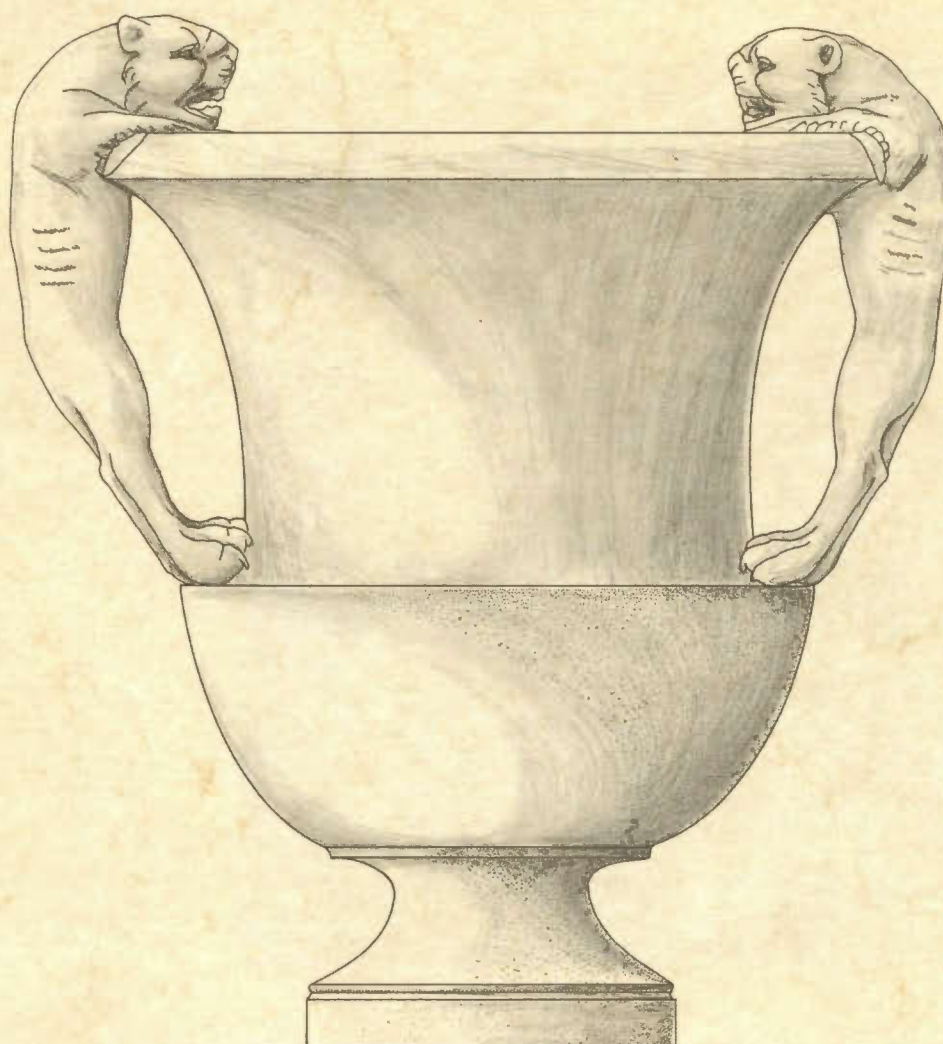


ACOR: The First 25 Years

The American Center of
Oriental Research:
1968-1993



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Oriental Research:
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Amman, Jordan

American Center of Oriental Research

P.O. Box 2470

Amman, Jordan

Printed in Jordan

1993

Cover:

Marble vase with lioness handles excavated in the Petra church.

Drawing by Catherine Alexander.

Title page:

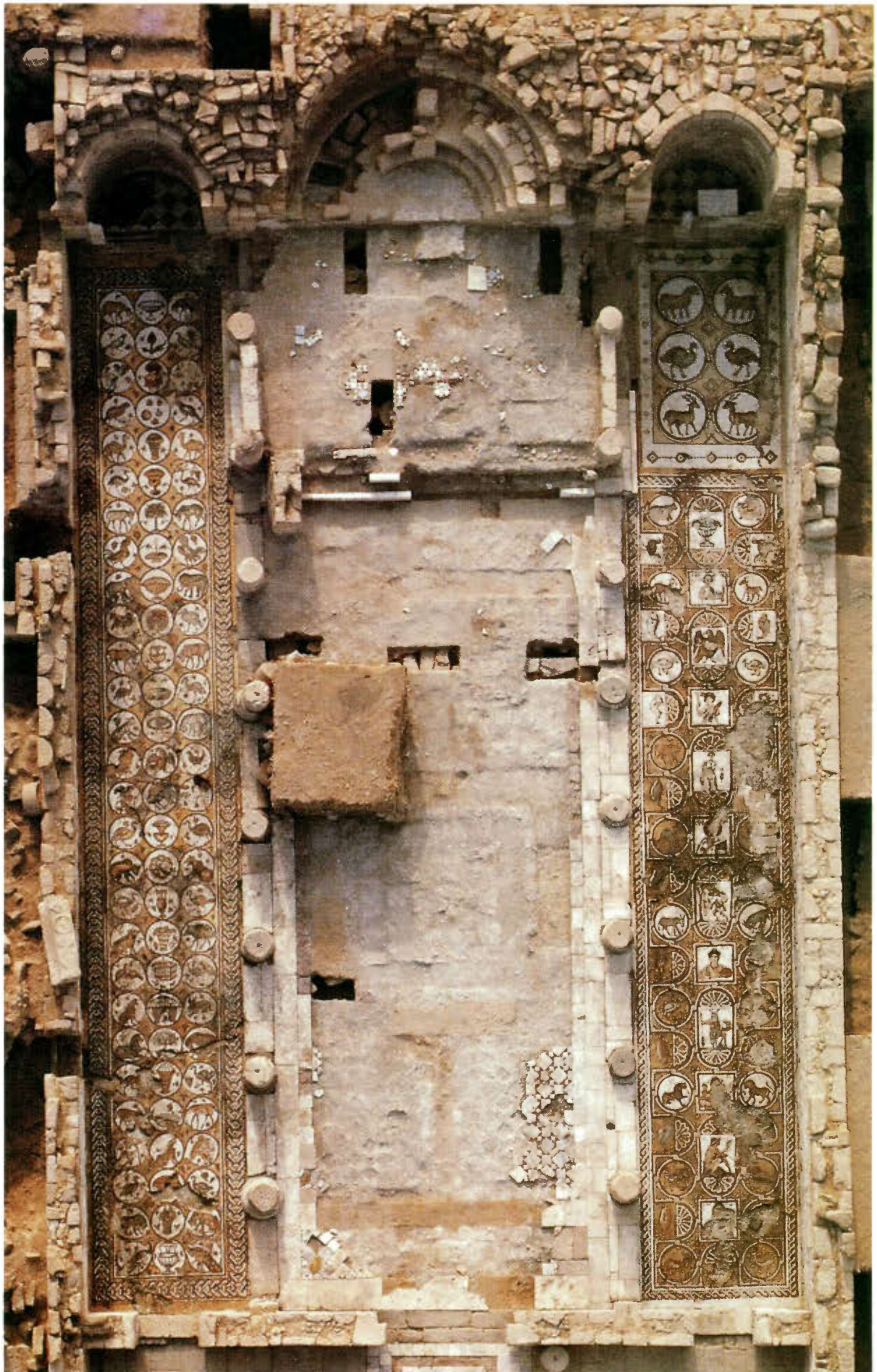
Personification of Spring from the southern aisle of the Petra church.

Photo by Bronwyn Douglas.

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Aerial view of
the Petra
church with
mosaics in both
side aisles.
Photo by J.
Wilson Myers
and Eleanor
Myers.



Preface

ACOR has much to celebrate in its 25th year and this work is part of the celebration. During this year, members of the ACOR community will be making plans for the future—for a future that will extend into the next century. It is appropriate, however, as we look to the future that we also celebrate the past, a past full of accomplishment as well as struggle. *ACOR: The First 25 Years* is meant to mark a transition for the institution: from young and struggling to established member of the intellectual community in Jordan. It is also meant as a tribute to all of those who worked very hard to help ACOR to grow and prosper for 25 years. There are so many who helped that to name just a few would be inappropriate. The names of some are found in what follows, but there were many, many others.

Acknowledgments

The section on ASOR, the chapter on the history of ACOR, and the lists of presidents, directors, professors and fellows as well as the list of projects were compiled by Branwen Denton from the reports of ACOR directors to the ACOR Board of Trustees, from reports in the ASOR and ACOR newsletters, from other published reports and from the ACOR files. Use was also made of *American Archaeology in the Mideast: A History of the American Schools of Oriental Research* by Philip J. King (1983). The section on the early explorers was written by Patricia M. Bikai who was also the editor and did the layout.

I would like to thank those who contributed synopses of projects: Geoffrey A. Clark, Bert de Vries, Zbigniew T. Fiema, Timothy Harrison, Chryssanthos Kanellopoulos, Cherie Lenzen, Burton MacDonald, Patrick McGovern, J. Maxwell Miller, John P. Oleson, Gaetano Palumbo, S. Thomas Parker, and Gary Rollefson. The other sections on the projects were written by Branwen Denton, based on materials published by the excavators. Joseph A. Greene contributed information on the Archaeological Survey of Greater Amman.

Photographs are by Patricia M. Bikai, Ghazi Bisheh, Bert de Vries, Rudolph Dornemann, Bronwyn Douglas, Zbigniew T. Fiema, Jay Guikema, Anthi Koutsoukou, J. Wilson Myers and Eleanor Myers, Gaetano Palumbo, James A. Sauer, and Jane Taylor; other photos are courtesy of Patrick McGovern, Gary Rollefson and The Eleanor S. Brockenbrough Library of The Museum of the Confederacy, Richmond, Virginia. Drawings are by Catherine Alexander, Chryssanthos Kanellopoulos, and John Oleson. A number of people made valuable suggestions on the manuscript, including S. Thomas Parker, Glen Peterman, David McCreery and Bert de Vries. Actual production was by Gulf Scan and the Jordan Press Foundation under the technical supervision of Shishir Dutta. Their help is appreciated.

Pierre M. Bikai

"Wadi Moheb" from W. F. Lynch,
Narrative of the United States'
Expedition to the River Jordan
and the Dead Sea, 1849.



WADY MOJEB.

American Research in Jordan

1838-1968

Archaeological exploration of the area east of the Jordan River by Americans and others began in the 19th century. The early explorers laid the groundwork for many of ACOR's later projects.

The Explorers

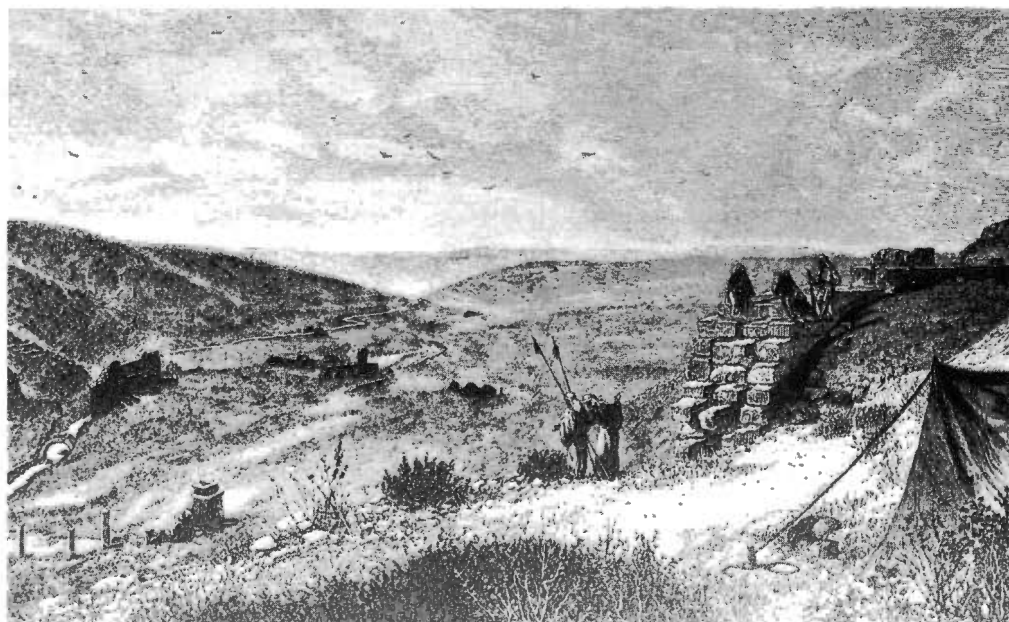
In the early 1800s, Ulrich Seetzen (explorer of the ruins of Amman and Jerash) and Johann Burckhardt (discoverer of Petra for the western world) traveled widely and made topographical studies. They were followed by American biblical scholar Edward Robinson (1794-1863) who traveled through Palestine in 1838 and again in 1852, searching for sites corresponding to those mentioned in the Bible. He was accompanied by his former student Eli Smith (1801-57). Their discoveries were published as *Biblical Researches in Palestine, Mount Sinai, and Arabia Petraea* (1841) and *Later Biblical Researches in Palestine and in the Adjacent Regions* (1856). Numerous ACOR scholars have continued the work of identification of sites in Jordan.

An American naval lieutenant, William Francis Lynch, conducted the first scientific survey of the Jordan Valley and Dead Sea Rift by boat in 1848. His findings were published in 1852 as the *Official Report of the United States' Expedition to Explore the Dead Sea and the River Jordan and Narrative of the United States' Expedition to the River Jordan and the Dead Sea*. In 1849, before Lynch's official reports appeared, a member of the expedition, Edward P. Montague, published his *Narrative of the Late Expedition to the Dead Sea from a Diary of One of the Party*. In his preface, Montague lamented that there had been many travelers to the region but that:

... their published narratives have been so voluminous, and in most instances, so expensively got up, that they have been out of the reach of the general reader.



Above, William Francis Lynch. Photo courtesy of the Eleanor S. Brockenbrough Library, The Museum of the Confederacy, Richmond, Virginia. Right, view from the Amman Citadel from Selah Merrill, *East of the Jordan*, 1881.



THE EXPLORERS

We have therefore little reason to wonder that so many erroneous ideas concerning this portion of the East are prevalent.

He then goes on:

With the exception of the United States, no nation can boast of a successful expedition to the shores of the Dead Sea. The boldness with which this novel enterprise was planned and executed, is a favorable indication of the energy and intelligence of our countrymen.

The Lynch expedition was indeed one of the first to the area which was designed and executed as a scientific expedition—from the design of the research and necessary equipment to final publication. Lynch's official reports included information on the climate, geology, ornithology and botany of the area of the Jordan River and Dead Sea, as well as archaeological and anthropological information. ACOR scholars continue this multi-disciplinary approach today.

In 1865, influenced greatly by the accomplishments of Robinson, the Palestine Exploration Fund (PEF) was founded in Britain with the aim of exploring the 'Holy Land' in a scientific and systematic way. Since the primary impetus for these expeditions in the 1800s was the study of biblical sites, attention was concentrated west of the Jordan River. In 1870, the American Palestine Exploration Society was formed. The literature of the British society of 1871 states:

The survey of Palestine divides itself naturally into two parts, the east and the west of the Jordan. It is with pleasure that the [PEF] Committee are able to announce that the Americans have established an independent association, and that an agreement has been effected by which they will take the east while the English Society takes the west of the Jordan.

Some survey and mapping was accomplished in 1873 by U.S. Army Second Lieutenant Edgar Z. Steever who created a map covering 500 square miles. The



Above, plan of the temple on the Amman Citadel as drawn in 1876. From Selah Merrill, *East of the Jordan*, 1881. Right, the cook tent of the Libby and Hoskins expedition at Petra. Behind it are the remains of the Great Temple. From W. Libby and F. E. Hoskins, *The Jordan Valley and Petra*, 1905.



THE EXPLORERS

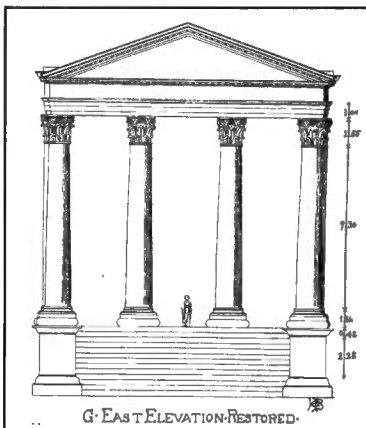
Society's second expedition, in 1875-77, was led by Rev. Selah Merrill and it documented a number of archaeological sites and collected ethnographic and botanical information. The results were published by Merrill in 1881 as *East of the Jordan*. This and numerous other archaeological surveys of Jordan formed the basis for ACOR's Cultural Resources Management computerized inventory of sites, the Jordan Antiquities Database and Information System (JADIS).

The American society, which suffered from deficiencies in funding and leadership, ceased to exist in 1884, but many of the participants in the society later became founders of the American Schools of Oriental Research.

In 1895, Frederick Jones Bliss, son of a president of what would later be called the American University of Beirut, documented a number of the churches with mosaics in Madaba, some of them in the area where ACOR is now involved in the Madaba Archaeological Park project. Bliss's work was published in the Palestine Exploration Fund Quarterly Statement of 1895.

The Princeton University Archaeological Expedition to Syria in 1904-5 documented architectural remains at Araq el-Emir and Amman, among other sites in Jordan. Their work was published in 1907 by Howard Crosby Butler as *Ancient Architecture in Syria* and some of their documentation on structures which no longer exist was used in the ACOR project at the Great Temple of Amman (the so-called Temple of Hercules).

The final major expedition of this early era which should be mentioned is that of William Libby, a geographer from Princeton University, and Franklin E. Hoskins from the Protestant mission in Beirut. This was published as *The Jordan Valley and Petra* in 1905; the volume has 159 illustrations, mainly photographs which are still useful. Among the photographs are early ones of Petra where ACOR has projects today.



Above, a restoration of the Temple of Hercules from H. C. Butler, *Ancient Architecture in Syria*, 1907. Right, "Madaba--Greek Church" from W. Libby and F. E. Hoskins, *The Jordan Valley and Petra*, 1905. The church is St. George's where the famous Mosaic Map is located.





Above, lion relief from Araq el-Emir. Photo by James A. Sauer. Right, Jerash. Photo by Gaetano Palumbo.

American Schools of Oriental Research

Americans remained uninvolved in actual Near Eastern archaeology until the initiation of excavations at Nippur, in Iraq, in 1884. In 1900, the American School of Oriental Research in Jerusalem was founded to establish a permanent center for American research in the region. The academic sponsors of the organization were the Society of Biblical Literature and Exegesis, the American Oriental Society and the Archaeological Institute of America; 21 academic institutions became charter members. In 1919, the organization was incorporated under a new name, the American Schools of Oriental Research (ASOR), to include the fledgling center in Baghdad.

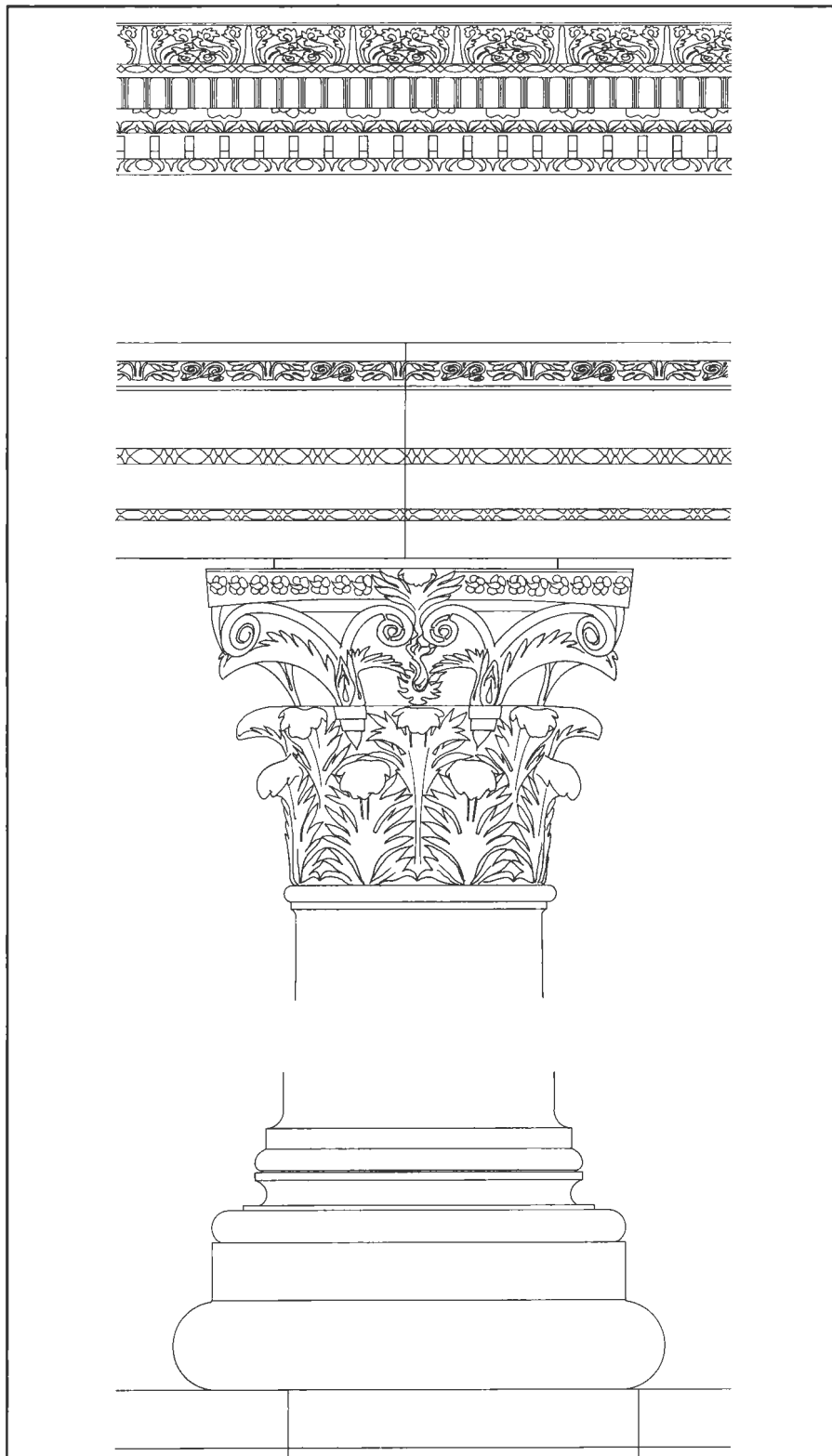


The years prior to World War I witnessed great refinements in archaeological methods over those of the previous century, when archaeology had most often been little more than treasure hunting. Great steps had been taken towards the development of systematic methods of digging and recording, with attention to stratigraphy and ceramic typology. At this time, though, interest continued to focus on Palestine because of its biblical sites. World War I put a halt to excavations in the area and the Jerusalem school closed in 1914.

The school reopened in 1919 and William Foxwell Albright, a distinguished orientalist, became director in 1922. During his tenure, Albright conducted several surveys in what was then called Transjordan. In 1924, he directed a survey of the Southern Ghor, at the southeastern end of the Dead Sea, as a joint project of ASOR and the Xenia Theological Seminary. The project had as its goal the identification of the “cities of the plain” described in Genesis 14. It was during this survey that the important Bronze Age site, Bab edh-Dhra, later excavated by ASOR and ACOR scholars, was discovered. Excavations were also begun at the Chalcolithic site of Teleilat el-Ghassul at the northern end of the Dead Sea. In 1930, excavations at Jerash (ancient Gerasa), begun in the previous year by the British School of Archaeology in Jerusalem and Yale University, continued as a joint project of ASOR and Yale. In 1932, Nelson Glueck, who had been a student of Albright’s, began a series of surveys in Transjordan which were to continue, with brief breaks, for two decades. These surveys, in which Glueck used land survey complemented by aerial reconnaissance and introduced the use of surface pottery for dating unexcavated sites, are still considered to be landmarks of comprehensive geographical, historical and demographic studies of the ancient kingdoms of Jordan. Glueck succeeded in locating more than 1500 ancient sites; he also excavated at Khirbet et-Tannur and Tell el-Kheleifeh.

Archaeological work in the Middle East was again interrupted by World War II. After the founding of Israel, the Jerusalem school, which had its headquarters in east Jerusalem, found itself unable to communicate directly with archaeologists in the newly-formed state. Cut off from direct participation in excavations in Israeli territory, ASOR excavations on both the West and East Banks of the Jordan River expanded. In the 1950s, excavations were carried out at Dhiban (biblical Dibon) and soundings were made at Pella. Paul Lapp, who directed the Jerusalem school from 1961 to 1965, also served as a senior field advisor to the United States Agency for International Development (USAID) on the West Bank. USAID planned to consolidate, clean and improve selected important sites for touristic purposes. The chosen sites were Qumran, Samaria and Jericho on the West Bank and Jerash, Amman, Petra and Kerak on the East Bank. At this time, ASOR also served in an advisory capacity to the Jordanian Department of Antiquities. Thus the groundwork was laid for what were to become two of ACOR’s most important functions in the future. In the 1960s excavations were carried out at Bab edh-Dhra, Dhahr Mirzbaneh, Araq el-Emir and Tell es-Saidiyeh and excavations at Tell-Hesban were to commence in the summer of 1967. In June 1967, the outbreak of the Six-Day War brought archaeological activity to an abrupt end and, when Israel occupied the West Bank, an “iron curtain” descended in the region, separating the two sides of the Jordan River.

Restoration of the order of the
Great Temple of Amman (The
Temple of 'Hercules'). Drawing
by Chryssanthos Kanellopou-
los.



ACOR: The First 25 Years

The American Center of Oriental Research in Amman, Jordan, was founded in July of 1968 in order to facilitate American participation in the excavation and preservation of Jordan's rich but largely untapped archaeological remains.

