

**THE JOINT MADABA PLAINS PROJECT  
A PRELIMINARY REPORT ON THE SECOND SEASON  
AT TELL EL-'UMEIRI AND VICINITY  
(JUNE 18 TO AUGUST 6, 1987)**

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During the summer of 1987 Andrews University sponsored a second archaeological expedition to Tell el-'Umeiri and its vicinity in Jordan (see Plate 1). Continuing as the Madaba Plains Project, this second season of excavation (see Plates 2, 3), soundings, and survey was jointly sponsored by Atlantic Union College (South Lancaster, Massachusetts), Canadian Union College (Lacombe, Alberta), and Southwestern Adventist College (Keene, Texas).<sup>1</sup> What

<sup>1</sup> The authors of this report are indebted to each member of the staff who helped to make possible these results. In addition to the financial support of the consortium institutions, other funds were raised from private donations and volunteer participation fees. Individuals who contributed generously to the general dig fund include William Berecz, Jr., James M. Byers III, Ronald and Sheila Geraty, Thomas and Hazel Geraty, Robert Ibach, Salim Japas, Enid and John Leung, Gloria G. and John T. Martin, Charles A. Platt, Elizabeth Platt, C. Murray Robinson, Barbara Russell, Zorka Sandic, Stanley Squier, C. Erwin Syphers, Gary A. and Carolyn Waldron, and Ernest S. and Dorothy L. Zaire. We gratefully acknowledge the support offered by each of these friends of the project.

Special thanks are due to Director-General of Antiquities Dr. Adrian Hadich, who eased several major problems during the course of the season; Amman Antiquities Inspector Hefzi Haddad, who went out of his way numerous times to make our project a success; Department of Antiquities representative Nazmieh Rida, who served as a Square Supervisor and helped solve problems with workers; and businessman/scholar Raouf Abujaber, landowner of Tell el-'Umeiri, who was again generous in allowing our research to proceed unhindered. The officers and staff of the American Schools of Oriental Research and its local affiliate, the American Center

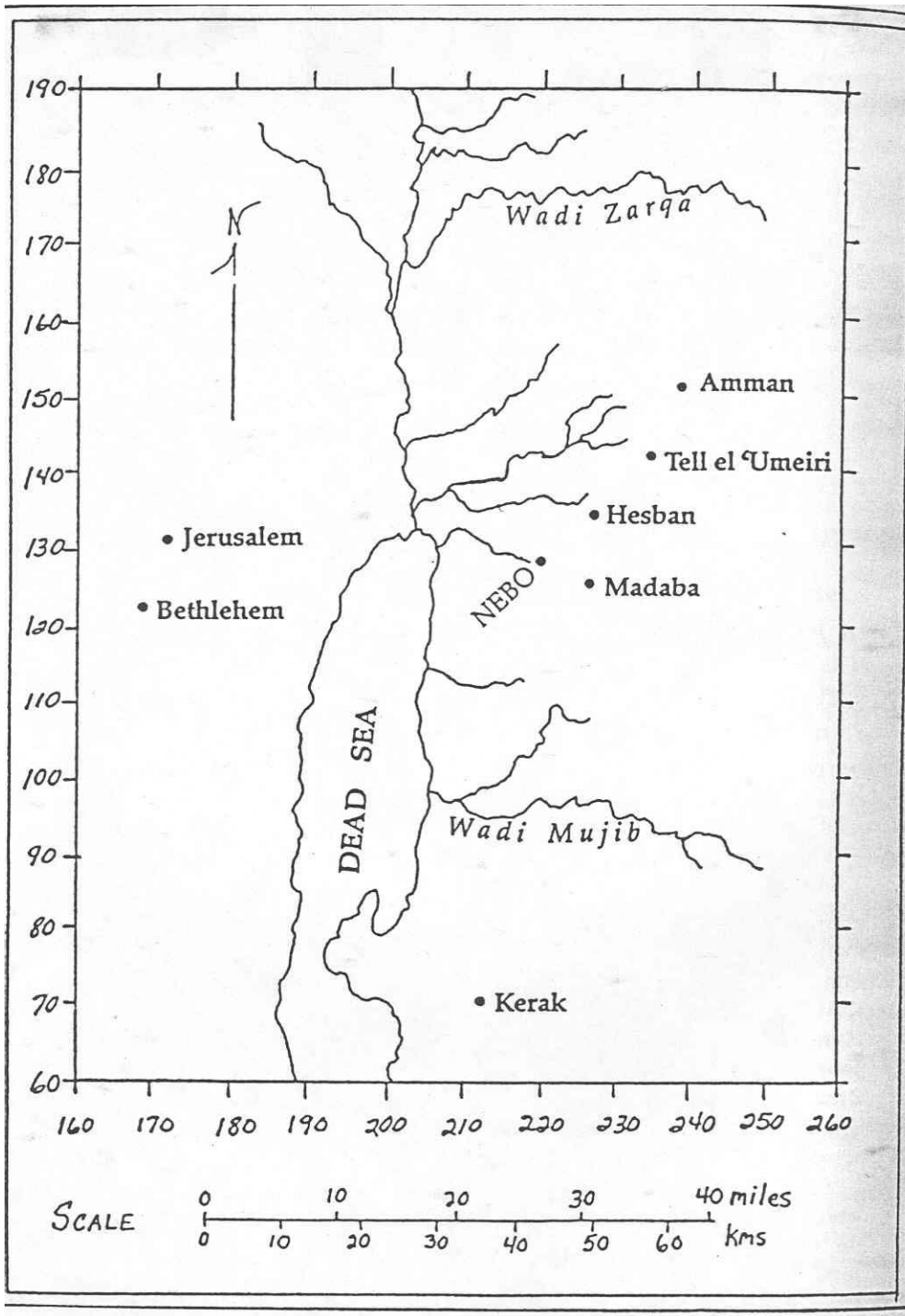


Plate 1. Map of Palestine with the location of Tell el-'Umeiri.

