

The Excavations of the Al-Khazna Courtyard in Petra, Jordan Second Season 2005

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Abstract

In 2005, excavations of Tombs 62C and 64A in the area of the al-Khazna/Treasury monument in Petra, Jordan conducted by the Petra Archaeological Park team, provided important insights into Nabataean funerary practices. Tomb 62C, located beneath the Treasury, contained the remains of at least 11 individuals, including adults and sub-adults, in a subdivided burial chamber. The tomb had been heavily looted, disturbing both the skeletal remains and accompanying artifacts. Pottery fragments and grave goods were scattered throughout the tomb, suggesting prior desecration. Bio-archaeological analysis of samples taken from the skeletal remains, at the University of Copenhagen, indicated that most individuals were adult males. Tomb 64A, a rock-cut structure with a well-preserved Nabataean facade, revealed a burial chamber filled with flood-deposited sediment and two pit graves. One grave contained the remains of seven individuals, while the other held a single individual. Pottery sherds and a corroded silver coin were found with the debris outside the graves. The tomb's design and stratigraphy suggest complex reburial practices and multiple phases of interment.

Keywords: Petra Archaeological Park, Skeletal Remains, Rock-Cut Tombs, Funerary practices, Nabateans.

Introduction

Following their initial excavation season at the Al-Khazna Courtyard in 2003, the Petra Archaeological Park team began the second season on 1 June 2005, which lasted until 22 October 2005 (Farajat and Nawafleh 2005). The project was directed by the authors. The team's primary objective was to further investigate and document the area beneath and surrounding the Treasury.

During the 2005 season, two squares were excavated. Square 01, located in Area 02 on the eastern side of the courtyard, opposite al-Khazna, was positioned in front of the southern side of Tomb 64A. The primary goal for this square was to fully uncover the tomb, including any skeletal remains and artifacts, and to expose the floor of the outer courtyard in front of Tomb 64A. This would allow for a comparison with the floor of the lower courtyard of al-Khazna, which had been uncovered in 2003 in front of Tombs 62D and 62E.

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As shown in Figure 1, five tombs (62A, 62B, 62C, 62D, and 62E) were uncovered during the 2003 and 2005 excavations below al-Khazna. Notably, Tomb 62A was situated 7 m below the courtyard surface, which indicated that the tombs beneath al-Khazna were arranged across two levels (Figure 1A).

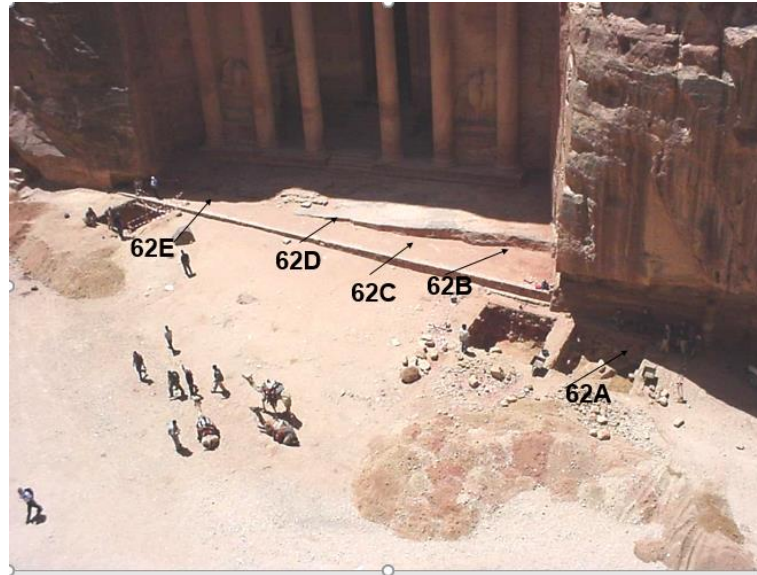


Figure 1A: Locations of Tombs (62A, 62B, 62C, 62D and 62E).

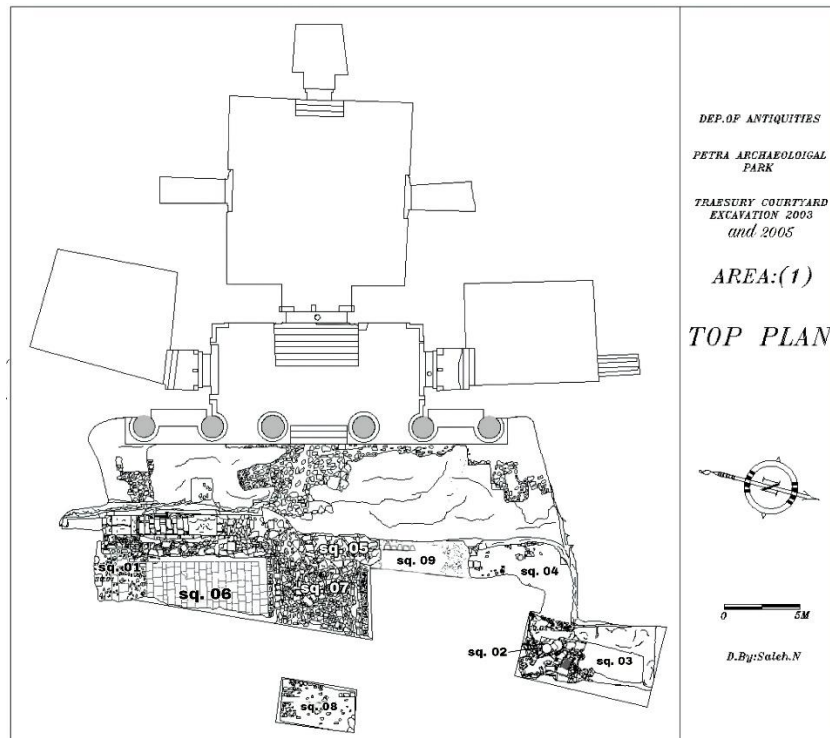


Figure 1B: Locations of Squares 01 to 09 (Drawing by Saleh Nawafleh).

Square 09, located in Area 01, was positioned on the western side of the courtyard, between Square 04 in front of Tomb 62B, and Squares 05 and 06, in front of the entrance

to tomb 62D. The excavation aimed to further investigate this area, building on the findings of the previous season. The area between Tomb 62B (Square 04) and Tomb 62D (Squares 05, 06) had been left unexcavated during the 2003 season due to time constraints (Figure 1B). It was also kept unexcavated to facilitate visitor access to the upper courtyard in front of al-Khazna at that time.

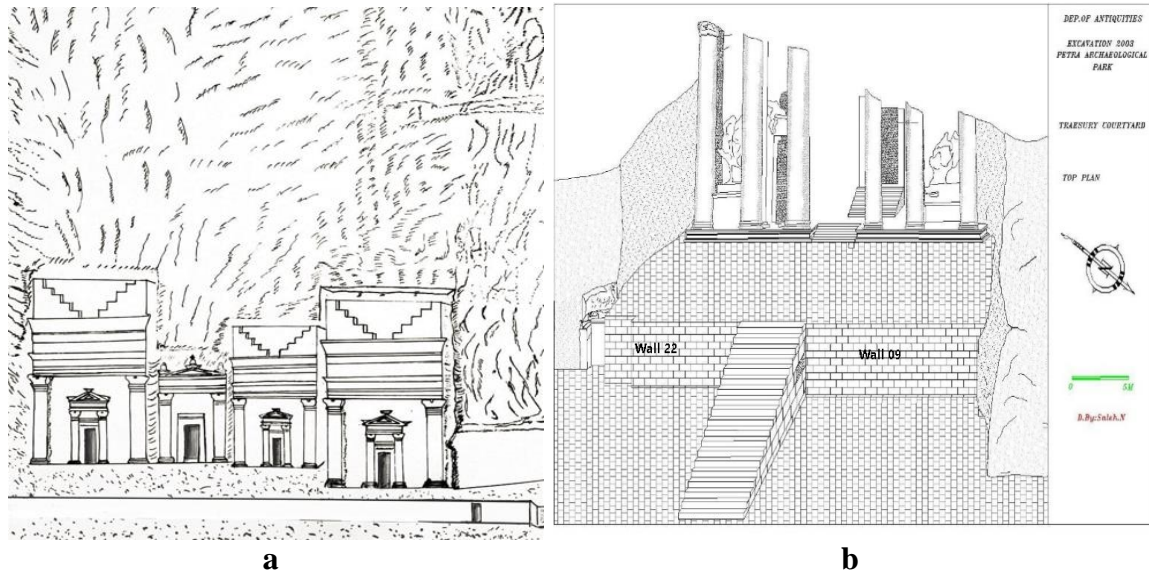


Figure 2a: A reconstruction of the imagined Tombs 62B, 62C, 62D, and 62E
(drawing by Sami Nawafleh).

Figure 2b: An imaginative reconstruction of the lower courtyard and al-Khazna
(drawing by Saleh Nawafleh).

These excavations have significantly enhanced our understanding of the al-Khanza / Treasury Monument, the tombs beneath it, and the external paved courtyard, particularly regarding the burial practices and funerary rituals of the Nabataeans (Figure 2A), as well as the layout of the upper terrace, staircase, and lower paved courtyard of al-Khazna (Figure 2B). The discovery and analysis of tombs and their contents have provided invaluable insights into the material culture and religious beliefs of the period. These findings are of great significance to both archaeologists and historians studying ancient Nabataean society. It is anticipated that future archaeological efforts will continue to explore this crucial site, uncovering additional ruins and tombs that will further enrich our understanding of the region's cultural and historical landscape.

Revealing the Treasury: The Removal of Upper Tomb Levels Below the Treasury and Their Role in Highlighting and Shaping the Architectural Facade.

As is well known, the carving process was carried out from an upper level to a lower one, which is exactly what occurred in the carving of the Treasury façade (Haddad, 2015:19). However, we believe that the Nabataean architect began this project from the northern side, opposite the Siq, by constructing a main scaffold in front of the facades of Tombs 62B and 62C (Figure 3a). Workers would have used wooden ladders to access the roofs of these tombs' facades (Figs. 3a, b, and c). This was necessary due to the

prominence and curvature of this side of the mountain, which protrudes before it aligns with the southern side. The distance from the outer edge of the rock-cut shelter to the inner groove of the footsteps is deeper and larger on the northern side (13.4 m) compared to the southern one (6.4 m). This configuration provided a spacious and comfortable area for free movement, as well as for lifting the materials required for the work using pulleys and manual cranes operated by skilled workers.

The Nabataeans employed various building techniques in Petra in carving monuments from solid sandstone mountains. It is hypothesized that, where the rock was used as a base, the stone carvers began at the top, cutting into the upper part of the mountain to create a horizontal platform. From this platform, they would have continued carving inward. Subsequently, they would have moved downward to create additional platforms, carving the façade at each level. This process likely continued in stages until the entire monument was shaped (Kuhlenenthal and Fischer, 2000: 90). This method extended to the roofs of Tombs 62B, 62C, 62D, and 62E (Figure 3c), where the roofs were used, along with the space they provided, to carve the remaining portion of the ground floor of the Treasury facade and its internal rooms. Additionally, this approach facilitated the maintenance of scaffolding, allowing the upper parts of the scaffolding to be dismantled and lowered during the descent for carving.

It is likely that this work spanned a considerable period, involving the examination and study of the site, the development of designs and plans, the calculation of carving material quantities such as wood, the selection of high-quality materials, their transportation to the site, cutting, preparation, classification and finally the construction and installation process.

As for the second floors of Tombs 62E, 62 D, and 62C, they were removed to highlight the feature of the Treasury. Meanwhile, the first floor and the chamber of Tomb 62B were completely eliminated because they projected forward beyond the level of the other facades, and to maintain symmetry on both sides of the stairs. The burial chambers of the lower floors of Tombs 62E, 62D, and 62C, however, were preserved.

Sculpture Waste:

Without a doubt, the fine sand resulting from the sculpting process was used to raise and level the bed of the valley, Tomb 62A, and the torrent channel under the lower courtyard by pressing, compacting, and leveling it strongly to withstand the tiles and movement in the courtyard. Meanwhile, large rock blocks were cut, trimmed, and stones were extracted from them to build the hidden water system beneath the courtyard.

The material resulting from the removal of the obliterated Tomb 62B and the second floor of the staircase Tomb 62D was used to complete the flood drainage project and finish the courtyard tiling, along with material taken from the floor of the central middle chamber and the northern chamber of the portico in the Treasury. It is clearly shown by the closely spaced marks of chisel strikes, which consist of longitudinal and transverse lines, the meeting and intersection of which led to the formation of rectangular and square shapes, the dimensions of which exceed the dimensions of the tiles discovered in the courtyards which confirms that part of the courtyards tiles were cut and removed from the floor of both chambers and their protrusions were removed and they were trimmed before used; this led to a difference in dimensions between the square shapes in the floors of the two chambers and the tiles, as the size of the tiles became slightly smaller, also the material and the color of the tiles are the same on the floors of both chambers (Figure 3d).

