

TELL NIMRIN PRELIMINARY REPORT ON THE 1993 SEASON

by

James W. Flanagan, David W. McCreery and Khair N. Yassine

with contributions by

Paula M. McNutt, Deidre Dempsey, Jennifer C. Ross and Peter Warnock

Introduction

The third season of excavation at Tell Nimrin was conducted from May 18 through July 6, 1993, under the direction of James W. Flanagan, Case Western Reserve University, David W. McCreery, Willamette University, and Khair N. Yassine, University of Jordan. Mr. Sa'd Hadidi, Inspector of the Salt District, graciously served as Department of Antiquities representative. Twenty-three additional field and specialist staff from Jordan and the U.S. participated. Lodging was kindly arranged at the Deir 'Alla Archaeological Station by Dr. Zeidan Kafafi, Director of Yarmouk University's Institute of Archaeology and Anthropology.

The Tell Nimrin Project is a collaborative venture sponsored by the directors' universities. Funding for the 1993 season came from those institutions as well as major grants and donations from the National Endowment for the Humanities (grant #RK-20043-93), the Catholic Biblical Association of America, and the Ohio State Board of Regents. Additional support was provided by the Kyle-Kelso Foundation and the institutions of staff members: Canisius College, LeMoyne College, and the University of Montana. Neutron Activation Analysis (NAA) was done at the Oregon State University Radiation Center with funding from the U.S. Department of Energy.

Tell Nimrin is a town site situated on the eastern edge of modern Shuna Junubiyah (South Shuna) along the east-west road that ascends from Shuna to Salt *via* Wadi Shu'aib. It is located at latitude 30° 54' 00"

and longitude 35° 37' 30", Universal Transverse Mercator Grid, Zone 37, International Spheroid Standard Reference 36 RYA 483326, and Palestine Grid, Clarke 1880 Spheroid, Reference 2094E/1451N. In summer excavation seasons in 1989 and 1990 the earliest occupation was dated to the transitional Early Bronze IV/Middle Bronze I period, ca. 2000 B.C. In those seasons, excavation proceeded in areas along the roadcut that constitutes the tell's current northern boundary, on the top of the tell above the roadcut, and on the western slope where later occupation levels that had been removed from the top of the mound could be found *in situ*.

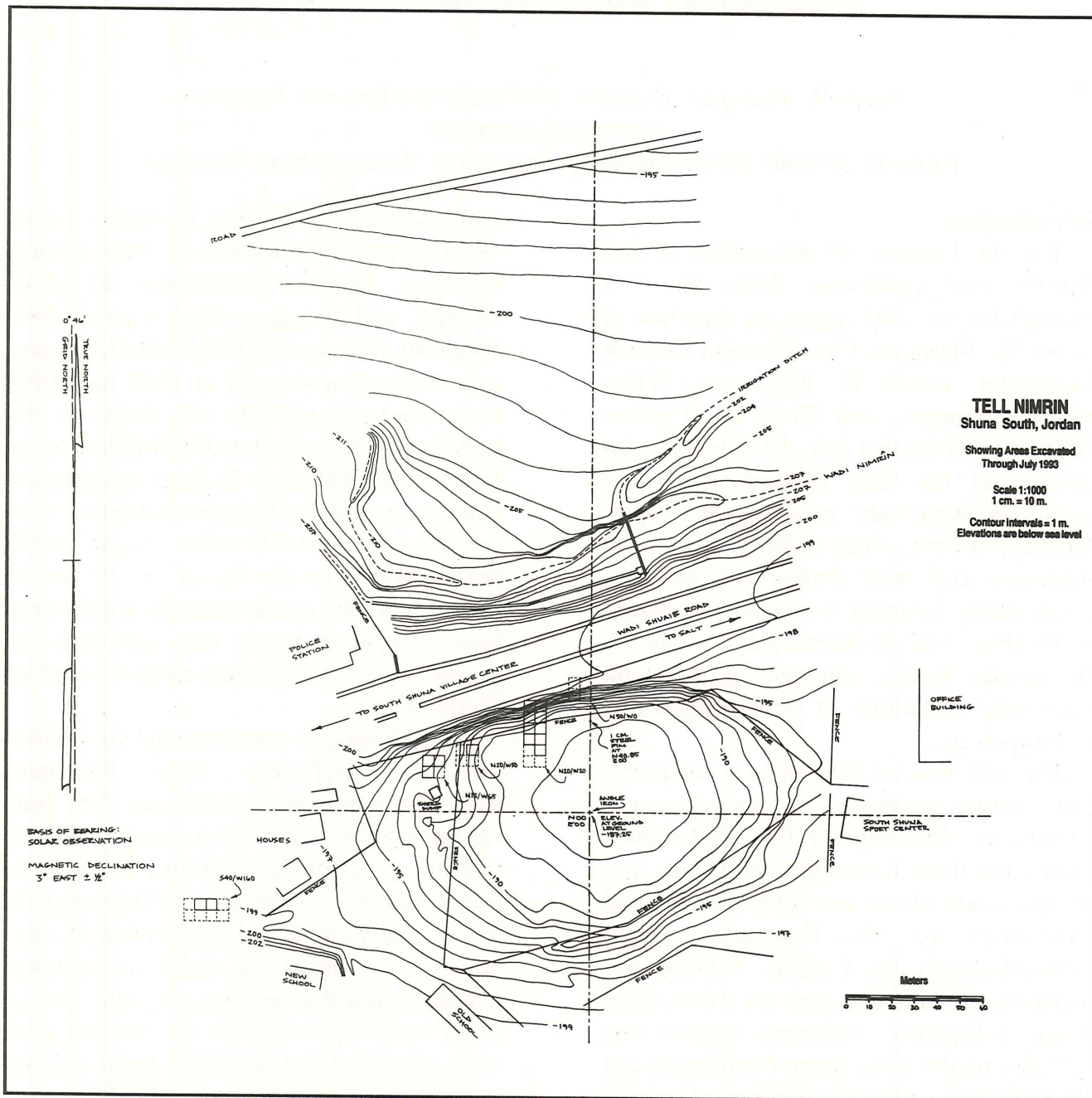
As indicated in previous reports (Flanagan and McCreery 1990; Flanagan, McCreery and Yassine 1992), the Tell Nimrin excavation began as a salvage project with the goals of documenting the occupational sequence at the site and focusing on the socioeconomic and environmental history of the region. In order to facilitate computer-assisted analysis of data, the 5 meter excavation squares on the site grid were identified by the single point nearest to the central reference point 00/00 on top of the tell.¹

1993 EXCAVATION

In 1993, six new squares were excavated (N30/W20, N35/W25, N40/W25, N25/W50, S40/W165, and S40/W170) and work continued in three squares opened in 1990 (N25/W20, N35/W20, N40/W20; see Fig. 1). Each was carefully selected in order to investigate different historical periods.

1. Thus the designation N40/W20 refers to the five meter square whose southeast corner (i.e. the

point closest to the central reference point) is located 40 m north and 20 m west of 00/00.



1. Topographic map of the site.

Squares S40/W165 and S40/W170, located near the western edge of the site, were intended to document the western expansion of the village during the late classical period. Excavation was restricted to two 2.0m x 2.5m soundings adjacent to the South Shuna Elementary School constructed in the 1970s. Plans to expand the school added a sense of urgency for examining the western boundaries of the site before further damage occurs.

Square N25/W50 was placed on the western crest of the mound. The section exposed in the road cut indicated that excavation in this square might reveal early Iron and Middle Bronze Age fortifications. The square was also chosen to examine the Byzantine and Islamic period occupation in this area and to determine the extent of damage caused by recent bulldozing. Aerial photographs taken in 1978 indicated that this is one of the least disturbed portions of

the mound and thus holds promise for producing *in situ* material from virtually all periods represented at the site.

On top of the mound, three new squares N30/W25, N35/W25, and N45/W20 were opened in order to increase the horizontal exposure of Persian and Iron II strata and structures identified in earlier seasons. Work in N25/W20 was restricted to the removal of the balk separating N25/W20 and N30/W20 where a Roman pit cut into Iron II strata had been identified in previous seasons.

A deep 1.5m x 4.5m probe along the east section in N35/W20 focused on tenth-eighth century B.C. strata and architectural elements. The trench was excavated to a depth of 1.5m at the southern end and 3.2m at the northern end.

The goal in N40/W20 was to search for evidence of Late Bronze Age occupation (or a Late Bronze gap), and for material associated with the monumental Middle Bronze walls identified in 1989. We hoped to excavate to the bottom of walls L143 N-S and L143 E-W in search of surfaces that would provide secure dating for the walls and shed light on their function. Based on pottery recovered from foundation trenches in N45/W20 in 1990, the date of L143 E-W is believed to be Middle Bronze II (17th-16th century B.C.). Unfortunately the bulldozing that accompanied the widening of the highway in 1980 removed all the surfaces associated with L143 E-W on the north side of the wall. Hence, we hoped that intact surfaces might be found on the south side. As a safety precaution, the 1993 excavation of N40/W20 was confined to an L-shaped trench, 1-1.5m wide.

The following is a brief period by period description of the results of the 1993 season.

The Islamic Periods

When Nelson Glueck visited Tell Nim-

rin over 50 years ago he noted the presence of numerous Islamic period sherds (esp. Mamluk) as well as an Ottoman period cemetery (Glueck 1945-49: 367-368). No trace of the cemetery remains today. During their 1976 survey of the Jordan Valley, Ibrahim, Sauer and Yassine (1988: 192) reported collecting Umayyad, Abbasid, and Ayyubid/Mamluk ceramics. The intensive surface survey of the mound conducted in 1989 by the current project directors yielded significant quantities of Umayyad and Ayyubid/Mamluk pottery along with small quantities from the Abbasid, Fatimid, and Ottoman periods (Flanagan and McCreery 1990; Dornemann 1990: 153-156).

Mamluk

The 1990 excavation provided stratified evidence of Ayyubid/Mamluk and Umayyad occupation in N15/W70, N20/W70, and N20/W65 in the form of *ṭawabeen*, pits, surfaces, and walls (Flanagan, McCreery and Yassine 1992: 102-105). In 1993, N25/W50 produced similar deposits. Directly below the disturbed surface layers (L1, L2, and L3), a late Mamluk *ṭabun* (L4) and associated ash (L7), a living surface (L5), and a stone alignment (L9) were encountered. These are evidence of domestic occupation in the late Mamluk period. They rest upon fill layers (L16, L17, L18, and L19) behind (east of) what appears to be a terrace wall (L10) of early Mamluk construction. A large stone-lined pit (L20) near the west section also dates to the early Mamluk period, as do stone wall L13 in the north section, a stone platform (L21), and a kiln (L12).

Probes S40/W165 and S40/W170 also produced significant Mamluk deposits. No Mamluk structures were found, but the large number of sherds in the upper soil layers (L1-L9 in S40/W165 and L1-L3 in S40/W170) supports the suggestion that the Mamluk village extended at least this far

west and probably further (Fig. 2). Because the Mamluk occupation material is so close to the modern surface of the tell, it has been disturbed over most of the site. It appears that the Mamluk and Ottoman strata have been virtually obliterated from the top and northern and eastern slopes of the site, but that intact Mamluk deposits lie immediately below the surface on the western and southern slopes.

Umayyad

Below the Mamluk loci, sealed, horizontal stratigraphy from the Umayyad era was found in both S40/W165 (L10-L17) and S40/W170 (L4-L9). There was very little evidence of ancient architecture, although partial stone alignments that might have been walls of small domestic structures were found in both squares. The pottery from the lowest levels consisted of a mixture of Roman, Byzantine, and Umayyad. Umayyad sherds dominated. The Umayyad structures were set just above the "bedrock" alluvial gravels in this section of the site at an elevation of approximately -204.60m. We conclude preliminarily that the Umayyad settlement extended further west than did the Roman and Byzantine villages, but the western boundary of the site in the Roman and Byzantine eras must have been nearby.

The lowest stratum encountered in N25/W50 during 1993 appears to be early Umayyad. Although there are relatively large quantities of Roman and Byzantine ceramics in this stratum, the presence of Umayyad pottery rules out a pre-Islamic date. The major features of this level are stone alignments L56, L57, and L64 (Fig. 3). They have not been excavated down to their original surfaces. It is possible that the loci are Byzantine walls that were reused in the early Umayyad period, in which case compact soil layers L62 and L65 may prove to be the Umayyad living surfaces associat-

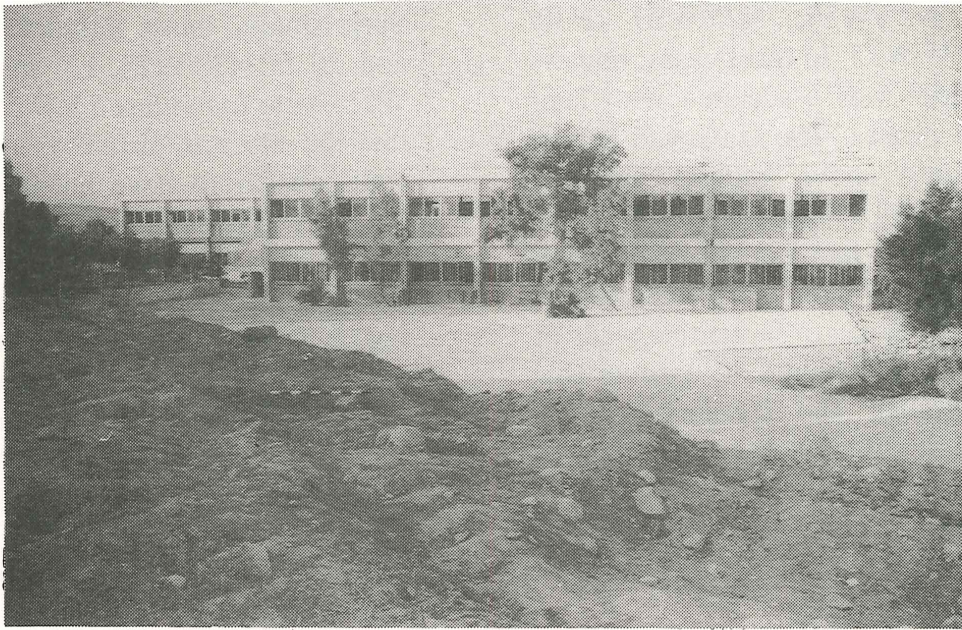
ed with them.

Sandwiched between the Umayyad and Mamluk strata in N25/W50 was a stratum that consisted of poorly preserved *tawabeen* (L38, L40, and L50), evidence of pitting activity (L42, L44, and L49), and surfaces that were hardly detectable. A C-14 sample taken from pit L49 yielded a calibrated intercept date of A.D. 1030. with a 2-sigma calibrated result of A.D. 880-1240. Both the stratigraphy and C-14 results indicate an Abbasid/Fatimid date for this stratum. These were the first stratified middle Islamic deposits to be found at Tell Nimrin.

Paleobotany

None of the Islamic era loci excavated in 1993 produced large quantities of plant remains. Nevertheless, a variety of cultigens are represented. Barley and bread wheat (*Triticum aestivum*) are the most frequently found cultigens from both early and late Islamic contexts. *Zizyphus*, lentil, olive, and almond are attested from the Mamluk period as are a variety of wild grasses and legumes. Historical references and the ubiquitous sugar pots found in Mamluk levels indicate that sugar cane was also an important crop during the Mamluk period. The olives could have been grown locally or imported from the eastern or western highlands. The almonds must have been imported from the highlands.

