PRELIMINARY REPORT ON EXCAVATIONS IN THE NABATAEAN TOWN AND ROMAN VICUS AT ḤUMAYMA (ANCIENT HAWARA), 2008

M. Barbara Reeves, Ian Babbitt, Katie Cummer, B. Vicky Karas, Brian Seymour and Andi Shelton

Introduction

Ḥumayma, ancient Hawara, is the largest Nabataean and Roman period site in the Ḥismā desert of southern Jordan. Two decades of archaeological work at the site (under the direction of John P. Oleson of the University of Victoria) have revealed much about the cisterns and aqueduct built in conjunction with the Nabataean town, as well as about the Roman fort (established in the early second century AD), five Byzantine churches (built in the fifth-seventh centuries AD), and the Abbasid family's qaṣr and mosque (built in the seventh century AD). In spite of all this past archaeological work, however, two fundamental components of the site's history remain poorly understood: the Nabataean and Roman period civilian communities.

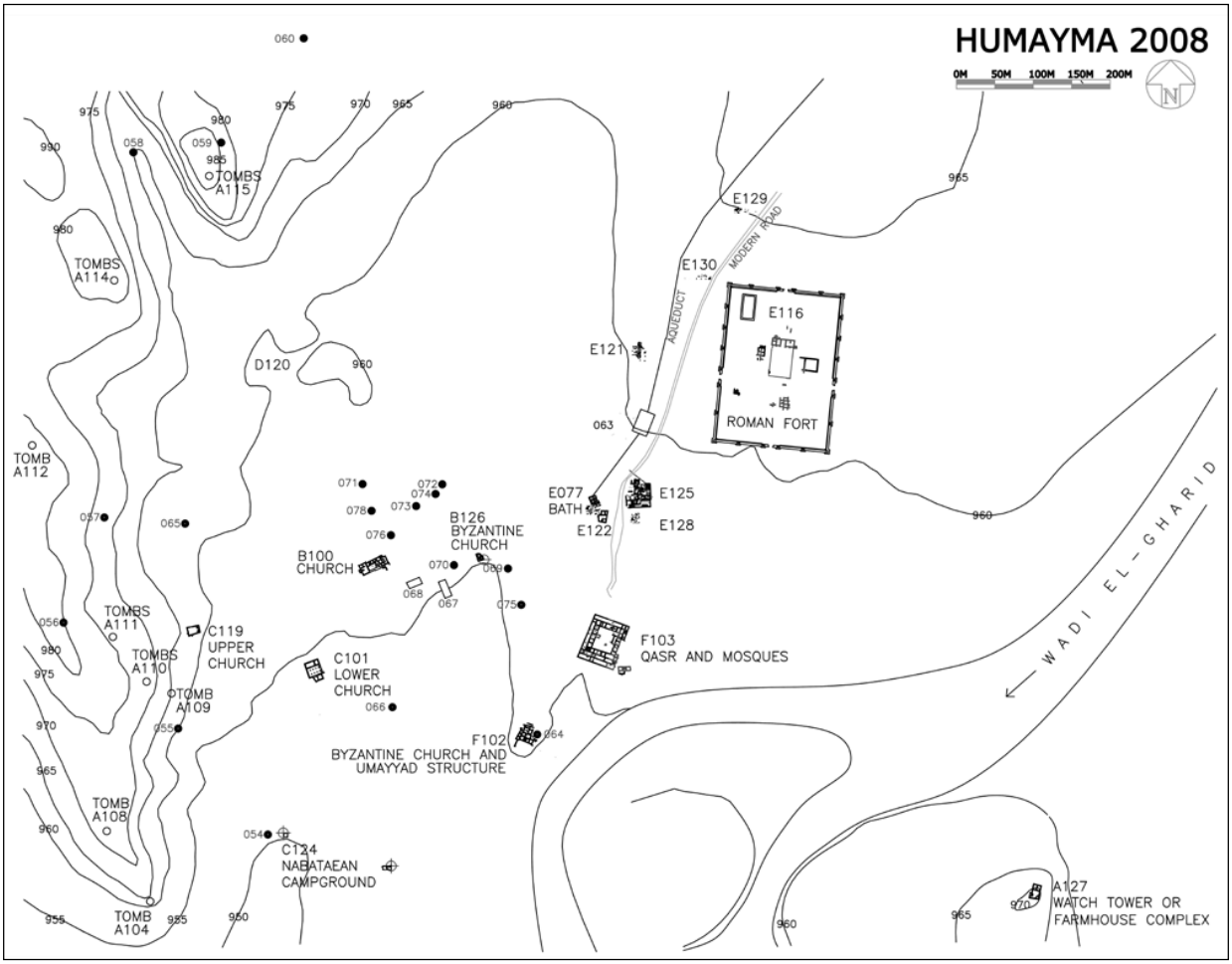
In 2008 a new cycle of excavations was begun (under the direction of M. Barbara Reeves of Queen's University) with the goal of investigating the character and extent of Hawara's Nabataean and Roman period civilian communities and, more specifically, to see how the nature of these communities changed as the Roman military presence at Hawara evolved[1]. Hawara, which had been founded as a Nabataean town in the first century BC, was chosen as the site for the one of the earliest and largest forts built immediately following the creation of the Roman province of Arabia. Hawara's military garrison and civilian community would co-exist for a further 300 years, during which there were great changes in social and political conditions in *Provincia Arabia*. Based on Oleson's past work on the Roman fort (E116) and Reeves' past work on the *vicus* (the civilian community outside the fort), five critical periods in Hawara's history have already been identified which will now be targeted in order to trace the evolution of military - civilian relations at this site: (1) the Nabataean town before the arrival of the Roman garrison, (2) the imposition of a 500 man Roman garrison in the early second century, (3) the revolt of Zenobia and the departure of the garrison in the late third century, (4) the return of a much smaller garrison in the early fourth century, and (5) the abandonment of the fort in the late fourth century. For the 2008 campaign, we targeted four different areas around the perimeter of the fort where, on the basis of past probes and geophysical data, we hypothesized that we would find buildings dating from the Nabataean to the Byzantine periods, as well as traces of the *Via Nova Traiana*, or the earlier

1. The 2008 season of the Humayma Excavation Project took place between 4 May and 17 June 2008. The project was run under the aegis of Queen's University, Kingston, Ontario, Canada. Project funding was provided by the Taggart Foundation and Queen's University. Fellowships from ASOR (Heritage Fellowship, V.B. Karas) and CASOR (Mary Louise Mussell Fellowship, K. Hadfield) assisted with the participation of specific team members. The project director was M. B. Reeves. Field supervisors were Ian Babbitt (E121), Katie Cummer (E128), Barbara Fisher (E077) and Brian Seymour (E129 and E130). B. Vicky Karas served as the conservator, Andi Shelton as the ceramicist, and Devon Skinner as the architect. Amer Bdour was the representative of the Department of Antiquities to the project. Profiles for the pottery plates were drawn by Sherry Hardin and inked by Andi Shelton. The Humayma Excavation Project is accredited by the Archaeological Standards Committee of the American Schools of Oriental Research and licensed by the Department of Antiquities of the Kingdom of Jordan. The Project Director is very grateful to Dr Fawwaz al-Khraysheh, Director General of the Department of Antiquities, and to Dr Barbara Porter, Dr Pierre Bikai, Dr Chris Tuttle, and all the staff at ACOR for their assistance with the project.

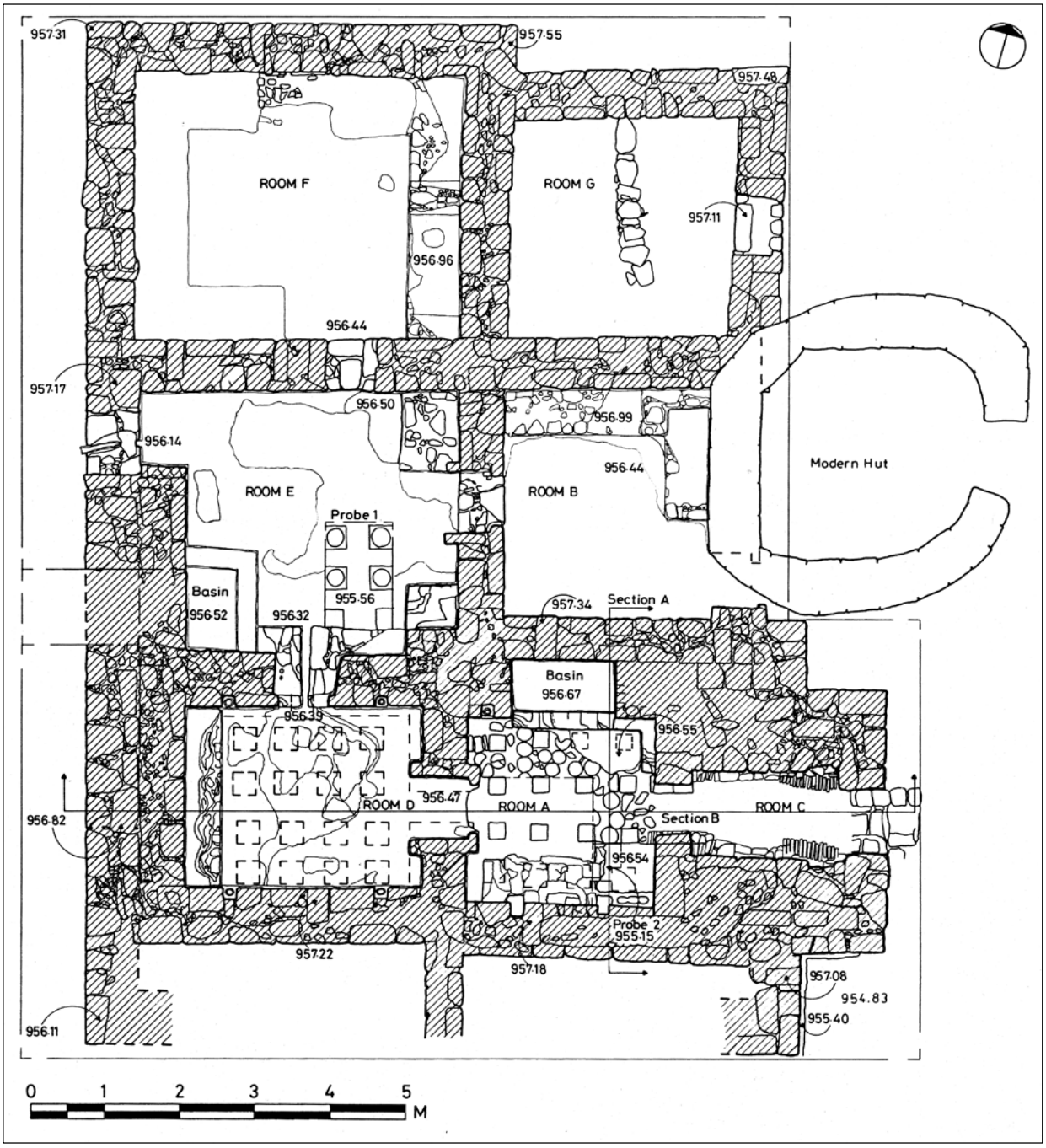
King's Highway.

Field E077: Leveled Nabataean Structures and the Roman Bath-House (M.B. Reeves**)**

Field E077 was reopened in 2008 with the goal of learning more about high status structures in Nabataean Hawara and to examine their fate following the arrival of the Roman garrison and the construction of its bath-house in the early second century AD. The field is located *ca* 150m south-west of the south-east corner of the Roman fort (Field E116) and near to the Nabataean and Roman structures in Fields E122, E125 and E128 (**Fig. 1**). Above ground all that can be seen of the ruins in Field E077 is the Roman period bath-house which Oleson excavated as part of his Hydraulic Survey in 1989 (**Fig. 2**; Oleson 1990: 294-306; cf. Reeves 1996). At that time Oleson determined that the walls of the bath-house had been laid on top of the walls of a partially dismantled Nabataean structure that had extended at least one meter south of the bath-house and whose walls (of sandstone blocks with diagonal trimming) had been more carefully constructed than the mortared rubble walls of the later bath-house. Subsequent small probes in 1996 and 2000 revealed the presence of another robbed-out wall (**Fig. 3**), indicative of a second Nabataean building, to the south of the south-west corner of the building under the bath. As excavations done at the site since 1989 had revealed that all other traces of non-hydraulic structures of Nabataean Hawara had been built over in subsequent centuries, it was decided to target the structure to the south of the bath in 2008. As no wall-lines were visible on the surface to the south of the bath it was hoped that this second Nabataean building would not have been built over. Moreover, its stone construction, which places it on par with



1. Plan of site with indication of ancient structures.



2. Plan of E077 after 1989 excavations.

the Nabataean shrine in Field E125 as opposed to the Nabataean mudbrick structures in Field E128 and elsewhere in Field E125, further suggested that this building would be of high status, perhaps a civic administrative structure or the house of an important individual.

Our strategy for the 2008 excavations in Field E077 was both to determine the extent of the remains of the southern Nabataean building and to excavate fully (for the first time) the southern edge of the northern Nabataean building. For consistency with other excavated fields at the site a cardinally oriented grid of 6 x 6m squares was laid over the southern portion of the field (**Fig. 4**). The first square excavated encompassed the south-west corner of the northern

3. Sections of two Nabataean buildings in probe to southwest of bath-building in 2000.

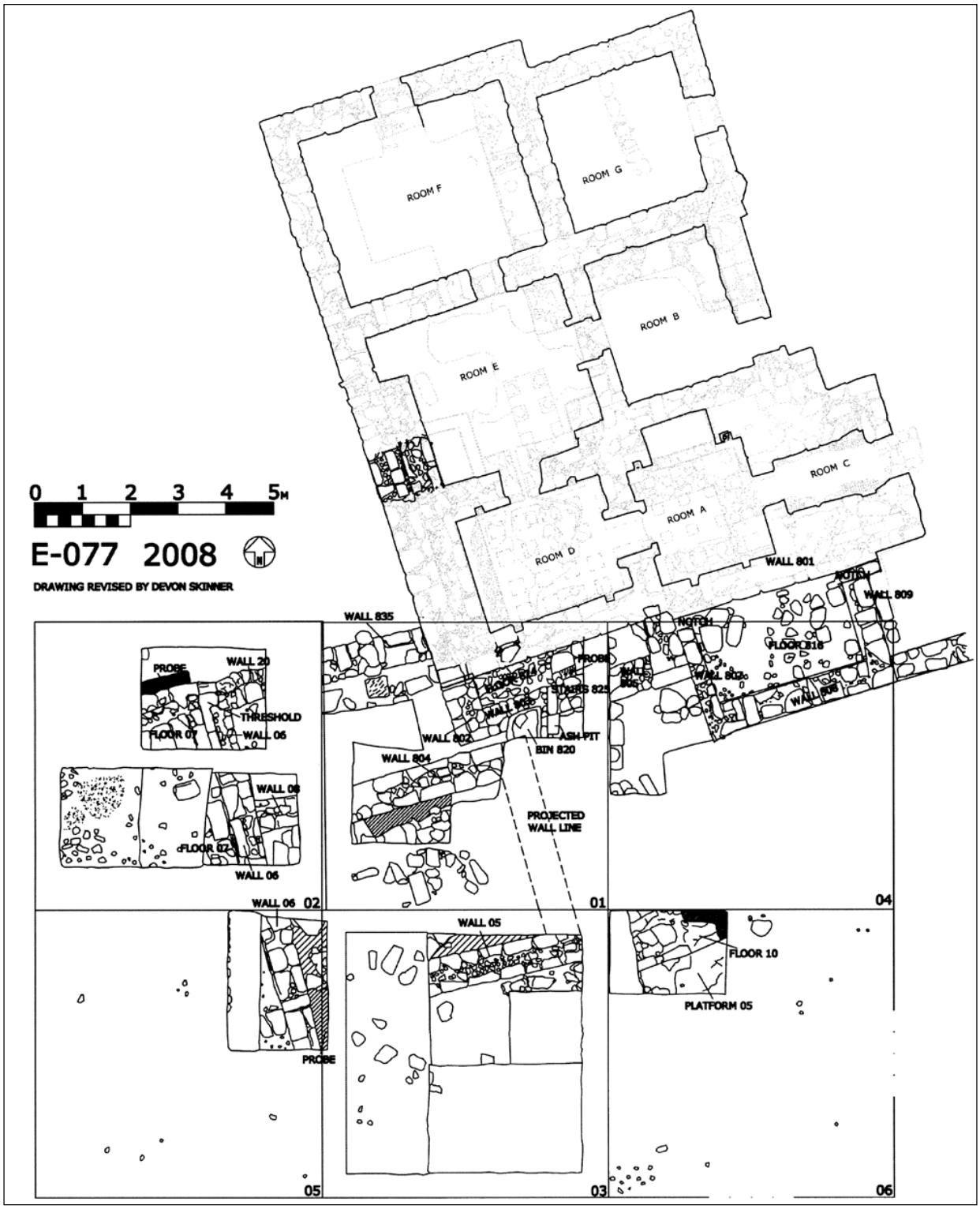
building (which is oriented 20° west of north) and the previously exposed portion of the southern building, as well as the areas to their south, west and east. Subsequent squares bear numbers corresponding to the order in which they were opened for excavation.