In other words, during the carving and preparation of this section of the site, the third phase (carving of the Treasury facade) coincided with the fourth phase (the infrastructure and superstructure). The site was used as a quarry to produce the materials needed for both the infrastructure and the superstructure, saving time, effort, and money, while also solving the topographical problem posed by the valley or flood stream.

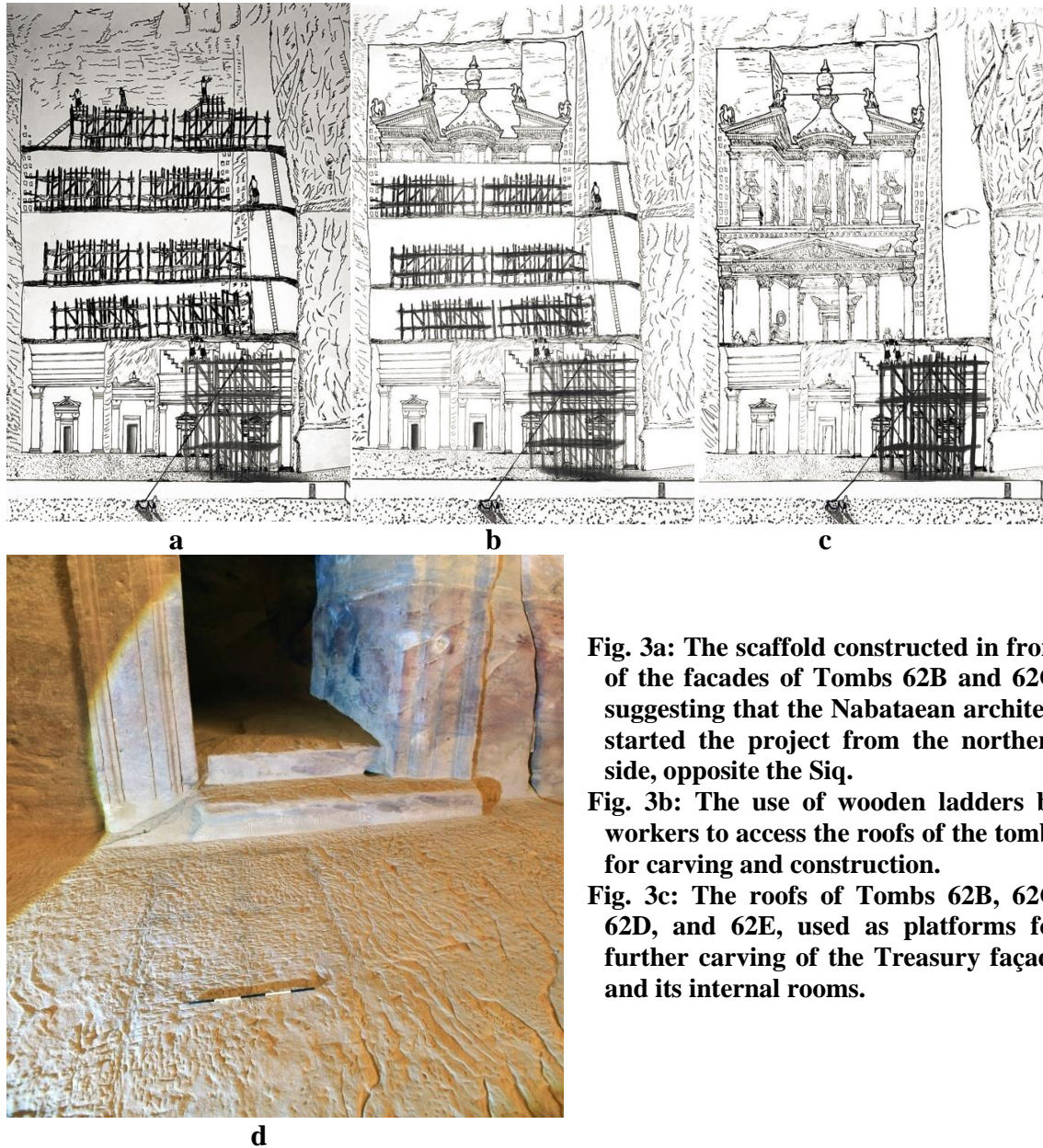


Fig. 3a: The scaffold constructed in front of the facades of Tombs 62B and 62C, suggesting that the Nabataean architect started the project from the northern side, opposite the Siq.

Fig. 3b: The use of wooden ladders by workers to access the roofs of the tombs for carving and construction.

Fig. 3c: The roofs of Tombs 62B, 62C, 62D, and 62E, used as platforms for further carving of the Treasury façade and its internal rooms.

Figure3d: Chisel marks indicating that the tiles used in paving the lower courtyard and the upper terrace were extracted and cut from the treasury chambers, particularly the main central chamber, where they were trimmed and reused.

(Figs. 3a, b, and c, drawn by Sami Nawafleh)

A Historical Overview of the Treasury's Function, Preservation, and Human Impact

The Treasury (al-Khazna), one of Petra's most iconic structures, has long attracted attention due to its monumental architecture and historical significance. Initially constructed by the Nabataeans, it later became a symbol of the grandeur of the ancient city, captivating travelers and archaeologists alike. Over the centuries, the Treasury has served various functions, evolving from a cultural and ceremonial space to a site of interest and preservation. Throughout its history, the monument has undergone numerous changes, including restoration efforts and adaptations for different uses. In addition to its architectural importance, the interaction between the Treasury and human activities—both ancient and modern—has had a profound impact on its preservation and the ongoing efforts to protect it.

In 1917, Colonel T. E. Lawrence chose the Treasury (al-Khazna) as the headquarters for his forces during the Arab Revolt. During his visit, his personal guard reportedly fired at the urn located at the top of the monument (Lowell, 1924: 171-184). In 1926, a sum of 1,000 Palestinian pounds was allocated for the restoration of one of the Treasury's fallen columns (Jordan National Library, Document No. 24/1/1/6, dated 3 January 1926).

In 1934, clearance work was undertaken at the Treasury by Mr. Horsfield from the American Schools of Oriental Research, furthering efforts to preserve and understand the monument's significance (Albright, 1935: 19).

The Treasury served various functional purposes over the years. Until 1968, one of its chambers was used as a storage facility by the Department of Antiquities (Petra Master Plan, 1968: 11). Additionally, due to limited accommodation at the Petra Tourist Rest House, which could only house 30 people, the Treasury was occasionally used as a shelter for tourists. For example, on 30 March 1972, the Petra Antiquities Inspector, in coordination with the Tourism Authority in Amman, ordered the cleaning of the Treasury and other caves in Petra to allow tourists, equipped with sleeping bags, to stay inside (Petra Archaeological Park, Petra Antiquities Office Records).

Throughout the 20th century, the Treasury underwent multiple conservation and restoration efforts. In the 1970s, the Department of Antiquities led frequent preservation projects in Petra. Notably, restoration work on one of the Treasury's columns was conducted in 1962, with the column re-erected (Khadija, 2017: 85). A major restoration project, led by the Department of Antiquities, took place from 15 February to 20 September 1974, focusing on consolidating two eroded base columns and restoring the lower portions. Additionally, the main steps leading to the Treasury were rebuilt, with missing and damaged steps replaced by new, chiseled stones (Petra Archaeological Park, Petra Antiquities Office Records).

Despite these preservation efforts, tourism has increasingly impacted the Treasury, contributing to the accelerated deterioration of its sandstone walls. A 2005 study by Thomas R. Paradise found that even small groups of visitors (25-30 people) raised the humidity levels inside the Treasury's tomb chambers by 5%-15%. The most significant effects occurred 10-20 minutes after entry, due to human respiration and perspiration. These increases in humidity can accelerate stone deterioration, including salt mobilization and mineral expansion, which further damage the monument's delicate structure. To mitigate this growing concern, the Petra Archaeological Park restricted visitor access to the Treasury in 2007 in an effort to protect the site from the adverse effects of tourism (Paradise, 2010: 416).

The Strategic and Symbolic Importance of the Treasury Tombs' Location

The Nabataeans placed great importance on their tombs, viewing them as eternal homes for the deceased. Family members would visit these tombs with votive offerings, incense, perfumed oils, food, and drinks, hosting religious meals and feasts in honor of the deceased. Many of these funerary complexes were strategically located in prominent positions around Petra, dominating their surroundings and providing commanding views of the city, thus reinforcing their symbolic and spiritual significance in the community (Perry, 2017: 99). The construction of tombs beneath the Treasury and across from the Treasury Plaza reflects the high social and economic status of the individuals interred there. Positioned immediately after the exit of the Siq—the main entrance to Petra—these tombs occupy a strategically significant location, overlooking the city's entrance and symbolizing the elevated rank of their owners. This prominent placement underscores their importance, positioning the site as a central element in both the cultural and religious life of Petra. Notably, the al-Khazna, situated at the exit of the Siq, would have been visible to all visitors. It is likely that they paused to make offerings or libations to the deceased notable Nabataean figure before proceeding into the city (Sachet, 2009: 106).

Tomb 62C is one of the rock-cut tombs situated below the Treasury. During the 2003 excavation season, only its entrance was partially exposed through a small sounding, due to time constraints (Farajat and Nawafleh, 2005). Notably, this is not the first excavation in the area of the Treasury. In 1979 and 1980, the Department of Antiquities excavated Tomb 64B, a rock-cut tomb of the Hegra type, carved into the eastern Khubtha cliff opposite the Khazna¹. Tomb 64B contains eight loculi and three sunken graves in the funeral chamber (Zayadine, 1981: 341–355).

The Façade of Tomb 62C

This façade protrudes from the surfaces of the two adjacent tombs (62D and 62E). It is totally devoid of architectural decorations and clearly bears chisel marks; it was thus not completed, probably due to the carving of al-Khazna and changes to the plans regarding its area and courtyard by the ruling authorities. Other indications that it was not completed or that work on it stopped are the widths of the two side door thresholds, which are 2 m and consequently the thickness of the outer wall is 2 m, which is quite wide in comparison to the levels of the carved decorations on the facades of the two nearby tombs (62D and 62E), that do not exceed 0.5 m, while their outer walls do not exceed 1m in thickness. We also found the foundations of a wall that used to cover the whole façade. All of this indicates that the decoration of this façade was to be done following the preparation of the inner chamber.

As for the uncovered dimensions of the façade, it is 3.80 m wide, its height from the lower courtyard up to the upper courtyard (the rock terrace in front of al-Khazna) is 4.06 m while the total height from the chamber floor or the lower threshold of the entrance up to the upper courtyard is 6.40 m. This façade is therefore higher than the facades of Tomb 62D (5.40 m) and Tomb 62E (6.26 m) (Figure 2a).

The Doorway

The entrance through the façade was carved out then completely closed. The upper third at a height of 1.34 m was later opened after Phase 4 (the pavement of the courtyard)

¹ Dr. Zayadine was the first to name this tomb as Tomb 64B.

probably to reuse the chamber or to loot it. This opening was blocked by a layer of debris and sand under which we found the foundations of a wall, the southwestern face of which was abutting the façade while its northwestern face was a mere 15 cm away from the façade. The foundations (Wall 09) extended N-S and were built along the extension of Wall 22 that was uncovered in front of Tomb 62E in 2003. The lower two-thirds of the entrance were blocked with large amounts of compact debris and stones at a height of 2.36 m, which were intentionally placed to raise the level of the courtyard in this area so that the pavement here would be at the same level as elsewhere in the lower courtyard.

It became clear that there were two walls abutting the central staircase: Wall 09 on the northwestern side of the staircase that extends from the lower courtyard to the upper courtyard, and Wall 22 on the southwestern side of the staircase. This shows that the Nabataean architects adhered to symmetry and equal masses, so that what is on the right would be a reflection of what is on the left (Figure 2b). Wall 09 was destroyed and looted so only the foundations remained.

The Archaeological and Deposition Layers (in Square 09)

Square 09, measuring 3.80 m x 2.0 m, revealed the presence of eight layers totaling 4.15 m in depth from the present level of the courtyard (the ground surface) down to the lower courtyard in front of the Wall 09 foundations.

All these layers were deposited by the floods that hit the courtyard except for the lower layer 08, which was compressed and contained some uneven stone slabs of varying sizes and black in colour, being of the same type of slabs that were found in the sloping ramp supporting the staircase in front of Tomb 62D. Part of this layer may have been an extension of the ramp; it was also mixed with red sand and mortar so the slabs may have fallen from the ramp onto this part of the floor. After cleaning, the remains of mortar appeared as lines and it became clear that it was the mortar used for fixing the stone slabs, and this is what the cleaned areas during the 2003 season also revealed.

As for the other depositional layers, the topmost layer, identified as topsoil, was yellow, soft, and dry, followed by a layer of sand and pebbles. The third layer was red, coarse, and soft, consisting of sand mixed with large pebbles and medium-sized stones. The fourth layer was compact and humid, composed of small pebbles and yellow sand. The fifth layer beneath it was dry, coarse, and medium-hard, consisting of sand with pebbles ranging from small to large, primarily limestone and sandstone, with a pale yellow color. Below this, the sixth layer was red, exhibiting similar properties to the fifth but containing large, uneven stones. The seventh layer was yellow and had the same characteristics as the previous layers. The eighth and final layer above the courtyard was red and hard, composed of sand mixed with small pebbles.

