

# ACOR Newsletter

## أخبار أكور

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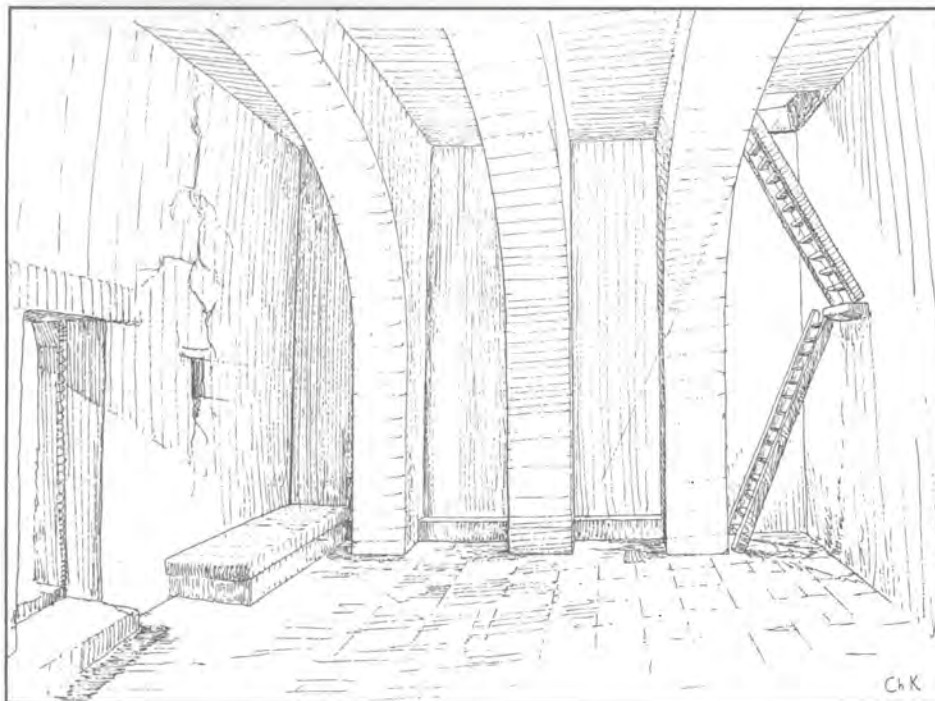
### The Petra Papyri *Jaakko Frösén and Zbigniew T. Fiema*

Conservation work on the carbonized Petra papyrus scrolls which began in the conservation lab at ACOR in September 1994 under the leadership of Professor Jaakko Frösén (Professor of Papyrology at the Academy of Finland) was largely finished by the end of February 1995. The team consisted of eight Finnish graduate and postgraduate students from the University of Helsinki: Marjo Lehtinen; Mari Mustonen; Matti Mustonen; Tiina Purola; Erja Salmenkivi; Marjaana Vesterinen; Sampo Vesterinen; Jan Vihonen; Fatma Marii, a Jordanian student of archaeology and conservation from Yarmouk University; photographer R. Henry Cowherd; and archaeologist Zbigniew T. Fiema. In January 1995, they were joined by Professor Ludwig Koenen of the University of Michigan and Clement A. Kuehn of Loyola University, Chicago, who began work on the scrolls assigned to the University of Michigan for publication.

Although a fire would seem to be a sure way to destroy any type of writing material, in the case of the papyri just the opposite

happened. Stored in tight rolls the papyri were only carbonized and the dull black ink is still legible on the charred shiny black background. To date, more than 130 scrolls have been unrolled. Work on the rest is due to be completed in May 1995. It is estimated that there are about 20 more scrolls to be opened.

Due to the fragility of the material and to the fact that most of the scroll layers were very thin (about one tenth of a millimeter) and tightly packed together by the carbonizing process, it was not possible to actually unroll them. The layers had



The room at the Petra Church site where the scrolls were found. Restoration drawing by Chrysanthos Kanellopoulos of the phase before the scrolls were stored there.

to be lifted, piece by piece, and consolidated or fixed by gluing them from the back to pieces of acid-free tissue paper. A neutral (PH 7) polyvinylacetate glue (Planatol BB) was used. Then the fragments were put under slight pressure between sheets of waxpaper. When the pieces were dry, the original document—the opened scroll—was reconstructed with the aid of the preliminary transcriptions, and then put between glass plates. The whole process has been documented by still photography and video. The glass plates were then photographed using special methods of overexposure in order to obtain black and white prints from the black on black pieces, as well as to obtain transparencies, which can be used for the computer-generated enhancement of the pictures.

Publication work will be undertaken jointly by the University of Helsinki and University of Michigan, under the leadership of Professor Jaakko Frösén and Professor Ludwig Koenen, respectively. ACOR has developed an agreement among all the parties, including the Department of Antiquities of Jordan, in order to avoid the difficulties which caused the delay in the publication of the famous Dead Sea Scrolls. Written by Patricia M. Bikai and ACOR Trustee Henry T. Christensen III, the agreement gives the researchers five years (with the possibility of a three-year extension) to submit a manuscript for publication of the scrolls assigned to them. In



Scroll group No. XXIX which was found to contain more than a dozen scrolls. Photo by R. Henry Cowherd.

the interim, researchers with a legitimate reason for having access to the material can apply for such access.

The texts found in the scrolls constitute the largest group of written material from antiquity found in Jordan. All the scrolls opened so far contain documentary texts written in Greek. The handwriting varies from the very cursive that is difficult to decipher, to the easily legible, indicating different scribes.

The earliest date found in the documents so far is A.D. 537 and the latest, A.D. 559. The dates were written using four dating systems: the regnal year of the Emperor Justinian; the consular year; the year of indiction (i.e. taxation period); and the era of the Province of

Arabia, or the era of Gaza. Many of the documents refer to the city of Petra as the metropolis of the Province *Palaestina Tertia Salutaris* and bearing the honorific title *Hadriane*. One of the scrolls (dated A.D. 538) is a notice to the record office about a cession of agricultural land. This document, written in two wide columns, was found lying open—perhaps someone was consulting it when the fire broke out.

The papyri are yielding information on the population of Petra and its economic and social situation. At



Scroll No. XIII at the beginning of the conservation process. Photo by R. Henry Cowherd.

least half of the texts read so far deal with wills and inherited property. About 60 different individual names have been deciphered. Among the key figures of the archive are men representing administrative ranks both ecclesiastic (bishop, archdeacon, deacon, prior or abbot, steward of the bishop, primate, presbyter, physician) and civilian (governor, curator, collector of taxes, public advocate, notary). They bear typical Byzantine honorific titles referring to the ecclesiastics as, e.g., very reverend, divinely favored, most pious, most holy, orthodox, Christ-loving, or to the laymen, as, e.g., most magnificent, most brilliant, most admirable (to men) and most decorous (to women). Some slaves have been identified.

Names of settlements other than Petra, such as Augustopolis and Eleutheropolis, are mentioned, together with numerous places around Petra and Augustopolis. From historical and archaeological points of view, Augustopolis may be identified with Udruh, a Roman-Byzantine fortress-cum-town, located ca. 10 km east of Petra. The other names include villages and farming areas with threshing-floors, water cisterns, roads, streams, and dunghills. Churches and other buildings in the cities of Petra and Augustopolis are also mentioned. Historically, the early to mid-6th century in Petra is an almost blank page. Thus, the texts are especially important, providing a plethora of information on the social and economic life of the city and its rural hinterland. This information should allow for a substantial reassess-

ment of the history of Petra and southern Jordan in the Byzantine period.

Particularly interesting information coming from the texts concerns the survival of Nabataean culture during the Byzantine period. Despite the fact that Greek was the main language of Roman and Byzantine *Arabia* and *Palaestina*, traditional Nabataean names appear among Christian and pagan Greek and Roman names. Thus, the Nabataean tradition, at least in the onomastic form, was still alive in Petra in the mid-6th century. Fragmentary signatures written in a script other than Greek (Semitic?) have also been found. A variety of topographical names around Petra and Augustopolis seem to repre-



Marjo Lehtinen reconstructing the scroll at left after it was taken apart piece by piece. Photo by Patricia M. Bikai

sent a Greek rendition of names in early Arabic, and indicate the importance of this language among farming communities around Petra before the coming of Islam.

