

PETRA NORTH RIDGE PROJECT: THE 2012 SEASON

S. Thomas Parker and Megan A. Perry

Introduction

This preliminary report summarises results from the first season of renewed work on the Petra North Ridge conducted between 17 May and 14 June 2012, under a permit from the Department of Antiquities.

Personnel

Senior staff included S. Thomas Parker and Megan A. Perry (co-directors), Carrie Duncan, Lauren Souther and Abigail Turner (area supervisors), Anna Hendrick (architect), Jennifer Ramsay (assistant director and paleobotanist), Jonathan Daniel Lowrey (faunal analyst), Laura Kate Schnitzer (conservator and small finds registrar) and Jihad Darwish (departmental representative). Trench supervisors were Cassandra Brigham, Russell Gentry, Geoffrey Hedges, Ashley Jones, Tiffany Key, Pamela Koulianos, Sandor Veigh, and Jessica Walker. Students included Mark Baek, Caitlin Cremer, Lindsay Holman (who also served as pottery regis-

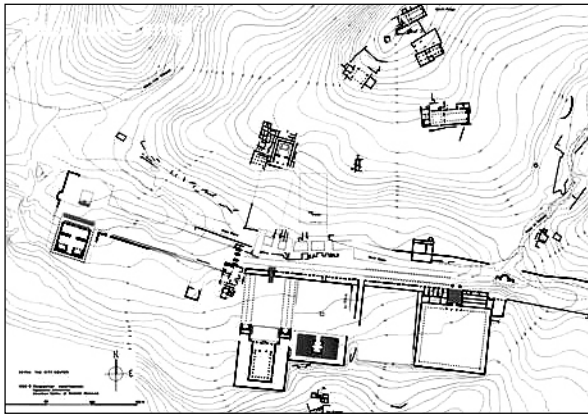
trar), Jordan Karlis, Anna Killmeier, Elizabeth Luttrell, Ian MacAfee, Rachel Murphy, Heidi Rosenwinkel, Carlos Santiago, Gina Stachowicz, Constance Starkey and Emily Sussman. Dakhilallah Qublan served as foreman of about eighteen local workers.

Previous Research

Petra's North Ridge lies just north of the main E-W street extending through the center of the city (**Fig. 1**). The ridge has witnessed several previous archaeological projects, nearly all focused on monumental structures. Perhaps the earliest excavations were conducted at the so-called Conway High Place (Cleveland 1960). Peter Parr conducted soundings along a segment of the northern city wall and some domestic structures nearby (Parr 1986). P. W. Hammond excavated the so-called 'Temple of the Winged Lions' and associated structures over several decades beginning in 1973 (**Fig. 2**). Unfortunately, no definitive final report of any of these exca-



1. Aerial photograph showing major features of the North Ridge and the 2012 excavation areas.



2. Plan of Petra city center with the western end of the North Ridge, and the Temple of the Winged Lions and Byzantine churches (Kanellopoulos 2002).

vations was ever published (Hammond 1996). In 1992 ACOR began excavating the ‘Petra Church’ with its extraordinary mosaics and unique cache of 6th century papyri. The final excavation report promptly appeared (Fiema *et al.* 2001) and several volumes of the papyri have already been published (Frösen *et al.* 2002; Arjava *et al.* 2007, 2011). ACOR next turned its attention elsewhere on the North Ridge. The Petra North Ridge Project was launched later in the 1990s with excavation of the ‘Ridge Church’ and the ‘Blue Chapel’ (Perry and Bikai 2007). In 1998 and 1999 the Petra North Ridge Project excavated two 1st century AD tombs under the Ridge Church. These tombs, despite later disturbance, yielded rich skeletal and artifactual evidence. Tomb 1 had been disturbed in the 4th century and Tomb 2 in the 6th century (Bikai and Perry 2001). Definitive publication of these structures and tombs is still in progress.