These layers correspond to those identified during the first excavation season in 2003. While a few small pottery sherds were found within these layers, no complete pottery objects were discovered, likely due to the accumulation of these layers over time from floodwaters transporting dirt and gravel.

The Archaeological and Deposition Layers Inside the Chamber of Tomb 62C

The burial chamber, measuring approximately 5.5 m (east-west) by 5 m (north-south) and with a height ranging from 3.35 to 2.83 m, was found filled with debris deposited by floodwaters from the adjacent wadi. The fill over the burials consisted of three layers: the top layer was coarse compressed clay, of red colour, with many stones of variable sizes

and a number of pottery sherds; next was a smooth medium hard yellow layer, in which we found a small human skull and a number of small-medium stones in addition to some stone slabs that were used to cover the burials; below was the third layer, somewhat coarse and of pale red colour, at the lower northern edge of the entrance we found three broken small jars with parts missing and a pottery lamp.

The heights of these three layers above the level of the burials were 0.70 m in the southeast, 0.67 m in the southwest, 0.45 m in the northwest, and 0.83 m in the northeast, while the maximum height of the burials above the floor was 1.10 m. In some areas white spots appeared on the walls above the debris layers, due to minerals deposited by humidity in the rock of the chamber walls.

The chamber is subdivided into four sections by stone walls, each measuring 5.5 m in length, 0.5 m in width, and 1 m in height (Figure 5). Inside, seven compartments separated by 1 m-high walls contained at least 11 individuals. Two of the compartments appeared empty, while the remaining compartments housed both primary and secondary burials, with the skeletal remains in varying states of preservation.

The constructed graves were full of deep coloured red sand, of the same type found in front of Tomb 62A during the 2003 season, which we think resulted from the carving of al-Khazna and its inner chambers. The sand feels smooth and somewhat humid, and full of pottery sherds. It was below the flood layers and went up onto the walls of the tombs.

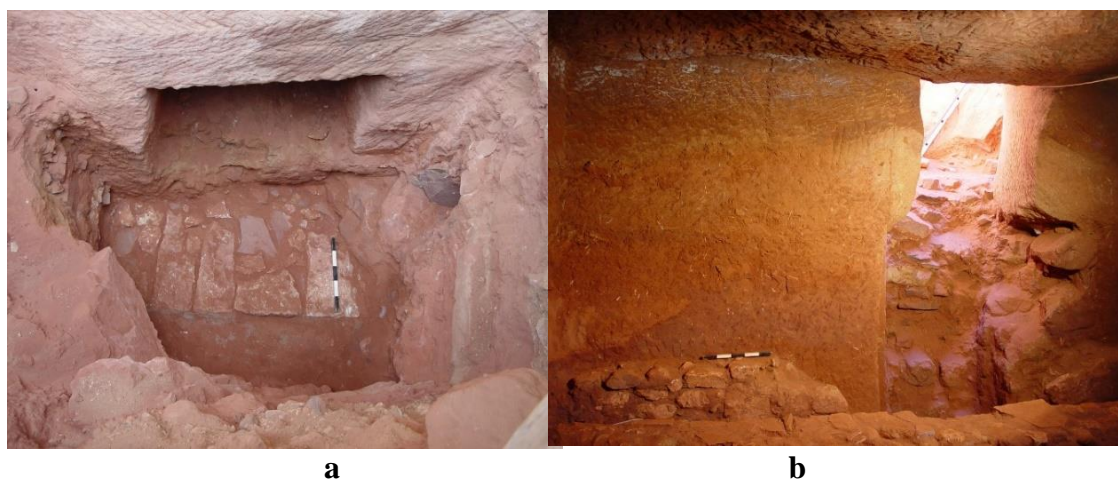


Figure 4a: Square 09, an upper exterior view of the entrance to Tomb 62C, showing part of the retaining wall foundation and traces of the mortar beneath the courtyard floor.

Figure 4.b: Interior view of the entrance of Tomb 62C.



c



d

Figs. 4c and d: The stone covering slabs of the graves, which were removed and scattered throughout the burial chamber, illustrating the extent of the looting that occurred.

The tomb appears to have been looted multiple times in search of treasures, which led to the displacement and mixing of the skeletal remains. The pattern of displacement of the cover stones and disinterment of the remains suggests that looting occurred by removing the soil from the rear graves towards the front graves. After reaching the floor of the tomb and looting the valuable grave goods, the looters would return the soil and move on to the next section, continuing their search for valuables. This process resulted in the destruction of many fragile pottery items, such as the rims, handles, and necks of jars, which were broken during repeated looting activities. These actions ultimately led to the mixing and fragmentation of these objects and the skeletal remains.

Walls of the Graves Inside the Burial Chamber:

After clearing the upper layers of accumulated silt within the burial chambers and reaching the surfaces of the graves, walls separating the individual graves were uncovered, extending in a north-south direction. Two walls, labeled Wall 12 and Wall 13, were constructed on either side of the entrance. In addition to these two walls, four other walls were uncovered to the west, running parallel to them. These are, in order: Wall 14, Wall 17, Wall 21, and finally Wall 24, which was built on top of the remains of a stone bench (Figure 5).

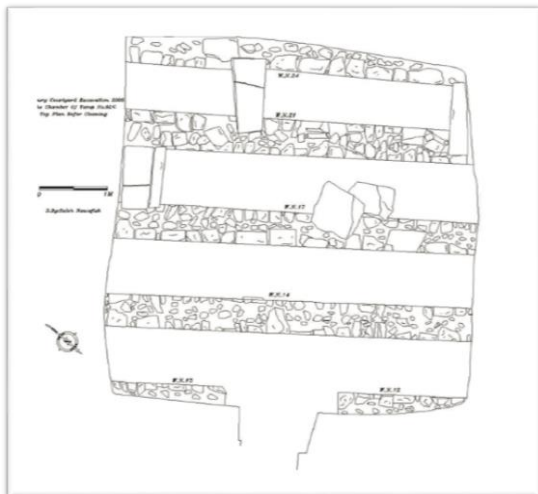


Figure 5: The walls separating the graves inside the burial chamber, including Walls 12, 13, 14, 17, 21, and 24, with Wall 24 built over a stone bench.

Each of the front two walls (Walls 12 and 13) is constructed of a single course, with a height of five courses, measuring 1.10 m in total. Wall 14 measures 5.45 m in length, 0.5 m in width, and stands at a height of between four and five courses (0.95 m). Wall 17 is 5.31 m long, 0.5 m wide, and has a height of four courses (0.90 m). Wall 21 measures 5.1 m in length, 0.5 m in width, and stands four courses high (0.78 m) (Figure 6).



Figure 6A: The construction details of the burial chamber walls, varying in length and height, made with regular and irregular stones, filled with mud and small stones.



Stone Bench

Figure6 B: Stone bench and Wall no. 24 built with one course of stones (Photo by Sabri Fdoul)

All walls, except for Walls 12 and 13, were constructed with two courses of both regular and irregular stones. The gaps between the stones were filled with mud and small stone, predominantly sandstone. The gaps between the courses were filled with a mixture of sand, mud mortar, and small stones. The fourth and final wall (Wall 24) was

constructed with a height of one course and a width of two courses (Figure 6b). It measures 4.96 m in length and 0.42 m in width. The variation in the height of the walls is attributable to the sloping, uneven ground.

It is believed that the burial chamber of Tomb 62C was originally either designed as a *biclinium* (a celebration hall or seating area), but it was later adapted for use as a tomb, or it was unfinished, left uncarved. Excavations revealed part of a stone bench integrated into the western wall of the room, likely part of the original seating arrangement (Figure 6b). The southern section of the bench was removed and extended to the floor, suggesting alterations to the room's original function. The bench, originally 1.5 m wide, was modified during the room's conversion into a burial space. Above the bench, a stone course wall was constructed using sandstone and limestone blocks, measuring 0.42 m in width in the southern half and 0.5 m in the northern half. Remnants of this wall, along with other evidence of functional change, indicate that the space was repurposed for burials, containing nine graves in total.

The Graves Inside the Burial Chamber of Tomb 62C:

After completing the cleaning process, nine graves were discovered in the chamber during the excavation. The descriptions of these graves are provided below, followed by an analytical study of the skeletal remains (Figure 7).

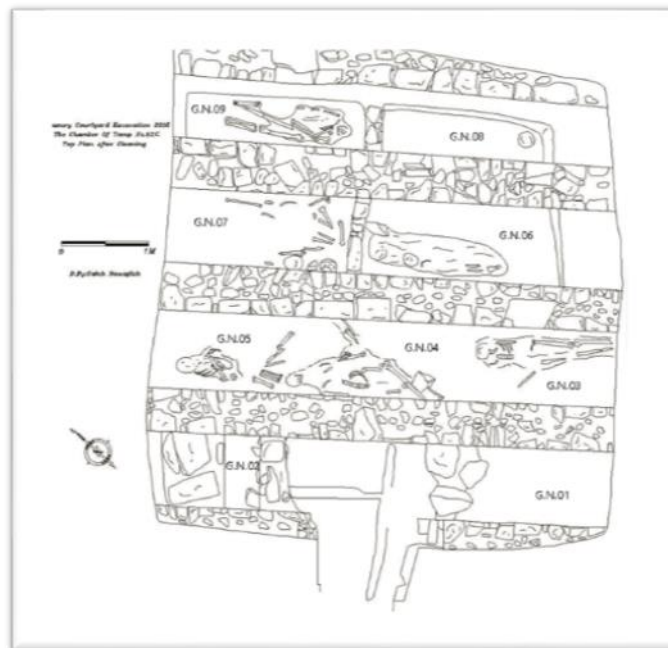


Figure 7: The nine graves discovered inside the burial chamber of Tomb 62C after the cleaning process.

Grave No. 1:

Located in the northeastern part of the chamber, between Walls 12 and 14, this grave measured 2.22 m in length, 0.85 to 0.9 m in width, and 1.10 m in height. It was filled with red sand, and no archaeological artifacts or human remains were found. The grave had been completely looted.

Grave No. 2:

This grave is situated in the southern part of the chamber, between Walls 13 and 14, opposite Grave No. 1. It was filled with a hard mud layer of dark red sand. Fragments of pottery, unpainted bowl in fragmentary state, and a wall extending east-west along the northern side of the grave were found, connecting Walls 13 and 14. The wall consisted of two courses, measuring 0.8 m in length and 0.6 m in height. A layer of ash was discovered on the tomb floor, beneath which stone flakes were found extending under Walls 13 and 14. No human skeletal remains were found in this grave. The dimensions of the grave were 1.9 m in length, 0.80 to 0.85 m in width, and 1.10 m in height.

In the area between Walls 14 and 17, the remains of three human skeletons were found. No dividing walls separated them, suggesting that these walls did not originally exist, or that they were removed when the tomb was disturbed by looters. Each of these remains will be discussed separately as individual graves.

Grave No. 3:

This grave was located in the northern part of the chamber, between Walls 14 and 17 (Figure 8). It contained a mixture of red sand, pottery fragments, and human skeletal remains. Notable finds included a small fragmentary figurine, a figurine of a musician playing a double flute, one large jar in fragmentary state, a small complete jar, and human skeletal remains. The remains appeared to belong to an adult individual, extending from north to south between the two walls. The skull was located at the southern end, facing the eastern wall, while the leg bones were found at the northern end, adjacent to the northern wall of the chamber. Other skeletal remains included ribs, forearm bones, and a broken piece of the pelvis. The total length of the remains was 1.60 m, covering an area with a width of 0.13 m at the legs and 0.5 m at the chest. The height of the grave, from the floor to the faces of Walls 14 and 17, was 0.90 m.

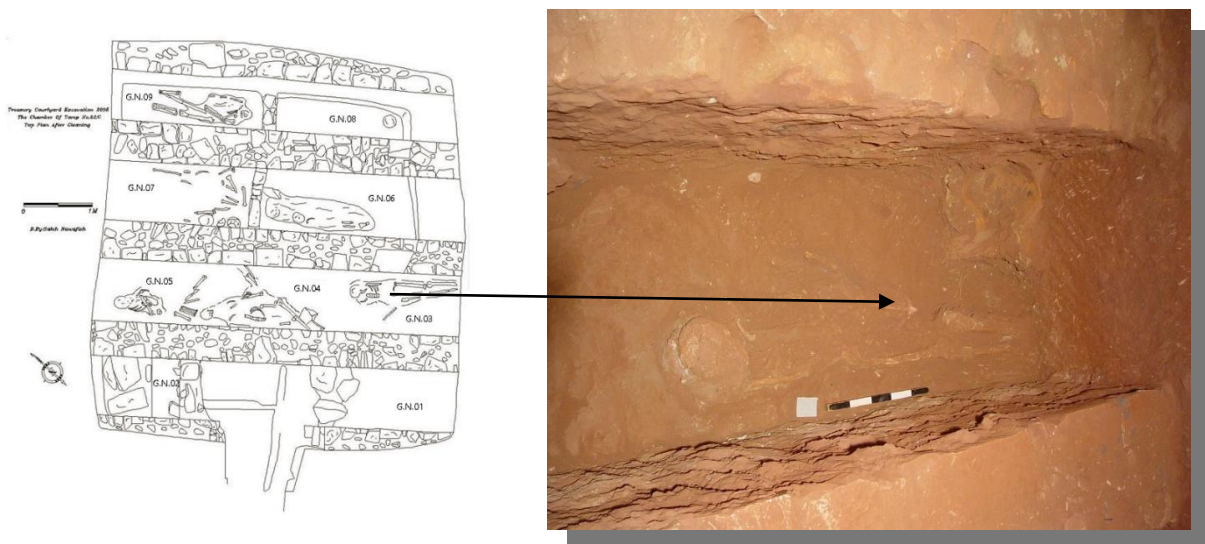


Figure 8: Grave No. 3 between Walls 14 and 17, containing human skeletal remains.

