THE JOINT MADABA PLAINS PROJECT:
A PRELIMINARY REPORT OF THE 1989 SEASON,
INCLUDING THE REGIONAL SURVEY AND EXCAVATIONS
AT EL-DREIJAT, TELL JAWA, AND TELL EL-UMEIRI
(JUNE 19 TO AUGUST 8, 1989)

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Editor's Note. In this issue of AUSS we are pleased to present a report of the third season of archaeological work at Tell el-Umeiri and at certain other nearby sites. The reports of the first and second expeditions appeared in AUSS 23 (Spring 1985): 85-110 and 26 (Autumn 1988): 217-252.

For technical reasons, in the present report we have varied the placement of the pictorial and diagrammatical plates from that which was used in the earlier two reports, where such plates were interspersed with the text. Herein all of the plates, except the frontispiece map, appear in a section at the close of the main text.

The next archaeological expedition in this Joint Madaba Plains Project is scheduled for the summer of 1991. Persons interested in participating may receive information by writing to the Institute of Archaeology, Andrews University, Berrien Springs, MI 49104-0990, U.S.A.

Kenneth A. Strand
Frontispiece. Map of Palestine with the location of Tell el-‘Umeiri (see also Plate 1).
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During the summer of 1989 Andrews University sponsored a
third archaeological expedition to Tell el-ʿUmeiri and its vicinity
(see Plates 1, 2). Organized as the Madaba Plains Project, this third
season of excavation, soundings, and survey was jointly sponsored
by Atlantic Union College (South Lancaster, MA), Canadian Union
College (College Heights, near Lacombe, Alberta, Canada), Walla
Walla College (Walla Walla, WA), and Wilfrid Laurier Univer-
sity (Waterloo, Ontario, Canada). An international team of 130

The authors of this report are indebted to each member of the staff who helped
make possible these results. In addition to the financial and staff support of the
consortium institutions led by Andrews University, other funds were raised from
private donations and volunteer participation fees. Individuals who contributed
generously to the general dig fund include Ronald and Sheila Geraty, Thomas and
Hazel Geraty, and Elizabeth Platt. We gratefully acknowledge their support. Gifts in
kind were generously made by Worthington Foods through the good offices of its
president, Dale Twomley; and Ali Ghandour, chairman of Royal Jordanian Air-
lines, arranged for substantial staff savings on airfare.

Special thanks are due Director-General of Antiquities, Dr. Ghazi Bisheh, who
helped make our season the most trouble-free ever; Department of Antiquities
representatives Hefzi Haddad and Hanan Azar, both of whom were most helpful to
the expedition in numerous ways, especially in helping it to relate to both govern-
ment and local workmen; and especially businessman/scholar Raouf Abujaber,
landowner of Tell el-ʿUmeiri, who was again generous in allowing our research to
proceed expeditiously. The officers and staff of the American Schools of Oriental
Research and its local affiliate, the American Center of Oriental Research, in Am-
man, provided invaluable assistance; the latter’s director and administrator, Bert and
archaeologists, students, and laypersons joined approximately 40 Jordanians in achieving the results described in this preliminary report (Plate 3). For a description of the overall goals of the project, the site of Tell el-'Umeiri, its region and history, and previous findings, the reader is referred to the reports of the first and second seasons.

Sally de Vries, 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 support, and Richard T. Krajezar, former superintendent of the American Community School in Amman, who provided generous logistical support. The Baptist School near Shmeisani, Amman, through its Principal, Wilson Tatum, made virtually all of its very ample facilities available to the dig for headquarters; it offered adequate space for sleeping, eating, working, meeting, and recreation.

The directors for the project this season included Lawrence T. Geraty, Senior Project Director; Larry G. Herr, Director of Tell el-'Umeiri Excavations; Øystein S. LaBianca, Director of the Regional Survey; and Randall W. Younker, Director of Hinterland Excavations. Douglas R. Clark was the Director of the Consortium.

Wallace Amundson and Bill Cash served as dig administrators at the Institute of Archaeology at Andrews University during the initial organizing stages of the project. Bernard Brandstater served as the camp administrator and chaplain in Jordan. Sanford Peck was the camp handyman. Ernest Zinke was the dig physician, assisted by nurses Rhonda Westman (camp), Esko Saarinen (tell), Ella Saarinen (tell) and Shirley Stephens (survey). Liisa Hawes was of great help in providing childcare in addition to helping out on the dig.

Leila Mashni served as head cook, assisted by Rhonda Westman. Kitchen staff included Kay Battenfield, Wadie Mashni, Aneesi Mashni, Mark Sandborn, and April Younker.

Pottery processing was supervised by Larry Herr. Pottery Registrar was Mary Ellen Lawlor, assisted by Nancy Lawlor, Renee Lawlor, and Flora MacKay. Pottery washing and restoration was supervised by Kathy Mallak. Gloria London was the Ceramic Technologist.

Processing of small finds was supervised by the Object Registrar, Elizabeth Platt, assisted by Beryl Bull, Anna Dohler, Kathy Mallak, and Siegfried Horn. Objects were drawn by Nancy Rynes.

The Ecology Lab was supervised by Øystein LaBianca. Ramona Hubbard was in charge of flotation. Preliminary bone identification was done by Øystein LaBianca, assisted by Jo Watson. Doug Schnurrenberger served as geologist.