In short, with the exception of Parr’s still largely unpublished excavation, all previous excavations on the North Ridge have focused on its public monumental structures. Yet even a cursory examination of the ridge showed that it was pock-marked by dozens of rock-cut tombs and wall lines suggesting the presence of many other structures, including a segment of Petra’s city wall. In 2005 the extent of these tombs and other surface features, such as ancient walls and modern terracing, was documented through a GIS project (Perry 2006). Perry recorded 51 recently robbed tombs and numerous structures within a *ca* 60 m² area, confirming that the North Ridge contains a large cemetery, apparently dating to

the Nabataean period. In 2010, Megan Perry and S. Thomas Parker joined efforts to explore these features on the North Ridge, with the first excavation season commencing in May 2012.

Project Goals

Despite the extent of archaeological research within Petra, surprisingly little is known about the city’s ancient inhabitants, especially the non-elite population. The Petra North Ridge Project seeks to address this gap by excavating Nabataean (primarily 1st century AD) tombs and Roman / Byzantine (1st - 6th century) domestic structures along the North Ridge. The project is examining Petra’s population through several avenues of research:

1. The health and quality of life of the Nabataeans during the city’s 1st century AD florescence will be explored through analysis of the human skeletal material contained within the tombs.
2. The 1st century AD tombs also contain significant evidence regarding Nabataean mortuary practices, filling in the picture presented by continued analysis of the rock-carved monumental tombs within the city.
3. Many ancient structures, some perhaps dating as early as the 1st century AD, overlie these more or less disturbed Nabataean tombs. Excavation of Roman / Byzantine domestic structures will broaden understanding of this still poorly known period of Petra.
4. Petra’s city wall appears on site plans since the beginning of the 20th century. Despite its obvious importance in understanding the history and organic growth of ancient Petra, the wall remains undated (it has been variously dated from the Nabataean to Byzantine periods). The project will excavate segments of the city wall in order to understand its construction and chronology.

The North Ridge thus contains a skeletal, architectural and material cultural sample that can address research questions related to Petra’s history from the Nabataean to Byzantine periods. The evidence will be interpreted in light of the Petra papyri, offering a rare opportunity to correlate material cultural evidence with contemporary documentary evidence from the same sector of the same site. Therefore, this project will combine disparate kinds of evidence (ancient

texts, material culture and skeletal evidence) to allow insight into the economic, cultural and social life of Petra's people as well as their connections with other populations.

A key component of this project is to minimize excavation-related landscape impact owing to Petra's role as Jordan's largest tourist attraction and its status as a UNESCO World Heritage Site. This includes: (1) completely filling tomb shafts upon completion of excavation to protect their interior and prevent accidents; (2) backfilling excavation trenches to preserve exposed architecture until full-scale conservation and presentation of the site at the end of the project; (3) setting up a cooperative effort with the Temple of the Winged Lions Cultural Resource Management (TWLCRM) project to utilize our sifted sand for backfilling and filling of sand bags.

