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# Preliminary results of archaeological research conducted by the CES RAS at Kom Tuman (Memphis) in spring 2023 

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#### Abstract

The paper presents preliminary results of the first part of the field season held by the Russian Archaeological Mission at Kom Tuman (Memphis) in spring 2023. The works were mainly carried out in the area of the "postern gate" of the Palace of Apries, where the peculiarities of the palace ramp's construction were studied. Another dig site was laid in the "rescue area", where remains of a bath complex were discovered. The uncovered structures date to the Late and Ptolemaic periods.


Keywords: Memphis, Kom Tuman, Palace of Apries, baths, Late Period, Ptolemaic period.

On March 7 - April 27, 2023 The Centre for Egyptological Studies of the Russian Academy of Sciences carried out the first part of the eighteenth season of the Russian Archaeological Mission to Kom Tuman (Memphis) ${ }^{1}$.

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The program of work included several focus areas:

1) archaeological works;
2) topographical survey;
3) study of objects in the magazine.

## Archaeological works

That season archaeological works were held in three areas: 1) the "postern gate" area (squares II.Q16, II.T17-T16), 2) the amphorae dump area (squares VI.N3, VI.O4-O5, 3), the "rescue" area (squares X.F1-G1) and 4) a basin to the west of the palace of Apries (fig. 1).

1. Work in the "postern gate" area. This area is located to the southeast of the southern wall of the Palace of Apries (squares II.16, II.T16-T17). The site is marked with a limestone doorway, which was obviously used as a postern gate of the palace. This place was outside of the area of interest of W.M. Flinders Petrie, who excavated the palace in 1908. The doorway and the area to the east of it were studied by Portuguese archaeologists in 2009. However their conclusions regarding the purpose and dating of the doorway, as well as the function of objects located to the east of it, have to be revised ${ }^{2}$.

The Russian Mission started to work here in 2018 aiming to trace the passage that had been made inside a massive ramp and had led from the gate to the palace. We succeeded in finding a corridor with a whitewashed floor and walls that ran westwards from the gate and turned north towards the palace ${ }^{3}$. In course of studying these remains, it became possible to prove that a passage had been made inside a massive solid mudbrick structure and had several floor levels dating to various historical periods.

The aim of that season's work was to uncover more segments of the passage in order to get a better understanding of the structure. To achieve this goal the previously excavated area was extended with a complete $10 \times 10 \mathrm{~m}$ square II.Q16 to the north and two half squares $5 \times 10 \mathrm{~m}$ (II.T16, T17) to the south.

Unfortunately, no new segments of the passage were traced, as a significant part of the palace ramp had not been preserved. However, it is possible that the northernmost part of the passage that adjoins the palatial structures still exists and can be uncovered in course of further excavations, as in 2021 the floor of the passage was reached in the square II.T16 at the level c. $14,99 \mathrm{~m}^{4}$. However there were no traces of the passage floor both in the southern part of the square II.Q16, where the remains of the Wall 400/402 were preserved at the level $14,58-14,70 \mathrm{~m}$, nor at $15,00-15,02 \mathrm{~m}$ in the northernmost part of the area excavated in 2023. These observations bring us to a conclusion that the floor could be located on a higher level, i.e. the passage leading to the palace is an ascending one.

In the central part of square II.Q16 a room of a regular shape (feature 493) was uncovered. Its width is $2,25 \mathrm{~m}$, its length is $4,50+\mathrm{x} \mathrm{m}$; the room extends northwards beyond the current excavation area. It is located inside the body of the Wall 400/402. This wall is built of bricks of silt and mud, both types of material are used in equal proportion. The lower

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Figure 1. Topographical plan of Kom Tuman, southern part of Azizia and Kom Dafbabi (by V. Sorokin and K. Loginov, 2016-2023).

Areas of fieldwork in the season are marked in red
part of the wall is laid in stretchers; in the upper part (at the level $15,60-14,80 \mathrm{~m}$ ) a few rows of stretchers are alerted with a headers course. The joints between bricks are $2-4 \mathrm{~cm}$ thick; the mortar contains inclusions of small-sized pieces of charcoal and limestone. Average size of the bricks is $50-50 \times 20-22 \times 12-13 \mathrm{~cm}$.