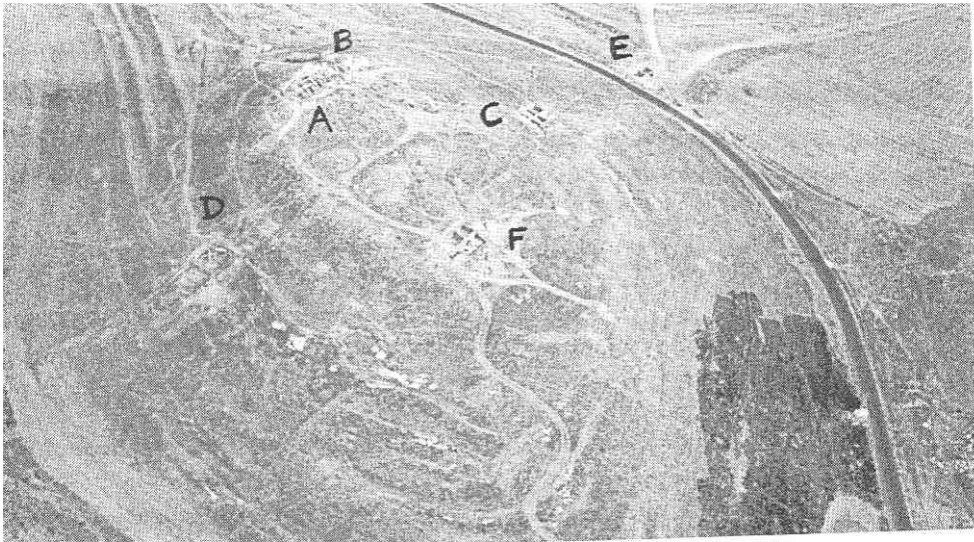
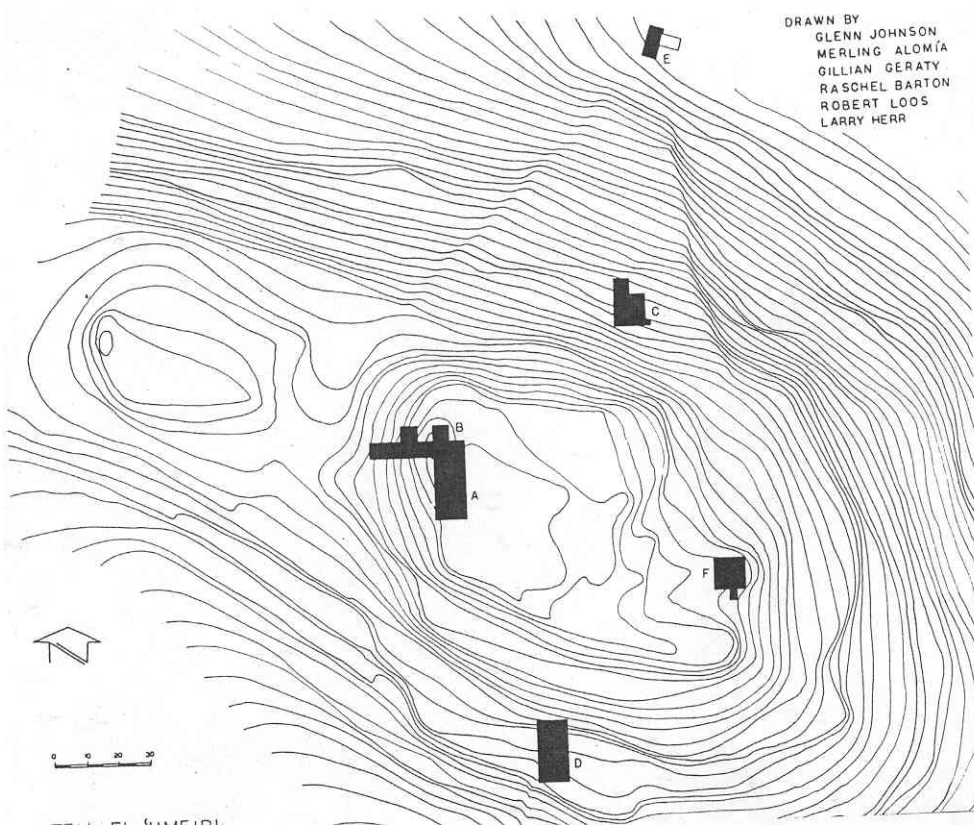


Plate 2. Aerial view of Tell el-'Umeiri.



TELL EL-'UMEIRI

Plate 3. Topographic map of Tell el-'Umeiri with Fields of excavation.

follows is a general preliminary report of the results achieved by the 100-member project team (see Plate 4). It should be read in the context of the first season's report, which also appeared in AUSS.<sup>2</sup> There the overall goals of the project, a description of the site of Tell el- Umeiri, and the evidence for 'possible identifications are all documented.

Once again the objectives of the project focused on cycles of intensification and abatement in settlement and land use in this frontier region: the Ammonite foothills on the northern edge of the Madaba Plains. Central to this focus was the study of the food systems employed by the inhabitants through time.<sup>3</sup>

The implementation of these objectives was refined during the 1987 season by enlarging the regional survey to three teams, each with its own primary objectives; by conducting excavations at three hinterland sites, most notably Rujm Selim (a small agricultural settlement some 2 km north of Tell el- 'Umeiri); and by expanding excavation areas on the central tell itself.

The following report will first summarize the findings of the regional survey, next highlight the results of the most extensive hinterland excavation, and then discuss the excavation results on the central tell, field by field.

of Oriental Research in Amman, provided invaluable assistance; the latter's director David McCreery, administrative director Glenn Peterman, and Ibtisam Dababneh, administrative assistant at ACOR, must be particularly mentioned. Others within Jordan without whom the excavation would not have been possible were Prince Raad ibn Zeid, who has been a constant supporter, and Richard T. Krajczar, Superintendent of the American Community School in Amman, who provided generous logistical support. The Baptist School near Shmeisani, Amman, through its principal, Wilson "Datum," gave virtually all its very ample facilities to the dig for headquarters. It offered adequate space for sleeping, eating, working, meeting, and recreation.

<sup>2</sup> Lawrence T. Geraty, "A Preliminary Report on the First Season at Tell el- 'Umeiri (June 18 to August 8, 1981)," AUSS 23.1 (1985): 85-110. Our working definition of "food system" is that of LaBianca from his 1987 Brandeis Ph.D. (dissertation, soon to be published by Andrews University Press *Hesban I--Sedentarization and Nonzadization at Hesban and Vicinity: A Study of Food System Transitions in Transjordan*; namely, "a food system is a complex unity consisting of all of the purposive, patterned (institutionalized) and interconnected activities carried out by a group of individuals in their quest for food."



### 1. The Regional Survey<sup>4</sup>

In the preliminary report for the 1984 season the appearance, within the survey region, of a number of round or rectangular structures was noted.<sup>5</sup> Often constructed with "megalithic" foundations, these structures were thought to be "farmsteads." Further work during the 1987 season enabled the survey team to classify these round and rectangular structures into five basic types: (1) large agricultural complexes or "estates"; (2) small farmsteads; and several types which now appear to be best classified as something other than farmsteads; (3) field shelters; (4) forts; and (5) kilns.

#### *Large Agricultural Complexes*

Additional examination during the 1987 season indicated that many of the larger "megalithic" structures recorded in 1984 did not occur as isolated phenomena throughout the countryside but rather were regularly associated with a number of the other features, including various wall lines (perimeter, field, and terrace walls), bedrock winepresses, millstones, caves (cellars), cisterns, and a wide variety of cupholes. Together, these features lend support to the suggestion that these "megalithic" sites should be classified, without becoming overly specific, as "agricultural complexes" (see Plate 5).

Excellent parallels for these complexes have been reported in the hill country around Jerusalem at sites such as Hurvat Ein Tutt, Khirbet er-Ras, and Ein Yalu.<sup>6</sup> The only real difference between the "farm-units" reported around Jerusalem and the agricultural complexes near Amman is how the dominant building on the site was constructed: Near Jerusalem the central building was constructed according to the "four-room" house plan, while the rooms of those structures near Amman are divided differently and are of "megalithic" construction. Rather than reflecting the function of

<sup>4</sup> The regional survey was directed by Oystein S. LaBianca. Field Supervisors for the three major survey operations (as described in the text) were Gary Christopherson, Jon Cole, and Randall Younker. They were assisted by Dorothy Irvin, ethnographer; Howard Krug, tomb surveyor; John Lee, lithicist; Doug Schnurrenberger, geologist; and Judy Christiansen, Raymond Pelto, John Podgore, Rhonda Sandic, and Tony Squier, volunteers. Translator for the survey team was Naji Tannous.

<sup>5</sup> Geraty, pp. 106-108.

<sup>6</sup> G. Edelstein and S. Gibson, "Ancient Jerusalem's Rural Food Basket," *BA Rev* 8/4 (1982): 46-54.



Plate 5. Central building at Rujm Selim, a large agricultural complex near 'Umeiri.

the building, this latter construction technique may simply reflect what was locally available in terms of raw materials as well as what was absent in terms of skilled workers and financial resources.

#### *Small Farmsteads*

Many of the same features mentioned above may also be present at the small farmsteads, but they are usually smaller in number as well as in scale. Thus, size is the main determining factor in this analysis.

#### *Field Shelters*

Many smaller, more-isolated stone structures were found in the fields, away from the main agricultural complexes and their associated features. They appear to be intended to provide shelter for families, farmers, or watchmen while they cared for the crops, particularly grapes, at critical times of the year. In the Bible, these structures were probably included by the term *migdalim*,<sup>7</sup> which can be divided into two groups: signal towers built by the state and

<sup>7</sup> O. Borowski, *Agriculture in Iron Age Israel* (Winona Lake, IN: Eisenbrauns, 1987), p. 106.

those, such as ours, built by private individuals. Few, if any, of the structures found within the 'Umeiri regional survey could be classified as military or state-run signal towers. In general, our structures were not built on high hilltops and did not command strategic views of the surrounding region, at least from a military point of view, but were usually located on spurs of hills overlooking specific agricultural fields, often in association with terraces and field walls. In short, they appear to be small (albeit frequently of "megalithic" construction), privately-built agricultural watchtowers intended for long-term use associated with intensive agricultural production.

