

# A Preliminary Sounding at Rujm El-Malfuf, 1969

by  
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## Introduction

Upsala College of East Orange, New Jersey with the cooperative assistance of The American Schools of Oriental Research through its Amman Center Committee conducted a preliminary sounding at the site generally known as Rujm el-Malfuf (North) beginning July 7 and concluding August 15, 1969.

The location of the site is on the presently expanding western edge of the city of Amman, Jordan just a short distance from the "Fourth Circle" on Jebel Amman. The site stands on the height of Jebel Amman overlooking the Wadi es-Saqrah to the north with a considerable range of visibility to the north, west and east. The rise of land on Jebel Amman restricts visibility to the south, somewhat, and may have accounted for the construction of an apparently similar site on the south side of the ridge overlooking that portion of the topography.

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(1) The writer expresses the gratitude of Upsala College to all the members of the staff of the Department of Antiquities who assisted with advice in arranging the choice of the site and in processing the application. We express special appreciation to Mr. Yacoub Oweis, Director-General of Antiquities, in whose administration the permit was issued and the excavation

Authorization to conduct the sounding was sought by the writer at the suggestion of members of the staff of the Department of Antiquities of the Hashemite Kingdom of Jordan during the summer of 1968, and permission was granted for the exploration on April 4, 1969 in accord with Chapter I of the Antiquities Law No. 26 for the year 1968. <sup>1</sup>

Sponsorship of the expedition was assumed by Upsala College through its Area Study Program on the Ancient Near East. The American Schools of Oriental Research extended cooperation in the form of the use of its quarters in Amman as an expedition base, including some excavation equipment and the excellent services of Mohammed Adawi as chief cook. <sup>2</sup>

As part of the activity of an Area Study Program designed for undergraduates, the staff was drawn largely from Upsala College. The writer served as Director. Photography was in the charge of Prof. Arthur F. Carlson of Up-

carried out. [Editor's Note: Mr. Oweis left the Department of Antiquities early 1971]

(2) For the arrangements with The American Schools of Oriental Research, special gratitude is expressed to Prof. G. Ernest Wright, President of the Schools; Mr. Thomas Newman, Administrative Director; and Prof. John Marks, Chairman of the Amman Center Committee.

sala College. The Architect - Surveyor was Prof. Bert DeVries of Calvin College, Grand Rapids, Michigan and Mrs. Aina Boraas, wife of the Director was Registrar. Seven students participated as Field Assistants,<sup>3</sup> and Aish Mohammed Eisa as Technical Man was assisted by fourteen laborers working under Foreman Mustafa Tawfiq Hazeem, both latter mentioned men having had extensive experience with other excavations.

The accommodations provided in the house rented by The American Schools of Oriental Research near Third Circle on Jebel Amman allowed the outfitting of a field dark-room, space for preparation of architectural and section drawings, space for pottery processing, field dating and registration, space for object registration and photography in addition to eating and sleeping quarters for the staff. The Department of Antiquities generously appointed Mr. Safwan K. Tell and Mr. Suleiman Dana as staff members to assist in both the excavation procedures and matters requiring liaison with the Department and other local authorities and suppliers. Their constant attention and valuable help are here gratefully acknowledged.

## History

The history of the site in previously published literature is an interesting array of comment

(3) Students included Diane Anderson, Carol Bloomquist, Ellen Sandberg, Mr. and Mrs. Tom (Ruth) Hummel, Randall E. Webb and Sue Ann Paschko.

(4) C. R. Conder, *The Survey of Eastern Palestine* (London: For The Committee of The Palestine Exploration Fund, 1899), Vol. I, p. 193.

(5) *Ibid.*

(6) *Ibid.*

(7) Duncan Mackenzie, "Megalithic Monuments of Rabbath Ammon at Amman," *Palestine Exploration Fund [Annual]* (1911), pp. 1-40 and Plates I-VI. The identification of this site

and analysis. C. R. Conder<sup>4</sup> mentions a name, El Melfuf, applied to six scattered ruins "along the Roman road leading westwards from 'Amman'".<sup>5</sup> He includes the functional diagnosis that several are "watchtowers" and the chronological speculation that "these ruins are probably of Roman origin."<sup>6</sup> Duncan Mackenzie associated such installations with dolmen construction in the area, but provides a more detailed description of the site, including a plan, section and photography.<sup>7</sup> His descriptions include "a circular edifice of enormous dimension, showing a contraction of the walls upward" and "a whole complex of rectangular chambers" attached to the circular building to the east.<sup>8</sup> He notes that the round tower had suffered less damage than the rectangular buildings attached to it, that an entrance to the circular construction may have been on its east edge, though no doorways are visible, and that the general plan of the rectangular complex "looks like a court with outhouses."<sup>9</sup> He also cites a presumed approach to the compound from the north side and an outer circumference wall running from the entrance route on the north, westward around the circular building and toward the south.<sup>10</sup> Additional support for the identification of the site des-

with that excavated as described below is based on comparison of Mackenzie's photograph of the round stone tower from the west looking eastward (Fig. 9, p. 22) and our field photos from the same vantage point. The comparison allowed a stone for stone identification by courses from ground level to top surviving course. Most interesting was the testimony of the photographs that no damage by natural cause or human use of the tower as a "quarry" for more recent construction has occurred at least in the western wall of the round tower since 1911. What was the top course then was still the top course when we began in 1969.

