



FRIENDS OF GORDION

NEWSLETTER



Figure 1: Aerial view of the Early Phrygian citadel's East Gate (9th century BCE), looking northwest. Photo by Ali Can Kırcaali and Zekeriya Utğu.

In many respects, the 2022 season at Gordion marked a return to our normal research program following two anomalous years of the COVID-19 pandemic (fig. 1). New areas of the settlement were explored with remote sensing, primarily magnetometry, and excavations continued at the South Gate and the Mosaic Building, while they were re-activated after a hiatus of 27 years in the Southern Lower Town. Architectural conservation encompassed four different areas within the citadel, as more visitors came to the

site than ever before. But coronavirus still remained an issue with which we wrangled every week. Twelve members of the staff contracted COVID during the season, as did several of the local workmen, although no one became seriously ill, and weekly testing for the staff enabled us to manage the situation reasonably well. Meals were moved outside, test kits and masks were continually made available, and most of those in quarantine were still able to work, so 2022 ended up being one of our most productive summers.

By this point we had hoped to announce that UNESCO had approved the inclusion of Gordion on the list of World Heritage Sites, as the 20th cultural site in Turkey to be so designated. The application process has encompassed more than three years and has involved us in the preparation of an application document of over 500 pages, working in collaboration with our colleagues in the Turkish Ministry of Culture and Tourism. The UNESCO meeting to vote on Gordion's inclusion was scheduled for June at Kazan, in

southern Russia, but the intensification of the war in Ukraine has caused the meeting to be postponed. That delay unfortunately still continues, although we are hopeful that the voting will eventually occur by early 2023. We could not have arrived at this point without the guidance and energy of a dedicated group from the Ministry of Culture and Tourism: Gökhan Bozkurtlar, Kıvılcım Neşe Akdoğan, Zeynep Tuna Yüncü, Pınar Kuşseven, Yıldırım İnan, and, of course, Yusuf Kırac, director of Ankara's Museum of Anatolian Civilizations, and his staff.

The local community continues to shower us with support. The Center for Cultural Heritage in the nearby city of Polatlı, directed by Mr. Kadim Koç, will be publishing this year a lavishly illustrated Gordion guidebook in Turkish that was prepared by the excavation staff. Mr. Koç also created an International Gordion

Half Marathon that is held annually over three successive days in Ankara, Polatlı, and Gordion, with the intent of highlighting the region's extraordinary cultural value as well as the pending UNESCO application. This year's Gordion Half Marathon was the third such event, held in late May (fig. 2). Seven hundred contestants ran next to the monumental Phrygian burial mounds (tumuli) that surround Gordion, while over 1,300 spectators cheered them on. There was also a special 124 m tumulus race for children, preceded by oral presentations of the stories of the Gordian Knot, King Midas, and Alexander the Great at Gordion.

Teaching local children about the value of cultural heritage protection as well as the historical importance of the Polatlı-Gordion region has long been a high priority for the Gordion Project, and 2022 featured the successful completion of the eighth

annual Cultural Heritage Education Program, or CHEP, directed by Ayşe Gürsan-Salzmänn of the Penn Museum and Halil Demirdelen of the Ankara Ethnographic Museum, as they describe below.

Architectural Conservation

The conservation of the Early Phrygian (9th century BCE) citadel buildings was again the most important activity during the season. Many of these buildings had been burned in a conflagration that swept through the eastern part of the citadel in late summer ca. 800 BCE, and although the structures are comparatively well preserved, the great heat of the fire had caused their walls to splay and the stones to fracture. Following their excavation in the 1950s and 1960s, ongoing exposure to the harsh Anatolian climate and seismic activity has caused



Figure 2: The contestants in the Gordion Half Marathon, with Tumulus MM behind them. Photo by Kadim Koç.



Figure 3: The Terrace Building (9th century BCE), looking northwest. The first six units have now been conserved. Photo by Brian Rose.

further damage to the buildings, so they remain our highest conservation priority. In 2022 our architectural conservation staff, led again by Elisa Del Bono and Angelo Lanza, focused on three areas: the Terrace Complex, the citadel's East Gate, and Megarons 1 and 3. In addition, at the end of the season, a 200 m long section of new fencing was installed on the western side of the Citadel Mound's Visitor Circuit.

The Terrace Complex

The Terrace Complex functioned primarily as a textile production and food processing center, and it was here that the fire probably began around 800 BCE (fig. 3). The complex featured a wide court separating two long buildings (the "Terrace Building, or "TB", to the east, and the "Clay Cut Building", or "CC", to the west), both consisting of eight units that were each subdivided into a large room and a vestibule. In the 1950s and 1960s, Rodney Young excavated nearly all of

the Terrace Building, although most of the western (CC) building remains uninvestigated. With a length of over 100 meters, this monumental complex of workshops ranks among the largest in Anatolia, second only to those in the Bronze Age Hittite capital at Hattusa, and the combination of textile and food preparation is not surprising: while the food was cooking, the attendants could turn to spinning and weaving so that no time would be wasted.

The complex's dry-laid masonry walls are composed primarily of local limestone, siltstone, and sandstone, with



Figure 4: Conserving the back wall of Terrace Building Unit 6, which was badly damaged by the fire of ca. 800 BCE. Photo by Brian Rose

a core of dry-packed rubble. The upper fabric was made from mud bricks. A timber framework was installed within each wall to provide stability, leveling courses, and vertical supports for the roof and upper galleries. Most of the walls exposed during excavation survive to a height of 1-1.5 m, with four to seven courses of masonry extant.

The Terrace Complex is one of the most prominent ruins of the Early Phrygian citadel, visible from almost every corner of the Visitor Circuit, and we have tried to adopt a conservation strategy that will limit the need for future interventions. Our techniques include the use of adhesives (epoxy resins) and lime-based grout injections to repair cracked

and delaminated stones; pinning and cable supports for dislodged stones; and soft wall-capping that utilizes shallow-rooted plants that absorb rainwater but do not grow deep enough to disturb the underlying masonry.

By 2016 the first five units of the Terrace Building had been conserved (TB-1 – TB-5), but further conservation here was put on hold between 2016 and 2021 as we turned toward the stabilization of the citadel's East and South gates. Masonry conservation in the Terrace Building resumed in 2022, with the goal of completing treatment of the complex's sixth unit (TB-6) (figs. 4, 5). As with the other walls treated in past seasons, it was first necessary to dismantle the damaged original blocks along the upper courses of the walls in order to make the epoxy treatments possible. Stainless steel rods were inserted across fractures in the largest blocks to provide extra reinforcement, and stainless steel cables that interweave (zigzag) around these rods were placed through the core of the walls. Where required, detached sections of blocks were reattached with epoxy mixed with calcium carbonate. The conservation of TB-6 was completed by the end of the season, and masonry consolidation of the walls of TB-7 will occur in 2023.

The East Gate

The masonry walls of the Gordion citadel's East Gate still rise to a height of 10 m, and their stabilization has been one of our principal concerns since 2014 (fig. 1). This is the best-preserved Iron Age citadel gate in Anatolia, and originally consisted of four elements: a trapezoidal gatehouse (the Polychrome Gate House), flanked by two roofed courts at north and south (the “North and South Courts” or

bastions), all of which frame a sloping, cobbled approach road measuring 20 m long and 10 m wide. In 2022, we turned to the eastern elevation of the South Court, along with the interior and exterior walls of the North Court.

The use of small “chinking” stones around the edges of larger blocks was a technique favored by Gordion’s masons during the 9th and 8th centuries BCE, but many of these stones had fallen out or become loose over the centuries, thereby creating a network of voids within the walls. The original chinking stones that were still in place were retained, and were stabilized with lime mortar when required. Where missing, new stones of the same shape were inserted (fig. 6), and all of the conserved walls were then covered by the soft wall-caps mentioned above.

Repointing along the upper masonry courses of the South Court’s eastern side was also completed in 2022 (fig. 1). During this consolidation, it was necessary to partially dismantle the three upper courses at the southern end of the wall. Several fractured blocks were removed piece by piece and then reattached using the epoxy resin and calcium carbonate mixture mentioned above. Due to the great size of the dismantled blocks, insertion of stainless steel bars across the cracks was necessary to ensure stability. The few missing or excessively deteriorated blocks were replaced, by using similar limestone blocks of the same date that we have found out of context during the ongoing excavation at the citadel’s South Gate.

Megarons 1 and 3

The large megarons that occupy the citadel’s Outer and Inner Courts originally featured some of the most impressive and elaborately decorated

buildings of Early Phrygian (9th century BCE) Gordion. The excavation of Megaron 2, in the Outer Court, yielded the earliest decorated stone mosaic floor that has ever been found, and the court itself was paved in limestone to impress the diplomats and ambassadors who must have come here to negotiate with Gordion’s rulers. Some of the courts’ buildings were badly damaged by the fire of ca. 800 BCE, and their deteriorated condition had prompted prior archaeological conservation staff to buttress the walls with earth and sandbags to maintain the surviving remains. The disadvantage of this approach is that the megarons became

nearly invisible from the Visitor Circuit, making it appear as if one of Gordion’s most important districts was largely empty.

We began to tackle that problem this year with Megarons 1 and 3, searching for a conservation strategy that would enable us to make the walls far more prominent and comprehensible to visitors. Megaron 1, in the Outer Court, measures 17.50 x 9.5 m, and its vestibule was covered by a pebble mosaic floor with geometric motifs in red and black on a white ground. When excavated in 1956, the walls were preserved to a height of about 1 m above the floor, with rectangular recesses that had originally been occupied by timber



Figure 5: The side wall of Terrace Building Unit 6, after conservation, looking north.
Photo by Brian Rose.



Figure 6: The Early Phrygian citadel's East Gate (9th century BCE): conserving the south wall of the North Court, looking northwest. Photo by Brian Rose.

framing posts subsequently burnt in the great fire.

Ali Can Kırcaali and his team removed the excavation backfill from above the megaron interior and found that the building's walls, largely of mud brick, were barely recognizable, nor were any traces of the mosaic floor still in place. Outside the building, however, the flagstone paving of the immediately adjacent part of the Outer Court remained in reasonably good shape, even though the pavers that had been burned by the fire of ca. 800 BCE were in need of emergency conservation (fig. 7). Uncovering an area of approximately 11 x 9 m, we discovered that the Outer Court

pavement was made of well-cut stones, approximately .25 m thick and in some cases nearly 1 m long, all of which had been meticulously laid at an even level. This was a pavement designed to last. All of its stones were carefully documented by Ali Can Kırcaali and İlayda Şahin, and after this, all intrusive soil was removed from the cracks and micro-cracks using scalpels, steel brushes, and compressed air; at the same time, detached portions of stone were reattached using epoxy resin mixed with calcium carbonate (fig. 8). In the future we plan to expose the remaining pavement in front of Megaron 1, and to conserve any stones that have sustained damage, so that something

of the original splendor of the court can once again be presented to visitors.