According to the W.M.F. Petrie 's observations, the size of a brick can be considered as a dating criterion for certain buildings. Thus, the bricks that were used for construction of the ramp (Wall 400/402) are similar to the bricks of "east side of old broadway and west side of E.N.E corner of the palace" ${ }^{5}$, i.e. of the base of supporting walls of the palace. This fact may indicate that the platform of the palace and the ramp with its inner passage were built at the same time.

In the face of the western wall of the Room 493 at the level $13,80 \mathrm{~m}$ an almost complete bottle (Find No 23/0035) dating to the late $6^{\text {th }}-5^{\text {th }}$ century BC was discovered.

Stratigraphic situation requires further study. Thus, in the western profile of the room, at level $13,00-13,10 \mathrm{~m}$ a layer of mudbrick material mixed with fragments of pottery was recorded. The southern part of the eastern profile features markers of destruction at level $13,80-14,00 \mathrm{~m}$; however, the same markers are not visible in the southern profile of the room.

The room's floor is formed of compacted soil with spots of reddish disperse material of uncertain origin. The floor is horizontal and even.

The room was filled with sandy loam of brown color with rare inclusions of charcoal, small (up to 2 cm ) chips of limestone and fragments of pottery. On a section cut, the fill is dense and homogeneous, without visible layers. Atop the fill in the southern part of the room there was an accumulation of limestone chips, its uncovered part had a rectangular shape in planum and measured app. $1,00 \times 0,50 \times 0,60 \mathrm{~m}$. Inside the fill at the level $13,74-13,76 \mathrm{~m}$ there were fragments of limestone blocks (c. $0,30 \times 0,30 \times 0,25 \mathrm{~m}$ ) and an architectural detail $(0,30 \times 0,10 \mathrm{~m})$. At the level $12,75-12,85 \mathrm{~m}$ loose mudbricks, large fragments of pottery vessels and bones were found.

Fragments of pottery collected at different levels of the fill of Room 493 were mainly parts of vessels dated to the $6^{\text {th }}-5^{\text {th }}$ centuries BC. Numerous fragments of the Old and the New Kingdom pottery, as well as of the Third Intermediate Period vessels, were also discovered ${ }^{6}$. The typology includes samples of wares from Upper Egypt and oases and imported vessels mostly of Aegean origin.

It is likely that the Room 493 was a cell of a casemate structure, which was an essential feature of ancient Egyptian mudbrick platforms. Judging by other similar constructions excavated at Tell Qedwa, Naukratis, etc., the shape and size of such cells were not uniform and depended on foundation load ${ }^{7}$. Thus cells of larger size (and usually having elongated rectangular in planum) were made below the most massive structures. Room 439 differs by its size and shape from other casemate cells of the main part of the palace platform; most likely it was built to support a massive ramp structure. Thus, the variety of substructure cells points to the existence of a certain architectural plan of the entire palatial complex.

The Wall 400/402 was badly damaged. In the south-eastern corner of the square II.Q16 in the upper layer of mixed soil above the Wall 400 there was a large accumulation of

[^2]pottery sherds (FSN 23/0008\&23/0009) ${ }^{8}$. This is a mixed assemblage with a dominance of 5th century BC fragments. There are also inclusions of the Old and the New Kingdom pottery. Fragments of Aegean amphorae and a Cypriote jar included in this assemblage correspond to this date.

At the edge between the squares II.Q16 and II.R16 at the level $14,79 \mathrm{~m}$ a limestone basin (Feature 481) was found. Its dimensions are $110 \times 52 \times 20 \mathrm{~cm}$, wall thickness is c .5 cm . The object had obviously been displaced and its current location was random.

The study of this room's purpose and of patterns of brickwork provides valuable information on peculiarities of building techniques (fig. 2).

Excavations in the southern extension of the old excavation area - in the square II.T16 - revealed brickwork of a solid ramp structure. In the body of the platform


Figure 2. Overall view to the square II.Q16

[^3]Yarmolovich 2020b, Yarmolovich 2021a, Yarmolovich 2021 b , Ярмолович 2023, etc.


