THE HELLENISTIC PETRA PROJECT: EXCAVATIONS IN THE CIVIC CENTER, PRELIMINARY REPORT OF THE FIRST SEASON, 2004

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with a Coinage Report by Steven E. Sidebotham

The primary objective of the Hellenistic Petra Project (hereafter HHP) is to locate, define the character, and determine the perimeters of the early Hellenistic settlement of the Nabataeans at Petra. In spite of 75 years of excavation at Petra, the period between the fourth and second century BC remains elusive and relatively unknown, so we established it as our primary focus for excavations. The methodology is to place a number of small exploratory soundings at strategic locations in the civic center in the Wādī Mūsā basin. By these small surgical cuts into the central urban landscape of the Nabataean capital it is hoped that we can expose evidence for the prior settlement during the late Achaemenid Persian and early Hellenistic era. The first season was conducted between July 31 and August 12 of 2004, a rather brief period, but intense and productive, as the following report will indicate. The project director is David F. Graf (University of Miami). The co-directors were Professor Stephan G. Schmid (Université de Montpellier) and Dr. Leigh-Ann Bedal (Penn State at Erie) who directed their respective soundings; the former also served as the ceramicist and general photographer for the project. Professor Steven E. Sidebotham (University of Delaware) was the numismatist. Student volunteers included Darius Jahann and Justin Lowry from the University of Miami. The project was supported by a grant from the Council of Research Administration at the University of Miami and a very generous contribution by Paris Katsoufis of Miami. The project is licensed by the Department of Antiquities of Jordan. The Project Director and Co-Directors wish to express their appreciation to Dr. Fawwaz al-Khraysheh, the Director General of the Department of Antiquities, and his staff for their support and assistance with the project, particularly Sulaiman al-Farajat the Deputy Inspector of Petra and Haroun Amirat our representative. We also wish to thank Dr. Jean-Francois Salles, and his staff at the 'Institut Français Proche-Orient', for their support and interest in the project.

At present, the prevailing opinion is that Nabataean society was primarily if not totally nomadic until ca. 100BC, when what we regard as "Nabataean" material culture begins — i.e. with the appearance of distinctive pottery (Schmid 2003: 75), coins (Bowsher 1990), and monumental architecture (McKenzie 1990: 106). As a result, ca. 100BC is presumed the pivotal turning point in which the Nabataeans made a transition from a nomadic to a sedentary life-style. As a result, before 100BC, the Nabataeans are regarded as nomads (*cf.* Schmid 2001a-c). The basis for this view and the traditional starting point for the early history of the Nabataeans at Petra is the eyewitness account by Hieronymus of Cardia in 312/11BC. (preserved in Diodorus XIX.94.10; *cf.* II.48.1-2). In this report, the Nabataeans are depicted as strictly pastoralists, not living in houses, completely nomadic, and as brigands preying off sedentary cultures. Although his account is widely regarded as trustworthy (Parr 2003: 28), it perhaps is better seen as a highly stylized literary description that has embedded in it the stock motifs of traditional Greek ethnography for cultures on the margins of the civilized world (Graf 1990: 52-53; *cf.* Bosworth 2002: 188-191, who notes Diodorus' details "should provoke disquiet rather than confidence...its literal truth is highly debatable"). The problem with interpreting the account as an accurate portrayal of Nabataean society in the aftermath of Alexander the Great's conquests is not only the inherent inconsistencies in the account, but its conflict with the images emerging from contemporary documents and archaeological evidence for Nabataean society in subsequent centuries.

These new sources help illuminate the "dark" centuries of early Nabataean history between 312/11BC and 100BC. Recently published Idumaean ostraca from the Negev in Palestine establish that a "Nabataeanized" Arab population was already part of the sedentary culture of the region in the late Achaemenid and early Hellenistic period (Graf 2003: 332-334), and there is no reason to believe the Transjordanian Nabataeans were laggards and

had not achieved a similar status at the same time. In ca. 257BC, the Zenon papyri refer to the Nabataeans as part of the regular Transjordan landscape (Graf 1990: 69-75) and in the newly discovered Milan papyrus containing the epigrams of Posidippus of Pella produced at the Alexandrian court in the reign of Ptolemy Philadelphus II (286-246BC), there is a reference to the "fighting Arabian horsemen of the Nabataean king" (Bastinanini and Gallazzi 2001: 34, col. II, 15-16, AB 10; with Graf 2005). This is the earliest extant reference to a Nabataean king, a century earlier than previous references. It is perhaps supported by another reference to a Nabataean king in a newly published Aramaic text from Syria which is dated perhaps to the late third century, but certainly the second century BC (Milik 2003: 275), and is probably earlier than the previous earliest reference to a Nabataean king from Khalutzah (Elusa) in the Negev from ca. 168BC (see Bowersock 1983: 18). By the last half of the second century BC, the Nabataean capital of Petra was an international focal point. In 129BC, Moschion, an envoy from Priene in Western Asia Minor, was sent to Alexandria in Egypt and 'Petra in Arabia' (Hackl *et al.* 2003: 126-127), and a few years later in 126BC the Han Dynasty Chinese envoy Chang Ch'ien was sent Bactria to investigate the western regions beyond, and in his report reference is probably made to Petra (as *Li-Kan = Rekem;* Graf 1996: 207-210). These sources suggest that the Nabataeans had an established state with Petra as their urban center decades before the hypothesized transition in 100BC, if not before.

In contrast, the archaeological evidence in support of these rather striking substantive written allusions is rather limited. Indications of an earlier Hellenistic settlement exist, but the finds have been scattered across the civic center and lack any stratigraphical context. Many of these finds were made in the earlier British excavations at Petra, beginning with the first excavations by the Horsfields between 1929-36 (Horsfield and Conway 1930: 379, and Horsfield 1939: 87), and later by the excavations of Peter Parr between 1958 and 1964. These finds include fragments of a black glazed Attic lamp of early Hellenistic date (Horsfield 1941: no. 108), a Ptolemaic coin (no. 121), and an ostracon inscribed in Greek of the second century BC (Horsfield 1941: 115). In addition, sporadic finds of early Greek stamped amphorae have been found at Petra by the Horsfields and in subsequent excavations. More than three dozen have now been recorded, scattered widely across the whole civic center: at Katute in the dump south of az-Zanṭūr (Horsfield 1939: nos. 41, 91-103), another near the foot of Umm al-Biyāra (Khairy 1990: 51), thirteen from the Swiss-Liechtenstein excavations at az-Zanṭūr (C. Schneider in Bignasca *et al.* 1996: 130-132, nos. 1-13), several more from the Temple of the Winged Lions (as cited in Parr 2005), a surface find from the "Great Temple" excavations (S. Tracy in Joukowsky 1998: 376), and the rest from beneath the Colonnaded Street (Parr 2005). The Greek inscriptions on the handles yield dates stretching from ca. 240BC (Schneider 1996: 129, no.1) to the early first century BC. None were found in clear stratified contexts, but in fills, dumps, or confused and "unscientific controlled" strata (Parr 1989: 185; *cf.* R. A. Stucky in Bignasca 1996: 389).

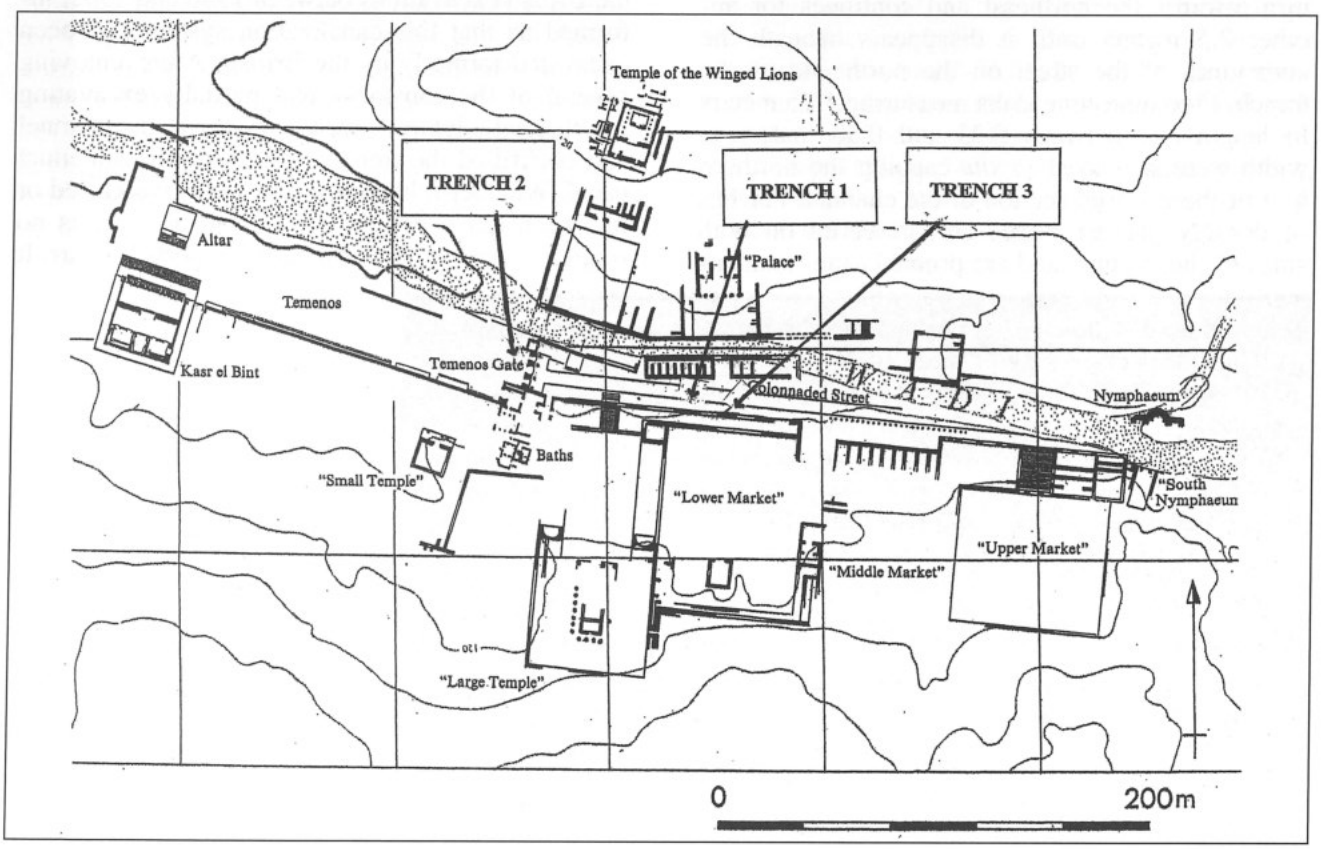
Nevertheless, these numerous finds are extensive enough to prevent them from being characterized as merely intrusive elements. They are widespread and ample enough to suggest that the foundations of an earlier settlement either were removed and scraped from the hills above for the construction of the later Nabataean settlement or that such a settlement still lies buried beneath later constructions.