### *Forts*

There was at least one site that could properly be classified as a fort in the sense of the biblical *biraniyot*.<sup>8</sup> This site was located on the summit of a high hill (see Plate 6).<sup>9</sup> It was not only strategically located, providing an excellent view in any direction, but it also appeared more than adequate in both size and design to house a military garrison. The interior was divided into several rooms of varying size, undoubtedly serving different purposes such as storage, food preparation, and living. Caves and a large cistern were located nearby; but field walls, terraces, winepresses, and other features generally associated with the farmhouses appeared to be missing. All sherds collected by the survey were exclusively Iron I and II.

### *Kilns*

Virtually all of the structures described above—large and small farmsteads, field shelters, and forts—were rectangular in shape. However, as noted in the 1984 preliminary report, a large number of the structures were circular in shape. Additional examination in 1987 led to the realization that there was remarkable uniformity in size (5 m in diameter) and construction components (small field stones) for virtually all the circular structures. Initially it was thought that these structures represented variant forms of either farmsteads or field towers. However, the thick walls (1 m) and lack of any obvious entrance and the discovery of plaster on the interior walls of the structures suggested some other function. Excavation of one of these circular structures revealed a large amount of intramural ceramic slag, suggesting that they were originally constructed as lime kilns (see Plate 7).

<sup>8</sup> A. Mazar, "Iron Age Fortresses in the Judean Hills", *PEQ* July-December 1982, p. 106.

<sup>9</sup> Coordinates 2328.1398; Ibach's Site 135; Fohrer's Site D.



Plate 6. Remains of an Iron Age military fort as found by the regional survey.

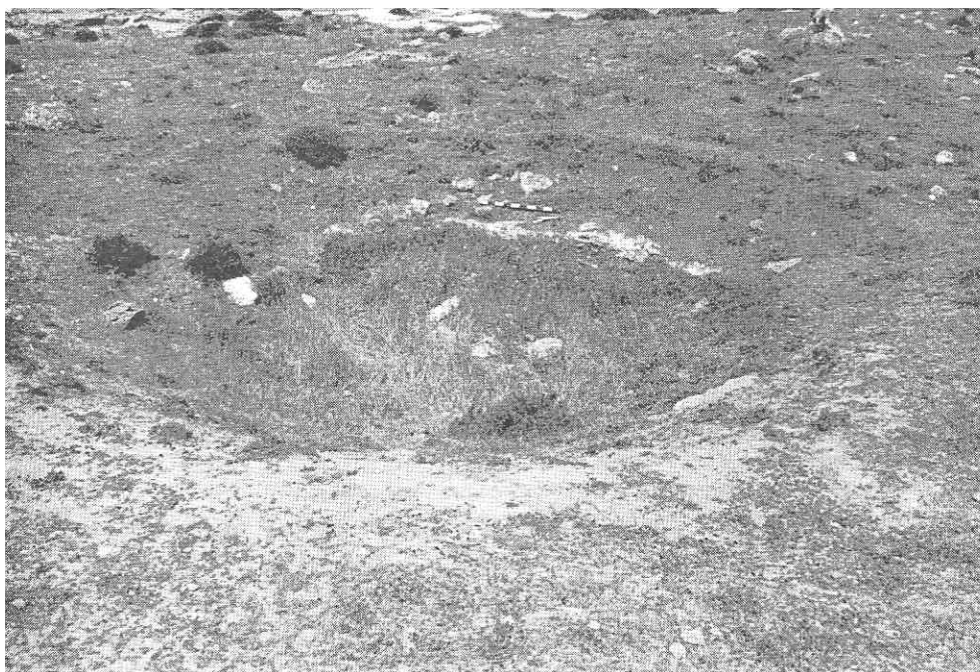


Plate 7. Lime Kiln located at 'Umeiri Site 50.

## 2. Rujm Selim<sup>10</sup>

Regional Survey Site 34, Rujm Selim, was chosen for a sounding because of its several "agricultural" characteristics identified during the 1984 survey. These included two cisterns, a "tower"-like structure, and several cup holes and quarry marks in the vicinity. Furthermore, the pottery identified during the survey revealed a predominance of Iron Age sherds. Together these characteristics suggested an agricultural settlement of the Iron Age (see Plate 8). Excavation in five Squares during the 1987 season revealed six, apparent phases of occupation. Although there were no clear occupation loci from the earliest phase, Phase 6, the late Iron II period was evidenced by the main "tower" structure, with its four rooms, as well as the plastering of the structure and perhaps the cutting and plastering of the lower cistern.

Phase 5, apparently late Iron II/early Persian in date, produced a trilobate (Scythian) arrowhead found outside what appeared to be a perimeter wall. Inside this wall, a courtyard was discovered to have been leveled with fill dirt and then possibly cobbled and provided with a plaster installation. Inside the "tower" structure itself were found several interesting household remains, including two ceramic loom weights, a spindle whorl, and sherds from a Persian water jug.

Most of the evidence for Phase 4 came from the interior of the square structure. Late Hellenistic in date, it also provided the majority of the objects found at the site: a well-preserved coin of Ptolemy II (ca. 280-213 B.C.) (see Plate 9), a bronze pin clasp, two spindle whorls in situ, as well as a whole lamp. The interior of the "tower" structure appeared to have been remodeled at this time by collapsing the four original rooms of Phase 5 into two.

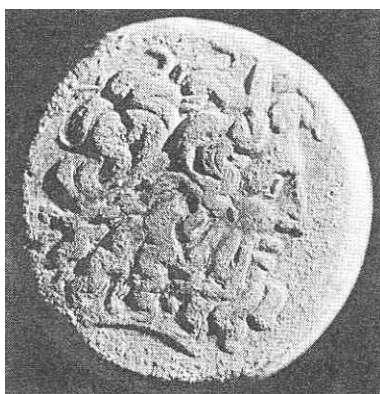
In Phase 3, probably Roman in date, the "tower" structure, which measured 9 x 9 m, was remodeled. One of the rooms contained the remains of a cobbled surface which was covered with smashed pottery of the Hellenistic/Roman periods.

During Phase 2, tentatively dated to the Ottoman period, there was evidence that the upper cistern was used as a dwelling, steps having been cut down into the cistern on the south side.

<sup>10</sup> Field Supervisor for Rujm Selim was Lorita Hubbard, assisted by Square Supervisors James Miller, Todd Sanders, and Lloyd Willis; volunteers included Kristy Hansen, Tamara Hoffer, Julio Juarez, Doris Strawn, and Ronda Westman.



Plate 8. Aerial view of Rujm Selim, a large agricultural complex.



Obverse (A)



Reverse (B):

Plate 9 (A and B). Coin of Ptolemy II found at Rujm Selim.

Phase 1 evidenced seasonal occupation by modern nomads: campfire remains, tent pegs, nails, and soda-bottle fragments.

It would appear that Rujm Selim, with its rather lengthy occupational history (it was abandoned in the late Persian to early Hellenistic centuries), fits the first category of structures analyzed above, that of the large agricultural complex. Only some two kilometers from Tell el-'Umeiri, it probably served the latter as a "daughter" agricultural site during the Iron Age and early Persian period, but was independently resettled in the Hellenistic period, when major sites in the region do not seem to have existed.

### 3. *Stratigraphic Excavations at Tell el-'Umeiri*

Previous work by the Madaba Plains Project, during five seasons of excavation at Tell Hesban in the 1960s and 1970s and one at Tell el-'Umeiri in 1984, has suggested the hypothesis that a series of five broad cycles of settlement intensification and abatement took place in the frontier region of central Transjordan.

