

WĀDĪ ABŪ ṬULAYḤA: A PRELIMINARY REPORT OF THE 2006 SUMMER FIELD SEASON OF THE JAFR BASIN PREHISTORIC PROJECT, PHASE 2

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Introduction

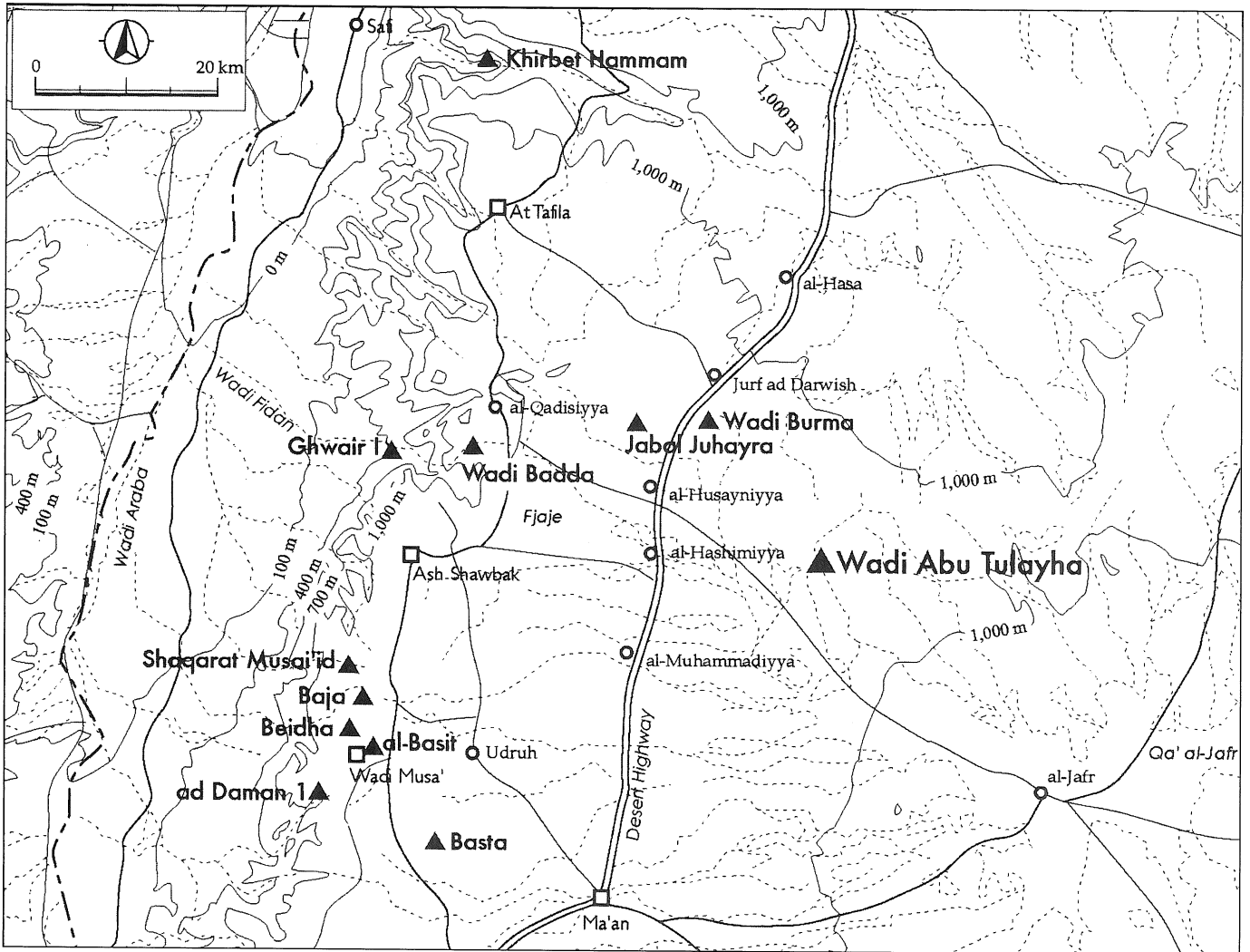
The 2006 summer field season of JBPP-2 (the Jafr Basin Prehistoric Project, Phase 2) was conducted from August 2 through September 30, focusing on the site of Wādī Abū ṬulayḤa, an agro-pastoral outpost in the northwestern part of the basin. The primary goal of this season was to excavate the eastern half of the outpost yet to be investigated and, in so doing, clarify its overall picture. Although this goal was not fully accomplished due to time constraints, the excavation of a few dozen semi-subterranean stone-built structures has provided insights into some major aspects of the outpost. Excavated evidence — the entrance blockade during the long absence of inhabitants, the frequency of agricultural utensils such as querns and sickle blades, and the occurrence of domesticated sheep and goats among excavated fauna — has corroborated our previous view that the site served as a seasonal agro-pastoral outpost probably derived from the PPNB farming society to the west. Of significance is a cluster of windbreak huts that was found near the eastern end of the outpost. It seems that they were used for temporary accommodations for the first group of transhumants who embarked on the construction of the outpost. These findings have enabled us to trace back the pastoral nomadization of this area to its very beginning. This report is intended to summarize the excavation results of this field season and give a brief discussion of their archaeological implications.

The Site and Site-Setting

The site of Wādī Abū ṬulayḤa, or JF-0155 in our site registration code, was first found during our 2001-2002 winter season survey and briefly referred to elsewhere (Fujii 2002). It occupies

the eastern edge of a flint strewn desert (or *al-Hamād* in Arabic) that extends between the two major drainage systems in the northwestern part of the basin: Wādī Abū ṬulayḤa to the east and Wādī ar-Ruwayshid ash-Sharqī to the west (**Fig. 1**). Hydrologically, it belongs to the former drainage system through a small tributary wadi that flows eastwards across the southern edge of the site. The surrounding natural environment is (and probably was) very harsh. The annual average precipitation is less than 50mm (Jordan National Geographic Center 1984: Fig. 114) and no perennial water source is available within a radius of a few dozen kilometers around the site. Consequently, the vegetation is very poor, being limited to thorny shrubs dotted on wadi beds. No settlements exist; even local pastoral nomads are rarely encountered. The existence of a PPNB outpost was all the more unexpected.

