# Following in the Footsteps of the Nabataeans: The First International Conference on Nabataean Research Studies

**By: The Petra Regional Council, Wadi Musa (Jordan)**

Between 21-23 June 1999, the first Nabataean studies conference was held in Petra, "Al Raqim", the capital of the Arab Nabataean state. This conference was organized by the Petra Regional Planning Council, the Arab Forum for Cultural Interaction ("Bait Al-Anbat") at Mu'ta University, and Al-Urdun Al-Jadid Studies Center. Distinguished experts and archaeologists specializing in Nabataean history contributed 70 papers, which provided comprehensive coverage of the various aspects of Nabataean civilization. Royal patronage of this conference reflected the concern of our leadership for Jordanian culture, while His Highness Prince Ra'ad bin Zaid opened the conference on behalf of Her Majesty Queen Noor al-Hussein.

The majority of the papers were discussed in Arabic, and this Arab participation, especially by those countries which were included in the Nabataean State, resulted in great satisfaction on the part of all those in attendance. Participants included tourist guides, hotel employees, journalists, students, officials, and teachers from the Archaeology departments at Mu'ta, Yarmouk, Al Al-Bait, the Hashemite University, and the University of Jordan; those who attended found in this event a great opportunity to increase their knowledge of one of the most important oriental civilizations.

This conference was held in Wadi Musa, the home of Petra, which is located 240 km south of Amman, Jordan. Most of the participants agreed that this unique conference ought to be held once every two years, and that it should focus upon a certain topic, such as agriculture, religion, hydrology, architecture, etc. No one can deny the fact that cooperation between non-governmental organizations and official departments can achieve very good results, particularly in academic fields. The Petra Regional Council, through its General Director Prof. Dr. Zaidoun Muhaisen, showed great eagerness to make this event a success. Most of the papers presented at the conference will be published in one or two volumes by Al Urdun Al Jadid Studies Center as soon as possible.

## Conference Programme

### 21 June 1999

### Session I, Hall I

Fawzi Zayadine: "The Gods of Qasr al-Bint"
Klaus S. Freyberger: "Some New Remarks on the Temple of Qasr al-Bint at Petra"
Philipp Hammond: "The Temple of the Winged Lions at Petra"
Martha Sharp Joukowsky: "Brown University Excavations at the Petra Great Temple"
Luigi Marino and Roberto Sabelli: "The Block Tombs of Petra"
Robert Wenning: "Gods in Stone, Gods on Stone, Stone as God: The Case of the Nabataean Deities"

### Session I, Hall II

David Graf: "The Structure of Nabataean Society"
Mohammad Jassem Mash-hadani: "The Origin of the Nabataeans"
Muzahim Usheish: "Nabataeans in Historical Studies"
Saleh K. Hamarneh: "The Nabataeans and their Capital from Arabic Islamic Sources"
Ismail Ammouri: "The Nabataean Kings"
Hytoon Al-Fasi: "Nabataean Queens"

### 22 June 1999

### Session I, Hall I

Sabri Lafi: "Nabataean Foreign Relations"
Khdier Al-Jumaily: "The Nabataeans' Relationship with Egypt"
Rasheed Jumaili: "Al-Hareth, the Third Policy"
Malik Saleh: "A Geographical Study of the City of Petra"
Mahmoud Ridha: "The Study of Political and Culture Life: The Case of Petra"
Key Prag: "Nabataean Petra and Herodian Jerusalem: Historical and Archaeological Reflections"

### Session I, Hall II

William D. Glanzmann: "Nabataeans in South Arabia"
Timothy P. Harrison: "The Bani' Amrat and the Nabataean Presence in Madaba"
Anne-Michele and J. Seigne: "Nabataea and Gerasa: Historical Traditions and Archaeological Evidence"
Jean Marie Dentzer: "Les Nabateens en Syrie de Sud"
David Kennedy: "Nabataean Archaeology from the Air"
Abdul-Jabbar Naji: "Cultural Changes at the Arab Nabataean State"

### Session II, Hall I

Hamzeh Mahasneh: "Khirbet Nakhel: A Nabataean Settlement on the Eastern Edge of Kerak Plateau"
K. Dino Politis: "Nabataeans on the Dead Sea in Light of Recent Excavations at Khirbet Qazone"
Zeidoun Muheisen: "Khirbet Addarih Excavations"
Laurent Tholbecq: "The Architecture of Khirbet at-Tannur"
Chang-Ho. Ji and Jong Keun Lee: "Nabataean Settlement Patterns and History in the Dhiban Plateau"
Bengamin J. Dolinka: "A Corpus of Nabataean Pottery from the 1994 Season of the Roman Aqaba Project"

### Session II, Hall II

Christian Augé: "Nearly 150 Years of Research on Nabataean Coins"
Basheer Zuhdi: "The Nabataean Coins at the Damascus National Museum"
Saba F. and Fawzi Zayadine: "Nabataean Tribes"
Jean-Paul Rey-Coquais: "Nabataean Northern Trade Routes and Northern Political Boundaries Revisited"
Vishwas Gogte: "Petra and Ancient Indian Sites"
Khairieh Abdel - Sahib: "Nabataean Economic Development"
Issam Mousa: "The Nabataean Communication Legacy"

## 23 June 1999

### Session I, Hall I

Hamed Qatamin: "New Archaeological Evidence From Sela' Related to a Water-Dependent Nabataean Defence System"
Ma'in Hunaidi: "Nabataean Hydraulic Systems in the Area Flanking the Siq"
Michele Daviau: "Nabataean Settlement and Water Management Systems in Wadi ath-Thamad"
Zeidoun Muheisen and Dominique Terrier: "The Nabataean Hydraulic System"
Shaker Abdul-Munim: "Nabataean Agriculture"
Hamdan Al-Kbeissi: "Nabataean Agriculture"

### Session I, Hall II

Yahya Ababneh: "The Historical Origin of the Shape of the Nabataean Letters"
Ussama Naqshabandi: "The Nabataean Contribution to the Arabic Alphabet"
Nahedh Qaisi: "The Effect of Nabataean Calligraphy on Arabic Calligraphy"
Hani Hyajneh: "The Importance of Nabataean Inscriptions in the Study of the Origin of Arabic Calligraphy"
Khalid Ismail: "Noun Patterns in the Nabataean Tomb Inscriptions of Mada'in Salih"
Sahar Smadi: "The Nabataeans' Numbers"
John Healy: "The Art of Epigraphy: Design and Calligraphy in Nabataean Inscriptions"

### Session I, Hall III

Mazin Abu-Mahfouz: "The Nabataeans in the Beer Sheba' Province"
Dhaifallah Obeidat: "Nabataeans in the Hauran Region"
Atif Shiyyab: "The Excavation of al - Rabbah and al-Qasr"
Taysir Atiyyat: "Nabataean Mosaic Floors in the Wadi Musa-Petra Region"
Suleiman Farajat: "Nabataean Tombs From Petra"
Nabil Khairy: "The Inscriptions of Mada'in Saleh as a Reference to Indicate the Identity of Petra"
Mahmoud Takriti: "Socio-Economic Changes in Nabataean Society"

### Session II, Hall I

Pierre Bikai: "The Petra Church"
Sabri Al-Abbadi: "The King's Chief Minister (Syllaeus)"
Rinad Al-Khatib: "Petra in Travellers' Books"
Khairiyah Amr: "Wadi Musa During the Nabataean Era"
Hans-Dieter Bienert: "The Outskirts of Petra: The Archaeology of the Ba'ja Region".■

# Scanty Remains of Classical Temple-Townsite Accessible Again at el-Kabu

**By: Rami G. Khouri, Al Kutba Publishers, Amman (Jordan)**

About a century ago, the German scholar-explorer G. Schumacher described in his book *Northern Ajlun* a large, walled site located on a prominent hilltop two kilometres east of Umm Qais (ancient Gadara). The site was called el-Kabu, and is still known by that name today.

Unfortunately, most of the remains he identified on the site have now disappeared; but the site itself is accessible again because the Jordanian army camp that had been located on the hill for many decades has been moved, following the signing of the Jordan-Israel peace accord of 1994.

Schumacher described el-Kabu as an ancient fortified site with such architectural features as cisterns, internal buildings, a thick fortification wall, basalt sarcophagi, steps, traces of a city gate, and an impressive temple with limestone columns topped by Corinthian capitals. He said the capitals were wider than those found at Umm Qais, and also saw the standing remains of a hall with six columns on the western side of the site, which he compared to the Prostyle Temple of Fortune in Rome.

The site sits atop one of the highest hills in this area, and enjoys commanding views in all directions — making it appropriate in antiquity for both a temple location and a security-related settlement.

The Greek scholar Konstantinos D. Politis revisited the site twice in 1986-87, when it was still used by the army; he aimed to document whatever remains still could be identified, within a quest to identify smaller forts, farmsteads and other structures that may have existed within the landscape around Gadara.

Politis made a rough plan of the external fortifications of the site, some of which can still be seen today, especially a large standing wall on the east side of the hill. He documented two-metre-thick fortification walls that measured some 95 metres on the north side of the site, 36 metres on the west side, and 38 metres on the east side, with no traces remaining of the southern wall.

He also identified a large, deep central cistern that can still be made out

Part of the standing eastern wall at Kabu.

today in the form of a depression and some stones. Politis also saw a fragment of a large black basalt sarcophagus, but none of the other basalt and limestone building remains that Schumacher had identified in the 1880s.

Most of those remains seem to have been bulldozed away on the summit of the hill in the past century, though he did identify some ancient remains along the south-eastern corner of the ancient settlement. These included limestone architectural blocks and rubble filled with pottery. Among the material remains that he was able to salvage were a particularly interesting Bucranium, a bull's head carved from soft porous limestone, measuring 30 cm high and 19 cm wide. Its unworked, broken off back side suggested to Politis that "it may have once been attached to something rather than standing free on its own."

Two possible uses of the bull's head bust, he suggested, were as part of the frieze of the temple that Schumacher had identified on the site (cultic bull sacrifice was common in this area in antiquity, particularly in the Mithraic religion), or as part of a corner of a sarcophagus, which was also common in the Roman-Byzantine Middle East.

An intriguing possibility raised by Politis is that the bull's head may have reflected some aspect of the Mithraic religion or cult, an ancient Persian/Indian cult that worshipped Mithra, a minor figure of Zoroastrinism, and elevated him to the chief god of Persia by the 5th Century B.C. The Mithraic cult spread to Mesopotamia and Armenia and became a leading cult in the Roman Empire, with more followers in the 2nd Century AD than Christianity. Its central myth was Mithra's sacrifice of the sacred bull, from which all good things in the world sprang.

Like other mystery faiths, Mithraism employed sacramental forms such as baptism and a sacred banquet. One of its rites (probably inherited from the cult of Cybele) was the *taurobolium*, or baptism with a shower of blood from a freshly slain bull. When the Emperor Nero crowned Tiridates as King of Armenia in AD 66, Tiridates was reported to have said to Nero: "...I have come to thee, my god, to worship thee as I do Mithras."

The religion was often represented by the bust of a bull, perhaps like the one found at el-Kabu by Politis a decade ago.

Politis' analysis of the pottery sherds collected from the surface of the ground at el-Kabu revealed ceramics from the Late Roman through the Byzantine periods (2nd Century to 6th Century AD). Some of the earliest pottery was represented by African redslip ware, terra sigilata, and Late Roman Galatian bowl fragments. The vast majority of the pottery, some 80 percent, dated from the Byzantine period, including one complete Byzantine lamp found near the area where the Bucranium was discovered. Fragments of glass and bronze were also retrieved, but no coins.

The site today sits immediately adjacent to the main road leading to Umm Qais from Irbid, amidst orchards and private homes at el-Mansourah village. The most prominent visible feature of the site are the standing remains of the southern fortification wall, which still stands some three metres high in the eastern hillside of the site.

Along the western side of the summit, amidst abandoned army bunkers and simple houses, are scattered fragments of the fortification wall, including some badly weathered capitals and large stone blocks. Pottery sherds are scattered all over the ground surface, amidst isolated architectural fragments and depressions in the ground that probably mark the location of underground cisterns or perhaps vaulted rooms.

Whether this was only a temple site or also a larger walled settlement from the Roman-Byzantine period remains to be determined by surveys and excavations in the future — if measures are taken soon to protect whatever architectural remains are still preserved on the surface and under the ground. ■

**An architectural fragment on the ground surface at Kabu.**

# Report on the 1998 Excavations by the Madaba Plains Project: Tell al-'Umayri and Tell Hisban

**By: Douglas R. Clark, Walla Walla College (U.S.A.), Larry G. Herr Canadian University College (Canada), Øystein S. LaBianca, Andrews University (U.S.A.), and Lawrence T. Geraty, LaSierra University (U.S.A.)**

With a history of more than 30 years of excavation in Jordan, the Madaba Plains Project has entered a new phase of operations in order to enlarge the potential for wider participation. Where they previously hosted excavation teams of more than one hundred people (up to 140 in 1998), project directors have decided, instead of working every other summer with such large numbers of participants, to alternate field seasons and aim for teams of 50-70 participants. Thus, the Madaba Plains Project will now mount excavations each year at alternate locations. Of the three major sub-projects—Tell Hisban, Tell al-'Umayri and Tell Jalul (in addition to the hinterland surveys for each of these major sites)—only Hisban and al-'Umayri saw archaeological excavations in 1998, while Jalul was in the field during the summer of 1999.

In keeping with the long-standing research design of the Madaba Plains Project, dig directors in 1998 continued excavations at Tell al-'Umayri and Tell Hisban in order to better understand the cycles of intensification and abatement in land use in central Transjordan.

## Tell al-'Umayri

Excavations in 1998 uncovered more earthen floors surrounding an Early Bronze Age I dolmen, or large stone burial monument, on the southeast slope of the hill. This is the first dolmen in the entire Mediterranean basin to yield significant numbers of burials (20), complete EB I pottery vessels (20), and surfaces indicating patterns of use.

Among the most impressive new discoveries are the remains of a Middle Bronze Age building made with large stones. From the same period are the foundations of a tower perched atop a massive earthen rampart which raised the height of the hill nearly ten meters. Associated with this tower was a well-plastered water pool, unique from this time in Jordan. There was also evidence of a large building made of massive stones inside the fortification system.

Just to the north of these ruins is a two-room Late Bronze Age building (Fig. 1 — Photo of Late Bronze II Two-room Building at Tell al-'Umayri). There were two levels of floors to the structure, each floor covered with a thick layer of burned bricks and wood. Although not fully excavated, the building now stands over three meters tall.

Excavators also continued working their way through the massive destruction of the early Iron I town (Fig. 2 - Top Plan of the Early Iron I Settlement at Tell al-'Umayri). The debris was made up of burned bricks and roofing materials such as wooden beams and reeds. Judging by the many bronze weapons found in the debris, there appears to have been a military invasion. One of the stone-pillared rooms was filled with almost two meters of ash.

Another significant find from this city was the thick town wall made of large stones. The wall was plastered in antiquity and, as uncovered by the excavators, stood three to four meters above the ground. It likely stood several meters higher in ancient times.

This season, the team attempted to locate the southern limits of al-'Umayri's Iron II/Persian administrative complex by uncovering a large wall which probably dates to the early Iron Age but was reused by the late Iron Age bureaucrats who ran the administrative complex. South of the large wall were Persian and Hellenistic buildings.

A minor settlement at the site also took place during the Hellenistic period, when residents constructed a small farmstead on the southern edge of the Tell above much more substantial ruins from the Iron Age II. This small farm may have produced wine on the surrounding hillsides, as well as grain crops in the valley bottoms.

Among the small finds were about 10 seals and seal impressions, bringing the total discovered at the site to over 80 and making al-'Umayri one of the most productive locations in Palestine in this regard. Another find, although fragmentary, is unique in Jordan. It consisted of small pieces from a life-sized ceramic statue, including a dramatically painted eye, an ear, a chin, parts of arms, two heels, and other parts of the chest and shoulders.

Also part of archaeological research at al-'Umayri for several seasons, the sub-surface mapping team again used Ground-penetrating Radar and the differential

**Fig. 1 Photo of late Bronze II two-room building at Tell al-'Umayri.**

Global Positioning System at the site, this time in areas north and east of the major areas of excavations on the western portion of the Tell, along the north rim of the Tell and on the southern side as well. In addition, they explored neighboring slopes for possible tombs and conducted seismic-reflection research at Tell Jalul.