Grave No. 4:

This grave was situated in the central area between Walls 14 and 17. It contained pottery fragments dating to the second half of the first century BC until the first century AD, pieces of a terracotta figurine, and a complete but broken bowl. Human skeletal remains found in the tomb included leg and thigh bones, the pelvis, parts of the spine, forearm bones, hand bones, and a skull (Figure 9). These remains were found together, extending from north to south. The total length of the remains was 1.83 m, with the width of the area where the remains were found ranging from 0.18 to 0.84 m. The height of this area was 0.90 m.

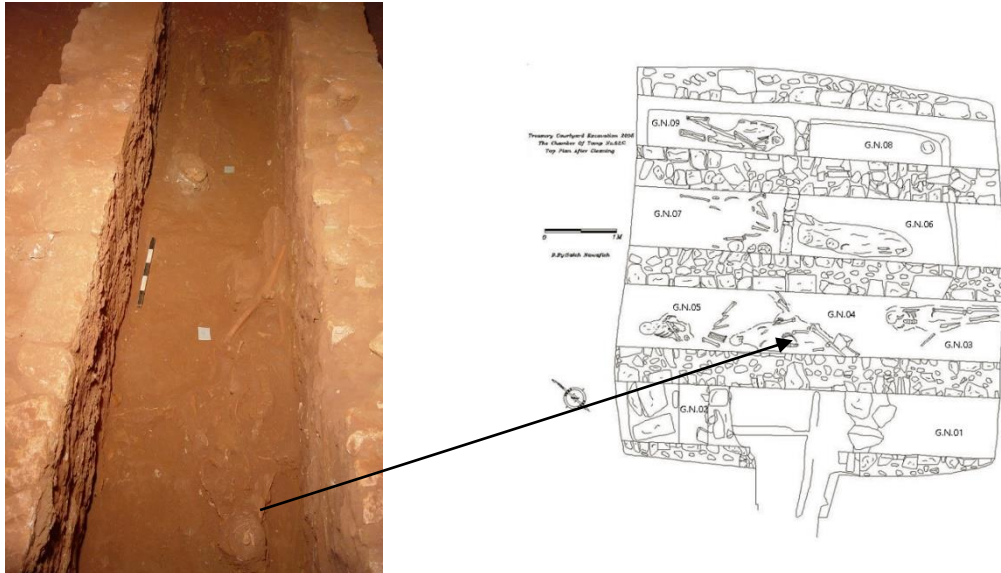


Figure 9: Grave No. 4 between Walls 14 and 17, with human skeletal remains, including leg bones, a skull, and parts of the spine.

Grave No. 5:

Located at the southern end of the chamber, between Walls 14 and 17, this grave was filled with the same type of red sand as the other tombs. Fragments of pottery, a broken cup (with the upper third missing), and human skeletal remains, including parts of the rib cage, hand bones, and most of the skull, were found. The total length of the remains was 1.02 m, with a width ranging from 0.07 to 0.33 m. The grave's overall dimensions were 0.90 m in width and 0.85 m in height (Figure 10).



Figure 10: Human skeletal remains, including parts of the ribcage and skull, inside Grave No. 5.

Grave No. 6:

This grave was located in the northern part of the chamber, between Walls 17 and 21, and was filled with fine red sand. After cleaning, human skeletal remains were found above a sandy layer, raised approximately 0.30 m above the floor (Figure 11). The southern part of the grave contained the skull, which was attached to a wall running east-west between Walls 17 and 21. This wall separated Grave No. 6 from Grave No. 7. The grave measured 2.90 m in length, 0.72 m in height, and the width ranged from 0.87 to 0.90 m. The northern part of the grave sloped downward to the south, rising approximately 0.20 m above the floor. This may be due to the remains of a side bench in the chamber that was later converted into a tomb. A significant quantity of pottery fragments was found in this area. Notable artifacts found with the remains included a pottery lamp, two unpainted bowls, fragments of a third bowl, and one bead.



Figure 11: Grave No. 6, located between Walls 17 and 21, containing skeletal remains.

Grave No. 7:

Located in the southern part of the chamber, between Walls 17 and 21, this tomb was filled with red sand, similar to the previous ones. It was separated from Grave No. 6 by the wall described earlier. Human skeletal remains were dislocated, scattered across the floor, mostly consisting of limb bones, hand and foot bones, some finger bones, ribs, and three large fragments, which may belong to two skulls. The grave measured 2.10 m in length, 0.87 m in height, and the width ranged from 0.87 to 0.90 m. The southern part, adjacent to the southern wall of the chamber, was covered by two well-carved sandstone slabs that extended over the upper faces of Walls 17 and 21.

Grave No. 8:

This grave was located in the northwestern part of the chamber, between Walls 21 and 24. Its level was higher than the other graves, as it was positioned above the remains of a rear stone bench in the chamber. The northern part of the grave was covered by a single slab of well-carved sandstone, which extended between the upper faces of Walls 21 and 24. Inside, only a small quantity of pottery fragments and a very small amount of skeletal remains were found, including two large fragments, which may belong to a single skull. The grave measured 2.33 m in length, with a width ranging from 0.66 to 0.77 m, and a height ranging from 0.40 to 0.63 m.

Grave No. 9:

This grave was located in the southwestern part of the chamber, between Walls 21 and 24. It was filled with red sand, and a nearly complete human skeleton was found, with the head positioned at the northern end. The skeleton likely belongs to an adult male (Figure 12) A significant number of pottery artifacts were found, including a small jar, an almost complete perfume bottle, pottery fragments, four beads, a single seashell, and parts of two bronze earrings. The grave measured 2.63 m in length, with a width ranging from 0.66 to 0.77 m, and a height of 0.90 m.

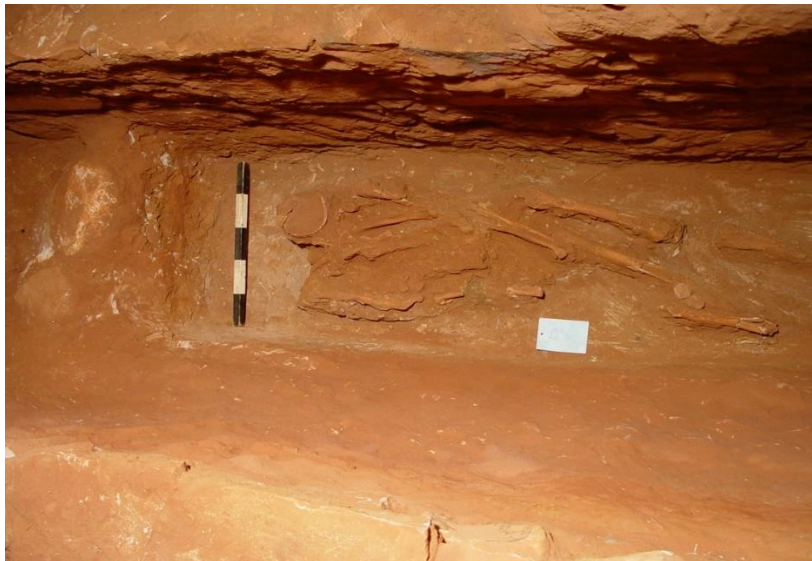


Figure 12: Grave No. 9, located between Walls 21 and 24, containing a nearly complete human skeleton of an adult male.

Skeletal Report: Treasury Courtyard Excavation, Petra 2003 and 2005

This study and anthropological analysis were conducted with the assistance and cooperation of the Danish Expedition (University of Copenhagen, Department of Biological Anthropology) during their work at the Neolithic site of Shakarat al-Musay'id². Additional analysis was carried out in the university's laboratories using bone samples selected from the skeletons in the tombs at Façade 62C (Figure 13). (This analysis also includes the skeletons from Tombs 62D and 62E, excavated during the first season in 2003).



Figure 13: The researcher Marie Louise S. Jorkov from the University of Copenhagen studying the skeletal remains inside the burial chamber of Tomb 62C.

Treasury Courtyard Excavation. Petra 2003, Tomb 62D

Minimum Number of Individuals: 1

Identification: Fragments of a cranium and mandible.

Description:

- The cranium is fragmentary. The occipital protuberance and superior nuchal lines are well-defined. The glabella and superciliary arches are pronounced, suggesting robust cranial features.
- The mandible is fragmentary, with only the left half present. The condyle and coronoid process are missing. The mandible shows gonial flaring and marked muscle attachments.
- The lower left M3 is present and intact in its socket. The roots of the lower left M2 are present, but the tooth was damaged post mortem. The lower left M1 was lost ante mortem, and the alveolar bone has been resorbed. No other teeth are present in the mandible.

² We would like to extend our sincere thanks to the Danish team, led by the director of the expedition, Dr. Charlotte Hoffman, and the laboratory team, represented by Dr. Niels Lynnerup and Marie Louise S. Jørkov.

- The maxilla is also fragmentary. The right M2 and M1 are present and intact in their sockets. The upper left M1 and upper right M1 were lost ante mortem, and the alveolar bone has been resorbed.
- **Cranial Sutures:** The sagittal suture is partially obliterated at the posterior end. The right lambdoid suture is also partially obliterated. Pachyostotic depressions are observed along the inferior sagittal sulcus.

Sex: Male (based on cranial features).

Age: Adult, 33-45 years old, based on molar wear (after Brothwell 1981:72), pachyostotic depressions, and obliteration of the sutures.

Pathology: No pathology observed.

Further Notes: A facial reconstruction has been made (Figure14).

Conclusion: Male, aged 33-45 years at the time of death. No pathology detected.

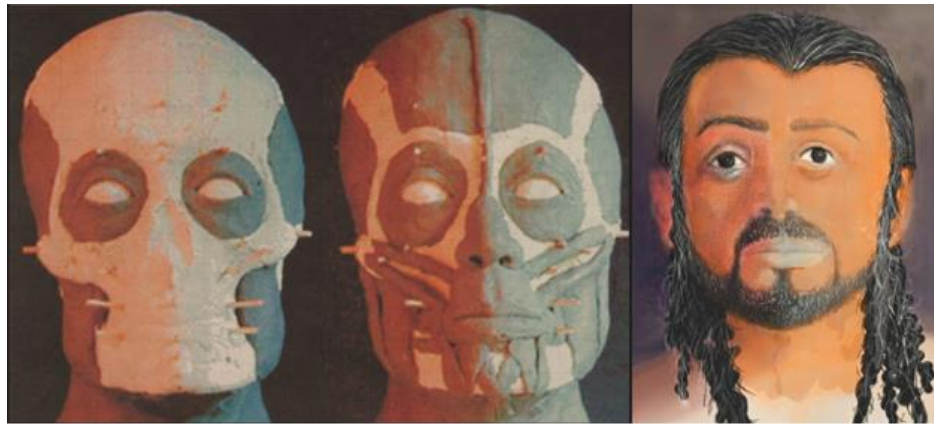


Figure 14: A facial reconstruction of a male from Tomb 62D, aged 33-45 years, based on fragmentary cranial and mandibular remains with no observed pathology.

Tomb No: 62E

Minimum Number of Individuals: 1

Identification: One right femur diaphysis with distal epiphysis.

Description: The femur is gracile and small in size, with characteristics that suggest a more delicate structure.

Sex: Female (based on the small size of the femur).

Age: Adult (based on epiphyseal closure).

Pathology: No pathology observed.

Tomb No. 62C:

Grave No. 3: Minimum Number of Individuals: 1

Individual Identification: Fragments of right and left humeri, right and left femoral diaphyses, right and left tibial diaphyses, left acetabulum, and right acromion.

Description: The skeleton is poorly represented. The femora show marked muscle attachments/enthesopathy on the proximal posterior part of the diaphysis, consistent with the insertion of the gluteus maximus muscle, the adductor longus muscle, and the short head of the biceps femoris.

Sex: Male? Based on the marked muscle attachments and size of the long bones.

Age: Adult

Pathology: The small fragments of the left acetabulum show osteophytic lipping on the acetabular rim, likely due to the ischio-femoral ligament, indicating an age-related change. This could be indicative of early-stage arthrosis.

Conclusion: The remains belong to an adult male with pronounced muscle attachments. The osteophytic lipping around the acetabular rim suggests that this individual was approximately 40 years of age or older at the time of death.