Simultaneously, the investigation of scrolls from the archaeological standpoint, and their significance in a wider historical perspective is being conducted by the archaeologist Zbigniew T. Fiema. It was initially suggested that a disastrous earthquake of A.D. 551, recorded in Byzantine sources, was responsible for the final demise of the ecclesiastical complex of Petra and for the destruction of the archive. That interpretation is now untenable in light of the fact that the date January 30, 559, appears in the scrolls. It is significant, however, that the documents can be used for an improved chronological assessment of the church complex. The location of the scrolls, and their initial reading suggest that the scrolls represent an archive related to a limited number of people, perhaps associated with the church as parishioners or benefactors. Furthermore, the place of discovery seems to be a storage area where documents were deposited and consulted, rather than a scriptorium.

Charred wooden fragments recovered with the scrolls provide important information on the manner in which the scrolls were stored. There may have been a 'book-case' in the northwest corner of the room. Layers of thin, charred shelves were recovered from among the scrolls found there. Other scrolls may have been stored in separate wooden containers. The finds include fragments of vertical staves (?), probably elements of barrel-like, wooden containers. These would have been joined

THE PETRA SCROLL CONSERVATION PROJECT IS SPONSORED BY

The American Center of Oriental Research (ACOR)  
The Ministry of Tourism and Antiquities of Jordan  
The University of Helsinki  
The Ministry of Education and Culture of Finland  
The Academy of Finland  
The University of Michigan

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AND BY SCROLLS WHICH WERE ADOPTED AND NAMED BY THEIR DONORS

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OTHER CONTRIBUTIONS TO THE PROJECT HAVE BEEN MADE BY

The United States Information Agency (USIA), Robert Johnston, R.D. Doidge, J. and J. Dumit, R. and J. Becker, C. Clarke, The Japan International Cooperation Agency (JICA), R. and E. Lewis, Long Island Society of The American Institute of Archaeology, A. and E. Pores, A. and F. Winant, and Yarmouk University

THE EXCAVATION WAS FUNDED BY  
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together by wooden pegs, and reinforced by horizontal straps made of bronze/copper strips. The tightly rolled scrolls were tied with strings and wrapped in textile before being deposited in the barrels. Available iconographic and archaeological evidence from elsewhere supports such a manner of storage. There may also have been wooden boxes. Additionally, the surfaces of two charcoal fragments, either of barrels or boxes, preserve scratches, perhaps letters, made with a pointed tool.

The scrolls were excavated by conservator Catherine Valentour and Zbigniew T. Fiema, chief archaeologist of the Petra Project, with the assistance of staff archaeologist Deborah Kooring, and of Suleiman Farajat of the Department of Antiquities. Excavations at the site were conducted under the direction of Pierre M. Bikai in cooperation with the Department of Antiquities.

## In Memoriam

### William Jobling

On Sunday, December 4, 1994, William Jobling collapsed and died on the beach moments after taking fourth place in a swimming race. At age 53 he had been swimming as a member of the North Bondi Surf Life Saving Association for the past 38 years. To those of us who knew Bill as the archaeologist of the Aqaba-Ma'an Survey, the epigraphist with a publication repertoire of thousands of desert inscriptions from the Arabian-Roman frontier and the multilingual expert in Semitic languages ranging from Nabataean to Ugaritic, this news from "down under" had a touch of the surreal. For we associate him with the aridity of the desert and the dustiness of libraries, not the frothiness of pounding surf. This testifies to a multifaceted person whose various talents and interests touched the lives of many people in disparate communities.

He was also reader in Religious Studies at the University of Sydney, an Anglican priest who officiated at services in various parishes and even in jail, and a devout family man, whose love and care for his wife, Lee, and daughters, Rebecca and Kate, constantly shone through even during the months of separation from them during his numerous research stints in the Middle East. He held several fellowships at ACOR, and most recently was a 1992-93 Dorot Fellow at the Albright.

Those who worked and lived with Bill at the ASOR institutes enjoyed his constant good cheer and humorous stories, experienced his friendship and pastoral concerns, and saw his financial generosity to those in need.

*Carmen Humi Ayoubi and Bert de Vries*

## In Memoriam

### Robert and Jean Boling

On Monday, December 12, 1994, ACOR founder and friend Robert G. Boling, 64, and his wife Jean, 62, were killed in a traffic accident on the highway to Aqaba.

Robert had been conducting research on "The Transition from the Late Bronze to the Iron I Periods in Jordan: The Emergence of Ancient Territorial States." He and Jean had just returned from a brief trip to India, and were planning to spend a few days in Aqaba before heading home to their family and to Bob's teaching responsibilities as Professor of Old Testament at McCormick Theological Seminary. The Bolings loved to travel and had even been to Antarctica.

Robert earned his M. Div. degree from McCormick Theological Seminary in 1956 and his Ph.D. in Near Eastern Studies from John Hopkins in 1959. He participated in numerous archaeological expeditions in the Middle East, including those at Tell Balata (Biblical Shechem) in Nablus in 1957 and 1966 and most recently participated in the Madaba Plains Project in Jordan. He was an editor of *Biblical Archaeologist* and had numerous publications on Old Testament exegesis and on the archaeology of Jordan.

Bob and Jean aided the growth of ACOR from the time of its founding in 1968. He was a trustee for many years and assisted with the fund-raising for the ACOR building and for the endowment.

We remember the Bolings as "ACOR family" and pass along our condolences to their daughters Martha, Gail, and Ruth, and to the rest of their family. We will all miss them.

*Glen Peterman*

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## The 1994 Field Season

### Khirbet Iskander

The last synthesis of Khirbet Iskander maintained that the site demonstrated the importance of sedentary adaptation in the ruralized landscape of the Early Bronze IV period, ca. 2350-2000 B.C., and strong continuity with urban traditions characteristic of the Early Bronze II-III cities. Given its two fortification systems, public buildings, a gateway, several major cemetery areas, a pottery storeroom, etc., the site testifies to the fact that in this post-urban period, small fortified towns did exist and probably served as regional centers. Khirbet Iskander shows that a wider and more complex range of adaptation than subsistence level village or pastoral life existed in a period of urban decline and despecialized socio-economic patterns.

Both stratigraphic and tomb evidence have shown that two periods, Early Bronze I and Early Bronze IV, define the occupational record of the site. So far, strati-

graphic evidence from Area B at the northwest corner of the mound indicates that the site began as an open village in Early Bronze I. Following an Early Bronze IV phase, when the site was again an open village, there were two phases of fortifications, an earlier stone and mudbrick wall and a later stone wall with square towers at the corners. Within the latter a large public structure was built in the northwest citadel area (Phase B). Finally, the area transformed into a neighborhood of contiguous rooms in which a wealth of domestic equipment came to light (Phase A). The site was abandoned following the Early Bronze IV period.

