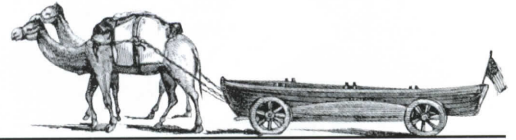


ACOR Newsletter

أخبار أكور

Vol. 9.2— Winter 1997



Before Darwin and Fort Sumter

*The United States' Expedition to Explore
the Dead Sea and the River Jordan, 1848*

Robert E. Rook



William Francis Lynch. Photo courtesy of the Eleanor S. Brockenbrough Library, Museum of the Confederacy, Richmond, Virginia.

From the vantage of the very late 20th century, ACOR's patron saint, Lieutenant William Francis Lynch, came from another world. As an adventurer, Lynch belonged to the last generation of explorers charting a pre-Darwinian world. As an American, Lynch represented an antebellum generation trapped in "a house divided against itself"; he served a nation that was struggling to expand and to fulfill a providential destiny but ultimately destined to suffer a bloody civil war. Nonetheless, Lynch completed a remarkably contemporary survey of the

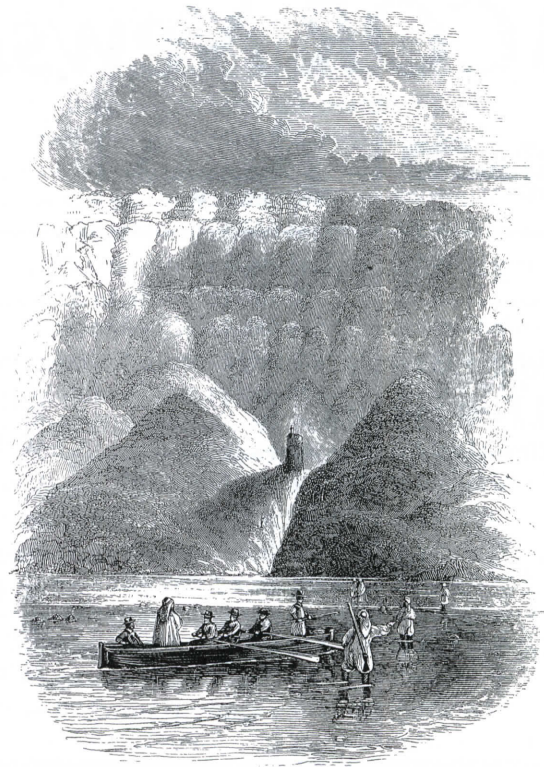
Jordan River and Dead Sea. Although Charles Darwin's publication of *The Origin of the Species* (1859) exploded Lynch's scientific world, namely that the world was older but not much different from that which God had created, and the American Civil War (1861-1865) ended the America to which Lynch had dedicated his professional career, Lynch's 1848 survey mission was a harbinger of both modern exploration and current developments in the Jordan Valley. While bearing the stigmata of the prevailing religious, ethnic, and racial attitudes of the 1840s, Lynch's survey mission captured a geophysical, ethnographic, botanical, and zoological portrait that was both accurate and scientific in many current respects.

Given the available technology and the obstacles in his path, Lynch embraced an epic and heroic challenge. He first proposed the mission in early May, 1847; Secretary of the Navy John Y. Mason approved the mission several weeks later. On November 26, 1847, Lynch sailed for the Middle East aboard the U.S.S. Supply, a vessel that had originally been christened the Crusader. After a three month voyage, Lynch landed at Constantinople, staying only long enough to win permission to enter the Jordan Valley from the Ottoman Sultan Abdel Mejid.



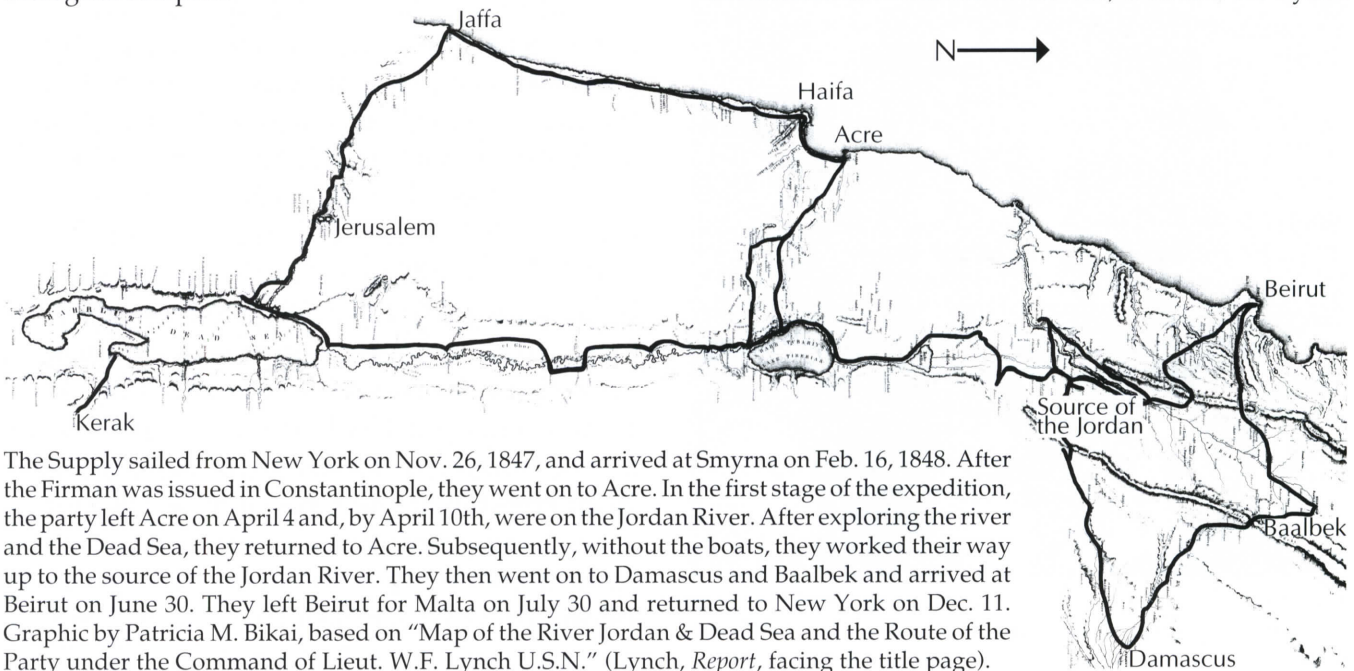
'Akil Aga el-Hasseé who guided and protected the expedition (Lynch, *Narrative*, facing 128)

Several weeks later and after an arduous 30-mile portage inland from Acre to Tiberias, Lynch launched his two metal-hulled boats, the *Fanny Mason* and the *Fanny Skinner*, on the Sea of Galilee in early April, 1848, and began his journey downstream into history. His eight-day journey to the Dead Sea was in fact a two-pronged assault. While Lynch navigated a Jordan River he quickly judged too tortuous and too tempestuous to be navigable for large-scale commercial purposes, a land party reconnoitered the surrounding banks. Along the way Lynch took careful measurements and recorded his observations; the land party collected mineral and biological samples.