We then turned to Megaron 3, in the Inner Court, which is the largest megaron ever discovered within the citadel, with a footprint measuring 30.40 by 18.85 m. In both the vestibule and the main room there had once been upper galleries, supported by two parallel rows of wooden posts. The walls' 1.50 m thick stone foundations were strengthened at regular intervals by wooden framing posts set into their faces, while the upper portion was built with mudbricks covered by a thick layer of clay plaster within the rooms.

Sixty years have passed since the building's excavation, and the poor legibility of Megaron 3 has increased due to vegetation growth, past backfilling campaigns, animal burrowing, and the shifting of soil levels inside the citadel. Our aim during the 2022 season was to expose and document a section of the megaron, while developing a strategy to protect the walls and present the building much more effectively. The fragile condition of the uncovered remains meant that the kind of stabilization we had used in the Terrace Building would not be possible.

A complete reburial of the megaron's remains, and the placement of new stones above them to replicate the building's footprint, was considered less than ideal because the walls survive to differing heights, and raising the ground level around all of them would result in the disappearance of the associated terraces, stairs, and enclosure walls. We therefore decided to experiment with the reconstruction of a single wall, the one dividing the vestibule from the main room, with several criteria in mind: conservation and increased legibility; complete reversibility; the use of modern low-cost materials; ease of installation; and

the re-use of collapsed building stones from the South Gate excavations.

We enclosed the wall in question with a wire mesh containing loose rubble, in an attempt to build a gabion-like container around the original masonry, nearly 2 m thick (.45 m wider than the original wall) and .70 m high (fig. 9). For the inner core of the gabion we used gravel, with large rubble packed around it against the inside of the wire meshing, while the megaron's original masonry was protected by a covering of geotextile. This method proved highly protective of the remains and completely reversible; moreover, the materials used were clearly distinguishable from the original fabric even though they have a similar color and texture. Nevertheless, this solution failed to improve the wall's legibility when viewed from the Visitor Circuit on top of the Citadel Mound, and we therefore dismantled the gabion and re-covered the wall with geotextile and sandbags until the next season. We will continue to test other techniques of exposing and displaying the megarons, with the intent of clarifying the overall plan while at the same time preserving the original architectural fabric.

All of this work was supervised by Elisa Del Bono and Angelo Lanza, assisted by Giuseppe Bomba, Renzo Durante, Mauro Perrone (masonry conservation), as well as Ali Can Kırcaali and İlayda Şahin (field photography and documentation). Rounding out the team were Ömür Atıktuğ (mason and foreman) and Nahit Yılmaz (conservation assistant); Melek Atıktuğ, Gamze Yılmaz, and Elif Kayran (women from Yassihöyük village who have been trained in the soft-capping technique by archeobotanist Naomi Miller); and a team of local laborers.



Figure 7: The stone paved Outer Court in front of Megaron 1 (9th century BCE), looking southwest. Photo by Gebhard Bieg.



Figure 8: Angelo Lanza and Nahit Yılmaz conserving the stone paved Outer Court in front of Megaron 1 (9th century BCE). Photo by Gebhard Bieg.



Figure 9: The conservation of Megaron 3 (9th century BCE), looking southwest. The ruined state of the megaron's dividing wall is visible at left (A). The wire, stone, and wood reconstruction of the wall is visible at right (B). The Terrace Building can be seen at the top. Photo by Brian Rose.



Object Conservation and Experimental Archaeology

Object conservation was overseen by Cricket Harbeck, assisted by İbrahim Dural (a recent graduate from the master's program in Conservation and Restoration at the Hacı Bayram Veli University), and Amber Swanson (University of Pennsylvania). They focused on conserving the newly excavated finds from the South Gate and the Mosaic Building, as well as monitoring environmental conditions inside the Tumulus MM tomb chamber (ca. 740 BCE). One of the most interesting projects, however, involved documenting and rehousing the tomb's cedar sarcophagus that had been recently transferred from the Museum of Anatolian Civilizations in Ankara to the Gordion Museum (fig. 10).

Within and around the sarcophagus were the remains of textiles that had originally been positioned beneath and over the body of the dead ruler, who was probably the father (Gordios?) of king Midas. Some of these textiles have an intense yellow color similar to gold—a phenomenon that is striking for its congruence with the later Greek legends of Midas' "Golden Touch" (fig. 11). Mary Ballard, Textile Conservator at the Smithsonian's Museum Conservation Institute, has shown that the fibers of these particular textiles were coated with the mineral goethite, an iron oxide, and this is the material that creates the golden hue. Unlike dyes that form a chemical bond with fibers, the goethite pigment is simply a covering film. Ballard has proposed

Figure 10: Cricket Harbeck conserving the cedar sarcophagus from Tumulus MM (ca. 740 BCE) in the Gordion Museum. Photo by Brian Rose.

that the use of this “golden” goethite pigment as a special treatment on some of Gordion’s textiles may have given rise to the story of Midas’ “Golden Touch.”

Conservator Cricket Harbeck and archaeologist Braden Cordivari were interested in continuing research on the application of goethite to textiles, and so began a project in experimental archaeology that they describe here (fig. 12).

“Since goethite would also have been available as a naturally occurring raw material in antiquity, we wanted to see whether it was possible to create similar, gold-colored fabrics by starting with this mineral rather than synthesizing it. We used a modern goethite pigment and several different fiber types, including wool and cotton. The process we used was similar to that described by Ballard, and essentially involved mixing the pigment with water in a heated pot, and then adding more water to cover the fibers. We tried several different proportions of pigment to fiber weight and experimented with the same piece multiple times.

Starting from goethite pigment, we were able to produce the rich golden-yellow color that appears on the MM textiles, particularly for the wool fibers. Without analysis to look at the microstructure of our dyed samples, however, we cannot be sure that we have accurately recreated the original Phrygian process, as our yellow fibers may not have the same type of goethite film that was observed on those found in MM. Nevertheless, we hope that this research sheds new light on the technologies and skills known to the ancient craftspeople at Gordion, perhaps later remembered in the stories of the Golden Touch.”



Figure 11: Traces of goethite within the cedar sarcophagus from Tumulus MM (ca. 740 BCE).
Photo by Gebhard Bieg.



Figure 12: Cricket Harbeck and Braden Cordivari experimenting with goethite production.
Photo by Gebhard Bieg.



Figure 13: (From left to right) Ali Kurultay, Michael Barngrover, Richard Liebhart, and Matthew Harpster scanning the interior of the Tumulus MM tomb chamber (ca. 740 BCE).
Photo by Gebhard Bieg.

Three-Dimensional Laser Scanning at Gordion

The goal of Gordion’s Three-Dimensional Laser Scanning project is to generate a three-dimensional digital model of the wooden tomb chamber inside Tumulus MM, thereby allowing visitors and researchers to move freely

around the tomb in their imagination, without endangering the stability of the actual chamber. The project involves the use of a FARO S150 laser scanner, and is being conducted by Dr. Matthew Harpster at Koç University in tandem with Michael Barngrover, Ali Kurultay, and Richard Liebhart.

After scanning approximately 70%

of the tomb structure in 2021 (the interior of the tomb and the exterior walls up to a height of 2 m), the priority in 2022 was to complete the scanning of the tomb’s upper walls and roof (fig. 13). The first step was to add scanning targets to the modern support structure that surrounds the tomb chamber, and then to take nine general scans around this structure. As common and very clear points of reference, these scanning targets make it easier for the processing software (called “Scene”) to combine all the various scans into a single digital model. The second step involved the recording of new data around the edges of the tomb’s roof, with 11 scans that focused on the southern end of the chamber. By placing the scanner higher up on the modern supporting infrastructure, these images added new data to the gradually growing three-dimensional model, while at the same time creating common referencing points on the walls and the roof, which could then be used to link the images of the roof to the model of the walls.

Even though physical access to all parts of the roof is limited, approximately 80 percent of the roof has now been scanned, digitized, and modeled. The laser scanner and photogrammetry techniques also made it possible to record the inscriptions of four Phrygian names previously discovered on a roof beam at the northwest corner of the chamber, and so these have now also been added to the overall model of the tomb.

Approximately 90 percent of the chamber structure has thus far been recorded in the digital model, including elevations of all four walls, details of the gable along the south wall, the inscriptions found on the roof beam in the northwest corner, details of the architectural joinery, and the modern concrete and

metal supporting shell that surrounds the tomb. This digital model will serve as a vital foundation for future scholarship, as well as a uniquely valuable resource for public outreach, education, and museum exhibitions.

Remote Sensing

Magnetic prospection resumed at Gordion for the first time since 2018, once again under the direction of Christian Hübner and Stefan Giese. This season, nearly 100,000 sq. m were investigated, with a focus on the areas to the northeast, east, and southeast of "Kuštepe", an early 6th century Phrygian fort at the northern end of the Lower Town that had been destroyed in the Persian attack on Gordion around 540 BCE (figs. 14, 15 areas 1–5, fig. 16). We also explored an elevated area of 10 hectares (25 acres) lying to the east of the citadel (fig. 15 area 6, fig. 16). Both of these locations lay on or near the ancient course of the Sakarya (Sangarios) River, which in antiquity flowed on the eastern side of the Citadel

Mound (see fig. 16, "Sakarya II"), not the western as it does today, its movement to the west having occurred only during the last two centuries.

Our reason for exploring the area to the southeast of Kuštepe this season was related to the Turkish government's application to UNESCO for Gordion's inclusion on the World Heritage Site List. Previous magnetic prospection directly to the southeast of Kuštepe had revealed the presence of a monumental fortification wall that marked the eastern border of the Lower Town, one of Gordion's two main residential districts (fig. 16). The southern end of this fortification wall had been discovered long ago at the southeastern limit of the Lower Town, as part of another early 6th century fortress ("Küçük Höyük") (fig. 16). However, the eastern line of defense connecting these two forts had never been detected, and the UNESCO reviewers who visited Gordion last year asked us to ascertain its location by using remote sensing so that zones of protection could be precisely established.

