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BRINGING THE PAST INTO THE FUTURE: THE DIGITIZATION OF CLASSICAL ARCHAEOLOGY
AND THE
TRASIMENO ARCHAEOLOGY DIGITAL SITE MUSEUM

REBECCA KERNS

DEPAUW UNIVERSITY HONOR SCHOLAR PROGRAM, CLASS OF 2019

COMMITTEE: PEDAR FOSS (SPONSOR), REBECCA SCHINDLER, BETH WILKERSON

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Index

Introduction	4
Literature Review	4
Digitization Debate	4
Digitization Implementation	8
Trasimeno Archaeology Digital Site Museum	10
Description	10
Relationship to Other Projects	11
Project Relevance	12
A Return to the Wider Debate	13
Conclusion	14
Bibliography	15

Museum: <https://archaeotrasimenositemuseum.wordpress.com/>

Introduction

Through the intersection of digital archaeology with museum-style didactics and instructional design, the material past can become more accessible off-site to both researchers and the public. In this paper, I will discuss the current debate regarding the implementation of digitization for archaeology projects and museums, summarize how other projects have implemented digitization, discuss how my project builds on this material, and argue that this approach is important for archaeological accessibility, knowledge transmission, and conservation.

Literature Review

Digitization Debate

In *Museum Object Lessons for the Digital Age*, Haidy Geismar lists some of the benefits of technology for artifact collections: “Websites can make entire collections available across the world in an instant, robots can allow so-called source communities to curate collections from afar and 3D-printing technologies permit us to recreate objects destroyed by war and extremism.”¹ Despite its many benefits, digitization presents a number of ethical issues that require continued consideration and improvement. Drawing upon the research of museologists and archaeologists, in this section I discuss the benefits of and problems with digitization as applied to the material past.

¹ Geismar 2018, xix.

Digital collections furthers the accessibility of the material past by creating a free resource available online at schools, libraries, and home. While visiting museums and archaeological sites is not always feasible due to socioeconomic, geographic, and mobility limitations, the online availability of digitized objects diminishes these barriers. However, Geismar questions whether digitization projects “engage audiences comprised of digitally literate consumers at the possible expense of others, often understood to be on the wrong side of the so-called ‘digital divide.’”² While digitization may not yet meet the needs of all individuals, constant technological advancements allow for continued improvements to the accessibility of artifact collections. However, with increased availability of digital material comes the danger of its uncontrolled circulation. Such circulation has the potential to “distort the context and meaning of the original artefacts,”³ leading to misunderstanding of artifacts and cultures. At worst, users could maliciously redistribute heritage materials in a vacuum of context to misrepresent a culture. During the digitization process, creators must take the measures necessary to prevent their project content from being misused or misunderstood.

In addition to making artifact collections more accessible, digitization can also be used to further knowledge transmission. However, some scholars are concerned that this increase of digitally available information will cause museum obsolescence. Younan and Treadaway state that “the open and creative use of digital copies continues to be seen as a threat to museum culture and practise, based on the long-held fear that simulations could render physical

² Geismar 2018, xix.

³ Younan and Treadaway 2015, 240.

collections of authentic artefacts obsolete.”⁴ As digital learning environments become increasingly available, museums must compete for public visitorship.⁵ While it seems unlikely that digital facsimiles will fully replace the appeal of “the real thing,” these technological advancements have prompted museums to innovate new ways to draw visitors, often using the same digital techniques that perhaps seemed threatening. Many museums are improving visitor experiences within the physical museum by providing supplementary object information and engagement in augmented reality, offering behind-the-scenes museum tours in virtual reality, facilitating virtual immersive environmental experiences, and sharing expertise through virtual docents and specialists.⁶ Museums have also adopted digitization to create online learning experiences based on their collections.⁷ These developments enable museums to showcase greater percentages of their collections to broader audiences: while display spaces within museums are limited, technology allows for exhibits unbounded by physical space and exhibition rotations. In addition to disseminating knowledge among the public, digital artifact databases serve as a convenient research tool for scholars by compiling object information and visualizations in a place where the data can be efficiently found, stored, and queried.

While digitization increases the amount of available knowledge concerning collections, some authors voice concerns over the authenticity of information and the possible biases in its presentation. As in physical museums, there is the potential for selection bias in the choice of which artifacts to display in place of others. Additionally, digitized artifacts may undergo

⁴ Younan and Treadaway 2015, 240.

⁵ Merritt 2017, 21.

⁶ Merritt 2017, 18; 21.

⁷ Examples of such projects are further discussed in the “Digitization Implementation” section.

alterations for optimized display at the discretion of an editor. “The choices and decisions of the editor play an important but often downplayed role in their creation. Digital 3D models look real, even though they are just a hypothesis of an artefact or space. However, while digital copies are not necessarily ‘truthful’ to the original objects, they can be seen to possess a different kind of authenticity.”⁸

During the digitization process itself, the related problems of expense and potential obsolescence of digital collections arise. Because technology is constantly changing, the software and hardware used for viewing and creating models requires frequent upkeep to avoid obsolescence, which is time and resource consuming. The cost of initial digitization tools, technological skill acquisition, and digital collections management can become expensive and prohibit some organizations from implementing digitization, particularly in areas constrained in maintenance budgets.

In addition to accessibility and knowledge transmission, digitization can help conserve archaeological sites and museum collections. Because archaeology is a destructive process, it is important to thoroughly record the process. Making three dimensional models of a site at varying stages of excavation provides a scaled record of stratigraphy and building phases, providing archaeologists with a means of recording more efficient than hand-sketching and more comprehensive than photographing. There are also the risks of museums and sites being diminished due to natural disasters, theft, social unrest, or acts of violence, so it is important to document material heritage as thoroughly as possible. Site and artifact digitization furthers

⁸ Younan and Treadaway 2015, 241.

conservation efforts and decreases the possibility of artifacts being lost, stolen, or forgotten.

Furthermore, digitization tools can virtually restore heritage sites and artifacts.⁹

Digitization Implementation

Many ongoing digital projects seek to digitize museum collections and national heritage. In this section, I provide a brief sampling of various digitization projects in order to contextualize my own project.

The Uffizi Digitization Project is in the process of three-dimensionally digitizing the Uffizi Gallery's entire collection of Roman and Greek sculpture.¹⁰ The collection is freely available on their website, catalogued by type, and searchable. Each object page contains a list of characteristics and publications concerning the piece.

Similarly, the Metropolitan Museum of Art has recently made all of its public-domain works available online.¹¹ Unlike the Uffizi Project, the digitized collection of the Metropolitan Museum of Art is in two-dimensions; however, it provides the benefits of a brief description alongside each piece and the option to download artworks. Like the Met, the Smithsonian Cooper Hewitt Collection has made photographs of its collection available online with brief descriptions.¹² The 3D Petrie Project at University College London has published their photogrammetrically digitized Egyptology collection online.¹³ These objects are briefly described, rotatable, and linked to catalogue entries.

⁹ Younan and Treadaway 2015, 240.

¹⁰ Indiana University Newsroom 2016.

¹¹ Tallon 2017.

¹² Cooper Hewitt.

¹³ 3D Petrie Museum 2018.

Beyond individual entities, the Reciprocal Research Network (RRN) of the Museum of Anthropology at the University of British Columbia draws together objects from twelve different institutions.¹⁴ This collaborative research database contains pictures, sources, and descriptions of First Nations items from the Northwest Coast of North America; however, much of their content is available only to members of the RRN.

The Google Cultural Institute takes digitization in a different direction. Along with annotated, ultra high-resolution photographs of works from museums around the world, the project has incorporated 360° virtual museum and world heritage site tours.¹⁵ These tours are in the style of Google Maps street view, allowing visitors to move and look around in the museum but not to inspect works up-close. To offset this downside, the Google Cultural Institute provides the Art Camera feature, which allows visitors to zoom in on high-definition photographs of artworks and read anecdotes about specific portions of the work. Individual object pages feature a link to the 360° view of their museum when available.