The photography operation was supervised by Larry Coyle and Tony Squier, assisted by Thor Storjell. The photography staff included Judy Christiansen, Mike Field, and Grant Lyman.

Drafting and surveying duties were supervised by Glenn Johnson assisted by Noel Dant and Esko Saarinen.

Computer data entry was supervised by Bill Cash and Warren Trenchard, assisted by Nelsona Dundas.

See Lawrence T. Geraty, "A Preliminary Report on the First Season at Tell el-'Umeiri (June 18 to August 8, 1984)," AUSS 23 (1985): 85-110; and Lawrence T.
The project's third season continued, as a major objective, the focus on the cycles of intensification and abatement in settlement and landuse within the analytical context of the food systems approach described in previous reports. The data derived from using this research design have been helpful, both in understanding larger anthropological questions concerning the causes of socio-cultural change and in dealing with more traditional questions pertaining to biblical geography and history.

The field strategy for obtaining our objectives included expanded excavation at Tell el-'Umeiri; random, judgmental, ethno-archaeological, and environmental surveys; and excavations at two hinterland sites—Tell Jawa and el-Dreijat.

1. The Regional Survey

As in previous field seasons, the hinterland within 5 km. of Tell el-'Umeiri was studied by our multidisciplinary survey team. The underlying objective of this survey, as before, was to further our understanding of changes over time in the food system of Tell el-'Umeiri and vicinity by documenting the diachronic patterns in which food was procured, processed, stored, distributed, prepared, and consumed. The extent to which such changes reflect intensification of the food system in the direction of increased sedentarism and urban control of the hinterland or abatement in the direction of nomadism and tribal control of the hinterland is one of the most fundamental questions with which both the hinterland survey and the excavations in this project area have been concerned.

During the last three seasons, the survey's scope has shifted from extensive coverage of the entire project area to intensive scrutiny of selected sites or regions within this area. The emphasis during the 1984 and 1987 seasons was on exploration and mapping of new sites and dominant environmental, settlement, and landuse features, whereas the 1989 season emphasized in-depth examination and documentation of aspects of the ancient food system which, although discovered for the most part during the previous two seasons, were deemed worthy of more intensive investigation.


*The regional survey was directed by Øystein S. LaBianca.*
The 1989 survey consisted of five different teams, each with its own objectives, procedures, and staffs. These included the sub-surface mapping team, the random square team, the environmental team, the farmstead documentation team, and the ethnoarchaeological team.

Sub-surface Mapping

The objective of the sub-surface mapping team, whose work was mostly experimental, was to determine the feasibility of using ground-penetrating radar in locating sub-surface archaeological features. More will be said about this in later reports.

Random Survey

This season the random survey team added forty more randomly surveyed 200 x 200 m. squares to the sixty squares which had been completed during the previous two seasons of field work. This brings the total number of squares surveyed to one hundred, or approximately 5% of the 1,969 such squares within a 5 km. radius of Tell el-'Umeiri.

This survey has already heightened awareness of several important dynamics of settlement and landuse within the project area. The most significant, perhaps, is the discovery that pottery from the Roman and Byzantine periods and, to a lesser extent, the Iron Age, is present throughout the project area. This finding lends support to the impression, arrived at through excavations at Tell

5Field Supervisor for this team was Jon Cole of Walla Walla College. He was assisted by Gerald Sandness and Brad Matson.

6This team was headed by Gary Christopherson of the University of Arizona. He was assisted by photographer Mike Field, translators Ahmad Tabba and Karim Mubarak, and volunteers Beryl Bull and Jeff Clare. Christopherson was also responsible for developing a new set of survey recording forms and an accompanying survey manual which were crucial to our heightened emphasis on intensive examination of selected sites and regions. This system substantially improved what had been used during previous seasons, both by adding new categories and by bringing the survey's recording procedures into line with those used for recording the stratigraphic excavations at Tell el-'Umeiri and elsewhere in the project area. The system consists of a survey site sheet, of which normally only one is completed for each new site, and six site feature sheets, of which as many as are needed are completed for each site. Separate feature sheets are included for recording architectural, environmental, rock-cut, (pottery) scatter, road, cave/cistern, and tomb features.
el-'Umeiri and elsewhere in central Transjordan, that the food (and social) system reached peaks of intensity during these two periods not equalled at any other time in history until now.

As in previous seasons, the random survey again contributed to the discovery of new archaeological sites. This season a total of 25 new sites were recorded, including several new sites which had concentrations of agricultural features. The rapid pace at which modern construction is obliterating the archaeological record within the project area was especially obvious to the random survey team since a number of the squares they set out to survey were found to be completely covered by new housing and streets. Also encountered almost daily by this team because of its extensive coverage of the project area was the number of new fences which have been put up over the past two years within the project area. Typically, these fences enclose newly planted orchards or drip-irrigated vegetable fields. They are another sign of the rapid pace of intensification.

