ACOR Newsletter
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Recent Iron Age Archaeology in Faynan:

Excavations and Surveys

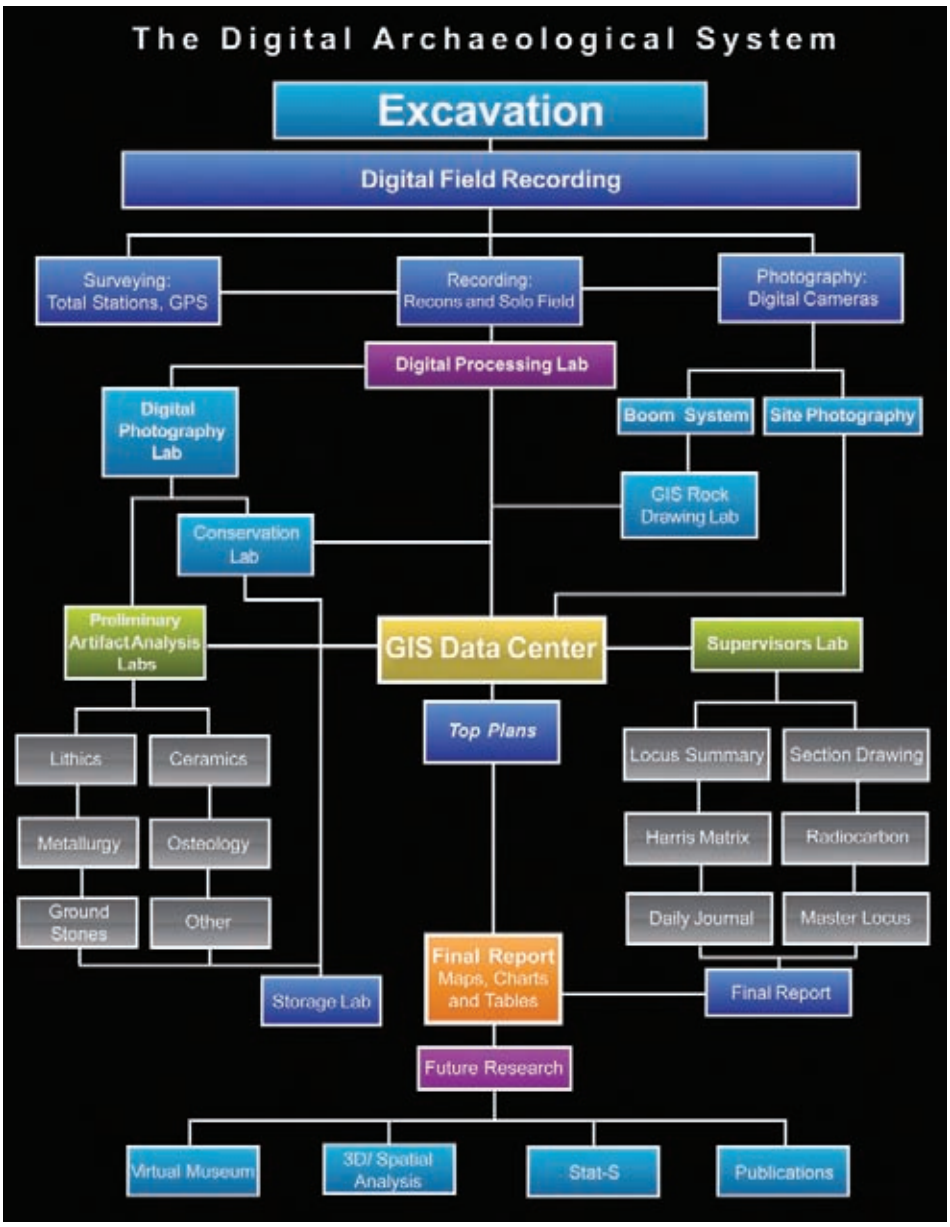
Thomas E. Levy and Mohammad Najjar

Since 2002 our research in the copper ore rich Faynan region of southern Jordan has focused on the role of metal production on social change during the Iron Age – a period spanning almost 700 years (ca. 1200 to 500 B.C.E.). The Iron Age in the southern Levant follows on the heels of the Late Bronze Age collapse of many civilizations around the eastern Mediterranean, such as the Mycenaeans in Greece and the Hittites in Anatolia. How and why this crisis occurred is poorly understood. During the Late Bronze Age (ca. 1600 – 1200 B.C.E.), the island of Cyprus was the center of international copper production. However, with the general social upheaval at the end of this period, new opportunities arose for the inhabitants of Faynan that allowed it to become the largest south Levantine metal production center in the following Iron Age. By harnessing the power of copper metal production at the end of the 2nd millennium and early 1st millennium B.C.E., the people of southern Jordan were able to establish a remarkable network of mines, smelting centers, agriculture, and trade networks in one of the most arid regions of the Middle East. How did this unprecedented technological expansion come about? How was metal production organized? Who controlled copper production through the Iron Age sequence? These are just some of the key questions our project is exploring.

