

# ACOR Newsletter

## أخبار أكور

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### Caring for the Cultural Heritage: Shelters

*by Pierre M. Bikai  
and Patricia M. Bikai*

Too often in the past the question of what happens "after the excavation" has not been an important one for archaeologists. As part of the general environmental movement, however, the profession is catching up. ACOR's work at two of Jordan's major sites, Madaba and Petra, provides some major lessons on how complex the issues can be. If preservation is taken seriously, for example, it can be very expensive. Some excavations need little in the way of conservation—simple back-filling will suffice. If, however, there have been major finds that are to be left exposed so that the general public can enjoy them, other measures must be taken. Jordan, for example, is particularly rich in mosaics, but excavated mosaics must be protected from the elements, must be sheltered. Beyond the issue of the cost, sheltering a site is not as easy as it would seem at first glance.

With funding from the United States Agency for International Development (USAID), ACOR has built a total of five shelters, four at Madaba and one at Petra. Four other shelters have been designed: for the Petra Church Baptistery; the Church of St. Stephen at Um al-Rasas; Lot's Cave; and the Church of the Martyrs at Madaba.

The two large shelters at Madaba, designed and built by Ammar Khammash for the Church of the Virgin/Hippolytus Hall and the Church of the Apostles, are built of stone, in the main stone found at the sites. Both are large buildings and required large foundations. They are very beautiful buildings and they provide security and environmental control.



The Petra Church shelter from the air. Rob Shutler, architect.

A smaller shelter in two parts was designed for the two wings of the Burnt Palace at Madaba by Leen Fakhoury and built by Kamal Tayem. It is steel construction with precast concrete roofs; because the spans involved were not great, the foundations needed were minimal. Finally at Madaba, the partially preserved mosaics of Church of the Prophet Elias needed a small shelter. Pierre Bikai designed and built a simple steel and wood structure with a tile roof. These last two shelters are

open-sided and therefore offer less security and less protection against wind-blown dust. The trade-off between the heavy foundations needed for a fully secure building with environmental control can easily be seen



Above, shelter over the Church of the Apostles; below, Church of the Virgin and Hippolytus Hall. Ammar Khammash, architect.



by comparing the small shelters to the larger stone structures at Madaba.

At the beginning of the design process for ACOR's shelter over the Petra church, architect Rob Shutler asked us what it was we wanted from that shelter and he presented a number of possible criteria (some of which are incorporated into the chart). Early on in the design phase, some of the trade-offs were already clear: as previously noted, maximum security results in large foundation size. In another example, construction on site carries with it the danger of damage both to the site being protected and to the surrounding cultural remains during the construction process; on the other hand, prefabricated structures can be expensive. Finally, the jobs created by using local building techniques, as had been done for the stone buildings at Madaba, had to be weighed against the issue of whether those stone buildings presented themselves to the lay person as being antiquities themselves.

For the Petra shelter there were constraints beyond those at Madaba. The first of these was that the visual impact had to be minimized. This had not been necessary in the urban context of Madaba, where the architects actually had to be inventive to prevent the antiquities from being overwhelmed by surrounding high-rise buildings. The second constraint was that Petra Church required a shelter that would span

Criteria	Madaba Church of the Apostles	Madaba Church of the Virgin	Madaba Burnt Palace	Madaba Church of the Prophet Elias	Petra Petra Church
1. Protect from the elements	x	x	x	x	x
2. Minimal intervention at the site			x	x	x
3. Clearly new			x	x	x
4. Reversible without harm to the site			x	x	x
5. Inexpensive				x	
6. Simple to install			x	x	x
7. Natural light	x	x	x	x	x
8. Natural ventilation	x	x	x	x	x
9. Flexible and expandable			x		x
10. Provide security	x	x			
11. Environmental control	x	x			
Size in square meters	600	500	225	200	600
Cost <sup>1</sup> including design/supervision	\$150,000	\$175,000	\$85,000	\$25,000	\$245,000
Cost per square meter	\$250	\$350	\$377	\$125 <sup>2</sup>	\$408 <sup>3</sup>

<sup>1</sup>Costs are approximate and do not include conservation of the mosaics, signage, walkways, etc.  
<sup>2</sup>Does not include the cost of recycled materials used in the project.  
<sup>3</sup>This shelter was prefabricated in the U.S. and there were shipping costs; nonetheless, the cost is still in line with the cost of the shelters built in Jordan where labor costs are appreciably lower.



Shelter for the Burnt Palace. The western part is to the left and the eastern to the right. Leen Fakhoury, architect.



Shelter over the Church of the Prophet Elias. Pierre M. Bikai, architect.



The aluminum frame of the Petra Church shelter



The Petra Church shelter after completion

the whole width of the structure. This meant that it would be either a building with massive foundations built on site or it would utilize an extremely modern (and expensive) technology, the space frame. That was, indeed, the technology finally chosen—precisely because of the sensitivity of the site.

In addition to the shelters actually constructed, architect Leen Fakhoury did a preliminary design for a 520 m<sup>2</sup> shelter for Madaba's Church of the Martyrs, consisting again of a steel frame. That shelter has yet to be built, but would cost around \$140,000 or \$269 per m<sup>2</sup>. ACOR also sponsored a design for a shelter at Lot's Cave measuring approximately 100 m<sup>2</sup> at an estimated cost of \$34,000 or \$340 per m<sup>2</sup>. A shelter for the Petra Baptistry, measuring 102 m<sup>2</sup>, as designed by Rob Shutler would cost \$34,000 or \$333 per m<sup>2</sup>. The project at Um al-Rasas did not reach the costing stage. However, the cost of the shelters that have been built and the estimated cost of the three that haven't ranges between \$125 and \$408 for an average of \$307 per m<sup>2</sup>. Five different architects have been involved with the eight projects and all were under pressure to devise a low cost solution to the problem of sheltering. As the chart shows, none met that criterion, with the exception of the Prophet Elias shelter, which was unusual in that no great spans were involved and recycled materials were used.

There is presently no low-cost solution, so responsible excavation of mosaics and the like should not be undertaken without provision for such expensive sheltering. Provision must also be made for conservation, on-going maintenance, and security.

Cost, however, is not the only issue. The design issues encountered in each of the projects showed that, whatever the cost, there is still no perfect design for a shelter. Each of the shelters built by ACOR exhibits one or more compromises, as can be seen in the chart.

Together, however, the shelters mark a major step forward in the effort to make what has been uncovered accessible to all, to give back to Jordan—our hosts—and to treat the cultural heritage of Jordan in a responsible manner.

