

Excavations at Tell Timai 2012

University of Hawaii

December 1 to 27, 2012



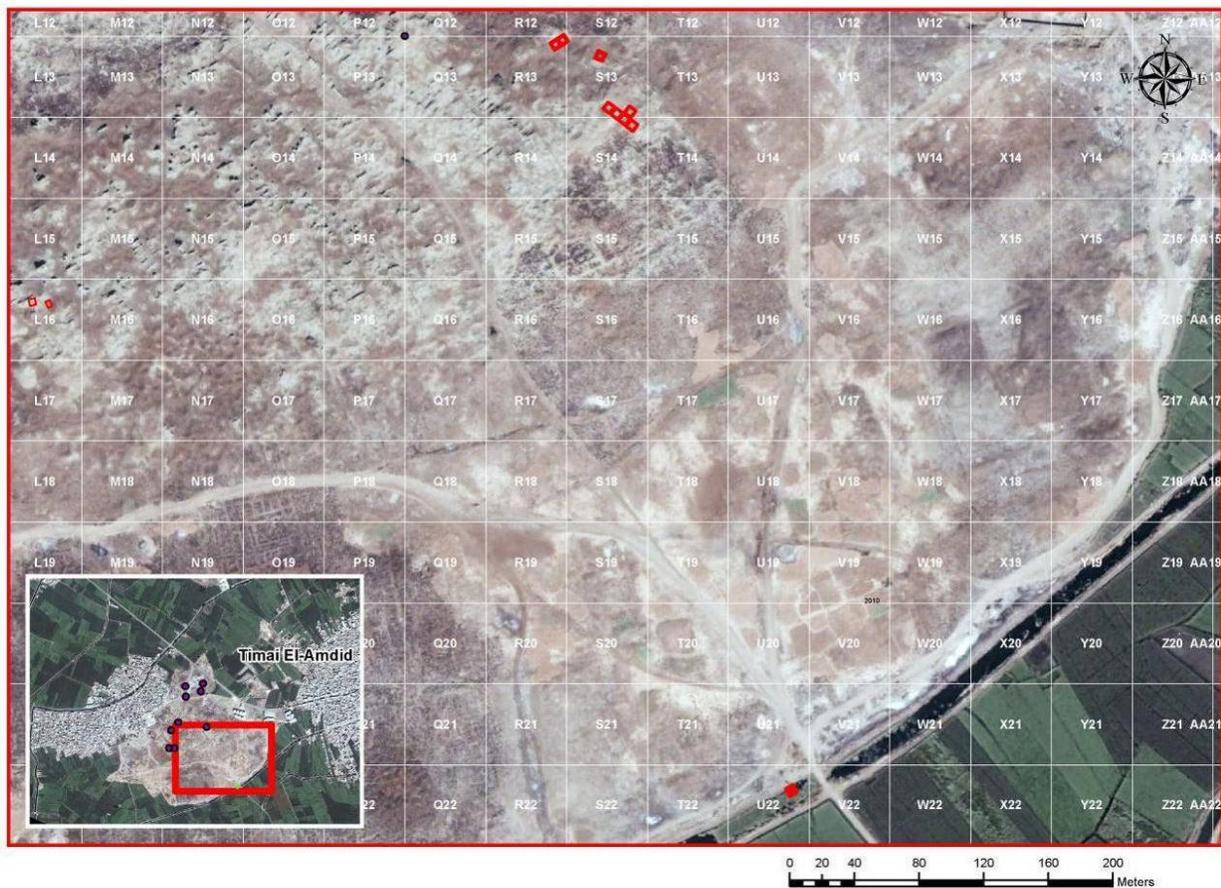
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An archaeological team sponsored by the University of Hawaii led by Professor Robert Littman and Dr. Jay Silverstein conducted excavations from 1-27 December, 2012. The archaeological team consisted of twelve archaeologists from America, Egypt, Australia, Mexico, England and Italy. The archaeological study focused on excavations in the central portion of Tell Timai and included features ranging from the Early Hellenistic Period to the late Roman Period. In 2007 the Tell Timai Project created a 50 meter grid system used to identify areas on the tell and excavation units are annotated by the 50 meter grid unit in which they are located. The Tell Timai Project worked in Grids U22, S14, S13, and R13. Excavation units are given sequential numbers within the grid and features within the unit are appended (e.g. S13-1-1308).



Map of the areas investigated.

During the Tell Timai 2012 season a Sokkia Set 3110 total station and Pentax autolevels were used to control unit elevations and conduct surface and unit feature mapping following the base datums established in previous seasons of work and excavation were conducted by context—individual features were documented and sampled to establish form, function, history, and date. Conservators from the Supreme Council of Antiquities assisted with the cleaning and conservation of artifacts.

CONSERVATION ISSUES

Several issues threaten the Tell Timai site and present an imminent and severe threat to the considerable wealth of historical and scientific data and the potential for developing the Tell Timai/Mendes archaeological area for touristic and educational purposes. The threats are:

1. Looting: During the course of this study approximately twenty new illegal excavation locations were identified with several excavations exceeding 5 meters in depth.
2. Natural erosion of mudbrick architecture and undermining of walls by dogs.
3. Illegal Encroachment: There appears to be a continued expansion of the garbage dump on the site as well as use of the land for other dumping, agriculture and construction.
4. Stadium Construction Project: Five fedens of land have been undergoing intensive salvage excavation in preparation for construction in the northern portion of the tell. Preliminary results of SCA and University of Hawaii work indicate that this area is extremely rich in Hellenistic occupation including a destruction of this part of the city in approximately 185 BC. The destruction event, like catastrophes at Pompeii and Santorini, offers a unique archaeological event in which artifacts are largely left in place providing important opportunities for careful excavation to uncover:
 - a. Details of daily life,
 - b. *In situ* artifacts including museum quality objects. Recent discoveries of numerous important finds, for aesthetic, historical, and touristic value, including coin hoards, unique figurines, gold and silver objects, and exceptional collections of ceramics indicate the need for careful and much more complete excavation.
 - c. Details of an important historical event that effected the subsequent history of Egypt and the Mediterranean world.

The current theory of the destruction event at Tell Timai is that it was one of the final battles of the Great Rebellion of the Egyptian People against their Greek rulers and the most successful attempt to replace the Greek Pharaoh with an indigenous Egyptian Pharaoh. This event is an essential piece of history tied to the text accounts of ancient authors such as Polybius and referenced in papyri and monuments such as the Rosetta Stone. Nowhere else in Egypt is there an archaeological record of the conflict between the Egyptians and the Greeks. In addition, these excavations have revealed evidence of an early Hellenistic occupation and represent a unique example of this poorly understood and extremely important period of Egyptian history.

Therefore, we recommend the following actions be considered by the Supreme Council of Antiquities:

1. The construction of the stadium on the northern portion of the tell be halted.

2. The Egyptian Government should propose to UNESCO that the Mendes/Timai archaeological area be recognized as a World Heritage Site.
3. Increased security be instituted and construction of a protective wall be planned and constructed.