To date, the investigation has been conducted three times: in the spring and summer seasons of 2005 (Fujii 2006a, 2006b) and the spring season of 2006 (Fujii in this volume). The general land survey conducted in the first season showed that the site, covering an area of ca. 1.5ha, consisted of the following three distinct components: 1) a sizable PPNB outpost occupying the northwestern corner of the site; 2) a pair of Early Bronze Age burial cairns (or cist enclosures in our terminology) overlying the outpost; 3) an elongate, roughly V-shaped freestanding wall that extends to the southeast of the outpost (**Fig. 2**). The first field season also conducted limited soundings of every component. The second season was focused on the PPNB outpost, the western half of which was entirely excavated. As a result, we were able to tentatively date it to the Late PPNB period on the basis of the lithic evidence. In addition, Cist Enclosure 1 was briefly examined



1. Wādī Abū Ṭulayḥa and PPNB sites around the Jafr basin.

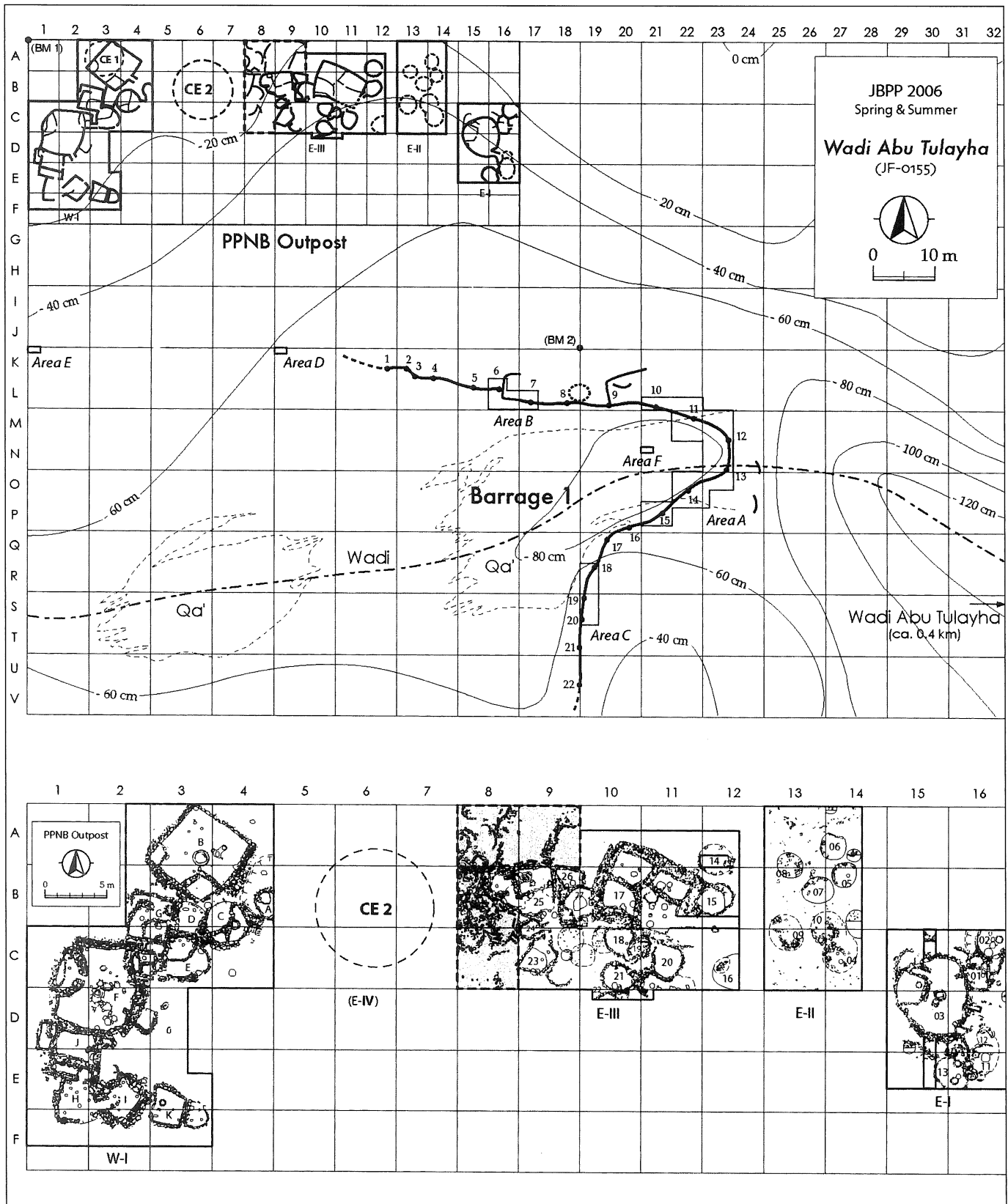
in advance of the excavation of the underlying PPNB outpost. The third season was devoted to the investigation of the V-shaped freestanding wall (and the other four similar features found in the basin), which turned out to be a barrage roughly coeval with the neighboring outpost.

The Excavation

The fourth field season, our main concern, was focused on the eastern half of the outpost (The investigation skipped the central part around Cist Enclosure 2, which is due to be excavated in the next season). In order to cover the anticipated eastward extension of the outpost, three operation areas, Area E-I to E-III, were set up with two 2m wide baulks in between (Figs. 3, 4). As with the western operation area (Area W-I) that was investigated in the previous field season, the excavation at the eastern operation areas was conducted based on a 5m by 5m grid

and locus system that subdivided a 10m by 10m major grid system covering the whole range of the site. The excavated area totaled 570 square meters and the volume ca. 300 cubic meters. Excavated soil from fill layers was not sieved, but a part of floor deposit including hearth contents was brought into water floatation for recovering floral remains.