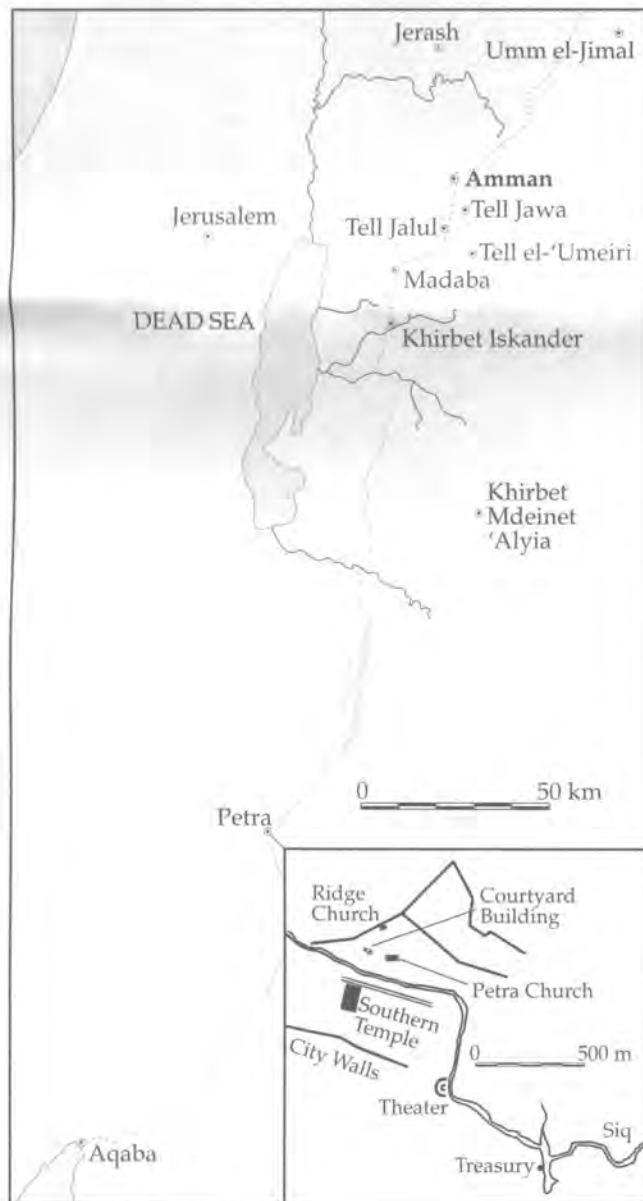
Objectives for the 1994 season were to understand the relationship of Phases A and B to the fortifications and to expose more of the Phase B public building. We now have clear evidence that the Phase B public building is subsequent to the first (inner) line of fortifications. New discoveries in the stratigraphy of Phase A suggest that, contrary to our earlier view, this latest settlement may likewise have used the outer fortifications.

The highlight of the season was the exposure of more

of the public building. Thus far there are two rooms with a doorway between, a "bench room" and a "bin room." The former contained great quantities of pottery; the latter a beautifully hewn stone-slab bin, a painted bowl within which lay the hoof of a bovine, two goat horns, miniature vessels, a hearth, and a fire pit. Additional work in the "bin room" revealed a niche/bench in the wall, pillar bases, and a round stone (offering?) table situated directly opposite the niche. It seems reasonable to interpret this building as a public center/sanctuary. *Suzanne Richard, Drew University, and Jesse C. Long, Jr., Lubbock Christian University*

### Madaba Plains Project

**Tell el-'Umeiri.** Located at the entrance to the Amman National Park, this site produced the best preserved early Iron I settlement so far uncovered in Jordan. It was fortified by a dry moat cut out of a bedrock ridge



at the bottom of the western slope and a retaining wall which held back a massive rampart running up the slope to a double city wall, apparently the earliest casemate wall so far discovered in the southern Levant. The fortifications were built immediately subsequent to an earthquake which destroyed the bedrock base of an earlier Middle Bronze IIC rampart system.

In a casemate room, next to the fortification, were the remains of approximately 40 smashed collared pithoi intermixed with charred bones of at least two humans, one probably an old man and another younger person. A hostile army had apparently destroyed the town, an observation based on five bronze spear and lance points in the room.

**Tell el-'Umeiri Hinterland.** Tomb excavations uncovered a megalithic burial structure; inside were 16 disarticulated and partially articulated skeletons and 19 complete vessels dated to Early Bronze I; other features suggest possible ritual uses. An Early Bronze IV cemetery contained five shaft tombs and two storage silos, whose existence together lends support to the idea that the area served not only as a place to bury the dead, but also as a seasonal camp or homing site for nomadic tribes, though a few Early Bronze IV remains have been found on Tell el-'Umeiri. Also located on the southeastern slope of Tell el-'Umeiri was a Middle Bronze IIC cave-tomb entered by a passageway with steps carved in bedrock. There were 15 articulated skeletons in the tomb and 13 complete vessels. The tomb was contemporaneous with the rampart-fortified Middle Bronze IIC town on Tell el-'Umeiri.

Another excavation team investigated a late Iron II rural agricultural complex. Associated with the 8 x 9 m building were a perimeter wall, agricultural terraces, a reservoir, cisterns, and wine presses. The excavation produced a large number of reconstructible pottery vessels as well as stone tools, while numerous jewelry items, figurine fragments, and three stamp seals suggest that this was no simple rural household, but a managerial complex connected with the contemporary administrative complex at Tell el-'Umeiri.

A sounding in the inscription cistern/cave at Khirbet Rufeis revealed that it was last cleaned and replastered during the early Islamic era. The more than 1000 engraved markings on a panel are tribal marks or *wasm*.

**Tell el-'Umeiri East Survey.** In an intensive survey of Tell el-'Umeiri East which is located at the entrance to the Amman National Park, 11 cisterns, 22 caves, and 10 quarries were recorded. The majority of the pottery was early Islamic; a metal detector found nine Umayyad and one late Ottoman coins. A similar study at Tell el-'Umeiri North yielded 10 coins from the Roman, Umayyad, Ayyubid, Mamluk, and Ottoman periods. An intensive surface survey of the hinterland of Tell Jalul investigated 50 randomly chosen 200 x 200 m squares; the complete lack of ancient farmsteads, villages or towns contrasts strikingly with the findings of the 'Umeiri survey, which located about 50 such sites.

Another project seeks to heighten public awareness of the continued viability of cisterns as a means to deal with the worsening water crisis in Jordan.

**Tell Jalul.** This site, located 5 km east of Madaba, yielded at least four major architectural phases from the Iron I to the Persian periods. The only find from Iron I was a stretch of wall in the center of the tell just east of the acropolis. Next to the wall was collapsed mudbrick which contained Late Bronze Age pottery and Iron I pottery, and a necklace made of a variety of glass, frit, and semiprecious beads.



Tell Jalul. Photo by James A. Sauer.

The early Iron II period was represented by the northern walls of two buildings on the north side of the tell. Excavations on the eastern side of the tell traced the early Iron Age II flagstone approach ramps to the city gate. The middle Iron II period was represented by portions of two buildings while a contemporary approach ramp, paved with flagstones, was traced along approximately the same line as the earlier road. From the late Iron II period a large portion of a tripartite pillared building was partially uncovered. The central room was dirt-floored, while the two side rooms were paved with flagstones. The late Iron II/Persian period was represented by several pits, some sections of walls, and an incense stand.

*Lawrence T. Geraty; Larry G. Herr; Øystein S. LaBianca; Randall W. Younker; and Douglas R. Clark*

### **Khirbet Mdeinet 'Alyia**

An initial season of mapping and test excavation was conducted at the late Iron I site of Khirbet Mdeinet 'Alyia. This work continues the Moab Marginal Agriculture Project's goal of studying the dynamics of Iron Age settlement in the semiarid eastern fringes of the Kerak Plateau. The site is located some 5 km north of Roman Lejjun, in a region of relatively low-rainfall. It is situated on an isolated promontory, some 300 m above the Wadi en-Nukheila (southern Wadi al-Mujib). The site itself is ca. 375 m in length and ranges from 20 m to 105 m in width.

The striking architectural preservation on the surface of the site (to the top of the first story in many cases) allowed us to map almost the entire town plan. This, combined with the results from our two small test squares, has provided a good picture of the nature and

duration of occupation at the site.

'Alyia appears to be a single occupation site, with preliminary analysis pointing to a late 11th century B.C. date for the pottery. The site is fortified by an inner casemate wall and an outer wall, tower, and moat complex associated with the western, and most vulnerable, side of the site. A probable gate is located in an offset of this outer wall, though the massive stone collapse in the area prevents a definitive identification. Numerous buildings are built into the casemate system, but not all casemates are incorporated into buildings. Indeed, long stretches of casemate rooms exist that were simply accessible by doorways from the interior public spaces of the site. At its widest point (on the northeast end), the center of the site appears to be largely devoid of buildings—creating an enclosed courtyard. While it remains to be confirmed by excavation at 'Alyia, such courts are paralleled at other Iron I sites in Palestine.

Earlier scholarship had argued that Khirbet Mdeinet 'Alyia was a military fortress or, alternately, a seasonal stronghold for pastoral nomads. Such arguments pointed to its agriculturally marginal location, prominent fortifications, and enclosed court. However, our evidence would indicate that 'Alyia is best seen as a large agrarian settlement. Surface remains indicate the existence of a diverse range of domestic (at least five four-room houses), public, and storage buildings at the site. Furthermore, in one square, the remains of a grain silo were found, with significant quantities of carbonized wheat or barley (analysis not complete) inside. In another square, a series of superimposed plaster floors were found, which included domestic pottery on their surfaces and numerous carbonized grain seeds in their makeup. This evidence indicates that among the diverse activities witnessed at Khirbet Mdeinet 'Alyia, the production, processing, and storage of grain figured prominently.