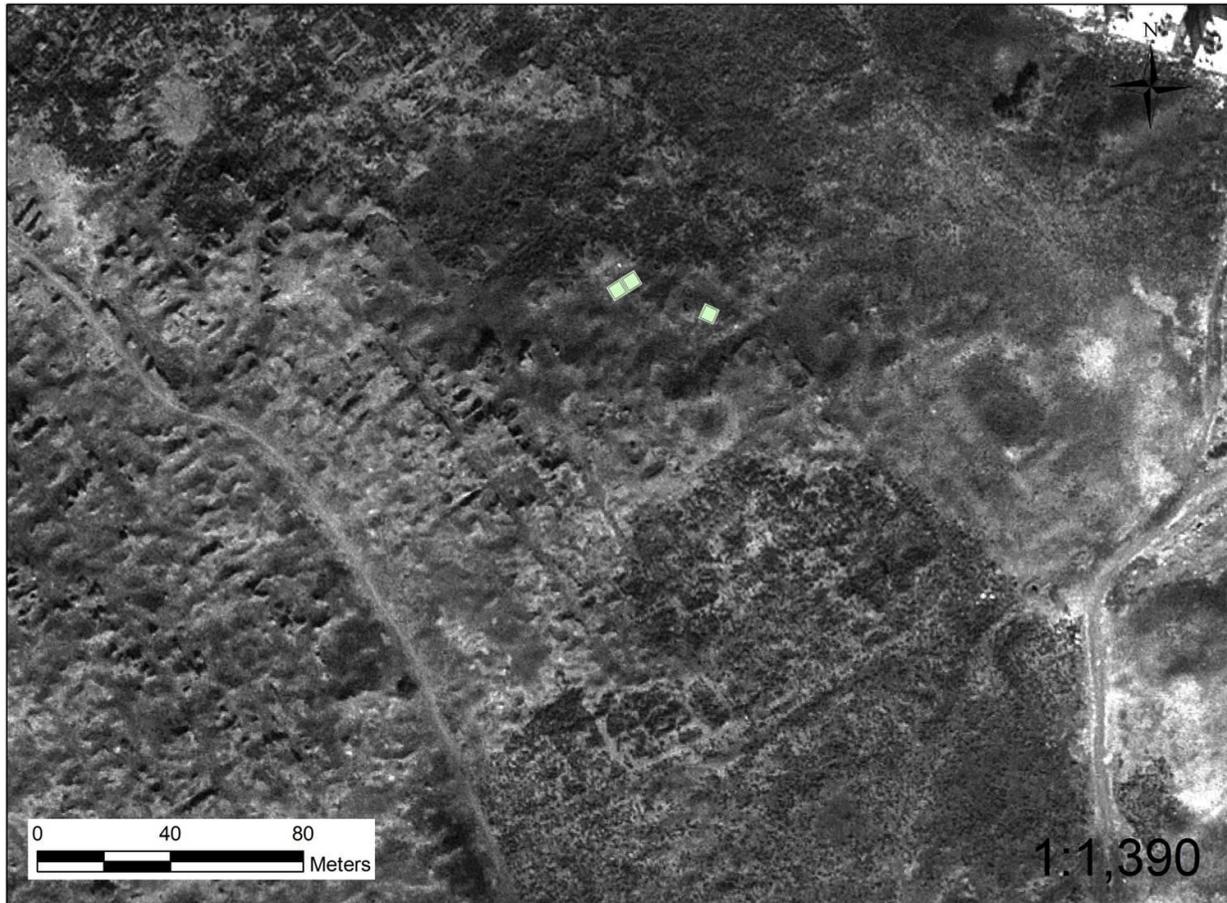
A 5-meter deep looter's pit in the central portion of Tell Timai.

EXCAVATIONS

R13-2

Mohamed Kenawi, PhD
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Sarah Hitchens, B.A.

In December 2012 the R13-2 unit was re-opened to further explore the structure discovered in the 2011 season, in order to continue investigating the date of foundation of the structure and this part of the city. Due to illegal digs that took place inside the unit since the summer of 2011, the context of the unit was damaged and all materials mixed from a pit approximately 1.5 meters wide and 3 meters deep. R13-2 is located in the heart of the ancient town (Thmuis), at the edge of two main streets and in front of a possible Gymnasium or forum area, not far away from a temple platform which can be seen from the unit (SE).



R13-2 and the two units of 2012 (R13-1 and S13-1)

Work began with an initial clean-up of the unit, followed by the removal of a destroyed Byzantine floor that had been uncovered in 2011 (Features: R13-2-1310 and R13-2-1311). After ascertaining the damage that the trench suffered and the depth of the looters' hole, it was decided to dig in the central part of the trench (that is, inside a room enclosed by four mud brick walls) with the aim of reaching the bottom level of occupation of the area enclosed inside the unit. During the 2011 season, the last feature uncovered was a large ceramic vessel that had been partly placed beneath a mud brick wall. It may have been covered by a Roman floor and was standing on worked limestone slabs that belonged to the Late Ptolemaic period. During the year between the two excavation seasons, the vessel was looted and partly destroyed by looters, therefore this year we began our investigation at the level where the vessel had been situated.



R13-2 in 2011 before closing the unit.

- 1- *Byzantine floor (destroyed by looters in 2012)*
- 2- *Early Roman floor (completely destroyed and excavated by looters)*
- 3- *Entrance to the byzantine structure.*
- 4- *Huge pot partly destroyed by looters and dated to the Late Hellenistic period.*
- 5- *Limestone foundation dated to the Late Hellenistic period (removed by looters).*
- 6- *Part of the byzantine floor.*

After cleaning, four features were identified (R13-2-3266, -3267, -3278 and -3269). Excavations focused mostly on R13-2-3266 (Late Hellenistic layer) as it is the feature at the centre of the trench; this was also due to reduce the risk of collapse of the features that had been previously excavated, as the looters' hole reached a depth of at least 3 meters, Features R13-2- and R13-2-3268 were excavated partially for investigation--only pottery was recovered from these features.



R13-2 after cleaning and removing the looters destruction.

Following the removal of R13-2-3266, a series of deposit layers were encountered (R13-2-3271, -3272, -3276 and -3277), differing in colour and typology of artifacts. Among the findings, the most interesting ones ranged from Ptolemaic coins and *in situ* ceramic pots, jars and bowls (R13-2-3271). This feature appears to be part of an earlier structure with a different function. The date appears Late Ptolemaic (pending analysis), but the whole structure was abandoned suddenly and does not show signs of destruction.



Pots *in situ* related to an early occupation dated to the Late – Middle Hellenistic Period.

As the excavations proceeded, two walls (R13-2-3282 and R13-2-3283) were recognized at the NE and SW edges of the area undergoing work inside the trench. Their discovery implies that the area had been re-utilized and the walls are connected to an early Hellenistic occupation. Although standing in close proximity, the walls do not appear to have any relationship between each other. This was confirmed during the finding of the floor R13-2-3280 (that lies between the two walls), the foundation of wall R13-2-3283 was below the floor associated at the foundation level of wall R13-2-3282. Moreover, wall F3283 does not continue beyond the limits of the trench, either terminating or curving in a NE direction (as opposed to wall R13-2-3282, which has a course following a SE-NW direction).

In accordance with the abovementioned facts, floor R13-2-3280 was removed in order to reach wall R13-2-3283's foundation. Beneath it other deposit layers were found (R13-2-3284 and R13-2-3399). These features yielded a rich amount of pottery, including full pots, worked limestone implements and ceramic and limestone figurine fragments pertaining to the Early Ptolemaic Period. In addition, the hue of the soil of R13-2-3399 was red and redbrick fragments were encountered mixed with the ceramic sherds. By observing the stratigraphy it was discerned that the excavation had reached the remains of a destroyed red brick floor of early Ptolemaic date, as determined by associated artifacts.

The last feature to be uncovered was R13-2-3400, a probable early Hellenistic mud floor. The floor does not coincide with the foundations of wall R13-2-3283, as it terminated at a level between deposit features R13-2-3284 and R13-2-3399. The mud floor covers the extent inside the excavated area of the trench. R13-2-3399 is of much interest because of the high quantity of Utilitarian wares compared to other wares.

The final elevation recorded reaches a depth of 5 meters. Our excavations suggest that this portion of the site appears to have been heavily inhabited from the Early Ptolemaic era until the Byzantine period. Further investigation in the same unit might yield an earlier Late Period occupation of the site which would be a key to dating the first habitation levels at Thmuis.

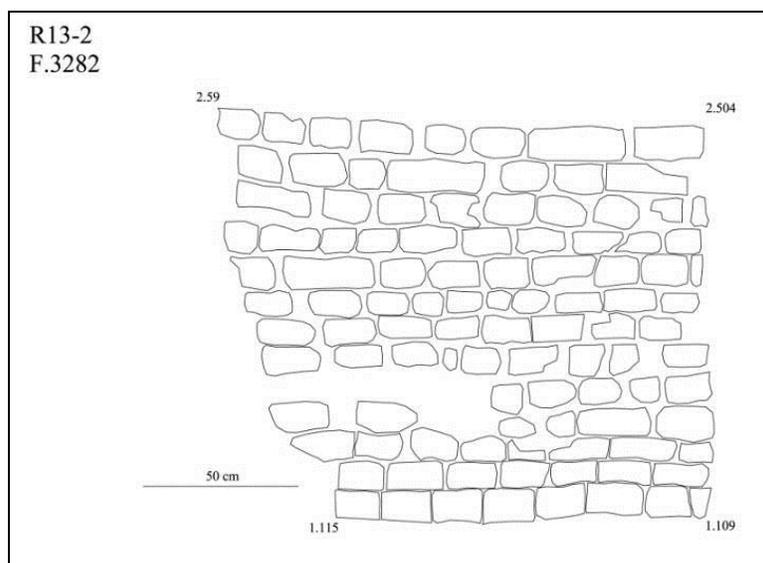


Fig.5: R13-2, simple drawing of one of the Hellenistic walls

R13-2 extension (3 x 4 m)

With the resumption of the excavations at the R13-2 unit it was decided to expand the unit in order to attain a better understanding of the context of associated features. A 3x4 meter extension was opened adjacent to the southeast edge of the original unit.

