THE 1996 SEASON AT 'AYN GHAZĀL: PRELIMINARY REPORT

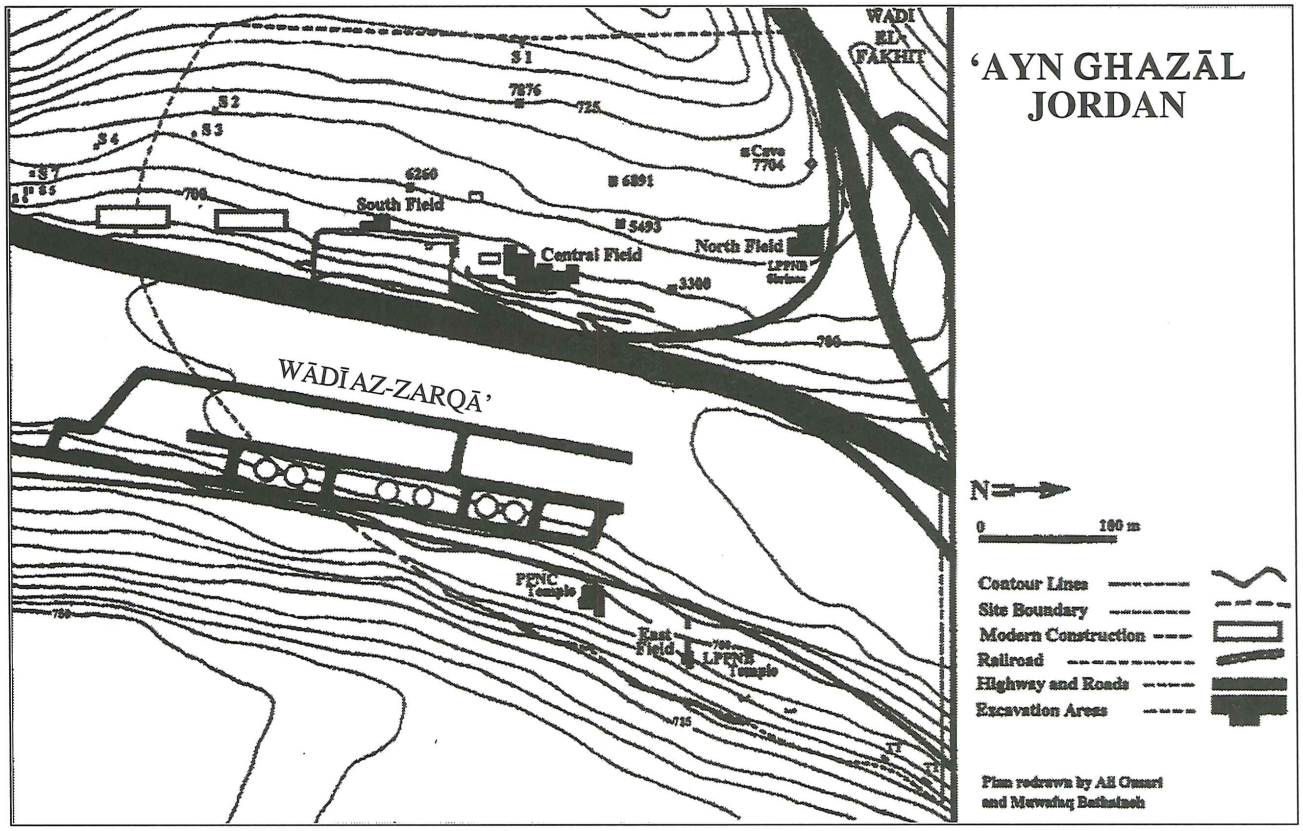
by

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Introduction

The 1996 excavation season at 'Ayn Ghazāl aimed to expand our information concerning the East Field opened in the 1995 season (Rollefson and Kafafi 1996) as well as to continue examination of Yarmoukian architecture and courtyards in the Central Field and the LPPNB and PPNC domestic, ritual and industrial complexes in the North Field.

In addition to completing the clearing of a temple/sanctuary in the East Field, 75 m^2 were sampled just downhill of the ritual structure, and a Step Trench 40 m long and 2 m wide was planned near the center of the East Field (Fig. 1). In the Central Field, 100 m^2 of newly investigated area were opened in the vicinity of a well-preserved Yarmoukian house first found in the 1994 season (Kafafi and Rollefson 1995). In addition, three excavation trenches (75 m^2) were dug to the south and east of a curved lime plaster floor discovered in the North Field in the 1995 season (Rollefson and Kafafi 1996); finally, 25 m^2 begun in 1993 around the circular cult building (Rollefson and Kafafi 1994) were peeled back in careful detail to understand better the details surrounding the use and transformation of the apsidal and circular four-phase building.



1. Site map of 'Ayn Ghazāl showing the location of the North, Central, South and East Field excavation areas. (Drawing by 'Ali Omari and Muwafaq Bataineh).

THE EAST FIELD

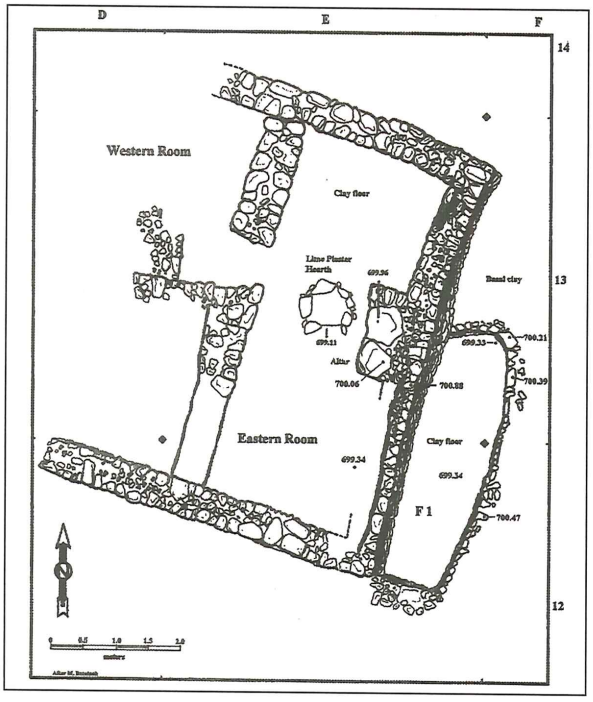
Concentrated work was undertaken in two areas of the East Field during the 1996 season. Continued work in Area I, the southern-most part of the enclave, intended to obtain a better idea of the stratigraphy, chronology and local use of the vicinity, particularly in regards to the temple/ sanctuary incompletely uncovered in 1995. The second area (Area II) was located nearer to the center of the East Field, approximately 70 m north of Area I.

East Field, Area I

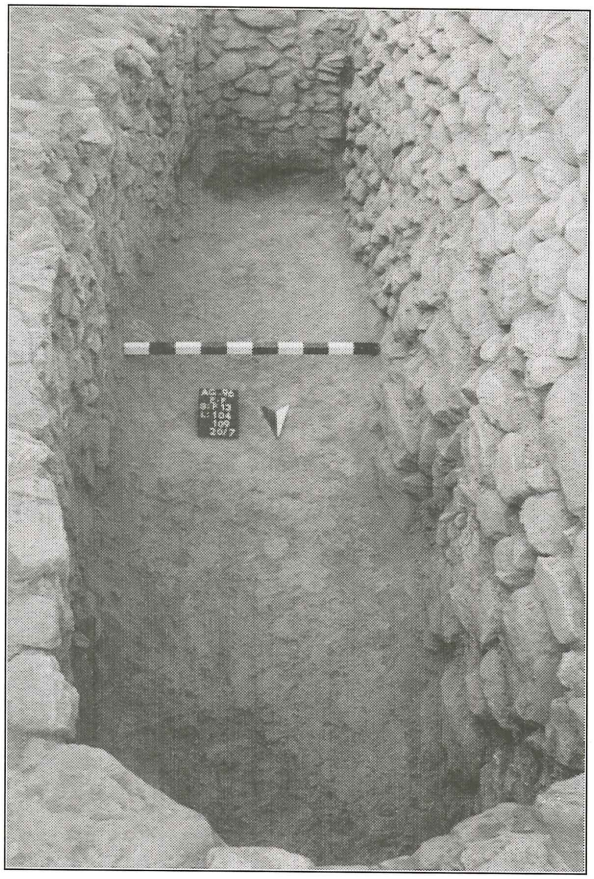
The PPNC Temple/Sanctuary

The temple/sanctuary discovered in 1995 was not completely exposed principally due to the presence of two enormous retaining walls; one (Terrace Wall III, hereafter TW III) had been placed immediately over the altar and the other (TW II) ran just outside of the eastern wall of the structure (cf. Rollefson and Kafafi 1996: 21, Figs. 9 and 13). The stones in both walls were relatively huge, some more than a meter in maximum dimension. It was not possible to get a crane into this part of the site, so the stones had to be broken with sledge hammers.