The hint that the latter is the case is suggested by the British excavations conducted along the Colonnaded Street between 1958 and 1964. The intent was "the excavation of a stratified sequence of structures and associated artifacts spanning, if possible, the whole range of the occupational history of the site, but relating particularly to the earlier phases, when the Nabataeans were exchanging their nomadic way of life for a sedentary one" (Parr 1990: 15). In regard to the latter, this goal was attained only in Parr's Trench III, flanking the street some 90m east of the Temenos Gate, where some 2-3m beneath the street level, built directly on the wadi bed, some rough simple, unsophisticated rectangular structures were discovered built of rough wadi boulders and clay, with clay ovens and floors that were dated tentatively to between the fifth and early third century BC (Parr 1960: 127-129; 1965: 528-529; 1970: 354; *cf.* 1990: 15-16). The associated finds included Hellenistic black-glazed sherds and coins from the Phoenician coastal cities, in particular of Arados from the third century BC (1960: 130-131; 1963: 100-101). The final report of these finds is still awaiting publication and, until it appears, the discoveries are begging for confirmation. Parr's important observation that there were "well stratified deposits beneath the paved street and the colonnades, offering promise of an undisturbed sequence of structures" (1990: 15) had never been pursued and was still waiting corroboration forty years later. The genesis of the HPP began in discourse and interchanges between Stephan Schmid and David

Graf about these matters in 2004, culminating in our plan to resume inquiry along the Colonnaded Street. Since Parr's Trench III was located in front of the Garden Terrace where Leigh-Ann Bedal was conducting excavations (Bedal 2002), we approached her for permission to excavate the area adjacent to the former British excavations and in front of her project. Not only did she agree, but offered to join our expedition. The various sections of the following report were written primarily by the listed parties. This introduction, the final editing of the text, and the conclusions that follow were written by Graf, the overall supervisor of the project. The two areas chosen for soundings were adjacent to the Colonnaded Street near Parr's Trench III and at the western terminus of the street, just inside and to the northwest of the Temenos Gate. The authors wish to express their appreciation to Peter Parr (London), Kay Prag (Manchester), and J.M.C. Bowsher (London) for their counsel, interest and support of the project.

I. Excavations along the Roman Paved Street

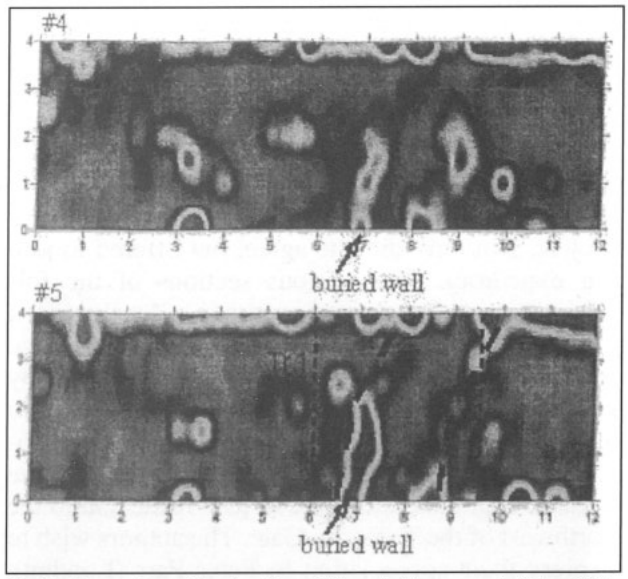
The length of the Colonnaded Paved Street is approximately 234m, measured from the eastern end near the "Trajanic or Upper Market" to the Temenos Gate in the west. Recent soundings at the eastern end of the street revealed several hard-packed dirt surfaces, partially paved with small irregular cobbles, beneath the present paved street, dating probably to the first half of the first century BC (Fiema 1998: 416; *cf.* Parr 1970: 364). These remains suggest a fairly broad earlier street (ca. 18m) existed in the Nabataean period, approximately the width of the Temenos Gate (Kanellopoulos 2001: 13). Beneath the current pavement, the ceramics extend from the first century BC to the beginning of the second century AD), with a coin of Rabbel II dating to AD 76-101, suggesting the street and colonnade were constructed around the end of the first century AD (Fiema 1998: 416). No remains of any construction prior to the first century BC at the eastern end of the street were discovered. The heavy alluvial deposits in this area suggest that the banks of Wādī Mūsā was much wider in antiquity, and that sandstone erosion deposits lined the southern banks of the wadi, creating a serpentine effect (Fiema 1998: 417-418). For this reason, among others, we preferred to place soundings further west along the street. Two trenches were placed alongside Parr's trench III, one just to the west, and the other adjacent to it immediately to the east, some 85-95m east of the Temenos Gate (**Fig. 1**).



1. General plan of the City Center area with the location of trenches 1, 2 and 3 (after McKenzie 1990: map 8).

Trench 1 (Leigh-Ann Bedal)

The first sounding was placed a few meters west of Parr's Trench III, and between the southern curb of the paved street and the terrace of the Portico Wall in front of the Garden Pool (*cf.* **Figs. 1, 2**). In a Ground-Penetrating Radar (GPR) study carried out in 2003, under the auspices of the Petra Garden and Pool Complex Excavations (Grealy 2004), a section of wall was revealed running north from beneath the Portico Wall to the paved street at a depth of 24 to 40cm below the present street level (**Fig. 3**). The location of this buried wall approximately six meters to the west of Peter Parr's Trench III (see **Fig. 7**) made it an excellent candidate to begin the search for remnants of any architecture predating the monumental construction within the Petra Basin. The trench was laid out 3.5m EW and 4.5m NS around the presumed buried wall. After clearing 0.20 meters of topsoil, consisting mainly of loose sand badly disturbed by modern activities along the street, the remnants of a large water canalization channel were revealed measuring 1.25 meters wide. The channel originates from an arched opening built into the lower courses of the Portico Wall that was exposed with the removal of the topsoil. It runs northward from the Portico Wall for 2 meters and then makes a 25° turn towards the northeast and continues for another 2.5 meters until it disappears beneath the curbstones of the street on the north end of the trench. Five limestone slabs measuring 1.25 meters in length and between 0.25 and 0.50 meters in width were preserved *in situ* capping the northern half of the exposed section of the channel. Patches of densely packed stones are preserved on both sides of the channel and are probably the remnants



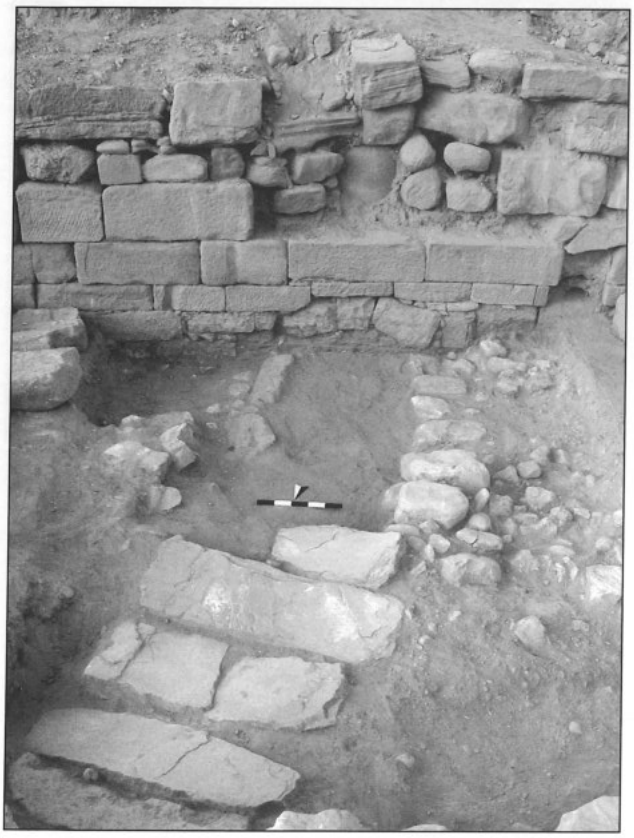
3. Horizontal amplitude slices #4 and #5 generated by GPR showing the feature originally identified as a "buried wall" at a depth of 0.24-0.40 meters below the surface. The dotted line marks the outline of the canalization system that was discovered in the course of excavation of Trench 1. The high amplitude reflection along the north end is the stone curb that lines the street.

of the foundation trench (**Figs. 4 and 5**).

Trench 1 was abandoned when we learned from a local Bedouin named Mufla, who participated in the British excavations between 1958 and 1962, informed us that this canalization system had been excavated formerly by the British. After removing several of the capstones and partially excavating the channel's interior, we covered over the channel and backfilled the trench, preserving the aqueduct canal. Whether it had been previously backfilled or had been left exposed is not clear, as there is no reference made to it in the earlier reports by Parr. It

2. Aerial view of the south slope of Petra, showing the locations of Trenches 1 and 3 and Parr's Trench III along the paved Colonnaded Street (foreground) and in front of the Garden Terrace Complex. The Great Temple Complex is at the right edge of the photograph [photo by Sara Karz Reid, Brown University].

4. View of the canalization system from the top of the Portico Wall with capstones still *in situ* on the north end.



5. View of the canalization system from the street, looking south. The Portico Wall has an arched opening built into its lowest courses to allow the channel to pass through it, transporting water from the southern slopes.

seemed clear now that the "buried wall" detected by the GPR study was in reality the channel's west wall as it projects from beneath the Portico Wall into the space along the street. Because the canalization system dominates the area of Trench 1 and because its construction must have cut away or destroyed any earlier structures, it was decided that further efforts in this location would be ineffectual for the objectives of this field project.

Nevertheless, some of the archaeological evidence recorded during the sounding was interesting. Five coins were found in the topsoil above the channel, without any stratigraphical context. One is a bronze coin of Aretas IV dating to AD 39/40 (Catalogue no. 1) was found in the topsoil above the southernmost capstone. Four other bronze coins were discovered in the fill to the east of the capstones: one is a well preserved issue again of AD 39/40 of Aretas IV (catalogue no. 2), but the others can only be identified as 'Nabataean' (catalogue nos. 3-5). In addition to the coin finds, the bottom half of a moulded terracotta figurine of a seated figure (**Fig. 6**) was found during the excavation of the upper layers of the fill inside the channel near the junction with the Portico Wall. Since the channel was previously excavated, the figurine fragment may have been washed through and from the canalization system (from underneath the Garden Terrace and/or the Great Temple's Lower Temenos) in the intervening decades.

Trench 3

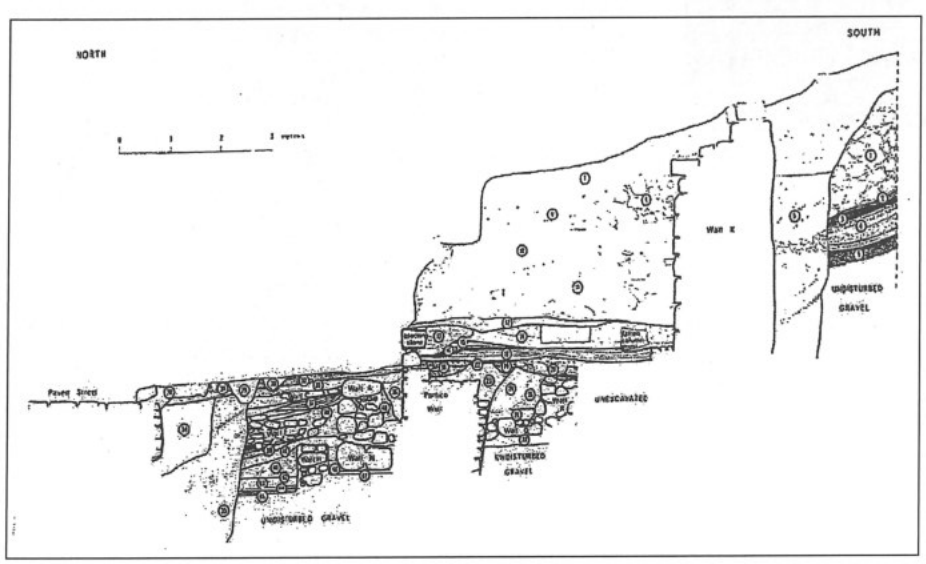
For the reasons mentioned above, it was decided to move our exploratory trench to the east of Parr's Trench III and contiguous with it. This second probe lasted ten days and proved to more successful in reaching pre-100BC levels. Trench 3 was laid out again to the south of the paved street, in a narrow (2.5 meter wide) space between Parr's Trench III and a Late Roman (or Byzantine) wall that divides the space between the Portico Wall and the street. This location was chosen because of its potential of exposing the eastern extension of

6. Fragment of a seated figurine, terracotta.

Parr's Phases I-VIII and the early structures he attributed to the third and second centuries BC (1970: 352-362, 369-370) (*cf.* **Fig. 7**). In Trench 3, we uncovered the remnants of at least nine occupation strata, four of which (Strata I, II, III, and V) contain structures that predate the construction of the Portico Wall. Due to a constrained time schedule and the difficulty of finding space along the street that is not obscured by structures or the display of architectural elements, a small trench (4.5 x 2.5 meters) was laid out to the south of the street, with Parr's Trench III and a Byzantine period wall (Stratum IX) defining the western and eastern trench lines (**Fig. 8**). After excavating the top levels (Strata IX and VIII), the decision was made to restrict the area of excavation to the northern third of the trench (an area of 1.25 x 2.25 meters) in order to achieve the deepest levels in the space between the limestone wall (ST7) and the large foundation trench. This final sounding exposed Strata VI, V, IV, III, II and I.