Two mud brick walls (R13-2-3278 and R13-2-3279) were uncovered soon after the surface layer was removed. The walls run parallel to each other at a regular distance of 1.50 m, but they do not seem to be contemporary as their foundations are lying at different levels. R13-2-3278 is built upon a thick layer of deposit, whereas R13-2-3279's foundations were not yet reached during the 2012 season. Moreover, R13-2-3279 was constructed alongside the walls R13-2-1320 and R13-2-1316, which enclosed the room of the original unit; it appears that R13-2-3279 is related to the room that had been excavated during the 2011 season.



Unit R13-2 with extension (view northeast).

A third mud brick wall (R13-2-3274) was uncovered in the east corner of the unit. It is abutted by wall R13-2-3278 but they are not contiguous as R13-2-3274 lies at a lower level and its foundations are deeper than those of R13-2-3278. As only a small square part of R13-2-3274 is visible, it is not possible to understand its orientation. Between the three mud brick walls lay two thick deposit layers (R13-2-3270 and R13-2-3273) that acted as fill features. Among the inclusions were whole bowls and complete pots, as well as various coins (data pending cleaning). Below the deposits was a mud floor (R13-2-3275) that does not extend completely between the two mud brick walls and was found in an odd reverse L-shape, probably the result of latter construction work and usage of space. Deposit R13-2-3273 continued in depth next to R13-2-3275 and once it was removed another mud floor (R13-2-3281) was exposed. Although lying

adjacent to each other, the two floors are individual and due to the end of the excavation season it was not possible to see their complete depths and how they relate to each other.

By observing the stratigraphy, it was possible to detect the presence of a burn layer among the mud floor layers that comprised R13-2-3275. Upon the excavation of R13-2-3275, it was revealed that the burn layer extended over the entire area covered by the floor and appears to run beyond the limits of the unit. However, it is important to note that there is no other evidence of the burn layer on any of the other features inside the trench, particularly the walls and northeast profile of the unit. There are no indications of burning or of a burn layer inside the room to the north of the extension; therefore, the burning is confined to a long narrow area and to one particular feature. Its unique shape may have resulted from the cutting of the floor, which may have removed part of the burn layer. The burn layer may be considered to be a destruction layer, but given its size and extension it appears to have not been particularly destructive and occupancy and rebuilding occurred soon after it happened (the burnt layer in R13-2-3275 is the fifth of the six mud layers that make part of it). It is important to note, however, that although the phasing of the layer has not yet been precisely determined, it does appear to represent an event in the mid-Ptolemaic era and may correlate with the same event responsible for the more extensive destruction identified in the northern portion of the tell (Grids O4-P7).



R13-2 showing the exposed burn layer.

In conclusion, the area excavated inside the extension of unit R13-2 is a possible hallway or alleyway, whose walls (R13-2-3278 and R13-2-3279) were constructed at different periods and

most probably after floor R13-2-3281 was laid, although since R13-2-3279, R13-2-3275 and R13-2-3281's foundations have not been reached it is not possible to understand if they are contemporaneous. Due to the size of the area excavated and the time constraints it is difficult to determine if the unit is inside a house or outside. Further excavations and expansions of the unit would help answer some of the questions relating to function and dating.

Unit S14-1

Sean Winter, M.A.

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Colleen Westmor, B.A.

Unit S14-1 was a 5x5m trench excavated at the south end of a row of four similar trenches, the aim of which was to investigate an area thought to represent a high status area of the city of Thmuis. Excavations uncovered a number of phases of site use. The top strata comprised a thick layer of pottery sherds brick fragments and industrial slag. This material was in secondary deposition and contained artifacts dating from the early to the late Roman periods, including material significantly older than that found in secure contexts below it. Immediately below this strata was an approximately 2m thick layer of mudbrick tumble which represented numerous collapse and fill episodes dating within a tight range from the early fourth to mid third century CE. A number of cut and fill features into the top of this collapse indicated the use of this area of the site for industrial purposes after the collapse of the building. Below this, the collapse layers overlay a number of architectural features including a series of mudbrick walls, two floors with *in-situ* pottery, wooden support beams and a set of wooden steps.



Stairway at the end of the corridor.

These structural elements combined to form a 2.5x3m room, with an entrance leading out to a small corridor, approximately 0.6m wide. The steps at the north end of this corridor appeared to climb up to the feature interpreted as a street in S14-2, the trench located immediately adjacent to the north. Flooring material located in the collapse layers and horizontal wooden postholes in the walls suggest the building had an upper story that collapsed into the lower room. Based on the nature of the *in-situ* finds, and the steps leading into it, the room has been initially interpreted as a storage cellar or similar located at the bottom of a larger structure.



The doorway between room and corridor.



Ceramic storage vessels *in situ*.

The top of the collapse was dated by pottery to the early to mid 4th century CE. Below this two coins provided good dating evidence for the process of collapse. The first, approximately one meter above the *in-situ* floor dated to 275 AD (SCA #126). The second recovered from the floor itself, dated to 265 AD (SCA #131), suggesting the collapse of the structure and build up of material was relatively rapid. Numerous *in-situ* amphorae were found on the floor of both the room and the corridor, and residues within them suggest they were full at the time of collapse. Additionally, a fully articulated cat skeleton was recovered from this floor with a sheep bone between its front paws (i.e., its' dinner), suggesting it was killed by the collapse. Combined, the amphorae and cat skeleton suggest the collapse first occurred when the structure was still in use.



Cat skeleton found on floor.

One highly significant find was recovered from this trench. A bone carving of the goddess Isis-Aphrodite was located within the neck of an amphora in the middle of the collapse layers approximately 1m above the *in-situ* floor (SCA #109). This amphora may have been *in-situ* on an upper level floor during the initial collapse, or may instead simply have been deposited as rubbish within the collapsed building. Nevertheless, based on the coin found below this feature (SCA#126), a coin found just above this feature dating to 332/3 AD (SCA #130), this artifact dates from after 275 CE to sometime within the early 4th century AD.

S14-2

Sarah Chapman, M.A.

Lori Lawson, M.A.

After removing the surface layer of Unit S14-2, a mudbrick wall was uncovered on the west side of the square running through the square at a north-south orientation (a continuation of this wall was discovered north of S14-2 in S13-4). This wall was abutted by another mudbrick

wall with an east-west orientation that continues westward into S13-3. These two walls formed two rooms partially located along the western half of S14-2.



Units S14-2, S14-3, and S14-1 (view southeast)

A 1 meter-wide layer of compacted clayey silt covered by a thin (approximately 1 cm thick) layer of sand and plaster residue was uncovered. This compacted layer (designated Feature S14-2-3108) ran through the east side of S14-2 and into (but not all the way through) S13-4 at a north-south orientation. Directly to the east of Feature S14-2-3108 is a mudbrick wall and directly to the west the remains of a redbrick and plaster wall along with some mudbrick tumble. Feature S14-2-3108 was originally interpreted as a street or passage way between the exterior of buildings but may in fact be a corridor or open space within the interior of a building.



Passageway in S14-2.

The room deposit in the northwest corner of S14-2 produced faïence and glass; utilitarian pottery, including amphora toes with small amounts of residue inside; and animal bones (sheep / goat, bovine, and fish, some of these bones had clear butcher marks); and frequent inclusions of charcoal. At 1.72 meters down the corner of a floor covered in plaster and pebbles was uncovered. At the same level of this floor under the west balk (same as Feature S14-2-3117) there was an Early Roman coin (possible Vespasian c. 69 AD, pending analysis).



Floor in NW corner of S14-2 dated to Early Roman Period.

A sondage cut across Feature S14-2-3108 revealed the remains of redbrick most probably associated with the mudbrick wall (Feature S14-2-3105) and the plaster and pebble floor (S14-2-3115) which is at the same level as the floor in the northwest corner. Removal of the west balk revealed that the two rooms on the west side of S14-2 continue westward into S13-3. The room deposit (S14-2-3110) of the northwest corner continues westward with the quantity of ceramics increasing to the west side of the western balk. The room towards the southwest side of S14-2 extended into S13-3 as well, with a mudbrick floor (found under a thin ash layer in the southwest room of S14-2 cm below the surface) continuing across the southeastern side of S13-3.