While the previous examples are digitization models from the museum side, the Cosa Project's Virtual Museum offers an archaeological approach. This project includes seven 3D artifact models, as well as one overview model of the site. The artifact models include brief descriptions (50 to 100 words), while the site model utilizes even shorter annotations (most around 15 words) affixed to the model to explain the site's features. Although the project does not

¹⁴ Jakobsen and Wallace 2014.

¹⁵ Google Cultural Institute 2015.

currently have a database section, their website declares, “Find information, catalogue information, and metadata coming soon!”¹⁶

Trasimeno Archaeology Digital Site Museum

The growing number of digitization projects attests to widespread acceptance of the utility of digitization in general. However, as discussed in the previous section, different projects have different approaches to digitization as well as different outcome goals. In this section, I describe the Trasimeno Archaeology Digital Site Museum project, compare its features to other projects, outline the specific relevance of this project, and situate the project within the current theoretical debate concerning digitization, discussed in the first section.

Description

The Trasimeno Archaeology Digital Site Museum is a web-based museum of the Trasimeno Archaeology Project, an ongoing excavation of a Roman villa complex in Umbria, Italy. The digital museum includes six sections: a welcome page, a general museum, a research database, a commentary section, a process section, and a contact page. The welcome page provides background information on the excavations and site navigation instructions. As the homepage, it is meant to engage visitors who may or may not be familiar with archaeology while offering navigational support to visitors with varying levels of digital literacy.

¹⁶ Brennan, 2016.

The museum and database sections are the heart of the webpage. The general museum section includes subpages for each model; these subpages include photos, context explanations, artifact descriptions, reconstructive illustrations, artifact function and importance information, and references. The goal of this section is to create an accessible, didactic environment for the general public to learn about the material past. Geared towards a scholarly audience, the research database page includes streamlined database entries for each artifact, with information such as date, location, material, iconography, and references, as well as photographs. This section is meant to be an archival resource for researchers.

The remaining pages are meta-informational sections. In the commentary section, I have included a condensed version of this paper. This section is intended to provide metadata on the museum itself, making visitors more aware of the relevance, process, and ethics of digitization. Similarly, the process manual page provides detailed information on the creation aspects of the museum for reference and replication. The contact page includes a comments box and directions to the project's main webpage.

Relationship to Other Projects

In the last decade, museums have increasingly implemented digitization projects. My own project draws upon precedents set by other projects while expanding on their accomplishments. Searchable and organized by type, the Uffizi Project served as a useful example in setting up my own museum. However, while the Uffizi Project lists object characteristics and references, my project further embraces the didactic potential of the digital environment by providing background information, visual context, and relationships to other objects in addition to

characteristics and references. The Metropolitan Museum of Art, Cooper Hewitt, and Petrie Museum digital collections provided examples of organization style and baseline descriptive content. In my project, I add to the range of description topics. While my own project utilizes objects from only one site, the RRN shows one way by which this digital museum project could be expanded into a research oriented, multi-site collaborative effort in the future.

The Google Arts and Culture project is similar to my project because it connects images of individual artifacts to their museum context; however, my digital museum differs in that the objects are three-dimensional, more descriptively annotated, more manipulatable, and connected to their original context rather than a contrived museum environment.

As a fundamentally archaeological project, the Cosa Virtual Museum's methods most overlap with my own project's; both projects include photogrammetrically generated site and artifact models with annotations. However, my project is more intentional in its individual artifact descriptions and contextualization, adopting a more museum-like style, whereas the Cosa Virtual Museum displays all of its models on the same page with minimal descriptions for each.

Project Relevance

The main objectives of the Trasimeno Archaeology Digital Site Museum are to improve archaeological accessibility, knowledge transmission, and conservation. At inception, I intended the project to solve the problem of limited contact with artifacts post-excavation. Prior to display in the local museum, archaeological materials must undergo numerous levels of time-consuming processing, during which they are kept in inaccessible storage. After artifacts join the museum collection, they are still subject to limited access as the museum is located in a small town in

central Italy. Publishing a 3D artifact facsimile online diminishes barriers to viewing the artifact and expedites its visual availability.

From the initial artifact models, the project grew to include trench models with the dual objectives of increasing site accessibility and contextual understanding. Because the site is located in the middle of a farmfield, visiting requires awareness of its existence, intentionality, permission, and detailed directions. While this obscurity is beneficial for the protection of the site, it limits public understanding of the site to the details they can surmise from photographs.

A Return to the Wider Debate

In previous sections, I have discussed digitization general pros and cons, the application of digitization to specific projects, and my own project. In this section, I discuss how my project addresses the digitization concerns identified in the debate section.

One of the primary goals of my project is to render the findings of a specific archaeological site more available over the internet. While the choice to use the internet may alienate digitally illiterate audiences, I have organized the museum as logically as possible and provided instructions on its navigation. To address the issue of uncontrolled circulation, I have chosen to publish the 3D models using Sketchfab software, which prevents visitors from downloading the models; thus they can only be viewed in the context-providing environment of the digital museum.

Concerns relating to the digital transmission of information include physical museum obsolescence, artifact authenticity, presentation bias, and technological obsolescence. Because my museum is aimed primarily for audiences within the United States, it should not affect local

museum visitorship; additionally, the museum has many non-digitized artifacts and visiting shows that draw visitors to the physical museum. In terms of authenticity, I have not done any editing of the 3D models themselves. While I provide drawn reconstructions, I indicate which parts of the artifact are reconstructed. To eliminate presentation bias, I provide visual contextualization for each artifact, allowing the viewer to *see* the object in the context of the location where it was found. Although I chose which objects would be prioritized to display, my decision was based on the completeness of the artifact rather than its subjective appeal. The most difficult issue for my project is that of technological obsolescence. Throughout the project, I researched and chose software that seemed likely to last for a long time; however, it is impossible to know for certain how soon the software will be antiquated.

Conclusion

Of the many benefits digitization offers to museologists and archaeologists, I have focused on accessibility, knowledge transmission, and conservation both in this paper and in my project goals. While some issues of digitization await solutions, individual projects like my own continue to seek creative ways of addressing them. As technology continues to advance, so too can its application to the material past.

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TRASIMENO ARCHAEOLOGY DIGITAL SITE MUSEUM

[WELCOME](#) · [MUSEUM](#) · [RESEARCH DATABASE](#) · [COMMENTARY](#)
· [PROCESS](#) · [CONTACT](#)

WELCOME

Welcome to the Trasimeno Archaeology Digital Site Museum!

The Trasimeno Project involves the excavation of a late Republican to mid-Imperial Roman villa complex near Lake Chiusi in Umbria, Italy. The project is an ongoing excavation conducted by the Comune di Castiglione del Lago, the Umbra Institute, and DePauw University.

The Trasimeno Project started in 2015 with an intensive field survey yielding over 12,500 objects. Based on the survey, the site likely spanned at least three terraces. Excavations began in 2016 at the eastern edge of the site, where the most notable feature was a drainage channel formed by tiles. During the 2017-2018 seasons, excavations continued to the west along two separate terraces. In the central terrace, we uncovered multiple architectural features from at least three separate phases of use. In the lower terrace, we found a bath complex with at least two rooms, a raised floor and hypocaust system, and mosaic flooring.

This museum includes 3D models of trenches and select artifacts from the 2018 season. Visitors are invited to click the "Museum" dropdown tab to learn about the site through its artifacts. For streamlined artifact entries, please visit the "Research Database" tab. The "Commentary" tab discusses the relevance of this digitization project, while the "Process Manual" contains information for reference and replication.



