

Fieldwork at Phrygian Gordion, 2013–2015

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This article presents the results of new excavation, remote sensing, and conservation activities at the Phrygian capital of Gordion in central Turkey. The most important discoveries were of Iron Age date and relate to Gordion's fortification system and city plan. Fieldwork focused on the southern side of the Citadel Mound, where excavation yielded a large Early Phrygian (ninth century B.C.E.) glacis or stepped terrace wall more than 2.5 m in height that supported a substantial fortification wall nearly 3 m wide. New fortifications dating to the Middle Phrygian (eighth century B.C.E.) and Late Phrygian (sixth century B.C.E.) periods were also uncovered in the same area, as was a new gateway leading into the citadel. A sondage beneath the Early Phrygian "Terrace Building Complex," or industrial quarter, produced traces of occupation during the Early Bronze Age, as well as evidence for the construction of an enormous terrace during the ninth century B.C.E. A new campaign of remote sensing clarified the street plan in Gordion's two residential districts (the "Lower Town" and "Outer Town"), in addition to revealing the presence of fortification walls, defensive ditches, and a large fort on the western side of the Outer Town. Conservation activities focused on the Terrace Building, the ninth-century B.C.E. pebble mosaic floor from Megaron 2, and the Early Phrygian Gate Complex, still the best-preserved citadel gate in Iron Age Asia Minor.¹

INTRODUCTION

The Iron Age kingdom of Phrygia encompassed much of what is now central Turkey, eventually extending from northwest Asia Minor to the Upper Euphrates (fig. 1). Gordion was located in the center of that kingdom, in an area that now lies 65 km southwest of Ankara, and its greatest prosperity occurred in the ninth and eighth centuries B.C.E., when the buildings on its Citadel Mound rivaled those in the cities and fortresses of Assyria and Urartu. It was during the reign of Midas (ca. 740–696 B.C.E.), however, that the site reached the height of its fame, functioning as a kind of bridge between East and West and interacting with Ionia and Greece as well as Assyria, Urartu, the Neo-Hittite states in Cappadocia, the northern Levant, and northern

¹The Gordion Project receives generous support from the University of Pennsylvania Museum of Archaeology and Anthropology, the C.K. Williams II Foundation, the Selz Foundation, the Loeb Classical Library Foundation, the Luther I. Replogle Foundation, the Merops Foundation, the J.M. Kaplan Fund, and the Jordan Foundation. During the preparation of this article, I received valuable assistance from Charles K. Williams II, Gareth Darbyshire, Ayşe Gürsan-Salzmänn, Gebhard Bieg, Carolyn Aslan, Kathleen Lynch, Sarah Beal, Andrea Berlin, Sarah Leppard, Simon Greenslade, Kate Morgan, Frank Matero, Elisa del Bono, Stefan Giese, Christian Hübner, Ken Sams, Mary Voigt, Richard Liebhart, and Sam Holzman. I am especially grateful to Ardeth Anderson and Gareth Darbyshire for preparing the illustrations, and to Gebhard Bieg for his photographs. Most of all, I thank the Turkish Ministry of Culture and Tourism and the Museum of Anatolian Civilizations in Ankara, without whom our work at Gordion would not be possible. Figures are my own unless otherwise noted.

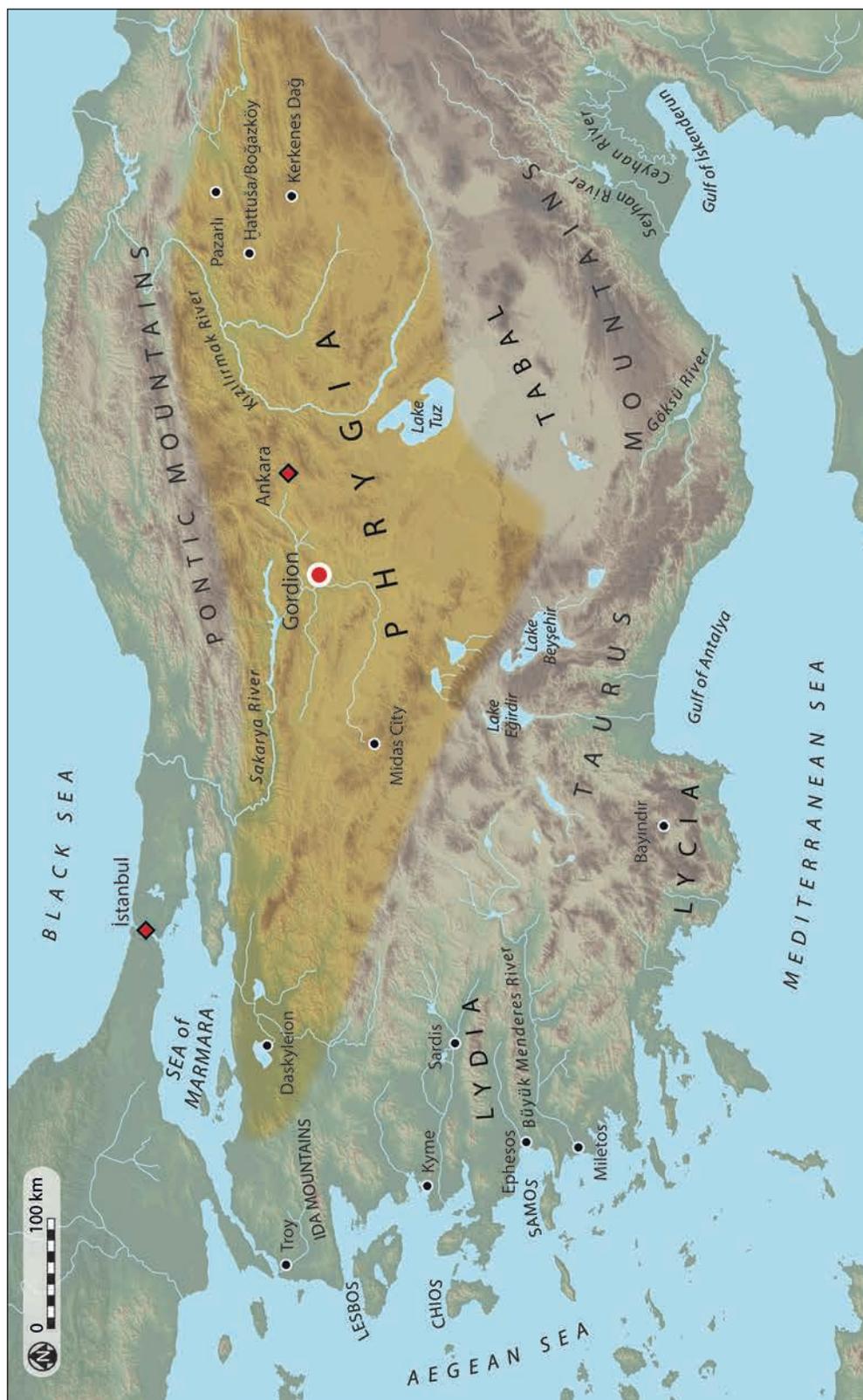


FIG. 1. Map of Anatolia with a reconstruction of the area under Phrygian control during the eighth century B.C.E. (G. Darbyshire, A. Anderson, and G. Pizzorno; courtesy Penn Museum, Gordion Project Archives).

Mesopotamia.² Gordion's liminal position, in fact, is one of the reasons why it has consistently been omitted from courses in Old World archaeology, in that it lies too far to the west for many Near Eastern archaeologists and too far to the east for those in the classical world.

Gordion's Citadel Mound measured 450 x 300 m (135,000 m²), roughly four times the size of the citadel of Troy. The 10 successive settlements contained within it span nearly four millennia, from ca. 2300 B.C.E. through the 14th century C.E., albeit with a hiatus in habitation between the late fourth and 13th centuries C.E. (figs. 2, 3).³ The citadel formed the nucleus of a settlement that appears to have encompassed slightly more than 100 ha (figs. 4, 5). At the north and south of the citadel lay a fortified residential quarter (the "Lower Town"), which was flanked at the northwest by a second fortified residential quarter (the "Outer Town"), each of which measured 44–45 ha. Encircling the settlement were more than 120 tumuli, most of which were constructed between the ninth and sixth centuries B.C.E. and featured wooden tomb chambers with no dromoi or krepis walls.

The Turkish name of the Citadel Mound, "Yassihöyük," or "flat-topped settlement mound," was prompted by the uniform level of its upper surface, now rising to a level of 13.0–16.5 m above the surrounding plain. The nearby village, also named "Yassihöyük," was founded in this spot for the same reason as the ancient settlement: the proximity of the Sakarya River, the third longest in modern Turkey, which runs from an area northeast of Afyon to the Black Sea. When Gordion was first founded, the Sakarya flowed along the eastern side of the mound, as represented in figure 5, but intensive grazing and the removal of trees over the course of many centuries resulted in increasing erosion and an instability in the river's course. By the 18th or 19th century C.E., the Sakarya had shifted to its present course along the western side of the mound, as one can see in figures 2 and 3.⁴

The configuration of the eastern side of the Citadel Mound during the Early, Middle, and Late Phrygian periods is relatively well known owing to the 35 seasons

of excavation that have taken place there, all but the first of which have been conducted under the auspices of the Penn Museum.⁵ The site was first identified by Alfred Körte, who worked with his brother Gustav for one long season in 1900, which was followed by a hiatus of 50 years. Rodney Young then conducted 17 seasons of fieldwork between 1950 and 1974. Mary Voigt in tandem with G. Kenneth Sams conducted another 14 between 1988 and 2006, and there have been three thus far in the newest phase of investigations.⁶

The citadel's central area on the east side of the mound had reached its final form before the end of the ninth century B.C.E. and was divided into two zones of very different function (fig. 6).⁷ A gate building more than 10 m high led to two courts (the "Outer," which was stone paved, and the "Inner") separated from each other by a wall that must have been more than 4 m high judging by the breadth of its foundations. This was a quarter used by the elite, but it was probably intended for administration rather than occupation. Although both courts were flanked by megara, the Inner Court was much larger, with three times as many megara. The four megara in the Early Phrygian Outer Court, nearest the gate, appear to have had pebbled floors, with an unusually elaborate mosaic featuring polychromatic geometric designs in the main room of Megaron 2.⁸ Another zone of activity, the "Terrace Building Complex," featured two long rows of buildings positioned on either side of a wide court, nearly all of which were devoted to textile production and grain processing.⁹ A

⁵ Field notebooks for the period from 1950 to 1973 are held in the Penn Museum's Gordion Project Archives.

⁶ Körte and Körte 1904; Sams 2005; Voigt 2005; Pizzorno and Darbyshire 2012.

⁷ DeVries 1990, 373–77; Sams 1994b.

⁸ Pebble mosaic: Salzmann 1982, 4, 6–8, 78, 93–4, nos. 46–56. Megaron 2: Young 1958, 143. Megara 9 and 12: Young 1964, 288–90; 1965. Megaron 1: DeVries 1980, 37. The floor does not survive in Megaron 10, but all the surrounding megara had pebble floors, and this one would undoubtedly have followed suit. The floor in Megaron 9 featured red, white, yellow, and blue pebbles, so we should probably reconstruct a geometric design along the same lines as the one in Megaron 2, to which Megaron 9 was oriented.

⁹ DeVries 1990, 385–86; Burke 2005, 71, fig. 6-2. In one of the CC ("Clay Cut") Terrace Buildings, sifted barley lay on the floor, probably intended for beer production (DeVries 1990, 386). The number of sheep bones in Early Phrygian levels represents an increase over those in Early Iron Age strata (Zeder and Arter 1994, 113–14), but this is probably related more to meat consumption than wool production.

² Mellink 1979; Roller 1984; Berndt-Ersöz 2008; Vassileva 2008; Ballard 2012; DeVries and Rose 2012.

³ Mellink 1992; Sams 1995; Uçankus 2002; Kealhofer 2005; Sentürk and Tüfekçi Sivas 2007; DeVries 2008; Rose and Darbyshire 2011; Rose 2012a; Voigt 2013.

⁴ Marsh 1997, 1999, 2005, 2012.



FIG. 2. Aerial view of Gordion's citadel. The location of the 2013–2015 trench (Area 1) is at the south (bottom of photograph); the circled area in the center designates Area 4, excavated in 2015. Stones from the outer fortification wall still lie in the Sakarya River, at upper left (courtesy Penn Museum, Gordion Project Archives).

similar organization for the citadel, with adjacent administrative and industrial districts, was followed when it was rebuilt at the beginning of the Middle Phrygian period, during the early eighth century B.C.E. (fig. 7).

We currently perceive the Citadel Mound as a unified settlement extending across the entire upper surface, and from the Hellenistic period onward that was true; but in the Early and Middle Phrygian periods, the mound may have been divided into two halves, with “Eastern” and “Western” Mounds separated by a central street (the “Inter-mound Street” in fig. 3).¹⁰ The evidence for this street is very fragmentary, and several areas along its projected course have been tar-

geted for excavation to ascertain whether it existed in the configuration envisioned by earlier archaeologists at Gordion, and, if it did exist, what role it played in the overall city plan.

Until recently, the chronology and topography of the citadel were regarded as relatively straightforward, with an extensive destruction level linked to a Cimmerian invasion ca. 700 B.C.E. But the radiocarbon and dendrochronological dates of seeds and wood found within the destruction level, coupled with the type and style of the associated artifacts and pottery, indicate a date of ca. 800 B.C.E. for the conflagration.¹¹ In other words, the destruction that had been ascribed to an enemy attack on Gordion ca. 700 B.C.E. should instead be regarded as the result of an accidental conflagration 100 years earlier, thereby completely changing our understanding of Gordion's development and its relationship to the other powerful Iron Age city-states in and

¹⁰Voigt 2013, 189. During the Middle Phrygian period, the street would have linked the Outer Town at the north to the Lower Town at the south, but there is no evidence for Early Phrygian occupation in either area. Early Phrygian levels were uncovered on the Western Mound in only one small sondage, so the nature of the settlement there is still very uncertain (Voigt and Young 1999, 209).

¹¹Rose and Darbyshire 2011.

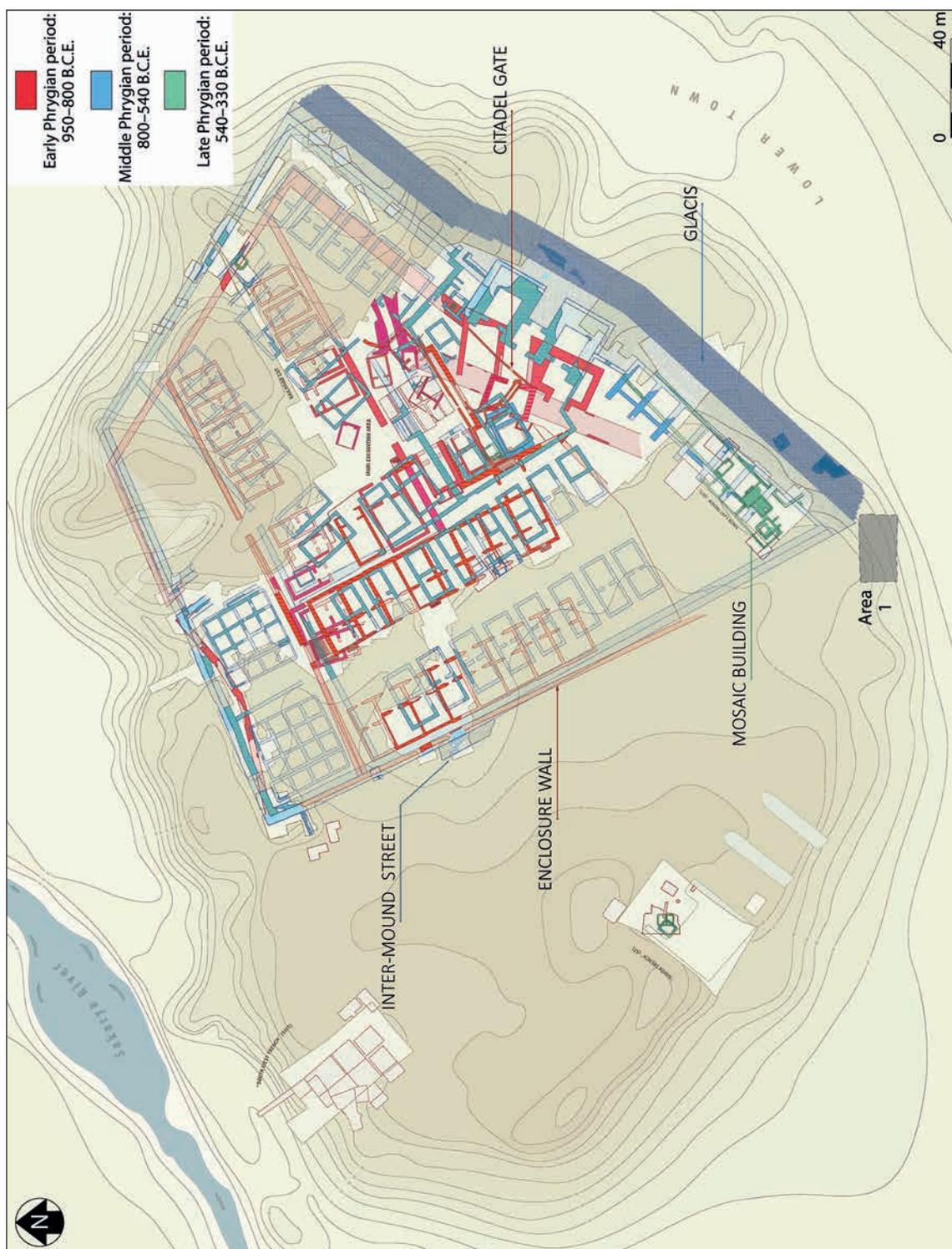


FIG. 3. Phase plan of the Citadel Mound at Gordion, showing the Early, Middle, and Late Phrygian phases of habitation. The Sakarya River appears in its current position at upper left (G. Darbyshire and G. Pizzorno; courtesy Penn Museum, Gordion Project Archives).