## Field Projects

### Eastern Hasa Late Pleistocene Project

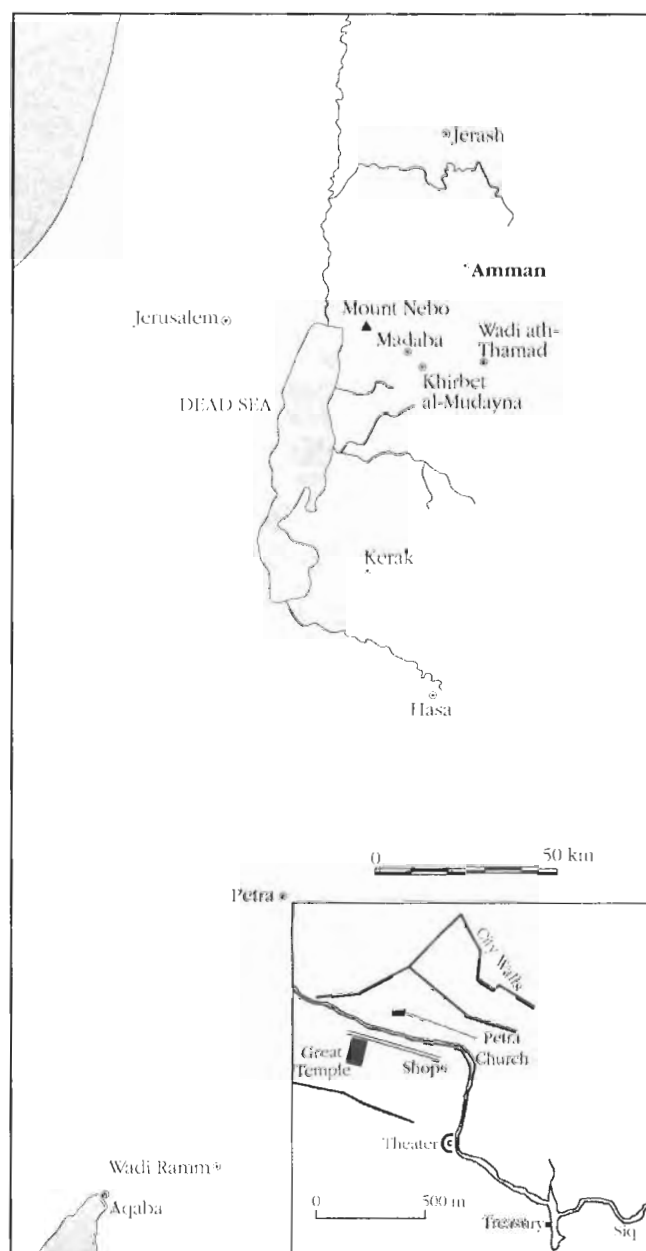
The eastern Hasa contained a Pleistocene lake which was present as late as about 20,000 B.P. Local conditions favored long-term visits by hunter-gatherers. Subsequently, during the Last Glacial Maximum (LGM), about 18/17,000 B.P., it is likely that Lake Hasa shrank or disappeared. During the LGM, hunter-gatherers probably were highly mobile, although the eastern Hasa would have remained attractive because of the many springs, ponds, and marshes. After the LGM, climatic conditions ameliorated, and the marsh/pond system became more extensive. This again favored longer stays at basecamps. These favorable conditions persisted until at least 11,000 B.P., after which the marsh system in the Hasa disappeared.

With the purpose of understanding ancient settlement systems associated with that ecology during the interval from about 40,000 - 11,000 B.P., the Eastern Hasa Late Pleistocene Project (EHLPP), funded by the National Science Foundation, conducted its first field season from 1 June to 12 July, 1997. Major objectives included: (1) relocation and assessment of Wadi Hasa Survey (WHS) and Wadi Hasa North Bank Survey (WHNBS) sites; (2) testing at Tor Sadaf (WHNBS 8), Tor Sageer (WHNBS 242), the Multaka al-Wadian site complex (WHNBS 192-196), and Tabaqa (WHS 895); (3) excavations and testing at Ain al-Buhira (WHS 618); and (4) geoarchaeological investigations of Tor Sadaf, Tabaqa, and the Hasa/Ahmar confluence, as well as new investigations at Ain al-Buhira and at the juncture of the Hasa and Khasra.

Our relocation and assessment of twelve WHS and WHNBS sites has confirmed the sparsity of Upper Paleolithic and Epipaleolithic sites in areas away from the lake/marsh system of the eastern Hasa basin. This highlights the importance of the lake/marsh ecological context during this interval.

Two new sites, EHLPP 2 and WHS 618X, as well as testing at Tor Sadaf and at the Multaka al-Wadian site complex, document a substantial Early Ahmarian (Early Upper Paleolithic) presence in the eastern Hasa. In conjunction with Late Ahmarian assemblages from Ain al-Buhira and Yutil al-Hasa (WHS 784), this affords great potential to study responses within the Upper Paleolithic to fluctuations in the lake/marsh ecology, and to document continuity and change within the Ahmarian.

Testing at Tor Sageer revealed an Early Epipaleolithic occupation that emphasized activities other than production of microlithic tools. This adds considerably to our understanding of site activity differentiation during this period. Additionally, the lithic assemblage from the site, which includes a small number of unusual types ("adzes" and "Sageer points"), as well as relatively narrow backed microliths including La Mouillah points, may represent an interval that falls between the



nongeometric and geometric Early Epipaleolithic occupations at Tor al-Tareeq (WHS 1065).

Testing at Tabaqa yielded Late Epipaleolithic assemblages (Early Natufian) that augment preliminary work at the site by B. Byrd. Perhaps the most significant observations are related to the geomorphology of this locale, where a probable oxbow lake/marsh was present during the Early Natufian. This occupation is buried beneath 1-2 m of marl deposits, indicating that the 30-35 m terrace in the lower portions of the Hasa drainage existed at least as late as ca. 11,000 B.P.

Excavations at Ain al-Buhira confirmed the existence of a well-developed Late Ahmarian in the eastern Levant that has a distinct bladelet technology focused on the production of "Ouchtata points." The recovery of large numbers of faunal remains, including whole teeth and ostrich egg shells, adds to our understanding of subsistence patterns in a lake/marsh ecological setting.

Spatially discrete artifact distributions have provided one of the first opportunities to examine *in situ* Ahmarian activities.

During the excavations at Tor Sadaf, Tor Sageer, Tabaqa, and Ain al-Buhira, including WHS 618X, flotation, phytolith, and pollen samples were collected for analyses. Faunal remains and geoarchaeological sediments also will be studied. This extensive sampling strategy was undertaken to aid in the reconstruction of the paleoenvironment, paleoecology, and geomorphology of the Wadi al-Hasa region, and in certain aspects of subsistence/seasonality.

Nancy R. Coinman, Iowa State University  
Deborah I. Olszewski, Bishop Museum, Honolulu

### Khirbat al-Mudayna

The second season of excavations at Khirbat al-Mudayna on the Wadi ath-Thamad continued under the supervision of Michèle Daviau of Wilfrid Laurier University (Waterloo, Canada). Excavations at Kh. al-Mudayna again concentrated on three fields: Field C on the northern top of the tell was opened to explore the Iron Age II remains further, and in Fields L and N, excavations of the Nabataean and Roman remains at the bottom of the tell continued. The regional survey continued for the second season.

*The Iron Age Gate.* In Field C, excavations confirmed the existence of a six-chambered gate on the northern side of the tell; it dates to the Iron II period (ca. 800-600 B.C.). The gate's total length is approximately 15.3 m and it was 15 m wide. This structure was connected to a casemate wall which seems to surround the whole tell. Excavations suggest that the gate was built on bedrock from the beginning as a six-chambered gate. An interesting feature of this six-chambered gate is the fourth wall of each chamber on the side of the main road. It is clear from this season's work that all three west chambers were sealed by a wall on the east side. This feature seems to be similar to the construction of the Iron Age gate at Hazor [Stratum X]. No remains from the excavation of this gate suggest an occupation earlier than Iron II, but further analysis is needed.

*The Nabataean Reservoir.* After further excavations in Field L (situated on the northern slope near the bottom of the tell), it has been determined that Building 700 had at least two phases. In the first phase, this structure which measured 10 x 16 m, was built of walls made of boulder and chink; up to five courses of these are preserved. The presence of water channels and of plaster found on the floor and walls, suggests that it was a Nabataean/Early Roman reservoir. It resembles the reservoir at Mamfisis. Attributable to the second phase are a line of ten piers visible on top of the plaster surface,

about 0.5 m apart. These were built in the header-and-stretcher style of construction, and seem to be part of a large arch support system for a ceiling.

*The Nabataean Temple.* Excavations in Field N revealed additional architectural features, and further strengthened the hypothesis that Building 800 was a



Rooms 803/804, the Nabataean Temple Complex. Photo by Wendy Porter.

Nabataean Temple. A single boulder with drafted margins may represent the symbol of the Nabataean god Dushara. In Room 801, a flight of 10 steps lead to a platform that towers over the remains of this building. Additional rooms were built along the west side of the temple. These rooms had floors lined with plaster and arches to support the ceilings. A Roman coin found in the debris may help to date a later occupation phase to the late 3rd century A.D., the time of Valerianus according to Z. T. Fiema.

*Site 13.* During last year's regional survey, a complete female figurine and fragments of anthropomorphic vessels were found at a site south of el-Rumeil, called WT-13. A salvage excavation was conducted during this season and produced several other figurines and more fragments of anthropomorphic vessels. Most of the figurines are ceramic representations of women holding either their breasts or a disc. Other finds included murex and cowrie shells, miniature juglets, a limestone figurine head, and a blue faience pharaonic amulet. The faience amulet together with the hairstyle and dress of some of the figurines suggest a stronger Egyptian influence here than in neighboring Judah. The finds and the position of the site suggest that site 13 was an Iron Age II cultic place. The site



Figurine from Site 13. Photo by Wendy Porter.



had been looted but most of the objects found this season were found under a layer of cobblestones in what appears to be a favissa.