Helicopter view of Khirbat en-Nahas, Jordan. The square feature is the Iron Age fortress; the black color on the site surface represents ancient copper slag mounds; all images courtesy of T.E. Levy

Our work has been carried out as part of the Edom Lowlands Regional Archaeology Project (ELRAP) under the auspices of the University of California, San Diego (UCSD) and the Department of Antiquities of Jordan (DOAJ). The Iron Age research in Faynan is part of a deep-time anthropological study which explores how mining and metallurgy, one of the earliest technologies to create synthetic material using pyro-technology, influenced culture change. The sweep of time we are investigating spans over 10,000 years, from the beginnings of sedentarization and the domestication of plants and animals during the Neolithic period when copper ore was mined for beads, through the rise of the first historical state level societies during the Iron Age, up to the Medieval Islamic period. By using technology as a lens for examining cultural and historical changes in this part of the southern Levant, we are able to measure aspects of cultural evolution with large material culture datasets.

As the Iron Age represents the period when the first historical state level societies evolved in the southern Levant, the ability to measure time and space (the context of artifacts and eco-facts) in the archaeological record is crucial for examining the relationship between ancient Near Eastern texts and archaeology. Thus, we have felt compelled to employ the most objective and advanced dating tools, namely high precision radiocarbon dating, to help achieve sub-century dating of the Iron Age archaeological materials from Faynan. We work closely with Tom Higham of the Oxford Radiocarbon Accelerator Lab to process and statistically model the dates from ELRAP. Equally, ELRAP has put considerable effort into the development of on-site GIS-based digital archaeology with the aim of facilitating the recording of the context of material culture and geo-archaeology phenomena with the highest degree of precision possible. These methodological advances have helped propel our research in the historical biblical archaeology of the southern Levant into the center of scholarly debate and public interest in the archaeology of Jordan. The success of the ELRAP expedition is due in large part to the efforts of UCSD graduate students whose doctoral research helps direct the research goals, data acquisition, and interpretation of the results. In this article, we briefly highlight some of the exciting excavation and survey results achieved to date.



Flow-chart illustrating the ELRAP on-site GIS-based Digital Archaeology System

Digital Archaeology and ELRAP

The ELRAP on-site GIS-based digital archaeology system was initiated back in 1999 during excavation of Neolithic and Early Bronze Age sites. As our current research focuses on historical archaeology, for which it is crucial to achieve sub-century dating, the importance of continually improving the system has become an annual effort. The most recent version of the digital archaeology system is seen in the flow-chart. As can be seen in the diagram, the nexus of the system is Geographic Information System (GIS—we use *ArcGIS*). GIS integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of spatially referenced information. For archaeology, this means we can use the highest precision survey instruments like Total Stations and Differential GPS (Global Positioning System) units to record artifacts, ecofacts, architecture, loci, geomorphological features,

and more with their exact x, y, and z (elevation) coordinates. Other forms of digital data, such as photographs, movies, geophysical prospection results, etc., can also be linked together to produce maps and test hypotheses using a wide range of statistical and visualization tools. When the tight spatial control of archaeological data is linked with high precision radiocarbon dating, we are in a strong position to examine objectively the relationship between the archaeological record and historical texts, such as Egyptian, Mesopotamian, Old Testament, and other ancient sources. The excavations at Khirbat en-Nahas especially the deep sounding in Area M, provide an excellent example of how this digital archaeology system works.

"Ruins of Copper" – Khirbat en-Nahas

The centerpiece of ELRAP research is our excavations at the ancient copper production site of Khirbat en-Nahas (KEN) situated on the south bank of the Wadi al-Guwayb. Geographically, the Faynan district is situated in the northern portion of what the Old Testament refers to as Edom – a region that stretches from the Wadi al-Hasa in the north to the Gulf of Aqaba in the south. One of the most intriguing features about Edom is the dichotomy between its highland plateau, where elevations often reach over 1300 meters above sea level and there is a narrow band of fertile Mediterranean land suitable for dry-farming, and the lowlands characterized by elevations often below sea level and a Saharo-Arabian desert environment with less than 90 millimeters of average annual rainfall. It is in the latter, austere, environmental zone that the rich copper ore deposits of Faynan are located. Prior to the ELRAP project, the only large-scale Iron Age excavations carried out in southern Jordan were up on the highland plateau at sites such as Busayra, Tawilan, and Umm al-Biyara near Petra. Work there was done by the British archaeologist Crystal Bennett who suggested that the Iron Age occupation in Edom began quite late (ca. 7th century B.C.E.) – an assumption that ran counter to dating of the Iron Age by Nelson Glueck, the pioneer of archaeology in Jordan who first surveyed Edom in the early 1930s. Bennett's dating model dominated Iron Age studies of southern Jordan until our 2002 excavations.

Glueck first reached Khirbat en-Nahas by camel in the spring of 1934 and made a fairly accurate sketch map of the site. Based on surface pottery, he dated the site to the 10th century B.C.E. and referred to KEN and other copper-producing sites in the neighboring Wadi Arabah as the "Pittsburgh of Palestine" – a reference to the industrial-scale production visible at KEN and other sites. This large site is ca. 24 acres in size, has over 100 buildings visible on the surface, and contains numerous ancient black copper slag mounds reaching heights over 6.5 meters (ca. 21 feet). However, Glueck made no excavations at the site.