Environmental Survey

The environmental survey team was specifically assigned to examine the landuse strategies which prevailed during the high intensity Roman and Byzantine periods. The site which had been chosen for this in-depth examination was Wadi Bisharah, which is located approximately 2 km. due west of Tell el-'Umeiri (Plate 4). Located adjacent to a large Roman/Byzantine town (Site 57) and a winery/church (Site 6), yet small enough to study as a complete system, it was deemed the best candidate for studying man and his environment. Several features were mapped, photographed, and shered by this team, including: (1) a series of variously intact embankments which ran perpendicular to the fertile wadi bottom; (2) sections of ancient terraces ascending from the wadi floor to the north and south; and (3) diversion dams and embankments constructed along several smaller tributary wadies. On the basis of pottery sherds found in and around these structures, a comparison could be made between present-day and Roman/Byzantine utilization of this wadi. This comparison suggests that when the ancient system was at its peak, the wadi and its surrounding slopes could

7This team was headed by Doug Schnurrenberger of the University of Maryland. He was assisted by Ahmad Tabba, translator.

8This site is the same as Hesban Site 138.
have produced tenfold its modern production in vegetable and fruit crops. The fact that terraces are again being constructed along the slopes of this wadi and repairs are beginning to be made to the embankments along its floor is confirmation that the momentum today is again in the direction of intensification.

Farmstead Documentation

The farmstead documentation team was assigned the task of carrying out in-depth documentation of the agricultural complexes located in previous seasons. Specifically, its task was to map, photograph, and draw the features which together support the identification of these sites as ancient farmsteads. The sites selected for such documentation were ones which represented good examples of the various categories of sites noted elsewhere by Younker. These included large agricultural estates, smaller farmsteads, and agricultural camp sites. While the first two of these usually included clusters of buildings and agricultural installations, the third was typically represented only by an agricultural watchtower. A total of fourteen sites belonging to these categories was documented by this team. Most had been occupied both in the Iron Age and in Roman/Byzantine times. One of them, Rujm Selim (excavated in 1987), was also occupied during early Persian and Late Hellenistic times.

Ethnoarchaeological Survey

The primary objective of the ethnoarchaeological team was to ascertain how sedentarization and nomadization take place at the level of the household and the local village. To this end interviews were carried out among three groups of local residents—Ajarmeh tribesmen who have occupied the region for several centuries, Christian families who arrived in the previous century, and Palestinian families who have arrived only in the past three or four decades. In carrying out this work the team was assisted by two artists and an

9 Jim Battenfield of Grace Theological Seminary led the farmstead documentation team. He was assisted by Tim Woodard.

10 These categories are described in the preliminary report of the 1987 season. See Geraty, Herr, and Labianca, pp. 217-252.

11 This team was headed jointly by Øystein S. Labianca of Andrews University and Dorothy Irvin of Durham, North Carolina. Artists Eric Shults and Sali Jo Hand documented various ethnographic features.
interpreter. The artists helped elicit information about how caves were utilized by the Ajarmeh in the previous century.

Perhaps the most important insights gained from these interviews have to do with advancing our understanding of why and how single households and groups of families could convert back and forth along the nomadic-sedentary continuum through multiple millennia. Structural arrangements which have traditionally made such movement possible include the following: the nearly ubiquitous phenomenon of rural families moving into tents for the warmer part of the agricultural season and into houses or caves for the cooler parts, the widespread practice of raising a mixture of crops and pasture animals, the existence within most tribally organized populations of families along various points on the nomad-sedentary continuum, the maintenance by most tribal entities of tribal lands suitable to both pastoral and agricultural pursuits, and the flexibility of tribal ideology when it comes to incorporating or excluding members. It is by means of these fundamental structural mechanisms that it has been possible for families or groups of kinsmen to be fluid and to convert to either a more sedentary or a more nomadic way of life depending on prevailing economic, social, and political trends.

2. *Hinterland Excavations*¹²

A. El-Dreijat¹³

A previous report of the Madaba Plains Project mentioned a large “megalithic” structure, recorded by the regional survey, which was described as a “fort” in the sense of the biblical *birānīyōt*.¹⁴ Because of the extensive discussion concerning the date and precise function of similar so-called “Ammonite towers,” a decision was made to excavate it (Plate 5).¹⁵

¹²Randall W. Younker of Andrews University directed the hinterland excavations.

¹³Field Supervisor for el-Dreijat was Lorita Hubbard, assisted by Square Supervisors Jennifer Groves, Linda Johnston, James Miller, Wendy Stewart, Greg Younker (1st half), Mark Carr (1st half), Paul Ray (2d half), Hilary Thompson (2d half); volunteers were Fred Cornforth, Rick Jordan, Eric LaBianca, Randy Low, Pearl Younker; Grant Lyman served as photographer.

¹⁴Geraty, Herr, and LaBianca, p. 224.

The site, presently known as el-Dreijat ("the stairs"), is located on a high hill approximately 2.8 km. southwest of Tell el-Umeiri. First identified by Fohrer as Site D, it was later included by the Hesban Survey as Site 135.

Prior to excavation, a survey of the site by the excavation team identified what appeared to be exterior walls approximately 2.5 m. wide, as well as two interior walls of similar thickness. Immediately to the southeast of the site, a large open cave was identified. According to local villagers, this cave is currently used during the winter months by a certain Umm Yusef as a pen for sheep and goats. Further south, on the crest of the hill, was a bell-shaped cistern, approximately 15.5 m. deep, which at the time of the excavation contained 4.5 m. to 5 m. of water. It was used by the shepherds in the region throughout the summer.