Before describing the findings of those excavations, a few comments are necessary regarding the fill over the buried Nabataean structures. The probes conducted in 1996 had suggested that the upper layers of the fill had been contaminated by twentieth century activities in this area which included the disturbance associated with an individual who had lived in this field between 1948 and the mid-1960s (Oleson 1990: 294), with the excavation of the bath-house in 1989, and with the bath-house's consolidation in 1996 (Oleson *et al*. 1999: 446-7). During the 2000 excavations at the site, the directors had therefore taken advantage of the presence of a bulldozer and dumptruck in order to remove the most heavily disturbed layer of the surface against the south face of the bath. Probes conducted immediately afterwards suggested we had been successful in removing the contaminated overburden, a finding supported by the stratigraphy of our 2008 excavations in this area.

The 2008 excavations in this area confirmed that at least two finely constructed stone buildings were erected in this part of the site in the Nabataean period. The two buildings shared a common orientation of 20° west of north, which differs from the due north orientation of the Nabataean buildings in nearby Fields E125 and E128, suggesting that the E077 buildings formed part of a distinct neighborhood. It is also important to note that adjacent walls of the two buildings (in Square 01) come within *ca*. 0.20m of each other, probably meaning that they abut at foundation level just like the walls of adjacent Nabataean buildings in Field E125 (Oleson *et al*. 2008: Fig. 3).

The southern edge of the northern building extends 1.35m past the later southern wall of the bath on the west and 2.8m past it on the east, forming the southern edge of three rooms. The western room had a cobblestone floor and three short stairs leading to an external door in the center of the room. The central room has two symmetrical but unexplained notches in its side walls (just south of where the southern wall of the bath was inserted) and no visible door, meaning its entrance must have laid within the side of the room incorporated into the bath. Finally, two of the walls of a room to the east were also exposed but will not be explored until a future excavation season.

A corner of the southern buildings was first found in Square 01 (exposed in the fill of later Bin 820). From there traces of the building were revealed in Squares 01, 02, 03 and 05. To the west of the wall in Square 02 there is a carefully laid flagstone floor with a deep cobble packing (**Fig. 5**), indicating that this must once have been an important building. A further sign of the care taken in constructing this building are the thick layers of extremely hard-packed soil containing white nodules found beneath both the flagstone floor in Square 02 and the wall in Square 05. Although this soil is probably of natural origin (see discussion of Fields E129 and E130 below), by choosing to build upon it (rather than on sand as



4. Plan of E077 after 2008 excavations.

was often the case in Field E125), the builders gave this building a very secure foundation. The full plan of the building will have to wait until a future season as the flagstone floor in Square 02 indicates that the building continues to the west and the wall in Square 05 indicates that it also

5. E077 Square 02: Floor 07, Walls 06 and 20.

6. E077 Square 02: Nabataean floor (07) and robbed-out walls (06 and 08)

continues to the south. As for the wall running enigmatically between Wall 06 in Square 02 and the western edge of the bath-house, it is a cruder construction than all the Nabataean walls, suggesting that it was not part of the original southern building.

Although the phasing of these buildings must remain tentative until foundation probes can be laid in sealed contexts, the excavations we have done suggest the Nabataean buildings were probably constructed in the first century AD. In the second century, in association with the construction projects of the new Roman garrison, the buildings in this area underwent a profound change. On the one hand, the buildings in this area were extensively robbed of their architectural blocks, and on the other hand, a bath-house for the Roman garrison was built overtop of parts of the northern building.

Oleson's original excavations of the bath had already shown that the bath's walls were built overtop of a robbed out Nabataean structure, but the extent of this robbing was only made clear in 2008. As **Figures 5 and 6** show, extant sections of the original walls of the southern Nabataean building and the western side of the northern Nabataean building have generally been robbed out to either the level of the floor or, lower still, to the level of the cobblestone foundations. It is also clear that sometimes the floor and wall stones have been completely taken away, as is the case on the north side of Square 02 (**Fig. 5**) or in the north-east corner of Square 05 where the expected continuation of Wall 05 from Square 03 was not found. Foundation probes done along the east face of Wall 06 in Square 05 (where the cross wall is missing) and along the north extant edge of the flagstone floor in Square 02 suggest the southern building was robbed out after the first century AD. Moreover, the fill overlying the cobblestone floor in the south-west corner of the northern building contained fragments of hypocaust tiles, flue tiles and water pipes, along with pottery sherds dating from the late first to the second century AD, implying that this area against the bath's new southern wall lay open when the Roman period bath was being constructed. Given the extensive reuse of Nabataean architectural blocks in both the Roman fort and the Roman bath it is likely that the soldiers of the new garrison acquired some of those blocks by robbing out the Nabataean buildings in Field E077. It is also possible that the extant structures to the south and west of the new Roman bath were deliberately dismantled so that they could not block light from entering the windows (attested by glass fragments) of the bath's heated rooms (Room D and Room A), which, just as the Roman architect Vitruvius recommended, faced south and west to take in the afternoon sun (*De Arch*. 5.10.1).

In contrast to the extensively robbed out walls on the western side of the excavation area (Squares 01, 02, 03, 05 and the western side of Square 04), the walls in the north-east corner of Square 04 (corresponding to the truncated central room south of the bath) are preserved to a greater height (**Fig. 7**). The reason for these differences between the two sides of the field seems to be explained by the ceramics overlying the room's floor. Whereas evidence suggests that the structures on the western side of the field were abandoned in the Roman period,

7. E077 Square 04: Room of Phase I bath-house abandoned in Phase II renovations.

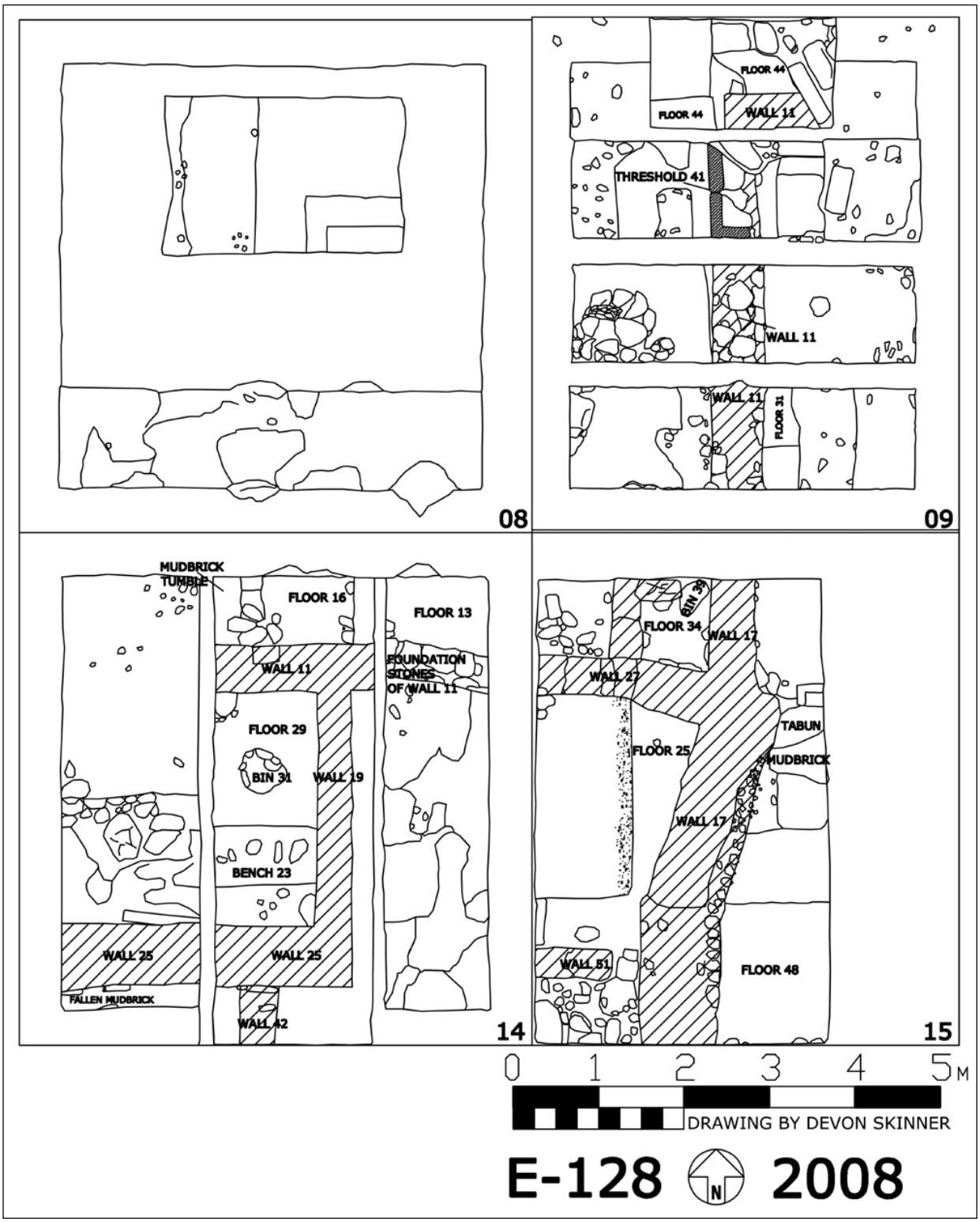
the ceramics found on Floor 816 suggest this area was abandoned in or after the Early Byzantine period. Moreover, since Oleson found evidence that Room A (the *calidarium*) in the bath-house had been renovated in or after the Early Byzantine period and that Room C (the *praefurnium*) had been renovated in or after the Late Byzantine period (Oleson 1990: 304-5), it seems likely that our area was abandoned during one such revision of the bath. The floor level of this area (similar to that of the lowest floor in Room A) and the characteristics of the (later) southern wall of the bath (whose eastern section abuts the western section and is slightly south of it), further suggest that this area formed part of the Phase I bath-building. The first phase of the bath corresponds to the time when there were up to 500 soldiers living in Hawara's fort and using this bath. In contrast, the Phase II renovations correspond either to the fourth or early fifth centuries when a much smaller garrison occupied the fort, or to the subsequent period when the fort had been abandoned. Since this bath was intended for the use of the Roman soldiers, it makes sense that it would have been larger in Phase I when the garrison was larger. Next season we plan to look for more evidence of this larger Phase I bath-house to the east of this area, where the south wall of another room has already been observed just beneath the fill. We also need to determine the relationship of the platform and floor in Square 06 (overlain by fifth century ceramics) to the Byzantine and earlier phases in this area.

After the eventual abandonment of each of these areas, strata formed above them which record the subsequent uses of this field over the next several hundred years. These strata reveal that the area was repeatedly used as a place to dump the ash pulled out of the bath's furnace when it was being cleaned. In addition there are other layers of bath dump which contain not just ash but also broken flue and hypocaust tiles suggesting that they relate to renovations carried out on the bath-house. Strata containing concentrations of lime nodules or gravel may also relate to such renovations (**Fig. 6**). Finally, there are occasional later floor levels and features (such as the plastered bin overlying Wall 803 in Square 01) which provide evidence of continued human activity in this area, perhaps also associated with renovations to the adjacent bath. The latest pottery overlying the highest floor consists of two sherds dating to the Abbasid period, but further evidence will be needed to determine if the bath-house was still in operation at that time.

Field E128: Nabataean and Roman Mudbrick Structure (M.B. Reeves and K. Cummer)

Field E128 consists of a small mound immediately south of Field E125. Given the proximity of this field to the Nabataean and Roman period structures in Fields E125, E122 and E077, we thought it likely that the mound would contain a structure of a similar date. Moreover, as the there were no wall lines or large stones visible from the surface, we thought the field would probably contain another mudbrick structure, similar to those discovered in Field E125. To test these hypotheses, we probed the highest point in the mound at the end of our 2005 excavation season. This probe confirmed the presence of two walls from a mudbrick structure, possibly of Nabataean origin, which showed signs of successive use (Oleson *et al*. 2008: 317-8). To learn more about this structure and about how the field was used in the Nabataean, Roman and later periods, we began more extensive excavations in Field E128 in 2008. A grid of squares (6 x 5-6m, sequentially numbered from the mound's north-west to south-east corner) was placed over the field. For our first season, the square containing our original probe was more fully excavated (Square 15), and three new squares were opened to its north, west and north-west (**Fig. 8**).

Our 2008 excavations confirmed the presence of a building oriented on a north - south, east - west grid, just like the Nabataean and Roman



8. Plan of E128 after 2008 excavations.

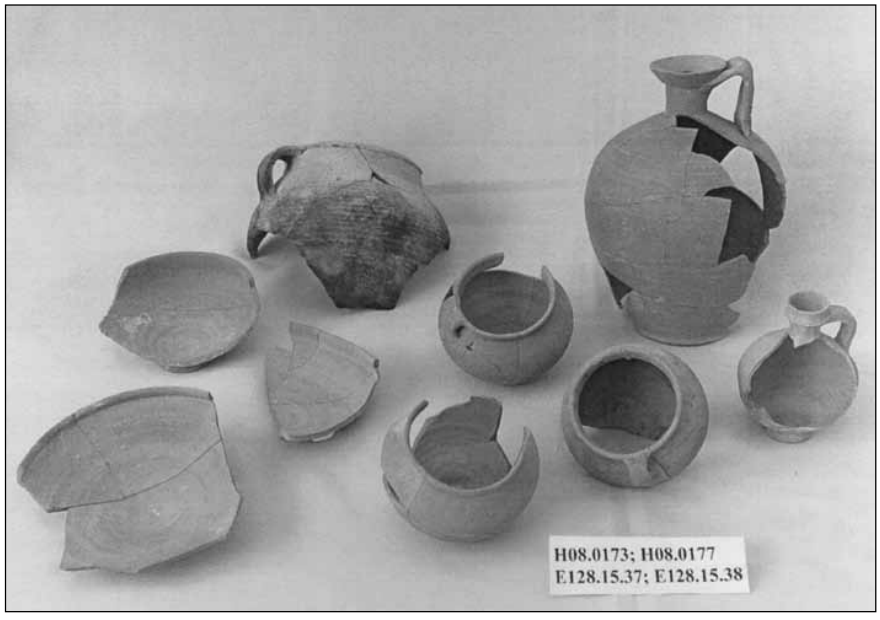
structures in Field E125. Somewhat surprisingly, however, the construction technique of those walls did not directly match any of many construction techniques already observed in E125's walls or elsewhere on site. As **Fig. 9** shows, the walls of E128 contained an eclectic mixture of

9. Mudbrick walls and later 'bin' over debris in northwest corner of Square 15.

building blocks. Both mudbricks and ashlars were laid together in a seemingly random fashion on top of the building's multi-course cobblestone foundations. Moreover, mudbricks used in the same section of wall sometimes varied considerably in color and fabric, suggesting they had been made in at least three separate batches. The impression is that the building in E128 had been constructed from building blocks taken from all over the site.

The reason for the building's eclectic construction materials may relate to the date of its construction. A sherd of NPFW-3b pottery found in a foundation probe outside a corner of the building suggests the walls were built sometime after the third quarter of the first century AD. A large concentration of semi-restorable vessels and pottery sherds (**Fig. 10**) found in an external corner of the building (Square 15, north of Wall 27 and west of Wall 17) further suggest the building was constructed before the middle of the second century AD. This pottery collection is discussed more fully below in the ceramicist's report. The ceramics were found immediately west of three mudbricks laid at a right angle to the corner (Bin 39; **Fig. 9**). Below these mudbricks was a 0.5-0.6m thick layer of building debris which sat on a probable first century soil layer. Although the full archaeological context of this assemblage cannot be known unless we remove the baulks to its north and west, the lack of any complete vessels and of a related cooking or domestic context suggests that the vessels and other objects represent a dump of broken or unwanted objects thrown outside the walls of the building.