The finds which include ceramics, building materials, glass and coins place S14-2 in the Roman period. The lowest coin found was the coin from under the west balk just outside the northwest corner of S14-2 (same as Feature S14-2-3117) is an Early Roman. More precise dating will be possible following ceramic analysis. Frequent inclusions of building materials including redbrick, mortar, and plaster were found throughout S14-2. It appears based on finds and architecture that S14-2 contained the remains of part of a multi-level domestic structure that continued into the adjacent squares S13-3 and S13-4.

Unit S13-2

The S13-2 unit was a 5x5m located on the highest part of the Tell to the north of three similar units in order to investigate the granite pillar located in the NW corner. The unit was located in what was thought to be a building. It was originally believed to have been severely looted since the unit was located on a steep slope.

The first feature (S13-2-3191) was a collapse with five layers of ash, which could possibly relate to the kiln found in the adjacent unit. Below this feature was a large deposit of pottery sherds, some with interesting markings. This feature (S13-2-3192) may have been a single deposit or a rubbish heap. In the SW corner of the unit was another smaller collapse (S13-2-3194) with another layer of ash adjacent to it. In the NE corner of the unit was another small mud-brick collapse (S13-2-3195). Finds included pottery sherds, slag, bone, and broken red-bricks.

The bottom NW corner of the unit was excavated (S13-2-3200) in order to determine if the granite pillar was in situ or if it had purposefully been moved to the bottom of slope or if the pillar had fallen down. Initial excavations revealed slag, some pottery sherds and broken red-bricks. Two coins found in the unit, one on the surface layer (SCA#125) and one found in Feature S13-2-3201 (SCA#124) were able to be dated to 272/3 AD and 285/6 AD respectively. However, modern military debris was found in the central portion of the trench indicating that an explosion may have occurred in the location in the 1960s mixing and destroying contexts. The disturbed nature of the context would limit the quality of the data and resources were redirected to areas with less disturbance.



Unit S13-2 when closed (view southeast).

Unit S13-3

Hal Bonnette, M.A.

Liesel Gentelli, B.A.

Unit S13-3 was opened during the 2012 season as one of five contiguous units to explore a segment of the central part of Tell Timai. It was one of four units that made a five by 23 meter, east-west trench (including three one-meter balks). Unit S13-3 was on the highest point of the terrain with S13-2 being on the west and S14-2 and S14-1 being on the east. The most interesting aspect of the unit is the kiln that was found in the southwest corner. It was made of red, baked bricks in a circular form and was about 12 courses high (1.15 meters deep). The courses were difficult to count because the kiln's purpose is not known at this time; speculations are that it was used for making either lime or faïence.

The northwestern portion of the unit was covered in a plaster floor with evidence in the balks that it covered roughly the entire western half of the unit. We could not determine whether the kiln was created by digging through the floor or whether the floor covered the kiln and, therefore, is later than the kiln. The deepest excavation occurred on the east side of the unit where a storage vessel was found *in situ*. Preliminary analysis of artifacts suggests a Roman (c. 100 A.D.) period occupation. The kiln can be seen in the upper right hand corner of the unit. Below it is the white plaster floor. The deep section on the left side of the unit is where the storage vessel was found *in situ*. The rounded mounds in the middle and lower sections of the photograph are deteriorated mudbrick walls. When the sides of these walls were cleaned, we were able to see the individual mudbricks.



Photograph of the S13-3 showing the kiln in upper right corner (view northwest)

Unit S13-4

Hal Bonnette, M.A.

Liesel Gentelli, B.A

Unit S13-4 was opened during the 2012 season as one of five contiguous units to explore a segment of the southern part of Tell Timai. Four units S14-1, S14-2, S13-3 and S13-2 were situated in a five by 23 meter, east-west trench (including three one-meter balks). Unit S13-4 was located north of Unit S14-2 and had the purpose of extending the architecture and possible roadway found in S14-2.

The roadway in Unit S14-2 did extend into the southwest portion of Unit S13-4; however, the more informative portion of the unit occurred in the western side. A room was found that was approximately 3.12 meters square and that was aligned with a similar room in Unit S14-2. That room was partially excavated (the rest of the room was in the one-meter balk separating the two units). A portion of the southern and western walls of the room was in the west balk, but nearly all of the room was excavated. Even though a pottery analysis was not available at the time of this writing, excavated coins indicate that this room was Roman. The room had mudbrick walls that ran 12 courses of alternating rows of headers and stretchers. The typical brick was 25 cm long, 12 cm wide and 9 cm high. The room was filled with over one-meter of domestic and architectural debris (e.g., thousands of ceramic sherds and many baked red bricks and pieces of bricks with mortar bindings and plaster coatings). In the southwest corner of the room we found a small burn layer and many thick, coarse sherds from a ceramic oven.

Excavations continued for approximately one-meter below the Roman room where we found a number of coins indicating that the structure below the Roman occupation level was Ptolemaic. This cultural level also was replete with pottery sherds. The season ended before the end of this level was found.



The flat portion in the upper left hand corner of the unit shows the roadway that continues from Unit S14-2, which is seen in the top portion of the photograph on the other side of a one-meter balk. The Roman room and Hellenistic structure below it are in the square on the right side of the photograph (view west).

U22

Robert Littman, PhD
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Liesel Gentelli, B.A
Jay Silverstein, PhD

In the 2009 season along the canal in Grid U-22, several reused architectural blocks were found, one of which had a faint inscription of the cartouche of a Ptolemy as well as a number of Hellenistic columns, a portion of a ceiling, and a bas relief. In 2012, the area along the canal was revisited to ascertain if there were remains of an *in situ* Ptolemaic temple. A hydraulic bucket loader was used to dredge the modern garbage and fill at the north bank of the irrigation canal in Grid U22. Approximately two meters below the surface of the fill, the floor of a Roman period temple was discovered. 15 pieces limestone blocks were recovered, consisting of fluted column and rectangular blocks. The floor consisted of Ptolemaic limestone columns that had been reused, and made into a flat surface with the insertion of mortar and Roman brick to create a continuous base. Several column disks were discovered adjacent to the floor. Given the number of continuous limestone column disks recovered in 2009, and these additional disks, it seems probable that the reused disks served both as columns and part of the base of the Roman temple.

Our conclusion then, is that the stone elements belonged to a Ptolemaic temple that was either rebuilt or cannibalized in the Roman period to build another temple/structure. We cannot make any conclusions about where this temple was located on the site.



The stone platform in place after excavation (view south).



The mortar floor on the surface of the stone platform (view northeast).



Hellenistic column disks reused in platform (view north).