TRASIMENO ARCHAEOLOGY DIGITAL SITE MUSEUM

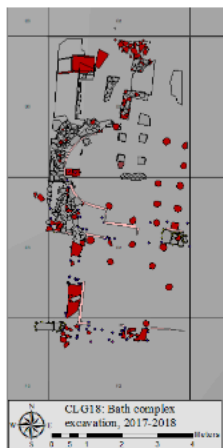
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BATH COMPLEX



[Villa Bathhouse Excavation](#) by [rebeccakerns](#) on [Sketchfab](#)

PHOTOGRAPHS:



Bath Complex. Photograph courtesy of Rebecca Schindler

Date: c. 2nd century BCE to c. 3rd century CE

Dates excavated: 6 June, 2018—3 July, 2018

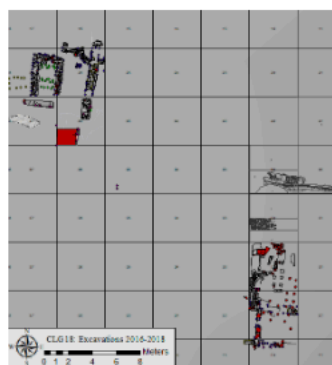
Location: Gioiella-Vaiano Villa Site, CLG18 Trench D2



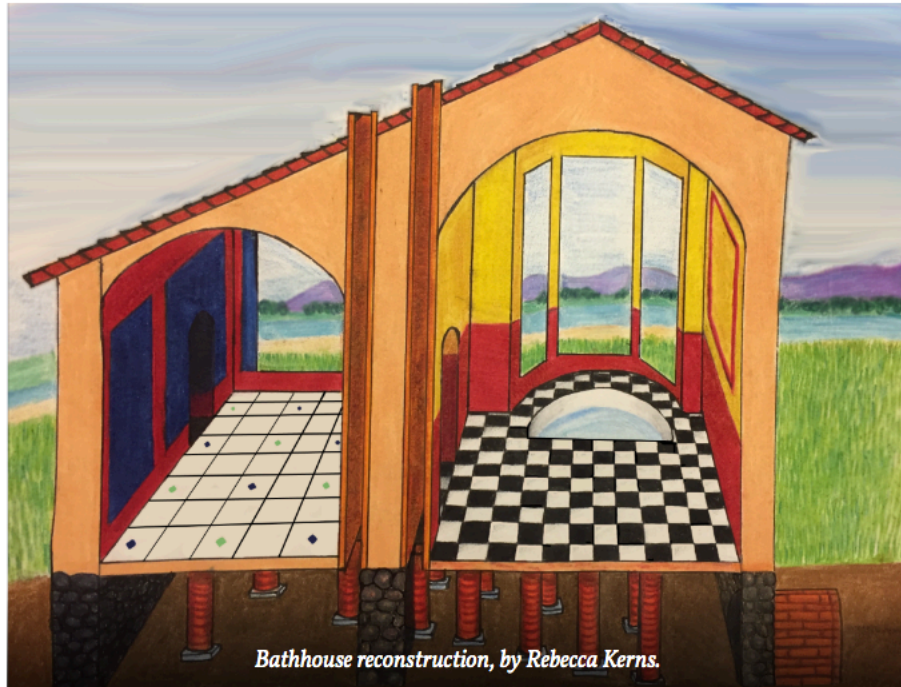
Materials Key

CONSTRUCTION:

Located on the lower terrace¹ of the site, this trench contains a portion of the bath complex. The southern half of the trench contains the northern half of an apsidal room as well as a hypocaust system. The system consisted of tile pillars (*pillae*²) supporting a raised floor under which hot air flowed from a stokehole, heating the floor. The hot air also convected through the hollow walls (*tubuli*³) to evenly heat the rooms. In the center of the trench is another wall segment, possibly a passage connecting to the apsidal room.⁴ Along the western edge of the trench runs a late wall built against the apsidal wall during a later reuse of the site. Pan tiles⁵ were later imbedded in this wall, likely for drainage.



Site Plan, courtesy of Trasimeno Archaeology Directors.



During its long history, the villa had various phases of use, reuse, and abandonment. Based on differing construction styles, we can identify various building phases; for example, the original bath complex was built using small stones and tile pieces while the later wall was built with concrete and debris. Although we can identify different construction phases, the amount of site disturbance due to its reuse and abandonment makes it hard to date definitively the complex. However, based on the oldest diagnostic artifacts found during excavation and survey, we can approximately date the bath complex's construction to the 1st-2nd century CE. The bath seems to have been renovated and perhaps used through the 3rd century CE.

The complex rests on the south-facing slope of a hill overlooking the Chiana River Valley.⁶ From this sunny location, bathers would have basked in the afternoon sun as well as in the tubs. Evidenced by window-pane glass fragments, the complex likely had large windows, both to facilitate panoramic views and use solar energy to help heat the complex.⁷



BATHING:

Bathing was a daily activity that involved covering oneself in oil, exercising, and strigiling, then taking a hot bath followed by a cold bath.⁸ Some bath complexes included medium temperature baths, saunas, and swimming pools.⁹ So far at this particular bath complex, we have found evidence for at least two rooms. Since both of these rooms have hypocausts, they would have been either hot or warm rooms.

Private bath houses were places of socialization as well as relaxation. The villa owners would have used this space to welcome and entertain guests, who might have traveled many days to reach the villa. In both urban and rural bathhouses, bathers would play sports, gossip, and have business discussions.¹⁰

ENDNOTES

1. Terraces are leveled areas on a slope, forming an artificially stepped terrain. At the Gioiella-Vaiano Villa site we have identified three terrace levels thus far.
2. *Pillae* are tile pillars used to raise the floor in a hypocaust system, which pumps hot air under the floor to heat the room.
3. *Tubuli* are hollowed walls through which hot air was pumped to heat the room.
4. The apsidal structure is identifiable as a room due to its *cocciopesto* interior surface.
5. Pan tiles (visible in the northwest corner of the trench) are large, flat tiles with two parallel raised edges. Used for roofing, pan tiles were placed side by side with arched cover tiles placed over the adjoining edges to shunt off rainwater.
6. The Chiana River (also called the Clanis River) was redirected during the Middle Ages. Today, the site overlooks Lake Chiusi.
7. Ring 1996, 717.
8. Fagan 2002, 10. Strigiling involves scraping off the oil, sweat, and dirt with a curved scraper called a strigil.
9. Fagan 2002, 10.
10. Yegül 1992, 30.

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BLACK LAMP



[Black Lamp](#) by [rebeccakerns](#) on [Sketchfab](#)

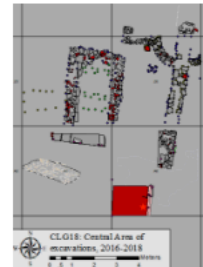
PHOTOGRAPHS:



Date: c. late 1st–early 2nd centuries CE¹ // **Material:** grey clay

Date found: 28 June, 2018

Location: Gioiella-Vaiano Villa Site, CLG18 Trench A6, U.S. 191



*Site Plan, courtesy of
Trasimeno
Archaeology
Directors.*

ARCHAEOLOGICAL CONTEXT:



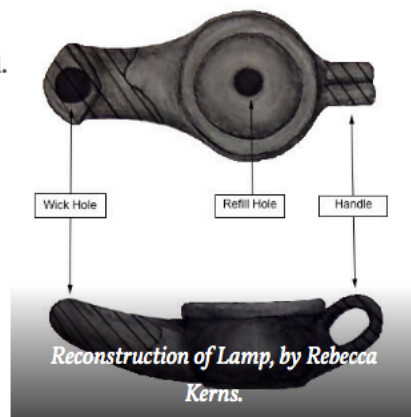
CONTEXT DESCRIPTION:

This lamp was found under a fragment of *opus signinum*² in the southwest corner of Trench A6. Near the lamp were large fragments of painted wall plaster that likely fell from an upper story during the structural collapse. Below the lamp was a cobble layer, likely laid as a work surface during a late phase of the site. Based on its placement, the lamp was likely buried during the collapse of an upper level floor after the abandonment of the site.



