the Middle Phrygian enclosure wall west of the Terrace Building zone, as well as the putative road that lay adjacent to it. What we found was a very loose and fragmentary gravelly layer that could just as easily have been a paved open area as a road, so the evidence does not yet point one way or the other.

What is most significant here, however, is the level of the Late Phrygian building collapse: it lay roughly .40 m above the pebbled surface identified as a road by Young and only slightly higher than the Early Phrygian level on the eastern side of the Citadel Mound. At least in this area, then, Early Phrygian levels must have been situated approximately 4 m lower than those further to the east. Why the Phrygian settlements in the center of the mound were so much lower than those at east and west is uncertain, but the topography of the mound clearly was much more varied than we had expected.

Geophysical Investigations

We again turned to our geophysics team of Stefan Giese and Christian Huebner to help us better understand the relationship between Areas 1 and 4, and between the newly discovered South Gate and the main Citadel Gate to its northeast (figs. 11, 21, 22). To do this we used

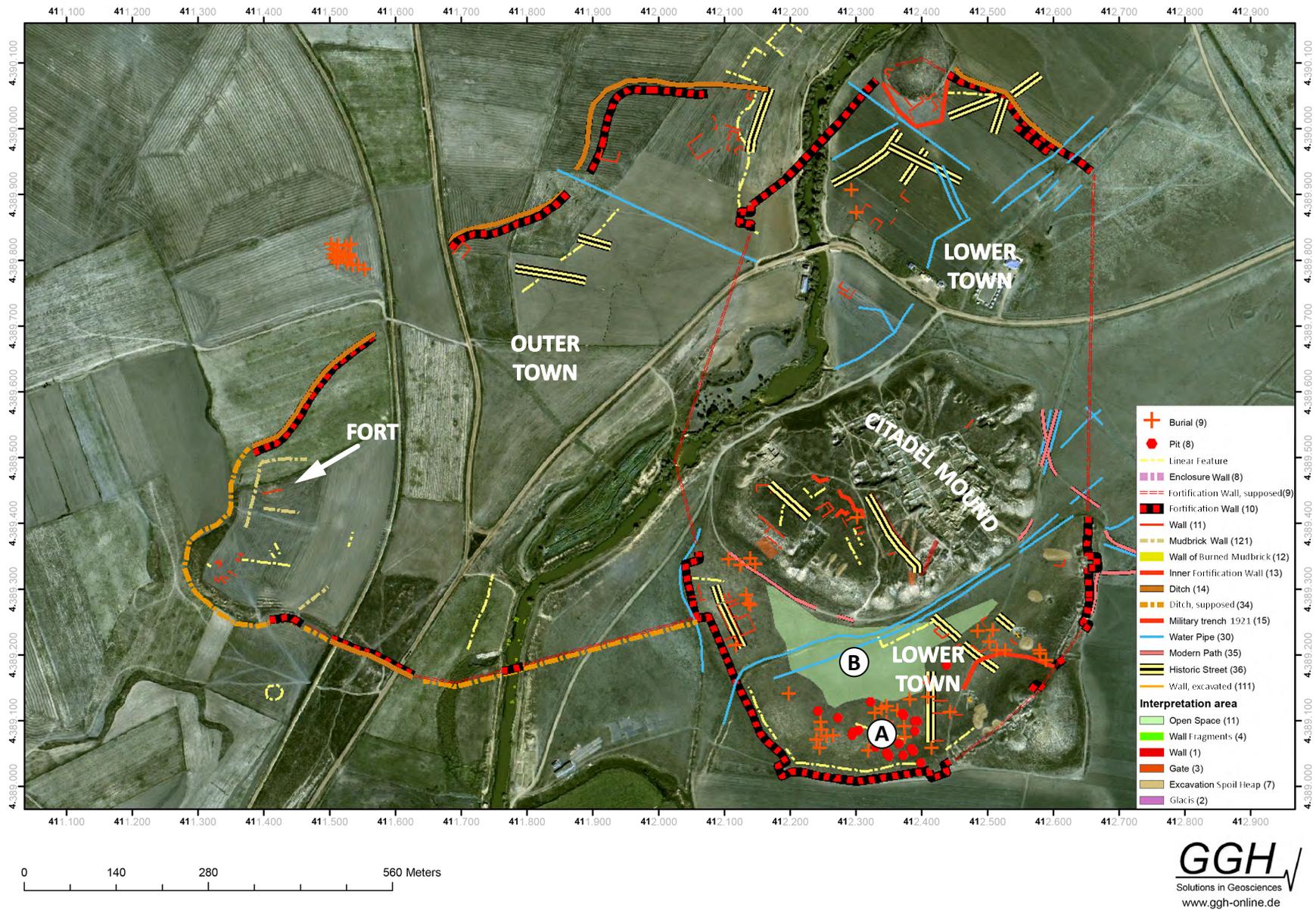


Figure 22: The fortifications of Gordion detected through remote sensing. The Lower Town lies above and below the Citadel Mound, while the Outer Town is located at the left. All districts were fortified. Plan by GGH.