Putting all of this information together, it seems that the building was constructed sometime between the third quarter of the first and the middle of the second century AD. Its construction from such an eclectic mixture of building materials may suggest that it was constructed from recycled stones and mudbricks taken from damaged structures located around the site. Similar recycling of building materials is observable in Hawara's Roman fort (E116) which was constructed soon after AD 106 from stones taken from the pre-existing Nabataean town. Whether



10. Semi-restorable vessels found together in E128 dump.

the structures in the Nabataean town had been knocked down by the Roman army (cf. Schmidt 1997) or by an earthquake (perhaps in 113 / 114; Russell 1985) is still not clear. It is likely, however, that E128 was built after the town had been damaged by a cataclysmic event.

As originally constructed, the external edge of the building ran north-south along the north side of Square 14 to the center of Square 15 where it turned north and ran almost to the top of Square 09 where it turned eastward. All of Square 08, as well as the northern quarter of Square 14, the north-west corner of Square 15, and the western half of Square 09, is either outside the building or in a courtyard. The only possible features in this area were the mudbricks laid out in the corner of Square 15. A door in the northern half of the north-south wall in Square 09 led from this external / courtyard area into the rooms of the building. There was one large room in the eastern half of Square 09 and at least four rooms south of the northern perimeter wall in Squares 14 and 15. The two northernmost rooms in Square 14 and 15 are less than 3m north - south and the easternmost room (straddling Squares 14 and 15) is *ca*. 4m east - west. Almost half of the north-south stretch of the westernmost room is taken up by a wide mud-plaster bench and there was a bin or pit cut into the room's floor. Another wall extends southward from the bottom of Square 15 indicating that more rooms lie in that direction. Based on the direction of walls and the projected size of rooms, it is also likely that the building continues to the west of Square 14, to the east of Square 09 and, by projection, to the east and south of Square 15.

The pottery sherds found on the earliest floors and bench inside the rooms are consistent with the building first being used in the second century AD. This period of use probably came to an end when an earthquake caused great damage to some of the walls in Squares 14 and 15. This can be seen most clearly in the plan (**Fig. 8**) where the southern extent of Wall 17 in Square 15 has shifted considerably westwards. At present there is not enough data to speculate on the date of this earthquake. The tabun and bin on the east side of Wall 17 were much higher than the building's original floor levels, indicating subsequent use later in the second century (to judge by the ceramics) or in the early third century (to judge by a coin). More excavation will be required to finalize the dating of this reuse and to determine if this reoccupation pre-dates or post-dates the earthquake. After it was last occupied in the third century, Field E128 seems to have been used as a dump up until the sixth century. There are a great deal of animal bones, seashells, ash and artifacts associated with this dump. Moreover, the dump is somewhat stratified, being sealed on several occasions by layers of decomposed mudbricks which have probably fallen from the adjacent walls. A selection of the artifacts found in this dump is included in the catalogue at the end of this section. After the sixth century, there is no evidence that there was any activity in this field until the middle of the twentieth century. According to our bedouin workers, the late Abu Adega had lived in a tent in this area at that time. Three postholes pushed into the decomposed mudrick (**Fig. 11**), a line of stones and a large quantity of camel bones just below the surface may date to his occupation. Finally, it must be noted that the occupational history of this field has been obfuscated by a series of rodent tunnels running throughout and between the decomposed mudbrick layers (**Fig. 11**). Indeed, on more than one night, rodents dug into the areas we had just cleared and we returned in the morning to find a hole in our excavation area with a pile of pottery sherds pushed out of its interior (**Fig. 12**).

Catalogue of Objects from the E128 Dump

Abbreviations: D: Diameter; H: Height; L: Length; MPL: Maximum Preserved Length; Th: Thickness; W: Width.

Fig. 13.1. H05.0264.01. Copper alloy cosmetic instrument consisting of a rod with a bulbous lower termination and a leaf-shaped upper termination (whose tip is lost). The square shaft has been twisted for a neat, decorative spiral form. MPL: 11.2cm; W: 1cm; Th: 0.2-0.5cm. Found in E128.15.26. Associated ceramics date to the late first to third century; phasing probably second-early third century.

Fig. 13.2. H08.0005.02. Round flat worked shell disk with a hole drilled through the center; broken. The hole has been drilled from one side only. D: 1.8cm; hole D: 0.3cm; Th: 0.25cm; < 2 g. Found in E128.14.01. Associated ceramics date from the late first to late third or early

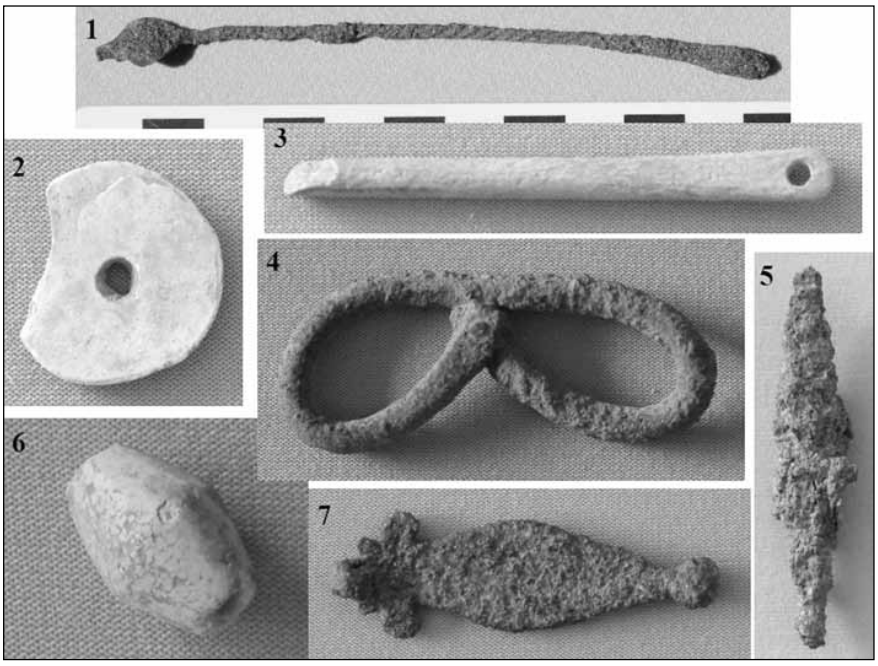
11. Decomposed mudbrick layer with old animal burrows and possible posthole, E128 Square 14.

12. Pilgrim flask fragment pushed out of a new rodent hole in E128.

fourth century AD.

Fig. 13.3. H08.0063.02. Eye and part of shaft of a bone needle. Sides are relatively flat. MPL: 5.1cm; width tapers from 0.45cm (at eye) to 0.35cm (at break); Th (at eye): 1.5cm; Th (at break): 0.35cm; hole D: 0.2cm; < 2 g. Found in E128.08.01. Associated ceramics date from the first to third century AD; phasing probably second century.

Fig. 13.4. H08.0013.01. Copper alloy object made from a rounded piece of wire folded into the center from both ends and punched flat and riveted to form a shape like a capital "B" (i.e. flat on one side and curved on the other). The object may be a string or harness attachment. L:



13. Objects from E128 dump.

4.8cm; W: 1.9cm; Th (wire): 0.3-0.4cm. Found in E128.14.03. Associated ceramics date from the late first to fourth or fifth century.

Fig. 13.5. H08.0253.01. Corroded iron arrowhead; pointed tip broken. Measurements after cleaning: MPL: 6.6cm; MPL (head): 4.5cm; head Th tapers from 1.5 to 0.4cm (at broken top); tang L: 2.0cm; tang D: 0.5-0.7cm; 10 g. Found in E128.08.02. Associated ceramics date from the late first to early third century AD.

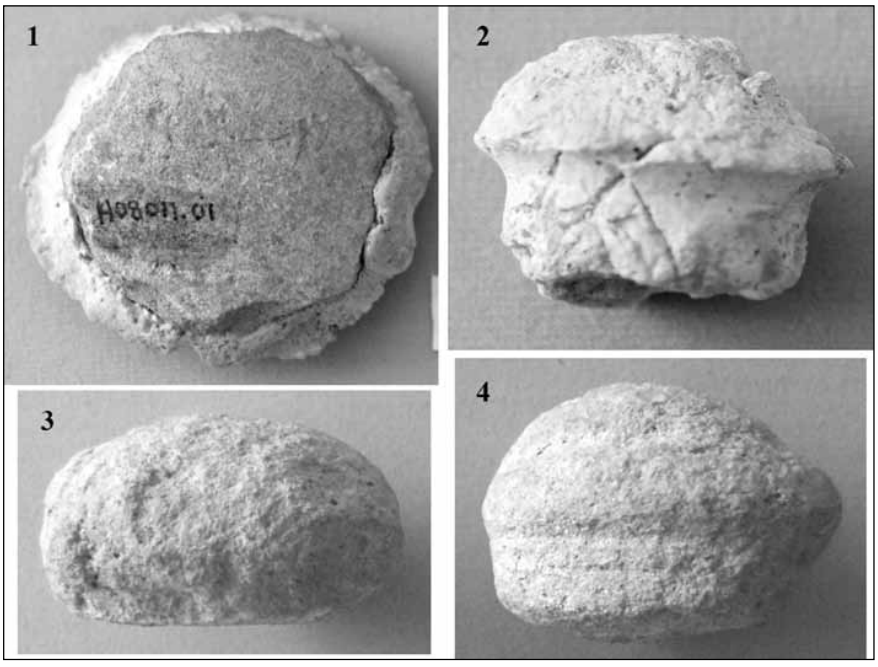
Fig. 13.6. H08.0002.01. Worked bone bead perforated through the length with a hole. Melon shaped with widest section (W 0.85cm) midway between two holes; five flat faces taper from midline to each end. L: 0.12cm; W (at center): 0.8cm; W (at each edge): 0.5cm; hole D: 0.2cm; < 2 g. Found in E128.14.02. Associated ceramics date from the late first to second century.

Fig. 13.7. H08.0005.01. Copper alloy pendant constructed from a piece of sheet metal. Thin tang bent at top for suspension extends 0.3cm both above and out from flat plane of body. Rhomboid-shaped with two projecting arms above. Spherical knob at lower end. knob D: 0.5cm; L: 4.1cm; W (central bulge): 1.2cm; W ("arms"): 1.25cm; W (above bulge): 0.35cm; W (loop): 3.5cm; body Th: 0.2cm. Perhaps attached to military dress or a horse harness (cf. James 2004: 91). Found in E128.14.01. Associated ceramics date from the late first to late third or early fourth century AD.

Fig. 14.1. H08.0011.01. Jar stopper formed from a reworked body sherd "plug" covered by a circular plaster sealant with a curved top. The sealant runs partway down the sides of the plug. The coarse ware body sherd has been reworked into a roughly round shape. The attached plaster sealant is very hard and retains the impression of the jar which it covered. The ceramic plug has pale red fabric (10R 6/3) with very pale brown slip (10YR 7/3). On the surface the plaster sealant appears to be whitish with many small voids. Plaster D: 5.1-5.6cm; ceramic plug D: 4.1-4.4cm; total thickness varies from 0.9cm (on one edge) to 1.9cm (in center); plaster thickness *ca*. 0.7cm; plug thickness: *ca*. 0.9cm; 48 g. Found in E128.14.01. Associated ceramics date from the early second to fifth / sixth century.

Fig. 14.2. H08.0271.01. Complete vessel stopper crudely molded from hard sandy white plaster. Top is convex; bottom concave. Bottom shows imprint of vegetative material, probably straw (stalks 0.1cm W). Th: 2.0-2.35cm; head D: 2.8-3.0cm; shaft D: 2.5cm; 14 g. Found in E128.08.06. Associated ceramics date from the first to third century AD; phasing is probably first / second century.

Fig. 14.3. H08.0138.01. Friable yellow sandstone vessel stopper with one flat face and one curved face. Th: 3.0cm; D (flat face): 4.1cm, D



14. Vessel stoppers from E128 dump.

(curved face): 5.3cm (at widest), tapers in towards each face. 36 g. Found with similar object H08.0138.02 in E128.09.10. Associated ceramics date from the late first to early third century; phasing probably late first to early second century.

Fig. 14.4. H08.0138.02. Sandstone vessel stopper with one flat face and one curved face. In profile, object forms two halves, with widest part of the object in the center (D: 5.9cm). Above this, object has a rounded top; below this, object is roughly flattened. Plug D: 4.8cm; plug H: 1.1cm; object Th: 4.4cm; 192 g. Found with similar object H08.0138.01 in E128.09.10. Associated ceramics date from the late first to early third century; phasing probably late first to early second century.

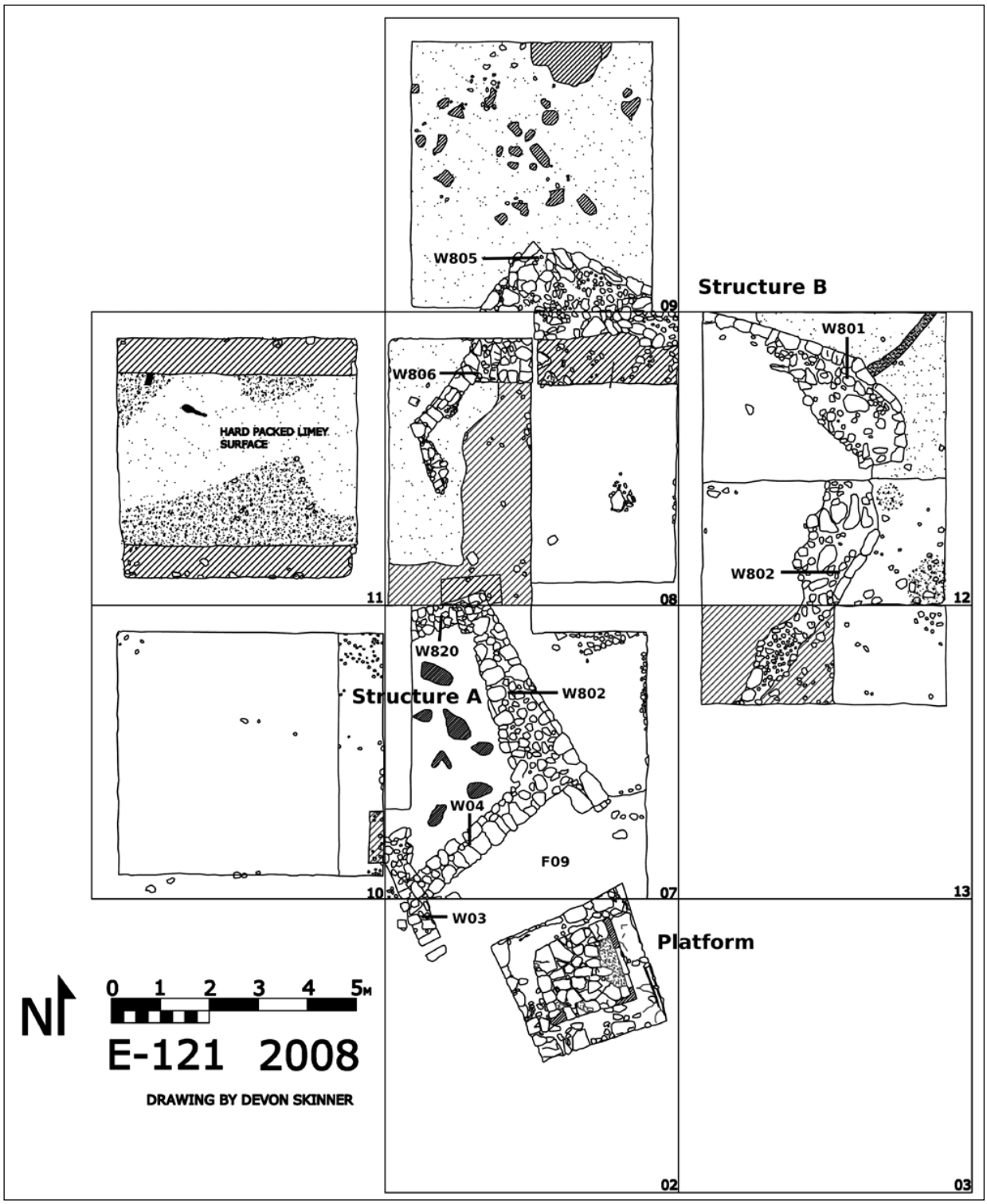
Fig. 15. H08.0179.02. Head of baboon broken from a larger figurine. Deeply pierced eyes, extended snout ending with slightly opened mouth. The back of the head slopes gently towards the back of the neck. Neck is hollow. Back of head is worn and possibly chipped. Coarse red fabric (10R 5/6) with gray slip (5YR 5/1). MPH: 2.7cm; W (ear to ear): 1.8cm; L (back of head to mouth): 2.9cm; Vessel wall thickness (measured at break) 0.3cm. Further discussion in ceramicist's report. Found in E128.08.02. Associated ceramics date from the first to fourth century; phasing is probably second to third century.