Pillar of salt at Usdum at the southern end of the Dead Sea (Lynch, *Narrative*, facing 308).

On April 18, Lynch and company arrived at the Dead Sea. They spent the next three weeks exploring the area before departing for Jerusalem on May 10. After the month-long survey of the lower Jordan Valley and Dead Sea, the crew spent several days in Jerusalem recovering before proceeding to the Mediterranean coast and Jaffa. Lynch's arrival at Jaffa at the end of May enabled a final calculation of the difference between the levels of the Mediterranean and the Dead Sea, a difference Lynch



The Supply sailed from New York on Nov. 26, 1847, and arrived at Smyrna on Feb. 16, 1848. After the Firman was issued in Constantinople, they went on to Acre. In the first stage of the expedition, the party left Acre on April 4 and, by April 10th, were on the Jordan River. After exploring the river and the Dead Sea, they returned to Acre. Subsequently, without the boats, they worked their way up to the source of the Jordan River. They then went on to Damascus and Baalbek and arrived at Beirut on June 30. They left Beirut for Malta on July 30 and returned to New York on Dec. 11. Graphic by Patricia M. Bikai, based on "Map of the River Jordan & Dead Sea and the Route of the Party under the Command of Lieut. W.F. Lynch U.S.N." (Lynch, *Report*, facing the title page).

ascertained as 1,316.7 feet (401.3 m) below the level of the Mediterranean. From Jaffa, Lynch moved on to Acre and preparations to begin his search for the source of the Jordan River.

The party returned to the Sea of Galilee on June 13, beginning a survey of the northern valley the next day. In comparison to the sand hills of the coast and the Dead Sea, the upper Jordan Valley was rich in possibility. The Huleh basin's fertile plains and a confluence of the Jordan River's perennial tributaries contributed to Lynch's assessment as he ascended the Golan Heights. On June 17, Lynch briefly left the expedition and the Jordan Valley to reconnoiter the Lebanon's Litani River basin before returning to lead the expedition out of the valley to Damascus, where commerce became a principle concern. Lynch discovered Damascus bazaars filled "with foreign fabrics and cutlery—mostly English—paying, we were assured, a handsome profit." Upon arrival in Beirut, the seaport of Damascus, Lynch procured "a list of its imports and exports," which he appended to his official report to Secretary Mason. A cholera epidemic in Beirut hastened Lynch's departure from the region at the end of June.

For Lynch, the only thing imminent upon his return to America was controversy. Life after the survey mission was bitter-sweet. The survey mission became a target for politicians eager to exploit any issue for partisan purposes. Lynch placed his case before the American public in May 1849. In the preface to his *Narrative*, Lynch admitted that "indications were such as to induce me to apprehend that it [the mission] was not appreciated." He appealed to "a liberal and enlightened community [who] would not long condemn an attempt to explore a distant river, and its wondrous reservoir."

Analysis of the Dead Sea Water.

The quantity submitted to analysis was drawn up by Capt. Lynch himself from a depth of 185 fathoms. The determination of its constituents was very carefully made by Professor Booth, of Philadelphia, assisted by Mr. Alexander Mucklé. I subjoin the results as already given in Captain Lynch's Official Report, submitted February 3, 1849.

Specific gravity = 1.22742.

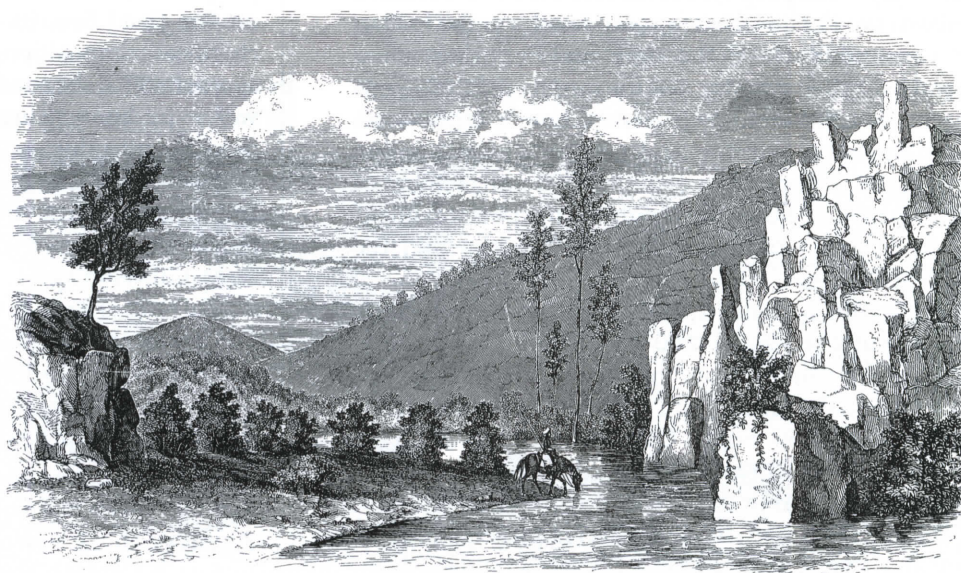
Chloride of Sodium,	78.554
Chloride of Potassium,	6.586
Chloride of Magnesium,	145.897
Chloride of Calcium,	31.075
Bromine Salts,	1.374
Sulphate of Lime,701
	<hr/>
	264.187
Water,	735.813
	<hr/>
	1000.000

It may be remarked that the great specific gravity of this water does not indicate full saturation with any of the chlorides, for the water is still capable of holding much chloride of sodium, and of course still more chloride of magnesium, in solution. Since, however, crystals of chloride of sodium remain undissolved at the depth of 116 fathoms,* it follows that the water of the Dead Sea is very unequally charged with its constituents, and that no safe inference can be drawn from an analysis of the surface water, and still less of any specimen in which the depth is not given. I will also add, that in two analyses of Dead Sea water for chloride of calcium alone, I have found more of this salt than in the analysis above given, in one instance 48 gr. 47 in 1000; but the water was in these cases taken from another part of the Sea.