*The Regional Survey.* The regional survey continued under the supervision of J. Andrew Dearman from Austin Presbyterian Seminary (Texas). The survey was undertaken to understand the distribution of sites and settlement patterns along the Wadi ath-Thamad and Wadi Shabik. A total of 33 sites have been located, 15 of them this season. Most of the sites belong to one of the two periods attested at Mudayna: Iron Age II or Nabataean. The Iron Age settlements are usually watch towers or agricultural installations. The abundance of strategically located Iron Age II towers suggest that this area was at the border between Moab and Amon. The Nabataean sites are mainly farming settlements and are located across the wadis overlooking the agricultural land. At some of the sites numerous buildings and other features were detected. For example, no less than 33 cisterns were identified at er-Rumeil. Only one site (RS-33) with earlier material was located. It is on a terrace on the south side of Wadi ath-Thamad and yielded Chalcolithic-Early Bronze Age lithics.

*Cristian G. Rata, U. of Toronto*

## Karak Resources Project

In 1997 the Karak Resources Project (KRP) completed a second season of research on central Jordan's Karak plateau. During their 1995 pilot season, KRP's staff launched a multidisciplinary project with an intensive surface study of 19 sites chosen from the earlier Miller-Pinkerton survey of this region. In June and July of 1997, the KRP conducted research through three interrelated approaches: 1) regional archaeological survey; 2) regional scientific studies; and 3) excavation at al-Mudaybi'.

The Karak Project's purpose is to document ways in which occupants of this 875-km<sup>2</sup> section of tableland have utilized available natural resources, including site location and access to local and long-distance trade goods. Through its continued study of how Karak's inhabitants have used natural resources (e.g., building stone, clay deposits, water resources, soils, plant communities, site positions, natural routes of travel), KRP should provide significant information on the region's historical and cultural development. Such research is especially important because rapid demographic and economic changes threaten the rich environmental and archaeological heritage of central Jordan.

In 1997, the KRP survey team revisited 36 sites previously documented by the Miller-Pinkerton survey; sites visited this season are in the extreme southern and southeastern parts of the Karak district, the territory around Mudaybi'. This follow-up work allows the more recent project to monitor damage done to these ancient settlements and to gather new information while it is still available. Thirteen new sites were also located and studied in the 1997 season.

The 1997 KRP team included six specialists who completed research in the environs of Mudaybi'. They examined the Karak plateau's geology and soils and the changing Bedouin and village cultures. All off-site investigations concentrate on resource exploitation and, in the case of ethnographic studies, are intended to illuminate patterns of continuity and change in the region.

KRP chose to excavate the site of al-Mudaybi' because it is well preserved but threatened by development. This fortified hilltop is located in the semiarid southeastern corner of the Karak governorate, on the west side of Fajj al-'Usaykir, a wide valley that runs between the Desert Highway to the east and the King's Highway to the west. As it stands today, the walled enclosure, which measures 83.5 m N-S x 88.75 m E-W, was built largely in Iron Age II but modified for use in later periods. Al-Mudaybi' must have served as an administrative center for the tiny Moabite kingdom; its strategic situation could have served both military and commercial interests. For KRP's purposes, the site's location on the "desert fringe" of the plateau makes it a perfect case study in resource utilization.

In this first of at least three excavation seasons, KRP opened a total of six 6 m x 6 m squares in two archaeological fields, A and B. The three squares in Field A ran from inside the site's northern, Iron Age wall into a later "acropolis," and the three squares in Field B ran from



Proto-Aeolic capital from al-Mudaybi'

just outside the eastern, Iron Age gate into the site's elevated interior. A variety of building remains, artifacts, and ecofacts were recovered in the excavation. Field A yielded materials which date primarily from the Late Byzantine through Late Islamic periods. Excavation in both fields yielded a considerable amount of stone tumble that almost certainly resulted from seismic activity.

Remains from Field B date mostly to Iron Age II and are dominated by a monumental city gate, which origi-

nally included at least four large, elaborately carved "proto-Aeolic" capitals and as many lintels. While additional excavation in the next KRP season will be needed to obtain a full plan of the entire structure, it is likely that this was a four-chamber gate which measured ca. 15 m on each side. Excavators removed debris from the gate's chambers and passageway, including remnants of charred beams and reed impressions from the collapsed roof. At this preliminary stage, it appears that the closest parallel to the new gate at Mudaybi' is the Iron Age city gate of Beersheba III, dated to the 9th century B.C.

Gerald L. Mattingly, *Johnson Bible College (Knoxville, TN)*

## Petra: Great Temple

In cooperation with the Department of Antiquities of the Hashemite Kingdom of Jordan, excavations were carried out at the Petra Great Temple from June 14 to August 11, 1997. Work was begun in the Propylaeum which defined an upper west terrace and crosswalls. The east-west retaining wall of the Lower Temenos was completely exposed as was the east stairway leading



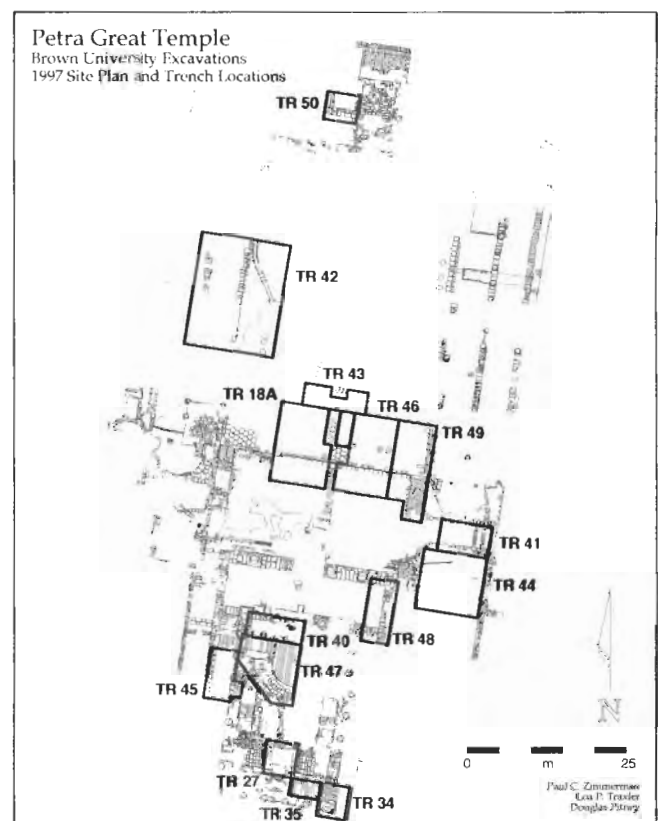
Aerial view of the Great Temple, August 1997. Photo by Artemis A. W. Joukowsky.

from the Lower Temenos to the Temple Forecourt in the Upper Temenos. A large area of the hexagonal pavement was excavated and, to the west, a canalization system extending under the pavement produced a cache of Nabataean wares. Elephant heads and trunks continued to turn up, but there is still a mystery as to which part of the Lower Temenos they adorned.

In the Upper Temenos, an elegant series of arches covering a cistern was located just behind the East Exedra. Much activity was devoted to the Great Temple

itself where one-half of an apsidal structure was recovered tentatively identified as having served as a temple theater or bouleuterion (council hall). One half of the temple's West Corridor was found to be frescoed with red, yellow, and blue plaster. The earth choking the East Exterior Anta and the East Interior Anta was removed so that the full sweep of the Temple Pronaos can now be appreciated. Eight courses of the massive heart-shaped column at the eastern rear were removed for re-erection and this area was excavated to ground level 7 m below the modern surface, exposing an elegant base to our heart-shaped rear column as well as a later Nabataean east-west stairwell, leading from the central Adyton to the East Interior Corridor.