## Tell Hisban and Vicinity

The renewed research at Tell Hisban and its environs involves investigations of several archaeological periods, from prehistoric through modern. The current efforts are intended to reexamine certain questions which were left unanswered by the original campaigns. The first example in this regard is the question of Tell Hisban's prehistoric past. In connection with a systematic survey of the hill of Hisban, the team identified a total of 154 stone tool fragments, dating from the Middle and Upper Palaeolithic periods. From the epipalaeolithic, a lunate which served either as an arrowhead or sickle blade was found, while the Neolithic was represented by several axes and arrowheads. Excavations in a cave complex near the summit of the Tell produced further evidence of prehistoric activity, including several hammer tools, scrapers, and arrowheads. In addition, a total of 57 sites containing scattered prehistoric worked stone tools were also identified beyond the Tell by the survey team.

Architectural remains from Iron I continue to be elusive. The team has identified a massive bedrock trench some 4 meters deep and 2-3 meters wide which runs east-west across the south shoulder of the tell as a dry moat to protect the Iron I village at its weakest point. While no one doubts that Tell Hisban was a prospering town during the Iron II period judging from the large quantity of ceramic objects and inscriptions dated to this time, there is actually very little to see architecturally. Preliminary assessments of new excavations on the northeast corner of the Tell suggest an Iron I cave complex later reused by the Iron II inhabitants as tombs. Caves played a greater role during the Iron ages than previously thought. Extensive use of caves continued and intensified into the Hellenistic period. Around 200 B.C., a massive fortification was placed at the summit of the hill, consisting of four large towers linked by four equally massive perimeter walls.

During the Byzantine period, Tell Hisban incorporated well over a thousand households. The team carried out an intensive survey of the water and soil management structures still extant in the wadi to the west and below the summit of Hisban, where they mapped an elaborate basin-wide water management system consisting of terraced hillsides and a wadi bottom criss-crossed by numerous check dams to prevent gully formation.

The Islamic periods at Hisban are well represented. Of particular interest this season was the area immediately south of the Mamluk bath complex on the summit. Excavations brought to light a series of several small vaulted rooms clustered around a central courtyard. The walls which enclosed the building were also identified. The arrangement of the spaces in this building and its manner of construction, which are reminiscent of the palaces of Mamluk administrators seen at Kerak and Aqaba, suggest that what we have here is an administrative palace.

Plans for consolidating, preserving and presenting both sites are well underway. Hisban has seen cleaned-up, including the construction of pathways, viewing platforms and signage, and the erection of a fence around the site along with locked entry gate. It has also seen the set-up of an outdoor "dig area" for use by Jordanian teachers and students. Proposals for al-'Umayri include protection of the site; further consolidation of exposed walls and structures; and construction of pathways, viewing platforms, signage and a visitors center in the form of a replica Iron I four-room house which would match the four-room house on the Tell on a one-to-one scale. ■

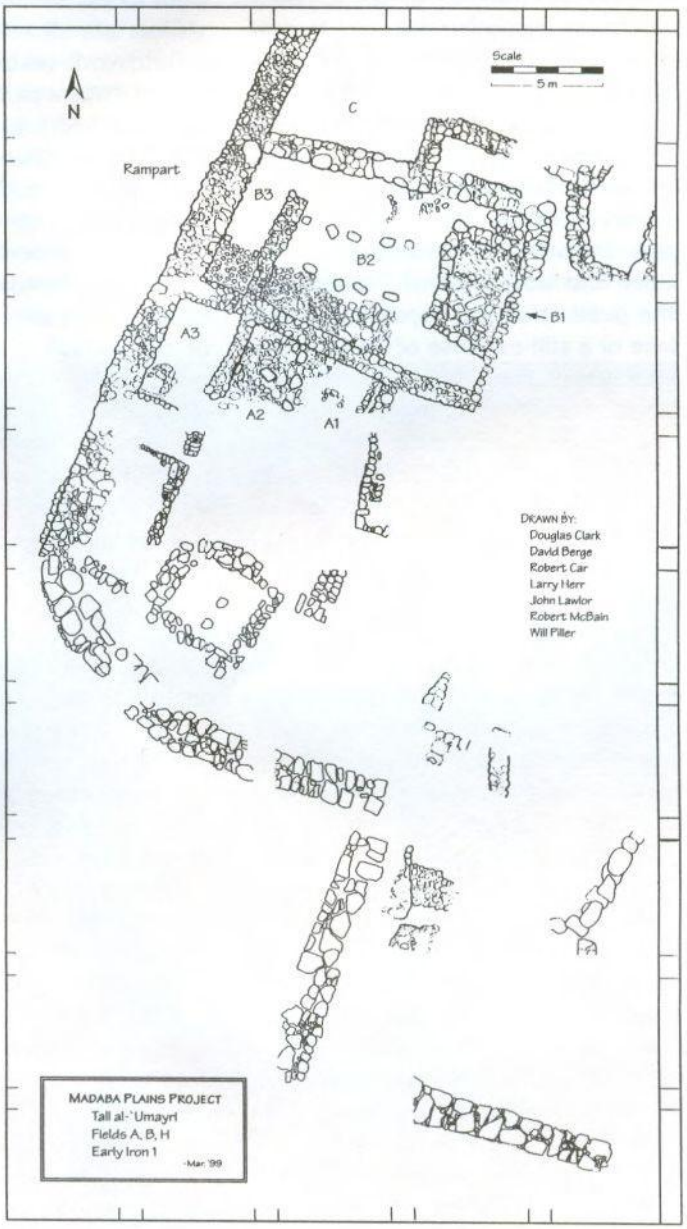



Fig. 2 Top plan of the early Iron I settlement at Tell al-'Umayri.

# Iraq al-Amir: New Research

**By: Jean-Pierre Braun, IFAPO-Amman Branch**

Due to its history, its impressive restored ruin, and relevant publication (Will, Larché, Zayadine, et al.), the site of Qasr al-Abd is well-known among scholars throughout the world. The wider area of the valley surrounding the site has also been recorded by surveys, which note archaeological remains that go back well into the Bronze Age (François Villeneuve; Chang Ho-Ji).

Reading Flavius Josephus' text about Iraq al-Amir (Jewish Antiquities Book XII) brings home the fact that 'the site' is not Qasr al-Abd, but the entire surrounding domain of Hyrcanus - 'the estate of Tyros'. Another look at various renditions of the same ancient Greek phrase has led to a new examination of the so-called lake surrounding the palace. Ernest Will renders the phrase, "a deep and wide channel," whereas in the publication it is represented as a lake or a still expanse of water which was later chosen for the three-dimensional computerized image.

In a subsequent article on the domain of Hyrcanus, Pierre Gentelle discusses the concept of the Hellenistic "paradeisos", which he translates as a "pond" ("Un 'paradis' hellénestique en Jordanie: étude de géo-archéologie" in Hérodote 20, 1981, pp.70-101). If one considers, however, that the 'moat', as the three-tiered massive wall is described in general, could not retain water permanently, Will's translation may be closer to the original meaning intended by Josephus.

These factors combined have encouraged a review and a search for new evidence related to 'the site,' which has traditionally been confined to the qasr and its 'lake'. Preparation for this new research began two years ago with the collection of published and recorded (n.p.) information to form a database of already identified archaeological remains in the area of the domain. This involved marking visible architectural remains on a modern topographical and cadastral map (Palestine Grid), an exhaustive bibliography with itemised codes for specific research, and a realistic assessment of the state of preservation of archaeological remains.

A master research plan was drawn up to bring in all elements pertaining to the establishment and 'management' of Hyrcanus' domain which, at the same time, formed a base for IFAPO's project to conserve and study the estate. The creation of a showroom was intended both to explain the qasr and to draw visitors' attention to the domain itself.

Fieldwork resumed in 1999 has played a major part in the research program. In addition to traditional excavations and architectural recording, investigations include the taking of core samples from the depression of the 'lake'. It is hoped that the laboratory analyses of the core samples will contribute greatly towards an identification of the actual type(s) of watering system(s) around the qasr. Geo-archaeological surveys are combined with programmed excavations, complementary 'on-the-spot' soundings, and studies of the landscape from a different point of view, this time taking account of the very landscape itself. The systematic collection and recording (surface and excavation) of archaeo-morphological material in addition to cultural assemblages is aimed at clarifying the literary interpretations of Josephus' text and at filling in the otherwise incomplete picture of the use of the terrain in antiquity before, during, and after Hyrcanus.

Following Paul Lapp's earlier explorations of the site, excavations have been one of IFAPO's main research activities on the grounds since the late 1970's. The French excavations concentrated on a wide-ranging area: Will and Larché excavated the qasr, Villeneuve and Fawzi Zayadine excavated in the ancient village, and Dentzer and Villeneuve excavated around the monumental gate. The latest archaeological investigations with Carré and Borel focus on excavations of areas above the caves, the depression surrounding the qasr, and the structure of the so-called dam or moat.

Architectural studies are wide-ranging and aim at a complete interpretation of the structures. Apart from building remains such as the recently excavated basin and the "square building", the likes of which can be found everywhere and are part and parcel of the domain, the caves are a particularly challenging architectural project within the broader historical setting of their existence and management. The mapping of irrigation and other watering systems combines the work of the architect and the archaeologist, in that it involves recording, digging and, where possible, following the course and identifying the destination or purpose of the system under study (see 'Men of Dykes and Canals', DEI, Petra, June 1999, a paper by F. Carré).

In the near future, there are plans for restoration and conservation of the 'moat', if such it was, together with the Department of Antiquities of Jordan, which will permit a simultaneous archaeological examination of the structure. If modern interference with the still intact ancient landscape ('the gardens of Hyrcanus') can be reduced to an acceptable minimum for the sake of both the local inhabitants and the stewards of Jordan's ancient heritage, then there is a chance to present much of the actual site, the domain itself, as a comprehensible unit combining the qasr, the agricultural and ornamental gardens, and the ancient village (built over by the 19th Century Iraq al-Amir), thereby showing it in its wider setting of the beautiful Wadi as-Sir.

The Discovery Trail of Hyrcanus' Estate, 'Tyros' (paper presented at the 7th SHAJ conference in Copenhagen, 14-19 June, 1998, in a workshop entitled, "Conservation, Heritage and Site Management ['CHASM']):

This paper introduces a site devel-

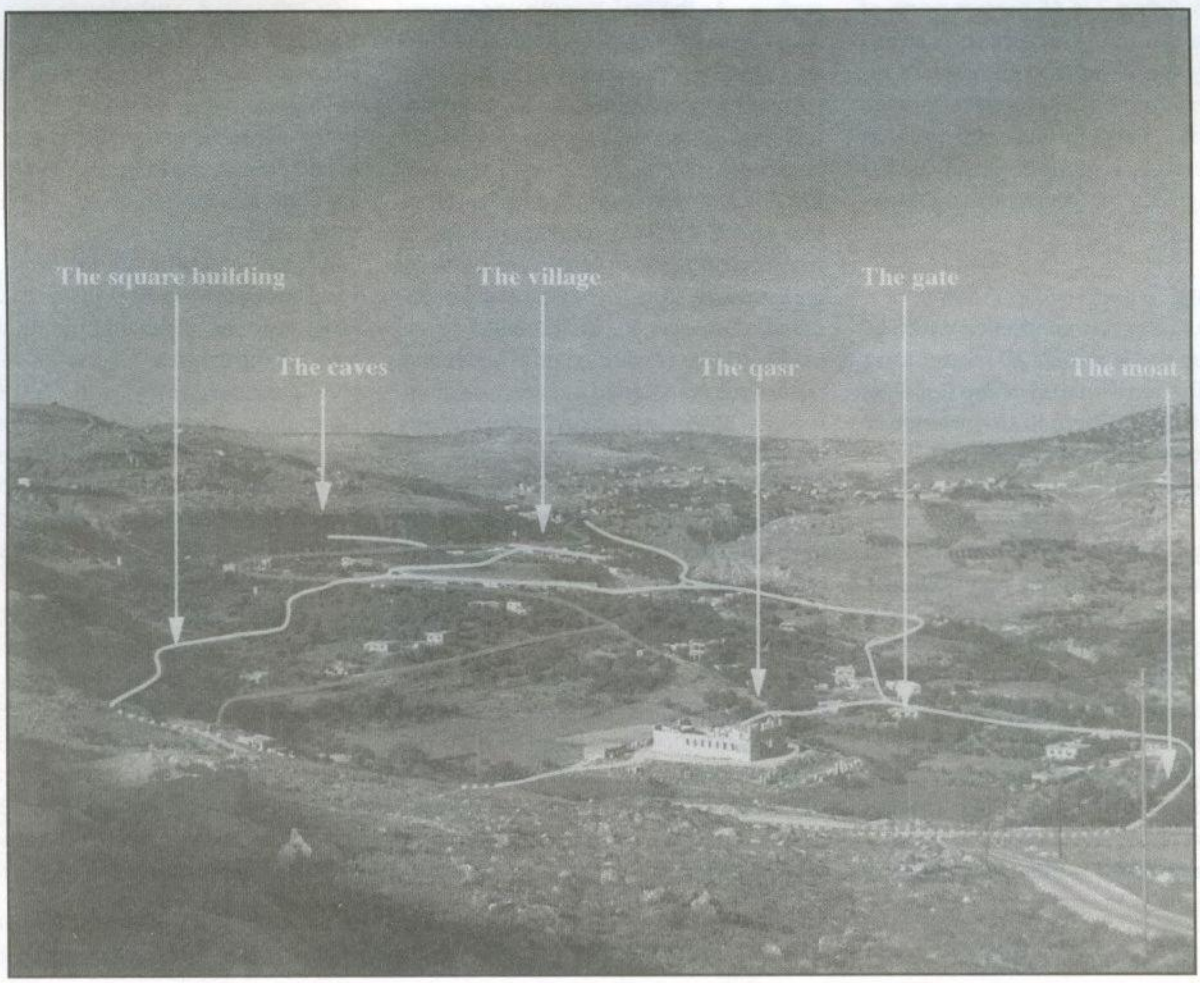
opment project (forthcoming in CHASM, Vol. I) which deals simultaneously with the preservation and study of man-made remains and the landscape of the Hellenistic domain of which Qasr al-Abd is but a part, and the presentation of the estate as a site. Many of the original Hellenistic landscaped gardens (agricultural and ornamental) are no longer visible to the untrained eye due to natural erosion over time and to interference by modern development; however, the remains are still there. The presentation is designed to guide the visitor through the domain, to the buildings that were once a hallmark of the estate, to the caves with their history in relevance to the domain and its owner, as well as to some of the vegetation that might still be visible as wild and cultivated plants today.

## The Showroom

The adjacent showroom and explanatory panels in the Qasr al-Abd are the first realizations of the master plan for the study and presentation of Iraq al-Amir. The showroom can be seen either as an introduction to the site at large, starting with the palatial residence, or as the final point after arriving at the qasr after following the discovery trail planned for the future. The room, which is part of the discovery trail, is not intended to be seen as anything but what it appears to be: a modest dwelling belonging to the Ottoman period village further afield (restored and looked after by the Noor al-Hussein Foundation).

The exhibits are as follows: the earliest photographs of the ruins of the qasr and its immediate setting; the first-century text by Flavius Josephus in which he not only describes the history of the owner and his family, the 'Tobiads', but also provides details about Hyrcanus' estate; the lavish publication of the restoration work and its final anastylosis, and a three-dimensional computerized re-creation on screen of the qasr itself. The short video (which was made in France and shown at the grand exhibition of Jordanian Heritage at IMA in Paris, July-October 1997) presents the traditional conception of a 'lake' surrounding the qasr. The exhibits explain the palace and draw attention to its setting, as do the panels and the preliminary archaeological map (the basis for an atlas) in the stairwell. Visitors are encouraged to go out and explore the surrounding landscape aided by the provisional map, which locates the remains on the grounds of the estate.