(8) *Ibid.*, pp. 22-23.

(9) *Ibid.*, p. 24.

(10) *Ibid.* The general mapping of the site done by Prof. DeVries during the 1969 excavation

cribed by Mackenzie with that investigated in 1969 is in his reported measurements. He reports a diameter of 20.15 m. for the exterior of the top courses, an internal diameter of 15.60 m., wall width of 2.30 m., and the adjacent rectangular construction of ca. 27 m. east-west and 28 m., north-south.<sup>11</sup> The "match" of these figures to the 1969 sounding site is apparent by checking the measurements available in Figure 1. The dimensions of the tower, the relation of the tower to other structural fragments, the dimensions of the outbuilding to the east and the traces of an approach from the north all match Mackenzie's Plate IV. Mackenzie supported Condor's theory that the function of the installation was a defensive observation point,<sup>12</sup> but he judged the age to be earlier.<sup>13</sup>

Carl Watzinger supported the association of the tower site with dolmen construction, and,

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produced an overall plan matching these features with remarkable accuracy, the only exception being the lack of traces of the outer circumference wall west of the circular building. A modern road under construction may have disturbed such traces, but a more thorough search for remaining fragments than 1969 season allowed is needed.

(11) *Ibid.*, p. 27.

(12) "... it is evident that the whole position and system of these fortified buildings was consciously sought out with a view to their peculiar function of defensive outlook. It is a sort of blockhouse system, having relation to the whole exceptional character of the landscape of Ammon... A whole army might pass down the valley upon Ammon and escape all attention from such a point of view. But once get to the spot where the fortified building is and the valley beyond is visible down the river bed." *Ibid.*, pp. 25-26.

(13) Using Sardinian megalithic monuments as parallels, he dates the construction to the Stone Age. *Ibid.*, pp. 23, 26-27.

(14) Carl Watzinger, *Denkmäler Palästinas* (Leipzig: J. C. Hinrichs'sche Buchhandlung, 1933), Vol. I, pp. 23-24.

using photo and plan evidence from Mackenzie's article, suggested that the construction pattern was parallel to Egyptian works of the second Dynasty evident at Abydos.<sup>14</sup> He retained a possible chronological placement of the construction in the Neolithic period.

Nelson Glueck apparently included the same site in his survey of eastern Palestinian remains. He reports having visited the site described and drawn by Mackenzie (cf. *supra*) on October 25, 1937. The description of the plan of the buildings, the condition of the surviving ruins and the measurements all indicate identification with the site involved in our investigation.<sup>15</sup> Glueck's dating the installation to the Early Iron Age is based on his pottery findings and the silence of archaeological evidence for alternative possibilities.<sup>16</sup> He eliminates consideration of pre-historic founding on the ground of the association of the towers with

(15) Nelson Glueck, "Explorations in Eastern Palestine, III," *The Annual of the American Schools of Oriental Research* (New Haven: The American Schools of Oriental Research, 1939), Vols. XVIII-XIX (1937-39), pp. 165-67.

(16) "A small quantity of worn EI I-II sherds was found in the ploughed fields immediately around the site, in addition to some early Byzantine sherds... It is probable that the circular tower was built first, and then the rectangular building-complex after it in the Early Iron Age, but there was probably no great time lag between them. It will be seen below that in Beq'ah are EI sites massively built with great flint blocks, and that also in some of them in connection with square or rectangular buildings are to be found circular towers. In other words, the type of the *rujm malfuf* did not represent an isolated manner of building in an age all of its own in some dim early historic or prehistoric past, but was a definite part of the architecture which prevailed in a large part of South Gilead and 'Ammôn during the Early Iron Age... The only other period to which they might have belonged would be the end of the Early Bronze Age, because from the Wâdî Zerqâ as far as

adjacent buildings,<sup>17</sup> and he notes the absence of any comparable installations in Western Palestine.<sup>18</sup> Concerning function, he concurs in the judgment that the round tower, at least, served "a defensive military purpose,"<sup>19</sup> with emphasis on the utility of the buildings as signal facilities and refuge.<sup>20</sup> He attributes the size of the installations to the use of native flint as the construction material.<sup>21</sup>

In his study on the history of the Ammonites,<sup>22</sup> George Landes cites the difficulties of dating architecture such as the building complex here under examination. Indicating that pottery concentrations may indicate the period of most intense occupation, and that such information when compared with known historical developments may allow one to "define, within the limits of a century or two, the initial phase of a certain type of constructional plan," he uses Glueck's conclusions about the Ammonite fortresses, assigning major occupation in early Iron I, and his own study of Ammonite political expansion to suggest an eleventh century date for the construction of the installations.<sup>23</sup> The association of such installations

as Ammonite architecture is considered the most striking feature of Ammonite building, and the uniqueness of the circular tower form to the Transjordan and its being more typical of Ammon than of Moab or Edom are noted.<sup>24</sup> The judgment concerning function remains defensive, the fortress-towers serving as lookout posts,<sup>25</sup> signal stations and shelter.<sup>26</sup>