Figure 3. Room 499 with ceramic vessels installed along its walls
formed by the Wall $400 / 402$ at the same level $(14,48 \mathrm{~m})$ a change of brickwork pattern is evident: the stretchers of the Wall 402 are oriented along the north-south axis, while the bricks of the Wall 400 have west-east orientation. This brickwork corresponds to the one that is present in profiles of Room 493, in the upper courses of which a few rows of stretches are altered with a row of headers. The platform is built of bricks made of both Nile mud and silt in equal proportion.

To the south-west of the doorway, in the square II.T17, at the level $13,74-13,69 \mathrm{~m}$ a living floor was found. Remains of two living rooms were discovered (features 499, 521). Room 499 was made atop the remains of Wall 400 , which formed both floor and the northern wall of the room. For the western wall of the room remains of Wall 401 were used, Wall 518 formed its eastern wall. The size of Room 499 is $5,00 \times 2,90 \mathrm{~m}$, its total area is $14,50 \mathrm{~m}^{2}$.

Inside the room along its northern wall three ceramic vessels installed in the floor were found in situ at level 13,74-13,69 (FSN 23/0064; 23/0065; 23/0066). Two round spots of dark soil in the same area can be interpreted as remains of other vessels (fig. 3). Single torpedo jar (FSN 23/0064) is dated to the late $6^{\text {th }}-5^{\text {th }}$ century BC, while a large S-shaped rim jar (FSN 23/0065) dates to the $5^{\text {th }}$ century BC. In the south-western corner of the room a Bes vessel (FSN 23/0067/001) dated to the late $6^{\text {th }}-5^{\text {th }}$ century BC was discovered. Along the eastern wall of the room, in the area measuring $2,00 \times 0,45 \mathrm{~m}$ spots of ashes, as well as traces
of fire were recorded at level $13,74 \mathrm{~m}$; beside the eastern wall two large spots of reddish disperse material were visible.

Room 521 is located to the east of the Room 499; they are separated with Wall 518, which seems to be a later extension to Wall 400, as none of latter's elements was used for construction of the room. The walls and the floor of the room were built separately and attached to an older structure. In the middle of the room there was a large accumulation of pottery sherds dated to the late $6^{\text {th }}-5^{\text {th }}$ century BC (FSN 23/0052, 23/0071), and two large vessels installed in the floor (FSN 23/0062 и 23/0063). One of the vessels (FSN 23/0063) was a fragment of a Cazomenian amphora dated to the $6^{\text {th }}$ century BC. In the north-western corner of the room there was a small recess with remains of a limestone block that could belong to a stone installation visible in the profile. The function of this feature is not quite clear.
2. Work in amphorae dump area (squares VI.N3, VI.O4-O5). The palace had been built on a massive mudbrick platform, which was generally considered to be of the same size as the palace itself. However according to a satellite image it can be concluded that the size of the platform is much larger. This fact makes it essential to look for actual outlines of the palatial complex.

To reach this goal in 2021 a new excavation area in the squares VI.N4-N5 was open, which was a provisional location of the south-eastern corner of the platform. A corner of a massive mudbrick structure was discovered there.

That season excavation area was extended westwards (square VI.N3) and southwards (squares VI.O4-O5). All excavated areas contained remains of a solid mudbrick structure that had been a part of the south-eastern edge of the palace platform. The bricks are made of Nile mud and silt; their size is similar to that of the ones used for construction of the ramp: $47-48 \times 23-24 \times 20 \mathrm{~cm}$. The platform was cut with two crossing passages (or trenches) $1-1,5$ m wide: one was running along the north-south axis, another was situated in the west-east direction. At the level $15,70-15,50 \mathrm{~m}$ the passages were dumped with fragmented ceramic vessels, most of which are represented with Levantine wares and imports from the Greek islands. Such pottery is obviously a sign of luxury, and one can suggest that the vessels dumped here were used as receptacles for the elite products consumed in the royal palace.