In the end, neither magnetometry nor ERT (electric resistivity tomography) enabled us to determine exactly where the defensive line was located, but in the course of geophysical investigations in this area, we received a wealth of other information suggesting that Gordion may have been nearly twice as large as we thought it was during the Middle Phrygian period (8th-6th centuries BCE). We already knew that the residential district to the north and south of the Citadel Mound (i.e., the Lower Town) encompassed 45 hectares (111 acres), and so too did the second residential district to the west of it, the Outer Town (fig. 16). These two districts, combined with the citadel, indicated a total of 112 hectares (277 acres) for the entire settlement area. But as we were prospecting this season to the east and northeast of Kuštepe, we received magnetic readings of yet another fortification wall with defensive ditch, branching off to the northeast from the Lower Town defences (fig. 15 area 3, fig. 16). This discovery pointed

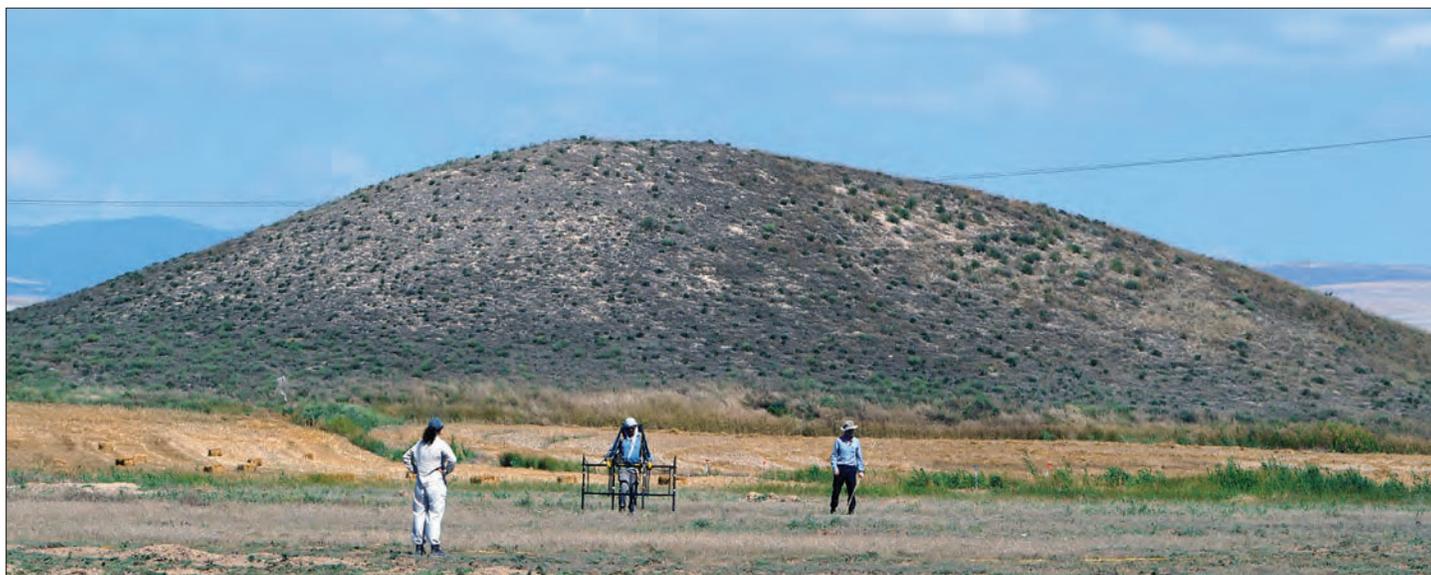


Figure 14: Remote sensing to the northeast of the mound of Kuštepe, a Phrygian fort destroyed by the Persians ca. 540 BCE. Christian Hübner, operating the magnetometer, is flanked by Janessa Reeves and Bedirhan Demirel. Photo by Gebhard Bieg.



Figure 15: The areas of 2022 remote sensing on and around the Citadel Mound, with magnetometry in gray and ERT in yellow. The 2022 excavation areas are also shown: at the citadel's South Gate and in the Mosaic Building (Area 1); and in the Lower Town cemetery (Area 8). Plan by GGH, with modifications by Gareth Darbyshire and Ardeth Anderson.

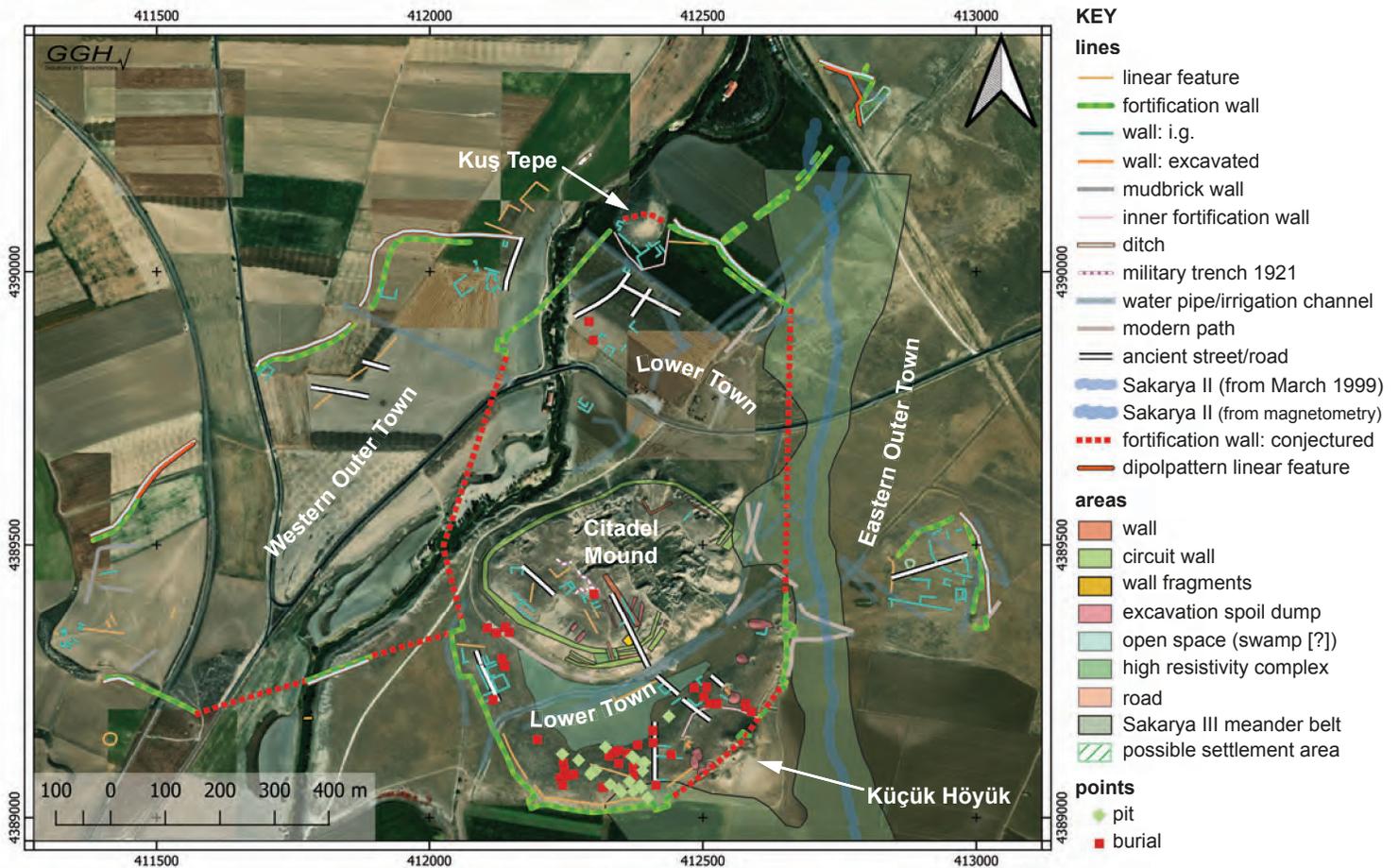


Figure 16: The results of 2022 magnetic prospection on and around the Citadel Mound. Plan by GGH, with modifications by Gareth Darbyshire and Ardeth Anderson.

to the conclusion that there was an Outer Town to the east of the citadel as well, just as there had been at the west. Our photographer Gebhard Bieg, who is publishing the Küçük Höyük fortress, had already noted that the Persian siege ramp built up against it contained a wealth of cultural material that must have derived from an eastern Outer Town area, and now we have the geophysical evidence for it.

We received even more valuable information while exploring a field 185 m to the northeast of this wall (fig. 15 area 1, fig. 16). The field in question occupied an area to the north of the eastern Outer Town. There we uncovered evidence for a large stone structure which may also have been part of the fortification system mentioned above, although more prospection in the area is necessary to determine its plan. In any case, this newly found structure is likely to have guarded a northern entrance to the eastern Outer Town.

More of the eastern Outer Town was detected in the elevated 10 hectare (25 acre) area to the east of the Citadel Mound (fig. 15 area 6, fig. 16). The surface of this area was covered with fragmentary worked stone and Middle Phrygian pottery, while prospection revealed a fortification wall and ditch enclosing a series of substantial buildings. The largest of these structures measures 16 by 35 m, and most of the buildings appear to have a Middle Phrygian orientation. The fortifications may well mark the eastern border of the Outer Town—there are no traces of structures to the east of it, yet an abundance of buildings to the west—though again this will need to be confirmed by more prospection further to the east next year.

Running diagonally through the center of the latter area is a road that

proceeds westward, crossing the line of the ancient Sakarya River by a bridge attested by previous magnetometry, and then passing through a gate on the northeastern side of the southern Lower Town (excavated by Bryn Mawr's Machteld Mellink in 1958). The road then moves to the citadel's South Gate, as do three other roads: one that proceeds directly to the north from a gate in the southern fortification wall of the Lower Town, another from Küçük Höyük, and a third that moves east from a gate in the northwestern fortification wall of the southern Lower Town. In other words, most of the roads entering Gordion led to the South Gate, which was clearly the principal entrance to the citadel, from the 9th century BCE to at least the Late Roman period (4th–5th centuries CE). The citadel's East Gate was probably primarily ceremonial, intended for use by ambassadors and other dignitaries who were being entertained in the megarons.

Excavation: the Mosaic Building (Area 1 extension)

Our most exciting discoveries this season occurred on the southern side of the citadel, in and around the Mosaic Building and the South Gate (figs. 15, 17, 18). The former structure was one of the first that Rodney Young unearthed in the 1950s, its name deriving from a series of blue and white pebble mosaic floors decorated with hooked meanders that occupy at least five rooms. This complex features a plan that deviates from that of any other structure on the citadel: a rectangular court paved with andesite slabs leads to two connecting rooms (the “loggia” and “tribunal”), the latter of which featured the stone foundations of a platform where Young believed the Persian governor of the settlement had held court (fig. 18a). Further to the west was a separate but related structure, the “South Building”, with a portico of half columns framing a nearly square



Figure 17: The citadel's South Gate with excavation in the Mosaic Building above it, looking north. Photo by Brian Rose.