The Umayyad plant assemblage is very similar to that of the Mamluk period. Few legumes were present in the Umayyad flotation samples but they did yield grape, date, and fig, not attested in the late Islamic deposits. This suggests that while wheat and barley were staples in both the early and late Islamic periods, fruit cultivation was more common during the Umayyad period. This hypothesis can be tested by future excavation but is tenuous given the limited exposure of Islamic levels attained



2. S40/W165 before excavation with the school in the background.



3. General view of the Umayyad phase in N25/W50.

up to this point and the fact that both legumes and fruits are seldom exposed to the conditions necessary for carbonization to occur.

Greater horizontal exposure is needed before the village plan during the Islamic era can be described. It is safe to conclude, however, that there was extensive occupation of at least the western slope of the

mound during both the Umayyad and Ayyubid/Mamluk periods. The domestic architecture and paleobotanical assemblage suggest small but prosperous farming villages in the early and late Islamic periods.

Roman and Byzantine Periods

A large amount of Roman and Byzantine pottery was recovered from S40/W165,

S40/W170, N25/W50, N25/W20, N30/W25, and N35/W25. In most cases, however, the material was associated with later occupational phases. The Umayyad deposits immediately above bedrock in S40/W165 (L16 and L17) and S40/W170 (L7 and L8) contained late Roman and Byzantine sherds mixed with the Umayyad ceramics, but no Roman or Byzantine walls or surfaces were encountered. It appears that either the Roman and Byzantine towns were located slightly further to the east or that the Umayyad occupation destroyed the earlier Roman and Byzantine living surfaces.

Byzantine

Similar information was found in N25/W50. By the end of the excavation season, increasing quantities of Roman and Byzantine pottery were appearing, but the presence of Umayyad materials indicated that the Byzantine stratum had not yet been reached. This was somewhat surprising because excavation along the east section of the square had reached a depth of over 3m. All indications suggested that we were near the Byzantine horizon and that this square may contain some of the best preserved Roman and Byzantine strata at Tell Nimrin. The depth of the Byzantine deposits in N25/W50 confirmed the first season's conclusion that a great deal of soil has been bulldozed off the top of the tell (Flanagan and McCreery 1990: 145, 148). Although no Iron or Bronze Age material has yet been uncovered in N25/W50, we remain convinced that it will emerge with further excavation which may produce evidence for the Iron Age and Middle Bronze Age fortifications.

Because of extensive bulldozing on top of the tell, we did not expect to find much *in situ* post-Roman material in N30/W25 and N35/W25. The latest previously found in this area was a Roman pit in N25/W20.

Surprisingly, intact Byzantine walls (L15 and 36 in N30/W25, L7 and L8 in N35/W25) were found just a few centimeters below the modern surface (see Fig. 4). The walls appear to have been constructed in the early Byzantine period and abandoned by the sixth century A.D. Evidence for this is, on the one hand, late Byzantine pits (L2 and L10 in N30/25), one of which destroyed the upper courses of walls L36 and L15, and on the other hand, the gold coin hoard (RO1-39) found above the Byzantine floor L24 associated with walls L7 and L8 in N35/W25 (Fig. 5).

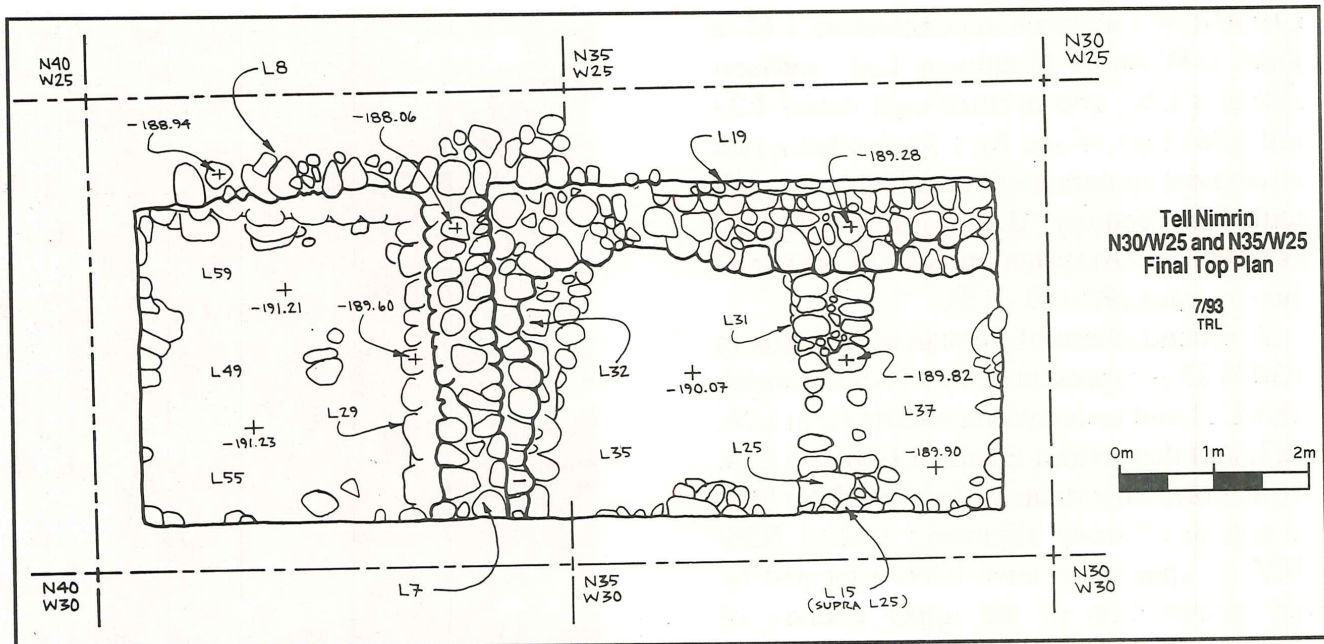
The discovery of intact Byzantine structures on top of the tell demands a revision of our earlier conclusion that virtually all post-Roman strata had been removed from the summit in recent years. There is no question that most of the Byzantine and Islamic levels have been destroyed, but apparently the bulldozers stopped near the northern edge of this part of the tell. It is likely, therefore, that additional Byzantine deposits might be found along the northern crest of the mound immediately west of N35/W25. It appears unlikely that other Byzantine layers further south on the summit have survived.

Paleobotany

Relatively little botanical material was retrieved from the Byzantine layers in N30/W25 and N35/W25. This may be because the structures there appear to be public rather than domestic. Nevertheless, small quantities of bread wheat, barley, olive, lentil, and *Zizyphus* were recovered by flotation. A pit (L42 in N35/W25) yielded date and *Zizyphus*, the only Roman period crops found in the 1993 season.

Roman

Evidence of Roman occupation below the Byzantine levels in N30/W25 and N35/W25 is poorly preserved. The top levels of



4. Final top plan of N30/W25 and N35/W25.



5. Intersection of walls L7 and L8 with plaster surface L24 in N35/W25.

L18 and L24 in N30/W20 appear to be a Roman surface associated with walls L25 in N30/W20 and L29 and the upper courses of L32 in N35/W25. The Roman stratum in these two squares appears to have been badly damaged by the subsequent Byzantine occupation.

Persian Period

The Persian period is well represented in N30/W25 and N35/W25 where two phases of occupation are discernible. The earliest phase consists of the lowest courses of the SE-NW oriented stone wall L32 in N30/W25, and in N30/W25 the N-S stone wall

L19 and its mudbrick superstructure L11, a short E-W stone alignment L31, surfaces L30 and L34, and occupational debris L33 and L28 (Figs. 4 and 6). L33 yielded a rich assortment of ceramics including two small sixth-fifth century B.C. jars (RO99 and RO100), an Assyrian juglet (RO98), and three ostraca (RO101-103).

A second phase of Persian occupation in N30/W25 is represented by a N-S mudbrick wall L23 and occupational debris from L26, L27, and the bottom levels of L18 and L24. At its northern extent, L23 covered the lower course of stone alignment L32 in N35/W25. It appears to have been truncated by the construction of the upper courses of L32 in the Roman period. At its southern extent, L23 may have cornered to the east over L31, but if so it was badly damaged when the stone wall L25 was built on top of it.

No clear living surface was detected in association with L23, but the bottom levels (from -189.64m to -189.78m) of L18 and L24 contained occupational debris contemporary with the mudbrick wall. In addition to Persian period ceramics, L18 yielded an ostrakon (RO87) and L24 two ostraca (RO85 and RO86). There is no evidence for abandonment between the two phases of Persian occupation in N30/W20. The stratigraphy, pottery, and ostraca all suggest that the second phase followed immediately after the first and should probably be dated to the fourth century B.C.

North of wall L32 and L7 in N35/W25 there are no Persian period structures or clearly defined surfaces. Any Persian surfaces that may have been in this square have been destroyed by the later Roman and Byzantine inhabitants who dug into the Iron II (early eighth century) stratum.

Iron Age

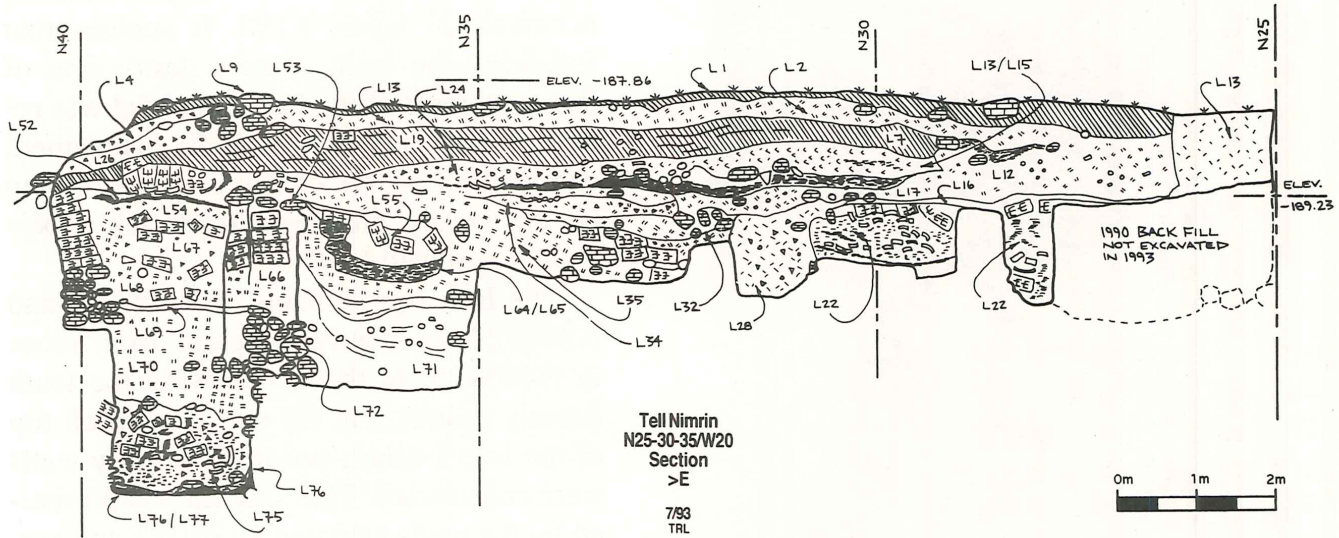
Stratigraphy

In 1993, additional evidence for the Iron

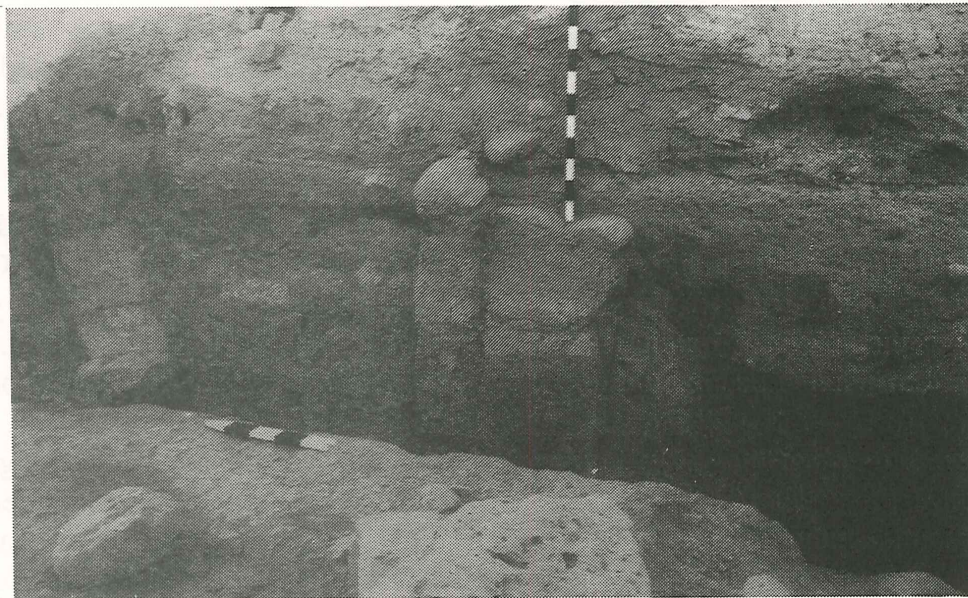


6. N30/W25 final photograph showing walls L19, L31, and L32.

Age sequence came primarily from squares N40/W20, N40/W25, and N35/W20 (for N35/W20 see Figs. 7 and 8). The earliest occupational levels uncovered in N35/W20 consisted of two E-W stone walls (one in the balk between N35/W20 and N40/W20 [L78] and L72) with well preserved plaster facing. A third stone wall with plaster facing (L79) was detected in the west section of the trench. This wall is oriented N-S and is bonded with wall L72 and the wall in the north balk (L78). Surface L77 was associated with these walls as was a one meter deep layer of destruction debris (L75; Fig. 9). The elevations and pottery readings indicate that these loci are contemporary with the late tenth century B.C. stratum in N40/W20.



7. East section of N25/W20, N30/W20, and N35/W20 (from right to left).

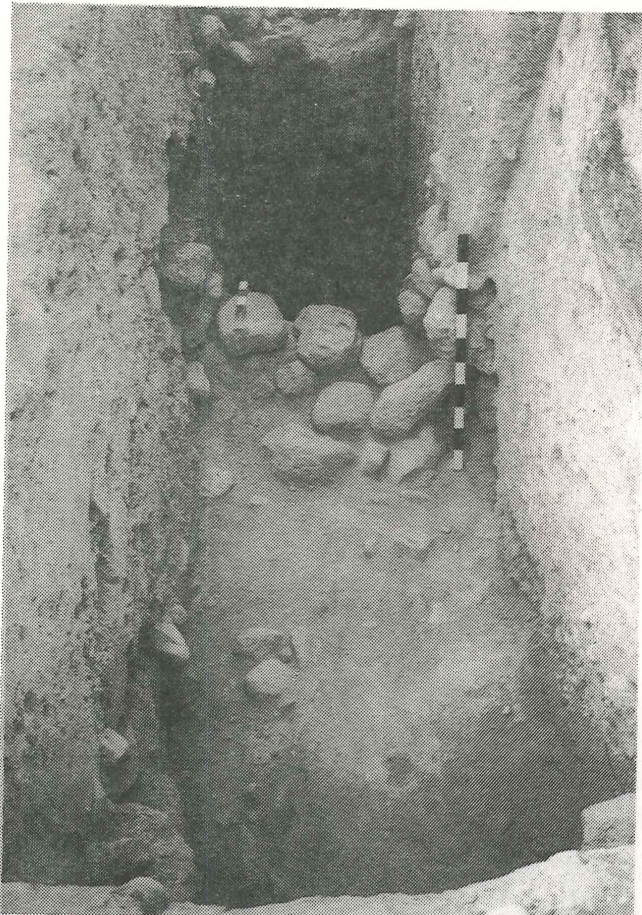


8. N35/W20 east section.

C-14 analysis of charred wooden beams from L75 produced calibrated intercept dates of 1220 B.C. and 850 B.C. with 2-sigma calibrated ranges of 1420-930 B.C. and 1010-800 B.C. The dates are not as tight as might be hoped, but they are within reason. The older date may be due to "the old wood effect." Judging from a series of C-14 dates from short-lived samples in the corresponding Iron I destruction layers in N40/W20, the Iron I destruction (L75) in

N35/W20 should be dated to the late tenth century B.C.