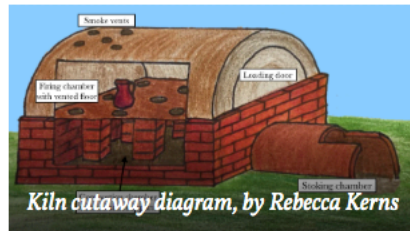
DESCRIPTION OF ARTIFACT & FUNCTION:

Lamps of this sort were a common light source in antiquity. They are made of terracotta, a widely-available and flame-resistant material. Lamps generally have a circular body serving as an oil reservoir, an open nozzle to hold a wick at one end, and often a handle at the other.³ Clay lamps were typically made using molds, allowing for the efficient mass-production of identical lamps.⁴ Through mass spectrometry analysis, we know that these lamps burned primarily olive oil, but animal fat was occasionally mixed with it.⁵



This particular lamp is covered in a dark clay slip ensuring impermeability.⁶ It has a plain rounded body with a tall rim and centered filling hole. Based on the breakage points, we can tell that it originally had a handle and long nozzle.

WHY THE ARTIFACT MATTERS:



This type of lamp was common in Umbria, indicating the possible presence of a production center nearby,⁷ or a regionally specific style. This style of lamp could have been made on-site, which would have required a kiln.⁸ Pottery was first modeled from clay, either by hand or using a mold, then superheated in a kiln to harden it.

Although we have not found a kiln itself, we have found several wasters⁹ indicative of a kiln onsite. We also know that the villa occupants had access to the fuel necessary for firing because they had a heated bath complex, which would have required a constantly running furnace.

Finding this lamp at floor level amid plaster fragments evidences structural collapse, indicating the cobble floor may have been one of the last working-surface phases in this area of the site.

ENDNOTES

1. Stopponi 2006, 198.
2. Romans used *opus signinum* for flooring. Also called *cocciopesto* (Italian), this building material consisted of broken tile bits mixed with mortar.
3. Harris 1980, 128.
4. Garnett 1975, 179.
5. Kimpe et al. 2001, 87.
6. Faley 2019.
7. Stopponi 2006, 198.
8. A kiln is a super-heated oven used for making pottery.
9. A waster is a piece of misfired pottery. These pieces were used to test the temperature of a kiln prior to the firing process.

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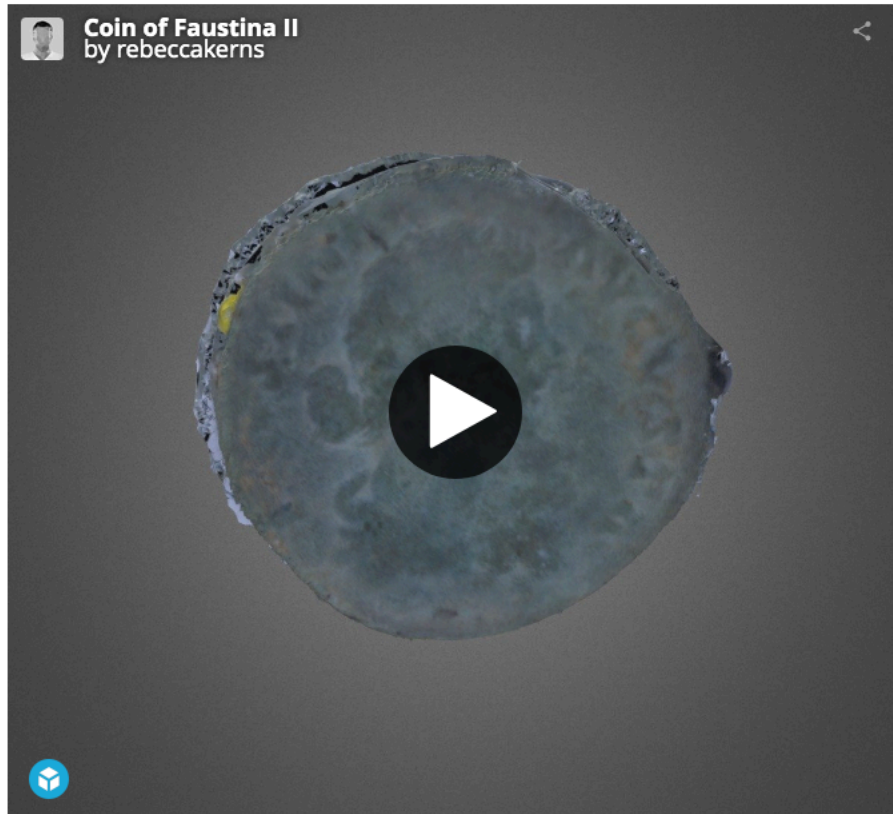
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COIN OF FAUSTINA THE YOUNGER

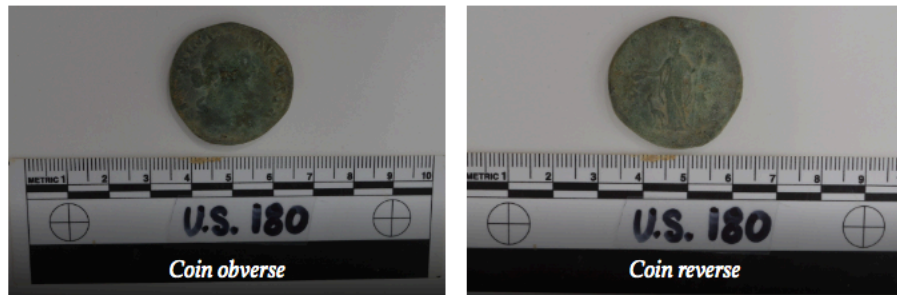


Coin of Faustina II
by rebeccakerns



[Coin of Faustina II](#) by [rebeccakerns](#) on [Sketchfab](#)

Photographs:



Date: 169-175 CE // **Material:** Copper // **Date Found:** 21 June, 2018

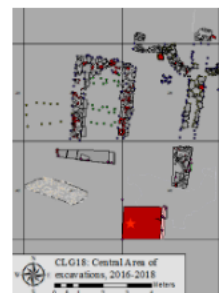
Location: Gioiella-Vaiano Villa Site, CLG18 Trench A6, U.S. 180

ARCHAEOLOGICAL CONTEXT:



CONTEXT DESCRIPTION:

This coin was found in an upper strata in the southwest corner of trench A6. Because it was found intermingled with a variety of building materials (mostly roof tiles), it was likely dropped and subsequently buried during a structural collapse or a dump. Due to the small size of the coin, erosion could also have moved it to this location.



*Site Plan, courtesy of
Trasimeno Archaeology*

DESCRIPTION OF ARTIFACT & FUNCTION:

On the obverse¹ of the coin is a profile bust of Faustina the Younger, the daughter of Emperor Antoninus Pius and Faustina the Elder, and the wife of Emperor Marcus Aurelius. She is identifiable by her signature hairstyle, a low bun, and by her hooked nose.² Encircling her head is the remnants of a "FAVSTINA AVGVSTA" label, of which the FAV is poorly preserved. "Augusta" was an official title (the feminine form of "augustus," similar to "queen") conferred to Faustina II by the Senate after the birth of her first child in 147 CE because the event indicated successful imperial succession.³ The title brought her formal rights, including the right to mint coins.⁴



Scale drawing of coin, by Rebecca Kerns

The reverse of the coin depicts a standing Juno holding a *patera*⁵ in her left hand and a scepter in her right. A peacock, the goddess' sacred animal, stands to her right side. Although unpreserved, the inscription "JUNO REGINA" encircles the goddess on other coins of this type.⁶ In addition to being queen of the gods, Juno was also the patroness of marriage and motherhood. By including Juno on the coin, Faustina associates herself with these identities.

Based on Faustina's portrait and Juno's stance, the coin was among the later coinage of Faustina, minted between 169 and her death in 175.⁷ The Senate deified

Faustina the Younger upon her death, elevating her to divine status.⁸ Had the coin been minted after 175, it would have included the title "Diva" to indicate her deification.⁹

In Imperial Rome, coins were minted by placing a hot blank (round metal piece) between two dies (hand-carved metal stamps engraved with the inverse coin design) on an anvil, then striking the stack with a mallet.¹⁰

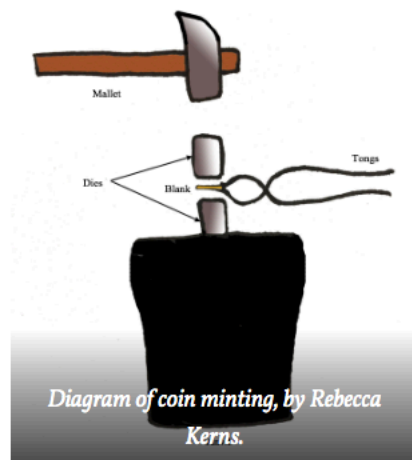


Diagram of coin minting, by Rebecca Kerns.