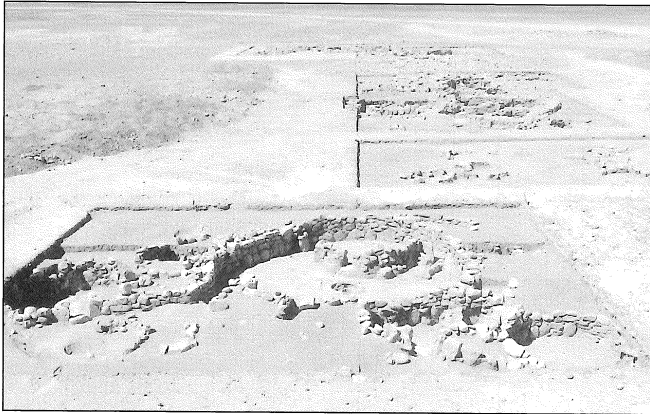
The stratigraphy of the eastern operation areas was basically identical to that of the western area. Layer 1 or surface layer was grayish buff in soil colour, relatively loose in texture, sandy silt deposit ca. 3-5cm thick. Layer 2 was light brown, slightly compact, silty sand deposit ca. 10-20cm thick. Layer 3 was heterogeneous deposits ca. 20-80cm thick, which constituted various fill deposits inside PPNB semi-subterranean structures. This layer faded out at the fringe of the structures, where Layer 2 directly overlay Layer 4. Layer 4 was reddish-brown,



2. The contour map and layout of the PPNB outpost at Wādī Abū Ṭulayḥa.

relatively compact, silty sand deposit not less than ca. 20-30cm thick, into which large pits for the construction of the PPNB semi-subterranean structures were dug. The deposits underneath

Layer 4 varied in contents depending on loci but were consistently sterile in terms of archaeological finds. A limestone bedrock layer, which often served as a natural floor of the semi-sub-



3. A general view of the outpost (from E).

terranean structures, was reached at a level of ca. 0.6-0.8m below the ground surface of those days, namely, the upper surface of Layer 4.

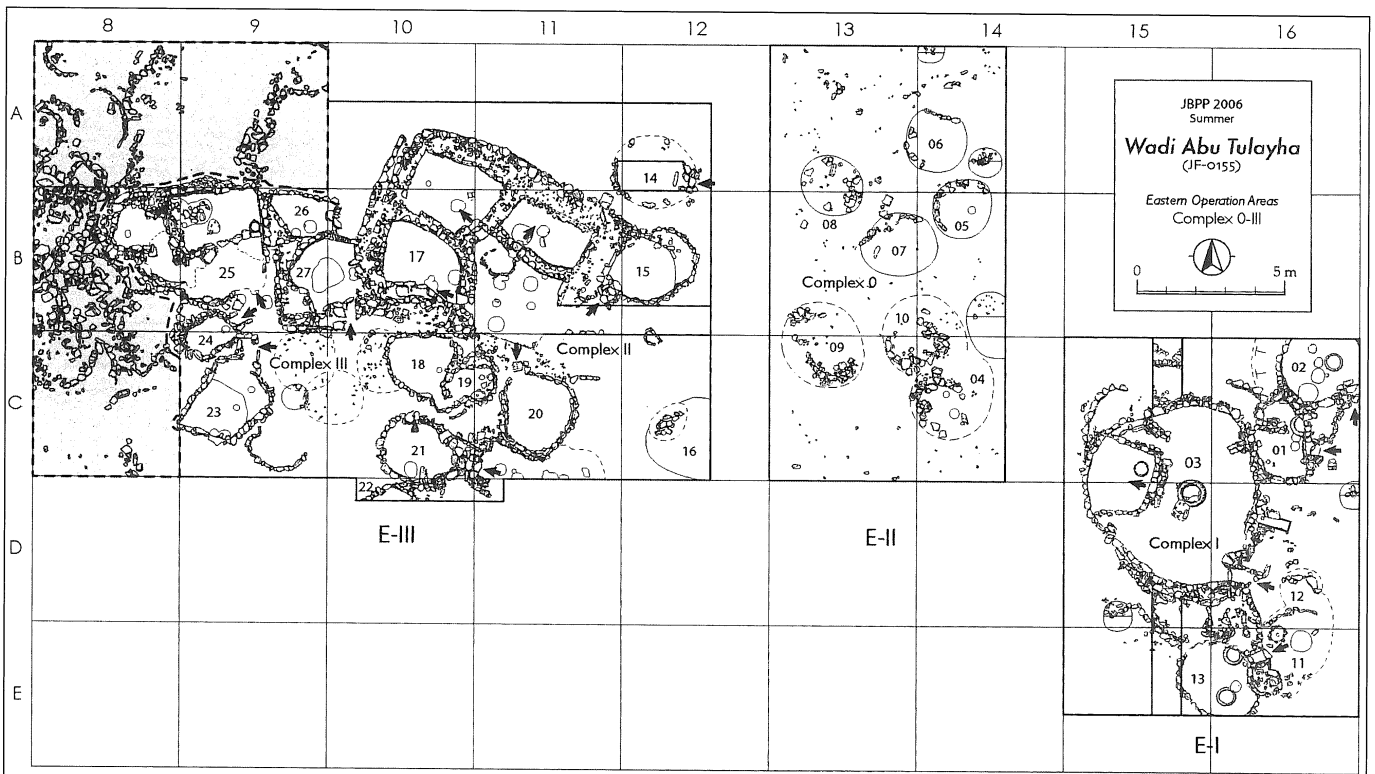
Structural Remains at Area E-I

This operation area contained four substantial masonry structures (Unit 01, 02, 03 and 13) and two temporary huts (Unit 11 and 12) (Figs. 5, 6). They are likely to have formed a structural complex (Complex I) with Unit 03 as a core feature. Thus the core structure will be described first, followed by the minor components.