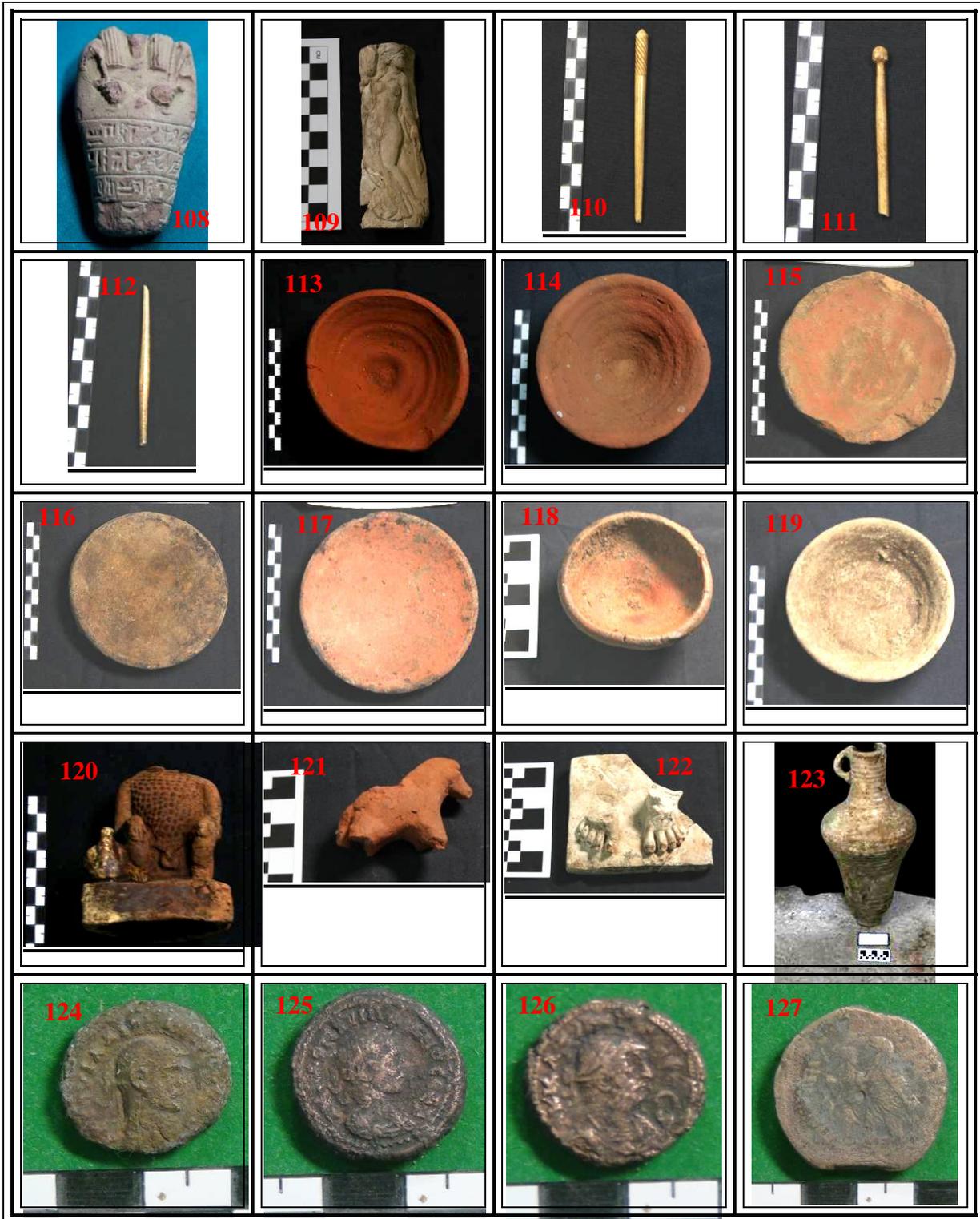


Unit U22-1 showing the profile with a thick layer of modern garbage fill on top of the cultural level (view Northeast).

APPENDIX I
CATALOGUE OF FINDS

SCA#	Material	Provenience	Description	Dimensions	Period	Condition
108	Faïence	S14-1-3287 2012-0406	Ushabti, head and feet missing, text excellent	142g, 92x 52x31 mm	Hellenistic	Good, damage
109	Bone	S14-1, 2012-0476	Aphrodite, carved in animal bone	102x33x6 Mm	Roman	Very Good
110	Kohl Stick	S14-1-3312 2012-1025	Ivory, carved, tip broken	3.2g 90x5 mm	Roman	Very Good
111	Kohl Stick	S13-3-3004 2012-0209	Ivory, round ball at one end, broken	1.5g 61x6 mm	Roman	Good
112	Kohl Stick	S13-3-3000 2012-0184	Ivory, broken ends	1.6g 72x5 mm	Roman	Fair
113	Ceramic	S11-Surface 2012-1122	Ceramic Bowl with pour spout	112x57 mm	Hellenistic	Complete
114	Ceramic	S11-Surface 2012-1123	Ceramic drinking cup	100x48 mm	Hellenistic	Complete
115	Ceramic	S13-4-3015 2012-0249 TM12-300	Ceramic offering plate	289g 118x22 mm	Roman	Complete,
116	Ceramic	S14-1-3306 2012-0564 TM12-212	Ceramic offering plate	192g 108x18 mm	Roman	Complete
117	Ceramic	S14-2-3104 2012-0634	offering plate	192g 133x18 mm	Roman	Complete
118	Ceramic	R13-2-1310 2012-0145	Small bowl or drinking cup	123g 104x40 mm	Late roman/Byzantine	Complete
119	Ceramic	R13-2-3272 2012-0854 TM12.148	Drinking Cup	214g 120x42mm	Ptolemaic	Complete
120	Ceramic	R13-2-1310 2012-0147	Terracotta Thoth, Figurine	88x60 mm	Byzantine/Roman	Broken
121	Ceramic	R13-2-3399 2012-0925	Terracotta horse, broken legs and rider, Figurine	108x78x38mm	Early Hellenistic	Poor
122	Ceramic	R13-2-3284 2012-0915	Carved limestone statue feet, Figurine	116x111x16mm	Early Hellenistic	Poor, incomplete
123	Amphora	S14-1-3306 2012-0537	Late Egyptian III, 4 th -7 th century AD	260x105mm	Roman	Complete

124	Coin	S13-2-3201 2012-0048	Alexandrian Potin Tetradrachm, Diocletian 285-286 AD Milne 4769 R:Dikaisonyesus	19.6x4.2mm 5.85g	Roman	Good
125	Coin	S13-2 Surface 2012-0006	Alexandrian Tetradrachm Potin, Aurelian, 272-3 AD, Rev: Eagle Milne 4398v	21.7x4.7mm 9.7g	Roman	Good
126	Coin	S14-1-3306 2012-0563	Alexandrian Tetradrachm Potin, Tacitus, 275-6 AD, Rev: Elipsis, Koln 3118-9	20.2x4.4mm 7.4g	Roman	Good
127	Coin	S13-2-3192 2012-0030	Bronze Ptolemaic	31.2x5.0mm 25.1g	Ptolemaic	Fair
128	Coin	R13-2-3271 2012-1130	Bronze Octobol	40.8x6.8mm 45.8g	Ptolemaic	Good
129	Coin	R13-2-3276 2012-0873	Bronze		Roman	Good
130	Coin	S14-1-3290 2012-1133	Bronze AE3/4, 332-333 AD	17.2x1.7mm 1.9g	Roman	Good
131	Coin	S14-1-3311 2012-1081	Alexandrian Potin Tetradrachm, Gallienus, 264/5 AD, Rev: Athena standing	22.5x4.6mm 8.9g	Roman	Good
132	Ushabti	N6-5-1205 2011-0252	Faïence, with partial inscription visible	82x72x40 mm	Hellenistic	Poor
133	Plaster	N12 Surface Find	Painted plaster, possible Rota Game Board	82x80x12 mm	Roman	Fair





APPENDIX II
SALVAGE EXCAVATION REPORT S10-1

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I. INTRODUCTION

On December 25, 2012, Supreme Council of Antiquities (SCA) inspectors Hamdy Mashal and Yasser AlGamal were notified that a construction project next to a group of apartment buildings on the northeast portion of Tell Timai had uncovered a large carved stone that contained possible engraved hieroglyphs. The stone was pulled out by a bucket loader from a depth of approximately three meters deep. The university of Hawaii Tell Timai Project assisted to recover important archaeological data prior to destruction of the zone. The University of Hawaii team was able to convince the director of the construction project to grant a three day suspension of work while the archaeological team collected data. This salvage excavation occurred on December 25-27, 2012 (Figure 1). The salvage area, which is approximately 15x20 meters in size, is located next to seven apartment buildings on the northeast portion of Tell Timai and is outlined in a white rectangle in the photograph below.