The Founding of ACOR

The report of the President of the American Schools of Oriental Research, G. Ernest Wright, to the Board of Trustees on December 7, 1967, included the following statement:

American cultural relations with the Arab world are in a critical stage. We have to move as promptly as possible, extending our resources to the very limit to activate American historical and cultural activities, particularly in those lands where our organization has a primary responsibility: Iraq, Syria, Jordan, Lebanon, Saudi Arabia and other countries at the southern tip of Arabia.

In order to accomplish this goal, it was considered imperative to establish permanent in-country research centers in the Arab world that would encourage ongoing research and train qualified staff. These institutions would adhere to a strict policy of non-involvement in the politics of any country in which the schools worked.

Wright had received a request from the University of Jordan for ASOR to assist their Department of Archaeology in the training of students. The university offered to provide office and library facilities for an appointee of ASOR in return for teaching and training activities. In response to that request, it was voted to appoint Rudolph H.

An apartment on the first floor of this building which is near the First Circle was ACOR headquarters for its first 6 months. Photo by Rudolph Dornemann.



THE FOUNDING OF ACOR

Dornemann, a graduate student at the University of Chicago, as annual professor in Amman for 1968-69. Dornemann had taken time out from his academic work to serve with USAID in Jordan between 1965 and 1967, and had been involved with assisting the Department of Antiquities in the conservation and preparation of ancient sites for tourism, thus continuing the work of Paul Lapp. The new organization was to be named the American Research Center in Amman and a committee was appointed by the president of ASOR to supervise it.

In July 1968, the first campaign at Tell Hesban, a major site on the high plateau above the northern end of the Dead Sea, got underway under the directorship of Siegfried H. Horn of Andrews University. Funding was provided by ASOR and the Jordanian Department of Antiquities. The new annual professor of the Amman center was provided with a car and excavation equipment, also funded by ASOR.

Dornemann was originally housed in a small apartment at the First Circle in Amman and he used some of the excavation equipment for furniture. By the beginning of 1969, he had rented and furnished a house with ample living and work space near the Third Circle; it would serve as ACOR's headquarters in Jordan until 1977. The center consisted of two buildings on about one dunum of land. The main building was a two-storey house with three bedrooms, living, dining and kitchen facilities on the first floor and office and work rooms upstairs. The smaller building, which consisted of a garage and another room, was used for storing excavation equipment. Dornemann retained the services of Mohammed Adawi as cook. Mohammed had previously served as assistant cook in the ASOR center in Jerusalem until he was forced to flee to Amman in June 1967, where he had been kept on a stipend from ASOR. Mohammed has remained an employee and invaluable friend of ACOR to the present day.

The primary responsibilities of the annual professor were the teaching of up to three courses at the University of Jordan and serving as archaeological consultant to the Director-General of Antiquities. During the first year, Dornemann began excavations on the citadel of Amman as a joint project of ASOR, the University of Jordan and the



Above, Rudolph Dornemann lectures. Right, the second ACOR, near the Third Circle. Photo by Rudolph Dornemann.



1970-1980: THE FORMATIVE YEARS

Department of Antiquities. This excavation provided training for advanced students in the university's Department of Archaeology and employment for recent graduates of the university who had been unable to find work because of the restricted opportunities available to them in Jordan since the war. Equipment and housing at the center were made available for excavations at the site of Rujm el-Malfuf in the western part of Amman, directed by Roger S. Boraas of Upsala College, who was appointed Research Associate in Amman for 1969-70. The policy of ASOR was one of close cooperation with the University of Jordan and the Department of Antiquities in order to be as helpful to both institutions as resources would allow and to keep archaeological activity alive in Jordan as the USAID program was being dismantled. The total annual budget for the first year of the Amman center was \$21,500, with 84% provided by the United States Information Agency (USIA) and 16% by ASOR.

In early 1970, the name of the center in Amman was changed to The Amman Center of Oriental Research and the residence near the Third Circle housed a number of distinguished guests for varying lengths of time. The center also began what has proven to be a long cooperative relationship with the organization known as the Friends of Archaeology. This multi-national group, founded in 1962 under the sponsorship of the Department of Antiquities, arranges lectures by professional archaeologists and trips to archaeological sites in Jordan and elsewhere and sometimes contributes money and manpower to worthwhile projects.

During its first year, the Amman center was regarded by the Jordanian government as "an exilic operation of the Jerusalem School." In December of 1969, when Murray B. Nicol was annual professor, a plan was presented to the Department of Antiquities by the president of ASOR whereby the Amman center would become an autonomous corporation which would, in addition to its normal archaeological activities, provide scholarly assistance to both the Department of Antiquities and the University of Jordan. Although American archaeologists were actively welcomed in Jordan, it was becoming increasingly difficult for archaeologists who excavated in Israel to work in countries that were members of the Arab League. As a result, the decision was taken in 1970 to reorganize ASOR. The corporate entity of ASOR, centered in the United States, was to remain unchanged with regard to its endowment and corporate individual memberships. It would continue its program of publications, fellowships, research grants and the like but would sponsor no projects or institutions in the Near East except by means of grants to independent corporations in the area that would make their own decisions and manage their own budgets. The Amman Committee incorporated itself as "The American Center of Oriental Research in Amman."

1970-1980: The Formative Years

In 1970, Bastiaan Van Elderen became director and annual professor at ACOR and conducted excavations at the site of Swafiyeh, on the western edge of Amman, where the remains of a Byzantine church with exceptionally well-preserved and beautiful mosaic floors had been uncovered. This excavation was conducted in conjunction

1970-1980: THE FORMATIVE YEARS

with the Department of Antiquities and served as a training exercise for students of archaeology at the University of Jordan. Work at the site was temporarily suspended because of the events which began in Amman in June.

Throughout the week of June 7th-13th, 1970, the city was in a state of upheaval as the Jordanian army battled commando groups which were attempting to take over the government. From Tuesday, June 9th, until Saturday, June 13th, Van Elderen and his family and Siegfried Horn, who had just arrived in Amman to continue excavations at Tell Hesban, were barricaded in the ACOR residence which was without electricity for two days, while intense fighting raged in the vicinity. On Saturday, on the recommendation of the U.S. Embassy, the group was evacuated to Beirut. Van Elderen was able to return to Amman after only six days and his family was allowed to return by the end of the month. The ACOR residence and equipment had survived intact and the Department of Antiquities had been able to continue work at the site of Swafiyeh. Van Elderen subsequently initiated excavations at Masuh, a site approximately three kilometers from Tell Hesban where another Byzantine church with mosaic floors had been discovered.

A new director of ACOR was appointed for the 1970-71 academic year, Murray Nicol, who had previously served as director of ACOR for three months in 1969-70. He and his family departed for Amman in September but the plane was prevented from landing in Amman by the outbreak of the second phase of the war in Jordan and the Nicols were forced to return to the United States. When a measure of peace was restored in Amman, American citizens were allowed to enter Jordan but without their families, thus making it impractical for Nicol, who had two small children, to return to Amman. The U.S. Embassy in Amman urged that the vacant post at ACOR be filled and, in November 1970, the Amman center committee appointed Siegfried H. Horn, who had no dependents. Horn was experienced in living under difficult conditions, having survived six years in prison camps in Indonesia and India during World War II; he had even managed to write several books while incarcerated. He never said much about the continued violence in Amman except for one vivid description of conditions there in January 1971:

Fighting broke out frequently and occasionally lasted for several days. Once during the month of January I could not leave the house for eight days and Mohammed Adawi, ACOR's faithful cook, could not come into the city. I was twice caught in the museum on Citadel Mound when heavy fighting began and had to spend hours in the shelter; once I was caught in crossfire in the downtown area, but was able to speed to safety through deserted streets.

The ACOR building was damaged by small missiles and bullets and some of the windows were shattered but nothing was stolen except for some tables. The museum on the Citadel also miraculously escaped major harm. Although it was repeatedly struck by rockets and bullets, none of the artifacts were damaged with the exception of several Roman glass vessels. Unfortunately, the Department of Antiquities did not fare as well; although the main offices suffered little damage, the storehouse on Jebel Hussein, which housed all of the excavation equipment and the entire collection of the *Annual of the Department of Antiquities (ADAJ)*, was completely destroyed by fire.

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By February, the situation improved enough to enable Horn to travel around Jordan. By April, government forces were in full control of Amman and the second season of excavations at Tell Hesban, postponed the previous year, began on July 5th under the directorship of Horn.

During the early 1970s, excavation and survey in Jordan as a cooperative venture by ACOR, the Department of Antiquities and the University of Jordan continued to expand. Third year archaeology students at the university were required to spend 100 hours in field excavation and it was the responsibility of the director of ACOR, in his capacity as instructor in archaeology, to provide the opportunity for excavation and to direct it. Tell Siran was chosen as a perfect location for training of this kind as it is located in the southeast corner of the university campus. Excavation began there in 1972 under the directorship of Henry O. Thompson. He was assisted by James A. Sauer of Harvard University, ASOR Albright Fellow for 1971-72, who was planning a career concentrating on the archaeology of Jordan. Tell Siran eventually yielded archaeological material from the Iron Age through Mamluk periods including a tightly-sealed bronze bottle inscribed with an eight-line Ammonite text. As this was the first Ammonite text of any length to be discovered it is still considered to be of unusual epigraphic significance. In the same year Thompson and the Department of Antiquities initiated excavations at the Iron Age site of Khirbet el-Hajjar, west of Amman and conducted other minor excavations with volunteers from the Friends of Archaeology. Bert de Vries, ASOR Albright Fellow for 1972-73, also began an architectural and topographical survey at of Umm el-Jimal, an important site near the Syrian border that had been a prosperous settlement from the Nabataean and Roman through Umayyad periods.

Following a visit to Jordan, the president of the ACOR corporation, John H. Marks, reported on the condition of ACOR in the brief time since its organization:

The two years since that bold beginning have firmly established the Center in Jordan as a respected and productive scientific institution. Directors Nicol, Horn, Thompson and Van Elderen have made the Center an archaeological focal point in Jordan, from which radiate lines to the Jordan University, the Department of Antiquities, the ministries both of Tourism and Antiquities and of Education, the Friends of Archaeology in Amman, the American Embassy, and several startling and extraordinary archaeological excavations. The potential significance of East Bank exploration for our understanding of Palestine at all periods, if it was ever in any doubt, can be seen from the work undertaken by the Center.

Thus in spite of periodic political upheaval and unrest the ACOR has established its place in Amman as a center of research and learning and another American "presence" in which we may find satisfaction. The opportunity for bringing to light the ancient history and culture of that marvelous land is enormous, and so long as necessary funds make it possible, the work will go on.

The year 1972-73 was the first time that ACOR officially had a second man in Amman. Bastiaan Van Elderen, who had served as annual professor and director in 1970, was appointed director of ACOR for the term 1972-74, and Henry Thompson



Above, Mohammed Adawi and Henry O. Thompson. Below, the Siran bottle. Photo by James A. Sauer.



1970-1980: THE FORMATIVE YEARS

became a visiting professor for the year 1972-73.

In addition to his other responsibilities, Van Elderen continued his investigations of the many early Byzantine mosaics in the area of Madaba, just to the south of Amman, close to Mt. Nebo, where Moses is said to have viewed the Promised Land before he died; one of the reported burial places of Moses is on Mt Nebo. In the town of Madaba itself, Van Elderen had identified the 14th known church with a mosaic floor. There appear to have been more Christian churches in Jordan than in any other area in the Levant in Byzantine times—a phenomenon that remains without explanation. The excavation and preservation of these churches, as well as of archaeological remains from other periods in Madaba, and the development of the town for tourism is an important ACOR project at the present time.

In 1973, 1974 and 1976, excavations continued at Tell Hesban, under the directorship of Horn and of his successor, Lawrence T. Geraty. The project at Tell Hesban has proven to be a landmark excavation in terms of pioneering a multi-disciplinary approach to archaeological research in Jordan. Also in 1973, Walter Rast and Thomas Schaub conducted a survey in the deep wadis of the Southern Ghor. The Bronze Age site of Bab edh-Dhra, in one of these wadis, had first been described by W. F. Albright in the 1920s, and excavated by Paul Lapp in the 1960s. The survey succeeded in identifying a number of other Bronze Age sites in the region. The following year excavations began at Bab edh-Dhra, where Bronze Age fortifications and a large cemetery dating to the same period had already been identified by Paul Lapp. Bert de Vries continued his survey at Umm el-Jimal, and excavation began at the site in 1974. ACOR also assisted scholars excavating at Araq el-Emir, Mugharet el-Wardeh and Abu Thawwab.

George Mendenhall served as director of ACOR in the spring of 1975 and was followed in the fall of that year by James Sauer who was to serve as director and professor of archaeology until 1981. By October 1976, the ACOR building near the Third Circle in Amman had been completely remodeled and the hostel could now house up to eight people at one time. The daily charge for room and board for ASOR members was \$9.50; income from the hostel was primarily used to pay for improvements to the building. The garage had been converted into a drafting room, where two professional draftsmen worked on a daily basis, drawing pottery, flints and archaeological plans from ACOR-related projects in Jordan. One of the major achievements of the year was the expansion of the library. This facility, which had previously housed only 600 volumes, was expanded to accommodate a collection of 1800 books and journals. Fund raising had made it possible to acquire 700 volumes from the personal collection of G. Ernest Wright, generously made available by his widow, and Sauer himself had moved 500 of his own books into the library. Fifty journals also came to the library on a regular basis. Public lectures continued to be delivered at the ACOR building and, for the first time, courses in the history and archaeology of Jordan, open to the public, were taught there by Sauer who also continued his regular courses at the university. Thus, the ACOR building, which had previously functioned primarily as the residence of the director, was now a public center. At this time the annual budget of ACOR had grown to \$35,000, of which 51% was provided by USIA, 15% by

1970-1980: THE FORMATIVE YEARS

ASOR, and 34% by ACOR itself, an increase over the previous year of nearly 50%.

In 1975 and 1976, ACOR joined with the Department of Antiquities and the University of Jordan in an intensive survey of the Jordan Valley, and over 200 sites were eventually identified. Also in 1976, a brief salvage excavation was carried out at the Amman airport, where the ruins of an unusual Late Bronze Age structure, possibly a temple, had been discovered and partially excavated in the 1950s and 1960s. Staff and equipment for the project were provided by members of the Hesban excavation and funding by the Jordanian Department of Civil Aviation. After the excavation was completed, the structure, the function of which has not yet been agreed upon, was unfortunately bulldozed to make room for a new runway, despite the pleas of the Department of Antiquities. Other projects included the investigations of early Islamic iron smelting sites at Wardeh and Abu Thawwab, soundings at the qasr at Araq el-Emir and the excavation of what may have been a late Roman grape press at Shmeisani, in Amman.

In June 1977, ACOR was forced by contractual problems to move from the newly renovated building near the Third Circle. This was a major crisis as there was not enough money in the budget for rental of another facility. After considerable difficulty, a new two-storey building with a basement was located, somewhat farther from the center of town, between the Fifth and Sixth Circles. Financial disaster was averted by contributions by two friends of ACOR. The first few days at the new headquarters, which was still under construction, were extremely chaotic as the building was swarming with workmen and bloodthirsty mosquitoes. One dawn, as a climax, a heavy radiator fell on top of the new annual professor, William J. Fulco, pinning him to the floor.

When finished, the new building was larger and more comfortable than the old facility and better suited to its function as a public center. The library now had twice

The ACOR building between
the Fifth and Sixth Circles.
Photo by Bert de Vries.



1970-1980: THE FORMATIVE YEARS

as much space and contained more books and journals. The building also had ample storage space for equipment and had a workroom where artifacts and samples could be studied and prepared for publication. ACOR also purchased a new vehicle that could be used by residents and projects for a small fee. The Department of Antiquities generously allowed the vehicle to be registered as government property so that heavy customs fees could be avoided.

By the end of the 1970s, the annual budget of ACOR had reached \$66,800, with 54% of the total contributed by ACOR itself. The ACOR headquarters was firmly established as a school where lectures were given and courses taught by the director, the annual professor and the Albright Fellow. These courses were no longer limited to strictly archaeological or historical topics—a course in religious symbolism was offered in 1978—an indication that ACOR was already broadening its scope to include interests beyond those of biblical and ancient historical studies. The institute was also becoming more international, as scholars from many different countries visited the ACOR building and were co-sponsors of ACOR field projects. The annual professor for 1978-79, Edwin A. Schick, reported that he had found ACOR “vibrant with an international flavor.”

By 1980, ACOR’s work in Jordan, with an occasional foray into Syria, had expanded so rapidly that serious discussion was taking place concerning the need for permanent headquarters, constructed to suit ACOR’s needs. A permanent center of this kind would not only be an invaluable base for scholars but at the same time could serve as a staging ground for field projects in Syria, Saudi Arabia, Bahrain and other neighboring countries. A fund-raising drive to finance such a facility had already been initiated by Sauer but this dream was not to materialize for another three years.

The final years of the decade witnessed the continuation of excavations at Bab edh-Dhra and Numeira in the Southern Ghor, and at Umm el-Jimal. Excavations were also reopened at the important site of Pella in the lower foothills of the East Jordan Valley, as a joint venture between Wooster College and Sydney University, under the directorship of J. B. Hennessy, A. W. McNicoll, and R. H. Smith; Pella, one of the major cities of the Roman Decapolis, has produced evidence of occupation from the Neolithic to late Islamic periods. A Byzantine church near Hesban, and burials dating to the Bronze Age at Kataret es-Samra and in the Baq’ah Valley were also excavated, and an architectural survey of the Umayyad Qasr Kharana begun.

One of the most significant developments during the final years of the decade was the increase in the number of areas surveyed. Projects such as the Roman Limes Survey, the Yarmouk Dam Survey, the Baq’ah Valley Survey, Kerak Plateau Survey, and the Wadi el-Hasa Survey, some of which continue to the present day, were initiated at this time. One of the important effects of these surveys was the gathering of information relating to the prehistory of Jordan, an area which had been previously neglected. After his tenure in Amman in 1978-79, Albright Fellow and prehistorian, Gary O. Rollefson, made the following observation:

The academic cliché “More work must be done in the field before ...” could not be more appropriate in view of the limited Pleistocene prehistoric research carried out in the past. Some current projects are helping to locate such sites, but

even greater efforts are required. In some areas prehistoric sites are being rapidly destroyed due to the construction booms in housing, industry, and roads, and salvage projects are necessary to rescue this valuable information.

The identification and study of prehistoric sites became one of the priorities of the next decade and attempts to redress the damage done to archaeological sites by urban expansion led to ACOR's Cultural Resources Management Program.

1980-1986: Years of Expansion

One contribution to a more efficient system of protecting the archaeological resources of Jordan has been a closer working relationship between ACOR and the United States Agency for International Development. For many years ASOR had been informally assisting and advising USAID on matters relating to development and archaeology in the Near East, especially in Jordan. In 1980, ACOR was awarded a contract by USAID to assist the Department of Antiquities of Jordan to draw up a Five-Year Plan for archaeological development and provided the Department with two highly qualified individuals, Linda Jacobs of the University of Oregon, and David McCreery of the University of Pittsburgh, as consultants for the project. In 1980, ASOR was registered as a non-profit private and voluntary organization with USAID, allowing ASOR to work more directly as advisor and consultant to USAID in matters concerning environmental impacts and cultural resource management in all areas of the Near East where USAID had development programs. ASOR's registration with USAID was also a positive reflection of USAID's increasing concern for, and sensitivity to, the potential impact of development on historic and archaeological resources in the countries of the Near East, and to the important role of those resources in the economic development of these countries.

In March 1980, the First International Conference on the History and Archaeology of Jordan was held at Oxford in order to review the breadth and depth of recent research devoted to Jordan's past and to develop priorities and systems for future research. The conference was organized by the Jordanian Department of Antiquities, under the patronage of the Royal Family of Jordan; His Royal Highness Crown Prince Hassan gave one of the opening addresses and attended many of the sessions. The Department of Antiquities was assisted by an international committee of which ACOR Director James Sauer was a member. Other ACOR scholars were also able to attend the conference in which approximately 250 people from 27 countries participated. In response to a challenge from Prince Hassan to explore a practical form in which international interest in Jordan's past might be expressed, meetings were held which led to a consensus that there was a need for cooperative efforts, in close collaboration with the Department of Antiquities, regarding library resources, data storage, archives, survey, excavation, conservation and education. In April 1981, a committee was formed in Amman to explore practical ways of implementing the decisions made at Oxford. The committee included ASOR President Philip J. King, ACOR Director Sauer and several other individuals from the United States, Europe, Great Britain,

1980-1986: YEARS OF EXPANSION

Australia, Canada, and Saudi Arabia, as well as members of the Jordanian Department of Antiquities and Jordanian academic institutions. The committee drafted a list of priorities headed by the need for intensive surveys in parts of the country which remained largely unexplored.

In 1981, David McCreery was appointed director of ACOR and James Sauer left to take up a position at the University of Pennsylvania; soon afterwards, Sauer became president of ASOR. McCreery was to serve as ACOR's director until 1988. At the end of 1982, ACOR was in what appeared to be a constant state of expansion. There were now at least four professional appointees residing at ACOR every year. In 1979, the National Endowment for the Humanities began to award grants to ACOR for post-doctoral research so there were two or three NEH fellows in addition to the director and the annual professor. The ACOR building could accommodate eleven residents and was filled to capacity most of the year. The library collection now held in excess of 2000 books, donated by private individuals, or purchased with money from various benefactors of which the Endowment for Biblical Research foundation was the most reliable. A large collection of offprints and 100 different journals were also housed in the library. New tables, shelves and a map case had also been purchased. Though ACOR still did not own a word-processor or computer, a copy machine was purchased for use in the library; at this time the facility was considered to be one of the best in the country. ACOR appointees continued to offer lectures, courses and field trips for the general public in addition to their other academic duties. In 1982, for the first time, trips through Jordan, Syria and Turkey were arranged for ACOR appointees.

Between 1980 and 1983, there was a proliferation of ACOR-affiliated field projects, both survey and excavation. Excavations were carried out at Lejjun, as part of the Limes Arabicus Project, Ain el-Assad, Pella, Bab edh-Dhra, Numeira, 'Ain

Director of the Department of Antiquities Adnan Hadidi bids farewell to James Sauer as David McCreery looks on.



1980-1986: YEARS OF EXPANSION

Ghazal, Tell el-Hayyat, Abila, Khirbet Iskander, Umm el-Jimal and Tell Safut; ACOR also participated in the International Jerash Project. Surveys continued in the Wadi el-Hasa and Kerak Plateau, and also in Wadi Hisma, Wadi Zarqa, Wadi Ziqlab and Wadi Isal. In 1982, ACOR-related projects involved approximately 300 scholars and student volunteers. In addition to the regular projects, ACOR staff and fellows served as volunteers on salvage excavations and surveys. Indeed, at this time, Jordan was experiencing phenomenal growth and neither the Department of Antiquities nor the foreign archaeological missions had the human or financial resources to keep up with the rapid development that was threatening many sites.

In an attempt to alleviate this problem, ACOR offered free training courses in excavation and recording techniques to interested amateurs, mostly members of the Friends of Archaeology, so that they could participate as volunteers on salvage excavations. Sauer and McCreery also produced a booklet, *Economic Development and Archaeology in the Middle East*, published in 1983. The booklet, which has a preface written by H.R.H. Crown Prince Hassan who is deeply committed to the rapid economic development of Jordan and the simultaneous protection of its ancient heritage, was printed in both English and Arabic under a grant from USAID. Its purpose was to educate developers about the potential danger to their national heritage and it proposed ways in which the public and archaeologists can work together in mutually beneficial ways.

On rare occasions it was necessary for ACOR to disassociate its name from projects that were less than reputable, as McCreery reported in 1982:

Rumor has it that the gold-plated Ark of the Covenant has been discovered by an American archaeological team on Mt. Pisgah, in Jordan. News of this astounding find reached Jordan on November 22, 1981, coming as a total surprise to Adnan Hadidi, Director-General of the Jordanian Department of Antiquities, and myself.

Checking into the matter, I found that there was a small group of so-called biblical archaeologists in Jordan during October. Although they claim to have received assistance from ACOR, they seem actually to have carefully avoided both ACOR and the Department of Antiquities.

This was not the first time that “Raiders” had visited Jordan in search of the “Lost Ark.” In 1977, Jim Sauer, David McCreery and members of the Department of Antiquities had stood in amazement as another group searched without success for the missing treasure in a Byzantine crypt on Mt. Nebo.

At this time ACOR had clearly grown too large for its current facility. The annual budget had burgeoned to \$113,930, of which over 50% was furnished by ACOR itself, through donations and money-generating services such as the hostel and equipment rental. The old building was filled to capacity and lacked adequate hostel space for the numerous visitors passing through Jordan who were members of ACOR-related projects. Another problem with the building was a basement that was perpetually flooded. In order to fulfill its true potential as the premier research facility for archaeology and related subjects in the Near East, it was necessary for ACOR to have as a headquarters a building specifically designed to meet its needs.

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A fund-raising campaign aimed at building a new headquarters for ACOR had been initiated by James Sauer in 1979. The amount needed to accomplish the project was estimated at that time to be \$2 million. By March 1983, the Hashemite Kingdom of Jordan had obtained a one-third acre plot of land, valued at \$200,000, across from the University of Jordan and near both the British and German archaeological institutes, and generously leased it to ACOR for the sum of one Jordanian Dinar per year. Subsequently ACOR was able to purchase the land thanks to the assistance of H.R.H. Crown Prince Hassan and H.R.H. Prince Ra'ad. The site had been chosen by James Sauer and David McCreery, out of several possible locations, as by far the best for the new building. However, the site was located near Iron Age and Roman remains (Khirbet Salameh—under excavation by ACOR and the University of Jordan at the present day) and thus archaeological soundings would have to be carried out before work on the new building could begin. As McCreery remarked, “it would be extremely embarrassing if we found that, in the process of building the new ACOR, we were destroying significant antiquities.”