Figure 23: Prof. Dr. Sadi Çağdır examining his plaster cast of the skull of a Galatian woman from the 3rd century B.C. Photo by Gebhard Bieg.

electric resistivity tomography (ERT) between and around our two trenches, since it has proven to be a reliable technique for detecting sub-surface features on the Citadel Mound. There was a high resistivity area roughly rectangular in shape and measuring at least 10 x 20 m that appeared directly north of the South Gate

in Area 1 (fig. 21, A). At this point it is difficult to determine whether it is simply dense rubble packing or a built structure that was somehow linked to the South Gate complex.

We also received welcome confirmation of the presence of a fortification wall extending southwest of the Early Phry-

gian Gate. Only a small part of this wall (called “ECW”) was uncovered by Young next to the Gate’s south bastion, but we detected it, with a thickness of 7 m, extending as far as the southern corner of the eastern citadel, below the area occupied by the Mosaic Building (fig. 21, B). We always assumed that this was one of two Early Phrygian fortification walls that must have been situated in this area because that is what one finds on the northern side of the Citadel Gate: the earlier wall was attached to the Polychrome Gatehouse, and the later wall was tied to the northern side of the north bastion when the Gate was expanded ca. 850 B.C. It seemed likely that a second Early Phrygian wall would also have been situated on the Citadel Gate’s south side, and one of the resistivity readings revealed a wall 3 m thick adjacent to the southeast corner of the south bastion. That is where we assumed the second wall must have been located, and Gareth Darbyshire and Chris Ray reconstructed it in this position in the Gordion citadel model displayed in the Midas exhibit.

The other major feature detected by resistivity was the continuation of the north-south enclosure wall along the west side of the Terrace Building zone, as one can see in fig. 21, C. Unfortunately, the Early and Middle Phrygian buildings on the west side of the citadel mound lay too deep for resistivity to record them.

Both magnetometry and resistivity in the southern part of the Lower Town detected the presence of two different districts possibly separated by a ditch. The southern or outer district was a very magnetically active area with a plethora of small and large anomalies (fig. 22, A); the northern or inner district features very few anomalies and no traces of structures (fig. 22, B). In the absence of excavation, we are unable to determine the reasons for such a strong difference in readings

between the two areas, but it is conceivable that the open area might have had functional significance, such as for ceremonies of state or public spectacles.

Skeletal analysis

Each year we focus on the human and animal bones that are uncovered in the trenches while often examining again the faunal and skeletal material excavated in earlier years. In 2015, our most important faunal discoveries were a series of pig bones found in up to a dozen contexts in the central mound trench (Area 4), suggesting that this was a Christian settlement operating during the Selçuk period. An unexpected discovery was the presence of camel bones in the pits, which is the first evidence we have found of their presence in Medieval Gordion, and some of them bore traces of butchery.

During the 2016 season we also turned our attention to one of the human skeletons discovered between 1993 and 1995 by Mary Voigt in the Lower Town, adjacent to the Middle Phrygian fort commonly called Küçük Höyük. Nearly all of these skeletons had been abandoned on the surface rather than formally interred, and in some cases, the bones of both humans and animals were mixed. The ceramics uncovered in the vicinity of the skeletons point to a date in the third century B.C., and Mary Voigt linked the deposition of the bodies to ritual activity associated with Celtic or Galatian domination in the area.

We were interested in continuing her analysis of the bones by creating a facial reconstruction of one of the skulls, a project that was carefully guided by Prof. Dr. Sadi Çağdır and Tuğba Gencer of the Cerrahpaşa Faculty of Medicine at Istanbul University. The head they chose was no. YH47397, a young woman between the ages of 18 and 22 who was slight-

ly under 4'9" in height (1.46-1.49 m) (fig. 23). There was a serious fracture on one side of her head that had originally been linked to the cause of her death, but there were some signs of ante-mortem healing, which suggests that she lived for some time after the accident or attack.

One of the most interesting conclusions emerging from this examination was that her head had been deliberately elongated when she was an infant (fig. 24). This technique involved wrapping the head when the bones of the skull were still soft and malleable; it is found in both the Old and New Worlds as a sign of special status, and was used for the decedent in the Midas Mound tumulus, a man we now identify as Midas' father. Why this technique was used for the young Hellenistic woman in Gordion's Lower Town is unclear, but the full story of these burials has clearly not yet been told, and our research will continue next year.