Field E121: Roman Platform and Early Byzantine Structures (I. Babbitt and M. B. Reeves)

Field E121 is located on a west-south-west downward slope of the shallow mound *ca*. 20m west of the division tank of the Nabataean aqueduct and *ca*. 70m north of Nabataean Pool / Reservoir 63. This field was originally opened in 1995 in an attempt to uncover further Nabataean hydraulic infrastructure. The area was selected because of several pieces of architecture jutting out from the shallow slope. After three weeks of excavation in 1995, this architecture was uncovered and included a large stone platform and a few associated walls. Neither were associated with the hydraulic works of the site. The associated pottery and a collection of 32 bronze coins pointed to a fourth to fifth century AD occupation. With excavation not producing the desired results, E121 was closed for the remainder of the 1995 season. In 2008, once the research objectives of the project had shifted towards understanding the *vicus*, excavation at E121 was renewed with the hope of fully uncovering an Early Byzantine period construction. Such a structure would fill in a gap in the *vicus*' chronology and would be helpful for determining the character of the *vicus* in the Early Byzantine period after a smaller garrison had returned to occupy Hawara's fort.

15. Terracotta baboon head from E128 dump.

Excavation in 1995 (not previously reported in *ADAJ*) focused primarily along the southern edge of E121. The most interesting discovery was the stone platform located in Square 02 (**Fig. 16**). To the west of the platform was a short, robbed out stone wall (Wall 03), which runs parallel to the west edge of the platform and proceeds north-west through Square 07. To follow the wall, a 2m wide probe was excavated in Square 07 along its southern edge. Excavation here revealed another short stone wall (Wall 04), almost perpendicular to and partially bonding with Wall 03 (**Fig. 17**). Attached to the eastern edge of Wall 04 was a truncated southern extension of a wall, represented by only two foundation stones. This presumed wall appears to have been opposite Wall 03 extending south towards the north-east corner of the stone platform. To understand more fully the relationship shared between these walls and the platform, the baulk between Square 02 and 07 was removed. No new architecture was revealed, but a collection of bronze coins, all dating to the fourth and early fifth century (up to the reign of Arcadius) was found. All the coins were very near to each other, suggesting they were dropped at approximately the same time. The coins were found between W03 and the north-west corner of the platform and about 0.2m above a beaten earth floor (Floor 09), indicating that they were



16. Plan of E121 after 2008 excavations.

dropped shortly after the abandonment of E121. Subsequent foundation probes along the face of Wall 04 produced Early Byzantine pottery, suggesting that the structures in this area had been constructed in or after the fourth century. Given that an Early Byzantine hydraulic structure was not considered a priority for excavation in 1995, this field was then closed.

17. Squares 02 and 07 at end of 1995 excavations.

In 2008, the project returned to E121 with altered intentions and a renewed interest in the peculiarities of the structures. We initially sought to define the known structures further and determine more clearly their phasing, construction methods, orientation and possible function. With this in mind, a 6m x 6m grid was laid over the area and excavation was continued in Square 07. This revealed a large, three course north-south stone wall (Wall 802), which continued into the north baulk of Square 07. Removal of that north baulk revealed another stone wall (Wall 820), running opposite to Wall 04 and bonding with Wall 802. Subsequent excavation in Square 10 failed to find the continuation of Wall 820 or Wall 03. Collectively Walls 03, 04, 802 and 820 form what is left of Structure A (**Fig. 18**). This is an entirely stone structure, built of a mixture of ashlar blocks, boulders, and cobbles, held together with mud packing. Although this structure has been heavily robbed out, the remains of the walls suggest that it once contained at least two square rooms that would have been oriented *ca*. 20 to 30° west of north.

The most well-preserved and well-constructed segment of Structure A is the bonded corner of Walls 802 and 820. The construction is entirely of large ashlar blocks forming about a 95° angle (**Fig. 19**). Wall 802, however, between this northern, bonded corner and its southern corner, bends becoming slightly concave and creating a *de facto* 105 degree angle at the north corner. The wall also begins to contain irregular boulders and cobbles and a few ashlars, diminishing in quality by the corner of Wall 04 and Wall 802. Similarly, Wall 04 and Wall 03 contain mostly boulders and cobbles, with ashlars used only oc-

19. Northern corner of Structure A, E121.

18. Structure A, E121.

casionally in their foundations. The wall tumble, present in the interior of the structure also suggests that the upper courses were constructed of boulders and cobbles, as opposed to ashlars or mudbricks. The tumble was highly concentrated in the southern interior section, just north of Wall 04. Tumble in the northern section, closer to Wall 820 was far less concentrated, possibly indicating that the northern section of Structure A did not collapse but was dismantled.

The architecture of Structure A is of particular interest. Unlike many other structures in the *vicus* (e.g. E125 and E128), Structure A does not show any signs of mudbrick construction. The quality of the stonework, however, clearly varies. Structure A's northern section displays exceptional quality, most comparable with the fort's interior structures, such as the Latrines or *Principia* (e.g Oleson *et al*. 2003: 40-45). The southern section of Structure A, represented by Wall 03, 04 and the south half of 802 is cruder, seen clearly in the stonework and W802's concavity. This disparity between the north and south halves likely suggests a partial reconstruction of the building with the northern half being the earlier portion. It seems most plausible that this reconstruction occurred in order to make use of the likely pre-existing stone platform, immediately south of Structure A, as a floor. The beaten earth floor (Floor 09), uncovered in the space south of Wall 04, and the platform's surface have very similar absolute elevations and form an unbroken surface. With this in mind, the concavity of Wall 802 might have been intentional; the robbed out southern extension of Wall 802, as suggested by the foundation stones uncovered in 1995, would have passed through the platform if Wall 802 was not concave. The slight concavity, however, ensures that any southern extension goes around the platform's north-east corner.

Structure A's interior ceramics help date its collapse. The tumble produced a typical Early Byzantine lamp base and a few other diagnostic cooking pot fragments, dating from the fourth to the fifth centuries. The thin layer of soil immediately below the tumble and resting on top of the interior beaten earth surface (Floor 814) produced pottery sherds dating to the fourth century AD, which probably represents the latest occupation of Structure A. The collection of bronze coins dating up to the early fifth century AD found 0.2m above Structure A's floor level (in soil from a tumble-free area) suggest this structure had been abandoned by the fifth century. Taken together, the accumulated evidence suggests that Structure A's occupation and abandonment were concurrent with the reoccupation of the fort (in the early fourth century) and its final abandonment (in the late fourth century).

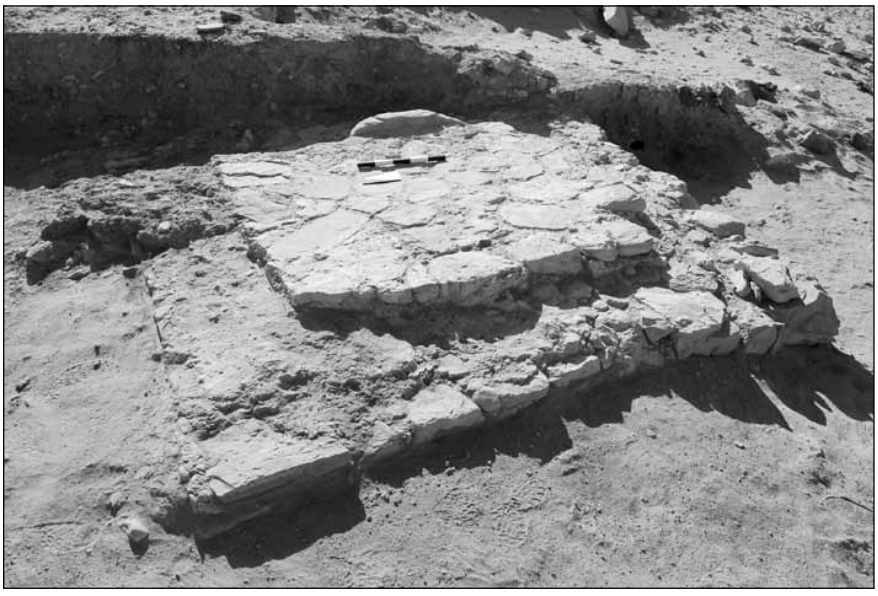
The phasing of Structure A suggests its existence was somehow dependent on the fort, but there is no evidence to indicate whether it was a military or civilian structure. There is also no conclusive evidence suggesting what function this building served. So much of Structure A has obviously been robbed out that it is now impossible to guess at its original plan. None of the pottery sherds found over the floor were from vessels crushed *in situ*. The predominance of coarse kitchen and storage wares among the scattered sherds on the floor hints that there was a food storage and preparation area in the vicinity, but no other artifacts or installations relating to such an area were found, except perhaps for the shallow pits sunk through Floor 814. These pits were devoid of any finds which could point to their function. A tentative hypothesis is that they might have once been used to support the base of vessels, but the shapes of the pits cannot provide conclusive evidence.

Excavation to the north-east of Structure A also revealed a second, large, ring-like stone construction, Structure B, which stretches through Squares 08, 09, 12 and 13 (**Fig. 20**). Structure B's construction is far cruder than anything in Structure A. Its perimeter wall consists of cobbles, boulders and some recycled ashlars, laid in a mixture of dry masonry and mud packing. There is extensive tumble all around the interior of the structure with far less on the exterior. At its widest, between Wall 806 in Square 08 and Wall 802 in Square 12, Structure B is 9.23m wide. It was probably not roofed. Additionally, the tumble, as seen particularly in the north probe of Square 08, suggests a wide but rather short wall. Moreover, Structure B clearly post-dates the abandonment of Structure A as indicated by a large ash layer, stretching through Squares 08, 09, 11 and 12, and proceeding beneath the walls of Structure B, but not those of Structure A. Ceramics from the ash date to the fourth century

20. E121 overview from northwest; Structure B in foreground.

AD, contemporaneous with Structure A. On the other hand, ceramics collected from beneath the wall tumble in Square 08's northern probe date from the fourth to the fifth centuries AD. Considering the size of the structure and its lack of finds, these preliminary excavations seem to indicate that Structure B likely functioned as some sort of animal pen. It seems likely that while Structure B was in use, parts of Structure A were also still standing, particularly the north corner of Structure A, which possibly could have been used to close Structure B.

Contrary to our expectations when reopening Field E121, the fourth century AD occupation was not the first occupational phase uncovered in our 2008 campaign. The very distinct north corner of Structure A, coupled with the clear reuse of the platform as a floor, indicates there was a previous phase of occupation. The platform is likely the primary feature of this earlier period. It is a relatively square stone structure with two apparent courses: a larger cobble and boulder lower course held together with a light grey mortar, and a smaller flat upper course covered with a thick, white pebble-filled floor plaster. The two courses create a stepped appearance (**Fig. 21**). The use of mortar as a binding agent is also unique to the platform among the E121 structures. The larger lower course of the platform is 2.95m wide on its north and east edges



21. E121 platform after excavation.

and 2.62m wide on its south and west edges. These measurements create a slightly skewed quadrilateral, which extends further out at its north-east corner. The upper course, in contrast, is only 1.76m wide along its south and east edges and 1.62m wide along its north and west edges. These dimensions form a second slightly obtuse trapezoid, which is missing part of its north-west corner.

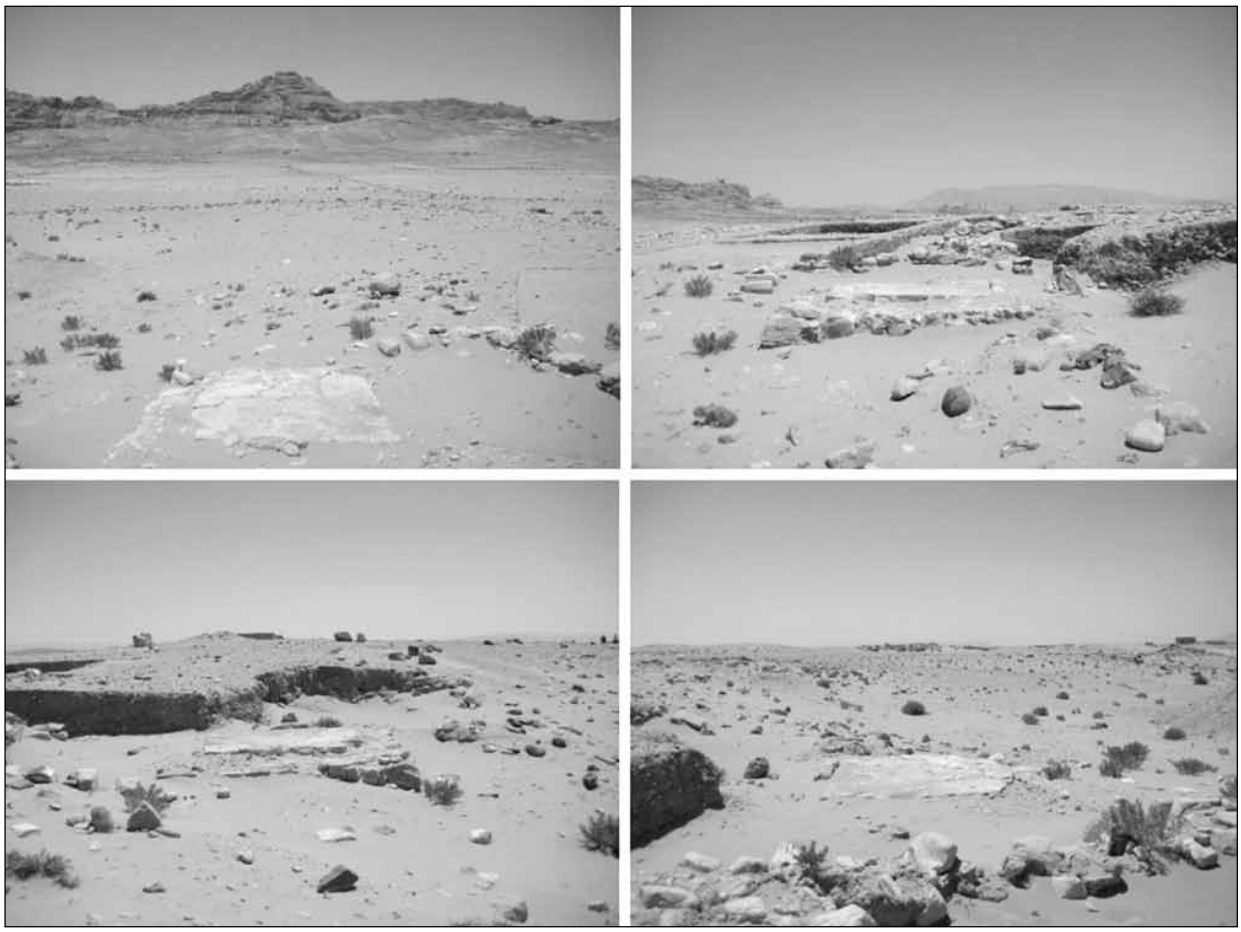
One of the most fascinating characteristics of the platform is that its most well-preserved segments, the lower north and east edges, measure almost exactly 10 Roman feet. The Roman foot (0.296m) was the basic unit of measurement used throughout Hawara's Roman fort (Oleson *et al*. 2008: 318-32). Its application in a structure outside the fort both dates the platform to after the Roman occupation of the site in the early second century AD and implies the involvement of Roman soldiers in its construction. Without a probe through the platform, the exact date of its construction is difficult to determine. Considering the quality of the stonework both on the platform and on the north corner of Structure A, and the unique use of mortar, it seems probable that the platform and the first phase of Structure A date to the first occupation of the fort (mid second to late third century AD). There was considerable activity in the *vicus* during this first occupation, as evidenced by the construction of the garrison's bathhouse (in E077), a house (in E122), and an *insula* and community shrine (in E125).

