ARCHAEOLOGICAL EXPLORATION OF SARDIS

NEWSLETTER FROM SARDIS, 2022 December, 2022

Dear Friends and Supporters,

For many coming to Sardis this season, the first stop was the Synagogue to see the new protective roof, built last fall after most of the team had left, thanks to a generous gift from Patrick Healy. I was particularly eager to hear the reactions of the architects and conservators who designed the roof: Troy Thompson (SmithGroup LLC), Nathaniel Schlundt (Building Conservation Associates), Michael Morris, and Hiroko Kariya (both conservators in private practice). Even after years of discussion and modeling, one can't predict the final result of a structure like this. How will it fit the space, how will the light look at different times of day, how will the roof affect views to the outside, what will the building feel like within? Maybe we would wish we had built it a bit differently, lower or higher or with different materials. So I felt real trepidation going down to the Synagogue with them for the first time in June, but am glad to report that the roof is an unqualified success. Aside from its basic purpose of protecting the building from further damage, there are many less obvious benefits. The shade is very welcome and the building is delightfully cool, making the Synagogue a refuge during the heat of the day. We worried that the tenting fabric of the roof might be too opaque and leave the building in the dark, but the light inside the building is even and clean, bringing out the colors of the mosaics and marble revetments. Voices and footsteps slightly reverberate and echo, so you sense that you are in enclosed space, an ancient building rather than a ruin. The views to the Marble Court and to the landscape around are still open, and the roof pleasantly focuses your attention on the view outside, while the warm tones of the marble and mosaics within the building contrast with the cool blue sky and clouds beyond. The brilliant, relentless sun used to wash out the colors of the mosaics; now, cleaned of half a century of biofilm and shaded by the roof, their natural hues and shades stand out as I have never seen them before.

However, cleaning and soft light also bring out the repairs from the 1960s as never before. When the mosaics were excavated from 1963–1965, many areas were missing: large gaps broke up the floor, and even well-preserved areas had many smaller holes. When the mosaics were lifted and re-set on a new concrete bedding, those gaps were filled with terrazzo and cement in a variety of colors and textures, gray, white, or "bubble gum" pink. In the years since, we have undertaken further repairs, using still other colors and textures of mortar and cement. These repairs were not so obvious until the roof was built; now they are all too eye-catching, breaking up the ancient patterns and distracting from our understanding of the complex, carpet-like designs.

Fig. 1. Troy Thompson and Nate Schlundt check out the roof over the Synagogue early in the season.

Fig. 2. For their roof design, Troy and Nate accept the ultimate award at Sardis—a hand-drawn watercolor by draftscreature Cathy Alexander—during a seminar on the Synagogue roof and mosaic restoration.

Fig. 3. At that same seminar, Michael and Hiroko explain the new project to restore the mosaics of the building.

Michael Morris, Hiroko Kariya, and the rest of the conservation team have been looking into how we might fix this. After long discussion, they came up with a plan to remove these modern cement patches, and replace them with new mosaic in the ancient patterns. Immediately, a host of questions arose. How far should we go? More than half the ancient mosaics are missing, so we don't want to fill the largest gaps and overwhelm the original mosaics; but careful repairs to even small areas could make a big difference. Where can we get stones of the right colors? Hiroko and Michael started with a bay with only black and white, and found a good source of white in the ancient limestone quarries in Bin Tepe; a few loose rocks collected in the back of the Land Rover makes thousands of small tesserae. The black stone, though, had to come from Antalya, and they are still searching for sources of the delicate blues, pinks, and other colors for the more colorful bays. Ancient mosaicists faced these questions as well, and probably traveled from city to city carrying many of their own supplies, heavy donkey-loads of stone. In the 1960s and 70s, some panels were accidentally reset slightly askew. These misalignments are invisible until you try to fill in the gaps and join the patterns: how to solve this without lifting and moving the panels?