Stratum I (Levels 14 and 15): The earliest occupation level, Stratum I, was discovered at the bottom of the smaller sounding, at elevation 890.90 meters, approximately 1.50 meters below the level of the paved street. A section of wall (ST13) rests directly on a natural undisturbed gravel deposit (Lo 54) that lined the wadi bank. The wall, which is composed of a single course of wadi limestone (0.30 meters wide), runs northeast for 0.75 meters and curves sharply to the north where it disappears into the base of the north baulk (**Fig. 9**). A deposit of ash (Lo 53) containing the jawbone and teeth of a sheep/goat was built up against the inside curve of the wall. No clear remnants of a floor were found in association with the wall (ST13). The recovery of a few course pottery sherds and a Greek amphora rim found in the fill (Lo 52) immediately

8. Trench 3 before excavations began. The paved street is in the foreground. Parr's Trench III is visible along the right edge of the photo with the Portico Wall running across the center of the photo and Wall K in the background. The Byzantine wall that marks the east edge of the trench is in the left foreground.



7. Section of Trench III (Parr 1970: fig. 1).

9. Wall ST13 runs northeast-southwest across the gravel deposit at the bottom of Trench 3. To the north of the wall is an ash pit that contained animal bones. Wall ST12 of Stratum II can be seen in the north baulk above the Stratum I wall.

above the wall and gravel deposit may be useful for determining a rough date for the wall. It seems that this Stratum I occupation coincides with Phase I in Parr's adjoining Trench III which is also characterized by a structure built of thin walls of rough limestone and a clay floor, resting directly on undisturbed gravel (Parr 2005: 3).

Stratum II (Levels 12-13): The next occupation layer is at 891.10 meters, approximately 0.20 meters above Stratum I and comprised of a meter long stretch of wall (ST12) that is visible in the north baulk (**Fig. 9**). The wall is of similar construction to the wall in Stratum I, but stands a few rough courses (0.50 meters) in height. A clay floor covered with a lens of black charcoal (Lo 51) ran across the eastern half of the sounding and underneath the wall (**Fig. 10**). This charcoal layer was primarily of burnt wood fragments, in which the grain of the wood was still visible in some of the splinters. Since this charcoal layer was of similar constituency and content, five samples were taken for carbon 14 testing. The test was conducted by Beta Analytic Radiocarbon Dating Laboratory in Miami, Florida, in April of 2005, and yielded a date of 2490 +/- 40B.P., with a calibrated sigma 2 date (95% probability) of 790 to 420BC and a sigma 1 calibrated date (68% probability) of 780 to 520BC. (Our appreciation is expressed to David Swetland of Coconut Grove, Florida for his gift in support of the Carbon 14 Test). Although the result is much earlier than anticipated, there is no reason to doubt the reliability of the test (see the discussion below). But the date yields only the time when the wood was cut, not when it was in use and burned, which may be centuries later (see the following discussion). The fact that the charcoal layer is sandwiched between Greek amphora fragments in Stratum I (Lo. 52) and Stratum III (Lo. 50) supports a late Classical or early Hellenistic date for the charcoal layer, but microscopic comparison of the similar fragments may reveal they should be associated with the same amphora. No precise date can be attached to these finds at this time. A bronze coin (catalogue no. 18) found in the clayey fill (Lo 50) above the charcoal lens was the earliest context for a coin in this trench, and provided the possibility of a *terminum ante quem* for Stratum III. However, it was so badly deteriorated that it disintegrated while cleaning and was unidentifiable. Nevertheless, the indications are that Stratum II represents an occupation in the Late Achaemenid or Early Hellenistic era.

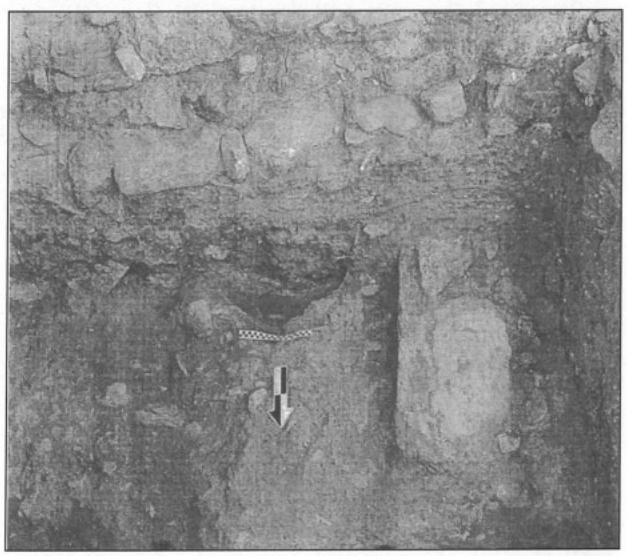
10. In Stratum II, a charcoal deposit covered much of the excavated area of the floor associated with Wall ST12 which is seen protruding form the north baulk in the lower left corner of the photo.

Stratum III (Levels 10-12): The third occupation stratum was found at elevation 891.90 meters. A wall (ST7a) of irregularly coursed wadi limestone packed with small stones and clay is oriented along the same alignment as the wall in Stratum II and forms the southern baulk of the sounding. This wall, which is preserved to a height of 1.0 meter (only 0.50 meter above floor level), is a significantly more substantial structure than those in Strata I and II. The associated floor is comprised of fieldstones embedded in a thick clay surface (Lo. 47) which covers the stone-filled foundation trench (Lo. 49) for Wall ST7a. In the clay deposit (Lo. 50) underlying the foundation trench, and just above the charcoal layer (Lo. 51) of Stratum II, a Greek amphora fragment and a few coarse ware body sherds of probably Hellenistic date were found.

Built up against the north face of the wall is a partition wall or possibly a workbench (ST10), oriented north-south and 0.90 meter in length. This feature is constructed of a core of limestone covered with a coat of mud approximately 0.10 meter thick. Only 0.10 meter of this feature was visible above the associated floor surface (Lo. 46), while its foundation extended down nearly 1.0 meter below the floor surface. Immediately to the east of

ST10 is a small, half-circular *tannūr* or oven (ST11) built up against the wall. The hard-baked clay walls are preserved to a height of 0.34 meter around a shallow pit fill with a thick layer of ash with five animal bones (**Fig. 11**). It is difficult to correlate the Stratum III features with the comparable features in Parr's Trench III, but a careful study of the plans and stratigraphic sections for his Trench III, suggests that Wall ST7a may be equated with Parr's Wall N (**Fig. 7**). Another possibility is that the workbench (ST10) is the eastern terminus of Parr's Wall H or of another contemporary construction (**Fig. 12**).

Stratum IV (Levels 6-9): This stratum is characterized by a series of fill layers that occupy the space between the constructions phases in Stratum III and Stratum V. A hard-packed clayey soil, probably incorporating clay packing sloughed off from the wall surfaces, covers the floor in the excavated space (Lo. 45). A thin lens of gray ashy soil covers the top of the fill, the *tannūr* and the workbench, and runs up against the north face of Wall ST7 at 892.00m. Above this ashy lens is a 0.75m deposit, consisting of alternating compressed layers of clay surfaces, course sandy rubble, and ash lenses (**Fig. 13**), interspersed with several small pits (Lo. 42-45). The inconsistency in their thickness and coverage made it difficult to define and trace each layer in such a narrow excavation area. According to Parr's original report, Phase IV of his Trench III is "represented by a series of thin gray occupation levels alternating with harder layers and floor surfaces" (Parr 1970: 357). The character of the deposits suggests that the space was occupied rel-



11. Stratum III features during the process of excavation. The *tannūr* (center) and partition wall or workbench (ST10) (at right) are built up against the north face of Wall ST7a. The layers of gray ash and burnt soil inside the *tannūr* are clearly visible. In this photo, the floor stones are not yet articulated.

12. A view of Trench 3 after the removal of the floor (Lo. 26) of Stratum III, showing at left some of the rubble fill of the foundation trench for Wall ST7a (at back). The thick clay facing of the partition wall/workbench (ST10) is clearly defined as it was traced below floor level. The function of the pile of round stones against the north face of ST10 was not determined unless they were part of the foundation fill.

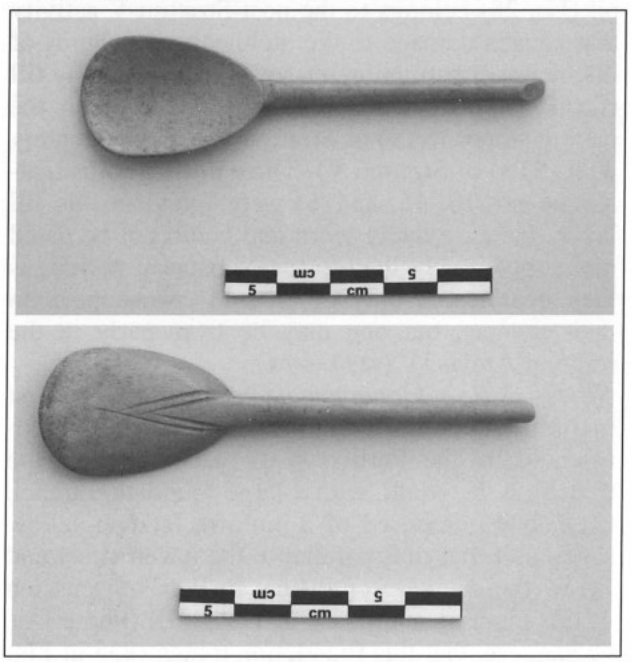
13. The east baulk showing the alternating layers of clay surfaces, course sandy rubble, and gray ash lenses of Stratum IV, above the stone rubble foundation trench fill of Stratum III along the north face of Wall ST7. At the top of the photo are dressed blocks in the lower course of the Byzantine Wall (Stratum IX).

atively consistently throughout the period between the Stratum III and IV construction phases. A preliminary study of the pottery sherds from this deposit reveals a transition from a few body sherds of course ware (Lo. 44) to a mixture of course ware with a few fragments of finer ware and a single body sherd of early Nabataean fine painted ware (Schmid, phase 1) and a large Hellenistic amphora handle without a stamp (Lo. 42). A polished hemisphere shell, possibly a game piece, was found in the lower deposit at 892.10 (Lo. 43). A single bronze Nabataean coin (see catalogue no.17) was discovered near the top of the deposit (Lo. 42) at 893.35, sealed by the clay floor bedding of Stratum V, and appears to be of the first century BC, and provides a *terminus post quem* for the Stratum V construction.