All of the exterior walls were built of massive unhewn and partially hewn chert boulders (ranging from 1.1 m. to 2 m. in diameter), with the chinks filled in with stones. Two major east/west interior walls were joined to the western exterior wall. These two interior walls appear to have at one time extended across the structure and joined the north/south wall on the eastern side. It is possible that major interior walls such as these supported a second

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The site coordinates for el-Dreijat are 2328.1398 on the Jordan 1:25,000 series map. The elevation is about 932 m.

According to Fohrer, the site was located at 2330.1400 on the 1:100,000 series map. Fohrer’s identification of the site as an Ammonite fortress is evidently based on a couple of factors: the building measured 23.50 x 21.00 m.; sherding at the site produced mainly Iron Age pieces although Roman, Byzantine, and some modern were found. G. Fohrer, "Eisenzeitliche Anlagen im Raume sudlich von Na‘ur" ZDPV 77 (1961): 60.

R. D. Ibach examined the site in June, 1976. He stated that the rectangular structure measured 21.00 x 19.00 m at its lower courses. According to his report "the walls are two rows wide and are made of large boulders; several interior walls are visible. Nearby are caves and a large cistern." During his examination of the site, 132 sherds were collected, mostly body fragments. Of these, two were modern, the rest were Iron II, with one possible Iron I. Robert D. Ibach, Archaeological Survey of the Hesban Region: Catalogue of Sites and Characterization of Periods, Hesban 5 (Berrien Springs, MI, 1987), pp. 28-29.
story. The complex was further subdivided into small rooms by numerous minor interior walls (Plate 6).

Iron II

Excavations revealed a much more complex use of the site than was anticipated at first. It appears that there were at least seven phases of occupation and activity.

Although no surfaces or architectural remains could be definitively dated to Iron II, the presence of several Iron II surface sherds and pockets of late Iron II material in Squares 2, 5, and 7 suggest that the site was initially occupied during this period. The similarity of construction with other Iron Age buildings also supports the possibility that at least part of the el-Dreijat structure (probably the main rectangular structure) was originally built during this time. It appears, however, that the site was cleared to bedrock during the later Persian/Hellenistic occupation, making a precise dating for the initial construction of the fort difficult (see below). Two cisterns or storage tanks in Squares 2 and 5 were probably cut during this earliest phase of occupation.

Late Persian/Early Hellenistic

The next phase of activity (Phase 6) seems to have involved some remodeling during the late Persian/early Hellenistic period. Pottery from this period was not only found in all 11 Squares, but also on several bedrock surfaces indicating that the Persian/Hellenistic occupants cleared the site down to bedrock in most areas (Plate 7). It was probably during this time that the Iron II pottery of earlier inhabitants was dumped into the abandoned cave/cistern in Square 6. Several inner walls in Squares 1 and 2 were probably constructed during this time to create rooms along the west side of the complex (Plate 8). Several other rooms in the northeast corner of the site (Square 6) were also added.

Hellenistic

While there is no clear break between Phases 6 and 5, there is clear evidence for a later Hellenistic occupation of the site. This was evident from several Hellenistic lamps, cooking pots, and other late Hellenistic forms. A circular installation in Squares 2 and 4, possibly used for storage, may have been originally constructed at this time.
Roman

There is some evidence for Roman activity on the site (Phase 4), although it does not appear that much of the structure was utilized. The circular installation may have continued in use during this period.

Byzantine

A Byzantine presence is suggested by sherds found in Squares 2, 3, 5, and 6, but all the sherds are small and worn. One of two coins found at the site comes from this period. It was a coin of Constans or Constantine (4th century A.D.). The other coin could not be identified.

Ayyubid/Mamluk

From the small number of sherds, 14 in all, it is possible that a temporary encampment occupied the site during the Ayyubid/Mamluk period. All the sherds, however, are painted and may have come from the same vessel.

Modern

According to the ceramic evidence, the most recent phase of activity on the site appears to be the result of modern Bedouin. This is suggested by the modern sherds found in Squares 2 and 6, as well as sherds collected elsewhere from the surface. In Squares 5 and 6 portions of a modern water jar were also uncovered. Most of the modern occupation, however, appears to be centered around the cave in the southeastern corner of the site and the blocked cave entrance to the west which was not excavated this season.

B. Tell Jawa

During the 1987 season the survey team discovered that parts of Tell Jawa, a large, important site ca. 5 km. east of ‘Umeiri, had been recently bulldozed, apparently in preparation for a new hous-

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19The Field Supervisor of Tell Jawa was P. Michèle Daviau. The Square Supervisors for the 1989 season were Nadine Brundrett (2d half), Antonius Haakman, Bruce Routledge, Julie Witmer, Michael Wood, and Hakam Ziaddi (1st half); volunteers were Nelsona Dundas, Isabelle Crepeau, Brenda Silver, and Adele Tempest.
ing development. Surface sherding indicated that Jawa’s occupation overlapped that of ‘Umeiri’s, at least during the Iron II period, meaning that any accurate understanding of ‘Umeiri’s role in the region would have to take into account its relationship with Jawa.

While the core staff had discussed the need to eventually conduct a probe of Jawa, this new threat to the site forced us to act more quickly then we had planned. Therefore, this season a small team was assigned to open five squares on the south side of the tell where the bulldozer had stopped after exposing the outer face of what appeared to be an Iron Age city wall (Plate 9).

The five squares, opened in Field A (Squares 1, 2, 3, and 4 south to north, and Square 13 east of Square 3), transect three major parallel wall lines, including the outermost one which had stopped the bulldozer. The strategy was to expose these walls, determine their construction history and function (they appeared to be city walls), and explore remains of occupation inside the walls.