Tenth century occupation is also represented in the lowest levels reached in N40/W25. Stone wall L189 and stone platform L206 were constructed in the tenth century and, like the Iron I walls in N40/W20 (L108 and L125), are situated immediately on top of the large Middle Bronze walls L193 (L143 in N40/W20). Soil layer L205, associated with the stone platform L206,



9. N35/W20 final photograph showing depth of excavation.

contained pure late Iron I pottery (Figs. 10, 11 and 12).

It is somewhat surprising that N40/W25 contained very little of the ashy tenth century destruction debris that is so deep in the adjacent square N40/W20. The only exception is L188, a burn layer immediately east of wall L189 that yielded a wide variety of cultigens with a calibrated intercept C-14 date of 940 B.C. and a calibrated 2-sigma result of 1130-830 B.C. L188 is clearly associated with the late tenth century destruction found in N40/W20. West of wall L189 and resting directly on top of platform L206

were an Iron II wall L197 and associated occupational layers L198. It appears that following the tenth century destruction of this area, most of the Iron I material was removed, wall L189 was partially dismantled, and wall L197 was constructed. L174 may be the poorly preserved mudbrick superstructure of wall L197.

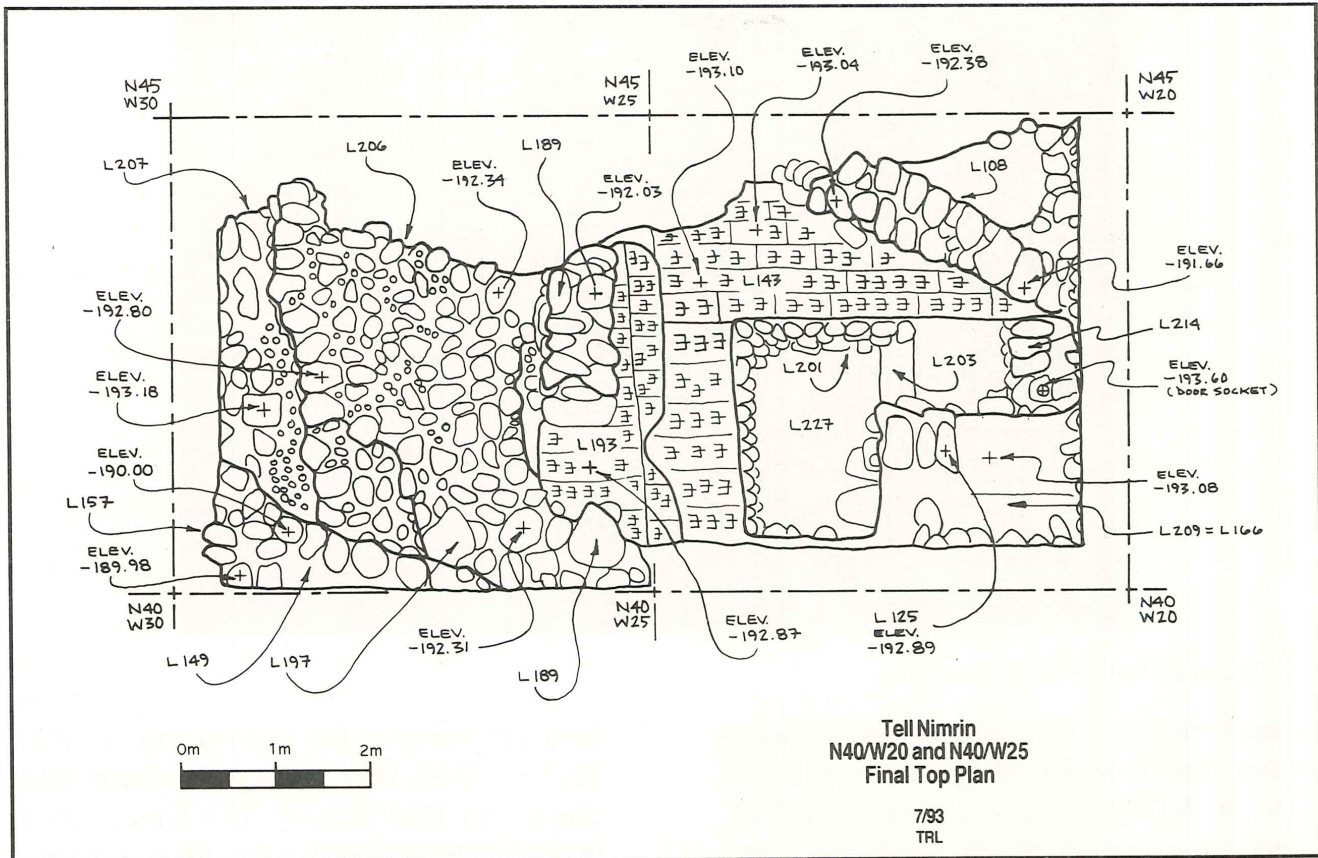
The Iron Age remains in N40/W20 and N35/W20 were quite different from those in N40/W25. In them, following the tenth century destruction, fill was thrown on top of the Iron I debris and ninth century walls were constructed. This stratum is represented by the walls L66 and L180/181 and surface L68 in N35/W20 (see Figs. 7 and 8) and wall L110 and surface L106/111 in N40/W20. In N25/W20 the ninth century occupational phase is represented by mudbrick walls L15 and L28 and by walls L36 and L37 in N30/W20.

The later part of the Iron Age sequence is relatively clear in general outline but is difficult to date with precision. One C-14 sample from L15 in N30/W20 yielded a calibrated intercept date of 770 B.C. with a 2-sigma range of 840-400 B.C. For the purposes of this article, the 770 B.C. date will be used as a benchmark for dating the final three phases of the Iron Age sequence.²

If the C-14 result is trusted, it would indicate a mid-eighth century date for the destruction represented by L17, L13, and L15 in N30/W20, and L36 in N35/W20. This is the level that contained the decorated krater found in 1990 that was tentatively dated to the mid-seventh century B.C. This mid- to late eighth century destruction covered the entire area of squares N30/W20 and N35/W20, spelling an end to this occupational era, at least in this part of the site. The

2. The following dates should not be considered as secure but are presented as a hypothesis. Additional C-14 samples and careful scrutiny of the stratigraphy and ceramics will no doubt provide correctives. Since the C-14 sample was taken

from a fairly large chunk of charcoal, a younger date of 750 B.C. or even 700 B.C. would be very reasonable for the stratum from which this sample came.



10. Final top plan of N40/W20 and N40/W25.

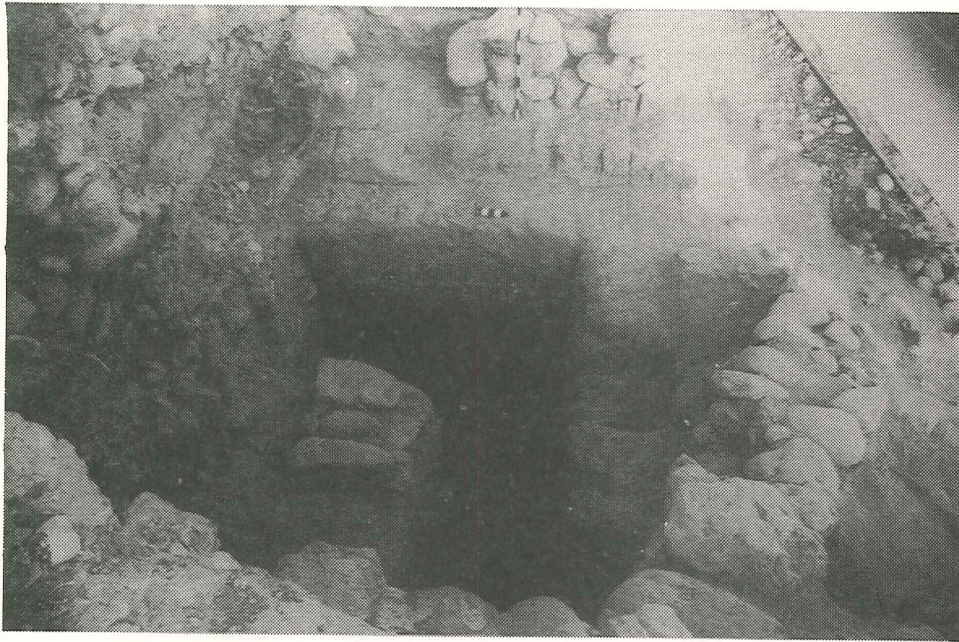


11. View of N40/W25 from above.

tawabeen found in N35/W25 (L31 and L36) and N40/W25 (L202 and L165) appear to be slightly earlier than the mid- to

late eighth century occupation and destruction found in N30/W20 and N35/W20.

Following the destruction there appears



12. View of N40/W20 from above.

to have been an extended period of abandonment as is indicated by the wash layers L19 in N35/W20 and L7 in N30/W20. Whereas an earlier report suggested a late seventh/early sixth century date for this phase (Flanagan, McCreery and Yassine 1992: 95), it now seems possible that these layers were deposited over a 150 year period from the late eighth through the sixth centuries B.C. It should be emphasized that this phase of abandonment in the late Iron II may well have been confined to a relatively small portion of the site. Soil layers similar to L19 and L7 in N35/W20 and N30/W20 have been found in N35/W25, but it remains to be seen whether these layers correspond to the late Iron II deposits to the east.

Below the mid-eighth century destruction in N35/W20 and N30/W20 there is evidence of extensive pitting that damaged ninth century walls (e.g., L36 and L37 in N30/W20). The pits are immediately overlaid by the mid-eighth century occupational surfaces. It seems reasonable, therefore, that the pits were dug in the early eighth century and almost immediately covered by the later eighth century occupation. The

large pit visible in the south section of N40/W25 (L172/L195) appears to have been dug at this time as well. The *tabun* visible in the south section (L202) and its associated surfaces as well as *tabun* L165 post-date the pitting activity and predate the later eighth century occupation found in N30/W20 and N35/W20.

In summary, the Iron Age sequence at Tell Nimrin can be described as consisting of five major phases. These are: 1) and 2) clear surfaces and walls for the late tenth and ninth century strata; 3) a series of large pits dug in the early eighth century followed by the construction of several *ṭawabeen*; 4) mid-eighth century surfaces and destruction debris; and 5) a period of abandonment from the late eighth-sixth centuries B.C. The sequence is clear but the absolute dates are subject to review. A downward revision of 50-100 years for the last three phases is not out of the question.

Paleobotany

The Iron Age strata produced good botanical assemblages. The late tenth century destruction layer in N40/W20 was particularly rich in botanical remains. It appears

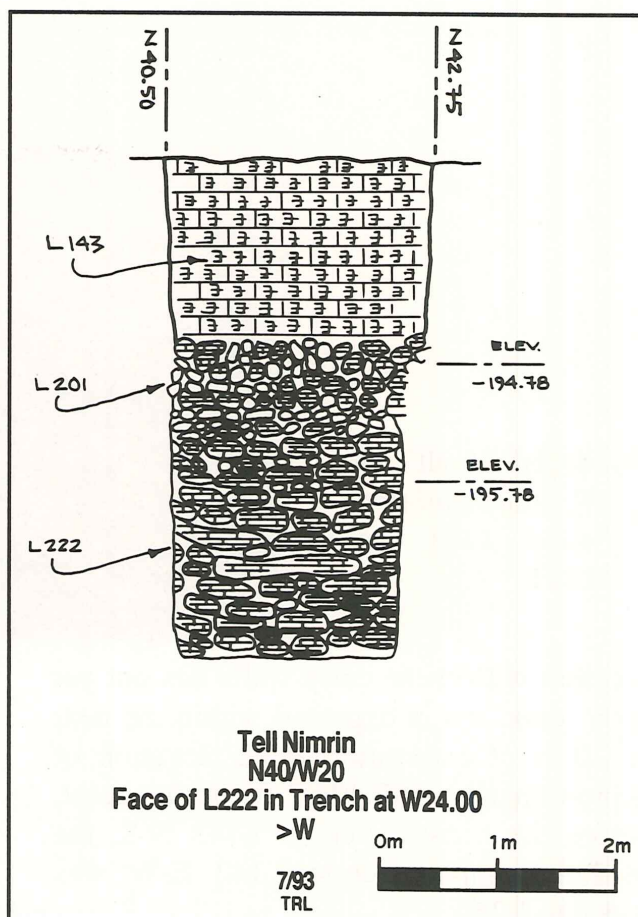
that this area was a storeroom for food stuffs in the late Iron I. Cultigens attested from Iron Age contexts up to this point include: bread wheat, barley, flax, lentil, pea, chickpea, olive, grape, fig, and pomegranate. Wild mallow and *Zizyphus* were also collected on a regular basis. The flax is the large-seed variety indicating that it was grown under irrigation. NAA is currently being conducted on the paleobotanical assemblage in an attempt to determine which crops were grown locally. It is highly likely that most of the cultigens were grown under irrigation in the region of Tell Nimrin from the Middle Bronze Age onward. Problems associated with prolonged periods of irrigation such as increased soil salinity, should be detected by the NAA as the analysis continues.

Middle Bronze Age

The only square that produced stratified Middle Bronze material during the 1993 season was N40/W20. By the end of the 1993 season, excavation there had reached an elevation of -197.25m. Although the foundational courses of the Middle Bronze walls were not reached and no well defined living surfaces were found, it is possible at this time to identify at least two phases of wall construction and use.

Mudbrick wall L143 N-S consists of ten courses of mudbrick resting on six courses of large cobbles (L201 N-S) which in turn rests on ten courses of small boulders (L222; see Figs. 13 and 14). The overall height of L143 N-S, L201 N-S, and L222 is in excess of 4m and it appears that the bottom of L222 has not been reached. The mudbrick of L143 N-S extends under the Iron I stone pavement L206 in N40/W25, so the precise width of L143 N-S is impossible to determine at this time. It appears, however, to be more than 3m wide.