IFAPO team members for the new research project under the general direction of the author are as follows: From 1997, E. Léna and Ph. Lenhardt [architects], assisted by S. Vatteoni [computer illustrator]; from 1999, L. Borel, [architect] and F. Carré [archaeologist], assisted by I. Kehrberg [ceramist], C. March, and E. Laroze [architects].■



# The Petra North Ridge Project

**By: Patricia M. Bikai and Megan Perry, American Center of Oriental Research (ACOR), Amman (Jordan)**

## Urban Layout (Patricia M. Bikai)

The initial objective of the Petra North Ridge Project is to investigate the urban character of the area between the Ridge Church and the Petra Church, an area extending about 95 meters N-S. The strategy is to define outlines of buildings in order to provide a better understanding of Petra as a city. There has actually been very little excavation in Petra, and most of the major projects have concentrated on monumental structures such as temples. In the first stage of this project, in 1999, two large buildings were defined on the plateau below the Ridge Church. The northern wall of Building 1 is 20 meters south of the Ridge Church, while the southern wall of Building 2 is 45 meters north of the Petra Church. The project is sponsored by the American Center of Oriental Research (ACOR) and is funded by ACOR's Petra Endowment, which was created by a grant from the United States Agency for International Development (USAID).

## Building 1

This building has an interior width of 13 meters and is at least 20 meters long (E-W). The eastern end of the building was not found. There is an entrance at the western end with two steps leading to bedrock. The northern wall of Building 1 appears to have served as a retaining wall against the hillside on which the Ridge Church was built in a later era. The small sections of the wall that were exposed show it to have been built of finely dressed limestone, leveled with chinking. Its western wall runs to the northern wall of Building 2, indicating that one of the buildings is secondary to the other. The interior space seems to have been divided into three unequal segments. This division may have been mandated by the levels of bedrock at the site. This may also provide an explanation for the fact that the door in the western wall is not in the center. The division into three parts indicates that the structure was roofed. Without further excavation, it would be impossible to say what purpose Building 1 served; however, that it was a public building seems clear from its size.

## Building 2

At the start of excavation, three features of Building 2 were visible: 1) the southwest corner, 2) a granite column drum and a well-made limestone base at the eastern end, and 3) large quantities of building stone over the whole surface. As the rock tumble was moved away from the building, it became clear that the area has been seriously disturbed in modern times. Modern debris was found to a depth of 1 meter and more into the rock pile. The building has an interior width of 13.40 meters and is 15.60 meters long E-W. It was divided into at least two parts by an E-W wall. The entrance was not located. Associated with the building are two 1.10 meter wide column bases and numerous Nabataean architectural fragments. These are all similar to materials from the "Great Temple" and can be dated to the end of the 1st century BC. A second granite column was found in the debris. This and the other finds indicate that Building 2 was also a public building, in this case, a richly decorated one.

The nature of the fill above these two buildings indicates that they may have been abandoned and used as quarries after the disastrous earthquake of 363 AD; in other words, there was no evidence that they were used during the Byzantine period.

## Tomb 2 (Megan A. Perry)

During the last few days of the eighth season of the Petra North Ridge project, a possible 4th Century AD rock-cut tomb was discovered while clearing overburden south of the Ridge Church. The tomb was cut into the natural sandstone bedrock, with a shaft of ca. 3.76 m in depth opening onto a chamber measuring 5.50 m x 5 m. A small room measuring 2.25 m x 2.60 m opened through a doorway off to the north.

Complete excavation of the tomb was held off until the ninth season of the project. Excavation revealed that the tomb was originally constructed and used during the 4th Century, but it was never completed. A portion of the northwestern corner of the small room was left uncut, and a large amount of rubble from the tomb construction was left inside the small room and just outside, leading towards the shaft. No other elements of the tomb, e.g., loculi, had been constructed, which is odd for such a large structure and for this time period.

A total of eight articulated burials were recovered in situ, in addition to a large amount of skeletal material scattered in the tomb as a result of an intrusive episode dating to the 6th to 8th Centuries. These individuals were interred directly on the sandstone bedrock, although there is evidence that one or two of the burials were enclosed within wood coffins. All of the deceased, with the exception of a 18-20-year-old female, were buried with one or two other individuals simultaneously; there was a 20-24 -year-old female with a 6-month-old infant; a 45-49 - year-old individual with a newborn infant; a 35-39 - year-old female with a 25-29 - year-old male, and a 55-59 - year-old female. No "grave goods," with the exception of one complete

bowl of uncertain date, were found associated with the intact burials. It is apparent that these groups of individuals were interred within a short period of time. Thus, one hypothesis is that the construction of the tomb was halted because the tomb had to be used to inter a large number of deceased due to a catastrophic event, such as an earthquake or an epidemic. No signs of perimortem trauma were noted on the skeletal material, and generally acute epidemics such as the plague leave little to no bone pathologies. Samples of the skeletal material have been retained for carbon-14 dating, ancient DNA (aDNA) extraction, and other chemical analyses used to determine diet and migration patterns.

As noted above, the tomb was re-entered some time between the 6th and 8th Centuries by individuals who were occupying the area in the region of the Ridge Church. Architectural elements and artifacts associated with the Ridge Church, such as wall and floor mosaic tesserae, pieces of the marble chancel screen, broken glass chandelier pieces, and storage jar fragments dating to the 6th to 8th Centuries, were discovered in the shaft of the tomb and in the upper layers of the chamber itself. In addition, within these layers were fragments of human skeletal material, presumably from burials within the tomb, which suggests that the intruders disturbed the burials within the tomb and used the shaft as a garbage dump. However, the intact burials described above were mostly or entirely spared from the later disturbance. At some point before the tomb was re-entered, a large (2.20 m x 0.95 m x 0.35 m) portion of the ceiling broke off and fell onto the exposed surface in the tomb. The later visitors then skirted around the ceiling stone, leaving the burials underneath and directly behind it more or less intact.

The discovery of this tomb is exceptional in that it is one of the very few tombs within Petra that has produced intact burials. The condition of the tomb and the deposition of the burials also raises interesting questions regarding the stability of the 4th Century in Petra, at least for the citizens who were using this tomb on the North Ridge.■

# Church of Saint Elijah discovered at Tell Mar Elias

**By: Rami G. Khouri (text and photos), Al Kutba Publishers, Amman (Jordan)**

A two-month excavation at Tell Mar Elias by a Department of Antiquities team headed by Ajloun inspector Mohammad Abu Abila has uncovered the remains of one of the largest known Byzantine churches in Jordan. The site is in the area called Listib today, which has long been associated with biblical Tishbe, the home region of the Prophet Elijah. The cruciform church is on the summit of a large hill overlooks the green mountains of Gilead, is one of the five sites designated by the Catholic church authorities in the Middle East as pilgrimage sites for the year 2000. The Church of Saint Elijah measures 32 x 23 meters, and has three apses in its east, south, and north walls. The floor of the church was completely covered in multi-colored mosaics, all showing floral or geometric motifs, including an inscription dating the church to 622 AD.

View within the body of the church.

The central apse of the church.

# Neolithic and Chalcolithic Archaeology in Wadi Ziqlab, Northern Jordan

**By: E. B. Banning, University of Toronto (Canada)**

Since 1981, a project based at the University of Toronto has explored Wadi Ziqlab, a tributary of the Jordan Valley southwest of Irbid, and excavated a number of Neolithic and Chalcolithic sites found in its drainage basin. The project's focus has been on changes in settlement intensity and distribution during a period from the Late Pre-Pottery Neolithic to the beginnings of the Early Bronze Age, when there may have been major settlement disruptions or realignments, and when Jordan's early farming communities were coming to terms with the problems of settled village life and animal husbandry. By the Early Bronze Age, these processes may have resulted in more complex and more hierarchical social and political systems, along with increasing economic inequality.

The Wadi Ziqlab Project began with a surface survey in 1981, and continued with excavations, botanical and geomorphological surveys, and a sub-surface survey in 1986, 1987, 1990, 1992, 1993, 1995 and 1999. The purpose of the sub-surface survey, which involves digging small test trenches in stream terraces, is to try to detect buried sites that archaeological surface surveys miss because of the overlying colluvium. This unusual survey program, although rather slow, has been somewhat successful. In addition to detecting small numbers of artifacts on several terraces, it discovered two Late Neolithic sites, WZ 200 and WZ 310, on terraces below the confluence of Wadi Ziqlab's two main tributaries.

In 1990 and 1992 the focus of excavations was site WZ 200, or Tabaqat al-Buma, which the sub-surface survey had found in 1987. The test excavations had already shown that there was an Epipaleolithic level deep within the site, which lies a little above 200 m asl. The test trench had also intersected a large, Late Neolithic cist grave containing several whole vessels and remains from two individuals. The subsequent excavations revealed domestic architecture and terrace walls of the Late Neolithic along with more burials.

We now know that the earliest Neolithic use of the site was for at least two large cist graves dating around 7800-7300 BP (6800-6050 cal BC). These were elongated pits, about 2 m long, dug into the Epipaleolithic levels, lined with large, flat stones, and covered with even larger stone slabs before being covered with earth, probably to form a tumulus or mound. The first cist we found contained some unusual jars and deep bowls with some similarities to Yarmoukian pottery, but with important differences, too. There was also a heavy stone bowl or mortar, a perforated stone disk (probably a spindle whorl), and a stone slab or palette, probably for grinding. The other cist contained a sub-adult with a severe pathology and an infant wearing a dentalium-shell necklace. If, as seems to be the case, this first phase is the remains of a Neolithic cemetery, it is highly unusual. Neolithic burials are usually found within settlements, often below house floors, but usually in numbers too small to account for all the deaths that must have occurred in the sites. The question has been, "Where are the rest of the bodies?" It now seems possible that, in the Pottery Neolithic at least, there were many off-site cemeteries like this one that simply have not been discovered. It is also interesting that, even at this early date, at least some of the graves were accompanied by pottery and other grave goods.

Some time later, at least two structures, apparently small rectangular houses, were constructed, cutting into some of the earth that covered the second cist grave. These were badly damaged by later occupation on the site.

In the next phase (6670-6630 BP, ca. 5550 cal BC), three or four structures were built on the site, nearly obliterating earlier architecture. Two of these were rectangular, single-room structures about 3 m wide and 5 or 6 m long, one of which had a circular, plastered hearth. A third had two rooms, one of them quite small, joined at the corner. The larger room had a clay-lined silo built into the northeast wall. A number of outdoor terrace walls or fences seem to have defined a yard, and there may have been a fourth structure to the west of which the only traces are a small patch of plaster floor and a plastered, horseshoe-shaped hearth. Two cists with child and infant burials were constructed northeast of the two-roomed building, and it is possible that the cists were originally used as storage silos. The pottery of this phase was predominantly a plain, very friable, poorly fired yellow or pink ware, consisting mainly of small jars and bowls.

In the next phase (6600-6400 BP, ca. 5400 cal BC), these structures fell into ruins, except for the small room of the two-room house, which received a new cobble floor and probably served as a storage out-building. A new single-room structure was constructed above the patch of plaster floor, probably replacing a similar building. It was again about 3 m x 5 m in size, and had a large limestone mortar in its center. Later a new cobble floor was laid above the original floor, so only the top of the mortar protruded. Among the pottery of this phase we found a hard, black-burnished ware and sherds with a criss-crossed combed decoration. This pottery belongs to the end of the Late Neolithic, and is similar to pottery found on "Wadi Rabah" sites in Israel.

The final Neolithic occupation of the site (6350-6200 BP, ca. 5300-5100 cal BC) shows no obvious change in material culture; however, all the previous structures were leveled and two new structures were built. A small, single-

room building in the western part of the site had a number of unusual interior features and a concentration of spindle whorls. A larger, single-room building to the northeast had a cobbled floor. In addition, a stone platform and some walls were built outside, and several burials, mainly of children, were inserted into the ruined buildings.

In spite of the dearth of projectile points, the faunal remains at Tabaqat al-Buma do include a number of wild fauna, notably deer, along with large numbers of sheep/goats and smaller numbers of cattle and pigs. The preservation of plant remains, unfortunately, was extremely poor, but the few small charcoal samples included some conifers, which we had expected to see only at upland sites to the east.

Excavations in 1990 and 1992 at site WZ 310, only about 800 m downstream from Tabaqat al-Buma, showed deposits of material that appears contemporary with that found in the last two Neolithic phases at that site. Very little architecture was preserved, but there were lithics, a stone mortar, and pottery, some of it with a "criss-cross" comb decoration, that includes black burnished ware and slightly carinated bowls, short-necked jars and wide, flat-strap handles. Unfortunately, this Neolithic material was in a secondary deposit, presumably washed downhill, as shown by the Early Bronze IB artifacts in pits that underlay it.

The discovery that two small, Late Neolithic sites, probably self-sufficient farmsteads, were distributed so close to one another along Wadi Ziqlab's stream banks encouraged us to think that the settlement system of this time was a dispersed, probably linear or dendritic one, with many small settlements stretched out, and possibly with one larger village that served as a central place for social and ideological activities.

Our 1999 excavations were to test the most likely candidate for this central place, some 5 km downstream, about 100 m asl, in an area rich in springs and where Wadi Ziqlab is a perennial stream. Tell Rakan I (site WZ 120) appears to have been founded in Late Pre-Pottery Neolithic B, and has overlying deposits containing Yarmoukian, Chalcolithic, Early Bronze I and later material. A local informant encouraged us to take a close look at this site, which a team member (Ian Kuijt) had noticed while testing a later site in 1987 but whose importance was not obvious until the digging of a new fish pond exposed a section 100 m long. During a six-week season in April and May, 1999, we excavated four neighboring step-trenches on the periphery of this site, which is now mostly covered by pomegranate groves and fish ponds. Below some 2 m of mixed fills containing Byzantine and probably Abbasid sherds, we found a succession of deposits containing Chalcolithic, Late Neolithic, and PPNB (or possibly PPNC) artifacts. The excavation areas became smaller as we dug more deeply (more than 5 m deep in places), so we found few features and little architecture in this first season. One very striking slab-lined, conical pit, dug into Late Neolithic deposits, probably dates to the Chalcolithic, and portions of walls and huwar-plastered floors in the deepest soundings appear to be Late PPNB or PPNC.

Material from the deeper levels includes Amuq and Byblos points, reaping knives and a "white ware" bowl, and two charcoal samples from plaster floors near the bottom of the bulldozer section have yielded radiocarbon dates of 8430 ± 70 BP (TO-3987, 7550-7305 cal BC) and 8100 ± 70 BP (TO-3986, 7290-6790 cal BC). Overlying deposits yielded several sherds with distinctive Yarmoukian herring-bone incised decoration and red slip, and some poorly-fired, friable sherds that appear to be similar to ones found at Tabaqat al-Buma. The Chalcolithic levels yielded a number of sherds with Golan parallels, including ovals of impressed dots, and a basalt "chalice" with a heavy pillar base. This site will prove excellent for documenting interrelationships with the smaller and more short-lived Neolithic and Chalcolithic sites elsewhere in the valley and, upon further excavation, may indeed prove to be the central place of the Late Neolithic settlement system.

In 1995 we conducted excavations at a Chalcolithic site just west of the modern village of Tubna (site WZ 121). Most of the architecture here was very close to the surface and had been damaged by modern agriculture, especially by the planting of olive trees and the removal of stones for terrace walls. However, we did find evidence of substantial Chalcolithic architecture, along with an excellent assemblage of Late Chalcolithic pottery and lithics. Interestingly, the pottery here is rather different from the Chalcolithic pottery from Tell Rakan, and has none of the Golan traits. The lithic industry shows evidence of very intense core reduction, and is predominantly "expedient," with amorphous cores, but there are also many bifacial adzes, sickle elements and oval fan scrapers. There is also considerable ground stone, with mortars, basalt bowls, chalice fragments, pestle fragments and two fragments of fine haematite maces. As one would expect in a Late Chalcolithic site, the fauna include sheep/goats, cattle and pigs. Among the more interesting features at the site were some carefully stone-lined pits, the bottoms of which had been chiseled into the limestone bedrock. After being filled with ashy soil containing many sherds and bone fragments, the pits were carefully paved with flat, rounded cobbles. We have yet to determine the function of these unusual features. If they were roasting pits or ovens of some sort, we cannot explain why they were so carefully covered. The extent of remains on this site shows that it was a fairly substantial village, but probably with houses well scattered, leaving a great deal of open space between. We also found another, probably similar, Chalcolithic site southeast of Tubna (WZ 129).