A study of the glass was undertaken, and our artifact data base now holds some 115,000 items. The 1997 catalog contains an additional 34 coins, 68 lamps and 46 other items including Nabataean wares, elephant parts, a partial Greek inscription, two bronze finials, and an extraordinary sculpture of a lion's head. Architectural elements, including marvelous painted stucco fragments, continued to be prolific, but of particular note is a

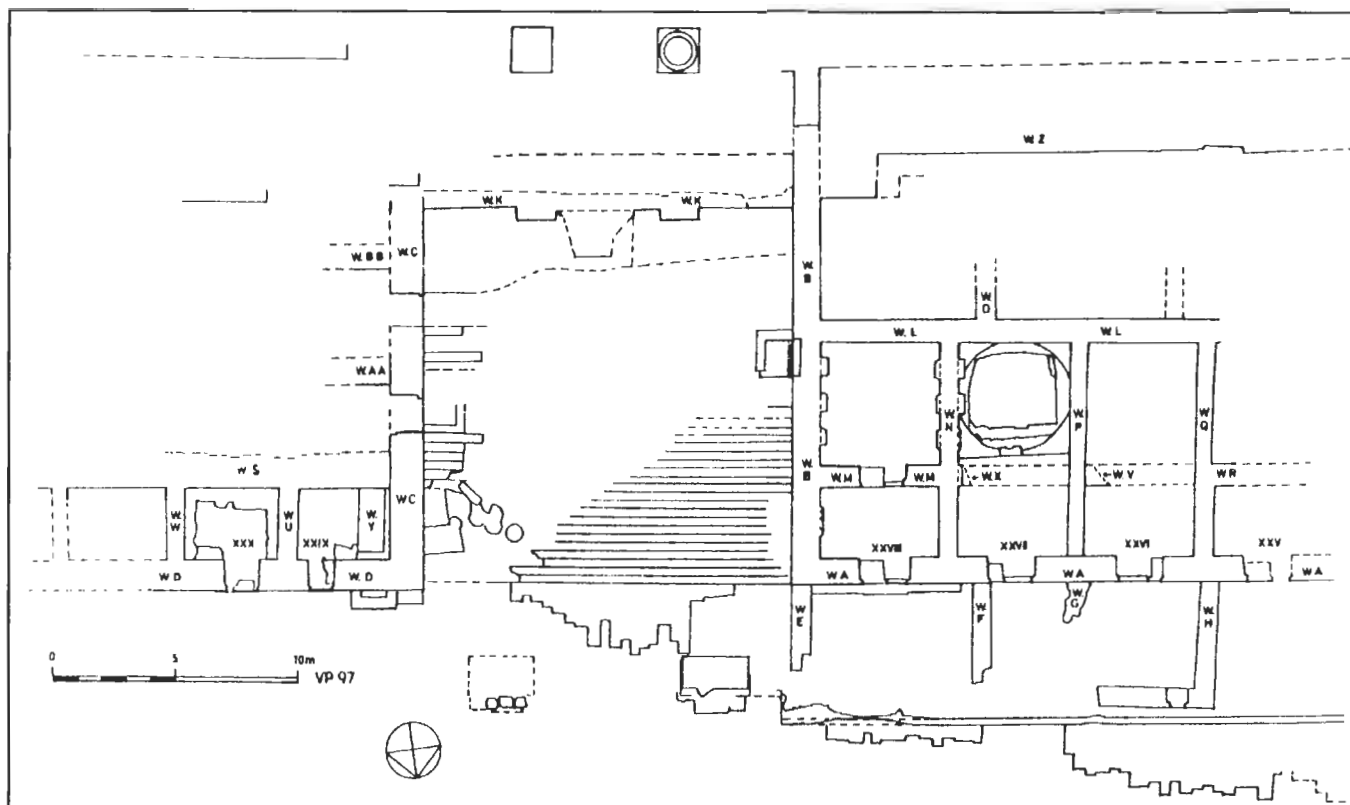


Ground plan of the Great Temple

pilaster with the relief of a life-sized male torso, which has as yet to be identified.

During the fall we will continue consolidation of the architectural elements of this great edifice. This effort is in part made possible by a grant from the World Monuments Fund.

Martha Sharp Joukowsky, *Brown University*



Ground plan of the Roman Street excavations

## Petra: Roman Street Project

ACOR's Roman Street Project, funded by the United States Agency for International Development (USAID) and supported by the Department of Antiquities of Jordan, began in late spring 1997. The purpose of the project is to enhance the touristic attraction of Petra and to explore the city's urban history by exposing a part of the civic center. Five rooms along the southern side of the eastern end of the colonnaded street were excavated, three to the west of the grand stairway and two to the east of it. Judging from their location in the city center, all five rooms were commercial establishments, such as shops or taverns.

The main feature is the stairway leading to the upper market, which is on a large artificial plateau held in place by retaining walls. The steps are only partially preserved. The remains of three small landings were found. These facilitated the access to the second-storey rooms west of the stairway and to spaces the east of it.

The three rooms (XXVIII-XXVI) on the western side of the stairway are roughly of the same size (ca. 4.4 x 8.45 m) and are similar in appearance. Room XXVIII features some unique details. Two niches in the facade flank the door and the room consists of two spaces separated by a wall. The upper floor was supported by the three arches in the back room and one in the front. The arch springers are well preserved in the back room, and the entire design of arches and springers is very uniform. Both external and internal doors in Room XXVIII had been partially blocked at some point and secondary

walls constructed on what had been the sidewalk. Two crosses incised on the front wall, and one on the partitioning wall may date to the Byzantine period.

Rooms XXVII and XXVI are each spanned by five arches. A puzzling feature occupies the southern half of Shop XXVII. It is a nearly square tank or basin with slightly curved internal sides and rounded corners. Stones and ashlar were deposited inside in tight but unpatterned layers. A roughly flat stone surface laid on top of them totally sealed the interior. Evidently the stone surface was meant to have a rounded form to facilitate some industrial operation. It has been suggested that it was a pottery kiln, a wine or oil press, or a threshing floor, but none of these suggestions is satisfactory.

The doors in Rooms XXVII-XXVI were also partially blocked. A raised area surrounded by the secondary walls in the front of Room XXVI represents one of the so-called "Byzantine shops" in Petra. The interiors of both rooms were filled up with stones, soil, roof tiles and paving slabs up to the level of the collapsed arches. The five arches in Room XXVII fell in orderly rows, allowing for the recovery of most of their voussoirs.

The twin shops XXIX-XXX are located directly east of the stairway. The main internal features there are benches or low counters set against the walls. In total, 138 coins were found in Room XXIX and 48 in Room XXX. South of these shops is Area East characterized by a series of parallel E-W walls, which form two long and narrow spaces or galleries on the increasingly higher ground. The galleries do not seem to feature any partition walls.



Perhaps the architectural design of Area East was intended to provide an aesthetically acceptable eastern frame for the monumental stairway. The two gradually superimposed spaces were perhaps open or covered galleries or porticoes opened to the north side. The general impression of the entire area is that of a huge facade, like an elaborate theatrical backdrop.

The preliminary interpretation of the site in terms of spatial and temporal changes is tentative and will likely be modified through the future studies. Some remains at



View of the Roman Street Project area from across Wadi Musa

the site may belong to an earlier phase of development, perhaps to the first half of the 1st century A.D., or later. In the second phase, the stairway was constructed, probably with a monumental arch in front of it. An inscription dating to A.D. 114, probably belonging to that arch, had been found previously in the area. It appears that the original shops XXVIII-XXVI were expanded through the construction of a new facade wall farther north. Rooms XXX-XXIX, if they existed before, were also substantially remodelled. The fieldwork results favor the opinion that the stairway is contemporary in construction with the sidewalk, the stylobate and the colonnade, the remodelled shops, and the extant pavement of the Colonnaded Street. The pottery deposits are uniformly not later than the beginning of the 2nd century A.D. A coin of Rabbel II found in the bedding of the street's pavement, which also sealed the foundation trench of the stylobate conforms to that date. This development could relate to the last decades of the Nabataean independence, but the Trajanic, or generally post-annexation period is preferred.