In 1983, a grant of \$200,000 toward the cost of designing and building the structure was given by USAID's office of American Schools and Hospitals Abroad (ASHA). There were also major donations by United Technologies, the Dodge Foundation, Mobil Oil and American Express. In 1984, ASHA awarded an additional \$400,000 toward construction costs, the largest single direct grant in the history of ACOR. These gifts to the ACOR Building and Endowment Fund from both Jordan and the United States were an index of the high respect and importance that the two governments attached to the role of ACOR in cultural exchange between the two nations. The director of ASHA commented on the reasons for ASHA's involvement:

The assistance being provided is given in recognition of ACOR's contribution to archaeology as a tool in economic and social development.

and ... The agency recognizes that in most development projects, the patrimony of the Middle East and archaeology are inseparable.

Additional fund raising was aimed at the private sector. In 1982, the Committee for ACOR, under the patronage of H.R.H. Crown Prince Hassan with H.R.H. Prince Ra'ad as chairman, had been established by ACOR President Gough W. Thompson, Jr. The aim of this committee was to raise one-third of the necessary funds in Jordan, one-third in the United States and one-third in other Arab countries that were served by ACOR's programs. Adnan Hadidi, Director-General of the Jordanian Department of Antiquities, and Mohammed Asfour, a prominent member of the Jordanian business community, also played leading roles in the work of the committee in Jordan. Their part in this effort led to the expansion of the ACOR Board of Trustees to 24 members, of whom a third were Jordanians.

The Alumnae/Alumni Building Fund campaign was initiated in 1983 in order to solicit donations from those individuals who had benefited from the facilities and services of ACOR at some time during the 15 years since the institution's founding. It was decided that the goal of the campaign would be to build and furnish the residents' lounge and three hostel rooms in the new facility. By July 1985, 25% of alumnae/alumni had responded with gifts and pledges of over \$43,673, an exceptional

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response when one considers that most of those who had used ACOR's resources were students and scholars who were not financially well off. This response was seen as "a crucial gesture of grass-roots support when funding is sought from foundations, corporations and government agencies."

On August 6th, 1984, a ground-breaking ceremony was held for the new building, presided over by H.R.H. Prince Ra'ad and attended by 200 friends and supporters of ACOR. The new facility was supposed to be completed in 18 months. Prince Ra'ad thanked those who had contributed but also reminded those present that, even though \$1.2 million had been raised for the building, the other goal—a permanent endowment—was still far away. In the following months construction proceeded on schedule and a foundation-laying ceremony was held in January 1985.

In spite of the fact that the non-stop fund raising and negotiating necessitated by the construction of the new building was a truly Herculean effort for ACOR's director and staff, ACOR continued to expand during these years, both as an academic institution and as an active participant in archaeological field research.

In May 1983, ACOR, in cooperation with the United States Information Agency, Yarmouk University, and the Jordanian Department of Antiquities, sponsored an archaeological exhibit focusing on prehistoric artifacts, entitled "Most Ancient Jordan: The Past Half-Million Years." The exhibition featured artifacts from five of the most important prehistoric sites in Jordan, technical drawings of the artifacts, maps, an artist's renditions of everyday life at the ancient sites, and a booklet which provided background information on each site as well as a general overview of the prehistory of Jordan. Articles by the ACOR director appeared in several local

The ground-breaking ceremony: In front: Laura Hess, Mohammed Adawi, Eric Meyers, Carol Meyers, H.R.H. Prince Ra'ad bin Zeid; standing: Anne Ogilvy, Widad Kwar, Sigfried Horn, James Sauer, David McCreery, Mohammed Asfour, Dave Johnson, U.S. Ambassador Richard Veits, Lawrence Geraty, Judge Afiq Halazoun, Farid Habib; behind at left: Bert de Vries and Rami Khouri.



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magazines, including the in-flight magazine of Alia, the Jordanian airline. The ACOR director also served on the Central Planning Committee for the Second International Conference on the History and Archaeology of Jordan, which was held in Amman in April 1983. It had as its theme "The Jordanian Environment: Geographical and Historical."

In 1983, ACOR had 10 affiliated projects in the field. Several of these projects continued in 1984 and 1985, augmented by other excavations and surveys. On August 2, 1983, the *Jordan Times* announced the discovery of "stunning Neolithic human statues" at Ain Ghazal:

The importance of the finds at Ain Ghazal lies in the relatively well preserved state of the statues and the smaller figures, considering that they are 8,000 years old. The sculptured human faces and bodies of the statues may represent the earliest examples anywhere in the world of mankind's first attempts at making human representations of this sort.

ACOR also offered assistance to scholars from Canada, Australia, Belgium, Germany, Britain, Denmark and Saudi Arabia as well as to Jordanians. More students than ever from the University of Jordan and Yarmouk University were using the ACOR library, and current and past ACOR staff members and scholars taught classes and gave lectures at both institutions as well as at the ACOR facility. Although taxed to capacity, facilities continued to improve. A grant from USIA provided money for an IBM personal computer as well as microfilm and microfiche readers for the library. A Shell Fellow now resided at ACOR, as well as the NEH and ASOR Fellows. After a visit to ACOR, U.S. Senator Daniel P. Moynihan reported:

I was excited by the academic atmosphere at ACOR! The scholars in residence impressed me with their expertise in their subjects, and their enthusiasm for their work is infectious.



Above, David McCreery with the building plans. Photo by Patricia M. Bikai, 1992. Right, the ACOR building. Photo by Jay Guikema.



The Center

On July 17, 1986, H.R.H. Prince Mohammed Ibn Talal cut the ribbon to inaugurate the new ACOR building. The ceremony was attended by several hundred people including other members of the Jordanian Royal Family, representatives of the United States government, members of the Jordanian business community, ACOR Director McCreery and representatives of ASOR. The center, the culmination of four solid years of fund raising, was a testimony to international cooperation. The strong support ACOR had received from the Jordanian and United States governments had stimulated giving from other sectors. The Canadian government donated seven desktop computers for use in the center, \$30,000 for the library furniture and an additional \$10,000 for surveying equipment. Jordanian companies had given materials for the construction of the building, USIA had provided the equipment for a security system, and the Jordanian government saved the project thousands of dollars by granting duty-free import privileges.

A second phase of the fund-raising campaign was to focus on funding endowments and fellowships in Islamic Studies, Cultural Resources Management, a conservation program and other specialized programs. Funds were needed to support the library and to maintain the building but, before this phase of the development campaign could be initiated, funds had to be raised for remaining construction costs, estimated at the time the building opened to be \$400,000.

The new ACOR headquarters was (and still is) among the most advanced and comprehensive archaeological research centers in the Near East. The aims of the institution were described at the time of the opening as three-fold: to offer a base for visiting and resident scholars conducting research in Jordan and neighboring countries; to provide technical resources, library facilities and public information programs

The reception area at ACOR.
Photo by Jay Guikema.



which bring together Jordanian, American and international scholars on a year-round basis; and to provide a forum for sharing the fruits of archaeological and historical research with a wider audience of scholars, students, official authorities and the public at large.

In accordance with these goals, the five-story building included the following facilities: hostel rooms and apartments to accommodate up to 30 persons; a specialized library of 3,000 volumes and 350 different periodicals, with reading and work areas and personal computers; private offices for resident scholars; facilities for drawing and drafting; a purpose-built, 90-seat lecture hall/seminar room with projection facilities; six laboratories and workshops for processing, analyzing and conserving archaeological and anthropological artifacts, space for a permanent conservation lab, which awaited funding to be equipped; a photographic darkroom; storage space for excavated artifacts; and a small permanent archaeological exhibition. Equipment available for archaeological excavations in Jordan included jeeps and pick-up trucks, camping gear, excavation materials, and surveying, mapping, photography and video equipment. During the first years in the new building, ACOR-affiliated scholars participated in an increasing number of field projects. ACOR was used by 20 field teams and by 20 resident scholars. The number of residents reached 50 in the summer of 1989, when Tell Nimrin used ACOR as their "dig camp" while seven other projects were in and out of the building.

By the end of the decade, due to generous gifts of money and books from many individuals, the library collection had doubled to 6,000 volumes. A \$300,000 grant from ASHA in 1990 was to provide for the purchase of 4,000 more books and equipment for the library, hardware and software to bring the computer systems up-to-date and equipment for the conservation lab.

ACOR library. Librarian Humi Ayoubi is at right. Photo by Bert de Vries.



1986-1993: New Directions

During the 1980s, ACOR-related projects had undergone a perceptual shift in emphasis. Whereas, in the beginning years of ACOR, research in Jordan had tended to focus on the Bronze and Iron Age periods, which were associated in many ways with “biblical archaeology,” or on the more spectacular remains of the Nabataean, Roman and Byzantine periods, in the final years of the 1980s, 50% of research projects concentrated on the prehistoric and Islamic periods. A change was also evident in methodology. Research at ACOR had now progressed beyond traditional archaeology, mostly involving generalists from departments of religion or biblical studies, to enlist scholars-in-residence from a variety of specialized theoretical disciplines, with anthropologists comprising the largest group. In 1991, Bert de Vries, who had replaced McCreery as ACOR director in 1988, reported:

While the traditional periods inspired by biblical and classical studies are not neglected, this signals a significant broadening of scholarly interest. This broadening represents a commitment by most scholars working in Jordan to deal fairly and objectively with research into the human condition in any period with evidence of the settlement patterns on the ground. While Jordan does have glamorous sites that perpetuate the romance of archaeology for the general public, I believe that this broad interest in the understanding of human culture from the Paleolithic to the present will give ACOR its personality and staying power as an academic organization.

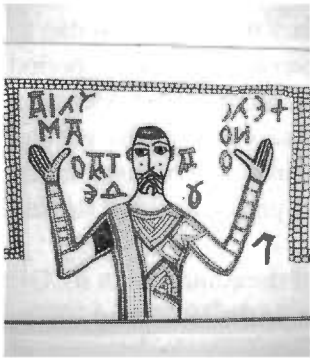
The same era had also witnessed a change in the nature of the contribution ACOR was making to the preservation of Jordan’s cultural heritage. In the 1970s and 1980s, ACOR had a tradition of supplying teachers to the archaeology departments of Jordan’s universities. By the end of the decade those departments had matured to the extent that ACOR’s contribution of faculty became less necessary, though ACOR appointees continued to offer lectures. However, as the active teaching role of ACOR scholars decreased, their involvement in developing practical solutions to the problems of protecting archaeological sites from destruction increased. In 1986, ACOR received a grant from USAID to establish a pilot program in Cultural Resources Management in Jordan, the first of its kind in the Near East. Cultural Resources Management (CRM) is the commonly used professional term for long-range strategies of conserving and managing archaeological and historical sites threatened by modernization. The destruction of such sites can be minimized if archaeological surveys are incorporated into the planning stages of development programs. The grant provided for an ACOR Cultural Resources Management advisor to the Jordanian Department of Antiquities. The advisor, with the help of an assistant, was to supervise archaeological surveys, establish efficient and scientific procedures for the recording of archaeological field data from endangered areas and train Jordanian personnel to use the data effectively. This initial grant and subsequent grants to CRM-related projects were made possible by the visionary support of members of the USAID/Jordan staff, who recognized that serious archaeological study is an integral preliminary aspect of cultural tourism. In this way the long-standing ACOR tradition of

1986-1993: NEW DIRECTIONS

volunteer participation in salvage archaeology was formalized.

In 1987-88, ACOR CRM Project Director Joseph Greene, together with members of the Jordanian Department of Antiquities, undertook a salvage excavation on the Amman Citadel and the Archaeological Survey of Greater Amman (ASGA) began in 1988. ASGA located 223 sites in Amman, many of which had not previously been recorded. Greene also arranged a seminar on the field preservation and packaging of pottery, bones and metal. In 1989-90, the Amman Citadel-'Ain Ghazal Feasibility Study was carried out under the direction of Rudolph Dornemann; Dornemann had been ASOR's first appointee in Amman in 1968. The purpose of the study was to design a master plan for the beautification of the Amman Citadel and the development of an archaeological park at 'Ain Ghazal. The concept was designed by an archaeologist and architects from the University of Jordan. Plans for the excavation, preservation and restoration of existing structures formed part of the plan. The Temple of Hercules Project, which began in 1990 and continues at present, was a direct outgrowth of the Citadel Feasibility Study.

A long term project for the development of an archaeological park was also being implemented in Aqaba, funded by USAID grants to ACOR in cooperation with the Department of Antiquities, under the direction of Donald Whitcomb of the University of Chicago. The early Islamic city of Ayla, buried beneath the sands of the beach near the center of the modern city, had been under excavation since 1986. The project had moved from salvage archaeology in its early years, to consolidation in 1988-89, then to implementation of the cultural park design in 1990. The goals of the project are to make Jordan's Islamic heritage more understandable, add cultural features to Aqaba's otherwise one-dimensional tourist attraction (the beach) and increase public awareness of Jordan's lesser known archaeological sites.



Above, drawing of the ["Don't Panic"] mosaic uncovered in the salvage excavation on the Amman Citadel. Photo by Bert de Vries. Right, the Citadel Photo by J. Wilson Myers and Eleanor Myers.



1986-1993:
NEW DIRECTIONS

A project of a different nature, also funded by USAID and managed by ACOR in conjunction with its CRM program, was underway at the important classical sites of Um Qeis and Pella. This involved the construction of rest houses that had been designed with the intent of reviving the traditional architecture of Jordan. The concept was to achieve harmony between the architectural style of the late Ottoman village and the functional requirements of a modern tourist facility. Design and construction of these buildings was geared to the maximum possible use of local labor and materials. The goals of the project were summarized by architect Ammar Khammash, who designed and directed the construction of the buildings:

Traditional construction methods are being revived experimentally in order to reintroduce the communal building techniques as an alternative to the industrialized systems that require imported materials and outside specialists. Thus both construction sites are like training workshops for masons, architects, students and the rural community.

When finished, these buildings will be equipped to serve the touristic public and they will also be an integral part of the local communities economically, educationally and aesthetically. Hence they will make the archaeology meaningful and significant to a wider public, including both area residents and visitors from afar.

In 1987, ACOR received a grant from USIA to provide for the services of a professional librarian who would assume responsibility for technical services, acquisitions and local development. The first librarian, Meryle Gaston, laid the foundation for the current professional appearance of the library and devised a carefully structured acquisitions policy and a detailed acquisition list, designed to avoid overlap with the collections of other local institutions. She also began the computerization of the library catalogues. Her successor, present ACOR librarian Carmen (Humi) Ayoubi, who began her tenure in 1988, has been primarily responsible for increasing the library's acquisitions and continuing the computerization of the files and catalogues using a software package donated by UNESCO. The library had basic reference works in the archaeology and history of Jordan and surrounding regions, linguistics and epigraphy, anthropology and biblical studies. The acquisition of part of the library of the late J. Lawrence Angel strengthened the holdings in physical and forensic anthropology. The collection of books on Islamic civilization and Middle Eastern studies was improving. The library had now become accessible to students and scholars outside the ACOR community as a research facility and the number of Jordanian students using the library resources continued to grow.

In the final years of the 1980s, resident scholarship at ACOR continued to expand. ACOR now had an annual Teagle fellow as well as Shell and NEH fellows. A number of the fellows were young, near or recent Ph.D.'s, who occasionally stayed on for an additional term as annual professors. Fellows not only engaged in field research but also devoted much of their time to analyzing the results of previous excavations. Between 1980 and 1990, ACOR had 23 NEH post-doctoral fellows whose collective bibliography, as of 1991, filled 25 pages. Visiting and resident scholars continued to offer lectures—in 1987-88, 25 lectures were delivered in less than a year.

1986-1993: NEW DIRECTIONS

Archaeologist Jennifer Groot worked on a number of ACOR-affiliated excavations between 1974 and 1987. She was an excellent stratigrapher and small finds specialist; more importantly, she inspired a generation of students. Her premature death in October of 1987 led to the creation of ACOR's first endowed fellowship and in 1989, the Jennifer C. Groot Fellowship in the Archaeology of Jordan was awarded for the first time. The annual award is given to an undergraduate or graduate student with little or no archaeological experience to enable him/her to participate in an ASOR-affiliated excavation in Jordan.

In November 1989, the *ACOR Newsletter* was launched in order to keep ACOR friends and alumni informed of major developments and events at the institute.

By now, the outstanding debt on the building was nearly paid off and a number of new programs were in the planning stage when events in the area caused a change. In November 1990, ACOR Director Bert de Vries reported that, although the crisis in the Gulf initiated by Iraq's invasion of Kuwait, had forced precautions on ACOR, activities continued almost normally. ACOR housed nine foreign residents, the four ACOR-managed development projects (Aqaba/Ayla, Temple of Hercules, Pella and Um Qeis Rest Houses and CRM) were proceeding on schedule and the library was busier than ever. Field projects involving staff arriving from overseas, however, had to be rearranged or postponed after the beginning of September.

On Dec. 30, 1990, at the annual meeting which was held in San Francisco, the American Institute of Archaeology hosted an ACOR colloquium on the Nabataeans which was of some importance as it not only reported the latest research on the Nabataeans, but also clearly demonstrated the strong links between Near Eastern and classical studies in the Hellenistic, Roman, Byzantine and Umayyad periods.

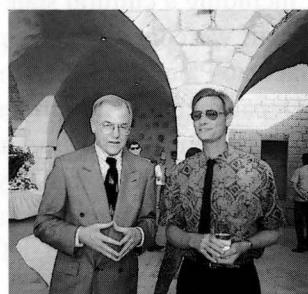
As the United Nations' deadline of January 15th for the removal of Iraqi troops from Kuwait drew nearer, further security measures were implemented which resulted in a severe curtailment of almost all ACOR operations. Four ACOR residents who had gone abroad for the holidays did not return. In the days before the 15th, the library was closed and all books, periodicals and computers were boxed and stored. The director left on January 22d to give a lecture in the U.S. and, acting on the advice of members of the Jordanian Board of Trustees, did not return until March 17th. Responsibility for ACOR was turned over to a caretaker committee made up of several members of the Jordanian Board.

By the end of April 1991, with the end of the Gulf War, ACOR was returning to normal; the hostel was open, as was the library and the ACOR projects were again in full operation. On July 1, 1991, Pierre Bikai succeeded Bert de Vries as ACOR director and found himself faced with the task of putting ACOR back on its feet, as the Gulf Crisis had caused a severe depletion of ACOR's operational budget. Although the U.S. Mission in Amman had been extremely supportive throughout the Gulf Crisis, all fellowships had been suspended. ACOR relies on funds generated by the hostel, equipment rental, etc., for its operational budget and the reluctance of many to come to the Middle East meant that the financial situation was severe. Two things kept the doors open during the summer of 1991: USIA fellowship funds were reallocated by USIA to operations and Canadians used the facility. It was difficult for U.S.

1986-1993: NEW DIRECTIONS

archaeologists to make plans for a 1991 season, but excavations did continue at Tell Jawa, Humeima and Iraq ed-Dubb, mainly by Canadians. The resident Dodge Fellow at ACOR, also Canadian, Burton MacDonald, worked on a research project.

In the fall of 1991, the first participants in the new Arabic Speaking Academic Immersion Program (ASAIP) arrived in Jordan. The program, funded by the Mellon Foundation, offers fellowships for the study of advanced Arabic at the University of Jordan while in residence at ACOR. By the end of 1991, ACOR was nearly back to normal.



Work had never stopped on the Temple of Hercules project. Archaeologist Mohammed Najjar excavated throughout the crisis. The Temple of Hercules Project on the Citadel involves the excavation and reconstruction of the Roman temple, one of the principal monuments of Amman during the classical period. The project is a major component of the plan to create an archaeological park on the Citadel, as outlined during the Amman Citadel Feasibility Study in 1990. The project, funded by USAID, is being carried out jointly by ACOR and the Department of Antiquities. By the end of 1991, architect Chrysanthos Kanellopoulos was documenting all of the architectural elements of the temple and computerized drawings were being generated using AutoCAD.

The rest houses at Pella and Um Qeis were finished in September. It was hoped that this project, carried out as part of ACOR's continuing work in Cultural Resources Management, would serve as a model for employment-generating cultural preservation activities in the future and, as a continuation of that type of work, ACOR received a grant from USAID in July 1991 to work in the town of Madaba. The Roman Street Complex in Madaba is located in a dense neighborhood and includes a well preserved stretch of a late Roman street; several churches and other buildings with mosaic floors

Above, John Oleson's drawing of ACOR as the "Academia Canadensis Orientalis Regionis." Below, U.S. Ambassador Roger Gran Harrison and Kenneth W. Russell at the opening of the Um Qeis Rest House. Photo by Patricia M. Bikai. Right, Pierre M. Bikai and Bert de Vries at the Fifth International Conference on the History and Archaeology of Jordan, 1992. Photo by Jay Guikema.



1986-1993:
NEW DIRECTIONS

which were built adjoining the street in the Byzantine-Umayyad eras; two cisterns; and a Byzantine crypt. Since their discovery the mosaic floors have been kept covered with soil because it was feared that exposure without proper restoration and sheltering would doom them to destruction. In this project, architect Ammar Khammash, who designed the rest houses at Pella and Um Qeis, is building a protective shelter of traditional design over the Church of the Virgin and the Hippolytus Hall and another one over the Church of the Apostles, using local materials and labor as much as possible. Because of the existence of many such mosaic floors throughout the country, Jordan's need for mosaic conservators has become urgent. With this in mind, there is now an agreement between the Jordanian Department of Antiquities and the Government of Italy to establish a school for mosaic conservation in Madaba. The Italians are providing the experts and curriculum to launch the school but, under a grant from the Canada Fund, ACOR renovated the actual school facility in modest traditional buildings adjacent to the Roman Street Complex.

The USAID-funded CRM Project, a joint venture of ACOR and the Department of Antiquities, was becoming increasingly important. Many international funding agencies now required Environmental Impact Reports (EIRs), including a cultural statement, prior to funding of construction projects. The CRM staff were the only group equipped to generate the necessary cultural assessments. Gaetano Palumbo, ACOR's CRM archaeologist, developed a system now in use at the Department of Antiquities to register all archaeological sites in Jordan by their map coordinates. The Jordan Antiquities Database and Information System (JADIS) makes it possible for any developer or agency to locate immediately any archaeological sites in the path of a construction project. The goal of the project is to register the approximately 20,000 known archaeological sites in Jordan.

Thomas A. Dailey of USAID at the site of the church in Petra before the excavation. Photo by Patricia M. Bikai.



1986-1993:
NEW DIRECTIONS

The winter months of 1992 brought massive snowstorms which effectively closed down ACOR for several days at a time and also resulted in damage to the building, lost trees and burst pipes. By the spring of 1992, ACOR was teeming with activity. More projects were being planned for the summer than ever before and research throughout the country was back to normal. When the Fifth International Conference on the History and Archaeology of Jordan was held at the Jordan University of Science and Technology near Irbid, in April, ACOR was bursting at the seams. The CRM Project had been extended for another two years, thanks to another generous grant from USAID. Another grant from the same source was received by ACOR for the publication of Michele Piccirillo's *The Mosaics of Jordan*; this volume will be the first in a series of ACOR publications.

Work continued at the Temple of Hercules, Madaba and Aqaba/Ayla. USAID had also provided funds for the excavation of a Byzantine church in Petra to begin in May, under the direction of Kenneth Russell, an ACOR archaeologist who had discovered the church in 1990.

On May 10th, 1992, Ken Russell died unexpectedly. He had spent many years excavating in Jordan and had worked on both the Temple of Hercules and Aqaba/Ayla projects. However, his greatest love had been the history and archaeology of Petra and the Bidul Bedouin who are the inhabitants of the Petra area. The friends and colleagues of Ken Russell established a trust in his honor. The Kenneth Wayne Russell Memorial Trust will be used for fellowships and to provide assistance for the education of the children of the Bidul Bedouin. Excavation at Petra began at the end of May, under the direction of Pierre Bikai, assisted by three co-directors.

During the summer, excavations continued at Madaba and Petra and others were carried out at Tabaqat el-Buma, el-Kuna, Tell el-Meqbreh, er-Rahib, Tell Jawa, Humeima and Aqaba/Ayla. Surveys were conducted in Wadi el-Yabis and in the vicinity of Madaba. Architectural and ethnographic survey was carried out in the village of Kurkuma and architectural drawing, mapping and photography continued at Umm el-Jimal. ACOR Director Pierre Bikai conducted a field school for archaeology students at the University of Jordan at the site of Khirbet Salameh, across the street from ACOR. This project represents a revival of the long-term relationship between ACOR and the university's Department of Archaeology.

The highlight of the 1992 season was photography done by balloon—a first in Jordan. J. Wilson Myers and Eleanor Myers came with their equipment from Greece in a joint effort by the Humeima, Petra, Madaba Plains and Umm el-Jimal projects. Low altitude aerial photography is done by suspending cameras from a balloon, and it is expected that this method of remote sensing, which can pinpoint distinguishable features such as exposed wall lines, will add significant data to both that gathered on the ground and that available from overflights by airplanes and satellites.

So many projects were in the field in 1992 that ACOR, which had originally been designed to house 30 persons, was filled well beyond capacity. One day lunch was served to 67 people, most of whom were housed at ACOR and in a rented apartment nearby. Mohammed Adawi carried on cheerfully with the assistance of several members of his family (Mohammed now has eleven children).



The balloon over Petra. Photo by Zbigniew T. Fiema.

1986-1993: NEW DIRECTIONS

In the fall of 1992, ACOR sponsored a Cultural Resources Management Conference which under the patronage of H.R.H. Crown Prince Hassan and with funding from USIA. Participants in the conference included experts from the United States, ACOR scholars, officials of the Department of Antiquities and development agencies, faculty from Jordanian universities and members of non-governmental agencies concerned with environmental and cultural heritage preservation, engineers, etc. In October, an exhibit of photographs of Petra was held in the Amman Marriott, sponsored by ACOR, Wendy Stewart, Jane Taylor and the Marriott, under the patronage of H.M. Queen Noor, to benefit the Russell Memorial Trust.

One of the more dramatic events of late 1992 was the moving of three massive stone blocks to replace Roman column drums too damaged to restore at the Temple of Hercules. They were moved from a quarry near Amman to the Citadel. The stones, one of which weighed 27 tons, had to be moved by truck through Amman in the middle of the night; they are probably the largest stones moved from a quarry in Jordan since antiquity. Under the direction of ACOR architect Chryssanthos Kanellopoulos, the stones are being carved using tools which are reproductions of those used during the Roman period.