A small University of Toronto team also conducted excavations at the Chalcolithic site of Tell Fendi, close to Wadi Ziqlab's confluence with the Jordan River, in 1996. This is a low tell with many Chalcolithic rectangular "broad room" houses quite close to the surface where, unfortunately, they have been damaged by plowing. Nonetheless, the excavations were able to reveal one fairly complete house and collect a good assemblage of Late Chalcolithic pottery with parallels in Tubna, the uppermost level at Abu Hamid and Pella. Large storage pithoi with rows of rope decoration and overlapping lunate appliqué

are particularly common at the site. A basalt tri-pillar-based chalice reminiscent of some of the pillar sculptures from the Golan Chalcolithic was found on the surface. The site probably dates to about 3900 cal B.C.

As our work in the area around Wadi Ziqlab's drainage basin continues, we are gradually learning more about the changes that accompanied the entrenchment of an agricultural way of life, and probably of nomadic pastoralism too, in this beautiful part of Jordan.

## Acknowledgements

Our work has been funded generously by the Social Sciences and Humanities Research Council of Canada. I would also like to extend thanks to the Department of Antiquities of Jordan, Mark Blackham, David Lasby, Zeidan Kafafi, Mohammad Najjar, Dan Rahimi, the Royal Ontario Museum, Ahmad Shreideh, Rakan Shreideh, Hikmat Ta'ani, and the many staff members of the project.

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# The Decumanus in Gadara: New Archaeological Discoveries

**By: Hans-Dieter Bienert, German Protestant Institute of Archaeology in Amman (Jordan) and Claudia Bührig, Technical University of Cottbus (Germany)**

Umm Qais, ancient Gadara, well-known for its monuments of the Graeco-Roman Decapolis city, has been the focus of archaeological excavations by German teams for the past 25 years. Started by Ute-Wagner Lux (at that time director of the German Protestant Institute of Archaeology) and Karel Vriezen (University of Utrecht, Netherlands) on behalf of the German Protestant Institute of Archaeology (DEI), various excavation teams from the German Protestant Institute of Archaeology in Amman, the German Archaeological Institute in Berlin, the University of Cottbus (Germany) and the University of Mainz (Germany) carried on with the excavation. Teams from the University of Utrecht (Netherlands) and the University of Cophenhagen (Denmark) also participated in the archaeological fieldwork.

Since the beginning of the archaeological research in Umm Qais, the Jordanian Department of Antiquities has played an active role in the research as well as in conservation and restoration efforts. Over a period of months in 1998 and 1999, a team headed by the Umm Qais inspector of the Department of Antiquities uncovered large parts of the Roman decumanus. This work was financed by the Jordanian Ministry of Tourism and Antiquities. The teams involved opened up the street (Figs. 1-4) leading from the location of the modern resthouse almost up to the so-called underground mausoleum and the Tiberias Gate.

Initial investigations into the Roman decumanus, which runs 1.5 kilometers in an east-west direction, were undertaken by Ute Wagner-Lux and Karel Vriezen in 1974 when conducting a survey in that area. However, the first archaeological fieldwork on the street started in 1980 when these two researchers excavated the decumanus

Fig. 1 The Roman decumanus with collapsed pillars (view towards the east).

Fig. 2 Later, possibly Umayyad remains of a building situated on the decumanus using stones of the colonnaded street as building material.

along a length of 34 meters (Wagner Lux and Vriezen 1982), and found the width of the street between the northern and southern stylobates to measure 12.55 meters.

From the Early Imperial period onwards, the east-west axis of the decumanus constituted the "backbone" of urban development in Gadara, with most public buildings of major importance being loosely lined up along this axis. The results of the excavation by Wagner-Lux and Vriezen at the decumanus demonstrated that the street was bordered on both sides by a stylobate, which may have been used as a substructure for a portico running along the road. The traffic area was supplied on both sides of the street with a podium-type structure elevated one step above the level of the street. This so-called estrade served as a platform for a row of honorary monuments. All work was carried out very elaborately in polychrome materials, which considerably increased the architectural value of the street space.

The activities undertaken by the Department of Antiquities, including the unearthing of buildings of a post-Roman date - possibly Ummayad - have added new information on the street. These buildings, most of which rested on a layer of soil (see Fig. 5) and covered parts of the Roman decumanus, were made primarily of stones taken from the colonnaded street, while some of them were made entirely of spoliae (Figs. 3-4). The foundations of two gateways inserted into the decumanus point to a re-use of the street in post-Roman times, possibly as an accomodation gate. The most striking discovery, however, was the fallen pillars of a propylon belonging to a large public building, probably a temple situated just south of the decumanus (Fig. 1); these pillars appear to have collapsed in an earthquake. The archaeological investigations are ongoing, and just recently, the remains of a canal and a large cistern located partially below the decumanus were found.

These findings will allow a more detailed study of the water supply and distribution system at Gadara. It is hoped that future conservation work will be able to preserve not only the fallen pillars but also the evidence of the later occupation of the Roman decumanus.

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Fig. 3

Fig. 4

Fig. 5

# Late Neolithic Esh-Shallaf 1999: Second Campaign of Excavations

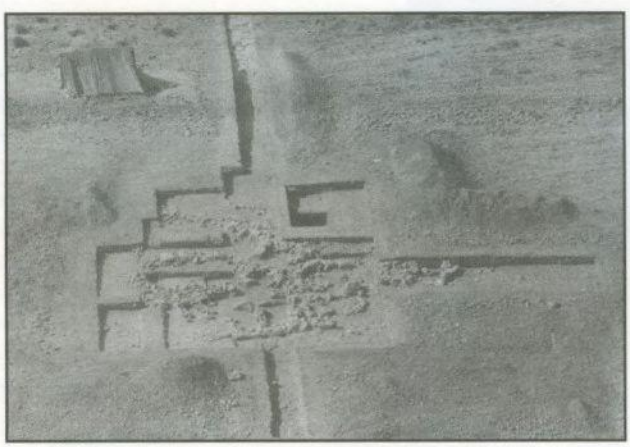
**By: Katrin Bastert, Dresden (Germany), Hans-Dieter Bienert, German Protestant Institute of Archaeology in Amman (Jordan), and Dieter Vieweger, Kirchliche Hochschule Wuppertal (Germany)**

In October 1998, an initial campaign of excavations at the late Neolithic site of esh-Shallaf was undertaken by Dr. Hans-Dieter Bienert and Prof. Dr. Dieter Vieweger on behalf of the German Protestant Institute of Archaeology in Amman and the Kirchliche Hochschule Wuppertal (see Occident & Orient, Vol. 3, no. 2). While initally planning for only one excavation season, the positive excavation results of the first campaign encouraged the organization of a second and final season, which was conducted between March 21-April 4 1999. Like the first campaign, the second one was financed by the German Protestant Institute of Archaeology and co-directed by Dr. Bienert and Prof. Vieweger, while the analysis of the pottery was directed by Katrin Bastert-Lamprichs (Dresden).

**The team members of the esh-Shallaf project.**

The site of esh-Shallaf was found by Prof. Dr. Siegfried Mittmann (Tübingen University, Germany), and the first superficial investigation of it took place in the framework of the Khirbet ez-Zeraqon project (research on the Early Bronze Age II city), which was conducted by the Institute of Biblical Archaeology from Tübingen University in cooperation with the Institute of Archaeology and Anthropolgy at Yarmouk University, Irbid between 1984 and 1994. This project was directed by Prof. Mittmann and Prof. Dr. Moawiyah Ibrahim (Irbid, now head of the Department of Archaeology at the Sultan Qaboos University, Oman), and final reports on it will be published in due course. As part of the Zeraqon project, a vicinity survey was carried out by Dr. Jens Kamlah (now University of Kiel). On the basis of this survey, Kamlah did the first classification of the surface pottery at esh-Shallaf (Nord), and his results will soon be published as part of his Ph.D. thesis.

In the first season, the remains of a number of structures, possibly huts, were excavated, while during the second it was possible to clarify more precisely the stratigraphy of the cultural layers. The architectural remains had been heavily disturbed by ploughing; therefore, it was sometimes impossible to define the relationship between some wall-like remains. However, through further investigations in 1999 we were able to define the outlines of some rectangular and oval-shaped huts, which appear to have been constructed very simply. In



General view of esh-Shallaf excavation.

Excavated architectural remains at esh-Shallaf.

most cases, the outline of the huts is defined by stones of different sizes; however, due to their arrangement, it seems very unlikely that high stone walls existed. Pieces of clay ('Hüttenlehm') point to the existence of superstructures of wood or reed with a mud plaster. No specific installations were detected inside the huts, but adjacent to some outside walls fireplaces were detected, one of which had a floor made of gravel and broken stone slabs. A huge mortar made of basalt was found lying upside down in one hut. Clusters of fist-size stones in some areas might have functioned as working/food processing platforms. However, no traces of any implements suggesting a workshop were found.

In the second season of excavations, a total of 1,020 pottery sherds were found. Of these, only six pieces dated back to the Roman/Byzantine period, while the vast majority could be attributed to the Yarmoukian period. Deep and shallow bowls, jars and hole-mouth jars accounted for most of the vessel forms; plates were very rare. Seventeen percent of the pottery sherds showed either a red polished slip or the typical incised herringbone pattern.

According to the research completed thus far, esh-Shallaf was a hamlet consisting of a cluster of simply built huts with fireplaces and stone platforms in between. It has not yet been possible to clearly define the exten of the village, but we suspect that it did not exceed the size of a small hamlet.

## Acknowledgements

We would like to extend special thanks to all staff members of the 1998 season: Ute Koprivc (Remscheid, Germany), Sarah Oltmanns (Bad Zwischenahn, Germany), Jens Eichner (Wuppertal, Germany), and Gerhard Reimann (Offenbach, Germany). We would also like to thank Dr. Wajih Karasneh, Inspector of Irbid, who helped us significantly in organizing the logistics of the excavation and many other matters. Thanks are similarly due to Dr. Ghazi Bisheh, director general of the Department of Antiquties of Jordan, for granting permission to excavate at esh-Shallaf. Last but not least, we thank Mrs. Asma Sibdeh, our local representative from the Department of Antquities, for her help and support.■


Remains of a fireplace.

Ceramic remains from Neolithic esh-Shallaf.

# The 7th International Symposium on Historical Geography in Antiquity

**By: Jochen Mayer, Institute of History, University of Stuttgart (Germany)**

More than 40 scholars from Germany, England, Austria, Switzerland, Italy, Jordan, and Turkey gathered at the 7th International Sympusiom on Historical Geography in Antiquity, which was held at Stuttgart University from May 5-9 1999. The symposium, organized by the Department of Ancient History of the Historical Institute and chaired by Prof. Dr. Eckart Olshausen and Dr. Holger Sonnabend, was entitled "Zu Wasser und zu Land. Verkehrswege in der antiken Welt," and its lectures were quite well attended.

On the first day of the symposium, the lecture by Holger Sonnabend (Stuttgart) and Michael Hascher (Munich) entitled, "Competing Traffic Systems in Antiquity? - The Lagoon Region Between Aquileia and Ravenna," showed that modern problems concerning the layout of traffic routes and the choice of vehicles already existed in principle in antiquity. Analogies over thousands of years were also drawn in many other lectures, although the historians called for caution when comparing the ancient world to our modern one.

At the end of the first day, participants were invited to a reception by the Ernst-Kirsten Society (the Society for Historical Geography in the Ancient World). In the closely packed program of the following days (Thursday to Sunday), a large variety of lectures was presented. In the lively discussions which followed each lecture, the papers were critically appraised and colleagues were given the opportunity to add further relevant information.

Those who took part in the symposium included not only historians, but scholars from other fields as well. In his lively lecture entitled, "Paläogeographischer Wandel an der türkischen Ägäisküste," the Marburger geographer Helmut Brückner presented modern scientific methods which are highly useful to archaelogy; while in the field of the history of technology, Jost Knaus (Munich) delivered a lecture entitled, "Furt oder Brücke. Hydrotechnische Aspekte des mykenischen Straßenbaus in der Argolis."

The reception hosted by the Ernst-Kirsten Society was followed the next evening by a reception under the auspices of the executive director of the Institute of History at Stuttgart University, Prof. Dr. Folker Reichert. The keynote speech on Friday evening was presented by Prof. Dr. Ing. Gehard Heimerl, whose talk was entitled, "Die Zukunft des Verkehrs." After the lecture, participants were invited to a third reception by the municipality of Stuttgart.

In his closing words on Sunday, Eckart Olshausen thanked all of the scholars in attendance for their participation and their valuable contributions. He then invited them to the 8th Historical-Geographical Symposium, which is due to be held in 2002 in Stuttgart under the title "Troies fuimus. Migration in der Antike."■

(continued from page 1)
5 kilometers east of Ba'ja, houses dating back to the 1930s and 1950s were documented by Janet Haberkorn, an artichect from Cottbus University, Germany. These houses, which have been abandoned by their owners, are made of stone and should be documented before they collapse, as they offer important ethnographic information about village life in the region. At Fersh, which is situated on top of a former Nabataean settlement, a test trench was dug to clarify the stratigraphy of some sites and to check for further information on the Nabataean occupation; this operation was directed by Isabelle Ruben. At the Ba'ja wadi and the entrance to the al-Ba'ja siq, the visible Nabataean canals were cleaned and properly documented. A topographical map was made of the area, including marks indicating all installations. A detailed report on this project will appear in this Newsletter, Vol. 5, no. 1, 2000.

Four further excavations by German teams (see fellows in residence) have received logistical and material support from the Institute. A number of colleagues have mentioned their interest in continuing their cooperation with the Institute next year, and further projects are planned at Umm Qais and in the Petra region. In past years, the Institute has not only been a center for coordinating German activities in the Kingdom, but also a meeting point for colleagues from Iraq and other Arab countries. It is hoped that we can broaden our activities to include greater cultural and archaeological cooperation with all the countries in this region and, by so doing, help to support understanding and scholarly cooperation which goes beyond political and/or cultural differences.

Under the patronage of H.R.H. Prince Ra'ad bin Zeid, an international symposium entitled "Men of Dikes and Canals - The Archaeology of Water in the Middle East" was organized in cooperation with the Orient Department of the German Institute of Archaeology (DAI) and Yarmouk University, Irbid. The aim of this symposium, which was held in Petra/Wadi Musa at the Mövenpick Hotel from June 15-20, 1999, was to bring together archaeologists and other scholars whose scientific research is related to water in antiquity and in modern times. For six days, scholars from different countries (Germany, Jordan, Switzerland, Syria, Spain, the U.S.A., Britain and France) and representing various fields (archaeology, history, Egyptology, geography, engineering, hydrology, and geology) discussed ancient water installations and water-related issues, including modern-day water problems and the increasing water conflict in the Middle East. This highly successful conference vividly demonstrated that archaeology is able to present research results on ancient water installations and techniques which can have an impact on present and/or future water exploitation and distribution techniques. The proceedings of the symposium will be published as a monograph by the Orient Section of the German Institute of Archaeology (DAI). The abstracts of some papers, as well as a separate report on the conference, are presented in this Newsletter.

The importance of the Institute and its work, not only in terms of archaeological research but in the broader field of cultural relations and interreligious dialogue, was further demonstrated by the visit of a high ranking delegation of the German Protestant Chruch (EKD). On April 29, 1999, the Institute welcomed the chairman of the Council of the Protestant Church in Germany, the Most Reverend Mr. Manfred Kock and his delegation. After being briefed by the Institute's staff, the guests were given an evening reception in honor of Mr. Kock and his delegation. The reception, which was jointly organized by the Institute and the German speaking congregation of Amman, was attended by more than 180 guests, including a number of dignitaries.

A number of lectures on different topics and other activities have been organized jointly by the Institute and the German speaking congregation in Amman. We have also had the pleasure of welcoming German members of Parliament and guiding them through Jerash and Petra. On June 19 of this year, Mr. Josef Hollerith, member of the German Parliament, paid a visit to the Institute, where he was briefed about our work and activities. On July 14, Dr. Friedbert Pflüger, member of the German Parliament and head of the European Affairs Committee in the German Parliament, accompanied by Dr. Michael Fuchs, secretary of the committee, were guided through the Nabataean city of Petra by Dr. Hans-Dieter Bienert, director of the German Protestant Institute of Archaeology in Amman. In October, a third delegation of four members of the German Parliament (Mr. Joachim Hörster, Mr. Dietmar Schlee, Mrs. Dorothea Störr-Ritter, und Mr. Detlef Freiherr von Hammerstein) visted Jordan, where Dr. Bienert guided them through the ruins of the ancient city of Jerash

During this past year we have had to say goodbye to a number of colleagues and friends. In April, Ms. Nadine Riedl left our Institute to continue her Ph.D. research at the Free University of Berlin (Germany) after having served as the Insitute's assistant director for the past four years. The Institute, and especially Umm Qais, owe a great deal to her and her never ending patience! We wish Nadine the best of luck in her future work, and we hope to see her again soon in Jordan.