In the 1980s, Volkmar Fritz, working as part of Andreas Hauptmann's German Mining Museum archaeometallurgy project in Faynan (1983–1993), made a small sounding at the site and obtained one radiocarbon sample that dated the building he excavated to the 9th century B.C.E. Hauptmann sampled a number of the slag mounds at KEN and retrieved eight more radiocarbon samples showing that metal production took place from the 12th through 9th centuries B.C.E. However, no large-scale stratified excavations were carried out at KEN or any other Iron Age sites in the Edom lowlands until ELRAP. Since 2002 we have sampled six areas at KEN with extensive exposures and processed 101 high precision radiocarbon dates from the site. No other Iron Age excavation in the southern Levant has produced such a large number of radiocarbon dates. We have sampled the fortress, large and small buildings, and one of the industrial slag mounds. Here we will discuss just two of the excavation areas.

The work in Area A focuses on the four-chamber gatehouse of one of the largest (ca. 73 x 73 m) Iron Age fortresses in the deserts stretching from the Sinai Peninsula through the Negev to southern Jordan. So far, three of the guardroom chambers and the main passageway through the gate were excavated. We have intentionally left one of the guardrooms unexcavated for future generations of archaeologists. The gatehouse façade measures 16.8 m, its depth is 10.6 m and the passage width is c. 3.63 m—typical of Iron Age II at Megiddo IVA, Beersheva V, Tel Dan, Ashdod 10, and Tell en-Nasbeh (Early). Of great interest to understanding the socioeconomics of Iron Age copper production at KEN are the stratigraphic observations and radiocarbon dates from the gatehouse which show two phases of construction in the gatehouse. More than 25 radiocarbon dates from this area confirm that the original gatehouse was built in the 10th century B.C.E. as part of the extensive fortification wall. In the following century, the gatehouse was decommissioned by sealing off the passage with a well-built closing wall and redesigning its interior by adding smaller stone doors to each of the guardrooms and establishing a much narrower entrance by building balustrades. Some of the questions we are exploring include: Who built the early fortress? Who decommissioned it in the 9th century B.C.E.? How did the fort function in the organization of metal production and trade?

Industrial-Scale Metal Production in the 10th and 9th Centuries B.C.E.

All of the ELRAP excavations are aimed at obtaining large-scale exposures to reveal the social context of the ancient inhabitants of the sites and where possible, deep stratigraphic sections to help define its developmental sequence. These are crucial for testing socio-economic and historical hypotheses. The excavations in Area M at KEN achieved both of these goals. In a recent paper in the *Proceedings of the National Academy of Science* (2008, Vol. 105) we demonstrated that the large slag mounds at the site were over 6 m deep. The Area M sounding represents one of the few carefully excavated ancient industrial slag mounds. Twenty-two high precision radiocarbon dates were processed from the deep sounding and reveal two periods of Iron Age industrial copper production – the 9th (ca. 3 m) and 10th century B.C.E. (ca. 2.5 m) and a less intense production period in the basal layers dating from the 13th to 11th centuries B.C.E. (ca. 70-75 cm). At the end of the 10th century B.C.E., there was a disruption in metal pro-

An early Iron Age striding animal scarab found in Area M, Khirbat en-Nahas

Four-room building associated with massive industrial slag mound in Area M, Khirbat en-Nahas. Over 6.5 m of slag accumulated here with the main phases of copper production dating to the 10th and 9th centuries B.C.E.

duction that we tentatively link to the military campaign of the Egyptian Pharaoh Sheshonq (Shishak) I. The radiocarbon dates and 21st Dynasty Egyptian artifacts found here point to this confluence. A scarab found in these levels is illustrated above. The scarab belongs to an early Iron Age mass produced series made of enstatite, which is foreign to Jordan. According to Stefan Muenger, these originate in the eastern Delta in Egypt, possibly Tanis where they were produced during the reign of the pharaohs Siamun and Sheshonq I in the 10th century B.C.E. Thus, the archaeometallurgical data show industrial metal production in both the 10th and 9th centuries B.C.E. These data, coupled with our earlier work, demonstrate that the Iron Age of southern Jordan is at least 200 years, and possibly as much as 400 years, older than the chronology proposed by Crystal Bennett and other researchers. Our work does not attempt to re-date the Iron Age sites in the highlands of Edom but rather shows that the earliest core area of Iron Age settlement was down in the lowlands near the copper ore resources. This is especially apparent in the ceramic studies carried out by Neil Smith for his UCSD doctoral research on the Iron Age pottery from KEN and other sites excavated by our team.

Surveys

Since 2002, ELRAP has carried out a number of surveys aimed at modeling the Iron Age landscape in Faynan, especially the countryside surrounding Khirbat en-Nahas, and hundreds of new sites have been discovered. In the upper reaches of the Wadi al-Jariyeh, upstream from the Iron Age metal production center of Khirbat al-Jariyeh, 91 new sites were found, of which 30 were mines. When these data collected by Kyle Knabb are combined with earlier survey work carried out by our team and others in the Faynan district, it is possible to model an intricate extraction, ore processing, smelting, provisioning, and trade system operative in the area during the 10th and 9th centuries B.C.E. Currently, our team is working on fleshing out the organizational principles of metal production throughout the Iron Age in Faynan from the 12th to the 6th centuries B.C.E.