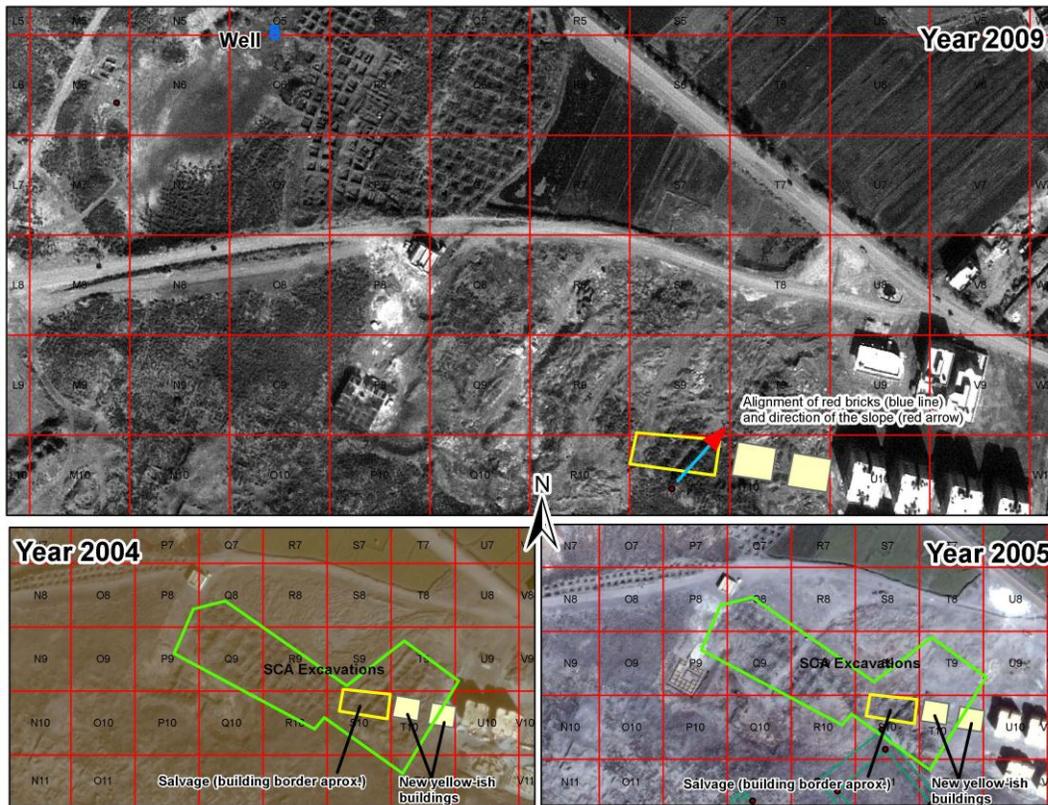


Figure 1. Location of salvage area (yellow rectangle) in the northeast portion of Tell Timai.

II. GRID LOCATION

The University of Hawaii team has divided Tell Timai into a system of 50 square meter grids. Each grid has an alphanumeric designation based on its north-south and east-west coordinates. The salvage operation took place in grid S10 and the open unit was designated S10-1.

III. EXCAVATION PROCESS

Because the work in grid S10 was salvage in nature with only three days to complete the task, the excavation process consisted of three parts: (1) clearing the area and cleaning the surface, (2) running an exploratory trench across the length of the area, and (3) putting a test pit in one corner.

III.A. CLEARING AND CLEANING THE SURFACE

While a mechanical front-end loader removed soil from the area down about three meters, the excavation team cleared and cleaned the remaining surface (see Figure 2).



Figure 2. Clearing and cleaning the salvage area (view northwest).

This process revealed numerous features dating from the Early Hellenistic to the Early Roman Periods.

1. The primary feature found was a red, baked brick wall that ran nearly the entire length of the eastern portion of the area (running from southwest to northeast). The wall is from five to three courses high. The middle of the wall is four courses with the top course being stretchers placed on edge and their flat sides facing each other. The next two courses are stretchers placed lengthwise on their flat surfaces. The bottom course is the same as the top course. These coursings are placed on top of a base that is either stretchers lying flat or on edge. (see Figure 3). The base is then covered with plaster (see Figure 4.).



Figure 3. Coursings of the brick wall (view west).



Figure 4. Base of brick wall covered with plaster. Photograph taken facing south.

The brick wall and base are believed to be a Roman or late Hellenistic aqueduct based on the presence of 1st century BC ceramics. The wall that probably was on the opposite side of the base and parallel to the existing wall is missing. However, SCA inspector Hamdy Mashal remembers that the SCA conducted an excavation of the same area about ten years ago. When the aqueduct was found then, it had a rounded brick top that allowed the water to be fully contained. This type of structure was known to exist, but its specific location was not known. The aqueduct appears to be an intrusive cut and construction within an earlier context.

2. The second primary feature type that was found was mudbrick architecture. About one-third of the area was covered by a mudbrick wall that was flat on the east end and rounded on the west end. The area within the walls also looked like mudbrick, which could be either mudbrick fallen from the walls or the entire mudbrick area was a platform and not a wall. Running parallel to this mudbrick formation, but separate from it, was another mudbrick wall. (Figure 5) The purpose of the walls is unknown.

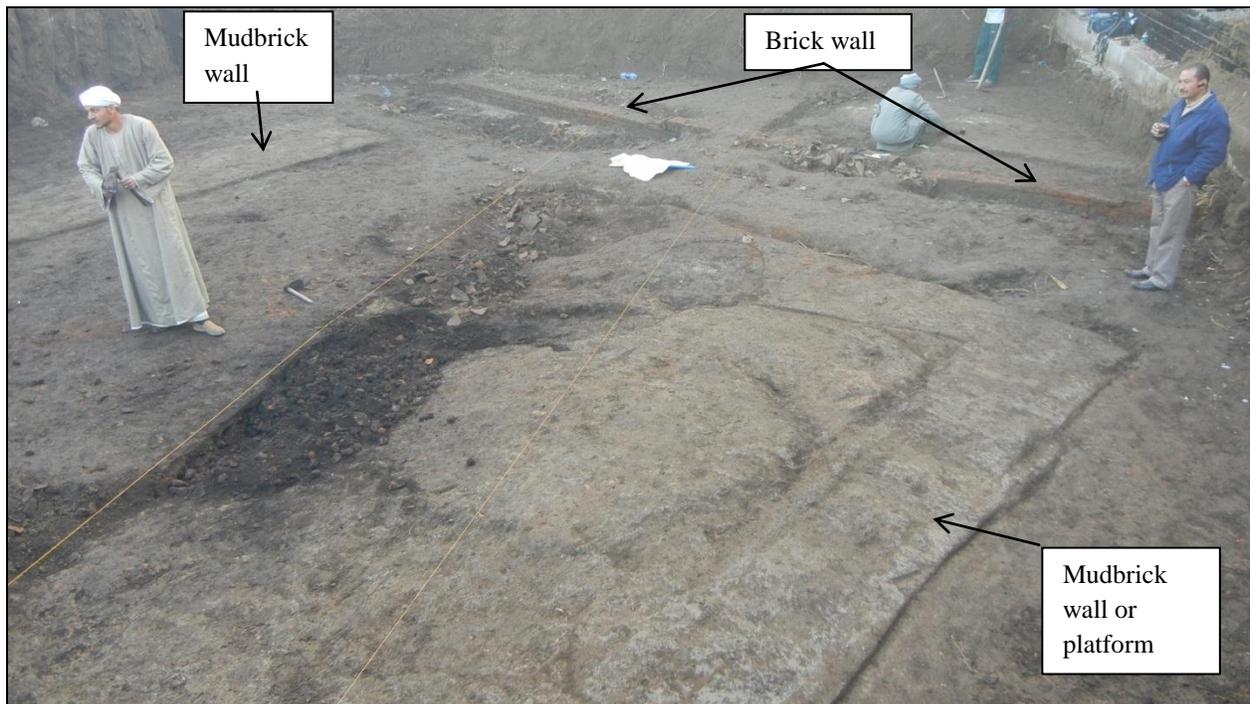


Figure 5. Mudbrick wall/platform and mudbrick wall (view east).

3. The third feature type found were deposits of amphorae. A complete, but cracked, amphora was found near the surface in a heap of ceramic sherds west of the brick wall (Figure 6). Three other amphorae were found broken in place along the west side of the brick wall (Figure 7). Even though a thorough analysis has not been completed on all of the pottery found in S10, the complete amphora has tentatively been analyzed by Dr. Mohamed Kenawi as being Hellenistic and dating to the 3rd to 2nd century BC (Figure 6).



Figure 6. Complete, but cracked, AE3 (AE 3-2, Variant A, dating to 3rd-2nd century BC [Dixneuf 2011]) amphora (view north).



Figure 7. Four amphorae broken in place along brick wall (inside the aqueduct) identified as AE2, 1st century BC (views northeast on left and east on right).

III.B. RUNNING AN EXPLORATORY TRENCH

After the area was cleared and cleaned, a two-meter wide exploratory trench was excavated across the entire site running east and west. The purpose of the trench was to find out as much as possible about the site within the confines of a narrower space to save time. The string outlining the trench can be seen in Figure 8.