H. Gese accepts Glueck's dating to the early Iron Age on the ceramic evidence and also considers them characteristic constructions for the time and place.<sup>27</sup> The general problem of function is viewed as a series of border positions in which the defensive function of each installation played its role.<sup>28</sup>

A review of the opinions cited above shows rather clearly the questions to which a sounding of such an installation should address itself. The uncertain relation of the founding of the round tower to the founding of the adjacent buildings is one such question. Another is the lack of clear stratigraphic evidence for the founding of any such installation. A third is the dependability of the surface pottery used

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'Aqabah there is no period of occupation between the end of the first phase of Middle Bronze and the beginning of Early Iron. That these *rujûm malfûf* cannot belong to the Early Bronze Age is shown by the fact that they have never been found on any site which might possibly be dated to the Early Bronze, while most of them have been found on sites which definitely do belong to the Early Iron Age." *Ibid.*, pp. 165-66.

(17) *Ibid.*, p. 166.

(18) *Ibid.*

(19) *Ibid.*

(20) *Ibid.*

(21) "One of the reasons for the massive construction of the *rujûm malfûf* and the square or rectangular sites together with which they are sometimes found, is that the native flint which abounds in the region was used in much the same fashion as the blocks were hewn from the rock. Flint blocks were used in later periods of

occupation in Transjordan also, being always hewn into smaller shapes than those that characterized the EI constructions." *Ibid.*, p. 167.

(22) George Miller Landes, "A History of the Ammonites" (unpublished Ph. D. dissertation, Faculty of Philosophy, The Johns Hopkins University, 1956).

(23) *Ibid.*, p. 285.

(24) George M. Landes. "The Material Civilization of the Ammonites," in *The Biblical Archaeologist*, XXIV (September, 1961), p. 72,

(25) *Ibid.*

(26) *Ibid.*, p. 74.

(27) Hartmut Gese, "Ammonitische Grenzfestungen zwischen Wâdî es-sîr und nâ'ûr." *Zeitschrift des Deutschen Palästina-Vereins* LXXVI (1958), pp. 56-57.

(28) *Ibid.*, p. 57, and Landes, "The Material Civilization ...," p. 68.

in Glueck's survey as the means of dating either the dominant occupation period or the founding period for the installation. These questions, reinforced by the danger to the survival of the site posed by modern urban expansion, governed the development of a strategy for the sounding conducted.

## Prospectus

A visit to Rujm el-Malfouf in the summer of 1968 allowed an on-site inspection of possible approaches to the problem. Based on observations obtained, it was suggested by the director in submitting the request for the permit that a single square be placed so as to have one corner intersect the exterior of the round tower wall and another corner intersect a portion of the exterior of the wall of the adjacent building complex at some point. The aim of this suggestion was to excavate in a single square, evidence showing the foundation trenches (if any) for both the round tower and the adjacent building construction. Any datable material from such foundation trench(es) fill might allow more precise dating of the construction of the building(s).

It was further suggested that if time allowed, a second square might be sunk somewhere inside the installation to detect more clearly separable stratification evidence of occupations and internal architectural patterns. The unknown depth of debris accumulated outside the installation made any plan for the second square necessarily tentative.

## Stratigraphic Summary

### *Square 1*

The excavation procedure employed in the sounding was a modification of the Wheeler-Kenyon procedure of giving primary atten-

tion to stratigraphy, with pottery and objects carefully separated by loci of origin in the soil layering of the debris accumulation. Our method of recording was to maintain a locus sheet on each distinguishable stratigraphic locus in which were combined a record of the process of its excavation, a basic locus description, location of the locus in the Square, loci associated above and below in contiguous connections, the locus dimensions, pertinent levels, pottery associated in the locus, objects associated in the locus, section drawing references, plan drawing references, photographs in which the locus appears, sketches of pertinent details and an interpretation record of the function of the locus.

The supplementary records included architect's plans and sections, the photographic record, the pottery registry, object registry, bone analysis cards. This report draws on all aspects of these records and on supplementary studies, particularly of the ceramic corpus.

The appearance of the site prior to the sounding was essentially that summarized by Mackenzie (cf. *supra*), with the wall of the round tower surrounded by some tumble (see Figure 2, bottom), the exterior walls of the adjacent building(s) surrounded by far more severe tumble and evidence of larger blocks having been broken for use elsewhere (see Figure 3, left foreground), and the sector of apparent juncture between the round tower and the adjacent building showing the most heavy accumulation (see Figure 4, right foreground).

Selection of the location for the sounding followed the initial suggestion submitted with the application for the permit, namely a single square intended to touch both the exterior of the tower and the exterior of the adjacent building. The spot selected was that uncluttered by apparent roadway or other entrance construc-

tions to the site. A seven meter square was plotted at the southwest side of the tower exterior. The precise location of the southwest corner of the adjacent building was not visible from ground surface, so the square was placed at such an angle that we hoped its eastern corner might intersect the foundation of the building's southwest corner.