It had been obvious for some time that the expansion of ACOR and the commensurate increase in administrative responsibilities necessitated the hiring of additional staff. Late in 1992, three assistant directors were appointed: Branwen Denton and Glen Peterman to serve in Amman and Robin Brown to represent ACOR in the ASOR office in Baltimore.

1992-93 turned out to be ACOR's 'year of the mosaics.' Work continued on the publication of *The Mosaics of Jordan*. At Petra, both side aisles of the Byzantine church were found to have intact mosaics and they received international media



Above, H. M. Queen Noor and Jane Taylor at the Petra photo exhibit. Right, H.R.H. Prince Hassan addressing the CRM conference. Photo by Jane Taylor.



coverage. At Madaba, continuation of the excavation of the so-called Burnt Palace by Cherie Lenzen and Ghazi Bisheh, uncovered several rooms with mosaics and mosaics were also found in the Church of the Prophet Elias.

The Present and Future

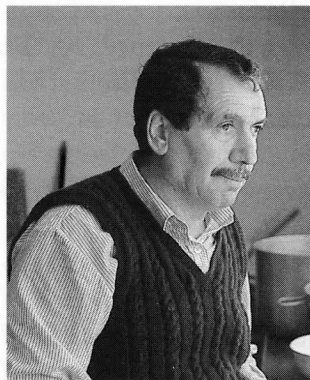
In an attempt to broaden its base beyond strictly archaeological activities, ACOR inaugurated its scholars-in-residence program in 1990. The program provides library, study and work space, living quarters and meals under one roof to scholars from all disciplines concerned with the past and present human condition in Jordan and the surrounding region. This was a significant change in direction for the institution and that change was reflected in the Mellon Foundation-funded Arabic program which began in late 1991 and which took a further step toward full realization in the 1992-93 academic year. Under a grant from USIA, ACOR has approximately 20 fellowships for 1992-94 for scholars from a variety of fields. The first of the new generation of ACOR scholars arrived in late 1992: John Roberts, a political science student from the University of Chicago who is studying political liberalization in Jordan and the role of entrepreneurship in that process. Under both this USIA grant and under the Mellon grant, ACOR now offers fellowships to Jordanians for research in the U.S.

During the winter of 1992-93, there were 20 persons of eight different nationalities in residence, including appointees, fellows, staff and others. The interests of this group were diverse; in addition to John Roberts and the archaeologists, the community included linguists, students of Islamic religion and culture, an architect and a teacher of Italian.

The many visitors who pass through ACOR often stay for lunch, which is consistently excellent due to the culinary expertise of Mohammed Adawi who has been with ACOR for all of its 25 years. Working breakfasts have also become a regular event. For example, in January 1993, H.R.H. Prince Ra'ad and Pierre Bikai hosted a breakfast for a group of scholars from Harvard who are working on mechanisms such as public health infrastructure which will have to be implemented in order for there to be a peaceful solution to the conflict in the Middle East.

The library is in daily use by Jordanian students, resident scholars and other visitors of various nationalities. At the time the building was constructed, two large rooms were designated for future development as a conservation laboratory. In early 1993, equipment for the lab, valued at \$90,000, was ordered and by late spring, most of it had been installed and the lab was in use by the Petra project.

Today the cost for room and board at ACOR is \$17 to \$24 per day, depending on the status and affiliation of the individual, only double what it was in 1976. During the 1993 summer and fall seasons, 12 field projects will be using ACOR's facilities in one way or another. Field projects include those which will continue work at Humeima, Tell Jawa, Tell Nimrin, Umm el-Jimal and Wadi el-Hasa, as well as a major new project at Petra, the excavation of the South Temple. The restoration of part of the colonnade at the Great Temple of Amman will be completed.



Above, Mohammed Adawi. Photo by Jay Guikema. Below, the fallen colonnade at the South Temple of Petra. Photo by Gaetano Palumbo.



Participants in several of these projects will be in residence at ACOR at the same time. At peak period it is expected that 80 persons will actually be housed by ACOR, with approximately 400 residing in the building for various lengths of time between May and September. The building was designed to accommodate only 30 individuals and, even with the inclusion of the rented apartments nearby, the building is now obviously inadequate to handle the numbers generated by the phenomenal growth of ACOR's programs. Once again there is talk of expansion.

If we compare the ACOR of today with the institution as it was conceived in 1968, the changes that have occurred, both in facilities and in program, are overwhelming. What started as a single annual professor at the University of Jordan, housed in a tiny apartment and sleeping on a camp cot, has developed into an institution with 14 employees, regular fellowship programs and a multi-million dollar, five-story facility with sophisticated technical equipment. The library, which did not exist in the early years, now has 20,000 books and periodicals. The annual operational budget, originally \$21,500, is now approximately half a million dollars.

The title of "annual professor" is a thing of the past, although the director of ACOR occasionally teaches a class at the University of Jordan. Ties with that institution and with the Institute of Archaeology at Yarmouk University remain strong but the years have seen the maturing of Jordanian academic institutions and the relationship between ACOR scholars and their Jordanian counterparts is now much more likely to be colleague-to-colleague.

ACOR was originally conceived as an institute devoted exclusively to archaeological research, primarily that inspired by biblical studies. During the past two-and-a-half decades that vision has broadened to involve ACOR in scholarship in a variety of disciplines. The ACOR facility is equipped to handle a diversified "community of scholars," which will hopefully expand with the offering of a greater variety of fellowships. In spite of such diversification, ACOR has retained its commitment to active archaeological field research. In 1993, there will be more ACOR-related projects in the field than ever before and other projects are in various stages of publication, but the shift in emphasis to include all of Jordan's historic and prehistoric periods has been progressing for the past decade. Besides the accumulation of new data, ACOR is actively involved in the interpretation of already existing data and the use of the results to assist in the preservation of the cultural heritage of Jordan and the development of its tourist industry.

Although ACOR is firmly established at this time as the premier research facility of its kind in the Near East, its future is by no means assured. It has weathered major financial crises in the past, but the situation remains precarious because of ACOR's lack of a permanent endowment. The near disaster caused by the Gulf War has underscored the need for such an endowment as well as for a loyal constituency of people who share ACOR's vision and are prepared to donate regularly and repeatedly. Nevertheless, the indications are that ACOR will be able to prosper and expand and to serve, as it has from the very beginning, as a vital liaison and facilitator of friendship between scholars from the United States, Canada and elsewhere and the government and people of Jordan.

PRESIDENTS OF THE BOARD OF TRUSTEES

1970-78	John H. Marks
1978-82	Walter E. Rast
1982-86	Gough W. Thompson, Jr.
1986-88	Edgar C. Harrell
1988-91	Robert A. Coughenour
1991-92	James A. Sauer
1992-	Artemis A. W. Joukowsky

DIRECTORS, FELLOWS & ANNUAL PROFESSORS

1968-69	Rudolph H. Dornemann	Director/Annual Professor
1969-70	Murray B. Nicol	Director/Annual Professor
1970	Bastiaan Van Elderen	Director/Annual Professor
1970-71	Siegfried H. Horn	Director/Annual Professor
1971-72	Henry O. Thompson	Director/Annual Professor
	James A. Sauer	Albright Fellow
1972-73	Bastiaan Van Elderen	Director/Annual Professor
	Bert de Vries	Albright Fellow
	Henry O. Thompson	Visiting Professor
1973-74	Bastiaan Van Elderen	Director
	James A. Sauer	Annual Professor
1974-75	James A. Sauer	Annual Professor
1974 (Fall)	James A. Sauer	Acting Director
1975 (Spring)	George Mendenhall	Director
1975-76	James A. Sauer	Director/Annual Professor
1976-77	James A. Sauer	Director/Annual Professor
1977-78	James A. Sauer	Director
	William J. Fulco	Annual Professor
	David McCreery	Albright Fellow
1978-79	James A. Sauer	Director
	Edwin Schick	Annual Professor
	Gary O. Rollefson	Albright Fellow
1979-80	James A. Sauer	Director
	Burton MacDonald	Annual Professor
	Vincent A. Clark	Albright Fellow
1980-81	James A. Sauer	Director
	Øystein LaBianca	Albright Fellow
	James W. Flanagan	NEH Fellow
	Robert L. Gordon	NEH Fellow
	Gary O. Rollefson	NEH Fellow
	David F. Graf	NEH Fellow
1981-82	David McCreery	Director
	Gary O. Rollefson	Annual Professor

1982-83	Edward Banning	Albright Fellow
	Linda Jacobs	NEH Fellow
	Albert Leonard, Jr.	NEH Fellow
	David McCreery	Director
	Cherie Lenzen	Albright Fellow
	Gerald L. Mattingly	NEH Fellow
1983-84	S. Thomas Parker	NEH Fellow
	R. Thomas Schaub	NEH Fellow
	David McCreery	Director
	Prescott H. Williams	Annual Professor (6 mo.)
	Robert G. Boling	Annual Professor (6 mo.)
	Donald O. Henry	NEH Fellow
1984-85	David S. Reese	Shell Fellow
	David M. Jacobson	Shell Fellow
	David McCreery	Director
	Robert G. Boling	NEH Fellow
	Cherie Lenzen	NEH Fellow
	Albert Leonard, Jr.	NEH Fellow
1985-86	Suzanne Richard	NEH Fellow
	Brian F. Byrd	Shell Fellow
	David McCreery	Director
	Keith Beebe	Annual Professor
	Joseph A. Greene	NEH Fellow
	Donald Whitcomb	NEH Fellow
1986-87	Doris Miller	NEH Fellow
	Michael Alcorn	Shell Fellow
	David McCreery	Director
	Burton MacDonald	Annual Professor
	Nancy Lapp	NEH Fellow
	Colin Brooker	NEH Fellow
1987-88	David McCreery	Director
	Brian Byrd	Annual Professor, NEH Fellow
	Frank L. Koucky	NEH Fellow
	Robert Schick	Shell Fellow
	Jonathan Mabry	Shell Fellow
	Robin M. Brown	Teagle Fellow
1988-89	Bert de Vries	Director
	William Jobling	Annual Professor (6 mo.)
	Robert Schick	Annual Professor (6 mo.)
	James Deemer	NEH Fellow
	Andrea Lain	Teagle Fellow
	Benjamin F. Hartsell	Jennifer C. Groot Fellow
1989-90	Bert de Vries	Director
	Patricia L. Fall	Albright Fellow
	Øystein LaBianca	NEH Fellow
	Kenneth W. Russell	NEH Fellow
	Carol A. Redmount	Shell Fellow

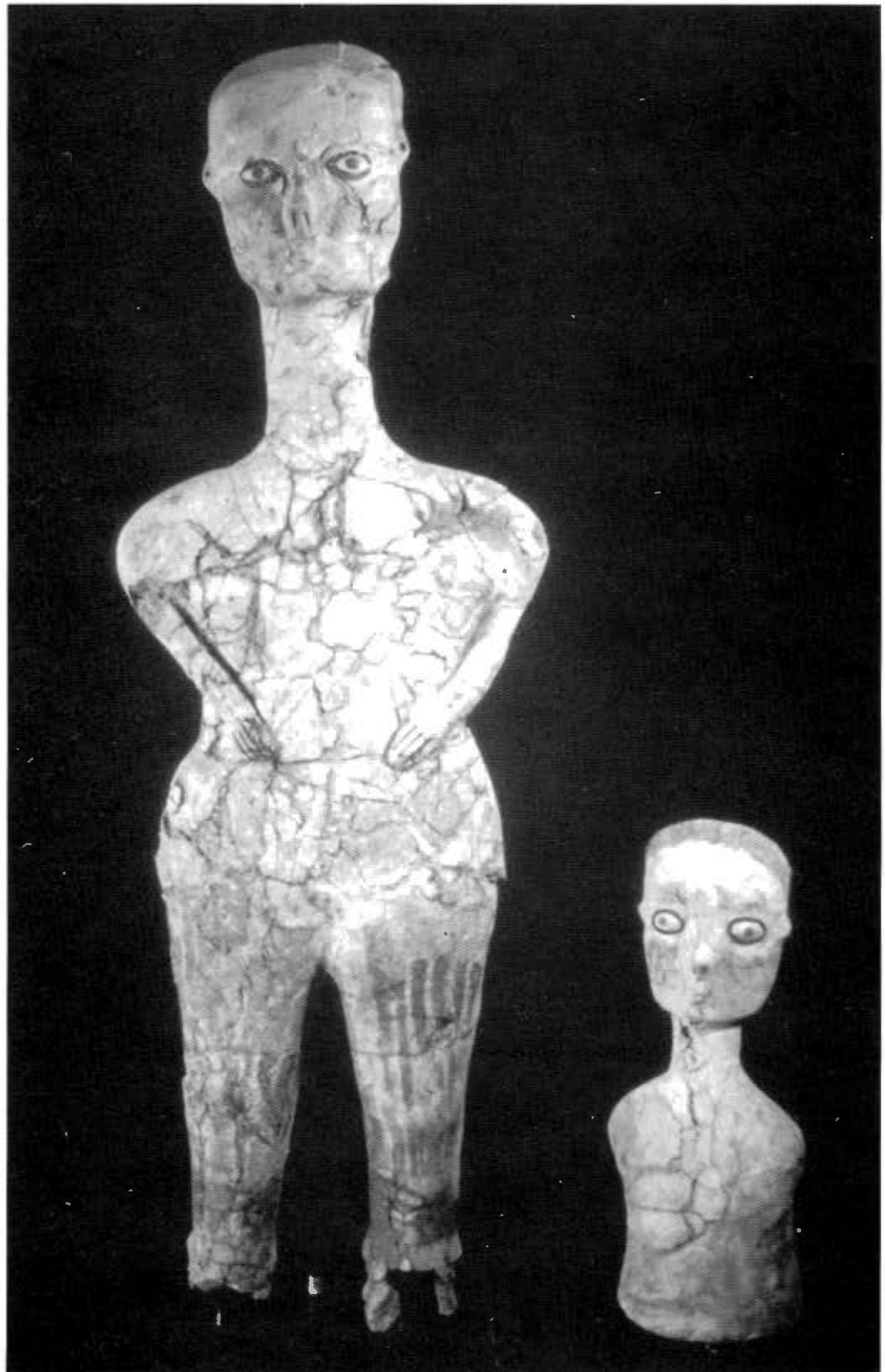
	Glen Peterman	Teagle Fellow
	Brenda Strickland	Jennifer C. Groot Fellow
1990-91	Bert de Vries	Director
	Kelly Low	Jennifer C. Groot Fellow
1991-92	Pierre Bikai	Director
	Burton MacDonald	Dodge Fellow
	Zbigniew Fiema	USIA Fellow
	Glen Peterman	USIA Fellow
	Jay Guikema	USIA Fellow
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	Carl Brown	ASAIP-Mellon Fellow
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	Lynn Killean	ASAIP-Mellon Fellow
	Russell Hopley	ASAIP-Mellon Fellow
	David Mehall	ASAIP-Mellon Fellow
	Ranjit Singh	ASAIP-Mellon Fellow
	Zeid el-Hammouri	ASAIP-Mellon Fellow (in the U.S.)
	Denine Dudley	Jennifer C. Groot Fellow
	Judith Mitchell	Jennifer C. Groot Fellow
1992-93	Pierre Bikai	Director
	Timothy Harrison	USIA Fellow
	Peter Warnock	USIA Fellow
	John Roberts	USIA Fellow
	Eric Lapp	USIA Fellow
	Brian Fitzgerald	USIA Fellow
	Nicholas Alexander	USIA Fellow
	Laurie Brand	USIA Fellow
	Linda Adams	USIA Fellow
	Thomas Paradise	USIA Fellow
	Jane Peterson	USIA Fellow
	Edith A. Dunn	USIA Fellow
	Michael Neeley	USIA Fellow
	Andrew M. Smith II	USIA Fellow
	Bruce Rutledge	Winnett Fellow
	Marie-Jeanne Roche	Dodge Fellow
	Frederic Cadora	ASAIP-Mellon Fellow
	Lynn Killean	ASAIP-Mellon/USIA Fellow
	Marion Katz	ASAIP-Mellon Fellow
	Charlene Constable	ASAIP-Mellon Fellow
	Timothy Gianotti	ASAIP-Mellon Fellow
	Salman el-Badour	ASAIP-Mellon Fellow (in the U.S.)
	Megan Perry	Jennifer C. Groot Fellow
	Janet King	Jennifer C. Groot Fellow

NEH = National Endowment for the Humanities

ASAIP/Mellon = Arabic Speaking Academic Immersion Program, Mellon Foundation

USIA = United States Information Agency

Two PPNB statues dated to 6770 B.C. (uncalibrated). Photo courtesy of Gary Rollefson.



The Projects

The American Center of Oriental Research has initiated and supported numerous projects in its first 25 years. The following are some of the more significant.

‘Ain Ghazal

The Neolithic site of ‘Ain Ghazal was initially discovered independently by Khair Yassine, University of Jordan, and by Mo’awiya Ibrahim, Yarmouk University, in the late 1970s. Excavations were begun under the auspices of the Department of Antiquities. Six seasons have been undertaken (1982-85, 1988-89), as well as one season of survey in the immediate vicinity of the settlement (1986). The Principal Investigator has been Gary Rollefson of the Peabody Museum, Harvard University; co-directors include Albert Leonard, Jr., University of Arizona, Alan Simmons, Desert Research Institute, and Zeidan Kafafi, Yarmouk University. A summary of results with bibliography is found in the *Journal of Field Archaeology* (1992).

The uninterrupted Neolithic occupation at the site spanned more than 2000 years, beginning at the onset of the Middle Pre-Pottery Neolithic B (MPPNB: 7200-6500 B.C.) and continuing through late PPNB (6500-6000 B.C.), Pre-Pottery Neolithic C (PPNC: 6000-5500 B.C.), and the Yarmoukian variant of the Pottery Neolithic (5500-?5000 B.C.). The rich animal and plant remains have permitted interpretation of the economic evolution of ‘Ain Ghazal. Of particular importance is the identification of the PPNC cultural phase, noted for the first time at ‘Ain Ghazal. In contrast to previously widely held beliefs, the PPNC evidence at ‘Ain Ghazal and other Jordanian settlements shows that permanent agricultural communities continued to thrive through the first half of the 6th millennium. One adaptation adopted by the PPNC inhabitants that permitted sustained presence in the area was the geographic segregation of the farming and herding sectors of the economy: it now seems clear that nomadic pastoralism was being developed during the PPNC. Another critical aspect of the archaeological sequence at ‘Ain Ghazal is the demonstration that Yarmoukian pottery technology was a direct outgrowth of local PPNC developments, not the consequence of “imported knowledge” from the northern Levant.

The results of other research are probably overshadowed by the exquisite MPPNB ritual finds. Numerous clay figurines of animals (especially wild cattle) appear to be associated with hunting magic. Human figurines can be interpreted as amulets (of which fertility images served to promote fecundity and protect the health of women). Family/lineage ritual is evidenced by decapitated burials, usually beneath house floors. Some skulls of favored family members were reburied elsewhere beneath the floors, and the skulls of some received extraordinary treatment: lime plaster recreated the faces of the dead in a gesture of ancestor worship. At least six plastered “portrait skulls” have been recovered from MPPNB levels. These personal and family-oriented aspects of ritual have been enhanced by the recovery of two caches (totaling at least 32 examples) of stunning plaster statues (ca. 90 cm high) and busts (ca. 45 cm), dated to between 6750-ca. 6500 B.C. The smaller busts may represent mythical ancestors, while the larger statues might represent mythical founders of the community.

Amman: The Great Temple

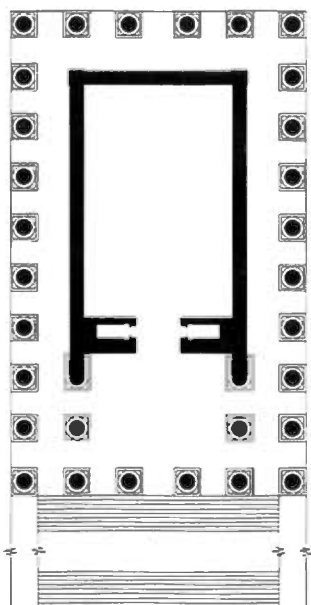
The great Roman temple on the Citadel, or Jebel el-Qal'a, in Amman is popularly known as the Temple of Hercules and has been securely dated by its dedicatory inscription to the term of the Roman governor Geminius Marcianus, i.e. to A.D. 161-66. The temple is on the middle terrace of the Citadel within a colonnaded temenos. It was oriented along an east-west axis with its facade to the east, in accordance with Greek tradition. The temenos was connected to the Roman city below by a monumental staircase entered by propylaea. The temple had a hexastyle facade on a podium measuring 43 x 27 m. The height of the columns, including the bases, is 13.5 m. The foundations of the prosthesis, completely subterranean during the Roman period, have, over the years, acquired disproportionate prominence, as they are the best-preserved elements of the temple. Most of the material of the temple was already robbed out before the earthquake of A.D. 746/47, when the remnants of the structure, the columns of the prosthesis and the pronaos, collapsed.

A major objective of the project and the publication is to clarify the ground plan of the temple. This fundamental issue has been debated for many decades. Conder, Butler, Bartoccini and Ceschi proposed a tetrastyle prosthesis for the temple; Bennett, Northedge and Zayadine, on the other hand, suggested that the temple had a hexastyle-peripteral floor plan. Both these hypotheses were based on insufficient consideration of the physical evidence. The evidence from this project adequately substantiated the restoration of the temple as a hexastyle structure. Moreover, detailed analysis of the material remains refutes the claim of a regular peristyle as it is possible that the peristyle remained unfinished.

Excavations were first conducted on the Citadel between 1930 and 1938 under the direction of archaeologist Renato Bartoccini and architect Carlo Ceschi of the Missione Italiana in Amman. Further archaeological work was carried out in the 1960s and 1970s by the Department of Antiquities of Jordan and ACOR (R. Dornemann) and also by the British Archaeological Institute (M. Bennett and A. E. Northedge). In 1991, excavations at the Citadel were resumed under the combined auspices of ACOR and the Department of Antiquities, funded by a grant from the United States Agency for International Development (USAID). The directors of the excavation were archaeologists Mohammed Najjar of the Department of Antiquities and the late Kenneth Russell of ACOR. A feasibility study on the restoration was done by A. Papanikolaou, Acropolis of Athens, and C. Kanellopoulos, and restoration of the temple began in July 1991 under Chryssanthos Kanellopoulos and engineer Mohammed Tayyem of ACOR, with funds from USAID.

The temple on el-Qal'a is the most poorly preserved temple in the area. The building of fortifications on the Citadel resulted in the reuse of its material for nine centuries. By good fortune, however, the temple of "Hercules" was the only monument of the area that had a numbering system carved on its drums by the ancient builders.

Anastylosis focused on three areas: the portico of the temple, the podium of the temple's northwest corner and part of the west temenos colonnade. Three columns of



Restoration of the ground plan of the temple (compare with page 4) as it was probably designed. Plan by Chryssanthos Kanellopoulos.

AMMAN: THE GREAT TEMPLE

the temple were found to be fully preserved, including bases and capitals. The fourth column of the prothesis from the south was erected in its original position, the second column of the facade was restored in the counterpart and actually symmetrical position of the fifth column, and a third column was restored atop of the north pronaos base. The fourth (inscribed) architrave of the prothesis was restored in its original place, determined from the sequence of the inscription, i.e., between the fourth and fifth columns of the facade from the south.

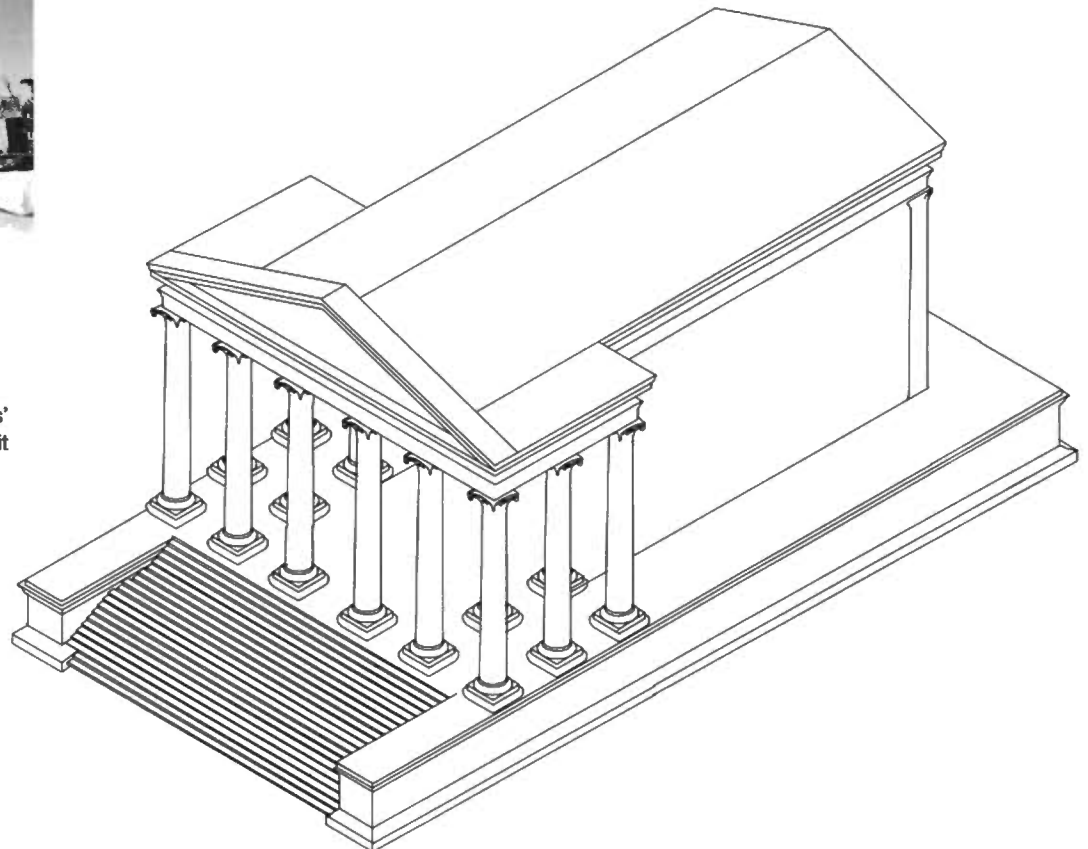
The anastylosis project respected the Venice Charter and the principle of reversibility. As local resources could not fully support the project, alternative solutions were used; e.g., the stone cutters were trained in ancient building methods. Because of the lack of a seismic table in the Jordan, a computer simulation program was used by the engineer of the project, M. Tayyem, who also designed and approved all the connections and reinforcements in restored members and foundations.