Stratum V (Levels 5-6): The last of the pre-monumental occupation levels in Trench 3 is located at 892.75 meters and is characterized by a limestone wall (ST7b), 0.75 meter wide, of similar construction to those in earlier strata, except that stones are larger and more regularly laid. The wall is oriented slightly northeast-southwest and is built directly on top of the wall in Stratum III (Wall ST7a). A finely worked bone spoon (Inv. #17) with a double "V" incised on the back and the end of the handle broken off (**Fig. 16a and b**) was discovered wedged against Wall ST7b just above floor level. The polished surface has an unusual green discoloration. To the north of WallST7b, remnants of a badly disturbed stone pavement (ST9) are laid out on a layer of course sandy fill (Lo. 29 and 30) and yellow clay sub-floor (Lo. 41) (**Figs. 14 and 15**). A small bronze ornament (Inv #18) was found in the yellow clay sub-floor (Lo. 41).

14. A rudimentary wall (ST8) runs across the top of the broken paving stones of Floor ST9 to the north of Wall St7b (at left).

15. A layer of yellow clay (center) formed a subsurface for the paved floor and floor bedding of Stratum V north of Wall ST7b. At right is the unexcavated foundation trench (Stratum VII).



16. (a) Bone spoon; (b) Back of spoon with double "V" incised into the base of the broken handle.

In his summary of Phase V in Trench III, Parr (2004: 2-3) describes "...walls...made of only irregularly coursed limestone boulders taken from the nearby wadi and packed with smaller stones and clay, they are sturdy, being between 0.85m and 1.0m in thickness, and their rough construction was originally concealed by a surface rendering of clay. Although now largely broken or destroyed, the contemporary stone paving was originally regular and carefully laid." It is reasonable to conclude that our Stratum V features and those of Parr's Phase V in the adjoining Trench III are contemporaneous. The coins found in the associated surfaces of the levels associated with Parr's Phase V in his Trench

III were of the early Nabataean anonymous Athena/Nike type (Parr 2004: 3), now dated between 129/8 and 104BC, co-terminus with the earliest Hasmonean issues (Kushnir-Stein and Gitler 1992-1993: 18-19; *cf.* Bowsher 1990: 226), and several decades earlier than previously assumed (Meshorer 1975: 9-12; Schmitt-Korte 1990: 125-26). This agrees with the Nabataean pottery found associated with Parr's Phase V, which includes one sherd of the simple linear style of the beginning stages of Nabataean painted ware, dating to the late second and early first century BC (Schmid 1995: 640).

Stratum VI (Level 4-5): A single row of limestone rocks and small roughly hewn blocks (ST8) run east-west across the top of the Stratum V floor (**Fig. 15**). This feature along with a small ash-filled pit (Lo. 28) belongs to the post-Stratum V activity that caused damage to the architectural features of that major construction phase. A layer of rubbly fill (Lo. 27) approximately 0.17 meter deep covers the paving stones (ST9) of Stratum V and rudimentary wall (ST8) of Stratum VI. Three bronze coins (catalogue nos.10, 15, and16) were found in this fill layer. Two are badly worn and could not be dated more specifically than to the Nabataean period, as they bear traces only of crossed cornucopiae on their reverse, but one may be from early in the reign of Aretas IV (see below).

Stratum VII — Monumental Construction: The first major urban construction phase in Trench 3 is represented by the Portico Wall, which borders the trench on the south, with a large foundation trench beneath it composed of a uniform reddish-yellow sandy soil that runs parallel to the paved street and below the southern curb line. In Parr's discussion of this monumental phase in Trench III (Phase IX), he suggests that this foundation trench (#35 in **Fig. 7**) is associated with a monumental terrace wall built in support of a terrace fronting the Portico Wall. He equates the unidentified terrace wall (buried under the paved street) with Wall K, which, along with the Portico Wall, forms a double retaining system for the monumental garden terrace to the south that overlooks the excavation area (Parr 1970: 364, fig. 1). In Trench 3, this foundation trench occupies the northern half of Trench 3 and was left unexcavated due to limited time for removing such a large quantity of earth that offered little chance of exposing any earlier construction phases. A bronze coin (catalogue no. 14) found in the Stratum VI fill was sealed underneath the overflow from the trench's fill that spread across the top of Lo. 27 and could have helped to indicate a possible *terminus post quem* for the Stratum VII monumental construction, but it is extremely worn and was unidentifiable. The foundation trench associated with the Portico Wall, located between Wall St7 and the Portico Wall, was also left unexcavated, but it is visible in the section of the baulk marking the division between Parr's Trench III and our current Trench 3. The trench fill is also composed of a uniform reddish-yellow sandy soil.

Stratum VIII (Levels 2-3): Above the top surface of the Stratum VII foundation trench and extending southward across the top of Wall ST7b is a sequence of compressed surfaces, and occupational debris fills (Lo. 21-25) that were badly disturbed by pits and construction activities that made it very difficult to excavate with any accuracy (comparable to Parr's Phases X-XI). The best that can be said is that these layers represent the period of occupation between the construction of the monumental architectural features of Stratum VII and the final construction phase that is represented in Trench 3. A bronze Nabataean coin (catalogue no. 11) with crossed cornicopiae was found in a disturbed area near the north face of the Portico Wall.

Stratum IX – Byzantine Wall and pavement: Immediately below topsoil, two small patches of floor paving (ST2 and ST6) composed of irregularly shaped field stones were preserved in the eastern half of the trench and continuing underneath the Byzantine Wall that was apparently constructed as part of a larger building program initiated to divide the area flanking the south side of the street into small spaces, possibly shops (*cf.* Fiema 1998; Kanelloupoulos 2001). A fragmented Greek graffito was discovered on the west face of the wall's bottom course, but it is not clear if is in reuse in the rather haphazardly constructed "Byzantine" wall or if it was inscribed after the wall was constructed (see the following epigraphic addendum). The precise date for the wall and the laying of the pavement then remains to be determined. Associated with the pavement are two cylindrical sandstone installations (ST3: dia. 0.23, h. 0.35; ST4: dia. 0.15, h. 0.40), each pierced by a 0.10 meter square socket (**Fig. 17**). One of these socket stones was previously propped on its side against the Portico Wall, demonstrating that they are not in their original location.

Epigraphic Addendum (David F. Graf)

The only inscription found during the HPP 2004 season was this fragmented and not very important Greek graffito that was etched into one of the stones of the wall constructed between the Portico Wall and the street described above (**Fig. 18**). The reading is clear

Mnēestḥē *L*[....] Remember L[....]

17. Stratum IX pavement and socketed stones.

18. Greek Graffito on Byzantine Wall at east edge of Trench 3.

The name of the individual is missing, except for the initial letter — the tail of the *lambda* is just barely visible. The temptation would be to assign the script of the graffito to the "square alphabet" (on the basis of the square *theta* and *sigma*) known at Gerasa in the first and second centuries AD (Welles 1938: 358-360), but square forms reappear in late antiquity and the "sagging" *mu* in the graffito is normally a later form. More importantly, there are examples from Petra of the 'square' script being used in the fourth century AD (see Sartre 1993: no. 81) and perhaps even later (Merkelbach and Stauber 2002: 445, no. 22/71/01). The square *theta* and *sigma* also have parallels in epigrams from Bostra, one of indeterminable late antique date (Merkelbach and Stauber 2002: 424, no. 22/42/11) and the other with a precise date of 410/11AD (Merkelback and Stauber 2002: 425, no. 22/42/98). [My appreciation is expressed to G. W. Bowersock at Princeton for bringing these references to my attention]. This evidence demonstrates just how dangerous it is to attempt to date inscriptions solely by any presumed paleographical development without any contextual indicators (*cf.* McLean 2002: 43-45). It is then difficult to decide whether the graffito was inscribed earlier on a block and reused in the construction of the wall or inscribed after the wall was constructed sometime in late antiquity. This ambiguity precludes this brief text from being considered as a *terminus post quem* for the date of the wall.

II. The Temenos Gate

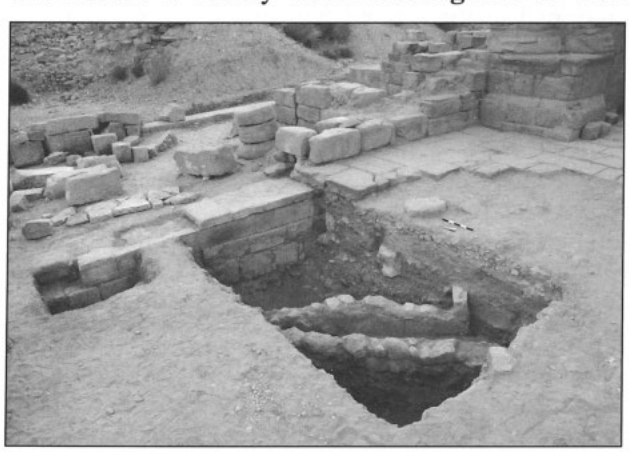
The second area we selected for soundings was near the Temenos Gate, the terminus of the paved street and the entrance to the sacred precincts or forecourt of the temple of Qaṣr al-Bint. The date of all these constructions — Colonnaded Street, Temenos Gate and Pavement, and Qaṣr al-Bint — remains at issue (see Kader 1996: 108-114). Parr dated the Paved Street to sometime after AD 76 (1970: 370) and probably shortly after the Roman annexation in AD 106 (*cf.* Kirkbride 1960: 121), but subsequent proposals suggested an earlier date in the Nabataean era, either in the reign of Rabbel II (by Starcky 1966: 947-48), or even much earlier, to just after 9BC (McKenzie 1990: 36). In similar fashion, the date of the Temenos Gate was initially assigned to the second half of the second century AD (Parr 1960: 131) or even later "as a civic embellishment of the prosperous Antonine and Severan days" (Wright 1961: 126). At any rate, a subsequent date to the pavement is required for the Gate, since some of the pavement was removed when the foundation for the Temenos Gate was constructed in the existing sacred complex, and replaced with smaller slabs (Parr 1960: 131-132; Wright 1967-68: 20). In addition, there are also indications that the present gate may not be the original one, since earlier architectural fragments are reused in the present gate, and some relief panels were found nearby that suggest an earlier monumental gateway once existed (Parr 1967-68: 17; *cf.* Schmid 2003c: 382-383), with a proposed date per-

haps in the early Augustan era (Wright 1967-68: 25). Such a date would correspond with the latest proposal for the date of Qaṣr al-Bint, sometime either in the reign of Malichus I (59BC - 30BC) or Obodas II (30-9BC), and perhaps preceded by an even earlier Hellenistic structure (Zayadine 1991: 292, 2003: 201). If this observation is correct, it is possible that the current paved road leading from the markets in the east through the monumental temenos gateway and to Qaṣr al-Bint in the west was the location of a former *via sacra* that was constructed over an even earlier Nabataean settlement located along the southern banks of Wādī Mūsā adjacent to and perhaps beneath this route. These problems needed clarification and provided the raison d'être for a sounding in the vicinity of the Temenos Gate.