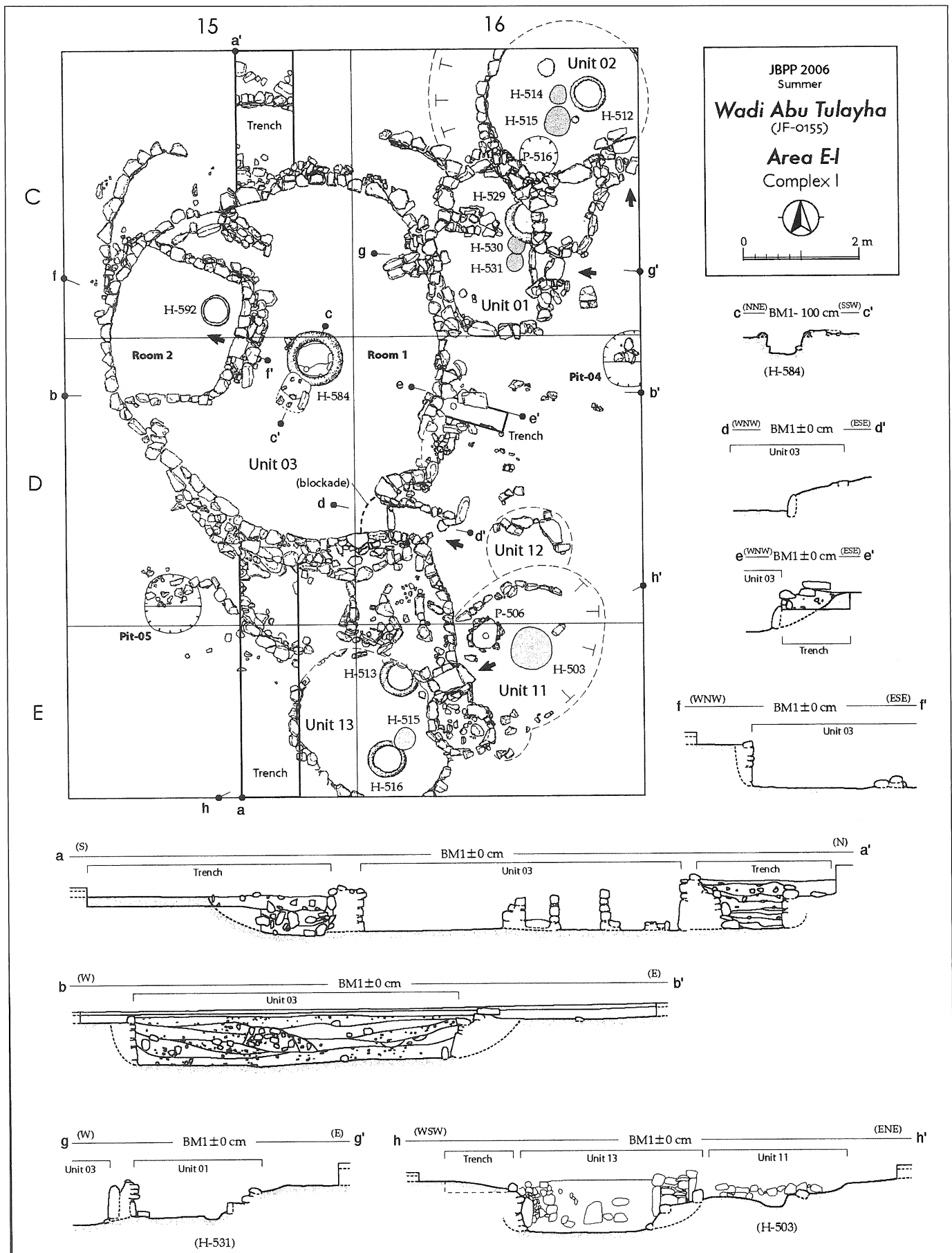
Unit 03

Being attended by several minor components,

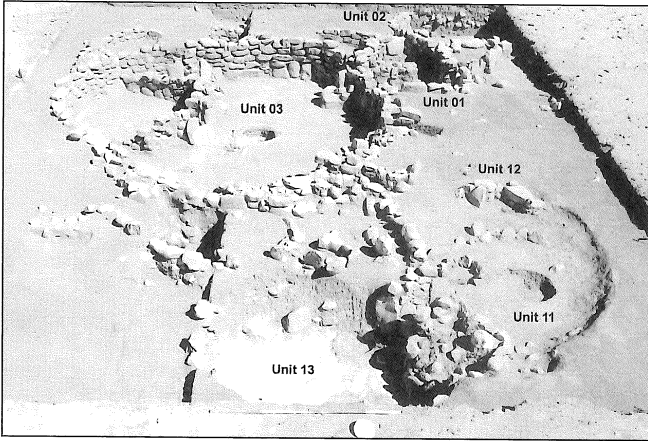
Unit 03 occupied the central part of Area E-I. It was a large, oblong, semi-subterranean masonry structure, measuring ca. 6m by ca. 5.5m in floor size and ca. 0.7m in floor depth (Fig. 7). The underground walls of this semi-subterranean structure were a single row wide and four to six courses high. They were constructed as masonry retaining walls leaning against the flanks of a large pit that was dug in advance of the construction. Relatively standardized limestone and flint flat cobbles, ca. 20-30cm long and ca. 10-15cm thick, were used for the main construction material. They were built up in stretcher bond, using coarse mud mortar. Nevertheless, foundation stones were larger in size and usually placed in an upright position on the pit base. Unlike the core structures at Area W-I, this structure rarely used small rubble as adjustment material. For this reason, every course of the masonry walls was often undulated. This structural defect caused remarkable wall inclination due to strong sideways soil pressure. On the other hand, overground or upper walls were hardly preserved, but the volume of fallen stones suggested that they were originally several courses high. It is probably for this reason that the masonry walls partly shifted to a two-row width from the ground level. The ceiling



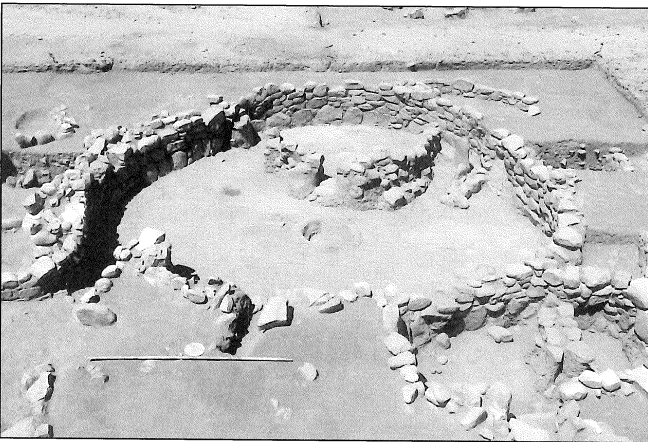
4. The layout of the structural remains at the eastern operation areas.