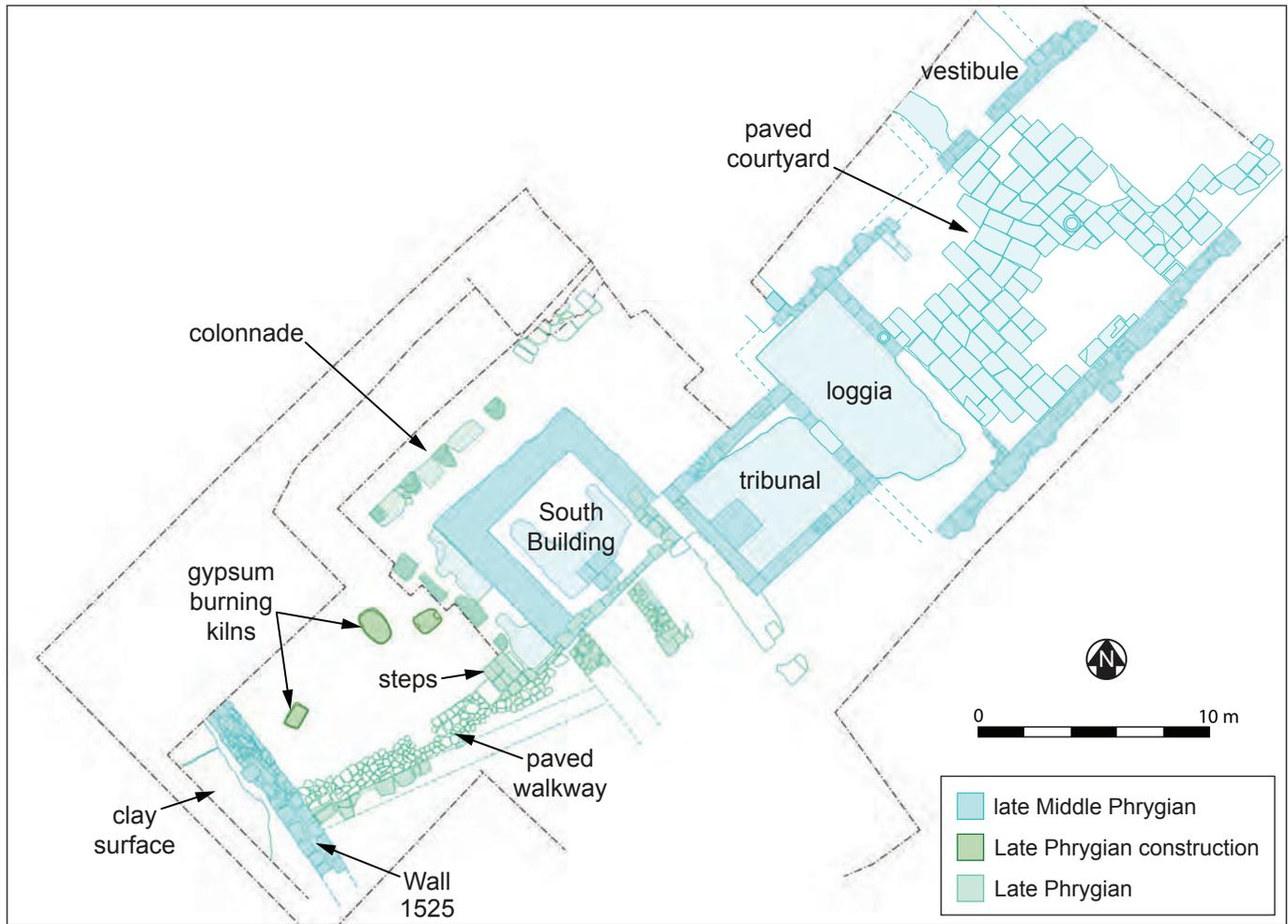


Figure 18a: Plan of the Mosaic Building, the South Building, and the area of excavation to the west of it. Plan by Sarah Leppard.

room that was dominated by a large base set against the back wall (again see fig. 18a). Both the square room and the portico around it were decorated with pebble mosaics identical to those in the Mosaic Building directly to the east.

Based on the discovery of a Persian cylinder seal in one of the robbing trenches, Young dated the complex to the early fifth century BCE, when Phrygia had fallen under the control of Persia. This dating remained unchallenged for nearly 70 years, until we resumed excavations here in 2019. We realized at that time that the complex was much larger than Young had thought, and

excavator Sarah Leppard discovered that the South Building overlay a large megaron of Early Phrygian (9th century) date (fig. 18b). Moreover, re-analysis of the artifact assemblage discovered by Young on the mosaic floors of the loggia and tribunal pointed to a destruction date at the time of the Persian attack ca. 540, and a construction date in the early 6th century when Gordion was under the control of the Lydian kingdom. In other words, it looked as if Young's dating might be off by a century, and we were eager to continue excavations in and around the complex to assess more effectively this new proposed chronology.

The coronavirus pandemic prevented further fieldwork in 2020 and 2021, but this year we had the opportunity to explore the area to the north and west of the South Building, again under the expert guidance of Sarah Leppard. Although there is still much more of the complex to uncover, and additional evidence is needed to anchor the new chronology in place, I present here an outline of the principal building phases based on the newest discoveries.

The first major building project in this area in the 9th century involved the construction of the citadel's South Gate, as well as a series of terraces on

the citadel's south side and the large Early Phrygian megaron under the South Building, all of which probably occurred ca. 850 BCE, when the citadel's East Gate was also constructed (figs. 18b, 19). We found some of the terrace walls at the south and west still in place, and even though the stone walls of the megaron had been spoliated by later builders, the robbing trenches indicate that it had an interior width of ca. 9.50 m. If the megaron's length was more or less twice its width, which is the usual format, then the former would have been ca. 19 m, only slightly smaller than Megaron 4 in the Early Phrygian citadel's Inner Court.

The megaron's entrance was likely at the north, facing the Early Phrygian Terrace Complex (fig. 18b). We cannot yet understand the two rather closely spaced lines of column supports (post pads) inside the building, which were presumably intended to support a balcony. If that was their function, however, the balcony would have been very wide, occupying nearly 40% of the interior, which is otherwise unparalleled at Gordion. On the western side of the megaron's interior is a large square base (.80 x .80 m) of unknown function, but it is worth noting that large stone bases were also included in the later South Building and the Mosaic Building tribunal (fig. 19).

The megaron appears to have gone out of use at the time of the great fire around 800 BCE, although there were no signs of burning. In its place the Phrygians constructed an early 8th century (early Middle Phrygian period) version of the South Building, the appearance of which is unknown because it has not survived in place (fig. 18a). Judging by residual debris, however, the walls were likely formed of polychromatic stones and built at the same time as the six-unit Building

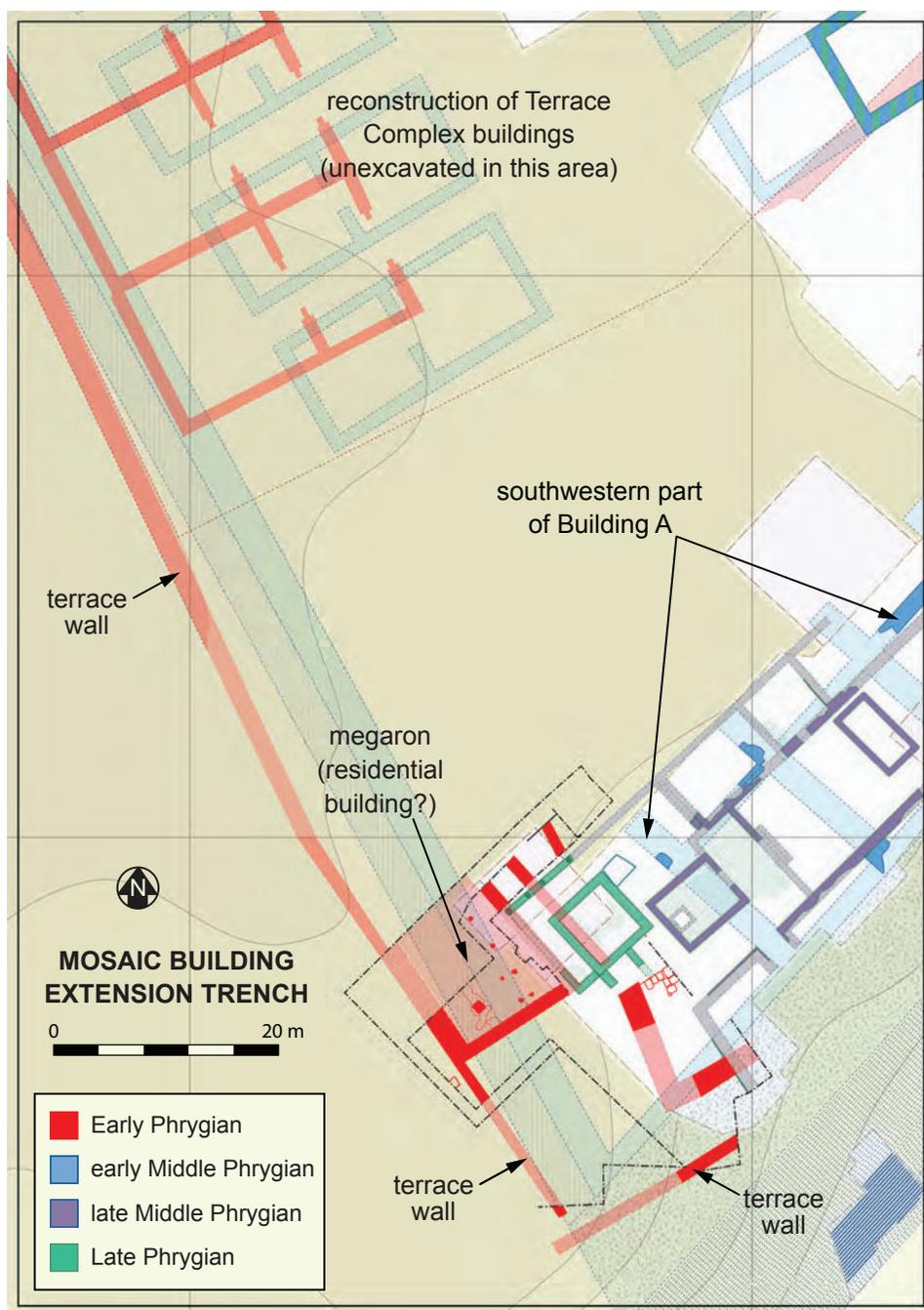


Figure 18b: Color phase plan of the Mosaic Building complex, showing Early Phrygian (9th century BCE), early Middle Phrygian (8th century BCE), late Middle Phrygian (early 6th century BCE) and Late Phrygian phases (late 6th century BCE). Plan by Sarah Leppard, with modifications by Gareth Darbyshire and Ardeth Anderson.

A directly to the northeast, which was variously used for administration, storage, and food preparation (fig. 18b). Two cellars at the north and northeast of the South Building may also date to the 8th century, the floors of which

were paved with stones probably spoliated from the Early Phrygian megaron's walls.

At some point around 600 BCE, late in the Middle Phrygian period, a building with architectural terracottas



Figure 19: The mudbrick floor and stone base of the Early Phrygian (9th century BCE) megaron beneath the Mosaic Building, looking southeast. Photo by Gebhard Bieg.



Figure 20: Excavation of the Mosaic Building, looking north. Wall 1525 in the foreground is of late Middle Phrygian date (early 6th century BCE) and features the incised numbers. The pavement and steps beyond are Late Phrygian (late 6th century BCE). Photo by Brian Rose.

was constructed in this area. We have only fragments of those terracottas, found in the construction fill of the Mosaic Building's stone pavement, but it looks as if a section of that building's tiled roof fell during or shortly after construction, possibly due to the unstable ground at the Citadel Mound's edge. In any case, by ca. 575 BCE a major building campaign was in progress throughout the citadel. New roofing systems with architectural terracottas were added to the old (8th century BCE) megarons and Terrace Complex buildings, all of which was likely due to Lydian financial support. In the area that we are currently investigating here on the southern side of the citadel, there is evidence for three components of the early sixth century building program: the dismantling of the two westernmost rooms of Building A, thereby making room for the construction of the new Mosaic Building; and the construction of a new South Building directly to the southwest of this (figs. 18a, 18b).