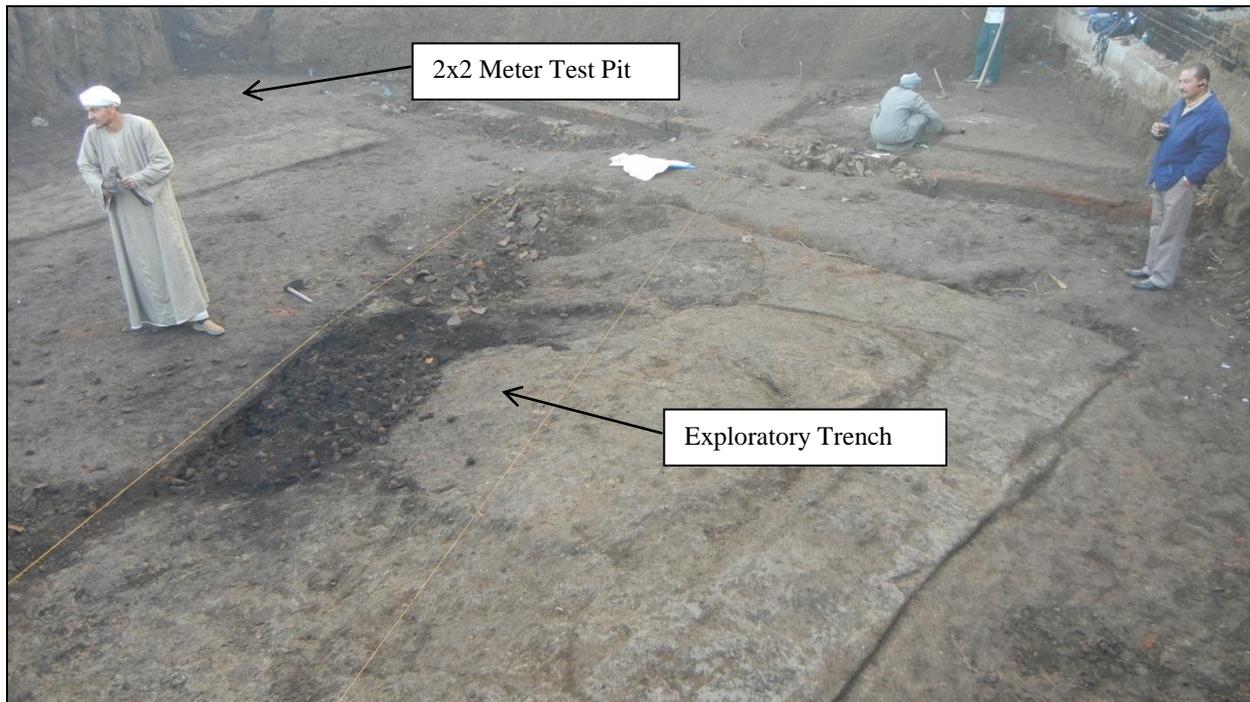


Figure 8. Yellow string showing location of the exploratory trench (view east).

In the two days that work progressed on the trench that cut through the mudbrick wall, some possible kiln or oven features, and a large burn fill were found. No conclusions can be made about the features within this trench because of the limited data, although the excavation elucidated the depth and structure of the brick wall (aqueduct). The large mudbrick wall/platform extended downward and its foundation was not reached. It appears to date to the 3rd century BC based on associated ceramics and artifacts.

III.C. TEST PIT IN THE NORTHEAST CORNER

In another attempt to learn as much as possible in the three days allowed for work, a 2x2 meter test pit was placed in the area's northeast corner (Figure 8). The purpose of the pit was for the workers to go down as far as possible in two days to determine whether another cultural level existed below the Hellenistic one.

Work in the test pit stopped after one meter because of a high water table that caused muddy soil. However, within the pit was found a possible continuation of the brick (aqueduct) wall. Except, the brick wall that was found would have been part of the west side of the aqueduct, which was not found within the larger area. Also, the wall branched to the north in the balk (Figure 10).



Figure 9. Brick wall found within the 2x2 meter test pit (view east on the left and south on the right).

IV. CONCLUSIONS AND ANALYSIS

The S10-1 salvage area shows evidence of occupation from the 3rd through 1st centuries BC beginning at more than 1.5 meters below the surface. Above this point the context is mixed with modern fill and highly disturbed, perhaps dating back to the early activity of the *sebbakheen* in the 19th and 20th centuries. The deepest level exposed at more than two meters below the surface dates to the 3rd century and appears to have been cut through during the 1st century for construction of the aqueduct. Other constructions appear to have included reused limestone elements of earlier Hellenistic temple architecture. Contemporaneous with the Early Hellenistic phase is an extensive burn layer that appears to have encompassed the entire northwestern portion of the excavation and extended on into the unit walls in the north, west, and south. Precise dating is not likely to be available for this burn event because of the haste of the work, but it appears contemporaneous with the extensive destruction and leveling event that occurred in the northern portion of the tell (Grids M6-7, O6-7, P6-7, etc.) that is currently estimated at c. 185 BC. Other features visible in the S10-1 salvage area included a possible glass kiln, imported clay, and a possible larger circular kiln. Again, there was insufficient time to adequately evaluate these features.

The Aqueduct and the water system of Thmouis

Discovery of the aqueduct has led to the formulation of a significant hypothesis about the aqueduct and a major part of the water distribution system for the city of Thmouis. When the salvage work began on the aqueduct, the features appeared to indicate an enclosed area with a floor extending northwest from the brick wall; however, the flooring did not extend to what

seemed to be rooms and instead terminated, roughly broken, approximately 50 cm from the wall. The flooring abuts the red brick wall alignment along its length and extends out as horizontal extension. The floor was laid after construction of the brick wall. The northwest edge of the floor the floor was broken as if it had abutted a brick wall that had fallen away. This was also consistent with the red brick rubble on the northwest side. Local workers reported that a parallel wall had been present but had collapsed during construction excavation in in previous salvage test-pitting. They also reported that many years ago when salvage pits were put in that the brick aqueduct was covered with an arch, presumably of brick also.

The flooring was a mixture of mortar and pebbles, making it very strong but at the same time smooth. This kind of mixture is similar to Roman concrete, which was useful to build aqueducts. By taking this into account and the precise lack of flooring after approximately 50 centimeters far from the redbrick alignment, as well as the dispersed bricks beyond this point for approximately 1.5 meters, the alignment and form of the aqueduct can be discerned.

A planar profile drawing was done in order to see the slope of the alignment and have one more clue about it. A simple trigonometry test was utilized to calculate the slope. The uncovered alignment was 10 meters long and the height difference, between one brick below the mortar from one of the very NW side to the opposite extreme, was of 6 centimeters.

$$\text{Hypotenuse} = \sqrt{(10^2 + 0.06^2)} = 10.00017999$$

$$\text{Sin}\alpha = 0.06/10.00017999 = 0.006 = \text{slope}$$

$$\alpha = 0.34 = \text{vertical angle}$$

That yields a slope of approximately 0.006, that is, 6 meters each kilometer, which according to several sources was a typical slope for long-distance water transport that was capable of maintaining a good water flow (Chanson 2008 & 2000; Frontinus S. I. 2003; Marold *et al* 2009)

Maintaining a constant flow of water is a major issue. Excessive slope would mean pouring out water, damaging the aqueduct structure and, when needed, the utilization of a hydraulic device to dissipate the kinetic energy –like *calix*- (Chanson 2008; Frontinus S. I. 2003: 35). On the other hand, a lack of slope would bring points of stagnation and it allows water to deposit excessive sediments, leading to reduced water flow (Chanson 2008; Frontinus S. I. 2003: 119; Chanson 2000).

In reviewing the relationship of this aqueduct to the overall site image, several observations can be made regarding the water system for the ancient city.

1. The S10-1 aqueduct is constructed in alignment with the Roman and Late Hellenistic street grid (southwest [210°]—Northeast [30°])

2. The S10-1 aqueduct flows northeast based on the slop of the floor.
3. The S10-1 aqueduct runs perpendicular to a crop line (previously assumed to be a road) visible in satellite imagery. This crop mark line may represent a main water line and the S10-1 aqueduct may represent a lateral line branching off the main line (Figure 10).



Figure 10. Shows the possible intersection of the S10-1 (pointing NE) aqueduct and the hypothesized main aqueduct (pointing NW/SE).

4. The line also transects a series of linear brick constructions associated with large platforms and columns of red brick in salvage Grid P7 excavated by Mr. Hamdy Mashal and mapped by the University of Hawaii project. Previous to this analysis the function of these brick alignments could not be discerned (Figure 11 and 12).



Figure 11. An example of one of the red brick linear structures mapped in 2010 from Unit P7-11.