Results from the 2012 Season

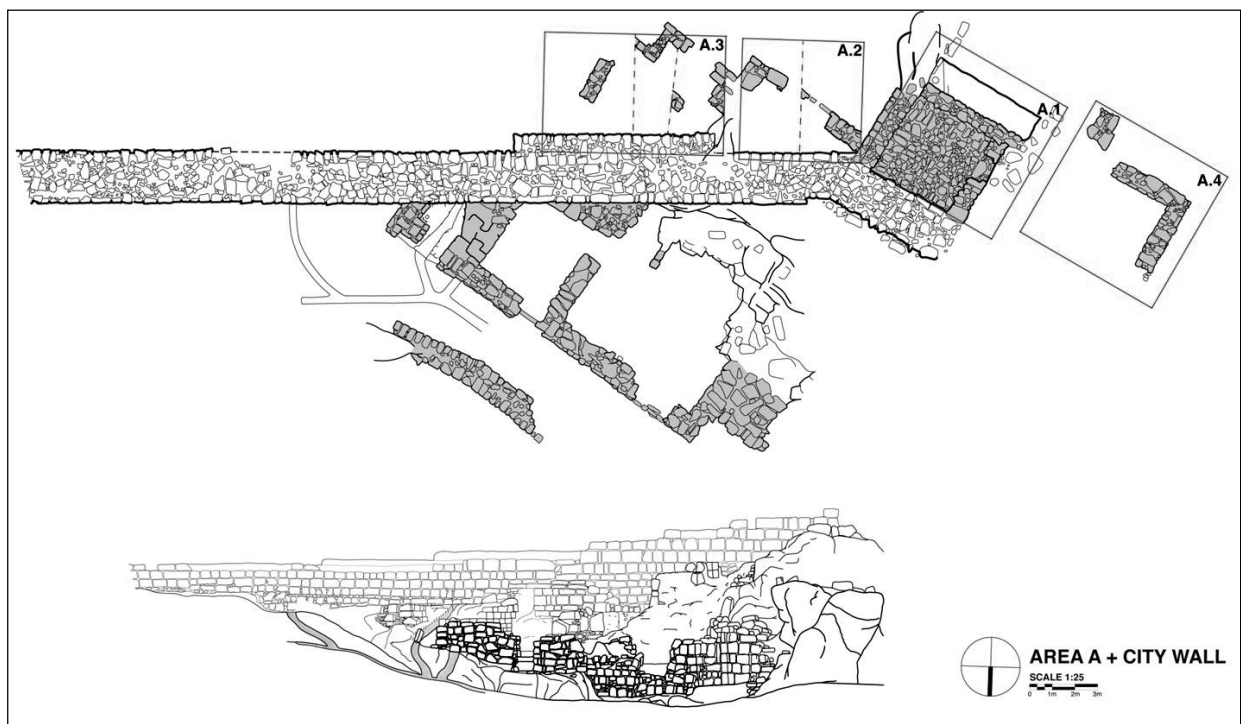
Area A

Four trenches (A.1, 2, 3 and 4) were opened in a roughly E-W line just east of the Ridge Church and just south of the city wall (**Fig. 3**). Trench A.1 measured 5 x 5 m, A.2 was 4 x 4 m, A.3 was 4 x 6 m and A.4 was 5 x 5 m. Excavation

in A.1 - A.3 produced a complete stratigraphic profile from topsoil to bedrock. Excavation in Trench A.4, just west of A.1, was confined to articulating the tops of wall lines extending from Trench A.1 and visible on the surface of A.4. All four trenches were backfilled upon completion of this season's excavation.

In the first period of occupation (1st century AD), a complex of stone structures, apparently domestic in nature, were erected directly atop bedrock. The orientation and alignment of the structures suggested that they once continued downslope to the north of the later city wall, where similar structures were uncovered by Peter Parr in his Trench V in the late 1950s. Unfortunately only a few preliminary plans, sections and elevations of Parr's structures were published (Parr 1986), so this area was documented further with drawings and photographs by the current project's architect.

These structures were subsequently cut by and / or built over by the erection of the city wall. The city wall builders used different techniques for different segments of the wall. In some cases (e.g. A.1) they simply incorporated existing Nabataean walls into the city wall itself. In other cases (A.2; A.3) the city wall builders



3. Plan and elevation of the Petra city wall in PNRP in Area A with location of excavation trenches.

cut a trench through the earlier structures down to bedrock, then laid a thin layer of soil to create a level surface on which to construct the city wall itself (Fig. 4). The wall itself averages *ca* 1.5 m in width and consists of two faces of dressed masonry surrounding a core of more roughly coursed masonry and rubble. It still stands in places up to 3 m in height. Attached to the south (inner) face of the city wall in A.3 was a stone buttress that abutted the city wall face but which shared a common stone foundation that extended under both the city wall and the buttress. The latest pottery associated with the wall foundations dated to the early 2nd century, suggesting that the city wall itself was erected in this period. This firm date for the construction of at least this segment of Petra's city wall was a notable achievement of this season.

