

MĀDABĀ PLAINS PROJECT 1996: EXCAVATIONS AT TALL AL-'UMAYRĪ, TALL JALŪL, AND VICINITY

by

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Introduction

A sixth season of excavation and survey by the Mādabā Plains Project occurred between June 16 and July 31, 1994. It was sponsored by Andrews University in consortium with Canadian Union College, East Africa University, La Sierra University, and Walla Walla College, with help from Cincinnati Bible Seminary. Full reports have already been published for the first season (1984: Geraty *et al.* 1989), the second season (1987: Herr *et al.* 1991a), and the third season (1989: Herr *et al.* 1997). Preliminary reports have also been published (first season: Geraty 1985; Geraty *et al.* 1986; 1987; second season: Geraty *et al.* 1988; 1989; and on 1990; third season: Younker *et al.* 1990; Herr *et al.* 1991b; LaBianca *et al.* 1995; fourth season: Younker *et al.* 1993; Herr *et al.* 1994; fifth season: Younker, *et al.* 1996; Herr *et al.* 1996).

This season, a team of about 130 persons took part in the interdisciplinary project, which included as its major activities excavations at Tall al-'Umayrī, surveys and soundings within a 5 km radius of al-'Umayrī, excavations at Tall Jalūl, site preservation and construction of tourist guidance facilities at Ḥisbān, and a survey within a 5 km radius of Ḥisbān (Fig. 1).

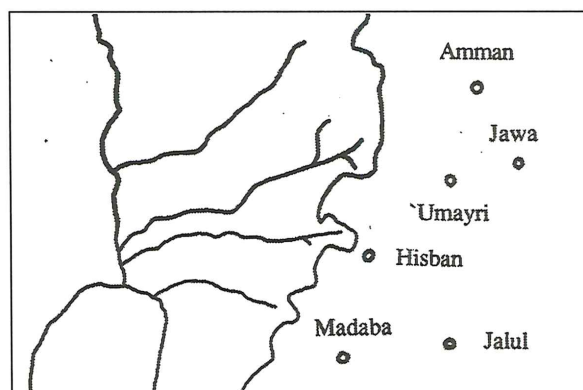
Once again the theoretical objectives of the project focused on cycles of intensification and abatement in settlement and land use in this frontier region between the desert and the sown, especially the involvement of the ancient Ammonites and other tribal groups during the Iron Age, as well as other periods. Central to this focus was the study of the food systems employed

by the inhabitants through time (for a full discussion of this theoretical framework, its history, and previous work done in the region see Geraty *et al.* 1986: 117-119).

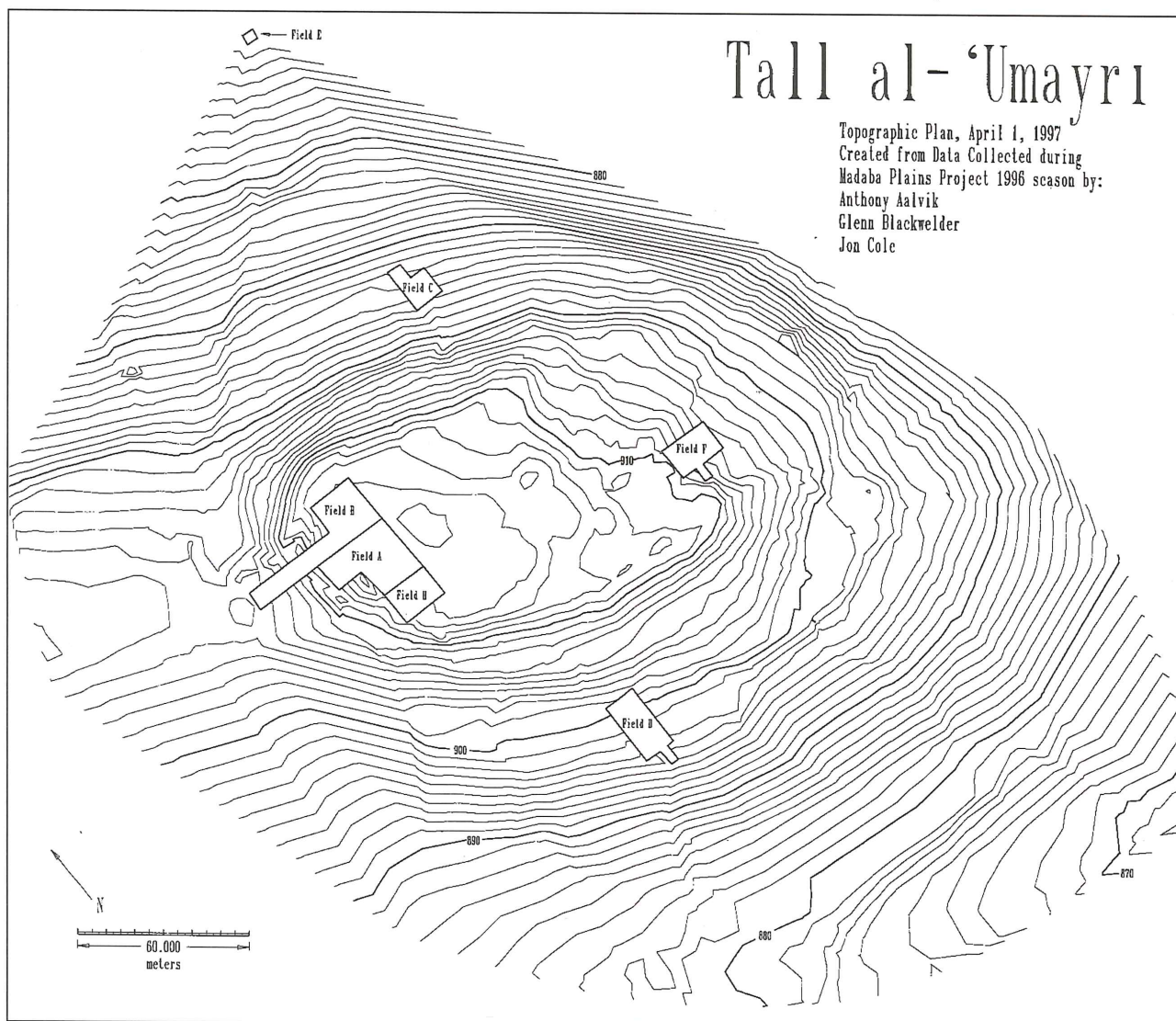
The implementation of these objectives was expanded during the 1996 season by enlarging the regional survey to six teams, each with its own primary objective; by probing deeper in the fields of excavation at Tall al-'Umayrī; and by expanding excavations at Tall Jalūl, the central site of the eastern Mādabā Plain during the Bronze and Iron Ages.

STRATIGRAPHIC EXCAVATIONS AT TALL AL-'UMAYRĪ (Larry G. Herr)

In 1984 four fields of excavation were opened (Fields A, B, C, and D) (Fig. 2). In 1987 three of the four were expanded (Fields A, B, and D), one was completed to bedrock (Field C), and two new fields were opened (Fields E and F). In 1989 one was expanded (Field A), three old squares reopened and expanded slightly (Fields B, D, and F), another excavation reduced from two squares to one (Field E), and another



1. Map of the Mādabā Plains region.



2. Tall al-'Umayri: Topographic map with fields of excavation.

field was opened on the north slope (Field G). In 1992 four fields previously opened squares were deepened (Fields A, D, and F), in one field existing squares were deepened while expanding by one square (Field B), and two fields were discontinued (Fields E and G). In 1994 excavations went deeper in Field A, expanded and deepened in Field B, and added Field H south of Field A. This season, Fields A, B, and H expanded, while the tomb excavations on the southeastern slopes of the *tall*, already begun under the hinterland survey in 1994, became part of the al-'Umayri excavations as Field K.

This season virtually the whole mound was transected with Ground Penetrating Ra-

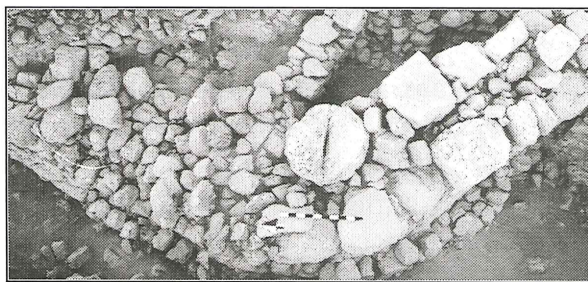
dar by Jon Cole of Walla Walla College, Gerald Sandness, and Bradley Matson. Preliminary analysis has suggested the presence of a casemate wall along the southern edge of the site and major walls south of Field H.