Final Conclusion of Grave No. 3: The remains belong to a single individual, likely an older adult male.

Tomb No. 62C:

Grave No. 4: Minimum number of individuals: 1

Identification: Fragments of long bones.

Description: The fragments are very poorly preserved. One fragment of the humerus, distal 1/3 of the diaphysis, side not identified. One fragment of the middle 1/3 of a radius diaphysis, side not identified. One fragment of the distal part of a fibula diaphysis, side not identified. One unidentified fragment of a long bone, possibly a fibula.

Sex: Female? Based on the size and shape of the humerus diaphysis and the gracile appearance of the other long bone fragments, it is likely a female.

Age: Unknown, either a small adult female or a juvenile.

Pathology: No pathology observed.

Conclusion: The long bone remains belong to a small individual, either a small adult female or a juvenile. Since the epiphyses of the long bones were not preserved, the age category cannot be definitively determined.

Tomb 62C

Grave No. 5: Minimum number of individuals: 1

Identification: Fragments of long bone diaphyses (right/left tibia, right femur, right/left humerus), fibula fragment with no side identification, as well as fragments of right/left clavicle, fragments of the left and right glenoid fossae on the scapulae, small fragments from the right/left ilium and ischium, and the spinous process and lamina of the 1st lumbar vertebra.

Description: The skeleton is poorly preserved. There are no epiphyses on the long bones.

Sex: Not identified.

Age: Adult

Pathology: No pathology observed.

Conclusion: The remains belong to an adult individual of unidentified sex. No pathological changes were observed.

Final conclusion of Grave No. 05: The skeletal remains of Burial No. 5 belong to one individual, an adult of unknown sex. No pathology was observed.

Tomb 62C

Grave No. 6: Minimum number of individuals: 2

Individual (a):

Identification: One unidentified cranial fragment.

Description: On the external surface, the fragment appears to be part of the occipital

bone with the occipital protuberance and nuchal line; however, the inferior side of the bone does not confirm this assumption.

Sex: Not identified.

Age: Adult?

Pathology: No pathology observed.

Conclusion: An unidentified cranial fragment.

Individual (b):

Identification: Fragments of fibula. Side not identified.

Description: The fragments are very small and fragile.

Sex: Not identified.

Age: Adult.

Pathology: No pathology observed.

Conclusion: The fibula fragment belongs to an adult individual.

Final conclusion of Grave No. 6: The skeletal remains of Burial No. 6 belong to two individuals, (a) and (b). Individual (a) is an adult of unknown sex, and individual (b) is an adult of unknown sex.

Tomb 62C

Grave No. 7: Minimum number of individuals: 3

Individual (a):

Identification: Bone fragments.

Description: A fragmentary proximal part of a right 2nd metacarpal, as well as unidentified fragments of long bones. One 1st distal hand phalanx, one left proximal hand phalanx, one proximal hand phalanx (side not identified), and fragments of three hand phalanges.

Sex: Not identified.

Age: Adult.

Pathology: No pathology observed.

Conclusion: The remains belong to an adult individual, and the sex could not be determined. All the remains likely belong to the same individual, as the color and size of the bones seem to match.

Tomb 62C

Grave No. 7:

Individual (b):

Identification: Fragments of cervical vertebrae.

Description: One fragment of the 1st cervical vertebra (the left interior and inferior articulating facets), and one fragment of a cervical spinous process.

Sex: Not identified.

Age: Adult.

Conclusion: The fragments of the cervical vertebrae belong to an adult individual of unknown sex.

Tomb 62C

Grave No. 7:

Individual (c):

Identification: Fragments of femur diaphysis, small fragments of tibia diaphysis and distal epiphyses, right distal fibula, left distal tibia diaphysis, and a fragment of the lateral part of the left clavicle.

Description: The skeleton is poorly represented. The tibia diaphysis fragments are very small.

Sex: Not identified.

Age: Adult, based on epiphyseal closure, enthesopathy, and age-related changes on the tibia epiphysis.

Pathology:

- The left femur diaphysis seems to bend slightly anteriorly/posteriorly in the proximal 1/3. The size of the femur is normal.
- The acromion end of the left clavicle has severe enthesophytes, likely resulting from the deltoid muscle, trapezoid ligament, and trapezius muscle.
- There is slight osteophytic reaction on the distal epiphysis of the right tibia.
- **Conclusion:** The remains are of an adult individual. The sex cannot be identified. The enthesophytes on the clavicle suggest that the individual may have engaged in strenuous work involving the shoulders and upper arms.

Final conclusion of Grave No. 7:

- The skeletal remains of Grave No. 7 belong to three individuals:
- Individual (a) is an adult of unknown sex.
- Individual (b) is an adult of unknown sex.
- Individual (c) is an adult, sex not identified. Individual (c) may have had a continuous workload on the shoulders.

Tomb 62C

Grave No. 8: Minimum number of individuals: 1

Identification: Fragmentary cranium with no facial bones.

Description: The superciliary arches and glabella are pronounced, and the preserved left mastoid process is large. The sagittal suture is completely obliterated, and the lambdoid suture is almost obliterated.

Sex: Male.

Age: Adult (elderly? Estimated to be over 45 years old based on obliterated sutures).

Pathology: No pathology observed.

Conclusion: The cranium appears to belong to an older male. The age estimation is based on the obliterated cranial sutures.

Tomb 62C

Grave No. 9: Evidence of multiple individuals based on fragmented elements (Minimum Number of Individuals: 2)

Minimum number of individuals: 2

Individual (a)

Identification: Fragments of ribs and a fragment of fibula diaphysis of unknown side.

Description: One right 2nd rib, one left rib, a fragment of a rib (the sternal end, side not identified), and an unidentified rib fragment.

Sex: Not identified.

Age: Adult.

Pathology: The fragment of the left rib shows periosteal reaction on the inferior surface. The 2nd rib shows osteophytes and eburnation on the articulating facet of the head and osteophytes on the articulating facet of the tubercle. The fragment of the fibula diaphysis shows severe periosteal hyperostosis.

Conclusion: The remains are of an adult individual of unknown sex. The osteophytes and eburnation on the 2nd rib could indicate osteoarthritis. However, the distribution and characteristics of the bony reactions seen on the ribs and fibula are similar to the symptoms of fluorosis, a common disease in Asia and the Middle East (Ortner and Putschar 1985: 288).

Individual (b)

Identification: Fragment of the distal 1/3 of a right humerus.

Description: The lateral epicondyle is missing. The medial epicondyle and diaphysis are large.

Sex: Male, due to the large size of the humerus.

Age: Adult.

Pathology: No pathology observed.

Conclusion: The humerus fragment belongs to an adult individual, possibly male, due to the large size of the humerus.

Final Conclusion of Grave No. 9:

- Individual (a): The remains belong to an adult individual of unknown sex. The osteophytes and eburnation on the 2nd rib could indicate osteoarthritis. However, the distribution and characteristics of the bony reactions seen on the ribs and fibula are similar to the symptoms of fluorosis, a common disease in Asia and the Middle East (Ortner and Putschar 1985, p. 288).

Individual (b)

The remains belong to an adult, possibly male, due to the large size of the humerus. No pathology could be observed.

Final Comments:

The minimum number of individuals, based on the anthropological analysis above, is 13 adults. Two individuals are from the 2003 season:

Tomb 62D:

One individual (Male)

Tomb 62E:

One individual (Female)

There are 11 adults from Tomb 62C, of which:

3 are males

1 is female

7 are of unknown sex.

The following table illustrates the number of individuals found in each tomb, along with a description of the skeletal remains. It provides details on the sex and type of

skeletal fragments discovered, as well as the specific tomb and grave number associated with each set of remains.

Table 1: A summary description of the species selected from the skeletal remains of Tombs 62C, 62D, and 62E, along with the results of the analysis.

Tomb No.	Grave No.	Minimum Number of Individuals		Sample Species	Sex
62D		1		Fragments of a cranium and mandible	Adult Male
62E		1		One right femur diaphysis with distal epiphysis	Adult Female
62C	3	1		Fragments of R/L humeri, R/L femora diaphysis, R/L tibiae diaphysis, left acetabulum and right acromion	Adult Male?
62C	4	1		Fragments of long bone	Female ?
62C	5	1		Fragments of long bone diaphyses, R/L tibia, right femur, R/L humerus and fibula fragment with no side identification, fragments of R/L clavicle, fragment of left and right glenoid fossa on the scapulae, small fragments from R/L ilium ischium, and the spinous process and lamina of 1st lumbar	Sex: Not identified
62C	6	2	A	One unidentified cranial fragment	Sex: Not identified.
			B	Fragments of fibula	Sex: Not identified
62C	7	3	A	Bone fragments	Sex: Not identified.
			B	Fragments of cervical vertebrae	Sex: not identified.
			C	Fragments femur diaphysis, small fragments of tibiae diaphysis and distal epiphyses- right distal fibula, left distal diaphysis and fragment of lateral part of left clavicle	Sex: Not identified Age: Adult
62C	8	1		Fragmentary cranium with no facial bones	Sex: Male
62C	9	2	A	Fragments of ribs and a fragment of fibula	Sex: Not identified
				diaphysis of unknown side	identified
			B	Fragment of a distal 1/3 of a right humerus	Sex: Male

Finally, it remains uncertain whether the graves in Tomb 62C belonged to a single family. If so, what is their relationship to the two other skeletons in Tombs 62D and 62E? Why were they buried there, and what is their connection to the Treasury? We hope that further studies and future excavations will provide answers.

Grave Goods from Tomb 62C: Pottery, Figurines, and Symbolic Artifacts

In the burial chamber of Tomb 62c, a range of grave goods, particularly pottery, was uncovered, providing significant insight into the material culture and burial practices of the individuals interred there. The artifacts offer important evidence of both symbolic and utilitarian objects used in funerary rituals. In Grave No. 2, fragments of an unpainted bowl were discovered, while Grave No. 3 yielded fragments of a large jar and a smaller, complete jar, as well as a small fragmentary figurine. A notable find was a figurine of a musician playing a double flute, highlighting the role of figurines in funerary contexts.

The figurine of the musician playing a double flute in Tomb 62c is a notable example of the depiction of music in funerary contexts. Musical instruments in ancient times, such as the flute, harp, or lyre, and tambourine or flat drum, were primarily utilized during religious, social, and funerary rituals (El-Khouri, 2001: 35). Scholars suggest that music played a central role in various ceremonies, including civic, religious, and funerary events, as well as in rituals and entertainment (Tuttle, 2009: 274). The depiction of a musician playing a double flute not only emphasizes the importance of music in the funerary practices of the Nabataean society but also suggests that such representations may have symbolized a connection between the living and the dead, reinforcing the spiritual or cultural beliefs tied to the afterlife.

Grave No. 4 contained pottery fragments, along with pieces of a female terracotta figurine or goddess, and a cracked, complete bowl. Similarly, Grave No. 5 included fragments of pottery and a broken cup, with the upper third missing. Grave No. 6 contained significant quantities of pottery, including unpainted bowl fragments, a lamp, and a single bead, suggesting that these items had both ceremonial and practical functions. In Grave No. 9, a larger number of pottery artifacts were found, including a small jar, an almost complete perfume bottle, pottery fragments, four beads, a seashell, and parts of two bronze earrings. These objects reflect the social and cultural significance of personal adornment and luxury items in the burial process.

The pottery, particularly the painted bowls, likely served both utilitarian and symbolic purposes, possibly being used in rituals or as offerings for the deceased's journey into the afterlife. The figurines, such as the musician and the horse rider, who wears conical headgear, are indicative of cultural or religious beliefs tied to the afterlife or otherworldly realms (El-Khouri, 2001: 109-110). In addition to the pottery, personal adornment items like beads, a perfume bottle, and luxury objects found in later graves suggest that the deceased were interred with items reflecting their social status and personal identity. A variety of pottery vessels, figurines, and oil lamps were found in Tomb 62c, highlighting both practical use and symbolic meaning in the burial customs of the society. These artifacts provide valuable evidence of the cultural practices surrounding death and the afterlife.

Finds from Tomb 62C

A total of 15 distinct pottery objects and artifacts were discovered in Tomb 62C. These items, including pottery vessels, figurines, and oil lamps, provide valuable insights

into the material culture and burial practices of the individuals interred there. For clarity, the finds have been divided into two groups, as shown in Figs. 15 and 16.