Khirbet Mdeinet 'Alyia represents a short-lived late Iron I expansion of agrarian settlement into this marginal region. This expansion parallels a similar late Iron II expansion (documented in earlier work), but is striking in its differences (nucleation, investment in storage and defense). Such differences highlight changes in the organization of production and social relations during the Iron Age, which will be the focus of the interpretive portion of the research.

*Bruce Routledge, University of Toronto*

### **Tell Jawa**

Tell Jawa, located 11 km south of Amman, is a site that contains the remains of buildings from the Byzantine-early Islamic transition period above an Iron Age walled town approximately two hectares in size. The Iron Age town (ca. 800-600 B.C.) was surrounded by a strong fortification of the casemate wall type. In the southwest, adjacent to the defense walls, several rooms with stone walls and doorways standing 2 m above the floors were exposed. Another Iron Age building, located

along the northwest edge of the town, has a different room arrangement. Building 300 consisted of a group of rooms perpendicular to the inner casemate wall face which surrounds a central cistern. Several rooms contained cooking areas and hearths with remains such as cooking pots, sheep bones, serving bowls, jugs, jars, and large storejars for oil and wine still in place. Alongside these ordinary vessels were examples of fancy dinnerware: bowls, saucers and small juglets which were covered with red slip and polished. Two jugs were white slipped with black painted bands. Items in storage in these rooms included 33 iron arrowhead and javelin points, unfired clay loom weights, sandstone perforated disks (lids for large storage jars?), and two broken ivory spindles. Two female figurines, apparently unique to Palestine and Syria, and one clay horsehead rhyton were recovered from the floors.

The latest Iron Age occupation is represented by a large pillared house (13 x 14 m) or residency located in the southeastern sector of the town. Building 800 contained 10 rooms on the ground floor and two staircases which led up to the second story which is no longer preserved. Artifacts from this building include the typical range of ceramic vessels, both red slipped and black burnished wares, along with a seal depicting a horse and rider. Remains from the upper story which collapsed into the lower room included a flagstone floor and a limestone table.

Immediately east of Building 800 was our most important discovery of the season, that of an Iron Age II gate complex. The plan of the west half of the gate, already visible at ground level, was exposed revealing two, possibly three, chambers, and a tower at the front. Under the wall collapse in the middle chamber of the gate was the skull and earring of a young female trapped when the Iron Age occupation ended. The exposing of a small section of the central roadway and the outer flanking wall complete the excavations to date. The ceramic finds from the gate area and Building 800 suggest a date in the late Iron II period (700-600 B.C.). The historical factors that brought about the end of Tell Jawa and the succeeding gap in occupation are unclear.

Excavations in an impressive building (600) from the Umayyad period with a central courtyard surrounded by rooms on three sides were undertaken in 1991 and continued this season. Room 606 in the northeast, excavated to floor level, was paved with a simple mosaic floor of white tesserae with a central pattern of diamonds and triangles. Three transverse arches covered with painted frescoes spanned the room. Preserved on one painted plaster fragment was a Kufic graffito.

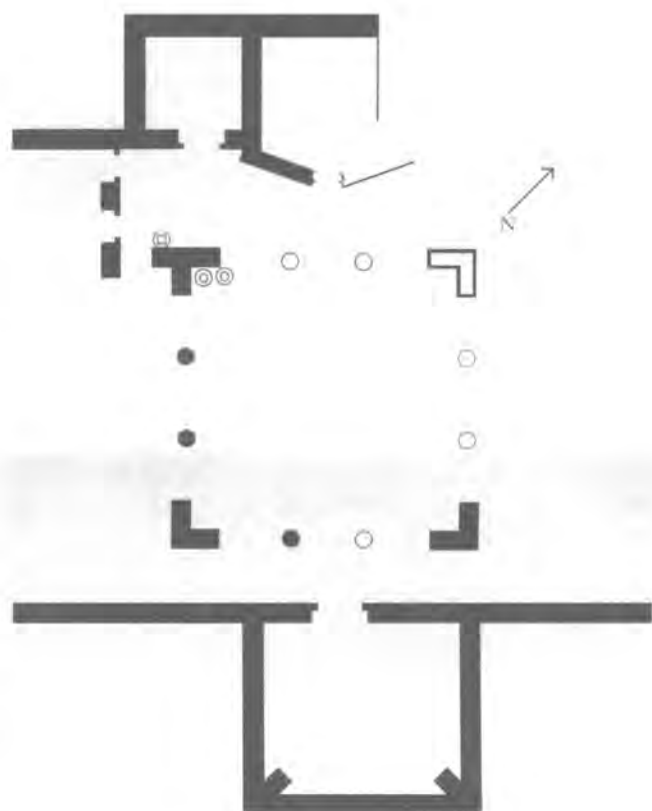
*P. M. Michèle Daviau, Wilfrid Laurier University, Waterloo, Ontario*

### Petra: The Square Courtyard Building

A survey at Petra from Oct. 29 to Nov. 4, 1994, partially uncovered the remains of a major structure of

the Nabataean/Roman period. The survey was conducted on a platform northwest of the Byzantine church and northeast of the Temple of the Winged Lions. The platform is at an elevation of 908.1 m. On the surface there are a large number of architectural elements including column drums and pilasters. On the platform itself, two column drums and several sections of walls were visible on the surface.

Four small trenches were excavated in various areas of the platform. There were two stratigraphic layers. The upper layer is ca. 50 to 60 cm thick and consists of stone debris and washed sand with very little pottery. The lower layer was no more than 5 to 10 cm thick and consists of large amounts of ash and charcoal mixed with sand; again there was little pottery. At a depth of 65



cm, a flagstone pavement was found. The trenches revealed that there is a nearly perfectly square structure, probably a courtyard, measuring 12.6 m on a side. The four corners are oriented to the four points of the compass. There were four entrances with two columns at each. It is unclear whether the courtyard was roofed. At the northwest corner three circular stone basins were found, two in the interior of the structure and one on the exterior.

Walls of other parts of the structure were traced to the northwest and southeast. To the southeast there is another large room with a doorway which does not line up with the columns in the square structure. To the northwest there are a series of rooms which open onto the area around the square structure.

This structure was only preliminarily investigated and it is impossible to make more than very tentative suggestions about it. It is, however, a public building of some importance, most likely of the Nabataean/Roman era. A coin found in the ash layer on the floor can be attributed to the House of Constantine, probably to before A.D. 348. This may give a hint that the structure was destroyed in the earthquake of A.D. 363.

*Pierre M. Bikai, ACOR*

### Petra: The Southern Temple

The Southern Temple is one of the major archaeological and architectural monuments of Petra. Located south of the colonnaded street and southeast of the temenos gate, this 7000 m<sup>2</sup> precinct contains a propylaea, a lower temenos, and a monumental stairway which leads to the upper temenos, the sacred enclosure for the temple proper. Also included is the West Lapidary (a prepared field for temporary storage of architectural fragments). All of these areas were documented in our second field season in 1994.

The propylaea steps were surveyed and consolidated. In the lower temenos a sondage determined the depth of deposit and the northern route of the canalization system. A limestone hexagonal pavement found, under fill, in Trench 6, continued into Trench 13. In the lower temenos, half of the western exedra was excavated and a capital with an elephant-headed volute was found. In the upper temenos, excavations were expanded; 11 m of the subterranean canalization system was mapped, and soil samples were taken to analyze their botanical content. The temple stylobate and a paved walkway were recovered from trenches on the western side of the temple and sculpted facial fragments and fine deeply-carved architectural elements appeared there.