Field A: The Upper Western Slope (John I. Lawlor)

Previous excavation on the western rim of the site has produced a significant administrative complex of buildings from the end of the Iron Age and the Persian period. Small hints of Iron I and Early Iron II material were found in four squares. This sea-

son, four new squares were opened to the west of the northern portion of Field A; these straddled the rim of the site and descended the upper slope to catch the outer fortification wall dated to the Iron I period. Because these excavations were outside the Ammonite administrative center excavated in previous seasons, we will list only the phases encountered this season with tentative suggestions as to how the phasing connects with that mentioned in the report of the 1992 and 1994 seasons (Herr *et al.* 1994 and 1996).

Phase 11 (LB IIB/Iron I Transition). The outer casemate wall was discovered running from Field B into Field A. It has now been exposed for a length of ca. 28 m. Toward its southern end in Field A, it curved sharply toward the interior of the site and disappeared under a later wall (Fig. 3). It may be the northern side of a gate, but only future excavations will tell. A curious feature of the wall, located almost at the transition from Field B to Field A, was an irregular offset of about 20 m, indicating that the wall may have had more than one phase, or, alternatively, was constructed in parts (Fig. 4). There is some evidence that earthquake activity could have altered the alignment. The offset was not a clear join, that is, the stones in the courses were not aligned vertically and the offset zigzagged vertically from course to course. No founding levels



3. Tall al-'Umayri, Field A: Outer fortification wall of Phase 11 as it curves in toward the interior of the site (at right); only the outer row of stones is visible; a later wall from Phase 8B is on top of it (the light colored stones to the right of the meter stick).



4. Tall al-'Umayri, Fields A and B (view to the north): Outer fortification wall of Phase 11 (Field A in foreground, Field B behind); two casemate rooms can be seen in the upper part; the curved section in the previous figure is just out of the picture at the bottom.

for the wall or associated surfaces were discovered this season, but in previous seasons the wall was founded directly on an earlier MB IIC rampart.

Phase 10 (Iron I). A storeroom containing 18 reconstructable collared pithoi was found on top of the deep, bricky destruction of Phase 11 (Fig. 5). Two walls of the storeroom were found with the pithoi leaning against one of them. This room was probably associated with a similar storeroom found in the 1984 and 1987 seasons in Field B just to the north (Geraty *et al.* 1989: 250-252 [misdated to Early Iron II]; Herr *et al.* 1991: 58, 62). There thus appear to have been two storerooms aligned roughly north-south along the edge of the site which, based on the pottery, should be dated to the



5. Tall al-'Umayri, Field A: Broken collared pithoi in Phase 10 storeroom.

11th century. The collared pithoi were similar to those found at Saḥāb with upright rims, relatively low necks, and high collars. The cooking pots were unique with a double groove on an exterior-thickened rim.

South of the storeroom was another room for which all four walls were preserved and a segmented pillar was found in the middle of the room. The interior dimensions of the room were 3.5 x 3.8 m and the door led into the room in the middle of the south wall. Another door may have existed in the northeast corner. No surface has yet been found.

Phase 9 (Early Iron II). The pillared room of Phase 10 seems to have continued into Phase 9, but was destroyed by a significant fire. A thick layer of ash covered the room with an especially heavy concentration of burned wood fragments near the pillar indicating that the pillar was used to support wooden beams for the roof. The pottery in the ash layer was Early Iron II. A similar ashy layer covered the storeroom that contained the collared pithoi.

Phase 8B (Iron II). The most significant feature of this phase was the very wide (2.0 m) wall made of very large boulders laid immediately above the Phase 11 fortification wall. It diagonaled up the slope, but was only one to two courses high. It may have been the outer limits of the Late Iron II administrative center. The wall, and a few

other, smaller wall fragments that seem to have been associated with it, were too close to the present surface of the site for any surfaces to be preserved. The wall is probably Late Iron II, but because of the lack of associated earth layers, we are uncertain and have given it a broad date of Iron II.

Phase 7B (Late Iron II/Early Persian). One wall fragment and a series of earth layers containing Late Iron II/Early Persian pottery represent this phase higher up the slope than the wall of Phase 8B.

Phase 4 (Early Persian). A pit 3.6 x 2.4 m in size was dug approximately 1 m deep into earlier materials. The phase also contained two earth layers.

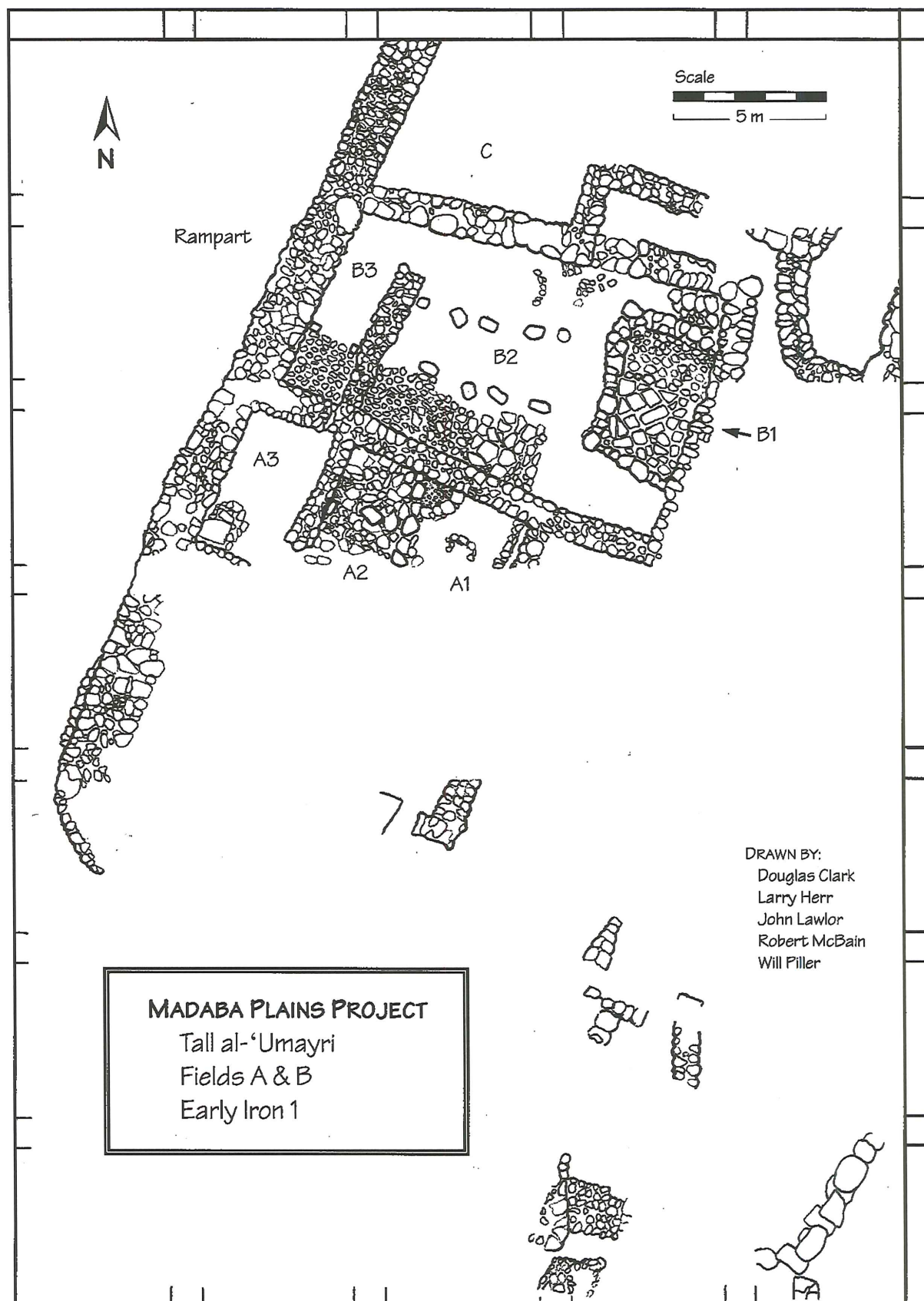
Phase 3 (Roman). The latest pottery in the topsoil of three squares contained Roman sherds.

Phase 2 (Byzantine-Late Islamic). Three earth layers contained pottery from the Byzantine to Late Islamic periods.

Phase 1 (Modern). This phase was made up of dump debris from earlier seasons of our excavations.