Designation of the sounding was Area A, and the exterior square was designated Square 1. The contour map shown in Figure 5 indicates its location.

Immediately upon clearing the Square of loose rock tumble, weeds and other ground surface plant growth, removal of the surface soil disturbed by roots and modern foot traffic showed a modern excavation had been intersected by our Square's southwest balk. Clearance of the portion of the pit within our Square indicated its most recent use as a dump for scrap cement lumps from adjacent housing construction. Other contents under the cement lumps showed by ashes, burnt plastic and screen fragments a recent use as a refuse fire pit. Clearance further indicated possible problems for the strategy of the sounding, because the pit bottom was bed-rock, and it lay less than a full meter below the ground surface from which we had begun the excavation. It was also a fortunate forewarning that the stratigraphic accumulation adjacent to the buildings was extremely shallow, and that any evidence of foundation trenches (if any) would demand meticulous attention to be traced in such shallow debris.

Subsequent probing of the stratification surrounding the buildings allowed distinction of only two layers (Loci 3 and 5) containing evidence of occupation. Locus 3 was comprised of hard dark soil with heavy clay content yield-

ing some pottery (extremely small and badly worn bits for the most part), some of it ribbed, and tesserae, ceramic roof tile fragments and glass fragments. Plaster lumps and bits were also found with the pottery. No weaponry or ashes were in the Locus, but some basalt grinder fragments were included. The layer extended throughout the Square and ran up to and connected with the exterior of the tower wall (Locus [6]). Its connection with the wall of the adjacent building was impossible to establish because some stones of that wall had been robbed out. The tentative interpretation of the Locus was that the uneven thickness of the layer, the plaster lumps in the debris, and the mixture of objects included suggest gradual destruction or deterioration of the adjacent structures as having contributed to the material accumulated. If there is a mix of occupation and deterioration debris, it was apparently peaceful, given the absence of any weaponry and ashes. Field dating of the pottery horizon indicated Roman ribbed ware as the latest datable material in all 17 of the baskets processed.

Locus 5 comprised a layer of limey, chalky, rocky earth under the Locus 3 accumulation. The soil was hard, grey, with much flint chip rock, some pottery, and was packed extremely hard. It lay throughout the entire Square, and embraced a few stones in what may have been a laid rough working surface near the corner of the adjacent building. The layer ran up to the most stratigraphic features found in the Square, a plaster lining of the exterior of the tower wall (Locus [7]) and similar plaster forming a drain around what turned out to be the foundation of the corner of the adjacent building (Locus [7]). The layer was directly over bedrock in some portions of the Square, although a thin layer of virgin soil lay in some uneven depressions of the bedrock formation.

Critical for the stratigraphic aims of the Square was the fact that no evidence of foundation trenches could be detected for either the tower wall (Locus [6]) or the wall of adjacent building (Locus [7]). Rather, it appears that both constructions were set on bed-rock with plaster drainage arranged to bleed ground water away from the foundations. The relative levels taken at the bottoms of the drain channels exposed indicate that the drain around Locus [7] intended to bleed the water away to the southwest, and the the drainage intended along the base of the tower wall was either a general seal of the entire foundation, or a very gradual drainage to the northwest and some repository outside the sector excavated by our Square. Most sensibly the drainage of such water would be down the wadi to the north. Figure 6 shows the plan of the drain Locus [7] as drawn when most of Locus 5 had been removed, and Figure 7 looks up the drain to the northeast from the corner of the foundation stone of the adjacent building corner.

Pottery found in the locus was field dated to the Roman period as the latest material present clearly in 7 of the 11 baskets processed, but it should be noted that the quantities in the remaining baskets were extremely small, of relatively poor quality, and of little help as significant indicator fragments for analysis.

As for the remains of the footing of the walls of the adjacent buildings, it can only be claimed that the corner was deliberately set and drained, that constructive craftsmanship in stone masonry was detectable. Further work on the site is necessary to obtain any data from more extensive surviving fragments which may be helpful in diagnosing the founding culture's identity.

The tower wall construction is that cited by Landes as typical of other locations as well: <sup>29</sup>

Typical construction technique consisted of blocks being lain at the corners in headers and stretchers, then throughout the rest of the wall in rude courses with smaller stones in between to make the rows fairly even. The average thickness of the walls was about two meters (ca. seven feet), the blocks laid in outer and inner layers with a certain amount of overlapping, but apparently with no through bonding stones, although some times part of the original mud and small stones core filling was still in position, as for example at el-Malfuf.

The conspicuous exception in the results of our sounding was the lack of any header-stretcher pattern in the corner. An addition to the construction techniques is the use of the plaster drain and seal arrangement. On the small portion of the exterior of the tower wall (Locus [6]) exposed to bedrock, it was evident that the plaster had deteriorated and fallen away in the upper portion exposed, but the lower two courses exposed above bedrock revealed plaster so well preserved that the palm and hand prints of the plasterers were still clearly imprinted in the exterior surface of the plaster seal. At the joint of the wall stones with bedrock a small "shelf" of plaster had been constructed to lead the water away from the foundation. It survived in the portion exposed to a width of 0.07 - 0.10 m., but it was impossible to detect from the portion expected whether the original design included an outside rim, forming a channel. The relatively well preserved state of the lowermost portions of the plaster lead the writer to think that such a

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(29) Landes, "A History . . ." p. 289.

channel was not part of the original design, but the relative levels of the "shelf" in the portion exposed would allow for such a drain to run off to the north if, indeed, it had once been there.