Excavations conducted in the interior of the temple uncovered a massive anta wall resting on a finely carved attic base, which we phased to the original temple construction. In the adyton, dominated by a large, now-consolidated, central vaulted arch, two trenches produced twin-stepped arched passages leading to paved



platforms, and a series of steps which gave access to the temple cella or to an exit. Six more columns in the naos were documented; a total of 20 are currently known to be *in situ*. Excavations preparatory to the creation of Lapidary West revealed several Nabataean levels and a wealth of Nabataean pottery which was sampled for petrographic and neutron activation testing. The building and use phase of each area was arranged in chronological sequence, and the interrelationships among the architectural components were tentatively established.

*Martha Joukowsky, Brown University*

### The Roman Aqaba Project

In 1994 this project discovered the ancient Roman port of Aila, now within the modern city of Aqaba on the Red Sea in southern Jordan. The city was founded by the Nabataeans in the first century B.C., and it flourished



as a major emporium between the Roman Empire and its eastern neighbors. Luxury products, such as frankincense, myrrh, and spices, were transferred from ships to camel caravans for transport into the empire. Direct Roman rule began in A.D. 106, when Aila became the southern terminus of the *Via Nova Traiana*, connecting Syria with the Red Sea. About A.D. 300, *legio X Fretensis* was transferred from Jerusalem to Aila, suggesting the strategic importance of the city. Aila continued to flourish throughout the Byzantine period, then surrendered to Islam in A.D. 630. The classical city seems to have declined rapidly after the seventh century, when a new Islamic town was founded nearby. The project aims to reconstruct the economy of Aila as an international port on the southeastern frontier of the Roman Empire.

Although the ancient city was long known from documentary sources, its exact location at the head of the Gulf of Aqaba remained a mystery. No ruins were visible on the surface. Aided by aerial photographs and scatters of surface artifacts, the project located major portions of the ancient city.

The earliest evidence obtained from excavation derived from two areas farthest north from the modern shoreline. Both yielded stratified evidence from the early Roman/Nabataean period (first centuries B.C./A.C.). Pottery included imported amphorae, Eastern Sigillata, and painted Nabataean fine wares. Both areas yielded cooking installations associated with mudbrick structures.

To the south, a substantial segment of the city wall of Aila was revealed. The wall was built in stone and dated to the early Byzantine period. The excavated segment was ca. 30 m long, ca. 2 m high, and defended by a projecting rectangular tower. The wall was erected over an earlier massive mudbrick structure, apparently once vaulted.

Just north of the city wall, a Byzantine mudbrick domestic complex was discovered. The complex consisted of several rooms built around a paved courtyard. Domestic activities were suggested by the discovery of installations built into the floors and walls of the complex and by associated artifactual evidence.

Just north of the domestic complex was a cemetery with at least five mudbrick tombs. Each tomb consisted of low mudbrick walls surmounted by a mudbrick vault. Three tombs were excavated; each contained a single articulated adult skeleton. The tombs were mostly devoid of grave goods, but the few sherds suggest that the tombs are late Roman or perhaps early Byzantine in date.

South of the Byzantine city wall, i.e., within the city, two other areas yielded substantial evidence of early Islamic occupation. This suggests that Roman/Byzantine Aila functioned as a suburb of the walled early Islamic town several hundred meters to the southeast, which has been undergoing excavation by a University of Chicago team.

*S. Thomas Parker, North Carolina State University*

## Southeast Araba Archaeological Survey

The Southeast Araba Archaeological Survey (SAAS), a component of Dr. S. Thomas Parker's Roman Aqaba Project, recorded some 160 ancient sites during the 1994 field season. Most of these sites were recorded in the immediate vicinity of Aqaba, while a few were recorded in the valley further north. The periods best represented in the SAAS database are the Chalcolithic/EB, Nabataean, Roman and Byzantine.



John Rucker standing on a road, presumably Roman, documented during the Wadi Araba survey component of the Roman Aqaba Project. Photo by Andrew M. Smith II.

In addition to surveying the environs of Aqaba, the SAAS visited and documented many of the major forts or caravanserais known to exist along ancient trade routes associated with Aqaba. Of particular interest was the survey of an ancient stone-paved road, presumably of Roman origin, that lies between Gharandal and Wadi Nukheila to the south. Although the date of the road cannot be definitely established, it may hold some relation to Roman occupation at Gharandal and the fortlet in Qa'a es-Sa'idiyeen (ca. 8 km to the north). West of this fortlet, along the east face of Jebel el-Khureij, the SAAS documented an ancient quarry with five discarded and fragmented Roman milestones. The study of this data enhances our knowledge of the economy of Roman Aqaba and the trade routes that claimed this settlement as a southern nexus.

Additional fieldwork is planned for 1996 and 1998.

The importance of this research in Wadi Araba grows steadily as relations between Israel and Jordan become more cooperative. Wadi Araba, once a virtual no-man's land, has become an important focal point in discussions on the economic development of both nations.

*Andrew M. Smith II, University of Maryland*

## Umm el-Jimal

The 1994 season of the Umm el-Jimal project was conducted from June 20 to July 29. The goals included: excavation of late antique tombs; excavation of a house in el-Herri, the site of the Nabataean/late Roman village; and survey of the decorative fragments and inscriptions in the ruins of the Byzantine/Umayyad town.

The burial specialists excavated 13 cist tombs which contained a minimum of 31 skeletons from the early Byzantine period. The tombs were very simply constructed and the grave goods ranged from none to very few, with the fanciest item being a pair of gold earrings of a type found in Nabataean, Roman, and Byzantine contexts. Thus the tomb construction and associated goods indicate that the people buried here were of very poor to moderate economic status.

While most bodies were placed carefully either directly in the soil or in wooden coffins, there were some bizarre exceptions. For example, one person was casually dumped on top of a wooden coffin in which another had already been buried, and another was in separate pieces so that articulated arms and other body parts were found disconnected from each other. Though most cists contained one or two skeletons, one somewhat larger tomb held 14 persons, stacked on top of one another in a single wooden coffin. The bones and related soil will be analyzed by physical anthropologists. The goal is not only to identify the sex, age, and stature, but also to analyze the history of the diseases and illnesses suffered by these people.

The second excavation area was at al-Herri, a rubble site 300 m in diameter, 100 m east of the Byzantine ruins. In 1984, soundings revealed domestic occupation in the early and late Roman periods, and destruction in the early Byzantine; i.e., foundation in the late first century A.C. occupation in the second and third, and destruction in the fourth. The site is very important because it is the only rural Roman settlement in northern Jordan that has not been disturbed by later occupation. In 1994, one of the houses was more extensively excavated, so that the walls and floors of several rooms were exposed. Five Nabataean painted sherds found in levels above the floors testify to the influence of the Nabataeans at Umm el-Jimal in the Roman era.

After the destruction of the house in the early Byzantine period, the entire ruin was covered by a thick ash-filled deposit of soil characteristic of dumping and burning. This dump debris was rich in Roman pottery, but contained enough early Byzantine pottery throughout to date its deposit to the fourth century. Learning where

this debris came from and why it was dumped on this ruin should shed light on the ancient method of garbage disposal! Of particular interest is the question whether such cleanups had a hygienic function related to disease and epidemic control.

Finally, an intensive survey of the Byzantine-Umayyad town in order to record decorative and epigraphic features was conducted. The features recorded included the large number of Byzantine crosses from churches and house lintels, and numerous Nabataean and Greek inscriptions, including some previously unknown ones.

*Bert de Vries, Calvin College*

## Petra: The Ridge Church

The Ridge Church is located at the northwestern edge of the Byzantine-era city and is just inside the city walls which run along the ridge overlooking Wadi Abu 'Ullayqa. Its location on that ridge, which rises to 924 m, has subjected the structure to severe erosion. Most of the stones of the walls and the other architectural elements have been washed down the slopes. It may have been described by Alois Musil in the early part of the century. He described two churches in the vicinity, but matching his descriptions to either of the two known churches is difficult. The Ridge Church definitely appears on A. Kammerer's map of 1929. It was noticed again by Thomas Dailey and Pierre M. Bikai in early 1994 and they encouraged documenting it before it deteriorated further. It was partially cleared during excavations in 1994-95. Five probes were made and features visible on the surface were documented.