Field B: The Western Defenses and Northwest Domestic Quarter (Douglas R. Clark)

This season, work centered on expanding the exposure of the well-preserved Late Bronze IIB/Iron I town discovered in previous seasons to the north. This was accomplished by clearing a small amount of the destruction layer in a four-room house (Fig. 6) and opening three new squares to the north of previously excavated areas. However, more excavation is needed in subsequent seasons to identify clearly was found this season. The phasing used below should be considered very tentative. We



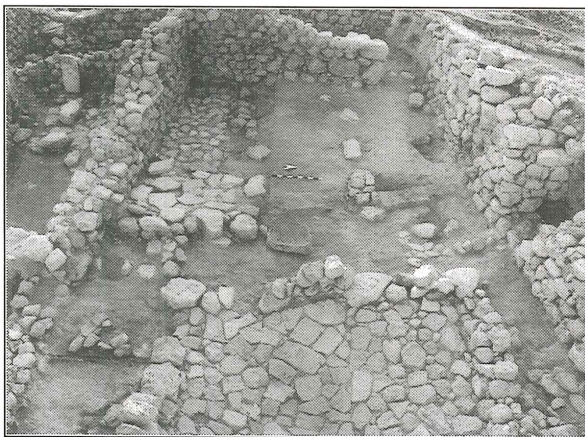
6. Tall al-'Umayri, Fields A and B: Plan of the LB IIB/Early Iron I architecture; rooms labeled A, B, and C are in Field B; the wall fragments are in Field A.

have retained the phase numbers from last season.

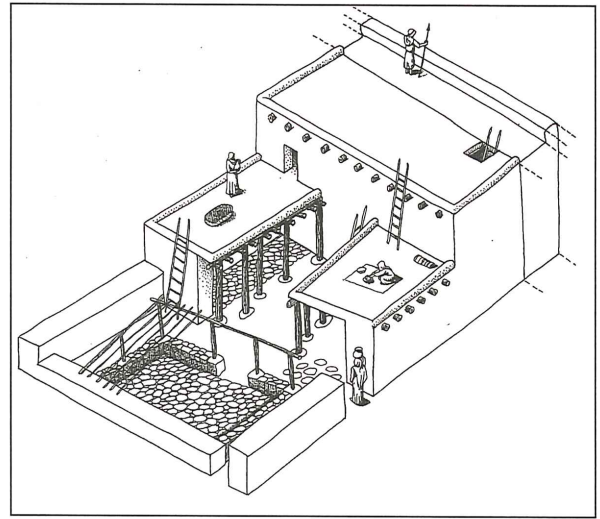
Phase 12. Frequent Middle Bronze IIC sherds were found in later deposits. It is possible that the rampart from this phase found in earlier seasons (Herr *et al.* 1996) rose at the northwest corner of the site, perhaps to accommodate a tower.

Phase 11B. A large garbage pit at least 4 x 5 m and about 2.2 m deep was found east of the four-room house and probably dates prior to the house, based on the pottery which contained mostly Late Bronze Age sherds mixed in with some very early Iron I forms. The triangular sections on the cooking pots looked like those from the Late Bronze IIB/Iron I rampart found in earlier seasons; hence the suggestion that the pit belonged to this phase. It contained large amounts of animal bones, mostly sheep/goat (ca. 8000 bones), but also bird, pig (16 bones), cattle, donkey, horse, dog, and turtle beside a sprinkling of small rodents.

Phase 11A (Fig. 6). This phase was described in last season's report (Herr *et al.* 1996), but is now clearer with the four-room house completely exposed (Figs. 7 and 8), providing us with an excellent glimpse into the private life of the occupants. It consisted of a broadroom at the rear of the house between the two casemate walls. Abutting it



7. Tall al-'Umayri, Field B: Four-room house in Phase 11A (looking west).



8. Tall al-'Umayri, Field B: Artist's reconstruction of the four-room house in Phase 11A (Rhonda Root).

were three longrooms divided by a row of post bases. A doorway led into the broadroom from the northern longroom. The eastern wall of the house was only partially present; perhaps curtains hung over the rest of it. At least the south longroom was paved with flagstones and part of the north room may have been as well. The dirt portions of the floor contained several laminated layers. Some of the walls in this part of the house were preserved almost 2.5m high and, based on the amount of mudbrick debris filling the house from its destruction, it must have been at least another story higher in the western end; there were probably also brick courses above the preserved stone courses in the rest of the house. The destruction filling the house averaged almost 2.00 m deep. Last season, many objects were found in the destruction debris suggesting that storage and work areas were in the second story and on the roof. This season a large saddle quern was found tumbled upside-down about 0.25 m above the floor. Based on its location, we suggest it originally was located on the roof of the southern longroom. The pottery from the house continues to be closest to that from the LB IIB/Iron I transition, though the cooking pots show a slight development toward the true Iron I flange.

An open courtyard was discovered in front of the house where the preserved walls were much lower and the destruction debris was only ca. 0.50 m deep. The original walls were thus not very high. This, along with the paved area circumscribed with pillar bases and constructed in two different methods of paving (one to the north, the other to the south), may have been an animal pen for the family flock.

The doorway to the complex was on the northern side and seems to have been an exit of the house into a small alley. Later construction at this point confuses the picture and more excavation is needed to make it clear what was to the north of the house.

The outer casemate wall was found to continue uninterrupted to the north for another six meters. However, there appears to be no casemate room north of the four-room house. Instead, other walls give us a picture that is hard to explain at present. However, no surfaces for any of the walls have yet been found. It is in this location that large amounts of MB IIC pottery were found. There may be no major architecture in this northwestern corner of the settlement during this phase. Wall fragments and a surface excavated in a limited exposure in this area may suggest small rooms. But more excavation should answer our questions.

Phase 8. A phase of pits dug into the Phase 11 destruction and filled with Late Iron II debris had been discovered in 1984 (see Geraty *et al.* 1989: 254 for a plan). Two more pits were discovered in 1994 and another one was found this season. The pottery belonged to Late Iron II.

Phase 7. Although we can not clearly connect them to other Phase 7 architecture, several walls, including two pillars were constructed in a similar manner to walls found in previous seasons. A large holmouth jar from the Late Iron II/Early Persian corpus was found on an associated surface (Fig. 9).

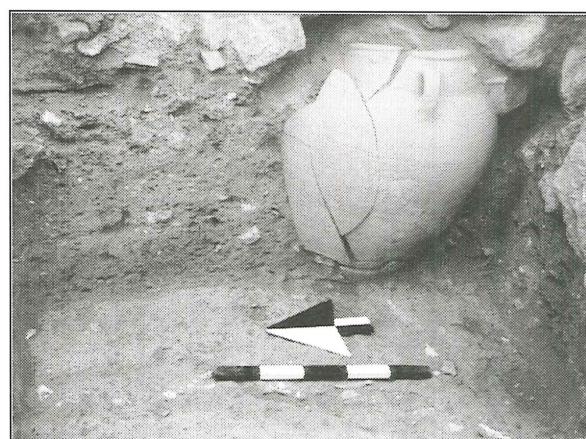
Phase 6. Previous excavation uncovered fragmentary walls and surfaces to which more wall fragments were added this season. Two more wall fragments may be added to this group. The pottery dated to the Early Persian period.

Phase 1. Again, as in previous seasons, topsoil included two ephemeral wall lines that were probably related to nomadic camps or agricultural fields. One of the walls was at least 10 m long.

Field H: The Southwestern Administrative Complex (Lloyd A. Willis)

In 1989 and 1992, ground penetrating radar examined the unexcavated area to the south of Field A. The results suggested more walls of similar size and orientation to those already discovered in the Ammonite administrative complex of Field A. Thus, a new field was laid out in 1994 with the ultimate purpose of connecting Field A to the southern edge of the site and exposing more of the thick-walled administrative buildings that seemed to extend south of Field A. Three squares were opened immediately south of Field A and this season another three were opened immediately to the south of the 1994 squares: 7K20 in the west, 7K21 in the middle and 7K22 in the east.