5. Complex I (Area E-I): the plans and elevations/sections of the structural remains.



6. Complex I (Area E-I): a general view (from S).



7. Unit 03 of Complex I: a general view (from E).

height from the underground floor can be estimated at ca. 1.5m.

Interestingly, the northern and southern walls were duplicated. It is questionable, however, that these two pairs of double walls were designed to reduce strong sideways soil pressure acting on the walls, because they were attached only to the narrow sides of the oblong structure and the long sides, which had further need of reinforcement work, were lacking in them. Rather, it seems more likely that the inhabitants started the construction of the structure getting the dimensions wrong and soon reconstructed it reducing the size so as to fit the length of available roof beams, as suggested by a similar episode at Area W-I (Fujii 2006a). It is notable, however, that buttresses were attached to the east and west non-duplicated walls only (Figs. 5, 8). This possibly means that a series of wastes of labor led to a certain degree of enhancement of both north and south walls.

This structure was originally of a single room type. The attachment of a U-shaped parti-



8. Unit 03 of Complex I: a buttress attached to the eastern wall (from NW).

tion to the western wall seems to have been a later episode in terms of comparative stratigraphy. A narrow sloping entrance was found at the southeastern corner. The south wing of a pair of sidewalls was extended further southward, serving as a windbreak against the northwesterly predominant wind in this region. Interestingly, the entrance was blocked with a temporary wall ca. 0.5m high and rubble was compacted into a narrow space thus produced (Fig. 9). Similar devices were found throughout the outpost including Area W-I (Fujii 2006a, 2006b). The custom of entrance blockade is suggestive of a seasonal use of the outpost.

The main room contained a large clay-lined hearth (H-584) ca. 1m in diameter and ca. 0.5m in depth at the central part of the floor. It was accompanied by a small rectangular clay table, which was probably used for putting foodstuff, firewood, and the rest. Similar devices are often seen at tent houses of modern local herders. The



9. Unit 03 of Complex I: the entrance blockade (from NW).

rectangular compartment, on the other hand, was equipped with a narrow entrance fringed with a pair of upright boulders and a small clay-lined hearth (H-592) ca. 0.4m in diameter. As noted above, the upper surface of the limestone bedrock layer was used as a natural floor without any special treatment. No clear evidence for postholes was found.

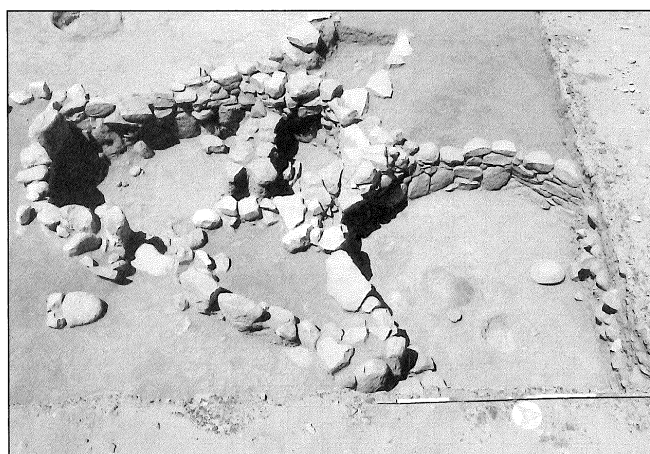
Unit 01

This structure adjoined the northeastern corner of Unit 03, the core of Complex I. It was a small, sub-rectangular structure ca. 2.5m by 1.5m in floor size and constructed on a pit ca. 0.5m in floor depth (Figs. 5, 10). The underground walls were a single row wide and four to six courses high. Overall, the masonry technique was inferior to Unit 03, which caused remarkable wall inclination especially at the western and southern walls. The upper walls were hardly preserved, but, again, the volume of fallen stones suggested that they were originally at least some courses high. Nevertheless, in light of its irregular plan and the absence of two-row wide walls, it is questionable whether the structure was as high as Unit 03. Rather, it seems more likely that the upper walls served as windbreaks of a moderate height. It is conceivable that this structure was briefly roofed with soft material such as twigs and leather.

This structure was also originally of a single room type. As was the case with Unit 03, the addition of a short partition (doubling as a buttress of the western wall) seems to have been a later episode in terms of comparative stratigraphy. A narrow stepped entrance ca. 0.5m wide opened at the southern part of the eastern wall. Two small hearths (H-530, and -531) and a large clay-lined hearth (H-529) were found beside the entrance. In addition, two querns and a pair of hammerstones were found *in situ* along the western wall. As for outdoor equipment, a small depot was found beside the entrance. It may have been used for storage space for firewood and the rest.

Unit 02

Unit 02 was a small round structure ca. 3m in diameter and ca. 0.7 - 0.8m in floor depth. Together with the neighboring Unit 01, it constituted the northeastern structural conglomerate of Complex I (Figs. 5, 10). It had much in common



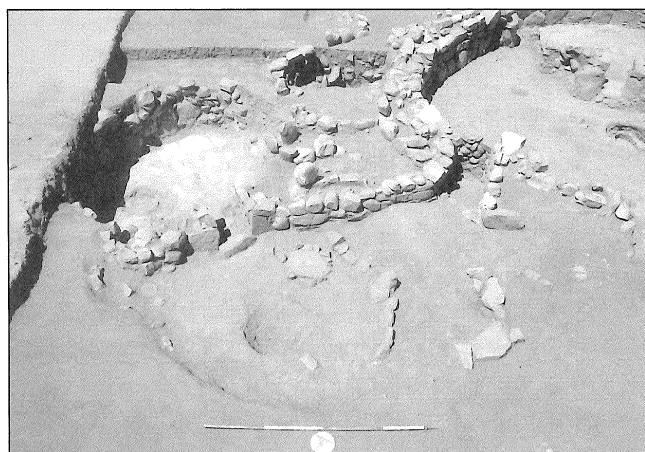
10. Unit 01 and 02 of Complex I: a general view (from E).

with Unit 01, including the construction material and masonry technique. What interested us instead was a shallow depression to the west of the structure. It may be a vestige of preliminary digging in advance of the construction of this structure.