Group One (Figure 15):

1. **Nabataean Painted Fine Bowl, Petra Museum no. JP 9090:** This bowl features palm leaf motifs on the interior in the Nabataean style. The vessel is incomplete, having been broken and mended. Its length is 19 cm (Figure 15.1). Similar examples are cited in Horsfield, 1930: 374, pl. 13, and JP 339. 'Amr, 1999 (Figure 9.1). It is dated to the latter half of the first century BC.
2. **Terracotta Figurine of a Rider, Petra Museum no. JP 9096:** This figurine depicts a person riding a horse in light red color (Figure 15.2). The figure is broken and reconstructed, with conical headgear on the rider's head. The rider gazes forward, and the chest features two irregular circular designs, each containing decorative dots. The rider holds the reins in his right hand.
3. **Cup with Impressed Decoration** (Figure 15.3): Incomplete, with part of the rim and body missing. It has a light red exterior, with incised decoration on the outside. Parallel example: Schmid, Phase 2, 2003: 77 (ca. 50 BC–20 AD).
4. **Oil Lamp** (Figure 15.4): Comparable items include Petra Museum no. JP 1491, with a parallel in Perry (2017: 105, Figure 5a).
5. **Oil Lamp** (Figure 15.5): Comparable items include Petra Museum no. JP 48, JP 935, JP 996, JP 1049, JP 2736, and JP 2761.
6. **Male Musician Figurine, Petra Museum no. JP 9098:** This figurine depicts a male musician seated on a small stool with legs crossed, playing a double flute. He wears a short tunic and has tight curls around the crown of his head. It is the only complete example of a musician figurine from Petra. Although it shares similarities with other Nabataean figurines, its origin is uncertain and it may have been imported from another region (Figure 15.6).
7. **Female Pottery Figurine, Petra Museum no. JP 9097:** Possibly representing Isis, the figurine is handmade in dark red color with incised lines on the head. The figure wears a crown and has two braids hanging on either side of the face (Figure 15.7).

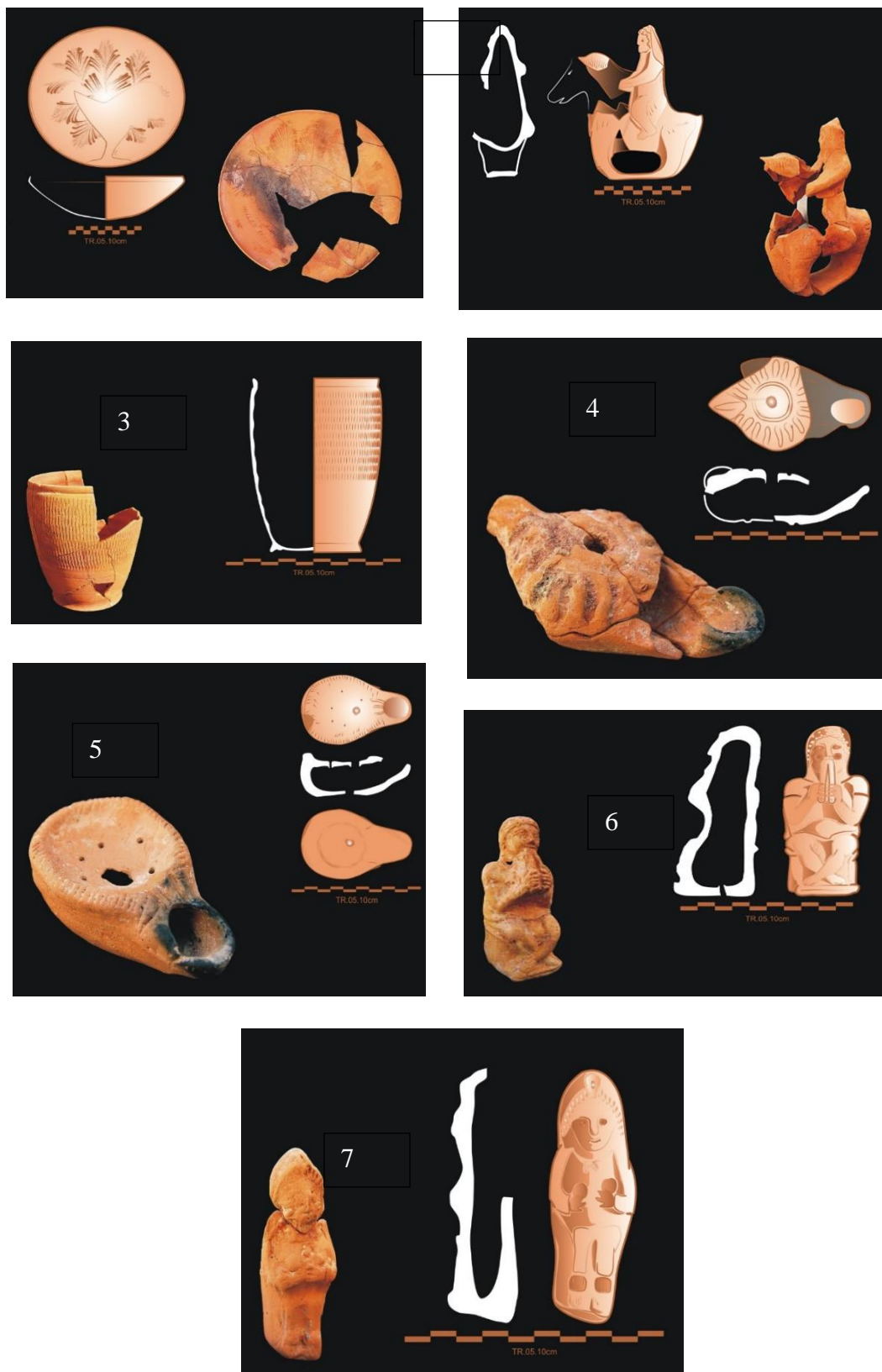


Figure 15: Displays Group 1 of pottery finds from Tomb 62C, including a painted bowl and cup, figurines, and oil lamps (Profile drawing by Qais Tweissi).

Group Two (Figure 16):

1. **Small cup (Figure 16.1. Petra Museum no. JP 9095):** With an averted rim, broken and mended, with a section of the rim missing. Made of pink clay with a ring base, its height is 6 cm, rim diameter is 9 cm, and base diameter is 3.8 cm. Comparable items include Petra Museum number JP 39, JP 224, JP 1062, and JP 2239.
2. **Incomplete juglet (Figure 16.2). Petra Museum no. JP 9087:** The juglet has a globular shape and a single handle, with the rim and part of the neck missing. The base measures 6 cm in diameter, consistent with JP 9092.
3. **Small pottery juglet (Figure 16.3). Petra Museum no. JP 9094:** Broken and reconstructed, with chips present on the rim and body. Its height is 13 cm, the rim diameter is 5.5 cm, and the ring base measures 4.5 cm. It has one handle.
4. **Small shallow bowl (Figure 16.4). Petra Museum no. JP 9088:** Broken and reconstructed, this red ware bowl features hard-fired black paint markings on both the interior and exterior. Likely an oil lamp, with a small portion of the rim missing. The bowl measures 12 cm in length with a base diameter of 5 cm. Comparable items include JP 2338 and JP 377.
5. **Pottery Bowl (Figure 16.5): Petra Museum no. JP 9089:** Broken and mended, with missing fragments from the body. It has an inverted rim and a rounded base. Comparable items include Petra Museum no. JP 1286 and JP 4610.
6. **Pottery Bowl (Figure 16.6):** Broken and mended, with a ring base, inverted rim, and light red color. Similar examples are cited in Schmid, 2003: 76, (Figure 52.1), first century BC.
7. **Incomplete ceramic juglet with a spout containing holes (Figure 16.7):** Possibly used for straining liquids. The rim and neck are partially missing, and the juglet is broken and mended. It has a flat base, one handle, and a light red color. slide
8. **Fragments of a Painted Pottery Bowl (Figure 16.8):** Painted with floral designs. Comparable items include Petra Museum no. JP 232, Bikai, 2008: 492, Figure 26c, and Schmid, 2003: Figure 56 (first century BC).

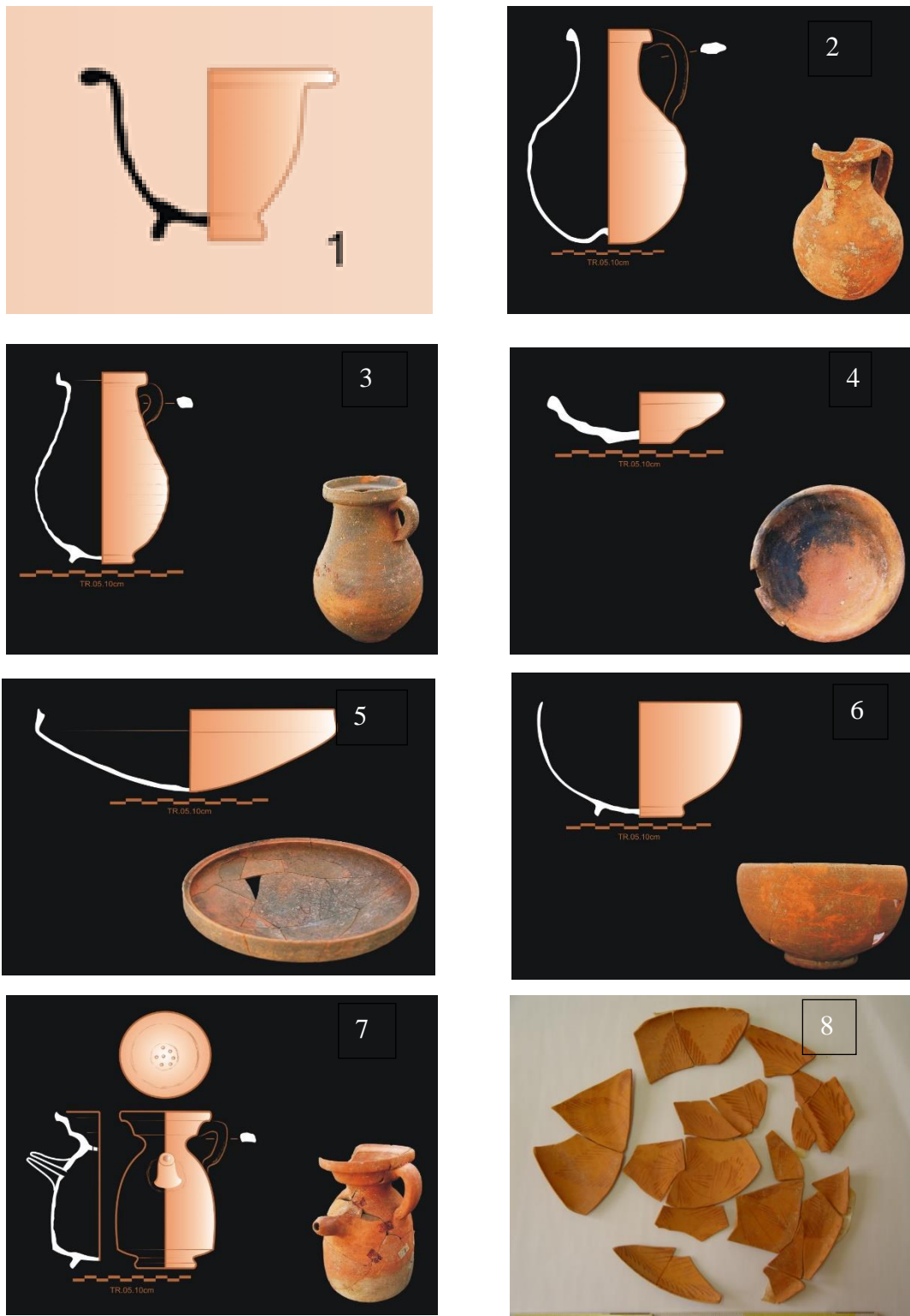


Figure 16: Group 2 of pottery finds from Tomb 62C, including juglets, bowls, and a cup. (Profile drawing by Qais Tweissi).

Looting and Desecration of the Graves in the Burial Chamber of Tomb 62C

It is evident that most of the tombs in Petra were subjected to looting during successive periods, including the Nabataean period. Despite the strict laws and financial fines imposed by the Nabataeans to prevent the desecration or looting of their ancestors' tombs and the theft of their valuable contents, these laws were often disregarded by thieves (Alzoubi and Al Qudrah, 2015: 5-6). The tombs in Petra were repeatedly looted and damaged, resulting in the theft of valuable grave goods such as jewelry, rings, necklaces, bracelets made of gold, silver, and precious stones, as well as the destruction of various pottery items.

The tombs uncovered beneath the Treasury, including Tomb 62C, serve as examples of those that were looted. The upper part of the tomb's entrance, measuring 1.35 m in height, was opened later, allowing access for looting and ransacking of its contents. (Figs. 4a, b) The stone covering slabs of the graves were removed and scattered throughout the burial chamber (Figs. 4c, d). During the excavation of the tomb, fragments of small figurines, plates, and pottery vessels were found in the western part of the chamber. These fragments belonged to items originally found in the eastern section of the tomb, indicating that the less valuable grave goods were scattered around the tomb in various locations. Based on the analysis of undisturbed tombs at Petra, it is likely that Tomb 62C originally contained more valuable items such as jewelry and precious metals, similar to those found in other undisturbed tombs in the area (Johnson, Ure, and Castro, 2017: 653). The grave goods that were looted from Tomb 62C would likely have included these types of artifacts, based on the patterns observed in comparable tombs.