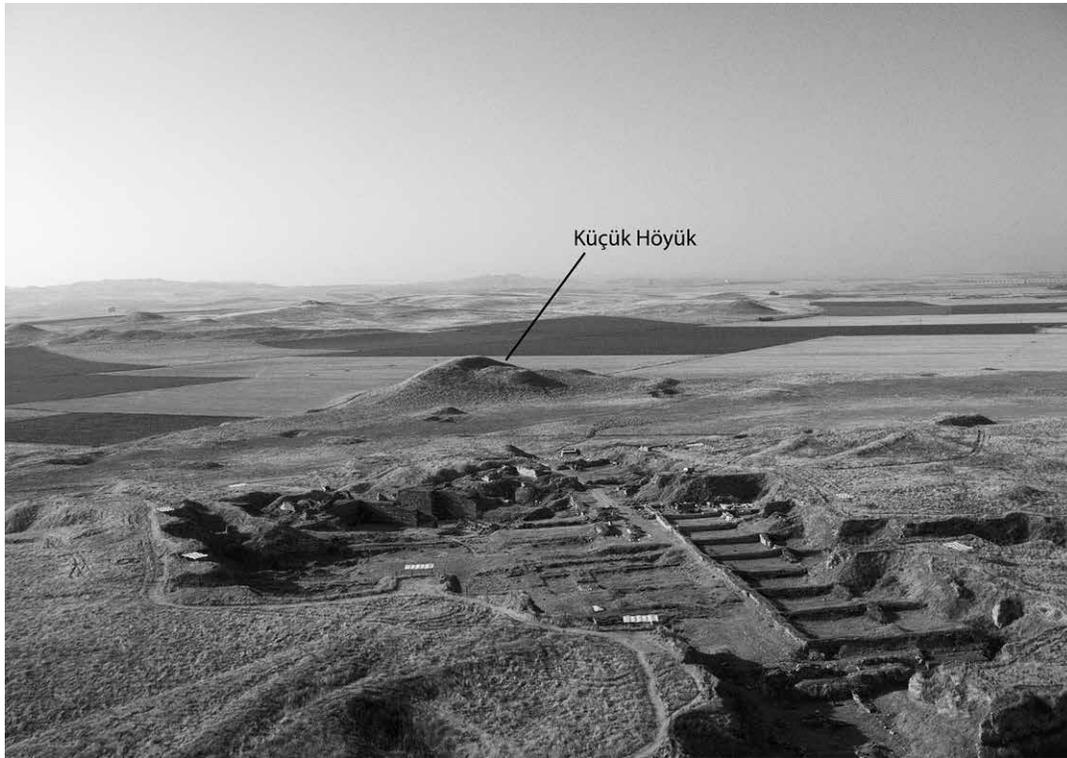


FIG. 4. The Citadel Mound of Gordion, looking southeast toward Küçük Höyük, the Middle Phrygian fort that was destroyed by the Persians (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. CRW_4241).

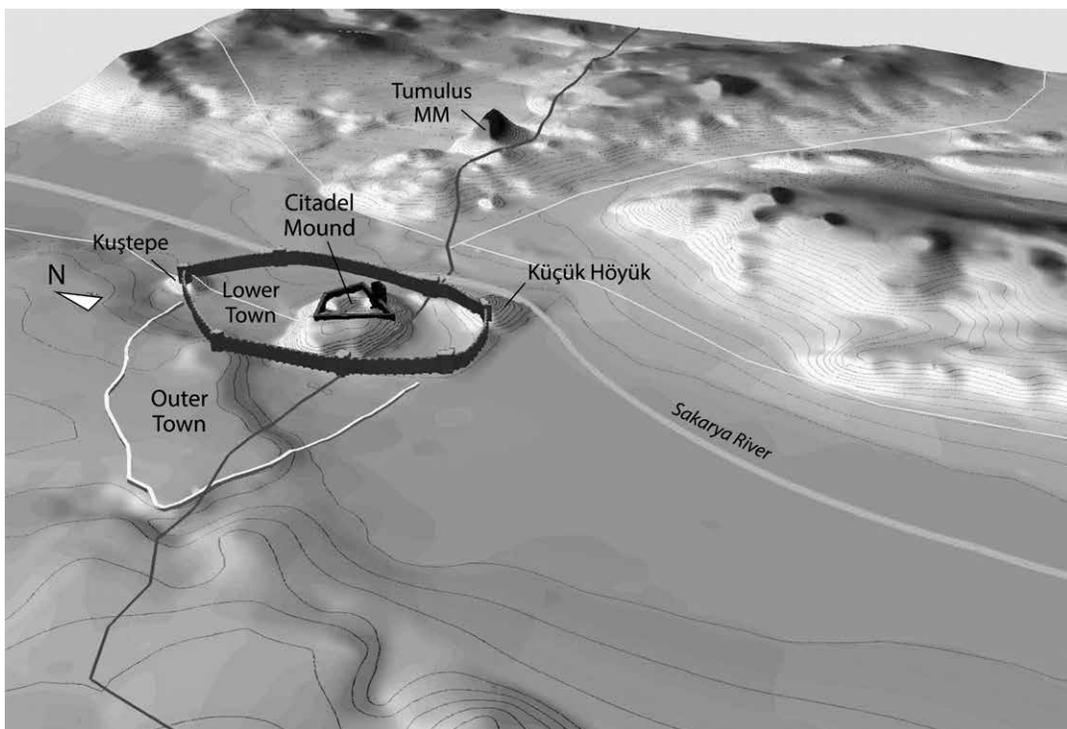


FIG. 5. Reconstruction of the fortification system of Gordion during the Middle Phrygian period (eighth to sixth century B.C.E.). The Sakarya River is shown at the east of the citadel, in the position it would have occupied in antiquity (B. Marsh; courtesy Penn Museum, Gordion Project Archives).

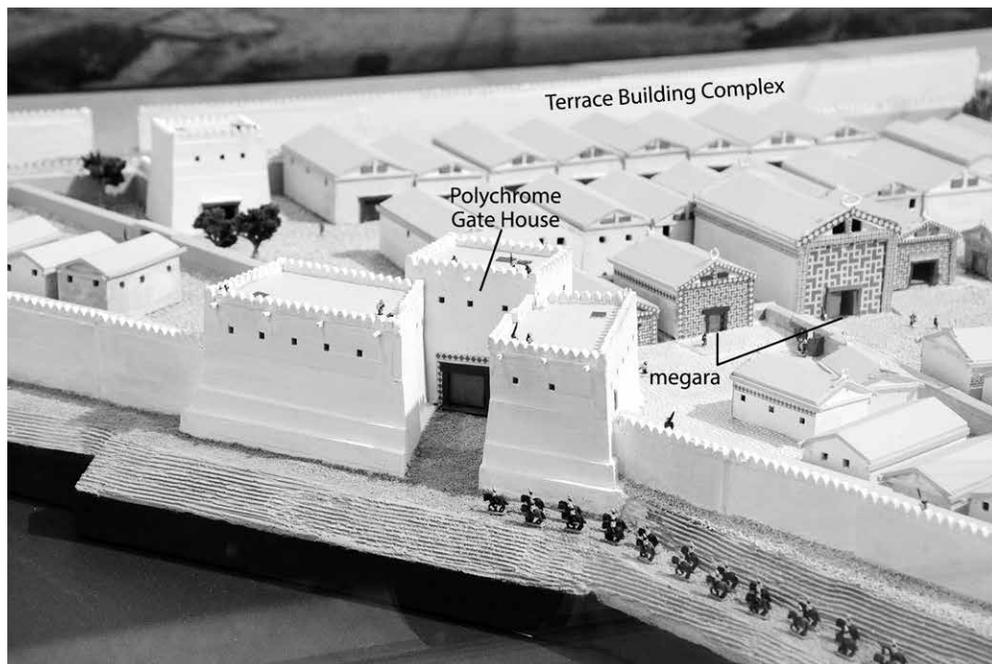
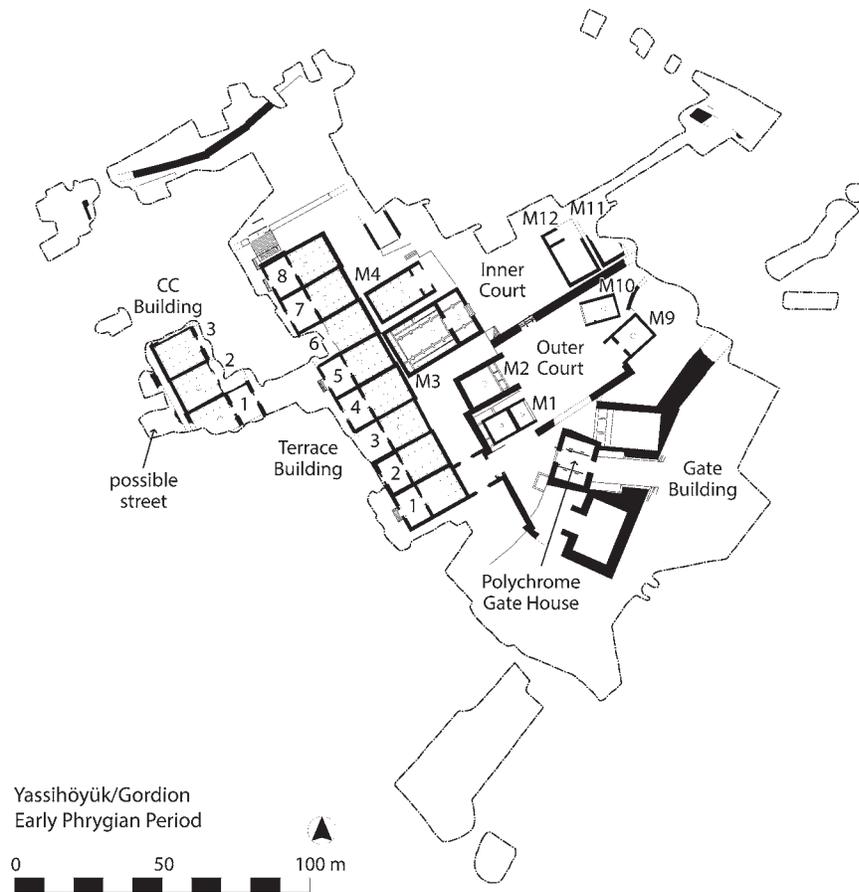


FIG. 6. The Citadel Mound in the Early Phrygian period: *top*, plan of the eastern side of the Citadel Mound (the Terrace Building and CC Building constitute the Terrace Building Complex, and the rooms of both have been numbered; the “M” is an abbreviation for megaron); *bottom*, reconstruction of the same area looking west, modeled by C. Ray and G. Darbyshire (courtesy Penn Museum, Gordion Project Archives).

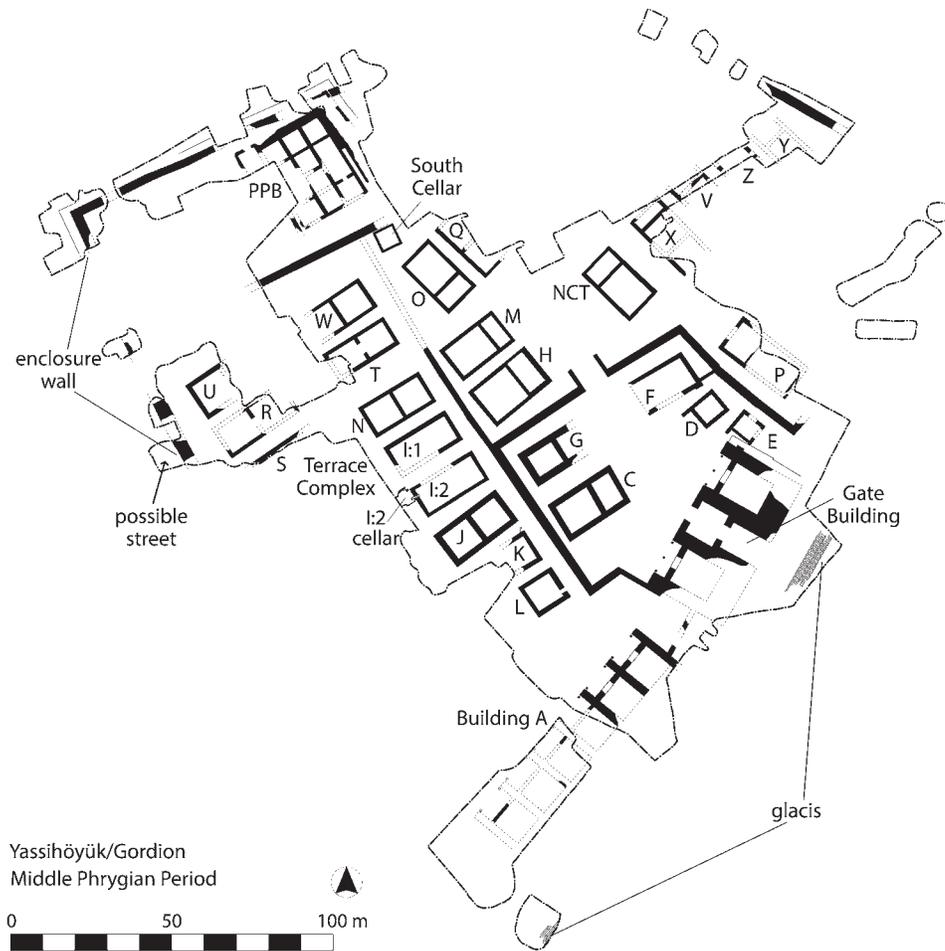


FIG. 7. Plan of the eastern side of the Citadel Mound in the Middle Phrygian period. The Middle Phrygian megaron and Terrace Buildings have been designated by letters rather than numbers to distinguish them from their Early Phrygian predecessors. “NCT” is a megaron; “PPB” is a storage building (courtesy Penn Museum, Gordion Project Archives).

around Anatolia. As a result, the Early Phrygian phase (pre-conflagration) is now dated to 950–800 B.C.E.; the Middle Phrygian phase (post-conflagration) to 800–540 B.C.E.; and the Late Phrygian phase, which coincides with the period of Persian domination, to 540–330 B.C.E.

This new chronology allows us to place Early Phrygian Gordion in a different temporal context, set against the reigns of a series of powerful Near Eastern rulers: Ashurnasirpal II and Shalmaneser III in Assyria, Sarduri I of Urartu, and Hiram I and Solomon in Phoenicia and Israel. As a result, Gordion’s Early Phrygian architecture should be viewed as even more innovative than had been previously thought, with the earliest known stone megaron, acroterion, and pebble mosaics in the Near East and roofing systems with spans that exceed

those in roughly contemporary Assyrian palaces, including the throne room of Ashurnasirpal II.¹²

Excavations at Gordion paused between 2007 and 2012 while the evidence for the new chronology was being gathered, and this allowed time for the publication of six new monographs that synthesized much of the earlier fieldwork.¹³ The year 2013 marked the beginning of a new interdisciplinary campaign of fieldwork, again conducted under the auspices of the Penn Museum, with three specific goals: determining the scope and plan of the Early and Middle Phrygian

¹² Sams 2012.

¹³ Roller 2009; Miller 2010; Simpson 2010; Keller and Matero 2011; Rose and Darbyshire 2011; Rose 2012a.

defensive systems using remote sensing as extensively as possible; providing a diachronic analysis of the residential quarter on the western Citadel Mound, which was largely neglected by earlier campaigns; and clarifying the urban plan of the Late Phrygian settlement and the commercial networks, primarily Greek and Persian, with which it interacted. This article summarizes the results of the fieldwork between 2013 and 2015, but I begin with an overview of the remote sensing activities on and around the citadel since 2007, because that was conceived as the prelude to and foundation for the fieldwork reported here.

REMOTE SENSING

Although Young and Voigt discovered Early and Late Bronze Age settlements on the mound of Yassihöyük, most of the excavated public buildings are of Early or Middle Phrygian date (ca. ninth to seventh century B.C.E.), while the majority of the excavated domestic structures are Hellenistic. This is largely because of the choice of sites for trenches, in that most of the areas of Phrygian domestic occupation (the Lower and Outer Towns; see fig. 5) were left untouched, whereas the Hellenistic houses on the Citadel Mound—apparently the primary area for Hellenistic occupation—were extensively excavated and removed by Young in his search for the elite districts on the Phrygian citadel.¹⁴

What was missing from the earlier analyses was a sense of the successive city plans, and particularly the relationship between the citadel and the larger urban area of which it formed a part. We attempted to remedy this gap in our information with a new program of remote sensing that involved magnetometry, radar, and electrical resistivity coupled with quad- and hexacopter aerial photography. This was not the first attempt at remote sensing to have occurred at Gordion: both Beth Ralph of the Penn Museum's Applied Science Center for Archaeology and Mary Voigt had attempted magnetometry in 1965 and 1995, respectively, but none of the results was especially informative.¹⁵ The new program launched in 2007 was conducted by Stefan Giese and Christian Huebner in Freiburg during the course of the last eight seasons, and by Compton Tucker, Joseph Nigro, and Dan Slayback, all from NASA, between 2009 and 2012.¹⁶ The radar results

were disappointing, primarily because of the plethora of disintegrating mudbrick in the soil, but resistivity and magnetometry were extremely successful.