*Early Iron II*

The excavations revealed at least ten archaeological phases, dating mostly from the Iron II period. The earliest phase, exposed in Square 13, consisted of the intersection of two Iron Age stone walls. Both walls were covered with large (65 x 35 x 15 cm.) fallen mudbricks, apparently from the collapsed superstructure. Because the bases of these walls were not reached, their date and function are uncertain. However, the debris of the collapsed walls contained late Iron II/early Iron IIB sherds making it probable that the walls were constructed either during that period (10th-9th centuries B.C.) or later in Iron II. A fill west of these walls produced Middle Bronze, Late Bronze, and Iron I sherds.

A small ash pocket on top of the debris of the two Iron Age walls apparently reflects a brief occupational phase (Phase 9) after the destruction of these walls.

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20Tell Jawa is located at coordinates 1408.2382 at an elevation of 928 m. It encompasses an area of 2.08 hectares or 5 acres. Several scholars have identified the site with biblical Mepha‘ath (Josh 13:18; 21:37; 1 Chr 6:79; Jer 48:21), although our work leads us to doubt this identification (see discussions by P. F. M. Abel, Géographie de la Palestine, vol. 2, Géographie Politique: Les Villes, 3d ed. [Paris: Librairie Lecoffre, 1967]).

21The site was surveyed by Robert G. Boling for the Madaba Plains Project during the 1984 regional survey. He assigned it as Survey Site #29.
At least three subsequent Iron Age phases (Phases 8-5) were
found in Squares 3, 4, and 13 just inside the city wall. They were
particularly evident in Square 3 where two wall lines appeared to
define two rectangular rooms of a large house. The lower portions
of these walls were constructed of stone while the upper part was
mudbrick. On the surface, associated with the lowest floor (Phase
8), was a collection of food-preparation objects and ceramic vessels
of a domestic nature. The objects included a saddle quern, an
upper millstone (both broken, but in situ), two pounding stones,
and fragments of a tabun which apparently was located against one
of the walls. Numerous bones (55 sheep/goat, 2 cattle), ashes, and
flint fragments were also found on this surface. The pottery on this
floor was from early Iron II (9th-8th centuries B.C.).

Middle Iron II

Later, probably during the middle of the Iron II period (8th-
7th centuries B.C.) the floor of this room was resurfaced (Phase 7).
Cooking pots, numerous animal bones (161 sheep/goat, 10 cattle),
an upper millstone, and a stone pounder testify to the continued
food preparation function of this room. A broken spindle whorl
suggests that spinning was also carried out here. A probable con-
temporary phase was found in the room immediately to the east.

The latest surface in the western room (Phase 6) also had
cooking pots, ash, small bowls, and animals bones (32 sheep/goat
and 2 cattle). Large amounts of white plaster, possibly the result of
rebuilding the inner casemate wall, had accumulated on the surface.
Again, the "room" immediately to the east seemed to have a con-
temporary phase. It, too, contained remains of domestic activities
including an accumulation of charcoal, 57 sheep/goat bones, 9
cattle bones, a chicken bone, 2 spindle whorls, a broken stone
grinder, a stone pounder, and a polished and finely serrated shark's
tooth!

To the north of these two "rooms" was a rather large building
with at least two long rooms. Pottery found in the debris layers of
this building suggests that it was contemporary with at least the
last couple of phases of the rooms discussed in the preceding
paragraph (Iron II—8th-7th centuries B.C.).

One of the season's most interesting finds, the head of a small
figurine, came from the eastern wall of this large building (Plate
10). It depicts a male wearing a headdress similar to the Egyptian
atef crown and identical to those depicted on the well-known limestone busts displayed in the Amman Museum. Siegfried Horn has suggested that this headdress was the crown of the Ammonite king.\textsuperscript{22} If so, this artifact would suggest that Jawa, which is near the border of Moab, was within the Ammonite sphere at this time. This conclusion is further supported by the pottery which is identical to that of nearby Umeiri, where a number of distinctive Ammonite inscriptions have already been found.\textsuperscript{23} If Jawa is indeed an Ammonite city, Albrecht Alt’s identification of Jawa with biblical Mepha\textsuperscript{c}ath would have to be modified, since the latter is clearly a Moabite town (Jer 48:21-24).

**Late Iron II**

Excavations indicated that during the latter part of the Iron II period (ca. 7th century B.C.) the city walls were rebuilt (Phase 5), although further excavation is needed to clarify their relationship to the domestic architecture found just inside.

These walls underwent further reconstruction (Phase 4) a short time later (late 7th, early 6th century B.C.). The city walls of this phase appear to be constructed in the casemate style. A doorway leads from one of the casemate rooms into the city. An ash layer seems to represent a cooking area just inside the city wall, although there were few bones. Botanical remains consisted of barley, wheat, lentil, and coriander. Pottery was late Iron II (6th century B.C.), although this cooking area could have existed subsequent to the abandonment of the town.