Conclusions Gained from Tomb 62C

1. This tomb is unique because the graves were built rather than carved into the floor or walls.
2. The Nabataeans demonstrated flexibility in altering the functions of halls and facades, even removing them when necessary, as evidenced by the changes made to the Theatre.
3. The oldest graves in this tomb are the inner ones (Graves Nos. 9 and 8), followed by Graves Nos. 7 and 6, and then Graves No. 5, 4, and 3. The most recent graves are located at the outer sides of the entrance (Graves No. 2 and 1). Based on burial preparation methods, we infer that Wall 24 and the floors of Graves Nos. 8 and 9 were constructed first. The deceased were then buried, and the graves were sealed with Wall 21. Finally, the graves were covered with stone slabs placed between the tops of the walls.
4. The façade of this tomb lacks architectural decorations, suggesting it may be the last façade to be carved before the decision was made to focus on the Treasury. Alternatively, it may not align with the façades of the adjacent Tombs 62D and 62E to the south, meaning it is slightly positioned forward compared to them. This advancement likely required the removal of external decorations in order to build a straight retaining wall in front of all the tombs. This is plausible, as the external façade and burial hall of Tomb 62B were completely removed due to the tomb's significant forward positioning relative to the others. This could be explained by the fact that, prior to the carving of the Treasury, the rock to the north of the Treasury was wider than the southern side, which accounts for the forward positioning of the façades of Tombs 62B and 62C relative to the other tombs.

5. Like other tombs excavated in Petra, this tomb was looted. It was likely looted multiple times, with the earliest looting possibly occurring at the end of the Nabataean period. The looting was destructive, organized, and rapid, with the primary objective being the theft of valuable objects while leaving behind less valuable funerary items, such as pottery.
6. Humidity is one of the most significant factors contributing to the weathering of the tomb's halls and façades, particularly those with deposition layers left by floods. We recommend a plan to excavate and clean as many halls and chambers as possible, especially those of significant tombs above ground, such as those along the Street of Facades.
7. The study of flood sources and the cleaning and rehabilitation of the hydraulic system are crucial and urgent to mitigate flood damage and preserve as much of this Arabian heritage as possible.
8. The rock faces surrounding the al-Khazna courtyard may still contain burials similar to those of Tomb 62A, as suggested by the depth of flood-deposited layers, which are approximately 7 m thick along the edges of the courtyard.
9. The rock-cut shelter to the north of the Treasury and the smaller rock-cut shelter to the south were interconnected, with the extension starting from the larger rock-cut shelter and sloping down towards the smaller one. This configuration seems to have been designed to protect the features beneath from erosion and weathering caused by waterfalls during the winter.

Therefore, we are confident that there are features or tombs at the same level as Tomb 62A, but these will not be excavated in order to preserve the remains and features of the lower courtyard (Figure 17).



Figure 17: The interconnected rock-cut shelters to the north and south of the Treasury, with a line drawn to clarify their connection. The larger shelter slopes down toward the smaller one, designed to protect underlying features from erosion. Additional tombs at the same level as Tomb 62A will remain unexcavated to preserve the lower courtyard.

Tomb 64A: Context and Excavation Overview

Tomb 64A is located opposite the Treasury, with its lower portion buried underground. It is situated near Tomb 64B, which was excavated by the Department of Antiquities in 1979 and 1980. Tomb 64B, according to Dr. Zayadine, was in use from the first to the fourth century AD, as evidenced by the archaeological finds, offering important context for understanding the chronology of the tombs in this area (Zayadine, 1982: 366-367).

Tomb 64A was excavated during the summer of 2005. It is a rock-cut tomb located to the north of the Siq. The tomb's structure is block-like but still attached to the rock on its back and left side. The buried section of the tomb reaches a depth of 7 m. Due to the depth of the excavation trench, a crane was employed to lift the sand from the trench (Figure 18a and b).

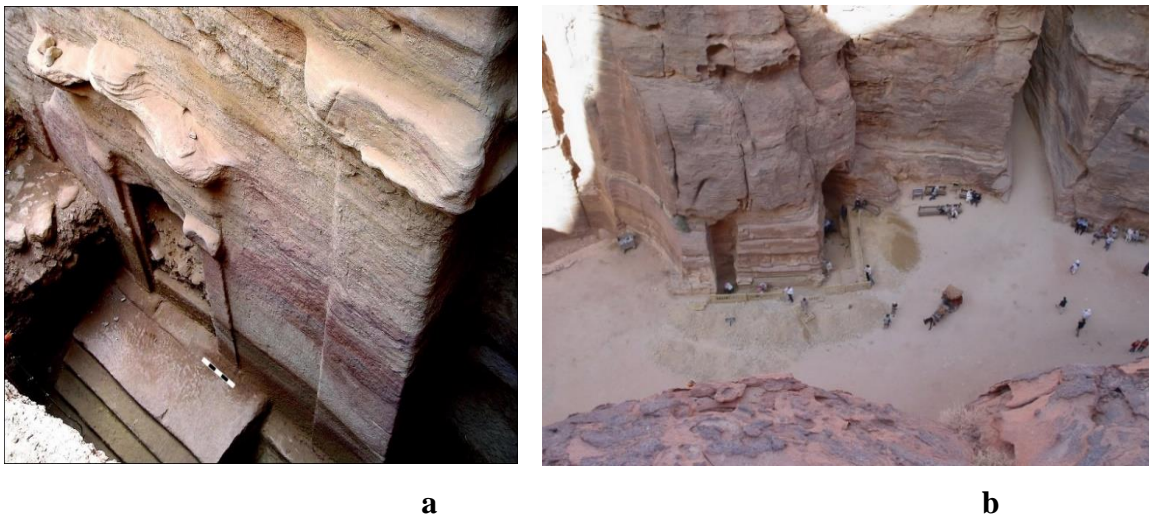


Figure 18a: The western façade of Tomb 64A, opposite the Treasury.

Figure 18b: The southern façade of Tomb 64A, with steps linking the courtyard to the door.

The tomb features two façades: the western façade, which faces opposite al-Khazna, and the southern façade, located next to the northern rock face of the Siq. Both façades display short Nabataean pilasters adorned with typical Nabataean capitals, with slightly protruding alcoves in the second order and crow step decoration at the upper order. The southern façade serves as the main entrance to the tomb, framed by two small eroded pilasters with Nabataean capitals and a triangular pediment above the door (Figure 19a and b)

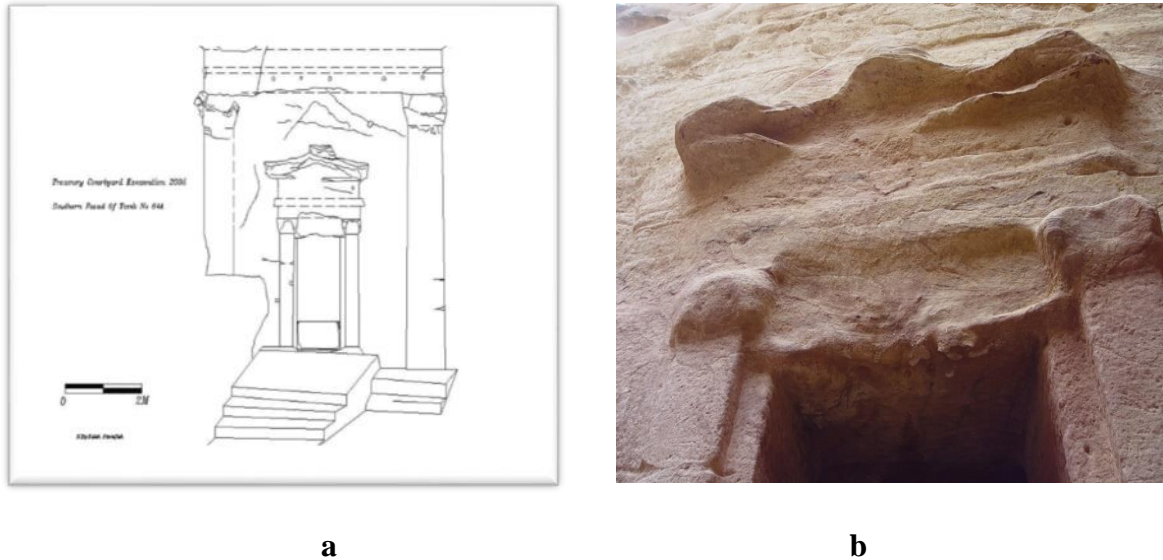


Figure 19a, b: The southern façade of Tomb 64A, with the main entrance framed by two small, eroded pilasters and a triangular pediment above the door.

The entrance to the tomb, located on the southern façade, measures approximately 2.10 m in height and 1.15 m in width. The entrance was sealed with seven stone blocks, of which only one remained in its original position; the others had been repurposed within the tomb in a later period. The total height of the slabs used to seal the tomb is 1.92 m, which is shorter than the height of the entrance, suggesting that the gaps were filled with mud and small stones. The entrance was carefully designed, as evidenced by the well-cut rock staircase leading up to it. The staircase consists of three steps, each with flat surfaces, and measures 2.98 m in width and 2.32 m in length. The height of the first step is 21 cm, the second step is 18 cm, and the third step is 20 cm, rising 0.59 m above the ground level.

The burial chamber was largely filled with debris brought in by floodwaters, forming a sedimentary layer approximately 1.30 m deep. The bedrock in the external courtyard, in front of the main door, descends to a depth of 7 m from the modern surface. The tomb is accessed from the courtyard floor via a rock-cut staircase, which provides access to the chamber situated 0.59 m above the surrounding Nabataean floor level. Remains of a pavement were found on the right side of the door, which may be part of the Khazna courtyard plaza, suggesting that the area in front of the tomb was backfilled during the fourth phase.

The Tomb Chamber: Description and Contents

The tomb chamber measures 4.20 m (east-west), 3.60 m (north-south), and 2 m in height. The walls are irregular and uneven, with visible chisel marks, indicating the use of carving tools during construction. At the junction of the northern and western walls, a small platform is present, suggesting that the chamber may have been incomplete, or the platform served as a base for a lamp used to illuminate the space. The ceiling also displays irregularities, with chisel marks visible on both the walls and ceiling, likely resulting from the carving process.

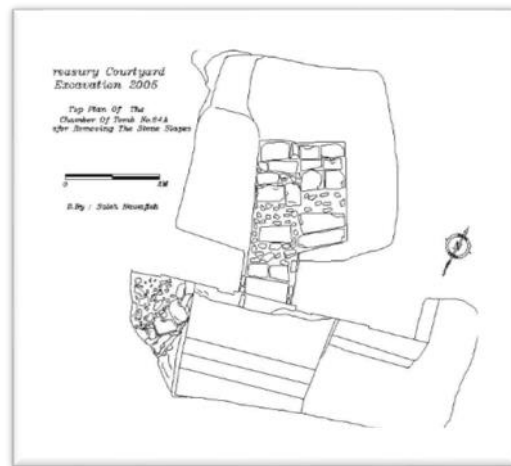
The floor of the chamber is nearly level and was filled with layers of compacted clay

in red and yellow hues, mixed with limestone, sandstone, and river stones, suggesting they were transported by floodwaters or torrential rains. The accumulated debris reaches a height of approximately 1.32 m.

Six rows of limestone and sandstone slabs were found extending longitudinally across the floor, from east to west. The slabs in the first and second rows, starting at the inner part of the chamber entrance, were composed of three slabs each: the slabs of the first row were all 30 cm wide, while their lengths varied between 21 and 81 cm. The second row had slabs 23 cm wide, except for one slab (37 cm wide), which may have been used as one of the stones for sealing the door. The lengths of the second-row slabs varied between 38 and 85 cm. The third row had five slabs with widths between 31 and 40 cm and lengths between 42 and 90 cm; Slab 5 (38 x 90 cm) was likely used to seal the door. The fourth row had two slabs (30 cm width), and lengths of 81 and 92 cm, which also likely served as door sealing stones. The fifth row had two slabs, measuring 48 x 36 cm and 32 x 34 cm. The sixth row had two slabs measuring 96 x 30 cm and 80 x 35 cm (Figure 20a and b).



a



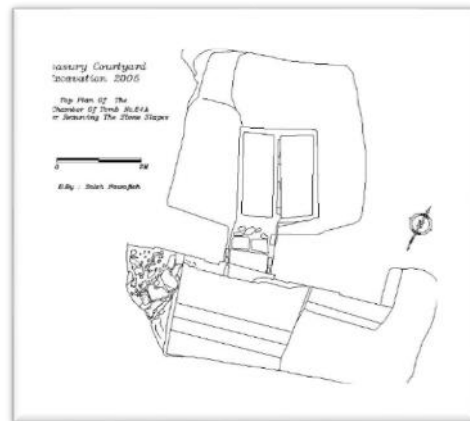
b

Figure 20a, b: Six rows of limestone and sandstone slabs found across the floor of the chamber, extending from east to west. The slabs vary in width and length, with some likely used to seal the door of the tomb.

These slabs were removed following their documentation by drawing. Beneath the slabs, two pit graves full of debris were found, separated by a rock divider. The ledges of the pits were 15 cm below the floor level, allowing the slabs to securely cover the graves, with the upper surfaces of the slabs level with the chamber's floor (Figure 21a and b).



a



b

Figure 21a, b: The two pit graves found beneath the slabs, separated by a rock divider. The graves were covered by the slabs, which were level with the floor of the chamber, and the ledges of the pits were 15 cm below the floor level.