Before describing the remote sensing results, I should indicate the specific questions that we were attempting to answer, foremost among which were the nature and scope of the Early and Middle Phrygian defensive systems. Most scholars have considered the configuration of the Early Phrygian defenses as relatively well established, because the Citadel Gate, constructed in the ninth century on the Eastern Mound, is still preserved to a height of 10 m and represents the best-preserved gate complex known from Iron Age Anatolia (see figs. 3, 6). The circuit of the associated fortification wall was never systematically charted, however, nor was it clear whether the defenses surrounded the entire citadel and extended as well to the residential districts in the Lower and Outer Towns.

Our principal questions focused on the two mounds to the north and south of the citadel, on the outer perimeter of the Lower Town. The larger of these, typically called Küçük Höyük (Small Mound), lies 200 m southeast of the citadel (see figs. 4, 5), and the other, Kuştepe (Bird Mound), 450 m to the north of it (see figs. 5, 8). Excavations within Küçük Höyük in the late 1950s had yielded a mudbrick platform 12 m high, measuring at least 50 m north–south and more than 10 m east–west, on top of which a four-story mudbrick and timber fort had been constructed.¹⁷

A Persian siege mound and the remains of the carts, ropes, and iron implements required to build it were unearthed on the eastern side of the fort, while hundreds of largely two-flanged arrowheads were still lodged in the fort's mudbrick walls, undoubtedly stemming from the Persian attack on Gordion in the 540s B.C.E.¹⁸ The Küçük Höyük fort was clearly a major component of an outer fortification system, and it seemed likely that the northern mound of Kuştepe covered the remains of a similar fort linked to the same network. In other words, we assumed that an outer fortification wall connected to Küçük Höyük and Kuştepe had completely encircled the Lower Town, which would explain the presence of a series of monumental stone blocks on the western side of the citadel that had been badly damaged by the meandering path

¹⁴ Stewart 2010; Wells 2012.

¹⁵ Young 1966, 267 n. 2; Voigt et al. 1997, 4–6.

¹⁶ Sams 2009, 2010, 2011; Sams and Rose 2012, 2013, 2014.

¹⁷ Young 1957, 324–25; 1958, 140–41; Edwards 1959, 264; Mellink 1959; DeVries 2005, 51.

¹⁸ Young 1957, 324; Mellink 1959.



FIG. 8. The mound of Kuştepe at the north of the Citadel Mound, looking northwest. The line of trees adjacent to the northwest side of the mound marks the modern Sakarya River (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives).

of the Sakarya River (see fig. 2, upper left). In the absence of fieldwork, however, this could only remain a theory, which meant that the extent of the settlement protected by fortifications had always been uncertain.

The use of magnetic prospection at key points around the citadel and on the two smaller mounds fortunately allowed us to reconstruct the complete circuit of the outer fortification wall and to demonstrate that the Kuştepe fort fulfilled the same protective role as that of Küçük Höyük (see figs. 5, 9). The circuit of the outer wall is 2.86 km and slightly more than 1 km from north to south, with a defensive ditch approximately 4 m in width situated in front of it.¹⁹ The walls per se were mudbrick and set on stone foundations 3.50 m thick, with square towers constructed at intervals of between 17 and 20 m.

Remote sensing has also verified our assumption that the mound of Kuştepe encompassed a mudbrick

fort that is essentially the same size as that of Küçük Höyük. Only a small part of Kuştepe could be subjected to magnetic prospection since the slope is so steep, but there were clear indications of a mudbrick wall, and we detected additional walls that created a fortified area of polygonal shape on the south side of Kuştepe's presumed fort, encompassing at least 6,500 m². A similar network of walls was identified on the inner side of the Küçük Höyük fort, but encompassing an area of 13,290 m², roughly two times larger. In the case of Kuştepe, this protected area appears to have been subdivided by walls into smaller rooms, so it was probably intended for additional storage of supplies and munitions rather than for exercise or training, but at this point one can only guess.

There appear to have been at least four gates in the outer fortification circuit (see the areas designated by yellow rectangles in fig. 9). One of them, on the eastern side, had already been discovered by Mellink in 1958, and it must have served the road that connected the main Citadel Gate with the monumental tumuli, including Tumulus MM (the "Midas Mound") at the

¹⁹ For earlier research on the Lower Town fortifications, see Marsh 1999.

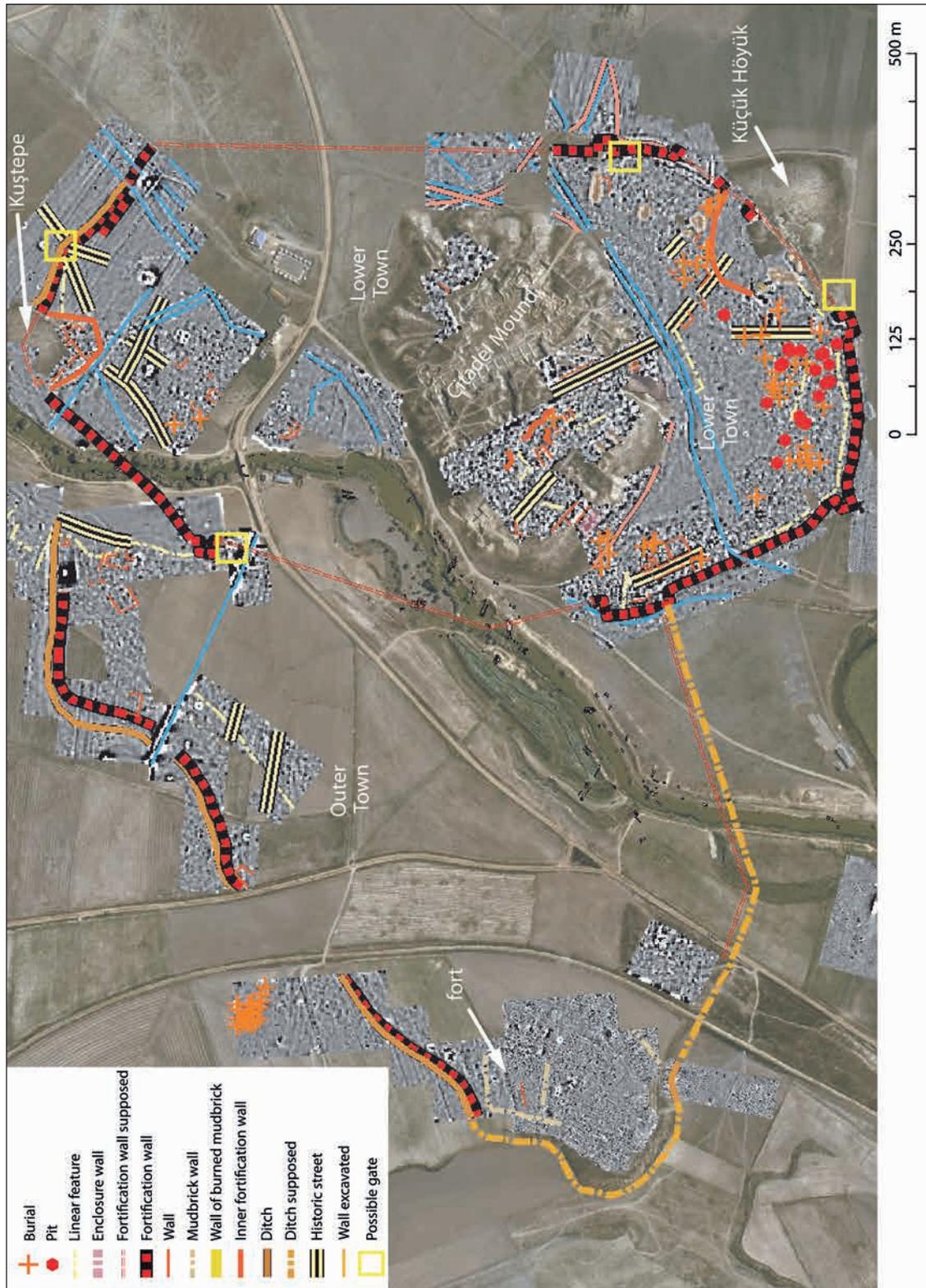


FIG. 9. The fortifications of Gordion detected through remote sensing. The plan is oriented north–south. The defensive ditch appears as an orange line on the exterior of the Outer Town fortification wall. The probable gates are indicated by yellow squares (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. GGH 2014–Map 4).

east (see fig. 5).²⁰ Another one was detected at the northeast, close to Kuştepe, where three roads appear to have come together. To the west of Küçük Höyük, next to a tower and at the end of a north–south street, there appears to have been a third gate, with the fourth located on the northwest side, near another tower, and leading toward the west into the Outer Town.

It looks as if the Outer Town's residential area was also bordered by a ditch with a defensive wall on its interior (see figs. 5, 9). The ditch was approximately 3.5 m in width, and the defensive wall, which had a width of 2.5 m, was located 4 m behind it. We have now been able to trace the course of the defensive ditch for more than 1 km (nearly 0.7 m of a mile), and both it and the wall clearly surrounded the entire district. Some of the stones from the Outer Town's defensive wall may, in fact, have survived. Approximately 70 m to the south of the Outer Town is a bridge originally constructed for the Berlin-Baghdad Railway in the late 19th century, and the stones of the bridge are of the same size and colors as those used for the bastions of the Middle Phrygian fortifications on the citadel mound. The most likely source would have been the Outer Town defensive walls.

At the western end of the Outer Town, about 650 m to the west of the Citadel Mound, we discovered the presence of what we interpret as a monumental fort, approximately the same size as the forts of Küçük Höyük and Kuştepe in the Lower Town (see fig. 9, left). The fort measures at least 100 x 70 m, and within this area, still visible on the surface, was a line of ashlar blocks of Middle Phrygian date, approximately 30 m long, that probably formed part of it. These readings coincide with a high point in the land, a ridge overlooking a valley, and that is undoubtedly why the area was chosen for a defensive outpost. This discovery demonstrates that there were at least three monumental forts designed to protect the citadel of Gordion during the Middle Phrygian period: Kuştepe at the north, Küçük Höyük at the south, and the new Outer Town fort at the west. It is also striking that the Lower and Outer Towns were planned as separate residential areas, with the west section of the Lower Town fortification wall between them, but only excavation can determine what significance, if any, this separation represented.

This means that the fortification walls of the citadel and Lower and Outer Towns protected an area roughly 103 ha in size, which is larger than the protected areas

of Troy (32 or 33 ha), Zincirli (39 ha), and Carchemish (90 ha), although smaller than those of Tell Rifa'at/Arpad (120 ha), Hattuşa (180 ha), and Kerkenes (270 ha).²¹ A similar tripartite organization was used for the Neo-Hittite settlement at Carchemish, with a citadel surrounded by Lower and Outer Towns, although there the Outer Town was considerably larger than the Lower Town, and the citadel per se much smaller than at Gordion.

The excavation of the fortification walls on either side of Küçük Höyük in the 1950s did not yield clear evidence for dating, but another method can be used to determine the time of construction.²² After the conflagration in ca. 800 B.C.E., the level of the Citadel Mound was raised 4–5 m with deposits of clay taken from the area adjacent to the Sakarya River (see fig. 5).²³ The removal of this clay would have meant a massive excavation along the river at the same spot in which the fortifications were built. It seems logical to assume that the clay unearthed during the digging for the ditch and the city wall's foundations was used to raise the level of the citadel, and that the two operations were part of a single, collaborative building program. If so, then the construction of the fortifications around the Lower and Outer Towns should be dated to the early eighth century B.C.E. Such a sequence of events also fits well with the results of Voigt's excavations in the Lower Town: the earliest evidence for occupation was Middle Phrygian, which suggests that occupation in the Lower Town increased once it was protected. Similarly, the earth and clay removed from the fortification ditches in the Lower Town could easily have been used to create mudbricks for the superstructure of the defensive walls.

Gordion can therefore be added to the corpus of ancient cities that contained several lines of defense, two of which surrounded the residential districts. Such a system of defenses with inner and outer fortifications had a long history in Anatolia during the Bronze and Early Iron Age—for example, at Hattuşa, Kanesh, and Zincirli—while defensive ditches surrounded the fortifications of several citadels in Syria, Palestine, and

²¹ Troy: Korfmann 1995, 179. Zincirli: Schloen and Fink 2009. Carchemish: Marchetti 2012, 133. Tell Rifa'at/Arpad: Casana 2013. Hattuşa: Neve 1992. Kerkenes: Summers and Summers 2012, 2013. The settlement at Urartian Ayanis encompassed 80 ha, but only the citadel was fortified (Stone and Zimansky 2004, 236).

²² Edwards 1959, 264; Mellink 1959.

²³ Marsh and Jones 2014, 191–92.

²⁰ Edwards 1959, 264.

Anatolia, including Carchemish, Troy, and Kadesh.²⁴ It looks as if this fortification network successfully protected the settlement for approximately 250 years, until the Persian attack.

THE STREET SYSTEM

Magnetic prospection has also clarified the street system in the Lower Town, especially to the south of the Citadel Mound. In this area we found evidence for a major street oriented northwest–southeast that appears to have linked the Citadel Mound with the fort of Küçük Höyük (see figs. 9, 10). Another street running north–south may have joined to a gate in the fortifications on the south side. The magnetometry results indicate that monumental buildings flanked both streets, and excavations by Voigt on either side of the northwest–southeast street did in fact yield a sizable Middle Phrygian ashlar building on a massive stone terrace as well as mudbrick houses of the same date.²⁵

The most unusual discovery in the southern part of the Lower Town was the presence of two different districts possibly separated by a ditch (see fig. 10). The southern or outer district was a very magnetically active area with a plethora of small and large anomalies; the northern or inner district features very few anomalies and no traces of structures. 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 had functional significance, such as for ceremonies of state or public spectacles. In any event, there was clearly a denser occupation in the southern Lower Town than many have suspected.

In the northern part of the Lower Town, north of the Citadel Mound, there are traces of a network of streets crossing the area, and although they were not orthogonally planned, several of them intersect at angles that are close to 90° (fig. 11). We should probably assume the existence of a street that connected the Kuştepe fort with the Citadel Mound, as in the southern Lower City, although we discovered no certain evidence for it.

²⁴ Hattuša: Seeher 2002. Kanesh: Özgüç 1999. Zincirli: Wartke 2005. Troy: Jablonka 2006; Rose 2008, 409 n. 55; 2014, 21–4. The Trojan system also featured a defensive ditch, as did a relatively large number of settlements in Anatolia (Carchemish), Syria (Qatna, Ebla, Kadesh), and Palestine (Hazor, Lachish, Ashkelon), so the presence of such a feature at Gordion is not unexpected (Bunimovitz 1992; Finkelstein 1992). For advice on the Syrian and Palestinian examples, I thank J.P. Dessel and Jodi Magness.

²⁵ Voigt and Young 1999, 211–16.

Flanking one of the principal streets were several unusually large structures, a few of which were at least 20 m long, as one can see in figure 11. These buildings appear to extend all the way from Kuştepe to the northern edge of the citadel mound—a distance of more than 430 m, and such results are in harmony with the abundant sherds of Middle Phrygian date that are still found on the surface in this area. This means that the northern part of the Lower Town appears to have been just as densely occupied as its southern counterpart. But here, too, magnetic prospection detected a “quiet zone,” approximately 130 m long, within the part of the Lower Town that lies near the northern edge of the Citadel Mound; it therefore looks as if there were open areas both north and south of the citadel, although again, we can only speculate about their potential functional significance.

The Outer Town is still an area of active agricultural cultivation, and we cannot subject the entire area to prospection as we did the Lower Town, but it certainly contained at least several buildings of substantial size, a few of which seem to be at least 20 x 20 m (see figs. 9, 11). We also detected a linear feature within the Outer Town that runs roughly parallel to the ditch and is intersected by two other linear features; all of these are probably streets and have been restored as such on the interpretive plan in figure 9.

FIELDWORK, 2013–2015

During most of the 20th century, large fieldwork projects focused far more on excavation than conservation, and Gordion was no exception. Young’s determination to uncover most of the eastern side of the Citadel Mound yielded an enormous amount of information concerning the settlement’s history and organization, but the buildings he uncovered are now in desperate need of attention, and that is true for most other sites in the Near East. As a result, the Turkish Ministry of Culture and Tourism currently requires the directors of archaeological projects to focus the majority of their energy on archaeological conservation and site management, and the Gordion Project has complied willingly with this mandate.²⁶

Architectural conservation between 2013 and 2015 focused on the monumental buildings of the Early Phrygian citadel, especially the Citadel Gate, the “Terrace

²⁶ Gordion’s conservation program was formulated and initially supervised by Frank Matero of Penn’s graduate program in historic preservation and is now supervised by Elisa del Bono.