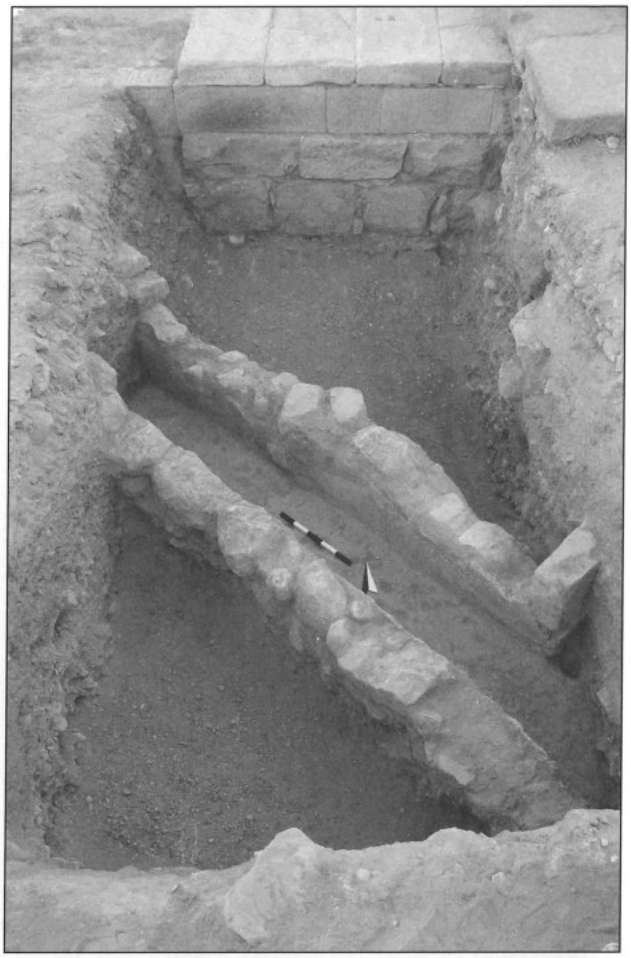
Trench 2 (Stephan G. Schmid)

Trench 2 was located just a few meters to the northwest side of the Temenos Gate (see **Fig. 19** for the general location). The main trench was 5m by 2.5m, with an adjacent small sounding 1m square added just to the northwest for interpretative reasons.

The lower layers of this sounding were composed of yellowish gravel containing small and large stones, indicating that the ancient riverbed used to be somewhat larger than the actual one at this location. The narrower riverbed is probably the result of a retaining wall that was built already in Nabataean times as we shall see below. The earliest built structure in trench 2 is a quite substantial water channel that runs in a SE-NW-direction (**Fig. 20**) directly into the gravel mentioned above but without any visible traces of any foundation. Immediately towards the SE-corner of trench 2 the channel turns into a cistern. The very beginning of this cistern is clearly visible on **Figure 20**. The



19. Trench 2 NW of the Temenos Gate, general view (Schmid).

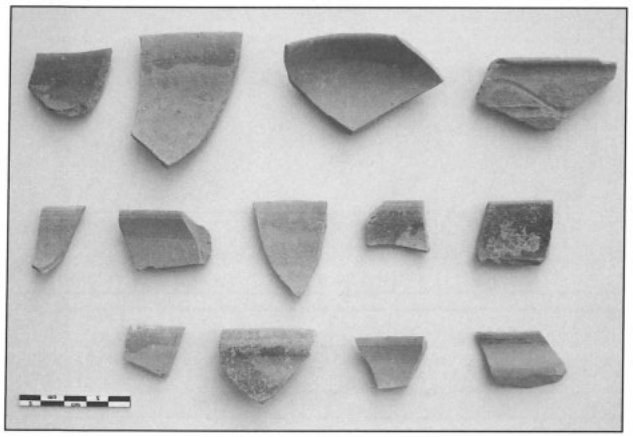


20. Trench 2, early Nabataean water channel and later wall (Schmid).

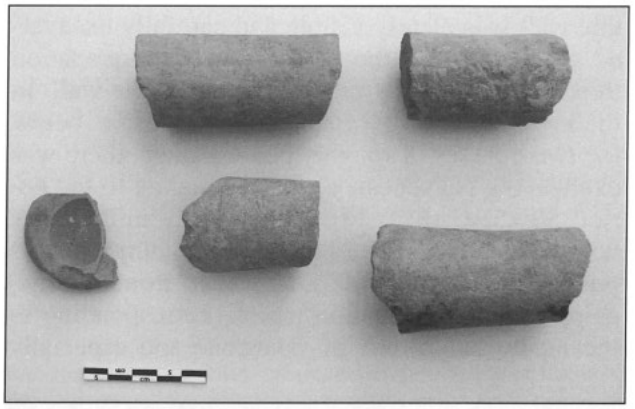
channel is built of not very well hewn limestone boulders, most of them probably collected directly from the ancient riverbed. The outer surface of the channel walls is not aligned and offers a rather careless picture; the inner surface was carefully covered with fine hydraulic mortar. The dimensions of the canalization are 42-45cm for the inner width, approximately 110cm for the outer width and ca. 50cm for the preserved height. The channel initially was covered by huge slabs measuring 70 x 115cm, one of which was actually found *in situ*. In the hope of finding some pottery fragments mixed with the hydraulic mortar as a chronological indicator for the date of the construction of the canalization, a few mortar samples were collected and crushed. In contrast to the Nabataean hydraulic mortar of the first century AD from elsewhere, this mortar did not contain any remarkable pottery fragments and was much finer in composition. The other chronological indications for the channel are the following: the channel is blocked and interrupted by a huge wall built in an EW-direction at the northern part of trench 2 (*cf.* below and **Figs. 20,**

21). The relationship between the earlier channel and the later wall is clearly visible on **Figure 21**. Since we have a rather precise date for the construction of the later wall of the third quarter of the first century BC, the channel must be earlier. The other chronological indication is offered by the fill in the channel which contained a surprisingly large amount of homogeneous Nabataean pottery of the later second and the first half of the first century BC (phase 1 according to Schmid 2000) as illustrated on **Figure 22**. A further confirmation of this general date for the fill is provided by the several fragments in it of Greek/Hellenistic amphora handles and a base of an Eastern Sigillata A open form (**Fig. 23**). The closest parallel for this construction technique and the dimensions of the aqueduct is the initial water installation discovered in the Siq of Petra, and dated by U. Bellwald to the early first century BC (*cf.* Bellwald *et al.* 2003: 35-40). Despite the fact that we are missing any precise chronological indication for the construction of the channel found in trench 2, the associated evidence indicated above makes it very likely that it was constructed no later than the late second or beginning of the first century BC. The main interest of this discovery goes far behind the simple finding of a water channel. It is clear that the population of Petra was large and sophisticated enough to construct such an extensive water management installation. This implies that there was a certain degree of urbanization already existing at Petra by 100BC (see Schmid 2001A, 2001B, 2001C).

21. Trench 2, early Nabataean water channel cut off by later wall (Schmid).



22. Trench 2, pottery of the late second / early first century BC from channel fill (Schmid).



23. Trench 2, Eastern Sigillata A and Hellenistic amphora handles from channel fill (Schmid).

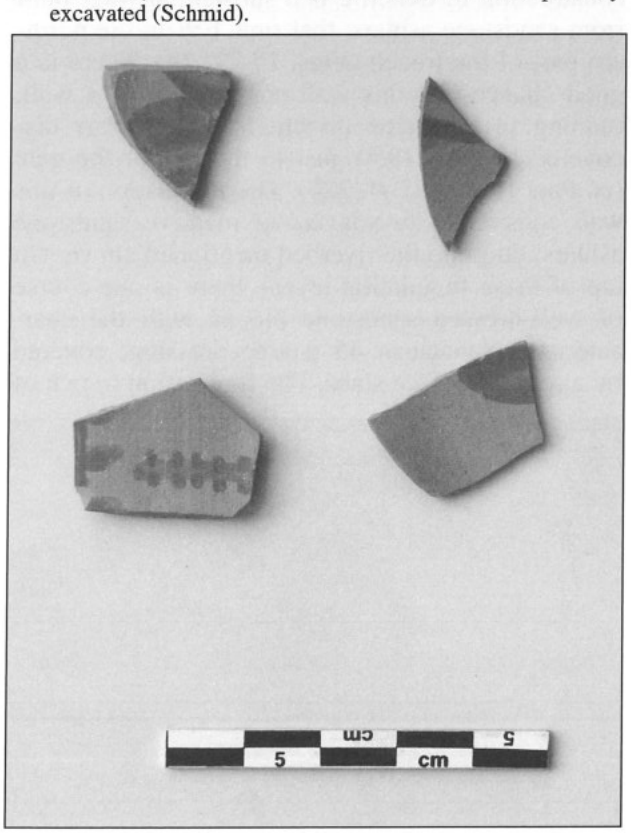
As mentioned above, the next clearly detectable construction in trench 2 is a substantial wall, built from sandstone ashlars, that runs EW in the northern part of the trench (**Figs. 19-21, 24**). There is a good chance that this wall corresponds to a wall, running in the same direction, that P. Parr discovered in 1958/1959, just to the NE of the gate (*cf.* Parr 1960: 132 pl. 22b). The foundation of this wall consists of two layers of massive sandstone ashlars, dug into the riverbed mentioned above. On top of these foundation layers, there is one course of well-dressed sandstone blocks with the characteristic Nabataean 45 degree dressing, covered by a row of surface slabs. The foundation trench of

24. Trench 2, Nabataean wall with stylobat and half column base on top (Schmid).

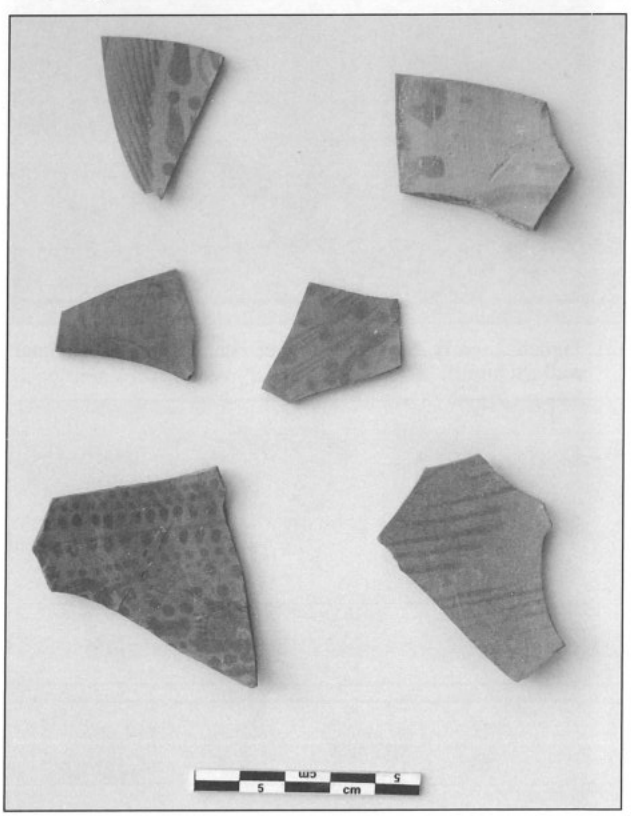
this wall was clearly visible and carefully excavated (**Fig. 25**) and the finds from the foundation trench allow a rather precise dating for the wall. In the lower level of the foundation trench, i.e. below the two courses of roughly hewn ashlars, there was exclusively Nabataean pottery belonging to the period 50-25BC (**Fig. 26**) and probably rather early within this span (for a detailed chronology of this pottery see Schmid 2000). However, from the lower part of the foundation trench, corresponding to the nicely cut course of sandstone and especially the covering slab, there were Nabataean pottery fragments (**Fig. 27**) of the early first century AD (phases 2c and 3a according to Schmid 2000). As a preliminary hypothesis, we would suggest that the initial wall was built in the third quarter of the first century BC and then underwent a rebuilding of its upper part during the reign of Aretas IV. As we shall see below, these chronological indications are of the uppermost importance for considering the complex problem of the chronology of the Temenos Gate and the paved street.