The Iron Age occupation at Jawa was apparently terminated during the 6th century B.C. Evidence for destruction or abandonment included the rock tumble that extended south down the slope from the city walls. In association with the rock tumble were the upper courses of the exterior portion of the casemate wall which was slumped inward (uphill). Initially it was thought the slumping should be attributed to an earthquake. However, the presence of 13 javelin points against the outside of the wall suggests the collapse could be related to an attack on the town (Plate 11). The


\textsuperscript{23}Our Ceramic Technologist, Gloria London, identified potter’s marks on pottery from both Tell el-Umeiri and Tell Jawa that she believes could have come from the same potter.
clearest sign of this destruction inside the walls was a large amount of pottery smashed against a wall and the adjacent floor. This pottery, all late Iron II (ca. 6th century B.C.), included pithoi, store jars, jugs, and one complete juglet. Amid this debris were two more javelin points, identical in style to those found outside the city wall. It is possible, although far from certain, that this destruction is related to Nebuchadnezzar’s 582/1 B.C. punitive campaign against the Ammonites and Moabites noted by Josephus. It appears that other Ammonite sites were also destroyed about this time.

After this destruction Jawa was not reoccupied. The final two archaeological phases consisted of topsoils and modern field walls. Some Roman/Byzantine sherds were found, but there was no sign that this part of the tell was occupied in those periods.

3. Tell el-'Umeiri

The excavations at Tell el-'Umeiri took place in six Fields (Plate 12) and discovered remains from the Early Bronze Age III (ca. 2500 B.C.) to the early Persian period (ca. 500 B.C.), encompassing most of the OT period.

Early Bronze Age

The earliest remains were found, as in previous seasons, on the southern and northern shelves, confirming once again that this

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24Antiquities of the Jews, X, ix, 7.

25Yassine has suggested that Stratum III at Tell el-Mazar, which he believes was in Ammonite hands at this time, was possibly destroyed by this campaign of Nebuchadnezzar. See Yassine, pp. 87-88. Another site which was possibly destroyed at this time is Tell Safut, although the excavator, D. Wimmer, does not attempt to tie the destruction to any known historical event. See D. Wimmer, “The Excavations at Tell Safut,” in Studies in the History and Archaeology of Jordan III (Amman, Jordan, 1987), p. 281. Some scholars suggest that Heshbon, which too was apparently in Ammonite hands at this time (Jer 49:3) was also sacked during this campaign. Cf. L. Heidet, “Hésebon,” in Dictionnaire de la Bible, ed. F. G. Vigouroux (Paris, 1903), 3:657-663; Werner K. Vyhmeister, “The History of Heshbon from the Literary Sources,” in Historical Foundations: Studies of Literary References to Hesban and Vicinity, eds. Lawrence T. Geraty and Leona G. Running, Hesban 3 (Berrien Springs, MI, 1989), p. 9.

26Larry G. Herr of Canadian Union College directed the excavations at Tell el-'Umeiri.

27Field Supervisor for Field D, where most of the Early Bronze Age material was found, was Tim Harrison. He was assisted by Square Supervisors Lori Haynes, Joy
Early Bronze Age town covered the complete site. The most extensive remains came from the southern shelf where three broad terraces incorporated roads and domestic dwellings. Supported by a long wall built at the lip of a bedrock shelf, the domestic complex on the upper, northern terrace was excavated in 1987. This season excavation took place on the middle terrace, also supported by a long wall, south of the 1987 excavation where the 1984 team had dug later remains. Farther south, a small portion of a third, lower terrace was discovered, but erosion of the hillside cut away remains which extended more than 2.5 m.

The most coherent remains of Early Bronze III domestic complexes came from the middle terrace, excavated this season. A street ca. 1.5 m. wide ran north to south and separated two housing units (Plate 13). Along one wall was a line of stones, perhaps intended to hold fodder for a tethered beast of burden.

Neither of the housing units was completely exposed, but the one to the east produced three walled spaces with significant remains. The large room next to the street was a cobbled courtyard with two “L”-shaped bins, suggesting food processing and perhaps animal sheltering.

Connected by a stepped doorway to the east was a large storeroom that contained the remains of 28 storage vessels of various types, mostly jars (Plate 14). Protected by the debris from the superstructure of the house, which fell on top of the jars during its destruction, and preserved by the fire that ravaged the building, the vessels still contained carbonized seeds of the foods used by the ancient family that lived there. These included legumes (lentils and garbanzos), fruits (grapes and figs), and grains (wheat and barley). Two jugs may have contained oil. Many of the vessels were the bottoms of jars reused as large bowls; apparently, this was not a wasteful society.

South of the courtyard and storeroom was a narrow room used for cooking. Sunk into a bench, perhaps used as a shallow counter, was a circular, stone-lined hearth filled with ashes.

Kurian, Bruce MacKay, Lisa Marsio (1st half), and Richard Dorsett (2d half); volunteers included Jocelyn Badovinac, David Lasby, Margaret Meagher, Mark Sandborn, Ella Saarinen, Jim Wehtje, and Pearl Younker.


Geraty, p. 95.
On the northern slope, in Field G, two squares were excavated on the eastern line of a "V"-shaped topographic feature descending the slope toward the water source (see Plate 12). Although the topographic features strongly suggest wall lines descending the slope, the excavations uncovered no such feature. Instead, 3 m. of unstratified dump sat on top of Early Bronze tumble. No sign of a wall could be found, even when a backhoe was brought in to section the line. The Early Bronze remains, however, established that the town from that period extended far down the northern slope.