Analysis of Dead Sea water (Lynch, *Report*, 204-5).

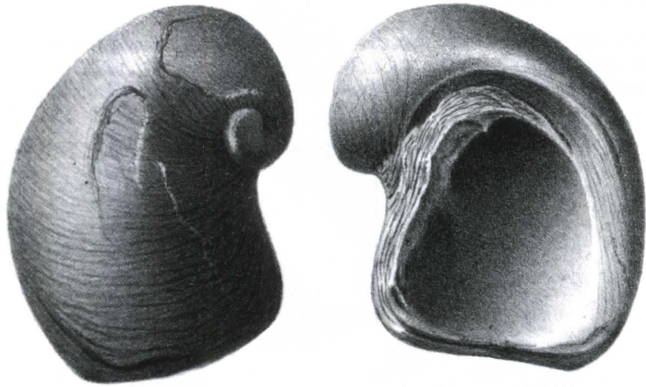
Lynch's faith in the American public was justified. The *Narrative* was a commercial success; the first edition quickly sold out. Over the next decade, it went through seven American and two English editions. Sales of the *Narrative* appeared to validate the contention of Matthew Maury, director of the newly created Naval Observatory, that public interest in the mission was sufficient enough reason to have funded it.

In 1849, Lynch was promoted to commander. In 1860, he published *Commerce and the Holy Land*, an expanded version of a public lecture he delivered several times between 1858 and 1860. In that work, Lynch's personal beliefs and experiences in the Jordan Valley coalesced into a passionate appeal for a new American



SOURCE OF THE JORDAN.

Source of the River Jordan (Lynch, *Narrative*, frontispiece). Lynch (*Report*, 43): "At the foot of Mount Hermon it gushes copious, translucent and cool, from beneath a bold, perpendicular rock, and flows in two rectangular streams between banks literally fringed with flowers."



Organic remains found in the chalk, *Exogyra densata* from Wadi Zerqa Ma'in (Lynch, *Report*, 224, no. 106).

trade route to the east. Although his 1848 survey had demonstrated the Jordan River's unsuitability as a navigable commercial waterway, the Jordan Valley remained a central piece of his blueprint for American commercial expansion. The Jordan Valley offered a middle route between an increasingly troubled Ottoman Turkish empire and European powers, England and France, feuding over a route for what became the Suez Canal. In 1855, an English engineer, W.A. Allen, had proposed blasting a canal from the Mediterranean across the path Lynch took to the Sea of Galilee. According to Allen, the rapid influx of Mediterranean seawater would enter the valley, overflow the Sea of Galilee, and unleash a raging torrent down the valley, eventually opening a waterway to Aqaba on the Red Sea coast.

In *Commerce and the Holy Land*, building on the work of Allan, Lynch envisioned a canal opening the upper Jordan Valley to the Mediterranean. But, instead of following the route south through the valley to the Red Sea as others had proposed, Lynch offered two northern routes to the Persian Gulf: a route north via the Jordan and Yarmouk Rivers to the Tigris and Euphrates and a second route to the east across the Jordan Valley toward present day Bahrain. Both routes, Lynch argued, required further exploration and substantial construction of road, rail, and canal systems. Such an investment of time and money, however, would gain access to a lucrative trade that would benefit both America and the Middle East.

Publication of *Commerce and the Holy Land* coincided with the hotly contested 1860 U.S. presidential election. Abraham Lincoln's victory in that election signaled the end of both the Union and Lynch's naval career. In December of 1860, South Carolina seceded from the Union and on April 12, 1861, opened fire on Fort Sumter in Charleston Harbor.

On April 21, Lynch tendered his resignation from the navy and, over the next four years, he served the Confederate Navy. At war's end, Lynch surrendered to federal authorities and was paroled on May 5, 1865. He spent the final six months of his life in Baltimore, Maryland, where died on October 17, 1865.

Further Reading

William Francis Lynch:

Narrative of the United States Expedition to the River Jordan and the Dead Sea (Philadelphia: Lea and Blanchard, 1849).

Naval Life: Observations Afloat and on Shore (New York: Charles Scribner, 1851).

Official Report of the United States' Expedition to Explore the Dead Sea and the River Jordan (Washington, D.C.: The National Observatory, 1852).

Commerce and the Holy Land (Philadelphia: King and Baird Printers, 1860).

Other:

Matthew F. Maury, "The Dead Sea Expedition," *Southern Literary Messenger* 14 (September 1848).

Edward Montague, *Narrative of the Late Expedition to the Dead Sea. From a Diary by One of the Party* (Philadelphia: Carrey and Hart, 1849).

The 150th Anniversary of the United States' Expedition to Explore the Dead Sea and the River Jordan

The story of the 1848 expedition was widely known at the time, but today is little remembered. The 150th anniversary is an appropriate occasion to recall both the accomplishments of the survey and to reflect on its era. The achievements of the expedition were not insignificant. Their documentation on such things as the territories, population sizes, and relationships of the various peoples of the area is still useful. The information on the Dead Sea, its configuration, depth, and chemical composition, is still used as a standard against which the condition of that fragile body of water can be measured. The maps created were used far into this century as they were the best maps of the Jordan River and the Dead Sea. More importantly, those maps vividly illustrate that those two bodies of water no longer exist as they were 150 years ago.

During 1998, ACOR is celebrating the anniversary with a lecture, and exhibit, and publication of *The 150th Anniversary of the United States' Expedition to Explore the Dead Sea and the River Jordan* by Robert E. Rook.

The commemoration is being undertaken with assistance from the United States Information Agency, the Council of American Overseas Research Centers, the U.S. Embassy in Amman, the United States Navy, the Royal Geographic Center, the Royal Society for the Conservation of Nature, and the Municipality of Greater Amman.

The River Jordan and the Dead Sea:

150 Years Later

When William Lynch set out on his expedition, the Dead Sea was perceived in America and Europe as a place of great mystery. Lynch himself, however, was a trained naval officer and, though he could be romantic and poetic, he was clear that his mission was to make a systematic scientific survey of both the Dead Sea and the Jordan River. On his last day at the Dead Sea, May 9th, 1848, he wrote:

The exploration of this sea was now complete; we had carefully sounded its depths, determined its geographical position, taken topographical sketches of its shores, ascertained the temperature, width, depth and velocity of its tributaries, collected specimens of its own and tributary waters, and of every kind of mineral, plant and flower; and noted the winds, currents, changes of weather and all atmospheric phenomena.*

The sea and the river he charted a century and half ago, however, was a very different place from the one that exists today.