The columns of the Great Temple of el-Qal'a, together with the architrave, create focal point for the skyline of Amman. The capital of Jordan, deprived of the plethora of columns that one can see at other sites such as Jerash, has now a complete specimen of post-and-lintel architecture, a reminder of her ancient glory.

The project is in process of being published by ACOR as *The Great Temple of Amman I: The Architecture* by C. Kanellopoulos and *The Great Temple of Amman II: The Excavations* by A. Koutsoukou, M. Najjar, and K. Russell.



Above, the first drum of the colonnade, a newly-cut one, being put in place. Photo by Anthi Koutsoukou. Right, Chryssanthos Kanellopoulos' restoration of the temple as it was probably actually built.



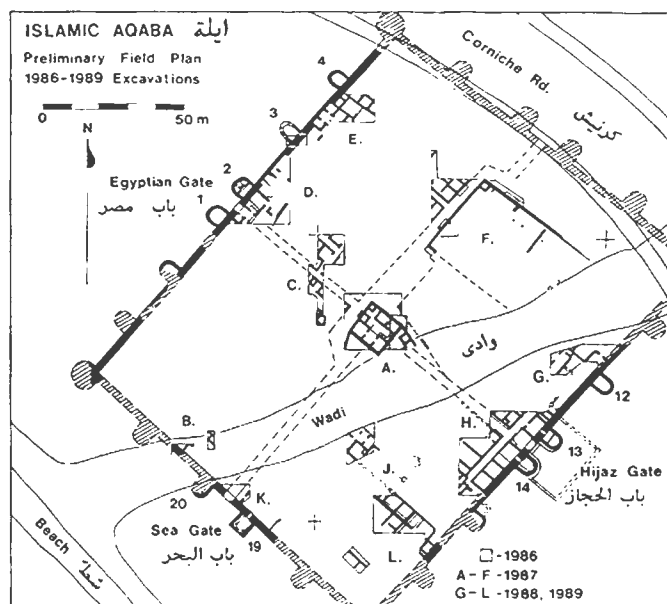
Aqaba/Ayla

The site of the medieval city known as Ayla is located in the center of the modern port/resort city of Aqaba, between the corniche road and the beach. Aqaba is situated in the extreme south of Jordan, at the northern tip of the Gulf of Aqaba, just a few miles from the Saudi Arabian border. Strategically located at the junction of land and sea routes from Asia, Africa and the Mediterranean, and benefiting from a tropical climate and plentiful sources of fresh water, Aqaba has been occupied for at least 3000 years. The city probably functioned as a port, engaged in trade with *Arabia Felix*, Egypt and the Levant, by the early 1st millennium B.C. and possibly earlier. Although there is no direct evidence as yet, it is also likely that the site was a port during the Nabataean period. After the Romans occupied southern Jordan in A.D. 106, they constructed the *Via Nova Traiana* to link Aqaba, which they called Ailana, with Bostra in southern Syria. The town was also occupied during the Byzantine period.

The Ayla mentioned frequently by Arab geographers of the 9th and 10th centuries was located near, but not within, the limits of the ruins of the earlier towns. Ayla was founded ca. A.D. 650, shortly after the Moslem conquest. The Abbasid period (A.D. 750-950) was the period of greatest prosperity; artifacts of this period show trade connections with Syria, Egypt, Iraq and China. Some of this interchange can undoubtedly be attributed to Ayla's position on the pilgrimage route to Mecca. The city went into decline during the Fatimid period (A.D. 950-1100) and was abandoned after its capture by the Crusaders in A.D. 1116. After this, settlement shifted about one km to the south, to the vicinity of a fort constructed in the Ayyubid/Mamluk period.

Ayla was first mentioned by E. Ruppell in 1822 and was described by Sir R. F. Burton, who visited the site in 1878, and by T. E. Lawrence in 1914. Survey and soundings at Ayla were conducted in 1986 by D. Whitcomb of the University of

Chicago in conjunction with the Jordanian Department of Antiquities. From 1987 until the present day, excavations at the site have continued, under the direction of Whitcomb, in conjunction with the Ministry of Tourism and Antiquities and ACOR, under a grant from the United States Agency for International Development (USAID). Conservation and consolidation have also been carried out at the site, with the goal of not only preserving this



unique Islamic town, but also of developing it as an archaeological park.

The city of Ayla was rectangular in plan and measured 120 x 160 m. The city was enclosed by a stone wall with semi-circular towers on all sides. It was divided into quadrants by two axial streets which led to the four city gates: the Bab el-Sham (Syrian Gate), the Bab el-Hijaz, the Bab el-Bahr (Sea Gate) and the Bab el-Misr (Egyptian Gate). The Egyptian Gate, located on the northwest and flanked by two of the towers, is preserved to a height of 4.5 m. The gate shows several phases of rebuilding, reflecting the history of the town's prosperity. The earliest gate (Umayyad or Abbasid) was 3 m wide and surmounted by a semi-circular arch; above the gate was a monumental stone inscription in Kufic. Later, the gate was narrowed and a series of rooms, perhaps shops, built on each side of the street both inside and outside the gate. As the fortunes of the town declined in the Fatimid period, the original arch was filled with debris and a smaller pointed arch was constructed as a doorway. Eventually, the gate was completely blocked.

Several areas with domestic structures were excavated in the interior of the town. The earlier Abbasid houses were well constructed of stone and mudbrick. Stones and architectural elements from these buildings were often reused in the later, flimsier structures of the Fatimid period. The street leading from the Egyptian gate was cleared and a probe in this area revealed that the original Umayyad street had been much wider. In the center of the town, near the crossing of the main streets, a large square residential building was excavated which showed at least two levels of occupation. In the most recent phase, dating to the late Abbasid or Fatimid period, a number of rooms were arranged around a central courtyard with entrance stairs on the northwest and a staircase leading to an upper storey. On the south side was a covered room open to the courtyard (*iwan*), with rooms on either side. One of the rooms had a fresco on one wall consisting of floral motifs and geometric designs; numerous graffiti in Kufic had been scratched on the fresco. Traces of a monumental arch which had belonged to an earlier phase of the building were discovered in the southwest wall and an identical arch was found on the southeast side. The walls were traced down 4 m to a fine plaster floor beneath which were artifacts dating to the Umayyad period. The presence of these two arches suggests that the building must have originally been a kind of pavilion, possibly a governor's residence. On the west side of the town was a substantial building (the "large enclosure"), which had two stairways, columns and thick gravel floors; the use of this structure remains enigmatic. The wall fronting the beach was completely cleared along its southwestern face, including its southwestern tower, and a series of small shops, possibly part of the Abbasid period *suq*, were also discovered in this area.

Artifacts found in the course of excavation included many imports from Egypt, Iraq and China. Fine lustre wares from the Abbasid capital of Samarra in Iraq were found together with Chinese celadons and porcelains, delicate bowls and stoneware storage jars. Steatite cooking pots, lamps and incense burners were imported from Yemen.

The early Islamic city of Ayla is unique in Jordan and, when the archaeological park is completed, tourists—Jordanians and those of other nationalities—will be able to walk the streets of the medieval town and visualize what life must have been like for the local inhabitants in the 10th and 11th centuries A.D.

Bab edh-Dhra

The site of Bab edh-Dhra is located in Jordan's southern Ghor overlooking the Lisan peninsula. To the east lies the mountain plateau area known in antiquity as the plain of Moab. To the west, the mountain fortress of Masada can be seen among the lower hills of the western coastline of the Dead Sea. The closest sizeable town is Kerak which is at the head of the Wadi Kerak; this wadi descends into the southern Ghor just to the north of Bab edh-Dhra. A natural spring is located below the site. Today the southern Ghor seems like a barren and inhospitable region especially in summer, but evidence recovered in the course of survey and excavation suggests that more trees grew there in antiquity and that the Bronze Age inhabitants of Bab edh-Dhra were able to grow a variety of cereal crops and fruits.

Early travelers visited the area in order to explore its extraordinary environment and, in some cases, to search for evidence of the "cities of the plain" mentioned in Genesis 14, the most famous of which are Sodom and Gomorrah. Irby and Mangles, who visited the region in 1818, were the first to record the existence of an archaeological site at Bab edh-Dhra. Exploration in the region continued throughout the 19th century and in the first years of the 20th century. After this, the southern Ghor was neglected until 1924, when W. F. Albright, M. G. Kyle and A. Mallon surveyed in the region and discovered Bab edh-Dhra. In the late 1950s, quantities of Early Bronze Age pottery began to appear in the Jerusalem market and P. Lapp succeeded in tracing these vessels to the Bab edh-Dhra cemetery in 1964. Lapp subsequently conducted three seasons of excavation at the cemetery and also investigated the settlement area. The results of these excavations were published posthumously as R. T. Schaub and W. E. Rast, *Bab edh-Dhra: Excavation in the Cemetery Directed by Paul W. Lapp (1965-67)*, Reports of the Expedition to the Dead Sea Plain, Jordan, Vol. I (1989).



Above, Early Bronze IA figurine from Bab edh-Dhra. Right, the site. Photos by James A. Sauer.



The Expedition to the Dead Sea Plain began excavations at Bab edh-Dhra in 1975, co-directed by R. T. Schaub of Indiana University of Pennsylvania and W. E. Rast of Valparaiso University, under the auspices of ACOR, in cooperation with the Department of Antiquities of Jordan. Excavation at the site and survey in its vicinity continued in 1977, 1979 and 1981. A previous survey of the region, conducted in 1971 by Rast and Schaub, had succeeded in identifying five other Bronze Age sites and, in 1977, excavations were extended to include the nearby site of Numeira. A principal goal of the expedition was a multidisciplinary investigation of this marginal area, aimed at determining adaptation strategies and settlement patterns during the Early Bronze Age. Data relevant to all periods of the Early Bronze Age were found to be present at Bab edh-Dhra.

During the EB IA period (ca. 3300-3150 B.C.), the population of the region appears to have been engaged in transhumant pastoralism, though there is some evidence of partial sedentarization at the end of the period. There is no evidence of an EB IA settlement at Bab edh-Dhra but numerous tombs in the cemetery date to that period. The tombs are shaft graves and have a circular shaft, cut vertically from the surface, that leads to small underground chambers cut out of the natural *lisan maris*. The burials usually consist of disarticulated human bones piled in the center of the chamber, with skulls set in a row to the left of the pile and burial gifts of ceramics and stone (basalt) vessels lined up around the right edge of the chamber.

In EB IB (ca. 3150-3000 B.C.) a village of over 10 acres was established at the site. The dwellings of this period were usually single square or rectangular rooms of mudbrick, often with stone foundations, plastered inside and out, with roofs of wooden poles and matted reeds plastered with clay. The settlement does not appear to have had a surrounding wall at this time. Some of the tombs in the cemetery, including circular charnel houses built of mudbrick, were also EB IB in date.

Clarification of the stratigraphy of the settlement at Bab edh-Dhra was hampered by the severe erosion which had occurred in many areas, especially in the northern part of the site. Though not as well known as the following EB III period, the occupation of EB II (ca. 2850-2550 B.C.) appears to have been substantial. There is evidence of both domestic architecture and of what may have been a cult building, located in the area of the later EB III sanctuary. Traces of a mudbrick wall, possibly part of a perimeter wall, were also identified. Large, rectangular charnel houses were in use during both the EB II and EB III periods.

The settlement at Bab edh-Dhra reached its peak during the EB III period (ca. 2550-2300 B.C.). At this time the city was encircled by a 7 m thick fortification wall, built of stone and mudbrick, which is still preserved on the south, east and west sides of the site. A gate that might have been the main access to the town was located in the western part of the wall. In the northeast, the highest area within the settlement, two stone towers with timber and mudbrick superstructures, flanking an open passageway, were discovered. These were probably part of the town's defensive system, possibly a gateway, but their relationship to the wall is unclear as very little of it was discovered in the northern part of the site. The interior of the town contained numerous closely spaced mudbrick structures which functioned as dwellings and workshops. Two

superimposed rectangular buildings, built of stone with mudbrick superstructures, were located just inside the southern wall. In its latest phase this building had an entrance located in the southern end of the western wall and a raised flagstone pavement with steps leading up to it inside the northern end. In the lower building flat-topped boulders were found that served as pedestals for wooden columns, one of which was discovered still *in situ* on its base. To the west of the building was a hemispherical installation made of large fieldstones that has been interpreted as an altar. The area is assumed to have had a cultic function, as both the building and its associated features and artifacts have many of the characteristics of sanctuaries at other Bronze Age sites in Palestine-Transjordan. Numerous shaft graves and charnel houses of the EB III period were also excavated. These contained rich finds including skeletal material, ceramics, figurines, gold jewelry, stone implements and vessels, bone and wood implements, textiles, reed matting and the remains of foodstuffs. The nearby site of Numeira, dated exclusively to the EB III period, also provided extensive evidence for the interpretation of everyday life in the Bronze Age. The site was burned at the end EB III and never reoccupied, so that its contents were buried under ashy debris and kept in an excellent state of preservation.

After the destruction of the EB III settlement at Bab edh-Dhra there appears to have been a break in occupation, then an EB IV (ca. 2300-2000 B.C.) settlement was built partially over the ruins of the earlier town and also outside of the previous settlement area. Structures of this period were of the same basic rectangular type as those in the earlier levels; some of the buildings contained pedestal bases and may have had a cultic function. In EB IV different burial customs were introduced and a new type of larger shaft tomb was used for both primary and secondary interments.

The excavations at Bab edh-Dhra have been published as preliminary reports in the *Bulletin of the American Schools of Oriental Research* (1980 and 1984) and the *Annual of the American Schools of Oriental Research* (1978 and 1981).

Baq'ah Valley Survey and Excavation Project

The Baq'ah Valley, a fertile and well-watered depression that is 15 km northwest of Amman, has been the focus of an expedition of the University Museum of the University of Pennsylvania since 1977, continuing up to the present (see *The Late Bronze and Early Iron Ages of Central Transjordan: The Baq'ah Valley Project, 1977-1981*, 1986). The project is directed by P. E. McGovern, and has been funded by the Museum and MASCA (Museum Applied Science Center for Archaeology), the National Geographic Society, the Jordanian Ministry of Tourism and Department of Antiquities, ASOR, ACOR and several private foundations.

The Baq'ah has been almost continuously occupied from the late Middle Paleolithic (ca. 50,000 years ago) up to the present, due to its central position on the plateau, its rich soil, one of the highest concentrations of perennial springs on the plateau, and an abundance of other natural resources. Five archaeological periods stand out: (1) the Early Bronze Age; (2) the Late Bronze Age; (3) the Early Iron Age; (4) the Late Iron

Age, extending into the Persian period; and (5) the Early Roman period.

Archaeological investigation has focused on the northwestern (Um ad-Dananir) region of the Baq'ah, which has more springs and visible ancient remains than any other sector of the valley. Urban settlement began there at least by Early Bronze II (approximately 2900 B.C.) at the 3.5-hectare, fortified hilltop site of el-Qesir ("the fortress"), the first of its type to be excavated in Jordan.

The Late Bronze Age (ca. 1550-1200 B.C.) is exceptionally well represented in the region, considering that earlier surveys by N. Glueck and others had found no evidence for the period. An overlapping temporal sequence of burial caves on Jebel el-Qesir and Jebel el-Hawayah attested to the urban character of the culture and its international relations. Among the imports were Mitannian Common Style cylinder seals, Egyptian scarabs and a ring, Mycenaean stirrup jars, Cypriote Base-Ring II and White-Slip II wares, and numerous Mediterranean and Red Sea mollusc shells.

The Late Bronze settlement at Khirbet Um ad-Dananir, which is about 2.5 hectares in area, was strategically situated on a cliff overlooking the Wadi Um ad-Dananir. The earliest structure belongs to this period, and to the extent that it has been excavated, is very similar in architectural layout to the contemporaneous square Amman Airport Building, located 15 km to the southeast. Like the latter, the Um ad-Dananir structure evidently had special significance, since miniature pottery vessels, jewelry, a pottery bull rhyton, and masses of burnt and unburnt animal bones and whole body parts (cattle, sheep/goat and donkey, along with carnivores and herbivores no longer living in the region) had been deposited in a "dedicatory fill" beneath the plaster floor of the building and in the foundation trenches, over bedrock.

An Early Iron Age (ca. 1200-1050 B.C.) burial cave on Jebel el-Hawayah is one of the largest tombs of this period ever discovered in Palestine. One of the most important discoveries was a group of 11 complete mild steel jewelry artifacts (anklets, bracelets,

Patrick McGovern, Nicholas Hartmann, Helen Schenck and Marilyn Saul in Cave A4, 1980. Photo courtesy of Patrick McGovern.



and rings). A similar iron anklet or bracelet in a Late Bronze II burial cave suggests that iron metallurgy had begun earlier.

Late Iron/Persian (ca. 650-400 B.C.) central Transjordan appears to have been especially prosperous. Among the numerous structures of the period, which were constructed of dry-laid, unhewn boulders and distributed throughout the Baq'ah, Rujm el-Henu West was most thoroughly investigated. Most likely a fortress, with complementary domestic and agricultural functions, the building had circular and rectangular towers and a casemate system of rooms around a courtyard. It had a single occupational phase, associated with a clay floor over bedrock, and was destroyed during the same period, with the upper walls collapsing onto the floor (2.5-3 m high walls were preserved). Finds included figurines, highly burnished pottery, and a deeply incised inscription, written on the side of a storage jar before firing, which read in Ammonite script *shema'* ("to hear"), a common name element in early Semitic.

At Khirbet Um ad-Dananir in the Early Roman III period (4 B.C.-A.D. 73), an orthostat structure yielded a collection of pottery, glass vessel and bracelet fragments, an iron sickle blade, and limestone vessels of Herodian type. A coin of the 1st century (Antonius Felix, A.D. 52-62) was found below the beaten earthen floor.

No certain information about the ancient identity of sites in the Baq'ah is available. In a list of Tuthmose III's Asiatic toponyms (ca. 1450 B.C.), which has been said to mark sites along the King's Highway, the Baq'ah has been identified with *mkrpwt* ("fertile depression"). The Late Bronze building at Khirbet Um ad-Dananir has affinities with late Middle Bronze-early Late Bronze structures at Shechem. Later biblical tradition, as reflected in the Jacob-Laban cycle, the Israelite settlement narratives, and the story of the sacrifice of Jephthah's daughter, may reflect reminiscences of similarly close ties in an earlier period between Gilead, where Khirbet Um ad-Dananir (Mizpah Gilead?) is located, and Israel, where Shechem is located.

Cultural Resources Management Project

The Cultural Resources Management (CRM) Project is a cooperative program of ACOR and the Department of Antiquities of Jordan. The program, funded by a United States Agency for International Development (USAID) grant to ACOR, has the purpose of creating better coordination procedures between the Department of Antiquities (DAJ) and all governmental agencies involved in development. This is being achieved through the preparation of cooperation agreements between the DAJ and those agencies. On the basis of those agreements, the DAJ will have to prepare Cultural Resources Impact Assessments in advance of each major construction project. The assessments are not only taken into consideration during the planning and feasibility study phases of the construction project, but are also the basis for further archaeological work, now conducted before actual construction, and not after damage has been already inflicted on the site. Another tool the CRM program is preparing is a complete inventory of Jordan's cultural heritage, under the form of a database called JADIS (Jordan Antiquities Database and Information System), which already con-

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tains encoded information on over 5000 sites all over Jordan. A team of DAJ employees under the direction of ACOR's CRM Consultant is encoding the information available from publications, files, and unpublished reports provided by many archaeologists working in Jordan, and is entering this information on a computer at the DAJ Registration Center. The actual JADIS software, developed by a Jordanian company, CDG, is a user-friendly tool which allows easy, error-free data entry and search, in a multi-lingual environment. At the moment, the data can be displayed either in Arabic or English; later, other language modules can be added.

The CRM program was initiated in 1987. The first activities were the creation of a network of liaison officers in various ministries, which helped to spread the idea of CRM at various governmental levels. Field projects were also part of the first CRM efforts, with the salvage excavation at the Amman Citadel and the organization of the Archaeological Survey of Greater Amman. In the second and third extensions to the grant, archaeological projects partly financed by governmental agencies were conducted by the DAJ, with ACOR's assistance: Jebel Abu Thawwab, Kufr Yuba, Beit Ras, Aqaba-Ras en-Naqb, and Tafileh-Ghor Feifeh. However, some incidents such as the salvage excavation of a Roman fort near Jerash in 1991 showed that the CRM process needs more effort in order to become part of the daily routine of governmental and private development agencies. So far, the CRM program has been successful in raising awareness of the importance of preserving cultural heritage, especially among people who work regularly on development projects. Thus, the creation of tools that will help to institutionalize common coordination procedures, as well as the JADIS database which gives information immediately on the presence of archaeological sites in areas under threat, are the most successful results of the CRM program, beyond the more strictly archaeological and scientific results obtained by the projects that the CRM program helped to initiate.



Above, CRM archaeologist Gaetano Palumbo in ACOR's computer room. Photo by Bert de Vries. Right, the Jerash Road salvage excavation. The CRM project is designed to help prevent such last minute excavations. Photo by Gaetano Palumbo.



East Jordan Valley Survey

The Jordan River flows from the Sea of Galilee in the north to the Dead Sea in the south. The entire valley, which is ca. 105 km long, is below sea level with the lowest point, ca. -394 m, where the river empties into the Dead Sea. On the eastern side of the river the flat floor of the valley (*ghor*) is ca. 3-5 km wide in the north and widens to ca. 10-13 km in the south. The valley is bordered to the east by hills dissected by numerous small rivers and wadis. The river itself meanders through a secondary valley (*zor*) which is separated from the *ghor* by the barren qattara hills. The northern part of the valley receives more rainfall and is generally more fertile than the south.

Surveys of the region were carried out by N. Glueck (1939-49), W. F. Albright (1926) and by H. de Contenson and J. Mellaart (1953). Numerous sites and dolmen fields were identified and excavation of selected sites confirmed that there had been extensive settlement in the valley from at least the Neolithic through Mamluk periods. In 1975 and 1976, new archaeological surveys of the valley were undertaken as a joint project of ACOR, the Jordanian Department of Antiquities and the University of Jordan. Mo'awiyeh Ibrahim was the administrative director of the project, assisted by James Sauer and Khair Yassine it was published in 1976 in *BASOR*. The goal of the project was to describe and locate on maps as many archaeological sites as possible. Sites with great potential for future excavation and those threatened with destruction due to modern development were to be specially noted. Goals of a more interpretive nature included observations of occupational history and settlement patterns which might be applied to modern economic development in the region.

In 1975, the survey concentrated on the northern part of the valley, from the Yarmouk River to Wadi Rajib; in 1976, the southern part of the valley was explored. The surveys identified 224 sites in all and evidence for occupation was discovered in almost every part of the valley. The area between Wadi Kufrenjeh and Wadi ez-Zerqa, which is well watered and fertile, was the most extensively occupied—one quarter of the identified sites were in this region. In contrast, the area between Wadi ez-Zerqa south to Wadi Nimrin showed few signs of exploitation until recently.

The Neolithic/Chalcolithic occupation was very extensive throughout the valley and several sites appear to have been permanent agricultural settlements. The Early Bronze period was also strongly represented; sites of this period were large and fortified and predominantly located on the higher hills. EB IV/MB I sites were smaller and usually unfortified; in contrast to the prevailing pattern in most occupational periods, these sites were rarely located near the major wadis. There was extensive evidence for a MB II occupation, mostly small-to-medium unfortified villages, in the north but not in the south. Few sites were identified that could be dated to the Late Bronze Age. The Iron Age was strongly represented in both the north and the south with most of the sites dating to the latter part of the Iron I and Iron II periods. Very few sites of the Persian period were identified. The Hellenistic period was strongly represented in the north but not in the south. During the early Roman period most of the Hellenistic sites continued to be occupied and this period was also strongly represented in the south. Evidence for a late Roman occupation was much less

extensive. The Byzantine occupation was substantial but most of these sites were abandoned at the end of the period. The Umayyad and Abbassid periods were poorly represented throughout the valley with the exception of a complex irrigation system of the Umayyad period which was located in the arid and relatively unsettled area south of Wadi ez-Zerqa. The entire valley was most extensively settled during the Ayyubid/Mamluk period, when new irrigation techniques were introduced and sugar cane was widely cultivated and processed. Most of these sites were abandoned at the end of the period and the Ottoman period was one of relatively low density of settlement.

Hesban

Tell Hesban, 20 km south of Amman and 10 km north of Madaba, was visited by Ulrich Seetzen in the early 19th century. He linked it with biblical Heshbon which was the capital city of Sihon, king of the Amorites, who was defeated by the Israelites when they first entered Canaan. Excavations began in 1968 and continued in 1971 and 1973 as a joint project of Andrews University and ASOR under the directorship of Siegfried H. Horn, with Roger S. Boraas of Upsala College serving as chief archaeologist. In conjunction with the excavations at Tell Hesban, the archaeologists conducted ethnographical and ecological surveys of the region. In 1974, Lawrence T. Geraty, Horn's successor at Andrews University, assumed directorship of the project and carried out campaigns in 1974 and 1976. A sixth campaign took place in 1978 under the direction of John I. Lawlor of Baptist Bible College; in 1979, an ecological survey of the region was conducted. In 1981, the last fieldwork project to be carried out in connection with the Hesban excavations was completed by Øystein S. LaBianca.