Gordion Cultural Heritage Educational Program

This was not a normal summer in Turkey or, indeed, throughout the world, in that terrorism and armed conflict again reminded us of the fragility of cultural heritage and the necessity of developing new strategies to preserve it. There is, of course, a temporal limit to every archaeological project, which means that the local villages need to be prepared to care for the archaeological site and the surrounding fields of tumuli with a level of passion approaching our own.

It was this belief that prompted us to inaugurate a new cultural heritage project three years ago, directed by Gordion's deputy director, Ayşe Gürsan-Salzman, in partnership with Halil Demirdelen, Deputy Director of the Museum of Anatolian Civilizations in Ankara, and with the assistance of the Penn Museum's pa-

laeo-botanist Naomi F. Miller. In 2014 and 2015, the program focused on cultural heritage training for students; in 2016 we shifted to local educational leaders, especially the teachers and administrators from secondary schools and high schools near Gordion. Through archaeological site visits and exchange of ideas about cultural heritage protection, the program was designed to encourage teachers to incorporate preservation topics into the Liberal Arts curriculum in their respective schools. Ten teachers were trained over the course of five weeks, and were guided through Midas City, Kerkenes, and the Museum of Anatolian Civilizations in Ankara, as well as all parts of the Gordion excavation site (fig. 25).

Our emphasis was on the value of preserving the past to inform the present; specifically, on understanding an archaeological site as a window onto the lives of the people who once lived in this area, rather than simply as a collection of artifacts. By the end of this summer's pro-



Figure 24: The reconstructed head of a Galatian woman from the 3rd century B.C., fashioned by Prof. Dr. Sadi Çağdır and Tuğba Gencer. Photo by Gebhard Bieg.



Figure 25: The Cultural Heritage Education program at Midas City, led by Ayşe Gürsan-Salzman and Halil Demirdelen.
Photo by Brian Rose.

gram, the teachers agreed that museum and site visits should begin at the kindergarten level, with the participation of parents, and continue through high school; that heritage education courses should be approved by the Turkish Department of Education and included in the curriculum for students in grades 6 through 12; and that each class should construct a webpage focused on the value of the past to inform the present. In the long run, the principal by-product of this program will be the creation of a local network of students, teachers, and municipal administrators who will develop strategies for the

preservation of Gordion and the historical landscape in which it is situated.

Publication, Staffing, and Notable Visitors

Our work during the 2016 season was made easier due to the energetic support of our representative, Mr. Özcan Şimşek of the Istanbul Archaeology Museum. We also benefited tremendously this year from the periodic visits of Mr. Enver Sağır, Mr. Halil Demirdelen, and Mr. Mehmet Akalın, the Director and Deputy Directors, respectively, of the

Museum of Anatolian Civilizations in Ankara, as well as Mr. Mustafa Metin. We extend warm thanks to the General Directorate for Cultural Heritage and Museums, especially Mr. Yalçın Kurt, General Director, Mr. Melik Ayaz, Mr. Mustafa Bozdemir, Mr. Umut Görgülü, Ms. Nilüfer Ertan, Ms. Pınar Çilesiz Ermiş, and Ms. Nihal Metin.

In organizing the Midas exhibit, we relied heavily on the support of several museum directors in Turkey, Greece, and the U.S.: Mr. Enver Sağır (Ankara), Ms. Zeynep Kızıltan (Istanbul), Mr. Mustafa Demirel (Antalya), Ms. Maria

Vlasaki and Mr. Nikolaos Petrochilos (Delphi), and Mr. Gil Stein (Chicago). Equally generous in their assistance were the Kaymakam and Belediye Başkanı of Polatlı, Mr. Mahmut Nedim Tunçer and Mr. Mürsel Yıldızkaya, respectively, and Mr. And Atasoy of the Ankara Historic Preservation Commission. Mr. Hasan Cemal Eraslan, Polatlı Belediye Başkanı Yardımcısı, visited the site several times to discuss the planning of an Archaeopark in the area of Gordion. The new program is intended to protect the monuments of the region; to make the residents stakeholders in the protection of the region's cultural heritage; and to educate the local community about the archaeology of the region. This complements beautifully the cultural heritage education program for children discussed above.

The excavation house was filled with researchers working on a wide variety of manuscripts that spanned a period from the Bronze Age through the Hellenistic period (fig. 26). These included Gareth Darbyshire on the iron objects; Carolyn Aslan on the Late Bronze Age and

Early Iron Age ceramics; Kathleen Lynch, assisted by Sarah Beal, on Greek ceramics; Beth Dusingberre on the cremation burials; Andrea Berlin and Brigitte Keslinke on Hellenistic ceramics; Scott Redford on Selçuk-period ceramics; Richard Liebhart on the architecture of Tumulus MM; Maya Vassileva (Phrygian bronzes); Sadi Çağdır and Tuğba Gencer (Galatian skeletons); Canan Çakırlar and Janine van Noorden (faunal analysis); and Penn graduate students Kate Morgan (Phrygian textile production) and Lucas Stephens (aerial photogrammetry). The catalogue of the "Golden Age of King Midas" exhibit was published by Penn Press in August of this year, and two more monographs are scheduled to be published next year: Phoebe Sheftel on the bone and ivory objects, and John (Mac) Marston on Gordion's ancient environment.