Excavation of the passage that ran from the west to the east started in 2021. It was traced for $8,5 \mathrm{~m}$ at level $15,97-15,65 \mathrm{~m}$. In 2023 excavation area was enlarged westwards to the square VI.N3, where extension of the passage was partly visible on the surface. In course of excavations in the southern part of the square we went down to the level $15,10 \mathrm{~m}$, but the passage was not traced. However, along its suggested wall, immediately beyond the excavated area two pits were discovered. The first (feature 497) was rectangular in planum and was filled with complete or near complete vessels of $5^{\text {th }}$ century BC (FSN 23/0057). The pit was $1,50 \mathrm{~m}$ deep and went down to $14,00 \mathrm{~m}$. Judging by its northern profile, the pit could be dug through the platform or directly next to it. The eastern profile of the pit is destroyed, the southern and the western profiles have not preserved as well. The compacted soil at the bottom of the pit was topped with a layer of large charcoals. It is likely that the pit and its fill had a magical purpose.

A few meters eastwards, in the square VI.N4, in the southern wall of the passage (?) there was an installation consisting of a large vessel supported with stones and filled with small potsherds, charcoal and chips of limestone (feature 487). Atop the fill a small complete


Figure 4. Overall view to the "amphorae damp" area (square VI.N3)
vessel was discovered. Dark and dense soil below the large vessel may indicate that the installation was used for draining water. Most likely, this feature was of domestic purpose. The vessels in similar drains found in various parts of the site had no bottom; in this case the vessel had a rather small hole in its base. Therefore, consideration should also be given to some ritual meaning of this feature.

Another corridor was traced along the western edge of the square VI.N3. In spring of 2023 its eastern part was uncovered, while its western part was beyond the excavation limits and still to be excavated. At the moment its purpose is not clear.
3. Work in the "rescue" area. The work in this area started in 2014 due to activity of local robbers, who unearthed a limestone doorway with relief representation of a heb-sed scene.

In 2014-2021 the Russian Mission uncovered a number of structures belonging to various building periods. The first of them was originally built in the Saite-Persian period and
was used for administrative and/or storage purposes. At later stages the building underwent a significant change in its layout ${ }^{9}$.

In spring of 2023 the excavation area was extended westwards with three $10 \times 10 \mathrm{~m}$ squares X.F1, X.G1 and X.H1. The squares X.G1 and X.H1 contained remains of a structure built of fired brick. The preserved parts of the structure include several walls, floor pavement and five water basins that were interconnected with water ducts. This building was obviously used as a bath complex (fig. 5).


Figure 5. Overall view to the "baths" area (squares X.F1-X.H1)

Most likely, the building was rectangular in planum, as can be seen by the southeastern corner formed by outer walls $494+528$ and 495 . Such shape was typical for many early Hellenic baths ${ }^{10}$.

[^4]During the Hellenistic period the baths were usually built of fired brick or stone blocks. Judging by the remains of walls and floors, the inner rooms of our bath complex were constructed of fired bricks. Limestone elements could also be used for furnishing interiors. A significant feature of the building is incorporation of earlier mudbrick structures that were used as an enforcement of its outer walls. It is also possible that ancient architects were inspired by local building traditions and used mudbricks intentionally. The Egyptians certainly knew advantages of this material as well as its low heat-transfer capacity coupled with a sufficient (more than 80 cm ) thickness of walls. In any case, the outer walls of the building were made of fired brick and encircled with massive mudbrick walls. Thus, mudbrick Walls 527 and 528 were either continuation of Wall 272 after its renovation or were added to it. They run along Walls 492 and 494 of fired brick and obviously formed a single structure. However, the exact relation between these walls has to be revealed in course of further archaeological study.

The bath complex contained several suite rooms, mainly located at the same level. In the south-eastern corner of the square X.G1 remains of stairs faced with plinth were discovered. The existence of stairs suggests a higher level of some of the rooms.

The walls of the bath complex were painted. This conclusion is based on discovery of numerous fragments of plaster decorated with relief moulding and painted "marble" patterns. The floors were paved with bricks and plinth tiles.