The Hesban expedition was a landmark in Jordanian archaeology in terms of its pioneering efforts in interdisciplinary research. The regional archaeological survey identified 155 sites and each successive season in the field attracted specialists in climatology, geology, soils, hydrology, phytogeography (the biogeography of plants) and zoogeography. All these studies contributed to a goal of the project, the interpretation of the nature of long-term culture change and continuity in the region. The project now is in final stages of publication, in a 14-volume series (Lawrence T. Geraty and Øystein S. LaBianca, eds.).

Excavations at Tell Hesban uncovered 19 strata, extending from the Iron Age to the Mamluk period. The absence of remains that can be dated to the Late Bronze Age has cast doubts in some quarters on the site's identification as the capital of King Sihon. The site appears to have been first settled in the Iron I period (ca. 1200-900 B.C.). This settlement was subsequently abandoned to be followed by an assumed occupational hiatus of ca. 150 years until the end of the 9th century B.C. when the Iron II settlement was founded. Throughout the millennium ca. 1500-500 B.C., nomadic pastoralists were becoming sedentary cultivators and vice versa. The two forms of subsistence existed side-by-side and were interdependent. Between the 12th and the 6th centuries B.C., the rate at which the population sedentarized exceeded the rate at which it nomadized, resulting in a gradual build-up of sedentary villages and intensification of

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land use in the project area. The highest density of settlement was reached during the 7th and 6th centuries B.C. Archaeological remains in the region surveyed that can be dated to this period include the remnants of farmsteads, farm towers, cisterns and a large reservoir at Tell Hesban. The inclusion of several cylinder seals and other emblems of delegated authority in the finds from this period indicate that a form of urban-oriented, elite-controlled agriculture prevailed during those two centuries.

The return to nomadism, which followed toward the end of the Iron II period, evidenced by the abandonment of most of these facilities, began to occur during the 5th century B.C. and continued throughout the 4th, 3d and into the 2d centuries B.C., the early Hellenistic period. During the Hellenistic period the situation in the project area was unstable as the region was divided among several political entities. In the late Hellenistic period most of the area was annexed by the Nabataean Kingdom and then later came under the rule of the Hasmonean Kingdom of Judea. The late Hellenistic remains at Tell Hesban include a 1.8 m thick stone wall which surrounds the summit of the tell. This wall and the high proportion of artifacts recovered that were military in nature—armor scales, sling stones, maceheads and arrowheads—has led to the conclusion that Hesban functioned as a border fort in that period. The fort was probably occupied by soldiers who were also farmers and may have played a role not only as agents of Hellenization, but also as leaders in the reintroduction of sedentary agriculture in the region.

During most of the early Roman period (A.D. 63-135) Esbus, as it was then known, continued to be used as a fort and as a temporary home for semi-sedentary cultivators and nomads. The perimeter wall was still in use and caves on the tell were used as dwellings. Surveys in the area have revealed that sedentary activity intensified during this period but that village farmers still coexisted with nomadic pastoralists. During the latter part of the early Roman period most of the project area was again in the

Aerial view of Tell Hesban.
Photo by James A. Sauer.



territory of the Nabataeans. In A.D. 106, the Nabataean Kingdom was annexed by the Emperor Trajan and became part of the Roman Provincia Arabia. The towns of Esbus and Madaba and their hinterlands were organized under one provincial government, beginning a period of political stability during which the region flourished.

The late Roman period was a time of rapid urbanization at Esbus and intensification of land use in the surrounding area. An important catalyst in this transformation was the fact that, during this period, Esbus became a way-station on the Esbus-Livias road and was also connected to the *Via Nova Traiana*, the main north-south highway. At Tell Hesban the archaeological record shows a complete change in living patterns at this time. Esbus had grown from the status of village to town complete with public buildings. The fort was no longer in use and the caves used in the previous period had been filled in. A Roman temple was erected on the acropolis and a monumental staircase connected the temple with an extensive plaza below. Coins were found at the site which had been minted locally. Thus, Esbus had become a "poor cousin" of such famous Roman cities as Philadelphia (Amman) and Gerasa (Jerash). The late Roman town is thought to have been destroyed by an earthquake in A.D. 363.

At Tell Hesban there is no evidence of a clearly defined break between the late Roman and early Byzantine periods, with the exception of the extensive damage caused by the earthquake; the monumental buildings continued to be used. There is, however, no evidence from the earliest stratum of this period for the additional building activities which had been an important facet of the previous period. It is not until the 5th century A.D. that there is evidence for build-up on the tell; this stratum has also revealed the first evidence of Christianity at Esbus. At some time during the 5th or early 6th centuries A.D., a Christian basilica, with an inscribed apse and a mosaic pavement, was erected on top of the Roman colonnaded area on the acropolis, reusing much of the Roman masonry. The following stratum held evidence for further

25 year reunion of the Hesban project, 1993. Front row: Randy Younker, Sigfried Horn, Director General of Antiquities Safwan Tell, Lawrence T. Geraty, Larry Mitchel, James Fisher; 2d row: Walter Rast, Roger Boraas, Douglas Waterhouse, Robert Ibach, Elizabeth Platt and Bjornar Storfjell; back row: Bastiaan Van Elderen, David Merling, Bert de Vries, James Sauer, John Lawlor and Øystein LaBianca.



growth in population and the expansion of Esbus into the surrounding area. Two additional Christian churches were constructed at Esbus at this time.

Although it was not feasible to divide the Byzantine pottery from the area surveyed into sub-periods, it can be stated that the Byzantine period (A.D. 365-661) as a whole was one in which more towns and villages were settled than in any other period in the history of the project area until the present day. There is also evidence for increased concern about water management. Nabataean-style flood water irrigation technology was used during this period, as well as Roman-style reservoirs and water-mills, on a scale never before seen in the region. One apparent consequence of this intensification of agricultural activity and sedentary herding was that there was little room left for the traditional camel nomads, as every tract of land was being exploited. This alienation of the camel pastoralists in Transjordan and elsewhere during the Byzantine period resulted in an accumulation of Arab tribesmen in the desert who would eventually rally to the banner of Islam and cause the overthrow of Greco-Roman dominance in the Near East.

The Umayyad period (A.D. 661-750) was one of relative prosperity in Transjordan because of its proximity to Damascus. At this time the project area was located in the military province (*jund*) of Palestine. Hesban itself continued to function as a town though there was a sharp decline in the number of archaeological loci at the tell from those of the preceding Byzantine period. In general, there seems to have been basic continuity at the site involving the reuse of earlier structures, rebuilding and adaptation of others and some new building within the older structural framework. Density of sedentary occupation in the surrounding area decreased sharply at this time.

During the Abbasid period (A.D. 750-969), Transjordan went into a period of decline when the center of political power shifted to Baghdad; many of the major cities and towns diminished or were completely abandoned. At Tell Hesban there is no archaeological evidence to suggest a permanent settlement there that can be dated to the Abbasid and Fatimid (A.D. 969-1200) periods, though the site may have been used seasonally by nomads. In the latter part of the Fatimid period a revival of the eastern caravan trade created new economic opportunities which increased during the Ayyubid period (A.D. 1200-1260) when an Ayyubid principality was established in Transjordan. This period witnessed further developments in commerce and a revival of more intensive forms of agriculture which resulted in prosperity for many villages and towns. This process intensified during the early Mamluk period (A.D. 1260-1400) when central Transjordan benefited from its location on the route between Syria and Egypt. According to historical records Hesban was the regional capital, with 300 villages attached to it, and served as a rest-stop on the postal route between Damascus and Kerak at this time.

The archaeological evidence from Tell Hesban and the surrounding area supports this picture. The Ayyubid stratum at the tell yielded little occupational debris. In contrast, the earliest Mamluk strata revealed evidence for large-scale rebuilding, often involving the reuse of the Roman-Byzantine ruins. The architectural remains include an elaborate bath complex, a possible caravanserai, a large baking facility and several large cave-complexes that appear to have served as permanent residences. The town

went into a decline during the late Mamluk period which is also apparent in the decrease of permanent settlements in the surrounding area. There is scant evidence for permanent occupation in the project area until the 19th century, which saw the development of villages in the region, many of which still exist today.

Humeima

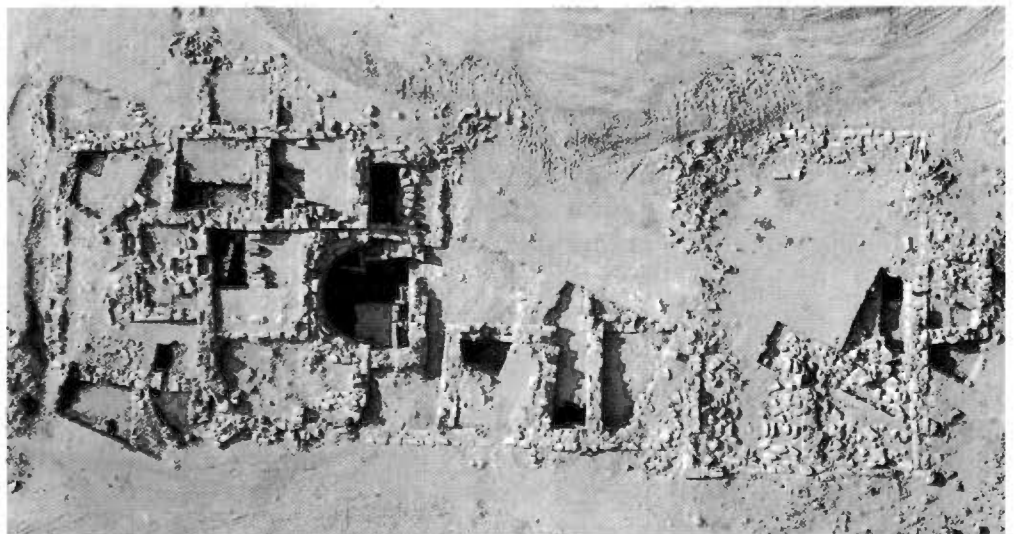
Humeima (ancient Auara) was the major center in the Hisma, Jordan's southern desert, in the Nabataean through early Islamic periods. The ruins of the settlement, approximately 10 ha in area, lie at an elevation of 955 m in the sandstone hills between Jebel Qalkha and Jebel Humeima, 3 km east of the Wadi Araba. Petra is 44 km to the north and Aqaba (ancient Ayla) 55 km to the south. According to Ouranios' *Arabica*, the Nabataean king Aretas III (87-62 B.C.) founded Auara in response to an oracular injunction to build a town at the site.

In the 1800s and early 1900s, the site was visited by many explorers, including N. Gleuck and A. Stein; Stein provided the best written description of the site prior to its excavation. The site was briefly excavated by the Jordanian Department of Antiquities in 1965 but the results were not published. Survey of the site was initiated by David Graf, then of the University of Michigan, in 1979. In 1980-83 he was joined by John Eadie, also of the University of Michigan, and by John P. Oleson of the University of Victoria in 1981-83.

In 1986-87, Oleson surveyed the region around Humeima for structures related to the water-supply system of the town and in 1989 began excavation of the center of the settlement; these excavations continue at present. Graf has continued his survey of the regional road system and rock-cut inscriptions.

The habitation area of Auara is clearly marked by piles of tumbled building stones and rubble made of dark red sand-stone. Approximately 30 structures, probably

Aerial view of Humeima. Photo by J. Wilson Myers and Eleanor Myers.



domestic in character, are clearly visible in aerial photographs. They consist, for the most part, of square or rectangular complexes of small rooms arranged on two or three sides of a small courtyard. The evidence from ceramics found on the surface and in the excavation of one of the houses suggests that the visible structures are primarily Umayyad/Abbasid in date and that some of them rest on earlier walls.

Nothing is known of the earliest history of the settlement but both early and middle Nabataean ceramics were found at the site and an extensive water-supply system was constructed there in the 1st century B.C. This consisted of: an aqueduct of traditional Nabataean design (a ground-level, roofed stone conduit) which carried water from 'Ain Ghana, 18.9 km away, to an open reservoir at the northern end of the site; a branch of the aqueduct that was added at a later date; and two large roofed reservoirs, fed by run-off water from a catchment area to the north, in the center of the settlement.

More than 50 ancient rock-cut and constructed cisterns, several wadi barriers, a dam and carefully modified run-off fields have been identified in the catchment area north, east and south of Humeima. Rock-cut Nabataean and Roman tombs occupy the ridges west of the site. Other Nabataean structures lie beneath later buildings and the thick layer of water-deposited silt which covers the center of the settlement.

During the Roman and Byzantine eras the site flourished; the *Via Nova Traiana*, built along the course of a pre-existing Nabataean north/south road, passed through or close to the settlement. In the late Roman or early Byzantine period a military camp was built at the northern edge of the site. A typical Roman *castrum*, with a reservoir and a gate in each of the four outside walls, is still clearly visible on the surface and the remains of a Roman bath building and a Byzantine church were excavated. In the Umayyad or early Abbasid period, a house or market complex was constructed on top of another Byzantine church and a large structure, excavated in 1992, has been identified as an Umayyad or early Abbasid caravanserai or palace. The building might have been constructed soon after A.D. 687/88, by 'Ali ibn 'Abd Allah ibn el-'Abbas, when Auara became a center for the Abbasid family's revolt against the Umayyads. Ceramic evidence shows a marked decline in habitation after the mid-8th century, but there are traces of intermittent occupation through the Ottoman period.

The results of the surveys and excavations at Humeima and in its vicinity have been published in preliminary reports and articles, the most recent being J. P. Oleson, "The Humeima Excavation Project: Preliminary Report of the 1991 Season," in *Echos du Monde Classique/Classical Views* 11 (1992) and J. P. Oleson, "The Water Supply System of Ancient Auara: Preliminary Results of the Humeima Hydraulic Survey," in *Studies in the History and Archaeology of Jordan*, IV (1992).

Kerak Plateau Survey

The Kerak plateau survey was directed by J. Maxwell Miller and Jack M. Pinkerton and sponsored by Emory University in association with the American Schools of Oriental Research and the Department of Antiquities of Jordan. It involved four summers of fieldwork (1978-79, 1982-83) and covered the Kerak plateau from the

southern rim of Wadi el-Mujib to the northern rim of Wadi el-Hasa and from the edge of the Dead Sea escarpment to the desert fringe (as marked by Wadi el-Lejjun and an imaginary line from the Roman site of el-Lejjun southward). Since this survey area corresponds roughly to the heartland of ancient Moab, the project was originally called the "Central Moab Survey." The plateau consists in the main of gently rolling terrain, averaging 1100 m in elevation. In spite of disadvantages such as thin soils and relatively few springs, abundant rainfall from the Mediterranean, spread over five or six months and combined with the absorbent character of the soils, allows a fairly productive crop yield. The Kerak plateau is covered with village sites which show evidence of having been occupied off and on throughout the centuries.

In addition to its isolation, the region between the Mujib and the Hasa was unsafe for travel during the 19th century. Thus, its archaeological remains received little attention until the end of that century when, for a brief period (1894-1910), the Ottoman government took a more active role in governing and policing the area. Three important developments occurred during this brief period: F. J. Bliss clarified the relative positions of the upper branches of Wadi el-Mujib (compare the confusion in earlier maps); R. Brünnow, assisted by A. von Domaszewski, made a systematic study of the Roman road system and associated fortifications of *Arabia Petraea*, including the Moab segment of the *Limes Arabicus*; and A. Musil prepared a 1:300,000 scale map of northwest Arabia which indicated the names and approximate locations of more than a hundred ancient ruins between the Mujib and the Hasa.

The discovery of the Balu' Stela at Khirbet el-Balu' by R. Head in 1930 initiated a second brief flurry of archaeological exploration of the region. J. W. Crowfoot and W. F. Albright made soundings at Balu' and Ader respectively in 1933, and N. Glueck began his survey of the Transjordan that same year. Glueck first gave attention to the region east of the Dead Sea in 1933 and made several return visits in 1936. E. Olavarri's soundings at Khirbet el-Medeinch in 1976 marked what has turned out to be a third flurry of archaeological activity in the region between the Mujib and the Hasa. Along with the Moab Survey, several important projects have been conducted in the area since 1976 by S. T. Parker, F. C. Worschech, J. Johns, A. McQuitty, and others.

The goal of the Kerak Plateau Survey was to develop a comprehensive gazetteer of the archaeological sites on the Kerak plateau. This involved four tasks: (1) "relocating" and establishing grid coordinates for the archaeological sites mentioned by previous investigators; (2) covering the ground systematically in order to find sites which had been missed previously; (3) examining and preparing descriptions of all sites on the plateau, whether previously known or not; and (4) collecting a sampling of surface pottery from each site. In all, 443 sites were located and examined. All of the major historic periods, beginning with Early Bronze I, are represented on the plateau. Some prehistoric sites were also discovered and reported to specialists but, as the survey crew itself did not include prehistorians, these sites were not studied comprehensively in the course of the actual survey.

The final report, published as *Archaeological Survey of the Kerak Plateau* (ASOR Archaeological Reports 1, 1991), also includes a full bibliography for each previously known site and summaries of what earlier investigators had reported regarding it.

Khirbet Iskander

The site of Khirbet Iskander is located approximately 24 km south of the town of Madaba, about 400 m east of where the modern King's Highway crosses the Wadi el-Wala, in the region of Jordan known in antiquity as Moab. The tell rises approximately 20 m above the landscape and covers 7.5 acres. Although rainfall in the region is not abundant, the perennial Wala would have provided an ample supply of water to the inhabitants. Today the area in the immediate vicinity of Khirbet Iskander supports intensive agriculture: orchards, olive groves, vineyards and field crops. The settlement is strategically situated at a major crossing of the Roman road which followed the route of the ancient King's Highway.

Khirbet Iskander was described by several late 19th and early 20th century explorers and surveyed by N. Glueck in 1930, who first dated the site to the Early Bronze IV period (ca. 2350-2000 B.C.). P. Parr made soundings there in 1960 and identified Late Chalcolithic/Early Bronze I and Early Bronze IV ceramics. Survey, topographical mapping and soundings of the site were undertaken in 1981, under the direction of S. Richard of Drew University, in conjunction with the American Schools of Oriental Research and Upsala College; excavation began the following year and continued in 1984 and 1987. The excavations revealed that there had probably been only two periods of settled occupation at Khirbet Iskander: Early Bronze I and Early Bronze IV. Khirbet Iskander is the first known fortified site of the EB IV period in Palestine-Transjordan, but appears to have been abandoned after the end of EB IV.

Excavation concentrated primarily on the EB IV levels in an attempt to determine the nature of the settlement of this period. The EB IV period had previously been considered as one in which most of the population had been involved in pastoral nomadism. Another goal was to identify continuities between the EB IV cultural complex and that of the preceding EB III. In the northwestern section of the mound seven architectural phases were identified. The earliest phase (Phase G) consisted of a structure dated by ceramics to the EB I period. Immediately above this were the

Khirbet Iskander. Photo by
James A. Sauer.



remains of a domestic structure dating to the beginning of EB IV (Phase F). In Phase E, a perimeter wall, consisting of a massive stone base and a mudbrick superstructure, was constructed and, in the following phase (Phase D), an outer wall with a square tower was added and the space between the two walls filled with rubble. The resulting wall was 2.5 m wide and is preserved to a height of 3 m. In Phase C, domestic structures were built within the fortifications.

The structures of Phase B appear to have had a different function from those of the previous phase. Phase B comprises two rooms of a large building outfitted with flagstone benches. The evidence provided by the associated ceramics and other artifacts suggests the use of this building as a public facility, perhaps part of a larger complex with a cultic function. In the latest phase (Phase A) the defensive walls were no longer in use though a stretch of a less substantial wall was uncovered just to the north, implying the continued need for defensive measures at that time. The material remains of this phase suggest that the area was again being used for domestic purposes. The structures of this period were houses of the longroom type which had pillars inside to support the roofs; many domestic features and artifacts were associated with these structures.

Excavations in the southeastern section of the mound uncovered three architectural phases which showed the transformation of what originally had been a domestic area into one with a public function and monumental architecture. Phases C and B were comprised of domestic structures. The latter phase was distinguished by interconnected broadroom houses with well-made walls preserved to a height of 1.25 m. Some of the structures had evidence of specialized activity and perhaps functioned as workshops. In Phase A, this domestic area was transformed first into a tripartite entryway with a plastered surface (A2) then into a bench-lined thoroughfare with two modified guardrooms (A1). A large building of massive construction was erected in Phase A2. In Phase A1 a series of alterations and additions, including benches and steps, provided the basis for interpreting this structure as a gate complex that was part of the town's defensive system.

Several cemeteries in the vicinity of Khirbet Iskander with tombs dating to EB IV were also investigated, though most of these had been robbed or destroyed by bulldozers. Most of these tombs were natural caves that had been modified for burial purposes; some of these also included a shaft. A number of the tombs had a circular shaft and a square chamber, features not found elsewhere in Palestine-Transjordan during EB IV. A collective burial of EB I date was also partially excavated.

The four seasons of excavation yielded evidence to support the hypothesis that permanent sedentary occupation was a viable life-style during a period (EB IV) previously considered to be a "nomadic interlude" between the urban Early and Middle Bronze Ages. The evidence also supports the view that the EB IV cultural complex shows strong affinities and continuity with the preceding EB III period.

The excavations at Khirbet Iskander have been published as preliminary reports in the *Annual of the Department of Antiquities of Jordan* (1982 and 1983), the *Bulletin of the American Schools of Oriental Research* (1984) and in the *Bulletin of the American Schools of Oriental Research Supplement* (25 and 26).

The Limes Arabicus Project

During the Roman and Byzantine eras (1st century B.C.-7th century A.D.), the southeastern frontier of the Roman Empire stretched across Jordan. In fact, Jordan boasts some of the best preserved Roman fortifications anywhere in the world. However, until the late 1970s, none of these sites had ever been excavated. These forts formed the *Limes Arabicus*, a Latin term meaning "Arabian Frontier." The *Limes Arabicus* Project began in 1976 with a surface survey that visited about 40 sites along the entire length of the Roman frontier in Jordan, from the Syrian border to Aqaba. Between 1980 and 1989, the project conducted five seasons of fieldwork, focussing on the frontier east of the Dead Sea. The *Limes Arabicus* Project is directed by S. Thomas Parker of North Carolina State University. Funding was provided by grants from the National Endowment for the Humanities, National Geographic Society, Dumbarton Oaks Center for Byzantine Studies, Samuel H. Kress Foundation and NCSU. Field staff each season included about a dozen professional archaeologists, two dozen students and 60-80 Jordanian workers. Crucial assistance was provided by the Department of Antiquities.

The project's research design sought answers to two main historical questions. Why had the Romans heavily fortified the frontier east of the Dead Sea about A.D. 300? Why were most of these same fortifications abandoned about two centuries later? In order to address these questions, research was pursued along four main lines of inquiry: (1) extensive excavation of the Roman legionary fortress of el-Lejjun, the largest military site in this sector, (2) soundings at four smaller Roman fortifications, (3) intensive surface survey of the frontier zone itself, and (4) intensive survey of the desert fringe east of the frontier. A great quantity of evidence was obtained through these excavations and surveys that shed light on both the two major questions and on many other historical issues.

Five seasons of excavation at Lejjun, the base of the Fourth Mars Legion, revealed substantial portions of its headquarters building, barracks, fortifications, bath, church, and other structures. Several buildings in the extramural civilian settlement, including a Roman temple and inn, were also excavated. The excavations revealed the complete

Aerial view of Lejjun. Photo by James A. Sauer.



stratigraphic history of the fortress from its foundation ca. A.D. 300 until its destruction by an earthquake in A.D. 551. The evidence shed light on the soldiers' military equipment, diet and religion. Soundings of the four smaller fortifications—the forts of Da'janiya, Khirbet el-Fityan, Rujm Beni Yasser and Qasr Bshir—revealed that all were occupied contemporaneously with the legionary fortress and thus aided in the reconstruction of the regional defensive system.

The surveys recorded a total of 537 archaeological sites, most new additions to the emerging archaeological map of Jordan. These ranged in date from Palaeolithic rock shelters to late Islamic forts. Many sites were interpreted as watchtowers built in the Iron Age, Early Roman (Nabataean) and Late Roman periods that served successively as the “eyes and ears” of the Moabites, Nabataeans and Romans. An innovative experiment was conducted in 1982 that manned 14 such forts and towers with staff members who attempted to transmit signals from post to post by smoke and fire in both daylight and at night, just as the Romans did. The surveys also revealed considerable traces of the nomadic Arab tribes, such as campsites and Thamudic inscriptions. These results added to the increasing evidence discrediting the long-held view that nomads leave no traces in the archaeological record.

In addition to the broader historical questions, many other problems have been investigated through detailed analysis by project specialists: architecture, pottery, coins, small finds, glass, chipped stone artifacts, paleo-botanical remains, animal and human bones, metal objects and geological samples.

The evidence suggests that the Roman military buildup about A.D. 300 was a response to an increasing threat from the desert posed by nomadic Arab tribes. The Roman response, largely engineered by the Emperor Diocletian (A.D. 284-305), included punitive campaigns against the tribes that extended deep into the desert, construction of many new fortifications, the installation of new military units and extensive repair of the regional road system. The success of this security policy is suggested by the growth of the local population and the spread of settlement right up to the edge of the desert in the succeeding early Byzantine period (4th-5th centuries A.D.). The abandonment of the frontier fortifications in the early 6th century was probably motivated chiefly by economic factors. The empire was under enormous pressure on other frontiers and the *Limes Arabicus*, with its many forts and garrisons, was costly to maintain. Thus Emperor Justinian, about A.D. 530, made the crucial decision to demobilize most of the Roman troops along the frontier and abandon the forts. This had momentous and, for the empire, disastrous consequences. It was in that very century that the Prophet Mohammed was born and Moslem invasions from the Arabian peninsula began early in the 7th century. The Moslem armies found no fortified frontier to contest their advance and moved on to the relatively easy conquest of Jordan and the entire Levant. Therefore, the decision to abandon the *Limes Arabicus* had important consequences for the subsequent course of history.