The River Jordan

Lynch and his fellow explorers set off to reach the Dead Sea from Lake Tiberius (Sea of Galilee) by navigating the River Jordan. The river he describes is one we would hardly recognize:

The river today [south of Pella] varied from thirty-five to sixty yards in width, and from five to six knots velocity of current, and five to six feet deep. Descended 12 rapids, three of them formidable ones, and passed one small tributary and five islands, one of them large and wooded.

There are many descriptions in his official report of "clear water," "cascades," and "breathless velocity"

and, at one point, just south of Um Qais, his boats were in danger from the rapids. They let one of the boats "drop to the brink of the cascade where she fairly trembled and bent in the fierce strength of the sweeping current."

If you tried to repeat this journey today you would be very disappointed. The extraction of water from the Jordan River and its catchment has reduced this once noble river to a mere trickle. In some places, the flow and depth are hardly sufficient to carry a boat of any description and stretches in the far south are virtually dry in summer. At the present time, there are four dams and three pumping stations. Another twelve dams and eight pumping stations are planned.

The Dead Sea

At 3.25 P.M., passed by the extreme point where the Jordan is one hundred and eighty yards wide and three feet deep, and entered upon the Dead Sea. ... The wind soon freshened into a gale, and caused a heavy sea, in which the boats laboured excessively. The spray was painful to the eyes and skin and evaporating as it fell, left encrustations of salt upon our faces, hands and clothing.

The sea that Lynch and his crew reached on April 18, 1848, was not the same size and shape as it is today. Lynch saw it as one complete unit, not broken as it is now into a larger northern part and a smaller southern part. Lynch notes in his journal that the water depth in the area west of the Lisan Peninsula was shallow and difficult to navigate. By 1851, that stretch of water had been named Lynch's Strait in honor of the explorer.

The Dead Sea kept a shape that Lynch would have recognized until the 1970s when the effects of water extraction from the Jordan River and other tributaries, as well as large-scale evaporation activities by the chemical industry, began to take their toll. The Dead Sea continues

*All quotations are from W. F. Lynch, *Official Report of the United States' Expedition to Explore the Dead Sea and the River Jordan*, 1852.



Ruined bridge of Semakh (Lynch, *Narrative*, facing 176). The boats had a difficult time passing through these ruins.

to shrink steadily. During the 1980s its level dropped an average of 65 mm per year. In the last three decades it has dropped about 15 meters. Because of this, the water covering Lynch's Strait became ever more shallow and concentrated, creating salt reefs that eventually blocked the flow of water from north to south.

Lynch's Strait is now dry.

Plant and Animal Life

Along the Jordan, Lynch describes an idyllic scene of banks:

... fringed with the laurestinus, the oleander, the willow and the tamarisk, and further inland, on the slope of the second terrace, grew a small species of oak and the cedar. The



Shore of the Dead Sea (Lynch, *Narrative*, facing 276).

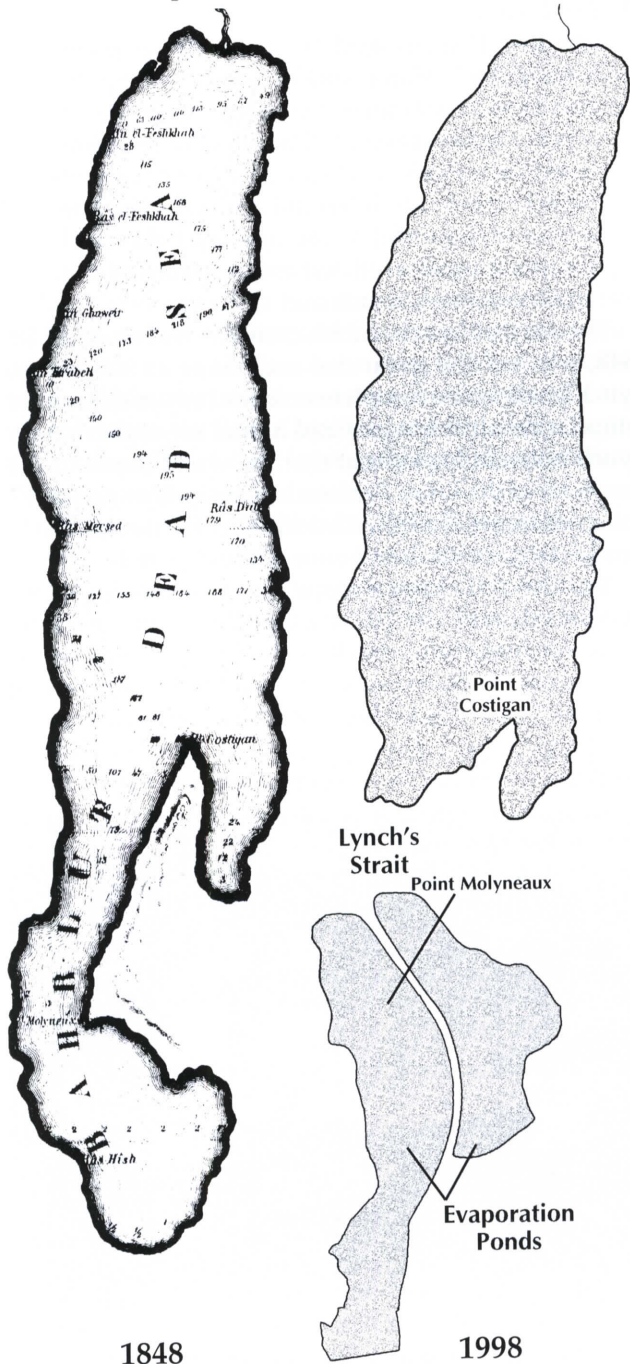
arbutus (strawberry tree) was mingled with flowers of the plain ... and from the banks to the elevated ridges on either side, the grass and the flowers presented a surface of luxurious beauty.

In the Ghor, he describes a great richness of animal and plant life:

We gathered many flowers for preservation ... and even during the heat of the day, when every living thing but ourselves had sought refuge in the thicket, there were birds flying about in all directions. ... We saw many fish, and a number of hawks, herons, pigeons, ducks, storks, bulbuls (or nightingales), swallows and many others which we could not identify. ... The western shore was peculiar from the high calcareous limestone hills; while the left or eastern bank was fringed with tamarisk and willow, with here and there a thicket of lofty cane and tangled masses of shrubs and creeping plants, giving it the character of a jungle. In one place we saw the tracks of a tiger, and in another started a wild boar.