It is difficult to determine the function of E121's platform when the area immediately around it has been so heavily disturbed by later construction. If the soldiers built it for a military purpose, its location (just west of the west gate of the fort) suggests the platform might have been a raised tribunal in the fort's military parade ground (the *campus*), used by the commanding officer when reviewing troops parading or practicing their drills (cf. Webster 1985: 228-9). If, however, the Roman period inhabitants of the site had built the platform for a civic function, it might have held betyls or a commemorative monument intended to be viewed by people entering the town from the north. In regard to this theory, it is interesting to note that of the four possible backdrops to the platform (**Fig. 22**), the one that would have been seen by someone passing on the eastern side of the platform (where the *Via Nova Traiana* is thought to have run) is aligned with the very same hill that is the focus of the community shrine in E125 (Reeves forthcoming). Finally, it is also possible that the platform was the base of an altar or religious platform, the presence of which might indicate an associated structure nearby, possibly still buried in the deep fill to the platform's north-east. This area will be probed in a future season to test this theory.

One other interesting characteristic of both the platform and the carefully constructed corner of Structure A is that they are oriented approximately 20° west of north. This is very different from the orientation of the fort or of the structures in Fields E125 or E128, but it is the same orientation as the Nabataean and Roman structures in Field E077. The reason for this overlap is not yet clear. The two fields are far apart, so the similar orientation may be accidental if the structures in each field are oriented in terms of local factors. On the other hand, the possibility that this orientation is indicative of some organizing principle at the site warrants further investigation.

Fields E129 and E130: Ancient Roadways, Ploughed Fields and the Site's Most Northerly Structure (M. B. Reeves and B. Seymour)

Fields E129 and E130 were opened in an attempt to confirm the existence of the *Via Nova Traiana* at Ḥumayma and to trace its route through the ancient community. The *Via Nova Traiana*, *Provincia Arabia*'s most important north-south road, was built over the ancient caravan route known as the King's Highway. Compelling evidence that Ḥumayma had been located along these routes is provided by the *Tabula Peutingeriana*, which shows Hauarra (Ḥumayma) on the only road between Aila (ʻAqaba) and Petra, and by milestones and intact paved sections of the road found just to the north and south of the site (Graf 1995). Exactly where the road entered Ḥumayma, however, is not known nor is its route through the site. Finding definitive evidence of the *Via Nova Traiana* or the King's Highway at the site of Ḥumayma would add much to our knowledge of this ancient community. It would allow a better understanding of the town's layout, provide clues to the locations



22. Backdrops to the E121 platform from the north-east (top left), south-east (top right), south-west (bottom left) and north-west (bottom right).

of infrastructure such as pipelines and subsidiary roads, and allow predictions of where commercial and military zones or important private or civic structures might be located.

As early as 1990, Oleson had hypothesized that the *Via Nova Traiana* would run from north-east to south-west though the site in order to enter in tandem with the aqueduct and exit without having to cross over the Wādī al-Ghārid (Oleson 1990: Figs. 1, 2). The hypothesized entry point for the *Via Nova Traiana* was based on the facts that it and the aqueduct had been observed to run in parallel north of the site and that the aqueduct must enter the site from the north-east in order to supply both the fort and town's reservoir (063). Additional evidence for the route of the *Via Nova Traiana* was provided by my 2000 excavations in Field E125 which found that the Nabataean pipeline bringing aqueduct water to the shrine ran under the modern dirt road through the site just north of E125 (Oleson *et al*. 2008: Fig. 2). It was hypothesized that an ancient road, possibly the *Via Nova Traiana*, was located in the same position (Oleson *et al*. 2003: 49). Unfortunately, however, this hypothesis could not be demonstrated without damaging the modern route through the site. Then, in 2002, a geophysical survey, conducted to look for buried structures near the fort, uncovered evidence suggesting that outside the north-west corner of the fort the ancient roads might not be covered by the modern road (Oleson *et al*. 2003: 50-54 and Fig. 14). The data in this area showed three linear anomalies to the west of the modern road running down the west side of the fort. All three anomalies ran from the north-east to the south-west. Based on their signals, two were hypothesized to correspond to buried roadways or the aqueduct, and the third (coinciding with a low earth mound visible on the surface) was

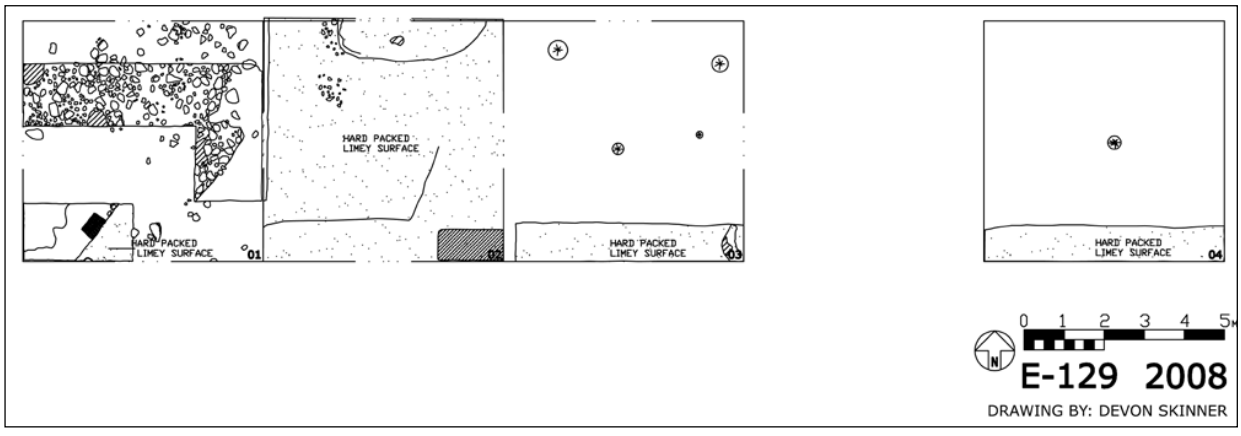
attributed to road repair or ploughing.

All of this previous work suggested that the most likely place to find the physical remains of the *Via Nova Traiana* at Ḥumayma would be to the west of the modern road outside the fort's north-west corner. In 2008 series of probes were excavated to the north-west of the fort both to find evidence of the *Via Nova Traiana* and to test the veracity of the 2002 geophysical data. Surface inspection of the area uncovered an alignment in the surface pebbles *ca*. 95m north-north-west of the north-west corner of the fort. It was therefore decided to place some squares there (Field E129) even though this was outside the area of the geophysical survey. A series of squares were also placed across the area where the geophysical data was collected (Field E130). The methods and results of each area will be discussed separately, followed by a discussion of the features revealed.

Field E129

Field E129 was chosen for excavation because the combination of a low ridge (extending less than 1m above the surrounding flat desert) and two possible edges, *ca*. 4 to 6m apart, to the concentration of surface cobbles aligned north-east to south-west that together suggested the presence of a paved section of the *Via Nova Traiana*. A 6 x 6m square (Square 01) was laid out across the possible road so as to capture the potential road edges in the north-west or south-east corners. Subsequent excavation revealed that the cobbles, although only one course deep, might have constituted a surface having an eastern edge angled 40° east of north and possibly a parallel western edge *ca*. 5m away (**Figs. 23 and 24**). Beneath the eastern extent of the cobbles was a layer of extremely hard packed yellowish-brown soil containing white nodules. A subsequent probe in the south-west corner of the square revealed that this distinctive soil level terminated in an edge angled 42° east of north. In Square 01 this layer was 0.9m thick with some cobbles and pebbles at its bottom. As this surface seemed considerably more durable than the cobble surface and hence a more likely candidate for the *Via Nova Traiana*, we decided to trace its extent to the east (**Fig. 25**). Based on the width of the *Via Nova Traiana* reported elsewhere in the Ḥismā we were expecting that the other side of the potential road would be found in Squares 02 or 03. To our surprise, the surface was still present in Square 04, more than 27m away. This surface will be discussed in detail at the end of this section, after the results from Field E130 have been presented. Before leaving Field E129, it must be noted that another feature

24. Possible cobble surface in E129 Square 01.



23. Plan of E129.

25. Hardpacked soil with white nodules extending across E129 Square 02.

was found in the south-west corner of Square 01, just west of the western edge of the hard packed soil with nodules. This feature, now quite decomposed, seems to be the south-east edge of a rammed mud (*pisé*) platform which extends into the west and north baulks of the excavated probe. Unlike the two angled surfaces, this platform is on an orientation close to true north, just like the Roman fort. A high concentration of disturbed boulders, probably representing wall stones, was found above both the platform and nodule-bearing soil along the south edge of the square. Immediately over the platform in the south-west corner of the probe was a high concentration of wall plaster (including polychrome fresco fragments), roof tile or hypocaust fragments, white mortar, and cobbles and pebbles. To the south of Square 01 other building fragments, including tiles and pebbly floor plaster, can be seen on the surface of the desert. All of this evidence suggests that an important structure (with frescoed walls) was located somewhere in the vicinity. Pottery sherds in the associated loci suggest this building dates to the Roman or Late Roman period, making it contemporary with the first phase of the Roman fort.

Field E130

Although the edges found in E129's Square 01 were on a similar orientation to one of the possible roads revealed by the geophysical survey, no direct proofing of the geophysical predictions could be made as E129 lay outside the range of that survey. Our next strategy was therefore to open Field E130, which lay inside the range of the geophysical survey. Six squares were eventually laid across this area in order to study what lay beneath the surface in a 38.66m-wide strip extending due east from the western edge of the modern road (**Fig. 26**). In all cases, the 1 m strip along the northern edge of each square was excavated in order to create a continuous plot of the area's stratigraphy. Some squares were also excavated more fully in order to describe features and search for their edges. The excavations in this area confirmed the presence of the ploughed area (with intact furrows; **Fig. 27**) predicted by the geophysical survey (in Squares 02, 03, 05 and 06), but could not confirm the presence of the other two linear features which were shown in the geophysical results as being *ca*. 7-10m wide with distinctive edges (Oleson *et al*. 2003: Fig. 14). Our excavations indicate that rather than there being two narrow features running down the western side of the fort, there is actually another patch of hard packed soil with nodules which extends more than 38 meters across this whole area (and presumably to its east and west as well). Sometimes this soil is found just 0.05m beneath the desert surface; sometime it is buried up to 0.9m beneath other layers of soil (such as the plough furrows). The

26. Excavation areas in E130 to west of modern dirt road.

27. Plough furrows in E130 Square 02.

thickness of the nodule-bearing soil also varied considerably (from 0.3 to 0.9m) and sometimes it disappeared for several meters before resuming. When it disappeared in E129's Square 01, it had an edge orientated 42° east of north. When it changed thickness in other squares, a variety of angles were observed. Any of these variations could have produced significant variations in geophysical readings which were taken in bands spaced 2.5m apart. Based on our excavations, the idea of discrete 7-10m wide linear roads in this area should be abandoned. It is also clear that the aqueduct did not pass through this area. On the other hand, it is very interesting that such a wide stretch of the area adjacent to the fort's north-west corner was both devoid of buildings and covered with a type of soil which would have provided excellent traction.

Discussion of the Features in Fields E129 and E130

Although the excavations in Fields E129 and E130 did not reveal a paved section of the *Via Nova Traiana*, they did uncover four distinct features: the extensive area of hard packed soil with nodules, dried-out plough furrows, a cobble surface, and a *pisé* platform. Each will be discussed in turn.

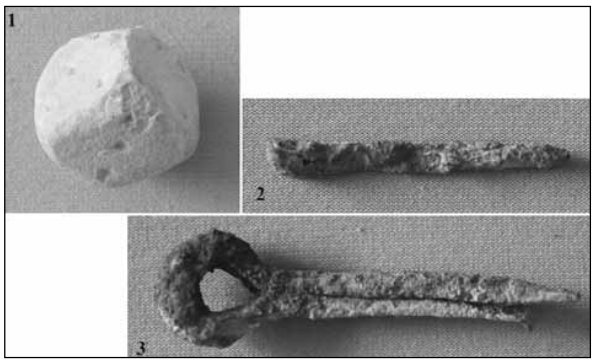
The hard packed soil with nodules found throughout Fields E129 and E130 is extremely interesting in its implications. Soils containing nodules of calcium carbonate concretions form naturally in calcareous soils from desert regions (see Ruellan 1973). Natural layers of such soil regularly vary in thickness from 0.2 to almost 1m. Given that all of the nodule-bearing soil layers in our probes were devoid of artifacts, it is likely that this expansive soil layer throughout Fields E129 and 130 is of natural origin. What seems very likely, however, is that the ancient inhabitants of Ḥumayma would have taken advantage of the extremely firm nature of these soils. Foundation probes in Field E077 revealed a 0.38m-thick layer of this soil under the Nabataean structures. Previous years' excavations in the Roman fort have also revealed layers of this soil under some roads and walls where they would have provided a firm footing. For example, **Fig. 28** shows a 0.85m-thick layer of this soil directly beneath the *Via Principalis Dextra* in the Roman fort (Oleson *et al*. 2008: 328-9).

28. Hardpacked soil with white nodules beneath the Via Principalis Dextra and sub-road drain in the Roman fort (E116).

Anyone digging trenches into the desert surface for wall foundations or defensive works (e.g. the trench around the fort, Oleson *et al*. 2008: 332) would have quickly encountered this extremely hard soil layer and realized its usefulness as a surface. Indeed when Stein traveled through the site in the 1930s he speculated that the *Via Nova Traiana* could not have passed through the settlement because of the difficulty presented by crossing the heavy sand in this area (Stein 1940: 437). What he did not know was that the sand could be cleared to reveal a firm surface. The strength and durability of this lime-bearing soil was proven to us when fully laden construction traffic began using the dirt road bordering the eastern edge of E129 during our excavations. While elsewhere, the dirt road through the site turned to silt, the section next to E129 (which contained nodules on its surface) remained in much better condition (**Fig. 26**). It seems reasonable that the ancient inhabitants of the site might have cleared off the overlying soil to expose this surface, perhaps even digging it up and re-laying it where they desired better support or traction (cf. the "lime mash" layer under the fort at Lajjūn, Groot *et al*. 2006: 164). Whether the wide expanse of this soil to the west of the Roman fort constitutes part of either the *Via Nova Traiana* or the King's Highway cannot be determined with certainty. It is thought that the *Via Nova Traiana* constituted a paved road (Graf 1997: 273) and sections of the road found elsewhere in the Ḥismā were certainly paved (Graf 1995: 252-57). Pavers might have sat directly on this surface as they did in the road in Ḥumayma's fort. On the other hand, other Roman

period roads both in Arabia (Kennedy 2000: 64 and 115) and throughout the Roman Empire were commonly only cleared tracks (Graf 1997: 272-3). Such tracks can be extremely wide: the '*Via Severiana*' north of Azraq is 15-20m wide (Kennedy 2000: 64) and roads through the Uvda Valley vary between tens of meters and 200 meters wide (Avner 1990: 138). The nodule-bearing soil in Fields E129 and E130 may have constituted a similar firm, wide surface which could both be used as a road and as a parking lot where wheeled vehicles could be left in the protective shadow of the fort. In addition to camel caravans, a huge number of wheeled vehicles would presumably have regularly traveled along the *Via Nova Traiana* to the fort, in order to supply the garrison with food and other necessities. These vehicles would have required a firm and relatively level surface. A firm, leveled, and relatively wide surface is also what was required for the military parade ground (*campus*) that would have been located outside every Roman fort (Webster 1985: 228-9). It therefore seems likely that the extensive, extremely firm natural surface discovered outside the north-west corner of the fort (and probably covering an even wider area) would also have been used as a place for the garrison's soldiers to carry out their regular military drills and training exercises (cf. Davies 1974: 310-11).

One of the reasons that this nodule-bearing soil would have provided a firm footing is that it was more water resistance than other soils found on the site. It is perhaps because of this soil's ability to trap or slow the movement of water that people were farming the soil which had accumulated above it. Evidence came in the form of dried-out plough furrows found in Field E129. The date when this land was farmed is not clear. The furrowed soil was packed with cultural debris including a sandstone die (**Fig. 29.1**), two iron pins (**Fig. 29.2-3**), glass and mortar fragments, and pottery sherds ranging in date from the first to the fifth centuries AD. There were no datable objects of later date but this does not mean no farming took place later. Although this area was not being farmed during any of the excavation or survey seasons over the past 20 years, one of our young workers maintains that the area has been farmed in his lifetime, and some recent aerial photos of the site



29. Artifacts found in the plough furrows: (1) H08.0131.01: Sandstone gaming die; each face 1.6 x 1.6cm; (2) H08.0156.01: Three-sided iron pin or nail; 3.6cm long; one flat end 0.4cm thick; one end tapers to a point 0.2cm thick; (3) H08.0134.01: Double-spiked loop (cf. Manning 1985: 130-1); 5.1cm long.