The results of this research have been published in a monograph (*Romans and Saracens: A History of the Arabian Frontier*, 1986), a two volume interim report on the 1980-1985 seasons (1987), some 30 scholarly articles and 10 popular articles. The final report, in two volumes, is nearing completion.

Madaba Archaeological Park Project

The modern city of Madaba, located 30 km southwest of Amman amidst the fertile plains of the Central Jordanian Plateau, continues an urban tradition that can be traced back in time at least 3500 years. The ancient settlement, now engulfed by the modern town, lies on a natural rise created by branches of the Wadi Madaba. On top of this rise are the distinguishable remains of a large low-lying tell and acropolis. Surrounding the tell, but primarily to the north, are the remains of the classical town, represented most notably by the churches and mosaic pavements which have drawn Madaba so much fame. Situated on the “Kings’ Highway,” Madaba (ancient Medeba), was an important Moabite center. Later the town fell within the Nabataean sphere of influence, then was incorporated into the Roman *Provincia Arabia* in A.D. 106. Christianity gained an important foothold in the region in the Late Roman period and, by the mid-5th century, the Christian community had grown large enough to warrant having a bishop. Madaba continued to flourish during the 6th through 8th centuries. The 6th century in particular witnessed a building boom in the town during which most of the churches flanking on of the Roman streets were constructed. Following the Islamic conquest and the establishment of the Umayyad Caliphate, Madaba continued to function as an important regional center and many of the churches continued in use. While excavations testify to continued habitation, the literary records remain silent about Madaba from the 8th until the early 19th century, when western Europeans began arriving in the Near East in search of adventure and traces of the past. During the interval, Madaba was probably little more than a small village.

In 1807, the ruins of the ancient town were visited by U. Seetzen then, in 1880, the town was resettled by Christian families from Kerak who constructed their houses among the remains of the ancient buildings. In the course of this activity, many of the mosaic pavements were discovered. G. Schumacher, an engineer, drew the first

The Church of the Virgin and the Hippolytus Hall. The Roman Street is behind.



MADABA ARCHAEOLOGICAL PARK

general plan of the ruins, published in 1895, and A. Musil surveyed the region in 1896. In the 1960s, systematic excavations began in Madaba, directed by U. Lux of the German Evangelical Institute with the Jordanian Department of Antiquities. In the mid-1980s, M. Piccirillo excavated the so-called Burnt Palace and the construction of a modern building exposed (and partially destroyed) part of the ancient Roman *decumanus*. In 1991 a major archaeological project was started in Madaba, by ACOR and the Ministry of Tourism and Antiquities, with funding provided by the United States Agency for International Development (USAID) and the Canada Fund. The purpose of the project is the creation of an archaeological park within the town. The excavations are simultaneous with the renovation of several late Ottoman and 1930s structures and the construction of shelters over important Byzantine mosaic pavements. Part of the uniqueness of the project is the integration of archaeology and architectural renovation and design, with the ultimate goal of touristic presentation. Excavations in the vicinity of the Roman street, including the Church of the Virgin and adjacent Hippolytus Hall, were carried out in 1991 and 1992, under the direction of M. Piccirillo. In 1992 and early 1993, excavations of the street and the Church of the Prophet Elijah were directed by C. Lenzen. Excavations are currently directed by G. Bisheh and P. Bikai is directing the excavation of several ancient cisterns in the vicinity of the park.

Architect A. Khammash is constructing shelters for the mosaics at the Church of the Virgin, the Hippolytus Hall and the Church of the Apostles (the latter is outside of the limits of the park) and is also involved in the restoration of several buildings within the park. Finally, Timothy Harrison carried out an archaeological survey of the whole of ancient Madaba so that areas which need to be protected can be identified.

Excavations were carried out in the vicinity of the Burnt Palace where approximately 43 m of the Roman street are now visible as well as areas to the south and the north of the street. It appears that the road was narrowed on the south and the north to

One of the Burnt Palace
mosaics uncovered in 1993.
Photo by Ghazi Bisheh.



create space for structures. Based on a probe of the foundation of the Church of el-Khadir, located to the south of the road, this seems first to have occurred in the late 5th/early 6th century.

In the east, the so-called Burnt Palace was cleared. This structure is now referred to as the “eastern structure” and is part of an extensive complex extending below buildings dating to this century and probably consisting of several structures and secondary streets. Partial mosaic pavements have been found to the north: one a figural representation of Autumn, one of Tyche, one of a bull and a lion, and two with geometric designs. The foundation of the south entrance was excavated; the date of the structure is the mid-7th century, contemporary with a parallel structure to the west, the “west structure.” Both were constructed reusing architectural elements from the earlier city. The “west structure” had an intricate drainage system which seems to have been altered in the Islamic periods. The “east” and “west” structures were destroyed in all probability by the A.D. 746/47 earthquake.

During the following two centuries, the earlier Byzantine structures were altered. The wall configuration suggests stores. The street in its narrower Byzantine form continued to be used; in other words, the integrity of the city plan was essentially maintained probably through the 9th/10th centuries.

Throughout the excavated area, evidence of Mamluk occupation has been found. An industrial installation was excavated adjacent to the Church of el-Khadir, part of which was a fire pit for lime. The remnants of a kiln and a major wall bisecting the original Roman street diagonally were excavated. The nature of this occupation presently remains obscure.

Significantly, the present excavations point to a relative continuity of occupation in this part of Madaba from the founding of the Roman city to the present. Indeed, there is now evidence for an Ottoman occupation prior to that of the late 19th century when the town was supposed to have been refounded.

The Madaba Plains Project

The Madaba Plains Project is a continuation of the Tell Hesban project and has included many veterans of Tell Hesban as members of its excavation and survey teams. The project involves the excavation of selected sites, many of which were first identified by the Tell Hesban regional survey, and a multidisciplinary survey of the Madaba Plains following the concepts developed at Hesban. The Madaba Plain, the focal point of which is the town of Madaba, extends from Wadi Wala in the south to Tell el-Umeiri and Hesban in the north; in the west it descends from the plateau into the Jordan Valley and extends to the beginning of the desert in the east. The plain is broad and relatively flat with no major wadi systems to disturb it. Today it is heavily sown with grain and, when irrigated, produces fruits and vegetables. Excavations and surveys connected with the Madaba Plains Project were carried out in 1984, 1987, 1989, and 1992 and will continue in 1994. Lawrence T. Geraty of La Sierra University, Øystein LaBianca and Randall Younker of Andrews University, Larry G. Herr of

MADABA PLAINS

Canadian Union College and Douglas R. Clark of Walla Walla College are co-directors of the project.

One of the objectives of the Madaba Plains Project has been to investigate sites in the vicinity of Tell Hesban which have been identified as having archeological material present that predates the original occupation at Tell Hesban (Iron I). Surface surveys in the 1970s had identified two major tells with evidence of Bronze Age occupation: Tell Jalul and Tell el-Umeiri. Tell Jalul was selected for excavation as it had more extensive Bronze Age remains and a more strategic location than Tell Umeiri. Also, Tell Jalul does not appear to have been occupied after the end of the Iron Age. Excavations were scheduled to begin at Tell Jalul in 1982 but were cancelled and attention was turned to Tell el-Umeiri.

Tell el-Umeiri is located 12 km northeast of Tell Hesban at the southern edge of the hilly region which surrounds Amman. Tell el-Umeiri actually consists of three separate sites which encircle an important spring. Tell el-Umeiri West has remains which range from the Chalcolithic through Iron Age periods, Tell el-Umeiri East was occupied in the Iron Age through the Umayyad period and an area to the north has settlements of the Islamic period, including the modern village of Buneiyat. Excavations have concentrated on Tell el-Umeiri West. Excavation at the tell and surveys in the surrounding region have determined that the area was most extensively settled in the Early Bronze III period and that the tell continued to be occupied in the Middle and Late Bronze Ages despite a significant decrease in settlement in the hinterlands.

Occupation again began to increase in the Iron I period and continued in Iron II, with a high-point reached in the 7th and 6th centuries B.C. The Iron I defensive system consists of a casemate wall with a beaten earth rampart below, held in place by a retaining wall, and a dry moat at the bottom—one of the best examples of such a system discovered to date. There is evidence for a fiery destruction in the middle of and at the end of the Iron I period. The wall was reused in the Iron II period and other architectural remains of this period include those of massive structures which may have been used for governmental activities. This assumption has been strengthened by the discovery of a seal impression, written in the Ammonite script of ca. 600 B.C., of a royal official,

Tell Jalul. Photo by James A. Sauer.



which contains the name of the king whom he served, King Ba'alīs (Jeremiah 40:14). These administrative buildings continued into the Persian period from which two provincial seal impressions were found.

Excavations at Tell Jalul, originally scheduled for 1982, were finally begun in the summer of 1992, under the direction of Randall Younker of Andrews University. Based on survey data, the tell is thought to have substantial Bronze Age remains. The first season of excavations uncovered Iron II stone pavements which are thought to be part of a paved ramp leading to the city gate. There is also evidence for a destruction level at the end of the Iron I settlement.

There have also been other projects: In 1987, an "agricultural complex" dating to the Persian/Hellenistic period was excavated. The complex, known as Rujm Selim, consisted of a central structure built of large stones which contained two cisterns, two wine presses and a storage vat, among other features. In 1989, excavations were carried out at el-Dreijat, an Iron II fortress 2.8 km south of Tell el-Umeiri. The fortress had been rebuilt in the Persian and early Hellenistic periods. In 1989, excavations began at Tell Jawa as part of the Madaba Plains Project. In 1991 and 1992, the excavations continued as a separate project directed by P. M. Michèle Daviau of Wilfrid Laurier University. Occupation at Tell Jawa dates primarily to the Iron II period. Architectural remains from that period include a 7 m thick casemate wall, the ground floor of a defensive tower and domestic buildings. The discovery of the head of an Ammonite figurine has aided in the identification of the site, which is located on the borders of the ancient kingdoms of Ammon and Moab, as an Ammonite stronghold. A building of the Byzantine-Early Umayyad period was also investigated.

The regional survey, which has been conducted by a number of specialists in conjunction with the various excavations, has been responsible not only for the identification and dating of sites by sherd collections, but also for the collection of a variety of data, including that of an ecological and ethnographic nature, pertinent to the understanding of the food production activities of the ancient inhabitants of the region. So far three volumes of the *Madaba Plains Project* publication series have appeared.

Pella

Tabaqat Fahl, ancient Pella of the Decapolis, is situated in the lower foothills of the East Jordan Valley at the junction of three major ecosystems and has access to plentiful fresh water in the vicinity. The forested hills to the east and fertile agricultural lands of the Jordan Valley to the west provide ample resources throughout the year. Pella also achieved importance in antiquity because of its position astride two major trade routes. The site is dominated by the 400 m long, 30 m high main mound of Taqat Fahl and the 65 m high natural hill of Tell el-Husn. The perennial Wadi Jirm flows through the center of the site, separating the two main areas.

Tabaqat Fahl appears on H. Kiepert's 1842 map of Palestine and was visited by E. Smith and E. Robinson in 1852, who confirmed its identification as Pella of the

PELLA

Decapolis. G. Schumacher conducted an extensive survey of the ruins in 1887 and , in 1958, brief soundings were undertaken under the auspices of the ASOR.

Major archaeological excavations at Pella began in 1967, under the direction of R. H. Smith of the College of Wooster, but were interrupted by the outbreak of the Six-Day War. Field operations resumed in 1979 under the joint auspices of the College of Wooster, the University of Sydney, Australia, and the Jordanian Department of Antiquities, directed by R. H. Smith (Wooster), J. B. Hennessy and A. W. McNicoll (Sydney). The College of Wooster terminated their excavations at Pella after the 1985 season. Excavations by the University of Sydney continue at present.

Stone tools dating as far back as the Lower Paleolithic period were found in the vicinity of Pella. The first evidence for human occupation at the site itself consists of predominantly Pottery Neolithic (ca. 5000 B.C.) sherds and flint implements found in several areas on and around the main tell. The Chalcolithic occupation covered at least 35 hectares and was partially excavated.

Ceramics dating to the Early Bronze Age were recovered from the main tell, Tell el-Husn and tombs in the Wadi el-Hammeh. Mudbrick walls on the main tell and a massive stone platform on Tell el-Husn have also been dated to this period. In the Middle and Late Bronze Ages (ca. 2000-1200 B.C.), Pella was a substantial walled town. The Middle Bronze Age fortification wall at the southeastern segment of the main tell is over 3 m thick and is preserved, in some places, to a height of over 10 m. Domestic structures and tombs of the Middle Bronze period were also excavated. Pella's prosperity at this time is attested by rich artifacts. These include both coarse and fine ware ceramics, alabaster vessels, cuneiform tablets, figurines, carved ivory, jewelry of bronze, gold and silver, cylinder seals and scarabs. This prosperity continued, apparently without a break, into the Late Bronze Age. Artifacts recovered from Late Bronze Age contexts include Cypriote imports as well as Egyptian goods,

Pella. Photo by Gaetano Palumbo.



indicating a widening of trade horizons in the Late Bronze I period. There appears to have been a decline in settlement size at the end of the Late Bronze Age but the evidence is not conclusive. The appearance of Mycenaean ceramics at the same time suggests even more extensive trading connections. In some of the excavated areas there is evidence for a fiery destruction which can probably be dated to the early 12th century B.C. Significant cultural continuity from the Bronze Age into the Iron Age is indicated by the immediate rebuilding of several of the destroyed structures. However, the quality of the architecture changed markedly for the worse, suggesting some recession during the period. Evidence for occupation continues into the Babylonian period in the early 6th century B.C., after which time the site appears to have been uninhabited during the nearly three centuries of Persian rule (539-332 B.C.). According to the literary evidence, Pella was refounded in the Early Hellenistic period but archaeological evidence is sparse. Structures of the Late Hellenistic period have been identified in several areas and fortresses were constructed on Jebel Hammeh and Jebel Sartaba during that period.

In 64/63 B.C. Pella was incorporated into the Roman Empire and by the 1st century A.D. it had become one of the important cities of the Decapolis, but on the main mound no Early Roman structures have yet been identified and architectural remains of the Late Roman period are also sparse. Buildings of the Early Roman period were excavated in the "Civic Complex" in the Wadi Jirm. These included a small covered theater, a bath complex and a large, paved area. Excavations in this area, which undoubtedly contains other evidence of Roman occupation, have been impeded by thick alluvial deposits and by the height of the water table. The numerous Roman tombs discovered in the vicinity attest to the city's large population during this period.

The city reached its greatest size in the 5th and 6th centuries A.D. Byzantine domestic and commercial structures are visible on the main mound and in its vicinity and on the western slope of Tell el-Husn. Monumental stone architecture on the summit of Tell el-Husn was most likely part of a defensive system. Three Byzantine churches have also been excavated and partially restored.

In A.D. 635, Pella peacefully transferred to Muslim rule and reverted to its original pre-Classical name of Fahl or Fihl. The smooth transition is reflected in the archaeological record, where there is no indication of destruction. The Umayyad occupation often involved the reuse or remodelling of existing Byzantine structures and Pella's churches continued to be used for Christian worship in the early part of the period. The earthquake of A.D. 746/47 devastated Pella.

Large structures which might have been part of a new city center to the northeast of the main mound, including a market and a caravanserai, have been dated to the following Abbasid period, then Pella appears to have been sparsely populated for about 200 years, until the 13th century. On the main mound, a Mamluk mosque and the remains of a Mamluk and early Ottoman village and its cemetery have been found. The evidence points to continuous occupation of the site from the late 13th or early 14th centuries until sometime in the 16th century. The site was not reoccupied after this time, until the late 19th century.

The major publications of the excavations at Pella are: R. H. Smith, *Pella of the*

Decapolis, Vol. 1 (1973); R. H. Smith and L. P. Day, *Pella of the Decapolis*, Vol. 2 (1989); A. W. McNicoll, R. H. Smith and J. B. Hennessy, *Pella in Jordan*, Vol. 1 (1982); and A. W. McNicoll, P. C. Edwards, J. Hanbury-Tenison, J. B. Hennessy, T. F. Potts, R. H. Smith, A. Walmsley and P. Watson, *Pella in Jordan*, Vol. 2, *Mediterranean Archaeology Supplement* 2 (1992).

Petra Church Project

The rose-red city of Petra is primarily known for its magnificent rock-cut tomb facades from the Nabataean and early Roman periods. Regretfully, the habitation areas of the city and the later periods in Petra have not received sufficient scholarly attention. The Byzantine period, marked by the steady advance of Christianity and by monuments of ecclesiastic architecture, is still poorly documented in Petra, but it seems that the process of Christianization in Petra was slow and uneven. Ancient historians mention churches being built during the 4th century A.D., but also the presence of curious practices of mixed pagan idolatry and Christian elements. As late as the early 5th century, pagan temples and priests flourished in Petra.

In light of this, the discovery of a Byzantine church by Kenneth W. Russell in 1990 was a significant breakthrough in our understanding of the Byzantine period in Petra. Following his death in 1992, the archaeological excavations of the church were directed by Pierre Bikai, ACOR. Actual work in the field was led by co-directors Zbigniew Fiema, Robert Schick and Khairieh 'Amr. The project was funded through the United States Agency for International Development (USAID), and supported by

the Ministry of Tourism and Antiquities of Jordan. Although the excavations ended only in March 1993 and conservation work at the site is still in progress, some observations on the church can now be offered.

The church is a tripartite basilica, measuring ca. 26 m (E/W) by 15 m (N/S), with three inscribed apses and three corresponding entrances in the western wall. Some parts of the church's walls are preserved up to 3 m above the floor level. Much of the material used in the construction of the

Personification of Summer from the southern aisle of the Petra church. Photo by Bronwyn Douglas.



church, such as the capitals, door jambs, and reliefs, must have come from the already ruined monuments of the Nabataean and Roman periods in Petra. While it is clear that the church underwent some modifications after its construction, its final form as an ecclesiastical structure included a synthronon installation in the central apse with a large chancel platform in front of it. The church complex also included an atrium, a partially open, stone-paved courtyard which preceded the church proper on the western side, and a tower located at the SW corner of the atrium. Both the church and the atrium were also accessed by three doors in the northern wall of the complex beyond which at least two rooms existed in direct association with the church.

The preserved decoration of the church attests to its original magnificence. Both side aisles possess mosaic floors of patterns stylistically dated to the early 6th century A.D. In the northern aisle, three parallel rows of roundels depict native and exotic animals and a variety of vessels and containers, the latter perhaps of symbolic meaning. The eastern part of the southern aisle possesses a similar repertoire, while the remaining area of that aisle presents a variety of different motifs. The centrally situated panels contain anthropomorphic personifications of the Seasons, the Ocean, Earth and Wisdom. These are flanked by representations of animals and fish. Generally, the mosaics show little damage, although some of the damage could have been intentional. The mosaics inside both side apses are of bichrome geometric design. The preservation of the original marble pavement of the central nave, being a geometric design of an *opus sectile* type is, unfortunately, very fragmentary, but the marble stylobate for both northern and southern row of columns is still *in situ*.

A variety of marble relief screens was also found during the excavation. These include the screens for the chancel area and for enclosing the space of both side apses. Thousands of glass tesserae found scattered, some of them gilded, attest to the fact that

Chancel screen and altar installation in the southern apse. Photo by Bronwyn Douglas.



the upper parts of the walls, the semidome over the central apse, and the arches between the columns were magnificently decorated with mosaics.

In addition to the ceramic material, the excavation produced numerous small finds. Among them are coins, bronze and iron door installations (hinges, mounts), glass, ostraca, fragments of Nabataean and Greek inscriptions on stones reused in church construction, an amethyst gem and hundreds of iron nails. A large marble vessel decorated with two lions in full sculpture forming the handles, was reconstructed from more than 100 pieces. Numerous samples of wall plaster, mortar and charred wood fragments have been also collected for further studies.

Although the date for the church's construction is still under investigation, it is reasonable to assume that it was built in the later 5th century A.D. The collapse of church's walls and columns, well evidenced during the excavations, can be associated with an earthquake, perhaps that which affected Petra in A.D. 551. Prior to that event, the church suffered a fire which brought down the wooden roof, and was abandoned. The robbing out of the marble floor in the central nave must have preceded the structural collapse as well. Squatter occupation, documented in the atrium and probably in some parts of the abandoned church, could have continued into the early 7th century A.D.

A preliminary report on the project will appear in 1993 in the *Annual of the Department of Antiquities of Jordan* and final publication, already in preparation, will be part of the ACOR series.

Southern Ghors and Northeast 'Arabah Survey

The area covered by the Southern Ghors and Northeast 'Arabah Archaeological Survey (SGNAS) is part of the Great Rift Valley which extends from Turkey to Mozambique. The Southern Ghors include the area from Wadi Ibn Hammad, at the northern edge of the Lisan Peninsula, to Ghor Feifa. The Wadi 'Arabah extends from this area to Aqaba. A number of important wadis enter the survey area. The Wadi el Hasa in the north, a perennial stream, is the most reliable source of water, while the other wadis flow seasonally.

The Southern Ghors and Northeast 'Arabah have been of interest to explorers and archaeologists since the early 19th century. Visits to the area were made by H. H. Kitchener (1884) and A. Musil (1907-08). In 1924, W. F. Albright and A. Mallon undertook the first archaeological excavations in the area and several important surveys were conducted during the 1930s including that of N. Glueck, who combined surface and aerial reconnaissance. Others who have surveyed or excavated in the region in the past several decades are P. Lapp, R. T. Schaub, W. Rast, T. Raikes, D. McCreery, G. King, B. Frolich, W. Lancaster, A. Hauptmann, H.-G. Bachmann, G. Weisgerber, E. A. Knauf, K. Politis, G. Clark and M. Najjar.

The SGNAS was formulated in order to provide the first systematic investigation of the area. The surveys were conducted during two seasons, in 1985 and 1986, over an area stretching from just north of el-Safi southward to Wadi Fidan. The distance

surveyed from north-to-south was ca. 40 km while the width was considerably less due to the international border to the west and an increasingly rugged terrain to the east. The surveys succeeded in locating 240 sites ranging from lithic and sherd scatters to major architectural sites. The first season was co-directed by F. L. Koucky of the College of Wooster, and B. MacDonald of St. Francis Xavier University. The second season was directed by B. MacDonald. Funding for the SGNAS was provided by the College of Wooster, the University Council for Research of St. Francis Xavier University, the Social Sciences and Humanities Research Council of Canada, the Kyle-Kelso Foundation, Inc., the National Science Foundation, the National Geographic Society and Arizona State University.

The work of the SGNAS revealed that the earliest occupational evidence, recovered at one site, can be attributed to the Lower/Middle Paleolithic period. Middle Paleolithic sites are also few in number. The sites from both periods are restricted to the southern segment of the territory. This can be attributed to the high levels of Lake Lisan which was in the Dead Sea Rift during the Paleolithic periods. The SGNAS found neither Upper Paleolithic nor Epipaleolithic sites in the survey territory. Both Pre-Pottery and Pottery Neolithic sites are present and the Chalcolithic period is represented by both lithics and ceramics.

Occupation appears to have intensified during the Chalcolithic/Early Bronze period. Not only is there evidence of occupation throughout the surveyed area, but the number of sites increases as well. There is a possibility that copper mining and smelting began in the area at this time. The Early Bronze period is also represented throughout the area, but mostly in association with human skeletal remains. There are Early Bronze I cemeteries at both el-Safi and Feifa and Early Bronze IV cemeteries especially in the central segment of the area.

The SGNAS identified neither Middle Bronze nor Late Bronze Age occupational evidence. Iron I period presence is associated especially with mining and smelting sites in the southern extremity of the survey territory. There are indications from the number of both sherds and sites, of increased occupation and activity in the region during the Iron II period. Natural resources, e.g., copper-manganese ores, were probably extensively exploited at this time. The SGNAS found Hellenistic sherds only in the central segment of the survey territory. However, there are major Late Hellenistic-Early Roman and/or Nabataean sites in the area. There is evidence of copper mining and smelting during the 1st-4th centuries A.D. in the region immediately south of the survey territory.

Byzantine period sites are the most numerous of any period in the region, ranging from very small sherd scatters to villages. During the early Islamic period the entire area of the Southern Ghors appears to have been a fertile region for the growing and processing of sugar cane and indigo. There is also ceramic evidence for occupation during the late Islamic/Ottoman Period. Moreover, there are eye-witness accounts of a village in the neighborhood of el-Safi during the 19th century A.D.

Preliminary reports on the survey were published in *ADAJ* (1987) and *BASOR* (1988). The final report is: B. MacDonald, *et al.*, *The Southern Ghors and Northeast 'Arabah Archaeological Survey*, Sheffield Archaeological Monographs 5 (1992).

Umm el-Jimal

The walls, arches, gates and towers of this ancient city, some preserved to two and three stories, rise black and forbidding from the plain. Umm el-Jimal, one of the largest and most spectacular archaeological sites in Jordan, is an extensive rural settlement constructed of black basalt in the lava lands east of Mafraq, a 70-minute drive northeast of Amman. Umm el-Jimal is located in the semi-arid region of northern Jordan on the edge of a basalt plain created by prehistoric volcanic eruptions from the slopes of the Jebel Druze, 50 km to the north in southern Syria. This plain, known as the southern Hauran, receives about 100 mm of rainfall per year. By itself, this is barely sufficient for an occasional wheat crop but, with careful collection and storage of the run-off, it is possible to follow the spring wheat harvest with irrigated crops. The *Via Nova Traiana* passes 6 km to the west of Umm el-Jimal on its way from Bostra, in Syria, to Philadelphia (Amman).

The Umm el-Jimal Project has consisted of nine field seasons stretching over 22 years, and is expected to close out with a major season in 1994. Funding and support for the project has been provided by a number of small grants and major contributions from the Department of Antiquities, ACOR/ASOR, NEH, the Kyle-Kelso Fund, the Ambassador Foundation and Calvin College, its institutional base.