A narrow stepped entrance fringed with a pair of sidewalls was found at the southeastern corner of the structure. The room contained a large clay-lined hearth (H-512) and two smaller simple hearths (H-514, and -515) at the central part of the floor. Interestingly, a limestone quern found *in situ* near the hearth cluster was put upside down, probably a device for the long absence of dwellers. In addition, a grinding stone was found *in situ* beside Hearth-515.

Unit 11

This oblong structure, ca. 2.5m by ca. 3m in floor size and ca. 0.2m in floor depth, was constructed beside the extended entrance wall of Unit 03 (Figs. 5, 11). It was constructed on



11. Unit 11-13 of Complex I: a general view (from E).

a shallow depression and accompanied with a short stone alignment along its northern fringe. In this sense, it resembled temporary sheds at Area E-II rather than the surrounding structures. Although no clear evidence for an entrance was confirmed, the access from the south or east seems likely. A large hearth (H-503) ca. 1m in diameter and ca. 0.3m in depth was found on the central floor. In addition, a large plinth stone ca. 0.5m long was found *in situ* at a narrow space between the hearth and the stone alignment (Fig. 30: 17). It was placed on a pit (P-506) ca. 0.5m deep and stabilized with rubble arranged along its edge. A similar device was found at Structure B in Area W-I as well (Fujii 2006a).

Unit 12

This unit, ca. 1.2m in diameter and ca. 0.2 - 0.3m in floor depth, can be defined as a smaller version of Unit 11 described above (Figs. 5, 11). Again, a short stone alignment extended along the northern fringe of a shallow depression. No hearth was found on the floor that was partly cut by the neighboring Unit 11.

Unit 13

This structure was located on the opposite side of Unit 11, with the extended entrance wall of Unit 03 in between (Figs. 5, 11). It was oblong in general plan and had a floor area of ca. 2m by 3m and a floor depth of ca. 0.8m. Thus, among the three structures that constituted the southern conglomerate, it was the only example with the same floor depth as the core structure. This unit was poorly preserved; the northern wall entirely collapsed and the southern and western walls were remarkably inclined. Only the eastern part was well preserved, where a narrow stepped entrance fringed with a pair of sidewalls opened northeastwards interrupting the extended entrance wall of Unit 03. Two large clay-lined hearths (H-513, and -516) and a small simple hearth (H-515) were found on the floor utilizing the limestone bedrock layer.

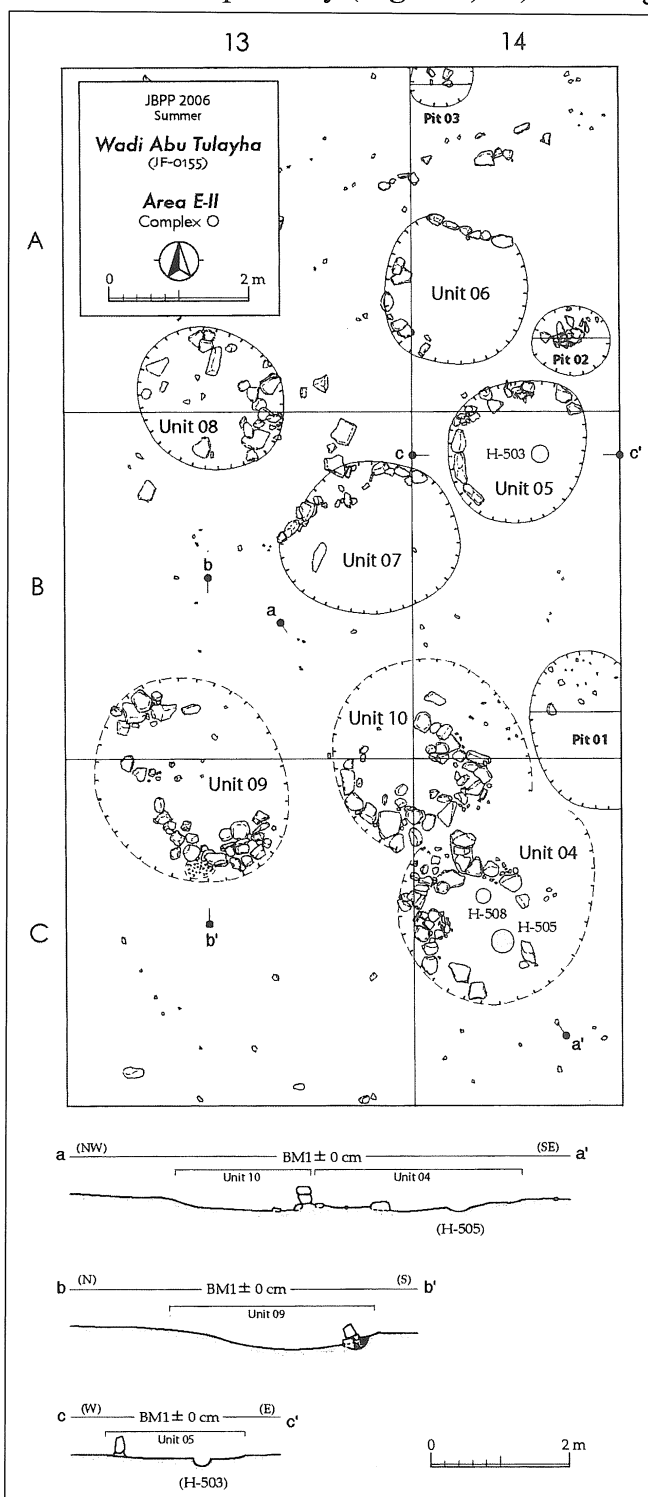
The Other Features

In addition, two small pits (Pit-04 and -05) ca. 1m in diameter were found at a location ca. 3 m east and ca. 1m southwest of Unit 03, respectively. They included many limestone cobbles, suggesting their use as dumping grounds for re-