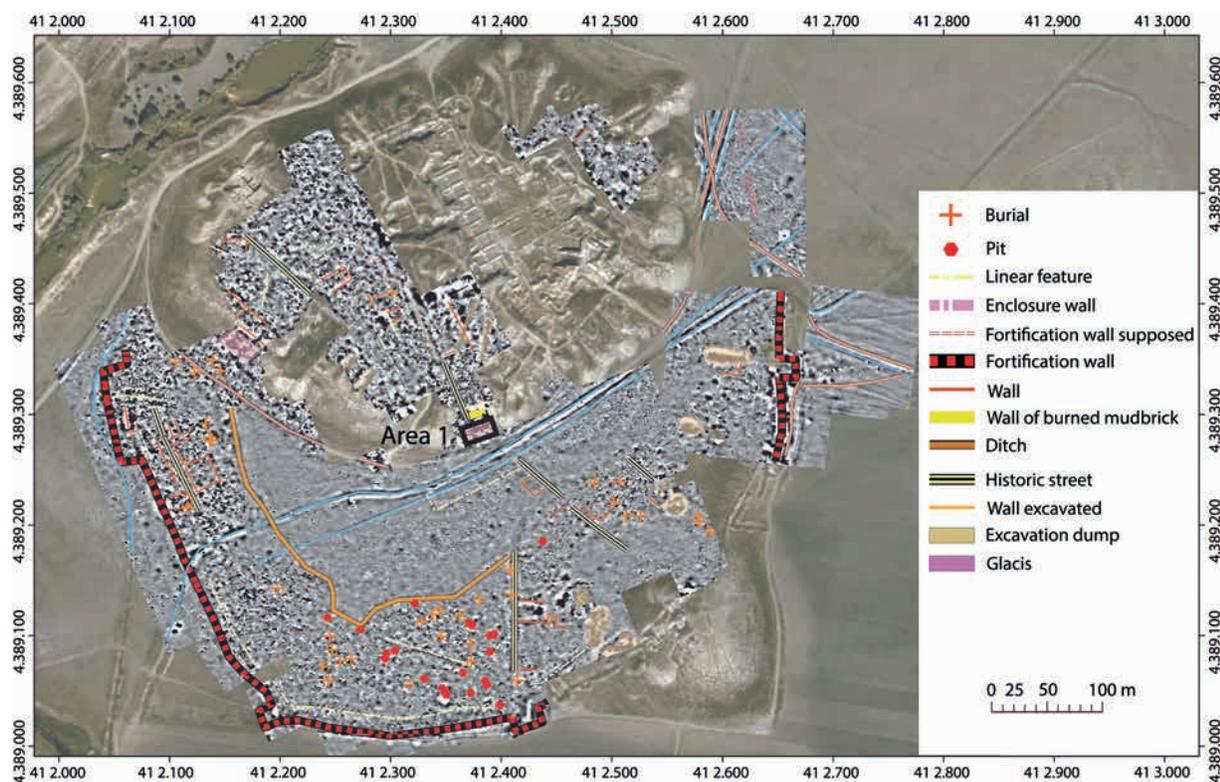


FIG. 10. Magnetic prospection on the Citadel Mound and in the southern Lower Town. The plan is oriented north–south, and Area 1 appears in the black rectangle (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. GGH 2010–Fig. 6).

Building Complex” (the industrial quarter), and the pebble mosaic in Megaron 2, all of which have provided us with a far more nuanced understanding of the citadel’s development during the ninth century B.C.E. In the sections that follow, the reports on recent conservation activity and excavation are combined since they have become complementary operations. Indeed, architectural conservation usually supplies just as much new information about a building or monument as excavation itself, thereby enabling one to chart the directions for future research more effectively.

The Early Phrygian Citadel Gate

The Citadel Gate on the eastern mound is the most conspicuous component of Gordion’s defenses, even though it was probably in use for no more than 50 years (see figs. 3, 6, 12–14).²⁷ The gate is now one of our most pressing conservation projects because of its complex construction history, which involved the placement of an even more monumental gate directly

on top of it during the early eighth century B.C.E. The gate’s configuration and its historical context have never been fully presented. I do so here because the building figures so prominently in our strategy for both conservation and excavation.

Young’s excavation of the Early Phrygian gate, which occurred in 1951, 1953, and 1955, revealed a wide corridor leading to a portal at the inner end; the two stone bastions flanking the corridor are still preserved to a height of 9.5 m. The central passageway of the gate, measuring 23.0 m long x 8.6 m wide, is unusually large by comparison with contemporary Neo-Hittite citadels, such as those at Zincirli and Carchemish, and that holds true for the entire gate complex, which measures 60 m north–south x 35 m east–west.²⁸

The passageway is in the form of a cobbled ramp that rose 3 m over the course of its 23 m length, while the bastions that flanked it contained covered rectangular spaces of unequal dimensions: the northern one measures nearly 13 x 16 m, and the southern one 19 x 12 m.

²⁷ Young 1955, 1–16; 1956, 252–60; 1960, 233–36; DeVries 1990, 377; Keller 2011.

²⁸ Gilibert 2011, 22–50, 58–75; Harrison 2013.

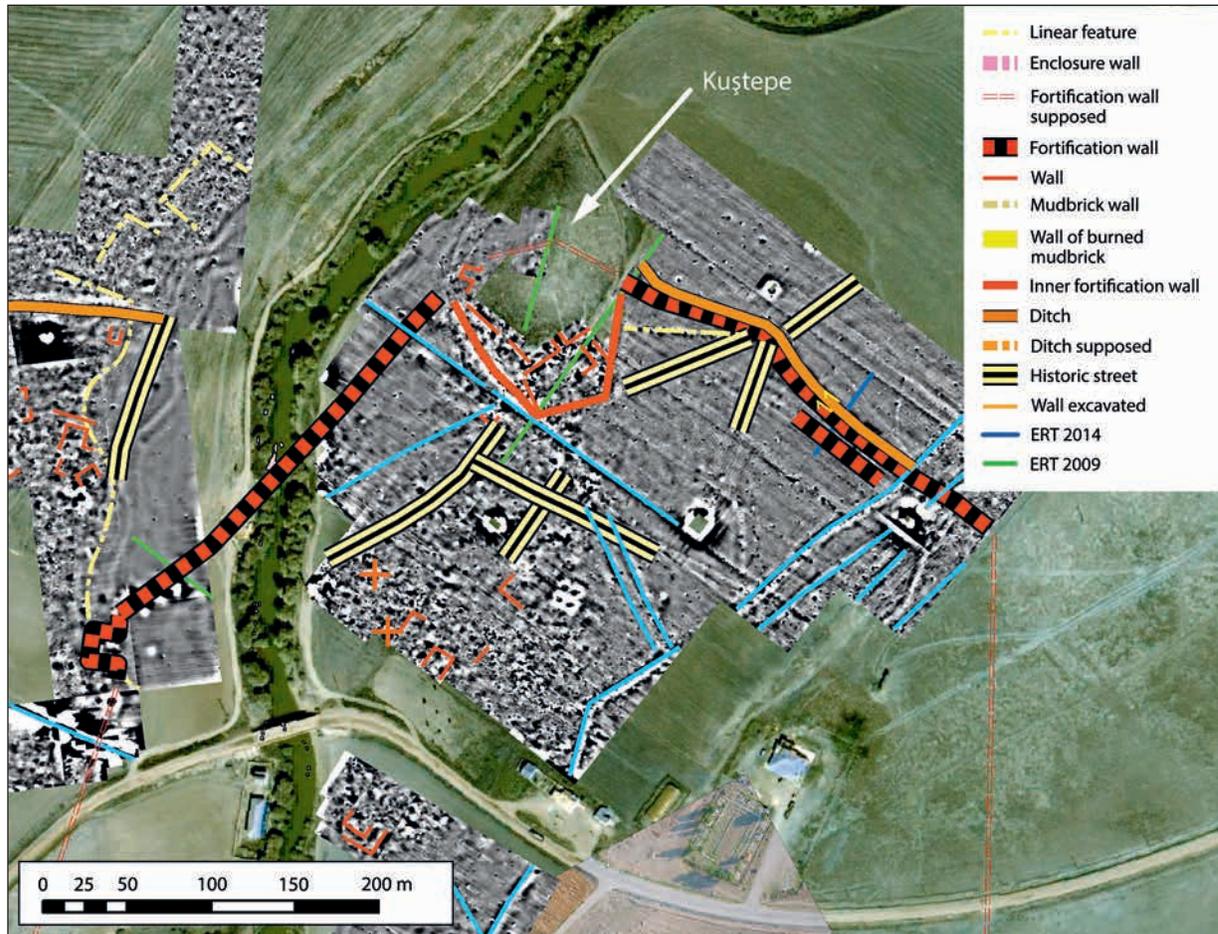


FIG. 11. Magnetic prospection on the Citadel Mound and in the northern Lower Town, between Kuştepe and the Citadel Mound (ERT = electrical resistivity tomography). The plan is oriented north–south (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. GGH 2012–Fig. 4).

Referred to as the North and South Courts by Young, each had a doorway on its inner side, and in the North Court Young found the supports for 53 pithoi of varying sizes, with the largest being approximately 1 m in diameter.²⁹ The bastions themselves are built primarily of limestone blocks, more oblong than rectangular, that covered a rubble core of limestone. Small slivers of stone were inset into the awkward masonry joints, but none of this pointing work would have been visible to the visitor since it was all covered by mud plaster with lime wash that appears to have been unpainted.³⁰

The upper 6 m of both bastions were battered and constructed largely of rhyolite, a light igneous rock

that was commonly used in regions of periodic seismic activity. As Young noted, the best precedent for such battered fortifications can be found in the Sixth Settlement of Troy, where new citadel walls with battered faces were constructed in the 14th century B.C.E., although a similar technique would later be used for Urartian defenses and for the Lydian fortification wall at Sardis.³¹ Above the battered stone walls there would have been an additional story of mudbrick, most likely

²⁹ Three rows of pithoi were found in this wing at the time of excavation (Young 1956, 260).

³⁰ Keller 2011, 73.

³¹ Troy: Klinkott 2004. Urartu: Çilingiroğlu 2004, 2013. Sardis: Ratté 2011, 108–12. Whether there was in fact direct influence from Troy cannot be ascertained, but it is worth noting that Phrygian inscriptions have been found at Daskyleion, 175 km to the east of Troy, and there must have been contact between the two areas (Rose 2014, 52).



FIG. 12. The Early Phrygian Citadel Gate, looking east. The Middle Phrygian rubble fill is visible on the opposite side of the gate (courtesy Penn Museum, Gordion Project Archives, image no. 2014_4305).

with a crenellated cap, which probably raised the total height of the gate to approximately 16 m.³²

The actual building within the Citadel Gate Complex through which one passed to access the megaron and Terrace Building Complex is generally referred to as the Polychrome Gate House because of the blue and deep red stones that were used in the construction of its walls (see fig. 6).³³ The bright colors of the gatehouse would have contrasted dramatically with the whitewashed bastions and flanking city walls, and the building may have been decorated with a series of carved limestone orthostats that were found in its vicinity. These are similar in style and iconography to those in the Neo-Hittite cities of Carchemish, Zincirli, and Karatepe and figure among the very few examples of figural stone sculpture discovered to date within the Early Phrygian citadel.³⁴

The Polychrome Gate House was originally flanked by citadel walls approximately 9 m thick that shared the same orientation (see fig. 3). When the Citadel Gate was expanded during a second construction phase, the Polychrome House was maintained as the primary gatehouse, but it now formed part of a much larger complex with the bastions joined to its eastern corners. The position of the citadel wall changed as well at that time: Young discovered parts of the first Early Phrygian citadel wall on either side of and running parallel to the Polychrome Gate House, with a thickness of 9 m.³⁵ When the monumental bastions were later added, a new citadel wall was constructed adjacent to the northeast corner of the North Court, roughly 13 m in front of the older one, although the width decreased from 9 to 6 m. It is unclear whether a wall with a similar

³² Seeher 2007, 20–5, 90–2, 168–73.

³³ Young 1956, 260–61; 1960, 234–36.

³⁴ Sams 1989; Rose and Darbyshire 2011, 28–30. Their height was 0.62 m, and even though the complete width can-

not be ascertained, it must have been greater than 0.51 m. The subjects represented, a lion, a griffin, animal combat, and a male holding a lion upside down, were standard components of Neo-Hittite reliefs (Orthmann 1971; Prayon 1987).

³⁵ Young 1962, 167–68.

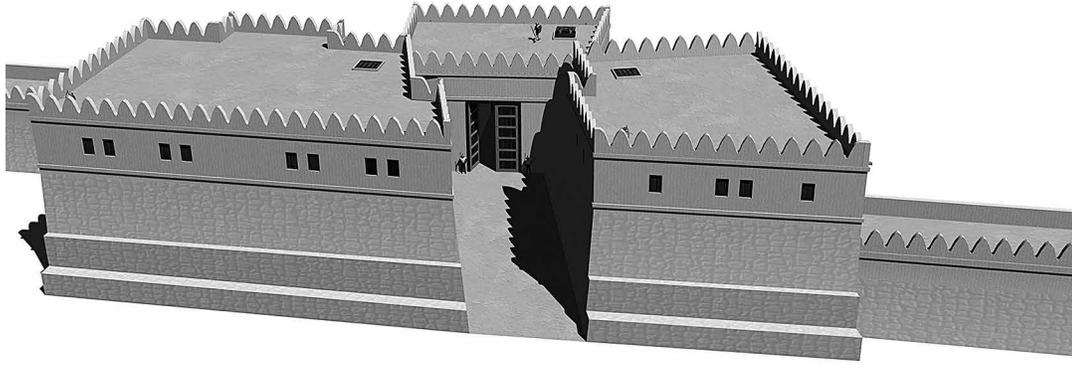


FIG. 13. Reconstruction of the Early Phrygian Citadel Gate (G. Darbyshire and G. Pizzorno; courtesy Penn Museum, Gordion Project Archives).



FIG. 14. Aerial view of the Early Phrygian Citadel Gate, looking west. The “soft cap” on the north bastion is visible at right; the south bastion is still covered by the concrete cap (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. 13-GGH-5888).

size and orientation was joined to the southwest side of the South Court. The Early Phrygian levels that would have encompassed this wall were not reached, owing to the monumental architecture that lay above them.

The most striking feature of the enlarged Early Phrygian Citadel Gate was the irregular plan of the bastions,

in that both are trapezoids rather than rectangles and the width of their walls varies dramatically (see figs. 3, 6, 13, 14). The interior configuration of the South Court walls generally matches that of the Polychrome Gate House, while that of the North Bastion follows a completely different orientation. Moreover, the north wall of the South Court has been stretched so that it

runs parallel to the North Court, and a similar manipulation is apparent on the east wall of the North Court, which was made parallel to the east wall of the South Court. If one had stood in front of the gate in antiquity, this radical modification would not have been visible, but viewing it in plan or from the air (see fig. 14) reveals the unusual narrowness and thickness of several of the walls.³⁶

It looks as if the South Court was constructed first, with the orientation of the Polychrome House identified as the model to follow. During construction, however, the decision was made to change the orientation, thereby yielding the unusual hybrid plan. The gate's new orientation is aligned with Tumulus W, the oldest of Gordion's excavated tumuli, which meant that those who were leaving the citadel would have had their attention directed toward what was probably the first of Gordion's royal burials.³⁷ From this, one can intuit that the Tumulus W decedent died in the course of the gate's construction, thereby prompting a revision in plan as a mode of homage. Such a decision tied the citadel more tightly to the landscape that surrounded it, and it allows us, by extension, to date the gate's construction to the same time as the tumulus, ca. 850 B.C.E.³⁸

Toward the end of the ninth century B.C.E., Gordion's rulers planned a major change in the citadel's appearance—not in the number and general layout of the settlement's buildings, but in the height of the citadel itself, which would be raised 4–5 m above its Early Phrygian level.³⁹ A similar approach to monumentality is evident in the later Phrygian citadel at Kerkenes, but such a dramatic reconfiguration of a settlement is, to my knowledge, unprecedented, in that it involved the burial and rebuilding of every structure in that settlement. This required the excavation and movement of more than half a million cubic meters of clay by a massive labor force, and such a herculean project makes

sense only if it is viewed against the background of the other monumental citadels that had been or were being constructed in Assyria, Urartu, and North Syria. It was at this time that the Polychrome Gate House and a section of the north wall of the Citadel Gate's passageway were dismantled. The stones were then reused to build a "dam wall" intended to contain the 4–5 m of rubble and clay that would now envelop the Early Phrygian gate (see fig. 12).⁴⁰

The project was delayed by a major conflagration that swept through much of the citadel ca. 800 B.C.E., but it then continued with the construction of a new gate (the Middle Phrygian Gate) directly above its predecessor.⁴¹ The width of the new gate, at 55 m, was essentially the same as that of its Early Phrygian predecessor, although it projected 20–23 m farther to the east and thereby increased the amount of space available for building in the Outer Court (see fig. 7). The architecture was also much more massive: the front walls of the bastions are 8 m thick, while those that flanked the Outer Court have a thickness of 5.50 m, and the other walls that make up the courts are nearly as thick. The Middle Phrygian Gate appears to have remained intact until the earthquake at the beginning of the fourth century B.C.E., after which it is difficult to track, although much of it must have remained standing since Young found substantial parts of the north bastion still in situ, and at least one Hellenistic structure was built against it.⁴²

When Young began his excavations of the gate in the 1950s, he re-erected the south wall of the Early Phrygian North Court so that the original configuration of the entrance corridor was recreated, but his removal of the rubble that had surrounded the two courts increased the possibility that the masonry would become destabilized, which had begun to occur already in the mid 1950s.⁴³ Cement caps were applied to the tops of much of the North and South Courts in 1956 to inhibit the flow of water into the masonry, but they cracked

³⁶ Given that the earliest Phrygian citadel wall was apparently dismantled while the Polychrome House seems to have remained intact, the two structures were probably not bonded, which suggests that the Polychrome House was a later insertion into the earliest citadel wall.

³⁷ This argument is presented in full in Liebhart et al. 2016. For Tumulus W, see Young et al. 1981, 191–218.

³⁸ Kuniholm (2011, 107) provides a terminus post quem of 862 B.C.E. based on his dendrochronological date for one of the South Court's structural timbers. I owe this observation to Gareth Darbyshire.

³⁹ Voigt 2012.

⁴⁰ Young 1955, 12; 1956, 258; Voigt 2012.