#### *Square 2*

The unexpectedly shallow accumulation of debris in Square 1, and its consequently rapid clearance to bedrock, brought the necessity of planning a second square as part of the sounding. Several factors affected the decision choosing its location. Given the shallow accumulation in Square 1, it became desirable to work a second Square with as much of the full stratigraphic record of the site's occupation as possible. Given the lack of foundation trench evidence for either building element in Square 1, it became desirable to seek additional evidence of the relation of the round tower to the adjacent buildings. Given the somewhat startling indications of Roman period pottery as characterizing both the occupation and deterioration strata in Square 1, it became desirable to get either confirming or modifying evidence from more typical occupation strata. Given previous speculation that some sort of entrance connection linking the two possible phases of architecture,<sup>30</sup> tower and adjacent buildings, lay on the east edge of the tower perimeter, it seemed a prudent move to locate the excavation so as to intersect such an entrance, to allow penetration of all interior occupation strata, and to discern what, if any, interior architecture characterized the round tower construction. Figure 8 shows the location of Area A, Square 2 which resulted from these considerations. Six meters E - W by eight meters N - S, it was set with its east balk running through the middle of the tower wall at its eastern extremity, thus intend-

ed to cut half of any entrance accommodations and sample, at the same time both the stratigraphic accumulations and the architectural plans of any interior tower design. It was hoped that larger quantities of pottery and objects would be available for dating corroboration or modification.

Summarized most succinctly, the excavation indicated substantial interior architectural subdivisions, revealed a split-level entrance arrangement linking the tower and the adjacent buildings, brought additional architectural design problems to light, supported with ceramic and coin evidence the Roman dating discerned on the basis of evidence from Square 1, and generally re-oriented our expectations concerning future exploration of this and other such locations.

The stratigraphic sequence, briefly put, included a substantial destruction debris accumulation, apparently peaceful in character, a major interior development of the tower in two, possibly three, story construction, and either the absence or deliberate obliteration of evidence of occupation prior to the Roman and Byzantine periods. Now to the details.

After removal of the loose tumble and modern surface soil accumulation, the first conspicuous features were major walls subdividing the Square into four varying sized spaces in which the stratigraphy might be excavated (See Figure 9). The largest of these (upper left of Figure 9) gave us the clearest and most complete stratigraphic sequence. Under the surface soil a 2.25 m. thick destruction debris layer had fallen in on a rough stone slab floor supported by a rough corbel construction. Under the floor

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(30) Cf. *supra* Mackenzie's observations.

lay some accumulation of soil in a "basement" space which yielded no evidence of occupation except the accidental sifting or drizzling of soil and pottery chips through the cracks in the stone floor above. Bone analysis indicates a cat had deserted her family there at some stage (skeletal remains of 4-5 very small kittens were found in the debris), but very close inspection for any sign of human occupation in the layering was carried right down to the bedrock, and no evidence of earth surfaces or floors was discernible.

Treating this destruction-occupation evidence more specifically, the destruction debris found in the sector bounded by the north and west balks and by walls designated Loci [3] and [4] (See Figure 9), was designated Locus 2. The debris comprised a mixture of very loose or lightly packed brown soil fallen round varying sized stones of chert and several huge thin slabs of limestone. The slabs varied from .12 to .25 m. in thickness and measured from 1.07 m. to 1.50 m. in length by .65 m. to 1.19 m. in width (See Figure 10). Some were found with one end high near the wall Locus [3] or near the west balk, and the other end tilted down toward the center line of the space running north to south. The significance of this was not apparent until clearance of the destruction had exposed a number of stones corbelled from walls [3] and [4] (See Figure 11). The debris included one such slab still in place, so far as we could discern, indicating that the corbelling from the walls was intended to support some ceiling arrangement, apparently including the large limestone slabs in the destruction debris. In Figure 12 the corbel stone *in situ* at the upper left supports bracing stones holding the cover limestone slab in the upper center, which rests again on the corbel stone from wall [3] at the upper right. This "demonstration" of the ceiling support system explained both the var-

ious corbel stones found and the slabs in the destruction debris as part of the original architecture with which we were working. The only question left uncertain was whether these slabs had in fact been the floor of an upper story, now demolished. Walls [3] and [4] appear to have stood higher than the surviving remains. Their width of 1.07 m. and 1.00 m. respectively and the fact that both walls were built up from bedrock support the possibility, but insufficient evidence survived to allow certainty that an upper story was part of the design of the interior structures, based on wall evidence alone.