The commercial function of the rooms is supported by the predominance of storage jars, amphorae and unused cooking pots in the ceramic repertoire of Rooms XXVIII-XXVI. The abundance of coins in Rooms XXIX-XXX may relate to operations conducted there. The majority are dated to the 4th century A.D., but 5th century

types are also present. Many coins were minted before A.D. 363, which may or may not be accidental. However, until the ceramic material is fully understood in terms of stratigraphic sequence and relationships, the impact of the 363 earthquake on this area cannot be fully ascertained or defined. Presumably, the construction of the "Byzantine shops" on the sidewalk and often upon the street itself, as well as the blocking of the doorways of the original shops, are related to earthquake damage and to increased threats of flooding and landslides.

The later Byzantine period is well attested in ceramic finds, but the coins included only a single issue of Justinian I. The gradual abandonment of the shops apparently progressed in a linear pattern, from east to west. Occupation in the eastern area of the street continued in some form during the 7th century. Incidentally, a fragment of a Crusader period cooking pot was found in Area East.

The Roman Street Project has greatly enhanced the architectural panorama of the city center and created a background to the Colonnaded Street. More impor-

tantly, the recovered information will permit a better understanding of the urban development of Petra. The continuity of occupation in the excavated area is now attested for the period between the 1st century B.C. and the 6th-7th century A.D. The second phase of the project will include the restoration of the remains.

*Zbigniew T. Fiema, ACOR*

## Wadi Ramm Recovery Project

The second season of the Wadi Ramm Recovery Project ran from June 27th to July 18th, 1997. Project directors were Dennine Dudley and M. Barbara Reeves of the University of Victoria.

The Eastern Complex, a palatial structure containing a bathhouse and public and private units, is situated alongside Ramm's Nabataean Temple on a small hill at the foot of Jebel Ramm. The elevation of the Eastern Complex in relation to Ramm's ancient settlement and the complex's pairing with a temple suggest this was an important structure when built (probably in the 1st c. B.C./A.D.). Exploration of the structure began in 1996 with documentation of the exposed remains. The goals of this year's season were to examine some of the peripheral areas of the Villa and to probe two of the bathing rooms.

The core of the Villa consists of two rectangular

structures, separated by a corridor, and two paved rooms or courtyards. The grand nature of the architecture and finds recovered last season indicated that the central parts of the Villa originally served a public or official function. It was theorized that the NW section of the Villa contained the private quarters, the focus of this season's work. A probe in the north end of the central corridor revealed a well-built staircase of three steps leading through a doorway into the NW courtyard. The threshold is carved from a single block and retains sockets for double-doors—identical to the grand doorways excavated last year. Exploration in the north of the courtyard recovered strong parallels in plan and finds to the north end of the (much larger) eastern courtyard. This similarity between the two areas, both used for dining, gives weight to the theory that the NW section housed the private quarters.

Vicky Karas searched along the southern perimeter for complex's main entrance. It had been hypothesized that the entry would be found in alignment with the axial doorways in the central rectangular unit. This proved not to be the case and a complicated architectural plan was revealed.

Excavation in the multi-room bathhouse concentrated on the frigidarium (unheated bathing room) and the tepidarium or sweat room. At the center of the frigidarium was an immersion pool. One can imagine a Nabataean bather stretching out in this pool, relaxing, and temporarily forgetting about the scarcity of water in the desert outside. The interior of the pool was 1.24 m long x 2.59 m wide x 0.94 m deep and was rimmed by Nabataean dressed stones faced with hydraulic plaster. This portion of the room was paved by flagstones and contained a bench running along the outside of the pool. There was presumably also access to the basin from the southern (not fully excavated) half of the room.

To the west of the frigidarium and between it and the calidarium (excavated last year) is a room that probably functioned as a sweat room or tepidarium (warm room). Excavation failed to uncover a hypocaust beneath the floor; however, a great deal of soot-encrusted wall plaster was found in the fill. This soot (present on at least 2 successive layers of wall plaster) appears to have accumulated while the plaster was still on the walls. This suggests that this room was heated by a brazier rather than by a hypocaust.

The results of this season's work show that the Eastern Complex was constructed in units, separating public and private spaces. The private apartments in the Villa were built with elaborate architecture and decorative features like its more public areas, indicating that personal luxury was as important as public display. The entrance to the Eastern Complex appears to have been complicated and carefully controlled. This suggests that the complex served primarily as a residence or palace and not as a civic building, although certain areas of the structure were designed for public use. Whether the bathhouse was primarily intended for public or private use is not yet clear. The bath is located next to the public areas of the complex and may have served either a religious function for the people visiting the temple or as a commercial enterprise catering to caravan travellers. Alternatively, the doors to the bathing block could have been closed to retain this area for private use.

*Dennine Dudley*

## Roman Aqaba Project

From May 16 to June 30, 1997, excavations took place in Aqaba as part of the Roman Aqaba Project. The project is directed by S. Thomas Parker of North Carolina State University. This season, the field director was Mary-

Louise Mussell of Carleton University (Ottawa, Canada). This season's excavation focused upon a large mudbrick structure first identified in 1994. The structure is at least 14 m wide and over 20 m in length. The mudbrick walls rest on bases composed of 12 courses of stone. The walls were covered with white plaster and decorated with white plaster mouldings.

The long axis of the building is oriented east to west. The eastern section of the building is divided symmetrically into three rooms. A large central room, approximately 6 m wide, is flanked by narrow rooms 2 m wide. Entrance to the building can be gained through two arched doorways at the western end of the north wall. The mudbrick arches are still standing, having been blocked by mudbrick walls in antiquity.

This season the excavation team was able to uncover a section of the floor of the



Roman Aqaba Project team members. In the front row, Mary-Louise Mussell is second from the left and S. Thomas Parker is on the right.

building. The initial floor was of mudbrick which was later replaced in one room by hexagonal composite pavers, purple in color, and in the central room of the structure by a multi-colored cobbled flooring. These two layers of floor represent the first phase of occupation of the structure, when it was still a two-storey structure with vaulted rooms. The upper level was reached by a staircase at the western end of the building.

During the 1996 season almost 100 coins were found in the room with the pavers. It appears the coins were originally in a palmwood box that had been attached to the east wall of the room beside a small doorway. The doorway and the room beyond it became a focus of the 1997 season. The doorway appeared to lead into a small room with a vaulted ceiling still intact. When excavation began it quickly became clear that beneath the southern portion of the room was a hollow. Unfortunately it was too dangerous to continue digging in the room. The vault appeared to be intact, but over the centuries the mudbrick had settled on the fill within the room. Collapse was an all too real possibility.

The original occupation of the building with its paved floors and plastered walls is dated to the 4th century A.D. This phase was probably destroyed, or severely damaged, in the earthquake of A.D. 363. After the earthquake much of the mudbrick vaulting collapsed, leaving a 0.5 m thick layer of mudbrick tumble over the floor. The walls, however, remained standing, as sometime in the 5th century the building was reoccupied.

During the 5th century, the building may have been the site of an artisan's shop. Pieces of worked shell and bone were common discoveries. Of special note is the head of a man carved on bone. Many of these of bone and shell appear to have been cut as inlay pieces, so that other fragments found in 1996 may have been part of a decorative screen or similar ornate piece of furniture.

The most exciting find of the season was also from the 5th century occupation. Cut into the floor was a small hollow and in the hollow were 30 bronze coins. The latest remains identified this season are of an immense *tabun* or oven dating to the early Islamic period. The *tabun* was built against the wall which blocked the smaller of the two standing arches. The oven is large enough to easily hold the two students who excavated it.

The initial use of this building is still a mystery, but an intriguing possibility exists. The central hall flanked by aisles suggests an early church. We know Aqaba was an early Christian center, as it was represented at the Council of Nicea in A.D. 325 by a bishop. The style of the building is not unlike 5th century mudbrick churches from southern Egypt. Coin and ceramic evidence places the construction of this building prior to A.D. 350. The interior walls of the building suggests a hall church rather than a basilica which would have had pillars or columns. Hall churches are usually dated prior to A.D. 330 which would make our church one of the oldest known. Only further excavation can confirm this.

Mary-Louise Mussell, Carleton University

## Update on the Scrolls

The University of Michigan team in 1997, consisting of Ludwig Koenen, Robert W. Daniel, Donka Markus, Robert Caldwell, and Traianos Gagos, continued its work on the papyri by establishing a final text for roll no. 10 (*Papyrus Petra Khaled and Suha Shoman*), by dealing with the historical and cultural implications of the information contained in that document, and by producing transcripts for almost all of the other priority rolls.