*Cycle 1:* Prior to the Early Bronze Age a coherent picture of general regional intensification and abatement in settlement patterns is not available. From time to time specific sites were settled intensively, but broad regional settlement patterns have not yet been documented. Beginning with the Early Bronze Age, however, surveys have shown large increases in inhabited sites.<sup>11</sup> EB III seems to have been the period when Tell el-'Umeiri was most extensively settled. In EB IV, however, the cycle seems to have begun the abatement process, with inhabited sites decreasing in quantity and quality until, by the Middle Bronze Age, very few sites have been located. Tell el-'Umeiri was, however, a glaring exception with regard to the Middle Bronze Age.

*Cycle 2:* The period of abatement continued through the Late Bronze Age, although Tell el-'Umeiri was still occupied, until the Iron I period, when settlements began to increase again. Intensification continued through the Iron II period, when a climax seems

<sup>11</sup> See especially the Hesban survey, forthcoming as *Hesban 5* and authored by Robert Ibach, Jr.; also our 1984 survey in Geraty, et al., "Madaba Plains Project: A Preliminary Report of the 1981 Season at Tell el-Umeiri and Vicinity." *BASOR Supplement 24* (1986):125; and, among others, J. M. Miller, "Archaeological Survey of Central Moab, 1978," *BASOR 234* (1979): 41-52; and B. MacDonald, "The Wadi el-Hasa Survey 1979 and Previous Archaeological Work in Southern Jordan," *BASOR 245* (1982): 35-52.

to have been reached during the seventh and sixth centuries B.C., a time when many major and minor sites have been located in the region.

*Cycle 3:* Little is known of the late Persian and early Hellenistic periods, but, beginning with small late-Hellenistic settlements, during a time when Rujm Selim seems to have been flourishing, the process of intensification began again, building slowly through the Roman centuries and reaching its zenith in the Byzantine era, when, except for the Modern Period, the region seems to have been the most heavily populated. Tell el-'Umeiri (East) was occupied during these periods, rather than the earlier Tell el-'Umeiri (West). The evidence is very strong that there was only a slight abatement during the initial years of Islamic rule, but when the caliphate moved to Baghdad with the Abbasids, the region seems to have been only lightly inhabited.

*Cycle 4:* Perhaps due to the region's importance to the Islamic reconquest of the Holy Land from the Crusaders, settlement again increased during the Ayyubid and Mamluk periods, from which large numbers of sites, including Tell el-'Umeiri (North), have been found. But with Turkish control, intensification ceased and another period of abatement began.

*Cycle 5:* Few settlements seem to have existed in the region until late Ottoman times, when cave villages, such as Tell el-'Umeiri (North), and fortified farmsteads began the fifth cycle of intensification--a cycle which has carried on unabated until the present.

Excavations of the site had two goals related to this understanding of cyclic intensification and abatement: (1) The hypothesis needed to be tested by excavation. This had been done initially by the Madaba Plains Project for Cycles 3-5 and, to a lesser extent, Cycle 2 at Hesban, but Tell el-'Umeiri with its Bronze- and Iron-Age occupation allowed much more detailed testing from the earlier cycles. How did a major site reflect the cycles of intensification and abatement? (2) Exceptions to the hypothesis needed to be examined to understand how sites, occupied during periods of abatement, functioned. Indeed, this was a major reason for the choice of Tell el-'Umeiri for excavation, for preliminary surveys had suggested occupation during the abated Middle and Late Bronze Ages. How did a major site function during periods when sedentary regional support systems were not in evidence?

In 1984, four fields of excavation had been opened on the site to examine these questions-Fields A, B, C, and D. In 1987, three of the four-A, B, and D-were expanded, while one-Field C-was diminished. In addition, two new fields were opened-Fields E and F. (Again see Plates 2, 3.)

*The Ammonite Citadel: Field A*<sup>12</sup>

Examination of the last major period of occupation at the site was continued at the western edge of the acropolis, where four squares had been opened in 1984. Four new squares were laid out north of the 1984 excavation in order to outline the northern limits of the Ammonite Citadel discovered in 1984 and to connect with the expansion of Field B, the western defense system (see Plate 10). It was hoped that the detailed study of this major building in one of the most important parts of the summit would help answer the questions regarding the processes of abatement at the end of Cycle 2. How did the remains reflect the abatement process? When did it occur? Did it occur suddenly or over a length of time? Whereas the 1984 excavations had been inconclusive regarding these questions, the finds in 1987 suggested at least tentative answers.

The two major phases discovered during the previous season were again encountered, but additional information was also discovered regarding: (1) the initial construction of the citadel; (2) the citadel's western and northern limits; and (3) occupation of the area after the citadel went into disuse,

Although little is yet known of the Iron I settlement, excavations at the western edge of Field A; uncovered fragmentary Iron I walls (for a house%) and a deep debris deposit immediately to the west of the citadel and retained by one of the foundation walls that had been in use with the earliest phase of the citadel. No other Iron I remains were found at similar levels inside the citadel.

<sup>12</sup> The staff was divided into four sections, responsible for excavation, regional survey, laboratories, and camp logistics. In charge of planning and overall execution of the project were Lawrence T. Geraty, Lairy G. Herr, and Oystein S. LaBianca, co-directors of the project.

The excavation stall, supervised by Herr, included six fields of excavation on the tell, and also one at Rujm Selim (a small agricultural site described above). Each field utilized one local workman per square. Field Supervisor for Field A, the Ammonite Citadel, was John Lawlor, assisted by Square Supervisors Nicholas Kronwall, Desmond Pons, Thomas Potts, and Nazmieh Rida; volunteers included James Beers, Chant's Castleberg, Monique Escamilla, Sharon Pertley, Malcolm Putts, Steven Russell, Junes Sawtell, and Dena Zook.



Plate 10. Aerial view of Fields A and B



Plate 11. Foundation walls of the Ammonite citadel in Field A.

Likewise, no foundation trenches have been found for any of the walls of the citadel. It would seem that the builders dug a large foundation area into the Iron I settlement in order to construct the foundations of the citadel (see Plate 11). Just how deep this foundation was dug is still unknown, because the bottoms of the citadel walls have not yet been found: but the lowest floors so far encountered were ca. 1.4 m below the top of the Iron I walls. The lack of foundation trenches indicated that this was a large-scale excavation intended to clear a large area for a series of basement rooms. It was thus a major alteration of the plan of the Iron-I settlement. It is here suggested that this construction was part of the overall intensification process taking place at Tell el-'Umeiri and its region, III which a large public structure was built to meet the needs of a strengthening economic and social order.

Only two of the exterior limits of the citadel have been uncovered: the west (where the foundation cut was discovered) and the north (where a pillared structure, possibly a house, has been found). Neither exterior wall was found to be specially strengthened, suggesting that the citadel may have been a complex of buildings with an outer fortification wall. But the latter has yet to be discovered.

Unfortunately, no other data were found beyond those discovered in 1984 that would lend information concerning the specific function of the building: the thick walls and large size of the complex do not fit a domestic interpretation. The work of the 1987 season confirmed the monumental nature of the complex, which measured at least 17 m north to south and 12 m east to west, with no signs of the southern and eastern limits.

Precisely when the citadel was constructed is not yet known, because excavations have not reached founding levels. The pottery from the earlier of the two phases so far isolated reflected the corpus typical to central Transjordanian plateau sites in the late Iron II period.

More can be said, however, about the citadel's end: Within one of the debris layers sealed below the surface of the upper phase of the citadel was an Attic sherd possibly dating to the fifth century B.C. In the rest of the earth layers and surfaces of the upper phase, other sherds of early-Persian date appeared together with those of the late Iron II corpus. It would thus appear that the citadel was in use well into the Persian period. The ceramic rhyton (see Plate 12) and pot found on the upper surface would support this conclusion.