The Early Bronze Age was the first period in Palestine when people first settled in large groups, a process known as urbanization. These settlements often had massive fortification walls surrounding them. Our site seems to represent a modest expression of this process. The housing complexes consisted of living rooms, storerooms, courtyards, and animal shelters. Each complex was a series of structures built around courtyards, unlike the coherent, single-house structures of later periods. It is as if, in this early period of urbanization, people had simply moved their farms tightly together.

No fortification wall for the town has been found as yet, and because the southernmost materials have been strongly eroded, it would appear that none existed on the southern slope. However, the town was apparently well planned, with housing units separated by narrow, straight streets and built on well-organized terraces climbing the slope of the hill. The finds suggest an orderly, neat, and efficient use of space and resources for a population that was perhaps the largest Tell el-'Umeiri ever saw.

Middle Bronze Age

The site seems to have been resettled toward the end of the Middle Bronze Age. The inhabitants abandoned the southern shelf, and there was reduced intensity of occupation on the northern slope and eastern shelf. However, excavations in Field B, on the

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30 Field Supervisor for Field G was Jim Fisher, assisted by Nadine Brundrett (1st half) and Edward Badovinac (2d half).

31 See also Geraty, p. 94.

32 Field Supervisor for Field B was Doug Clark. He was assisted by Square Supervisors Carolyn Draper, Julio Juarez, Gotthard Reinhold (1st half), Todd
THIRD SEASON AT TELL EL-ʿUMEIRI

western slope of the acropolis, probed ca. 1 m. into an earthen rampart containing potsherds from Middle Bronze Age IIC (Plate 15). The top layer of the rampart (no other layers have been found as yet) sloped ca. 30° and was made of beaten earth with a few thin lenses of crushed lime. The pottery included large quantities of chocolate-on-cream ware, a phenomenon which occurs at ʿUmeiri whenever Middle Bronze pottery is found. This would suggest that this particular ceramic style was native to Transjordan.

Ramparts were constructed throughout Palestine in Middle Bronze II. Although more excavation is needed to determine the nature of the rampart, it would seem that the settlement at Tell el-ʿUmeiri fits the times.

Late Bronze Age

For the first time at Tell el-ʿUmeiri earth layers from the Late Bronze Age were uncovered in Field F, the eastern shelf. Although no architectural remains could be isolated, the layers produced a Cypriot base-ring sherd and a well-preserved Astarte plaque figurine (Plate 16).

Iron I

This season it became clear that the casemate fortification system in Field B was Iron I, as we suggested in earlier reports (Plates 17 and 18). An earthen rampart almost 2 m. thick was constructed immediately on top of the Middle Bronze rampart at the same time as the outer casemate wall to provide support against the weight of debris building up inside the wall and to help defend the city. All three layers of this rampart produced Iron I pottery. At the bottom of the rampart a revetment wall supported the rampart where a dry moat plunged about 4 m. into the bedrock. The rock and the clay that was excavated from the dry moat went to lay the

Sanders, and David Thomas (2d half); volunteers included Beryl Bull, Richard Fenn, Liisa Hawes, Lynden Hawes, Motoko Kamida, and Lee Ann Sargent.

33Field Supervisor for Field F was Russanne Low. She was assisted by Square Supervisors Betty Gamble, David Hopkins, Claudia Muse, and Tom Wehtje; volunteers included Jeff Clare, Stefanie Elkins, Susan Jorgensen, Richard Lewis, and Allison Nicolls.

34Geraty, p. 92; Geraty, Herr, and LaBianca, p. 236.
first layer of the rampart. The western slope was the most vulnerable to attack, and the occupants of the site apparently wanted a strong fortification system. This may be the first fortification system found in Palestine that included a casemate wall, a rampart, and a dry moat.

Excavations just inside the wall inside the casemate room produced a deep destruction layer ca. 2 m. thick. It was composed primarily of burned mudbricks and stones, but also included burned wooden roofing beams. The fire was so hot that it turned some of the wall stones to lime. Beneath the destruction debris in the casemate room were smashed storage jars, most of which had collar rims, typical of Iron I throughout Palestine (Plate 19). Several of these large jars contained the same potter's mark on the handles, but none sported precisely the same type of collar.

This was the end of Iron I in Field B. In earlier seasons, we had uncovered remains of an early Iron II storeroom over this destruction.35 In Fields A36 and F an ash layer overlay the stratigraphic boundary between Iron I and Iron II. It would thus seem that the destruction which ended Iron I at Tell el-‘Umeiri was sitewide. It is possible that this destruction was caused by the army of King David attacking the Ammonites. It was Bath-Sheba’s husband, Uriah the Hittite, who was killed at the walls of Rabbat-Ammon when David conquered that city (2 Sam 11). Although the pottery in the casemate room would seem to be somewhat earlier than the early 10th century B.C., when David lived, it is possible that such large storejars lasted for long periods of time.

In Field F, on the eastern shelf, a well-built terrace wall came from this period.

Iron II and Early Persian

Field A at the west end of the acropolis continued to produce extensive remains from at least two phases stretching from late Iron II into the beginning of the Persian period. Four new squares were opened to the east of previous excavations. After three seasons it

35Geraty, p. 93.
36Field Supervisor for Field A, the Ammonite Citadel, was John Lawlor, assisted by Square Supervisors Boguslav Dabrowski, Denise Herr, Carolyn Norman, and Jack Pichette; volunteers included David Brock, Alessandro Bruno, Ken Gardoski, Susan Kennel, Karis Lawlor, and Ernest Zinke.
now seems that at least three large buildings were occupied in the excavated area during the earliest phase.