Phase 7. More exposure this season has allowed us to collapse the phasing of the 1994



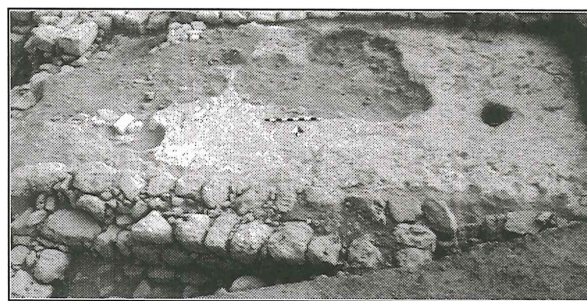
9. Tall al-'Umayri, Field B: Large jar in Phase 7.

season so that Phases 7 and 8 from 1994 are now Phase 7. The large (ca. 2.00 m wide) wall found in last season's excavation continued south into this season's exposure. The wall was too close to the west balk to expose material west of the wall, but to the east several fragmentary walls, two pillars, and a surface produced Iron I pottery. This is in contrast to the pottery from fills around the Phases 8 and 7 walls of 1994 which was Late Iron II (but we had not reached floors in 1994) and the remains were better preserved this season. The large wall may have been part of the Iron I site fortification system at this location.

Phase 6. This phase equals Phases 5 and 6 of 1994. The large wall of Phase 7 seems to have been reused in Phase 6. Most of the phase found this season lay under the later phases which we could not remove; only one or two earth layers could be attributed to it. Its date seems to have been Early Iron II.

Phase 5. This phase, Phase 4 in 1994, included the earliest construction of the administrative complex which was visible this season in one of the major walls of the complex. It also included a pillar, but no surfaces were reached. If we may use the earliest phase of the complex in Field A and the Field H squares of last season, the date is the Late Iron II period.

Phase 4. This was Phase 3 of 1994 and consisted of the most remarkable room so far uncovered in the administrative complex. A very well-made plaster floor covered a large room about 5 m wide by 11 m long (Fig. 10). The initial plaster floor was thick (ca. 10-15 cm thick) but had to be repaired once or twice. As yet, no doorway has been located into the room and, although we have found most of all four walls, a few small areas where a door could be located stand outside our excavated area. Although no ob-



10. Tall al-'Umayri, Field H: Plastered room in Phase 4 (looking west); the large pits are Hellenistic; the small circular one is the base of a Persian pithos.

jects or pottery were found directly on the surface, the pottery from the fills immediately above it represents the finest pottery so far found at the site including several Attic pieces and good examples of Ammonite fine ware. The pottery dates to the Early Persian period.

Field Phase 3. This is a new phase for the field this season. It consisted of a robber trench outside the administrative complex to the west and a pit dug through the plaster floor inside the Phase 4 room. It also comprised an earth layer which contained a Hellenistic storage jar. The rest of the pottery in the robber trench and the pit was Hellenistic. This is our first sign of Hellenistic building activity (albeit intrusive) at the site.

Phase 2. This phase included a small agricultural terrace wall. It was simply a row of stones laid into an erosion channel near the western rim of the site; it was probably designed to prevent water erosion down the hill. The channel was then filled with thousands of small cobbles and worn pottery collected from the top of the site probably by farmers working the flat top of the *tall*. The latest pottery in the channel fill was Umayyad.

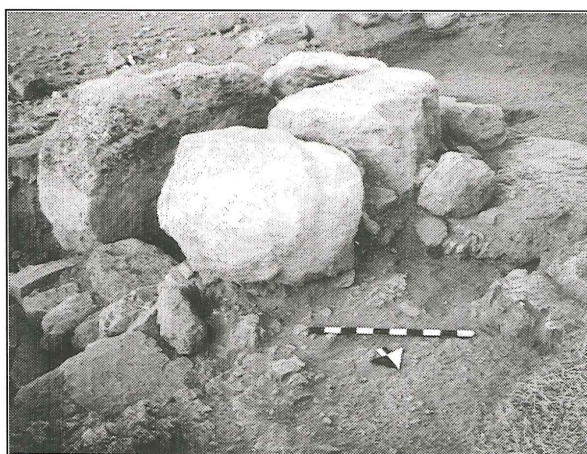
Phase 1. The agricultural use of the site continued through the Middle Ages. Within topsoil was a long wall line of stones marking the edge of the site, possibly to locate

the limitations of a field.

Field K: The Tombs (Elzbieta Dubis)

This season the excavation of the tombs on the southeastern slope of the site was part of the excavation on the *tall*, whereas they had been associated with hinterland excavations in 1994. Both major tombs begun in 1994 continued this season and another smaller one was excavated.

Megalithic Tomb. Last season the interior of a dolmen built on the slope of the site was excavated. It contained the best preserved contents of a dolmen ever found in Palestine, including 20 burials (based on the number of skulls), 20 complete pottery vessels all belonging to EB IB, and other small objects, such as beads. Soundings had uncovered well-trodden "plaster" surface patches outside the structure. This season excavations exposed a larger area around the dolmen to see if the surfaces could represent activity patterns associated with the burials. In fact, a series of up to six well-made and well-used surfaces were uncovered immediately to the north and west of the dolmen (Fig. 11). The surfaces were too close to topsoil in the south to be certain whether they extended in that direction as well, but preliminary indications suggest



11. Tall al-'Umayri, Field K: EB I dolmen with surrounding surfaces.

that they did so. The surfaces were made up of very hard earth and pebbles with chalk mixed in giving them a plaster-like appearance (one has been analyzed by a laboratory to be "plaster"). Although excavation reached about 2.0 m to the west of the dolmen and 1.5 m north of it, the outer boundaries of the surfaces were not reached. No objects of any kind were found on the surfaces, which may suggest some kind of ambulatory ritual connected with the dolmen. The pottery was all early Early Bronze, indicating the contemporaneity of the surfaces with the objects inside the dolmen.

Middle Bronze Age Cave Tomb. Farther downhill from the dolmen (on the first natural terrace above the valley floor) a natural cave, used as a tomb during MB IIC was discovered and mostly excavated in 1994. This season, with physical anthropologist Joan Chase added to the team, the remainder of the tomb was excavated to see if any more burials could be located. All the earth was removed to bedrock, but only a few bone fragments were found. Some were slightly articulated, but no complete skeletons were found. The cave was entered through a stepped passageway carved into bedrock and then through a small door.

Hemispherical Cave Tomb. A small tomb immediately above and slightly to the east of the dolmen was cleared. It had been excavated by tomb robbers a few years ago, but we cleared it to see if any finds or skeletal remains could be located and to obtain a plan of the tomb.

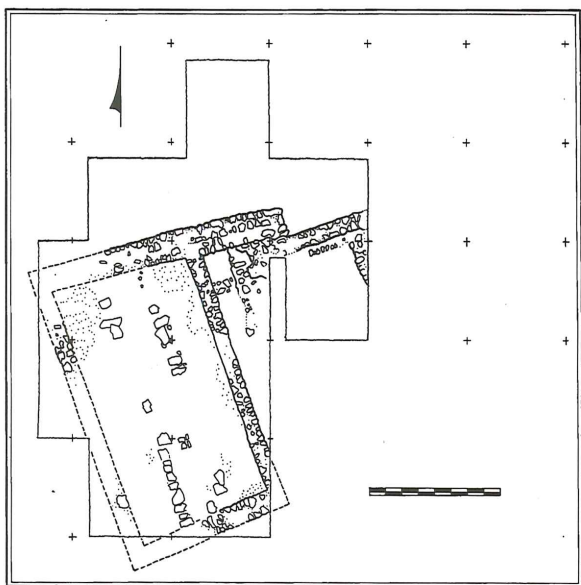
This tomb contained no finds or skeletal remains whatsoever. It was found to be a very shallow cave, extending only about 1.5 m into the hillside. There does not seem to have been a natural cave before it was hewed out of the rock. A shallow passageway led to the relatively high (ca. 1.2 m) door. No pottery was found that could suggest a date. The tomb may have been unfinished.

STRATIGRAPHIC EXCAVATIONS AT TALL JALŪL 1996 (R. Younker and D. Merling)

In 1996 excavations at Tall Jalūl (directed by the authors) were continued in Fields A (north side of the *tall*), B (east side of the *tall*), C (in the center of the *tall*) while a new field, D, was near the south side of the *tall*, just south of Field C.