Pottery from Locus 2 showed Roman material consistently as the latest datable forms. They included *terra sigillata* and imitations of such ware, lamp fragments and spouts. The objects included a half dozen basalt grinder fragments, numerous glass rim, neck and base fragments, and *one* possible weapon - a round stone of unevenly surfaced limestone measuring *ca.* .09 m. in diameter which would have been rather large for a slingstone and small for a missile.

The relative absence of weaponry as over against domestic objects, the absence of ashes or other traces of damage by fire and the loose and apparently undisturbed condition of the soil accumulation with the rock types mentioned above seem to indicate a gradual period of disintegration rather than the sudden shock destructions brought on by war or natural catastrophe such as earthquake. The condition and thickness of the destruction layer indicated that it was a peaceful decay rather than some violent trauma which marked the demise of the site.

Beneath the destruction accumulation, Locus 2, was the apparent floor construction, Locus 18. It was constructed of limestone and chert bars, slabs and smaller stones varying

from .25 m. to .35 m. thick and of length and breadths differing from .25 m. to .95 m. There were numerous chinks between the stones apparent as the destruction debris above them was removed, and the uneven floor surface involved in such construction gave no evidence of neatly accumulated occupation layers such as might be normal over earth or plaster floors. Some ash flecks, numbers of bone fragments and the continuing appearance of domestic pottery forms (cookpots, lamps, bowls) and objects (glass and grinder fragments and a stone mortar) sustained the impression that the installation served as domestic residential quarters. The pottery immediately above the stones comprising the floor continued to show Roman forms, as in the destruction debris above it.

We were thrust into the next stratigraphic evidence by accident. While standing on some of the stones comprising the "floor" construction, a minor collapse of the floor occurred, indicating that there was some sort of space open beneath. Careful clearance of the collapsed floor material revealed a "basement" with what seemed at first to be a smooth mound of earth just under the collapsed sector (See Figure 13). Following the completion of the clearance of the sector of floor 18 within the Square, careful stratigraphic work was pursued in the "basement."

This comprised cutting a portion of the mound of basement debris to yield a subsidiary section directly through the mound connecting with wall [3] and our west balk. Completion of that clearance indicated that the mound had apparently accumulated by sifting or drizzling (during rainy season leaks?) through the roughly constructed floor above. No layering due to human use was detectable, and meticulous separation of soil samples near its bottom supported the conclusion that the accumulation

was due to natural forces. The few pottery sherds which had dropped into the accumulation showed Roman dating characteristics, including imitation *terra sigillata* ware, ribbed ware, and one molded lamp top fragment. The soil immediately above the bedrock base of the accumulation showed some traces of moisture seepage, but the space cleared in the sector was too small to allow sweeping statements about the basement drainage problems (See Figure 14).

Three other features of the interior architectural development became evident in the data observable through this "basement" excavation. First, while clearing the floor above of the destruction accumulation, several of the chinks between the stones comprising the floor showed a cool updraft of air as they were exposed. We thought the cool might be due to moist soil beneath, but the draft was most likely wind channeled somehow through the exterior face of the tower wall chinks. No deliberate openings in the tower wall were visible on the exterior on any side. The prevailing wind coming from the north west or west led to careful examination of the exterior on those directions of exposure, especially. When the "basement" clearance began, we found out why the drafts had been felt. Under the floor level was extensive bracing and pier support for the floor (discussed below), but opening in any north-south sub-floor support walls allowed a clear movement of air across the entire east-west width of the tower interior *under the floor*. Anyone conducting an excavation of such data in the heat of July and August was tempted to think about deliberate air conditioning planning by the builders.

Second, the continuation of the section cut through the mound in the "basement" to its connection with Wall [3] established that the

interior walls were built directly upon bedrock, contributing conspicuously to their stability and bearing strength.

Third, the sub-floor support structures became clearly apparent from the "basement" clearance, small in area though it was. Additional cross walls were built across the center of the room span. At points these were supplemented by piers built up from bedrock and supporting the stone corbelled to support the floor stones above. The principles were essentially similar to those used in the ceiling construction, but the sizes of the slabs varied in being thinner in width and thicker than their ceiling counter-parts. Figure 15 shows one portion of such corbel construction from Wall [4] with the floor slab rather over-exposed photographically at the very top of the picture.

The stratigraphic sequence described above was confirmed by the results in the other sectors of Square 2 insofar as excavation proceeded. In the sector bounded by Walls [4], [11], [9] and the south balk (See Figure 9 above), the same destruction debris lay over a simpler stone floor supported by the same sub-floor corbelled support. This supported the suspicion that we had definitely constructed interior rooms, and the destruction debris included ceiling slabs and corbelled support stones for the ceiling, although the deterioration of the construction caused some of these to tilt more the wall [11] into the destruction debris accumulation. Most important from this destruction debris (Locus 5) was the addition of a clearly datable coin to the ceramic and glass evidence of Roman

occupation. The obverse of the bronze coin bore the head and inscription of Roman Emperor Marcus Aurelius Probus, A. D. 276 - 282.<sup>31</sup> Its being found in the midst of the destruction debris (Locus 5, at .50 m. below the top wall [4]) would suggest that the occupation of the site would necessarily precede the minting and subsequent loss of the coin. Unfortunately, the removal of the floor and sub-floor debris in this sector of Square 2 could not be completed before the end of the season.