Later in the 2nd century massive dumps accumulated against the south face of the city wall in A.2 - 3. The dumps proved rich artifactually, with thousands of pot sherds, faunal bones, metal slag and other finds. In contrast, occupation in A.1 continued after construction of the city wall immediately to the north, by laying a new stone floor over an earlier similar floor. Occupation in A.1 continued into the 4th century, possibly being terminated by the 363 AD earthquake, when the structure apparently collapsed and was abandoned.

Area B domestic structures

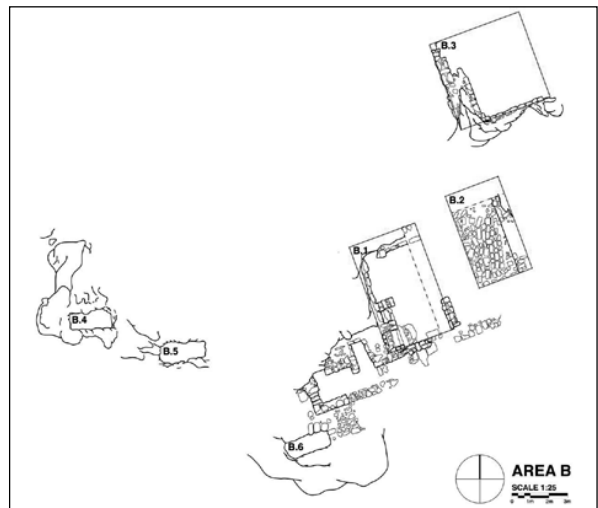
This area lies farther east of Area A on the North Ridge. Area B consisted of two separate operations: (1) apparent domestic structures and (2) rock-cut shaft tombs interspersed among the



4. Trench A.3 showing the stone buttress foundation (under the metre-sticks) extending under both the city wall (upper left) and buttress itself (upper right in shadow).

domestic structures (Fig. 5). Trenches B.1, B.2 and B.3 were opened to examine portions of the domestic structures while Trenches B.4, B.5 and B.6 each examined one of the three tombs excavated this season.

Trench B.3 (5 x 5 m) was laid out on a small plateau amidst several wall lines visible on the surface. Trenches B.1 (4 x 6 m) and B.2 (4 x 5.5 m) were laid out directly adjacent to one another on a terrace just below and a little to the SW of B.3. Standing masonry walls farther SW of B.1 - 2, apparently exposed by erosion of the southern slope, suggested the presence of well-preserved structures in this area. These exposed structures, although situated outside the excavated area, were also documented by the project architect. Excavation of B.3 revealed walls on all sides but the north, forming a large rectangular enclosure, apparently too large to be roofed and thus probably an open-air courtyard (Fig. 6). The room



5. Plan of Area B showing layout of trenches.



6. Trench B.3: wall collapse, probably from the earthquake of 363 AD, encountered on the surface.

walls were partially laid against cut bedrock, which formed the SW corner of the enclosure. The recovery of numerous storage jar fragments suggested that the courtyard probably was, at least in part, a storage area. Occupation ended with the collapse of the entire eastern wall, with its stone coursing still closely aligned, into the courtyard. Diagnostic pottery from this context suggested that the wall collapsed in the mid-4th century, perhaps in the 363 AD earthquake.

Trenches B.1 - 2 formed two rooms of the complex on the south-facing terrace. The room walls were founded on bedrock and may have extended into caves to the north, but the danger of collapse prohibited excavation of the caves themselves. Excavation began with removal of massive layers of tumbled masonry. The collapsed masonry in B.2 was particularly closely aligned, suggesting it fell from the west, or the common N-S wall separating the two rooms (**Fig. 7**). Under the tumble in B.2 was a beaten earth floor but very little other evidence of occupation. It appeared that the room had been cleaned out prior to the collapse of its walls. In B.1 occupation began with the laying of a plaster floor directly overlying bedrock. Against the northern wall of the room was a cooking installation comprised of two large ceramic jars, the smaller placed within the larger and the former filled with ash (**Fig. 8**). Excavation also produced numerous fragments of red-painted plaster which once decorated the walls and / or ceiling of either this room or perhaps an upper storey. The possibility of the latter was suggested by an L-shaped stone staircase built into the SW corner of this room. Three steps of the