Michael and Hiroko trained a small team of local women and men in the ancient art of laying mosaic, and to work through these specific problems of color, shape, and design. Sevinç Akça in particular has a marvelous eye for pattern, and is able to solve many of these perplexing problems of merging panels and distributing errors. It's slow work, but we have time and want to do it

Fig. 4. Hiroko Kariya checks in on Sevinç Akça and Emine Altan as they restore the mosaics in the Synagogue; in the background, Teslime Erdoğan cuts new tesserae for the restoration.

Fig. 5. Reporters from Turkish Radio and Television interviewed Sevinç, Emine, and Teslime for a live broadcast on the restoration of the Synagogue.

Fig. 6. Kiernan (top) and Jen (bottom) testing the new technique for cleaning the wall painting in Field 55. The square blobs are the poultice to soften the crust over the fresco, applied in areas only a hand's breadth wide, so this is a slow and careful process.

Fig. 7. Frescoes, before and after: above, the red and yellow streaks of the faux marble fresco are revealed by careful removal of the thick gray layer of carbonate accretion.

right. So now visitors to the Synagogue get a double treat of respite from the heat and the fascination of watching the team at work. The team continued working through the fall, finishing at the end of October. This beginning has been a success; we'll continue, we hope, for many years.

The luxurious Roman houses of Field 55 are the site of another conservation project. Back in 2014 we excavated a well-preserved Late Roman room with painted walls and a tiled floor, and a rich assemblage of artifacts left when the room collapsed in an earthquake. Cleaning and consolidating the frescoes on three of the room's walls took the conservators most of that summer. The fourth wall, however, stubbornly resisted every attempt, the paintings covered by a thick, rock-hard crust of carbonate accretion. The conservators analyzed the layer with SEM-EDX, RAMAN and FTIR, and other high-tech acronyms, but we never came up with a way of removing the crust without damaging the painting beneath. This summer, however, conservator Kiernan Graves (Site & Studio Conservation, LLC), a specialist in the conservation of ancient painting, gave it one more try, and developed a method of poulticing the wall painting in small areas to soften the crust, so it can be carefully teased off with a scalpel. She and conservators Jennifer Kim (private practice) and İzel Güngör (Istanbul University) trained another small team of women in this technique, and they have made gratifying progress. It is magical to see the brilliant colors emerge slowly slowly from behind the blank gray wall, and this has been really satisfying for everyone on the team.

Fig. 8. Kiernan, İzel, Ameya, and Süheyla at the training seminar for the team cleaning and restoring the frescoes.

Fig. 9. With training by Kiernan and the other conservators, by the end of the season Hatice Serin and Ebru Yavuz had cleaned the upper part of the wall. The lower half will have to wait until 2023, but it reveals an unsuspected pattern, interestingly different from the other walls of this room.

Fig. 10. Excavation in Field 55. Frances (sitting, upper left) and Liam (in black) direct and record excavation of the marble-paved courtyard, with the last remains of the earthquake debris still in situ, while architect Micah Tichenor (bottom) draws the new discoveries, and conservators Ameya (left) and Brian (upper right) undertake minor repairs to the broken pavement blocks.

In that same sector, Frances Gallart Marqués (Harvard and Cornell Universities) and Liam Devlin (Harvard University) continued to excavate the large courtyard where Frances dug last summer. Liam's goal was to excavate new ground to find the northern edge of the court; Frances continued in the complex area she dug last year. As so often, there is a huge discrepancy between their modes of attack. Liam, starting from the surface, had a meter or more of pretty sterile earth to remove with picks and shovels to uncover the walls and stratified deposits below; Frances, meanwhile, worked delicately in small probes to answer specific questions in the same room.

Liam uncovered the north wall of the courtyard, defining a grand open space about 13 × 14 meters, with further rooms to the north that he's leaving undug for the moment. He had the advantage of working in Frances's footsteps. Excavating in this space last year, Frances found that the devastating earthquake that leveled the house—and the rest of the city—in the early seventh century had left columns and other fallen debris lying in the center of the courtyard. But sometime later, people returned to salvage marble blocks from the room, especially along the west, digging through the collapsed remains of the portico to reach the floor below; so those areas are bare of collapse and of pavement blocks. In the process, these Byzantine Sardians lost interesting artifacts for Frances to discover, like the two "uterus amulets" reported on in your last newsletter. Forewarned that his excavation area might also have been disturbed by later marble-seekers, Liam was able to distinguish earthquake debris from later disturbance, and so was not surprised to find the pavement and furnishings of the court here almost entirely robbed out. It seems that some feature like a tank or basin stood here in the northern part of the court, of which only the drain remains, but it's hard to know what was going on in this part of the courtyard when so little survives.