The depth of the stones underlying L143 E-W (L230) was impossible to determine

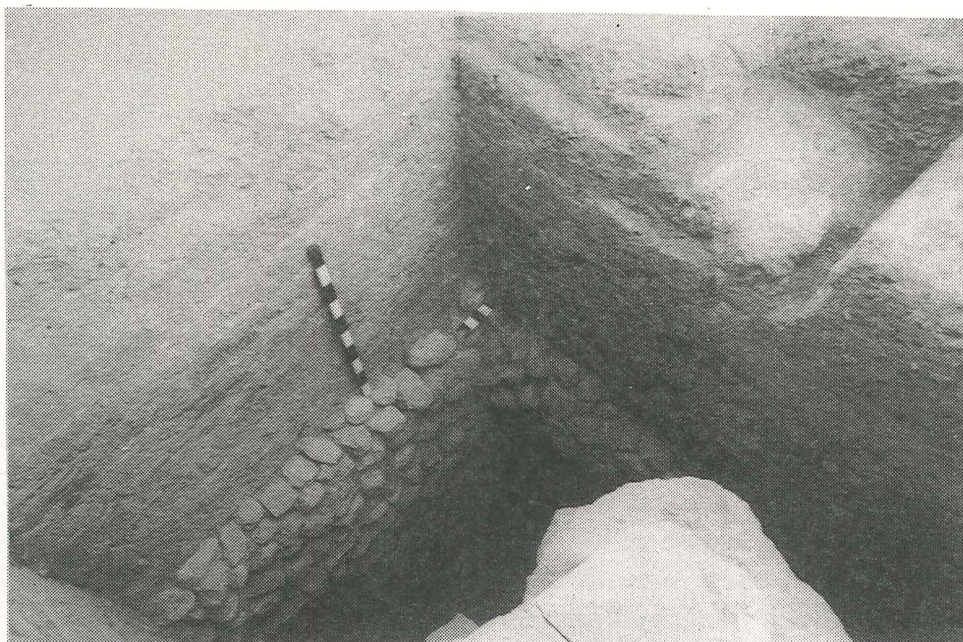


13. Face of L222 in trench at W24 in N40/W20.

because the stones of L201 E-W and the soil layers (L117, L118, L119, L224, and L225) beneath them obscured the face of the stone wall (see Fig. 15). The large cobbles of L201 E-W were clearly built up against the mudbrick wall L143 E-W rather than underlying the mudbrick as is the case with L143 N-S and L201 N-S. Viewed from the north it is clear that the stone wall L230 has at least nine courses and is approximately 2m high, and that L143 E-W sits directly on top of the small boulders of L230 at an elevation of -195.40m. This elevation corresponds with the bottom of the large cobbles L201 E-W, providing the key for distinguishing the two major phases of construction and use of these Middle Bronze Age walls.

The first phase is represented by the construction of the two stone walls oriented E-W (L230) and N-S (L222). A surface as-

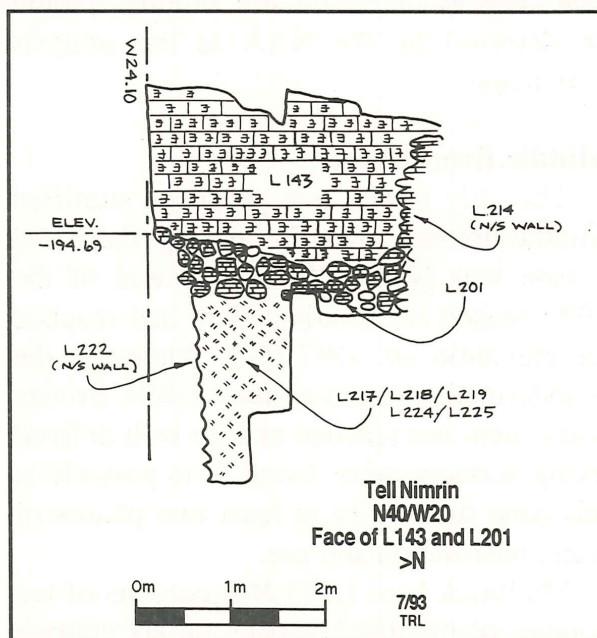
14. Mudbrick wall L143
N-S on top of stone
walls L201 and
L222.



sociated with these early walls has not yet been found but is expected within the next 15-20cm of excavation at an elevation of approximately -197.40m. At some point, before the construction of L143 N-S, the mudbrick superstructure L143 E-W was added to L230.

At the beginning of the second phase, soil was filled in against walls L222 and L230 to a level of approximately -195.40m. The six courses of L201 N-S were then built on top of L222 and the mudbrick wall L143 N-S superimposed on L201 N-S. At the same time, L201 E-W was built up against L143 E-W as was the N-S stone wall L214. Poorly preserved surfaces L203 and L217 are associated with this second phase of building activity.

The pottery suggests that both building phases are MBII. It seems likely that the first construction phase dates to late MBIIB. and the second phase to MBIIC. All of the debris associated with L143 N-S and L143 E-W, up to the top of these mudbrick walls, contains pure Middle Bronze II ceramics. We conclude that by the time the tenth century people arrived and built their walls on top of L143 N-S and L143 E-W, it was not necessary to do any "filling" in this area. The function of these massive walls is



15. Face of L143 and L201 in N40/W20.

still unknown. They clearly represent some form of monumental public architecture and are probably parts of a palace, temple, or Middle Bronze fortification system.

Very few botanical specimens were recovered from the Middle Bronze II stratum. The only cultigens were a few grains of barley and some lentils. This may be because this is a public rather than a domestic structure. Another factor might be that we are excavating the exterior of the building. The fill soil layers at the end of phase I/

beginning of phase II along with the lack of well defined living surfaces suggest that at least in the latest phase of this structure(s), the interior space lay to the north and/or the west.

The Middle Bronze occupation appears to have ended abruptly sometime in the 16th or early 15th century B.C., but up to this point, there is no clear evidence for a violent destruction of the Middle Bronze city. It may be that political and/or environmental factors led to the abandonment of the site. The village recovered quite quickly from its destruction at the end of the tenth century B.C. The eighth century destruction was also followed by a recovery in the late Persian period. The 500 year gap of occupation from ca. 1500 to 1000 B.C. must be due to significant sociopolitical and/or environmental phenomena that remain to be explained.

C-14 Analysis

To date, fifteen C-14 samples from the 1990 and 1993 excavations have been processed. The analyses were conducted by Beta Analytic Inc. in Miami, Florida. The calibrated dates listed in Table 1 were arrived at using the Pretoria Calibration Pro-

Table 1. Summary of Carbon 14 analyses.

<i>Sample#</i>	<i>Provenance</i>	<i>C-14 Date</i>	<i>Intercept Date</i>	<i>2-sigma Range</i>
1.	N45/W20 L 58 B455	3590±70BP	1947BC	2140-1750BC
2.	N35/W20 L 75 B311	2990±90BP	1220BC	1420- 930BC
3.	N25/W20 L 40 B136	2950±70BP	1180BC	1400- 942BC
4.	N25/W20 L 22 B113	2920±70BP	1110BC	1310- 910BC
5.	N40/W20 L120 B49	2840±70BP	990BC	1200-830BC
6.	N40/W25 L188 B300	2820±60BP	940BC	1130-830BC
7.	N40/W20 L133 B339	2790±70BP	926BC	1155-810BC
8.	N40/W20 L 88 B119	2780±50BP	921BC	1050-830BC
9.	N40/W20 L139 B131	2800±50BP	920BC	1040- 830BC
10.	N40/W20 L136 B427	2760±60BP	900BC	1020-810BC
11.	N35/W20 L 73 B299	2750±80BP	890BC	1070-790BC
12.	N35/W20 L 75 B354	2740±60BP	850BC	1010- 800BC
13.	N25/W20 L 25 B348	2630±70BP	807BC	920- 760BC
14.	N30/W20 L 15 B107	2520±90BP	770BC	840- 400BC
15.	N25/W50 L 49 B347	990±90BP	1030AD	880-1240AD

cedure Program that is based on dendrocalibrations.

The project directors view these C-14 dates as an important but not definitive means of dating the occupational sequence at Tell Nimrin. In general, the calibrated intercept dates correspond to what we had expected on the basis of stratigraphic and ceramic analysis. All the dates agree with our expectations within 50 years except for the following: sample #2 is 320 years too early, #4 is 100 years too early, #5 is 65 years too early, and #13 is 100 years too late. Only one of these dates is really problematic (#2) in that it falls outside the 2-sigma calibrated range. Even this date is within five years of the lower limit of the 2-sigma range. For convenience, the listing in Table 1 is arranged chronologically from oldest to youngest.

Geology

Geological research during the 1993 field season continued to pursue the objectives of earlier seasons. These were to situate Tell Nimrin in its regional environmental and social contexts and to assess, in so far as possible, the reciprocal relationship between human factors and the ecology of

the Jordan Valley. The relationships between the disciplines of archaeology and geology were therefore of special interest to geologists Johnnie N. Moore of the University of Montana and William J. Fritz of Georgia State University who collaborated in both field and post-season research. They drew from their own field observations and tests, the earlier work of 1989 Tell Nimrin geologist Ronald West of Kansas State University, and the Jordan Antiquities Database and Information System (JADIS), an inventory of site locations, elevations, and occupation periods developed by the Cultural Resource Management team at ACOR in Amman and the Department of Antiquities under the direction of Dr. Gaetano Palumbo.

Several hypotheses were formulated for testing during the season as well as in post-season research and future seasons of field work. They began with the basic assumption that the general pattern of human habitation in the Dead Sea basin can be explained at least in part by a gradual change in climate, following, or associated with, the lowering of the level of the Pleistocene/Holocene pluvial Lake Lisan. Similarly, the rates and "levels" of change in climate, lake stand, and human occupation interrelated in ways that can help in explaining the pattern of occupation, depopulation, and repopulation detected in the Tell Nimrin archaeological record.

Testing the hypotheses required, and will continue to require, close collaboration between archaeologists and geologists and will expand to include climatologists, geomorphologists, ecologists, and others. The usual problems of availability and standardization of data from the politically sensitive Jordan Valley were immediately confronted. Modern political geography meant that information from both sides of the rift was sparse and irregular in respect to quality, methodologies, and calibrations.

Many attempts have been made to model Lake Lisan/Dead Sea levels over time. These have produced sharply varying conclusions. Some have proposed complex curves that rely on rapid basin subsidence and uplift (tectonics), others have felt that sedimentation, at least on the margin of the basin, was controlled by climatic changes rather than tectonics, and so on. But in spite of the variety, there has been general agreement on two fundamental (obvious) points: the shoreline restricted occupation at different levels over time, and human occupation in the Jordan Valley has been responsive to and in turn has influenced the environment, including the lake/sea. Climate and temperature, patterns and types of vegetation and animal husbandry, subsistence strategies, trade and commerce, and the location of residences all have interconnected, ecological, economic, and social implications.

Moore and Fritz felt that archaeological data provides "a vast and accurate database" to constrain (determine) lake level and establish limits of the lake shoreline. Hence, their investigation began with the knowledge that Tell Nimrin's first occupation (as archaeologically defined in areas excavated thus far) was during the Early Bronze IV/Middle Bronze I transition, ca. 2000 B.C., that there was an occupation gap of approximately 500 years during the Late Bronze period (ca. 1500-1000 B.C.), and that there was possibly a later gap during Iron II (ca. 700-550 B.C.). Other than these times, the site seems to have been inhabited continuously from its foundation down to the present (South Shuna).

The archaeological aspect of the research began with the simplest model of shoreline retreat, i.e., a linear decrease from the maximum lake stand down to the present shoreline of the Dead Sea. Plotting the decrease on coordinates of elevation (x axis) and time (y axis) yielded a straight line extending from the presumed maxi-

mum lake stand at -180m at 15000 ybp (years before present) down to ca. -400m at present. Then, using the JADIS database selectively, Jordan Valley sites were plotted according to geographical coordinates, elevations, and initial times of occupation. A number of factors dictated caution and cross checking. Because the database is in its early development, entry errors have not been fully eliminated, survey and excavation reports may offer varying degrees of uncertainty, some sites are unidentifiable and undatable with the information currently available, and the information reflects only the eastern side of the valley.

In spite of the limitations, JADIS offered a starting point and a basis for identifying problem sites and regions that would need further investigation. The patterns that emerged also offered rationales for modifying the initial linear-regression hypothesis and were useful in identifying additional issues that must be considered as part of revised hypotheses.

No firm conclusions were drawn and the research continued in the post-season. Studies of regions around sites like Pella, Ghasul, Şafi, and Ghрубba continue to be investigated. The lake/sea basin *in toto* must be examined. That research will shed light on the history of Tell Nimrin.

The geologists concluded in their spring report to the directors that as far as Tell Nimrin is concerned—and any other sites situated in the mouths of wadis—the down-cutting and the increase in aridity would be the dominant processes affecting habitation. Habitation in the Jordan Valley was restricted to the wadi mouths until about 11,000 ybp when the lake started to retreat. It appears now that even though the chemistry of the lake changed dramatically through time, it was very likely never fresh water even when full. Seasonally there may have been fresh water overlying the deep salt water, but that is difficult to determine.

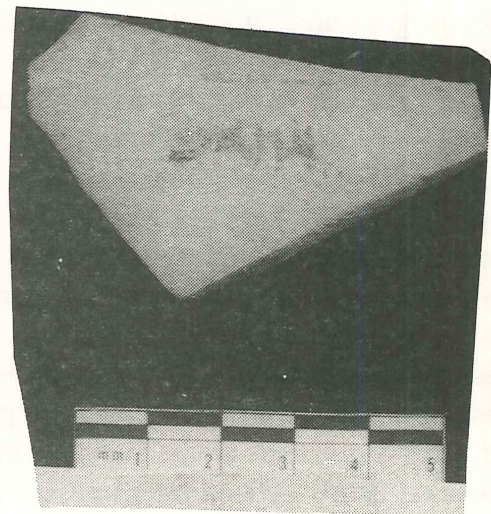
The tectonics of the basin remain a nagging problem. There is good evidence of uplift of 30m or more along the east front in the past 11,000 years. There are likely down-dropped areas as well. Reconstructing the real elevations of the sites when they were inhabited may be very difficult. The Tell Nimrin geologists think the data will be in the wadis. Finding it would require a major expansion of Macumber and Head's effort in Wadi al-Ḥammeh.

Major Artifact Finds

The season yielded a number of important finds besides the environmental, stratigraphical, architectural, and ceramic information outlined above.

Ostraca

Eight ostraca all from N30/W25 (RO85, 86 [L24], 87 [L24], 101[L33], 102 [trim], 103 [L33], 108 [L33], and 109 [L33]) and a single seal impression (RO60) on ceramic ware from N40/W25 were discovered during the 1993 season (Fig. 16). Dr. Deidre Dempsey of Marquette University, the Tell Nimrin epigrapher who published the 1989 ostracon (1993), was commissioned to prepare and publish the materials. Although still under review, her preliminary readings and transliteration and translation indicate



16. Ostracon TN93RO85 from N30/W25.

that all the ostraca bear only single word inscriptions written with ink on the outside of the sherd, in Aramaic cursive script of the early to middle fourth century B.C. Six ostraca bear the personal name 'ahab that is attested in the Hebrew Bible, a seal from a Lachish tomb, and elsewhere. One appears not to be a personal name, but a word (*klnh*) with the adjectival *kl*, "all." The eighth attests to the common 'qrb, "scorpion."

The seal impression has two lines of one word each. The first line is less clear than the second. The former may be the proper name, *hwr* or *hwd*. The latter seems to be a proper name as well, possibly *mlkyw*.

Byzantine Gold Hoard

A hoard (L11) of 34 solidi coins and four pendant earrings, all contained in a small trefoil mouth terracotta juglet, were excavated in N35/W25 on May 30. The find-spot was approximately 10 cm above the floor (L24) associated with E-W (L7) and N-S (L8) walls that shielded the find on two sides and about 65cm below the preexcavation elevation of the spot. The context as well as the hoard have been dated to the Byzantine period. The immediate context was L10, possibly a small pit(?) of silt clay with small pieces of charcoal, ash, and occupational debris. The manner of deposition of the jug and contents was not determined.