staircase were preserved. Adjacent to the staircase, to the north, was a small plastered cubicle, perhaps a storage area. Occupation of this room also ended catastrophically with massive deposits of stone tumble, including a number of architectural fragments, apparently reused in the walls of the structure. The latest pottery was again mid-4th century, suggesting that the tumble may also date to the 363 AD earthquake.

In short, it appears that the B.1 - 3 structures represent portions of a domestic complex dating from the Late Roman period (2nd / 3rd centuries) and destroyed in the earthquake of 363 AD. There appeared to be no later occupation in this area.

Area B Tombs

Three shaft tombs within the vicinity of the Area B domestic structures were selected for excavation based on their potential to link stratigraphically with the domestic structures in Area B and to represent damage due to varied states of looting and disturbance. The tombs selected were carved into a bedrock outcrop at the uppermost reaches of the North Ridge (**Fig. 5**). Tomb B.6 had the most extensive disturbance, with soil removal and disturbance involving half of the tomb shaft and approximately half of the chamber. Tomb B.4 had slight disturbance in approximately one-third of the shaft that did not seem to extend far into the tomb chamber. Tomb B.5 only showed signs of disturbance in antiquity and had not been pilfered recently. Almost 100 % of tomb fill was sifted during excavation, the only exception being the undisturbed naturally-deposited soil layers that had filled Tomb B.6.



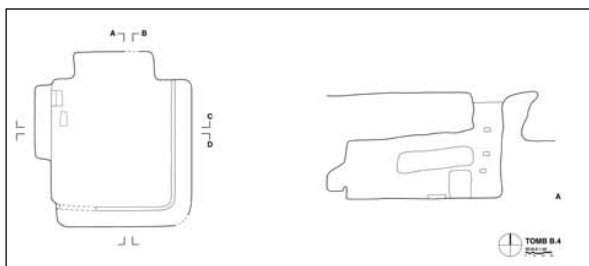
7. Trench B.2: closely aligned tumble reflecting the catastrophic collapse of a wall within this room, probably in the earthquake of 363 AD.



8. Trench B.1: the cooking installation composed of two ceramic jars, one set inside the other, built against the north wall of this room.

Tomb B.4 was a 6.45 m x 6.20 m chamber tomb entered via a 2.13 m x 0.99 m wide, 2.54 m deep shaft cut into the sandstone bedrock (**Fig. 9**). Except for the sector of the shaft disturbed recently by tomb robbers, the tomb had been filled with fluvial and aeolian sediments up to top of the chamber, which measured 1.67 m high on average. These natural soil layers contained only a small amount of intrusive artifacts. This tomb contained many unique architectural features, such as two ‘windows’ and a *ca* 12 - 18 cm deep ‘trough’ running continuously along the northern and western walls of the chamber for placement of the deceased. One window was located mid-way down the shaft on its southern wall, opening onto a bedrock plateau below the level from which the shaft had been carved. The stone in this bedrock stratum is much weaker than the surrounding sandstone and thus the window may have been created naturally through erosion of the bedrock through into the tomb shaft. Any tool marks that would have been created during the carving of the window have long since eroded. The second window, located in the north-west corner of the tomb (and opening directly into the intersection of the northern and western troughs), on the other hand, appeared to have been human-made, either accidentally (by not calculating correctly where the bedrock slopes down in that area and accidentally cutting through to the outside) or on purpose (**Fig. 10**). The window opening was filled with cut stone blocks, large sherds of a storage jar and pieces of molded, flat glass that likely were used to cover the window opening. The window had been covered outside the tomb by accumulated sand and thus was not visible at the surface.