WHY THE ARTIFACT MATTERS:

More than just commerce tokens, coins serve as powerful propaganda. Through the natural dispersal of trade, a single coin reaches numerous individuals, all of whom see, touch—even desire—the coin and, by association, the icons it bears.

When Marcus Aurelius began ruling in 161 CE, he needed to establish and promote his authority through propaganda. That same year had widest distribution of coinage portraying Faustina.¹¹ As the daughter of the previous emperor, the wife of current emperor, and the mother of the presumed future emperor, Faustina herself linked past, present, and future leadership. The association with Juno reinforces her status as royalty, wife, and mother. Her portrait therefore symbolized smooth transitions of power, which promoted imperial stability and, presumably, quality of life for the Roman people. For the newly crowned imperial couple, minting coins of Faustina not only promoted her fame but also propagated the idea of good governance.

Because our coin has a minting date range of 169–175 CE, the earliest it could have been in circulation is 169, giving the layer in which the coin was found a *terminus post quem*.¹² However, because the layer in which the coin was found was not its primary context,¹³ the layer was likely deposited much later than 169 CE.

ENDNOTES

1. Obverse is the “heads” side.
2. Stamper 2018.
3. Levick 2014, 31; Boccacio 2003, 205; Burns 2006.
4. Levick 2014, 36–37.
5. A type of offering bowl.
6. Latin for “Queen Juno.”
7. Mattingly 1976, cxliii. The coin is from Group III of Faustina II’s coins; cf. Mattingly, plate 55, no. 13.
8. Boccacio 2003, 206.
9. Art Institute of Chicago 2016.
10. Harl 1996, 10.
11. Ameling 1992, 164.
12. Latin, literally meaning “end after which.”
13. A primary context refers to the original, undisturbed location of an artifact.

COIN REFERENCES

Ameling, W. 1992. “Die Kinder des Marc Aurel und die Bildnistypen der Faustina Minor” *Zeitschrift für Papyrologie und Epigraphik* 90, 147–166.

Art Institute of Chicago. 2016. “Cat. 55 Aureus Portraying Faustina the Younger: Tombstone,” in *Roman Art at the Art Institute of Chicago*. Art Institute of Chicago.

Boccaccio, Giovanni. 2003. *Famous Women*. Harvard University Press.

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Levick, B. 2015. *Faustina I and II: Imperial Women of the Golden Age*. Oxford University Press.

Mattingly, H. 1976. *Coins of the British Empire in the British Museum, Vol. IV: Antoninus Pius to Commodus*. British Museum Publications Limited.

Stamper, M. 2018. "Faustina Augusta." *Trasimeno Archaeology Field School Student Blog*. ArchaeoTrasimeno.

TRASIMENO ARCHAEOLOGY DIGITAL SITE MUSEUM

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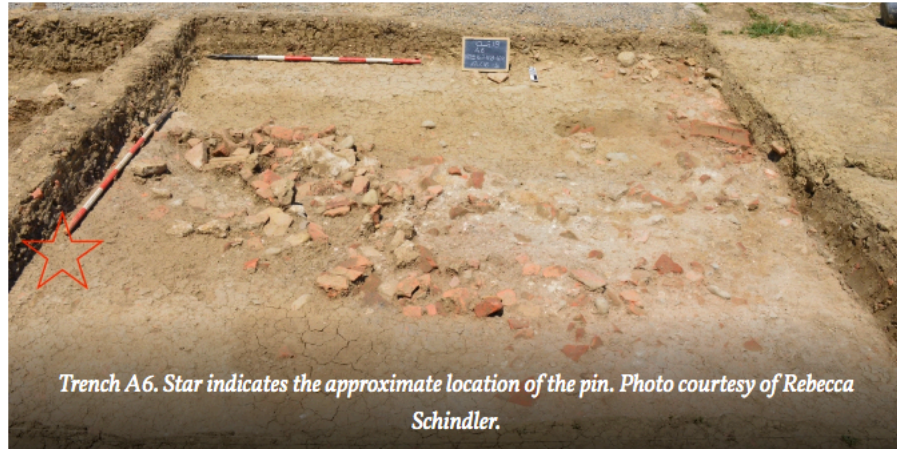
Date: c. 3rd–late 4th centuries BCE

Material: Bone

Date found: 18 June, 2018

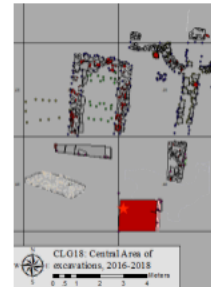
Location: Gioiella-Vaiano Villa Site, CLG18 Trench A6, U.S. 169

ARCHAEOLOGICAL CONTEXT:



CONTEXT DESCRIPTION:

This pin was found in an upper strata in the west side of trench A6. It was found among fill material, indicating that it was likely included in the unwanted dumped material, or dropped during the dumping process. Because the pin is small in size, it also could have moved to its depositional location via erosion.



*Site plan, courtesy of
Trasimeno
Archaeology
Directors.*

DESCRIPTION OF ARTIFACT & FUNCTION:

This bone pin has an ovular head with a flattened top, its shaft swells slightly in the middle, and its point is broken off and unrecovered. Based on the shape of the head, it falls into the category of Type 3A bone pins.¹ Through a comparison with other pins of this type, we can roughly date this pin to the 3rd or 4th century CE.² Type 3 bone pins were typically homemade by hand-carving and polishing a piece of bone.³ From burial contexts, we know that comparable pins were used to hold women's hair in place.⁴ These pins could also have been used for secondary purposes, such as fastening clothes.⁵

WHY THE ARTIFACT MATTERS:



Roman bust of a woman with a hairpin.⁷

In ancient Rome, women elaborately styled their hair not only for physical appearance but also for displaying their individuality, virtues, and personality.⁶ In a culture that expected women's domesticity, public silence, and modesty, hairstyles were a means for women to project their identities within the confines of social expectations. Through busts, paintings, coins, and even instances of hair preserved in burials, we know that women had their hair meticulously styled to suit contemporary fashion trends, as well as their age, social status, and public profile.⁸ Because the time-consuming styling of hair took place in the privacy of the home,⁹ elaborate hairstyles projected chastity and

domesticity.¹⁰ Unnaturally styled hair signified civilized sophistication, and it was often associated artistically with literacy.¹¹ Holding these elaborate hairstyles in place required many hairpins such as the one found on our site. Hairpins held women's hair firmly in place, creating a gendered contrast with men's less styled and more flowing hairstyles.¹²

By finding the hairpin and approximating its date, we know that women were among the occupants of our site during its post-second century BCE use. However, because we found the hairpin in a fill layer and not its original location, we cannot know exactly what areas of the site were used by women. Although the hairpin's depositional context limits its factual utility, its nature as a personal object provides a more abstract opportunity: to imagine the lives of the villa occupants through the objects they touched on a daily basis.

ENDNOTES

1. Crummy 1995, 22. These categories are based on pins from a Roman Britain site while this pin is from Campania; pin styles may differ regionally.
2. Crummy 1979, 161.
3. Crummy 1995, 20, 22. Rodet-Belarbi & Van Ossel found that all studied bone pins from their site were made of cow bones.
4. Crummy 1995, 21.
5. Simpson 2003, 21.
6. Bartman 2001, 1.
7. "Head of a woman." Rome, Palazzo Corsini 642, back. In Crummy 1995, 12.
8. Bartman 2001, 1.
9. Bartman 2001, 4.
10. The virtues associated with elaborately styled hair are comparable to those

10. The virtues associated with elaborately styled hair are comparable to those associated with weaving. If a woman was working the loom or styling her hair, she was at home rather than out in public with non-familial men.
11. Bartman 2001, 6. Styled, unnatural looks contrasted with Roman notions of uncivilized barbarism. Roman artists often depicted provincial women with natural hair.
12. Bartman 2001, 3.