Field A: Pillared Building (Z. Gregor and R. Gregor)

Field Phase 9. This season most work in Field A was concentrated on fully exposing the Iron II (seventh - sixth centuries BCE) pillared building of Field Phase 9, the north and west walls of which were discovered during the 1994 season. This was done by opening four new squares on the south side of Field A and two half squares on the north and east sides of the field. Full exposure of the 12 m long building, including the south and east walls, confirmed its "tripartite" nature (Figs. 12 and 13). As noted previously, the tripartite building was divided internally by two rows of stone pillars, creating a cen-



12. Tall Jalūl, Field A: Plan of the tripartite pillared building.



13. Tall Jalūl, Field A: Tripartite pillared building (view to the north).

tral chamber and two flanking aisles. Additional fallen pillars were found in the south side of the building, some of which appeared to have been reused in a Persian period building which succeeded this building during Field Phase 8 (below). The aisles were still paved with flagstones on the north end of the building, but the pavers had been mostly robbed out of the south end, probably during the Persian period. Within the debris of this building, a number of well-preserved clay figurines depicting humans and various animals were found, adding to those recovered during the 1994 season. This season, the animal forms again included the horse and rider figurine, well-known throughout Palestine during this period.

One particularly well-preserved human figurine appeared to wear a headdress that reflected Egyptian styles.

Field Phase 8. Above the "tripartite" pillared building, was found the very fragmentary architectural remains of what appeared to have been a fairly large building from the Persian period. Only small sections of wall, a few flagstones, and pillars (apparently reused from the Iron II pillared building) survived from this Persian period building. Much, if not most of it, appeared to have been destroyed by the intrusion of later Bedouin burials from Field Phase 2, described during the 1994 season.

Field B: The Gate Complex (James. Fisher and Jennifer. Groves)

Four additional squares and several probes were opened this season on the southwest side of Field B in an attempt to find the Iron II inner gatehouse. The discovery of four additional phases between the two Iron II approach ramps and city gates required a renumbering of Field B's field phases this season.

Field Phase 13. Phase 12 consists of the Late Iron I/Early Iron II ashy destruction layer, which is about 1 m thick. This phase was again penetrated this season under what appears to be the pylons (Wall 16, Square B12) of the tenth/ninth century BCE inner gatehouse of Field Phase 11. As before, these ash lenses contained sherds from collared-rim storage jars, carinated bowls, etc.

Field Phase 12. Field Phase 11 includes the Early Iron II outer gate and paved approach ramp, and the ramps western retaining wall, exposed during the 1992 and 1994 seasons. A possible pylon (Wall 16 in Square B12) for a gate chamber of what would be an inner gatehouse, was located immediately to the west and next to where the approach ramp turns into the city after passing through the outer gatehouse.

Field Phase 11. A second repaving of the approach ramp of the ninth / eighth century gatehouse between the outer and inner gatehouses.

Field Phase 10. Repaving of the approach ramp of the ninth/eighth century BCE outer gatehouse between the outer and inner gatehouses, identified in N balk of Square B14.

Field Phase 9. This phase consists of the ninth/eighth century BCE outer gatehouse which was constructed a few meters to the

south of the original outer gatehouse of Phase 12. This new gatehouse was built on a larger scale with bigger foundation stones. Only four stones of this new gatehouse survive – two large foundation stones of the northeast pylon, and two paving stones at the threshold. Between this new outer gatehouse and the area where the inner gatehouse appears to have been located, was a stretch of light gray clay that seems to have served as a roadbed between the two gatehouses. In places, this roadbed was covered with crushed nari, plaster, or flagstones.

The remaining field phases of Field B correspond to those reported in 1992 and 1994; there are no significant details to add to the reports of these seasons.

Field C (Richard Dorsett and Paul Ray)

Work in Field C this season threw additional light on almost all the phases which were exposed in the previous two seasons, plus exposed three new phases.

Field Phase 14. Two well-built walls (C 4:29, 34) of a large building represent the earliest architectural phase in Field C. These were connected with a hard plaster surface laid immediately above bedrock. The undulating surface of the bedrock was leveled by cobble fills. A cistern of undetermined date may belong to this earliest field phase which so far appears to date to the Late Bronze/Iron I transition or later in the Iron I.

Field Phase 13. This phase represents the destruction/abandonment of the Phase 14 building.

Field Phase 12. A mudbrick structure (C 4:24A-C = C 3:23A-C) was built directly above the second course of the destroyed eastwest wall of Phase 14. The mudbrick structure was outlined by a number of well-articulated mudbricks. The material found

within the mudbrick structure dated to the Iron I and Early Iron II. The glass and frit beads and oil lampstand chalice found during the 1994 season were found in the partially collapsed detritus of this phase. A collar-rimmed storage jar was found *in situ* within this same structure this season. A basalt vessel that resembles an oil lamp in size and shape also came from this structure.

Field Phase 11. The destruction and abandonment of Phase 12.

Field Phase 10. The short stretch of a well-built north-south wall (C4:20), excavated during the 1994 season and dated to the Iron II, founded directly upon the second course of the northsouth Iron I wall of Phase 14 (C4:29--above). Excavation in Square C5 revealed that this wall did not continue south. Therefore, it must have been bisected by another wall to the west as was the case earlier in Iron I. This building was subdivided by the addition of an ephemeral wall (36) in C 3, which, like its larger counterpart, was founded upon the earlier plaster surface of Phase 14. Parts of the lowest course of the northsouth wall (mentioned above) have also been found to the north in Square C2. The living surface of this phase appears to be represented by a plaster floor built upon the then existing top of the earlier mudbrick structure of Phase 12.

Field Phase 9. This phase consists of the addition of a stone capping built upon further mudbrick debris on top of the mudbrick structure of the Phase 10 eastwest wall. This was dated by sealed pottery to Late Iron II. Alternately, this wall might have been part of the Phase 10 wall, dating this building slightly later in Iron II. A northsouth wall of a small, perhaps domestic, structure in Square C5 might possibly also date to this phase.

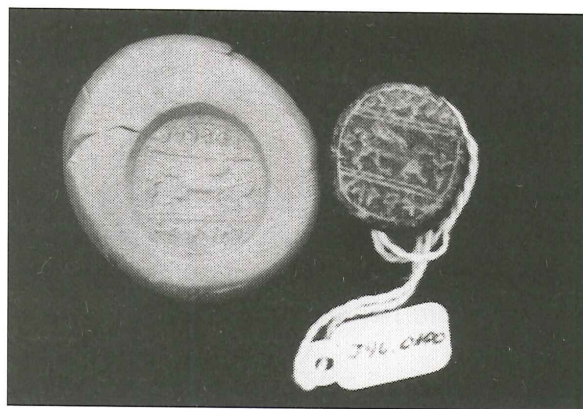
In the sift debris from the 1994 season

Yunker found a fine red limestone seal engraved with Ammonite letters dating to the seventh century (Fig. 14). The seal reads *lnqb bn sd 'l* "belonging to Naqab son of Sedeq'l." The presence of this seal suggests both the presence of an Ammonite administrative building in the vicinity and that the border of the Ammonites during the latter part of the Iron Age extended as far south as the Jalūl-Mādabā line.

Field Phase 8. Field Phase 8 represents the post Field phase 9 destruction/abandonment debris accumulation.

Field Phase 7. A somewhat more compact building with a stretch of stone wall running all the way through Square C2 and half way through Square C4, but presumably incorporating the earlier phase 10 northsouth wall was revealed already in the 1994 season. A parallel wall (later robbed out) seems to have been built to the west, presumably connected by a reuse of the earlier a on the same phase (10-9) eastwest wall on the south. The building of this first architectural phase of the Persian period incorporated an arch into the northsouth wall, possibly for drainage purposes as it appears too low and narrow to have served as an entrance.

Field Phase 6. The Phase 7 building was divided by an east west wall abutting the northsouth wall of Phase 7, with a doorway



14. Tall Jalūl, Field A: First photograph of the Ammonite seal.

between the main north south rooms.

Field Phase 5. This third phase of the Persian period is represented by the robbing of the western northsouth wall and the southernmost course (of the two) of the Phase 6 room division. The doorway between the two major rooms appears to have been blocked at this time and the addition of a "pillared" room was founded in Square C2 and the northern part of C4 on the earlier Phase 14 pavement. A pit from this period was also dug to the west of the row robbed out western northsouth wall. A basin was embedded into the Phase 14 surface. The basin and the two incense stands found nearby might suggest a cultic installation in the vicinity.

Field Phase 4. The destruction of Phase 5 is represented by a massive debris layer which included nari, roof plaster and mud brick debris of this earlier building as well as a roof roller found in the 1994 season. Two arrowheads and a number of balista were found in the collapsed debris (C2:16, 18 = C4:32; cf. C1 E Balk) of this phase.

Field Phase 3. The bottommost course of the poorly constructed wall (10) in Square C2 on the same orientation as the earlier Iron I/Iron II and Persian period walls found in the 1994 season is dated to the Late Persian period. It appears to have been accompanied by a large pit between Squares C3 and C4. Another small wall in C5 east of the earlier phase 9 (?) ephemeral wall also seems to be connected with this phase.