The dismantling of both TW II and TW III (both of which exceeded 15 m in length N-S, converging with T I and T IV in the NE corner of Square E 14) revealed that the temple/sanctuary was built after earlier LPPNB layers had been removed to a depth of at least 2.5 m and after the construction of Terrace Wall I. TW I truncated all of the earlier LPPNB deposits running along a North-South line for more than 20 m (cf. Rollefson and Kafafi 1996: Figs. 9 and 10). After reaching sterile clay, the builders of the temple/sanctuary excavated a relatively small semisubterranean chamber (F1) about 4 x 1.25 m to a depth of more than a meter (Figs. 2 and 3). The yellowish clay from this chamber appears to have been used to cover the floor of the Eastern Room of the temple/ sanctuary (cf. Rollefson and Kafafi 1996:



2. Top plan of the PPNC temple with the Western and Eastern rooms and the F1 storage feature. (Drawing: M. Bataineh).



3. View to the south of the F1 storage room east ("behind") the PPNC temple. (Photo: Belal Degedeh).

21); the volume of sediments (ca. 5 m^3) corresponds well with the circumstances that were encountered in this section of the building. The function of this small room is not clear, but it may have served as a storage facility for materials and objects used in the ritual structure.

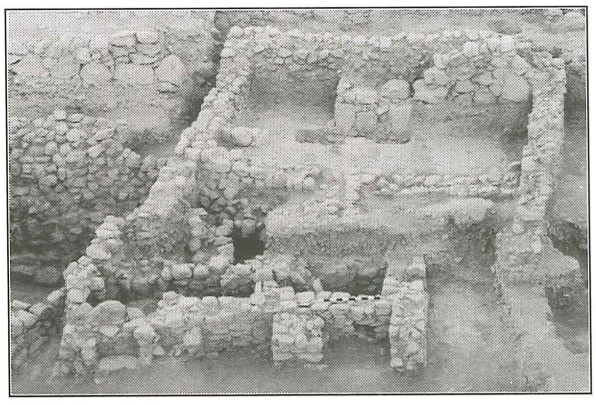
On an artificial terrace created by the clearance of earlier LPPNB deposits, a small rectangular trough-like structure ca. 1.0 x 0.4 m was built against TW I east of the semisubterranean F1 storage chamber; evidence of burning occurred inside and around this feature, although its exact function remains obscure.

The interior arrangement of the Eastern Room became clear once removal of TW III was underway (Fig. 4). It was guessed in 1995 that the three standing stones visible under TW III were in the center of the room, following a "symmetry" rule that had operated at 'Ayn Ghazāl since the MPPNB; this was only half correct: the standing stones were situated at the middle of the N-S axis, but they were also placed directly against the eastern wall, not in the middle of the E-W axis of the room (cf. Rollefson and Kafafi 1996: 21-22). It also turned out that there were not just three standing stones aligned along the eastern wall, but three *pairs* of orthostats that supported a split-level altar of two large limestone slabs that rested more than a meter above the clay floor. The central pair of orthostats, the floor hearth (surrounded by seven limestone slabs), and the doorway in the wall separating the Eastern and Western Rooms formed a straight line, as predicted in 1995 (Figs. 4 and 5).

Clearance of the doorway and the sediments (mostly destroyed by bulldozers and ancient erosion) remaining in the Western Room exposed the lowermost remnants of a screen wall at the western side of the opening. Leaving the Eastern Room, one was forced after ca. 60 cm to make an abrupt turn to the north; this means that someone in the Western Room could not see what was happening in the Eastern Room, particularly in regards to the altar and the floor hearth. In effect, this is the oldest version we know of regarding a temple "holy of holies", which was cut off from public view (cf. Fig. 4).

We were not able to remove all of the stones from TW III that had crossed the raised altar: the eastern wall (preserved to 1.8 m high and only about 35 cm thick) of the temple/sanctuary had begun to collapse inward in the SE corner of the structure, which may have been the reason for the abandonment and "ritual burial" of the temple.

In reflection, there is a considerable amount of labor involved in the preparation and construction of the temple/sanctuary. The original floor area of the temple is not



4. The PPNC temple in upper half of the photo, the earlier LPPNB house in the foreground. To the left is the deep 2.8 m LPPNB retaining wall. (Photo: B. Degedeh and Yousef Zu'bi).



5. A closer view of the altar area, built against the eastern wall of the PPNC temple. (Photo: B. Degedeh).

known due to later damage, but there was a ground plan of at least 8 x 20 m involved in the clearance of LPPNB deposits, reaching a depth of 2.5 m, which translates into a minimum of ca. 200 m^3 of excavated dirt undertaken in the construction effort.

The LPPNB/PPNC House

Three contiguous excavation trenches (D-12,[1] D-13 and D-14, totaling 75 m^2) were opened in 1996 to the west (downhill) of the temple/sanctuary. Square D-12 contained only badly eroded or otherwise disturbed outdoor sediment deposits (the hillslope was 35% in this part of 'Ayn Ghazāl), but to the north, squares D-13 and D-14 exposed the remains of a badly damaged LPPNB house. The dimensions of the structure, which was not completely uncovered to the west, were minimally 5 x 6.5 m (EW x NS) and included all or parts of eight rooms that ranged in size from ca. 1 x 1 m to 1 x 2.4 m (cf. Fig. 4).

The initial size of the larger rooms in the western part of the house may have been much greater, but remains of abutting stud walls show that the space was reduced in the rooms sometime during the LPPNB period. (Unfortunately, the exact arrangement of the rooms will not be possible to reconstruct since the laying of a sewer line in the 1980s created a 2 m wide trench through the center of the rooms). These rooms all contained remnants of red-painted lime plaster floors, and the stones used in the walls were shaped into rectangular slabs, a typical LPPNB practice. The smaller rooms were constructed in a row along the eastern side of the house, and the absence of lime plaster floors and the use of undressed limestone blocks suggest that this area may have been an early PPNC modification of the original LPPNB building. This range of rooms also runs under the temple/sanctuary, providing us with a PPNC age for the ritual building.

The LPPNB Retaining Wall

The bottom of the large, battered retaining wall partly unearthed in 1995 (TW IV, Rollefson and Kafafi 1996: Fig. 11; compare with Fig. 4 in this report) was reached in 1996, 2.85 m beneath the top of its uppermost course. TW IV appears to have been built in two phases: the earliest phase, approximately half of the overall height, has an angle of batter of approximately 75°, but above this is a section of nearly vertical wall that may have been added at a later time. The earliest phase remains unknown in terms of its construction date: the earliest surfaces that lie against the face of the wall may be late MPPNB in time (based on some aspects of the lithics), but it is safest for now to assign an M/LPPNB age to the first phase. The latter part of the structure certainly dates to the LPPNB period, and one can trace the disappearance of the retaining wall under the walls of the PPNC temple/sanctuary.

The purpose of the TW IV is apparent: throughout almost its entire height is a series of alternating colluvial and alluvial deposits that interfinger as the result of slope wash and river flooding. Just over a meter to the west of the lower portion of TW IV, and parallel to it, is a series of rebuilt walls whose function is not clear; probably they were, at times at least, parts of structures, but they also may have served to prevent damage to other nearby structures from river flooding and from subsequent undercutting of the steep slope. The purpose of these walls can be better understood with additional excavation, although this is also near recent damage associated with the burying of a sewer line.

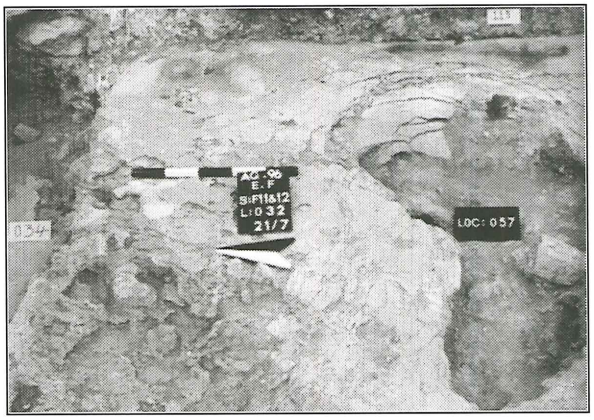
The LPPNB Apsidal Building

In Sqs. F-12 and F-11 an LPPNB apsidal building was partially uncovered in the 1995 season, and this building was targeted for complete exposure in 1996. The building

1. In the East Field, excavation trenches follow a grid pattern whereby 5m rows of alphabetical letters march uphill (from west to east) from A to Z, crossed by rows of numbers increasing from 1 to x from south to north.

had interior dimensions of at least 4 x 3.2 m (NS x EW), but the southern end remained covered under unexcavated sediments. It had an apse contour on the northern end, identical to the earliest phases of the circular cult building in the North Field (Rollefson and Kafafi 1994) and very similar to the building in the Central Field re-used by the Yarmoukians, possibly as a "public building" (cf. Rollefson, Simmons and Kafafi 1990: 110-111; Rollefson and Kafafi 1996: n. 2). The apsidal structure in the East Field had numerous flooring episodes, but only the earliest four preserved any coherency: 1) the earliest (Locus 034), only exposed at the very edge of the apse, was painted with a broad red band at the join of the floor and the wall; 2-3) two intermediate floors were exposed only in very small patches where the overlying floors had suffered post-abandonment damage, but a circular floor hearth, 70 cm in diameter and colored pink on the rim and on the interior surface, was found in the center of the room that belonged to this floor phase[2]; and 4) the fourth, uppermost floor.