Meanwhile, Frances removed some of the fallen masonry lying on the courtyard pavement to try to learn more about its original form, while leaving the columns and a few other elements in place as a reminder of the destruction of the house; once lifted, they can't be put back. This showed, just as she had predicted, that some of the pavement of the courtyard had already been removed in antiquity—the columns had fallen onto gaps in the pavement which therefore must have been there before the earthquake. This reinforces the idea that the house was abandoned, and was perhaps being renovated at the moment of the earthquake. But it wasn't a complete wreck since the portico was standing and roofed; fragments of the painted ceiling even survive in one spot where the collapse was undisturbed.

Along the west side of the courtyard Frances dug into deeper levels and

Fig. 11. At the foot of the courtyard wall Paul Tamburro (Harvard University) carefully excavates a small area of undisturbed collapse, which preserves frescoes that had gradually slumped from the ceiling and wall after the earthquake. Elsewhere this collapse layer had been dug through to recover the marble pavement. Paul had to painstakingly record the fragments, then face them with Japanese tissue and lift them in sections.

uncovered the earthquake fault, now traced from one side of the court to the other, splitting walls, shifting and twisting the marble floor, breaking and offsetting a pair of water pipes, and cleaving the ground beneath to unknown depths. Elsewhere we found such faults to go more than 8 meters deep, and these are just the small, surface ruptures.

This earthquake fault has been of great interest to archaeoseismologist Ökmen Sümer and geophysicist Mahmut Drahor (both Dokuz Eylül University, Izmir), who came to Sardis in May before the main team arrived. With Buğra Oğuz Kaya and Mustafa Yağlıdere (also Dokuz Eylül University) they undertook surveys to map the major fault that ran through the city center, continuing work begun last year. They have been able to trace the main fault, running at least 50 meters deep, across Field 55 and then east in front of the theater (whose parodos wall is split, perhaps in that earthquake). We are beginning to appreciate in more detail how this fault shaped the landscape of Sardis over time, not just occasionally demolishing the city but, in geologic time, creating the high terraces which later became the Lydian palace, and the cliffs of the Acropolis itself.

Last summer on Field 49, the high terrace above Field 55, Will Bruce (University of Kansas) dug past the official end of the season to finish excavating an important destruction level in the Lydian palace. This was the remains of the battle between Cyrus and Croesus in 547 BC, one of the turning points in the history of Sardis (and of the western world), when, just as the Delphic oracle had predicted, Croesus' rash attack destroyed a great empire—his own. At the foot of a Lydian wall built of beautiful limestone blocks was a scatter of burned and fragmentary human bones, a couple dozen arrowheads, and other indications of battle and fiery destruction. And among bits of arm and hand bones, Will found a hoard of nine silver Lydian coins. These are among the earliest silver coins in the world, and in this closely datable, historic destruction level in the Palace of Croesus, together with bits of their owner, they have one of the best proveniences of any hoard of ancient coins. But they were covered with a thick layer of corrosion products, sometimes harder than the metal beneath, completely obscuring the devices on the coins. So one of the conservation team's challenges this summer was to clean them. Some of the coins weigh only 1/3 of a gram and are smaller than your little fingernail, so the problem resembles, on an almost microscopic scale, the problem facing Kiernan Graves and her wall painting team. Conservators Jen Kim, Brian Castriota (private practice), Emily Frank, Ameya Grant (both New York University), Süheyla Şimşek (Ankara University), and İzel Güngör used soft implements and gentle chemicals, taking infinite care to soften the corrosion and tease out the images on the coins. Although the coins all have the same device—a lion and bull on one side, one or two punches on the other—each coin is different and has its own personality, some more worn, some clearer, some revealing their images easily, others resisting every attempt to remove the hard crust and reveal the softer metal beneath.