None of the stones from the dismantled units of Building A were reused in the new construction: newly quarried stones of andesite were employed for the paved court, and new half columns of gray and red stone were incorporated into the South Building—the earliest stone half columns for which we have evidence in ancient architecture. One cannot exclude the possibility that the idea of stone half columns was due to Lydian influence, even though none has thus far appeared in the Lydian capital of Sardis (in western Turkey). Lydian influence is clear, however, in the terrace wall at the southwest, "Wall 1525", where the blocks are inscribed with sequential numbers that are similar to those on the masonry of early 6th century



Figure 21: Photogrammetric rendering of the stone blocks with incised numbers in Wall 1525. For clarity, we have highlighted the numbers in black. Image by Ali Can Kircaali.



Figure 22: Excavation of the Mosaic Building, looking northwest. Sarah Leppard uncovers the andesite omphalos and limestone column. Photo by Gebhard Bieg.



Figure 23: At left: the ceramic pegs from a wall mosaic in the Mosaic Building. The pegs were originally assembled in a geometric design similar to that on contemporary (6th century BCE) architectural terracottas, one of which is shown at right. Photos by Gebhard Bieg; peg assembly reconstruction by Amber Swanson and Janessa Reeves.



Figure 24: Penn students (from left to right) Janessa Reeves, Brigitte Keslinke, and Amber Swanson reassemble an architectural terracotta from the Mosaic Building. Photo by Gebhard Bieg.



0 10 cm

Figure 25: A complete architectural terracotta with heraldic lion (right) and bull (left), from the roof of the Mosaic Building (early 6th century BCE). Photo by Gebhard Bieg.

BCE Sardis (figs. 18a, 20, 21). These blocks mark the only known example of the use of a numbering system in the architecture of Phrygian Gordion, although not all of them are in fact numbers: one of the stones features a

carefully incised meander motif in the corner, similar to the motifs that were used on the wooden furniture from Gordion's Tumulus P (ca. 760 BCE).

There was another remarkable discovery that may be attributable

to this phase. Collapsed next to the terrace wall bearing the Lydian numbers was an andesite omphalos, or navel, with a height of .57 m and a diameter of .49 m. Next to it was a limestone column preserved to a

height of 1.58 m that probably formed part of an architectural frame for the omphalos (fig. 22). This is the only stone column that has ever been found at Gordion, thereby highlighting what a special installation this would have been. Omphaloi were objects of great sanctity, generally erected in sanctuaries or temples, and tied to the cults of both Apollo and Zeus. The most famous of the omphaloi was located in Apollo's sanctuary at Delphi, where both Phrygian and Lydian kings had made ostentatious dedications, but it was equally representative of Zeus and tied to him in several mythological stories. This is the only omphalos to have been discovered in Asia Minor, and at the end of this section I will suggest its potential connection to the South Building's function.

In an area adjacent to the omphalos we discovered hundreds of gray and coral-colored terracotta cones or pegs that originally formed part of a wall mosaic (fig. 23). It looks as if these ceramic wall mosaics were used only in the Mosaic/South Building complex and in the Painted House, a small semi-subterranean shrine in the citadel's Outer Court that can be linked to the cult of Matar, the Phrygian Mother Goddess. Again, then, it is clear that the Phrygian architects wanted to highlight this space as one that was extraordinary. As our photographer Gebhard Bieg has noted, these pegs were probably arranged in geometric patterns that echoed those in the contemporary architectural terracottas on the buildings' roofs. I asked our registrars from Penn, Janessa Reeves and Amber Swanson, to assemble the pegs in a matrix based on the configuration of the terracottas, and you can see the result in figure 23.

The entire complex was designed

to be a polychromatic showplace. We discovered fragments of blue, red, and white wall painting that would have complemented the red and bluish gray half columns, the blue/gray, red, and white architectural terracottas, and the blue and white pebble mosaics. As far as we know, these were the first pebble mosaics to have been produced at Gordion in over a century and the first to feature meanders, although such motifs had earlier appeared on Phrygian furniture and pottery. The use of so many floor mosaics with identical designs and colors played a major role in uniting the disparate rooms of the complex, as did the identical architectural terracottas on the various roofs (figs. 23–25).

A few other discoveries highlight the elite nature of the complex. Altogether we have found five small gold foil panels with relief decoration that were once affixed to boxes or furniture (fig. 26), as well as a bronze fish-

scale matrix filled with colored glass. Another extraordinary find was a large three-nozzled marble lamp featuring incised concentric circles, a meander surrounding a star, and knobs or reels in relief, all of which would have been elaborately painted (figs. 27, 28).

Much of this splendor disappeared in the Persian attack around 540, which is attested by several bronze arrowheads discovered in the area, along with a sizeable piece of iron



Figure 26: Three pieces of gold foil with relief decoration from the Mosaic Building (early 6th century BCE). Photo by Gebhard Bieg.



Figure 27: A marble lamp decorated with concentric circles and relief knobs (early 6th century BCE), from the Mosaic Building. Photo by Gebhard Bieg.



Figure 28: The base of the marble lamp from the Mosaic Building, with the meander and star highlighted in black for clarity.
Photo by Gebhard Bieg.

and bronze scale armor. Although we are still ascertaining the extent of the destruction, it is clear that the Mosaic and South Buildings were extensively damaged. The Mosaic Building (tribunal, loggia, and paved court) appears to have gone out of use altogether at this time. The roof beams were taken away for reuse and several of the stone pavers were spoliated, but the broken architectural terracottas were left in place. The South Building's portico with red and grey columns must have been destroyed too, since the drums were reused in the construction

of a Late Phrygian (late 6th century BCE) bastion added to the adjacent South Gate, as were several wall blocks from Building A.

Unlike the Mosaic Building, however, the South Building was reconstructed after the Persian attack, although the new stylobate was fashioned of reused material, and the new gray and red half columns appear to have been recut from Middle Phrygian wall blocks, with some of the paving stones from the Mosaic Building's court re-employed as orthostats or parapets between the new

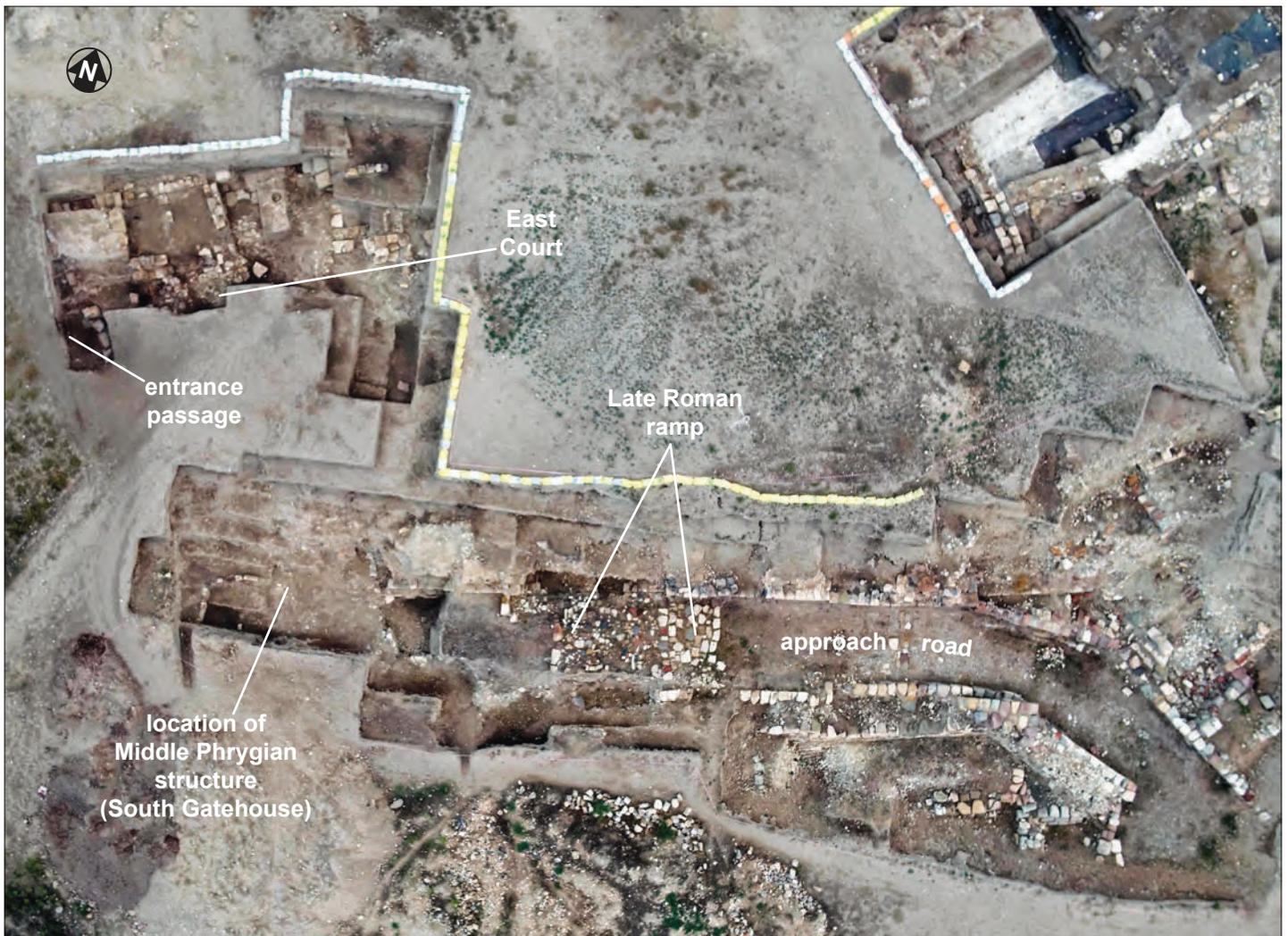


Figure 29: Aerial view of the citadel's South Gate (at bottom and left), and the South Building / Mosaic Building complex (upper right).
Aerial photo by Ali Can Kircaali and Zekeriya Utgu.

half columns. The fact that the rebuilt portico featured alternating gray and red half columns like its predecessor suggests that the rebuilding occurred relatively soon after the destruction, when the residents still remembered the original appearance. We also uncovered traces of three kilns where gypsum was burned to produce plaster for the rebuilt walls, and some of that plaster was used to patch the pebble mosaics in the South Building, which remained in use (fig. 18a). If the omphalos was produced for the early 6th century building, then it likely remained on display when the building was restored, since the collapse of the frame that surrounded it appears to date to the early 3rd century BCE (Early Hellenistic period). Next year's expansion of the trench should enable us to provide a firmer chronology.