Six reigns and four mints are represented in the collection: Valens (A.D. 364-378; eight coins, all Antioch), Valentinian I (A.D. 364-375; 11 coins, all Antioch), Leo I (A.D. 457-474; three coins, all Constantinople), Basiliscus and Marcus (A.D. 475-476; one coin, Constantinople), Zeno (A.D. 474-491; eight coins—five Constantinople, two Thessalonica, and one Western), and Anastasius I (A.D. 491-518; three coins, all Constantinople). The earrings are two pairs, gold with a gem set at the top and pearls suspended below. The shorter pair has only

a single pearl; the longer pair has three pearls with spacers.

The juglet is also Byzantine. The hoard, therefore, is tentatively dated to the beginning of the sixth century A.D.

A fuller description of the hoard is presented in a separate article in this issue of *ADAJ*. Readers are asked to consult that report for further information.

Ceramics

Field readings and analyses for the 1993 season were provided by Ms. Jennifer C. Ross, a doctoral student at the University of California, Berkeley. These readings have not been integrated formally with readings from other seasons provided by Dr. Rudolph Dornemann. The following is the end-of-season report by Ms. Ross.

The pottery from the 1993 season at Tell Nimrin covers a range of periods. More than 50,000 sherds were recovered and examined in the course of the season. The principal periods represented include Middle Bronze II, Iron Age I and II, Persian, Roman, Byzantine, Umayyad, and Ayyubid/Mamluk. In addition, numerous Early Bronze IV/Middle Bronze I sherds were found in N40/W20. Small amounts of Late Bronze, Hellenistic, Abbasid, Ottoman, and modern sherds were also represented. Examples and descriptions are given in the Appendix, at the end of this report.

The Ayyubid/Mamluk pottery consists of both closed and open forms. Green and yellow-gold glazed examples, particularly from open forms glazed on the interior and often on the exterior, are represented. Brown glazes are also present, in some cases being used to create a thin-lined design atop a yellow glaze. In very few examples the glaze covers a design in raised relief (Fig. 17.3). Wares are principally orange and brown,³ with few inclusions. The glazed forms are mainly wheel-made or

3. The ware colors given here are not from a Munsell soil color chart.

wheel-finished. Another common Ayyubid/Mamluk type consists of painted jar and bowl forms. The wares for the painted examples are red to brown in color, predominantly coarse, with a white to greyish slip and red to purple-brown painted decoration. In general, the painted vessels are hand-made and gritty, with the painted surface smoothed. The painted designs are geometric, located in various zones of the vessel body, with cross-hatched designs among the most common. Other painted designs include zigzag bands, ladder patterns, chevrons, checkerboards, spirals, and crosses (Fig. 17.1, 2). Further Ayyubid/Mamluk types include thick "sugar pots," both open and closed forms, with evidence of wheel-smoothing. The ware of the sugar pots is orange to brown and gritty, and the forms have coarse exterior ribbing (Fig. 17.4, 5). Finally, there are a number of open forms with applied and impressed bands below the thickened rim. These are also of the orange to brown gritty ware, generally coarse and handmade. Ayyubid/Mamluk sherds were found near the surface across the mound, but were concentrated in N25/W50, S40/W165, and S40/W170.

Abbasid sherds are uncommon among the 1993 Tell Nimrin ceramics. The few recognizably Abbasid sherds belong to open forms, and one possibly cylindrical vessel (Fig. 17.6). The principal ware is orange to brown in color, with few inclusions. Among the decorative types are elaborate cut-out designs and raised rouletted or molded patterns, all of a geometric nature.

Umayyad pottery, of various types and forms, was found in large amounts in N25/W50, S40/W165, and S40/W170. Among the most common Umayyad forms is a large, bag-shaped jar with fine ribbing, one or two handles, and a plain rim (Fig. 17.7). The ware for these jars is fine, of orange or white color, with some fine inclusions. Another Umayyad form is a large, thick open

form, possibly for cooking, with handles, a thickened rim, and combed decoration in a band near the rim (Fig. 17.8). Other Umayyad cooking pots are of a closed form, with brown-purplish glaze, a short rim, and horizontal loop handles. Finally, some sherds of Umayyad painted ware were recovered. These vessels possessed a light colored fabric, white or cream-colored slip, and red paint in a loop or other geometric pattern.

The most common Byzantine ceramic form at Tell Nimrin is the large, bag-shaped jar with profiled rim and deep ribbing, commonly known as the "Pella bag jar" (Fig. 18.8, 9). Many of the Tell Nimrin examples possess a dark grey exterior surface, onto which are painted vertical lines in a whitish paint. These jars came particularly from N25/W50 and N35/W25. The ware is a fine grey, often fired to a bright pink or violet color on the interior surface. The paste of these jars has few fine inclusions. Also Byzantine in date are large open basins, some with profiled or thickened rims (Fig. 18.6). The basins are hard-fired to a light, buff or white color with few inclusions. Their diameters range from 30 to 50cm. The Byzantine ceramics from the 1993 season at Tell Nimrin appear to be predominantly late in date, overlapping in some forms with the Umayyad material.

Roman ceramics were found in N25/W20, N25/W50, S40/W165, and S40/W170. They consist of open bowl forms (Fig. 18.1), cooking pots (Fig. 18.2), bottle or juglet forms (Fig. 18.3, 4), and jars. Most of the wares are fine and thin, fired to a red or grey color in the case of the cooking pots, buff to orange and red for the other forms. In general, there are few inclusions in the paste. Several pieces of eastern terra sigillata are represented (Fig. 18.5). Other fine bowls are burnished. The Roman ceramics appear to be mostly late in date.

Few Hellenistic sherds were found in the

1993 excavations. Only one painted Nabataean bowl fragment and several sherds with glossy black slip are readily identifiable as Hellenistic in date. In contrast, Persian vessels, mostly of fifth-fourth century B.C. date, were common in N30/W25 (L18, L24, and L28) and N35/W25. The most prevalent form is the storage jar with simple, thickened rim (Fig. 19.6-9). A few Persian cooking pots, with everted rims and handles with ellipsoid section (Fig. 19.5), were found, as were open bowls (Fig. 19.1, 2) and holemouth forms. The Persian wares are fine, orange to pinkish-brown, with some fine sandy inclusions. The surfaces occasionally manifest bubbles from air pockets.

Iron Age II vessels were among the most common from the 1993 excavations, with forms dating from the ninth-sixth centuries B.C. A particularly significant series of broken storage jars was discovered in N25/W20, with body sherds from probably more than twenty-five storage vessels. Besides the storage jars, other Iron II forms include cooking pots with profiled rims, lamps, burnished bowls, holemouth jars, and bottles or juglets. The storage jars from N25/W20 are mostly mottled and smudged by fire, and are buff, orange, brown, grey, yellow, and pink in color. In general, the paste includes much sandy grit, of white, grey, and black, and small amounts of crushed pottery temper, or "grog." The storage jar bodies were coil-built then smoothed, the rims wheel-made. Handles generally have an ellipsoid section, and fingerprints are sometimes visible at the points of attachment. The shoulders are carinated and have two or three incised horizontal bands, while the bases are rounded. The oldest Iron II rims, from N25/W20 (L B9), appear to date to the early ninth century (Fig. 20.6, 7, 8). Most possess a strongly profiled rim. The largest number and variety of jars come from L B8, which may date to the mid to late ninth century.

Again, rims are distinctly profiled (Fig. 20.9-12), and shoulders sharply carinated. L B7 and L B6 contained smaller numbers of rims, which are generally less strongly profiled and more angled (Fig. 20.13-16). These loci may date to the eighth and seventh centuries, respectively. Cooking pots from N35/W20 and N40/W25 are fired to red-brown, brown, or brown-black colors, and have some quartz temper (Fig. 20.5). Bowls and lamps are orange and brown in color, with small amounts of grit temper. There is a distinct pattern in the distribution of the Iron II forms, with the largest numbers of storage jars coming from N25/W20, and other forms, such as cooking pots and bowls, from the surrounding squares, such as N35/W20 and N40/W25.

The Iron Age I pottery was concentrated in N35/W20, particularly in L71 and L75. Three nearly complete Iron I chalices were found together in L71 (Fig. 21.1, 2). Additional Iron I remains were recovered from N40/W20 and N40/W25. Besides the chalices, the predominant Iron I forms are triangular-rimmed cooking pots with red-brown to orange-brown fabric and angular quartz temper (Fig. 21.6), small profiled jar rims of pink to brown fabric, and large, heavy "collared-rim" jars that are dark grey and brown in color (Fig. 21.4, 5). The Iron I pottery appears to belong to the late 11th-10th centuries B.C.

A large amount of Middle Bronze II pottery came from N40/W20. Forms include both open and closed varieties, and wares are both fine and coarse. A variety of decorative schemes were employed on the Middle Bronze II pottery. Common forms consist of open bowls with folded rims (Fig. 22.5), wide-necked jars (Fig. 22.9), carinated bowls (Fig. 22.3, 4), at least one nearly complete pedestal vase (Fig. 22.1), and a large number of coarse cooking pots with finger-impressed raised bands (Fig. 22.10, 11). Middle Bronze II wares are mostly

buff to orange, well-fired, with sand and grog temper. The vessels are wheel-made, with relatively thin walls. The cooking pots are generally hand-made, with straight or incurving walls. Their ware color is orange-brown to dark brown, and the potters used angular quartz grit. In a few examples, the ware is darker and grittier, and the impressions were made with the side of a stick, rather than a finger. Only one cooking pot found in 1993 has a punctate mark above the band, and that puncture does not go all the way through the vessel wall. In general, the cooking pots and other vessel types appear to belong to the MB IIB, the 18th-16th centuries B.C. A number of sherds belonging to slipped and burnished wares also appear. In general, their ware is buff and thin, and the slip is a cream to yellow color, though sometimes it is red. Several pieces of very fine, thin, dark grey burnished ware were discovered. Other types of decoration include red-painted bands and zigzag lines (Fig. 22.12). In a few cases, sherds possess designs in both blue-black and red colors.

A small number of Early Bronze IV/Middle Bronze I sherds came from the 1993 excavations. Wares are somewhat grittier than the Middle Bronze II material, and are more yellow in color. Forms include holemouth rims (Fig. 22.13) and folded ledge handles, and decoration consists of fine-combing or incision. These sherds all came from N40/W20.

Wood Analysis Report

Analyses of wood for the 1989 and 1993 seasons reported here was done by Mr. Peter Warnock, a doctoral student at the University of Missouri. The report below conforms essentially to his report.

The wood samples analyzed were from the 1989 and 1993 seasons of excavation at Tell Nimrin. The types of wood identified reflect the environment around the site in antiquity, particularly the fresh water wadi

located nearby. Although the quantitative sample is small, it does indicate possible changes in the environment over time, most likely due at least in part to human intervention.

Twenty-one samples with varying numbers of wood fragments were examined. They consisted primarily of charred material or charcoal. Identification was made using standard techniques (Maby 1932; Koeppen 1972; Leney and Casteel 1975; Western 1963). In most cases taxa were taken to genus level, although in some cases identification of species was possible. For others it was possible to identify only family level.

The context of the samples dated to the 20th century B.C. was a layer of mixed debris containing burnt mudbrick, from what appears to be a domestic area (N45/W20, L58), possibly a courtyard (McCreery, personal communication, 1994). The types of wood contained in this sample included oak, willow, and tamarisk. This suggests that the ancient collection strategies sought a wide range of woods and that the environment in the general area may have been varied enough to support them. Oak (*Quercus*) is a component of the maquis vegetation found at higher elevations throughout the general region today. Its presence at Tell Nimrin may indicate a wetter climate in the immediate area of the site than at present, or a more extensive maquis vegetation throughout the Jordan Valley. Tamarisk (*Tamarix*) is a salt-tolerant species, and its presence at a site near the Dead Sea is not surprising. Willows (*Salix*) require a plentiful, permanent water supply and most likely came from the banks of the nearby Wadi Shu'aib.

Willow predominates in the samples from early contexts, especially those dated to the tenth and ninth centuries B.C. It was not found in any of the samples from later contexts. The other woods found in the

samples dating to the Iron Age could potentially have come from the immediate area of the site. These include woods from the Rosaceae and Cistaceae families and species of *Acacia* (cf *raddiana*) and *Cupressus* (Cypress). The cypress would have come from the wadi, where conditions were fairly wet. Of special note is the fact that the cypress wood was desiccated, not charred, and was still in good condition.

Samples from the Mamluk and modern periods include possible *Acer* (maple), *Pinus* (cf *Pinus pinea*, stone pine), and *Ficus* (fig). Maple demands conditions cooler and more humid than those in the region of the site (i.e., the Jordan Valley). The sample may have been imported, and is possibly modern. The stone pine is found at higher elevations, but would have been easily transported to the site. The fig wood was not charred, and probably represents the most modern of the samples analyzed.

With the exception of one sample, determination of wood use is not possible at this time. It is likely that wood from most of the samples was used for construction rather than as fuel, since contexts tend to be destruction levels rather than hearths. The sample from N25/W20 (L28), containing willow and *Acacia*, came from the most well-defined context—what was apparently the doorway of a ninth century B.C. domes-

tic building. This supports the proposal that wood use was confined primarily to construction.

In general, collection strategies in earlier periods appear to have been based on using wood from the nearby wadi. The presence of willow in the earlier samples suggests an ample water supply during these periods. It is possible that because of the water supply, willow may have been one of the larger trees in the area, and thus suitable for use in construction. It is also possible that, as the willow stands were depleted (as is suggested by its absence from samples dating to contexts after the ninth century B.C.), inhabitants were forced to utilize other species. Depletion of wood sources may have necessitated importing wood in recent times.

Acknowledgements

In addition to the directors and Department of Antiquities representative cited at the beginning of this article, the 1993 core staff included: Drs. Paula M. McNutt, assistant field director; Kathleen S. Nash, area supervisor for N25/W20, N35/W20, N30/W20, N35/W25; Thomas R. Lee, draftsman. They were assisted by specialists, Drs. Michael Finnegan, osteologist; Johnnie N. Moore and William J. Fritz, geologists; Jan L. Reiff, computer specialist;

Table 2. Summary of wood analyses.

Period	Identifications
20th century B.C.	<i>Quercus</i> sp, <i>Salix Babylonica</i> , <i>Tamarix</i> sp.
Late tenth century B.C.	<i>Salix babylonica</i> , cf Rosaceae, charred chaff, possible remnants of dung/ashed dung.
Ninth/eighth century B.C.	<i>Salix babylonica</i> , cf Cistaceae, <i>Acacia</i> sp (cf <i>raddiana</i>), cf <i>Cupressus</i> (un-charred, excellent condition), charred dung (two seeds, possibly broom corn)/ashed dung (primary component = chaff).
Byzantine	Glass fragments (possibly a small bead). Identified by Wendy Metcalf, University of Missouri-Columbia Geology Department.
Mamluk/Modern	Cf. <i>Acer</i> (sp probably <i>obtusifolium</i> ssp <i>syriacum</i>), <i>Ficus</i> (<i>Ficus sycomorus</i> or <i>pseudo-sycomorus</i>), <i>Pinus</i> (cf <i>Pinus pinea</i>)/ <i>Ficus</i> in majority, wood uncharred, excellent condition—modern.