That season the eastern part of the structure was only excavated. However, this segment contains the main elements of the bath complex. The baths were heated with an open fireplace or a furnace, remains of which have been preserved to the north of tholos, in the north-western part of the uncovered structure. The furnace was directly connected to the tholos, which was heated by hot air and steam coming immediately from it. The tholos was also heated via hot air channels than ran inside the walls. Remains of such channels preserved between Walls 501 and 494 and inside the inner Wall 496.

The tholos was a round structure of fired brick, its diameter was c. $4,0 \mathrm{~m}$. The walls were one-brick thick. It consists of two different layers, which alternate between a stretcher course and a header course. Along the northern part of the inner edge of tholos the remains of small seats have been preserved that were separated from each other with low partitions, half brick thick and one-two courses high. The preserved part of the floor was made of compacted silt material covered with a thin layer of dispersed substance of reddish color that has made an impression of red soil. It is likely that originally the floor was paved with bricks or plinth tiles. To the west of tholos remains of a basin or bathtub (feature 490) have preserved. It is almost square in planum, measuring $1,30 \times 1,25 \mathrm{~m}$, its height is $0,82 \mathrm{~m}$. Thickness of walls is 20 cm , thickness of the bottom - $20+\mathrm{x} \mathrm{cm}$. The inner surface of the basin was smoothed with greyish mortar, corners were rounded. The outer surface probably was decorated, as can be assumed by the presence of thick and uneven layer of mortar that could be used to fix tiles or similar material.

Basin 490 was connected to two other basins with water ducts. One basin (feature 513) is located to the south of the basin 490 . Basin 513 has a rectangular shape and measures $1,40 \times 0,90 \mathrm{~m}$, its preserved height is c. $0,80 \mathrm{~m}$. Treatment of inner and outer surface is the same as that of Basin 490. The water duct was constructed of fired brick (size of brick is $28 \times 12 \times 6 \mathrm{~cm}$ ) fixed with white mortar. It connected drain holes of both basins with each other. These holes were made in the middle of the basin's wall close to its bottom at approximately
the same level. The duct has a slight inclination to the north, that can be a result of natural factors. Most likely both basins had communication with each other. At the moment it is not clear whether the ducts had a cover or were exposed.

Another basin (feature 491) was located to the east of Basin 490 and most likely was a sitting bath. It had a weird shape of a bean $0,80 \mathrm{~m}$ long and $\mathrm{c} .0,50 \mathrm{~cm}$ wide. The inner surface of the basin was covered with a layer of white mortar, at the bottom thickness of the layer reached 20 cm . The water duct ran from the upper part of the eastern wall of Basin 490 at some angle to the side wall of Basin 491. The place of joint of the duct and Basin 491 has not preserved.

The eastern wall of Basin 513 joins suite Basins 514 and 529 that were connected with a small flow path. Unlike Basin 513 that had dimensions and surface treatment similar to that of Basin 490, Basins 514 and 529 were of larger size. They were $3,50 \mathrm{~m}$ long and $2,00 \mathrm{~m}$ wide; their preserved height was $0,20-0,60 \mathrm{~m}$. We do not know whether the suite baths were connected to Basin 513, as the walls of the basins are poorly preserved.

It is likely that there were no special devices to fill and drain the baths; they were filled manually and drained with gravity flow via ducts.

The baths have survived at least two building phases and a number of repairs. Thus the central room - tholos - and the fire place were parts of the original construction. Later they were overbuilt with a water duct and the sitting bath.

Bath complexes were usually built next to natural sources of water or wells. In the north-eastern part of the complex the remains of a well were excavated (fig.6). It is likely that it was used as a water source for the baths. The well was dug through Wall 272. This fact proves that remains of old mudbrick buildings were reused for construction of the baths. The well was formed with pottery rings that were c. 1 m in diameter and $0,3 \mathrm{~m}$ high. It was uncovered to the depth of $3,0 \mathrm{~m}$, its further study was scheduled for the next field season.

Based on study of pottery, it was concluded that the baths existed from the Ptolemaic period onwards.