The conservators have been greatly helped by numismatist Jack Kroll, who has been consulting by Zoom and email from the US. Among the questions Jack poses: When were these coins minted, and how old were they when they were lost? The coins are all quite worn, and have apparently seen a lot of use in their lifetimes; but how long was that? Recent study of a cuneiform tablet from Babylon, now in the British Museum, confirms what scholars once believed and then doubted for a time: that Cyrus conquered Lydia in 547 BC. So we know just when the coins were lost. This type of coin is associated with Croesus,

Fig. 12. Jen Kim cleaning one of the tiny silver Lydian coins under the microscope.

Fig. 13. Ameya holds the coin hoard after cleaning. We don't know how much these were worth in ancient Sardis, but in contemporary Babylon, this much silver would have been worth about 1.6 sheep, or about 38 days' wages.

Fig. 14. Photographer Jivan Güner (private practice) photographs the hoard of silver coins held by conservator Ameya Grant.

Fig. 15. Yılmaz Erdal and his students study the few scraps of bone from the destruction debris, all that remains of the owner of the coin hoard.

Sardis's last king; and Herodotus tells us that Croesus reigned 14 years, so these coins should date to between 561 and 547 BC. But another recent article points out that Herodotus's 14 years seems to be just a literary device, whereas other evidence points to a much longer reign for Croesus. We hope therefore that Jack's study of these coins will help establish when and how these earliest silver coins in the world were minted.

Meantime, anthropologist Yılmaz Erdal and his students Alperen Ceylan and Gökçen Adiloğlu (Hacettepe University), and Tuana Zara Eren (Ege University) studied the sad remains of the bones. But not even Yılmaz Bey was able to say much more about the burned chips than that the person was probably male, and probably middle-aged, to judge by the wear on one tooth.

Back in the field, Will excavated beneath that destruction floor to explore earlier Lydian occupation levels. Not more than a hand's breadth below the burned level, he uncovered layers of limestone chips, scattered by masons trimming the limestone blocks of the wall during its construction. So while last season he was digging the end of the life of the Lydian palace, he has now found its beginning. Or rather, the beginning of this last phase of the palace, because under the massive terrace wall, he found the foundations of another, earlier phase of this wall, and then construction debris from an even earlier Lydian structure. In all he found that the Lydians apparently took apart and rebuilt these palace walls at least three times in the first half of the sixth century BC, during the reigns of Alyattes and Croesus. We've seen this almost obsessive construction, dismantling, and reconstruction before in the Lydian fortification, which was also repaired and renovated over and over during this period; the architects and

Fig. 16. Excavations on Field 49. At left, Will Bruce excavates around the Lydian limestone terrace wall, revealing earlier monumental architecture of the reigns of Croesus and Alyattes (partly obscured by the winch for hauling earth out of the deep trench). In the lower right on the other side of a Roman wall, Burçin excavates Byzantine graves, paradoxically at a lower level but more than a millennium and a half later than Will's excavations. In the upper right, Baha and Ümit Güngör (Ege University) watch atop an unexcavated area of rubbly earthquake debris, now shown to be Byzantine and not earlier.

Fig. 17. By the end of the season, Will had uncovered a sequence of monumental architecture in this small area. Behind him is a Hellenistic wall built of reused Lydian blocks. The Lydian terrace wall to the right has two phases: the top three courses belong to the latest phase; underneath are four or five courses from the foundations of an earlier phase (most of these stones would have been buried underground to support a substantial and finely worked superstructure). The white stone at the corner was apparently wedged into the foundation trench to buttress the earlier phase. The rather crummy wall in front of Will belongs to a still earlier Lydian phase, and is a bit of a mystery; it's probably only the core of a wall whose finer face stones were removed and reused.

masons of Lydian Sardis must have been incredibly busy. And they could be very thorough: one of Will's phases consists only of a dense layer of working chips running up to a robber's trench; the wall itself was almost 2.4 meters thick, but not a stone remains, only the pit where it was dug out.