It is almost certain that the tracks that Lynch saw were those of a leopard, not a tiger. Leopards can still be found in the mountains of the West Bank, but they are now extremely rare and endangered. The last leopard recorded on the East Bank was shot in 1987.

Chris Johnson, Mohammed Abdul Fatah, and Khaled Irani Royal Society for the Conservation of Nature



Far left: Graphic based on "Sketch Map of the Dead Sea" (Lynch, *Narrative*, facing 268). Left: the Dead Sea in 1998. Lynch named the northern point of the Lisan Peninsula Point Costigan after Christopher Costigan from Ireland who, in 1835, was the first modern traveler to sail on the Dead Sea. The southern point was named for Thomas Molyneaux, an English sailor who explored the Jordan River and the Dead Sea in 1847. Lynch says (*Report*, 36) this was "a tribute to the memories of the two gallant men who lost their lives in attempting to explore this sea." Point Molyneaux, like Lynch's Strait, has disappeared.

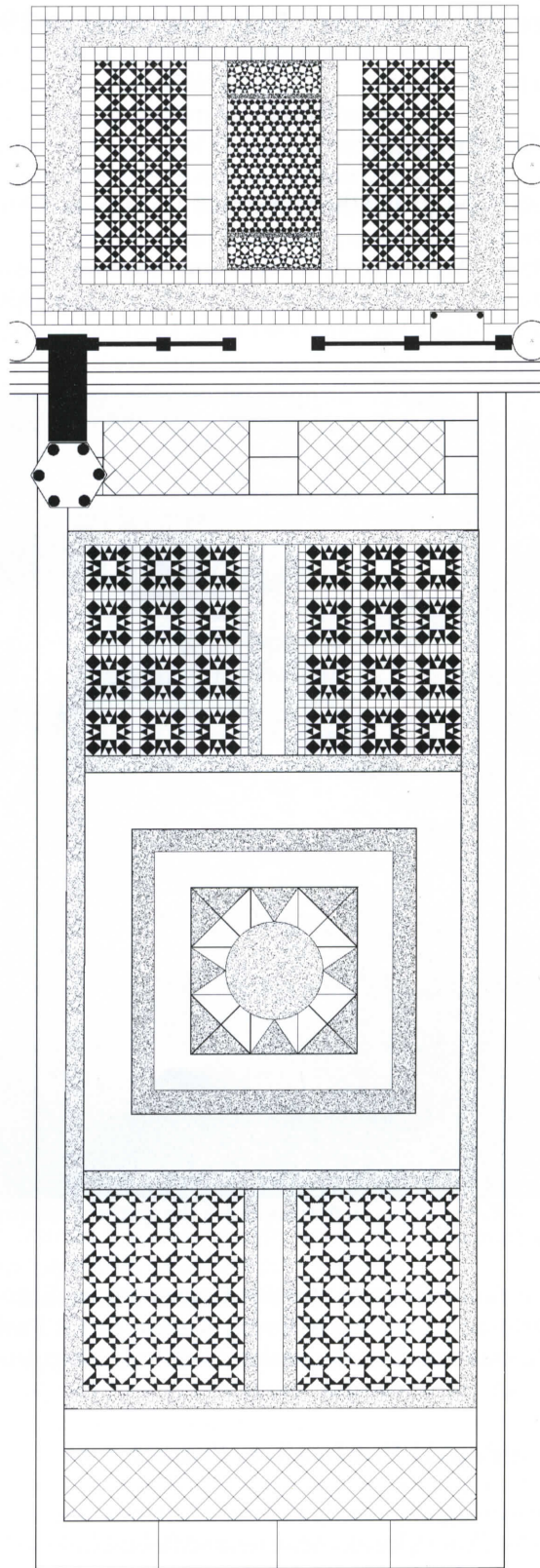
Petra Church: Pavement of the Nave

Most of the marble paving of the chancel and nave of the Petra Church was robbed in antiquity. The aerial photograph of the Petra Church taken by Wil and Ellie Myers in 1993, just as the excavation was completed, showed that the remaining mortar bedding of the pavement gave the broad outlines of the design of the floor. Soon after the aerial photograph was taken the whole floor of the church was covered with sand to protect the mosaics. It remained that way until the summer of 1997. Subsequently, the author, with the assistance of Virginia Egan and Pierre Bikai, measured all of the extant traces. With the use of a digital camera and Adobe Photoshop, it was possible to create a nearly complete reconstruction on paper. With one exception, the central panel, just enough remained of each of the different panels to determine the materials used. Of the central panel, only mortar traces remained and the restoration at right shows the limit of what the evidence will support. It is possible that the central circle, probably too large an area to have been a single stone slab, was a mosaic with the name of the church and/or the names of the donors.

Where actual fragments of the floor remained, they showed that two materials were used to create the design. For the lighter color, marble was used. The variety of types and shades of the marble suggests that it was recut from materials brought into Petra in earlier eras. The darker color was created from a local sandstone that is purple in color. The use in a few places of harder purple stone, including porphyry, indicates that the choice of that purple sandstone was a deliberate attempt to imitate genuine porphyry, a prized stone in the Byzantine period (purple being the "royal" color).

At the time the Petra Church shelter was designed, it was decided that a U-shaped walkway would go into the nave so that visitors could view the mosaics in the two aisles. Once it had been determined what the design and materials of the original pavement were, however, it was decided to restore the floor, rather than build the walkway. The materials would have to be different, however, so that it would be clearly a restoration. Two shades of Ma'an limestone were chosen. These are not as strong in color as the originals but will give visitors an indication of the richness of the original building. The new floor will be installed in the spring of 1998.

Patricia M. Bikai



Left, above: ground plan of the Petra Church showing the traces of the remnant flooring in the chancel and nave. Left, below: part of a preserved section of the chancel. Above: restoration of the floor by Patricia M. Bikai. The restoration of the steps, pulpit, and chancel screens is based on drawings by Chrysanthos Kanellopoulos. The coloring of the central panel is hypothetical. The areas left white in the drawing were most probably paved with large marble slabs.

Director's Report: July-December 1997

Pierre M. Bikai

ACOR Projects

ACOR/USAID and the Ministry of Tourism and Antiquities:

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



Enzo Di Carlo works on the mosaics of the northern aisle of the Petra Church.