To the west of the South Building the architects added an exterior court paved with reused stones, as well as a staircase leading into the building, so whatever occupied the large stone base in the South Building's interior was presumably still accessible (figs. 18a, 20). This may well have been the cart with the Gordian Knot cut by Alexander in 333. That this knot actually existed is attested by four ancient historians (Arrian, Plutarch, Curtius, and Justin) but the references differ as to the precise location. Its placement on Gordion's acropolis, or citadel, seems clear, but Arrian locates it near a palace of Midas, whereas Justin situates it in a temple of Zeus. In the 2019 newsletter we suggested that the Mosaic Building complex served as the residence of Gordion's rulers during the Middle Phrygian period, and the presence of the omphalos in the South Building makes it a cult complex as well, probably associated with Zeus and/or Apollo. As far as we can tell, this complex was also the most elaborately decorated of those on the

citadel but the South Building was the only elite structure still standing at the time of Alexander's arrival. In other words, the South Building and its surroundings come closer to fitting the historical and archaeological tradition of the Knot than any other location at Gordion.

There are still many questions here that we need to answer. Both the Mosaic and South Buildings continue further to the north and west, so these are areas that we intend to explore next year. In the meantime, it is abundantly clear that Gordion's citadel was repaired and remained in use after the Persian attack (unlike the citadel at Sardis). Many of the citadel's buildings that had been damaged during that attack were rebuilt with spoliated material, and the South Building even managed to maintain some of its former glory during the period of Persian control. It is not unlikely, in fact, that the office of the Persian administrator was located somewhere within this complex, as Young had already speculated, which would explain why the Persian cylinder seal was found in one of the robbing trenches. Nevertheless, at some point in the first quarter of the 3rd century BCE (Early Hellenistic period), the entire complex was destroyed and covered by 1.5–2 m of fill, above which a series of houses were built, and the Knot—if it was here—would have vanished from view.

Excavation: The South Gate (Area 1)

Our second major focus of excavation this season was the citadel's South Gate, located to the southwest of the Mosaic Building, and this was once again carefully excavated by Simon Greenslade (figs. 17, 29). We began excavations here in 2013 with the intent of determining whether there was evidence for a major road cutting

through the center of the citadel. In the course of seven excavation seasons we have unearthed a monumental citadel gate that appears to have been in operation for over 1,200 years, from its initial construction ca. 850 BCE to the end of the Medieval settlement in the 13th or 14th century CE. It now seems virtually certain that this was the citadel gate used by the majority of Gordion's residents, with the East Gate being used primarily for diplomatic or ceremonial activities.

By the end of the 2019 season we had uncovered most of a 66 m long approach road, 5–6 m in width, that was flanked by fortification walls nearly 3 m thick (figs. 17, 29). On the western side of the road was a ramp paved with spoliated stones that we can confidently place in the Late Roman period, but the underlying configuration of the gate during the earlier Phrygian phases has been more difficult to determine, as has the position and nature of the northward turn of the road into the citadel. No excavation occurred here in 2020 due to the pandemic, and the 2021 fieldwork focused exclusively on architectural conservation. Large-scale excavation resumed in 2022 and we now have answers to some of our most pressing questions, even though two more years of excavation will probably be necessary before we can present an overview of the continual changes to the gate during the last 2,800 years (fig. 30).

Already in 2018 we had uncovered a massive foundation of stone rubble that stretched across the approach road to the west of the Roman ramp (figs. 29, 31). This we interpreted at the time as a possible bastion around which the road turned, but it now seems much more likely to have been a terraced gatehouse that was originally erected at the beginning of the Middle Phrygian period



Figure 30: Excavation at the citadel's South Gate, with an Early Phrygian wall (9th century BCE) visible at the bottom. Photo by Brian Rose.

(8th century BCE). The foundations extend for over 15 m, and even though the ashlar blocks originally set above it have been robbed, possibly as late as the 19th century, the presence of wooden beams in the foundations points to a date in the 9th or 8th century BCE. This we can refine further, since the east side of the foundations cuts through the Early

Phrygian wall on the north side of the road, thereby suggesting that this putative "South Gatehouse" formed part of the 8th century Middle Phrygian rebuilding.

The insertion of a gatehouse across the road would have duplicated the arrangement of the citadel's East Gate, where the approach road led directly into the Polychrome Gatehouse, and

if the South Gatehouse was as large as its counterpart at the east, it would have had a width of ca. 20 m. It is worth noting that the eastern side of the proposed gatehouse is angled with respect to the road, like the Early Phrygian East Gate, and runs parallel to the main Enclosure Wall that lies directly west of the Terrace Complex.

Further to the north, during the last week of the season, we unearthed a substantial wall of ashlar blocks that appears to be the eastern side of the N-S connecting road, the wall for which we have been searching for four years (fig. 31: "entrance passage"). Although we uncovered only the upper courses of the wall, it appears to be Early Phrygian (9th century) in origin, with Middle Phrygian rebuilding in the 8th century. This would mean that the South Gatehouse signaled a shift in the approach road's direction from E-W to N-S. There is no comparable example of such an arrangement in the defensive architecture of Iron Age Anatolia, but it would have been enormously effective in slowing the approach of a hostile force, and in fact, there appears to have been no successful attack on the citadel until that of the Persians in the 540s.

The width of the N-S road is still unclear, but it would have been at least as wide as the E-W road (5-6 m), and we should be able to ascertain the precise measurement when we excavate further to the west next year. The original ground level on that side is several meters higher than that at the east, so there is an excellent chance that we will find the western side of the N-S road in far better condition.

It looks as if the N-S road stretched for a length of at least 20 m and was bordered at the east by a large court that lay within the citadel and was entered from the north. We have

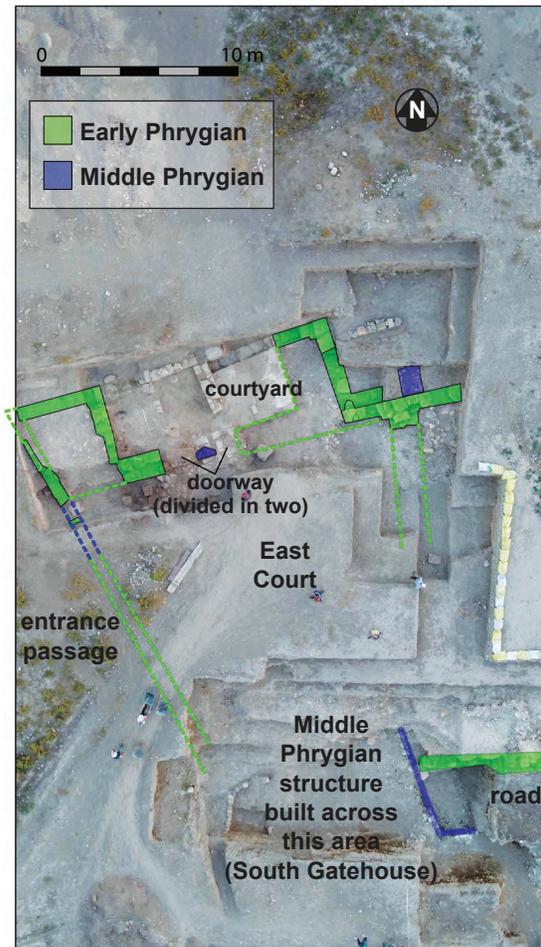


Figure 31: Color phase plan of the South Gate's East Court, showing Early Phrygian (9th century BCE) and Middle Phrygian (8th century BCE) phases. Plan by Simon Greenslade; aerial photo by Ali Can Kırcaali and Zekeriya Utğu.

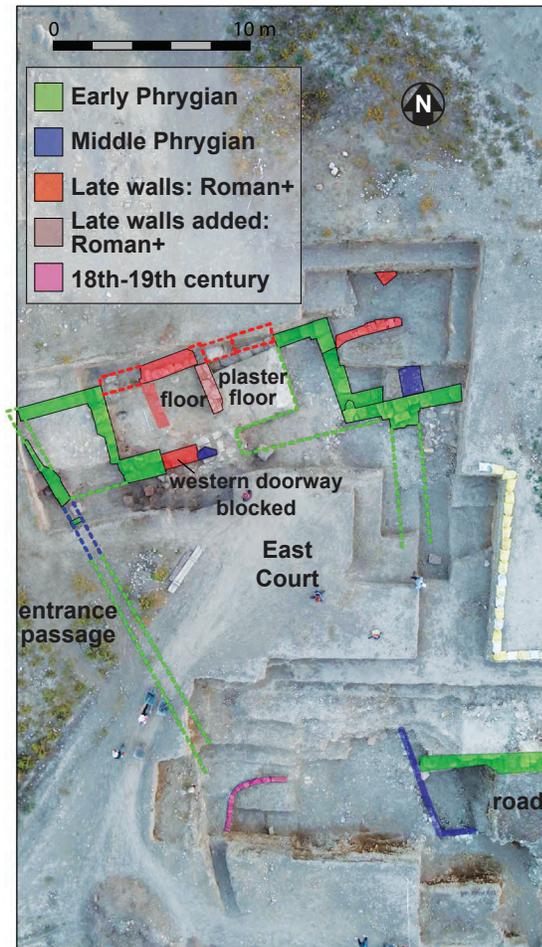


Figure 32: Color phase plan of the South Gate's East Court, showing Early Phrygian (9th century BCE) and Middle Phrygian (8th century BCE) phases, as well as Roman and more recent constructions. Plan by Simon Greenslade; aerial photo by Ali Can Kırcaali and Zekeriya Utğu.

labeled this the “East Court” on the plans (figs. 31, 32), and there was presumably a counterpart at the west, thereby echoing the layout of the East Gate with its flanking North and South Courts. The width of the East Court may have been as large as 16.50 m, which is in line with those bordering the East Gate, although most of the court’s eastern wall has been spoliated, so this remains uncertain.

From what we can tell, most of the Early Phrygian walls here continued in use during the Middle Phrygian period, which is also the case with

those flanking the E-W approach road. New walls were built against the outer side of the East Court at that time, one of which was still faced with three coats of plaster. There may well have been damage and subsequent rebuilding here at the time of the Persian attack, just as there had been at the entrance to the E-W approach road, but we have thus far found no traces of it.

The history of the East Court during the post-Phrygian periods is difficult to ascertain since so little pottery was unearthed in the associated deposits (fig. 32). A stone pavement was added

to the entrance at some point, and it was later blocked by a mudbrick wall. A heavily plastered floor with a shallow pit in front of the East Court’s entrance may date to the Medieval period (12th-14th centuries CE), since similar features covered with Medieval pottery have been found throughout the western parts of the citadel, although no such pottery appeared in our trenches this year.

I have commented several times on the extensive robbing of stone throughout the South Gate area, and it took us some time to understand this. Much of the



Figure 33: Late 19th century railroad bridge near Gordion with reused polychromatic Middle Phrygian (8th century BCE) stones, perhaps from the citadel's South Gate. Photo by Gebhard Bieg.