PIN REFERENCES

Bartman, E. 2001. "Hair and the Artifice of Roman Female Adornment." *American Journal of Archaeology* 105:1, 1-25.

Crummy, N. 1979. "A Chronology of Romano-British Bone Pins." *Britannia* 10, 157-163.

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Simpson, C. 1997. *The Excavations of San Giovanni di Ruoti: Volume II: The Small Finds*. University of Toronto Press.

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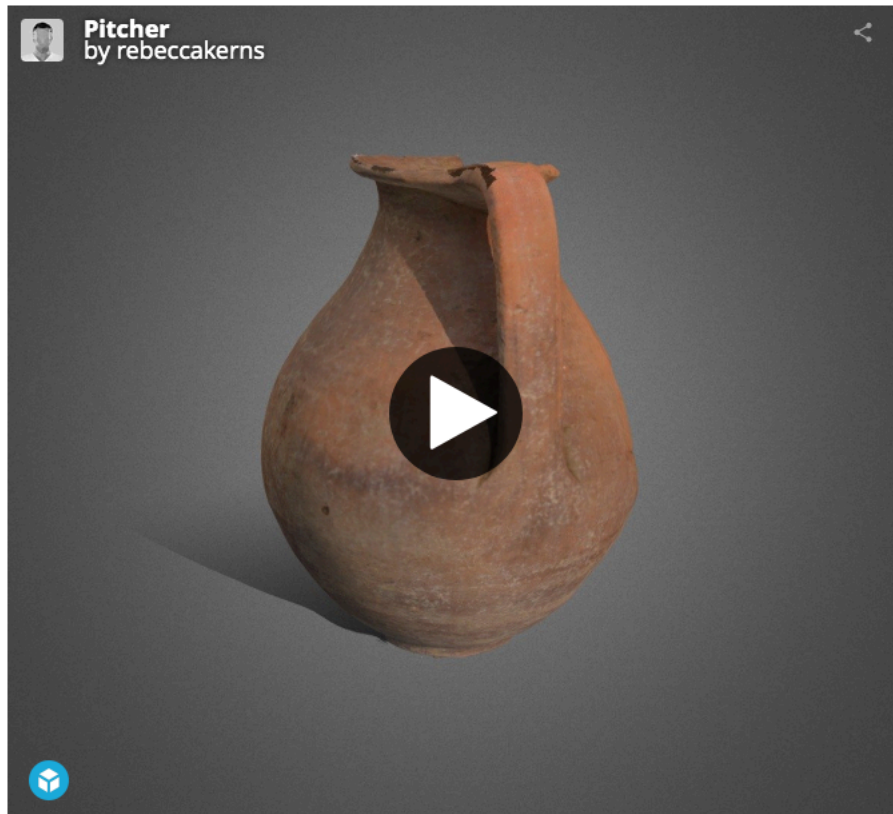
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PITCHER



Pitcher
by rebeccakerns



[Pitcher](#) by [rebeccakerns](#) on [Sketchfab](#)

PHOTOGRAPH:



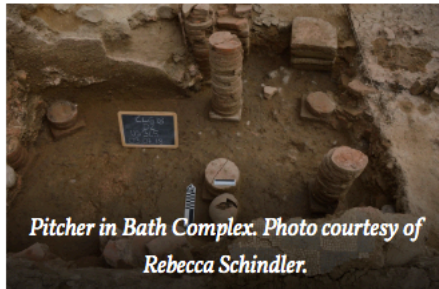
Date: 1st-2nd c. CE, based on vessels of similar style from 1st c. CE Gubbio¹ and 1st-2nd c. CE Baschi and Cosa²

Material: Terracotta

Date found: 3 July, 2018

Location: Gioiella-Vaiano Villa Site, CLG18 Trench D2, U.S. 345

ARCHAEOLOGICAL CONTEXT:



Pitcher in Bath Complex. Photo courtesy of Rebecca Schindler.



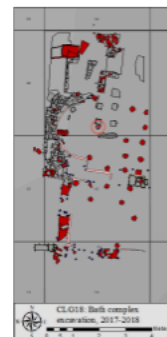
Bath Complex, Trench D2. Star indicates location of pitcher. Photo courtesy of Rebecca Schindler.

CONTEXT DESCRIPTION:

This pitcher was found at the base of a hypocaust pillar in the bath complex. It was likely sitting on the mosaic floor, which is supported by the hypocaust system, but ended up in the hypocaust when the floor collapsed. Because the pitcher is nearly intact, it is probably close to its last human-influenced location.



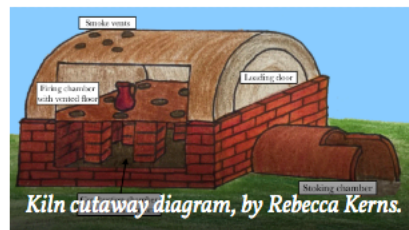
Close-up of pitcher in context. Photo courtesy of Rebecca Schindler.



Site Plan, courtesy of Trasimeno Archaeology

DESCRIPTION OF ARTIFACT & FUNCTION:

This pear-shaped terracotta pitcher has a narrow base, one handle, and a sloping rim for pouring. Its plain surface indicates that it was a utilitarian jug rather than a decorative piece.³ Because it was found in the bath complex, it could have been used for pouring water during the bathing process (such as to wash or to create steam by pouring water on a hot surface).

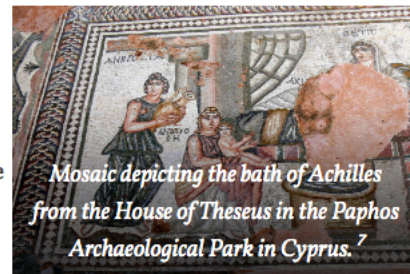


Based on its smooth, uniform surface, the pitcher was made using a potter's wheel. Households could buy such vessels from businesses or make their own at home, which would have been a chore of women or slaves.⁴ Making pottery required a kiln,⁵ in which the modeled clay was hardened by extreme heat. Although we have not

found a kiln itself, we have found several wasters⁶ indicative of a kiln onsite. We also know that the villa occupants had access to the fuel necessary for firing because they had a heated bath complex, which would have required a constantly running furnace.

WHY THE ARTIFACT MATTERS:

While the pitcher itself is a rather generic vessel, it is among the most complete pottery pieces found onsite. As it was found in its original context, we are able to imagine its connection to the building and function in the occupants' bathing. In the fifth century CE mosaic to the right, the woman on the left carries a pitcher similar to the one found onsite.



ENDNOTES

1. Chiari 1995, 284.
2. Bergamini 2008, 272; source for both Baschi and Cosa.
3. Stone 2015, 140-1. Based on comparanda.
4. Peacock 1982, 7.
5. A kiln is a superheated oven used for firing pottery.
6. A waster is a piece of misfired pottery. These pieces were used to test the temperature of a kiln prior to the firing process.
7. Sauber 2011.

PITCHER REFERENCES

Bergamini, M. 2008. *Antiquarium Comunale di Baschi*. Electra Editori Umbri Associati.

PITCHER REFERENCES

Bergamini, M. 2008. *Antiquarium Comunale di Baschi*. Electra Editori Umbri Associati.

Chiari, M. 1995. *Museo Comunale di Gubbio: Materiali archeologici*. Electra Editori Umbri Associati.

Peacock, D. 1982. *Pottery in the Roman world: An Ethnoarchaeological Approach*. Longman Group, Ltd.

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Sauber, W. 2011. "Paphos Haus des Theseus – Mosaik Achilles." Wikimedia Commons. Accessed Jan. 18, 2018.