Field D (Jennifer Groves and Stephanie Elkins)

A new field, Field D, was opened up to the south of Field C this season in hopes of exposing more of the large building complex found in Field C (Fig. 15). Instead, it appears that some domestic structures from the



15. Tall Jalul, Field C: Late Iron II building with pillars and doors (view to the east).

Persian period were found. Five phases were discerned during this season's excavation.

Field Phase 5. The earliest phase of Field D consisted of some architectural remains of possible Late Iron II/Persian domestic dwellings. Modest wall lines appeared in Squares D1, D3, and D4. Large quantities of Late Iron II/Persian period bowl fragments were found in association with these walls.

Field Phase 4. Phase 4 was a post-Late Iron II/Persian period accumulation of debris and natural sedimentation. The total accumulation was 1.25-1.50 m deep.

Field Phase 3. A stretch of wall dating to the Persian period was found in Square D1.

Field Phase 2. Phase 2 included subsurface/post Persian period debris/sediment accumulation.

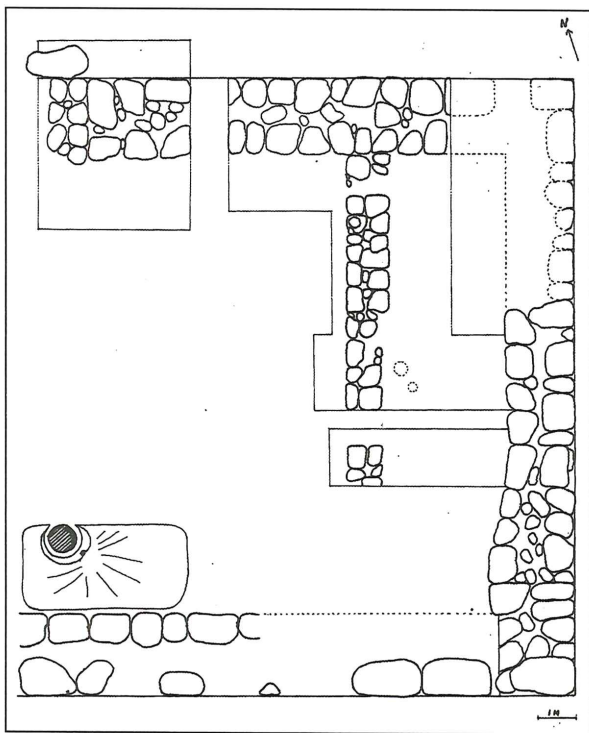
Field Phase 1. The uppermost phase in Field D consisted of topsoil and subsurface soils.

HINTERLAND INVESTIGATIONS (Øystein S. LaBianca and Larry G. Herr)

Seven hinterland teams investigated separate archaeological, environmental, and ethno-archaeological problems in the al-'Umayri and Hisban regions.

Al-'Umayri survey site US 37 sits mid-slope overlooking the upper reaches of the Wādī al-Bunayyat from the south-southwest. The moderately sloped hillside offers a terrace-based vineyard, scattered fig and olive trees, and thin arable soil within a perimeter wall encompassing ca. 0.6 ha. Three architectural structures occupy the center of the plot: a modern one-room concrete block structure that shelters the site's owner and her blind mother; an adjacent one-room stone structure which is currently collapsing, but has served in the past as both storeroom and domicile; and a partially preserved, mostly buried rectilinear structure from antiquity. Assorted other features complete the portrait: terraces (one of which is contiguous with the structure's southern wall), four cisterns (three in use), a cave complex with a stepped entrance (a cistern in antiquity), and numerous stone piles.

Excavation of the rectilinear structure (Fig. 16) intended to date it, to elucidate its



16. Hinterland Site 37: Plan of the sixth century rural site near Tall al-'Umayri.

architecture, and to recover any artifacts abandoned or discarded by its ancient inhabitants. Massive stone debris covered approximately fifteen percent of the 16.5 x 13.7m structure and dictated the location of the excavation squares. Outside the structure, excavation moved swiftly to bedrock, removing ca.0.5 m of dry gravelly soil and demonstrating that the exterior wall had been founded on bedrock.

The width of the external wall measured a fairly regular 2 m. Abutting it and preserved to a single course high, the western wall rose ca.0.35 m to about half the height of the north wall. The ancient builders founded this 1.0 m thick wall on a thin layer of clay. They also utilized the clay to install a stone pavement that was preserved in a limited area south of the thick external wall. In its current state, the end of the thinner wall segment extends slightly beyond the inside face of the northern external wall. Likely, the wall once extended further and protected the western aspect of the structure. It is possible that the western wall served as a fence in front of the paved courtyard and did not rise high enough to support a roof and that it represents a secondary phase of construction.

Bedrock climbed markedly beyond the preserved pavement and excavators found only the topsoil locus in the southward continuation of excavation. The soil proved to be only 5-15 cm above bedrock. There were no architectural remains for the western third of the structure.

Three squares were opened in the available space along the eastern external wall. While the northeastern corner of this wall lay unexposed beneath debris, the top of the remaining 11m (58%) of the wall showed a width of 1.8 m, but increased to over 2.2 m at its southern end where it drew near to a bedrock shelf. A few of the wall stones reached lengths of over 1.5 m. Three courses of blocks remained in place, achieving a height of over two meters.

Within the structure bounded by this massive wall, three probes revealed that the ancient builders had constructed a north-south wall, creating a long room running the width of the building with no architecturally marked subdivisions. Builders provided access to the 3.2 m wide room through two doorways at its north end and middle.

Each of the probes came down upon a beaten earth surface composed of ashy brown earth with randomly dispersed pottery sherds and *tābūn* fragments. In the northernmost square on the western side of the wall, the surface material enclosed a sporadically pavement of flat fieldstones. The pavement sat within a bedrock depression. Hellenistic pottery (none later) with an admixture of Late Iron II/Early Persian sherds came from the surface. In the middle probe the floor sealed over two installations chiseled into the bedrock. A 0.20 m diameter cuphole accompanied a deep cylindrical hollow (diameter 0.40m; depth 0.47 m: a crushing or grinding installation). Pottery from the deeper installation originated exclusively in the Hellenistic period.

The builders linked no lateral walls to the western side of the transverse wall and constructed no other walls bonded to or abutting the northern external wall. These observations make it likely that the ancient structure consisted of a single, roofed long room fronted by a substantial, partially paved courtyard protected on two sides by the continuation of the massive external walls and on the third side by a low wall or fence. The structure may have incorporated a silo (currently plastered and utilized as a cistern) at its southwestern corner.