On top of the covering slabs of the Nabataean wall stands a half-column base related to a kind of bay. As can be seen on **Figure 28**, the actual visible pavement of this part of the temenos is clearly later than the half column and, therefore, the wall beneath it as well. Since the covering slabs and the Nabataean wall beneath them continues for several meters in a western direction (and probably towards the west in Parr's trench of 1958/1959), we can assume that a colonnade was flanking the temenos at an earlier stage. When the pavement was constructed, a specially curved slab was set in place to help provide contour for the half column base and then overbuilt by massive stones (**Fig. 28**). In order to find out more about the chronology of the pavement, the two slabs bordering trench 2

25. Trench 2, foundation trench of Nabataean wall partially excavated (Schmid).



26. Trench 2, pottery of the third quarter of the first century BC from the lower part of the foundation trench for the Nabataean wall (Schmid).

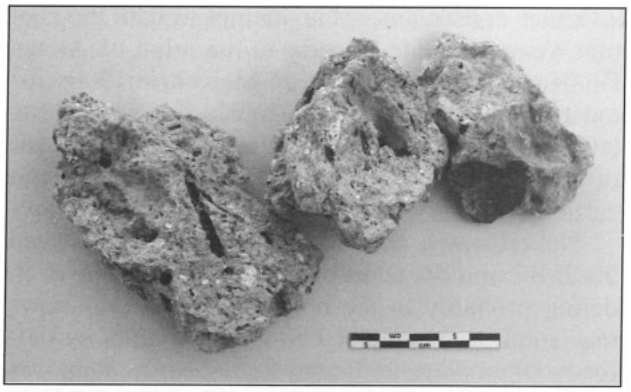


27. Trench 2, pottery of the early first century AD from the upper part of the foundation trench for the Nabataean wall (Schmid).

were lifted and the area beneath them was carefully excavated (**Fig. 29**). As is clearly visible on **Figures 28 and 29**, the massive floor slabs are laid into a layer of ashy, whitish-gray mortar that was spread on a layer of smaller broken slabs. A close-up of some of these mortar samples (**Fig. 30**) shows the amount of ash and small fragments of charcoal mixed in the plaster. This mortar and the technique of abetting floor slabs into mortar are not

28. Trench 2, stylobat with half column base and later added pavement slab (Schmid).

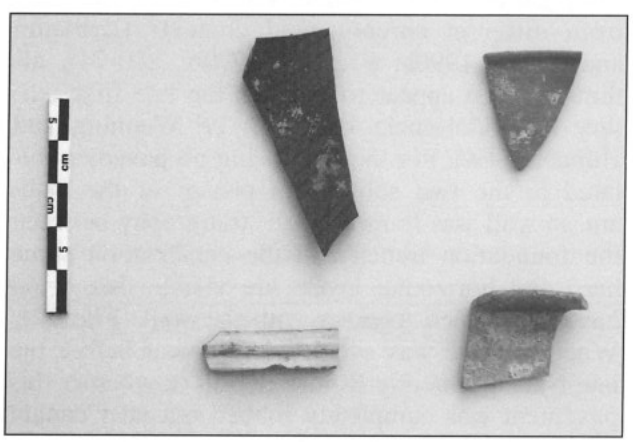
29. Trench 2, small sounding beneath pavement slab (Schmid).



30. Trench 2, fragments of mortar containing charcoal and pottery from the pavement slabs bedding (Schmid).

common in the Nabataean period, at least not until the very end of the Nabataean kingdom. This observation is confirmed by the pottery that was extracted from the mortar mentioned above (**Fig. 31**). Some characteristic rim sherds as well as some painted sherds characteristic of the last quarter of the first century AD (phase 3b according to Schmid 2000) were found beneath the slabs.

These results confirm a *terminus post quem* within the last quarter of the first century AD for the construction of the paved street, at least in this western part of the civic center. This observation is of the highest significance for the chronology of the main monuments of this area, particularly for the controversy concerning the date of the paved street and Temenos Gate. Parr's original proposal was for a date after AD 76 (1970: 364-370), but subsequently it was suggested it was constructed perhaps even earlier, with a *terminus post quem* as early as 6BC in the reign of Aretas IV (McKenzie 1990: 35-36; Kader 1996: 136-144). With the results from our 2004 season, we can definitely date the pavement east of the Temenos Gate to sometime after the last quarter of the first century AD, placing at issue any proposal for an earlier date. As



31. Trench 2, pottery of the last quarter of the first century AD from the bedding of the pavement slabs (Schmid).

a further consequence, the attempt to date the current Temenos Gate to early in the reign of Aretas IV (Kader 1996: 136-144; *cf.* McKenzie 1990: 36) must also be removed from consideration. What is left unresolved is whether there was a predecessor of the present Gate in the first century BC or even earlier.

Nevertheless, the massive wall built between 50-25BC and the additional colonnade on top of it, dating probably to the reign of Aretas IV, shows that some monumental building activities had already taken place in the city center earlier than was previously thought. Since, evidently, this wall continues on the other side of the Temenos Gate (Parr 1960: 132), we may propose that this is one of the earlier monumental arrangements of the city center. The half column base mentioned above belongs to a type that can be found at Petra for instance at the temple of the Winged Lions, the Urn Tomb and the theatre, and that is virtually identical with the column bases from Machaerus (on the bases from Petra see McKenzie 1990: pl. 50e-g; on Machaerus and other Herodian luxury buildings *cf.* Japp 2000; Netzer 1996, 1999; Lichtenberger 1999; Roller 1998; Nielsen 1994: 181-208; for historical aspects related to Herod and his family see Kokkinos 1998). Hence, we can hypothesize a colonnade, several dozen meters long, maybe doubled by an analogous structure on the other side of the — not paved — street and dating to the decades between 30-10BC or slightly later. It is possible that this sandstone structure was once decorated with reliefs. However, the group of limestone blocks of sculpture found in the southeast vestibule should only be considered with caution as part of such a construction. Not only are they from various unstratified contexts (Wright 1967-68: 21), but they also do not constitute a homogeneous group — there are differences in style, composition and technique, and they appear to be from different chronological contexts (Lyttleton and Blagg 1990a: 97, and 1990b: 270-74), although some appear to be from the late first century BC (McKenzie 1988: 87; *cf.* Wenning and Hübner 2004). For the time being no pavement related to the two subsequent phases of the Nabataean wall was found. In the stratigraphy between the foundation trench and the canalization some hard and horizontal layers are visible that could have functioned together with the wall (**Fig. 32**). Whether there was ever any pavement before the late Nabataean/early Roman period or whether this pavement was completely robbed out later cannot yet be decided by the evidence of our rather small trench.

32. Trench 2, E-stratigraphy (Schmid).

Since all of the aforementioned scholars agree on the fact that the Temenos Gate is slightly later or at the best contemporary to the paved street, the gate in its actual version too has to be dated after the last quarter of the first century AD and the construction of the street. However, since there are clear indications for earlier monumental buildings in this part of the city, an earlier gate cannot be excluded. Although four bronze coins were found in Trench 2, all of them were discovered in the fill above the aqueduct and offer no contribution to the chronological development of either the wall or the aqueduct. These include a Nabataean coin found in the surface levels of the trench (no. 9), and three coins from Phoenician mints found in the mixed fill just below the surface (nos. 6-8). The latter all date to the third century BC and attest to earlier activity in the civic complex before the construction of the aqueduct and wall. For further discussion of these coins, see below. In conclusion, despite the small surface excavated and the limited time available, some important results regarding the evolution of the city center of the Nabataean capital were achieved. It is possible that with one or two additional trenches in the Temenos Gate area the complex chronology and history related to the monumentalization of the city center can be gained in the near future.

III. The Numismatic Evidence (Steven E. Sidebotham)

During the 2004 season of the Hellenistic Petra Project, 18 coins were recovered from all three soundings, both of those adjacent to the paved street (trenches 1 and 3) and the other just to the northwest of the *temenos* gateway (trench 2) leading to Qaṣr al-Bint. All the coins are *aes* (copper alloy) issues; no silver or gold was recovered and no hoards were found. The coins were chemically cleaned using a solution of hydrochloric acid di-

luted with water. Coins were weighed on an Acculab Pocket Pro C/60 precision electronic balance with a gradation of 0.01 grams. Almost all of the attributable or identifiable coins are, not surprisingly, Nabataean. The six coins illustrated from the catalogue represent the best preserved of the eighteen coins. Of these, catalogue nos. 1-2 (from trench 1) are common Nabataean issues of Aretas IV (Schmitt-Korte 1990: 122), but in exceptionally good condition. Their excellent state of preservation suggests deposition soon after minting in AD 39/40. In contrast, catalogue no. 10 is clearly Nabataean, but much of the coin is missing and was struck off center, making attribution difficult. But either the letter ḥ or *-t* appears between the crossed cornucopiae. If the former is the case, it is probably of Aretas IV with a date of 6-4BC (Meshorer 1975: nos. 71-72), but if the latter, of Rabbel II, AD 101/102 (Meshorer 1975: no. 163; Schmitt-Korte 1990: 124, no. 86). Graf suggests the former is the case, since the largeness of the letter indicates it stands alone, and especially since only one bust is visible on the obverse.

Of greater importance are the three issues from Phoenician mints from Trench 2 (catalogue nos. 6-8). One of these is extremely worn with a trident/anchor counter stamp on the reverse that appears to be of Ptolemy Philadelphus II (catalogue no. 8 from trench 2). The centering hole found on Ptolemaic Alexandrian bronze issues is absent and the die positions are atypical of such coins, suggesting it is probably from one of the Ptolemaic mints elsewhere, and we propose either Tyre or Sidon. The counter stamp was placed on the reverse after the coin had been in circulation for an extended period of time. The trident/anchor device typically appears on foreign coins circulating in Seleucid territory between 175-162BC (Houghton 2004: 56-57; *cf.* Mørkholm 1984: 108; for general discussion see Le Rider 1995). The trident countermark, however, also appears on Ptolemaic coins of the third century BC, including early issues (between 285 and 265BC) of Ptolemy II Philadelphus (Svoronos 1904: 59, no. 81; *cf.* Davesne 1987). The extensive wear of this coin suggests that it had been in circulation for a long time prior to its loss. Thus, while it may be an early issue of Ptolemy II, it was not deposited at Petra until perhaps a century or more after striking. There are ample parallels for lengthy circulation of coins and Ptolemaic era coins have even appeared in second century AD contexts at Cyrene. In contrast, the two coins from the Phoenician city of Aradus (catalogue nos. 6-7 from trench 2) are both excellent examples of the autonomous coinage of the north Phoenician island (Rey-Coquais 1974: 157; *cf.* Hill 1910: xiv-xv; Seyriq 1951: 215-216, 1964: 34); their preservation, though not as fine as those of catalogue nos. 1-2, suggests deposition not too long after minting. One of the issues (catalogue no. 6) is undated, and dates proposed for this issue range from 245-243BC, just before the dated issues begin in 243/2BC (Duyrat 2004: 227-232), to just a little later, between 240 and 237BC (Hill 1910: 13); the other Aradus issue (catalogue no. 7) has a specific date of 238/7BC (Hill 1910: 13). For the possible political and economic significance of their appearance at Petra, see the discussion below.

The remainder of the specimens in the catalogue can be either designated as only generally "Nabataean" or are completely unidentifiable; the latter are, in all likelihood, Nabataean as well. One coin disintegrated into small particles upon cleaning (catalogue no 18 from trench 3). A number of the coins (catalogue nos. 3, 5, 9, 11-13, 15-16) preserve only enough traces of crossed cornucopiae on the reverse to be identified as "Nabataean". Several Nabataean rulers used this device including Syllaeus, Aretas IV, Malichus II and Rabbel II. The reverse of catalogue no. 17 may preserve an eagle, a Nike figure or, less likely, the palm of a hand. These devices were used by Aretas II, Aretas III, Obodas II, Malichus I, Obodas III and Syllaeus, so the coin should be given a first century BC date.