⁴¹ The conflagration is commonly referred to as the "Destruction Level" and has been dated by dendrochronology, radiocarbon, and the associated artifacts to ca. 800 B.C.E. (Rose and Darbyshire 2011).

⁴² For the projected earthquake, see DeVries 1990, 400; see also the section "Excavations on the Citadel Mound: The South Gate and the 'Inter-mound Street'" herein.

⁴³ Young 1956, 258.

in the course of annual freezing and thawing, so moisture continued to penetrate their walls (see fig. 14).⁴⁴

By the 1980s, a bulge had developed in the northern wall of the South Court, adjacent to the ramp, which was temporarily halted by the installation of a new concrete capping of both walls in 1989. After a sizable earthquake in 1999 in north-central Turkey, however, the bulge gradually became more significant. The stones in the affected area were dislodged by an additional 3–4 cm, and new spalling and cracking were in evidence as well.

Two additional factors associated with Phrygian building techniques further complicated the gate's conservation. One was the Phrygians' propensity for using timbers in the foundations of monumental buildings, such as the gate's North and South Courts, presumably to provide greater flexibility for the structure in the event of seismic activity.⁴⁵ During the course of the last three millennia, the timbers have disintegrated or become compressed, in part owing to the tremendous weight of the Middle Phrygian gate directly above its predecessor. This has caused a bulge in the masonry, leading to increased cracking and widening joints.⁴⁶

The other problem stems from the Middle Phrygian rebuilding, in that large amounts of expansive reddish clay were set against the North and South Courts, thereby exerting additional pressure on the wall. This is still a problem in the South Court, where Young chose not to remove the Middle Phrygian fill. The masonry's deteriorating condition led to the decision to begin injection grouting on the north wall of the South Court, below the bulge. The assumption was that the grout, a hydraulic lime binder, would create a sufficiently strong bond between the stone facing and rubble core that would stabilize the bulge and prevent other such displacements from occurring. The grout was initially injected into the north wall of the South Court over the course of five years; in 2006, however, we decided to shift to a more cautious program of con-

dition survey and analysis since there was no objective way to determine how successful the grouting had been or even how and where the injected grout had settled within the wall.⁴⁷

Following the condition survey, the injection grouting program was discontinued in favor of a significantly different course of action. The deteriorated and missing facing stones associated with the bulge will be repaired or replaced rather than strengthened in place; this is still possible since no grout has been injected into the large bulge on the South Court's north wall. Such an undertaking is far from straightforward, in that the project requires the removal and conservation of 4 m (11 courses) of stones—those that have been affected by the bulge as well as those above them. The newly stabilized stones will be reinserted in the wall after we cut back the rubble core that is exerting pressure on them.

Two sondages confirmed the stability of the South Court foundations, after which we erected a new scaffolding system against the damaged north face of the South Court, using 250 old wooden railroad ties for the foundation. Above the scaffold we placed an aluminum gantry crane capable of lifting 1,500 kg, enabling us to move the damaged stones directly to the scaffolding for conservation.⁴⁸ A few of the stones will need to be replaced, but most of them will be conserved with epoxy and consolidated with stainless steel bars. A critically important step will be the installation of

⁴⁷ For a discussion of the grouting methodology and results, see Wong 2011. This change in method coincided with a change in staffing in that Frank Matero replaced Mark Goodman after the latter's untimely death in 2004. Only the lowest 7 to 16 courses (out of a total of 20–25 on the South Court) received treatment.

⁴⁸ David Biggs of Biggs Consulting Engineering, PLLC, who has been with this project since its inception, created a design for a strong yet flexible galvanized steel scaffold with a timber foundation. We were able to acquire and assemble the latter thanks to the kind intervention of several individuals and institutions: the Turkish Ministry of Culture and Tourism, especially Mustafa Bozdemir; Enver Sağır, director of the Museum of Anatolian Civilizations in Ankara; and Mürsel Yıldızkaya, Polatlı Belediye Başkanı, who arranged for the free transport of the 250 railroad ties that were used for the scaffold's foundation. The project was carried out with generous support provided by the J.M. Kaplan Fund and the Merops Foundation. The new scaffolding system was supplied by Tamer Kalıp ve İskele Sistemleri in Ankara. Conservation work on the gate in 2014 involved only repointing work with a lime-based mortar, microinjections of stone spalls, and epoxy reattachment of stones on the east side of the South Court.

⁴⁴ Keller 2011.

⁴⁵ Young 1956, 253, 258; 1968, 234; Keller 2011, 74–5.

⁴⁶ The foundations of several ancient buildings were constructed on sand rather than timbers, but presumably for the same reason—i.e., to provide greater structural flexibility in seismic zones. Such techniques were used for the Temple of Athena at Ilion (Dörpfeld 1902, 217–18), the Treasury of Sybaris at Olympia (Adler et al. 1892, 48), and the interior rooms of the *skene* of the theater at Magnesia (Humann et al. 1904, 23), among others.

stainless steel strap anchors into the rubble core, essentially duplicating the original timber ties.

The problem of the concrete capping, which repeatedly caused more harm than good, has also been partially solved. The concrete cap, or “hard cap,” on the North Court was removed in 2010 and replaced with a “soft cap,” where the walls are covered by one or more geosynthetic layers (Tyvek and Typar) that are separated by a gravel layer featuring drainage hoses (see fig. 14).⁴⁹ Placed above them is a mudbrick frame that contains Poa grass (*Poa bulbosa*), a local perennial plant requiring minimal maintenance. The roots easily absorb water during periods of rainfall, but their shallow size prevents them from penetrating the geosynthetic layers below.⁵⁰ The walls, in essence, can breathe safely. The concrete above the South Court was removed in 2015, and a similar soft cap will be applied to the South Court walls once the bulge has been repaired.

The Terrace Building Complex

The Early Phrygian citadel’s industrial quarter, or “Terrace Building Complex,” served as a center for food preparation and weaving activities on the Citadel Mound (see figs. 2, 3, 4, 6, 15).⁵¹ The complex in question consists of two parallel structures: the “Terrace Building” at the east, which has been completely excavated, and the CC (or “Clay Cut”) Building at the west, of which only four units have been uncovered (see figs. 3; 6, top). It looks as if the configuration of the western building mirrored that of the east, which would mean that both buildings would have been approximately 100 m long and positioned on either side of a 16 m wide court. Each of the buildings probably comprised eight adjoining units with a vestibule and main chamber, the majority of which contained hearths between 1.3 and 2.0 m in diameter. The length of each unit is close to twice its width, at 21.0 x 11.50 m, so each group of two represents a nearly perfect square.

Some of the Terrace Building rooms contained between 500 and 600 loomweights, and at full capacity there were probably as many as 300 workers in the complex.⁵² Nearly a dozen shovels and rakes were

found by Young in the Terrace Building, and, during conservation activities in TB-3 (i.e., the third room of the Terrace Building), we discovered the iron shank of what must have been a hearth rake, 1.67 m long, next to a mudbrick platform for grinding stones.⁵³ Iron rakes with comparable lengths are unattested in Iron Age Anatolia, and they highlight the massive size of the associated hearths.⁵⁴ An accident at or near one of those hearths probably caused the fire of 800 B.C.E., judging by the pattern of the destruction, and the carbonized seeds discovered within the building suggest that the event occurred during the summer, when the winds would have quickly fanned the flames.⁵⁵

The Terrace Building has been one of our primary projects in conservation since 1999 because the walls were so badly damaged in the conflagration (see figs. 3, 15).⁵⁶ The rooms in the complex were largely mudbrick and timber structures with socles of stone that reached a height of more than 1 m, but whether the roofs were pitched or flat is not yet clear. The fire caused the two sides of the wall to splay, and the stones are badly cracked in most cases. The foundations are generally preserved to a height of four courses, with a width of 1.4 m and a height ranging from 1.0 to 1.5 m, but 10 years ago they were scarcely visible. Concern over their splayed condition in the late 1990s had prompted Gordion’s conservator Mark Goodman to line the walls with buttressing sandbags and clay capping.⁵⁷ This provided a temporary solution to their deterioration but obscured their original form to such an extent that the visitors were no longer certain of what they were viewing. Beginning in 2007, a revised conservation plan was adopted that aimed to stabilize the walls and restore them as a prominent feature of the citadel’s

⁴⁹ Lim 2011.

⁵⁰ Miller 2012.

⁵¹ Young 1958, 146–47; 1960, 240–43; 1962, 164–67; 1964, 285–86; 1966, 269–71; 1968, 238–39; DeVries 1980, 38–40; 1990, 385–86; Burke 2005.

⁵² DeVries 1980, 40; Burke 2005; 2010, 108–52; Ballard 2012.

⁵³ 13718, ILS-778. The closest parallels are somewhat shorter tools (ca. 0.7–1.3 m long), with a long shank, socketed at one end, and with an L-shaped bend at the other leading to a narrow rectangular rake blade, as found in Young’s excavations of TB-4 (ILS-263) and TB-7 (ILS-667a). The blade of a rake, broken off from its shank, was also found in TB-4 (ILS-317). I owe this information to Gareth Darbyshire.

⁵⁴ Since the complex was intended for industry, most of the units had hearths in their main rooms with the exception of the two at the south, which seem to have been used for storage.

⁵⁵ DeVries 1980, 36; Rose 2012a, 18 n. 1.10.

⁵⁶ Young 1958, 146–47; 1960, 240–43; 1962, 164–67; 1964, 285–86; 1966, 269–71; 1968, 238–39; DeVries 1980, 38–40; 1990, 385–86; Burke 2005.

⁵⁷ Goodman 2005, 219–29.



FIG. 15. The Terrace Building Complex at Gordion, looking northwest. The CC Building is at the upper left (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. 13-GGH-5948).

architectural landscape, and, as of August 2015, five units of the eastern building have been completed.

The damaged stones were conserved using epoxy resins and lime-based grout injections, while a new internal cable system tied the two sides of the splayed walls together through the use of stainless steel cables set in a zigzag configuration (fig. 16). These are concealed within the wall and removable at any time, as are all of the conservation interventions. The tops of the walls received the same kind of soft capping of *Poa* grass that was applied successfully to the North Court of the Citadel Gate. In cases where the original stones have completely disintegrated, new stones have been added with a slightly different tooling and color, a slightly greater projection from the masonry, and a surrounding bed of hydraulic mortar, unlike the original masonry.⁵⁸ In the course of this work, we have attempted to adhere to the principles of the Venice Conservation Charter of 1964, which stipulates that modern interventions should be distinguishable from the original construc-

tion without detracting from the aesthetic integrity of the monument being conserved.

The conservation work described above prompted a range of questions concerning the potential antecedents of this complex, as well as the size and configuration of the artificial terrace on which the building rested. When did industrial activity in this area begin, and how monumental an undertaking was the terrace construction? To clarify these issues, we launched a 5 x 7 m sondage beneath the floor of unit 6 (TB-6), which skirted conservation activities in TB-5 and 7 (see fig. 6, top).⁵⁹ The rubble fill of the terrace turned out to be far more extensive than we expected, reaching a height of 4 m, and removing it required several weeks of painstaking excavation (fig. 17).

The earliest feature that we uncovered, 4.5–5.5 m below the floor of the Terrace Building, was a large kiln, at least 2.5 m in diameter, that was probably

⁵⁸ Del Bono and Keller 2011.

⁵⁹ The Terrace Building was excavated by Kathryn Morgan, who will be publishing the results, and the report presented here summarizes her conclusions.



FIG. 16. Consolidating the wall blocks of the Terrace Building with steel cables (E. del Bono; courtesy Penn Museum, Gordion Project Archives).

constructed in the Early Bronze Age based on the ceramic remains discovered around and within it (fig. 18). Above and to the east of the kiln were the remains of an Early Bronze Age house with an associated pit nearly 2 m in diameter that was lined with plaster at its sides and bottom. The domestic trash within it included handmade red burnished bowl fragments, part of a red burnished depas cup, and the gnawed remains of sheep, goat, deer, and cattle.⁶⁰ Above this building but below the stone rubble were approximately 40 cm of sloping deposits filled with mixed Middle Bronze to Early Iron Age ceramics. The latest excavated strata consisted of concentrated Early Phrygian trash, including several artifacts related to textile production—a bone shuttle and needle, two complete spindlewhorls, and two partially preserved loomweights—along with a very large quantity of unworked bone, charcoal, and sherds.⁶¹

⁶⁰ Voigt 1994, 267; Henrickson and Voigt 1998, 83, 87.

⁶¹ Needle: F-431. Shuttle: F-432. Spindlewhorls: F-289, F-294. Loomweights: F-308, F-396. There were also several grinding stones (F-328, F-370) and a pestle (F-397). An article on the faunal remains by Canan Çakırlar of the University of Groningen is forthcoming.

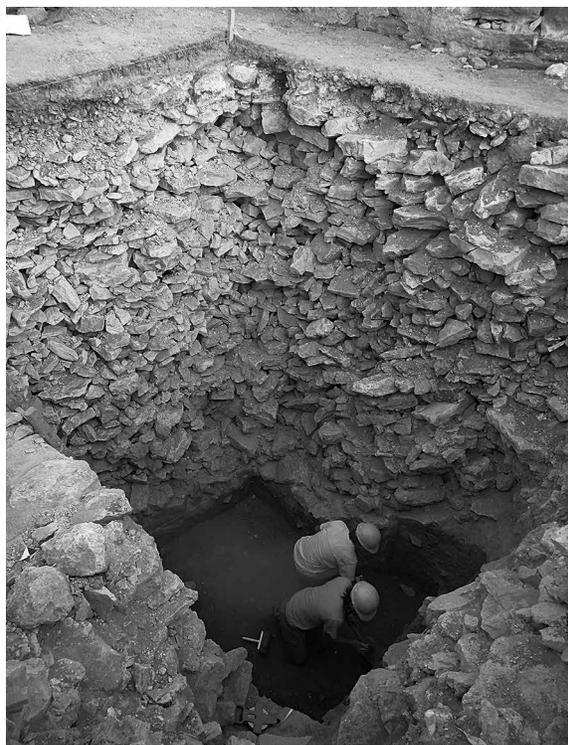


FIG. 17. Excavation beneath the rubble fill in the Terrace Building sondage (TB-6), looking west (courtesy Penn Museum, Gordion Project Archives, image no. 2014_4142).



FIG. 18. Remains of a kiln (probably of the Early Bronze Age) beneath the rubble fill in the Terrace Building sondage (TB-6), looking southwest (G. Bieg; courtesy Penn Museum, Gordion Project Archives, image no. 2014_4381).

The evidence yielded by the sondage demonstrates that, while there was considerable (and varied) activity in this area beginning in the third millennium B.C.E., the enormous terrace was an ambitious new extension to the citadel that commenced in the ninth century. During earlier occupation in this area, the Phrygians had cut trash pits deep into Early Bronze Age layers, perhaps also leveling off any Middle and Late Bronze Age accumulation.⁶² When the construction of the terrace began, they deposited the enormous quantities of stone fill above the earlier remains, ultimately creating a platform that rose 1 m higher than the adjacent courts flanked by megara. We initially thought that such extensive deposits of stone must have been robbed from earlier buildings, but there were no finished surfaces on any of the stones, so they may have been quarried especially for the terrace construction.

Pebble Mosaic Conservation of Megaron 2

To the east of the Terrace Building Complex was an elite quarter divided into two separate courts by a

mudbrick wall more than 4 m high. Within the Outer Court, closest to the citadel gate, were four megara (M1, M2, M9, and M10 in fig. 6, top), one of which (Megaron 2) is more elaborately decorated than the others. It was here, in 1956, that Young uncovered the earliest pebble mosaic floor so far known (fig. 19).⁶³ The mosaic dates to the second half of the ninth century B.C.E. and features a series of polychromatic geometric designs that most likely echo the kinds of textiles that would have been produced in the adjacent Terrace Building Complex. The best-preserved sections of the mosaic were cut from the floor seven years after excavation, set in concrete with rebar backing, and ultimately exhibited in the Gordion Museum in 1983. Such treatment of an artifact would be anathema to conservators today, and we needed to formulate new strategies to ensure the preservation of the panels.⁶⁴

⁶² This argument is put forward both by Young and by Voigt, but it is discussed at greatest length in Voigt 2013, 173–78.

⁶³ Young 1957, 322; 1958, 143; 1965; Salzman 1982, 4, 6–8, 78, 93–4, nos. 46–56. Colored pebble mosaic floors were also discovered in Early Phrygian Megara 1 and 9 (Young 1965), but they were not well preserved.

⁶⁴ This we accomplished with the assistance of the J.M. Kaplan Fund and the Luther Replogle Foundation.



FIG. 19. Watercolor reconstruction of the pebble mosaic from Megaron 2, by Joseph S. Last, 1956 (courtesy Penn Museum, Gordion Project Archives, plan 1956-17, 400833).

Ascertaining the best conservation method is essential because of its significance within the history of mosaic production. The mosaic's actual date in the later ninth century B.C.E. was determined only in the last decade as Gordion's new chronology was formulated. Prior to that, it was generally dated to the late eighth/early seventh century B.C.E., which placed it later in date

than the far less complex pebble mosaics at Assyrian Til Barsip, Urartian Altintepe, and Neo-Hittite Arslantaş, all of which have been dated to the second half of the eighth century.⁶⁵ Consequently, polychromatic

⁶⁵ Salzmann 1982, 4–8; 82–3, no. 5 (Altintepe); 84, no. 15

pebble mosaics were generally viewed as having developed in the orbit of Syria and Assyria and then spread to central Anatolia, where more complex designs were created.