Mr. DeWitt D. McNutt, surveyor; Mr. Darwin Melnyk, photographer; and Ms. Jennifer Ross, field ceramicist. Field personnel included: Ms. Mayyada Jarallah, square supervisor N40/W20; Ms. Janice King, square supervisor N35/W25; Mr. Patrick Madden, square supervisor N35/W20; Ms. Janet Melnyk, square supervisor S40/W165 and S40/W170; Mr. Ahmed Momani, square supervisor N40/W25; Ms. Megan Perry, square supervisor N25/W50; Mr. Timothy Beal, assistant square supervisor N40/W20; Ms. Margaret Gunn, assistant square supervisor N30/W25; Mr. Mulay Jarif, assistant square supervisor N40/W25; Ms. Brigitta Lee, assistant square supervisor N30/W25; Mr. Jafer Telfah, assistant square supervisor N25/W50; Sheik Sadek Abdullah Abu Khalaf and Mr. Aish Mohammed Abu Hilal, technical archaeologists. Accommodations at the Deir 'Alla Archaeological Sta-

tion were managed by Mr. Mohammed Jamrah. We are grateful for their generous participation and contribution to the project.

J. W. Flanagan
Department of Religion
Case Western Reserve University
Cleveland, OH 44106
U.S.A.

D. W. McCreery
Department of Religious Studies
Willamette University
Salem, OR 97301
U.S.A.

K. N. Yassine
Department of Archaeology
University of Jordan
Amman - Jordan

References

- Amiran, R.
 1970 *Ancient Pottery of the Holy Land*. New Brunswick, NJ: Rutgers University Press.
- Clark, V. A., Bowsher, J. M. C. and Steward, J. D.
 1986 The Jerash North Theatre. *Architecture and Archaeology 1982-1983*. Pp. 205-302 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981-1983*. Amman: Department of Antiquities.
- Cole, D. P.
 1984 *Shechem I. The Middle Bronze IIB Pottery*. Winona Lake, IN: Eisenbrauns/ASOR.
- Danin, A.
 1983 *Desert Vegetation of Israel and Sinai*. Jerusalem: Cana Publishing House.
- Dempsey, D.
 1993 An Ostrakon from Tell Nimrin. *BASOR* 289: 55-58.
- Dornemann, R. H.
 1990 Preliminary Comments on the Pottery Traditions at Tell Nimrin, Illustrated from the 1989 Season of Excavations. *ADAJ* 34: 153-181.
- Fahn, A., Werker, E. and Bass, P.
 1986 *Anatomy and Identification of Trees and Shrubs from Israel and Adjacent Regions*. Jerusalem: The Israel Academy of Sciences and Humanities.
- Finkelstein, I.
 1988 *The Archaeology of the Israelite Settlement*. Jerusalem: Israel Exploration Society.
- Fitzgerald, G. M.
 1931 *Beth-Shan Excavations 1921-1923. Vol. 3. The Arab and Byzantine Levels*. Philadelphia: University of Pennsylvania Press.
- Flanagan, J. W. and McCreery, D. W.
 1990 First Preliminary Report of the 1989 Tell Nimrin Project. *ADAJ* 34: 131-152.
- Flanagan, J. W., McCreery, D. W. and Yassine, K. N.
 1992 Preliminary Report of the 1990 Excavation at Tell Nimrin. *ADAJ* 36: 89-111.
- Franken, H. J.
 1974 *In Search of the Jericho Potters*. Amsterdam: North-Holland Publishing.
- Franken, H. J. and Kalsbeek, J.
 1975 *Potters of a Medieval Village in the Jordan Valley*. Amsterdam: North-Holland Publishing.
- Glueck, N.
 1945-49 Exploration in Eastern Palestine, IV.c. 'Arbôth Môab. *AASOR* 25-28: 366-371.
- Harding, G. L.
 1951 Excavations on the Citadel, Amman. *ADAJ* 1: 7-16.
- Herzog, Z., Rapp, G. and Negbi, O. (eds.)
 1989 *Excavations at Tel Michal, Israel*. Minneapolis: University of Minnesota Press.
- Ibrahim, M., Sauer, J. A. and Yassine, K. N.
 1988 The East Jordan Valley Survey, 1976. Pp. 189-207 in K. N. Yassine (ed.), *Archae-*

ology of Jordan: Essays and Reports. Amman: University of Jordan.

Kenyon, K. M.

1960 *Excavations at Jericho. Vol. 1. The Tombs Excavated in 1952-4.* Jerusalem: British School of Archaeology.

1965 *Excavations at Jericho. Vol. 2. Tombs Excavated in 1955-8.* Jerusalem: British School of Archaeology.

Kenyon, K. M. and Holland, T. A.

1982 *Excavations at Jericho. Vol. 4. The Pottery Type Series and Other Finds.* Jerusalem: British School of Archaeology.

Keoppen, R. C.

1972 Charcoal Identification. *U.S. Forest Service Research Note FPL-0217.*

Lapp, P. W.

1961 *Palestinian Ceramic Chronology. 200 B.C.-A.D. 70.* New Haven, CT: American Schools of Oriental Research.

Leney, L. and Casteel, R. W.

1975 Simplified Procedure for Examining Charcoal Specimens for Identification. *Journal of Archaeological Science* 2: 153-159.

Maby, J. C.

1932 The Identification of Wood and Wood Charcoal Fragments. *Analyst* 57: 2-8.

McNicoll, A. W., Edwards, P. C., Hanbury-Tenison, J., Hennessy, J. B., Potts, T. F., Smith, R. H., Walmsley, A. and Watson, P.

1992 *Pella in Jordan 2.* Sydney: Mediterranean Archaeology.

Parapetti, R. *et al.*

1986 The Italian Activity within the Jerash Project 1982-83. Pp. 167-203 in F. Zayadine (ed.), *Jerash Archaeological Project I, 1981-1983.* Amman: Department of Antiquities.

Potts, T. F., Bourke, S. J., Edwards, P. C., Richards, F., and Wightman, G.

1988 Preliminary Report on the Eighth and Ninth Seasons of Excavation by the University of Sydney at Pella (Tabaqat Fahl), 1986 and 1987. *ADAJ* 32: 115-149.

Smith, R. H.

1973 *Pella of the Decapolis.* Volume I. London: College of Wooster.

Smith, R. H., McNicoll, A. W. and Hennessy, J. B.

1981 The 1980 Season at Pella of the Decapolis. *BASOR* 243: 3-31.

Western, A. C.

1963 Wood and Charcoal in Archaeology. Pp. 150-158 in D. Brothwell and E. Higgs (eds.), *Science in Archaeology.* New York: Basic Books.

Worschech, U. F. and Ninow, F.

1992 Preliminary Report on the Third Campaign at the Ancient Site of el-Balu' in 1991. *ADAJ* 36: 167-174.

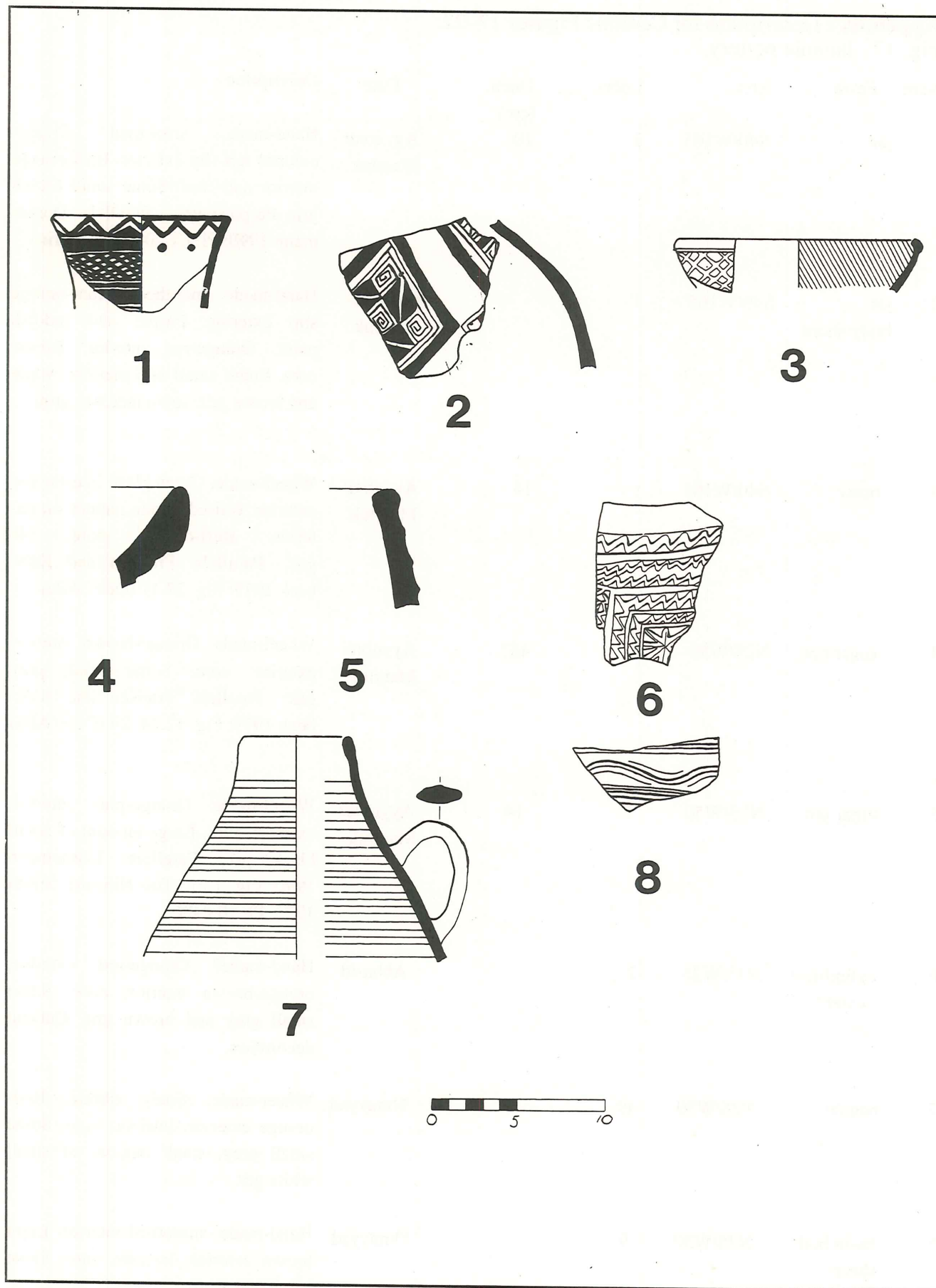
Yadin, Y. *et al.*

1958 *Hazor I.* Jerusalem: Magnes Press.

- 1961 *Hazor III-IV (Plates)*. Jerusalem: Magnes Press.
- Yassine, K.
- 1988a The Open Court Sanctuary of the Iron Age I. Pp. 115-135 in K. Yassine, *Archaeology of Jordan: Essays and Reports*. Amman: University of Jordan.
- 1988b Tell el Mazar, Field I. Pp. 75-113 in K. Yassine, *Archaeology of Jordan: Essays and Reports*. Amman: University of Jordan.
- Zohary, M.
- 1982 *Plants of the Bible*. New York: Cambridge University Press.

Appendix : Description for Ceramic Figures 17–22.
Fig. 17 . Islamic pottery.

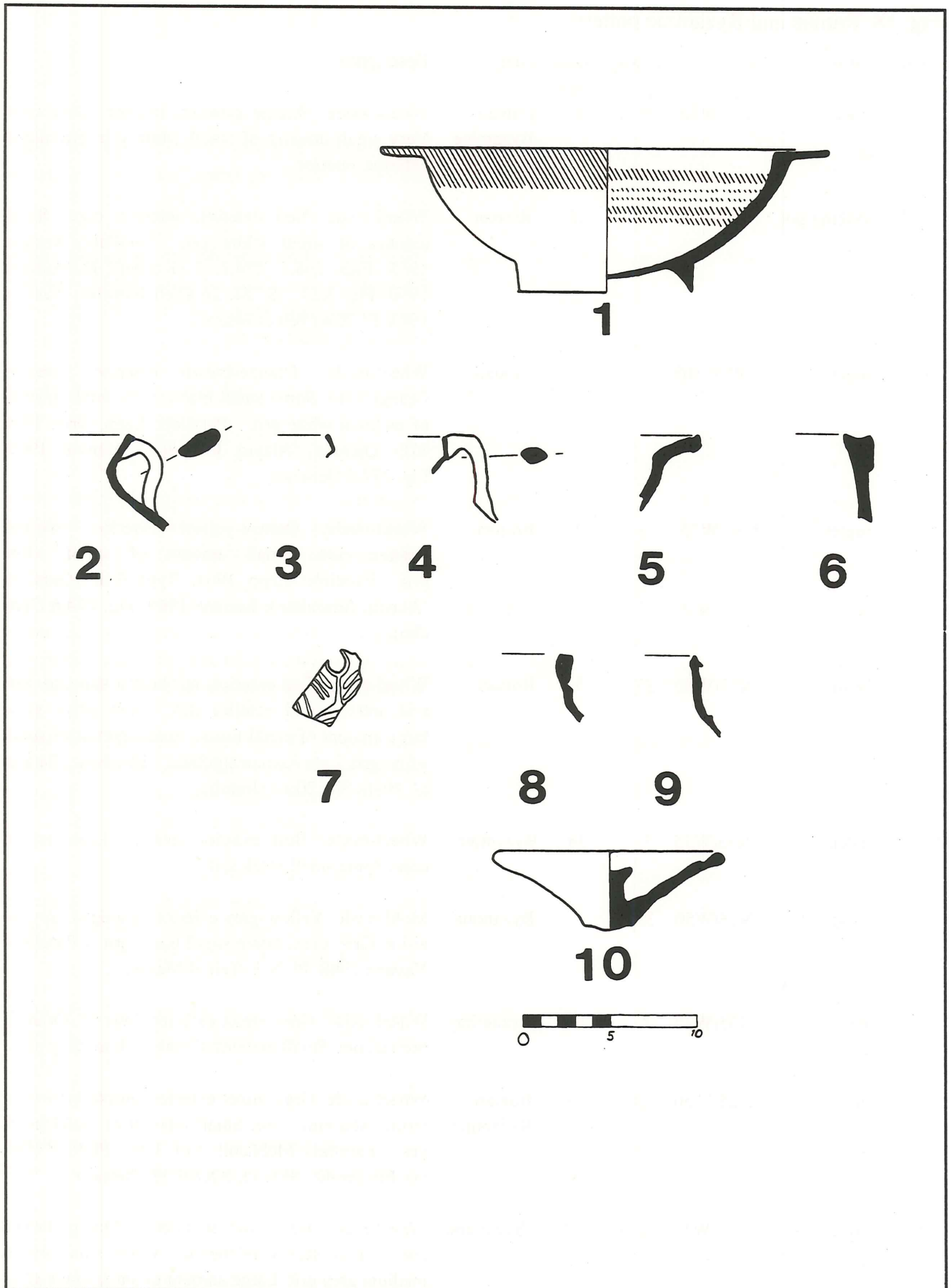
Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	jar	S40/W165	2	10	Ayyubid/ Mamluk	Hand-made, smoothed. Cream-colored self slip exterior. Buff-orange interior and core. Some small brown grit. Purple paint. Parallels: Dornemann 1990: Pl. I.1.20 (Tell Nimrin).
2	jar body sherd	S40/W165	1		Ayyubid/ Mamluk	Hand-made, smoothed. Cream-orange slip exterior. Purple and reddish paint. Orange-red interior. Brown core. Some small and medium white and brown grit, some medium grog.
3	bowl	S40/W165	1	14	Ayyubid/ Mamluk	Wheel-made. Green glaze interior and exterior. Raised lattice pattern on exterior. Buff-orange core. No grit. Parallels: Franken and Kalsbeek 1975: Fig. 37.17 (Deir 'Alla).
4	sugar pot	N25/W50	2	48?	Ayyubid/ Mamluk	Wheel-made. Orange-brown interior, exterior, core. Some small grey grit. Parallels: Franken and Kalsbeek 1975: Fig. 42.14, 29 (Deir 'Alla)
5	sugar pot	N25/W50	1	14	Ayyubid/ Mamluk	Wheel-made. Orange-pink interior, exterior, core. Large amount of small black grit. Parallels: Dornemann 1990: Fig. 1.21 (Tell Nimrin); Smith 1973: Pl. 70 #486.
6	cylindrical vessel?	N35/W25	2		Abbasid	Hand-made? Orange-red exterior, orange-brown interior, core. Some small grey and brown grit. Cut-out decoration.
7	bag jar	N25/W50	49	6	Umayyad	Wheel-made, finely ribbed. Red-orange exterior, interior, core. Some small grey, small amount of small white grit.
8	basin body sherd	N25/W50	19		Umayyad	Hand-made, smoothed interior. Light brown exterior, interior, core. Some small white grit.