(e.g. Kennedy and Bewley 2004: Fig. 10.4B, taken in May 1998) show the furrows clearly. As the elevations in this area lie above the site's run-off field (Oleson 1995: Fig. 4), it is likely that these fields could only have been farmed when irrigation water was available.

The last two features identified in this area were the surface of cobblestones *ca.* 5m wide, lying just beneath the surface and partially over the nodule-bearing soil, and the considerably deeper *pisé* platform located just west of the sharp edge of the nodule-bearing soil in Field E129. Either the cobble layer, or the platform, or both might be contemporaneous with the building debris found in and around E129 Square 01. The nature of the debris (fresco fragments, roof tile or hypocaust shards, and pebbly floor plaster fragments mixed with stones and pottery) imply the presence nearby of a well-constructed structure of Roman or Late Roman date. As this structure would be the northernmost building at Ḥumayma, it should be targeted in a future season in order to determine its function in relation to the fort and the town.

2008 Ceramic Overview (A. Shelton)

Shelton became the project's ceramicist in 2008, succeeding previous ceramicists Yvonne Gerber (1998-2005) and Khairieh 'Amr (1991-1996). Shelton wishes to thank 'Amr and Gerber for useful discussions about Ḥumayma's ceramics. This preliminary assessment of the ceramics is based on material excavated Fields E077, E121, E128, E129 and E130 in 2008.

General Observations

The ceramics from the 2008 season date from the late first century BC to the early ninth century AD, with the major concentration falling between the late first century AD and the fourth century AD. As previously noted by Oleson, most of the loci at Ḥumayma are not homogenous and are thus difficult to date (Oleson *et al*. 2008: 319). A rare exception was a rich assortment of partially restorable vessels, mostly dining and cooking vessels dating from the late first to the mid-second century AD, which was discovered in a homogeneous stratum in E128's dump (**Fig. 10**; see above for context description and below for partial catalogue). Based on forms and fabric, the pottery in this cache appears to have been imported from Petra and, with the exception of the cooking pot, show few signs of wear. All of the forms have close parallels in the Petra / az-Zanṭūr corpus. Found with this cache of early to mid-second century ceramics was a Class 47 amphora handle, dated to the third and fourth centuries, possibly starting in the very late second century (Peacock and Williams 1986: 193-195). The presence of this amphora, a relatively common one at Ḥumayma, in a cache of earlier vessels might be a displacement caused by burrowing rodents (see above) or may indicate a slightly earlier date for the amphora than previously thought. Research into the matter will continue.

Coarse Wares

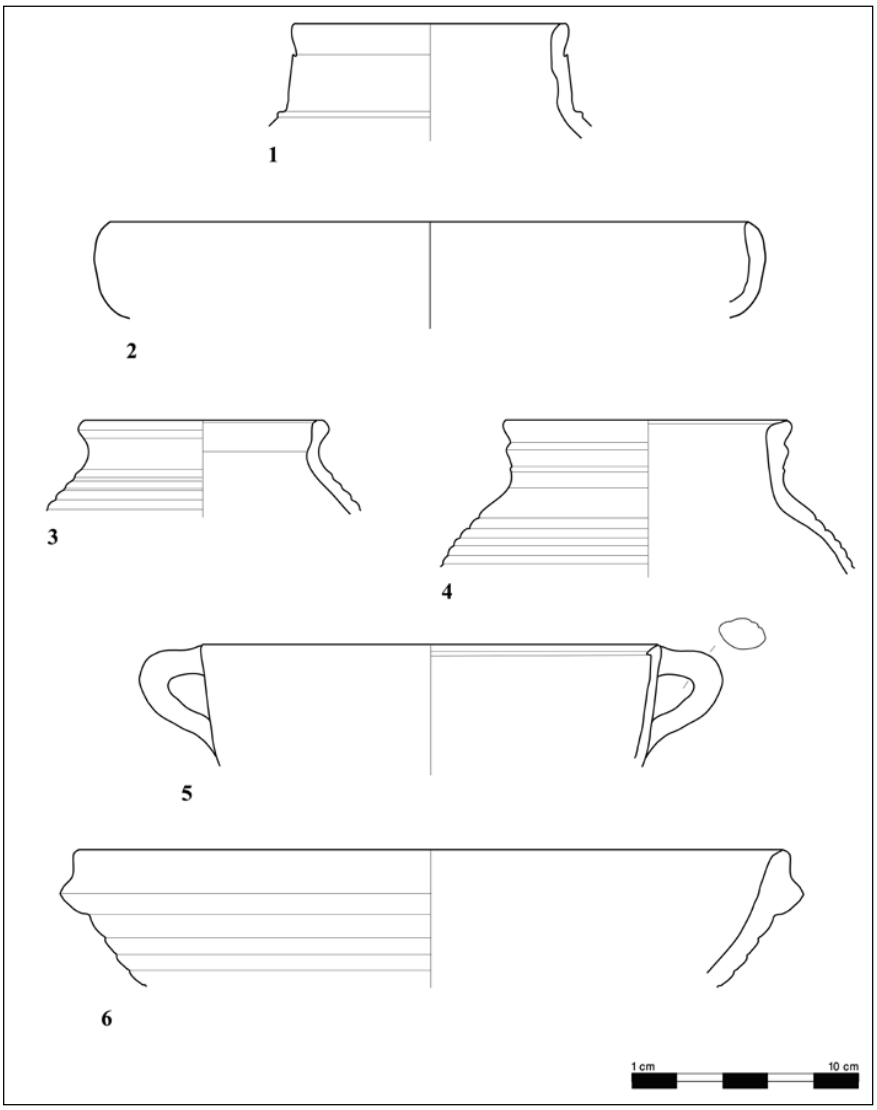
Of the *ca* 26,000 sherds processed this season, the vast majority were coarse wares, all of which were (presumably) imported to Ḥumayma since no kilns have been discovered at the site. The paucity of homogeneous loci at Ḥumayma hinders the creation of a secure typology of coarse wares at this time; data from future excavations will hopefully clarify the matter. The 2008 coarse wares are continuing to be studied, but a preliminary assessment follows. The reader should also consult Gerber's more comprehensive discussion of Ḥumayma course wares, based on the 1998-2005 seasons (Oleson *et al*. 2008: 334-341).

Most forms and fabrics were fairly consistent with ceramic repertoires from Petra (including surrounding sites) and Roman Aila / 'Aqaba (**Fig. 30)**, suggesting these were the two primary suppliers of ceramics for Ḥumayma. Imports from Aila are present in the Ḥumayma assemblage, although in far smaller quantities than those from Petra. This would seem to indicate that Ḥumayma, although located roughly equidistance between Petra and Aila, remained strongly within Petra's trading sphere. The Aila imports were mostly medium sized storage vessels, such as ribbed-necked jars (**Fig. 30.4**) and strainer-neck jars (**Fig. 31**). The imports from Petra include cooking vessels, jugs, jars, bowls of varying sizes, and large storage vessels and pithoi. Closed vessels included jugs, jars, cooking pots, and multiple sizes of storage vessels. Cooking pots are imported almost solely from Petra and generally seem to follow the typology suggested by Gerber (Gerber 1997 and 2001; Gerber and Fellmann Brogli 1995).

Fine Wares

The Nabataean painted and unpainted fine wares found at Ḥumayma during the 2008 season generally date from the mid-first century AD to the third century, represented as Schmid's Phases 3a-4 (Schmid 2001, Figs 32.1-3). The relative absence of first century BC to mid-first century AD (Phases 1-2) fine wares that was previously noted by Gerber for the ceramics from the 1998 to 2005 seasons continues to hold true (Oleson *et al*. 2008: 335). This is particularly interesting considering these fine wares are present not only at Petra but also, beginning in Phase 2, at Aila (Parker, pers. comm.). Nabataean fine wares were found in all excavated areas, but make up a fairly small proportion of the corpus as a whole. Approximately 257 sherds of NPFW were recorded, accounting for about 1 % of the ceramic finds.

Although few Eastern Sigillata A (ESA) sherds were found (approximately 27 sherds), they represent some of the earliest datable fine wares found this season. ESA vessels usually date from the second century BC to the second century AD. Both closed and open forms are present in the corpus, but unfortunately the vast majority of these sherds are too small to attribute to a specific form. One base could be identified as the type represented by Hayes Form 28, which dates from the last quarter of the first century BC to the first quarter of the first century AD (**Fig. 32.4**; Hayes 1985). ESA was found in



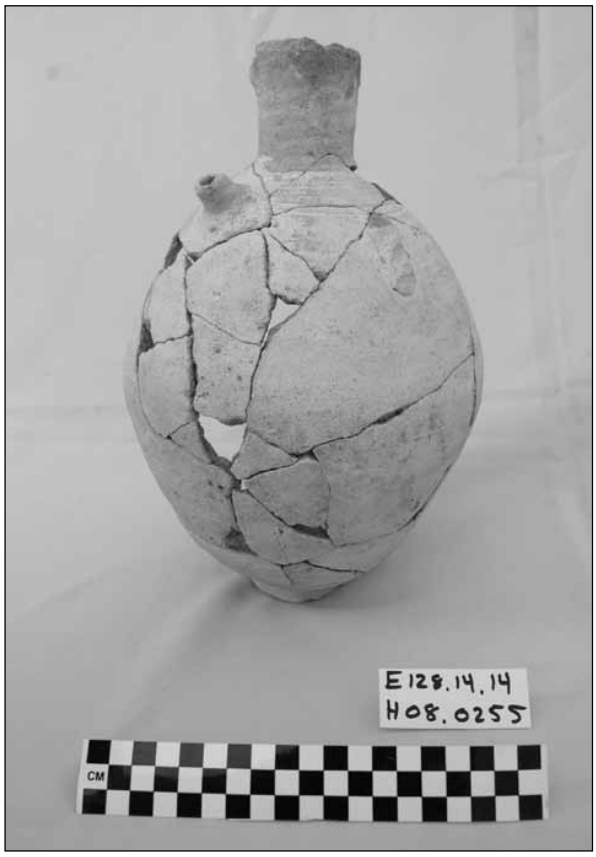
30. Selection of 2008 coarse wares.

areas E128 (20 sherds), E077 (4 sherds), E121 (2 sherds) and E130 (1 sherd). One Eastern Sigillata B (ESB) sherd was also found in E077, but was unfortunately too small to identify according to Hayes's typology.

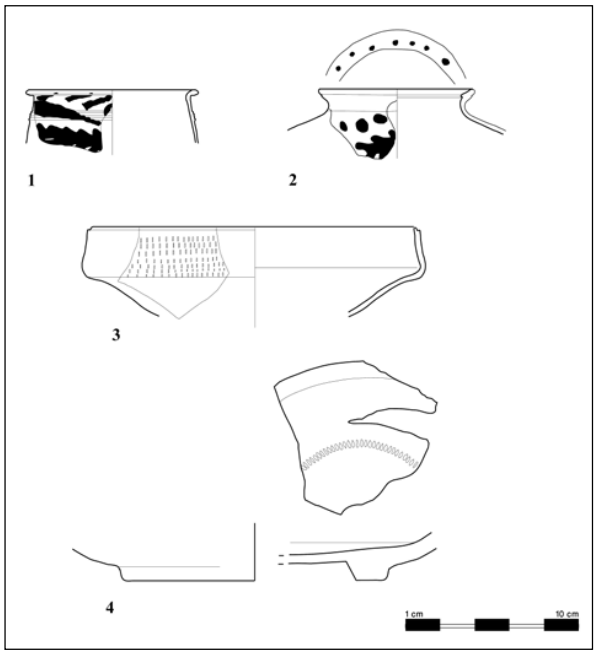
Late Roman / Byzantine imported fine wares were also present in the areas excavated in 2008. African Red Slip (ARS) was the most abundant late imported fine ware identified at Ḥumayma. Most of the ARS sherds (26 out of 27) recovered this season are the ubiquitous Form 50 bowl, dating from the mid-third century to the mid-fourth century (Hayes 1972: 69-73), whereas only one body sherd is in the later "D" fabric described by Bonifay (Bonifay 2004). It is expected, however, that future excavations will show that the dominance of the Form 50, based on this season's evidence, is an anomaly. One sherd of Phocaean Red Slip (from E121) and one sherd of Egyptian Red Slip B (from E128) were also found.

Amphorae

One of the most interesting initial observations from the 2008 season was the variety of imported transport amphorae discovered. This season's excavations uncovered transport amphorae sherds from Egypt, Gaza, North Africa, Palestine and the Aegean. Almost all of these were from the Roman and Byzantine phases (late second century to the fifth century). The Class 47 ("Hollow-foot") amphora, possibly an Aegean wine amphora dating to the late second through fourth centuries AD (Peacock and Wil-



31. Strainer-neck jar from Roman Aila found in E128 dump. H08.0255a.

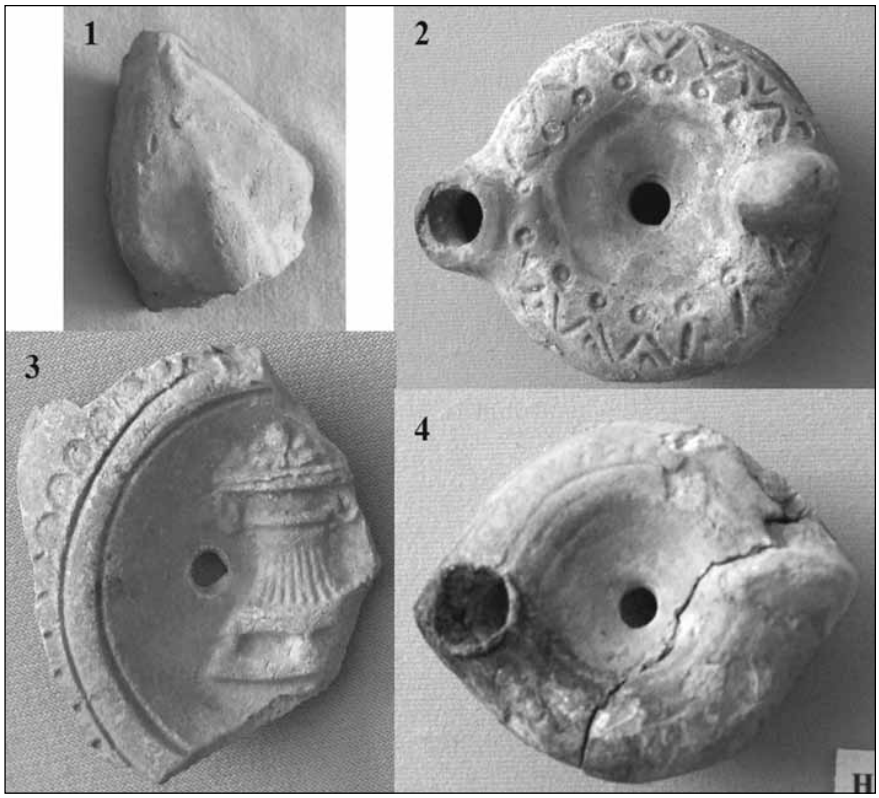


32. Selection of 2008 fine wares.

liams 1986: 193-195), was the most abundant imported amphora discovered this season, accounting for 30 of the *ca* 66 imported amphorae sherds identified. Class 47 sherds were found in E077, E128 and possibly E130, but were most prevalent in E121. The Gaza Class 48 and Class 49 (Peacock and Williams 1986: 196-199) are the second most common imported amphorae. It is interesting to note that some of the more common amphorae that appear at Aila seem to be rare at Ḥumayma (Shelton 2008). These include the Egyptian Classes 52 and 53 (Peacock and Williams 1986: 204-207) and the Palestinian Bag Jar, Class 46 (Peacock and Williams 1986: 191-192). Although few in quantity (4 sherds identified), the appearance of the African Class 33 (Peacock and Williams 1986: 153-154) should be mentioned since it is "attested but extremely rare" at Aila (Parker 2002: 424). The early Roman imported amphorae, such as the Rhodian Class 9 and Koan Class 10 (Peacock and Williams 1986: 102-106) were absent from this season's corpus. There were also several imported amphorae which have yet to be identified; study of these will continue.