It is not clear what type of baths we deal with - were they private or public. The dimensions of the uncovered part fit the size appropriate for public baths, though close proximity of the complex to the royal palace suggests a limited number of persons who had access to the area.
4. Basin to the west of the Palace of Apries (fig. 7). C. 150 m to the west of the Palace of Apries an unusual structure of stone was noticed. It was cleaned of modern garbage and studied. The structure consists of a large limestone basin of round shape measuring c. 2 m in diameter and $0,5 \mathrm{~m}$ deep. The basin is sunk into ground and has a hole in the center, which was probably used to drain water. The upper part of the basin was outlined with a few stones that formed an outer circle of the basin. A few meters south of the basin a few blocks of limestone were found. The blocks could be part of a duct leading to the basin.

A further study of the construction will provide scholars with understanding of its actual structure and purpose. It is possible to make a provisional suggestion that this object was a part of wine, oil or other production workshop.

Archaeological works will be continued during the season, which is scheduled for the fall 2023.


Figure 6. Well in the square X.F1 (feature 498)


Figure 7. Basin to the west of the Palace of Apries

## Topographical survey

That season the Russian Mission continued topographical survey of the site in order to amend the existing plan by adding new features that appeared during the last years. This task was successfully fulfilled (see fig. 1).

## Study of objects and work in the magazine

In spring 2023 we continued study of finds and pottery that had been discovered during that and previous seasons.

1. Analysis of pottery. One of the main activities was studying and analyzing pottery. The principal objective of this work was to clarify the overall stratigraphy of the site. More than 40 series of pottery coming from different archaeological locations were analyzed, drawn and photographed. All pottery assemblages collected in 2013-2023 were reviewed that made it possible to accurate dating for archaeological strata.

In general, the study proved the previously defined stratification, relating to the strati of the Roman Period down to the Late Period. A considerable amount of sherds dating to the New Kingdom and to the Old Kingdom admixed with the pottery of later periods let us
suggest that the site of Kom Tuman was also inhabited at that periods, and the corresponding archaeological strati are still to be reached during further archaeological excavations at the site. Many sherds analyzed this year were defined as import wares, what gives an idea of trade contacts of Egypt, and Memphis in particular, with Greek islands, Cyprus, Levant and Asia Minor in the $6^{\text {th }}$ century BC - the $1^{\text {st }}$ century. AD.
2. Study of small finds. The study of small finds in the Seasons 2001-2023 was focused on technological aspects of their fabrication providing important information of production activities, which had taken place in the Late Period at Memphis in general, and at Kom Tuman in particular.

Finds of 2021 season were described and analyzed, photographed, some of them were drawn. Study of these objects provides new data and helps better understanding of Ancient Egyptian manufacturing technologies.

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# Предварительные результаты археологических исследований, проведенных экспедицией ЦЕИ РАН на памятнике Ком-Туман (Мемфис) весной 2023 г. 

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В статье приводится предварительная информация о результатах археологических исследований, проводившихся на памятнике Ком-Туман (Мемфис) Российской археологической экспедицией ЦЕИ РАН весной 2023 г. Один из раскопов, где проводились работы, расположен в районе «потайного хода» дворца Априя. Там были изучены конструктивные особенности пандуса, ведшего во дворец с южной стороны. Во втором раскопе, находящемся в зоне «спасательных раскопок», были найдены остатки банного комплекса. Обнаруженные постройки относятся к Позднему и птолемеевскому периодам.

Ключевые слова: Мемфис, Ком-Туман, дворец Априя, бани, Поздний период, птолемеевское время.

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[^1]:    ${ }^{2}$ Trindade Lopes 2011: 252.
    ${ }^{4}$ Here and below all levels are above mean sea level
    ${ }^{3}$ Belova, Ivanov 2022a. (AMSL).

[^2]:    ${ }^{5}$ Petrie 1909: 5.
    ${ }^{7}$ Smoláriková 2000: 55-65.
    ${ }^{6}$ Report of the field ceramist S. Lämmel. For results of previous seasons see Lammel 2021.

[^3]:    ${ }^{8}$ Ceramic vessels from this accumulation were studied by the field ceramist V. Iarmolovich. For previous reports see Yarmolovich 2019, Yarmolovich 2020a,

[^4]:    ${ }^{9}$ Belova, Ivanov 2022b: 10-28.