The most recent floor (Locus 032), uncovered throughout the excavation trench showed after careful cleaning that it was decorated in a broad checkerboard pattern, at least in the northernmost two meters of the surface (Fig. 6). A grid was painted in red on the lime plaster, then alternate areas were filled in with red pigment. This method resulted in rectangles, rather than squares, and there was considerable variation in the size of the individual rectangles. Overall, they averaged ca. 40 cm on a side. Like the earliest floor, the most recent plaster surface was also bordered with a broad red band at the join with the walls, and a large stone-and-clay lined subfloor installation, up against which the floor plaster curved at the edges, was also bordered in a band of red. Lime plaster was still preserved up to a height of



6. Floors of the LPPNB apsidal house in the East Field. At the far left is the original floor (Locus 034), and the signs and arrow are atop the painted checkerboard floor 032. (Note some visible patterning at upper left). The eastern wall of the building is across the top of the photo. Loc 057 is a pit that cut through the upper floors, and a badly disturbed burial (excavated in 1995) with skull was found inside. (Photo: B. Degedeh).

40 cm on the eastern wall of the building, but the material was very friable and it was not possible to determine if the wall plaster had ever been painted.

A severely damaged sequence of up to five more floors was found above Floor 032, but there was little preserved coherence. There were occasional pedestaled fragments of red-painted floor plaster *in situ*, but generally they were very small. It is not possible to demonstrate that these surfaces were associated with the walls bounding the earlier sequence described in the previous paragraph. One of the lowermost of this ill-defined series of surfaces was a lime plaster-and-gravel floor foundation (Locus 111), although the finished surface was absent. Associated with this floor base was a posthole (Locus 112) which, at its base, used a thick, flat stone to support the post; this stone was once used as a game board (see below). The location of the posthole in relation to the walls of the underlying apsidal house indicates that the upper sequence of floors must have been associated with a different

2. In the MPPNB, circular floor hearths were placed directly in the center of the room. If this geometric "rule" still applied in the LPPNB, this room of the apsidal building would have been 4.8m long (NS) and 3.5m wide (EW).

floor plan.

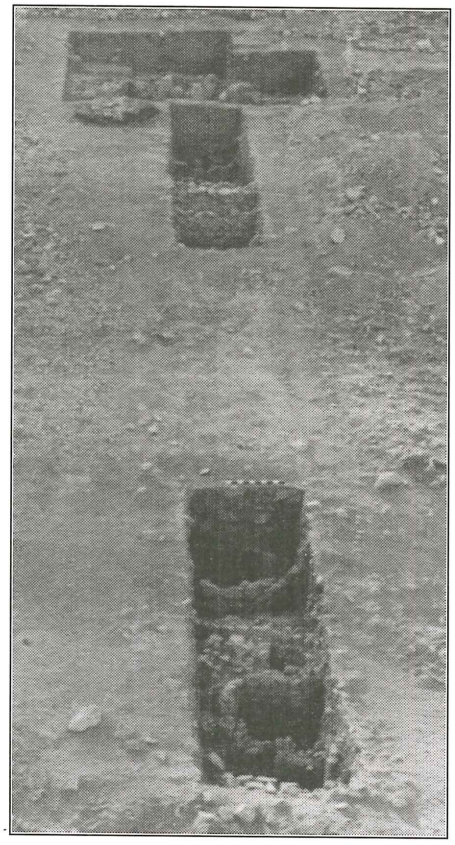
East Field, Area II

The nature of the settlement in the East Field outside of the southern part of the area excavated in 1995 was very poorly understood, for the only other investigations that had been carried out east of the az-Zarqā' River entailed two small test probes near eroded plaster floors and walls in 1984 (Rollefson and Simmons 1986). The season in 1995 was very productive, but the focus was on the fringe of the eastern enclave, and in 1996 we wanted to obtain a broader and more representative sample of the distribution of architecture and activities in the East Field. To this end, we opened up a long but narrow trench that ran uphill from the steep escarpment above the railway to just below the first ledge of limestone outcrop beneath the plateau above the East Field (Fig. 7). The placing of the trench was entirely random, but as it turned out, the location proved to be uncommonly productive.

The LPPNB "Split-Level" House

The 2 x 2.5 m probe in Square F-28, near the bottom of the slope in the East Field, coincided neatly with one room of an LPPNB house (cf.Figs. 1 and 7). The room turned out to be in the SW corner of the house and was bounded by the exterior western and southern walls as well as interior walls that separated the room from others to the north and east. Between the room and the one adjacent to the east was a doorway ca. 60 cm wide in the room's NE corner that had been blocked at a later time. The interior dimensions of the room were 1.5 x 1.3 m (NS x EW). The floor was coated with lime plaster and decorated with a solid field of red pigment.

The walls were 50-60 cm thick and preserved to a height of ca. 70 cm. The stones used for wall construction were dressed to a rectangular shape, and courses were leveled in the characteristic LPPNB manner by using small, thin slabs as chinking elements. The



7. View towards the east (uphill) of the Step Trench in Area II of the East Field. From bottom to top are the "split-level" LPPNB house just below some sort of industrial structure, then at the top of the narrow trench more terrace walls and another industrial station below, at the far top, the location of the LPPNB temple. (Photo: B. Degedeh and Y. Zu'bi).

corners of the room show a technological style that has not been noticed elsewhere at 'Ayn Ghazāl: rather than interlocking at an angle of 90°, there is an added corner structure that creates an obtuse angle so that one wall meets the "corner element" at ca. 135° and the next wall picks up the same angle going in the other direction.

In the adjacent square of G-28 additional rooms of the same house were encountered beneath other structural features described below. The blocked doorway described in the previous paragraph led into Room 2 that was only about a meter wide (EW); the NS dimension is not certain since the other walls of this room are in unexcavated sediments, but presumably they are the same as the

room in Sq. F-28. Room 2 also has a red-painted lime plaster floor, but there was no clear evidence of the "obtuse angle" corner system here.

A third room (Room 3) of the house, whose floor was not reached in the 1996 season, exists farther to the east. Its dimensions are not known. To the north of Rooms 2 and 3 is another (Room 4) with a red-painted plaster floor that is more than 60 cm higher than the one in adjacent Room 2. Adjacent rooms with different absolute elevations was noted in the North Field LPPNB two-story house (Kafafi and Rollefson 1995:), but this was understandable as a means of dealing with house construction on a slope. The NS relationship of Room 4 with Rooms 2 and 3 has (evidently) nothing to do with the local topography, so the reasons behind this odd "split level" arrangement of the floors will remain puzzling until the rest of the house is exposed. At the moment there is also no indication of the traffic pattern in the house except for the passage between Rooms 1 and 2.

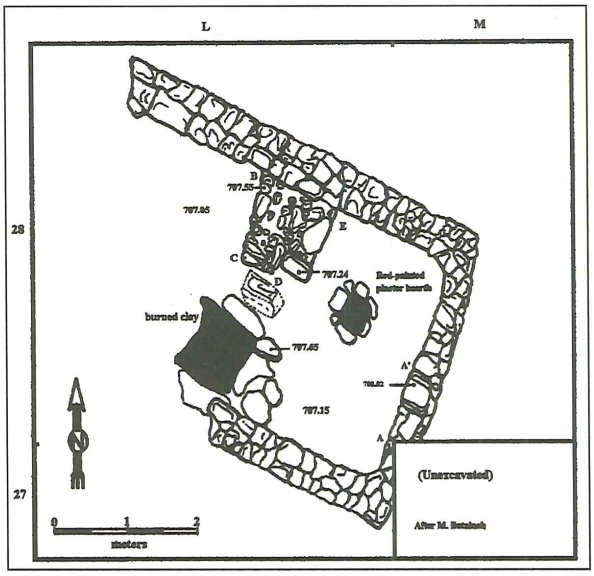
The blocking of the doorway between Room 1 and Room 2 indicates that the house underwent a change in how some parts of it were used, and that perhaps two phases are represented. An even later use of the structure, after it had been abandoned as a house, is reflected by the construction of an apparent stone-built hearth or furnace on soil that had accumulated on the floor in the SW corner of Room 1. The sediments in and around this furnace did not provide any clues to what purpose the room was used after it was abandoned as a residential feature.