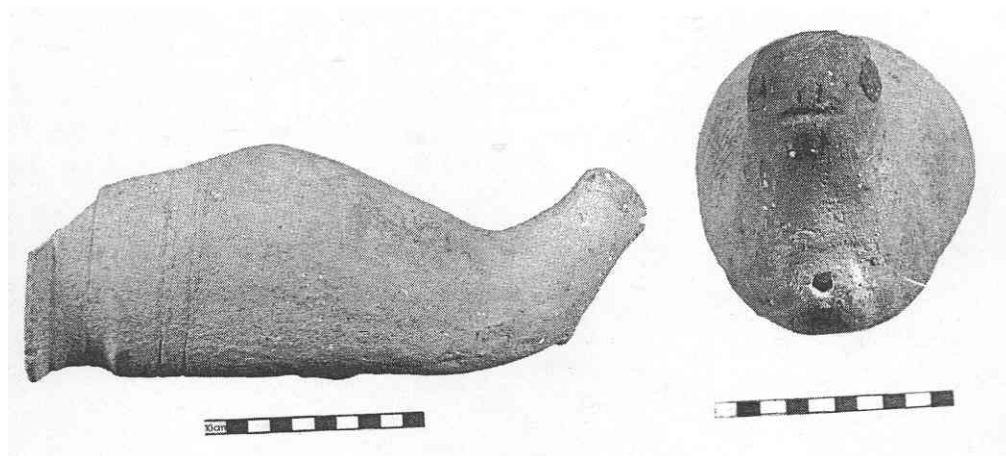


Plate 12 (A and B). Ceramic rhyton from Field A.

The abatement process does not seem to have been sudden. No signs of destruction were found in the upper levels of the last citadel. Instead, after the citadel had gone out of use, builders constructed two large semi-underground installations into the area north of the citadel, destroying much of a possible pillared house which seems to have been contemporary with the citadel.

The first installation was a small plastered pool whose interior measured 2 x 2.75 to and was ca. 2 m deep (see Plate 13). The installation was buttressed strongly on all four sides by over a meter of well-laid stones. Five steps descended steeply into the pool from the north (the bottom two were narrower than the upper three), but the buttressing stones indicated that most likely one, and possibly two, others existed originally. The interior was covered with two layers of plaster, suggesting that it had been repaired and thus used over a period of time.

The superstructure of the pool probably was constructed of finely-hewn ashlar blocks, because about fifteen such stones, not in evidence anywhere else on the site, were found in the fill inside the pool and in its immediate vicinity. Associated with this installation were two fragmentary surfaces that contained pottery from the late Iron II and early Persian periods, similar to the pottery found in the fill inside the pool.

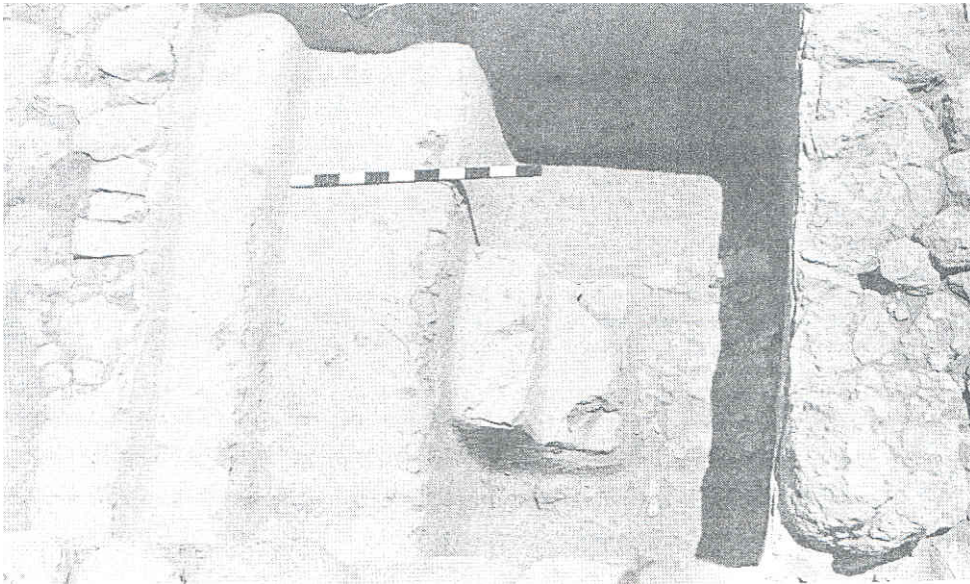


Plate 13. Plastered pool in Field A.



Plate 14. Stone-lined silo in Field A.

The second installation was a narrow, stone-lined silo, measuring ca. 1.25 m in diameter at the lip and narrowing slightly as it descended to its bottom 2.80 m deep (see Plate 14). The fill from the silo contained nothing that suggested its function, but it may have served to hold jars which were lifted by means of rope or a hooked stick.

It would thus seem that after the citadel went out of use the site continued to be occupied, probably on a less intensive level than before; that is, the public structure of the citadel was apparently judged unnecessary, and no more large structures with walls sufficiently large to thwart destruction by farming activities were built. In this abated state, however, the site lasted long enough for the pool to receive a second coat of plaster. No evidence of further building activity was found in Field A.

*The Western Defensive System: Field B*<sup>13</sup>

A significant indicator for the processes of intensification and abatement at a settlement is the presence or absence of fortifications.

<sup>13</sup> Field Supervisor for Field B, the Western Defensive System, was Douglas Clark, assisted by Square Supervisors Gillian Geraty, Gary Kent, David Merling, and Gotthard Reinhold; volunteers included Hans-Dieter Bienert, Caroline Cameron, Rafael Figueroa, Vanessa Martin, Kevin Nelson, Nora Peppers, Erwin Syphers, and Janelle Willis.

The objectives for Field B on the western slope of the summit were to examine the changes which took place in the defenses of the site through time. For this reason, four squares and part of another had been excavated in 1984, and in 1987 the field was expanded to seven squares. In this way, the complete slope was excavated and connected with the northern squares of Field A.

In one small area, a probe uncovered ashy destruction debris with pottery dating to the Late Bronze and early Iron Ages, including a Late Bronze biconical painted jug with handle on the shoulder. However, not enough is yet known of the Late Bronze settlement to be able to answer the question of just how much abatement had occurred between Cycles 1 and 2 at 'Umeiri in the Middle Bronze Age and Late Bronze Age.

By the late Iron I period (or earlier) it seems that the site was surrounded by a casemate wall and beaten-earth rampart system. Such a development suggested that the intensification process for Cycle 2 was already well under way. An addition to this system, discovered in 1987, was a revetment wall, made of a single line of large boulders, at the bottom of the rampart (see Plate 15).

Just inside the casemate wall, which seems to have continued through the Iron II period, were two phases of fragmentary walls and surfaces dating to the early Iron II Period. Farther to the east, in the two squares immediately to the north of Field A, two phases of fragmentary domestic architecture included stone walls; cobble, plaster, and beaten-earth surfaces; hearths; and pits. Unfortunately, not enough remained for a clear plan to emerge. Excavation of the foundation trench for the plastered pool, mostly in Field A, cut through these occupation levels, leaving portions of late Iron II holemouth pithoi *in situ*. One pithos base was sliced vertically through the middle. Activity patterns for these domestic areas thus included storage.

A corner of the Field A plastered pool extended into Field B, where it seems to have been in use with the uppermost walls and surfaces in the northern part of the field, as evidenced from both the 1984 and the 1987 excavations. All walls and surfaces were, however, fragmentary and were difficult to interpret beyond obvious non-monumental characteristics. The masonry of the walls included a wide variety of stone cutting, suggesting that the occupants did not have the leisure and/or resources to construct fine structures. This confirmed the suggestion for Field A that this phase represented the abatement process at the site, when, perhaps, the settlement was forced to adopt new, less-intensive strategies to exist.



Plate 15. Revetment wall and rampart in Field B (RW, revetment wall; CW, casemate wall).