Figure 34: Byzantine bronze cross from the Citadel Mound. Photo by Gebhard Bieg.

robbing may have occurred in the late 19th century, during the construction of a trunk line of the Berlin-Baghdad railroad directly to the west of the site. During the first excavations at Gordion in 1900, Alfred and Gustav Körte commented on this robbing, and several of the railroad bridges were fashioned of polychromatic Middle Phrygian stones with drafted margins, still visible today and probably deriving from the South Gate (fig. 33). Within one of the robbing trenches at the south, where the Middle Phrygian South Gatehouse would have been located, we discovered a curving wall fashioned of a single course of stone (fig. 32). The construction cannot date earlier than the late 19th century and may have been connected to farming or herding.

Both of the trenches at the Mosaic Building and South Gate were enormously rewarding, as you will have gathered, but they were also extraordinarily difficult to excavate since they involved so many robbing disturbances, so many terraces and levels, and so many historical periods. Without the unflagging energy and analytical skills of Simon Greenslade and Sarah Leppard, these amazing results could not have been achieved.

We end this section with a few comments on Medieval Gordion (12th-14th centuries CE), since the plaster floor near the East Court's entrance likely dates to that period. Following the citadel's abandonment in the late sixth or seventh century CE, there was

a hiatus of approximately six hundred years, as one finds at the majority of western and central Anatolian sites. The precise date at which the citadel was resettled is believed to have been the twelfth or thirteenth century based primarily on coins and ceramics, with the same evidence suggesting that the settlement lasted not more than 200 years, ending in the 14th century. For most of this period, Gordion lay within the Seljuk Sultanate of Rum, but the presence of pig bones in up to a dozen contexts suggests that the settlement was primarily Christian rather than Islamic.

The evidence for the settlement is extensive and seemingly covered the entire western side of the Citadel Mound, which may have still been served by the South Gate. Constructed throughout this area were a series of ovens and pits built in close proximity to each other. A few of the pits were bell-shaped with plastered sides and floors; these were undoubtedly used for grain storage, the largest of which had a capacity of up to 350 kg. Another unexpected discovery was the presence of several camel bones in the pits, some of which bore traces of butchery. What is most striking is the enormous number of pits and ovens that have been found in every trench dug on this western side. Area 4, near the center of the Citadel Mound, yielded 20 contemporary pits in a mere 20 x 10 m area, and if the same was true for the entire western side of the mound, then there would have been over 2,000 of them.

This represents food production on a massive scale, even greater than that in the Early Phrygian Terrace Complex, so the settlement associated with the production must have been of significant size. We also need to assume the existence of a sophisticated network of labor, administration, and



Figure 35: Excavation of the Lower Town necropolis (Area 8), with (from left to right) Eda Mollahüseyinoğlu, Tuğba Gençer, Mehmetcan Soyluoğlu, and Gareth Darbyshire.
Photo by Gebhard Bieg.

supply systems for raw materials, all of which is again reminiscent of Early and Middle Phrygian production. The fact that no clear evidence for Medieval housing has yet been unearthed in the western area suggests that residence and industry may have been in separate places, which would have prevented the vast quantities of smoke associated with the latter from unduly interfering with the inhabitants' houses.

Somewhere within the settlement there was likely a church, possibly dating to the Early Byzantine period. On the northern side of the citadel, between the Terrace Complex and the Persian-Phrygian Building, or PPB, Rodney Young discovered a bronze cross with flaring arms ending in knobs at each outer corner (fig. 34). With a height of nearly 16 cm and a nail at the base for attachment to a larger element, probably a staff, the



Figure 36: Newly discovered Phrygian language inscription from Early Hellenistic Gordion, in the Museum of Anatolian Civilizations, Ankara. From left to right: Rostislav Oreshko, Umut Alagöz, Mine Çiftçi, and Okan Cinemre. Photo by Brian Rose.

cross is likely to have been intended for processions associated with a church.

There was another lucrative activity in which the residents of Medieval Gordion were engaged: the robbing of tumuli. Our best evidence for this comes from tumulus T52, approximately 1 km from the Citadel Mound, which we excavated in 2019 in partnership with the Museum of Anatolian Civilizations in Ankara (fig. 41). It figures among the largest burial mounds at Gordion, comparable to the early 8th century tumuli P and K-III on the Northeast Ridge. The roof of T52 had collapsed under the enormous weight of the tumulus (as at all the other investigated tumuli with the exception of Tumulus MM), thereby crushing the contents of the chamber under a mass of broken timbers, stone packing, and clay. A number of robbers' tunnels had

disturbed the chamber after its collapse, one of which can be dated to the 12th or 13th centuries CE, judging by the broken green-glazed and yellow-glazed bowls and jugs left by the robbers. Gordion's tomb chambers of Early and Middle Phrygian date were generally filled with bronze vessels, including large cauldrons, and it was probably this metal that the robbers were seeking. If a tumulus as large as T52 was robbed during the Medieval period, it seems likely that many more were as well, and the metal vessels they discovered were probably carted back to the western side of the citadel for recycling.

Excavation: the Hellenistic and Roman Burials in the Lower Town (Area 8)

To the south of the Citadel Mound, only a small part of the Lower Town's interior has been excavated: initially in the 1950s and 60s, and then more extensively from 1993 to 1995 by Mary Voigt, who demonstrated that the Phrygian- and Persian-period residential area here had become a cemetery by the 3rd century BCE (Early Hellenistic period). Excavation yielded a variety of pre-Roman burials assigned by Voigt to the initial Celtic/Galatian phase (ca. 260 – early second century BCE), as well as graves of the early Roman period (1st – 2nd centuries CE). Major questions still remain concerning the spatial extent and chronological development of the cemeteries, however, so we launched a two-week 5 x 5 m sondage (Area 8) directly east of Voigt's Area A, supervised by Mehmetcan Soyluğöçlü and assisted by Şule Duman and Eda Mollahüseyinoğlu, with osteological and archaeological expertise provided by Tuğba Gençer, Gareth Darbyshire, Simon Greenslade, and Sarah Leppard (figs. 15, 35).

Three inhumation graves were discovered, two of them (Graves 1 and 2) of pre-Roman date, and one (Grave 3) from the Early Roman period. The two pre-Roman burials, spaced about 3 m apart, were very similar, each consisting of a shallow oval pit oriented east-west, containing a single body in extended dorsal position with the head to the east. On top of Grave 1 was a large stone slab, perhaps serving as a grave marker as well as a cover, sealing the remains of a female aged around 15-17 years. The osteological analysis revealed that her vertebrae were excessively spongy and porous for someone of her age, which could have been the result of

severe vitamin D deficiency, secondary osteoporosis, or an infectious disease such as brucellosis, any of which might have been the cause of her death.

As for Grave 2, the eastern part had been destroyed when the later Grave 3 was dug, so only the decedent's legs were discovered in situ. Curiously, these were crossed, a feature not found in any of the other Gordion graves or indeed in most burials in general. The remains were those of a muscular man aged 35-40, who had suffered from osteophytic developments on his spine, probably the consequence not only of his advancing age but also of mechanical (presumably work-related) stress. He was also afflicted by enthesopathy on his feet, a type of deformity caused by excessive and protracted physical activities such as running or other strenuous repetitive leg movements. Furthermore, his skull bears several marks caused by ante mortem blunt-force blows, but the actual cause of his death appears to have been a very severe cut to his right forearm, a wound that evidently became infected and never healed; death would have followed several weeks later. Considering all of the osteological evidence, it seems highly plausible that the man was a soldier who may have been mortally wounded trying to defend himself by raising his right arm to protect his face.

Although the precise dates of Graves 1 and 2 remain uncertain, they could be contemporary with an Early Hellenistic grave found only 2 m away that had been cut into the same ground surface. This contained the body of a sub-adult female interred with two gold lion-head earrings datable ca. 350 – 200 BC, and thus either from the Macedonian settlement period or the subsequent Celtic Galatian phase. Grave 3, the burial of an infant aged about 2 years, was evidently of Roman date, presumably from the 1st or 2nd

centuries CE, and thus linked to one of the early phases of the Roman fort on the Citadel Mound.

Apart from the three people interred in these graves, the fragmentary remains of six other individuals have been identified from the skeletal remains found in the various fills in this area, including three infants. Since the Lower Town burial ground was in use for around 500 years, many graves would have been disturbed by later tombs, robbers, and natural processes, causing the scattering of human remains and artifacts throughout the area.

The Gordion Inscription

Post-Phrygian burials occur not only in the southern part of the Lower Town but also in the Outer Town to the west of the citadel. It was here, on the surface of a field, that one of the most important discoveries of the summer emerged: a stone inscription written in the Phrygian language that contains the first (and only) epigraphic attestation of Gordion's name (fig. 36). The inscription was rescued by the Museum of Anatolian Civilizations

in Ankara, where it now resides, and will be published by Umut Alagöz, the Museum's Deputy Director, and Rostislav Oreshko, who has been studying the Phrygian graffiti at Gordion for several years. The inscription is just over .43 m high, with a preserved length of .68 m, but it was probably at least 1 m long originally. It certainly dates to the early 3rd century BCE (Early Hellenistic period) and appears to have been a funerary inscription set up on the road leading to the citadel from the northwest. More information about this inscription will appear in an article by Umut Bey and Rostislav, which will appear in *Belleten*, the journal of the Turkish Historical Society.

2022 Gordion Cultural Heritage Education Project (CHEP)

The Cultural Heritage Education Program is one of the most important components of the Gordion Project, with the goal of engaging the local community and teaching them about the historical importance of the archaeological site and its



Figure 37: Conservator Cricket Harbeck speaks to the Cultural Heritage Education Program participants at the conservation lab in the Gordion depot (the "Çanak Palas").

Photo by Brian Rose.



Figure 38: Halil Demirdelen and Ayşe Gürsan-Salzmänn speak to Gordion's Cultural Heritage Education Program participants in the Ulu Mosque in Sivrihisar, built in 1231. Photo by Bedirhan Demirel.



Figure 39: Visit from the Ministry of Culture and Tourism. From left to right: Umit Görgülü, Murat Yıldırım, Nihal Metin, Ömer Balamir, Yahya Coşkun, Bahattin Çelik, Mustafa Metin, Brian Rose, Serpil Özdemir, Yusuf Albayrak, Siddik Çalık, Angelo Lanza, Kadim Koç, Köksal Özköklü, Elisa del Bono, İlker Gümüşkaya, and Ali Can Kırcaali. Photo by Gebhard Bieg.

surroundings. At the beginning, the program involved local high school teachers, students, and parents; in the last five seasons, it has expanded to include municipal administrators as well as students from regional universities and high schools. We have also invited the families who make a living from agropastoral activities on the land surrounding the ancient city.