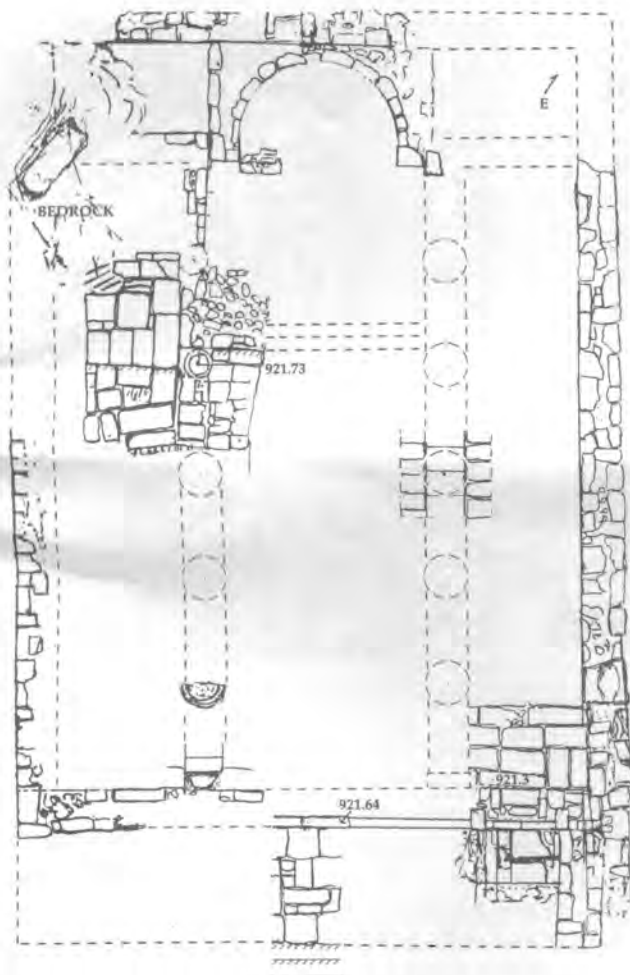
The building itself measures 18.1 m in length and 13.5 m in width. It is oriented ca. 35° north of true east. To the west is a 2.6 m deep portico. The church itself has a nave and two side aisles which are separated from the nave by stylobates which once carried five columns on each side. The three remaining column bases are of different styles and were apparently reused from Nabataean/Roman buildings. The nave and the two side aisles are paved with sandstone blocks which are in a good state of preservation. From an architectural point of view, the church is of standard Byzantine construction—a mono-apsidal basilica with two rectangular pastophoria.

At the eastern end of the nave is a raised platform or chancel with remnants of the steps which led to it. The chancel and apse floors are eroded but quantities of mosaic fragments found at the site indicate that they were originally paved with a mosaic consisting mainly of large white limestone tesserae. Set into this there was a colored mosaic, but only fragments of that were recovered. Small displaced stone and glass tesserae, similar to those found in the Petra Church, indicate that there were once wall mosaics in this church.

As noted above, there was a narthex to the west. There was apparently an entrance to this at the southern end. In the area excavated, two steps leading down to

the west were found. This is not what would be expected as the ground begins to rise at that point and goes up to the top of the ridge which is ca. 2.5 m above the floor level of the church. The steps must lead to some feature, probably a cave below the high point of the ridge. There is a second cave in the bedrock under the northern pastophorion.

Little was recovered that can aid in dating the structure, but, on the basis of the mosaic fragments and the general form, it is preliminarily dated to the 5th to 6th centuries A.D. The other finds included a few iron nails, and marble fragments which may have once belonged to chancel screens, altars, or other such furnishings, but they are very fragmentary.



This church may mark the northwest corner of the Byzantine city. There is no evidence of Byzantine construction to the west or to the south of the Petra Church so it may stand at the southwest corner of the Byzantine city. To date, there is no clear evidence that the city to the south of the main east/west street was rebuilt in the Byzantine era. The eastern limits of Byzantine construction in Petra are not known but evidence to date appears to indicate that Petra as a Byzantine city was smaller than it had been in prior eras.

*Patricia M. Bikai, ACOR*

## Reports

### Conservation and Preservation Activities

During the last year, the growing strength of the cultural preservation movement in Jordan manifested itself in a number of ways. Most importantly, UNESCO presented a draft management plan for the preservation of the Petra National Park. The peace process has resulted in a growing number of visitors to Petra and the draft management plan addresses the multiple difficult issues which must be resolved so that there is a balance between tourism and preservation. Pierre Bikai, Patricia Bikai, Gaetano Palumbo, Zbigniew T. Fiema and Deborah Kooring participated in the formal discussions of the draft plan in October of 1994.

The Department of Antiquities of Jordan also published new excavation regulations which make it mandatory for all excavators to present a plan for the preservation of their sites.

*Patricia M. Bikai, ACOR*

### A Program to Develop a National Register of Cultural Heritage Properties for Jordan

This project identified the need for establishing a National Register of Cultural Heritage Properties in Jordan, recommended procedures for evaluating potential resources, and provided examples of the evaluation process using a variety of archaeological sites. The study was funded by an ACOR/USIA Fellowship and was carried out from January to March, 1994.

Cultural Heritage Properties are those remnants of the past that illuminate human history. The recognition, preservation, and interpretation of this cultural legacy is important for fostering a sense of continuity between historic and modern populations. The wealth of ancient archaeological sites, historic buildings, and traditional cultures in Jordan is a source of national pride in testifying to the accomplishments of both ancestors and predecessors, and in containing unique scientific, educational, and interpretive potential. Due to the recent rapid expansion of Jordan's population, technologies, and economy, modernization and development is destroying this precious and nonrenewable cultural resource at an alarming rate.

Development of an official listing of significant Cultural Heritage Properties is a logical next step in Jordan's development of procedures to manage its cultural resources. At present, only archaeological sites predating 1700 are specifically protected by law and responsibilities for the identification and interpretation of these sites are spread over several ministries. Under the National Register proposed by this project, cultural heritage properties are broadly defined to include archaeological sites, buildings, places of historic or cultural importance, and landscapes. Individual resources are identified as being important because of one or more associ-

ated values: historical, architectural, scientific, artistic, or cultural. Other factors such as tourism potential and public interest can also increase the overall significance of a resource. For those resources which do not contain significant values, and therefore are not listed on the National Register of Cultural Heritage Properties, no further protection or study is required once they are identified and recorded. By identifying Jordan's rich and diverse historic and cultural resources as one cohesive entity, a comprehensive National Register of Cultural Heritage Properties would:

1. Provide a focus for legislative and administrative efforts designed to identify, protect, preserve, and interpret this cultural heritage;
2. Require interdisciplinary research efforts and the involvement local and regional entities in the identification of significant cultural heritage resources;
3. Facilitate the presentation and interpretation of the past to citizens and visitors by compiling a registry of important resources;
4. Provide a ranked listing of heritage properties to guide the initiation of both internal and foreign-aid development projects; and,
5. Clearly identify that majority of resources which are not significant and therefore need no further management or protection.

Establishing a National Register of Cultural Heritage Properties is an important step in a larger process. Identification, preservation, and interpretation of endangered cultural properties are undertaken by enlightened governments for the benefit of their people through the enactment of pertinent laws, policies, and development strategies. Such systematic, legalized, and far-sighted stewardship is called Cultural Resource Management (CRM).

The first stage of CRM studies involves identifying and recording resources to determine the frequency and distribution of cultural property types. The second stage deals with distinguishing those properties of each type which are of such importance that their alteration or destruction would constitute a significant loss to the community or nation. For these "significant" sites, a third stage is required: the development of management plans to protect or recover those values which made the property important. For sites which lack significant values, no further management is necessary beyond initial identification and recording.

In practice, these three steps—identification, evaluation, and management—are often collapsed into one another. Experts in certain types of cultural resources can frequently identify, evaluate, and make management recommendations during an initial visit to a property, drawing on their accumulated knowledge of the resource type and the types of values associated with it. Other properties are more complicated, however, and require additional investigations before such assessments can be made.

*Julia G. Costello*

## The Oil Lamp of Roman Palestine

For over one hundred years, numerous studies regarding oil lamps have focused on typological, chronological, and decorative aspects. As a USIA Fellow at ACOR in 1993 and at the W.F. Albright Institute in 1994-95 my project attempts to synthesize this information with literary and epigraphic sources as well as archaeological evidence in order to better understand the religious and cultural significance of the lamp in Roman Palestine. Special attention, for example, is paid to determining whether specific lamp types and their motifs are associated with specific archaeological contexts. Do lamps found in burials, for instance, differ from those recovered from hippodromes and theaters?