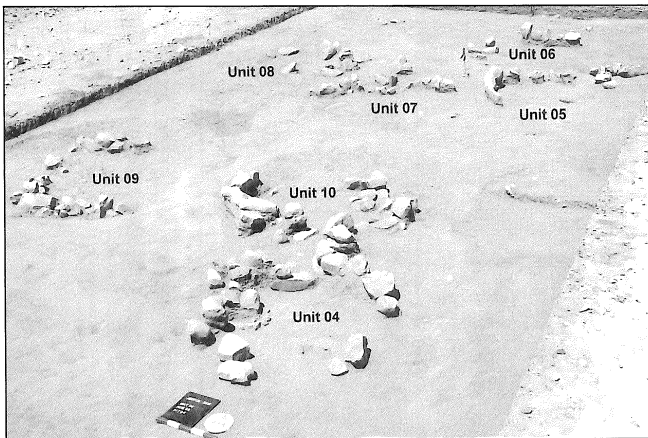
maining construction material of Complex I.

Structural Remains at Area E-II

This operation area was quite different in contents from the neighboring two areas and no substantial structures were included. Instead, it contained seven temporary huts (Complex 0) and three small pits only (Figs. 12, 13). Leaving



12. Complex 0 (Area E-II): the layout and elevations/sections of the structural remains.



13. *Complex 0 (Area E-II): a general view of the structural remains (from SE).*

an interval of ca. 0.5-1m among them, they were concentrated on the central part of the operation area. Every hut was ca. 1.5-2.5m in diameter and ca. 0.1 - 0.2m in floor depth, and a short curvilinear stone alignment fringed its northern or northwestern edge. With the exception of a few shallow hearths, no small features were found on the floors. Finds were also very scarce.

There is little doubt that these huts were used for temporary camping facilities. To begin with, their southward-to-southeastward orientation falls on the lee side of the northerly or northwesterly predominant wind in this region. The scarcity of finds and hearths, to say nothing of their simple structure, also supports the functional identification suggested above. It is also notable that, unlike many structures at the neighboring operation areas, they were equipped with simple hearths only. The total absence of clay-lined full-scale hearths highlights their ad hoc nature. Modern local herders also often construct similar facilities, when they camp far away from their tent houses. It is needless to say that they follow the same orientation principle.

The question is why such a hut cluster intervened between Complex I and II only. Suggestive in this respect is our hypothesis that the continuous westward renewal of a single (or at most a few) structural complex led to the formation of this elongate outpost (Fujii 2006a, 2006b). Given this, it follows that the hut cluster temporarily accommodated the initial group of transhumants who were concerned with the construction of Complex I, the first structural complex in the outpost. Both the location and the orientation of their temporary accommodations must have been favorable for watching the progress of

construction taken place at Area E-I. Nevertheless, it was limited to the first group who needed such a hut cluster, because the subsequent construction is likely to have taken place in series using a pre-existing complex as a base of their livelihood. It is probably for this reason that the hut cluster existed between the first and second complexes only.

Structural Remains at Area E-III

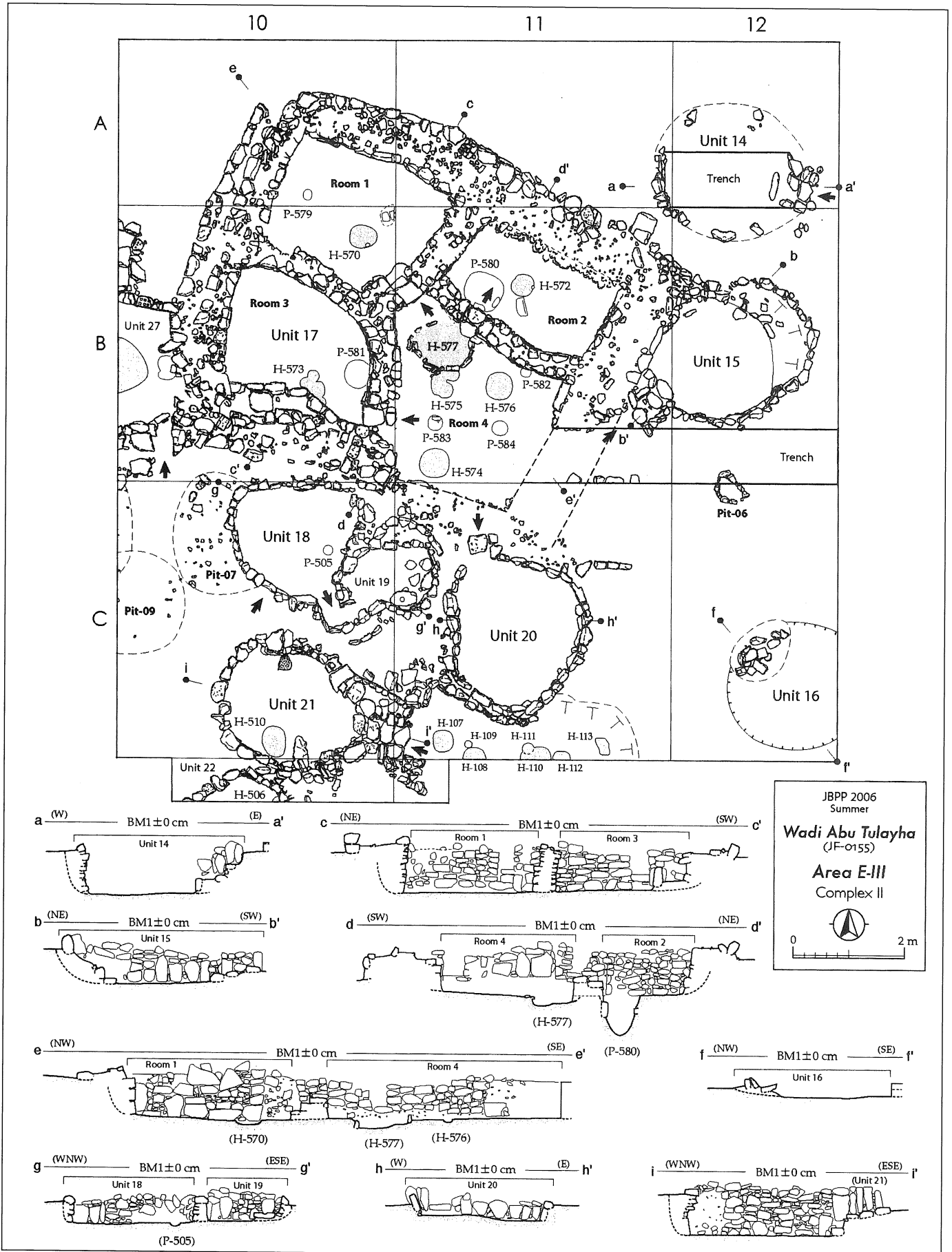
A dozen structural remains were unearthed in this operation area. They fall into two clusters: Complex II with Unit 17 as a key structure and Complex III with Unit 25 as a central feature (Fig. 4). Importantly, these two core structures changed into a rectangular or sub-rectangular plan. The minor components also underwent a series of techno-typological transformation including the appearance of a shallow-floor type and the consequent degeneration of a stepped entrance. The order of description is the same as Area E-I; the core structure will be described first then followed by the others.