The year 2022 marked the eighth season of the CHEP program. Starting with 22 students, it grew to a total of 30 participants, including three specialists who acted as our guides during the field excursions. The five-week program was directed by Ayşe Gürsan-Salzmänn, archaeologist at the Penn Museum, in partnership with Halil Demirdelen of the Ankara Ethnographic Museum. The team also included Janessa Reeves and Amber Swanson, students in Penn's programs in Mediterranean Archaeology and Classical Studies, respectively.

The program included an introduction to every type of activity carried out by the Gordion Project: excavation, survey, conservation, registration, floral and faunal analysis, and physical anthropology, among others (fig. 37). During our tours in the landscape that surrounds the ancient citadel, our botanist guide, Prof. Mecit Vural, identified the different types of endemic steppe plants still surviving in the Gordion region and explained their decline due to destructive agricultural practices over recent centuries. The students understandably asked how the landscape in its present state could be maintained, which led to a discussion of strategies for environmental conservation.

These lectures were augmented by trips to three museums in Ankara and one in Polath, the largest city in the vicinity. Those in Ankara included the Museum of Anatolian Civilizations, the

Ethnographic Museum, and the Koç Museum. The Polatlı Museum contains artifacts relating to the Turkish War of Independence between 1919 and 1922, including photographs and diaries of deceased ancestors who fought during the Battle of the Sakarya River. The use of all four of these museums allowed us to present the entire cultural history of Anatolia to the students, from antiquity to the 20th century.

Finally, there were several field trips to sites in the broader region of ancient Phrygia, including Midas City (Yazılıkaya), Pessinus, Sivrihisar (fig. 38), and Konya, the capital of the Seljuk Turkish sultanate during the Medieval period. Our guide in Konya was Prof. Hikmet Biçen, a high school teacher whose specialization involves the history and architecture of the Seljuk and early Ottoman periods. She emphasized the ongoing conservation of Konya's 12th and 13th century Seljuk buildings, thereby helping the students realize that historic preservation is a priority for structures of every period, not just those of antiquity.

In 2021, Brian Rose and Ayşe Gürsan-Salzman were interviewed for a film about Gordion and the CHERP program entitled *Gordion's Shepherds* (or, in Turkish, *Gordion'un Çobanları*), which will soon air on Turkish television. We hope that such publicity will enable us to increase CHERP's participant numbers by 25-35%, and facilitate an even stronger collaboration with local schools, the Polatlı municipality, and the museums in Ankara and Eskişehir.

Publication, Staffing, and Notable Visitors

Our work during the 2022 season was made easier due to the energetic support of our representative, Mr. Mustafa Metin of the Museum of

Anatolian Civilizations in Ankara. We also benefited tremendously this year from the periodic visits of Mr. Yusuf Kırac, the director of the Museum of Anatolian Civilizations; Mr. Umut Alagöz, Murat Yıldırım, and Mehmet Akalın, the museum's Deputy Directors;

and Mr. Okan Cinemre, curator. We extend warm thanks to the General Directorate for Cultural Heritage and Museums, especially Mr. Gökhan Yazgı, General Director, Mr. Yahya Coşkun, Deputy General Director, and Mr. Köksal Özköklü, Mr. Umut



Figure 40: Visit of U.S. Ambassador Jeff Flake and Cheryl Flake from the U.S. Embassy in Ankara. Photo by Gebhard Bieg.

Görgülü, Ms. Nihal Metin, and Ms. Zeynep Boz, all of whom visited us this summer (fig. 39).

Equally generous in their assistance were the Kaymakam and the Belediye Başkanı of Polatlı, Mr. Murat Bulacak and Mr. Mürsel Yıldızkaya, respectively. Mr. Kadim Koç, deputy director of the Polatlı Municipality, has been a constant source of support for us, especially with regard to the new Gordion guidebook and the Cultural Heritage Education Program. We were also honored by several visits from the staff of the U.S. Embassy in Ankara: American Ambassador Jeff Flake and Cheryl Flake (fig. 40), Deputy Chief of Mission Scott Oudkirk, Cultural Affairs Officer Gabrielle Price, and

Steven Mora, head of the Homeland Security Department. It was a pleasure to welcome again the Friends of ARIT-Ankara, as well as Mr. Ari Mäki, Finnish Ambassador to Turkey, and Fahri Dikkaya.

The excavation house was filled with researchers working on a wide variety of manuscripts that spanned a period from the Bronze Age through the Roman period. These included Gordion Project archivist Gareth Darbyshire (iron objects, especially those from the cremation burials); Penn graduate student Brigitte Keslinke (Hellenistic ceramics and Middle Phrygian architectural terracottas); Tuğba Gençer (Istanbul University—Cerrahpaşa) on human skeletal material, assisted by Vedat Burkay

Çamurdan (Istanbul University—Cerrahpaşa), and Tuana Zara Eren (Ege University); Canan Çakırlar and Thom Brongers (Groeningen University), zooarchaeological analysis; Billur Tekkök Karaöz (Başkent University, Ankara) and Ali Akın Akyol (Ankara Hacı Bayram Veli University), studying Roman ceramics; Gülşah Günata (Boğaziçi University, Istanbul), Iron Age ceramics; Yusuf Kadioğlu (Ankara University), Gordion's geology; Günsel Özbilen Güngör (Assistant Director), lamps; and Rostislav Oreshko (CNRS/Orient et Méditerranée, Paris), Phrygian graffiti.

The pace of publication continues to increase, almost faster than we can edit the volumes. Last year witnessed the appearance of Gül Gürtekin-Demir's study of the Lydian pottery from Gordion, *Lydian Painted Pottery Abroad*. The Gordion monographs appearing this year will include *The Gordion Excavations, 1950-1973: Final Reports Volume II. The Lesser Phrygian Tumuli Part II: The Cremations*, by Ellen Kohler and Elspeth Dusinberre, with contributions by Elizabeth Baughan, Andrea Berlin, Gareth Darbyshire, Jane Hickman, Brigitte Keslinke, Phoebe Sheftel, and Maya Vassileva; and Phoebe Sheftel's *Bone and Ivory Objects from Gordion*. We are in the final stages of editing *The Hellenistic Settlement at Gordion* by Shannan Stewart and Martin Wells; Janet Jones' volume on the glass of Gordion; and a volume of collected studies on Middle and Late Phrygian Gordion, edited by Brian Rose and Elspeth Dusinberre. Mustafa Metin, Braden Cordivari (ISAW, New York University), and Richard Liebhart prepared for publication the reports on the Beyceğiz and Tumulus 52 excavations (fig. 41). In addition, the Turkish version of the Gordion guidebook was completed this season, thanks in particular to Gareth Darbyshire and Günsel Özbilen Güngör.

We want to single out several



Figure 41: Gebhard Bieg photographing vessels from Tumulus 52's tomb chamber (8th century BCE). Photo by Brian Rose

members of the staff without whom this summer's work could not have functioned as well as it did (fig. 42): Günsel Özbilen Güngör, first deputy director; Tuğba Gençer, second deputy director, and Gareth Darbyshire, Gordion Project archivist, all of whom were also instrumental in staging a costume party for the 4th of July (fig. 43); Janessa Reeves and Amber Swanson

(Penn), registrars, assisted by Fatma Nur Bahar (Hacettepe University, Ankara); Gebhard Bieg (photographer; fig. 41), assisted by Kathi Bieg; Canan Çakırlar, Thom Brongers (Groningen University), and Ramazan Parmaksız, zooarchaeological analysis; Edibe Özmen Baysal (Hacettepe University), archaeobotany; Billur Tekkök Karaöz, Deniz Tamer, Ebru Kırkanlı, and

Sude Tanrikulu (Başkent University) ceramic analysis; Serkan Pamuk (Akdeniz University), pithos project, assisted by Nuray Edis (Van Yüzüncü Yıl University); Braden Cordivari (ISAW, New York University), Joseph Nigro, Brian Norris, Emily McGowan (surveying); and Christian Hübner (geophysics). Ayse Gürsan-Salzmann (Penn) co-directed the



Figure 42: The 2022 Gordion staff in June. Photo by Gebhard Bieg.



Figure 43: The 2022 Gordion staff at the 4th of July costume party. Photo by Gebhard Bieg.

Cultural Heritage Education Project (CHEP) with Mr. Halil Demirdelen (Ethnographic Museum, Ankara), assisted by Bedirhan Demirel (Başkent University). The excavation of the South Gate was supervised by Simon Greenslade; the Mosaic Building by Sarah Leppard, and the Lower Town necropolis by Mehmetcan Soyloğlu (Cyprus Institute) with the assistance of Eda Mollahusseyinoğlu (Mimar Sinan Fine Arts University, Istanbul) and Şule Duman (Ankara University Dil Tarih ve Coğrafya Fakültesi).

The architectural conservation was overseen by Elisa Del Bono, Angelo Lanza, Giuseppe Bomba, Renzo Durante, and Mauro Perrone, assisted by Ali Can Kırcaali (Samsun University), İlayda Şahin (Istanbul Technical University), and Kaan Özcan (Atatürk University, Erzurum). The object conservation work was expertly overseen by Cricket Harbeck, assisted by H. İbrahim Dural (Ankara Hacı Bayram Veli University) and Amber Swanson (Penn). The digital imaging of the Tumulus MM tomb chamber and the East Gate was conducted by Matthew Harpster, Michael Barngrover, Ali Kurultay, (Koç University), and Richard Liebhart, while the drone photography was conducted by Ali Can Kırcaali and Zekeriya Utğu, our house manager and guard. Zekeriya kept

everything running efficiently within the excavation compound and on the Citadel Mound. Finally, although she was not a member of the Gordion staff in Turkey, Ardeth Anderson of the Penn Museum is responsible for the design and layout of each Gordion newsletter, and she also deserves our heartfelt thanks.

Within the U.S., we continually rely on the counsel, guidance, and support of Charles K. Williams, II, as well as Christopher Woods, the Williams Director of the Penn Museum, Amanda Mitchell-Boyask, executive director of advancement at the Penn Museum, and the Museum's Board of Overseers.

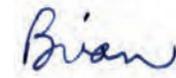
We would like to close by noting again that none of our accomplishments this summer would have been possible without your encouragement and generous support. It is a pleasure to acknowledge, in particular, the assistance offered to us by the Penn Museum of Archaeology and Anthropology, the C.K. Williams II Foundation, the U.S. Embassy in Ankara, the Merops Foundation, the Selz Foundation, the Areté Foundation, and Matthew J. Storm, C94, WG00, and Natalia Arias Storm. At this particular time, when so much cultural heritage has been disappearing so rapidly, we're enormously grateful for the investment that you've made in the preservation of the past.

We hope to be able to share our results with more of you during this year, at lectures in the U.S. or at Gordion itself. You'll find the latest information about the project on our website:

<https://www.penn.museum/sites/gordion/>

We look forward to welcoming you to the site in a post-pandemic era!

With best wishes,



C. Brian Rose

James B. Pritchard Professor of Archaeology, Penn Museum
Director, Gordion Archaeological Project



Günsel Özbilen Güngör
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

<https://www.penn.museum/sites/gordion/friends-of-gordion/>