With the change in dating, this sequence needs to be reconsidered, and it is not as straightforward as one might like. The idea of inserting pebbles into a floor to create a more durable surface can be traced at least as far back as the Late Bronze Age at Tiryns (14th century B.C.E.), although the pebbles were largely monochromatic, separated by several centimeters, and featured no patterns.⁶⁶ The next known example is that of Gordion, which contained an elaborate network of geometric designs rendered in dark blue, dark red, white, and, less frequently, yellow. There are no precedents for such an ambitious configuration in mosaic form, either at Gordion or in the Aegean and Near East, although the next examples, from Til Barsip, Arslantaş, and Altintepe, were made at a time in which Gordion was ruled by Midas, who was involved politically or militarily with all three areas. It is tempting to view the contemporary development of pebble mosaics in those settlements as a by-product of their interaction with Gordion and the Phrygians, even though none of them attempted a design as ambitious as that at Gordion.⁶⁷

What was the impetus for the creation of pebble mosaics at Gordion, and what were the formal sources for the designs? This can be answered only in part. Color was a prominent component of Gordion's architecture, beginning at least as early as the ninth century B.C.E. with the Polychrome House and continuing with the polychromatic courts of the Middle Phrygian Gate, so the builders' fascination with color in monumental public spaces is abundantly attested.⁶⁸ Brightly colored pebbles were easily available in or near the adjacent Sakarya River, as they are still today, so the raw materials were in place for the creation of sizable mosaics.

Several motifs that appeared in the Megaron 2 mosaic, such as checkerboard patterns, meanders, and

interlocking triangles, are also attested in ninth- and eighth-century B.C.E. furniture, ceramics, and bronzes uncovered at the site, as they are in contemporary textiles from Gordion.⁶⁹ It seems likely that textiles, many of which were produced in the adjacent Terrace Building Complex, functioned as an especially important source for the designs. Fragmentary textiles recovered from Megaron 3 (buried ca. 800 B.C.E.) and Tumulus MM (closed ca. 740 B.C.E.) exhibit a similar fascination with alternating geometric forms, as does the costume of King Warpalawas on the well-known rock-cut relief from İvriz (Tyana), which may have been a gift from Midas.⁷⁰ Nevertheless, the mosaics were clearly laid freehand, with no master plan to guide the craftsmen: the patterns are of different sizes, with slightly different orientations, and the transitional spaces among them are awkward, especially around the edges of the room.

It is particularly striking that the Megaron 2 mosaic was just as much of an outlier in the architectural decoration of Gordion as it was in the early history of mosaic production, which raises the issue of Megaron 2's function. At the time of its excavation, Young noted several ancient repairs to the mosaic, which suggest sustained activity, and the hearth in the main room, around which the pebble mosaic was laid, was the largest in the Early Phrygian settlement, with a diameter of slightly less than 2 m.

The building itself is distinguished by several features that are duplicated in none of the other megara of the citadel. It was a gabled building, and it was the only megaron to have been built primarily of stone. Moreover, some of the wall blocks contained incised drawings of animals, birds (possibly associated with falconry), and fighting warriors.⁷¹ The megaron actually appears to have been decorated with a stone acroterion—the

(Arslantaş); 114, nos. 127, 128 (Til Barsip). The Altintepe example featured colored stones in no particular pattern, while those at Til Barsip featured black and white squares in a checkerboard pattern.

⁶⁶ Podzuweit and Salzmänn 1977; Salzmänn 1982, 114, cat. no. 129.

⁶⁷ Such mosaics are not attested in Greece until the sixth century B.C.E., and geometric designs would not occur until the late fifth, in a very different configuration from the earlier Anatolian examples (Salzmänn 1982, 7–8).

⁶⁸ Rose 2012b, 9.

⁶⁹ Furniture: Simpson 2010. Ceramics: Sams 1994a. Bronzes: Young et al. 1981, 18, fig. 9; 20, figs. 10, 11; 208, fig. 126. Textiles: Ellis 1981, 294–310. Similar geometric patterns are also found on the rock-cut monuments in and near Midas City (Berndt-Ersöz 2006).

⁷⁰ Mellink 1979, 252. Warpalawas is known to have been an ally of Midas, who erected a basalt stele with a Phrygian inscription in Tyana. The bronze belt and fibulae worn by Warpalawas in the İvriz relief are of Phrygian type and are usually regarded as gifts from Midas to his ally. The highly ornamented tunic and cloak are also likely to have been either Phrygian in origin or inspired by Phrygian designs, and it is noteworthy that such elaborately decorated drapery is absent in other Neo-Hittite reliefs and statuary.

⁷¹ Roller 2009, 2012.

first of its kind in the Near East, as well as two lion protomes, which are among the few examples of representational sculpture within the citadel.⁷² We may never be able to determine whether Megaron 2 was intended for rulers, cult, or a combination of the two, but during the few decades of its existence, the building contained more innovative features than any other structure in the region.⁷³

Since the pebble mosaic is of such critical importance to the history of architectural decoration, it has long been a target for conservation, although the actual work began only in 2013. Some of the conservation solutions we adopted were relatively straightforward. One condition affecting many of the panels was the presence of overgrout, a thin but coarse mortar that covered several sections of the panels as a result of the concrete backing process in the 1960s. We were able to remove the grout that obscured the face of several of the panels relatively easily, but other procedures were more complex. We cut much of the heavy concrete backing from one of the panels using a Bosch router, which allowed us to take out approximately half of the concrete matrix up to the rebar backing, but because of the proximity of the rebar to the pebbles, we decided to discontinue the project until we could find a safer method of ensuring the stability of the panels.

One of the panels was intended to be a key component of a new exhibition at the Penn Museum, *The Golden Age of King Midas*, and that panel received the majority of our conservators' attention in 2015 (fig. 20).⁷⁴ Several sections of the mosaic had been badly



FIG. 20. The pebble mosaic from Megaron 2: *top*, before conservation (courtesy Gordion Project, Penn Museum); *bottom*, after conservation (G. Bieg; courtesy Penn Museum, Gordion Project Archives, image no. 2015_04663).

damaged, but new pebbles of white, red, and black were collected in the Porsuk Valley, only a few kilometers from Gordion, from the same sources that had supplied the original pebbles. These were used to fill in the missing sections of the mosaic and render the design more intelligible to viewers. Replacement stones were coated with shellac that will glow orange in ultraviolet light, thereby allowing restored areas to be easily distinguished from the original. The watercolor drawing of the mosaic produced in the 1950s, a work of art in its own right, was used as a base map for recreating the missing designs (see fig. 19).

Excavations on the Citadel Mound: The South Gate and the "Inter-mound Street"

When Young began his excavations at Gordion in 1950, he assumed that the Citadel Mound was a unified entity containing a series of successive settlements. It was only in 1969, after 13 campaigns, that excavation revealed the existence of a paved area, potentially a street, to the west of and approximately 2.5 m below

⁷² Young 1956, 261–62; Sams 2012, 63–6. Although most of the building had been stripped of its furnishings during the massive construction (the "Unfinished Project") that occurred immediately prior to the fire of 800 B.C.E., there was still a large trefoil jug containing nearly 300 astragals. A bench located along the southeastern wall of the building may have been a later addition, when the space between Megara 1 and 2 was used for storage. Although there was no monumental sculpture at Gordion, it did figure in the gate decoration of the Phrygian settlement at Kerkenes (Draycott and Summers 2008).

⁷³ Some scholars have identified the megaron as a temple (Mellink 1981, 101; Sams 1997, 241), while others have pointed to the similarities in plan among all the megara and the lack of any identifiable cultic installations.

⁷⁴ For the panel, see Rose and Darbyshire 2016, 103. The work was directed by Cricket Harbeck and Jessica Johnson and assisted by William Shelley, Eda Kaygusuz, and Pshtiwan Ahmed Ibrahim, our conservation intern from the Iraqi Institute for the Conservation of Antiquities and Heritage in Erbil, Iraq.

the enclosure wall of the Early Phrygian Terrace Buildings (the “Inter-mound Street” in fig. 3). Only a small section of it was unearthed, and the discovery would not appear in the scholarly literature until 21 years later, but it raised the possibility that at least part of the mound was divided during the Phrygian period. Young, in fact, believed that it indicated an attempt by the Phrygian rulers to separate the elite quarter from the surrounding areas.

By 1990, in DeVries’ summary of the Young excavation seasons conducted between 1969 and 1973, the paved area had been labeled as a street 5 m wide, although there was no further commentary on its path to the south and north, or on its chronology (see figs. 6 [top], 7).⁷⁵ In 1997, Voigt published her interpretation of the discovery, which was that the street cut through the entire citadel mound during the Phrygian period, thereby creating two distinct mounds at east and west.⁷⁶ In light of the possibility that the street constituted a significant component of Gordion’s urban plan during much of the first millennium B.C.E., we decided to make its exploration one of the first projects of the new excavations.

The paved areas that had been interpreted as a street had been discovered by chance during excavations to the west of the CC Building, which constituted the western part of the Early Phrygian Terrace Building Complex (see fig. 6, top). Only 8 m of this area were ultimately uncovered, directly to the west of building units CC-1 and 2, and so not far from the center of the citadel; but, if they were part of a street that continued through the entire mound, then its length from one end to the other would have been approximately 285 m.

The excavated area of the street appears to have varied in width between 4.80 and 5.80 m and was composed of cobblestones and clay that ranged in depth from 0.25 to 0.65 m. Its relationship to the eastern and western mounds that flanked it is unclear. This area lies at the base of the enclosure wall that supported the Middle Phrygian Terrace Building Complex, although the elevation of the Terrace Building platform during that period is not known (see fig. 7). What one can say is that the street lay 2.5 m below the level of the Early Phrygian Terrace Buildings, and 4–5 m of clay separated the Early and Middle Phrygian levels; consequently, it seems likely that the street lay approximately

7 m below the level of the Middle Phrygian Terrace Buildings on the eastern side.⁷⁷

Retaining walls as high as 7 m could have held back the enormous weight of the mound only if they were enormously strong, and their width appears to have extended to 3.5 m (see fig. 3). Even then, additional buttressing walls would undoubtedly have been necessary as time progressed, and several small walls that probably served as supports were uncovered during the excavation.⁷⁸ In an earthquake area like Gordion, however, such terrace walls eventually collapse, and tumbled stones were in fact found over the area interpreted as a street.⁷⁹ The associated fill contained Early Hellenistic pottery, so the earlier excavators of Gordion assumed that the mound was divided by the street through the Late Phrygian or Achaemenid period and then completely filled in at the beginning of the Hellenistic period.⁸⁰

The filling of the street created a relatively level surface across the entire area that can still be seen today (see fig. 2).⁸¹ Although this would have been a small-scale enterprise by comparison with some of the other public works projects at Gordion, it would still have involved the movement of nearly 14,000 m³ of earth if the street was as long as the earlier excavators believed. In any event, houses were gradually built across the entire mound during the course of the Hellenistic period, and, although only a small part of the Lower and Outer Towns has been excavated, there is no evidence for Hellenistic housing in those areas.⁸² The reasons why the Citadel Mound became the favored area for occupation during this period were no doubt varied, but one of them may have been the shifting course of the Sakarya in the Lower Town, which probably made habitation there more difficult. Another would have been the increased security that residence on the mound would have supplied, which is a phenomenon that occurred repeatedly at Troy as well.

In 2013, we decided to situate a trench at the southern end of the line that was believed to mark the street, labeling it as Area 1 (see fig. 2, bottom). This area lay to the southwest of the Mosaic Building, an imposing structure with polychromatic pebble mosaics that may

⁷⁵ DeVries 1990, 378, 381.

⁷⁶ Voigt et al. 1997, 5.

⁷⁷ Voigt 2013, 209.

⁷⁸ Young 1963, 122; 1969, 124.

⁷⁹ Young 1963, 122.

⁸⁰ Young 1963, 125; 1969, 114, 119.

⁸¹ DeVries 1990, 400–1.

⁸² Stewart 2010; Wells 2012.

have been intended for the region's Persian administrator (fig. 21).⁸³ The location of the trench had unfortunately been the dumping area for the excavations of Young and Voigt, which meant that up to 3 m of fill had to be removed before excavation could begin.

We cleared an area measuring slightly more than 1,800 m², and both magnetometry and electric resistivity highlighted the archaeological potential of the area. That there were monumental stone structures of rectangular shape in this area was clear from the remote sensing; similar structures had appeared in the magnetic prospection on the western edge of the Citadel Mound, so the structures in Area 1 were almost certainly connected to the citadel's defenses, and these structures appeared to end where the street was assumed to have been situated. Immediately to the north of these presumed defenses there were readings indicating an enormous anomaly about 40 x 15 m in size at a depth of approximately 4 m (the yellow rectangle in fig. 10).

We developed a three-year plan for exploring the area since there were so many points of uncertainty that we hoped the excavation would clarify. Our initial trench was placed in the area where we assumed the western side of the Citadel Street would have been located; such a zone would also provide us with an opportunity to explore the defensive installations on the southern side of the Citadel Mound, of which nothing was known. The initial 2013 trench measured 10 x 15 m; further expansion to the north and east in 2014 and 2015 brought it to 35 x 20 m, and the discoveries within it spanned from the Early Phrygian period (ninth century B.C.E.) to the Early Roman period (first century C.E.). This was an unusually difficult area in which to excavate since it lay on a slope and was filled with stone from top to bottom, much of which seemed to have been toppled there by an earthquake.

Over the course of these three seasons we were fortunate in uncovering previously unsuspected fortifications dating to three different periods: Early, Middle, and Late Phrygian. We also found evidence of robbing activity in the Late Phrygian and Early Roman periods (fig. 22). The primary Early Phrygian discovery was a substantial fortification wall situated on a high glacis, or stepped retaining wall (see figs. 22, top [no. 1, green]; 22, bottom; 23). Only the foundations remain, but the five surviving courses at the west are still preserved to a

height of 1.45 m. The wall was faced with large, rectangular white stone blocks on each side and packed with a core of smaller, mostly unworked limestones. The width of the wall at the west was 2.85 m, which suggests a considerable height, although it gradually narrows as it moves toward the east. The same width was used for the defensive perimeter wall around the eastern side of the citadel, and the newly discovered wall probably served the same function in the citadel's western sector.

The fortification wall rested on a stepped glacis constructed of the same well-cut limestone blocks with rubble packing behind them (see figs. 22, 23). We excavated to a depth of 2.45 m below the top of the glacis and uncovered 13 steps, but if the glacis continued to the walking level of the Lower Town, which seems virtually certain, then we should reconstruct another 3–4 m. In that case, the glacis and the wall it supported would have risen to a height of more than 9 m.⁸⁴

This is not the first example of a glacis at Gordion: Young uncovered one section of a stepped-stone glacis of eighth-century date in front of (east of) the main Citadel Gate (fig. 24), and another section of it to the southeast of the Mosaic Building, on the eastern side of the projected citadel street (see figs. 3, 7).⁸⁵ He was able to uncover only 20 steps of the gate's glacis before the high water level made additional excavation impossible, but he assumed an original height of 27 steps. That glacis had been faced with sections of light and dark colored stones, apparently from several different quarries, and possibly intended to highlight the extent of the area under Phrygian control. Such a coloristic juxtaposition would have been in harmony with earlier

⁸⁴ The tread of the glacis has an average measurement of 0.15–0.16 m, although it diminishes in size significantly in the highest section, just below the fortification wall; altogether, the bottom of the section of glacis we uncovered projects out 2 m from the wall above it. The risers of the Early Phrygian glacis vary in height from 0.17 to 0.32 m, with an average of 0.23 m. By comparison, the Middle Phrygian glacis at the eastern gate, which has a relatively standard tread, projects out 3.20 m over the course of 13 steps. The fortifications at Kerkenes involved a 5 m high glacis supporting a defensive wall 6–8 m high (Summers and Summers 2012, 168). For an overview of Gordion's Iron Age fortifications within the context of Anatolian defensive architecture, see Vergnaud 2012.

⁸⁵ The glacis in front of the main gate features horizontally undulating courses of stone, which is a building technique attested in Anatolia, Greece, and Egypt in antiquity. This construction technique has been interpreted as a precaution against seismic disturbance (Klinkott 2002).

⁸³ Burke 2012.



FIG. 21. The late sixth-century B.C.E. Mosaic Building on the Citadel Mound, looking northeast (courtesy Penn Museum, Gordion Project Archives, image no. G-674).

monumental construction in Tabal/North Syria, such as the orthostats at Arslantepe/Malatya and Carchemish, which comprised a series of reliefs alternating between limestone and basalt, light and dark.⁸⁶

The relative elevation of the new Early Phrygian glacis differs significantly from those uncovered by Young, as does its construction technique. The top step of the glacis is 8 m lower than the one at the Middle Phrygian Gate; moreover, there is no use of alternating sections of colored stone, and the steps are considerably narrower and less carefully finished. The closest parallels in terms of the size of the stones and the construction technique, in fact, are the walls of the Early Phrygian Citadel Gate, and the newly discovered glacis was very likely constructed at the same time, in the mid ninth century B.C.E.

This discovery is remarkable for several reasons, but chiefly because there was, until now, no evidence for the use of a glacis at Gordion during the Early Phrygian period, nor was there evidence that it had surrounded

the south side of the citadel. The glacis identification may also explain the large anomaly detected by magnetometry to the north of this area, which registered as a deposit of clay or mudbrick. When Young excavated the Middle Phrygian glacis in 1955, he discovered a similarly large bank of clay that supported the rubble packing of the glacis, and that is most likely what the magnetometry behind the Early Phrygian glacis revealed.⁸⁷

The discovery of a glacis here requires some additional comments. A stone glacis was used at Hattuša in the Late Bronze Age and at Kerkenes in the late seventh century B.C.E., but the stepped stone glacis format appears to have been very rare in the Near East during antiquity. The closest parallels occur in the Middle Phrygian citadel of Hacituğrul, near Gordion, the Middle Bronze Age settlement of Maydos Kilisetepe, across the Dardanelles from Troy, and the Iron Age Stepped Stone Structure in Jerusalem, which

⁸⁶Woolley 1952; Gilibert 2011, 33.