The other long-term excavator of Lydian remains on this hill, Güzin Eren, was not digging this summer, but finishing her doctoral dissertation for Boston University. The newly minted Dr. Eren arrived in Sardis after submitting her thesis, a cause for great celebration. Her dissertation on monumental Lydian terraces at Sardis—including her own and Will's work on Field 49 as well as older excavations on ByzFort and the Acropolis—is a masterpiece, and she is now planning her book expanding on it.

Down the slope from Will's trench on Field 49, Burçin Güzel (Ege University) is working in what must be one of the most confusing areas I've seen at Sardis. She follows up on excavations of 2019 and 2018 by Ece Alper (Bilkent University), which exposed a complex of rooms. Some of these contained Byzantine pottery of the 14th–16th centuries and were built very sloppily, perhaps a "squatter level" here in this very late period when nearly all occupation at Sardis was on the Acropolis. Other rooms, however, looked like Late Roman construction, with nicely mortared walls, some painted with wall paintings. However, a small but consistent number of Byzantine sherds even in those rooms left us uncertain about the chronology. Another reason to think they might be Late Roman was that they were buried under meters of earthquake debris, closely similar to the earthquake debris that buried the houses on Field 55 and the rest of the city. But we hadn't reached a floor level which would provide decisive evidence for the date.

Fig. 18. *Dr.* Güzin Eren in the temple of Artemis, in one of Jivan's ongoing series of staff portraits.

Fig. 19. Burçin reaches floor level in the room with the painted walls (visible in upper right), and finds it full of Byzantine graves, covered with stone slabs or tiles. (The cracked slab behind her bears a Post-It reminding us "don't step here, dingbat!")

Fig. 20. Burçin discovers a Middle Byzantine (10th–12th century) bronze processional cross near one of the burials. We haven't opened any of the graves in this room, so we don't have direct evidence for who was buried or when they were interred; and in any case such graves typically contain few offerings. So such a distinctive liturgical artifact provides important information about the community living here and the date of this occupation.

Fig. 21. Outside the room with the cross, Burçin excavated two other spaces, also completely filled with graves, making about 21 burials in all. Burçin dug some of these early in the season, with the help of Yılmaz Bey and his team, but left most of the graves unopened until next year when Yılmaz can excavate them carefully and efficiently. Here Yılmaz and his students excavate one of the graves early in the season, with Jivan photographing.

Burçin finally reached that floor level and found, around the edges of the room, the remains of two superimposed pavements, one of mosaic and the other of marble slabs, both apparently Late Roman. But in the middle of the room these floors had been dug away by at least four Byzantine graves, covered with stone slabs and tiles, which provide a firm if general chronological framework: we have real occupation (or at least burials) here centuries after the end of the Roman city. The earthquake that buried these rooms, therefore, was not the great seventh-century earthquake but one almost a thousand years later. We are not sure what the character of the building was, but it seems to offer a connection between the Late Roman period and the little-known Byzantine era at Sardis: it either survived the seventh-century earthquake or was rehabilitated afterwards. This is also the most substantial occupation yet found in the Roman city center, adding a millennium or so to the occupation of this area. And this is only a few meters from the deep sondage where, a few years ago, Will found Early Bronze Age remains, from about 2000 BC, pushing the history of the site back a millennium or so in the other direction. Conclusion: never take anything for granted at Sardis.

After the seventh-century earthquake, it still seems that most buildings in the lower city were abandoned and the center of occupation of Byzantine Sardis moved to the Acropolis, described by Polybius as "the strongest place in the world." This had housed one of the palaces of the Lydian kings, a temple of Olympian Zeus founded by Alexander the Great, and probably numerous other major buildings, nearly all of which were demolished to build the Byzantine fortifications that now dominate the citadel. But the citadel and its fortifications

Fig. 22. Ben Anderson and Jordan Pickett explore the Byzantine "Barracks" on the Acropolis.