In August our French colleague, Prof. Dr. Jean-Marie Dentzer, left the French Archaeological Institute (IFAPO) to return to his professorial post at the Sorbonne (Paris). From 1995-1999, Prof. Dentzer resided in Damascus, where he was at the helm of the French Archaeological Institute for the Near East. During his term of office, Mr. Dentzer inaugurated the new library at the Institute's headquarters in Beirut and greatly advanced archaeological and architectural studies of Bosra and Sî, as well as co-directing excavations in Petra. Prof. Dentzer is an authority on the Classical periods in archaeology, and he is especially renowned for his scholarship in the Late Hellenistic and Nabataeo-Roman studies which he began in the late 60's when he was professor at the University of Nancy. In addition to his many distinguished positions, he was director of the archaeological research center, "ERA 20" at Valbonne until 1994, where he took part in and co-directed many excavations, notably those at Surkh-Kotal (Afghanistan), Thamusida in Morocco, Tell Arqa in Lebanon and, since 1974, various surveys

in south Syria. We wish Prof. Dentzer all the best and hope to see him again in Jordan.

Prof. Dentzer is succeeded as head of the French Archaeological Institute for the Near East by Prof. Dr. Jean-Louis Huot. Prof. Huot obtained his Ph. D. in 1979 and, after teaching history and geography for a number of years, he became resident fellow at the French School of Archaeology in Jerusalem with a research grant. From 1966 to 1969 Prof. Huot held the post of senior researcher at IFAPO in Beirut, which was followed by the distinguished position of Professor at the Sorbonne (Paris). Among his many archaeological expeditions, some of the most remarkable are his partnerships with C.F.A. Schaeffer at Ras Shamra and Ramad, with H. de Contenson in Syria, with J.B. Pritchard at Tall as-Sadiyah in Jordan, and with J. Margueron at Larsa in Iraq. His collaboration with the Larsa expedition led in 1977 to his directorship of the French Archaeological Delegation in Iraq, an important post representing all French archaeological missions in Iraq. Prof. Huot has been awarded many honors and is on the board of several scientific committees, including the editorial committees of archaeological journals such as Paléorient, Syria, and Revue d'Assyriologie et d'Archéologie Orientale, to name but a few. Before taking up his present position as director general of IFAPO for Jordan, Syria and Lebanon, he was the director of "ERA 41" (CRA of CNRS, Paris). Prof. Huot is best known among his students for his research and many publications on the prehistory of Iraq. We welcome Prof. Huot and look forward to seeing him often in Amman.

Despite the uncertainty about the future of our Institute, we are planning projects for the new millennium, focusing on site presentation issues. Archaeological research in Umm Qais as well as in the Petra region will continue, and plans are underway for joint projects with our Jordanian and European colleagues, all of which points to the necessity of keeping our Institute open and active. We are thankful for all the support we receive from our colleagues and from many Jordanian institutions, and it is our hope that everyone concerned about the future of our Institute will do his/her best to keep it going, for the benefit of archaeological research and cultural cooperation with our Jordanian hosts far beyond 2000.■

# Words of Appreciation and Welcome to Dr. Ghazi Bisheh and Dr. Fawwaz Khraysheh

The director and staff of the German Protestant Institute for Archaeology in Amman join our many colleagues in the archaeology community in thanking Dr. Ghazi Bisheh for his many years of service as director general of the Department of Antiquities, and also in welcoming Dr. Fawwaz Khraysheh as the new director general of the department.

Dr. Bisheh served two stints as director general, for a total of eight years, in between which he was an associate professor at Yarmouk University and director of the Madaba Archaeological Park Excavation. Under his leadership the department significantly expanded the number of surveys, excavations, and conservation projects in the country, while focusing heavily on manpower training in several fields.

Dr. Bisheh, born in Amman in 1944, graduated from the University of Jordan with a BA in archaeology in 1967, then earned his MA and Ph.D. degrees in Islamic Art and Architecture from the University of Michigan, USA.

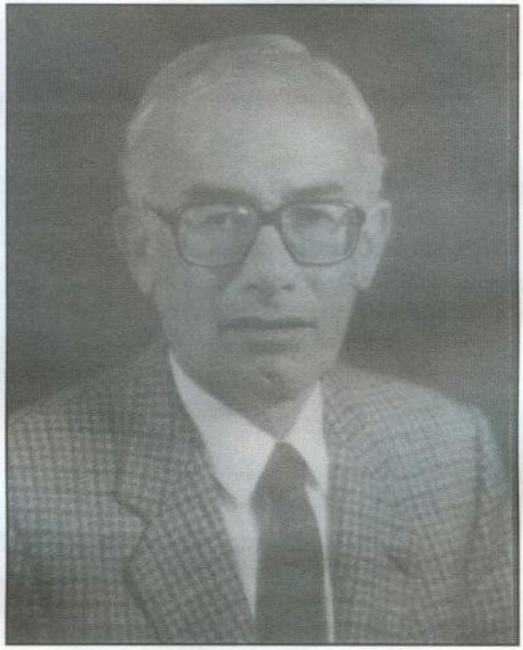
He spent his entire career with the Department of Antiquities in various posts around the country, before being named director-general in 1988. Dr. Bisheh's scholarly focus is on the transition from the late Byzantine to the early Islamic eras in Jordan, and he has excavated at several sites, including

Dr. Fawwaz Khraysheh.

Madaba and Qasr el-Hallabat.

Dr. Fawwaz Khraysheh, born in Breiqa, north Jordan, in 1955, earned his BA degree in Arabic language and literature from King Saud University in Saudi Arabia, then continued for his MA and Ph.D. degrees in archaeology and ancient Semitic languages at Philipps University in Marburg, Germany. His most recent post before being named director general of the department was Associate Professor at Yarmouk University and director of the Institute of Archaeology and Anthropology at the university. He also served for nine years as head of the department of epigraphy and ancient languages at the university. His field experience at numerous excavations since 1980 has included work at Sahab, Yasila, Madaba, Muwaqqar, Bayir, Wadi Sara, and Tell el-Khanasiri, among others.

Dr. Khraysheh's academic specialization is in the ancient languages of the region from north-west Arabia to southern Syria, and the languages and archaeology of this region before the Islamic era. He has published extensively on issues related to the Safaitic, Thamudic, Nabataean, and early Arabic languages.



Dr. Ghazi Bisheh.

During his career he has been a visiting professor at Leiden, Michigan, Arkansas, Berlin and Philipps-Marburg universities. He is married, with two boys and two girls.

He has said that his priorities for the department include continuing to train his staff, develop their capabilities, and improve their working conditions, for he believes that ultimately the department's success will depend on the quality and dedication of its staff. He has also expressed the desire to promote deeper links and cooperation among the Jordanian universities, the Department of Antiquities, and the international archaeological centers in Jordan.■

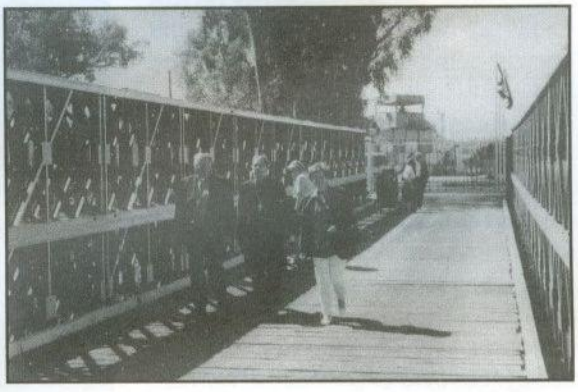
# Visit of German Church Leaders to the Hashemite Kingdom of Jordan

Heads of the German Evangelical Church in Germany paid a one day visit to the Hashemite Kingdom of Jordan during a tour of countries in the Middle East. The Chairman of the Council of the Evangelical Church in Germany, the Most Reverend Mr. Manfred Kock, was accompanied by Bishop Dr. Rolf Koppe (Head of the Unit for Ecumenical Relations and Ministries Abroad), Mrs. Kock, Dr. Beate Scheffler (member of the Council of the Evangelical Church in Germany), Propst Karl-Heinz Ronecker (head of the Lutheran Church of the Redeemer in Jerusalem), and Mrs. Ronecker. The German delegation arrived in Jordan via the King Hussein Bridge on April 29th. They were welcomed by members of the German Embassy, the German speaking congregation of Amman, the German Protestant Institute of Archaeology in Amman, Jordanian officials, and members of the Department of Antiquities of Jordan.

After a short briefing, the delegations headed for the recently excavated "Baptism Site", where Dr. Ghazi Bisheh, director general of the Department of Antiquities, introduced the guests to the excavation and explained the history of the ancient site with its pools, cisterns, chapels and churches. This site, close to the Jordan River, must have been an important place for worshippers and pilgrims, at least during Byzantine times. Dr. Mohammad Waheeb, the head of the excavation team, then guided the delegation through the excavations and explained the ongoing fieldwork which should be completed in early 2000.

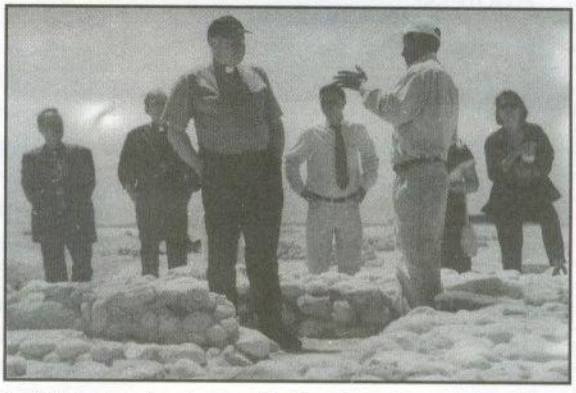
From the River Jordan, the delegation went to Amman where the members had been invited for talks at the Royal Academy for Islamic Civilization Research (Al al-Bait Foundation). In April 1997, the Evangelical Church in Germany and the Royal Academy for Islamic Civilization Research had held a symposium on "Religion and Secularism" in the framework of the Christian-Muslim dialogue. This meeting was followed by a talk by H. E. Peter Mende, the German ambassador to Jordan. During lunch, the members of the delegation discussed the political situation in the region and were informed about the work of German institutions in Jordan, in particular the German speaking congregation of Amman and the German Protestant Institute of Archaeology in Amman. The delegation then paid a brief visit to the Lutheran church in Amman before heading for talks with members of the royal family.

In the evening, a reception was held in honor of the visit of the Chairman of the Council of the Evangelical Church in Germany at the German Protestant Institute of Archaeology in Amman. During the reception, which was attended by more than 180 guests, Mr. Kock emphasized the importance of the presence and work of the German speaking congregation for a lasting Christian-Muslim dialogue. He also stressed his determination to continue supporting the work of the Ger-



Arrival of the German delegation via the King Hussein Bridge: In the forefront from left to right: Mr. Manfred Kock, Chairman of the Council of the EKD, Propst Karl-Heinz Ronecker, Mrs. Ingeborg Ronecker.

Mr. Kock and his delegation are welcomed at the baptism site by Dr. Ghazi Bisheh (second from right), director general of the Department of Antiquities of Jordan, and Dr. Mohammad Waheeb, field director of the baptism project.



Dr. Waheeb introduces Mr. Kock and his delegation to the excavations at the baptism site.

man Protestant Institute of Archaeology, which has been under threat of closure due to severe financial cuts. However, impressed by the institute's work, its role, and its acceptance in the Jordanian society, Mr. Kock stated that he will do his best to keep the work of the institutes in Amman and Jerusalem going. This short but highly intensive and informative visit to the Hashemite Kingdom of Jordan ended in the institute's garden with a farewell and "hope to see you soon again in Amman". ■

**Members of the accompanying delegation: Dr. Scheffler, Propst Ronecker, Bishop Dr. Koppe, Mrs. Kock.**

# The New Pella Bronze Age Temple: The Largest 'Migdol' Ever Found

**By: Stephen Bourke, Sydney University (Australia)**

The four most recent seasons at Pella in Jordan have concentrated on a massive Bronze Age structure, which was revealed this season as the largest example ever excavated of the south Levantine 'Migdol' Tower or Fortress Temple. With overall dimensions likely to exceed 32 by 24 meters, it is considerably larger than the previous largest example known (26 x 22 meters), which was discovered in German/American excavations at the important Biblical cult center of Shechem (located a few kilometers from modern Nablus in the Palestinian administered West Bank). The Pella example is closest in overall design to the Shechem temple (thought to be the famous temple of El-Berith mentioned in Judges 9: 46-49), although it shares several design features with the Hazor Area A temple (also attributed to El by its excavators), and a similar design history with a slightly smaller temple from Megiddo (Temple 2048). Its closest Jordanian parallel lies with the much smaller rural shrine excavated at Tell el-Hayyat, a few kilometers south of Pella in the north Jordan Valley.

The Pella temple is oriented east/west (as is the Shechem temple). Work to date has concentrated on the southern and western interior, with a 30 x 5 meter strip excavated along the southern quarter of the building interior along with a 10 x 20 meter strip within the western interior. The entire southern long wall has been exposed, with an internal raised brick paved corridor running along its interior. The outer edge of the central pillared hall (featuring three large half metrer wide basalt column bases, closely resembling the reconstructed Shechem temple), and the complete southern tower (approximately 5 x 5 meters square and modified subsequently to narrow the original monumental entranceway as at Shechem and Megiddo) have all been exposed in the first strip. The western excavations have completely exposed the Holy of Holies, featuring a reused orthostat lined doorway (as at Hazor), flanking columns (with smaller basalt bases), and a massive stone-paved floor, flanking mudbrick benches and a stepped altar/podium off center to the south of the entrance.

The Migdol temple form has been associated with the worship of north Canaanite El, head of the local pantheon, originally a mountain-based storm and/or war deity. From present indicators, the Pella temple was constructed around 1600 BC and was destroyed for the last time somewhere around 900 BC There are four main structural phases in the life span of the temple, although most finds date to the 'middle' phases of the structure, between 1450-1150 BC

Finds from the 55-60 % of the interior explored to date have been spectacular. They include parts of seven conical fenestrated stands (closely paralleled at the nearby temple complex of Beth Shan), a life-sized basalt statue head (best paralleled at Ebla), a quantity of ceramic bowls, jugs and jars (all bearing 'tree of life' motifs), a large crater with 'bulls' head' protome handles, several hemispherical bowls, a WS painted alabastron, and fragments of two asymmetrical bowls (elements similar to assemblages from Lachish and Beth Shan). In addition, a large number of bi-colored spherical and conical glass beads, several elongated multicolored glass, agate, amethyst and carnelian barrel beads, and small numbers

of magnificent lapis lazuli and gold beads were found scattered over the southwestern corner of the Holy of Holies, perhaps from at least one large necklace or beaded collar.

Glyptic consists of four local Syro-Mitannian 'Common Style' faience cylinders, two Kassite Babylonian cylinders, one (unfinished) cylinder of lapis lazuli, as well as several large glass 'cylinder blanks' (or just possibly spacer beads). Other finds include ceramic and faience zoomorphic rhyta, faience cups and buckets, two glass plaques, fragments of ivory, lapis lazuli and polished bone furniture inlay, a bronze spearhead, a small furniture inlay studded with animal heads, a votive snake, several arrowheads, a small but beautifully modeled Reshef figurine, fragments of two Egyptian stone jars (one reused from the Old Kingdom), a gold earring and numerous foil fragments, a cluster of colored faience tiles, several finely worked basalt bowls, and a ladle.

Together, these finds make up an impressive assemblage, considering that we have explored less than half the temple interior. The type and distribution of finds are consistent with the presence of a gilded basalt cult statue (perhaps similar to that from Hazor Area C); the statue has lapis lazuli eye and fingernail inlays, is wearing a number of glass and stone bead necklaces, and is seated on a copper and ivory inlaid wooden throne holding a bronze spear.