The other two sectors of Square 2 provided quite different insights on the interior of the tower. The very small space bounded by walls [9], [3], [10] and the interior of the tower wall (Locus [6], as in Square 1) yielded no evidence of the floor and ceiling construction described in the other two sectors above. The apparent modification of the tower wall to which we assigned Locus [16] will be discussed below. Whether it was some sort of storage corner, or became a sort of closet with access only through a crawl space through wall [9] was not clearly established by the extent of our clearance.

The space bounded by walls [3], [10], the north balk, and the presumed interior line of the tower [6] (See Figure 9 above) revealed the most exciting architectural features in some respects.

The basic stratigraphic sequence of a destruction accumulation over a floor level paralleled that in the two "rooms" west of walls [3] and [9]. Evidence of corbelled ceiling support was present in wall [3] on its east face as it had been on the west face. A slightly re-

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(31) The coin was retained by the Department of Antiquities at the division of objects, and remains as part of the Department collections. Expedition records identify it as Object

number 64, and the field photograph numbers 283 and 284 record its obverse and reverse respectively.

aligned section of the tower wall, with a definitely constructed entrance passage through the tower wall, was clearly apparent. The offset segment of the tower wall on the north was identified as Locus [15], and its counter-part on the south was identified as Locus [16]. Constructed of large stones (with one exception) they were built on a line moved slightly to the west from the interior normal line of the tower wall. In the segment of the entrance construction on the north (Locus [15]) one huge worked limestone block anchored the edge of the entranceway half way up its face. The floor of the passage adjacent to the south face of wall [15] comprised the flat top surface of a chert block integrated as part of the tower wall [6], and although no tesserae were found *in situ*, the plaster base for a mosaic floor fragment lay flush up against that threshold stone on its east edge (See Figure 16). Wall [10] formed the southern edge of this entrance way, and the levels on the threshold stone top indicate its appropriate placement to provide access to the main "floor level" of the interior rooms described above.

Clearance of the debris along the southern spur of the entrance (Wall [16]), revealed a similar threshold installation utilizing the regularly placed stones of the tower wall (Wall [16]) construction. However, the level of that threshold was 1.40 m. above the lower threshold. We seem to have uncovered a split-level entrance to the tower interior from the adjacent building to the east (See Figure 17), with the main floor entrance comprising the northern half and the upper floor (or roof top) entrance comprising the southern half of the access.

Two other main features comprise the characteristics of the interior architecture of the tower. It clearly made no sense to have a mas-

sive main entrance to the tower unless some access to the interior rooms were provided. Right according to speculation, a doorway through wall [3] became apparent as the lower entrance was cleared (See Figure 18 where the lintel stone shows its east edge *in situ* at the top center, and the loose soil and rock of the destruction debris blocking the doorway is in contrast to wall [10] on the left and the portion of wall [3] east face exposed behind the meter stick).

Clearance of the doorway indicated a carefully bonded lintel with vertical limestone blocks forming the door frame, including the bolt-hole on the north frame vertical block, leading directly from the main gateway into the interior rooms (See Figure 19).

The other feature of the interior construction was a small niche, built deliberately with an overlapped inverted V ceiling and plastered at least on the base. It was built into the north face of wall [4], providing a small storage space in the room cut by the northwest corner of the Square (See Figure 20).

A portion of the east edge of Square 2 was extended eastward in an attempt to diagnose other features of the entrance/gateway to the tower from the adjacent building, but the destruction of the eastern end of wall [10] and any other facilities to which it may have been linked made no further conclusions possible from the sounding effort.

While the extremely loose condition of the soil and rock comprising the destruction debris in all sectors of the Square made keeping neatly vertical balks simply impossible, Figure 21 indicates the final stage of excavation in Square 2, showing especially the outlines of the sub-

floor support structures under the main walls shown in Figure 9 above.

Figure 22 shows the west face of wall [3] after clearance of the doorway and the small portion of the "basement" indicating the foundation of the wall and adjacent floor support structures rested on bedrock.

Figure 23 is the elevation drawing of the west face of the main gateway indicating the relation of the lower to the upper sectors of the entrance. Unfortunately we were unable to complete clearance to bedrock before the season ended.

Summary analysis of the nature of the interior construction and the stratigraphic sequence detected in three of the four subdivisions of the Square would support the claim that the interior architecture represents a single period of construction and occupation followed by a gradual peaceful disintegration of the installation with the quantity of domestic pottery and coin evidence suggesting possible roof storage or an upper story, evidence for which is missing for the most part due to erosion or quarrying of the interior. Further work on the remaining portion of the interior is needed to confirm or modify this judgment.

## The Problem of the Pottery

When Nelson Glueck drew his conclusion that this was an Early Iron Age site, he made reference to some EI I-II sherds found in the field next to the tower and building (Cf. n.