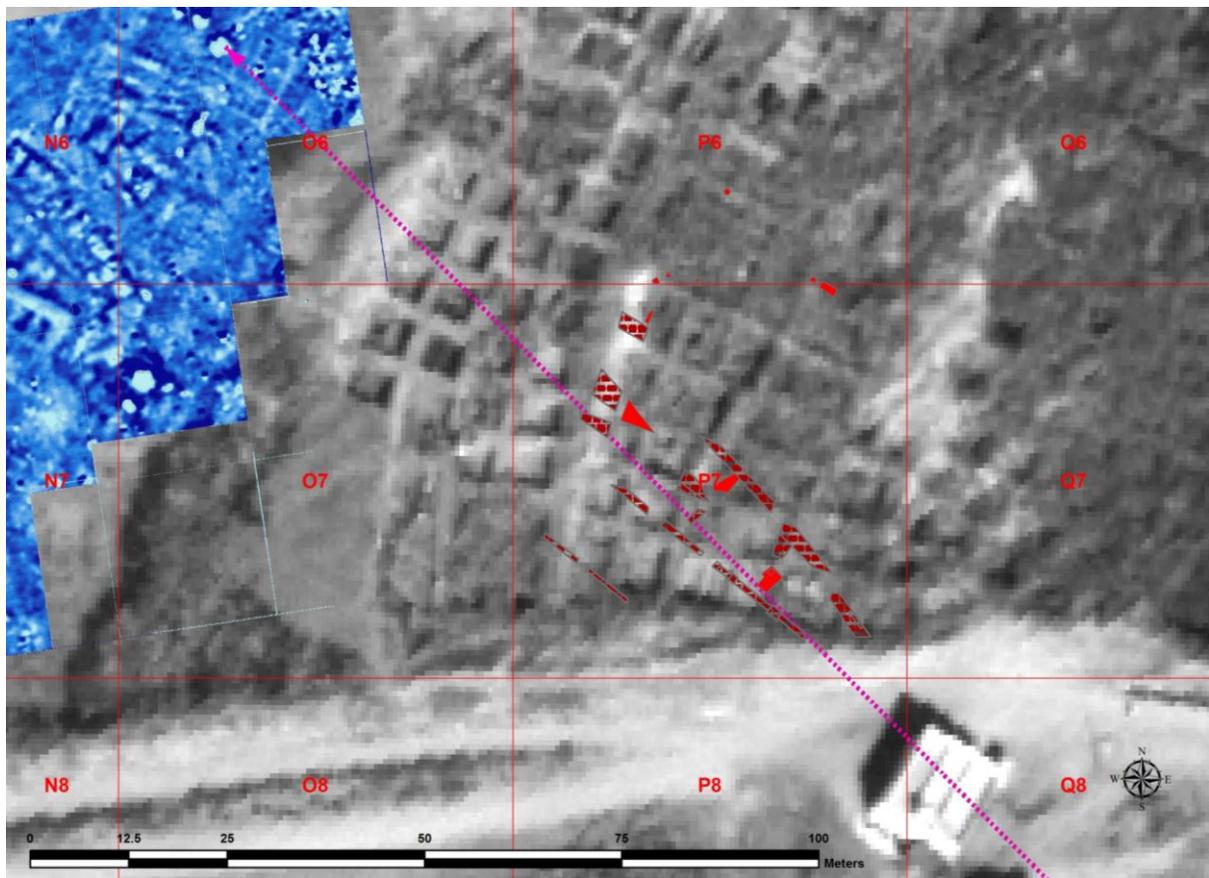


Figure 12. Prolongation of the hypothesized main aqueduct (magenta Arrow) through the north salvage area to the large well uncovered in Grid O6. Note that the prolongation aligns with the linear brick structures (red) mapped in the salvage Grid P7.

- The hypothesized main aqueduct line runs directly northwest to the large well in Grid O6 first identified in the 2010 magnetometry imaging made by Tomaz Herbich (Figure 13) with the University of Hawaii project and excavated in 2012 by Dr. Saad and Mr. Yasser Elgamel. The large well has been modelled as a large scale water well that would lift water in large amounts (Figure 12).



Figure 13. A CAD model of the well structure created by Mohamed Saad and a photograph of the same well in salvage Grid O6. (view northeast).

- The line of the hypothesized aqueduct also runs directly southeast from the large well in Grid O6 to the area believed to contain extensive baths in Grid W14 (Figure 13 and 14).

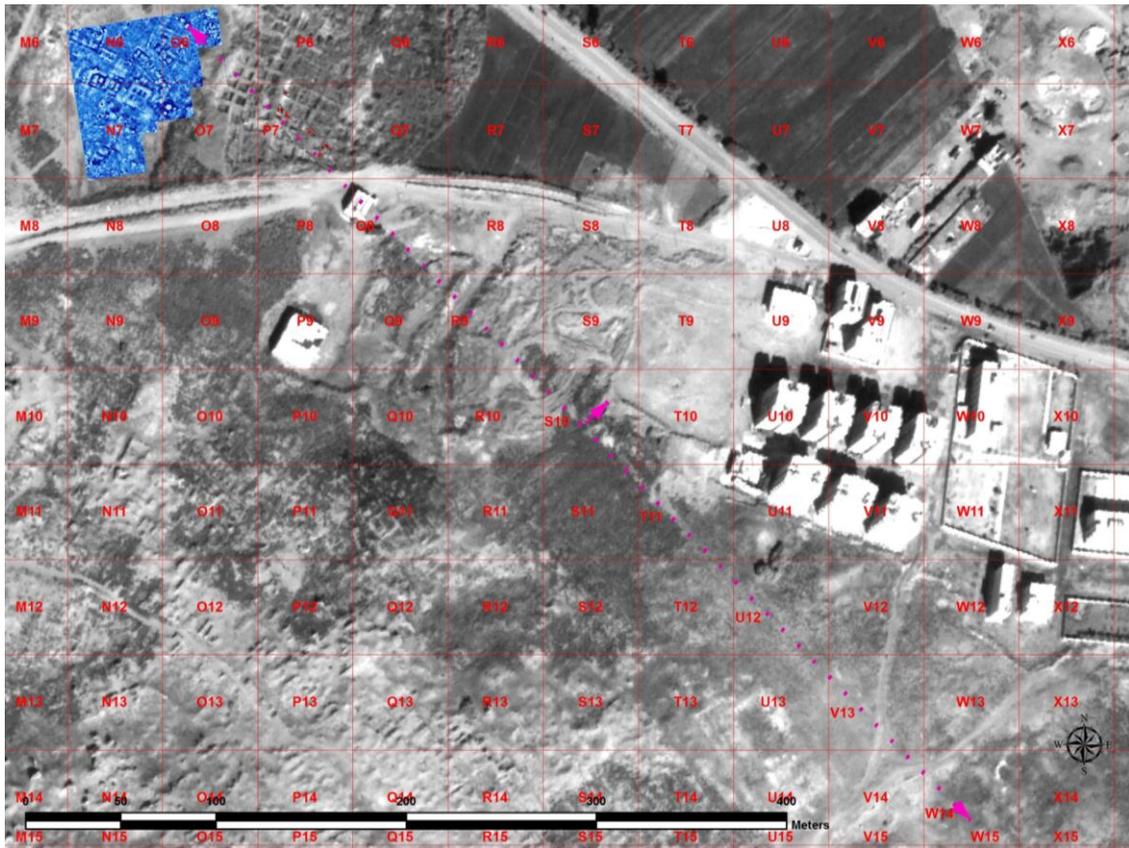


Figure 14. Line of the hypothesized main aqueduct running between well in Grid O6 and the baths in Grid W14.

It thus appears as the well Grid O6 may have fed a major elevated aqueduct that flowed southeast, feeding the bath and many other locations across the eastern half of the tell. The aqueduct appears to have been covered, both protecting the water from sun and dust and the aqueduct may have moved underground at some point in order to maintain the slope necessary for water flow. Much of this area has been destroyed for construction of buildings in the town of Tell Timai El Amdid, but it suggests that there was considerable Late Hellenistic and Roman settlement extending under the modern town.

Evidence supporting this water system for the ancient city of Thmouis is very strong although not conclusive. This hypothesis can be easily verified with further controlled excavation along the hypothesized main aqueduct and at the baths. Since much of this area is currently designated for destruction, testing will be limited to the main aqueduct artery and the bath unless the Supreme Council of Antiquities halts the construction project.

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