Conclusion: Into the Future

The anthropological goals of investigating the role of technology on social evolution in southern Jordan are coming to fruition in the UCSD – DOAJ – ELRAP expedition. We have made significant advances in applying new developments in digital archaeology to the study of historical archaeology. This includes using our rich GIS databases to build innovative 3D archaeological models using Calit2's virtual reality StarCAVE and other tools. Faynan contains the best preserved ancient mining and metallurgy district in the world. Regions such as Cyprus, Spain, Oman, Anatolia, and others have been destroyed by modern mining works. Jordan is fortunate. Not only is Faynan especially rich in archaeological terms, but it is also spectacularly beautiful. We believe that with the ELRAP excavations and research, coupled with other studies carried out in the area by British and German teams, Faynan should become a UNESCO World Heritage Site.

Using the Area M data, Kyle Knabb, Jurgen Schultz, and Tom Levy created a visualization application for the StarCAVE, an immersive virtual reality environment at UCSD's Calit2 that allows a user to walk through a computer 3-D generated model.

We are grateful to the ELRAP staff members and the villagers of Quraiqira for all their help and collaboration. We thank Dr. Fawwaz al-Khraysheh, Director General of the DOAJ, and Dr. Ghazi Bisheh, former Director General, for their long-standing support of our work. We would also like to acknowledge the help of Yehya Khaled, Director General of the Royal Society for the Conservation of Nature (RSCN) and Chris Johnson, Wild Jordan Director, RSCN. Funding has come from the National Science Foundation, National Geographic Society, UCSD-Calit2, Institute of Aegean Prehistory, and private foundations.

Site Presentation in Jordan: Concept Design and the January 2009 Documentation Season at Umm el-Jimal

Bert de Vries

During the last two excavation field seasons of the Umm el-Jimal Project (UJP, 1996 and 1998), the architects, Amjed Bathaineh, Edith Dunn, and Bert de Vries, developed a traditional site preservation and development plan that proposed the consolidation of key buildings of the Byzantine-Umayyad site, especially the Praetorium; the layout of a signed walking tour; and the reversible adaptation of the Umayyad "Farm" House (House 119) as a Museum Visitor Center. Several years ago the Department of Antiquities (DoA), under the direction of its own architects, began implementing the restoration of the Umayyad House and its adaptation as the proposed Museum Visitor Center, a process that is nearing completion.

In 2006, a new nonprofit organization, Open Hand Studios (OHS), founded by Calvin College graduates to work in partnership "with communities across the world to create hands-on museum exhibits and virtual media that nurture social justice," adopted the Umm el-Jimal Project as one of its pilot programs (www.openhandstudios.org). The objective of the partnership is to present Umm el-Jimal and all its data and research as a virtual museum linked to the site presented as a museum in reality. These linked museums will be structured to enable access and to engage all interested communities, ranging from the local village to the people of Jordan, as well as Jordanian government ministries responsible for antiquities, tourism, cultural heritage, and education; academic communities and their agencies in Jordan and around the world; and anyone anywhere interested at a popular heritage and tourism level.

Inception and Implementation of the Work of the UJP-OHS Partnership

OHS and UJP have worked together since 2007 to complete the long process of digitizing the vast amount of UJP field data for digital structuring and presentation. The new UJP website (www.ummeljimal.org) opened May 2008 and functions as a carefully planned museum with complexes of wings and rooms that will contain all the Umm el-Jimal research and site materials ranging from raw data to field reports, publications, photo and other specialty records, project history, site tours and much more. While "front" rooms will present attractive and informative displays, the "back" rooms will contain fully searchable GIS-integrated project data.

To complete the installation of these virtual "exhibits" and "storerooms" new documentation using current equipment and methods became necessary. For example, to integrate the access to the real site with the virtual one required the installation of a walking tour on the ground that matches a visually recorded virtual tour on the Internet. And to give a realistic rendering of the structures of the site in virtual reality, a photographic regimen for three-dimensional rendering needed to be done.

In addition, this site documentation enabled connection with at least three of the "communities" mentioned above. First, the team began documenting the living heritage of the six thousand-strong village of Umm el-Jimal, both to reconnect it historically with the antiquities and to make it a "stake-holder" in the hosting of visitors and the management of liaison between Umm el-Jimal and the rest of the world. The creation of Umm el-Jimal's archaeological educational curriculum was planned to promote intellectual appreciation at all levels from local to international and from popular to academic.

Bringing a team of documentation and museum specialists to the site also satisfied the interests of the DoA in two

The double windows of House XVIII at Umm el-Jimal at sunrise; all photos courtesy of B. de Vries

Sally de Vries and Calvin students enjoying the tent fire during a heritage interview

ways. First, computer technicians in the Department joined the team working on three-dimensional photographic rendering of structures. Second, the field team and DoA staff began working together on the design and installation of the museum on the ground.

Thus, the documentation field work done in January 2009 functioned as a four-way partnership between the DoA, the Umm el-Jimal Municipality, Open Hand Studios, and the Umm el-Jimal Project, with adjunct participation by Jordan's Ministry of Education, Calvin College, and ACOR. All this will continue into the indefinite future, both in Jordan and at Calvin College, and will include a second documentation season in January 2010.