⁸⁷Young 1956, 253, pl. 83, fig. 11.

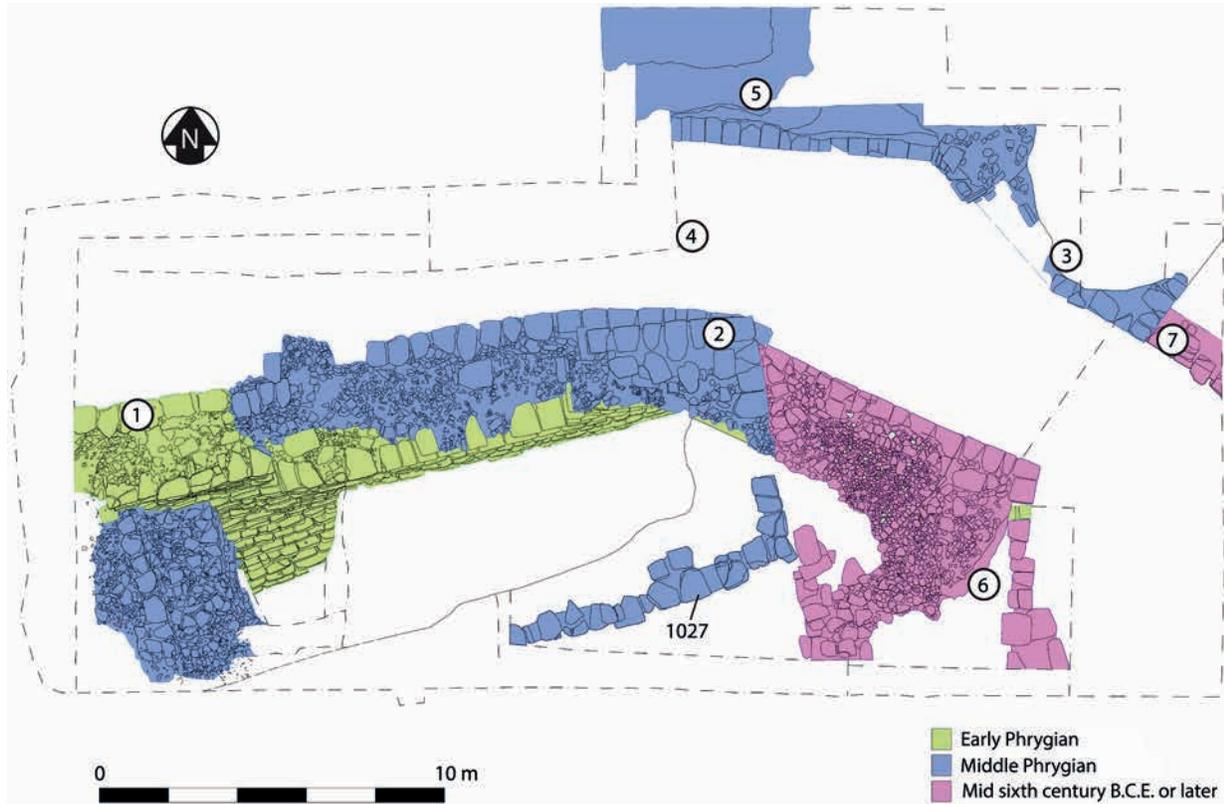


FIG. 22. Early, Middle, and Late Phrygian construction in Area 1: *top*, phase plan, showing the southern side of the Citadel Mound (1, Early Phrygian fortification wall and glacis; 2, 3, Middle Phrygian bastions; 4, street; 5, northern wall of the Middle Phrygian street; 6, 7, Late Phrygian bastions) (drawing by S. Leppard, S. Greenslade, and D. Bescoby; courtesy Penn Museum, Gordion Project Archives); *bottom*, aerial view of the southern side of the Citadel Mound, looking north (G. Bieg; courtesy Penn Museum, Gordion Project Archives).



FIG. 23. The Early Phrygian glacis, looking north (G. Pizzorno; courtesy Penn Museum, Gordion Project Archives, image no. 13-C1-0780).



FIG. 24. The Early Phrygian Citadel Gate (*top left*) and Middle Phrygian glacis (*bottom*), looking northwest (Giese and Huebner, Inc.; courtesy Penn Museum, Gordion Project Archives, image no. CRW_4287).

some have associated with the reigns of David and Solomon.⁸⁸

The decision to use a stone glacis in constructing the citadel of Middle Phrygian Gordion was a logical one in that a complex network of buildings was situated on an artificially created mound that was 4–5 m higher than its predecessor and 14–20 m wider. Substantial layers of artificial fill were added to the Early Phrygian citadel, so there would have been the need for the kind of lateral support that the stepped stone glacis would have provided. At the same time, of course, the stepped format could have provided an advantage to the enemy if the tread were too deep or the risers too low, and that was probably the reason why it was not more widely adopted.

The Early Phrygian fortification wall and glacis extended across the entire trench, although not in a straight line (see fig. 22).⁸⁹ The wall continues for 17 m from the western side of the trench toward the center; there is then a turn in the wall producing an obtuse angle of 140°, at which point the wall extends for at least another 9 m, northwest–southeast, and continues beyond the trench's eastern limit. The eastern course of this wall, after the turn, appears not to have been faced with a glacis; there is only a vertical wall. Moreover, the juncture of the glacis and vertical wall is a very awkward one: the courses of stone do not match, and several of the stones at the juncture are tilted at an angle, making it seem as if the two walls were conceived as distinct structures built by two separate teams of workers who were gradually moving toward this point. The oblique angle of the wall is also significant in that it matches the orientation of a street in the Lower Town, uncovered by magnetometry, that led directly toward this area from the fort of Küçük Höyük (see figs. 9, 10).

All the evidence suggests that we have uncovered the western side of a gate, which, in turn, was connected to

another street that led from the citadel into the Lower Town. The distinctive angled juncture of the gate and the glacis/fortification wall is rather reminiscent of the unusual trapezoidal plan of the main Early Phrygian Citadel Gate and the angled fortification walls that are attached to it, where there also seems to have been a lack of central planning among the teams of workers (see figs. 3; 6, top; 14).

The street must have changed into an inclined ramp as it approached the gate, but its original form cannot yet be ascertained since the part of the western wall that was uncovered lies under a Late Phrygian rebuilding. Young postulated a similar kind of entrance ramp arrangement in front of the main Citadel Gate on the mound's eastern side; if both gates were so configured, then any attacker ascending the ramp of either gate would have had his right, unprotected side (i.e., the non-shield-bearing side) exposed to the citadel's defenders, as at the Lion Gate in the Hittite capital of Hattuša.

There are no traces here of the ca. 800 B.C.E. conflagration that marked the end of the Early Phrygian period, nor would one expect them, but there is abundant evidence for an enlargement of the citadel's fortifications, both horizontally and vertically, at the beginning of the Middle Phrygian period in the early eighth century B.C.E. Against the face of the glacis the builders had constructed a roughly built limestone wall nearly 2.7 m in width that begins at the top of the glacis and probably extends to its base (see figs. 22, 23).⁹⁰ There were no finished faces, and the area to the east of it had been filled with rubble of the same type as that used to construct the wall; at first, in fact, it was difficult to see the distinction between the wall and the rubble fill.

Distributed within this rubble fill were a series of juniper logs, laid generally parallel to one another on a north–south orientation, of which eight were recovered.⁹¹ The length of the timbers varied from 0.40 to 0.87 m, with an average diameter of 0.25 m, and several of them had been burned. The same kind of rubble fill with timber binders had been found by Young set against the Early Phrygian Citadel Gate as fill for the Middle Phrygian glacis, which had also included

⁸⁸ Hattuša: Börker-Klähn 1994. Kerkenes: Summers and Summers 2013. Maydos: Sazcı 2013, 49, 61, fig. 9; 62, plan 3. Jerusalem: 1 Kings 11:27; 2 Sam. 5:9; Stager 1982; Uziel and Shai 2007; Faust 2010; Finkelstein 2011. In general, see Wright 1969. The stepped glacis at Hacituğrul, 22 km northeast of Gordion, is unpublished, but it is clearly visible in a photograph taken by Mellink and posted online by the Bryn Mawr College Visual Resources Center (Mellink 1973).

⁸⁹ The Early Phrygian fortification wall appears to narrow as it moves from west to east. The far western end measures 2.95 m; 4 m farther to the east it decreases to 2.7 m; and nearly 10 m farther to the east, as it approaches the gate, it seems to narrow to slightly more than 1.6 m.

⁹⁰ The original length of the wall was greater than 4.3 m, and the height greater than 2.45 m.

⁹¹ The timbers are F-130–36, 142, 149–51. I thank Sturt Manning of Cornell University, who oversaw their analysis at the Laboratory for Aegean and Near Eastern Dendrochronology.

roughly built stone walls alternating with rubble to ensure greater stability.⁹²

Bark remained on a few pieces of the timbers that we discovered within the rubble packing, while other samples were close to their terminal rings. The dendrochronological results yielded a use date in the late 10th or early ninth century B.C.E., thereby suggesting that timbers from an Early Phrygian building were reused in the Middle Phrygian glaciis packing. A similar reuse of Early Phrygian timbers occurred in the eighth-century Building A (see fig. 7), in the east part of the citadel across the central street from the current trench, and it fits with the Phrygian inclination to use as much earlier building material as possible in later construction.⁹³ Inclusions in the rubble fill were surprisingly rare—no small finds and only a few ceramics—which suggests that the builders were unusually careful in assembling the rubble packing, or that there were no buildings in the immediate vicinity from which accumulated trash could have come.

The newly discovered assemblage of rubble and timber surely functioned in the same way as the one at the Middle Phrygian Citadel Gate; this suggested to us that it served as the backing of a Middle Phrygian stepped stone glaciis, replacing its predecessor, and we eventually uncovered a likely candidate for it 5.5 m farther to the south. This was in the form of a wall, backed by the rubble fill, that was composed of three courses of stones, some of a reddish color, rising to a height of 1.60 m (see figs. 22, top [Wall 1027, blue]; 25). The blocks had degraded significantly, primarily owing to groundwater, and we could only investigate it in parts since the stones lay very close to the southern edge of the trench. Nevertheless, they appeared to form part of the face of a glaciis, replicating its Early Phrygian predecessor and complementing the Middle Phrygian glaciis found by Young on the eastern side of the street.⁹⁴

The Middle Phrygian glaciis wall, as I will call it, supported the southern side of a massive rectangular

bastion of Middle Phrygian date (see fig. 22, top [no. 2, blue]). The northern and southern sides are separated by 8–9 m and are not precisely parallel. The eastern side is defined by a line of carefully finished blocks, while the western side must lie outside the boundaries of the trench, which means that the structure was longer than 21 m. The walls are constructed of sandstone blocks in a variety of colors, including pinkish gray, golden yellow, pinkish red, and dark orange, along with gray and white; a similar juxtaposition of colors appeared in the bastions of the Middle Phrygian Citadel Gate. These are among the most sizable worked blocks to have been uncovered at Gordion, with the largest being 1.30 m long x 0.78 m wide x 0.63 m high; they are also analogous in dimension to the stones used for the Middle Phrygian Citadel Gate and the outer fortification walls.

The northern side of the Middle Phrygian bastion was built on approximately 2 m of clay and stone rubble that had been deposited directly above the Early Phrygian wall, even though there were no signs that the Early Phrygian fortifications here had been damaged in the fire of 800 B.C.E. The carefully finished blocks on the bastion's eastern side clearly signal its terminal point, which is approximately 2 m to the east of the sharp angle in the Early Phrygian glaciis, and they also probably mark the western side of a street leading into the citadel. A complementary bastion, also 8 m thick, was discovered on the eastern side of this street (see fig. 22, top [no. 3, blue]). This bastion lies parallel to the Middle Phrygian glaciis discovered farther to the northeast in the 1950s (see fig. 7, south of Building A), and we hope to link the two areas by excavation.

These two bastions would have created a fan-shaped entrance to the street, which has a width of nearly 5 m and moves toward the west (see fig. 22, top [no. 4]), behind the western bastion. Whether the road subsequently turns north into the citadel is still uncertain, but a northern extension of the trench should provide the answer. It is striking that the bastions would have been as thick as 8 m, but they were intended to guard one of the major entrances to the citadel, and it is worth noting that their width is comparable to that of the bastions in the Middle Phrygian Citadel Gate, which would have been a contemporary construction of the early eighth century B.C.E. (see figs. 3, 7).

We discovered a series of large, well-cut ashlar blocks that must have tumbled from the western bastion's superstructure. Some of these had a length of 0.95–1.25 m, a height of approximately 0.50 m, and

⁹² The same kind of timber-laced rubble construction was used at Phrygian Kerkenes (Summers and Summers 2012, 169).

⁹³ The juniper logs used in the foundation of Building A, which was probably constructed in the early eighth century, provided a terminus post quem of 993 B.C.E. (Sams and Burke 2008, 332–33).

⁹⁴ We should also, by the same token, assume that an Early Phrygian glaciis still lies undetected beneath the Middle Phrygian glaciis at the main citadel gate.



FIG. 25. View of the Middle and Late Phrygian bastions in Area 1, looking west. The collapsed mudbrick wall is visible in the center of the photograph (G. Bieg; courtesy Penn Museum, Gordion Project Archives, image no. 2015_3785).

a depth of 0.70–0.80 m, and all were fashioned from strikingly colored stone, ranging from pink, purple, and red to yellow, green, dark gray, and white. Similarly colored stones are still in situ in the foundations of the Middle Phrygian bastion, and they are the same size and color as those that make up the walls of the Middle Phrygian Citadel Gate. In both cases, the polychromatic fortifications would have been easily visible from the major streets leading to the citadel gates, thereby endowing the reconstructed settlement with a level of splendor even more impressive than that of its Early Phrygian predecessor.

The northern side of the street was also discovered (see figs. 22, top [no. 5, blue]; 25, 26). It is formed by a line of carefully cut ashlar blocks, the upper section of which had collapsed in front of it. Excavation revealed nearly 8 m of this wall, and here, too, judging by the collapsed blocks, we are dealing with a polychromatic appearance, with at least 15% of the stones featuring a bright red color. The red stones must have been transported from the quarry in a very rough form and finished on-site, with the trimmed waste used as rubble packing behind the wall, as one can see in figure 26. This wall must have held back the enormous weight of the citadel, which means that it would originally have

risen more than 3 m higher, and it is not surprising that it ultimately collapsed.

The fortifications were not strong enough to prevent a successful Persian attack in the 540s. That this attack was a severe one is clear from the complete destruction of Küçük Höyük, which was taken by means of a siege mound and a volley of arrows, judging by the massive numbers of Persian arrowheads discovered in the fills around it. Traces of Persian destruction on the Citadel Mound have been difficult to discern, but that has now changed with our discovery of an enormous mudbrick collapse (see fig. 25, center) that clearly constituted the upper walls of the Middle Phrygian western bastion. They must have collapsed during the Persian attack.

Immediately thereafter (Late Phrygian period, ca. 540–400 B.C.E.), a new bastion (see fig. 22, top [no. 6, pink]) was added next to the western Middle Phrygian bastion, which went out of use. We have uncovered only a part of it, but it looks as if it, too, may have been 8 m thick, and it would have further narrowed the entrance to the street. Within the foundations of this Late Phrygian bastion we discovered a large number of painted architectural terracottas, all of which can be dated to the first half of the sixth century. These are all of well-known types, primarily lateral simas



FIG. 26. The Middle Phrygian wall bordering the north side of the street in Area 1, looking north. This is no. 5 on the color phase plan in fig. 22 (G. Bieg; courtesy Penn Museum, Gordion Project Archives, image no. 2015_5925).

and pendant frieze plaques that have been decorated with painted tongue patterns, lotuses, lions and bulls, checkerboards, and lozenges.⁹⁵ The types appear to have been produced through the mid sixth century and have been found primarily in the fort of Küçük Höyük and around Building A, the Middle Phrygian administrative structure that lies to the northeast of this area (see fig. 7).

Other small finds associated with this wall include a black-figure amphora featuring a male in ornamented dress, possibly Dionysus, standing next to a horse-drawn chariot, and a painted window frame of terracotta that is divided into several square registers (fig. 27).⁹⁶ The amphora fragments probably belong to the Leagros Group and date to ca. 530 B.C.E., but the window frame, which is painted on two opposite sides, is

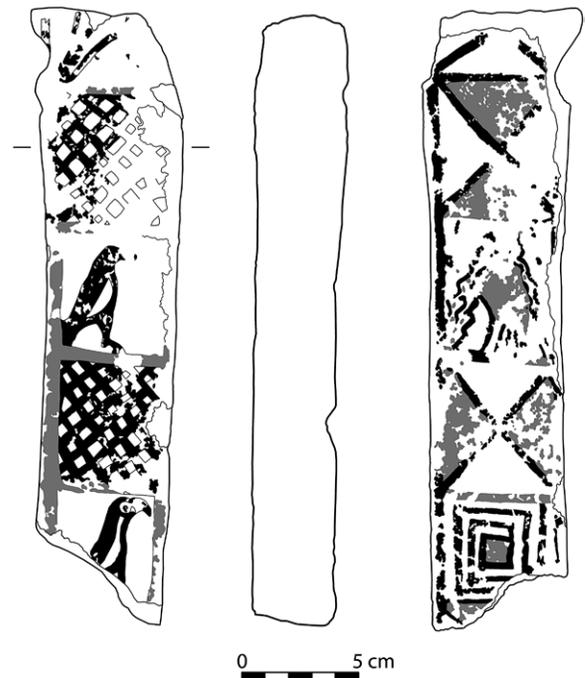


FIG. 27. The painted terracotta window frame from the Late Phrygian fortifications on the southern side of the Citadel Mound (drawings by E. Miller and A. Anderson; courtesy Penn Museum, Gordion Project Archives).