*The Northern Terrace: Field C*<sup>14</sup>

Five of the six squares in Field C were completed in 1984 (see Plate 16). In many of the earth layers, Middle Bronze Age pottery had been found, but none of it associated with in-situ remains. All debris above the Early Bronze Age levels had been disturbed during the late Iron II period. But the uncompleted square (8L82) had reached undisturbed Middle Bronze Age levels (see Plate 17). Because the random surface survey of 1984 produced significant numbers of Middle Bronze Age sherds from this area, it was decided to complete excavation of Field C in order to examine this period of occupation, a time when the rest of the region was experiencing a distinctive lack of settlement.

As in the rest of the squares in Field C, EB III remains were found above bedrock and included fragments of walls that remained one course high. Isolated pockets of ash above the surfaces suggested burning activities associated with the final occupation, but the remains were not extensive enough to suggest destruction. No EB IV remains were uncovered.

Above the EB III remains were two phases of fragmentary Middle Bronze Age walls and surfaces, in one of which a small sherd of punctured Tell el-Yahudiyeh ware was discovered. Domestic Middle Bronze II pottery and objects were found, including a complete bronze needle, and an obsidian fragment that suggested trade with Anatolia.

While central Transjordan was in general abatement during this period, Tell el-‘Umeiri was a significant exception, seemingly prospering with extensive trade and fine domestic tools. Too little was excavated to be able to describe in detail the economic state of the settlement at this time, but it seems to have been a major city, isolated and apparently lacking a rural support system. Much more work on this exception to the above hypothesis needs to be done in the future.

The walls and surfaces on the Middle Bronze terrace were truncated in the north by a substantial terrace wall built in two parts. The first section, in the west, contained pottery from the end of the Late Bronze Age, while the second, in the east, produced early Iron I sherds. No other remains were found, suggesting that the northern slope was now, extramural. Although the strong abatement processes reflected in the region around ‘Umeiri were thus again not in

<sup>14</sup> Field Supervisor for Field C, the Northern Slope, was James Battenfield, assisted by Square Supervisor Taleh Smadi and volunteers Linda Pautian and Sandra Smith.



Plate 16. Aerial view of Field C.

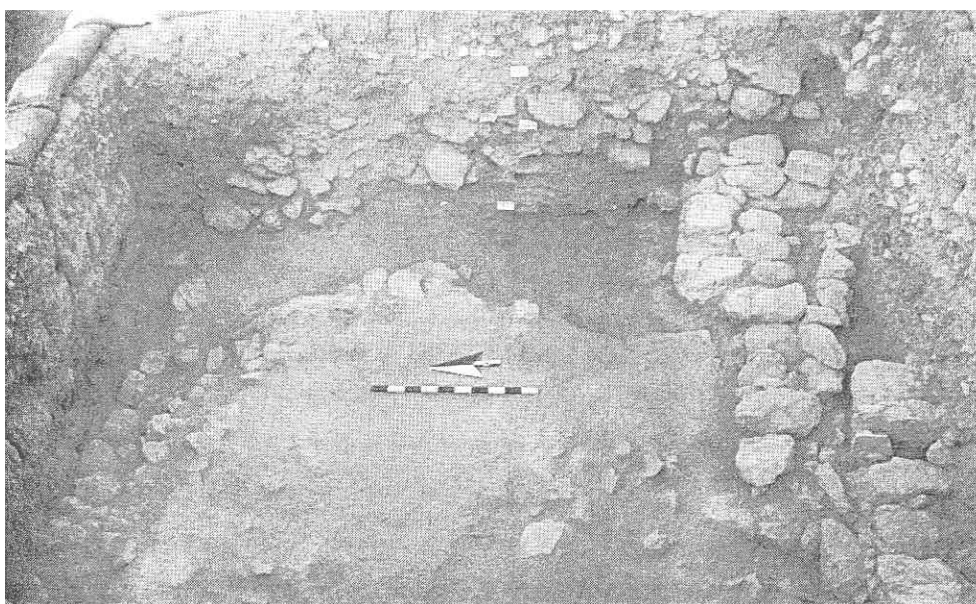


Plate 17. Early and Middle Bronze Age remains in Field C.



Plate 18. Aerial view of Field D.



Plate 19. EB III domestic complex in Field D.

evidence for the Late Bronze period, the settlement appears to have declined in size. Although the data base is small, the information suggests no radical change or destruction between the Late Bronze and Iron I settlement, but rather only the extension of a terrace wall.

*The Lower Southern Terrace: Field D*<sup>15</sup>

The 1984 excavations on the lower southern terrace uncovered two fragmentary phases from the EB IV period which yielded information regarding the abatement process of Cycle 1. The field was expanded in 1987 to intercept potentially better-preserved remains beneath what appeared to be deeper debris to the north (see Plate 18). Instead, four phases of an EB III domestic complex were found north of a terrace wall uncovered in 1984, but whose function had not been known prior to 1987. No EB IV remains appeared in Field D in 1987. There is thus new information regarding only the height of the intensification process during Cycle 1.

The EB III domestic complex was built on a bedrock terrace that seems to have been carved back in places (see Plate 19). All

<sup>15</sup> Field Supervisor For Field D, the Lower Southern Terrace, was Michele Daviau, assisted by Square Supervisors Timothy Harrison, George McCourt, Marilyn Murray, and Katrina Rounsefell: volunteers included Wallace Amundson, Bonnie Battenfield, Randall Clark, L.vnda DuPreez, Ron DuPreez, John Giddings, Carla Jones, Zlatko Kanacki, Kimberly Murray, Warren Ruf, Lynn Smith, and Charles Urquhart.

four phases of the complex reused the Major walls, constructing and dismantling other minor walls as house plans changed. At least two of the rooms were long rooms, with doors through their short sides. No benches were found, but plaster with reed impressions from roof and or wall coating was found in a yellow matrix that was probably the earth topping of the roof. In one room, eleven thin surfaces had been laid one on top of the other, indicating constant occupation and reuse of the area. The surfaces were not compact, suggesting that they had been laid rapidly during intensive use. Although they were difficult to discern in vertical section, broken ceramic vessels and other objects were frequently found lying on them. The finds associated with these surfaces reflected common domestic activities, such as food preparation (mortars, grinders, bones from meat animals, and cooking pots), food storage (a bin built into a wall and many large pithoi with flaring, thickened rims and rope molding at the base of the neck [one jar contained about 4000 chick peas],), and tool-making (thousands of flint flakes and a few tools). Embedded in the surfaces were mortars, sockets, hearths, and pillar bases. One of the surfaces, perhaps a courtyard, was made of thinly laminated plaster.

Field D best represented the apex of intensification of Cycle 1, although located on the periphery of the site and thus most likely not representing its most prosperous expression. Still, its architecture and domestic material culture reflected an economic and social order that was organized and reasonably prosperous. Although the abatement process for the Early Bronze settlement could not be shown from data collected this season, a comparison of the remains described above with those of the EB IV phases discovered in 1984 shows that prosperity declined in the following period. The EB IV houses were much smaller, with poorly constructed walls, while the individual housing units were farther removed from each other, reflecting a reduced population density. The abatement process had already begun.

*The Water System: Field F*<sup>16</sup>

Ever since Tell el-‘Umeiri was rediscovered in 1976, it has been assumed that the reason it was occupied-and indeed re-

<sup>16</sup> Field Supervisor for Field F, the water System, was James Battenfield, assisted by Square Supervisors Gums Chef and Bryce Cole: volunteers included Boguslav Dabrowski, Jeff Fisher, Jonathan Wishet, Tracy Wilmott, Kim Wilhite, and Nathaniel Yen.

mained settled throughout the abatement years between Cycles 1 and 2--was the presence of the only spring between Amman and Madaba. The tell itself was not the highest and most easily fortified hill in the region; its views to the north, west, and south were limited by higher hills immediately adjacent. The availability of water thus seems to have overcome strategic weaknesses in the decision regarding where to settle. Even after the site was abandoned, other settlements arose nearby which could still utilize the water source.