The LPPNB Temple

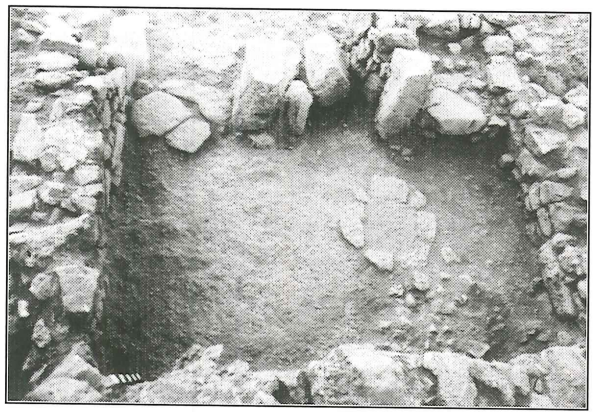
At the opposite end of the hillside trench in Sq. L-28 (cf. Fig. 7), the remains of a building was found whose western end had been eroded due to the steep (35%) declivity of the hillside. Architectural techniques, including the use of dressed stones and oblique-angle corners, show that structure is LPPNB in date. The building measures 4 m N-S and minimally 5 m E-W, although the western part was destroyed by erosion.

It appears that the structure originally consisted of a single room with a dirt floor; both features were very uncharacteristic of the LPPNB. In the center was a N-S line of three "standing stones" (although the center stone had fallen down), each about 60-70 cm high (Figs. 8-9). At the southern end of this group was a floor-level platform enclosed on three sides by two long (ca. 80 cm), parallel limestone blocks and some irregular limestone slabs; between these stones was a 3 cm layer of clay that had been burned to the color and texture of fired pottery. The intensity of the fire, as well as its evidently persistent use, indicate this may have been a floor altar (Fig. 10). In the floor between the standing stones and the eastern wall was a roughly square hearth (ca. 50 cm on a side) made of lime plaster and painted red, surrounded by seven small, flat limestone slabs (Fig. 9).

The building underwent at least one remodeling phase (and possibly two). The space between the northernmost standing stone and the north wall was filled in with a low platform (75 x 50 cm in extent, 30 cm



8. Top plan of the LPPNB temple in Area II of the East Field. A doorway (A-A' to the right) was later closed, and the stone platform BCDE was also a later alteration of the eastern room. (Drawing: M. Bataineh).



9. View to the west of the eastern room of the LPPNB temple. At the far left is the southern wall of the temple; next is the floor altar, then three standing stones (the central one toppled towards the top of the picture. At upper right is the low stone platform BCDE in Fig. 8. The eastern wall is at the bottom of the photo, and the red-painted hearth between the standing stones and the eastern wall. (Photo: B. Degedeh).



10. View to the east of the floor altar. At the far right is the southern temple wall and upper center is the southernmost standing stone. Between the horizontal limestone slabs is the area of burned clay. (Photo: B. Degedeh).

high) made of flattish limestone boulders, set off from the rest of the area to the west and south by the construction of a thin (single-stone, ca. 20 cm wide) screen wall preserved to a height of 60 cm. Except for the narrow spaces between the standing stones (ca. 25-30 cm), the only access from the western side to the eastern part of the building would have been across the floor altar between the southernmost standing stone and the south wall (cf. Fig. 8).

Another alteration of the building, possibly coincident with the construction of the northern alcove platform, involved the closure of a doorway that once existed in the eastern wall near the SE corner. Most of the former 1 m wide opening was filled with dressed wall stones like the rest of the wall, but at the northern edge of the doorway, a single orthostat made of dazzling white chalky limestone was set on end, rising about 80 cm above the floor (Fig. 11). This orthostat, oval shaped in cross section and about 40 cm wide, had a pronounced hump-like projection at the top, and while it appears that the oval cross section of the piece was intentionally shaped, a thin calcretion covering the upper part of the orthostat made it impossible to determine if the hump feature was natural or artificial. In either event, the stone has definite anthropomorphic characteristics to it, and it bears some resemblance to a small lime plaster or chalk stylized human figurine found in 1982 (cf. Rollefson 1984: Fig. 4 b-c).

The orthostat in the eastern wall gives a possible clue to the superstructure of the building: in short, the walls, preserved to a height of just over 90 cm, may never have gone any higher, and that this was an open-air structure. On the other hand, a considerable amount of stone was found inside the building, and it could be that the projection on the orthostat presented no problem to fill-



11. The eastern wall of the LPPNB temple. In the center is the limestone anthropomorphic orthostat. Note the filled doorway between the left side of the orthostat and the vertical line at the tip of the north arrow. (Photo: B. Degedeh).

ing the doorway up to the former ceiling/ roof.

Except for the red-painted lime plaster hearth, any one of these features alone make this building unlike any other found before or during the LPPNB: the earthen floor, the floor altar, the three standing stones, the alcove platform, and the anthropomorphic orthostat in the eastern wall; even the hearth is uncommon, for its shape is not the characteristic PPNB circular form, and it is set off from the surrounding floor by seven flat stones. Taken altogether, the six aspects of the building argue strongly that this was a ritual building, larger and more imposing than the circular cult buildings/shrines (Rollefson and Kafafi 1994; see also below) in the North Field. We feel justified in describing this as a temple, a formal religious building that constituted the forerunner of the PPNC temple described above. (Note the echo of the numbers three and seven in the later structure).

The Industrial Areas and "Terrace Walls" of Area II

Excavation between the LPPNB temple high up the side of the hill and the "split level" LPPNB house near the base of the slope revealed several features associated with ashy soils and dense quantities of fire-cracked rocks (FCRs), as well as walls of varying thickness and height. In Sq. G-28, in a stratigraphically later position than the split-level house, the corner of a well-constructed sub-rectangular structure was filled with dark ashy soils and FCRs, and the heavy stones of the walls also showed pitting due to burning. This situation was paralleled in Sq. K-28, just to the west and downslope from the temple; here there was a relatively elaborate construction of massive stone blocks in association with burned materials that, like its relative in G-28, evokes some industrial installation. More detailed study is necessary, but at the moment there is the impression that the kinds of artifacts (including the presence of animal bone) is dissimilar to domestic areas of the site. This situation recalls a similar correlation of large walls and burned soil and FCRs in the LPPNB and LB/C deposits in the North Field (cf. Rollefson and Kafafi 1994; Kafafi and Rollefson 1995).

The Area II Step Trench also revealed many walls, completely unassociated with the industrial installations, of unknown function. Most of the walls tended to follow along the slope, so it is possible that some were terrace or retaining walls, although the presence of "good faces" on both sides of some of them also argues against this relegation. In Sq. J-28, some 7.5 m downhill (west) of the LPPNB temple, three major walls running N-S all occurred within a space of three meters, and there is some reason to believe that at least two of them were at least partially contemporaneous, if not all three. The uppermost wall (W 002) was 1.2 m high and a meter thick; it was separated by some 40 cm from W 008, another wall that was preserved to a height of 60 cm, with a thickness of 40 cm. Downhill another 70 cm was Wall 014, standing a meter high and boasting a thickness of 80 cm. Unfortunately, in the 2 m wide trench, there was no well-defined occupational surface at the base of any of them, although it should be noted that all three had "good faces" on both sides and were, therefore, probably not terrace walls. The small area and depth of exposure, as well as the lack of identified artifacts or other means of seriation, makes it dangerous to project any age for these walls, although it might be mentioned that the thickness for Walls 002 and 014 exceed any known LPPNB walls from 'Ayn Ghazāl, and that they may date to the PPNC.

In Sq. G-28, Wall 003 (ca. 1.0 m thick) was found stratigraphically later than a complex of thinner walls (e.g. W 021, ca. 50 cm thick) associated with the industrial installation. If the thicker walls are a phenomenon restricted to the PPNC (and this

seems to be borne out by the data from the mains site across the az-Zarqā' River) then it would appear that the activities associated with heavy burning are a (late) LPPNB phenomenon.

Yarmoukian Activity in the East Field

No Yarmoukian potsherds were found in the East Field during the 1995 season. In 1996, a couple of non-diagnostic sherds appeared in the uppermost disturbed deposits in Area I, but this could be ascribed to an isolated broken pot rather than representative of a Yarmoukian "presence" in the East Field. But at the top of the Step Trench in Area II, in Sq. M-28, while excavating sediments outside (uphill, to the east of) the LPPNB temple, a relatively shallow (ca. 35 cm) but broad (ca. 1.15 m diameter) pit (P 007) rich in Yarmoukian pottery sherds was associated with a roughly C-shaped burned-soil feature (F 006) ca. 10 cm thick but 1 x 1.25 m in area. According to the field notes, the area "must have been thoroughly burned to produce such a striking color. Either a very hot fire or perhaps many fires were built here. [It has been] suggested that it was an open air kiln. It was found at nearly the same level as the large finds of pottery, and [the feature] is located at the top of the Yarmoukian period pit [P 007] that produced many pieces of pottery."