Fig. 23. In the Byzantine "Barracks" on the Acropolis, Jordan Pickett, Turhan Doğan, and Furkan Kulak (right) inspect the bricks for the best place to sample mortar for radiocarbon dating, while Ben Anderson and architect Ehsan Behbahani Nia (UW-Madison) watch.

remain surprisingly little known. Before the pandemic Benjamin Anderson (Cornell University) and Jordan Pickett (University of Georgia) had begun a new survey of the citadel, aimed particularly at recording the fortifications. After an enforced hiatus, they returned this year to explore the little-known east ridge, discovering a dozen segments of Byzantine walls that had never been mapped before.

Scholars have struggled to date these walls, resorting to arguments about historical probability since there is almost no useful archaeological data. With the help of Turhan Doğan, director of the Carbon-14 lab at TÜBITAK-MAM, Ben and Jordan took samples of mortar from the Acropolis walls and from other buildings around the site, and are beginning a project to date these samples. This is a challenging procedure, but we hope it will give a firmer indication of when these walls were built.

The first archaeological expedition to Sardis was led by Howard Crosby Butler over a century ago, between 1910–1914 and with a brief season in 1922. Butler focused on the temple of Artemis and on the Lydian cemeteries, not on the city or the acropolis. The temple was recently and magnificently republished by Fikret Yegül (University of California-Santa Barbara), who continues to come to study this fascinating building. Phil Stinson (University of Kansas) is also investigating the sophisticated refinements of the temple—the floor and walls are subtly curved upwards, and the columns lean inwards almost imperceptibly. These refinements are so subtle that they are often quite difficult to measure even with modern instruments (and the temple's unfinished state makes exact measurements even more challenging). So Phil has been working with a three-dimensional laser scan of the temple, which is accurate to a fraction of a millimeter, and allows much more subtle measurements in the computer than are possible in person.

Butler's other major focus was on the Lydian tombs in the hills around Sardis. The Lydians often buried their dead in chamber tombs carved into the living rock like houses for the dead, with multiple rooms, doors, and beds, used by families for many generations. They also buried their dead in tumuli, earthen mounds covering beautifully carved stone chambers, also with beds and other domestic features; in sarcophagi placed in chamber tombs or tumuli; or in other types of graves. These tombs are spread unusually widely around the city, in groups extending for kilometers outside the walls. Butler excavated a thousand (!) or so tombs in his four years at the site, and discovered (in my opinion) the most beautiful objects ever found at Sardis: exquisite gold jewelry, seals of gold and semi-precious stones, terracotta figurines and busts, and rich groups of vases, both Greek and local Lydian—the first scientifically excavated Lydian pottery.

The outbreak of World War I, however, and then Butler's untimely death in 1922 left many of these objects unpublished. Butler had entrusted the publication of the pottery to a young archaeologist named George Henry Chase, who began teaching at Harvard University in 1916 just after the end of Butler's excavations. Chase became involved with other projects, though, and in 1938 he bequeathed responsibility for publishing the Sardis pottery to a young lecturer recently arrived at Harvard from Germany named George M.A. Hanfmann. This led, eventually, to Prof. Hanfmann's founding of the current Sardis Expedition, and to the many discoveries of the past 65 years.

Fig. 24. Annetta, Susanne, Leyla, and Okan board the 1958 Willys Jeep (still running strong after 64 years!) for another day of surveying the Necropolis.

Fig. 25. The tomb survey crew mapping the South Necropolis about three kilometers from the city, where a series of chamber tombs are carved into the hillside and cliffs. Susanne (red arrow) stands before one tomb, and the shadow behind Annetta is the filled-in opening of another (white arrow); in all they identified 26 chamber tombs along this ridge.

Fig. 26. It's Annetta's turn to poke her head and camera into the entrance to one of the chamber tombs while Susanne watches. In some future season we'll have to explore and document them properly; for now it's enough to know where they are.