Only two or three rooms of a large building with very thick walls have been found in the south. But the central building has been completely exposed. It was made up of four rooms, three long rooms abutting a broad room (Plate 20), a style typical in western Palestine during the Iron Age, but now becoming more frequent in Transjordan as Iron Age sites are excavated. The third building on the north was oriented at 90° to the four-room house and included a broad room with at least five long rooms abutting it. One of the rooms was formed with a row of pillars. This third house had doorways connecting all the rooms.

It would seem that at least the first two buildings were basement structures, that is, the walls were built into a large pit dug for the whole structure. Individual foundation trenches were not found for any wall, and Iron I layers were found immediately outside the buildings. Surfaces were found only in the northern building, where a typical domestic repertoire of objects, such as grinding tools, was found. However, the thick walls, the basements, and the large size of the two southern buildings suggest that they were used for non-domestic, administrative activities. Perhaps they should be connected with the royal seal found in this area in 1984.37

Other major structures from the same period were found in Field F on the eastern shelf. Two parallel walls (Plate 21) may have made up a small gate structure with a narrow passageway between them. Inside this possible gate was a large building constructed of a third parallel wall which cornered at both ends. Surfaces with the walls contained no objects.

A later phase of structures was built over the walls of Field A (Plate 22), seemingly ignoring the earlier walls completely. Unfortunately, the surfaces that went with these walls have been destroyed in the Middle Ages by agricultural activities on top of the mound, but the pottery associated with them was early Persian.

The many finds from Field A included figurines (Plate 23) and two seal impressions with the same inscribed name, Be'ercamon (see below).

Early Roman

In 1987 a small, plastered pool or ritual bath with steps was excavated at the northern edge of Field A.\textsuperscript{38} From the debris inside, pottery no later than the early Persian period had provided a tentative date for the structure, even though similar ritual baths are seldom found prior to the early Roman period. This season, when we removed part of the foundation of the structure, two early Roman sherds were found.

Middle Ages

Because such a structure is normally subterranean and no associated buildings or pottery of the Roman period have been found anywhere in the immediate region as might be expected, we suggest that the associated Roman building(s) have disappeared and that the present-day surface of the mound has been lowered considerably since Roman times. It may be suggested that agricultural activity combined with wind and water erosion has lowered the top of the tell by as much as a meter. This may account for the large quantities of pottery and objects found in topsoil in Field A: wind erosion removed the soil but left stones, pottery, and objects. Farmers removed the stones to the many large rock mounds scattered over the site.

Water Source

Excavations continued in only one Square in Field E,\textsuperscript{39} the water source at the bottom of the tell on the north side. Earth layers from Iron I were cut by a plaster and cobble installation built during Iron II times (Plate 24). The Iron II remains were, in turn, cut by an early Roman plastered channel. Then, during Byzantine times, all structures were cut by a deep foundation pit for a tunnel leading to the well house. The Byzantine structure was used when the well was capped in the 1930s. None of the ancient remains except that of the Byzantine well is coherent enough to reconstruct the water structures.

\textsuperscript{38}Geraty, Herr, and LaBianca, p. 234.

\textsuperscript{39}Field Supervisor for Field E this season was Larry G. Herr, assisted by Lawrence T. Geraty and Warren Trenchard.
In the topsoil of Field A a seal inscribed on two sides was discovered. The name of the owner, \( {\text{l}^\text{m}s} \), occurred on the obverse with a drawing of a bull’s head. On the reverse was a bird perched atop a possible lotus, while the name of the owner and his patronym were inscribed around the iconography: \( {\text{l}^\text{m}s \text{bn tmk}^\text{l}} \). We can translate and vocalize the inscription “Belonging to \( {\text{El}^\text{mas} \text{bn Tamak}^\text{el}} \)” (Plate 25). Both names are found on other Ammonite seals and inscriptions as well as in the OT. The letters suggest a date in the early 7th century B.C.

Two seal impressions on jar handles were also found in the topsoil of Field A. Both impressions were made by the same seal and read \( {\text{lb}^\text{mn}} \), which should probably be translated and vocalized as “Belonging to Be\( {\text{er}^\text{ammon}} \)” It is likely that the national name \( {\text{Ammon}} \) was used as the theophoric element.
Plates 1-25
Plate 1. Map of Tell el-‘Umeiri, Tell Jawa, Dreijat.
Plate 6. Plan of Dreijat.
Plate 8. Excavated rooms in Drejit.
Plate 10. Figurine of Ammonite King.
Plate 12. Topographical map of Tell el-‘Umeiri.
Plate 14. In situ EB III vessels in Field D.
Plate 16. LB fertility plaque.
Plate 17. Plan of the Iron I casemate wall system after the 1987 season.
Plate 18. Iron I rampart sloping against the outer casemate wall.
Plate 20. Walls of the late Iron II four-room house in Field A cut by walls of the later phase.
Plate 22. Walls of the Late Iron II House cut by walls of the later phase.
Plate 23. Figurine from Field A.
Place 74. Iron II cobble and plaster structure at the water source cul by Byzantine Foundation pit.
Plate 25. Seal of *EL*amas, son of Tamak*el*.