No evidence of Yarmoukian dwellings have been found in the East Field to this point, and with the apparent drop in population at 'Ayn Ghazāl during the Yarmoukian period, it would be unlikely that we would find much occupational debris here. But the question of where the Yarmoukians made their pottery may have been answered, finally. Deep pits filled with ashy soil have been found in Yarmoukian courtyards in the "Main Site" west of the az-Zarqā' and it has been weakly suggested in the past that perhaps the low-scale demand for pottery made on a cottage-industry basis could have been satisfied by such using such pits on a sporadic basis (e.g. Kafafi and Rollefson n.d.). Now, perhaps, with the identification of F 006 in Sq. M-28, we can finally state that some of the Yarmoukian people of 'Ayn Ghazāl fired their pottery across the river, where draught may have been better for high open-air kiln temperatures and where the effects of smoke would have less impact on the comfort of the inhabitants across the waterway.

THE NORTH FIELD

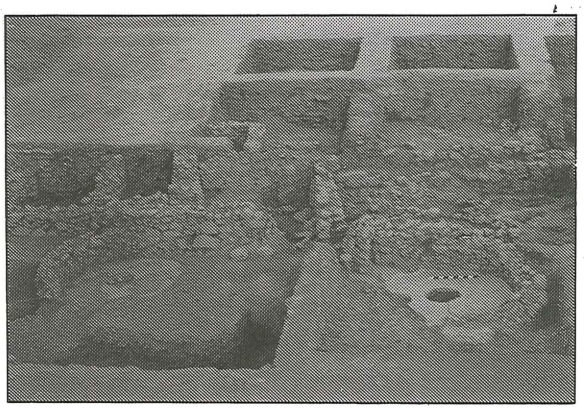
Our intensive focus on the North Field since 1993 has been due in large part to locating a relatively undisturbed LPPNB neighborhood there, a rare situation in the site west of the az-Zarqā' River. In past seasons a two-storied LPPNB house was exposed (cf. Kafafi and Rollefson 1995) near a circular cult building we have interpreted as a family/lineage shrine (Rollefson and Kafafi 1994). In the last week of the 1995 season a thin lime plaster floor with a curved outline was uncovered in the extreme corner of a trench next to the circular shrine, which we thought at the time was another apsidal building (Rollefson and Kafafi 1996: 15 and Fig. 5). In 1996 one of the aims in the North Field was to completely reveal this building.

Other problems left unresolved in earlier field work was the situation surrounding the circular shrine. It was clear that the round room was the final expression of a four-phase structure, but it was not clear what the shape of the earliest phase was (Rollefson and Kafafi 1994: 21-23) nor what kind of function the building may have served before it became an apsidal structure in Phase 2. Furthermore, while the land to the east of the shrine was severely eroded in antiquity, the relationship of the building to the exterior land surfaces to the west was unclear, and to the south it remained unexplored. We hoped, therefore, to find answers to these issues in 1996.

The Second Circular Shrine (Shrine II)

After 75 m^2 to the east, southeast and southwest had been excavated to a depth of some 70 cm, it became clear that what we took to be another example of an apsidal building in 1995 was, in fact, a second circular shrine (Fig. 12). Built directly against a broad (60 cm) N-S terrace wall (5515.009) and located just 4 m to the south of the four-phase building bared in 1993, the new (in all senses of the word) shrine was a virtual twin, at least superficially. The interior diameter of Shrine II was 2.70 m, compared to just over 2.5 m for Shrine I excavated in 1993. The floor plaster was also painted red, although in the case of Shrine II the floor was in a very bad state of preservation due, in part, to its thinness, but mostly because of the shoddy quality of the floor's foundation layer.

Although there were overall similarities between the two shrines, there were also some differences. In contrast to the solid wall construction of Shrine I, the wall of Shrine II (a single-phase structure), although just as thick, was made of small (20-25 cm) globular masses of mostly soft limestone. The downhill (eastern) area was badly damaged by later PPNC activity, so it was not possible to determine if at one time a small rectangular antechamber existed, as was the case for Shrine I.[3] Whereas Shrine I had a sequence of eight red-painted lime plaster floors directly superimposed on each other, in Shrine II there was evidence of only two flooring episodes, which indicates that Shrine II was not in use for a very long period of time. Finally, while there was a large hole in the center of the Shrine II room, as was the case of Shrine I, there was no subfloor pit, and therefore no radiating subfloor channels.



12. View to the west of the two circular shrines in the North Field; the older shrine (excavated in 1993) is to the right. At left center is a large LPPNB structure with several rooms and some PPNC alterations. (Photo: B. Degedeh and Y. Zu'bi).

The proximity of the two shrines and the several cracks that penetrated the floor of Shrine I suggest that Shrine II may have been a replacement for Shrine I, which was so badly damaged that it had to be abandoned. The inferior wall construction, as well as the tacky underpinnings of the floor, indicate that the construction of Shrine II was relatively sudden and perhaps not even intended to be a long-lasting replacement of its predecessor.

The Area Around Shrine I

Work in 1993 showed that the four-phase building, of which Shrine I was the latest use, was associated with walls to the northwest, west, and south, although there was not enough time to investigate what these walls outside of the four-phase building represented. The meticulous care of the excavations in 1996 was instrumental in unraveling the unclear relationships of the building during its prolonged use and the exterior space around it.

First, it is now certain that Phase 1 of the building was also apsidal in shape. The first structure was built either against, or cut, a wall (Locus 154) that is either MPPNB or very early LPPNB in age; it is not certain what Wall 154 represents: it is either part of a house or a courtyard boundary, and the for-

3. The antechamber for Shrine I may have been the fortuitous use of the floor of the Phase 2 apsidal structure on which Shrine I was constructed.

mer option is more likely.[4] It should be noted that the elevation of the plaster floor of the Phase I (Locus 018) is 35-40 cm lower than an MPPNB lime plaster floor (Locus 151/ 152) (see below) exposed to the west (uphill) of the apsidal building. This could mean a) that Phase I might be as old as late MPPNB, or b) that for the construction of the Phase 1 apsidal structure the builders cut down into MPPNB layers,or) the elevational relationship between floors 018 and 151/152 is the result of artificial terracing, known to have been a common practice at 'Ayn Ghazāl (e.g., Rollefson and Kafafi 1996: 11-14). In view of the terraced arrangement of the rooms in the large building to the north of the Shrine 1 complex, and the relationship of this "terraced house" with what appears to be an earlier MPPNB house west of it, we can suggest confidently that options b) and c) together are more likely than any of the options alone.

Since the long axis of the apsidal building was EW, with the eastern façade looking out towards the az-Zarqā' River, we might assume that the exterior area uphill (western) was the "backyard" of the structure. Three walls set this outside area off from all directions, with a small opening in the NE corner that lead along the northern wall of the apsidal structure/ circular Shrine I complex. The western exterior area is the only walled exterior space that we know of for the MPPNB or LPPNB,[5] and this exclusion of public traffic from this confined area adds to the ritual nature proposed for this building sequence.

The walls of the uphill courtyard were simply adapted housewalls, and the earliest courtyard surface was an MPPNB house floor preserved patchily over an area of ca. 3.8 x 4.4 m (if Wall 154 was part of the original house); this area (16-17 m^2) is consistent for an MPPNB room at 'Ayn Ghazāl (cf. Banning and Byrd 1984). The traffic on this surface during Phase I of the apsidal building/Shrine I complex was evidently intense, and exposure to the open air added to damage to the floor surface, so it is not known if the floor was decorated either originally or during its subsequent use.

The outdoor area was used for the entire duration of the apsidal building/Shrine I sequence, which may have lasted up to 500 years. There is a clear sequence of the repaving of plaster floors 151/152, although very soon the repairs used simple mud, and later surfaces in the courtyard were unprepared accumulations of soil and debris. Interspersed with the renewal of the courtyard surfaces was the fashioning of several well-made, sequential stone-lined firepits in the NW corner of the courtyard. Ranging in diameter from 40 - 60 cm, the areas around these fireplaces were very ashy and contained relatively dense amounts of animal bone (but other artifacts were relatively rare). Assuming that there is a direct relationship with the courtyard (and its fire pits) with the ritual use of the apsidal building/Shrine I complex, we are eager to learn of the kinds of animal bones found in association, both in terms of species and skeletal parts.

The relationship of the shrine complex with the two-story building just to the north

4. The nearby MPPNB lime plaster floor suggests it is a house wall, even though the floor did not reach this wall. It should be noted that at 'Ayn Ghazāl there is no evidence for boundaries between open spaces outside adjacent or nearby domestic buildings in either the MPPNB or in the early LPPNB periods (Rollefson n.d.a).
5. Cf. no.4. Certainly there are terrace walls known in the MPPNB and LPPNB, but these served to protect lower-lying structures from erosion and were not intended (as far as we can tell) to provide some form of social privacy or act as a sign of "personal real estate". Other walls occurred in LPPNB outdoor areas, but these were very thin and seem to have served as windscreens to prevent scattering of ashes and coals from outdoor firepits (Rollefson and Kafafi 1996). "Proper" courtyard walls that set off one private space from another were evidently introduced in the PPNC period (Rollefson n.d.a.).

has also become a bit clearer, although some developmental areas remain to be determined (if this is possible, in view of the conditions in this part of the site). The floor of Room 2 of the two-storied Terraced House to the north of this complex lay at 711.39 m, about the same as the MPPNB floor used as the earliest courtyard surface by the Phase 1 apsidal structure. This floor of the Terraced House is part of this building's earliest phase, and a later phase assumed the addition of rooms added downhill at considerably lower elevations; these latter floors were deeper in elevation due to leveling activities by later LPPNB families living in and modifying the existing structure. The excavation for constructing the Room 3-4 addition to the Terraced House may have coincided, in general, with the excavation into the MPPNB house floor and walls, which if true would indicate a time after 6,300 bc (uncal.) for both the Room 3-4 addition to the Terraced House and Phase 1 of the apsidal building/Shrine I complex.