Documentation of Ruins and People at Umm el-Jimal in January 2009

The goal of the multi-faceted January 2009 season was to gather documentation for the site presentation program described above. As diverse as the potential audience, the team members came from Calvin College (Grand Rapids, Michigan), Open Hand Studios (Chicago, Illinois), the Department of Antiquities (Jordan), and the village of Umm el-Jimal itself. The central goals for the work included:

1. Museums: Creation of Umm el-Jimal Virtual Museum interfaced with Umm el-Jimal in Reality (Museum-on-the-ground).

2. Heritage: Gathering data in the living village for integration into the antiquities of Umm el-Jimal, working towards the goal of establishing the site as a Southern Hauran culture center.

3. Environment: Sampling of historic soils to service the Jordan-wide ancient soils research and documentation of modern ecology.

To achieve these goals the project staff was divided into six teams, each with their own areas of specialized expertise:

The Video Production team led by Jeff DeKock (OHS) documented the entire site in film and still photography and filmed numerous interviews with experts and local residents.

The Virtual Museum and Site Development team led by Paul Christians (OHS) created a visual tour of the site using elaborate photography techniques, developed the script and signage for such a tour, and is developing the design for the installation of the site museum and walking tour on the ground.

The Virtual Reconstruction team led by Craig Mulder (OHS) did photogrammetric field documentation for the three dimensional portrayal of two buildings, the Umayyad House (by DoA engineers Tawfiq al-Hunaiti and Mowafaq al-Fayez), which is to serve as the new Museum Visitor Center, and the Cathedral (by OHS-UJP staff).

The Modern Cultural Heritage team led by Sally de Vries (UJP) with Muaffaq Hazza (UJP) documented the tent and house occupation of the ancient site during the past century and conducted interviews with numerous members of the community to document their remembered heritage.

The Educational Curriculum team led by Sarah Oord and Mary Workmen (Calvin education majors) developed a multi-discipline strategy for the teaching of archaeology to Jordanians in primary and secondary schools. Based on that, they developed 13 lesson plans using the archaeology of Umm el-Jimal as subject matter and presented their work as a concept proposal to the Ministry of Education for integration into the national archaeology curriculum.

The Historical Ecology team led by Bernhard Lucke (Brandenburg Technical University) and Laurie Koning (Calvin graduate in Geology) took samples of ancient soils for laboratory analysis to study the ancient climate patterns and agricultural adaptation of the various communities at the site.

Expected results of the work include imaginative, attractive, and educational site presentations to be posted both on the Internet (www.ummeljimal.org) and installed on the ground, to enable both virtual and actual visits. Bert de Vries (Director) and his talented collaborators consider this thorough and multi-tiered site presentation structure to be a potential model for other sites in Jordan and elsewhere. We view the results as a great step towards the overarching goal of providing a structure that enables equal, open, and fair access to antiquities sites and the information based on them. Our model of multiple intersecting partnerships also serves to facilitate the just implementation of that goal within the normal strictures of local, national, and international civic societies.

The field work was funded by Calvin College and the Norwegian Research Council and received strong support from its project partners, the DoA and Open Hand Studios. In addition to the core staff listed above expressions of deep gratitude are due to Dr. Fawwaz al-Khraysheh (DoA Director General) for his gracious enablement of our partnership; Muaffaq Hazza (long-time UJP team member) for his tireless local arrangements and community coordination; the Mayor of Umm el-Jimal Municipality, Saleh Fallah, for his visionary blending of heritage dream and economic practicality; and the entire ACOR staff for its encouragement of our vision and enabling of our work. We are also grateful to Sultan es-Serour for allowing us to use the house of his father, Sheikh Hail, for our "camp" and its great *madhafa* for our communal computer lab, living room, and lecture hall.

Teaching Umm el-Jimal—the Boys' School with Byzantine houses in the foreground

ACOR Activities in Boston

At the ASOR Annual Meeting in Boston, several activities took place to continue the celebration of ACOR's 40th anniversary year. There was a double academic session on "ACOR at 40" which took place on Friday morning (11/21). The program was developed to cover numerous aspects of ACOR's involvement in archaeological projects in Jordan. It was duly noted that many projects could not be included due to the limited time.

The lectures were divided into two sessions—the first presided over by me as the current ACOR Director and the second by David McCreery of Willamette University who was ACOR Director from 1981 to 1988. The full program was:

Session I:

Barbara A. Porter: ACOR at 40: The People and Places

Gary Rollefson (Whitman College): Leave No Stone Unturned: ACOR's Expansion into Prehistory

R. Thomas Schaub (Expedition to the Dead Sea Plain): Studies on the Early Bronze Age in Jordan from 1968-2008: A Period of Downsizing from an 'Urban' Culture to Corporate Villages

Burton MacDonald (St. Xavier University), ACOR and Survey Archaeology in Jordan

"ACOR at 40" Participants: David McCreery; Burton MacDonald, Barbara Porter, Sten LaBianca; Tom Schaub; Chris Tuttle; Bert deVries; Bethany Walker; absent Gary Rollefson; photo by E. Porter Honnet

Session II:

Øystein LaBianca (Andrews University): Collaborative Research on Empires in Jordan and the Levant

Christopher A. Tuttle (ACOR): Highlights of ACOR Projects in the Greater Petra Region

Bert de Vries (Calvin College): Umm el-Jimal and the Empires of Late Antiquity

Bethany Walker (Missouri State University): Islamic Archaeology in Jordan

These sessions occurred in the same large room where the joint Anniversary Party for CAARI at 30 and ACOR at 40 took place in the evening. The party was a well-attended event with many trustees from both boards represented, as well as former fellows and friends of each institution. The chairmen of each board made brief welcoming remarks as did the respective directors, myself and Tom Davis. The occasion provided an excellent chance for colleagues to get together.