The chamber of the tomb contained the remains of at least 16 individuals. One partial skeleton was found at the southern end of the western ‘trough’, which had been covered with



9. Plan and north - south section of Tomb B.4.

large sherds of more than one ceramic storage jar. In addition, the remains of three individuals, two adults and one child, were discovered within a rectangular niche cut into the eastern wall (**Fig. 11**). All of these burial features had experienced disturbance due to natural factors, predominantly periodic seasonal flooding of the tomb, and some of the skeletal remains had washed out of the burial features and into the soil below. In addition, one intact skeleton, three partially intact skeletons and scattered skeletal elements from another eight individuals were recovered from the soil layers immediately upon the bedrock chamber floor, and a newborn infant a few centimeters above the bottom of the shaft floor (**Fig. 12**). A complete lamp was recovered from one of the eastern niche burials and a complete *unguentarium* from the only intact burial on the floor. The lower levels of chamber fill also included a large number of ceramic sherds. The artifactual evidence points to use of the tomb during the 1st century AD.

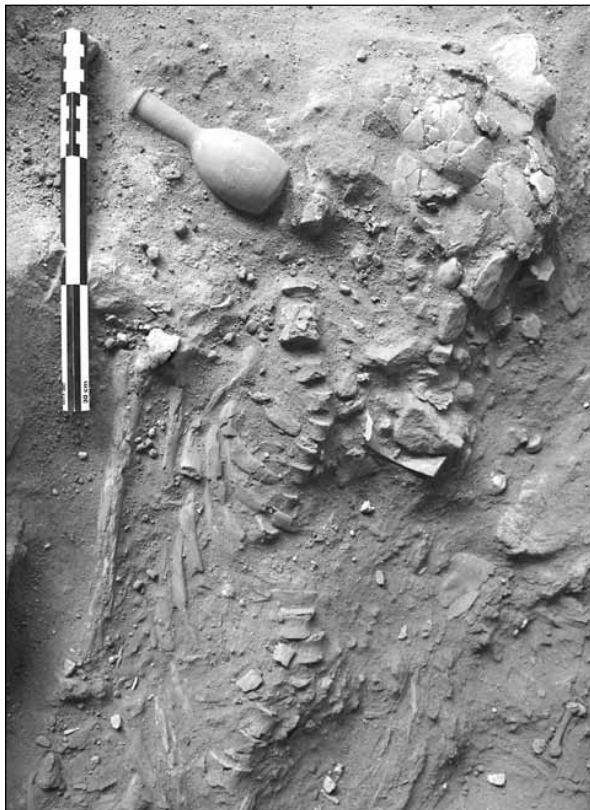
Tomb B.5 (**Fig. 13**), located *ca* 5 m to the east



10. The ‘window’ in the north-western corner of Tomb B.4, showing the northern and western ‘troughs’.



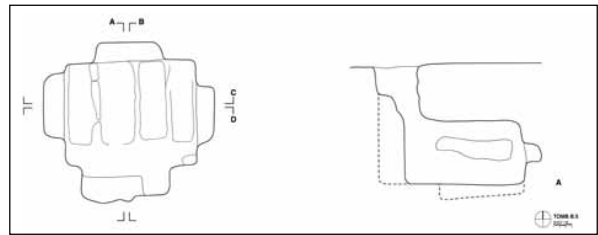
11. The burial niche in the eastern wall of Tomb B.4 with stones likely used to cover the opening.