Petra: Petra Church Mosaics Conservation, Enzo Di Carlo and Claudia Tedeschi; Roman Street Project, Chrysanthos Kanellopoulos, architect; Zbigniew T. Fiema, archaeologist

Petra Papyri Publication Project

U. of Michigan: Ludwig Koenen, Traianos Gagos, Robert W. Daniel, Donka Marcus, and Robert Caldwell. U. of Helsinki/Academy of Finland: Jaakko Frösén, Marjo Lehtinen, and Mari Mikkola.

ACOR-Assisted Field Projects

Aqaba/Ayla, Mary Louise Mussell, Carleton U. Azraq Wetlands Prehistory and Paleoenvironmental Project, Richard Watson, Rusty Low, and Douglas

Schnurrenberger, San Juan College, New Mexico Bir Madkhur Excavation and Survey, Megan Perry, U. of New Mexico, and Andrew Smith II, U. of Maryland Dhiban Plateau Regional Project, Chang Ho C. Ji, Andrews U.

Ghwair in the Wadi Feinan, Alan Simmons, U. of Nevada/Las Vegas, and Mohammad Najjar, Dept. of Antiquities

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

Cartographical and Computerizing Research around Jabal Harún, Petra, Jaakko Frösén, Academy of Finland

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

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

Lehun, Denyse Homès-Fredericq, Vrije Universiteit, Brussels

Urban Archaeology and Preclassical Madaba, Tim Harrison, U. of Chicago

Petra, Great Temple, Martha Joukowsky, Brown U.

Petra, Ridge Church, Patricia Bikai, ACOR

Bioarchaeology of Sa'ad: A Small Byzantine Village in the Mafraq District, Jerry Rose, U. of Arkansas, and Mahmoud el-Najjar, Yarmouk U.

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

Tell Safut, Donald Wimmer, Seton Hall U.

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

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

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

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

Fellows in Residence

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

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

Ahmad Sadri, Lake Forest College, The Comparative Study of Post-Revivalist Islam

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

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

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

Patricia Carter, U. of Tennessee, Collection and Preservation of Jordanian Folk Music on Site

NMERTA PRE-DOCTORAL FELLOWS:

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

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

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

Charles E. Reineke, U. of Missouri-Columbia, Mass Tourism in the Jordan Rift Valley: Economic, Environmental, and Cultural Effects

United States Information Agency Fellows:

Rochelle Davis, U. of Michigan, Recreating Jerusalem: Oral Histories of Life in British Mandate Jerusalem

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

Rochelle Davis, U. of Michigan, Recreating Jerusalem: Oral Histories of Life in British Mandate Jerusalem

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

Catherine Warrick, Georgetown U., The Politics of Culture: Gender and Discourse in Jordanian Society

Waleed Hazbun, M.I.T., Staging Liberalization? The Politics of Tourism, the State, and Global Economy in Jordan

Kress Foundation Fellow:

Erika Schluntz, Brown U., The Architectural Sculpture of the Great Temple, Petra

Council of American Overseas Research Centers (CAORC)

Affiliated Fellow:

Stefan Meyer, The Experimental Novel in the Levant

Jennifer C. Groot Fellows:

Brian Brown, Brown U., Petra Southern Temple Project

Christian Rata, U. of Toronto, Wadi ath-Thamad Project

For information on ACOR's fellowships contact: ACOR, 656 Beacon St., 5th Floor, Boston, MA 02215-2010, Tel.: 617-353-6571, Fax: 617-353-6575, e-mail: acor@bu.edu.

Lectures

July 13. Wadi ath-Thamad Excavation and Survey, Michèle Daviau and Andrew Dearman

July 14. Roman Aqaba Project, Marie Louise Mussell

July 15. Tall Hisban Cultural History Project, Øystein LaBianca and Gary Christopherson

July 16. Urban Archaeology and Preclassical Madaba, Tim Harrison

July 16. Eastern Hasa Lata Pleistocene Project, Nancy Coinman and Deborah Olszewski

July 19. Ghwair, Al Simmons and Mohammad Najjar

July 20. Wadi Fidan Archaeological Project, Tom Levy and Russell Adams

July 21. Kerak Castle Excavation, Jack Lee

July 22. Bioarchaeology of Sa'ad: A Small Byzantine Village in the Mafrq District, Jerry Rose and Mahmoud el-Najjar

July 23. Wadi Ramm Recovery Project, Denine Dudley, Vicki Karas, and Barbara Reeves

July 26. Khirbet Iskander, Suzanne Richard and Jesse Long

July 30. Hunting in Azraq over the Past Quarter Million

Donors to ACOR

From June through December, 1997, the following friends of ACOR donated to the endowment: The American Schools of Oriental Research (ASOR), Mr. Henry Christiansen III, Dr. and Mrs. Burt DeVries, Dr. Lawrence T. Geraty, Mr. Artemis A.W. Joukowsky (Joukowsky Family Foundation), Mr. and Mrs. Kosmo Kalliarekos, Dr. S. Thomas Parker, Ambassador and Mrs. Wesley Egan, Dr. Harold Forshey, Dr. and Mrs. Donald O. Henry, Mrs. Nancy Lapp, Mr. and Mrs. Kenneth Miller, Mr. Randolph Old, Mr. Rex Rice, Dr. and Mrs. Edwin Schick, Prof. Denise Schmandt-Beserat, H.E. Senator Leila Sharaf, Mr. and Mrs. Khaled Shoman, Ms. Guiliana Battiti Sorlini, Dr. and Mrs. Prescott Williams, Jr., and Mrs. Judy Zimmerman.

General donations were made by Mr. Henry Christiansen III, Mr. Felix Emse, Jr, Dr. Rodney Grubb, Dr. and Mrs. Steve Infantino, Dr. Doris Miller, Mr. Charles P. Schutt, Jr., Mr. Bernard Selz (Selz Foundation), Mr. Hershel Shanks, Ms. Cynthia Shartzter, and the U.S. Embassy Community Liaison Office.

The Jennifer C. Groot Endowment received contributions from Mr. Timothy Ferrell, Mr. Bruce Gould, and Dr. S. Thomas Parker.

The Harrell Family Trust received donations from The American Schools of Oriental Research (ASOR) and Mr. and Mrs. Edgar Harrell.

The Kenneth W. Russell Trust received donations from Ms. Kay Russell and Mrs. Rebecca Salti.

In kind donations were made by Dr. Patricia Bikai, Dr. Martha Joukowsky, Mr. Robert E. Mittelstaedt, Mr. Randolph Old, and Dr. Khair Yassine.