Eric Lapp in Jerash, one of several Decapolis cities which had thriving market for ceramics during the Roman and Byzantine periods. Photo by Ina Kehrberg.

In order to determine regional interconnections and trading patterns between urban centers of Roman Palestine, particularly those among the cities of the Decapolis first described by Pliny the Elder, petrographic thin-section and chemical composition analyses have been conducted on lamp sherds uncovered from select archaeological sites. By comparing the chemical composition of a specific lamp fragment to that of clay samples collected from a number of sites, I hope to discover a chemical "match" which may pinpoint original clay sources used by ancient potters. Such chemical "fingerprints" linking lamps to clays would enable me to more accurately determine the likely place of manufacture. The Roman discus lamp type is most suitable for the determination of provenance and thus, offers the best means of understanding the regional trade patterns of Roman Palestine.

*Eric C. Lapp, Duke University*

## Petra: Weathering Studies of the Roman Theater

Few weathering studies have quantified the rates at which rocks deteriorate, or have those studies established the specific mechanisms responsible for weathering. By studying architectural structures of known age and their alteration over time, as well as the substrate (i.e., sandstone, marble) composition and their variable constituents, rates and mechanisms of weathering can be evaluated.

In ongoing research to examine weathering rates and mechanisms in the Paleozoic sandstones of Petra, Jordan, an important advance in weathering research was made—two possible thresholds have been indicated in this weathering analysis. The identification of threshold responses was previously undocumented in rock deterioration and is significant because it indicates a nonlin-



Aerial view of the theater at Petra. Photo by J. Wilson Myers and Eleanor Myers.

ear response of the rock to intrinsic characteristics (i.e., rock matrix composition and matrix-to-clast ratio) and to extrinsic influences (i.e., lichen attachment, moisture, and sunlight). This discovery fuels the current debate on the character of natural processes as to whether they are linear, logarithmic, or irregular as in threshold response.

The study methodology was designed specifically for the Petra site. In the Roman Theater, which was carved out of bedrock during the first century A.C., a random 2 m sampling scheme was used to measure the now-weathered surfaces from a hypothetical false da-

tum point. The datum point was determined from documented Roman engineering and construction canons. A total of 526 depth measurements were made on vertical and horizontal surfaces and correlated to the intrinsic variables of sandstone matrix-to-clast ratios, overall densities, and matrix constituent concentrations (Si, Ca, Fe, Al) and to the extrinsic variables of lichen attachment, and accumulated annual insolation receipt (megajoules/m<sup>2</sup>).

First, a threshold was found relating to an intrinsic characteristic. When matrix iron concentrations exceeded 2%, an abrupt decrease in overall sandstone weatherability is indicated until weathering is found to have decreased below measurable limits at 4%—apparently halting observable weathering. It has been speculated that matrix iron acts as a sandstone clast binding agent, lessening the overall clast disaggregation and overall weathering.

Second, a threshold was affected by an extrinsic influence. In sandstone strata with matrix calcium concentrations exceeding 10%, weathering was accelerated with insolation >5200-5300 megajoules/m<sup>2</sup>. From recent petroleum research in sandstone diagenesis, it is speculated that the increased heating from insolation is responsible for irregular calcite crystal expansion and contraction causing ma-

trix/clast interface micro-fracturing, clast disaggregation, and subsequent weathering—a new finding in sandstone weathering research.

The ruined city of Petra in southern Jordan is proving to be an ideal site for weathering studies of this kind. This research is proving critical not only in landscape studies such as geomorphology and sedimentology, but also in conservation sciences where an understanding of the causes, rates and trends of deterioration is vital for architectural preservation and structural analysis.

*Thomas R. Paradise, University of Hawaii at Hilo*

## Director's Report

*Pierre M. Bikai*

### ACOR Projects

Cultural Resource Management (CRM) Program, ACOR/USAID and the Department of Antiquities, Gaetano Palumbo

Madaba, ACOR, USAID, and the Ministry of Tourism and Antiquities:

Archaeological Park Master Plan, Michele Piccirillo  
Mosaics Shelters, Ammar Khammash

Conservation of the Mosaics of the Burnt Palace, Mary Scott, Fatma Marii and Mahmoud Abu Juda

Um er-Rasas Archaeological Park Master Plan, ACOR, USAID, and the Ministry of Tourism and Antiquities, Michele Piccirillo

Petra Church Documentation Project, ACOR, World Monuments Fund, Chrysanthos Kanellopoulos and Catherine Alexander

Petra Scrolls Conservation Project, ACOR, Academy of Finland, University of Helsinki, University of Michigan. Funded by National Endowment for the Humanities, Samuel Kress Foundation, the Ministry of Tourism and Antiquities, and numerous others

Petra Church Shelter Design, ACOR, USAID, and the Ministry of Tourism and Antiquities, Rob Shutler

Qatrana Fort Master Plan, ACOR, USAID, and the Ministry of Tourism and Antiquities, Leen Fakhoury

St. George's Church, Jebel al-Webdeh, ACOR and the Abdul Hameed Shoman Foundation, Pierre Bikai

### ACOR-Affiliated Field Projects

Khirbet Iskander, Suzanne Richard

Khirbet Salameh, Pierre Bikai

Lehun, Denyse Homès-Fredericq

Madaba Plains Projects: Tell el 'Umeiri, Lawrence T. Geraty; Tell Jalul, Randal Younker; Regional Survey, Øystein LaBianca

Roman Aila, S. Thomas Parker

South Temple of Petra, Martha S. Joukowsky

Tell Jawa, P. M. Michèle Daviau

Tor Faraj, Don Henry

Umm el-Jimal, Bert de Vries

Via Militaris Project, David F. Graf

### Fellows in Residence

#### *United States Information Agency (USIA) Fellows:*

Betty Anderson, *The Evolution of Jordan's National Identity: The Role of the National Socialist, Ba'ath and Communist Parties 1948 to 1957*

Laurie Brand, *Arab Women and Political Liberalization, Winners or Losers?*

Robert Boling, *Research in the Transition from the Late Bronze to the Iron I Periods in Jordan: The Emergence*

*of Ancient Territorial States*

Zbigniew Fiema, *Petra Church: Publication Phase*  
Dale Lightfoot, *Foggara Irrigation in the Jordanian-Syrian Desert: Contemporary Impacts of Ancient Technology*

Beatrice St. Laurent, *A Survey and Analysis of Late Ottoman Pasha Residences and Farmsteads in Jordan*

Steve Simms, *Petra Ethnoarchaeological Project*

Susan Slyomovics, *Public Memory of Place: Rebuilding the Pre-1948 Palestinian Village*

#### *Near and Middle Eastern Research*

##### *and Training Program (NMERTA) Fellows:*

Erin Addison, *Women's Support Systems in a Middle Eastern Context*

Sharon Araji, *Women, Education and Development in Jordan: A Comparative Study*

James Gillespie, *The Hashemites: A Study in Dynastic Politics and Modernization*

Andrew Parasiliti, *Tightrope: Jordan, Iraq and the Gulf War*

Albert Randall, *Spiritual-Religious Dimensions of Peace in the Middle East*

*Winnett Fellow:* Bruce Routledge, *Moab Marginal Agriculture Project*

*Council of American Overseas Research Centers (CAORC)-ACOR Affiliated Fellow:* Ellen Lust-Okar, *Managing Crises: Political and Economic Liberalization in the Middle East*

Information about ACOR's fellowships can be obtained from ACOR, 3301 North Charles St., Baltimore MD 21218.

### News and Notes

◆ July 4. A long article on the St. George Church project appears in the *Jordan Times*.

◆ July 7. Patricia and I give a tour of Petra to the new U.S. Ambassador, Wesley Egan, and his wife, Virginia.

◆ July 8. Joe Seger and Walt Rast, members of ASOR's Committee for Archaeological Policy (CAP), arrive for the annual tour.

◆ July 20. The fax is not working properly. Kathy wonders if the asteroids smashing into Jupiter are the cause.