Grave Pit One, is located directly opposite the entrance, near the center of the chamber. It measures 2 m in length, 1.4 m in depth, and 0.72–0.75 m in width. The floor of this grave contained the remains of seven skulls along with other bones intermingled with mud, along with fragments of pottery and a coin.

Grave Pit Two, located to the east of the first grave, measures 2 m in length, 0.74 m in width, and 1.45 m in depth. It contained a single skeleton, along with one stone slab. Both grave pits were full of debris and mud. The arrangement of the slabs, along with the removal and reuse of the original door stones as cover slabs, suggests that the grave pits may have been looted and excavated multiple times.

Floods and Archaeological Layers in Front of Tomb 64A

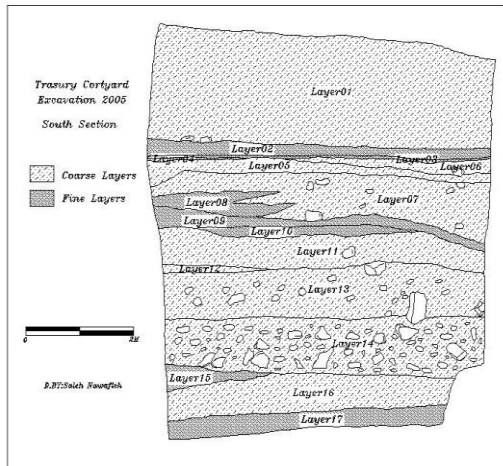
After excavating the southern side surrounding Tomb 64A and reaching the floor, 17 layers were revealed, including two sedimentary layers left by the floods and torrents that came from the Siq and Wadi Danqur al-Khazna, in addition to the floods and waterfalls originating from the rock-cut section of the tomb, located on the western side of Jebel al-Khubtheh. Most of these layers are red in color, and six of them are soft and loose. Fragments of pottery were found in some of these layers, including pieces of water pipes that might have fallen with the rainwater from the terracotta water pipes running in the upper part of the tomb.

The remaining layers are compressed and hardened, containing large quantities of stones of various sizes, gravel, and primarily yellow and white colors, and they are free from pottery fragments.

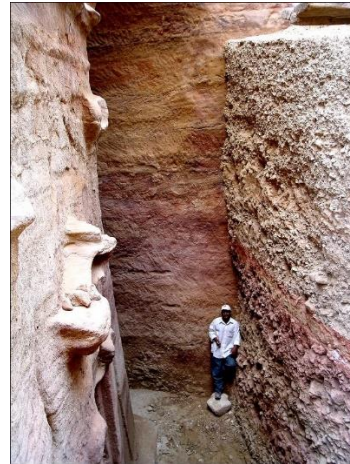
The variation in the thickness of the layers ranges from 5 cm to 50 cm, with an average thickness of 20 to 30 cm. Thicker layers correspond to larger floods, while thinner layers indicate milder flooding or drier periods. This difference in thickness helps in understanding the seasonal intensity and frequency of the floods.

The oldest layer found in this section, Layer 17, is located 6.90 m below the current surface level. It is red in color and contains remnants of mortar, along with irregularly shaped small pieces of sandstone and limestone tiles, placed randomly. This suggests that the courtyard tiles were looted in this section, as indicated by the area uncovered in front

of the window tomb and the stairway from the 2003 season. When comparing the courtyard level with the levels found in the first season, it matches the same level uncovered in front of the Incense Tomb, which is also located 7 m below the current surface. This implies that both Tombs 64A and the Incense Tomb (62A) may date back to the same period (Figure 22a and b).



a



b

Figure 22a: The southern section of Square 01 in front of Tomb 64A, showing seventeen layers.

Figure 22b: The southern section of Square 01, showing the total height of the layers, which is 6.90 m.

At a higher level than this floor, part of a paved floor was discovered (Layer 12), made of the same type of paving as in the Siq, with irregular stone slabs (Figure 23). It is located on the western side of the section, adjacent to the southwestern corner of the tomb, with an uncovered area of 1 m x 1.04 m. This floor is 1.1 m higher than Layer 16 and may represent the same floor as the lower outer floor of al-Khazna, remnants of which were found in front of Tombs 62E and 62C. This suggests a connection between the tomb's construction and the broader architectural context of the area.



Figure 23: A paved floor of irregular stone slabs, similar to those found in the Siq, located at the southwestern corner of Tomb 64A. A line has been drawn to indicate the height of the floor in front of the tomb. This floor may correspond to the lower outer floor of al-Khazna, remnants of which were found in front of Tombs 62E and 62C, suggesting a connection between Tomb 64A and the broader architectural context of the area.

The System of Draining Floods, Waterfalls, and Rainwater in the Treasury Courtyard

These excavations have deepened our understanding of the drainage system for rainwater falling on the courtyard, as well as the waterfalls resulting from the accumulation of rainwater on the surrounding peaks and the floods coming from Danqur Al-Khazna Valley. Surveys have confirmed the construction of five dams in this area during that time, in addition to the water flowing through the Siq, which was influenced by the Siq waterfalls following the digging of the Al-Mudhlim Tunnel and the construction of a dam at the entrance to the Siq during that period.

In the first season of 2003, we discovered a channel for draining rainwater above Tomb 62A, located beneath the lower courtyard and facing east. With the assistance of the University of Pennsylvania mission working at the Petra Pool and Garden site, we conducted a remote sensing survey in front of Square 01, at a distance of 14 m from the rock-cut shelter wall. The analysis revealed the presence of a construction wall extending from the south towards the northwest, located 5 m below the present level, i.e., towards the outer Siq.

Through our continuous monitoring and follow-up of the site, particularly during winter seasons and floods that affected the courtyard at different times, we observed that these floods revealed a second wall, parallel and opposite to the one identified in the remote sensing survey. The floods also revealed additional foundations on the southern side opposite Tomb 62D. We believe that these are extensions of both walls. The question arises: Was there a drainage tunnel or culvert to drain the rainwater in front of the Treasury? Based on the previous evidence, we propose the following analysis:

The valley area or torrent channel beneath the lower courtyard of the Treasury may have been equipped with a drainage tunnel that starts from the direction of Wadi Danqur Al-Khazna and extends with the outer Siq towards the Street of Facades. This tunnel was likely equipped with manholes for draining rainwater. Evidence suggests that drainage channels were provided on both sides, descending from the bottom of the courtyard towards the floor of the tunnel to prevent blockage. The subtle slope of the courtyard on the eastern and western sides towards the center (towards the tunnel's location) allows rainwater to flow toward the manholes of these channels.

We hope that further research and excavations in the future will provide additional insights into the drainage system and help resolve the remaining uncertainties about the infrastructure, offering a more complete understanding of how the system functioned.

Conclusion

Tomb excavations in Petra, particularly those conducted in recent decades, have significantly deepened our understanding of Nabataean burial practices and the rituals surrounding the treatment of the deceased (Perry and Walker, 2018: 121-137). These excavations, carried out at various sites including the Tomb of Uneishu N. 813 (Zayadine, 1974: 135-150), Petra's North Ridge (Perry and Walker, 2018: 121-137), the Renaissance Tomb at Wadi Farasa (Huguenot et al, 2004: 203-210), and Tomb N. 676 at Wadi Mataha (Johnson, 2017: 641-655), have revealed that the Nabataeans commonly interred their dead with personal belongings. Women, in particular, were often buried with jewelry such as earrings, bracelets, rings, necklaces, and nose rings. Other burial goods included small pottery animal figurines, ceramics (both painted and unpainted), oil lamps, coins, jars, glass vessels for makeup and perfumes, cooking pots, and painted cups.

Additionally, terracotta figurines of the main goddesses were frequently found, suggesting their role in protecting the deceased in the afterlife.

Since 1998, Dr. Perry has led studies at the Petra North Ridge site, focusing on mortuary practices and gathering data on the health and diet of non-elite residents of first-century AD Petra (Perry, 2017: 102-16). Through the study of skeletal remains and other archaeological finds, Perry has provided further insight into both the mortuary customs and the everyday lives of the non-elite residents of Petra during this period.

The exploration of tombs, such as those in the North Ridge area, has been instrumental in understanding Nabataean burial practices, contributing to a broader comprehension of the archaeological landscape around Petra, including excavation efforts near the Treasury Plaza. Wadeson (2012) excavated two monumental facade tombs, BD 779 and BD 781, located at the base of al-Khubtha south of the Urn Tomb, offering valuable insights into the functioning of tomb complexes and the burial practices within them (Wadeson, 2012: 104).

Recent research has provided further understanding of the chronology and significance of various types of rock-cut tombs in Petra, including facade tombs, shaft tombs, and pit graves. These tombs exemplify the diversity and sophistication of Nabataean funerary architecture. Scholars have focused on two key aspects: the dating of these tombs and the burial practices associated with them. In-depth examinations of tomb interiors have been crucial in understanding the spatial organization and ritual functions of these tombs, offering a deeper understanding of Nabataean mortuary customs (Perry, 2002: 265-268, Gorgerat et al., 2013: 201-208, Wadeson, 2011: 1-24).

In conclusion, the continued excavation of Nabataean tombs, particularly those in Petra, has yielded invaluable insights into the complexities of ancient burial practices and the cultural significance of mortuary rituals. The diverse range of tomb types, from facade tombs to shaft and pit graves, highlights the sophistication of Nabataean funerary architecture and reflects the society's evolving beliefs in the afterlife. Through the study of burial goods, skeletal remains, and tomb interiors, scholars have made significant strides in understanding not only the rituals surrounding death but also the daily lives and health of the Nabataean people. The 2005 excavation of the Treasury Plaza, which unearthed additional artifacts and tomb structures, further enriched our understanding of the spatial organization of Petra and its funerary landscape. The ongoing research in Petra has been instrumental in shaping our knowledge of these practices, and future excavations will undoubtedly continue to refine our understanding of the socio-cultural and religious landscape of ancient Petra. Studies focusing on the spatial organization of tomb complexes, as well as the role of gender, status, and religious symbolism in burial practices, will likely provide even deeper insights into the complexity of Nabataean society.

The highlighted text of the acknowledgment below in yellow color is the correct and final version

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حفريّة ساحة الخزنة/ الموسم الثاني 2005

سليمان علي الفرجات¹، سامي محمد النوافلة²

ملخص

في عام 2005، أجرى فريق من محمّية البترا الأثريّة حفريات أثريّة في المدفّنين 62C و 64A في منطقة الخزنة في البترا؛ مما أسهم في تعزيز فهمنا للممارسات الجنائزيّة لدى الأنباط. وقد كشف المدفن 62C، الذي يقع تحت الخزنة، عن حجرة دفن مقسّمة إلى عدّة أقسام، تحتوي على بقايا عظميّة لعدد لا يقلّ عن 11 فردًا، بينهم بالغين وقُصّر. تعرّضت حجرة الدفن للنّهب؛ مما ألحق أضرارًا كبيرة بالهياكل العظميّة والمرفقات الجنائزيّة، وقد تناثرت بعض أجزاء القطع الفخاريّة والمرفقات الجنائزيّة في جميع أنحاء المدفن؛ مما يُشير إلى تعرّضه للعبث والتخريب في فترات سابقة، كما قدّم التحليل البيولوجي للبقايا البشريّة، الذي أُجري في جامعة كوبنهاجن، رؤى حول ملفّ المتوفّين البيولوجي؛ حيث تبيّن أنّ معظمهم من الذكور البالغين. أما المدفن 64A فهو واجهة صخريّة منحوتة ومزيّنة بأعمدة نبطيّة ملتصقة بالواجهة، يمكن الوصول إليه عبر درجات منحوتة تؤدي إلى حجرة دفن مليئة بطبقات من الرّواسب الرّمليّة التي خلفتها مياه السيول الجارفة، وقد عُثِر داخله قبرين محفورين، أحدهما يحتوي على بقايا لسبعة هياكل عظميّة، بينما يحتوي القبر الآخر على بقايا لهيكل عظمي واحد، وعُثِر داخل غرفة الدفن على كسر فخاريّة وقطعة عملة برونزيّة متآكلة، ويُشير تصميم المدفن وترتيب طبقاته إلى تاريخ معقّد من الاستخدام المتكرّر والممارسات الجنائزيّة، بما في ذلك إعادة الدفن.

الكلمات الدالة: البترا الأثريّة، الهياكل العظميّة، المقابر الصّخريّة، الممارسات الجنائزيّة، الأنباط.

¹ دكتورة، جامعة بوليتكنيكا دي فالنسيا، إسبانيا (2011). أطروحة: تحليل الأنشطة السياحيّة في محمّية البترا الأثريّة (الأردن). يعمل حاليًا مستشارًا لمفوضيّة إقليم البترا للتنمويّ السياحيّ، والشّركة الأردنيّة لإحياء التراث.

² بكالوريوس في الآثار، الجامعة الأردنيّة. يعمل حاليًا مرشدًا سياحيًا
تاريخ استلام البحث 2024/12/31، وتاريخ قبوله للنشر 2025/2/19.

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