17. Islamic pottery.

Fig. 18. Roman and Byzantine pottery.

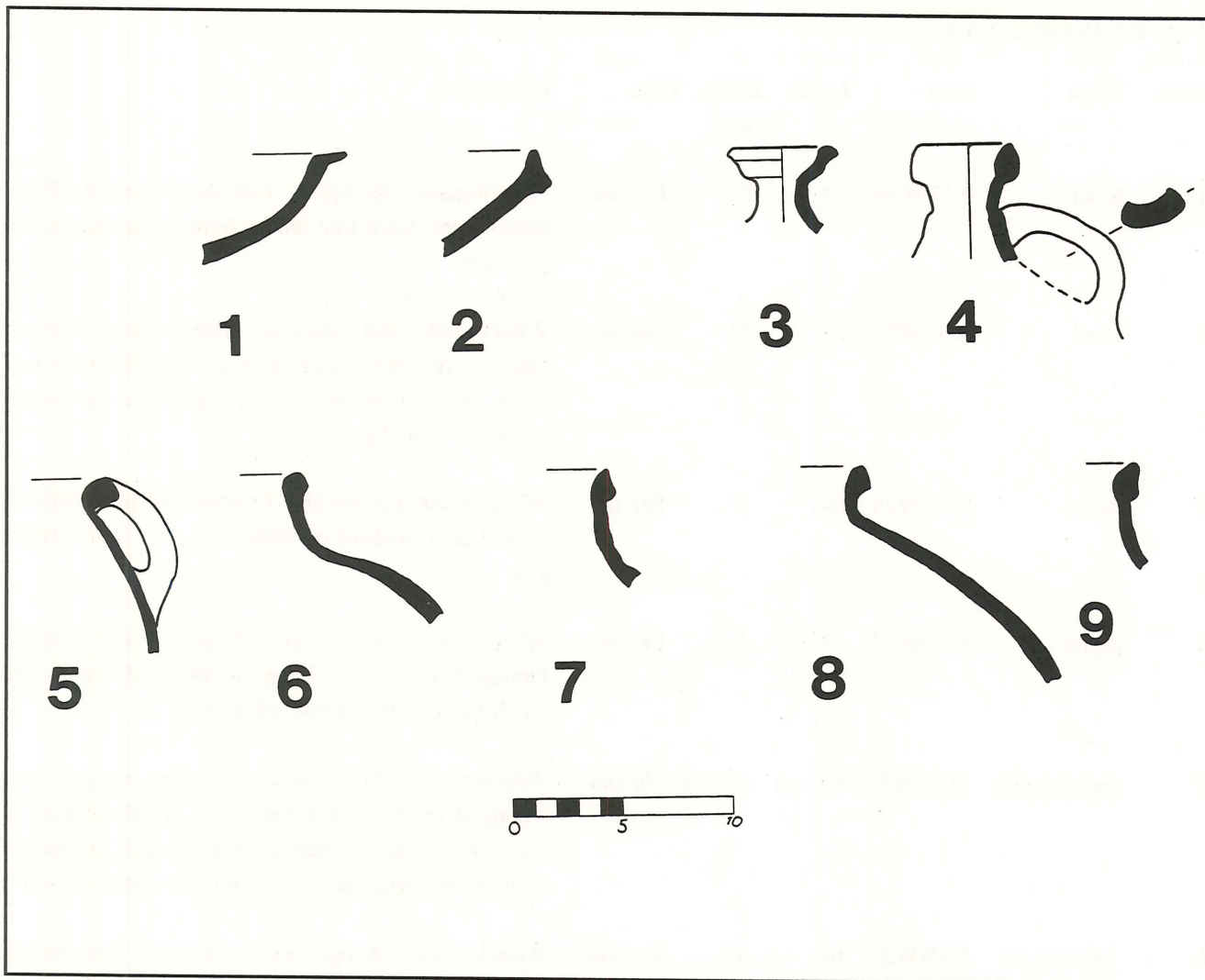
Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	bowl	N25/W50	39	26	Roman- Byzantine	Wheel-made. Orange exterior, interior. Grey core. Very small amount of small white grit. Burnished exterior, interior.
2	cooking pot	N25/W20	B3	13	Roman	Wheel-made. Red exterior, interior, core. Small amount of small white grit. Parallels: Kenyon 1965: Figs. 268.1, 274.3, 7 (Jericho); Dornemann 1990: Fig. 3.21, 23, 24, 26 (Tell Nimrin); Yassine 1988: Pl. X.4 (Tell el-Mazar).
3	juglet	S40/W165	4	2	Roman	Wheel-made. Orange-brown exterior, interior. Orange core. Some small black, very small amount of medium white grit. Parallels: Lapp 1961: Type 31D (Qumran, 'Alayiq, Jerusalem); Kenyon 1965: Fig. 277.8 (Jericho).
4	juglet	N30/W25	10	2	Roman	Wheel-made. Orange-yellow exterior, interior. Orange core. Small amount of small white grit. Parallels: Lapp 1961: Type 31E (Qumran, 'Alayiq, Jerusalem); Kenyon 1965: Fig. 274.6 (Jericho).
5	bowl	N25/W50	27	30	Roman	Wheel-made. Red exterior, red-brown slip and burnish interior and exterior rim. Some small grey, large amount of small black, small amount of small white grit. Late Roman sigillata. Parallels: Clark <i>et al.</i> 1986: Fig. 20.17 (Jarash).
6	basin	N35/W25	3	38	Byzantine	Wheel-made? Buff exterior, interior. Light brown core. Some small black grit.
7	lamp	N25/W50	33		Byzantine	Mold-made. Yellow-grey exterior, smudged grey interior. Grey core. Some small black grit. Parallels: Yassine 1988: Pl. X.3 (Tell el-Mazar).
8	jar	N35/W25	2	10	Byzantine	Wheel-made. Grey-violet exterior, interior. Orange-brown core. Small amount of small white, grey grit.
9	jar	N25/W50	24	10	Roman- Byzantine	Wheel-made. Grey-violet exterior, purple-brown interior. Red-pink core. Small amount of small black grit. Parallels: McNicoll <i>et al.</i> 1992: Pl. 98.7 (Pella); Fitzgerald 1931: Pl. XXXII.18 (Beisan).
10	pot cover	S40/W170	1, 4	14	Byzantine	Wheel-made. Buff exterior, interior. Orange-brown core. Small amount of medium white, small white, medium grey grit. Large amount of small black grit. Parallels: Harding 1951: Fig. 2 #42 (Amman).



18. Roman and Byzantine pottery.

Fig. 19. Persian pottery.

Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	bowl	N35/W20	63	24	Persian	Wheel-made. Red-pink exterior, interior. Pink-brown core. Very fine fabric. Some small white and grey grit.
2	bowl	N30/W25	28	22	Persian	Wheel-made. Buff exterior, brown-orange interior. Brown-pink core. Large amount of small, some medium, and a small amount of large white grit; small amount of small grey grit.
3	juglet	N30/W25	24	5	Persian	Wheel-made. Brown-pink exterior, red-pink interior, core. Large amount of small and very small white grit.
4	juglet	N35/W25	47	4	Persian	Wheel-made. Orange exterior, orange-pink interior. Orange-brown core. Large amount of small and small amount of medium white grit.
5	cooking pot	N35/W20	63	20 (int)	Persian	Wheel-made. Red-orange exterior, orange and smudged interior. Dark grey core. Small amount of small white and medium grey grit, small amount of medium and large grog. Pitting from vegetal temper.
6	jar	N35/W20	64	11	Persian	Wheel-made. Orange-brown exterior, pink-brown interior. Brown core. Large amount of small white and some small white and grey grit. Parallels: Herzog <i>et al.</i> 1989: Figs. 9.4, 9.5 (Tel Michal).
7	jar	N35/W20	64	10	Persian	Wheel-made. Orange-brown exterior, interior. Orange-red core. Large amount of small white and some small black and grey grit. Parallels: Herzog <i>et al.</i> 1989: Figs. 9.4, 9.5 (Tel Michal).
8	jar	N30/W25	18	10	Persian	Wheel-made. Orange-brown exterior, pink-brown interior. Pink core. Some small white and brown grit. Parallels: Herzog <i>et al.</i> 1989: Figs. 9.4, 9.5 (Tel Michal).
9	jar	N30/W25	24	11	Persian	Wheel-made. Orange-buff exterior, orange interior. Brown-orange core. Some small white and black grit.

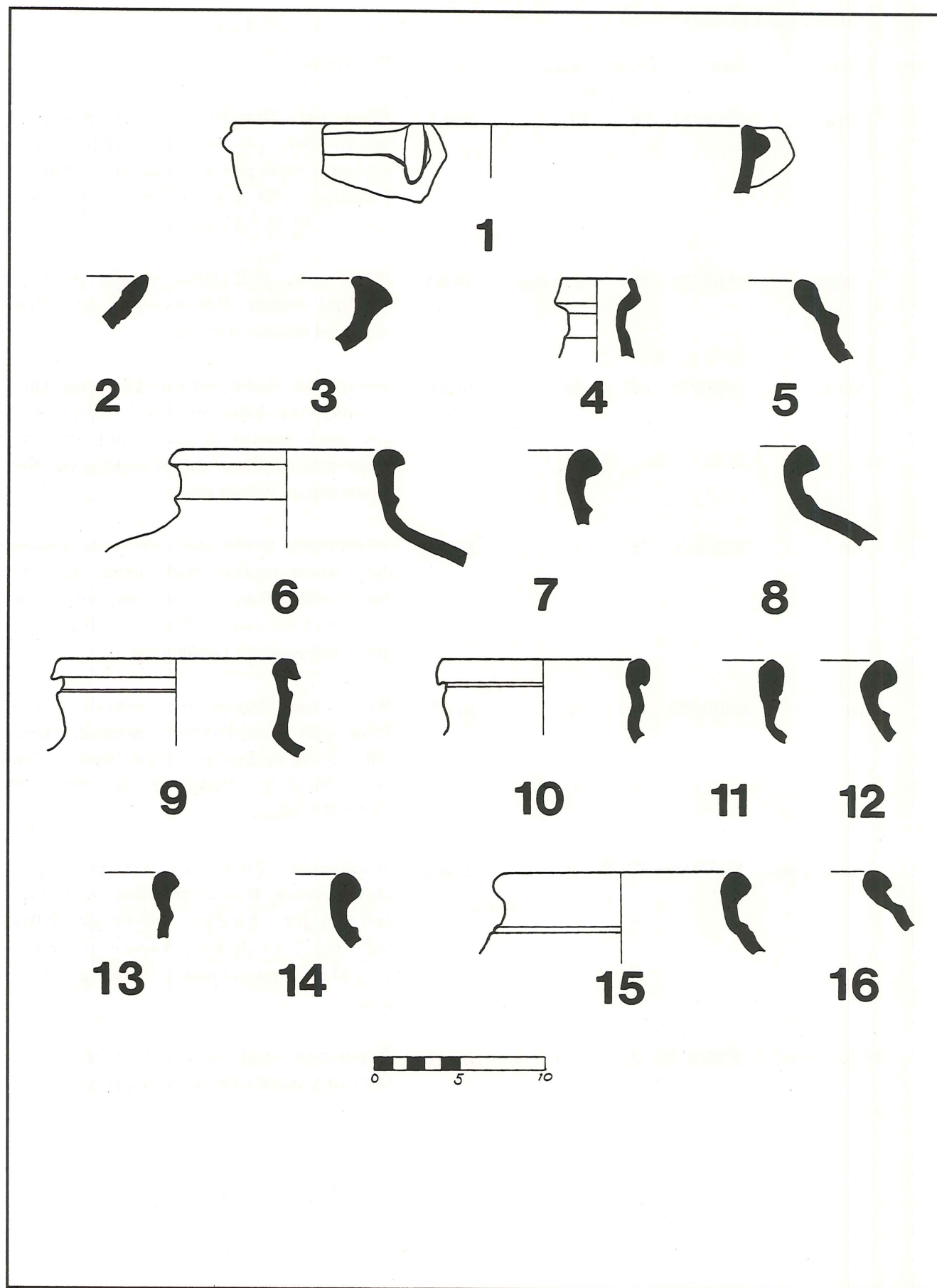


19. Persian pottery.

Fig. 20. Iron Age II pottery.

Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	bowl	N40/W25	161	30 (int)	Iron II	Wheel-made. Orange-buff exterior, brown-orange interior, core. Very fine fabric. Some small black grit. Parallels: Kenyon and Holland 1982: Fig. 199 (Jericho); Potts <i>et al.</i> 1988: Fig. 14.5 (Pella); Yassine 1988: Pl. XI.9 (Tell el-Mazar); Yadin <i>et al.</i> 1961: Pls. CLXXVIII.20-21, CLXXXII.12, 14, 17, CCXX.14-16, CCXXVI.10-13 (Hazor).
2	bowl	N40/W25	162	30	Iron II	Wheel-made. Orange exterior, interior. Light orange core. Large amount of small grey and black grit, some small white grit. Interior rim horizontally burnished.
3	bowl	N40/W25	162	30	Iron II	Wheel-made. Light brown exterior, interior. Brown-orange core. Fine fabric. Small amount of small white grit. Parallels: Amiran 1970: Pl. 65.2 (Tell Beit Mirsim A); Yadin <i>et al.</i> 1961: Pl. CLXXXII.4 (Hazor).
4	juglet/ bottle	N40/W25	154	4	Iron II	Wheel-made. Light brown exterior, interior. Brown core. Large amount of small and small amount of medium white grit. Parallels: Amiran 1970: Pl. 88.6 (Hazor).
5	cooking pot	N40/W25	146	22 (int)	Iron II	Wheel-made. Brown exterior, interior, core. Some small black grit. Parallels: Dornemann 1990: Fig. 5.7 (Tell Nimrin); Amiran 1970: Pl. 75.11 (Farah N. III); Franken 1974: Fig. 3.2 (Jericho).
6	jar	N25/W20	B9	13	Iron II	Wheel-made. Grey and red exterior, red-orange and pink-grey mottled interior. Brown-pink core. Some small and medium white grit, small amount of small grey grit, small amount of medium grog. Parallels: Dornemann 1990: Fig. 5.11 (Tell Nimrin).
7	jar	N25/W20	B9	11.5	Iron II	Wheel-made. Orange-yellow exterior, orange interior. Grey-brown core. Some small grey, black, and white grit.
8	jar	N25/W20	B9	12	Iron II	Wheel-made. Yellow-grey smudged exterior, interior. Dark brown-grey core. Some small grey and white grit.
9	jar	N25/W20	B8	13	Iron II	Wheel-made. Yellow-orange exterior, orange-

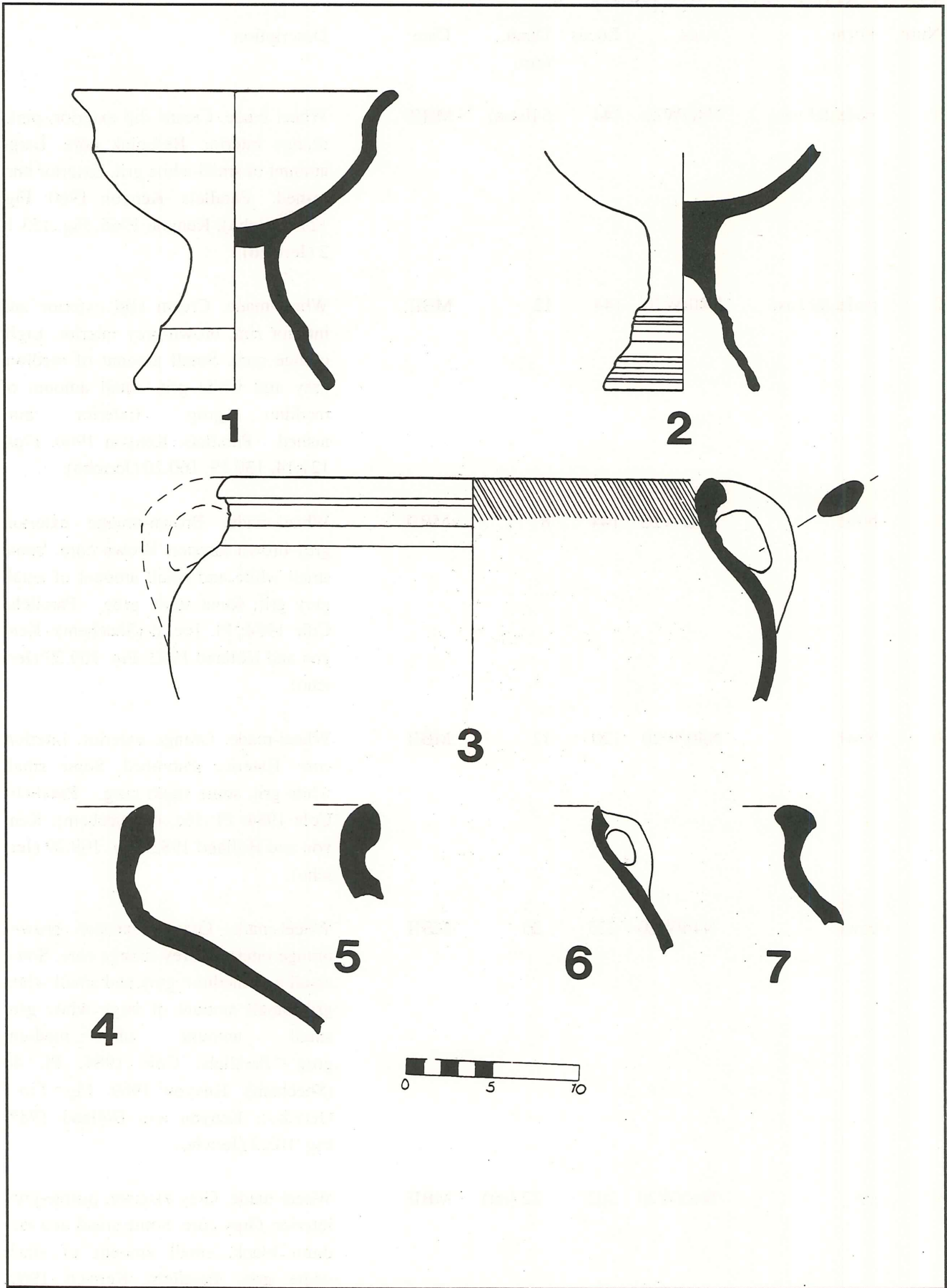
						brown interior. Some small black, white, and grey grit, small amount of medium grey and white grit, small amount of large white grit, small amount of medium grog.
10	jar	N25/W20	B8	11	Iron II	Wheel-made. Orange-yellow exterior, orange-brown interior. Brown-orange core. Some small white and grey grit, small amount of medium white and large grey grit, small amount of medium grog. Parallels: Yadin <i>et al.</i> 1961: Pl. CCXV.25 (Hazor); Franken 1974: Fig. 15.3 (Jericho).
11	jar	N25/W20	B8	12	Iron II	Wheel-made. Buff exterior, interior. Pink to red core. Large amount of small white grit, some small grey and black grit.
12	jar	N25/W20	B8	13	Iron II	Wheel-made. Yellow-orange exterior, orange-brown interior. Brown to dark brown-grey core. Some small white grit, small amount of small and medium grey grit, small amount of medium grog. Parallels: Dornemann 1990: Fig. 5.11 (Tell Nimrin)
13	jar	N25/W20	B7	11	Iron II	Wheel-made. Buff exterior, orange interior. Brown core. Some small white and black grit.
14	jar	N25/W20	B7	13	Iron II	Wheel-made. Orange-brown exterior, brown interior. Brown-grey core. Some small white and black grit, small amount of medium white grit. Parallels: Yadin <i>et al.</i> 1961: Pl. CCXIX.23 (Hazor); Worschech and Ninow 1992: Fig. 4 (el-Balu').
15	jar	N25/W20	B6	13	Iron II	Wheel-made. Green-yellow and smudged exterior, orange-pink and pitted interior. Grey core. Some small and medium white and a small amount of medium grey grit. Parallels: Dornemann 1990: Fig. 5.10 (Tell Nimrin).
16	jar	N25/W20	B6	?	Iron II	Wheel-made. Light brown exterior, interior, core. Large amount of small black, some small white and grey grit.



20. Iron Age II pottery.

Fig. 21. Iron Age I pottery.

Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	chalice	N35/W20	71	19	Iron I	Wheel-made. Orange-pink exterior, pink-brown interior. Pink core with brown center. Small amount of small grey and white grit. Parallels: Finkelstein 1988: Fig. 90 ('Izbet Sartah); Amiran 1970: Pl. 68.8 (Qasile X).
2	chalice	N35/W20	71	9 (base)	Iron I	Wheel-made. Buff-yellow exterior, buff and smudged interior. Brown-orange core. Some small and medium white grit.
3	krater	N40/W25	167	28	Iron I	Wheel-made. Red-brown exterior, orange interior. Grey core. Some small and medium white grit, small amount of small black and large white grit, small amount of small grog. Red-brown slip on interior rim.
4	jar	N35/W20	75	?	Iron I	Wheel-made. Brown and dark brown exterior, dark brown interior. Dark brown-grey core. Sandy fabric. Some medium and small white, grey, and black grit, small amount of large grey grit, small amount of small grog.
5	jar	N40/W20	130	22	Iron I	Wheel-made. Orange-brown exterior, interior. Brown-grey core. Exterior smoothed, interior pitted. Some medium brown grit, some medium grog. Parallels: Yadin <i>et al.</i> 1961: Pl. CLXVII.5 (Hazor).
6	cooking pot	N35/W20	73, 75	9	Iron I	Wheel-made. Brown-grey exterior, orange-brown interior. Brown core. Some small black and grey grit. Parallels: Kenyon and Holland 1982: Fig. 215.4 (Jericho); Yadin <i>et al.</i> 1961: Pl. CLXXI.20 (Hazor); Franken 1974: Fig. 8.3 (Jericho).
7	deep bowl	N35/W20	71	31	Iron I	Wheel-made. Buff exterior, red-orange interior. Grey core. Some small white and grey grit.



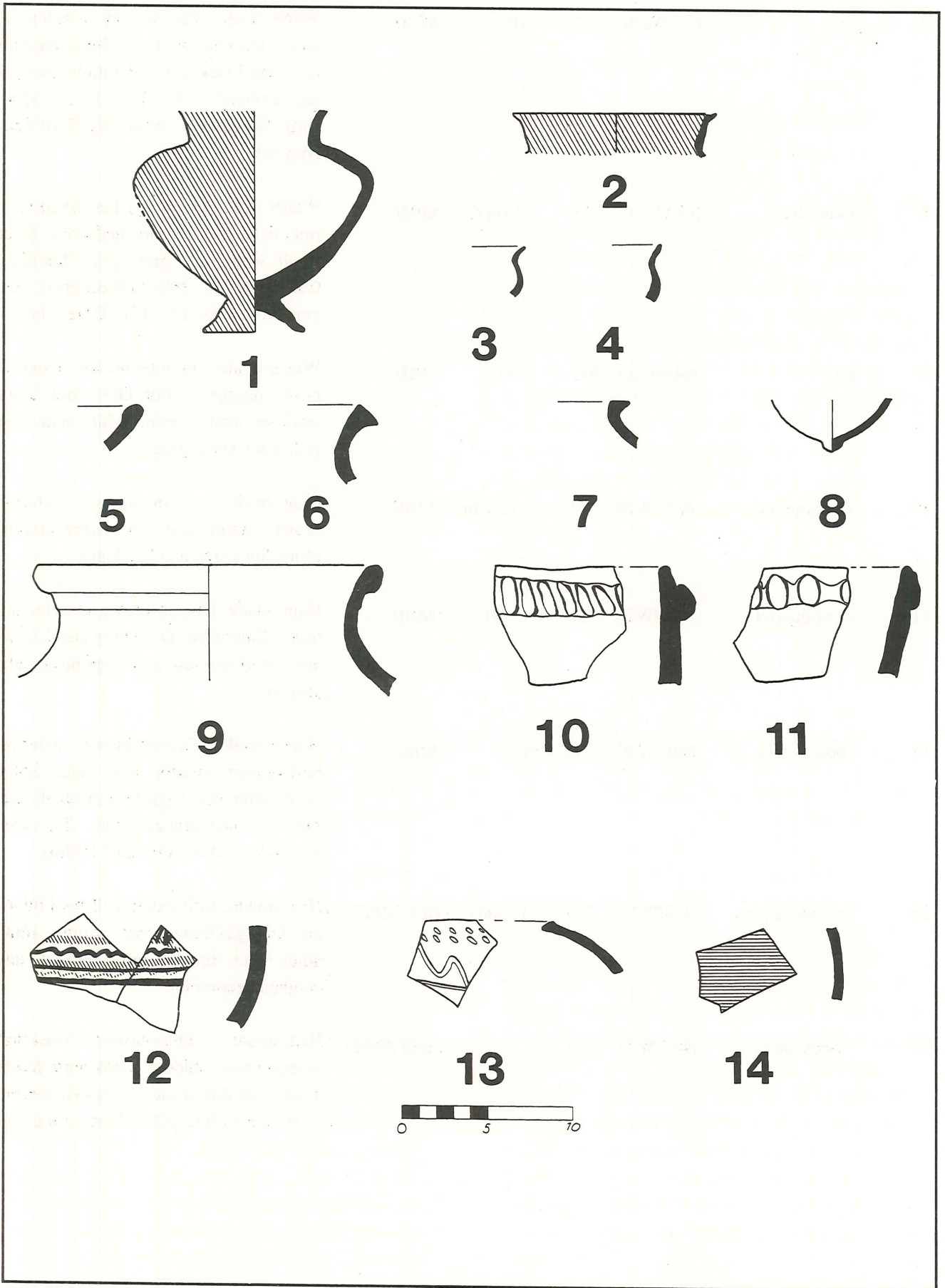
21. Iron Age I pottery.

Fig. 22. Middle Bronze Age pottery

Num.	Form	Area	Locus	Diam. (cm)	Date	Description
1	pedestal vase	N40/W20	144	6 (base)	MBII	Wheel made. Cream slip exterior, pink-orange interior. Red-pink core. Large amount of small white grit. Exterior bur-nished. Parallels: Kenyon 1960: Fig. 121 (Jericho); Kenyon 1965: Fig. 153.1-2 (Jericho).
2	pedestal vase	N40/W20	144	12	MBII	Wheel-made. Cream slip exterior and interior rim, brown-grey interior. Light orange core. Small amount of medium grey and white grit, small amount of medium grog. Exterior bur-nished. Parallels: Kenyon 1960: Figs. 121.14, 130.19, 160.20 (Jericho).
3	bowl	N40/W20	144	8	MBII	Wheel-made. Brown-orange exterior, grey-brown interior. Brown core. Some small white and small amount of small grey grit; some small grog. Parallels: Cole 1984: Pl. 16c, d (Shechem); Ken- yon and Holland 1982: Fig. 109.29 (Jer- icho).
4	bowl	N40/W20	120	12	MBII	Wheel-made. Orange exterior, interior, core. Exterior smoothed. Some small white grit, some small grog. Parallels: Cole 1984: Pl. 16c, d (Shechem); Ken- yon and Holland 1982: Fig. 109.29 (Jer- icho).
5	bowl	N40/W20	225	20	MBII	Wheel-made. Orange exterior, brown-orange interior. Grey-orange core. Some small and medium grey and small white grit, small amount of large white grit, small amount of medium grog. Parallels: Cole 1984: Pl. 4b (Shechem); Kenyon 1960: Fig. 115.1 (Jericho); Kenyon and Holland 1982: Fig. 103.2 (Jericho).
6	jar	N40/W20	202	22 (int)	MBII	Wheel-made. Grey exterior, purple-grey interior. Grey core. Some small and me-dium black, small amount of small white grit. Parallels: Kenyon 1960: Fig. 124.1 (Jericho).

ADAJ XXXVIII (1994)

7	jar	N40/W20	217	10	MBII	Wheel-made. Yellow-grey exterior, interior. Grey-brown core. Some medium grey and black grit. Parallels: Kenyon and Holland 1982: Fig. 115.25 (Jericho); Dornemann 1990: Fig. 7.18 (Tell Nimrin).
8	button base	N40/W20	215	1 (base)	MBII	Wheel-made. Dark grey burnished exterior, light grey interior and core. Some small white and grey grit. Parallels: Cole 1984: Pl. 28h-k (Shechem); Kenyon 1960: Figs. 122, 131.10 (Jericho).
9	jar	N40/W20	202	20	MBII	Wheel-made. Orange-brown exterior, brown-orange interior. Grey core. Some medium white, small white and grey grit, some small grog.
10	cooking pot	N40/W20	176	19 (int)	MBII	Hand-made. Orange-grey exterior, brown interior and core. Large amount of medium grey and black grit.
11	cooking pot	N40/W20	215	20	MBII	Hand-made. Orange-brown exterior, interior. Smoothed. Dark grey core. Small amount of medium and large brown and grey grit.
12	body sherd	N40/W20	212, 213		MBII	Wheel-made. Orange-brown exterior, buff-orange interior and core. Some small white grit. Lightly burnished exterior. Red and orange paint. Parallels: Smith <i>et al.</i> 1981: Fig. 26.7 (Pella).
13	holemouth jar	N40/W20	207	12 (int)	EBIV/MBI	Hand-made. Buff exterior, brown interior. Orange-brown core. Some small white and brown grit. Incised and combed decoration.
14	body sherd	N40/W20	213		EBIV/MBI	Hand-made. Grey-brown exterior, orange-brown interior. Grey core. Large amount of fine white grit, small amount of medium white grit and medium grog.



22. Middle Bronze Age pottery.