TRASIMENO ARCHAEOLOGY DIGITAL SITE MUSEUM

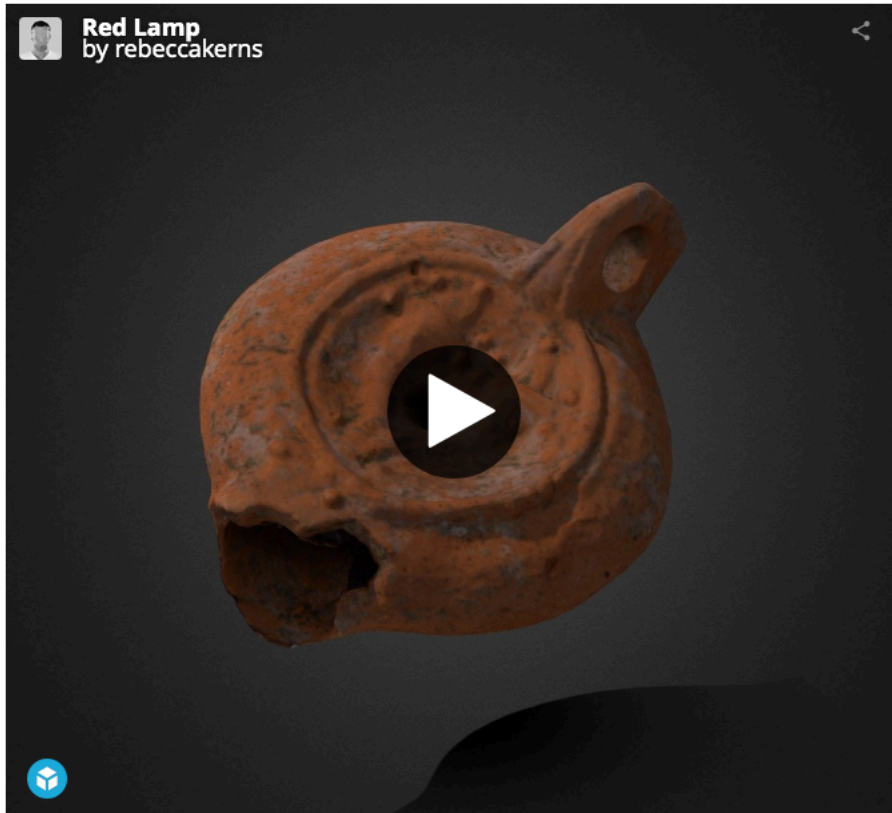
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RED LAMP



Red Lamp
by rebeccakerns



[Red Lamp](#) by [rebeccakerns](#) on [Sketchfab](#)

PHOTOGRAPHS:



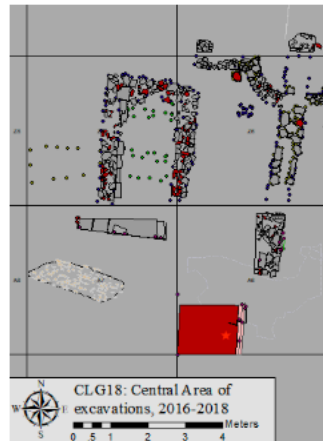
Date: c. 1st-3rd centuries BCE **Material:** Terracotta

Date found: 21 June, 2018 **Location:** Gioiella-Vaiano Villa Site, CLG18 Trench A6, U.S. 180

ARCHAEOLOGICAL CONTEXT:



CONTEXT DESCRIPTION:



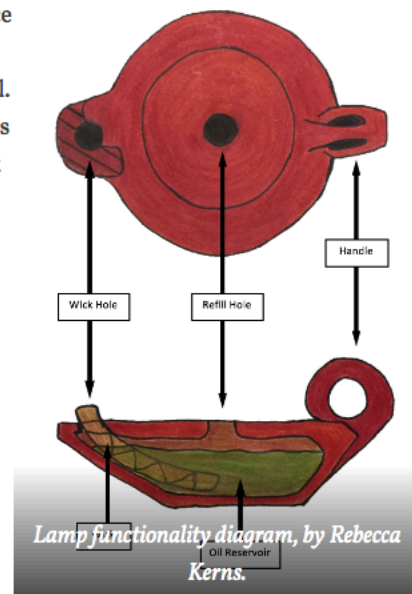
This lamp was found in an upper strata in the southwest corner of trench A6. Because it was intermingled with a variety of building materials (mostly roof tiles), its depositional environment indicates that it was likely buried during a structural collapse or was the result of a dump.

*Site plan, courtesy of Trasimeno
Archaeology Directors.*

DESCRIPTION OF ARTIFACT & FUNCTION:

Lamps of this sort were a common light source in antiquity. They are made of terracotta, a widely-available and flame-resistant material. Generally, they have a circular body serving as an oil reservoir, an open nozzle to hold a wick at one end, and (oftentimes) a handle at the other.¹ Terracotta lamps were typically made using molds, allowing for the efficient mass-production of identical lamps.² While many lamps have decorative motifs on top, some also have a *planta pedis*.³ Through mass spectrometry analysis, we know that these lamps burned primarily olive oil, but animal fat was occasionally mixed with it.⁴

Why the artifact matters:



By studying the decorations on artifacts, we can better understand what their owners valued for themselves and how they wanted to be perceived by others. This particular lamp features a cornucopia motif on the top surface, symbolizing plentiful harvest and relating to the villa's crop production. Additionally, visitors to the villa might have used the lamp, so its owners would have wanted to positively portray themselves through their belongings. By choosing a common harvest motif, they subtly projected a sense of affluence and successful production; the visitor might then subliminally associate these cultural values with their hosts. In sum, the owners could have been trying to reinforce their successes to friends or visitors. Or, they might have just really liked cornucopias.

Flipping the lamp over, we find an poorly preserved *planta pedis* (maker's stamp) on the bottom. Like a brand logo, maker's stamps indicate who made the lamp, thus benefiting the manufacturer by providing advertisement. The distribution of lamps with a certain stamp help us to understand the extent and chronology of commerce networks. If the stamp on this lamp were legible, we could potentially understand whence the owners purchased it.

Because of the large quantity of comparable lamps, we can approximate the production date of our lamp to be between the first and third centuries.⁶ The lamp's date then provides a datum for the site's occupation. If the lamp were in a primary context,⁷ the lamp's date would serve as an approximate *terminus post quem*⁸ for the phase of the site (the date after which the site was in use) because the lamp's use at the site had to occur after its production date.

ENDNOTES

1. Harris 1980, 128.
2. Garnett 1975, 179.
3. *Planta pedis* refers to a maker's stamp, located on the base of the lamp.
4. Kimpe et al. 2001, 87.
5. Bussi re and Wohl 2017, Cats. 278-440. This lamp is comparable to Loeschke Type VIII lamps, which had a round body with a short rounded nozzle. These lamps were most popular throughout the Italian peninsula during the 1st-3rd centuries CE, with some examples from the 1st century BC and 4th-5th centuries CE.
6. A primary context refers to the original, undisturbed location of an artifact. Because the lamp was in disturbed fill, it was not in its primary context.
7. Latin, literally meaning "end after which."

LAMP REFERENCES

Bailey, D. 1975. *A Catalogue of the Lamps in the British Museum*. London: British Museum Publications Ltd.

Bussi re, J., and B. Wohl. 2017. *Ancient Lamps in the J. Paul Getty Museum*. Los Angeles: J. Paul Getty Museum.

LAMP REFERENCES

Bailey, D. 1975. *A Catalogue of the Lamps in the British Museum*. London: British Museum Publications Ltd.

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García Gimenez, R., R. Vigil de la Villa, M.D. Petit Domínguez, M.I. Rucandio. 2006. "Application of chemical, physical and chemometric analytical techniques to the study of ancient ceramic oil lamps." *Talanta* 68, 1236–1246.

Garnett, K. 1975. "Late Roman Corinthian Lamps from the Fountain of the Lamps." *Hesperia: The Journal of the American School of Classical Studies at Athens* 44:2, 173–206.

Harris, W.V. 1980. "Roman Terracotta Lamps: The Organization of an Industry." *The Journal of Roman Studies* 70, 126–145.