Other LPPNB Architecture

The large expanse of the Terraced House is matched to a lesser extent by the incomplete exposure of a complex of LPPNB walls and rooms in Sq. 5515, to the SW and W of Shrine II. Room 1, surrounded by walls on the north, south and western sides, has an area of 2 x 2.6 m (NS x EW), which is relatively large for the LPPNB structures elsewhere in 'Ayn Ghazāl; adjacent to the north is Room 2 with dimensions estimated at 1.6 x 1.8 m, and still farther to the north is Room 3, 2 m wide NS but the EW measurement is not possible to estimate (cf. Fig. 12). The circumstances of this complex remain confusing, for although there are confined spaces that normally would be taken to represent rooms, no lime plaster floors have been found so far, although some earthen surfaces (?) may have been detected, including associated fire pits. It is possible that the original floor levels have not yet been reached. The floor of Shrine II is 71 cm below the lowest surface excavated in Room 1, for example, and a plaster floor was found in Room 3 (in Sq. 5516) in 1995 at almost the same absolute elevation as the floor in Shrine II; but the Room 3 floor was associated with any walls, since it was found very late in the season.

Shrine II appears to have been snugly against the eastern wall of this structure, which is at least 7.4 m long from south to north. The northern end of this building was damaged in antiquity, although whether in the LPPNB or subsequent PPNC period is not known at the moment, and it is not clear yet if the southern end of the building has been found.

PPNC Structures

As was the case throughout earlier seasons in the North Field, much of the latest LPPNB stratigraphy was disturbed by PPNC inhabitants, including modifications to standing LPPNB architecture. All three rooms discussed in the previous paragraphs, for example, were also used in the PPNC period, albeit with additional walls that changed rooms sizes and shapes and dirt floors.

A wall that appears to have functioned as a courtyard wall appeared at the southern end of the excavation area in the North Field, abutting the eastern wall of the LPPNB building just west of Shrine II. This wall had two distinct phases (the later phase is slightly offset from the earlier), and perhaps the Phase I wall served to set off an open courtyard analogous to the courtyard behind Shrine I farther to the north. The courtyard surfaces were virtually impossible to trace: the sediment was characterized by extremely dense amounts of angular rubble, often of a chalky limestone, and this mass may have been repeatedly reworked by people during the PPNC period. Notably, no independently constructed PPNC structure was discovered, but this may be due to 20th century stone-clearing and agriculture.

CENTRAL FIELD

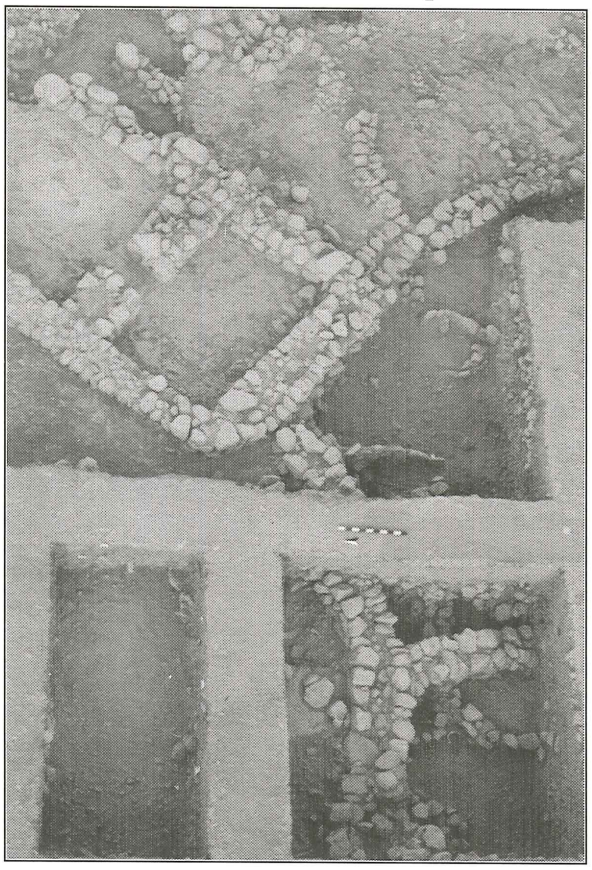
In 1994 the exposure of a substantial three-room Yarmoukian house in Sq. 4073 and associated courtyard to the NW revealed the dramatic decrease in housing density in the late 6th millennium compared to the situation at the beginning of 'Ayn Ghazāl's occupational history (Kafafi and Rollefson 1995). The courtyard also reflected various outdoor activities associated with small, shallow fireplaces and deep, broad firepits in an open space shaded by an *'arīsha* structure (an open-sided ramada). We hoped in 1996 to continue the courtyard investigations to the west, south and east of the house, which would at the same time allow us to check on a possible outhouse structure attached to the southern end of the house, as well as confirm the terracing activities undertaken by Yarmoukian residents.

The Yarmoukian Round House

In the next excavation trench (Sq. 4273) uphill and west from the 3-room Rectangular House uncovered in 1994, excavation revealed two major phases of use, although it is difficult to make a direct correlation of either of them with the rectangular house: the greatest depth reached was approximately 35 cm above the floor of the house and courtyards.

The earlier of the phases in Sq. 4273 appears to be a courtyard complex with rectilinear walls and some circular stone arrangements (probably firepits); whether a house is in the near vicinity is not known for certain, although one of the straight walls may be a house component.

The second phase is intriguing in terms of the architecture that it produced. In contrast to the bold 90° angles of the 3-room house in Sq. 4073, the second-phase structure is a gentle circular arc that, in projection, would have been approximately 5.5 to 6 m in overall diameter. The exterior wall was 80 cm thick, which is broad for any but a PPNC corridor house; this suggests that the wall supported a substantial superstructure over the ca. 12.5 m^2 of floor area (Fig. 13). The wall itself is also interesting in that it is not a solid stone construction, but instead is a rubble-core wall, with interior and exterior stone facing of good quality, that would become popular in succeeding millennia. A doorway ca. 80 cm wide faces south, complete with a level threshold comprised of broad, flat limestone slabs and, just inside the door, a stone with a door socket almost 20 cm in diameter. The interior of the circular structure was at one time paved with *ḥuwwār* plaster (as was the door's threshold), although only patches remain intact. Unfortunately, most of the building remains unexcavated to the north, so interior features remain unknown; in the ca. 4 x 1.5 m arc that was exposed, there were no indications of interior postholes or



13. The large Yarmoukian Round House is at the bottom of this photo, the Rectangular House excavated in 1994 at upper left, and the Plastered Floor House at upper right. East is at the top of the photo. (Photo: B. Degedeh and Y. Zu'bi).

hearths. To the outside was a complex of stone alignments and surfaces, including fireplaces and rectilinear courtyard (?) walls. One of the latter was 70 cm wide, again relatively robust, that led from the towards the south; another of unknown dimensions led from the threshold to the SW.

At the present time it is impossible to demonstrate physically that the Round House in Sq. 4273 is or is not on a terrace above the Rectangular House in Sq. 4073. Despite the differences absolute elevations, the Round House might be a later construction, and indeed we would suggest that this is the case. The projection of the broad wall to the E and N from Sq. 4273 indicates that it would have continued its arc across the SW corner of the Rectangular House in 4073, although no trace of this curved stone alignment was found in 1994. In fact, given the slope of the Central Field and the disturbances invoked by stone clearing and plowing, the later Round House wall was probably destroyed to beneath its foundations.

Perhaps we are being precipitous in calling this structure the Round "House", since the function of the building remains unproven. Circular or curvilinear structures are known in the Yarmoukian period (e.g. Kafafi 1985; Garfinkel 1992: 20-28), but there is no evidence that circular structures served any particular service beyond normal domestic residences. We are confident that this Round House is not another example of the "Tent" foundation structures found in earlier seasons at 'Ayn Ghazāl (e.g. Rollefson and Kafafi 1994; Rollefson and Simmons 1987), simply due to the thickness of the walls of the building excavated in 1996.

The Southern Courtyard Area

The area to the south of the Yarmoukian 3-room Rectangular House was excavated to a level ca. 1.8 m beneath the modern surface, and accumulation of sediments and features that contain three main phases of use, the middle one of which is contemporaneous with the house itself. All three phases are associated with outdoor surfaces, although these surfaces are also badly damaged and difficult to define.