16 *supra*). Our initial surprise at the pottery evidence in the strata of Square 1 was gradually turned into the conviction that some error had occurred, either in our reading the pottery evidence in the field or in the extension of a conclusion from Glueck's evidence. That the error was of the latter rather than the former sort seems apparent from preliminary analysis of the ceramic horizon in the clearest stratigraphic sequence of occupation evidence available from the sounding, namely, the sequence of Locus 2 (destruction debris), floor 18, and the sub-floor "basement" material in the northwest sector of Square 2. Figures 24 - 33 are representative of the forms found throughout the destruction debris accumulation. Figures 34-39 are representative of the materials found on and under Floor 18. The drawings were prepared by Miss Diane Anderson, a member of the staff, as part of a Senior Honors Thesis prepared in 1969 - 70, and subsequently submitted to the Faculty of Upsala College. Her preliminary analysis of the vessel types and parallels of form and ware led her to the conclusion that comparisons "vertically" from locus to locus showed a relative continuity and homogeneity in the ceramic corpus. "This would suggest that the three layers are sequentially related within a relatively restricted period of time; the site had one basic phase of occupation and destruction." <sup>32</sup>

Fifteen fragments of genuine or imitation *terra sigillata* suggested a Roman date for the accumulation apart from comparison of parallel forms. Study of the fragments with reference to Kathleen Kenyon's discussion of *terra sigillata* <sup>33</sup> led to the conclusion that the samples

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(32) Diane E. Anderson, "Ceramic Typology Analysis: Rujm el Malfouf 1969" (unpublished Senior Thesis, Upsala College, 1970), p. 57.

(33) Kathleen M. Kenyon, "I. Terra Sigillata,"

in J. W. Crowfoot et al. *The Objects from Samaria* (London: Palestine Exploration Fund, 1957), pp. 281 - 88.

found at Rujm el-Malfouf "had a buff paste with a definite red glaze that would align it with Kenyon's Eastern Sigillata A, rather than B or C. .... the high quality of the sherds, as well as the descriptive similarities in paste and glaze to Kenyon's Eastern Sigillata A, would strongly suggest the genuineness of the Rujm el-Malfuf sigillata in Kenyon's terms." <sup>34</sup> The chronological appearance of this ware at Samaria was established there by 60 B. C., and was still in use at the time of the revived activity on the site in the second century A. D. <sup>35</sup>

The search for parallel forms is here reported in a most preliminary state. Herodian Jericho, Samaria, Bethel, Dibon and the Roman-Byzantine cave of Mughareh Abu Hamileh have provided the clearset parallels of form to date. The combination of the lines of evidence thus far examined led Miss Anderson to the tentative conclusion that the ceramic parallels to her corpus of material from Square 2 suggest a date range from the second half of the first century B. C. to the third century A. D.

That the corpus described above was not atypical for the site became apparent as other portions of the Square yielded similar forms. Figure 40 shows some of the fragments found *in situ* as the lower portion of the main gateway or entrance way was being cleared (Wall [15] stone is at the extreme left), and the lamp in Figure 41 (Registered as object 79) was found near the bottom of the destruction layer just east of Wall [3]. Further studies are needed to make the parallel citations more complete, but the consistency of the appearance of Roman material is striking.

In reference to the problem of earlier Iron Age ceramic evidence, all that can be said is that it did not occur within the scope of the modest excavation this sounding included. From stratification evidence, ceramic analysis, the clue provided by the most legible coin and the comparison of data obtained in Square 1 outside the tower and that obtained in Square 2 inside the tower, the signs point rather to a single phase of construction-occupation in that sector of the site, at least, and that phase falling within the early stage of Roman occupation in Transjordan, while the gradual decay and disintegration which seems to have marked the destruction process stretched later in the same general period. That the occupation for which we found evidence was essentially residential and peaceful is most clear in the dominance of domestic wares and objects and the absence of signs of violence or natural catastrophe.

The radical adjustment of chronological focus to which the data forced us both during the process of the excavation and in the studies conducted since its conclusion have raised questions yet to be answered. Most conspicuous is the "un-Roman" look of the architecture. In contrast to Roman period installations in the center of Amman to the east, this is surely very crude and rough. It raised the question for us of whether or not the Romans might simply have cleared and used (or modified) a previously existing structure, eliminating the bulk of evidence of earlier occupation in the process. The most severe difficulty with that hypothesis was the evidence of Square 1. We cleared to bedrock a seven meter square sec-

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(34) Anderson, *op. cit.*, pp. 61 - 62.

(35) Kenyon, *op. cit.*, p. 288.

tor, finding Roman material right to the bottom of occupation evidence. If, then, the Romans found the structure already constructed, with the debris of previous use about, they were most meticulous in clearing a surrounding apron of more than seven meter's width before beginning their own use of the installation. Another hypothesis, which remains to be tested by further exploration of the site, is that the workmanship may have either been hired through local relatively less skilled carftsmen than normal Roman standards would use, or that the installations were intended to be tem-

porary facilities, and therefore somewhat more crudely constructed.

It is hoped that the evidence of the sounding is sufficient to warrant further investigation of the site for the stratigraphic, architectural, ceramic and other clues which may resolve some of these unanswered questions. It is further hoped that the problems raised to view by the sounding at this site will spur investigation of other similar installations before the needs of the expanding city of Amman will make such excavation less accessible.

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