A donation to the library endowment was received from Mrs. Anne Ogilvy. Donations to library operations or for purchase of books were received from Mr. Ronald Atkins and Mrs. Gail Vander Heide.

Donations of books and journals were received from Ms. Kholood Abdo, the Abdul Hameed Shoman Foundation, Mr. Russell Adams, Dr. M. Adnan al-Bakhit, Drs. Pierre and Patricia Bikai, Dr. J.M. Blazquez, Dr. Jean-Pierre Braun, Dr. Robin Brown, Dr. Douglas Comer, Mr. Thomas Dailey, Ms. Stephania Dodoni, Mr. Fred Donner, Dr. Steven Falconer, Dr. Omar al-Ghul, Ms. Carol Grissom, Dr. Bassam Haddad, Mr. Najib Hourani, Embassy of Israel, Dr. John Lee, Ms. Fatma Marii, Dr. John Oleson, Ms. Mary Reeves, Prof. Denise Schmandt-Beserat, Mr. Trent Shipley, Mr. Richard Stephenson, Prof. Dr. August Strobel, Mr. Peter Warnock, Mr. Oliver Wilcox, and Ms. Ghada al-Yousef.

Years, Richard Watson, Russanne Low, Douglas Schnurrenberger, Leslie Quintero, Phil Wilke, and Gary Rollefson

July 31. Dhiban Plateau Regional Project, Chang Ho C. Ji

Aug. 4. Tell Safut, Don Wimmer

Aug. 11. Petra: Roman Street Project, Zbigniew T. Fiema

Aug. 13. Petra: Great Temple, Martha Joukowsky

News and Notes

July 1. The count of excavators in the field tops 300.

July 3. There is a combined Canada Day/4th of July celebration with the U.S. and Canadian ambassadors as guests. Hamburgers, hot dogs, potato salad, ice cream, chocolate chip cookies, etc., etc.

July 14. The Grand Duke and Duchess of Luxembourg tour ACOR.

July 15. I wing off to Petra with the Luxembourg contingent. The helicopter flies over ACOR as it departs and I



The Grand Duchess of Luxembourg, Pierre Bikai, the Grand Duke of Luxembourg, and H.R.H. Prince Ra'ad bin Zeid



The large building in the center is ACOR

am able to capture aerial views of the building and, later, of the Petra shelter.

July 17. David Levin of USIA visits to evaluate the fellowship programs.

July 24. In the evening, I give a party at the "Palace" in Madaba for the Iskander crew and for the neighbors who have suffered through the restoration project.

July 28. There is an end-of-season party on the balcony for the Thamad and Scroll teams. Ernie Gardner of the Wadi ath-Thamad team regales the guests with opera selections.

Aug. 4. In Petra, the work on the mosaics is almost finished. Springtime looks just as lovely as ever!

Aug. 7. Ahmad Sadri finds a beautiful chameleon in the garden and brings it in for everyone to see. Later, I ask Ahmad if he's feeding it. Ahmad: "No, I don't have any flies on me."

Aug. 15. Randy Old sends Kathy a stack of postcards from Hawaii. When they arrive she says that one of them shows the area just next to the house that Randy is procuring for her.

Aug. 18. I make a run down to Petra to see the new equipment granted to ACOR by USAID—a crane, a backhoe, and a dump truck.

Aug. 22. I go off to Madaba with the Minister of Tourism and Antiquities and the Director of Antiquities so we can discuss the hand-over of the Madaba Archaeological Park to the ministry.

Aug. 22. Meanwhile, Patricia gives a tour of ACOR for the Friends of Archaeology.

Aug. 23. The audit is in full swing, creating an entertaining diversion for the otherwise bored staff.

Sept. 4. Patricia and I visit Um Sayhoun where the Petra Regional Council, with a contribution from the Kenneth W. Russell Trust, is building a wall around the boy's school to create a playground for children who now play in the street.

Sept. 5. A nice quiet Friday on what is usually the beginning of the quietest time of the year at ACOR. A call comes in from St. Olaf's College. They have a group of 29 on their way in and can ACOR host them for a week? No problem.

Sept. 6. Panic sets in.

Sept. 13. At the end of a mad week, the St. Olaf's students leave Jordan.

Sept. 13. In the morning Patricia rearranges all the furniture.

Sept. 13. Audit and finance consultant Rex Rice arrives in the middle of the night and early in the morning he, Nisreen, and Patricia enjoy long discussions of debits and credits and assets and, and ... ! In the afternoon, Randy

Old turns up to join the fun.

Sept. 22. Volunteer Janice Hagginbothom begins a financial analysis of ACOR's various programs. Later, she looks utterly horrified when Patricia declares, "This is fun!"

Sept. 26. Patricia and I and the Egans depart for Petra where the first activity will be the long-awaited removal of "Patricia's balk" which is reputed to contain every missing piece from everything that ever existed in the Petra Church.

Sept. 30. Having disposed of most of the balk (which contained almost nothing), the Petra contingent moves on to the Ridge Church.

Oct. 5. As a result of the on-going financial study, it is revealed that in 1996-97, there was about 37% occupancy in the hostel—well over 7000 bed-nights. Hotel experts say that's pretty good. ACOR staff say that is a lot of questions as to the price of a postage stamp, how to place a phone call, where to get a bus, etc., etc.

Oct. 5. Patricia, Humi and Pat go to a fabric store to choose a color for the "re-cover all the sofas project."

Oct. 5. Shishir Dutta brings by the first pages from the



The new furniture in the lower library

reprint of *The Mosaics of Jordan*.

Oct. 26. The new furniture for the lower library, a donation of the Canada Fund, begins to arrive. This sets off a chess game in the basement and sub-basement of relocating the computer room, the drafting area, the archives, the map collection, and the publications.

Oct. 28. The old computer room is closed and the computers removed as painting and renovation begin. The newly covered sofas are delivered, giving the living room a new image.

Nov. 18. At the ASOR meetings, I give a paper on the problems of conservation at Madaba. In the question period, someone makes the mistake of asking a question about the trees in the mosaics, thereby giving me the opportunity to launch into THE TREE LECTURE.

Nov. 26. Shishir Dutta conducts the ACOR Indoor Putting Tournament in the upstairs lounge until 2 AM, with Shishir's team being declared the winner.



Detail from the mosaics of the Petra Church, head of a stag

Nov. 27. A group from Yarmouk University arrives for a tour of ACOR. Bob Daniel provides the tour of the "old burned paper."

Nov. 27. Thanksgiving Day dinner for 20 is held.