The 1972-73 season was devoted to mapping of the site, in order to fill in details omitted from the architectural survey done by H. C. Butler's team in 1905 and 1909. In 1974, preliminary soundings were made to obtain a representative sampling. These soundings determined that the basic stratigraphic profile ranged from Late Roman to Umayyad. In 1977 the focus was on four major structures: the Barracks, Praetorium, House XVIII and the perimeter wall. The results showed that the town was continu-

Umm el-Jimal. Photo by James A. Sauer.



ously inhabited from the Late Roman through the Umayyad periods and that there were no Early Roman/Nabataean occupation levels in the structures excavated. The fall of 1977 was devoted to the consolidation of the Barracks perimeter walls with force-pumped aerated cement.

In 1981, work included excavation of the Northeast Church, the Numerianos Church, various water channels and the Via Nova. This confirmed that the standing buildings are mainly the product of a rural agrarian culture that flourished in the Hauran from the 4th to the 8th centuries A.D. A major new discovery was the identification of the 100 m² ruined area between the Roman reservoir and the East Church as a *castellum* built ca. A.D. 300 and used as part of the defense system of the Roman frontier in the 4th century. In January of 1983 the gate of House XVIII was cleared and its walls consolidated.

In 1984, further work was done on churches and the Roman *castellum*. However, the major focus shifted to activities outside the walls of the Byzantine-Umayyad town. These included the completion of a walking survey of terrain within 10 km of the town, tombs and cemeteries and the wadi system with reservoirs governing ancient agriculture east of the town. The major discovery of the season was a Nabataean village buried under the moonscape rubble 200 m east of the town, in an area known locally as "el-Herri." The presence of this Nabataean, ER/LR site does much to explain the lack of earlier occupation layers under the Byzantine town, in spite of the presence of earlier pottery and numerous Nabataean and Greek tombstone inscriptions reused in the later structures.

In 1992, only surface work was done. This included architectural study of four Late Roman and Early Byzantine structures (three houses and the Praetorium) and detail mapping of the *castellum* and el-Herri, which has enabled not only accurate mapping, but also GIS computer imaging, begun this past year. The 1993 season is focused on consolidation and site development, including the stabilizing of the high walls of the Praetorium, and preparation of House 119 as a museum and rest house. The 1994 season will be devoted to excavation of el-Herri, the Nabataean-Roman village.

A simplified version of the history of the site follows from the above results: From the 1st to the 3d centuries A.D., a small Arab village with Roman features superimposed on Nabataean cultural influences flourished at el-Herri, until it met destruction ca. A.D. 270. Meanwhile, the Praetorium and a few other imperial Roman structures were erected 200 m to the west. Then, in ca. A.D. 300, the *castellum* was built, but it lost its military function late in the 4th century. To replace it, the much smaller Barracks was constructed early in the 5th century. Then, as imperial military presence diminished, the Early Byzantine town of the 5th and 6th centuries, consisting of over 150 houses and 15 churches, flourished—a product of a self-sufficient economy and security. This town survived in somewhat diminished form through the Umayyad period until it was finally abandoned, possibly after the earthquake of 747/48. After centuries of inactivity, this town experienced a brief revival when the Druze resettled it between 1910 and 1935.

Preliminary reports have appeared in the *Annual of the Department of Antiquities of Jordan* (1982 and 1983), the *Bulletin of the American Schools of Oriental Research*

(1981), D. Homes-Frédéricq and J. B. Hennessy, eds., *Archaeology of Jordan II, 2: Field Reports, Sites L-Z, Akkadica*, Supplementum VIII (1989) and as B. de Vries, *Umm el-Jimal, "Gem of the Black Desert"* (Al Kutba, Amman).

Wadi el-Hasa Survey

The Wadi el-Hasa originates in the eastern Jordan desert and flows in a northwesterly direction until it empties into the southern Ghors of the Dead Sea at Safi. The area is situated between the Arabian Desert to the east and the Dead Sea Rift Desert to the west. It is now marginal for dryland agriculture and has probably been so since the end of the Pleistocene. The area is cut by a number of deep north-to-south wadis, separated from each other by ridges and mountains. According to accounts given by 19th century travelers, the upland plains were covered with luxuriant grasslands in the spring but virtually devoid of trees. On the other hand, the lower regions of the wadis were densely wooded with a variety of trees and canebrakes in the marshy areas. The region teemed with a variety of animal life, a far different picture from that of the present day.

Prior to 1979, the most extensive archaeological work carried out in the area had been the surveys by N. Glueck in 1933, 1934 and 1937. The Wadi el-Hasa Survey (WHS) began in 1979 and continued in 1981-83 under the direction of B. MacDonald of St. Francis Xavier University, Antigonish, Nova Scotia. Major funding for the project came from the Social Sciences and Humanities Research Council of Canada and the University Council for Research of St. Francis Xavier University.

The Wadi el-Hasa served as the northern boundary of the WHS. On the east, the survey territory extended to Qal'at el-Hasa, immediately west of the Desert Highway; on the west, it went just beyond the edge of the plateau, where the terrain drops off appreciably towards the southeast plain of the Dead Sea; the southern boundary was from 15 km in the west to less than 1 km in the east, south of Wadi el-Hasa. The WHS examined 1074 sites, both within and south of Wadi el-Hasa, which produced lithics, ceramics, glass, and/or architectural remains. The earliest evidence of human occupation found in the area consisted of lithics dating to the Lower Paleolithic period. The lithic evidence spans all periods from the Lower Paleolithic through Pre-Pottery Neolithic periods. More substantial remains were found at the Epipaleolithic site of Tabaqa and at Khirbet Hammam/Abu Ghrab, a Pre-Pottery B Neolithic village site. Evidence of human occupation during the ceramic periods is given in tabular form below. Little evidence of Pottery Neolithic occupation was discovered, except in the western segment of the survey territory. The number of Chalcolithic sites indicates an increase in population south of Wadi el-Hasa at this time. This trend continued into the Early Bronze I period but not into the Early Bronze II-IV periods. The Middle Bronze and Late Bronze periods are poorly represented in the WHS territory. There is evidence, however, for the renewal of sedentary occupation at the end of Late Bronze II. The population appears to have increased again during the Iron I period; there are settlements of the 12th to 11th centuries B.C. in the western section of the survey area. This population increase seems to have accelerated during the Iron II period and

possibly continued until starting to decrease at the beginning of the Hellenistic period. Sites dating to the Nabataean period are more numerous than those of any other ceramic period. Nabataean sites were found throughout the WHS area, especially in the wadis. Roman period sites were also located throughout the territory and a segment of the *Via Nova Traiana* is well preserved in the central segment. The Byzantine period appears to have been one of significant population in the area, based on the number of sites encountered. Evidence for early Islamic occupation is almost completely absent from the survey area. There are, however, several major sites that date to the Ayyubid/Mamluk period. A number of the Ottoman period sites were probably villages associated with the pilgrimage route to Mecca.

Ceramic Period Sites of the WHS		
Period	No. of Sites	Percentage
PNL	5	0.47
CHAL, CHAL-EB	16	1.49
EB I-IV	50	4.66
IRON I-II	97	9.03
HELL, HELL/Early Roman	15	1.40
NAB, NAB-ROM, NAB-ROM	257	23.93
ROM, Late ROM, Late ROM-BYZ	106	9.87
BYZ, BYZ-UM, BYZ/UM	130	12.10
EISL	6	0.56
LISL	168	15.64
OTT/MOD, LOTT/MOD	140	13.04
UD	368	34.26

Since the completion of the WHS infield work in 1983 a number of archaeologists have worked at sites which the WHS surveyed. Moreover, G. A. Clark, director of the Wadi el-Hasa Paleolithic Project, began excavating a number of WHS sites at the eastern end of Wadi el-Hasa and in Wadi el-‘Ali in 1984.

Preliminary reports on the WHS were published in the *Journal of the Department of Antiquities of Jordan* (1983, 1982, 1980) and the *Bulletin of the American Schools of Oriental Research* (1982). The final report was published as B. MacDonald, *et al.*, *The Wadi el Hasa Archaeological Survey 1979-1983, West-Central Jordan*. (1988).

Wadi el-Hasa Paleolithic Project- Wadi el-Hasa North Bank Survey

The Wadi el-Hasa Paleolithic Project (WHPP), directed by G. A. Clark of Arizona State University was designed to test by excavation sites originally discovered by B. MacDonald's Wadi el-Hasa Survey (WHS). WHPP objectives are to examine the potentially most informative WHS sites ranging in time from the Middle to the Epipaleolithic in order (1) to acquire adequate samples of lithic assemblages, (2) to

recover floral, faunal and other kinds of paleoenvironmental information, (3) to undertake a geomorphological study of the east Hasa drainage, (4) to establish the beginnings of a radiocarbon chronology for west-central Jordan, and (5) to map the extent of Pleistocene Lake Hasa, with which most of the archaeological sites are associated. Long-term goals include an assessment of Anthony Mark's model for paleoenvironmental change and human adaptation in the central Negev highlands, located some 100-120 km southwest of the study area. The Wadi el-Hasa Paleolithic Project-Wadi el-Hasa North Bank Survey (WHNBS) research program is supported by grants from the National Science Foundation, the National Geographic Society, the American Schools of Oriental Research, the United States Agency for International Development, Arizona State University and the Chase Bank of Arizona.

To date, the following six WHS sites have been tested by excavation:

WHS 618 (Ain el-Buheira—discovered 1982, tested 1984): series of Upper Paleolithic Ahmarian, Epipaleolithic Kebaran camps located on the NW shore of Lake Hasa; C-14 date of 20.3 kyr BP from Kebaran component; mean C-14 date of 24.3 KYR BP from Ahmarian components (3 samples); probable age of sites ca. 26-19 kyr BP.

WHS 621 (discovered 1982, tested 1984): slightly derived later Middle Paleolithic (Tabun B-C type Mousterian) open site located on the NW shore of Lake Hasa; not dated radiometrically, probably ca. 60 kyr old.

WHS 623X (discovered and excavated 1984): small (4 m²) Upper Paleolithic Ahmarian open-air knapping station on the shore of Lake Hasa; undated, probable age ca. 25 kyr BP; many reconstructible cores.

WHS 634 (Ain Difla-discovered 1982, tested 1984, 1986, 1992): early Middle Paleolithic (Tabun D type Mousterian) rock shelter associated with the 20 m high terrace of the Wadi Ali; ca. 7 m stratified deposits; Oxford TL date of 105±15 kyr BP on burnt flint from level 5 (of 20 levels excavated so far). Oldest dated site in Jordan.

WHS 784X (Yutil el-Hasa-discovered and tested 1984): terminal Ahmarian collapsed rock shelter site C-14 dated at 19 kyr BP; excellent faunal preservation, hearths, features, pollen sequence.

WHS 1065 (discovered 1982, tested 1984, 1992): Epipaleolithic Kebaran (and possible Natufian) open air site associated with Lake Hasa, and found adjacent to a rock shelter and a fossil spring; seven C-14 dates ranging from 16.9-11.3 kyr BP.

The Wadi el-Hasa North Bank Survey was initiated in 1992 to complement B. MacDonald's survey of the south bank. The objective was to get a more adequate regional picture of changing human adaptations over the past 150,000 years. The 1992 season produced 78 sites, dominated by stone age material. Only 18 sites (23%) yielded ceramics and/or had distinctive architectural remains. These were dominated by Late Byzantine/Early Islamic (7 sites, 39% of ceramic total), and a scattering of Roman (2, 11%), Nabataean (1, 5%), Ayyubid/Mamluk (5, 28%) and Ottoman (3, 17%) sites. Many sites, with and without architecture, were multicomponent. The remaining 60 sites (67%) yielded lithic artifacts dating from the Lower Paleolithic (Acheulean) to the Metal Ages. Of particular interest were 25 (27%) Upper Paleolithic sites, which were not reported in Jordan until MacDonald's 1979-83 survey.

To date, 21 articles and notes have been published, or are in press, on the Wadi el-

Hasa research. WHPP/WHNBS research has appeared in the *Annual of the Department of Antiquities of Jordan*, *Studies on the History and Archaeology of Jordan*, *Proceedings of the Prehistoric Society*, *American Journal of Archaeology*, *Archiv für Orientforschung*, as well as *The Prehistory of Jordan* (Garrard and Gebel, eds.), *The Wadi el-Hasa Archaeological Survey* (MacDonald, ed.), *Alternative Approaches to Lithic Analysis* (Henry and Odell, eds.), *The End of the Paleolithic in the Old World* (Straus, ed.), and *Perspectives on the Past* (Clark, ed.).

Wadi el-Yabis Survey and Excavations

The Wadi el-Yabis Survey and Excavations is a joint University of Rome-University of Arizona project financed by the Italian Ministry of Foreign Affairs and the Italian National Research Council. Four seasons of fieldwork (1987, 1989, 1990, 1992) conducted by Gaetano Palumbo and Jonathan Mabry have helped to clarify the history of human occupation and exploitation of this area of northern Jordan.

The Wadi el-Yabis flows from the Ajlun mountains to the Ghor, and is one of the few perennial streams east of the Jordan. It crosses three environmental zones (upland forest, Mediterranean maquis, Irano-turanian steppe) in a few kilometers. This situation is particularly favorable for the study of one of the research questions of this project, i.e. the influence of environmental constraints on human settlement. The aim of the project, in fact, is to understand rural adaptations through time, and the political and environmental factors that contributed to shaping the landscape of an area that has always been an agricultural “backwater” of more powerful political centers.

From a methodological point of view, the project is based on field surveys, conducted in one kilometer wide (east-west), six to nine kilometer long (north-south) transects, in order to cover intensively at least one third of the area of the wadi catchment (which totals almost 300 km²). The surveys are conducted on foot by five to seven team members walking in parallel lines. This method has allowed the discovery of a large number of new archaeological sites, from the Paleolithic to the late Ottoman. Each site is described on special forms not only for its visible features, but also for the environmental and physical settings. The transects are also divided into “survey units” (usually geomorphological units) that are described by their natural and man-made characteristics. This approach helps to place archaeological sites within the environment. So far, 250 sites have been identified by the survey. All periods are represented, including some that are rarely represented elsewhere, such as the PPNA (Pre-Pottery Neolithic A) which was identified in a cave called ‘Iraq ed-Dubb above the Wadi el-Yabis and near the village of ‘Irjan. A sounding was made in the cave in 1989, and ‘Iraq ed-Dubb later became an independent project directed by Ian Kuijt of Harvard University. Other soundings were conducted at a PPNB site below the village of ‘Irjan (er-Rahib), at a Chalcolithic and EB IA site near Kufr Abil (Jelmet esh-Sharich), at an Iron Age I site in the Jordan Valley (Tell el-Meqberah), and at an Iron Age II site on the mountains near the village of Ishtafeina (Khirbet Um el-Hedamus). All these soundings yielded information on rural exploitation of the environment

during different time periods. Many different types of site have been identified by the survey: not only habitation sites (from major urban sites to small villages), but also industrial installations (wine and oil presses), water collection devices, small farms, agricultural terraces, water mills, military sites (forts and watchtowers), and monasteries and hermitages. They all witness to an intensive use of the valley, mainly but not exclusively, because of its agricultural potential.

Analysis of the data collected allows, among other results, reconstruction of the evolution of human settlement in the valley. Parallels can be drawn with other intensive surveys conducted in the region (Wadi Ziqlab, Wadi Kufrinje), which will make it possible to understand the more general settlement history of the Jebel Ajlun from the earliest times to the beginning of this century.

As part of the project, a study of the dolmen fields present in the area is also being made: dolmens are mapped, recorded, and in a few cases also excavated, in order to understand their construction and their. On the basis of preliminary evidence, the dolmen fields of Wadi el-Yabis are dated to the Late Chalcolithic and EB I periods, but several reuses are evident down to the Roman/Byzantine periods and later.

Finally, the vernacular architecture of a few villages in Wadi el-Yabis is under study. Vernacular architecture is still not protected under current Jordanian law. Recording of this architecture and technology is an important contribution to the understanding of Jordanian culture. One village, Kurkuma, has been totally surveyed, and each house described in detail. Plans and sections of houses and courtyards have been prepared. An ethnological study is also being conducted in order to better understand the use of the structures and the traditional way of life.

More work is needed, and the publication is expected to present, in two volumes, the results of the survey and those of the soundings. Preliminary articles have been published in the *Annual of the Department of Antiquities of Jordan* (1987, 1990, 1992) and *Paléorient* (1991); short notes have appeared in the *American Journal of Archaeology*, *Liber Annuus*, and *Syria*.

Traditional structure at Kurkuma. Photo by Gaetano Palumbo.



ACOR-Assisted Archaeological Projects in Jordan

Tell Hesban and Vicinity (Iron Age to Mamluk)	Siegfried Horn	Andrews U., 1968-1976
Rujm el-Malfuf (Iron Age)	Lawrence Geraty Roger Boraas	Upsala College, 1969
Swafiyeh (Byzantine church)	Bastiaan Van Elderen	ACOR-DAJ, 1970
Tell Masuh (Byzantine church)	Bastiaan Van Elderen	ACOR-DAJ, 1971
Khirbet el-Hajjar (Iron Age)	Henry Thompson	ACOR-DAJ, 1972
Tell Siran (Late Iron-Persian-Islamic)	Henry Thompson	ACOR-U. of Jordan, 1972-73
Umm el-Jimal (Roman, Byzantine, Umayyad)	Bert de Vries	Calvin College, 1972-
Rujm el-Malfuf South (Iron Age)	Henry Thompson	ACOR-DAJ, 1973
Bab edh-Dhra (Early Bronze Age)	Walter Rast	Valparaiso U., 1973-81
Temple of the Winged Lions (Classical)	Thomas Schaub Phillip Hammond	U. of Utah, 1973-
Jordan Valley Survey (Over 200 sites located)	James A. Sauer Khair Yassine Mo'awiya Ibrahim	ACOR-U. of Jordan, 1975-76
Limes Arabicus Project: Tell Lejjun and four other Roman forts Survey (800 sites located)	Thomas Parker	N. Carolina State U., 1976-89
Araq el-Emir (Hellenistic)	Robin Brown	1976
Khilda (Iron II, Roman, Byzantine, Mamluk)	James A. Sauer	ACOR-U. of Jordan, 1976
Abu Thawwab (Iron Age)	Robert Coughenour	ACOR-Western Seminary, 1976
Wadi Wardeh Excavation (Iron Age)	Robert Coughenour	ACOR-Western Seminary, 1976-77
Ras en-Naqb Survey (Prehistoric)	Donald O. Henry	U. of Tulsa, 1977
Amman Airport Building (Late Bronze Age)	Larry Herr	Andrews U., 1977
South Ghor Survey (All periods)	Lawrence T. Geraty David McCreery	ACOR-USAID, 1977-78
Baq'ah Valley Survey (EB, LB-Iron Age)	Patrick McGovern	U. of Pennsylvania, 1977-

PROJECTS

Numeira (EB III)	Michael Coogan	Harvard U., 1977-83
Kerak Plateau Survey (Over 400 sites, all periods)	Maxwell Miller	Emory U., 1978-82
Qasr Kharaneh (Excavation and restoration)	Jack M. Pinkerton	
Wadi Hisma Survey (Epigraphic survey, Roman-Byzantine)	Stephen Urice	Harvard U., 1979
Wadi el-Hasa Survey (All periods)	David Graf	ACOR-NEH Fellow, 1979-80
Pella (Bronze Age, Iron Age, Roman, Byzantine)	Burton MacDonald	St. Francis Xavier U., 1979-83
Tell edh-Dhahab el-Gharbi (Iron Age and Roman)	Robert Smith	Wooster College, 1979-1985
'Ain el-Assad (Paleolithic)	Robert L. Gordon	ACOR-NEH Fellow- DAJ, 1980-81
Um ed-Dananir (LB and Roman)	Gary Rollefson	ACOR-NEH Fellow, 1980-82
Wadi Ziqlab Survey (All periods)	Patrick McGovern	U. of Pennsylvania, 1981-
Humeima (Late classical to Byzantine)	Ted Banning	U. of Toronto, 1981-
Wadi Bayir Survey (Paleolithic)	John Oleson	U. of Victoria, 1981-
Kataret es-Samra (EB-LB cemetery)	Gary Rollefson	ACOR-NEH Fellow, 1981-82
Wadi Isal Survey (115 sites located)	Scott Rolston	
Tell Abila (All periods; mainly Roman/Byzantine)	Albert Leonard, Jr.	U. of Missouri, 1981-82
Tell Safut (LB-Iron Age)	Linda Jacobs	ACOR-NEH Fellow, 1982
Khirbet Iskander (EB IV city and cemetery)	Harold Mare	Covenant Seminary, 1982-
Tell el-Hayyat (Middle Bronze village)	Donald Wimmer	Seton Hall U., 1982-
'Ain Ghazal (PPNB-C city)	Suzanne Richard	Drew U., 1982-87
Irbid/Beit Ras Survey (31 sites located)	Steve Falconer	U. of Arizona, 1982-85
Khirbet Salameh (Roman-Byzantine)	Bonnie Gardiner	
	Gary Rollefson	San Diego State U., 1982-
	Alan Simmons	Desert Research Institute
	Albert Leonard, Jr.	U. of Arizona
	Zeidan Kafafi	Yarmouk U.
	Cherie Lenzen	ACOR-NEH Fellow, 1984
	Cherie Lenzen	ACOR-U. of Jordan, 1985
	A. M. McQuitty	

PROJECTS

Wadi el-Hasa Paleolithic Project (Survey and excavations)	Geoffrey A. Clark	Arizona State U., 1984-
Madaba Plains Projects:	Lawrence Geraty	Andrews U., 1984-
Tell 'Umeiri	Larry Herr	
Tell Jawa	P. M. Michèle Daviau	
Tell Jalul	Randy Younker	
'Umeiri Survey	Gary Christopherson	
(All periods)	Øystein LaBianca	
Tell Abu en-Ni'aj (Early Bronze IV)	Douglas R. Clark	
Southern Ghors and	Steve Falconer,	U. of Arizona, 1985
Northeast Araba Survey (240 sites located)	Bonnie Gardiner	
Naur Survey (Emergency survey)	Burton MacDonald	St. Francis Xavier U., 1985-86
Qasr Shobak (Crusader-Islamic)	Robert Coughenour	ACOR-USAID, 1986
Aqaba/Ayla (Islamic)	Robin Brown	SUNY Binghamton, 1986
Wadi Kufrinja Survey (Over 200 sites located)	Donald Whitcomb	U. of Chicago ACOR-USAID, DAJ, 1986-
Qasr Wu'eira (Crusader-Islamic)	Joseph Greene	U. of Chicago, 1987
Qasr Kerak (Crusader-Islamic)	Robin Brown	SUNY Binghamton, 1987
Amman Citadel (Salvage excavation)	Robin Brown	SUNY Binghamton, 1987
Greater Amman Survey (223 sites located)	Joseph Greene	ACOR-USAID CRM Project, 1987-88
Tor Hamar (Prehistoric rock shelter)	Joseph Greene	ACOR-USAID CRM Project, 1987-88
Wadi Sh'eib Survey (All periods)	Donald O. Henry	U. of Tulsa, 1988
Tell Handaquq (Early Bronze Age)	Karen Wright	Yale U., 1988
Cultural Resources	Jonathan Mabry	ACOR-Shell Fellow, 1988-
Management Project	Ian Kuijt	Harvard U.
	Meredith Chesson	
	Joseph Greene	ACOR-USAID, DAJ, 1988-
	Ernesta Kraskiewicz	
	Ruba Kana'an	
	Cynthia Shartzter	
	Gaetano Palumbo	

PROJECTS

Wadi Sh'eib (PPNB-C-Neolithic)	Gary Rollefson	ACOR-NEH Fellow, 1989
Wadi el-Yabis Survey (Over 250 sites located)	Alan Simmons	
Tell Jawa (Iron Age and Islamic)	Jonathan Mabry	U. of Arizona, 1989-92
Tell Nimrin (All periods)	Gaetano Palumbo	U. of Rome
'Iraq ed-Dubb (PPNA cave)	Michèle Daviau	Wilfrid Laurier U., 1989-
Tur 'Imdai (Petra) (Bedouin/historic)	David McCreery	Willamette U., 1989-
Abu Irshribsheh (EB IV cemetery)	James Flanagan	Case Western Reserve U.
Temple of Hercules (Iron Age and Roman)	Ian Kuijt	Harvard U., 1989-91
Madaba Archaeological Park Project (Roman and Byzantine)	Kenneth Russell	ACOR-NEH Fellow, 1989-90
	Steve Simms	
	Walter Rast	Valparaiso U., 1990-
	Thomas Schaub	
	Mohammed Najjar	ACOR-USAID, DAJ, 1990-
	Kenneth Russell	
	C. Kanellopoulos	
	Anthi Koutsoukou	
	Michele Piccirillo	ACOR-USAID,
	Cherie Lenzen	Ministry of Tourism, 1991-
	Ghazi Bisheh	
	Ammar Khammash	
	Timothy Harrison	
Jerash Road Roman Fort (Emergency excavation)	Gaetano Palumbo	ACOR-USAID, DAJ, CRM
Wadi el-Hasa	Ali Musa	
North Bank Survey (78 sites located)	Geoffrey A. Clark	Arizona State U., 1992-
Tuwaneh Survey (Nabataean to Byzantine)	Zbigniew Fiema	ACOR-USIA Fellow, 1992
Petra Church Project (Byzantine church)	Kenneth Russell	ACOR-USAID, DAJ, 1992-
	Pierre Bikai	
	Zbigniew Fiema	
	Robert Schick	
	Khairieh 'Amr	
Khirbet Salameh (Iron Age, Roman, Byzantine)	Pierre Bikai	ACOR-U. of Jordan, 1992-
Madaba Cisterns (Byzantine)	Pierre Bikai	ACOR-USAID, 1992-
Tell Handaquq South (Early Bronze Age)	Meredith Chesson	Harvard U., 1993-
The South Temple, Petra (Nabataean)	Ian Kuijt	
	Martha Joukowsky	Brown U., 1993-

Amman, Jordan