Lamps

Approximately 200 lamp fragments were found, dating from the Nabataean to the Byzantine periods. They are mostly types found at Petra. Common were the Nabataean / Negev lamps (Grawehr 2006: 296-306), decorated and undecorated round lamps with small fill holes (**Figs. 33.2 and 33.4**; Grawehr 2006: 310-317), decorated round lamps with large fill holes (Grawehr 2006: 322-333, Type 2, variants a, b and c specifically), and the Petra-Early Roman lamps (Grawehr 2006: 340-349)**.** Most lamps appear to be of regional manufacture. One fragment from a molded-handle lamp resembles that found in the az-Zurrāba kilns (**Fig. 33.1**; ʻAmr 1999: 7.4). Of particular interest is a fragment from an embossed discus lamp (**Fig. 33.3**) depicting an altar resting atop a two-stepped platform. The altar column is fluted and is topped with fruit clusters. Ribbons flow from both sides of the column top. The shoulder of the lamp is decorated with two incised lines inside a scalloped motif. While no exact parallels have been found for this lamp, the altar motif, usually with snakes, appears on similar lamps from the first and second centuries AD (Rosenthal and Sivan 1978: 31-32, no.109).

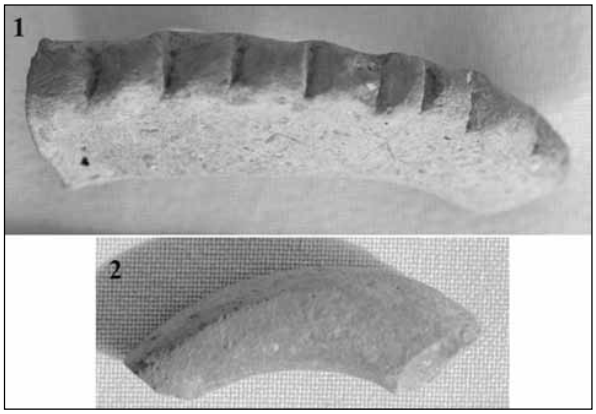


33. Selection of 2008 lamps: (1) H08.0100; (2) H08.429.02; (3) H08.0271.02; (4) H08.0378.01.

Figurines and Zoomorphic Vessels

One figurine fragment and two horns from zoomorphic vessels were recovered this season, all from E128. Both horns appear to be from ibex zoomorphic vessels. **Fig. 34.1** is similar to those found in Petra (Tuttle 2009: 521, cat. no. 177; 526, cat no. 183). Although from the E128 dump, this horn can be dated to roughly the second to fourth centuries AD based on associated ceramics. The other horn (**Fig. 34.2**) is a plain, conical curve which has no known parallels (Tuttle, pers. comm. May 2009). This horn, also from the E128 dump, was found with ceramic material dating generally to the second and third centuries AD.

The figurine fragment is a delicately carved baboon head (**Fig. 15**; description in catalogue from E128 dump) with no regional parallels (Tuttle 2009: 194). The head resembles the dog-faced baboon (*Papio hamadryas*), whose range includes Egypt and the southern Arabian peninsula. In Egypt, the baboon was sacred to Thoth and was depicted in art and on coins through the Roman period (Geissen 2008: 169). Further investigation of the figurine will be needed to determine its origin.



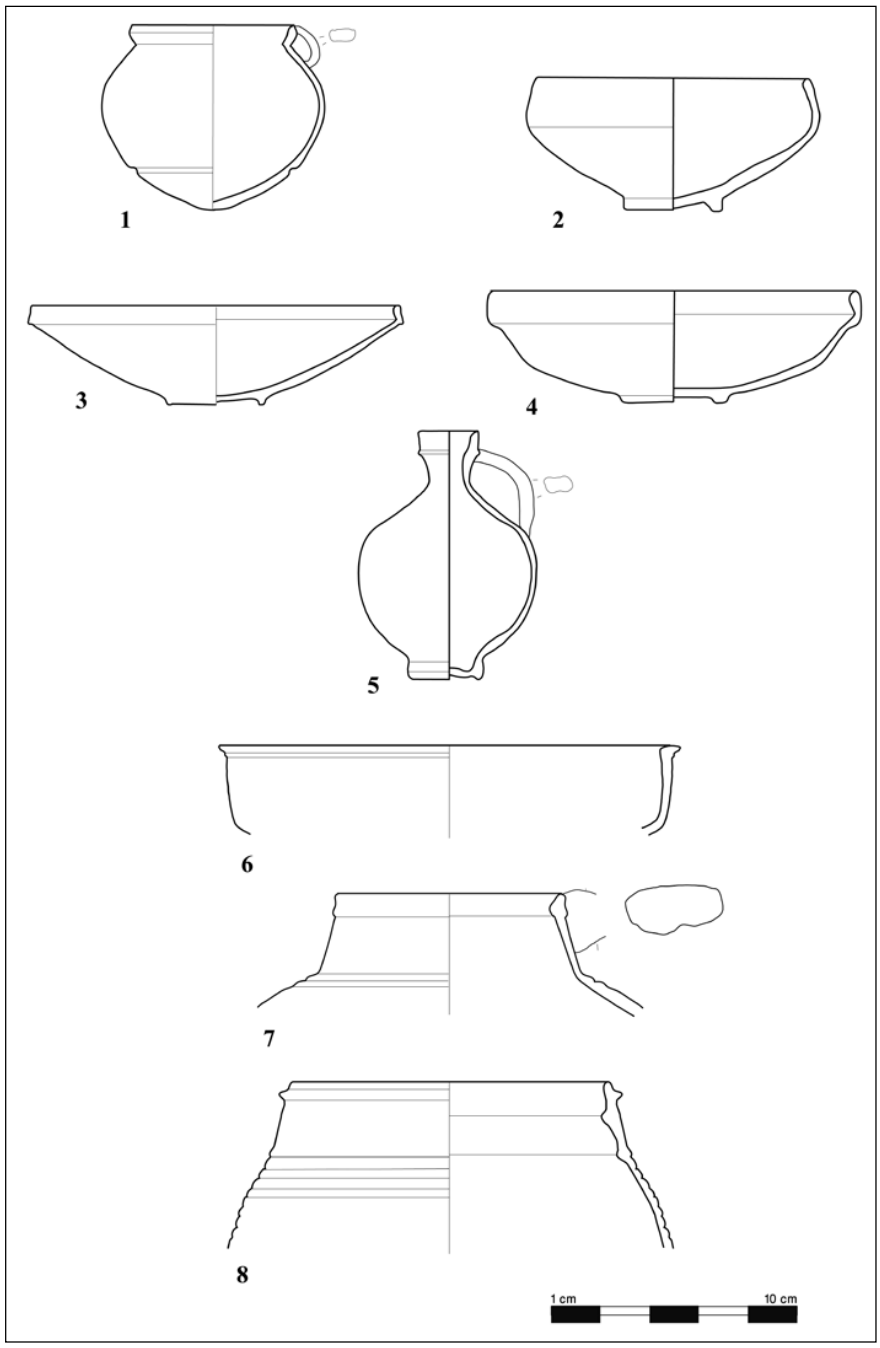
34. Horns from zoomorphic vessels.

Catalogue

Below is a selection of the coarse wares (**Fig. 30**) and fine wares (**Fig. 32**) excavated this season, as well as a selection of some of the semi-restorable vessels from the E128 dump (**Fig. 35**; cf. **Fig. 10**). All will be published more fully in future reports.

Figure 30.1

H08.0003a. Jar with rounded rim. Notch just below rim. Diam: 12cm. Fabric: 2.5YR5/8; Exterior: 5YR6/4; Interior: 2.5YR6/6 [E128.14.01] Par-



35. Selection of semi-restorable vessels from the E128 dump.

allel: Gerber 2001: Figure 2.M (first century AD).

Figure 30.2

H08.0056a. Large bowl with incurving, slightly thinning rim. Thick grey slip on exterior. Base suggests a flat bottom. Diam: 28cm. Fabric: 2.5YR6/8; Exterior: 2.5YR6/1; Interior: 2.5YR6/8.[E077.01.808] Parallel: Gerber in Oleson *et al*. 2008: Figure 23.29 (second-third centuries AD).

Figure 30.3

H08.0036a. Jar with rounded, everted rim. Ribbing on body. Diam: 11 cm. Fabric: 5YR6/6; Exterior: 5YR7/3; Interior: 5YR7/3 [E121.07.807] Parallel: Brogli 1996: Abb. 742, 744 (fourth and fifth centuries).

Figure 30.4

H08.0405a. Jar with flattened rim and ribbing on neck and shoulder. Thick white slip on

exterior. Aqaba ware. Diam: 12.5cm. Fabric: 5YR7/4; Exterior: 5Y8/2; Interior: 10YR8/2 [E077.05.05] Parallel: Dolinka 2003: Figure 20.J2b (second century AD).

Figure 30.5

H08.0141a. Bowl / casserole with beveled interior rim. Vertical loop handle. Whitish slip on exterior. Diam: 20cm. Fabric: 2.5YR6/8; Exterior: 5YR8.2; Interior: 2.5YR6/8 [E121.09.803] Parallel: Brogli 1996: Abb. 773-774.

Figure 30.6

H08.0291a. Large bowl with thick ridge below rim. Wide ribbing on exterior. White slip on exterior. Aqaba ware. Diam: 31cm. Fabric: 2.5YR6/6; Exterior: 2.5Y8/2; Interior: 2.5YR6/6 [E077.04.811] Parallel: Whitcomb 2001: Figure 1.G (early Islamic).

Figure 32.1

H08.0137a. Nabataean painted fine ware cup / small jar. Everted rim with band of fine ribbing on exterior body. Elongated slanted triangles painted on exterior of rim, continuing onto body. Below these is a horizontal triangular swath of paint above a leaf / vine. Paint is dark reddish-brown. Diam. 10cm. Fabric: 2.5YR6/8; Exterior 2.5YR6/8; Interior: 2.5YR6/8; Decoration: 2.5YR3/2 (dusky red). [E128.15.30] Parallel: Schmid 2000: Type F 2c 64, Phase 3c (100 AD to mid-second century AD).

Figure 32.2

H08.0137b. Nabataean painted fine ware jar. Flattened everted rim; globular body. Red slip applied to exterior and rim interior (drip lines extend down body interior). Small dots are painted on the rim flange. Larger dots are just below the neck; below these is a horizontal leaf / vine. Diam: 8.5cm. Fabric: 2.5YR6/8; Exterior: 10R5/6; Interior: 2.5YR6/8; Decoration: 2.5YR3/2 (dusky red) [E128.15.30].

Figure 32.3

H08.0100a. Nabataean fine ware bowl. Shallow rouletting on exterior. Notched rim. Sharp carination between below rouletting. Diam: 18.5cm. Fabric: 10RYR6/8 (thin dark gray core); Exterior: 10YR6/8; Interior: 10YR6/8 [E128.09.05] Parallel: Schmid 2000: Type E 8a 95, Group 9, Phase 3 (20 / 30 AD to first quarter of the second century AD).

Figure 32.4

H08.0208a. Eastern Sigillata A plate base. Rouletted ring on interior. Ring base. Diam: 15cm (base). Fabric: 5YR7/4; Exterior: 10R4/6; Interior: 10R4/6. [E128.08.02] Parallel: Hayes 1985: Tavola IV.10-11 (last quarter of the first century BC to first quarter of the first century AD).

Figure 35.1

H08.0177a. Nabataean fine ware cup. Rounded base. Everted rim. Single vertical loop handle. Deep groove on exterior near base. Diam: 6.75cm. Fabric: 2.5YR6/8; Exterior: 2.5YR6/8; Interior: 2.5YR6/8 [E128.15.38] Parallel: Schmid 2000: Type G 1a 274, Phase 3 (20 / 30 AD to first quarter of the second century AD).

Figure 35.2

H08.0177b. Nabataean fine ware hemispherical bowl. Ring base. Diam: 11cm. Fabric: 2.56/8; Exterior: 2.5YR6/8; Interior: 2.5YR6/8 [E128.15.38] Parallel: Schmid 2000: Type E 4a 35, Group 5.

Figure 35.3

H08.0173a. Nabataean fine ware carinated bowl. White slip on rim exterior. Ring base. Diam: 15cm. Fabric: 2.5YR6/6; Exterior: 2.5YR5/6; Interior: 2.5YR 6/6 [E128.15.38] Parallel: Schmid 2000, Group 6.

Figure 35.4

H08.0177c. Nabataean fine ware carinated bowl. White slip on rim exterior. Ring base. Diam: 15cm. Fabric: 2.5YR6/6; Exterior: 2.5YR 5/6; Interior: 2.5YR6/6 [E128.15.38] Parallel: Schmid 2000, Group 6.

Figure 35.5

H08.0177d. Nabataean fine ware juglet. Ring base. Diam: 2.5cm. Fabric: 5YR6/6; Exterior: 5YR6/6; Interior: 5YR6/6 [E128.15.38] Parallel: Schmid 2000: Type G 14d 305, Phase 3 (20 / 30 AD to first quarter of the second century AD).

Figure 35.6

H08.0173b. Shallow bowl / casserole with

flattened rim. Thin white slip on exterior. Diam: 19cm. Fabric: 2.5YR6/6; Exterior: 10YR8/1; Interior: 2.5YR6/6 [128.15.37] Parallel: Gerber 2007: Figure 61 (early second century).

Figure 35.7

H08.0174a. Jar with folded rim; slightly inverted. Slight ribbing on shoulder below neck. Vertical handle attached at rim. Thick grey slip on exterior. Diam: 10cm. Fabric: 2.5YR6/6; Exterior: 2.5YR5/1; Interior: 2.5YR6/6 [E128.15.38] Parallel: Gerber: unpublished Ḥumayma reference database from 1998 season (second / third centuries).

Figure 35.8

H08.0174a. Jar with slightly inverted rim. Flanged ridge just below rim. Ribbing on body. Diam: 13cm. Fabric: 2.5YR5/8; Exterior: 2.5YR6/3; Interior: 2.5YR5/8 [128.15.38] Parallel: Gerber 2007: Figs. 19 & 22 (last quarter of first to early second century).

Object Conservation (B. V. Karas)

Karas' role as conservator for the 2008 Ḥumayma Excavation Project (HEP) focused on processing small finds, mostly metal artifacts and ceramics, for study and storage. Small finds were treated following standard conservation methods as well as HEP specific methods established by J. Logan during her tenure as the project's primary conservator (see Oleson *et al*. 1999: 443-46; 2003: 61-62). Other conservation initiatives for the 2008 season included the relocation of a large three-dimensional sandstone betyl from Ḥumayma's Field E125 to the 'Aqaba Museum, and the compilation of guidelines for artifact storage preparation, based on a survey of the 'Aqaba Museum storeroom. These conservation goals were funded, in part, by a generous Heritage Scholarship from the American Schools of Oriental Research.

Sandstone Betyl from E125 (H08.0463.01)

A large (0.58 m tall) three-dimensional sandstone betyl was discovered in 2000 during the first season of excavations in Field E125's Nabataean and Roman period shrine (Oleson *et al*. 2003: 47, Fig. 11; 2008: Fig. 6). As the object was extremely heavy and surrounded by 0.70 m high baulks, it was decided at the end of the 2000 season to leave it *in situ* at least until the full excavation of the shrine could be completed. In 2004 the directors arranged to have Na'if Zaban re-attach the top of the object (which had been broken off in Antiquity) to protect it from further damage (**Fig. 36**). By 2008, however, the new join had broken, the high baulks had been removed, and vehicle and human traffic through the site had increased significantly due to the construction of a new military base. Upon re-evaluating the pros and cons of leaving the betyl *in situ* in the shrine, Karas and Reeves subsequently decided it would be best to relocate the object to the storage facilities at the 'Aqaba Museum.

To have left the betyl *in situ* any longer would have put it at high risk of further damage by both humans and natural processes. Although many sandstone types are very well suited to use as building material, sandstone that is weakly bonded by minerals such as calcite or clay can be inherently friable and thus easily broken (Robertson 1982). The two pieces of the betyl were moved to the 'Aqaba Museum's artifact storeroom. The bottom portion of the betyl was wrapped in a padded sheet and placed on a wooden pallet to elevate and protect it from any ground water that may enter the store room. The top part of the column was wrapped in polyester batting and placed on a layer of sand inside a soft rubber bucket.

Rather than attempting to repair the column during 2008, it was decided that it should remain in two pieces until a thorough evaluation of its condition could be carried out. Further conservation treatment will focus on maintaining the stone's structural integrity by providing a per-

36. Na'if Zaban re-attaching top of betyl in E125 shrine in 2004.

manent storage or display mount to safely house the betyl in one or two pieces. Reattaching the top of the column will require an assessment of the stone's porosity, strength and condition of its break surfaces. Continued conservation treatment of the break may hurt rather than help the betyl due to the stone's inherent weaknesses. A free-standing mount, supporting the top part of the column slightly above the break edge of the lower portion, would be a simple and attractive solution, one which would not compromise the material integrity of the betyl. The betyl will remain in the ʻAqaba Museum indefinitely owing to its at-risk status. Reeves ultimately hopes to have a replica of the betyl placed in the shrine room of E125.