Unfortunately, if Butler drew a map of the tombs he excavated, it is now lost, like so many notes from that time. So although scholars have studied and published excellent articles and books on Lydian tombs and burial customs, we still don't know where all of Butler's tombs are located. Annetta Alexandridis (Cornell University) and Susanne Ebbinghaus (Harvard Art Museums) therefore began a new survey project to locate as many tombs as possible around Sardis. Accompanied and often led by the energetic Leyla Uğurer (Istanbul University) and Okan Emre Güney (Ege University), Susanne and Annetta spent a month clambering through the steep hills around Sardis locating, mapping, and exploring the tombs. Chamber tombs are typically dug into the steep and inaccessible cliffs behind the city, making the search particularly challenging as the team had to scramble up steep slopes and through almost impenetrable spiny bushes. Every square meter of ground had to be examined carefully, since many tombs have collapsed or partly filled in since they were excavated, leaving only a slight dip in the ground, or a hole more suitable for a badger than a professor or even a student. But despite thorns and bats, the team identified almost 300 tombs of different types, mapped them precisely with a GPS, and distinguished groups of tombs, perhaps belonging to families or clans, scattered through the

Fig. 27. For the most part, we can't yet identify many chamber tombs with specific tombs excavated by Butler. This is one exception, where a tomb is recognizable in a photo (left) published in Butler's report on his excavations in 1913, with the distinctive "pediment" carved above the door to the tomb.

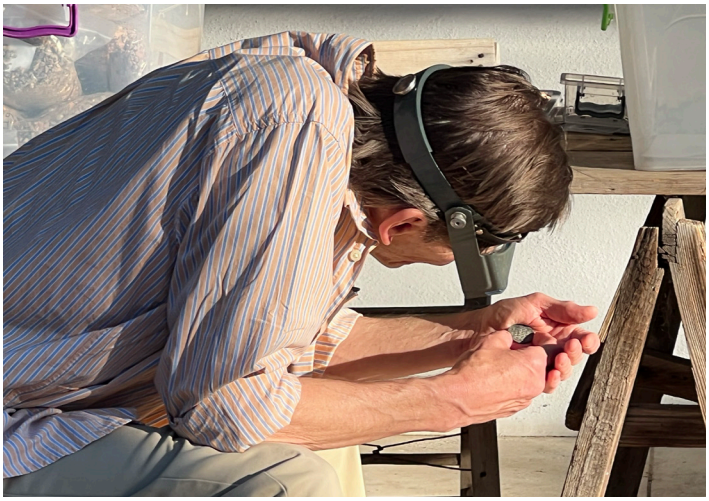

Fig. 28. Marcus Rautman studies a Byzantine coin, newly discovered in Burçin's trench in a room adjacent to the one with the cross, further important evidence for occupation in central Sardis in the 10th or 11th century.

Fig. 29. Archaeobotanists Erica and Jess pick through bits of charcoal and other detritus from excavations, separating out and identifying the carbonized seeds to understand the ancient diet, agricultural practices, and other questions. Ginger, the lovely stray puppy who wandered into camp and stayed, provides welcome moral support.

rolling landscape. It's the first stage of a long project, but was a tremendous success, and contributed enormously to our understanding of this unusual ancient culture.

The summer was rounded out with many research projects, a particular joy as we are able to invite a fuller staff after a couple of lean years, and reunite with old friends. John Sigmier (University of Pennsylvania) continued his work on the largest Roman arch in the world; architectural historians Ursula Quatember (University of Graz) and Andy Leung came to visit and advise on their joint project. Jane Evans (Temple University) returned to study the coins from the site, from Lydian to Byzantine. Marcus Rautman (University of Missouri) continued his study of late antiquity at Sardis in general, and particularly the houses. Fulya Dedeoğlu Konakçı, Yakup Bora Timur (both Ege University), and Peter Pavúk (Charles University, Prague) continued their study of Bronze Age ceramics, aided by Güzin Eren's ongoing analysis of the complex stratigraphy of Field 49. Liz DeRidder Raubolt (Grand Rapids Community College) studied pottery from Roman deposits, especially of the first century AD, while Şüle Pfeiffer Taş (Atılım University) studied Byzantine pottery, especially Burçin's new discoveries. Bahadır Yıldırım (Assistant Director and Harvard Art Museums) made great progress with the rich sculptural ornament of the Wadi B temple. Rostislav Oreshko (Centre national de la recherche scientifique, Paris) returned to his study of Lydian inscriptions, in preparation for the publication of a new corpus of this little-known language. The majority of known Lydian inscriptions come from Butler's excavations in the Necropolis, so Slava's research dovetails nicely with Susanne's and Annetta's survey. Erica Rowan (Royal Holloway, University of London) and Jessica Feito (Koç University) analyzed archaeobotanical remains from past and current excavations. All of them relied on recorder Christine Muron (Cornell University), who documented the artifacts as they came in from the field, coordinated the many specialists working with the finds, and maintained calm and order in the depot.