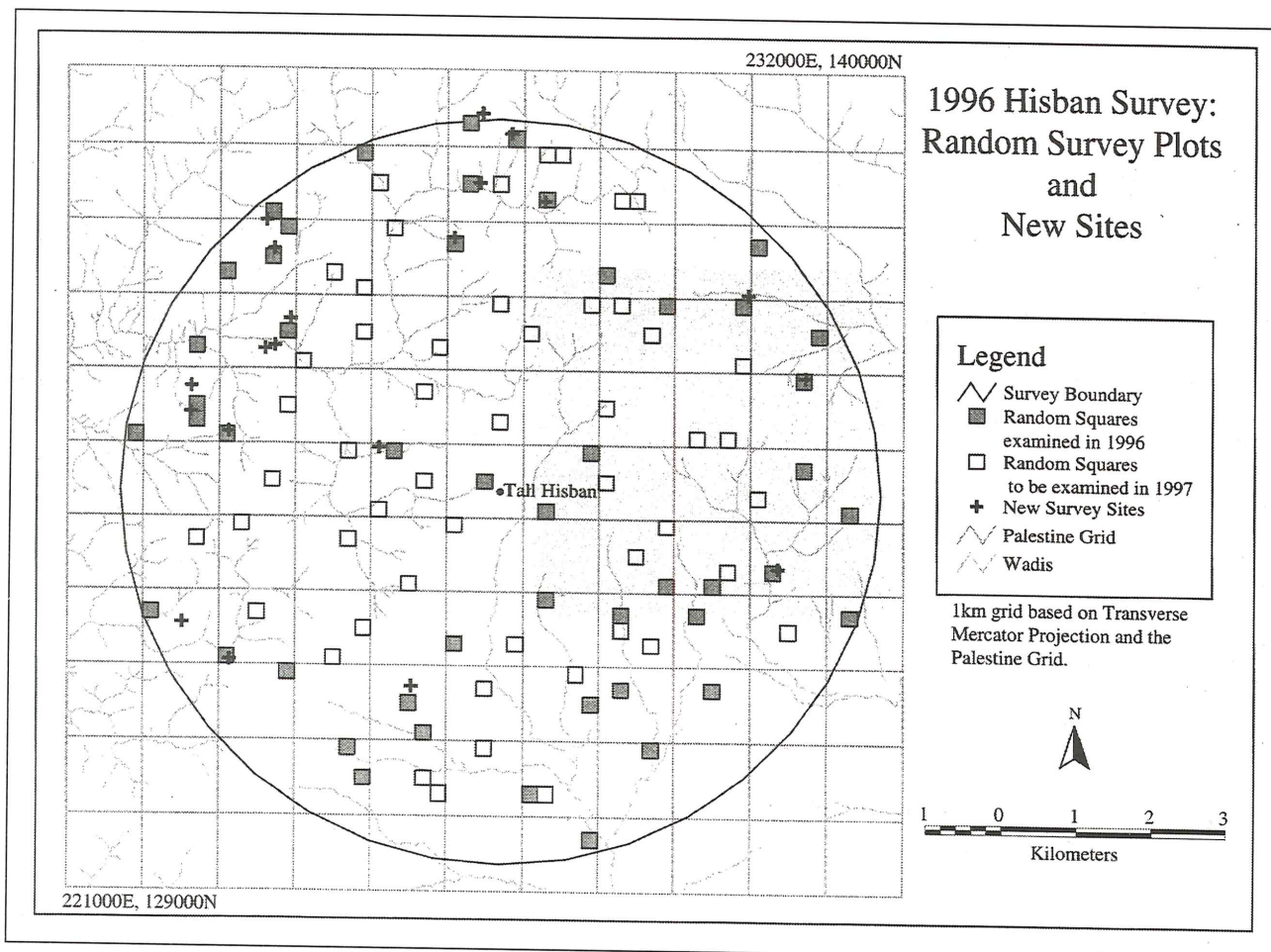
Objects consisted only of a few pounders, mortars, textile tools, flints, grindstone fragments, and a small section of bronze rod. The ceramic assemblage contained no whole or reconstructable forms; many sherds were well worn. Paleobotanical examination of earth samples produced mostly sterile readings: only a few grains of wheat

emerged in the flotation tank. The bone assemblage was meager, with the expected species appearing: sheep and goats dominated. There were also other large mammals, pigs, oxen, chicken, and dog bones. The quantities of pithoi and jars eclipsed other ceramic forms; storage containers accounted for over fifty-two percent of the corpus. Jugs, bowls, and cooking pots totaled about thirty percent of the identifiable forms. The configuration of this Hellenistic assemblage stood in contrast to the profile of the Late Iron Age/Persian ceramics that made an appearance in smaller quantities (49 versus 79 rims). The percentage distribution of the forms in the Late Iron II/Early Persian assemblage revealed the dominance of the bowl (38.8%) which together with the jug, cooking pot, and jar constituted ninety percent of the forms. There were only two pithos rims (4.1%). With three times as many pithoi as cooking pots, the Hellenistic ceramics likely originated in activities associated with a non-domestic usage of the building.

The characteristics of the constellation of finds imply the orderly abandonment of the structure after a relatively brief period of occupation. The well-built terraces remained intact, but the structure was never again used except as a source for building material.

The Regional Survey in the Vicinity of Tall Ḥisbān (Gary L. Christopherson)

During the 1996 field season, the Mādabā Plains Project returned to the region of Tall Ḥisbān for the purpose of conducting a supplementary survey of the region (Fig. 17). The initial survey of the Ḥisbān region was conducted during the Summer months of 1973, 1974, and 1976 by Robert D. Ibach Jr., and has been published as part of the Ḥisbān final report volumes (Ibach 1987). The new survey was supplementary in that its principal purpose was not to redo the work of the previous seasons, but to provide



17. Map of the Hisbān regional survey in 1996.

a statistical baseline of ceramic, environmental, and archaeological data. Having developed and successfully employed a method using randomly located survey plots in the Tall al-‘Umayrī and Tall Jalūl hinterland surveys (Christopherson 1997), it was decided to use this method in the Hisbān region as well. Data collected would then be used for comparison purposes with the other surveys.

Random survey plots for the area within a 5 km radius of Tall Hisbān were generated by the following process. A grid of 200 x 200 m squares was imposed on the project area. One hundred randomly located points were generated in a geographic information system. Each of these points fell within one of the grid squares. These 100 grid squares, representing a 5% sample of the survey region, became the random survey plots.

During the 1996 season, 49 of the 100 squares were visited by the Hisbān survey team. Ceramic, environmental, and archaeological data in these squares were recorded. Preliminary analysis of these data indicate that previous surveys in the region may have seriously underestimated settlement on the plains. The region is almost evenly divided between broad plains to the east and south, and the steep descent to the rift valley to the west and north. Pottery counts and weights from random squares in the plains were markedly higher than those from random squares in steep areas. Conversely, the original Hisbān survey, found few sites on the plains but many in the deep wadis. These contradictory lines of evidence suggest that sites on the plains have disappeared, most likely destroyed by construction or farming activities. If these pre-

liminary results can be confirmed, it could change the way future archaeological surveys are conducted in Jordan.

In addition to the data collected from the random squares, 20 new sites were discovered during the course of the survey. Sixteen of these sites were located in the wadis, and were generally cemeteries or assemblages of agriculturally related features, such as terrace walls, wine presses, cisterns, field towers, and irrigation channels, often associated with small rectilinear structures. Of the four sites located on the plains, only one, Site 213, had any architecture associated with it. At this site, a large (16 m), partially bulldozed rectilinear structure was located along a fence line separating fields. Its proximity to this fence seems to have saved the structure from complete destruction, providing a picture of what settlement on the plains may have been like in antiquity.

These results are encouraging and plans to continue the survey are already being carried out. Thanks to a grant from the National Geographic Society, a survey team will return to the Ḥisbān region during the summer of 1997. Plans are to complete the recording of the remaining 51 survey squares at this time.

Epigraphic Survey (David F. Graf and Fawwaz al-Khraysheh)

Anticipating a large-scale epigraphic survey of central Jordan in the near future, a preliminary "test" survey was conducted in the desert region east-southeast of 'Ammān as part of the hinterland survey of the Mādabā Plains Project. More than 40 pre-Islamic "Old Arabic" Thamudic "E" texts were collected, with a few Safaitic and Aramaic texts. The area from al-Muwaqqar in the north to al-Qaṭrāna in the south, and east of the Desert Highway approximately 30 km was our focus, but limitations of time permitted only several forays into this extensive region. Most of the finds were at

isolated cairns ("piles of stones") in the barren desert. The largest concentration was in the Wādī Janab, the Wādī Rujayla, and at Rujm ash-Shid. A few stray finds of Thamudic "E" texts were also recorded some 100 km south of 'Ammān just 5 km southeast of the Roman legionary camp of al-Lajjūn (courtesy of Bruce Routledge of the University of Pennsylvania). But the most spectacular finds were Thamudic "E" texts west of the desert highway at 'Urayniba and Mādabā. The latter are the longest texts ever discovered in Thamudic "E" each representing more than 200 characters. All of the other texts are laconic with typical graffiti information, mentioning only the names of men and women, their genealogies, tribes, and deities.

These newly discovered texts represent the first substantial corpus of such texts ever discovered in the 'Ammān-Mādabā region, demonstrating the script extended across the whole Transjordanian plateau as far north as 'Ammān. The script also bears similar paleographical and orthographical peculiarities with the typical Thamudic "E" texts, making the designation of the script certain. A few stray finds of Safaitic in the region suggest that this area was the intermingling ground for Arab tribes who utilized both scripts, even if Thamudic "E" was dominant.

Names of new tribes appear, like HDD [KhDD] and N'LT. The only deity invoked is the goddess LAT, but the name Dhushāra also appears in a theophoric personal name, indicating the Nabataean Arab deity of the royal house at Petra was worshipped by the tribes. Although female inscribers are rare in the texts, we found one stone from Wādī Janab bearing two texts written by different women and a third by the brother of one of the same women. The long genealogies of several texts are also quite exceptional for Thamudic "E." From a sociological perspective, the corpus raises many intriguing questions. What promoted this extensive lit-

eracy across the Arabian Peninsula among what is considered a primitive uncivilized culture of nomadic tribesmen? Plans are being made for a more extensive and intensive survey of the region.