Nov. 28. Patricia and I return from the U.S. and tour the renovations. Thank you to Bob, Kathy, Nisreen, Humi, Pat, Mohammad, Abed, Sa'id, Vicky, and Caesar. ACOR looks organized!

Nov. 29. Patricia tells Abed that everyone has done such a good job on the various renovations perhaps we should return to the U.S. for another month. Abed reacts with horror: "Please—there were too many bosses!"

Nov. 29. Since Patricia and I were on airplanes the whole of Thanksgiving Day, Mohammad restages the whole event!

Nov. 30. Dr. Ghazi Bisheh comes by for lunch. Big news is that the 'Ain Ghazal statues, which were restored at the Smithsonian, are on their way home!

Dec. 7. Kathy scrapes the bottom of the barrel for a copy of *Mosaics*. Meanwhile, Shishir toils away on finishing the reprint and on printing *Ammonites and Arabs: 5000 Years in the Madaba Plains of Jordan*.

Dec. 9. I take another St. Olaf's group to tour the Citadel, where we encounter Carol Grissom, who restored the 'Ain Ghazal statues, installing them at the museum. Later the group goes off to the U.S. Embassy for a briefing by Ambassador Egan.

Dec. 15. A letter comes from Celeste Fulgham of USAID beginning, "Congratulations!" It goes on to say that ACOR has fulfilled the "Conditions Precedent" to actually receive the \$900,000 Petra endowment. Thank you to everyone who worked so hard on it.

Dec. 22. There is a farewell luncheon for Sarah Musselman who has spent three months as a volunteer packing up all the finds from the Petra Church so that they can be turned over to the Department of Antiquities.

Dec. 23. I go off to Yarmouk U. to give a lecture on the Thamudic inscriptions from Madaba.

Dec. 25. Thirty participants, including H.R.H. Prince Ra'ad and Princess Majda, sit down for the traditional holiday brunch in honor of the employees and their families. There are children everywhere!

Trustees Meet in Napa, California

On Nov. 19, 1997, the ACOR Board of Trustees met in Napa, California. One of the major topics was the endowment campaign. ACOR is very close to fulfilling the matching requirements of the National Endowment for the Humanities Challenge Grant. The venue of future meetings was also discussed. It was generally agreed that efforts by the American Schools of Oriental Research (ASOR) in regard to the meeting at Napa were to be commended.

In the evening there was an ASOR reception at which ACOR President Artemis A.W. Joukowsky received the W.F. Albright Award "for his outstanding leadership and support of the American Center of Oriental Research."

ACOR Trustees

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

Class of 1999: Mrs. Nancy Frederick; Dr. Harold Forshey; Mrs. Widad Kawar; Mrs. Anne C. Ogilvy (Secretary); Mr. Randolph B. Old (Treasurer); Dr. S. Thomas Parker; H.E. Senator Leila Abdul Hamid Sharaf; and Dr. James Wiseman

Class of 2000: Mr. Mohammed Asfour; Mr. Sami Habayeb; Dr. Donald Henry; Mrs. Nancy Lapp; Mrs. Judy Zimmerman; Dr. Øystein LaBianca; Dr. John P. Oleson; and Dr. Gaetano Palumbo.

Ex-Officio: Dr. Pierre M. Bikai, ACOR Director and Dr. Joe Seger, ASOR President

ACOR and its Newsletter

ACOR, the American Center of Oriental Research, is a nonprofit academic institute whose services are supported through endowments, donations and grants. ACOR is tax exempt as a 501(c)(3) organization, as determined by the U.S. Internal Revenue Service. Inquiries may be sent to ACOR, P.O. Box 2470, Amman 11181, Jordan, Tel.: (962-6) 534-6117, Fax: (962-6) 534-4181, e-mail: ACOR@go.com.jo, or to ACOR, Boston University, 656 Beacon St., 5th Floor, Boston, MA 02215-2010, Tel.: 617-353-6571, Fax: 617-353-6575, e-mail: acor@bu.edu. The *ACOR Newsletter* is edited by Patricia M. Bikai. Technical supervision by Shishir Dutta. Printed in Jordan by Jordanian Printing Press. The logo on the front page is a graphic by Atalla Design based on the illustration "Caravan of the expedition" (W.F. Lynch, *Narrative*, facing 146).

ACOR Publications

The Mosaics of Jordan by Michele Piccirillo. Large format, cloth-bound volume includes 303 pages in full color with 824 illustrations, plans, and aerial photographs. \$175.

The Great Temple of Amman: The Architecture by Chrysanthos Kanellopoulos. The architecture of the temple that was excavated and partially restored by ACOR. Large format, cloth bound. \$80.

JADIS: The Jordan Antiquities Database and Information System: A Summary of the Data, edited by Gaetano Palumbo. Basic information on nearly 9,000 archaeological sites from all periods, plus 117 maps. This 453-page, hard-bound volume is xerographically reproduced. \$40.

The Great Temple of Amman: The Excavations by Anthi Koutsoukou, Kenneth W. Russell, Mohammad Najjar, and Ahmed Momani. Description of the 1990-93 excavations undertaken by ACOR and the Department of Antiquities. This hard-bound volume has 180 pages and 3 fold-out plates. \$65.

Madaba: Cultural Heritage edited by Patricia M. Bikai and Thomas A. Dailey. Catalogue of the remains from the Early Bronze Age through late Ottoman vernacular houses (113 pages, paperbound) Over 150 illustrations, five in color. Includes a separate large map. An Arabic translation is available at no additional cost if requested. \$35.

Ancient Ammonites & Modern Arabs: 5000 Years in the Madaba Plains of Jordan edited by Gloria A. London and Douglas R. Clark. Life across the centuries in the area excavated over the past 30 years by the Madaba Plains Project. \$27.

In preparation: *The 150th Anniversary of the United States' Expedition to Explore the Dead Sea and the River Jordan* by Robert E. Rook. An assessment of the Lynch expedition in 1848. Hard-bound volume of 32 pages. Many reproductions of Lynch's illustrations, including his three maps.

All prices include shipping.

Contents

Before Darwin and Fort Sumter: The United States' Expedition to Explore the Dead Sea and the River Jordan, 1848	1
The River Jordan and the Dead Sea: 150 Years Later ..	5
Petra Church: Pavement of the Nave	7
Director's Report: July-December 1997	8
ACOR Projects	8
Petra Papyri Publication Project	8
ACOR-Assisted Field Projects	8
Fellows in Residence	8
Donors to ACOR	9
Lectures	9
News and Notes	10
Trustees Meet in Napa, California	12