Located at the foot of the northern slope of the site, immediately outside the convergence of the V-shaped walls of the northern suburb, the source is presently dry. Raouf Abujaber, whose family has owned the land on which the water source is located since late Ottoman times, reported that the source had produced water until the 1930s. When it became dry, his family capped the installation with reinforced concrete (see Plate 20).

At present, a hole has been opened in the capping by vandals. This hole allowed the excavators to study the interior to a depth of ca. 5 m. Ashlar blocks made up the four walls of a large shaft ca. 2.5 x 3.5 m in size. The bottom was filled with rubble and recent garbage. Two architectural phases could be discerned in the ashlar, with the top two courses being clearly much more recent than the



Plate 20. Aerial view of Field E.

lower courses. The top course of the lower phase included the springstone of an arch. At the bottom, an arched channel or tunnel led to the west but ended after ca. 1 m.

It was decided not to excavate the interior, because fill debris inside a water installation seldom provides evidence either for the construction date or for associated use patterns. Instead, two squares were opened on the western side of the installation in order to examine (1) foundational features of the present structure; (2) any previous structures that may have been preserved; and (3) the intensity, quality (architectural features), and chronology of use; as well as (4) the question of whether the source was a spring or a well.

The excavations encountered several earth layers which must have been dump debris from periods when the water system was cleaned out. The earliest such material contained secondarily-deposited EB III low-necked water jars, virtually to the exclusion of other forms. There were also several pockets of dumped debris from episodes of cleaning activity which contained 1026 diagnostic sherds from the late Iron Age II, at least 90% of which were water jars and jugs. Above the late Iron II remains were several deposits of dumped cleanup debris which contained almost exclusively early Roman water jars and jugs. It would thus seem that the area was used for water resources, at least through the early Roman period. No significant later remains have been found until comparatively modern times.

#### *The Eastern Shelf: Field F*<sup>17</sup>

During the 1984 random surface survey, the eastern shelf produced the most balanced series of ceramic readings anywhere on the site; that is, pottery quantities from all major periods of settlement at the site were represented in more-or-less equal percentages. It thus seemed likely that excavation in 1987 would produce remains from these periods without a major disruption and that the living strategies of each settlement could be examined in detail in terms of the project's overall questions concerning intensification and abatement. There were also surface indications that the southern city wall ended here in a tower. North of the "tower" was a slight

<sup>17</sup> Field Supervisor for Field F, the Eastern Spelt, was Russanne Low, assisted by Square Supervisors Wendell Buck, James Fisher, Denise Herr, and Katarina Mantyniemi; volunteers included Jim Asgeirsson, Nina Asgeirsson, Alessandro Bruno, Ann Fisher, Brent Geraty, Thomas Wehtje, and Wiley Young.



Plate 21. One side of an outer gate bastion in Field F.

depression running up the slope from the east, flanked by another rubble pile on the north, thus suggesting the existence of a gateway at the eastern summit. It has been hypothesized that the Kings' Highway ran just to the east of the site, roughly where the modern Queen Alia International Airport Highway runs today.<sup>18</sup> If so, the most likely location for the gate to the city would be on the eastern side. Four squares were initially laid out to intersect the eastern side of the northern "tower" of the proposed gateway and to examine the eastern shelf as it approached the structure. A fifth square was added later.

The earliest levels were reached in a 1-m-square sounding at the end of the season. Here several hard earth layers containing pottery of the early Iron II and Iron I horizons were excavated. These lay immediately beneath what appeared to have been a bastion, perhaps an outer gate complex, running perpendicular to the slope (see Plate 21). Three short piers extended from this thick (ca. 1.5 m) north-south wall.

The most interesting feature of this structure was a standing stone near one of the piers, accompanied by the bottom half of a

<sup>18</sup> D. B. Redford, "Bronze Age Itinerary in Transjordan, *Journal for the Society for the Study of Egyptian Archaeology* 12 (1982): 55-74.

large pithos embedded in the associated surface and a boulder with a hole carved in one end as if it were intended to tether an animal. This suggested the kind of activity patterns that would be typical of gates--such as tethering a beast of burden while the owner did business inside the summit wall, and public-ceremonial activities associated with a pithos next to a standing stone. A similar standing stone with associated basin has been found at Tell el-Farah (N) in the gate of Niveau VIIb (10th century).<sup>19</sup>

The interpretation is that the approach to the acropolis traversed the slope from north to south through the outer bastion and then turned west for the final approach. However, the wall had very shallow foundations, resting on a compact and stable earth layer. Indeed, a foundation trench was found only on the upslope side of the wall. An ashy layer immediately above the beaten-earth surface that was in use with this wall may reflect the destruction of the wall. Late Iron II and early Persian pottery were found in the associated surface and earth layers.

The area does not seem to have been occupied after its destruction. A series of weak terrace walls and irregular pits can be related to activities of a considerably abated settlement dated to early Persian times, probably contemporary with the plastered pool in Field A. Still later, there is evidence that this area of the mound was used for farming. Although the tell itself was not occupied at this time, the farm on its slopes reflected the intensified nature of settlement in the region during the Byzantine period, from which many such settlements have been found by surveys. The very latest evidence in Field F was an Islamic period burial containing an intact male skeleton with a javelin blade in its pelvis (see Plate 22).

#### 4. *Epigraphic Finds*

The range and variety of small finds in 1987 was comparable to those of 1984, so the list need not be repeated except to mention, perhaps, some fine examples of Iron-Age figurines, both human (see Plates 23, 24) and zoomorphic (see Plates 25, 26).

Again, the most interesting finds were epigraphic. Although two small ostraca with very fragmentary signs of script were discovered, the most important inscriptions were ones from Fields F and B.

<sup>19</sup> A. Chambon, *Tell el-Far'ah I* (Paris, 198-1), p. 155.



Plate 22. Burial of adult male with javelin blade in the pelvis.



Plate 23. Head of a human figurine fragment with head-dress.



Plate 24. Head of a human figurine fragment without head-dress.

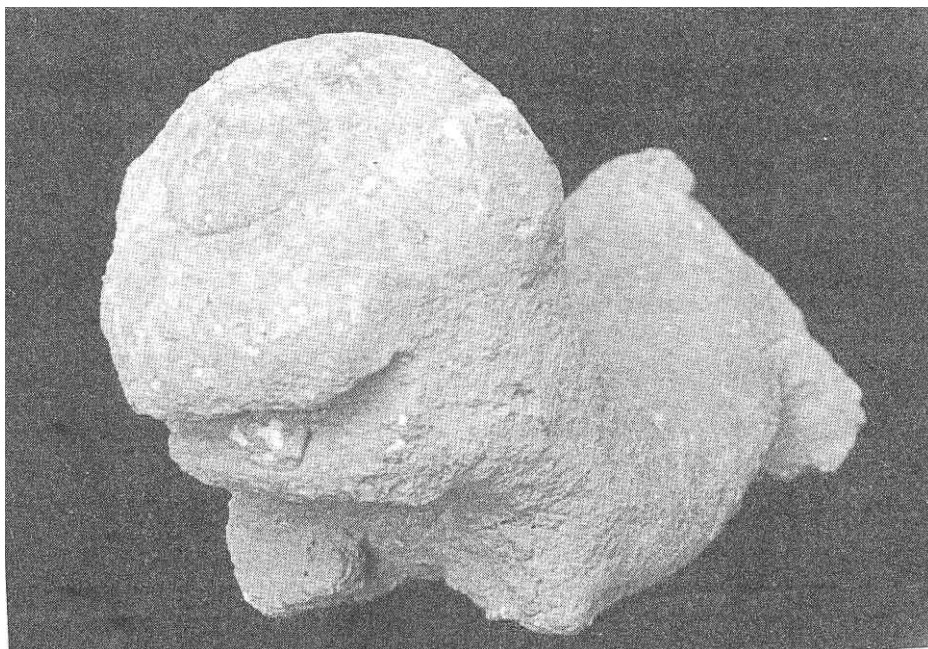


Plate 25. Zoomorphic figurine fragment.