We want to single out several members of the staff without whom this summer's work could not have functioned as well as it did: Mackenzie Heglar (Bryn Mawr), registrar, assisted by Ken Jordan; Gebhard Bieg, photographer, assisted

by Tom Stanley (Penn Museum); Emily Miller and Cem Küncü (Ankara University), illustrators; Joseph Nigro, Brian Norris, and Braden Cordivari (University of Pennsylvania), surveying and mapping; Canan Çakırlar and Janine van Noorden (Groeningen University), faunal analysis; Naomi Miller (Penn Museum) and Mac Marston (Boston University) archaeobotany; Brigitte Keslinke (Boston University) and Cem Küncü (Ankara University), ceramic analysis; Stefan Giese and Christian Huebner (GGH), geophysics; and Gareth Darbyshire (Penn Museum), archivist.

The architectural conservation was overseen by Elisa del Bono, assisted by Angelo Lanza, Giuseppe Bomba, Renzo Durante, and Shaghayegh Torkzaban (Penn School of Design). Engineering expertise, especially regarding the conservation of the Early Phrygian Gate, was provided by Semih Gönen (University of the Bosphorus) and David Biggs. The object conservation work was expertly overseen by Jessica Johnson (Smithsonian Institution) and Cricket Harbeck, with intern Julia



Figure 26: The 2016 Gordion Project staff. Photo by Gebhard Bieg.

Commander (Penn Museum).

The excavation of the Phrygian fortification walls (Area 1) was directed by Simon Greenslade, assisted by Hüseyin Erol (Hacettepe University), Mehmetcan Soyloğlu (Sheffield University), and occasionally by Işık Abacı (Istanbul University), Eda Kaygusuz (Istanbul University), Yusuf Çalış (Adnan Menderes University), and Braden Cordivari (University of Pennsylvania). The trench west of the Terrace Building (Area 4) was supervised by Sarah Leppard and Ramon Navas, assisted by Selen Soysal (Ankara University), Işık Abacı (Istanbul University), and Braden Cordivari (University of Pennsylvania). Ken Jordan provided indispensable support regarding the organization of the pottery depot, which was supervised by Gareth Darbyshire, as did his associates Eda Kaygusuz, Selen Soysal, Işık Abacı, and Yusuf Çalış. Zekeriya Utğu, our house manager and guard, kept everything running efficiently within the excavation compound and

on the Citadel Mound.

Within the U.S., we continually rely on the counsel, guidance, and support of Charles K. Williams, II, as well as Julian Siggers, the Williams Director of the Penn Museum, and the Museum's Board of Overseers.

We would like to close by noting again that none of our accomplishments this summer would have been possible without your encouragement and generous support. It is a pleasure to acknowledge, in particular, the assistance offered to us by the University of Pennsylvania Museum of Archaeology and Anthropology, the C.K. Williams II Foundation, the Selz Foundation, the Luther Replogle Foundation, the Merops Foundation, and the J.M. Kaplan Fund. Especially at this particular time, when the cultural heritage of Syria and Iraq is disappearing so rapidly, we're grateful for the investment that you have made in the preservation of the past.

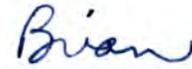
We hope to be able to share our results with more of you during this year: in lec-

tures in the U.S., at Gordion itself, and at the Penn Museum's Gordion exhibit. You'll find the latest information about the project on our website:

<http://sites.museum.upenn.edu/gordion/>

Thank you again and we look forward to welcoming you to the site!

With best wishes,



C. Brian Rose

James B. Pritchard Professor of
Archaeology, University of Pennsylvania;
Director, Gordion Archaeological Project



Ayşe Gürsan-Salzmänn

Assistant Director, Gordion Archaeological
Project

The Friends of Gordion support the ongoing activities of the Gordion Excavation Project, which include site conservation, fieldwork, and publications of the latest discoveries. All Friends of Gordion receive the annual newsletter that provides information about the results of the season's work. Friends are especially welcome at Gordion and are given guided tours of the site, the excavation, and the museum. Every contribution, no matter how small, enables us to further the cause of protecting and publicizing the site. You can support Gordion by making your tax deductible donation at <http://sites.museum.upenn.edu/gordion/friends-of-gordion/friends-of-gordion/>