◆ July 25. Sy Gitin, director of the Albright Institute for Archaeological Research in Jerusalem, shows up just in time to sit with us to watch the Washington handshake on TV.

◆ Aug. 4. H.R.H. Prince Ra'ad visits ACOR and tells Glen Peterman and Zbig Fiema about his recent plane flight above Tel Aviv and Jerusalem with His Majesty King Hussein.

◆ Aug. 8. ACOR receives its first direct long-distance call from Israel—from a person who needs Kathy's help with a plane ticket!

◆ Aug. 10. Zbig Fiema and Fatma Marii are interviewed for a program on the scrolls to be aired on BBC.

◆ Aug. 11. At Martha Joukowsky's excavation dig-house at Petra, Madelene Parr is confronted by a woman



Part of the (very serious) scroll team. Seated: Fatma Marii, Professor Jaakko Frösén, Marjo Lehtinen. Standing: Erja Salmenkivi, Mari Mustonen; Matti Mustonen, Zbigniew T. Fiema and Deborah Kooring. In the window: Glen L. Peterman. Photo by R. Henry Cowherd.

demanding to use "the loo." Mrs. Parr says, "Sorry—this is a private dig-house, but there is a small resthouse some 100 meters away." Hearing this, the woman draws herself up and declares, "But ... but, my husband is a British General!"—To which Mrs. Parr answers dryly: "this is an American project—and all that was over in 1776 anyway!" [This story is probably apocryphal-ed.]

- ◆Aug. 19. Said Adawi gets married.
- ◆Sept. 10 Zbig Fiema and Deborah Kooring are married in Salt Lake City, Utah.
- ◆Oct. 20. Patricia and I deliver 20 silk-bound presenta-

tion copies of *The Mosaics of Jordan* to the Royal Palace—and don't ask what they are for.

◆Oct. 26. Immediately after the signing of the peace treaty between Jordan and Israel—an event viewed by a worldwide television audience—the Jordanians give gifts to the assembled dignitaries. To the highest ranking guests go the silk-bound copies of *The Mosaics of Jordan*.

◆Oct. 28. Patricia and I leave for archaeological test excavations at Petra. Among the volunteer staff are the U.S. and Swiss ambassadors to Jordan. During the week, the project goes through several names: AEP for "Ambassadors' Expedition to Petra," "Amateur's Expedition to Petra," and "Anyone and Everyone's Project." We will later learn that it is known in Amman as the "Dip Dig"—Dip for diplomatic, that is!

◆Nov. 9. Another TV crew shows up to film the scroll conservation process. Zbig takes charge. Fatma, having learned from her previous experiences with film crews, says that "with all that equipment it looks like they're gonna stay three hours!"

◆Nov. 23. Gaetano Palumbo leaves ACOR and Jordan for his new position at the Getty Conservation Institute.

◆Dec. 10. An article on the Petra Scrolls appears in *Discover* magazine. The scrolls are listed as one of the 75 top science stories of 1994—along with the Shoemaker-Levy comet smashing into Jupiter; the discovery of the Top quark by Fermilab; and the record 10.7 million watts generated by Princeton's TOKAMAK fusion reactor. We are pleased.



Dr. Ghazi Bisheh

◆Dec. 21. Dr. Ghazi Bisheh is appointed as the Director-General of the Department of Antiquities.

## Donors to ACOR

The following friends of ACOR contributed over the last months: Edward B. Banning; Pierre Bikai; Roger S. Boraas; Terry Christensen; Darlene Emery; Harold Forshey; Larry Geraty; the Joukowsky Foundation; Nancy Lapp; Edward Pores; the Long Island Society of the American Institute of Archaeology; George and Eathel Mendenhall; Eric Meyers; Dee Miller; S. Thomas Parker; Ann Rhea; Marjorie W. Sears; Joe Seger; Cynthia Shartzler; and Al Simmons.

Donations to the ACOR Endowment were received from: H.R.H. Prince Ra'ad bin Zeid; Mohammed Asfour; Terry Christensen; Bert and Sally de Vries; Widad Kawar; and Charles Rubinger.

There was a donation to the Jennifer Groot Fellowship Endowment from S. Thomas Parker

Donations to the Kenneth W. Russell Memorial Trust were received from: Patricia Bikai in honor of Martha Joukowsky; Kay Russell; and Jane Taylor.

Donations to the library for the purchase of books and equipment were received from: Edward B. Banning; Terry Christensen; Harold Forshey; Larry Geraty; Sy Gitin; Charles U. Harris (for library furnishings); the Joukowsky Foundation (for a library security system); Nancy Lapp; Dee Miller; and Thomas Parker.

Donations of books were received from: Assad Abdul Rahman; Mitch Allen of Sage Publications; American Society of Papyrologists; Gerti Bierenbroodspot; Pierre M. Bikai; Ghazi Bisheh; J.M. Blazquez; John Bolt; Robin Brown; Department of Antiquities; Sally de Vries; Zbigniew T. Fiema; Jaakko Frösén; Getty Conservation Institute; Hana Hijazi; Forouz Jowkar; Chrysanthos Kanellopoulos; Sultan Maani; Lysbeth Marigold; Natural Resources Authority; Laila Nehme; Robert Oosterhout; William Overstreet; Gaetano Palumbo; Anna Paolini; Thomas Paradise; Michele Piccirillo; Robert Schick; Irfan Shahid; Khalaf al-Tarawneh; the University of Jordan Library; Peter Warnock; Donald Whitcomb; and Khair Yassine.

# THE GREAT TEMPLE OF AMMAN

## THE ARCHITECTURE



CHRYSANTHOS KANELLOPOULOS

### New Publications

*The Great Temple of Amman: The Architecture* by Chrysanthos Kanellopoulos

This volume details the architecture and history of this important monument. It also documents both the study which preceded the partial restoration of the podium, temenos, and temple colonnade, and the restoration itself. Publication was made possible through support provided by the United States Agency for International Development (USAID), and by funds from ACOR's publication endowment. Income from sales of the book will be returned to the publications endowment and used for the publication of other works on the art and archaeology of Jordan. It was edited by Patricia M. Bikai with the assistance of Thomas A. Dailey. This large format, 137-page cloth-bound volume (10" x 13") has a total of 196 illustrations (two in color), including 13 oversize plans and maps.

*JADIS: The Jordan Antiquities Database and Information System*, edited by Gaetano Palumbo

In cooperation with the Department of Antiquities of Jordan, the basic information in the JADIS computerized database has been issued in printed form. 8,680 sites are listed by JADIS number, name, area of Jordan, and periods of occupation. It is the result of four years of work conducted by Dr. Palumbo and Department of Antiquities staff. This 453-page, large format (9" x 11"), hard-bound volume is xerographically reproduced. There are 117 maps of site locations by region and period, plus one large fold-out map.

### The Endowment Campaign

ACOR will finally retire the mortgage on the building in June of 1995 and will be debt-free for the first time in 10 years. ACOR will soon enter the 'post-building' era and has been reassessing its long-term objectives and its needs for that phase. At their meeting in November of 1994 in Chicago, The ACOR Board of Trustees made it their urgent priority to build an endowment which will ensure ACOR's future. In the long term (10 years), the board intends to raise \$3,100,000 to underwrite the positions of the director, the assistant directors, and the librarian. Over the near term (3 years) ACOR is seeking to raise \$600,000.

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### ACOR and its Newsletter

ACOR, the American Center of Oriental Research, is a nonprofit academic institute whose services are offered at or below cost. It is supported through donations and grants. ACOR is tax exempt as a 501(c)(3) organization, as determined by the U.S. Internal Revenue Service.

Inquiries may be sent to ACOR, P.O. Box 2470, Jebel Amman, Amman, Jordan, Tel.: (962-6) 846-117, Fax: (962-6) 844-181, or to ACOR, 3301 North Charles Street, Baltimore, MD 21218, Tel.: (410) 516-3498, Fax: (410) 516-3499. The *ACOR Newsletter* is edited by Patricia M. Bikai. Printed in Jordan. The drawing of the logo on the cover page (a pilaster capital from the Petra Church) is by Chrysanthos Kanellopoulos.