*Inv. 10*

In addition to the main pieces of the papyrus that produce a more or less continuous text, there are 450 fragments, mostly the size of postage-stamps, that provide snippets of information from the beginning of the document, which is otherwise completely lost. Several of the fragments come from the surviving part of the document. L. Koenen succeeded in placing a large number of these fragments onto the right side of the main text. This resulted not only in new information but also in confirmation of many restorations as well as the rejection of a few. In several cases, the placement of fragments solved problems on which the team had spent much time. It also turned out that 95% of the team's supplements were confirmed by the newly placed fragments. This is an unusually high rate of success (30-50% is regarded as very good) that is mostly due to the formulaic character of the document.

As reported before, *inv. 10* is a division of property among three brothers named Bassos, Epiphaneios, and Sabinos. The property consists of houses in the metropolis of Petra and in the nearby village of Seril, as well as land in the surrounding countryside. Study of the other documents in the archive suggests that *inv. 10* is the oldest document in the archive, predating the earliest securely dated document of A.D. 528. Unfortunately, this cannot be proven since the dating formula that was at the beginning of the roll has been destroyed altogether.

The only link that connects *inv. 10* with the rest of the archive is the name of one brother, Bassos, who does not come from the family of the principal person of the archive. Rather, Bassos is the grandfather of Theodoros's wife Stephanos. This might explain why *inv. 10* was found among the papers of Theodoros. Bassos' son, Patrophilos (father-in-law of Theodoros), appears as a party in pre- or post-nuptial agreements with Theodoros (e.g., *inv. 63+65* and *inv. 68*) and possibly in other documents that Stephanos brought into the family.

*Inv. 10* is an interesting document both on its own and within the larger context of the archive, because it provides unique information on property ownership and inheritance and because it sheds light on the nature of Petra's economy and its hinterland.

Above all *inv. 10* is a monument in the history of the Arabic language. This is due to its wealth of Semitic (mostly Arabic) names for places, houses (e.g., line 85-86: Gr. *Darath al-Ebad* = Ar. *Darat al-'Ibad*, "House of the Worshippers"), and parts of houses (e.g., line 86: Gr.

*Elliath Aplithonis* = Ar. Elliat Afthonis, “Penthouse of Aphthonios”). About 50 such names appear in roll 10, perhaps another 30 in the rest of the archive. Most of the names are in a form of pre-Islamic Arabic. This is of great importance as Arabic was not a written language with its own alphabet until the Koran was written down a century later. The few unquestionably authentic remnants that we have of pre-Islamic Arabic are written in other, non-vocalized Semitic scripts. In these papyri, however, the Greek vowels render the Arabic vowels.

The many Arabic toponyms that appear in inv. 10 are of particular interest, because several of them are still in use in the larger Petra area. With the help of several linguists, archaeologists, and local residents it has been possible to identify several of them with still-existing modern places. A few examples may suffice here: *al-Bassa* and *Xaphphath al-Hawawer*, are names based on words meaning “moist place” and “pan (in the topographical sense) of white earth”. They were identified with two existing places in the town of Wadi Musa, next to Petra. Some five other places in the same town have



Hussein Hamad, Mohammad Nuweyja, and Dakhilallah Qublan of the Bedul Bedouin of Petra with Dr. Robert W. Daniel of the U. of Michigan scroll team. A member of the excavation team at the Petra Church, Mohammad Nuweyja was the first person to recognize the scrolls.

names identical with or closely similar to place names in Roll 10. Some 5 km north of Wadi Musa, high in the hills overlooking Beida, is an elevated area called Umm al-Louza (“Mother of Almond Trees”), and contiguous with it a part of the hillside is called al-Rafid. In Roll 10 are mentioned places called *Math al-Louza* and *al-Raphida*—names that may be referring to the very same places. Clearly, the family of the archive owned much property in the prime farmland around what is now Wadi Musa and they probably owned land to the north, around Umm Louza, which is still an agricultural region today.

#### Other Rolls

The team also studied nearly all of the other priority rolls, including many from field inv. 34, which was

excavated as a group. The overwhelming majority of the rolls in this group deal with property matters such as the transfer of property rights through cession, sale, or transfer of tax responsibilities. Three of the documents deal with the dowry and other property that Stephanous brought into the family.

Two of these texts can be briefly described here:

(1) Inv. 60 consists of 14 complete lines and four substantial fragments from the foot of that roll. The document deals with the registration of a vineyard called *Malouda* that is situated in a deserted hamlet called *Baith Tel al-Keb*. It records the transfer to Theodoros son of Obodianos, of the responsibility for paying taxes on that property to the local authorities. For reasons that are obscure, Theodoros and his father paid the taxes in the past to a municipal official, Flavius Leontios and his father, Valens. The text can be securely dated to Jan./Feb. A.D. 540. The taxes for land that previously had been registered in the land-register of Augustopolis are now being collected by the tax-office in the metropolis of Petra. The vineyard fell under the fiscal authority of the city (it is called “free” land, meaning free from the fiscal authority of the imperial administration; in other words, land that was under the control of the city). The rate of taxation is high, 47.5%, a rate corroborated by other documents in the archive that seem to record even higher rates.

(2) Inv. 67 (*Papyrus Petra Selz Foundation II*) was reconstructed like a jigsaw puzzle, first by arranging the photographs and then arranging the original fragments, from more than 120 fragments of varying sizes. Seventeen lines of text were recovered. Only three or four of them are not complete and the signature, probably that of the local official, is missing. The document is addressed by Flavius Dusarios son of Valens, who had been prefect of *Kastron Ammatha* (modern al-Hammam, a settlement SE of Petra and near the modern city of Ma’an), to Alpheios son of Valens, the keeper of the public records, probably in Petra. Dusarios had held a post in Ammatha, as the document informs us, but was a citizen of Petra. In this document, he requests the keeper of the public records to transfer tax responsibility for a piece of land (part of which was a vineyard) to Theodoros son of Obodianos. The property was located near *Kastron Zadakathon* (modern Sadaqa, approximately 20 km SE of Petra) in an uninhabited hamlet. As in many of the other documents from Petra, the plot of land bears an Arabic name.

It is too early to draw general historical conclusions, but it is certain that in the 6th century Petra’s agricultural economy was still functioning and that the city maintained economic and administrative ties with several other communities in the area, including Augustopolis, Ammatha, and Zadakatha. Furthermore, the documents inform us that at least the local administration (both in Petra and Augustopolis) was still fully functional in the middle of the 6th century.

Traianos Gagos, *University of Michigan*

## Director's Report: January-June 1997

*Pierre M. Bikai*

### ACOR Projects

ACOR/USAID and the Ministry of Tourism and Antiquities:

Madaba: Archaeological Park and Mosaics Shelters, Church of the Prophet Elias, Pierre M. Bikai, architect; Burnt Palace, Presentation Phase, Leen Fakhoury, architect

Petra: Petra Church Shelter and Conservation Project, Zbigniew T. Fiema, archaeologist; Robert Shutler, architect; and Starnet, contractor; mosaics conservation, Enzo Di Carlo and Claudia Tedeschi; Roman Street and Project, Chrysanthos Kanellopoulos, architect; Zbigniew T. Fiema, archaeologist

### Petra Papyri Publication Project

University of Helsinki: Jaakko Frösén, Jorma Kaimio, Maarit Kaimio, Antti Arjavva, Marjo Lehtinen, Manna Vestrienen, Mari Mikkola, Tiina Rankinen, Marja Vierros; U. of Michigan: Ludwig Koenen, Traianos Gagos, Robert W. Daniel, Donka Marcus, and Robert Caldwell

### ACOR-Assisted Field Projects

Aqaba/Ayla, Carleton U., Mary Louise Mussell  
Azraq Wetlands Prehistory and Paleoenviromental Project, Richard Watson, Rusty Low, and Douglas Schnurrenberger, San Juan College, New Mexico  
Bir Madkhur Excavation and Survey, Megan Perry, U. of New Mexico, and Andrew Smith II, U. of Maryland

Dhiban Plateau Regional Project, Andrews U., Chang Ho C. Ji

Eastern Hasa Late Pleistocene Project, Nancy R. Coinman, Iowa State U., and Deborah J. Olszewski, Bishop Museum, Hawaii

Kerak Castle Excavation, St. John Fisher College, Jack Lee

Khirbet Iskander, Drew U., Suzanne Richard and Jesse Long

Urban Archaeology and Preclassical Madaba, U. of Chicago, Tim Harrison  
Petra, Great Temple, Brown U., Martha Joukowsky

Petra, Ridge Church, ACOR, Patricia Bikai  
Bioarchaeology of Sa'ad: A Small Byzantine Village in the Mafrq District, Jerry Rose, U. of Arkansas, and Mahmoud el-Najjar, Yarmouk U.