Our primary aim through these finds is to document the temple's internal layout and gain some understanding of the form and execution of actual cultic practice. More importantly, we intend to focus on how both layout and cult practice may have changed over the life of the temple, which spans one of the most critical periods (ca. 1650-850 BC) in the development of religious ideas in the Near East. This will be an important advance, because most Migdol temples were excavated when field practice was less concerned with the systematic recovery of the zoological and botanical evidence which we now know to be vital to any reconstruction of ancient behavioral patterns. Our zoologist has already achieved surprisingly good matches between ancient temple offering lists and the animal bone remains buried in small pits under our temple floors. It may be that the botanical evidence will eventually be shown to correlate with the very strict foddering requirements attested to in Ugaritic dietary laws. We also hope to reconstruct a complete temple offering assemblage (bowls, jugs, jars, altars, etc.), and if we are lucky, perhaps even the cult statue and throne. Fragments of most of these items have already been recovered and we hope a relatively complete assemblage awaits our trowels. ■

General view of the recently excavated Bronze/Iron Age temple at Pella, looking east. (Photo by Rami G. Khouri).

# Searching for Medieval Hormuz: The Lost Crusader Fortress of Petra

**By: Manfred Lindner, Naturhistorische Gesellschaft Nürnberg (Germany)**

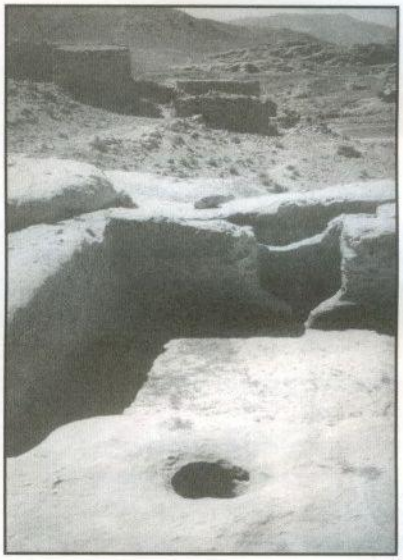


**Fig. 1 Nabataean to Byzantine "At-nub", no Crusader site (1995).**

During one of his adventurous wanderings in the northern Petra region, A. Musil tried to identify a certain place in the Bayda area as the long lost "Hurmuz", the third historically known Crusader fortress of Petra. Musil claimed that the ruin was called "Hormuz." However, we do not know whether the Bedouins customarily used this name, or if Musil got it from a letter of Saladin's cited by Imad el-Din and again by Ibn al-Atir. Be this as it may, what was noted appeared to be the foundation of a ruined structure of 60 by 30 paces, located on a low mound. According to Musil, the compound replaced the older al-Karn, both of which were intended to defend Crusader Petra against invaders from the west (Musil 1908, 220, 247).

**Eliminated candidates**

When visited by N. Glueck in 1934, the site had deteriorated: "Kh. en-Neq'ah [is] a small, completely destroyed ruin, out of which nothing could be made. No shards were found by it." (Glueck 1934/35 EEP II, 87). In the 1970s, the Inspector of Petra severely reprimanded several Bedouins who were caught in the act of building houses out of the ashlars of the same place. The houses, which were built in defiance of the Department of Antiquities, make use of former foundations and now cover part of the rocky hill above and to the east of the modern road (Fig. 1). In the interior, salvaged arches and diagonally cut ashlars can be made out. Walls of about 7 meters with durable cornerstones of flinty material are pre-Bedouin. The spot located about 20 meters above the road offers a panorama view of J. Mansar, J. Adabde, Umm el-Biyara, Madhbah, the Wadi Musa-Tayyiba road, and 'Ain Braq. The site was examined several times by groups of the Naturhistorische Gesellschaft Nürnberg (NHG) and by a departmental archaeological survey in 1996; it was judged by the latter to have been Nabataean (First and Second Centuries AD), Byzantine (fourth to sixth centuries), and Late Islamic. An elaborate rock-cut wine press was declared Nabataean ('Amr et al. 1998, 507).

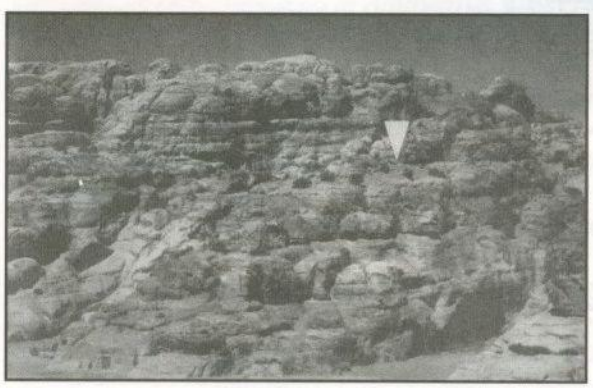


Fig. 3 An-Naq'a II at the precipice of Jabal Baida (1998).

Fig. 2.

In his search for Hormuz together with the NHG, E. A. Knauf was certain that Musil's Hormuz, or 'Kh. an-Naq'a' as the site is now spelled by K. 'Amr, could not have been the Crusader fortress. Yet it must have been located in the same area in which the road or track between Petra and Naqb Nemala was to be controlled. Kh. al-Qarn, far out in the plain, was not even considered a Crusader fort, and in fact it proved to be a Nabataean-Roman settlement (fortress ?) of the first to early Second Century AD.

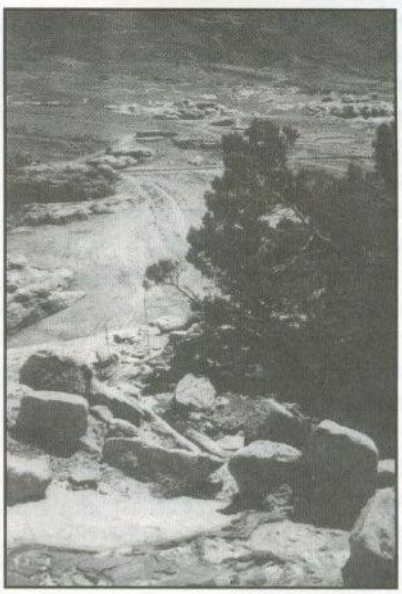


Fig. 4 Looking from Naq'a II to Naq'a I and the 'Amarin Housing (1996).

('Amr, et al. 1998, 515).

Another site, "Atnub", also offered hope; this site is built of regularly cut and laid ashlars between sandstone outcrops, and was used as a well defended and stocked place using the outcrops as "towers" (Fig. 2). The examination undertaken in 1995/96 (prior to the departmental survey) included drawing the site and analyzing the surface pottery. It was concluded from this that it did not belong to the Crusader period, but to the Nabataean-Byzantine period. An elaborate nefesh, a Dushara pillar in a niche, two wine presses, a rock-cut channel and a (hidden) cistern confirmed the dating and eliminated Atnub, as it was called by NHG, as a candidate for a Crusader fortress (see Jahresmitteilungen der NHG 1995/96). This result was confirmed by the above-mentioned survey of "Bayda 16" ('Amr, et al. 1998, 510).

**Hormuz found at last**

The search for "Hormuz" then went on. In the same year (1996), I was led by my friend Dakhilallah Qublan to a ruin field on the steep precipice of Jabal Bayda high above Kh. an-Naq'a (Figs. 3 and 4). At first sight, the site was regarded as a fortified Late Islamic village. It seemed to belong to a group of similar villages (e.g. Kh. Rweishde, Kh. Mu'allaq, Kh. Anajil), marking a period of unrest and insecurity in the Petra region around the twelfth and thirteenth centuries. An-Naq'a II, as it was called by NHG, was revisited in the following year, this time together with E. A. Knauf and U. Hübner. Both convinced me that an-Naq'a was nothing other than "Hormuz", the third Crusader fortress of Petra. Casemate-like, built with about 15 compartments at the rim of the precipice, it was, in fact, quite unlike the other Late Islamic villages (Fig. 5). There was a closable entrance/exit through a gorge to the southwest. The finds were, with one notable exception, hand-made Late Islamic pottery which was known to have been used by the Crusader personnel at Petra, and fragments of round and oval hand mills (Lindner 1999, forthcoming).

**Beyond Hormuz**

From the southwestern entrance/exit with remnants of a bolting by walls, a quarry is passed from which the tabular white sandstone of the an-Naq'a II walls was taken. Then the path winds up to a plateau inclining upward toward the southeast. Around a large ruined compound built against a rocky mound with the presumed openings looking toward the south, a scatter of Nabataean-Roman pottery was found explaining the find of a single Nabataean fine-ware shred at an-Naq'a II.

On another rock, a very weathered quadrilateral niche with three idol pil-

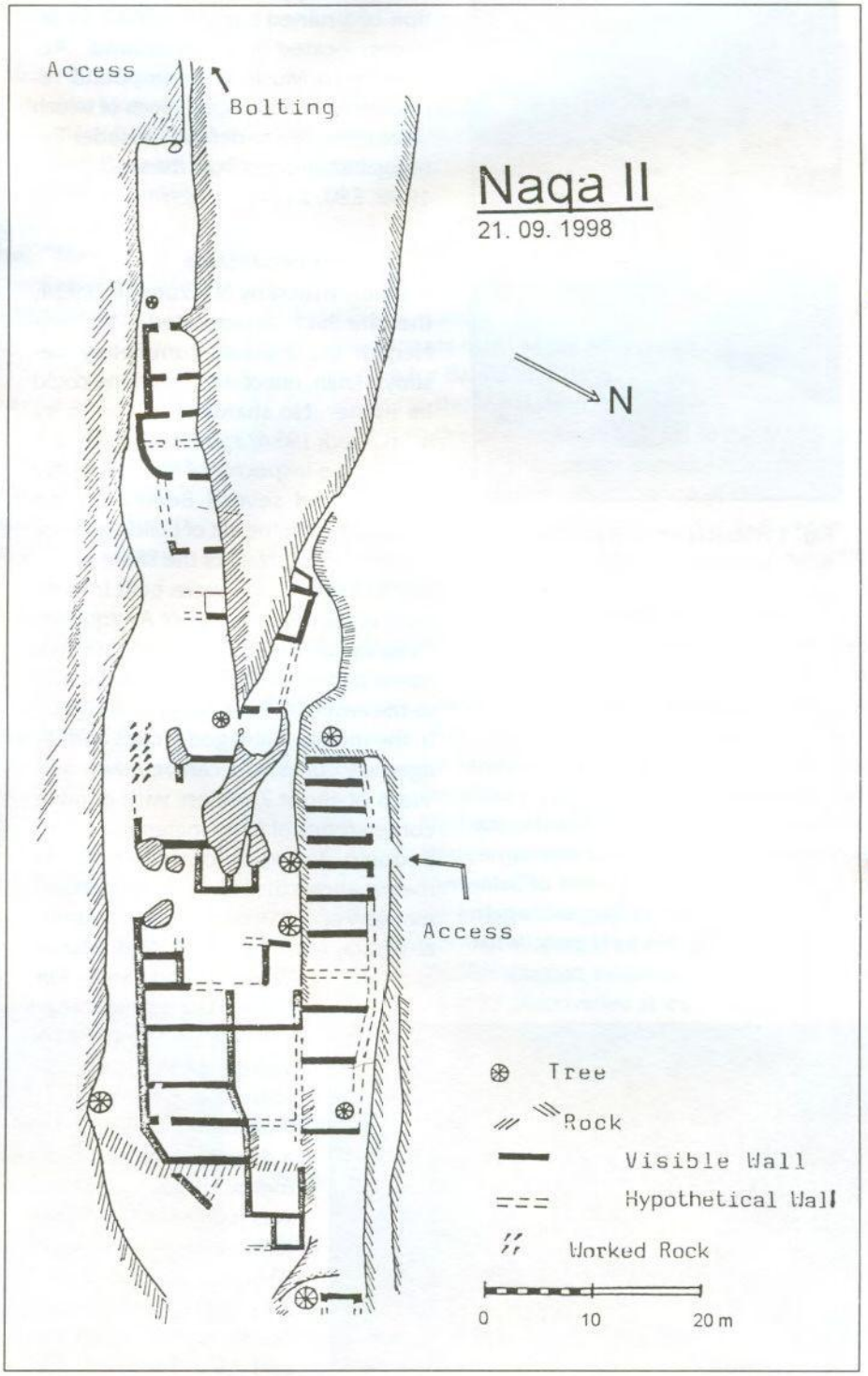



Fig. 5 Sketch map of an-Naq'a II (Hormuz) by Ulrich Hübner and Ingrid Künne (1998).

lars was noted. Runoff from the upper fringe of the plateau was collected in a square cistern with a wall of carefully cut ashlars conducting water to it. The presence of a tin vessel by the reservoir revealed that it is still being used at present. The runoff was collected again in a round, rock-cut cistern originally enclosed by a wall, before it dropped steeply down into a large catchment basin. Fine sand indicated that there had been frequent flooding with water which eventually should have drained toward Siq Umm el-Hiran. Barred by a wall (which was not found), a large pond may have formed after it rained.

At the southern rim of the plateau two incongruous items were noted. The first was rock engravings of a camel, of "feet", and of ostriches, animals which clearly lived here only in the dreams of hunters who had previously seen them in the Araba (Fig. 6). The second item was a Greek inscription with the name of a man who did not wish to be forgotten, together with a couple of indecipherable rock pictures (Fig. 7). The discovery of Naq'a III, as it was logically designed, may also explain the Nabataean-Roman past of Naq'a I. The latter probably fulfilled a similar function already at that time. Based on its Late Islamic pottery, the successor quite probably became the roadside outpost for the Crusader stronghold of Naq'a II. In both periods, the cooperation of two sites allowed for effective control of people using the tracks from Kerak-Shobak or from Naqb Nemala to Petra, i.e., coming from Syria or across Wadi Araba from Egypt or Gaza.

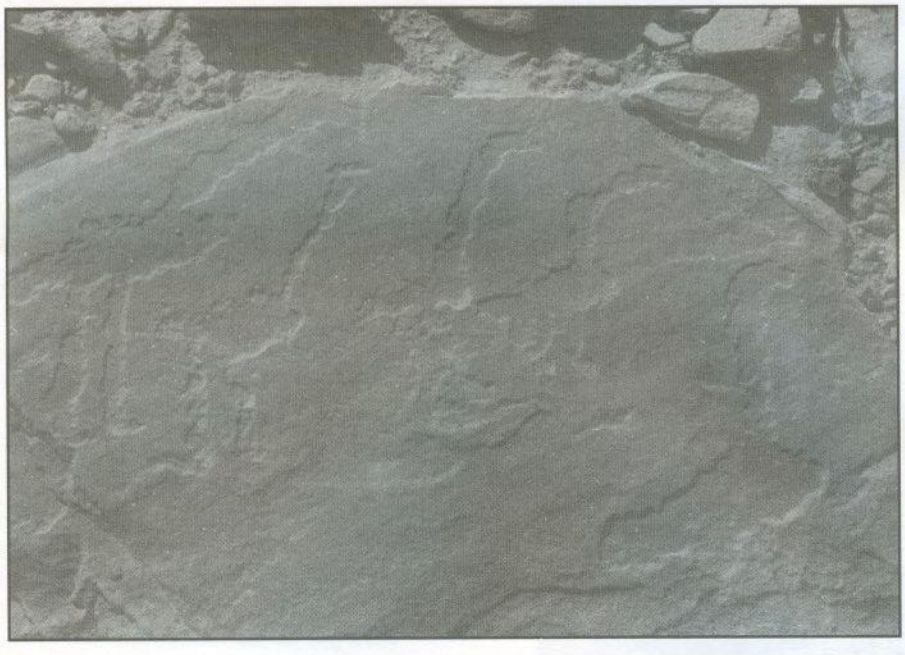


Fig. 6 Rock engraving of ostriches at an-Naq'a III (1998).