Fig. 30. Christine Muron working in the depot, another of Jivan's portraits.

With the Synagogue roof completed, we now turn our construction energy towards the next shelter, over the Lydian fortification. This is a much more complicated project than the Synagogue, whose roof could be set on top of the restored walls. This next shelter needs to be fit into the complex archaeology of sector MMS, with its irregular topography and dense, often overlapping buildings dating from the Lydian period to the Late Roman. Troy, Nate, Michael, and the rest of the team had decided on a final design last summer, but we then needed to prove that their design would not interfere with unknown archaeological remains. Gencay Öztürk (Ege University) therefore excavated a couple dozen sondages for the footings of the roof, with the goal of finding nothing of any importance. Thanks to the team's careful planning, Gencay succeeded wonderfully; the roof can be built without destroying significant archaeological features. Engineers Teoman Yalçınkaya (Sardis Expedition representative) and Taner Kurtuluş (Artabel, Izmir) are

Fig. 31. Gencay celebrates the successful discovery of nothing (or at least nothing we can't bury under a cement foundation to support the new roof). It is not, of course, nothing: the foundation is carefully located in the corner of a Roman room, and the clean brown earth under the Roman walls is actually the mudbrick core of the Lydian fortification.

Fig. 32. Alyssa Martinez working at the research office at Harvard Art Museums, now back to full strength and working in person. Alyssa orchestrates the myriad moving parts for the upcoming field season, as well as helping with research and with the enormous archive, paper and digital, that results from our years of excavation.

now working on the static engineering, and we hope to get permission to build this spring. This project has been a long time in the making, but thanks to the ingenuity and determination of Michael, Troy, Nate, Teoman, Taner, and others, we hope it will soon become a reality. The construction is made possible by the extremely generous bequest of the late William Collins Kohler, one of Prof. Hanfmann's star students and a member of the expedition in the late 1950s and early 1960s. Kohler remained interested in Sardis through his life, and we are profoundly grateful to him for this gift. We hope to report to you soon on progress.

As I write this in December, we're in the midst of preparations for next season. The office in Cambridge is back in business after a couple years of remote loneliness, and editor Kerri Sullivan and Baha are joined by Alyssa Martinez, who takes over from Robin Woodman as Sardis Office Coordinator. With a background in Museum Studies and in photography, Alyssa comes to us from Visitor Services at the Harvard Art Museums, and those of you who have dealt with the office will already be familiar with her cheerful competence; we are so lucky to have her with us. We look forward to reporting on further developments and, as always, are deeply grateful to you for your interest and support.

Nick Cahill
Director, Sardis Expedition

We have a number of our Sardis publications available to interested supporters at a discount; if you are interested, please write to us at am_sardis@harvard.edu.

If you would like to be added to our list of recipients of future newsletters, or for more information about our activities and how to support our work, please send an email to am_sardis@harvard.edu.

Past newsletters are available on our website https://sardisexpedition.org/en/news

The Cambridge Biennial Lecture for the 2021 and 2022 seasons at Sardis will take place on **Mar. 28, 2023** *at 6:00 PM at Harvard Art Museums. Please check the Events Calendar at https://harvardartmuseums.org/calendar for full details.*