The catalogue is presented by trench and the following abbreviations are used

AE	*aes* (copper alloy)
g.	grams
mm.	millimeters
r.	right
l.	left
Obv.	obverse
Rv.	reverse
Inv.	inventory

The catalogue is arranged as follows: 1)* indicates that the coin is illustrated; 2) Inv. no., 3) level/locus no.; 4) date excavated [day-month-year]; 5) AE followed by size in mm.; 6) weight in g.; 7) Obv. [if preserved]; 8) Rv. [if preserved]; 9) date and place of minting [if ascertainable]; 10) Obv. and Rv. die positions [if extant]; 11) published parallels [where possible].

Trench 1 (five coins)

*1) Inv. no. 5; level 2/locus 15; 1-8-04; AE 16; 2.37g.; Obv. bust of Aretas IV right; Rv. two cornucopiae crossed with inscription *ḥrtt* (= Aretas); 39/40 AD, Nabataean;↑; *cf.* similar Meshorer 1975: 105, no. 115; Schmitt-Korte 1990: 114, nos. 37-41 (**Fig. 33a, b**).

33. Coin No. 1, obverse (a); reverse (b).

*2) Inv. no. 6; level 2/locus 15; 1-8-04; AE 18; 4.81g.; Obv. jugate busts of Aretas IV and Shuqailat r.; Rv. two cornucopiae crossed with legends ḥrtt/šqy/lt (= Aretas/Shuqai/lat); 39/40AD, Nabataean; ↑; *cf.* similar Meshorer 1975: 105, no. 112; Schmitt-Korte 1990: 122-123, nos. 77-81 (**Fig. 34a, b**).

3) Inv. no. 4; level 2/locus 15; 1-8-04; AE 13; 1.53g.; very worn; Obv. bust r.?; Rv. two cornucopiae crossed, inscription lost; unattributable Nabataean.

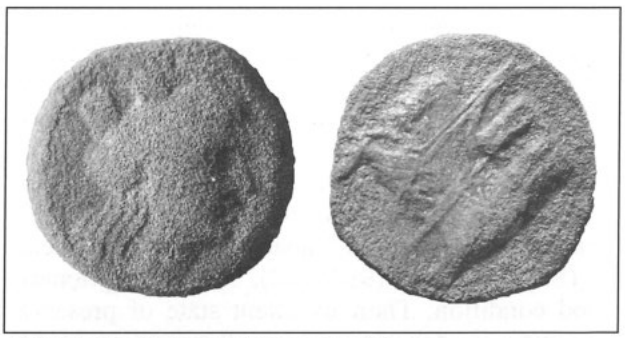
4) Inv. no. 3; level 2/locus 15; 1-8-04; AE 15; 1.51g.; very worn; unidentifiable.

5) Inv. no. 1; level 1/locus 11; 31-7-04; AE 11.5; 0.72g.; very worn; Obv. [bust r., lost]; Rv. two cornucopiae crossed; unattributable Nabataean.

Trench 2 (four coins)

*6) Inv. no. 20; level 2/locus 36; 8-8-04; AE 16; 2.97g.; Obv. head of Tyche with turreted crown and flowing hair; Rv. prow of galley armed with a ram l., with figurehead of Athena fighting l. with shield and spear; above horizontal club, and perhaps slight traces of A (R)to the r.; either ca. 246-243BC or 240-237BC (see discussion above), from Aradus; ↑; Hill 1910: 13, nos. 88-90, Plate III.3-4, and Duyrat 2005: nos. 1357-1373, Plate 18 (**Fig. 35a, b**).

*7) Inv. no. 8; level 4/locus 7; 22-8-04; AE 16; 2.77g.; Obv. head of Tyche r., wearing turreted crown; perhaps faint AR (for Aradus) right [border of dots]; Rv. prow of galley armed with ram l., with figurehead of Athena fighting l. with shield and spear; below in Phoenician letters "year 22;(= št 22)"; 238/237BC, from Aradus; ↑; Hill 1910: 13, nos. 92, Plate III.6 and Duyrat 2005: 1418-1422, Plate 19, no. 1419 (**Fig. 36a, b**).



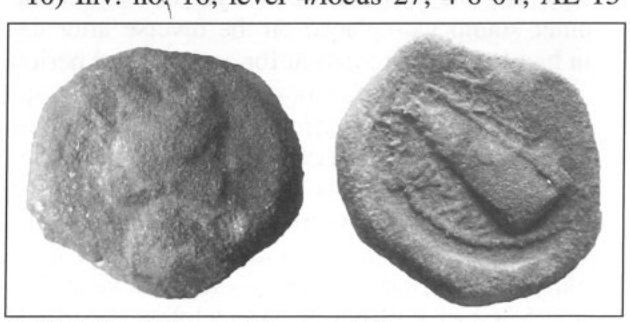
35. Coin No. 6, obverse (a); reverse (b).

*8) Inv. no. 13; level 5/locus 32; 4-8-04; AE 26; 13.03g.; Obv. bust r.; Rv. eagle stg. l., head to r.; no extant legend, trident counter stamp (see discussion above); unattributable Ptolemaic, likely Ptolemaic II Philadelphus from a Phoenician mint (Tyre or Sidon); ↑ (**Fig. 37a, b**).

9) Inv. no. 7; level 3/locus 5; 2-8-04; AE 16.5; 2.66g.; Obv. indistinct; Rv. two cornucopiae crossed; unattributable Nabataean.

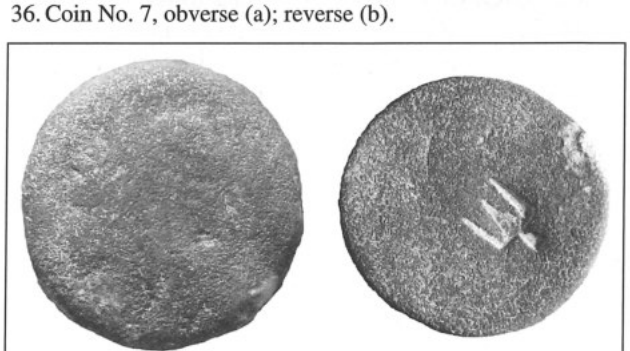
Trench 3 (nine coins)

*10) Inv. no. 16; level 4/locus 27; 4-8-04; AE 13



36. Coin No. 7, obverse (a); reverse (b).

34. Coin No. 2, obverse (a); reverse (b).



37. Coin No. 8, obverse (a); reverse (b).

(1/3-1/4 of coin missing); 1.43g.; Obv. bust r.; Rv. two cornucopiae crossed, between them, either the letter *ḥ* or *-t* (struck off-center); Nabataean; either Aretas IV between 6-4BC (Meshorer 1975: nos. 71-72), or Rabbel II, AD 101/102 (Meshorer 1975: no. 163; Schmitt-Korte 1990: 124, no. 86); see the discussion above; ↑ (**Fig. 38a, b**).

11) Inv. no. 9; level 2/ locus 21; 3-8-04; AE 15; 2.17 g.; Nabataean; Obv. bust r. (indistinct); Rv. two cornucopiae crossed; unattributable Nabataean.
12) Inv. no. 11; no level recorded/locus w. balk trim; 3-8-04; AE 14; 1.53g.; very worn; Obv. indistinct; Rv. faint, two cornucopiae crossed; unattributable Nabataean.
13) Inv. no. 12; no level recorded/locus "W balk N"; 4-8-04; AE 13; 0.97g.; very worn; Obv. (bust r., lost); Rv. two cornucopiae crossed; unattributable Nabatean.
14) Inv. no. 10; level 2/locus 20; 3-8-04; AE 10; 1.08g.; extremely worn, unidentifiable.
15) Inv. no. 14; level 4/locus 27; 4-8-04; AE 14; 0.97g.; very worn; Obv. bust r. (very indistinct); Rv. two cornucopiae crossed (struck off-center); unattributable Nabataean.
16) Inv. no. 15; level 4/locus 27; 4-8-04; AE 14; 1.57g.; very worn; Obv. bust r. (very indistinct); Rv. two cornucopiae crossed; unattributable Nabataean.
17) Inv. no. 19; level 6/locus 42; 7-8-04; AE 14; 0.97g. (weight of two fragments); Obv. Indistinct; Rv. possibly stg. eagle or Nike fig., less likely palm of hand; unattributable Nabataean, but probably of the first century BC (see the discussion above).
18) Inv. no. 24; level 12/locus 50; 11-8-04; 0.21g.; unidentifiable fragments.

Conclusions

The primary objectives of the HPP were to expose traces of the pre-100BC settlement and, if possible, discover stratified deposits of this earlier period. In this regard, both of our selected areas for soundings in the ancient civic center of Petra were successful in exposing remains of the pre-100BC Hellenistic period and contributed to our understanding of early Nabataean society. Parr's observation that beneath the Colonnaded Street there were "well stratified deposits" offering an "undisturbed sequence of structures" proved to be accurate. The goal of our trench 3 was to link up with Parr's Trench III from his excavations in 1958-64 that provided stratified evidence of a pre-100BC settlement, perhaps as early as the Achaemenid Persian period, but certainly the early Hellenistic era. The finds in our adjacent Trench 3 revealed similar humble dwellings, constructed with very rough limestone, verifying Parr's reported discoveries, although a precise chronology for these structures has yet to be determined. In similar fashion, our trench 2 revealed architectural constructions of the first century BC, including an impressive canalization system that dates probably to the early first century BC, and a colonnaded wall built sometime in the third or fourth quarter of the first century BC. Some fragments of black-glazed Attic ware and Greek amphorae were found in both trenches, but the crucial evidence for an even earlier occupation was the carbon 14 test of the burnt wood in trench 3 and the Phoenician coins in trench 2. Both of these finds deserve further comment, as it appears that they push the chronological settlement at Petra back to the earliest stages of recorded Nabataean history.

1. The Radiocarbon Test: In our Trench 3, the earliest occupational level was covered with a black ash of burnt wood, scattered over the whole area of the trench.

Of the five samples of this burnt layer retrieved from Stratum II, four were submitted to Beta Analytic, Inc. (in Miami Florida) for high precision radiocarbon testing. The sample tested comprised 2.8 grams of clean charcoal, provided from the 130.9 grams of bulk sediment/gravel submitted to the laboratory. Of this amount, 5.0mg of charcoal was processed, after complete pretreatments, for 14C AMS (Accelerator Mass Spectrometry) dating. No anthropogenic contamination was detected in the tested sample — such as modern preservatives or fungicides — during the pretreatments. As indicated above, the result was a ^{14}C AMS date of 2490 +/- 40 BP, with a calibrated sigma 2 date (95% probability) of 790 to 420BC and a sigma 1 calibrated date (68% probability) of 780 to 520BC, using the INTAL 98 calibration curve (Stuiver *et al.* 1998; Talma *et al.* 1993). The calibration graph indicates a long plateau in the

38. Coin No. 10, obverse (a); reverse (b).

curve of three and half centuries in time for this BP date, a rather lengthy two-sigma range, implying a probability for the real age across the entire plateau (i.e. not more probable in one region of the range or another). However, since the burnt layer was sealed between two strata where Greek amphora were present, a date later in the curve seems more likely. (My thanks to Daren Hood of Beta Analytic Inc. and Dr. Massimiliano Galeazzi of the Department of Physics at the University of Miami for helpful advice in interpreting the results of the ^{14}C test). It should be emphasized that the ^{14}C date only indicates when the wood was cut, not when it was used and later burnt, and timber is known to have a long life of use in the Near East. For example, according to recent ^{14}C AMS dating of the cypress beans in the al-Aqṣa Mosque at Jerusalem, constructed in AD 705-715, there were beams that yielded dates of the ninth and first centuries BC as well as beams dating to the Byzantine period (Lipschitz *et al.* 1997: 1047-1050). The early date of the late Iron Age-Hellenistic period should then not be dismissed, but regarded as illustrative and suggestive for the dating of Strata II. Beta Analytic is the world's largest professional radiocarbon dating service, a regular participant in the International Radiocarbon Inter-comparison Studies, and is always within the core region of the mean consensus dates of the study materials (see Scott *et al.* 2004; *cf.* Boareto *et al.* 2003).