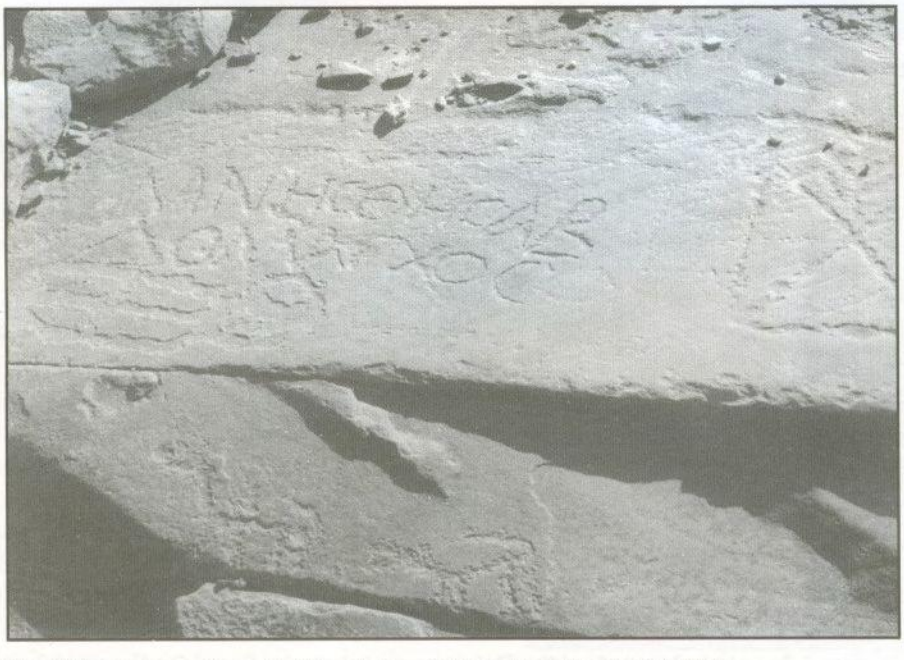


Fig. 7 Rock engraving of a Greek inscription at an-Naq'a III (1998).

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# Ba'ja - The Archaeology of a Landscape: 9000 Years of Human Occupation

**By: Hans-Dieter Bienert, German Protestant Institute of Archaeology in Amman (Jordan), Roland Lamprichs, Dresden (Germany), and Dieter Vieweger, Kirchliche Hochschule Wuppertal (Germany)**

The Ba'ja region is situated in southern Jordan, approximately 10 km north of Petra, the ancient Nabataean city (Figs. 1-2). Today it is accessible via an asphalt road leading from Wadi Musa to Beida, which then continues as a dirt road and a rather difficult trail into the Wadi Arabah. After passing the Beida junction, the dirt road passes through the Siq Umm el-Hiran and enters the Jabu plain (Fig. 2). As travelers enter the Jabu plain, their attention is arrested by a huge round mountain, Ba'boul al-Ba'ja. The mountains just east of Ba'boul al-Ba'ja are called Ba'ja. The first archaeological research in this region, an area approximately 10 km north of the ancient Nabataean city of Petra, was first undertaken by Dr. Manfred Lindner and his team from the Naturhistorische Gesellschaft Nürnberg (Germany). In 1983, Lindner conducted an initial survey of the area (Lindner 1987; 1996).

In the summer of 1984, while surveying the Ba'ja region, Lindner and his team discovered a number of prehistoric and historic settlements. The most ancient site, which Lindner named Ba'ja II, dates back to the Late Pre-Pottery Neolithic B (LPPNB: 6,500 6,000 BC). Its setting is quite spectacular; as it sits on a terrace between mountains (Fig. 3) which covers about 12,000 square meters; moreover, the former settlement can only be reached through a narrow siq. Within the siq, at least two barriers of huge fallen rocks must be passed before one can reach the ascent to the Neolithic settlement. Here, in 1997, a large-scale excavation was undertaken by the German Protestant Institute of Archaeology in Amman. During a month-long campaign, an area of 250 square meters was uncovered (Fig. 4). Typical PPNB walls of up to 2.5 meters in height were detected, and a large collection of sandstone ring fragments were some of the outstanding findings from the site. First preliminary reports have already been published (Bienert/Gebel 1997a; 1997b; 1998a; 1998b).

Beside Ba'ja II, Lindner identified three other sites which he named Ba'ja I, Ba'ja III and Ba'ja IV (Lindner 1989; 1996). Ba'ja IV is situated approximately 2 km south-southwest of


Fig. 1 Plan of the Ba'ja region (sketch by M. Lindner).

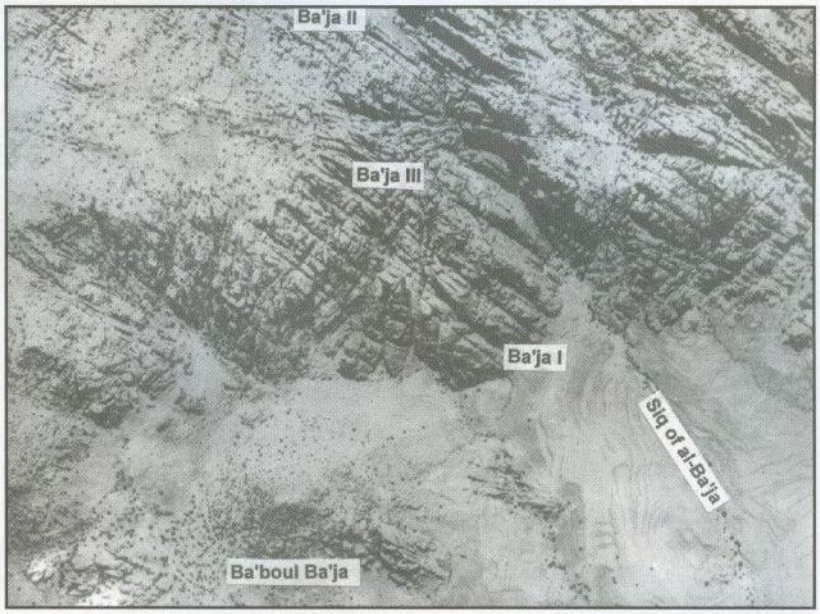


Fig. 2 Aerial photograph of the Ba'ja region (photo by Royal Geographic Center, Amman).

the al-Ba'ja siq. Here, Lindner's team identified ancient terrace walls and house foundations on an area of 200 x 200 m. Pottery scattered over the surface dates back to the Early Bronze Age, the Nabataean period, and the Late Roman period (Lindner 1989, 189; 1996, 273-274). However, since the discovery by Lindner, the site has suffered severe damage by road works and agricultural activities (Lindner 1996, 274)

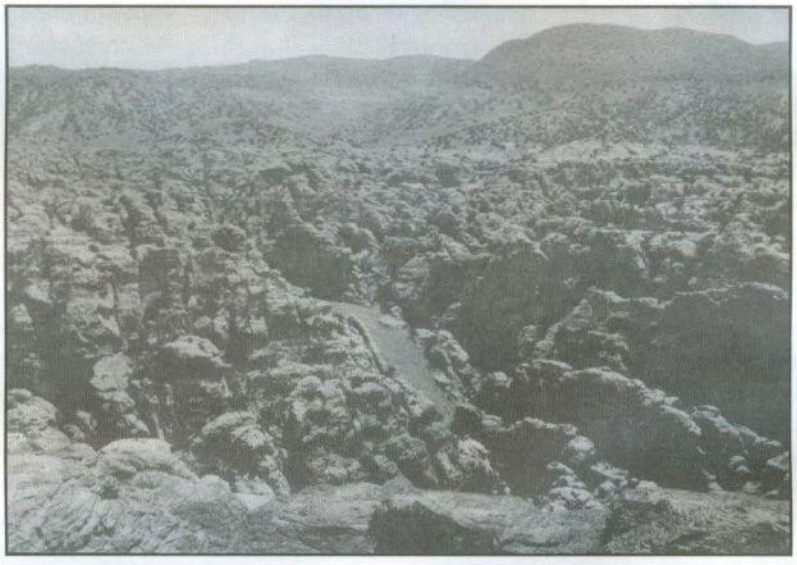

Fig. 3 View from Ba'ja III towards Ba'ja II (photo by M. Lindner).

Located near the al-Ba'ja siq are a number of ancient, most likely Nabataean, rock-cut canals (Figs. 5-6) which belonged to an ancient water network; this network carried water that was collected by a dam at the entrance to the siq towards the Jabu plain. Rock-cut installations still identify the position of the former dam (Fig. 5). It is very likely that in Nabataean times the region was heavily cultivated and that the water collected in the siq was used to irrigate the fields. This idea is supported by a large number of old terrace walls which can be found along the wadi of Ba'ja and at Ba'boul al-Ba'ja (Fig. 7). The presence of a rock-cut wine press may also indicate wine production at the site, while two dams of probable Nabataean origin can be found at the foot of the Ba'ja massif. Both of them are still in use nowadays and have been restored and rebuilt in recent times (Fig. 9).

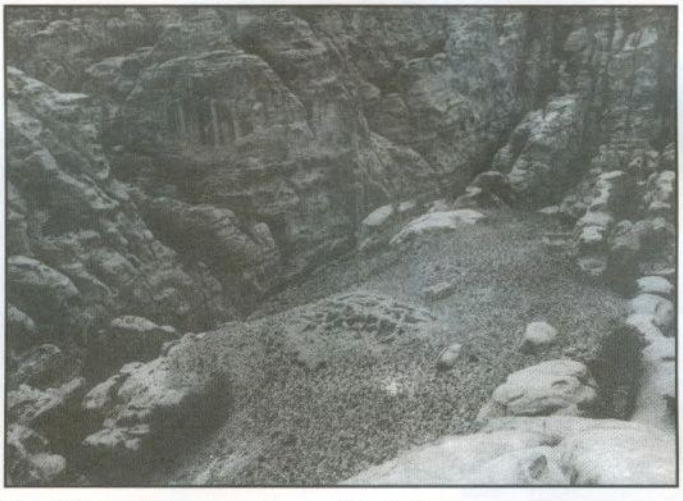

Fig. 4 The 1997 excavations at Ba'ja II.

On the northern slope of the wadi of Ba'ja (Fig. 8), close to the entrance to the al-Ba'ja siq, Lindner identified the ruins of a village, Ba'ja I, which is of uncertain origin (Lindner 1989, 184; Lindner 1996, 249-252). Pottery from an initial site survey pointed to a Nabataean and late Islamic (Ayyubid-Ottoman) occupation. According to Lindner, the village (Fig. 10) consisted of up to 50 units (houses), while collapsed walls and house foundations

Fig. 5 The entrance into the siq of Ba'ja with rock-cut remains. of an ancient barrier.

Fig. 6 Rock-cut canals, leading water from the siq of Ba'ja towards the Jabu plain.

can still be clearly seen in the field. In 1998, another site survey was undertaken by Dr. Bienert and Dr. Lamprichs, who collected surface pottery. Their findings did confirm a late Islamic-Ottoman date for the Village, with previous occupations dating to the Nabataean and Late Roman / Byzantine periods; however, it was not possible to confirm the existence of a an Iron Age settlement despite a few sherds which were found dating back to that period (Bienert / Lamprichs 1999).

Ba'ja III (Figs. 8, 11, and 12) offers the most outstanding setting for the sites discovered by Lindner: "Circa 40 meters north of the Siq exit leading up to Ba'ja II, there is a series of chimneys and fissures with tiny worn footholds to climb up. About 140 meters above the village of Ba'ja I, a rugged mountain top consisting of dome- or tower-like foundations together with cisterns, grinding plates and Edomite pottery indicate an Edomite mountain stronghold or an easily defendable acropolis of a settlement down in the plain" (Lindner 1989, 187). Several attempts by teams (Fig. 13) from our institute to reach Ba'ja III have failed due to the very difficult path. However, it is our intention to continue our search for an accessible road up to the site. Lindner and his team explored the site twice, first in 1984 and then in 1986 (Lindner/Farajat 1987). On both occasions, a sketch of the mountain top was made showing the visible installations on the site. All of the pottery collected dates back to the Iron Age II (Lindner/Farajat 1987; Zeitler 1992). However, up to now no indications of an Edomite settlement in the Jabu plain have been found, and it appears that Ba'ja III has, as mentioned by Lindner, been a pure mountain stronghold, comparable to Umm al-Biyara and some other similar sites in the region.

Thanks to the generous financial support of the Fritz Thyssen Foundation

Fig. 7 Some of the terrace walls which stretch along the eastern slope of Ba'boul al-Ba'ja.

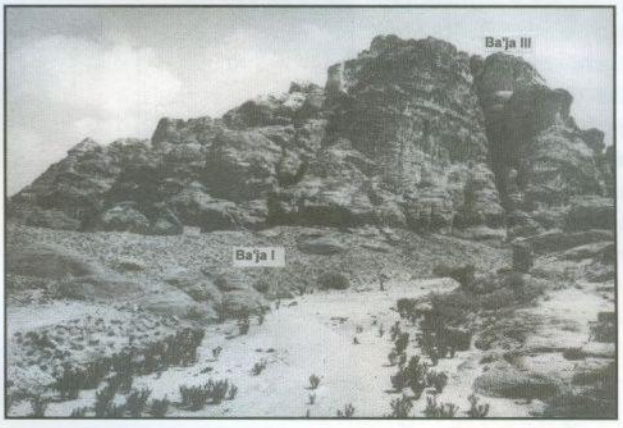


Fig. 8 View of the sites of Ba'ja I and Ba'ja III.

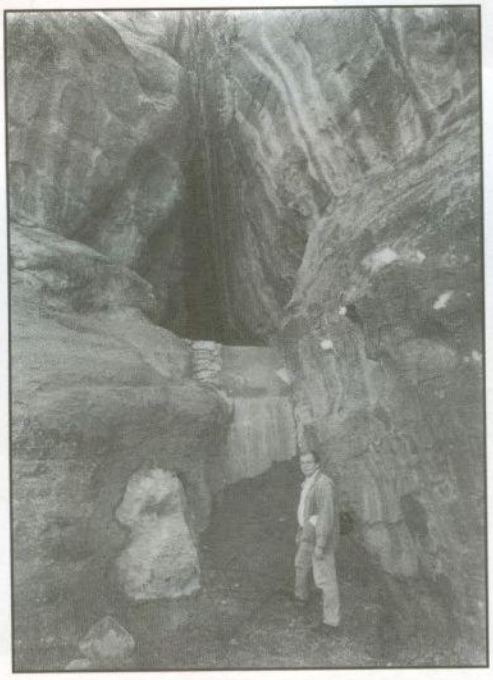

Fig. 9 A modern dam closing off a rock fissure in the Ba'ja massif.

Fig. 10 The settlement of Ba'ja I with collapsed house walls.

(Köln, Germany), it was possible to plan for a new project in the Ba'ja region. In October 1999, a three-and-a-half-week archaeological campaign investigated the sites of Ba'ja I and Ba'ja III as well as the Ottoman village of Fersh with its ancient Nabataean occupation. The project was directed by Dr. Hans-Dieter Bienert (director of DEI-Amman), Dr. Roland Lamprichs (Dresden, Germany) and Prof. Dr. Dieter Vieweger (Kirchliche Hochschule Wuppertal). Support and logistical help was provided by the Petra Stone Preservation Project (CARCIP), the Department of Antiquities of Jordan, and the Petra Regional Council (PRC). The focus of the project is not on a single site of a certain period, but rather on the region itself and its human occupation over time. For us it seems necessary not only to concentrate on a specific period, but to investigate the traces of human occupation in all periods. By doing so, we shall attempt to get a better picture of the settlement history of that region. A detailed report on the archaeological investigations and the expedition to Ba'ja III will be published in Occident and Orient, Vol. 5, no. 1, 2000.

Fig. 11 Mountain top with the settlement area of Ba'ja III (photo by M. Lindner).

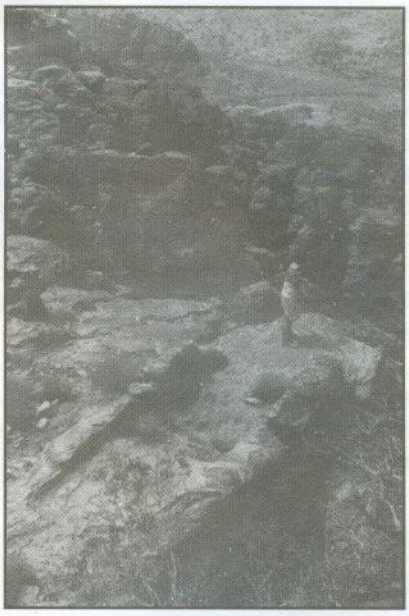

Fig. 12 A rock-cut structure at Ba'ja III (photo by M. Lindner).

Fig. 13 On the way to search for an access to Ba'ja III.