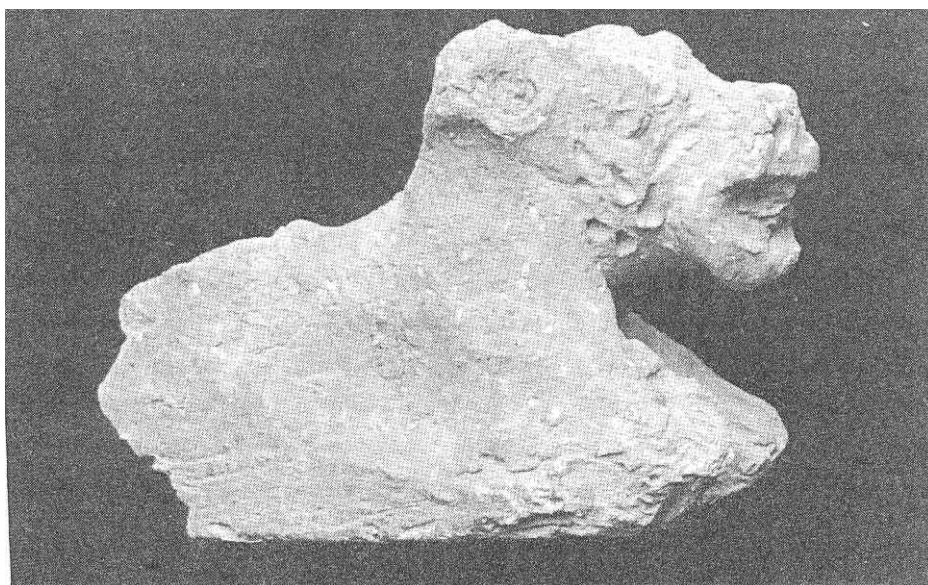


Plate 26. Zoomorphic figurine fragment.

From Field F came a small scaraboid seal made of red limestone found *in situ* (see Plate 27). Both the low quality of the stone and the nature of the inscribed materials on the seal suggest that it did not belong to a wealthy person. The first four letters of the inscription appear on the top line, with the last letter on the second: the rest of the second line is empty. There is no iconography. The script is typical of the Ammonite national script of the early sixth century B.C. and reads *lsm'z*, "belonging to Shem'az." Especially distinctive is the *zayin*, carved in the shape of a squat Z, typical of late-Ammonite forms. The name itself, or elements of it, are very common to Semitic onomastica--including those in the Bible--but the bearer of the seal is unknown to history.

From Field B, out of a large trenchpit dug after the Persian period pool went out of use, came an Egyptian seal impression: On an Iron I jar handle was found the cartouche of the 18th-Dynasty Pharaoh Thutmose III, typical of copies made in the 12th century, long after the Pharaoh was gone from the scene (see Plate 28). It is not confirmation of D. B. Redford's suggestion that Thutmose III actually visited Tell el-'Umeiri (biblical Abel-keramim), because



Plate 27. Red limestone seal from Field F.

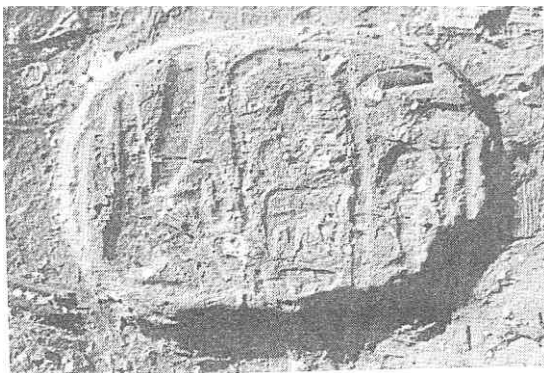


Plate 28. Seal impression with the cartouche of Thutmose

many similar seals, each with his cartouche, were made throughout Palestine in the centuries following his rule.<sup>20</sup>

The importance of the epigraphic finds from both the 1984 and 1987 seasons at Tell el-'Umeiri is remarkable; these finds are of interest to historians, linguists, and biblical scholars alike.<sup>21</sup> One

<sup>20</sup> Cf. Redford, in the title cited in n. 18, above.

<sup>21</sup> To facilitate in-field identification, documentation, and conservation of pottery objects, flints, human skeletal remains, animal and plant remains, ethnobotanical samples, geological samples, and other ecofacts, separate processing stations and procedures were set up at the beginning of the season in the large gymnasium at headquarters.

Pottery processing included Stations where sherds were washed, read, counted, registered, technologically analyzed, mended, drawn, photographed and further analyzed as needed. Pottery Registrar was Mary Ellen Lawlor, assisted by Kathy Mallak, Nancy Lawlor, and Renee Lawlor. Ceramic technological studies were carried out by Gloria London, assisted by potter Marlene Sinclair. Pottery washing was organized by Vanessa Martin.

Processing of small finds, was the responsibility of the Object Registrar, Elizabeth Platt, assisted by Karis Lawlor. This Station included the cleaning, identification, registration, drawing, photographing, and conservation of artifacts such as coins, cosmetic implements, jewelry, figurines, ostraca, textile tools, and stone utensils. Drawings of the objects were made by artist Peter Erlard: after he left, the job was carried on by Monique Escamilla and Alessandro Bruno. Two special studies were also carried out: one on textile tools and their associated industries, by Dorothy Irvin; and another on stone tools, by John Lee.

The ecology laboratory, supervised this season by Randall Younker, included separate processing Stations, each with its own equipment (Scales and microscopes) for processing flotation samples: human and animal osteological remains; ethnobotanical samples; earth and rock samples: flint chips and artifacts: and a work station for the members of the regional survey, where maps and aerial photographs could be examined in preparation for the next day's fieldwork. Raniona Hubbard, Phyllis Richards, and Sandra Penley conducted the Rotation procedure: and preliminary identifications were made by Rnsstne Low. Charles Castleberg cleaned the animal bones, and Doug Schnurrenberger and George McCourt processed the geological samples. Flint remains from field D were analyzed by Peter Sheppard.

Field identifications resulting from each of these processing operations were compiled and integrated into the stratigraphic records by a computer system assembled and programmed by James Brower. He also entered the field data on a weekly basis, providing checks to the recording procedures of each supervisor. No diagnostic sherds, bones, or flints were discarded. What was not turned over to the Department of Antiquities at the end of the season or shipped to North America for further analysis was stored in stackable crates along with the rest of the project's equipment. Of the items shipped to North America, the small objects have been housed in the Horn Archaeological Museum at Andrews University, and the publishable pottery has been temporarily housed at Canadian Union College until the

can imagine that this tell on the edge of the Madaba Plains has yet other treasures waiting to be found during the third season of the joint Expedition to the Madaba Plains, currently scheduled for June 19 to August 8, 1989.

project is completed, when it will be sent to the Museum at Andrews University. Glenn Johnson supervised the drafting team, which included Ron Haznedl, and, for a few days, Carlene Johnson. Also located at headquarters was a makeshift darkroom for processing and developing film. The photography team was headed by Larry Coyle, assisted by Judy Christiansen, Tamara Hoffer, Ronda Sandic, Thor Storfjell, and Erwin Syphers.

At headquarters the daily logistic needs of the staff were supervised by Lawrence Geraty, and included the camp staff: Bjornar Storfjell, part-time administrative director; Wallace Amundson, part-time administrative director; Erwin Syphers, physician; James Byers, physician; Ted Pottle, head cook; Ramona Hubbard, Ann Syphers, and Mary Zicinke, assistant cooks (many volunteers also helped with the kitchen work, especially Sandra Penley, Phyllis Richards, and Doris Straws); and Raymond Pelto, handyman. Lloyd Willis acted as chaplain, and Nora Peppers and Rafael Etgueroa produced a series of video presentations about the dig.

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