We were pleased that Mary Ellen Lane, the Executive Director of CAORC (Council of American Overseas Research Centers), was able to join us. Sue Sauer represented the early years of ACOR in Amman.

Barbara A. Porter

Arte Joukowsky (ACOR Board President) and Gus Feissel (CAARI Board President) giving Welcoming Remarks at the Joint Reception; photo by B. Porter

In Memoriam:
Father Michele Piccirillo (1944–2008)

Father Piccirillo, the Franciscan priest and professor of archaeology who made a huge mark on the cultural heritage of Jordan, was buried at Mt. Nebo on November 1, 2008. He was born in Casanova di Carinola in the province of Caserta near Naples, Italy in November 1944 and died in Livorno on October 26, 2008 after battling pancreatic cancer.

In 1960, he went to Jerusalem to be a novice at the Studium Biblicum Franciscanum (SBF), which remained central to his career. He became a priest in 1969 at the age of twenty-five and was posted to the Custody of the Holy Land (Custodia di Terra Santa). He received degrees in Sacred Theology from the Athenaeum Antonianum and in Biblical Studies from the Pontifical Biblical Institute, both in Rome, and completed his doctorate on Iron Age pottery of the Levant in 1975 at the Institute of Near Eastern Studies of La Sapienza University, also in Rome. After 1975, he taught biblical history and geography at the SBF and served as director of their museum. In Jordan he was the director of the Franciscan Archaeological Institute based at Mt Nebo, and the projects undertaken encompassed excavation and restoration at many places, including Mt. Nebo, Umm al-Rasas, and Madaba.

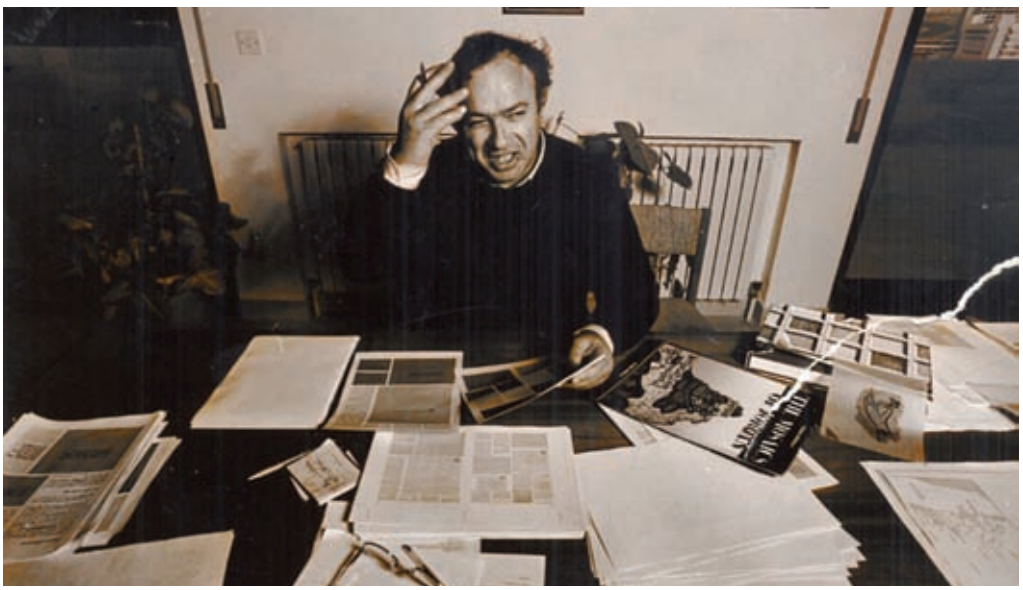
He published extensively. The book that ties him most closely to ACOR is *The Mosaics of Jordan* (1993), officially launched in January 1994 as the first book in ACOR's publication series. During the two years that it took to realize this magnificent volume, he worked intensively with the editors, Patricia Bikai of ACOR and Thomas Dailey of USAID/Amman. In the mid-1990s when Pierre Bikai (ACOR Director 1991–2006) was working on various projects in Madaba, including the Madaba Archaeological Park, collegial interconnections abounded as part of an abiding friendship.

Some other important publications by Piccirillo are *Umm Al-Rasas Mayfa'ah I* (1994) and *Mount Nebo: New Archaeological Excavations 1967-1997* (1998), both co-authored with Eugenio Alliata, and *The Holy Sites of Jordan* (1996), *The Madaba Map Centenary 1897-1997* (1999), and *L'Arabia Cristiana* (2002). He was on the editorial board of *Liber Annuus,* the annual published by the SBF. He wrote many articles for it, essentially each year starting in 1972, as well as for other journals.

Father Piccirillo attending the ICHAJ 10 conference in May 2007 in Washington, D.C.; photo courtesy of B. Porter

Father Piccirillo was also the scientific director of the exhibition on the Mosaics of Jordan, which traveled extensively in Europe and resulted in several versions of the exhibition catalogue, for example *I Mosaici di Giordania* (Rome, 1986). It was his care of the Byzantine sites in Jordan itself that occupied much of his time when he resided at Mt. Nebo. His expertise also extended to projects in Palestine, Syria, Egypt, and Cyprus. His passion for his work was clear to all who came in contact with him. He had a wide circle of friends who feel his loss keenly, as do his family and colleagues.