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# Urban Archaeology in the Highlands of Central Jordan: The Tell Madaba Excavations, 1998-99 Seasons

**By: Timothy P. Harrison, Department of Near & Middle Eastern Civilizations, University of Toronto (Canada)**

In the modern Middle East, with its long history of urbanism, the consequences of urban continuity present a daunting challenge to archaeological research. The city of Madaba, located 30 km southwest of Amman amidst the fertile rolling plains of the Central Jordan Plateau, represents a case in point. Continuing an urban tradition of some 5,000 years, the modern town engulfs the ancient settlement, which is preserved in the form of a large low-lying tell and acropolis that still form a visible rise in the town center. Nevertheless, Madaba's historical prominence necessitates a thorough assessment of its role in the long and eventful history of the Central Highlands of Jordan.

The Tell Madaba Archaeological Project (TMAP) was conceived with the goal of pursuing this investigation. By focusing on the central site of Madaba, the project has been working since 1996 to expand an emerging regional database and to facilitate analysis of the changing economic and socio-political organization of communities on a regional level. Drawing on the historical perspective represented by the archaeological record, this research effort seeks to: (1) document the changing subsistence strategies of specific communities over time; (2) identify the underlying social factors that may have influenced decision making processes; and (3) assess the impact which adaptive responses have had on the fragile balance critical to maintaining ecological equilibrium and long-term viability in a marginal, or transitional, environment. Given the current concern in Jordan for developing, or re-introducing, subsistence strategies that conserve scarce natural resources, these research objectives address issues of contemporary relevance and importance.

Following a preliminary exploratory season in 1996, full-scale excavations were initiated in 1998, their aim being to clarify the archaeological history of the western slope of the tell acropolis (Field B). These excavations were continued and expanded during a field season held from June 2-July 15, 1999. The specific project goals for this phase of TMAP are to: (1) assemble extensive, quantifiable collections of botanical, faunal, ceramic, and lithic materials for each of the principal phases of occupation at the site; (2) map and record associated architectural remains; (3) conduct the preliminary processing and laboratory analysis of the material evidence recovered; and (4) integrate the architectural and artifact records in a relational database that will facilitate reconstruction of the archaeological history of the region. By the end of the 1999 field season, excavations had succeeded in uncovering a six-phase stratified sequence spanning four broad cultural horizons preliminarily dated to the Late Ottoman, Early Roman/Nabataean (1st Century B.C. to 1st Century AD), Late Hellenistic (2nd-1st Century BC),

Tell Madaba, 1999 excavations, Field B, looking east.

and Iron IIB (9th-8th/Early 7th Century BC) periods. Excavations are scheduled to continue in the year 2000, and will be devoted primarily to investigating the Iron Age (and earlier) levels at the site.

The earliest deposits excavated so far, which date back to the Iron IIB period, seal against the inner face of a monumental fortification wall (Field Phase [FP] 6). The upper levels of this phase identify the final use of this wall as a free-standing structure toward the end of the Iron IIB. The wall is preserved to almost 5 meters in height along its external face, and reaches approximately 7 meters in width at its greatest extent. Its external face had been exposed previous to our excavations, and was originally constructed directly on bedrock. During the 1999 season, a probe was excavated against the wall's inner face. By the end of the season, the probe had reached a depth of approximately 2 meters and had uncovered more than six courses of the wall, bringing the total depth of the Iron IIB deposit excavated to date in Field B to more than 3 meters. At the very end of the 1999 season, excavations in the probe uncovered the corner of an unhewn stone structure extending from the east balk, possibly signaling the bottom of this phase.

A four-phase sequence spanning the Late Hellenistic-Early Roman/Nabataean period was superimposed over the Iron Age levels. The pottery of the upper two phases is distinguished by the appearance of large quantities of classic Nabataean painted wares (both imported and local imitations), indicating that a decisive shift occurred in the ceramic industry at Madaba during the 1st Century BC, and by implication, that Madaba had begun participating in a southern, Nabataean-oriented socioeconomic and cultural network.

The final stratigraphic phase in Field B is represented by an arched wall that runs along the crest of the tell, and a series of associated trash pits. Large foundation trenches had been cut into earlier levels to secure the structure, and although difficult to ascertain, our investigations suggest that in the process of constructing the building, substantial portions of the site (primarily Byzantine and Early Islamic levels) were removed or leveled. The pottery recovered from these pits consisted predominantly of Late Ottoman handmade wares, including several Ottoman pipes. This Late Ottoman building activity corresponds to the well-attested (and historically documented) late nineteenth century resettlement of Madaba.

Finally, in the process of clearing the outer face of the Iron Age fortification wall, a series of Late Byzantine/Early Islamic structures (possibly shops) were found abutting this wall. Although originally exposed during bulldozing activity in the mid-1980s, it was nevertheless possible to delineate a two-phase architectural sequence spanning the Late Byzantine/Early Islamic transition (6th-7th/8th Centuries AD). The floors of the rooms, including one second-story floor, were paved with mosaics. One room contained a wealth of smashed pottery vessels, including a set of unused candlestick lamps, a number of bronze and iron utensils, and the fragmentary remains of a painted fresco.■

General view of the 1999 excavation in Field B, on the west side of the Tell Madaba acropolis, looking north (photo by Rami G. Khouri).

# Contact and Change in the Near East: Studies in Ancient Economy and Infrastructure at the Department of Special Projects in the Humanities (University of Mainz/Germany)

**By: Theodor Kissel and Jeorjios M. Beyer, Sonderforschungsbereich 295, Mainz (Germany)**

The Department of Special Projects in the Humanities (SFB) (Cultural und Linguistic Contacts: Modes of Change in Historical Areas of Tension in Northeast Africa and Western Asia), financed by the National Endowment for Research (DFG), took up its work in January 1997 at the Johannes Gutenberg University, Mainz. Topics of this research are the political, cultural and linguistical contacts in an area extending from Western Asia and Northern Africa to the Mediterranean Sea. This historical area once saw empires unfold and world religions come into being and, through this, had and continues to have a formative influence on material and cultural development throughout the region.

The SFB covers the time from ancient history to the present, and its broad interdisciplinary approach can be seen from the great number of faculties taking part: Egyptology, Ethiopian Studies, African Philology, Ancient History, Ethnology (from 2000 onwards), Islamic Studies, Classical Archaeology, Semitic Studies, Turkology, Comparative Linguistics, and Near Eastern Archaeology. Main fields of study are: state and religion in Northeast Africa and Western Asia; forms of settlement, art and economy in Northeast Africa and Western Asia; language in Northeast Africa and Western Asia; and religion and society in more recent times.

Corresponding to the title, "Cultural and linguistic contacts," the phenomenon of contact and communication between cultures and ethnic speech communities has been given a central place in the research. Network model terminology, which originated in social anthropology, has been used to describe the concepts of registration and to explain processes of change. Three elements of contact-induced change are the most prominent: means of contact, bearers of contact, and types of contact. Means of contact (artifacts, texts, language) are indications of contact; in other words, they represent the contact which must have taken place and which can be inferred from them. Bearers of contact (traders, consecrators, envoys, interpreters, sailors, mercenaries, colonists, nomads, prisoners of war, slaves, etc.) are individuals and social groups through which the contact takes place. Finally, types of contact (trade, diplomacy, migration, colonization, wars, travel, transfer of technology and science, etc.) are types of human activity through which contact takes place.

Focus on a common question by a number of scientific disciplines, each with its own unique methods and capacities, combined with interdisciplinary cooperation leading to new insights and patterns of interpretation, should also be of interest for the social developments now taking place in the region and elsewhere.

## Economic and Cultural Contacts

The section of the project dealing with ancient history, namely, "economic, technological and cultural contacts in the area of the Fertile Crescent and bordering regions from Hellenistic times to the beginning of Arabian times" (lead by Prof. Dr. L. Schumacher, with Dr. Theodor Kissel, M.A. and Jeorjios M. Beyer, M.A.) works on the topographical, infrastructural, administrative and personnel structures which make possible

Roman road near Rusheideh at the eastern edge of the Jabal Druse/Syria (Photo: Th. Kissel).

economic ties and the exchange of goods in the Near East. Cultural and linguistic processes of change are analyzed in the context of economic infrastructure (Th. Kissel, Economic Infrastructures, and J.M. Beyer, Economic Organization and Cultural Contacts in Syria).

**Economic Infrastructures**

Up to now, the research on roads in the geographical area of Syria and Jordan consists of a number of in-depth studies of ancient roads (see the work of Bauzou, Graf and Kennedy on the Via Nova Traiana). Most of this research concentrates on strictly defined problems, e.g., the course of a single road in a single period of time. Thus far, however, almost no research has been done on infrastructure as a defining element of a major landscape, or beyond one era. To make up for this lack, Kissel is working on a diachronical study of arteries of communication (roads, rivers, etc.) in the historical area of the Fertile Crescent based on a synthesis of archaeological findings and written records.

Kissel's study takes note not only of the actual course of the roads, but also of the installations connected to them (settlements, posts, forts, guard stations, wells, cisterns, milestones and bridges) and the administrative apparatus, which was connected to the use and financing of state travel (see his comparison of the Assyrian kalliu-express-system, the Achaemenid courier-system and the Roman *cursus puplicus*).

By conquering distances, developing space, and connecting peoples, routes are the material base for communication and contact. Therefore, they are especially useful in the verification of material and ideational cultural interaction and in showing the processes of change which have resulted therefrom; hence, the importance of the SFB research.

Problems of continuity, discontinuity and functional change are studied by examining the Near Eastern routes, covering the period from the neo-Assyrian era to late antiquity. The main topic of this research is the study of the ancient road network for more than one era (Kissel 1999). From this, important conclusions can be drawn about duration, importance and intensity of use, as well as indications about the continuity of historical settlements. Diachronical studies were first tried for the main Antiochia-Nisibis road (Kissel 1998). Initial results regarding processes of change, communication and long-term contacts were obtained by the SFB by studying Egyptian, Assyrian, Achaemenid and Roman sources. Added to this study was an analysis of toponomy, especially expressive, concerning etymology and semantics. Because of these results, this interdisciplinary method will be used paradigmatically to study other routes in the area under research.

A second line of research stresses internal communication in smaller areas (limestone massif, Hauran, Decapolis) and its connection with a broader, transregional network of roads. Especially for regionally secluded economic areas such as the northern Syrian limestone

Roman bridge near Jemarrin (north of Bosra) across the Wadi Zedi/Syria (Photo: Th. Kissel).

massif with its internal structures of villages, a tightly connected network of different levels of travel and trade (local, regional, and beyond) opens a door to the outside world.

**Economic Organization**

It was once considered most important to first establish what base was needed to facilitate economic contacts and the normally resultant cultural phenomena in northern Syria. Studies over the past few decades dealing with the history of the economy have tended to draw a unified picture, mostly concentrated on the governmental interchanges of the Roman Empire. The basis for this was in most cases the idea of a detailed network of governmental and institutional regulations whose effects reached the outermost corners of the empire and provided the foundation for the Roman economy. In contrast to this viewpoint, Beyer works from an understanding of the economic organization of the Roman empire as one founded on state-directed and state-supervised production and interchange which adhered to the laws of the market. The different degrees of government influence and tension between local and state administrations, including cross-border traffic, can be seen most clearly in the studies of "small independent areas" such as the Tetrapolis, the limestone massif, Palmyra and the Hauran.

Because of their internal structures and the numbers of cities, villages, and farmsteads which are still visible today and which are increasingly the focus of archaeological studies, rural areas are most useful for researching questions about regional differences in organization, state regulation, and the possibility of economic contacts both with the Greek dominated centers and the East. Unfortunately, the economic activities of the rural areas in Syria have so far been only partially researched. Exceptions are the groundbreaking studies by Tchalenko, Tate and Callot of the limestone massif, as well as the ongoing research by the IFAPO on the Hauran. The status of the individual institutions and settlements taking part in trade and production has not been explained sufficiently.

The results of the research done thus far (Beyer 1998) have shown the degree of sophistication of the economic infrastructure even in relatively self-contained rural areas. Some research has dealt with the relations of different forms of settlements of varying size and status (polis-metrokomia-kome-epoikion, etc.). Research on "independent systems" has resulted in the establishment of a set of criteria for determining regional specialties, which are useful for defining regularities in the economic relations of different economic units. Simple contact, which is inevitable with geographical proximity and connection to the same infrastructure, may leave only barely recognizable traces; hence, it requires the development of precise criteria. Improvement of such criteria is possible at the junction of the individual areas of research (settlement and infrastructure, administrative and social structures, and demographic structures).

For the most part, the classification of

Sergilla (Jabal Zawiye), Roman baths (Photo: J. M. Beyer).

material is based on the criteria for analyzing economic processes developed by Davies. Based on his fundamental observations, Davies developed three "independent variables": 1) the quantity and importance of goods exchanged and services offered; 2) the institutions and infrastructures in which economic exchange takes place; and 3) the mentalities of those taking part in the exchange. This latter includes, in the broadest sense, all culture-related factors, from local, individual customs and conventions to language, religion and ethnic identity.

Only the sum of all available criteria together with sufficient material provides valid data for determining the pattern and relations of economic processes of exchange and their influence on the bearers of contacts involved. The terms "strong" and "weak" ties, a theoretical concept used by all of the SFB researchers, can be applied here to the description of "non-native" individuals and groups active in trade who have some kind of mediating function, which can be seen in the border area of the field of research. These individuals and groups can, because of their mobility, act as catalysts for change.

Behyo (Jabal al A'la), trapetum-oilpress (Photo: J. M. Beyer).

**Road junctions**

The situation of contacts for the northern Syrian limestone massif was researched during two field trips, one in 1998 and the other in 1999 ( Beyer/ Kissel). In certain regions, such as the plains between Jabal al-A'la, Jabal Barisha and Jabal Halaqa or east of Jabal Zawiye, it could be proved that local and regional routes are tightly interlinked. This, in turn, was connected to a road system which crossed regional borders at certain junctions. Local trade took place by the exchange of goods required on a daily basis in a small community or in its immediate surroundings. A high frequency of interactions characterizes this exchange of goods; such "stable" contacts have very little potential for innovation. What this means is that stable, continuous contact with the same people and the constant exchange of the same products does not cause easily discernible changes in contact patterns. On the other hand, trade which takes place across regional borders, and which thereby reaches outside a closed social system, opens possibilities of communication and contact which encourage processes of change.

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# Ba'ja V: A Newly Discovered Neolithic Site in the Ba'ja Region

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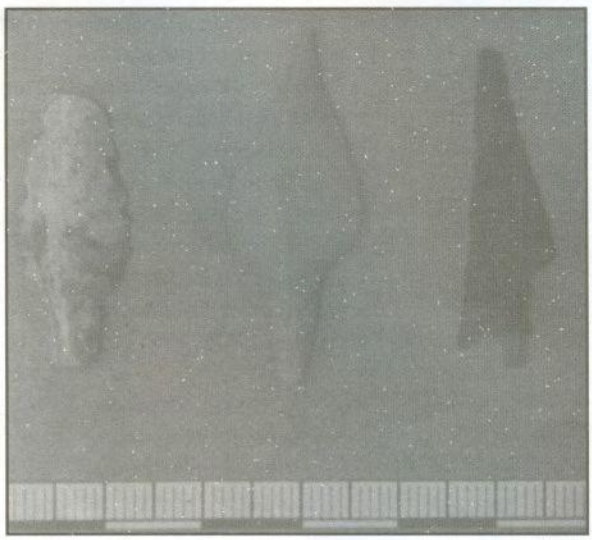
In the framework of the 1999 Ba'ja project which conducted archaeological excavations and surveys in the Ba'ja region and at Fersh, a new Neolithic site was found about 100 meters north of Ba'ja I. During a survey of the vicinity of Ba'ja I, team members collected a number of flint tools. A further search of the surface area revealed further flint tools, such as arrowheads, blades, bladelets and scrapers, which were scattered over an area of about 80 square meters. The tools discovered so far date back to the PPNB; however, further study on the artifacts is necessary to date them more precisely. No visible structures which could have been associated with the flint tools were detected on the surface. Spots of ash indicate the probable presence of fireplaces, but it is uncertain whether they are contemporary with the lithic artifacts. Therefore, for the time being we are unable to define the specific nature of the site. Bulldozing and agricultural activities as well as the construction of a large pool have inflicted heavy damage on the site. Following the terminology introduced by Dr. Manfred Lindner, the site was called Ba'ja V. Further research on the artifacts to be undertaken soon will provide more details on the site itself. ■

View of the area of Ba'ja V, with the above mentioned pool in the center.

Members of the Ba'ja project discussing the excavation, with the Ba'ja V area in the background.



Three arrowheads found at Ba'ja V.