The earliest phase, which is possibly coeval with the rectangular house to the east (also excavated in 1996, see below), consists mostly of accumulations of loessic soil and ash, as well as scattered flints, bones, and pottery. In this outdoor area is a semicircular stone feature about a meter in diameter, made of a wall a single stone thick. This feature eventually fell apart and was soon replaced with a similar structure ca. 1.5 m in diameter (cf. Fig. 13).

In the second major phase, another curved feature was attached to the southern wall of the Rectangular House excavated in 1994. Like the earlier semicircular features, it is also just over a meter in diameter and has a wall a single stone thick; it has no evidence of an association with the use of fire; and the floor of the features are compact dirt surfaces on which accumulated a somewhat higher than average density of flint debitage. It appears that all three features were elaborate windscreens where some activities related to the manufacture and use of flint tools were undertaken.

The last phase, badly disturbed by recent erosion and agriculture, included some stone alignments that may have been walls as well as some ashy concentrations. It is probable that this phase was partially contemporaneous with the use of the Round House.

The Yarmoukian Plastered House

Downslope and east of the 3-room Rectangular House is an area exposed in Squares 3872 and 3873 that partially overlaps in time with the courtyard sequence south of the Rectangular House. The upper phase is characterized as another exterior area, at least for the most part, although like all of the Yarmoukian deposits just beneath the modern surface, there has been considerable de-

struction due to erosion and agricultural plowing. In this phase, seven stone rings, about 30 cm in diameter, were found in a pattern that suggests they formed postholes to support a generally rectangular *'arīsha* shade structure. (Much of the rest of the postholes were in the unexcavated part of the squares). The postholes were very well constructed: a pit was lined on each of four sides by a long, flattish stone 15-25 cm in length, and centrally in the base of the pit was a large flat stone on which the post would have rested.

The rest of the area was an accumulation of soil, rubble, flints, and animal bones, a common property of Yarmoukian courtyards. At the far south of this courtyard complex, in Sq. 3872, emerged the northern face of a wall more than 90 cm thick, preserved to a height of only 15-20 cm, but it ran into unexcavated areas in three directions, so the exact dimensions remain unknown. It is tempting to draw a comparison with the Great Wall excavated in 1989 (Rollefson *et al.* 1993: 111 and Fig. 3).

The earlier phase is by no means clear, although it appears to consist of a house with at least two rooms. One is represented by two walls that meet at a right angle at the NW corner of the room (the "eastern room") in the SE corner of Sq. 3873; the greater part of this room remains unexcavated. The western wall is 60 cm thick, while the northern one is only half this breadth. A dirt surface or floor occurs inside this corner, and a narrow (20 cm) "cupboard"-shaped chamber occurs along much of the length of the western wall, set off from the rest of the room by a wall 35-40 cm in thickness.

To the west is another space (the "western room") bounded on the north by a curving wall 50 cm thick and 2.2 m long that connects with a NS wall to the west, forming a floor area of at least 4 m^2, although the southern wall was not located. The curving wall approaches but does not quite join the western wall of the room discussed above: there is a gap of 15-20 cm, but perhaps this simply represents post-abandonment damage to the structure (or the reason for its abandonment). The interior of the western room had floors covered with *ḥuwwār* plaster (preserved only in patches), but the floors of the eastern room (which occurred at about the same elevation) did not have any embellishment to the earthen surface. Except for the arc-like contour of the northern wall of the western room, this building recalls the circumstances of the 3-roomed Rectangular House, where *ḥuwwār* plaster was confined to only one (the central) room. This structure is earlier than the Rectangular House (the western wall of the western room seems to run under the later building) and may be its precursor (cf. Fig. 13).

The Lower Yarmoukian Terrace

The Round House, the Rectangular House, and the Plastered House all seem to be three major construction phases (with the Round House the latest) that occurred on one terrace. But eastwards from the Plastered House, in Squares 3673 and 3674, it is clear that the Yarmoukian deposits began accumulating on a lower terrace artificially created by earlier (probably MPPNB?) inhabitants at 'Ayn Ghazāl (cf. Rollefson and Kafafi 1994: 17-19).

In Sq. 3673 a rectangular building, with one earthen surface above another, separated by only a few centimeters, is dated by the presence of pottery to the (early) Yarmoukian period. Due to its location on the slope, the building was severely damaged by 20th century agriculture (and probably Neolithic stone-robbing), so little can be said about the size of the building. The western and northern walls were both 70 cm thick and preserved to maximum height of ca. 60 cm.

The two walls are founded on a compact surface (Locus 016) that contains no pottery, and it is assumed, therefore, that this represents the change from the PPNC to the Yarmoukian occupation. (No information is yet available on the density or decoration of pot-

tery from the two earthen surfaces associated with the building). The surfaces are more than a meter lower than the floors of the Plastered House uphill.

Lithics Analysis

Tables 1-3 provide information concerning technological and typological aspects of the analyzed chipped stone samples

Table 1. Debitage class distribution among samples from the AG96 excavation season.

Main Site										
	M/LPPNB		LPPNB		LB/C		PPNC		Yarmoukian	
Class	n	%	n	%	n	%	n	%	n	%
Blade			229	24.39	152	23.94	212	10.00	243	8.77
Flake			433	46.11	314	49.54	1241	58.57	1802	65.03
C.T.E.			13	1.38	12	1.89	30	1.42	30	1.08
BurSpall			10	1.06	2	0.31	36	1.70	7	0.25
Microfl			71	7.56	30	4.72	36	1.70	21	0.76
Debris			172	18.32	115	18.11	512	24.16	635	22.92
Other			2	0.21	5	0.79	5	0.24	0	0.00
Core			9	0.96	5	0.79	47	2.22	33	1.19
(Tools)			(77)	(8.20)	(71)	(11.18)	(275)	(12.98)	(638)	(23.02)
Total			939	100.00	635	100.00	2119	100.00	2771	100.00
East Field										
Blade	14	20.29	1464	21.99	59	14.32	318	19.78		
Flake	23	33.33	1980	29.74	181	43.93	754	46.89		
C.T.E.	2	2.90	129	1.94	7	1.70	27	1.68		
BurSpall	2	2.90	61	0.92	6	1.46	30	1.87		
Microfl	0	0.00	57	0.86	0	0.00	16	1.00		
Debris	28	40.58	2941	44.18	141	34.22	450	27.99		
Other	0	0.00	3	0.05	0	0.00	2	0.12		
Core	0	0.00	22	0.33	18	4.37	11	0.68		
(Tools)	3	(4.35)	(717)	(10.77)	(36)	(8.74)	(146)	(9.08)		
Total	69	100.00	6657	100.00	412	100.00	1608	100.00		

Table 2. Blade-to-flake ratios for the several phases in the East Field and Main Site areas.

Main Site		
Period	Blade:Flake Counts	Blade:Flake Ratio (as %)
LPPNB	229: 433	35:65
LPPNB/PPNC	152: 314	33:67
PPNC	212: 1241	15:85
Yarmoukian	243: 1802	12:88
East Field		
MPPNB/LPPNB	14: 23	38:62
LPPNB	1464:1980	43:57
LPPNB/PPNC	59: 81	26:74
PPNC	318: 754	30:70

Table 3. Tool class distributions among the various phases west ("Main Site") and east ("East Field") of the Wādi az-Zarqā', 'Ayn Ghazāl 1996 season.

Main Site										
	M/LPPNB		LPPNB		LB/PPNC		PPNC		YARM	
Tool Class	n	%	n	%	n	%	n	%	n	%
Proj. point			7	11.11	2	4.35	8	5.44	51	10.26
Sickle			6	9.52	7	15.22	20	13.61	59	11.87
Knife			7	11.11	5	10.87	4	2.72	28	5.63
Burin			11	17.46	11	23.91	18	12.24	39	7.85
Truncation			0	0.00	0	0.00	2	1.36	0	0.00
Scraper			10	15.87	5	10.87	52	35.37	100	20.12
Dent/Notch			6	9.52	6	13.04	17	11.56	67	13.48
Borer			9	14.29	4	8.70	9	6.12	110	22.13
Bifacial tool			6	9.52	3	6.52	8	5.44	14	2.82
Bkd/Tgd bl			0	0.00	1	2.17	4	2.72	7	1.41
Other			1	1.59	2	4.35	5	3.40	22	4.43
Subtotal			63	100.00	46	100.00	147	100.00	497	100.00
Ret. pieces			6	6.74	17	23.94	66	23.40	154	18.55
Util. pieces			15	16.85	8	11.27	68	24.11	179	21.57
Indeterm.			5	5.62	0	0.00	1	0.35	0	0.00
Total			89		71		282		830	
East Field										
Proj. point	1	100.00	66	12.77	7	15.56	18	11.46		
Sickle	0	0.00	143	27.66	2	4.44	17	10.83		
Knife	0	0.00	78	15.09	7	15.56	14	8.92		
Burin	0	0.00	51	9.86	6	13.33	21	13.38		
Truncation	0	0.00	3	0.58	0	0.00	3	1.91		
Scraper	0	0.00	33	6.38	7	15.56	20	12.74		
Dent/Notch	0	0.00	15	2.90	1	2.22	13	8.28		
Borer	0	0.00	63	12.19	2	4.44	23	14.65		
Bifacial tool	0	0.00	24	4.64	9	20.00	10	6.37		
Bkd/Tgd bl	0	0.00	23	4.45	0	0.00	4	2.55		
Other	0	0.00	18	3.48	4	8.89	14	8.92		
Subtotal	1	100.00	517	100.00	45	100.00	157	100.00		
Ret. pieces	1	33.33	141	17.43	4	7.41	61	22.51		
Util. pieces	1	33.33	151	18.67	5	9.26	53	19.56		
Indetermin.	0	0.00	0	0.00	0	0.00	0	0.00		
Total	1		809		54		271			

from 1996 (this represents probably only about 15% of the total chipped stone population from the season).[6]