Barbara A. Porter



Father Michele preparing the layout for *The Mosaics of Jordan* in the ACOR director's apartment in 1993; photo courtesy of Patricia M. Bikai

American Center of Oriental Research: 2009–2010 Fellowship Awardees Announcement

National Endowment for The Humanities Post-Doctoral Research Fellowship

Beatrice St. Laurent (Art History, Bridgewater State College) The Dome of the Rock: Restorations, Historic Tiles, their Documentation and Ties with the Jordan Museum

ACOR-CAORC Post-Graduate Fellowship

Joel Burnett (Religion, Baylor University) Terra-Cotta Architectural Models as Evidence for the Religion of Iron Age Jordan

Alysia Fischer (Center for American and World Cultures, Miami University) Investigating Jordanian Glass: Archaeological and Contemporary

Angel Foster (Ibis Reproductive Health) Assessing the Reproductive Health Content of Medical Education in Jordan

Stefanie Nanes (Political Science, Hofstra University) Women in Municipal Governance in Jordan: The Impact of the Gender Quota

Jason Rech (Geology, Miami University) Paleohydrology and Climatic Significance of the Mudawarra Lake Deposits, Southwestern Jordan

Philip Wilke (Anthropology, University of California, Riverside) Lower Paleolithic Adaptations in the al-Jafr Basin, Jordan

The Andrew W. Mellon Foundation East-Central European-Research Fellowship

László Csicsmann (Institute of International Relations, Corvinus University, Hungary) 'Terrorist Organizations' or 'Political Parties'? The Perspective of Political Engagement of Islamists Organizations in the Middle East—Lessons from The Hashemite Kingdom of Jordan

Ivana Kvetanova (Trnava University, Slovakia) Christian Archaeology at Trnava University

Balázs Major (Arabic and Islamic Studies, Pázmány Péter Catholic University of Hungary) Comparative Study of the Medieval Rural Settlements of the Syrian Coast and the Western Part of Jordan (11th to 14th centuries)

Tomasz Waliszewski (Near Eastern Archaeology, University of Warsaw, Poland) Green Gold II—Inventory of the Oil Presses in Jordan (Hellenistic, Roman, Byzantine, and Early Islamic Periods)

The Samuel H. Kress Fellowship in the Art and Archaeology of Jordan

William Zimmerle (Near Eastern Languages & Civilizations, University of Pennsylvania) Mapping the Neo-Assyrian Empire in Northern Jordan-Southern Syria: Imperial Landscape Change and the Archaeology of Trade Networks in Iron Age Gilead

ACOR-CAORC Fellowship

Stephanie Brown (History, North Carolina State University) Reevaluation of Iron Age Fortified Sites of the Eastern Kerak Plateau

Sarah Bush (Politics, Princeton University) The Politics of Promoting Democracy

Eleanor Gao (Political Science, University of Michigan) Do the Buses Run on Time? Local Government and Public Goods Provision in Jordan

Jill Goldenziel (Government, Harvard University) Refugees, Security, and the Politics of International Law

Matthew Kroot (Anthropology, University of Michigan) Early Villages of the Dead Sea Basin: The 'Asal-Dhra' Archaeological Project

Jennifer C. Groot Fellowship

Russell Gentry (History, North Carolina State University) Dhiban Excavation Project

Gabriel Kravitz (Anthropology and Middle East Studies, McGill University) Azraq Palaeolithic

Isaiah Moose (History, San Diego State University) Bir Madhkur Project

Pierre and Patricia Bikai Fellowship

Micaela Sinibaldi (History and Archaeology, Cardiff University) Villages of Crusader Transjordan: Production, Circulation and Use of Ceramics in the 12th Century A.D.

Harrell Family Fellowship; Bert and Sally de Vries Fellowship; MacDonald/Sampson Fellowship

Christopher Ames (Anthropology, McGill University) Neandertal Lifeways: An Archaeological Survey from the Edge of the Jordanian Plateau to the Dead Sea

James A. Sauer Fellowship

Steven Edwards (Near and Middle Eastern Civilizations, University of Toronto) Wadi ath-Thamad Project

Frederick-Wenger Jordanian Educational Fellowship

Muna Al-Slaihat (Sustainable Tourism, Queen Rania Institute, The Hashemite University) Developing a Sustainable Tourism Plan for the Archaeological Site of Iraq al-Amir

ACOR Jordanian Graduate Student Scholarship

Maryam Ibrahim (Sustainable Tourism, Queen Rania Institute, The Hashemite University) A Study of Khirbet al-Batrawy: Archaeological and Tourism Development

Fatima Jalboosh (Cultural Resources Management, Queen Rania Institute, The Hashemite University) The Architecture of the Umayyad Settlement around Qasr al-Hallabat, Jordan

For information on ACOR's fellowships contact:
ACOR, 656 Beacon St., 5th Floor, Boston, MA 02215-2010
Tel.: 617-353-6571; e-mail: acor@bu.edu; www.bu.edu/acor

Fellows in Residence (July–December 2008)

ACOR-CAORC Post-Doctoral Fellow

Beatrice St. Laurent, Bridgewater State College; The Dome of the Rock: Symbol of Jerusalem (Restorations, Politics and Religion: 1560 to the Present)

Beatrice St. Laurent

ACOR-CAORC Fellows

Carine Allaf, University of California, Los Angeles; An Investigation of Women's Graduation Rates form Higher Education in Jordan

Lisa Welze, University of Oxford; Political Polarization between Palestinian Communities in Gaza, the West Bank and Jordan

Carine Allaf

Lisa Welze

Kenneth W. Russell Trust Annual Tawjihi Prize for Students in Umm Sayhoun

In Summer 2008, ACOR announced the first of the annual prizes to be awarded every summer after the Tawjihi exam results are posted to the male and female student from Umm Sayhoun who achieved the highest Tawjihi score.