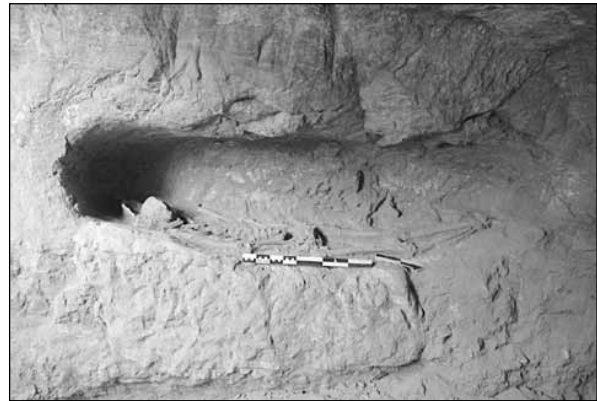
12. The superior portion of skeleton B.4:22.

of Tomb B.4, consists of a shaft measuring 2.4 m x 0.7 m which drops 3.1 m below the surface bedrock and a 3.54 m x 2.80 m chamber. The tomb was filled to its entire 1.67 m height with relatively sterile, naturally-deposited fill, similar to Tomb B.4. The earlier layers of tomb fill contained many ceramic sherds and other material culture fragments. This tomb contained many features cut into the bedrock for interring the dead. Three rectangular niches similar to the one in Tomb B.4 were cut into the western, northern and eastern chamber walls (**Fig. 14**). In addition, three shaft graves were cut into the floor of the tomb, one of which still contained capstones *in situ*. Stonemasons had started work on a fourth shaft grave at the eastern end of the chamber, which was never finished.

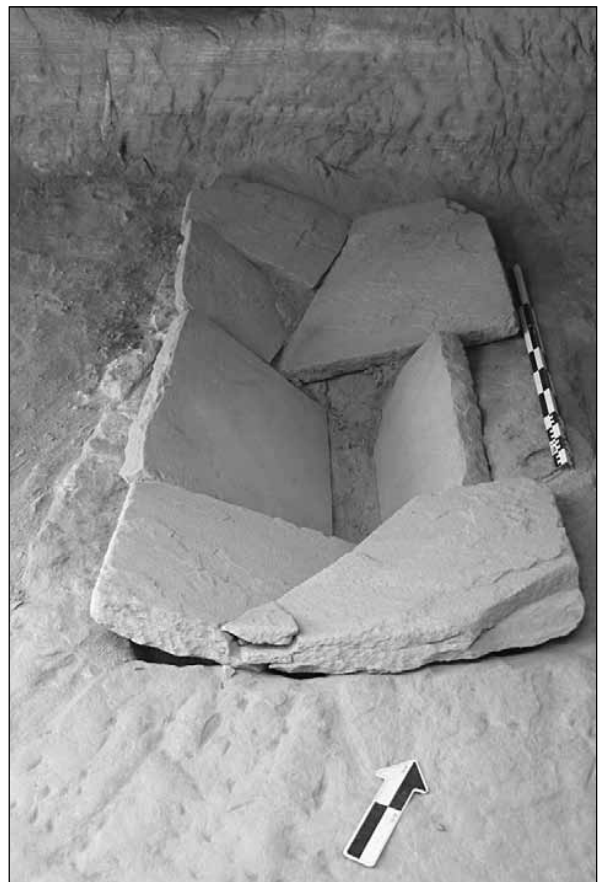
A minimum number of 22 individuals were interred within this tomb. Single adult burials were found within the western and northern niches, while the eastern niche was empty. The partial remains of one individual was recovered from the bottom of the eastern-most completed shaft grave (**Fig. 15**), surrounded by a possible ‘coffin shadow’; the pelvis and lower limbs of



13. Plan and south - north section of Tomb B.5.



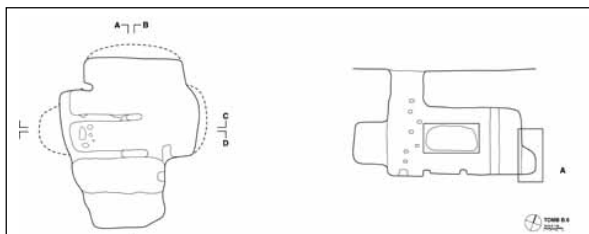
14. Burial B.5:12 within the western niche of Tomb B.5.