Table 2 is probably the most informative of the three tables, since Tables 1 and 3 show little change from earlier excavation season preliminary reports. We wish to point out in Table 3, however, that the percentages of sickles for the PPNC and Yarmoukian periods are much higher than in earlier reports, since this report uses a definition of sickles that is not restricted to the presence of gloss (cf. Quintero *et al.* 1996). In Table 2, it is interesting to note that the Yarmoukian blade:

6. The chipped stone analysis is being conducted by Leslie Quintero. We would like to express our deep appreciation to Phil Wilke for his help in the lithics analysis at the end of the season.

flake ratio is extremely low in comparison to earlier samples, and the absolute value of the sample sizes argues against sampling problems *per se*. One aspect that may be in effect here is the notation by the excavators in Sq. 4073 in the Central Field that the semi-circular stone structures may have been associated with reduction activities, which would have elevated the flake component as a consequence of core preparation.

Table 2 is also instructive in the separation of the LPPNB and PPNC samples, which in the East Field is much clearer in stratigraphic terms than in the North Field; although the East Field continued to be used during the PPNC period, it was evidently not an intensively inhabited area, which left the LPPNB layers more intact. Furthermore, there appears to have been less of a transitional change from the LPPNB to the PPNC in terms of deposition, which also helped to keep the distinctions between the modal LPPNB and modal PPNC lithic traditions more noticeable. In this regard, attention is called to the much higher blade:flake ratio for the LPPNB samples, again a distinction supported by the sample sizes.

Of note among the lithics samples, two pieces of obsidian were recovered: one each from the LPPNB and the PPNC periods. The LPPNB specimen was black and opaque, a broad but very thin blade segment with militantly parallel ridges, and probably represents a blade produced with the pressure technique (L. Quintero, pers. comm.).

Other Small Finds

Tables 4-6 present the tabulations of other material culture remains recovered during the 1996 season.[7] As has been mentioned before, the bone tool collection is probably under-represented, and we expect it to increase as faunal analysis continues.[8]

Among the "worked stone" category (Ta-

Table 4. Bone tools from the 1996 season at 'Ayn Ghazāl. (a = serrated; b = incised)

	East Field				Main Site				
	LPPNB	LB/C	PPNC	Mixed	LPPNB	LB/C	PPNC	Yarm	Mixed
Awls	17	16	10	2	18	2	4	8	-
Spatulas	4	1	1	2	5	-	2	-	-
Needles	-	-	-	-	1	-	1	-	-
Other	1[a]	-	1[b]	-	-	-	-	-	-

Table 5. Worked stone objects from the 1996 season at 'Ayn Ghazāl. (a= gameboard; b = "standard holder; c = "axe manufacturer").

	East Field				Main Site				
	LPPNB	LB/C	PPNC	Mixed	LPPNB	LB/C	PPNC	Yarm	Mixed
Handstones	9	2	8	2	6	1	5	14	3
Pestles	3	1	-	1	-	-	1	1	-
Discs	1	5	1	3	7	2	6	5	-
Querns	7	2	3	4	1	-	2	5	1
Mortars	1	1	1	1	-	-	-	-	-
Cupmarked	1	-	-	1	-	-	-	1	-
Incised	-	3	-	-	-	-	-	1	-
Weights	8	4	7	3	-	-	-	4	-
Spindle whorl	1	-	-	1	-	-	-	1	-
Stone bowls	2	1	1	-	-	-	-	1	-
Other	1[a]	1[b]	1[c]	-	-	-	-	-	-

7. We thank Beth Grindell for her analysis of this material, as well as for her excellent control of the field laboratory during the 1996 season.
8. The faunal analysis of the 1993-95 campaigns have already been completed by A. von den Driesch, and the 1996 samples are being worked on at present).

Table 6. Ornaments from the 1996 season at 'Ayn Ghazāl. (M-o-P = mother-of-pearl; a = bone; b = quartz crystal)

	East Field				Main Site				
	LPPNB	LB/C	PPNC	Mixed	LPPNB	LB/C	PPNC	Yarm	Mixed
"Bracelets"	30	8	9	6	4	4	8	5	4
Beads	5	1	4	1	-	1	2[a]	1	-
Bone rings	1	-	-	-	1	-	-	-	1
Pendant	1[a]	-	1[b]	-	-	-	-	-	-
M-o-P pendant	1	-	5	-	1	-	-	-	-
Shell pendant	5	2	1	-	2	-	1	1	-

ble 5), three "other" artifacts, all from the East Field, deserve special mention. The first of these is an LPPNB gameboard of the mancala variety (Fig. 14), similar in some respects to the PPNC example (Rollefson 1992). The example from 1996 is an almost circular slab of soft limestone 32 x 25.5 x 7 cm that was converted from a misled use as a grinding stone, in view of its contours. The flatter face of the stone bore two parallel rows of four shallow pecked depressions (Rollefson 1996). This game board appears to have been casually made and probably used for a short time. It eventually became the base stone for a posthole associated with the Apsidal Building in Sq. F-11 in the East Field.

The second "other" artifact is a curious lump of mudstone (?) shaped into a subconical form with a basal diameter of ca. 35 cm and a height of 30 cm, found in the fill of the LPPNB house beneath the PPNC temple



14. The limestone mancala game board used as a post support in the LPPNB apsidal house in the East Field Area I (Photo: Hussein Debajah).

in the East Field. From the apex, a hole 4.5 cm in diameter penetrated the stone for a distance of ca. 15 cm. The artifact was heavy, and the shape and features of the piece suggest that a cylindrical-shaped object was inserted into this base; perhaps a torch sconce or some other heavy anchor for a standing rod-like object.

The last of the "others" is a magnificent "machine" used in the manufacture of axes. Ca. 35 cm in maximum dimension, the subcircular granular stone had a roughly triangular cross section. On one of the broad faces were two deep, parallel grooves 5-6 cm wide; on the opposite broad face were several arcs of worn grooves sweeping across the length of the face to the other, resulting in a rippled, stepped surface from the sharper edge of the surface to the higher edge. Both faces bore thick stains – even smears – of red ochre, a fine-grained mineral that may have had both functional polishing effects (Quintero, pers. comm.) as well as symbolic meaning: the "axe machine" was found on the floor of F1, the storage feature (?) behind the PPNC temple in the East Field. The circumstances of its finding begs the question: was the "axe machine" associated with ritual events, in which axes were used, in the temple?

The Future

The 1996 season marked the 10th excavation season at 'Ayn Ghazāl, an anniversary that was celebrated with the announcement by the Department of Antiquities that 3.5 hectares of the Main Site would be pur-

chased and protected from destruction. For the moment, no major seasons of excavation are planned at 'Ayn Ghazāl, with the exception of a "surgical probe" above the LPPNB temple in the East Field in 1998.

The purchase of the land by the Department of Antiquities is a blessing, but it also has consequences that involve continued responsibility beyond archaeological exposure. It has been a dream for a long time that 'Ayn Ghazāl would become a model for public awareness and appreciation of prehistoric archaeology. Despite the lack of visually impressive features such as 10 m pillars and 30 m façades, we have felt that the resources at 'Ayn Ghazāl are as important to the public awareness of Jordan's archaeological heritage as Petra, Jarash, and Mādabā. Jordan's unique archaeological background has been *anchored* by 'Ayn Ghazāl, and the later achievements of Jordan's history (of any part of the history of the Near East, for that matter) cannot be understood without taking 'Ayn Ghazāl's contribution into account.

We are therefore pleased at the preservation of a major part of 'Ayn Ghazāl. But we are also committed to developing 'Ayn Ghazāl as an educational facility, not only for the school children of Jordan, but for the tourists who pass through Jordan every day. We hope, with the help of local Jordanian contributions, that we can develop 'Ayn Ghazāl into an archaeological park, complete with a modest on-site museum, with pathways and signs, and a program to shelter, preserve, and protect 'Ayn Ghazāl for generations of people interested in how human society developed into its present state.

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