The prize is administered by ACOR in Amman for the trust which has as one of its aims educational assistance for the children of the Bedul. Ken Russell (1950-1992) worked with the Bedul and had close friendships with many individuals in Petra.

The 2008 recipients for this prize were Nuha Ibrahim Abdallah and Jemal Khaled Dakhilallah.

Donations to ACOR Library (July–December 2008)

Badia al-Abed; Raouf Abu Jaber; Stefano Anastasio; Russell B. Adams; Zaki Ayoubi; Deirdre Grace Barrett; Patricia M. Bikai; J. M. Blázquez Martínez; Eliot Braun; Robin M. Brown; Centre for Tourism and Cultural Change, Leeds Metropolitan University; Sevil Yesim Dizdaroglu; Jennifer Ebeling; Rózsa Erzsébet; Zbigniew T. Fiema; Pavlos Flourentzos; Elizabeth A. Frantz; Rune Frederiksen; Jaakko Frösén; Omar Al Ghul; Piero Gilento; John Grattan; Laura Hamblin; Timothy Harrison; Moawiyah M. Ibrahim; Jo Indekeu; Artemis A. W. Joukowsky; Randa Kakish; Mutsuo Kawatoko; Riad al Khouri; Beata Kowalska; Nancy Lapp; Tom and Alina Levy; Kenneth K. A. Lönnqvist; P. E. MacAllister; Missy McHugh; Fatma Marii; Jihad al Masri; Yiannis Meimaris; Gregor B. M. Meiering; Robert E. Mittelstaedt; Valerie Montes; Ibrahim Musallam; Tina M. Niemi; Diana Craig Patch; Barbara A. Porter; Judith Price; Jennifer Ramsay; Gotthard G. G. Reinhold; Gary Rollefson; Yorke M. Rowan; Gajus Scheltema; David Seely; Abdul-Rahim Al-Shaikh; Gali Oda Tealakh; Akira Tsuneki; Guido Vannini; Firas Abd al-Aziz Al-Wirikat; Sean L. Yom; Ra'fat Mohammad Dhahi al-Zaben

Donors to ACOR (July–December 2008)

General Donations to the Annual Fund were made by: Donna Antoon; Roger S. Bagnall; Martha Boling-Risser and Robert J. Risser in memory of Robert G. and Jean G. Boling; Nirmal and Ellen Chatterjee; Douglas R. Clark; Emme and Jonathan Deland; David S. Dodge; Ralph and Laurel Doermann; Ben Elliott; Ruth G. Farnham; Jerry G. Fischer; Anna Gonosová; Sami and Lily Habayeb; Joy Hebert; Philip and Ann Howlett; Glenn and Shelley Hughes; Abed M. Ismail; Joukowsky Family Foundation; Eugene J. Kenney and Dale Burchard Kenney; Sara M. Knight; Øystein LaBianca; Joan and Ken Landis; R. Eleanor Linder; James and Judith Lipman; Margaret Mathews; Stanley Maxwell; J. Ryan and Janet K. O'Connell; Christina and Dwight Porter; Suzanne L. Richard; Barbara C. Sampson; Cynthia L. Shartzer; R. Thomas and Marilyn Schaub; Joe D. Seger; Andrew W. Vaughn

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James A. Sauer Fellowship Endowment: Joukowsky Family Foundation; Rami G. Khouri; George M. Landes; Nancy Lapp; S. Thomas Parker; Elizabeth E. Platt

Publication Fund: Shell in Jordan thanks to Ian Bromilow

ACOR Announcement

Christopher A. Tuttle promoted to ACOR Associate Director on January 1, 2009

For the list of all ACOR publications, see the ACOR website or earlier issues of the *ACOR Newsletter*.

New Website to be launched in Summer 2009 www.acorjordan.org which will eventually replace ACOR's Current Website: www.bu.edu/acor

ACOR e-mail address in Boston: acor@bu.edu

ACOR e-mail addresses in Amman: acor@acorjordan.org reservations@acorjordan.org library@acorjordan.org

November 2008 Board Meeting

The ACOR Board of Trustees annual fall meeting was held on 22 November 2008 at the Westin Waterfront Hotel in Boston, Massachusetts. A plaque was presented from CAORC to honor ACOR's 40th anniversary year. In 2008 Board members matched a $50,000 challenge grant offered by the Joukowsky Family Foundation. President Artemis Joukowsky was able to extend congratulations to ACOR Assistant Director, Christopher Tuttle, for his January 1, 2009 promotion to Associate Director upon the successful defense of his Brown University Ph.D. dissertation.

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