Tall Hisban Cultural History Project and Survey, Andrews U., Sten LaBianca and Gary Christopherson

Tell Abu en-Ni'aj, Arizona State U., Steve Falconer

Tell Safut, Seton Hall U., Don Wimmer

Wadi Araba Earthquake Project, U. of Missouri, Tina Niemi

Wadi Fidan Archaeological Project, Tom Levy, U. of California, San Diego, and Russell Adams, U. of Sheffield

Wadi Ramm Recovery Project, U. of Victoria, Dennine Dudley, Vicki Karas, and Barbara Reeves

Wadi ath-Thamad and Khirbat al-Mudayna, Wilfrid Laurier U., Michèle Daviau

### Fellows in Residence

*Near and Middle East Research and Training Act (NMERTA)*  
NMERTA POST-DOCTORAL FELLOWS:

Mansoor Moaddel, East Michigan U., Understanding Jordanian Exceptionalism

Robin McGrew-Zoubi, Sam Houston State U., Middle Eastern Women in Science: A Study of Science Education in Gender Separate Schools in Jordan

Denise Schmandt-Besserat, U. of Texas at Austin, Neolithic Symbolism at 'Ain Ghazal: The Socioeconomic Significance

Amiya Mohanty, Eastern Kentucky U., Modernization and the Changing Social Supports, Needs, and Life Satisfaction of the Elderly in Jordan: An Exploratory Study

Ahmad Sadri, Lake Forest College, The Comparative



Amiya and Sarat Mohanty, Zoharah Simmons, Robin McGrew-Zoubi with her son Adam, Trent Shipley, Allison Wilke, Mansoor Moaddel, Helen and Bill Mierse, Denise Schmandt-Besserat, Ahmad Sadri, Leonard and Alicia Robinson, and Elizabeth Gittings



#### Study of Post-Revivalist Islam

Thomas R. Paradise, U. of Hawaii, The Analysis of Roman Architectural Deterioration in Jordan

Timothy Harrison, U. of Chicago, Tell Madaba Archaeological Project: Investigations of Urban Life in the Semi-Arid Highlands of Central Jordan

Richard Stephenson, East Carolina U., Urban Planning, Development of a GIS Database for the Kerak Plateau Region of Jordan

#### NMERTA PRE-DOCTORAL FELLOWS:

Allison Wilke, Oxford U., Portraying Nationalists: The Arab Press and Palestinian Women's Groups 1929-39

Trent Shipley, U. of Arizona, Eliciting Jordanian Thoughts on Masculinity through Popular Film

Leonard C. Robinson, U. of Utah, Elite Self-Interest,

#### Two-Level Games and Conflict Resolution in the International System

Elizabeth Gittings, Harvard U., The Iconography of the Palace and Umayyad Dynastic Legitimacy at Qusayr 'Amra

David L. Clark, London U., An Archaeological Examination of the Paleo-Christian Baptismal Fonts within the Decapolis and Northern Jordan

Alan P. Olson, U. of Tulsa, A Study of Technotypology and Transhumance within the Middle and Upper Paleolithic of Jordan

Donka Markus, U. of Michigan, Research on the Carbonized Petra Papyri

Anne Pirie, U. of Durham, Hunter-gatherer Territories in the Epipaleolithic

### Donors to ACOR

From January through June, 1997, the following friends of ACOR donated to the endowment: The American Schools of Oriental Research (ASOR), L. Carl Brown, Nicholas Clapp, Sami Habayeb, Stephen Infantino, Joukowsky Family Foundation, Kyle-Kelso Foundation, Charles Miller, Mansoor Moaddel, Jerome Rose, Ahmad Sadri, Paul Scham, Joe Seger, Bernard Selz, Maria-Louise Sidoroff, and Prescott Williams, Jr.

General donations were made by Margaret Ahlness, Henry Christiansen, Kyle-Kelso Foundation, Tom Limna, David McCreery, Petra Forum Hotel, Thomas Paradise, Bill Shuman, Manual Tarska, Nicholas Veldez and Donald Wimmer. Donations in kind were received from Rosmary Bdeir, Patricia Bikai, Gail and Jim Cleveland, Nancy and Dan Gamber, Beau McCall, Gaetano Palumbo, ICCROM, Phyllis Powers, and Marilyn and Tom Schaub.

The Jennifer C. Groot Endowment received a contribution from S. Thomas Parker.

The Harrell Family Trust received donations from the Barbara Zuchrow Cohen Trust, Edgar Harrell, Erik Harrell, Matthew Harrell, and Phillip Harrell.

#### ASOR Challenge

The gift noted above from ASOR was made possible by a donation from ASOR Board Chairman, P.E. MacAllister. He and his wife, V. Rebecca MacAllister, have been generous to ACOR in the past—they were among the first to adopt scrolls. Thanks to his generosity, ACOR and the centers in Jerusalem and Nicosia each received \$50,000 as an outright gift. Another \$50,000 is now available to each center on a matching basis: every \$2 we raise for any of our activities, ASOR will match with \$1.



P.E. MacAllister

The Kenneth W. Russell Trust received donations from Kyle-Kelso Foundation and *Biblical Archaeology Review*.

Donations to the library endowment were received from Aina and Roger Borass and Pierre Bikai. A donation to library operations was received from Meryle Gaston. The Embassy of Canada has given a grant for library furniture.

Donations of books and journals were received from Khaled Abu Ghanimeh, Adeeb Abu Shmais, Erin Addison, Adnan al-Bakhit, Omar Al-Ghul, Emmanuel Anati, Zaki Ayoubi, Zahir Bacchus, Leigh-Ann Bedal, Hans Dieter Bienert, Pierre and Patricia Bikai, Ghazi Bisheh, J.M. Blazquez, Roger Borass, Oded Borowski, G. Wesley Burnett, David Campbell, Cyprus American Archaeological Research Institute, Thomas Dailey, Robert Daniel, Bryan Daves, F.M. De Bel-Air, Sally and Bert de Vries, Martha Demas, R. F. Docter, Fred Donner, Elizbieta Dubis, Edith Dunn, Steven Falconer, Zbigniew Fiema, Nazeh Fino, Nancy and Dan Gamber, Meryle Gaston (NYU Library), Seymour Gitin, Nayef Goussous, Maurice Grolier, Ann Haeckl, Ralph Hendrix, Donald Henry, Larry Herr, Wada Hisahiko, Denyse Homès-Fredericq, Najib Hourani, Fayez Jaber, Artemis A.W. Joukowsky, Martha Joukowsky, Lina Kattan, Widad Kavar, Marjorie Kelly, Luna Khirfan, Øystein LaBianca, Thomas Levy, Sherry Lowrance, Burton MacDonald, Jodi Magness, Fatma Marii, Patrick McGovern, Mark Meister, George Mendenhall, Bill Mierse, Doris Miller, Mansoor Moaddel, Ahmad Momani, Ministerio de Cultura (Spain), G. Lopez Monteagudo, Mayada Nammary, John Oleson, Peter Pakkanen, Julio Palazon, Thomas Paradise, Glen Peterman, Brigitte Porée, Phillip Posey, David Priess, Marie-Jeanne Roche, Gary Rollefson, Avraham Ronen, Jerome Rose, Carolyn and Bruce Routledge, Ahmad Sadri, Denise Schmandt-Besserat, Ingrid Schneider, Joe Seger, May Shaer, Trent Shipley, Steve Simms, James Sims, Yasser Tabbaa, H.R.H. Princess Ghida Talal, Tomasz Waliszewski, Peter Warnock, Donald Whitcomb and Oliver Wilcox.