⁹⁵ F-181, 258, 285, 380–82, 468, 469, 471. For an analysis of the types, see Glendinning 2005.

⁹⁶ The amphora fragments (F-369 and F-416) and window frame (F-433) were discovered in a robbing trench that cut through fills associated with the Late Phrygian walls. There was also a stone (F-302) inscribed with the Greek letters “EKATO.”

a much more unusual discovery.⁹⁷ One side features a bush or tree along with two registers of opposing triangles and one of concentric squares; the other has two registers of silhouetted birds alternating with two others with cross-hatching. The only known parallel comes from an elaborately decorated building at the Phrygian site of Pazarlı, 60 km north of Hattuşa, which probably also dates to the first half of the sixth century.⁹⁸ Among the many painted architectural terracottas from that building are painted shafts that have been restored as a framework for windows, and these, too, feature square registers decorated with triangles, birds, and flowers. Whether the window identification is correct or not, all the architectural terracottas we uncovered cluster around the middle of the sixth century or shortly thereafter and suggest a construction date in the third quarter of that century, after the Persian sack of the settlement.

The repair of the fortification wall and construction of a new bastion were essential to the citadel's defenses, now more than ever. The outer forts and associated fortification walls were rendered useless after the attack in the 540s; the Persian siege mound continued to stand next to the ruined fort of Küçük Höyük, which meant that the citadel's fortification walls would have been the only functioning line of defense. That the settlement was able to fend off a Spartan attack under Agésilaios at the beginning of the fourth century suggests that the defensive walls were still sufficiently strong and therefore must have been rebuilt and maintained after the Persian sack.⁹⁹

The date at which the building collapsed is difficult to pinpoint, especially owing to the recovery of so few retrievable small finds and the presence of several late robbing pits. Within one of the pits over the building collapse, however, were fragments of an Attic black-glazed pelike dating to the early fourth century B.C.E.¹⁰⁰ One cannot place too much weight on

a single pelike, but its date of manufacture coincides with the proposed time of an earthquake at Gordion, and given the substantial size of the structure based on its associated blocks, it would probably have taken an earthquake to bring it down.

That an earthquake occurred in the fifth or fourth century B.C.E. at Gordion has long been posited, although the precise date has been difficult to fix. Young thought that the earthquake dated to the mid fifth century, and DeVries proposed a date of ca. 400.¹⁰¹ Based on our excavations, it looks as if the latter date is more likely, and the robbing probably began immediately thereafter.¹⁰² Since the fourth century was not a period of extensive rebuilding on the citadel, some of the robbing trenches may have been dug to procure stones for repair of or changes to the fortifications, although there is no certain evidence for that. Part of the main Citadel Gate on the eastern side of the mound continued to stand, but the newly excavated bastion and adjacent gate on the south side appear to have been leveled, and the city would therefore have been defenseless against any approaching army.

Robbing probably continued sporadically at different points in the Hellenistic period, judging by the associated ceramics, but the next major rise in spoliation did not begin until the Early Roman empire, when an unusually large robbing trench was dug over the old fortifications, measuring at least 10 x 9 m with a depth of nearly 2 m. Within this trench was a bronze coin with illegible obverse and reverse, but the diameter and weight point to a date in the second half of the first century C.E., and the ceramics in related deposits date to the same period.¹⁰³ This was a time of significant political and military reorganization in Galatia as well as renewed building activity at Gordion, including a paved street, colonnades, and a building with a peristyle court, most of which were built with spoliated stones from earlier structures.¹⁰⁴ From what we can tell, most of that construction occurred on the western side of the citadel, and since the defensive system had been abandoned nearly 500 years earlier, the glacis area

⁹⁷ For this information I thank Kathleen Lynch, who will be publishing the Greek pottery from Gordion.

⁹⁸ Koşay 1941, pls. 33, 40. I owe this observation to Sam Holzman.

⁹⁹ *Hell. Oxy.* 1.4, 21.6. A host of arrowheads were found by Young just outside the main citadel gate, and these probably stem from the Spartan attack (Young 1955, 11). An arrowhead (F-253) and slingstone (F-302) were found in fill around the Middle Phrygian bastion, but whether they date to the Persian or Spartan attack cannot be determined.

¹⁰⁰ F-127 from Area 1, deposit 127.

¹⁰¹ Young 1955, 6; 1962, 154; DeVries 1990, 400.

¹⁰² Robbing trenches were found in Area 1, deposits 1015, 1020, 1022, 1024–27, 1029, 1043, 1051–53, 1029. Context 1020 represents the hill wash over the collapsed blocks, and 1022 the earliest robbing activities.

¹⁰³ Coin: F-105 from Area 1, deposit 120. Roman rim sherd of Flavian date: Area 1, deposit 110, F-71; context 1003.

¹⁰⁴ Goldman 2005.

would have been a logical site for the supply of building material.

Area 4: The Center of the Citadel Mound

As I mention above, the existence of a road extending from a southern gate and cutting through the center of the citadel has long been assumed, but there is actually very little evidence to support it. If it did exist, what lay adjacent to it on the western side of the citadel during the Early and Middle Phrygian periods? These were the questions we hoped to answer with a trench situated in the center of the mound (Area 4), immediately to the west of the Terrace Building Complex that was uncovered by Young in the 1950s (see fig. 2, center circle). This area is also not an easy one in which to excavate: since Early Phrygian levels lie approximately 8 m below the surface, the trench had to be large enough so that a team could remove a large amount of earth at such a great depth.

We began a 20 x 10 m trench in 2015; however, given the large size of the trench, we were only able to reach Hellenistic levels, and the completion of work here will probably require three more seasons. The earliest level uncovered dates to ca. 50–100 C.E. and contained a circular oven 1.40 m in diameter that yielded numerous fragments of burned ram horns; four more ram horn fragments were found in an ashy pit in front of it, and a marble statuette of Asklepios discovered at a higher level probably dates to the same period.¹⁰⁵

The most important material, however, dates to the Medieval period, about which relatively little is known at Gordion.¹⁰⁶ Five occupation phases of this period were encountered, spanning the 13th and the early 14th century C.E. The main activity here was storage, with 48 pits in total spread across an open area. The interiors of many of the pits were covered with a lime plaster and repeatedly replastered. Pig bones were found in up to a dozen contexts, suggesting that this was a Christian settlement operating during the Selçuk period.

A few of the pits were bell-shaped and likely used for grains, the largest having a capacity of up to 350 kg. We uncovered evidence here for the early diffusion of

rice, and there were also fish bones indicative of long-distance trade. 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.¹⁰⁷ Several of the associated ceramics were of high quality, including a perfume flask and pottery with sgraffito and champlévé decoration.¹⁰⁸ Two fragmentary ovens of Selçuk date were also unearched, although they were clearly not as substantial as the many medieval ovens discovered east of our trench during the Young excavations. It is noteworthy that the extensive food-production facilities that characterized this area during the Early and Middle Phrygian periods appear to have continued during the Selçuk period, even though the latter settlement was considerably smaller. The long hiatus in habitation is equally striking, in that there was no discernible habitation in this area between ca. 100 C.E. and the 13th century C.E., a period of nearly 1,100 years.

TUMULI

There is often a tendency to regard tumuli as the most characteristic components of the Anatolian landscape, which is true, but in the ninth century B.C.E. they existed only at Gordion.¹⁰⁹ The first of the monumental burial mounds, Tumulus W, was constructed ca. 850 B.C.E., and eventually more than 120 tumuli surrounded the settlement (see fig. 4). The source of this tradition is unclear: burial mounds were used during the Bronze Age in southeastern Europe, which was the homeland of the Phrygians, although their migration had occurred in the later 12th century, and the earliest of Gordion's excavated tumuli did not appear before the mid ninth century.¹¹⁰ It is conceivable that the Phrygians of the ninth century were consciously attempting to echo the distinctive landscape of their Thracian ancestors as their kingdom began to encompass a broader area of Asia Minor, both east and west of

¹⁰⁵ The Asklepios statuette (F-571) was found in Area 4, context SU4014. The horn fragments are in SU4108 and 4145.

¹⁰⁶ For earlier excavations in the medieval levels of Gordion, see Sams and Voigt 1999, 565; 2004, 198; Sams and Goldman 2006, 44–5; Sams et al. 2007, 374, 376. I thank Mac Marston and Lucas Proctor for their analysis of the botanical material, and Canan Çakırlar and Janine van Noorden for their analysis of the faunal material.

¹⁰⁷ F-759, with traces of camel dung from context SU4060 (Area 4), and F-785, bulk bone from context SU4066, which contains camel bones and their teeth.

¹⁰⁸ Perfume flask (base fragment): F-508 from context SU4000 (Area 4). Selçuk sgraffito and champlévé sherds: Q2, pit FP2 (fill SU4060).

¹⁰⁹ The Lydians adopted this tradition only in the middle of the sixth century B.C.E. (Roosevelt 2009, 99–100).

¹¹⁰ Sams 1988; Vassileva 2005; Ratté 2011, 54. For the latest chronology of Gordion's tumuli, see Sams and Voigt 2011, 166, fig. 7.10. The new tumulus chronology chart was compiled by Gareth Darbyshire.

Gordion, although we can do no more than speculate.¹¹¹ In any event, the rulers of Gordion chose to surround their settlement with a fabricated landscape different from that of any other state in Anatolia, at least initially. The royal tumuli that constituted the components of this landscape of power would have highlighted both the wealth of the increasingly influential kingdom and the size of the labor force at their disposal.¹¹²

Gordion's tumuli were designated as primary areas for remote sensing because of the increase in tomb robbing during the last few years.¹¹³ There have typically been fewer attempts at looting in Phrygia than in Lydia, Lycia, or the Troad, since Phrygian tomb chambers are wooden rather than stone, and therefore much more likely to collapse, and since there are no doors or dromoi for entry.¹¹⁴ There has recently been a change in this pattern, however, in that the accelerated construction of new roads with heavy earth-moving equipment throughout Turkey has coincided with a rise in looting. Moreover, many of the tumuli lie in the center of cultivated fields, and the continuous plowing over and around them has endangered the wooden tomb chambers they contained. To safeguard the tumuli, we need to be able to demonstrate to the authorities that the tomb chambers that are most threatened by the plowing are still intact and have not been robbed.

We discovered that both magnetometry and resistivity worked well on the tumuli: not only were we able to determine the location of the tomb chamber, but in several cases we could also determine whether they had been robbed since the looters' tunnels registered along with the chambers. Between 2008 and 2013, our two geophysical teams surveyed 24 tumuli with remote sensing, and in many cases the tomb chambers were found to be still intact. The largest tumulus that

we surveyed, the Beyçeğiz Tumulus lying 11 km to the east of Gordion, has a preserved height of 17 m and is therefore the fourth-largest tumulus in this area, just after Tumulus MM at 53 m, the Kiranharmanı Tumulus at 24 m, and Tumulus W, the oldest one known at Gordion, at 22 m high. Beyçeğiz was targeted several times during the last three years by looters, who dug a tunnel nearly 36 m long into the tumulus; they fortunately failed to reach the chamber, which is now the focus of a rescue excavation by the Museum of Anatolian Civilizations in Ankara.

Another tumulus near Dümrek, nearly 25 km to the north of Gordion, was attacked by looters with a bulldozer in 2012, and although the upper section of a well-preserved corbeled limestone roof was damaged, the majority of the tomb chamber escaped destruction. Subsequent rescue excavations by Vahap Kaya of the Museum of Anatolian Civilizations in Ankara in 2012 yielded a two-chambered stone tomb of Late Hellenistic date, almost certainly built by one of the Galatian elite. Very few well-preserved Hellenistic stone tomb chambers have been discovered in this area, so the excavation was an important one, and we are all thankful to the Museum of Anatolian Civilizations in Ankara for acting so quickly to protect it.

Within one of the tumuli, located 1 km east of the Citadel Mound and immediately south of the Gordion Museum, we detected the radial stone walls that were often used at Gordion during the construction of the earthen mantle over the chamber. Another tumulus (SR-1) on the Southeast Ridge, 1.5 km to the southeast of the Citadel Mound, was still unlooted, and we can posit a likely date of construction in the eighth century B.C.E., even though it has not been excavated, owing to the formal dialogue that seems to have existed between the entrance to Gordion's citadel and the tumuli in the surrounding landscape. The Early Phrygian Citadel Gate had apparently been turned during construction so that it was oriented toward Tumulus W (ca. 850 B.C.E.). When the Middle Phrygian Gate was constructed above its Early Phrygian predecessor after the conflagration of 800 B.C.E., it was turned even farther to the southeast, so that it was aligned with SR-1. An eighth-century date of construction therefore seems likely, and the decedent was almost certainly a member of Gordion's royal family.¹¹⁵

¹¹¹ It is noteworthy that Bronze Age tumuli in Thrace were re-used during the Classical period for tombs of Thracian rulers in an apparent attempt to augment their status and legitimize their authority (Agre 2016). For the Phrygians' arrival at Gordion, see Voigt and Henrickson 2000.

¹¹² For a similar approach, see Uziel 2010. For Tumulus MM, the largest of Gordion's tumuli, see McGovern et al. 1999; McGovern 2000; Simpson 2010, 2012; Liebhart 2012.

¹¹³ Kohler 1980, 1995; Young et al. 1981; Miller 2012, 244–53; Liebhart et al. 2016.

¹¹⁴ Phrygian tomb chambers were not made of stone until the Hellenistic period, when tumuli were used again by the Galatians (Young 1956, 250–52). Between the late sixth century B.C.E. (ca. 530) and the early first century B.C.E., no monumental tumuli in the vicinity of Gordion appear to have been constructed.

¹¹⁵ Another tumulus in the same area (S-1) can be confidently dated to the eighth century. The gender of the deceased in SR-1 is, of course, an open question, but most of the tumuli,

The preservation of these tumuli is inextricably connected to the local communities, who are in a position to monitor and maintain archaeological sites once fieldwork there is completed. It has become increasingly clear that lessons on the fragility of cultural property need to be taught to primary and secondary school students if site protection is to become part of their perspective on the landscapes that surround them.

A new program tied to these goals and funded by the Penn Museum was recently launched by the Gordion Project's assistant director, Ayşe Gürsan-Salzmann, in tandem with Halil Demirdelen, the deputy director of Ankara's Museum of Anatolian Civilizations. The program lasted for much of the 2014 and 2015 seasons, with several students from the villages around Gordion participating in workshops at the Gordion site and museum, at the nearby archaeological sites of Midas City and Dümrek, and within the Ankara museum. Reports were given by the students at the end of the program, followed by feedback from the local villages regarding the program's structure. Teaching respect for cultural property to younger generations has now become a part of every archaeologist's activities, and, given the success of this season's pilot project, we will certainly continue it in subsequent years.

CONCLUDING REMARKS

Since fieldwork at Gordion has been ongoing for more than six decades, it may seem surprising that so much excavation and conservation remain to be done, but the ancient settlement encompassed more than 100 ha, and the majority of the monumental burial mounds that surrounded it remain to be explored. It is noteworthy that the tumulus of Midas has never been identified, nor have the residences of the Phrygian rulers. As the project looks toward the next decade, there are several key initiatives that figure prominently in our agenda.

The first involves Gordion's city plan, wherein we hope to determine the ancient road system as a way of understanding the physical links among the administrative, industrial, and residential districts. This involves extensive use of remote sensing coupled with selective excavation, which has also allowed us to chart the development of the settlement's fortification sys-

tem between the ninth and fourth centuries B.C.E., both on the citadel and in the Lower and Outer Towns. The fortifications around the citadel were considerably larger, stronger, and more complex than we expected, although the Lower and Outer Town residential districts appear to have been fortified only during the Middle Phrygian period.

All this exploration occurs in tandem with architectural conservation, especially in the areas of the citadel excavated by Young, which have assumed an even greater importance in the wake of Gordion's new chronology, in that each of them is a century earlier than we initially believed. The full extent of the new chronology has still not been processed, but it is clear that we need to look at Gordion in a completely new way, and the same holds true for the cities and states with which the Phrygians interacted.

Conveying that information to the full range of visitors to the site, and especially the local community, has been one of our most pressing priorities during the last three years. To that end, new bilingual information signs have been installed throughout the Citadel Mound so that visitors will have access to the full history of Gordion's settlements. More than 100 m of new stone staircases have been installed along the visitors' circuit, and approximately half of the old barbed-wire fence that encircled the site has been replaced by nearly 400 m of new galvanized steel fence, thereby making the site look more like an exhibit than a restricted area. We should be able to complete the most important components of our strategic plan over the course of the next 10 years, but the true measure of success will be the extent to which we have brought the local community into the project as stakeholders in Gordion's maintenance and preservation.

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whether holding cremations or inhumations, were male burials. For the tombs of females at Gordion, see Kohler 1980, 66 (Tumulus F, 625/620 B.C.E.), 68 (Tumulus A, ca. 525 B.C.E.); 1995, 12, 187, 233 (Tumuli B and C).

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