Kimpe, K., P.A. Jacobs, M. Waelkens. 2001. "Analysis of oil used in late Roman oil lamps with different mass spectrometric techniques revealed the presence of predominantly olive oil together with traces of animal fat." *Journal of Chromatography A*, 937, 87–95.

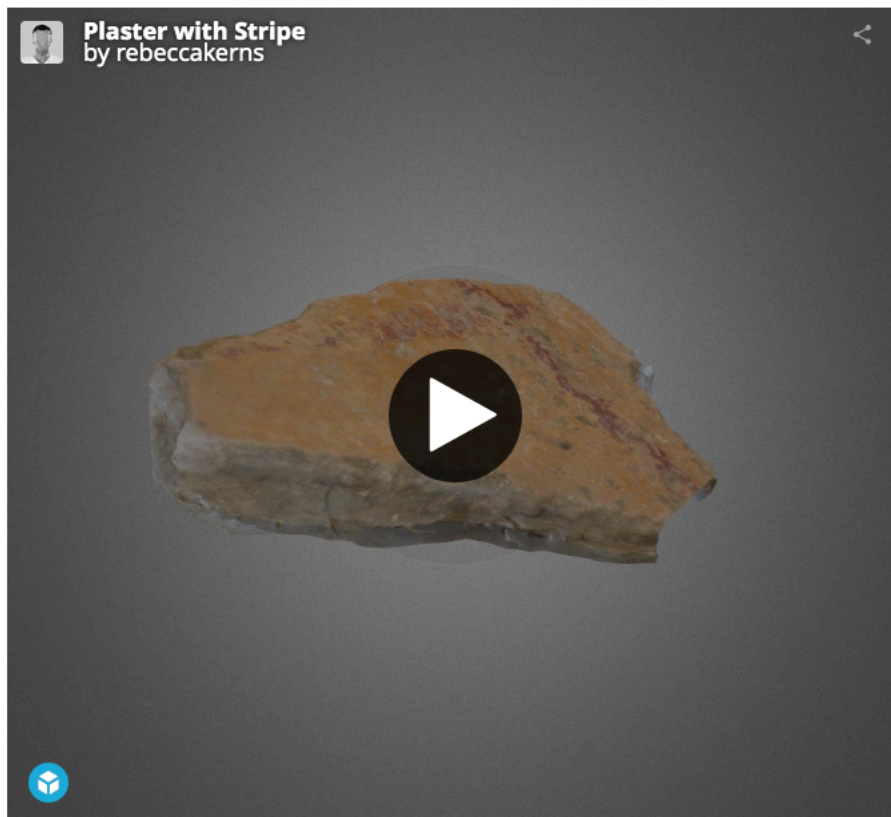
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WALL PLASTER



Plaster with Stripe
by rebeccakerns



[Plaster with Stripe](#) by [rebeccakerns](#) on [Sketchfab](#)

PHOTOGRAPH:



Material: Plaster (intonico) **Date:** Unknown

Date found: 28 June, 2018 **Location:** Gioiella-Vaiano Villa Site, CLG18 Trench A6, U.S. 191

ARCHAEOLOGICAL CONTEXT:



CONTEXT DESCRIPTION:

These fragments of wall plaster were found next to an ashlar block¹ amid fragments of *opus signinum*² and above a layer of cobbles, which were likely placed during a late phase of the site. Because the fragments are broken among other building materials, they likely fell from an upper story during the collapse of the structure.



DESCRIPTION OF ARTIFACT & FUNCTION:

These wall pieces are composed of layers of plaster covered in paint. In addition to studying the archaeological remains, we can understand Roman building and decorative techniques through the writings of Vitruvius, a 1st century BCE Roman architect.³ Roman walls were made by layering plaster over the structural stones. The plaster was made of a mix of lime, water, and a filler material (usually sand, crushed marble, or crushed brick), with the lime acting as the binder.⁴ Rough plaster with chunkier fill material was applied near the stones, with progressively finer layers applied near the finished wall surface.⁵ After applying the last layer of plaster, an artist painted the wet plaster to create a fresco.⁶ Paint was made by combining water with natural ochres, charcoal, flowers, and chalk.⁷ After the paint was dry, a layer of wax was applied to preserve its color.⁸

WHY THE ARTIFACT MATTERS:

These plaster fragments indicate that the villa had a lavishly decorated interior. While paint was expensive, shades of brown, red, and yellow were the most affordable and therefore most common.⁹ Because of the simplicity of design on these fragments, they were likely from a private room of the house. Wall paintings in public rooms tended to be more elaborate so that the owner could impress visitors with scenes of optical illusion, mythic narratives, or landscapes. Painting styles and subjects depended on current fashions, the function of the room, and the mood the owner wanted to communicate.

ENDNOTES

1. An ashlar block is a large, rectangular stone used in sturdy construction.
2. Romans used *opus signinum* for flooring. Also called *cocciopesto* (Italian), this building material consisted of broken tile bits mixed with mortar.
3. Vitruvius wrote a 10 book collection on architecture titled *De Architectura*. In this collection, he describes topics such as building materials, architectural styles, city planning, environmental and astrological impacts on construction, and machinery.
4. Freccero 2005.
5. Vitruvius VII.3.6.
6. Vitruvius VII.3.7.
7. Vitruvius VII.7.1-5.
8. Vitruvius VII.10.3-4.
9. Aliatis et al. 2011, 1537.

WALL PLASTER REFERENCES

Aliatis, I., D. Bersani, E. Campani, A. Casoli, P. Lottici, S. Mantovan, and I. Marino. 2010. "Pigments used in Roman wall paintings in the Vesuvian area." *Journal of Raman Spectroscopy* 41: 1537-1542.

Freccero, A. 2004. *Pompeian Plasters*. Rome: The Swedish Institute.

WALL PLASTER REFERENCES

Aliatis, I., D. Bersani, E. Campani, A. Casoli, P. Lottici, S. Mantovan, and I. Marino.
2010. "Pigments used in Roman wall paintings in the Vesuvian area." *Journal of Raman Spectroscopy* 41: 1537-1542.

Freccero, A. 2004. *Pompeian Plasters*. Rome: The Swedish Institute.

Morgan, M. 1914. *Vitruvius: The Ten Books on Architecture*. Harvard University Press.



ARTIFACT DATABASE 2018

Artifact	Date	Date Found	Location	Material	Type	Iconography
Black Lamp	Late 1st-early 2nd c. CE	28 June, 2018	Gioiella-Vaiano Villa; CLG18 Trench A6, US 191	Gray clay	Umbrian	
Coin	169-175 CE	21 June, 2018	Gioiella-Vaiano Villa; CLG18 Trench A6, US 180	Copper	Faustina II Group III	Obverse: "FAVSTINA AVGVSTA"; bust of Faustina II Reverse: "JUNO REGINA"; standing Juno holding patera and scepter with peacock
Red Lamp	c. 1st-3rd c. BCE	21 June, 2018	Gioiella-Vaiano Villa; CLG18 Trench A6, US 180	Terracotta	Loeschke Type VIII	Cornucopia on top surface; illegible stamp on base
Pin	c. 3rd-late 4th c. BCE	18 June, 2018	Gioiella-Vaiano Villa; CLG18 Trench A6, US 169	Bone	Type 3A	
Pitcher	1st-2nd c. CE	3 July, 2018	Gioiella-Vaiano Villa; CLG18 Trench D2, US 345	Terracotta		
Plaster		28 June, 2018	Gioiella-Vaiano Villa; CLG18 Trench A6, US 191	Intonico		Painted red, yellow, yellow with red stripe

PROCESS

Publishing Models:

1. Export model as a .obj file, with texture, from the photogrammetry software.
2. Select exported files and compress into a .zip.
3. Upload the .zip to Sketchfab.
4. Edit the model properties in Sketchfab by clicking the “3D Settings” tab.
5. Embed in the WordPress page by copy and pasting the model’s URL from Sketchfab into the WordPress page.