Although of only relative importance, this indication of a date for our Stratum I-III in Trench 3 for the Achaemenid Persian period and/or early Hellenistic era should not be found surprising. Stratum IV seems to clearly mark the transition to the first century BC, so that the prior stratified finds suggest a pre-100BC date. It should also be noted that the Persian period is known from nearby Tall Ṭuwaylān in the modern village of Wādī Mūsā, where excavations uncovered a cuneiform tablet dated to the "accession year of Darius king of the lands" (Dalley 1984; *cf.* Dalley in Bennett and Bienkowski 1995: 67-68). This Darius must be identified with one of the three Achaemenid Persian kings of that name, indicating a date of either 521BC (Darius I), 423BC (Darius II), or 335 (Darius III). The unsettled dynastic succession in the accession year of Darius I suggests the king in this tablet should be identified with one of the latter two kings. This tablet records a transaction drawn up in the Ḥarrān for a local Edomite, suggesting that this area of Edom was inhabited in the Persian period. This agrees with the proposed date of the excavated settlement at Ṭuwaylān, which is generally placed between the early seventh century BC to "possibly as late as the forth century BC (Bennett and Bienkowski 1995: 103). Our finds in the Petra basin would support this latter date. The hypothetical end of Edom associated with the Babylonian invasions of the region in the first half of the sixth century (*cf.* Bartlett 1989: 161) must then be revised, given these signs of continuity into the late Persian period.

2. The Ptolemaic and Phoenician Coinage: Of primary importance also are the early Hellenistic coins from Trench 2, even if they were not found in any stratigraphical context. Our catalogue no. 8 is badly worn, but has all of the signs – size, weight, shape, and discernible marks – of early Ptolemaic bronze coinage from the Phoenician mints. The closest parallels appear to be issues of Ptolemy II Philadelphus from either Tyre (Svoronos 1904: 60, no. 384, pl. xi, 27: obv. Ptolemy II, rev. eagle with open wings; before 266BC) or Sidon (p. 112, no. 761, pl. xxvii, 15-17: obv. Head of Zeus, rev. eagle with closed wings; after 271BC). A similar trident countermark as that which appears on our coin was used by the Seleucids, but the middle prong on the trident of our coin is distinctively different in shape, and may be of Levantine origin as well: such trident countermarks appear on coins of Ptolemy II Philadelphus (285-246BC)dating from 285, 282, 278, and 276BC (Svoronos 1904: 59, no. 81 note), so our coin may equally date to the early reign of Ptolemy II Philadelphus [my appreciation to Christian Augé for these suggestions and the references]. The trident was particularly associated with Poseidon and maritime commerce, so common in Phoenicia; Svoronos associated it with Berytus (1904: no. 381 β), but it is also found on early Ptolemaic issues from Cyprus (Davesne 1987: 147-148). However, since our coin is so badly worn, it must have been deposited at Petra at a much later time, probably sometime in the second century BC.

In contrast, the two Aradus coins found in unstratified topsoil and fill in Trench 2 are in excellent condition and must have been in circulation only for a short period. Nor are these the first Aradus coins found at Petra. During the British Excavations in the 1955/56, an "autonomous" Aradus coin of the "second century BC" from a room (R.N. 2) was found at the eastern end of the street (Kirkbride 1960: 119). From Parr's excavations in 1958-64, another 15 Aradus coins (ca. 240-187BC) were found, five from Trench III (Bowsher 1990: 223), and another nine from elsewhere along the Colonnaded Street (Parr 2005: 5). In addition, one Carthaginian issue (ca. 310-280BC) and seven of the twelve Ptolemaic coins (ca. 300-221BC) found were also from the Street. According to J.M.C.

Bowsher (personal communication), seven of the Aradus issues are from 240-37BC and four others from 226-187BC. If one adds to this number another possible Aradus issue found in Trench I near Katute, the Aradus issues comprise almost half of the Hellenistic coins found in the British excavations that range in date from the early third to the first centuries BC. Most of these coins were single finds, and not all from stratified deposits, but the fact that three coins of Ptolemy III (246-221) also came from Trench III (Bowsher 1990: 223) is interesting, given the clear Hellenistic stratigraphy of both Parr's Trench III and our adjacent Trench 3. (Our appreciation is expressed to both Peter Parr and J. M.C. Bowsher for graciously allowing us to cite this important information here, and we look forward to their forthcoming full publication of the earlier excavations).

This unusual concentration of third century BC Aradus coins at Petra deserves some explanation, especially since such finds are virtually absent elsewhere in Transjordan. But there is a similar contribution of third century BC Aradus issues at 'Nabataean' sites along the caravan route between Petra and Avdat. Of the dozen Aradus coins found in Israel, all six of the issues of 240-237BC (Hill 1910: 13, nos. 88-92) are found concentrated in the area between Avdat and the Wādī 'Araba. Two (and possibly three) were found in the environs of the recent excavations of the military camp at Avdat (IAA nos. 79906 and 80134; *cf.* 80134 'possible'), another two at Mezad Mishor or Khirbat al-Biyar (IAA nos. 92549 and 92550), and one from Mo'a = Moje 'Awad (IAA no. 95069), both of which lie some 45-50km e/se of Avdat on the road to Petra. There also is a Hellenistic context for these finds. The ruins at Mezad Mishor, just east of Mezad Rahel, are part of a complex of Nabataean Hellenistic ruins of the third century BC — including the Nabataean forts at nearby 'Ayn Eraga and 'Ayn Rahel (Korjenkov and Erickson-Ginni 2003: 40-44) — located on the early branch of the Incense Road between Petra and Gaza that bypassed the Ramon Crater (Erickson-Ginni 2002: 113 n. 4). At Mo'a, 10km to the south, an important road station on an alternative route of the Incense Road between Petra and Gaza via Avdat (Meshel and Tsafrir 1974 and 1975), the earliest finds included coins of Ptolemy III (246-221BC), Hellenistic oil lamps and juglets of the third and second centuries BC, plus some Rhodian stamped handles (Cohen 1982: 243; 1993: 1139). At Avdat, the Hellenistic finds included some Rhodian stamped jar handles (ca. 220-180BC) from crevices in the acropolis (Negev 1986: 8-9) and some coins dating from the late forth century to the second century BC (mostly unpublished: *cf.* Negev 1974: 23; 1977: 546-547; A. Kindler in Negev 1997: 192). The rest of the known Aradus issues from Israel are all from the second or first centuries BC, with the exception of one from Galilee of the late third century BC (information supplied courtesy of the Israel Antiquities Authority).

Our appreciation to Peter Fabien (Avdat), Yigal Yisraeli (Mezad Mishor), and Rudolph Cohen and Yizhar Hirschfeld (Mo'a) for permission to publish this information from these sites, and the Israel Antiquities Authority for granting my request for this information. A special word of thanks should be expressed also to Donald T. Ariel (Head, Coin Department, Israel Antiquity Authority) and Haim Gitler (Curator of Numismatics, Israel Museum) in Jerusalem for facilitating my inquiries.

Such apparent patterns can be deceptive, and are vulnerable to subsequent discoveries, which force revision of any hypothesis, but the overwhelming impression of the available evidence is that there must be some explanation for this convergence of the coins geographically and chronologically. What is striking about the Aradus issues is that they come from the north Phoenician island, presumably allied with the Seleucid kingdom, some distance north of the Eleutheros River, which is normally associated as the northernmost boundary of Ptolemaic territory (Seyrig 1951: 215; Rey-Coqais 1974: 157; Bagnall 1976: 11-13, 183; Will 1979: 259). During the "Second Syrian War" (260-253BC), Aradus' purportedly remained firmly aligned with the Seleucid regime, and its loyalty was rewarded in 259BC by permission to issue autonomous coinage, marking its 'liberation' from Ptolemaic rule, as essentially a "Seleucid mint" (Hill 1910: xv; *cf.* Seyrig 1964: 34-43; Rey-Coquais 1974: 153-154; Davesne 1999: 128; Duyrat 2005: 226-229). During the "Third Syrian War" (246-241BC), it began issuing its first dated bronze coinage in 243, allegedly again for its loyalty to the Seleucid regime (Strabo 16.2.14 [154] with Hill 1910: xv; *cf.* Grainger 1990: 146-147). It is assumed that the undated "autonomous issues were issued either just prior (Duyrat 2004: 227-232) or just after this date, between 240 and 237 BC (Hill 1910: 13). Nevertheless, during Ptolemy III's campaign into northern Syria during the conflict, Seleucia in Pieria, the major port of Antioch, was captured and held till 219BC, and Antioch and much of the Seleucid heartland was under Ptolemaic control (Burstein 1985: nos. 98-99; with Bagnall 1976: 13; Jähne 1974: 513-515; Grainger 1991: 84; Hölbl 2001: 48). This Ptolemaic occupation of Syr-

ia is supported by epigraphic and numismatic evidence. At Ras Ibn Hani, on the cape of the North Syrian coast about 10km north of Latakia, an inscription suggests the presence of a garrison of Ptolemaic mercenaries (Rey-Coquais 1978: 324-325), and coins from the area include issues of Ptolemy II and III with coins of Aradus beginning in year 22, i.e. 238/7BC (Augé 2000: 67-68). This is the same date for the Aradus coins at Petra from our excavations and the date of the Aradus coins in the Negev, suggesting commercial exchanges between the Ptolemies and the Phoenician island after the end of the conflict in 241BC. It can be suspected that much of the northern Phoenician coast, including Aradus, came temporarily under Ptolemaic suzerainty/sway at the time (Davesne 1999: 127). Aradus was far too important strategically and commercially to be ignored by Ptolemy III. Whatever the case, the finds of Aradus coins at Petra and the Negev suggest the flourishing of the trade route between the Nabataean capital and the Mediterranean port at Gaza in the late third century BC (see Graf 2006), presumably in transporting the "frankincense and myrrh and other spices" as Hieronymus of Cardia already reported almost a century earlier (in Diodorus 19.94.5).

These results from the HPP in 2004 suggest that further exploration of the Petra civic center should be productive in exposing even further evidence of the early Hellenistic settlement. The rather shabby and modest domestic buildings exposed in our trench 3 confirm the existence of a settlement in the early Hellenistic era, just as Parr's earlier discoveries along the Colonnaded Street had already suggested. The possibility of more important and larger structures of the period can be assumed. The unsophisticated dwellings we discovered in trench 3 are built directly on the wadi bed and were probably only peripheral to a larger settlement. The coinage evidence from our trench 2 and elsewhere in the civic center suggests the vitality of the commercial relations the settlement was engaged in during the third century BC. More substantial buildings surely must have existed on the hills above to the south of the wadi where major constructions later took place, and scattered early Hellenistic finds have been made. It may be assumed these structures were largely destroyed, their remains scraped and cleared away into dumps, where most of the Hellenistic period finds have occurred. In their place, the impressive later Nabataean and Roman city was erected. What has largely prohibited the discovery of this pre-existing Hellenistic settlement has been the widely held view that the Nabataeans were essentially nomadic before 100BC. As a consequence, the fascination for scholars has been the standing ruins and monuments at Petra ignoring any possibility of a prior occupational history of the settlement. The traces we have discovered of this earlier culture suggest a re-evaluation of this prevalent thesis is needed. Based on the results of our first season, we plan to continue our pursuit of "Hellenistic Petra".

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