*United States Information Agency Fellows:*

Rochelle Davis, U. of Michigan, *Recreating Jerusalem:*

*Oral Histories of Life in British Mandate Jerusalem*

Francis Oliver Wilcox, Georgetown U., *Human Rights and the Politics of Liberalization in Jordan since 1989*

Kimberly Katz, New York U., *A Comparative View of the Development of Islamic Institutions in Amman and Jerusalem in the 1950s*

Thomas Berger, U. of New Mexico, *Diacronic Change in the Natufian of the Levant*

*Jennifer C. Groot Fellows:*

Brian Brown, Brown U., *Petra Southern Temple Project*

Christian Rata, U. of Toronto, *Wadi ath-Thamad Project*  
For information on ACOR's fellowships contact: ACOR, 656 Beacon St., 5th Floor, Boston, MA 02215-2010, Tel.: 617-353-6571, Fax: 617-353-6575, e-mail: acor@bu.edu.

## News and Notes

Jan. 8. In the periodical room, James Sims and Patrick Rogan lead a working session on the design of the new national museum.

Jan. 13. Virginia Egan arrives with a delegation of congressional wives including the spouses of Representatives Ron Packard (R-CA), Joe Knollenberg (R-MI), Terry Everett (R-AL), and Michael Collins (R-GA).

Jan. 14. ACOR hosts the quarterly "directors' dinner." The directors of the British, French and German institutes discuss better coordination among their libraries.

Jan. 16. While Senators Ted Stevens (R-AL), Thad Cochran (R-MS), and Conrad Burns (R-MT) meet with H.M. King Hussein, their spouses tour ACOR.

Jan. 16. Steve Falconer comes by to discuss shipping his study materials to Arizona State. After he leaves, Kathy comments in disbelief, "He's shipping 2000 kilos of old rocks and old dirt!!!"

Jan. 25. The ship with the shelter for the Petra Church on it has docked at Aqaba.

Jan. 26. H.R.H. Prince Talal bin Mohammad and his wife, H.R.H. Princess Ghida, visit ACOR.

Feb. 21. I go off on a rainy Friday morning to give a tour of Madaba and Mount Nebo to FBI Director Louis Freeh.

Feb. 22. Richard Dockery from Starnet arrives to assemble the shelter for the Petra Church.

Feb. 23. Almost six years after the publication project began, the manuscript for *The Great Temple of Amman: The Excavations* is ready to print. It is due to Anthi Koutsoukou's persistence that it is finished.

Feb. 25. Richard Dockery and I leave for Petra at the crack of dawn. A bit later, while it is snowing, Patricia and Virginia Egan leave to begin their season at the Ridge Church. On arrival at Petra, we find that the container with the shelter in it has not arrived from Aqaba. There is a lot of to-ing and fro-ing but, late in the afternoon, it arrives and we begin

unloading. Patricia discovers at 4:30 PM that a certain Dr. Bikai is scheduled to give a lecture at the Petra Forum at 6 PM to a large tour group (it was on the ACOR calendar for April 25). Never mind—while one Dr. Bikai unloads tons of aluminum from a 40-foot container, the other Dr. Bikai carries on with the lecture—it was quite a day!

Feb. 26. Meanwhile at ACOR a very nice letter from H.M. Queen Noor arrives thanking everyone for the preliminary report on *Papyrus Petra* H.M. King Hussein and H.M. Queen Noor. She describes the document as "a marvelous piece of our heritage."

March 20. Don Keller becomes U.S. assistant director.

April 21. The new Minister of Tourism and Antiquities, H.E. Akel Biltaji, comes by for a visit.

April 23. There is rejoicing as librarian Humi Ayoubi's brother-in-law is released from the Japanese Embassy in Peru. Humi's sister was released the first evening.

May 14. Late in the evening the Aqaba/Ayla team comes in. The season begins!

May 18. After Dan Gamber does all the paperwork, Bob and I sign the certification that ACOR has raised \$303,081.43 of the \$400,000 needed for the NEH Challenge. This certification entitles ACOR to \$101,027.14 in NEH matching funds. Thank you all!

May 22. Prime Minister Abdul Salam Majali and Mrs. Majali, the Minister of Tourism and Antiquities, Akel Biltaji, and the Director of Antiquities, Dr. Ghazi Bisheh, visit the Petra Church.

June 2. In the evening there is a reception to bid farewell to Dan and Nancy Gamber who are moving to Belgium.

June 10. A wonderful day with the following events: 8 AM: Executive Committee meeting. 10 AM: Board of Trustees meeting. 6:30 PM: Signing of the \$900,000 endowment grant from USAID to ACOR (photo below); income from the endowment will be expended at Petra. 7-9 PM: A party.

June 25. Patricia and I depart for Istanbul for a meeting of the directors of the member schools of the Council of American Overseas Research Centers (CAORC).



Patricia and Pierre Bikai; Chairman of the ACOR Board Artemis A.W. Joukowsky; Grant Officer Celeste Fulgham; U.S. Ambassador Welsey Egan; USAID/ Amman Director Lewis Lucke; and Project Officer Alonzo Fulgham

Trustees Meet in Amman

On June 10, 1997, the ACOR Board of Trustees met at ACOR. The meeting was preceded by a trip to Syria by many of the trustees and their families. At the meeting itself, the focus was on the \$900,000 endowment granted by the United States Agency for International Development (USAID). The income from the endowment will initially be used for continuing work at the World Heritage site of Petra, but after five years can be used in other ACOR program areas.

President Artemis Joukowski congratulated everyone on how well the endowment campaign was going.

Three new trustees were elected: Dr. Øystein LaBianca of Andrews U., who is associated with the Madaba Plains Project; Dr. John P. Oleson of the U. of Victoria in British Columbia, director of the excavation at Humeima; and Dr. Gaetano Palumbo who was ACOR's Cultural Resources Management Archaeologist and is now with the Getty Conservation Institute in California.

ACOR Trustees

- Class of 1998: Mr. Artemis A.W. Joukowski (President); H.R.H. Prince Ra'ad bin Zeid (First Vice President); Dr. Lawrence T. Geraty (Second Vice President); Dr. L. Carl Brown; Mr. Henry Christensen III; Mr. Nicholas Clapp; Dr. Michel Marto; and Dr. Bert de Vries
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ACOR and its Newsletter

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ACOR Trustees and families at the Temple of Bel in Palmyra

ACOR Publications

- The Mosaics of Jordan* by Michele Piccirillo. Large format, cloth-bound volume includes 303 pages in full color with 824 illustrations, plans, and aerial photographs. \$175.
- The Great Temple of Amman* by Chrysanthos Kanellopoulos. The architecture of the temple that was excavated, and partially restored by ACOR. \$80.
- JADIS: The Jordan Antiquities Database and Information System: A Summary of the Data*, edited by Gaetano Palumbo. Basic information on nearly 9,000 archaeological sites from all periods, plus 117 maps. This 453-page, hard-bound volume is xerographically reproduced. \$40.
- The Great Temple of Amman: The Excavations* by Anthi Koutsoukou, Kenneth W. Russell, Mohammad Najjar, and Ahmed Momani. Description of the 1990-93 excavations undertaken by ACOR and the Department of Antiquities. This hard-bound volume has 180 pages and 3 fold-out plates. \$65.
- All prices include shipping.
- In preparation: *Ancient Ammonites & Modern Arabs: 5000 Years in the Madaba Plains of Jordan*.

Contents

Caring for the Cultural Heritage: Shelters .....	1
Field Projects .....	4
Eastern Hasa Late Pleistocene Project .....	4
Khirbat al-Mudayna .....	5
Karak Resources Project .....	6
Petra: Great Temple .....	7
Petra: Roman Street Project .....	8
Wadi Ramm Recovery Project .....	9
Roman Aqaba Project .....	10
Update on the Scrolls .....	11
Director's Report: January-June 1997 .....	13
ACOR Projects .....	13
Petra Papyri Publication Project .....	13
ACOR-Assisted Field Projects .....	13
Fellows in Residence .....	13
Donors to ACOR .....	14
News and Notes .....	15
Trustees Meet in Amman .....	16