Environmental Survey (Doug Schnurrenberger, Richard Watson and Russanne Low)

The al-Azraq Oasis of east Central Jordan is a unique environment which recent studies have shown to have been the focus of human use for over 200,000 years (Garrard, Price and Copeland 1977; Copeland and Hours 1989; Low 1996). During the summer of 1996 the authors worked together to locate suitable sites for extraction of pollen proxy evidence for Holocene paleoenvironmental and paleoclimatic change. Lacking typical pollen sample sites (lakes, bogs, etc.) in the vicinity of the Mādabā Plains, the team investigated areas outside the Mādabā Plains Project area. Late in the field season, the team traveled with Daoud al-Eisawi, Professor of Biology at the University of Jordan, to the newly developed pools at the al-Azraq Oasis Conservation Project in al-Azraq Shishān.

While Low and Schnurrenberger were collecting sediment samples for pollen analysis on the north side of the 'Ayn Soda pool, Watson conducted a reconnaissance of the western side of the pool and noted the presence of black chert flakes eroding out of a buried gravel stratum near water level. In an examination of a peninsula on the southern edge of the pool, which had been exposed by dropping water levels, Watson noted the presence of numerous bifaces and a proboscidean tooth that were apparently *in situ* within a gravel stratum directly overlying a green clay stratum. A brief survey of the areas surrounding the pool revealed an astonishing number of lithic artifacts and faunal remains. These materials were, of course, seriously displaced having been ex-

cavated from the area of the pool during bulldozer operations to enlarge it some 24 months earlier. An examination of the adjacent 'Ayn Qasaiya pool revealed a lower density, but distinct, artifact assemblage some 50 m to the north of the 'Ayn Soda pool.

The al-Azraq basin has long been known for its potential rich inventory of prehistoric cultural remains spanning the Lower Paleolithic and into the historic period when the area was occupied by the Romans and later political entities. Several Lower Paleolithic sites have been excavated or systematically collected within the basin (Rollefson 1980, 1983, 1984, Copeland and Hours 1989) and a team led by Garrard, of the Institute of Archaeology London, has excavated, or documented, a large number of Upper Paleolithic and later sites (Garrard 1994).

To date, only a limited amount of time has been spent collecting artifacts and faunal remains from the two newly discovered spring sites. However, in this short span of time a relatively large collection of Lower and Upper Paleolithic materials was recovered, pointing to the richness of the materials still awaiting excavation in undisturbed areas of the site. In total, some 772 tools and/or cores were collected, in addition to an as yet untallied quantity of debitage. Of the tools, some 412 bifaces and 279 flake tools were collected (Rollefson 1996). While analyses of these materials is in the early stages, the majority of the bifaces have been typologically dated to the Late and Final Acheulian (Rollefson n.d.). In addition, a more limited sample of materials dating to the Middle Paleolithic (Levantine Mousterian), Epipaleolithic (Kebaran or Geometric Kebaran) and the PPNB were collected.

An examination of the materials collected from 'Ayn Soda and 'Ayn Qasiya suggests the possibility of spatially and temporally differentiated occupations at the two springs. While materials from 'Ayn Soda

are overwhelmingly dominated by bifaces dating to the Late and Final Acheulian, the smaller sample of artifacts from 'Ayn Qasiya are representative of the later Middle Paleolithic (Levantine Mousterian). Only a single biface was recovered from the pool and area surrounding 'Ayn Qasiya. This suggests that the springs were active and/or utilized differentially through the Lower and Middle Paleolithic periods.

Previous research in the Lower Paleolithic of the al-Azraq Basin has led to the definition of the Late Acheulian of the al-Azraq facies (Copeland 1989); a distinctive assemblage of Lower Paleolithic materials characterized by unusually high frequencies of cleavers. The brief collection made during the 1996 field season corroborates this trend where the cleaver frequency is 63%, higher still than cleaver frequencies at other al-Azraq Late Acheulian sites (Rollefson n.d.). The variation in tool frequency as compared with other assemblages in the Levant is interpreted to reflect the focus on animal butchery associated with the marsh/lake environments of the Late Pleistocene al-Azraq basin.

Faunal materials recovered include remains of extinct varieties of camel, onager and elephant as well as horse, cow, pig, and goat/sheep. The disturbed context for the recovered materials does not allow precise association of these remains with the recovered artifactual materials. The precise age of these remains is at present unknown, but the relative position of the faunal remains and artifacts is suggestive of an association with the Late Acheulian materials.

Research initiated during a projected 1997 season will attempt to determine the chronology of lakes in the basin as well as their depth and extent. Since initial exploration began in the al-Azraq Basin, authors have cited the existence of a Pleistocene Lake al-Azraq, a permanent pluvial lake (e.g. Nelson 1973, van Liere 1961). These observations were based on the presence of

lacustrine clays and the then held belief that glacial periods resulted in the formation of pluvial lakes in arid basins. We now realize that the pluvial = glacial correlation is at best an oversimplification. We know that there is evidence for a lake of unknown dimensions post-dating or coeval with the Late Acheulian occupation of 'Ayn Soda and perhaps additional evidence for a lacustrine episode associated with the Mousterian occupation at 'Ayn Qasiya.

The depth and extent of the lake(s) as they varied through time are also critical for understanding the human occupation of the region. Human occupation would have been largely restricted to the shorelines which may have varied dramatically in space. We currently do not know if there was one large, or a series of small, isolated lakes such that human cultural remains might be found in the interior of the modern basin. Finally, as discussed below, we are very interested in locating portions of the basin which have received sediment continuously throughout the Quaternary, allowing the possibility of recovering a complete core, containing proxy evidence for paleoclimate and paleoecology.

Paleobotany (Russanne Low)

The Mādabā Plains Project has recovered palaeoethnobotanical remains from its excavations since 1984. Until recently, samples have been taken from middens, pits, hearths, jars, and other loci which either directly evidenced remains, or were considered likely repositories of botanical data. The analyses of botanical remains, dung fragments, and charcoal conducted at the Laboratory for Palaeoethnobotany at the Department of Anthropology, University of Minnesota, and at the Department of Vegetation History, University of Munich, are now being interpreted through comparison with systematically sampled deposits from the 1996 field seasons at al-'Umayri, Jalūl,

and Tall Mādabā.

The objective of the ethnobotanical sampling strategy of the 1996 field season was to provide comparative data for the analysis of carbonized seed assemblages of past seasons. A total of 142 samples of ca. 20 liter volume were processed this season from al-'Umayri and Jalūl, 98 of which contained carbonized botanical remains. Our research design directed the systematic sampling of a wide variety of loci, including "fill loci" to determine the presence and nature of "background" carbonized seed deposition. Tim Harrison at Tall Mādabā has generously participated in this effort by standardizing his sampling procedures with those of the Mādabā Plains Project, so that a continuous diachronic sequence of botanical remains from a stratified garbage dump at Tall Mādabā can be included in the analysis.

A statistical procedure used by palynologists to describe the degree of similarity exhibited between fossil assemblages is being modified for use with carbonized seed remains. These analyses will provide the basis for our efforts to isolate and define signature assemblages for the different human activity areas represented on the archaeological landscape, as well as archaeologically defined loci such as "fill" or "pit" deposits.

It is anticipated that the analysis will serve as a theoretical contribution to ongoing discussions about the "meaning" of carbonized seed assemblages from *tall* sites. An understanding of the depositional and taphonomic processes that ultimately characterize the recovered assemblages will enable us to better understand the dietary importance of the wild plants and cultigens represented in the fossil assemblage, to both humans and their animal domesticates.

Project Rainkeep

During the last season, several ancient cisterns were replastered as an experiment to see if ancient water technologies could be used in modern situations. Follow-up visits

to the cisterns were somewhat disappointing in that the plaster/cement mixture apparently failed the test and was cracking in various places. However, before the cracking, the cisterns had held good water for many months.

Site Preservation at Tall Ḥisbān

Directed by LaBianca, a small team worked at preparing Tall Ḥisbān for tourism by constructing a path circling the site and accessing the most important features; building viewing platforms at strategic locations; setting up explanatory signs at the viewing platforms and along the path; printing a brochure so that visitors can tour the site at their own leisure; and providing local and national guides with information about the site.

A small-scale excavation took place at one of the small towers at the southeastern corner of the acropolis. A small room was cleared inside the tower and produced excellently preserved sherds from the Mamluk period, the last period in which the site was occupied. At this time the acropolis enclosure probably served as a small caravansary.

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