15. The capstones over the eastern shaft grave in Tomb B.5.

another skeleton were found scattered in the upper fill layers of the shaft. Most of the skeletal remains in Tomb B.5 were found in soil layers immediately above the unfinished shaft grave and the capstones of the next shaft grave to the west, all in the eastern half of the tomb. Two partial skeletons were discovered in the soil layers, in addition to the scattered, commingled remains of another 18 individuals. A majority of the bones were integrated into or just above a thick (ca 10 - 15 cm) layer of burned chunks of unidentified material that do not contain the cellulose structure expected in wood. The nature of this material remains a mystery, but our preliminary hypothesis is that it is incense. The two western-most shaft graves were left unexcavated and will be reopened during the proposed 2014 excavation season.

We began excavation of Tomb B.6 (Fig. 16, 17) at the beginning of the second week of excavation. The extensive disturbance of the tomb suggested that it would not take long to remove the tomb fill and excavate the burials within. The tomb consists of a shaft measuring 3.1 m x 0.8 m, a larger 2.27 m x 3.10 m chamber to the north of the shaft and a smaller 0.85 m x 2.75 m chamber to the south of the shaft. The tomb



16. Plan and south - north section of Tomb B.6.



17. View of Tomb B.6 from within the northern chamber into the shaft and the smaller southern chamber, including the unexcavated shaft graves at the forefront.

shaft was excavated down to the bottom, about 2.7 m below the bedrock surface. In addition, all recently disturbed and naturally deposited soil within the north chamber was excavated down to the top of approximately six shaft graves excavated into the floor. Another possible *loculus* blocked by fallen bedrock extends to the east of the chamber near the shaft, and the smaller chamber to the south also probably contains a shaft grave or other burial feature. We decided at the beginning of the fourth week of the project to cease excavation in this tomb, realizing that we would not have the time or experienced personnel to properly excavate these burial features. We hope to reopen the tomb during the proposed 2014 excavation season.

The three tombs explored during the 2012 season presented some intriguing insights into Nabataean mortuary material culture. In addition to complete lamps, cups and *unguentaria*, and sherds of many other ceramic vessels, the tombs contained personal jewelry and other mortuary accoutrements. Small bronze bell-like objects were found in all of the tombs, a common feature in Nabataean mortuary contexts both within and outside of Petra (Horsfield and Horsfield 1939: 151; Murray and Ellis 1940: 45; Zayadine 1970: Fig. 12, 1973: 40, 1979), including within the tombs excavated by Perry and Bikai on the Petra North Ridge in 1998 and 1999. In addition, sheep / goat *astragali* gaming pieces were found within Tomb B.4, discovered near the infant in the tomb shaft. Fragments of coroplastic figurines also were recovered, similar to those in previously excavated North Ridge tombs.

Post-excavation Conservation / Protection Measures

This project is acutely aware of the need for protection and conservation of Jordan's cultural heritage, particularly the structures and features within the heavily-trafficked site of Petra. To that end, we backfilled 50 % of the completed excavation trenches (A.1, A.2, A.3, B.1, B.2 and B.3) to preserve the structures that they revealed, with the future goal of consolidation of the structures and appropriate signage as enough of the complexes have been excavated to be meaningful to tourists and others at the site. These tombs were backfilled using their own soil dumps, removing these features from

the site. We left the well-dressed architectural stones arranged near Area B for future study by the project's historical architect.

The tombs do present a danger to humans and animals, and thus the shaft entrance of the completed Tomb B.4 was backfilled completely; the shafts of Tombs B.5 and B.6 were backfilled partially and covered with metal sheeting. The tombs were backfilled from the sift piles and any remaining soil from the sift piles was used to cover an endangered building to the east of Tomb B.6 and fill three shaft tombs left open to the elements by tomb robbing activities. Any remaining sifted soil will be used by the Petra Church restoration project for backfilling and the Temple of the Winged Lions project for filling sandbags during the autumn and winter of 2012 - 2013.

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