ʻAqaba Museum Storeroom Survey

With the permission of Manal Basyouni, Director of the ʻAqaba Museum, Karas carried out a preliminary evaluation of the condition of the collections storeroom. The objective of the evaluation was to inform and improve our team's approach to packing artifacts for storage in the museum's specific physical and environmental conditions. A secondary objective was to make these guidelines available to excavation directors who use the ʻAqaba Museum collections storeroom or use other storage facilities with similar conditions. It is extremely important for an object's long term survival to prepare it for storage in a way that mitigates against accelerated deterioration in its new *ex situ* environment. Fluctuating temperature and relative humidity cycles can irrecoverably damage all types of archaeological material. Assessing the storeroom's environmental conditions and physical limitations allowed for the compilation of simple and effective guidelines for preparation of objects for storage.

The ʻAqaba Museum's storeroom experiences fluctuating temperature and humidity. There is limited space, artifacts are often unprotected and un-housed, and there is no clear designation or labeling of objects and object project affiliation. These are typical storeroom conditions for many local and regional museums throughout the world. Based on these observations, broad recommendations for housing registered finds were made:

- Avoid the use of paper or cardboard for housing artifacts. Typically, these materials are not acid free and absorb moisture. Both acid and moisture will transfer to objects being stored, accelerating the degradation of metals, ceramic, glass, bone and all organics. Paper and cardboard are also very attractive to insects, especially silverfish. By weakening or destroying its organic container (paper or cardboard), insects can accelerate the deterioration of the actual object or compromise its safety.
- Purchase various sizes of Tupperware-type boxes (found locally in ʻAmman or ʻAqaba). Pack artifacts by material categories, i.e. all iron together, all bronze together etc. If plastic boxes are not available, employ large Ziploc-type bags. The goal is to avoid having the current paper artifact bags exposed to fluctuating relative humidity and temperature, which can lead to moisture damage. Durable and clear artifact storage containers for individual objects or groups of objects can also protect against any physical impact on the objects from man-made or natural forces.
- To further protect the objects, use plastic crates to house the Tupperware or Ziploc containers. When possible, keep like objects together.
- Label the plastic boxes or bags clearly in both English and Arabic. Labels for containers or bags clearly stating, in English and Arabic, the project name, year and contents will help to ensure the object's safety and deter haphazard rummaging.
- In addition to these broad guidelines, more specific recommendations were made for future implementation into the Ḥumayma Excavation Project's conservation approach:
- Notify the conservator as to what objects are being registered as readily as possible. The conservator can then begin making storage mounts for those objects, as they pass through the conservation lab.
- Use cavity mounts — of volara or some similar material — for housing registered finds. The object in its mount can be easily slipped into an appropriate size of polyethylene bag (available from conservation supplies vendors such as "Conservation Resources" in the United States) and remains secure in its mount in the bag.
- Storing objects in clear containers (clear boxes, polyethylene bags etc.) will do away with

the need to shake objects out of the paper bags currently used for small finds and will facilitate searching for a particular object. Clear storage will also allow for visual monitoring of an object's condition in storage, again without having to shake the object out of a paper bag.

In 2008, all of the Ḥumayma Excavation Project's registered finds were housed in their original small-finds paper or plastic bags and separated into material categories: metals, bone, stones, plasters and mortars, and ceramics. These categories were packed into medium-sized plastic Tupperware-type containers (purchased locally) and labeled clearly in both English and Arabic. The plastic storage containers will serve as a buffer to the fluctuating relative humidity (RH) and temperature of the 'Aqaba Museum's collections storage. The containers will also provide physical protection and mitigate damage to the artifacts caused by handling of the unprotected bags during storage.

Site Conservation (M. B. Reeves)

When our project set out to investigate how relations between Roman soldiers and civilians changed at this site through time, little did we expect that we would experience a modern reflection of the same interaction. When we arrived for the 2008 excavation, we learned that a new military base was being constructed just west of the archaeological site at Ḥumayma and extremely heavy vehicles filled with construction materials were continuously passing back and forth along the dirt road through the site (**Fig. 37**). The bedouin residents of the area were extremely upset that the vehicles were damaging the archaeological site, which they view as a source of their identity and income. In many places the dirt road had turned to powdery silt under the weight of the vehicles (**Fig. 38**). Moreover, since some sections of the modern dirt lie over buried structures (Oleson *et al*. 2008: 317), ancient remains that had not yet been studied were in danger of being exposed and run over. The potential for damage was even greater in the random places where two trucks needed to pass, causing one truck to divert off of the modern road and onto the archaeological site proper. Additional potential damage was being done by four-wheel drive military vehicles that were being driven off of the roads and all over the site,

37. Construction vehicle passing beside E125 and E128.

38. Dirt road through archaeological site damaged by construction vehicles.

including areas marked off for our excavation.

The modern civilian inhabitants of the Ḥumayma region were justifiably upset that in the process of constructing a fort, the adjacent archaeological site was being damaged. They implored the truck drivers to take a different route, set up stones to block the road and wrote letters to the newspapers. When we arrived, they asked for the help of archaeologists. As the site belongs to the Department of Antiquities, our Department representative, Amer A. Bdour, and the ʻAqaba Regional Director, Dr Sawsan Fahkri, took charge and devoted considerable time to communicating with the Governor, the military and the construction contractor in order to resolve this issue. As a result of their hard work, a new (non-destructive) route to the military base was found that did not lead through the archaeological site. By the last week of the excavation, almost all of the construction and military vehicles were using that route. Thanks to the Department of Antiquities, the past had repeated itself: soldiers and civilians at Ḥumayma were once again co-existing in harmony.

Conclusions and Future Plans (M. B. Reeves)

The 2008 excavations succeeded in their research goal of producing new evidence about Hawara's civilian communities in several critical periods which span the 300 year history of Hawara as a Roman garrisoned town. Excavations in Fields E077 and E128 revealed stone and mudbrick buildings from the original Nabataean town which were heavily damaged around the time of the Roman annexation. The fate of the two carefully constructed, presumably high status, buildings in E077 is particularly evocative because their stones seem to have been appropriated by the Roman soldiers building the fort and the garrison's bath-house. The excavations in E077 also produced evidence that during the first phase of its operation (corresponding to the presence of a 500 man garrison), the bath-house had been bigger than previous excavations had suggested. During this same period the mudbrick structure in E128 was once again occupied, corroborating previous findings from Fields E125 and E122 showing the eventual revival of the civilian community. The enigmatic platform in Field E121 dates to this same period but it is not clear if it was part of a military *campus* where the Roman soldiers practiced their drills, or if this platform, oriented towards the same hill as the E125 shrine, supported symbols of the town's Roman period identity. Except for traces of a structure at the west end of Field E129, the structures in E121 were likely some of the most northern structures in the Roman and Early Byzantine period *vicus*. Excavations in Fields E129 and E130 had hypothesized that a paved extension of the *Via Nova Traiana* would run through these areas on a route down the west side of the fort. Instead of a paved road, a natural layer of extremely firm soil was found throughout this area, leading us to hypothesize that the natural surface would have been utilized by the ancient inhabitants of the fort and town as a wide roadway and military drill field. The fort was occupied up until the late fourth century, as were parts of the *vicus* as indicated by the excavations in Field E121's Structure A. These excavations suggest Structure A was built in the fourth century, concurrently with the smaller garrison's reoccupation of the fort, and was abandoned in the late fourth century close to the time when the fort was abandoned.

In our future excavations we plan to expand upon these initial findings in order to obtain a deeper understanding of the character of the structures outside the fort over the course of a garrison's presence. In particular, our next season's excavations will focus on learning more about the plan, function and phasing of the Nabataean stone structures and the garrison's bath-house in Field E077, and the Nabataean and Roman mudbrick structure in Field E128. We also plan to probe the deep fill to the northeast of the platform in Field E121 to find out if a temple or associated structure once stood there.

M. B. Reeves
Department of Classics
Queen's University
Kingston, ON Canada

I. Babbitt
Department of Classics
Queen's University
Kingston, ON Canada

K. Cummer
Department of Classics
Queen's University
Kingston, ON Canada

B. V. Karas
Smithsonian Museum Conservation Institute
Washington, DC USA

B. Seymour
Royal British Columbia Museum
Victoria, BC Canada

Andi Shelton
Department of History
North Carolina State University
Raleigh, NC USA

Bibliography

'Amr, K., al-Momani, A.
1999 The discovery of two additional pottery kilns at az-Zurraba/Wadi Musa. *ADAJ* 43: 175-194.

Avner, U.
1990 Ancient agricultural settlement and religion in the Uvda Valley in southern Israel. *Biblical Archaeologist* 53: 125-141.

Bonifay, M.
2004 *Etudes sur la céramique romaine tardive d'Afrique*. British Archaeological Reports International Series 1301. Oxford.

Davies, R.W.
1974 The daily life of the Roman soldier under the Principate. *Aufstieg und Niedergang der römischen Welt*. II.I: 299-338.

Dolinka, B.
2003 *Nabataean Aila (Aqaba, Jordan) from a Ceramic Perspective*. BAR International Series 1116. Oxford.

Fellmann Brogli, R.
Die Keramik aus den spätrömischen Bauten. Pp. 219-81 in A. Bignasca *et al*., *Petra Ez Zantur* I. Terra Archaeologica II. Mainz: Philipp von Zabern.

Geissen, A.
2005 The Nome Coins of Roman Egypt. Pp. 167-170 in Howgego *et al*. (eds.), *Coinage and Identity in the Roman Provinces*. Oxford University Press.

Gerber, Y.
1997 The Nabataean Coarse Ware Pottery: A sequence from the End of the Second Century BC to the Beginning of the Second Century AD. *SHAJ* 6: 407-411.
2001 A Glimpse of the Recent Excavations on ex-Zatur/Petra: The Late Roman Pottery and its Prototypes in the 2nd and 3rd Centuries AD. Pp. 7-12 in E. Villeneuve, and P.M.Watson (eds.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV^{e}-VIII^{e} siècles apr. J.-C.). Actes du colloque tenue à Amman les 3, 4 et 5 décembre 1994*. Bibliothèque Archéologique et Historique 159. Beirut: Institut Français d'Archéologie du Proche-Orient.
2007 The Pottery from the Umm Rattam Area. Pp. 245-253 in Lindner *et al*. (eds.), Umm Rattam Survey: Specialized Reports *ADAJ* 51: 242-256.

Gerber, Y. and Fellmann Brogli, R.
1995 Late Roman Pottery from az-Zantur, Petra. *SHAJ* 5: 649-655.

Graf, D.F.
1995 The *Via Nova Traiana* in Arabia Petraea. In J.H. Humphrey (ed.), *The Roman and Byzantine Near East*. Journal of Roman Archaeology, suppl. 14. Ann Arbor: JRA.
1997 The *Via Militaris* in Arabia. *Dumbarton Oaks Papers* 51: 271-81.

Grawehr, M.
2006 Die Lampen der Grabungen auf ez Zantur in Petra. Pp. 261-398 in D. Keller and M. Grawehr (eds.), *Petra-Ez Zantur III*. Verlag Philipp von Zabern, Mainz am Rhein.

Groot, J.C., Jones, J.E. and Parker, S.T.
2006 The Barracks at el-Lejjun. Pp. 161-85 in S.T. Parker (ed.), *The Roman Frontier in Central Jordan: Final Report on the Limes Arabicus Project, 1980-1989*. Washington DC: Dumbarton Oaks.

Hayes, J.W.
1972 *Late Roman Pottery*. Rome.
1985 Sigillate Orientali. Pp. 1-96 in *Enciclopedia dell'arte antica classica e orientale. Atlante delle Forme Ceramiche II, Ceramica Fine Romana nel Bacino Mediterraneo (Tardo Ellenismo e Primo Impero)*. Rome.

James, S.
2004 *Excavations at Dura Europos: Final Report VII: Arms and Armour and Other Military Equipment*. London: British Museum Press.

Kennedy, D.
2000 *The Roman Army in Jordan*. London: The Council for British Research in the Levant/ The British Academy.

Kennedy, D. and Bewley, R.
2004 *Ancient Jordan from the Air*. London: The Council for British Research in the Levant.

Oleson, J.P.
1990 The Humeima Hydraulic Survey: Preliminary Report of the 1989 Season. *ADAJ* 34: 285-312.

1995 The Origins and Design of Nabataean Water-Supply Systems. Pp. 707-19 in *SHAJ* V. Amman: Department of Antiquities.

Oleson, J.P., ʻAmr, K., Foote, R., Logan, J., Reeves, M.B., Schick, R.

1999 Preliminary Report of the al-Humayma Excavation Project, 1995, 1996, 1998. *ADAJ* 43: 411-50.

Oleson, J.P., Baker, G.S., De Bruijn, E., Foote, R.M., Logan, J., Reeves, M.B., Sherwood, A.N.

2003 Preliminary Report of the al-Humayma Excavation Project, 2000, 2002. *ADAJ* 47: 37-64.

Oleson, J.P., Reeves, M.B., Baker, G. S., de Bruijn, E., Gerber, Y., Nikolic, M., and Sherwood, A. N.

2008 Preliminary Report on Excavations at Al-Humayma, Ancient Hawara, 2004 and 2005. *ADAJ* 52: 309-342.

Parker, S.T.

2002 The Roman ʻAqaba Project: The 2000 Campaign. *ADAJ* 46: 409-428.

Peacock, D. and Williams, D.

1986 *Amphorae and the Roman Economy: An Introductory Guide*. London: Longman House.

Reeves, M. B.

1996 The Roman Bath-house at Humeima in its Architectural and Social Context. M.A. Thesis, University of Victoria.

2009 Landscapes of Divine Power at Humayma. *SHAJ* X: 325-338.

Robertson, E.C.

1982 Physical Properties of Building Stone. Pp. 62-87. In *Conservation of Historic Stone Buildings and Monuments: Report of the Committee on Conservation of Historic Stone Buildings and Monuments, National Materials Advisory Board, National Research Council*. Washington, DC: National Academy Press.

Rosenthal, R., and Sivan, R.

1978 *Ancient Lamps in the Schloessinger Collection*. Jerusalem: Hebrew University.

Ruellan, A.

1973 Morphology and distribution of calcareous soils in the Mediterranean and desert regions, in *FAO Soils Bulletin 21 - Calcareous Soils*. Rome: Food and Agriculture Organization of the United Nations.

Russell, K.W.

1985 The earthquake chronology of Palestine and North-west Arabia from the 2nd through the mid-8th century A.D. *BASOR* 260: 37-59.

Schmid, S.G.

1997 Nabataean fine ware pottery and the destruction of Petra in the late first and early second century AD. Pp. 413-420 in G. Bisheh *et al*. (eds.), *Studies in the History and Archaeology of Jordan* VI. Amman: Department of Antiquities.

2000 Die Feinkeramik der Nabatäer. Typologie, Chronologie und kulturhistorische Hintergründe. Pp. 1-199 in S.G. Schmid, B. Kolb (eds.), *Petra—ez Zantur II: Ergebnisse der Schweizerisch-Liechtensteinischen Ausgrabung. Teil* 1. Terra Archaeologica IV. Mainz: Philipp von Zabern.

Shelton, A.

2008 A Comparison of Imported Roman Ceramics from Aqaba and Humayma. Paper presented at the Annual Meeting of the American Schools of Oriental Research. Boston, MA: November 2008.

Stein, A.

1940 Surveys on the Roman Frontier in `Iraq and Trans-Jordan. *Geographical Journal* 95: 428-39.

Tuttle, C.

2009 *The Nabataean Coraplastic Arts: A Synthetic Approach for Studying Terracotta Figurines, Plaques, Vessels, and other Clay Objects*. PhD Dissertation, Brown University, Providence, RI.

Witcomb, D.

2001 Ceramic Production at Aqaba in the Early Islamic Period. Pp. 297-3-3 in E. Villeneuve and P.M. Watson (eds.), *La Céramique Byzantine et Proto-Islamique en Syrie-Jordanie (IVe-VIIIe siècles apr. J.C.). Actes du colloque tenu à Amman les 3, 4, et 5 décembre 1994*. Bibliothèque Archéologique et Historique 159. Beirut: Institute Français d'Archéologie du Proche Orient.

Webster, G.

1985 *Roman Imperial Army*. 3rd ed. Barnes & Noble Books.