The Components of Complex II

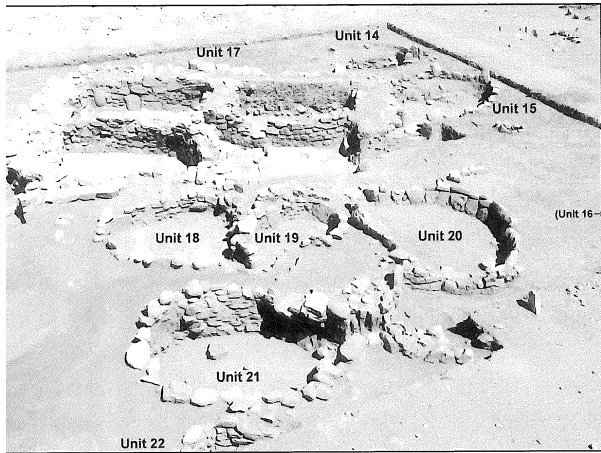
Unit 17

Unit 17, the core of Complex II, occupied the northeastern corner of Area E-III and was attended by at least seven subsidiary components (Unit 14-15 and 18-22) (Figs. 14-15). It was among the largest structures in the outpost, measuring ca. 6.5m by ca. 4.5m in floor area and ca. 8m by ca. 6m in outer size. The floor depth was ca. 0.7 - 0.8m, a normal value as a core structure (The reason why the floor depth of core structures were standardized at ca. 0.7 - 0.8m is that, as noted above, a limestone bed-rock layer extending at that level was used for a natural floor).

This unit seems to have been the first quadrangular structure in the outpost, first because it came next the oblong key feature (Unit 03) with the hut cluster in between, and second because it exposed a variety of structural defects not uncommon to an inexperienced construction. As is commonly known, the construction of a semi-subterranean masonry structure with a quadrangular plan requires a wide range of technological devices including the use of standardized building material, the interlocking technique of corner stones, and the use of adjustment mate-



14. Complex II (Area E-III): the layout and elevations/sections of the structural remains.



Complex II (Area E-III): a general view (from SW).

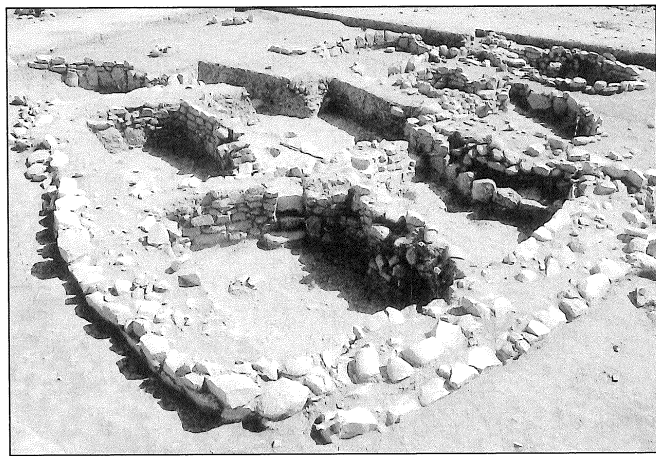


16. Unit 17 of Complex II: a general view (from SE).

and high-power mortar, to say nothing of acute design and construction. This is because, like round structures, quadrangular semi-terranean structures cannot disperse strong sideways soil pressure along their walls. However, this structure was lacking in such devices, which caused remarkable wall inclination and subsequent collapse.

Thus it is no wonder that the structure underwent repeated restorations and reconstructions. Among these was the addition of partitions doubling as buttress walls, which resulted in the amorphous space division of the structure finally of a single room type (Figs. 16-17). The posteriority of this episode is evidenced by a clear stratigraphical gap between the partitions and the original floor). The same is true of the reconstruction of the western outer wall, which contributes to a robust appearance of this structure. It appears, however, that these conscientious efforts could not overcome all structural defects. The northeastern wall of Room 2, for example, was left entirely collapsed. Likewise, the southeastern quarter of Room 4, where an entrance to this structure probably existed, no longer retained its original appearance.

As for small features, Room 1 contained a small hearth (H-570) in front of a narrow indoor entrance leading from Room 4. A small clay pipe similar to that found at Unit 03 accompanied it. In addition, a small pit (P-579), possibly used for a posthole, was found beside the rear wall. Both the northwestern and northeastern walls were remarkably inclined due to sideways soil pressure. Next, Room 2 contained a shallow hearth (H-572) and a deep pit (P-580) in front of a narrow entrance leading from Room 4. As



17. Unit 17 of Complex II: a general view (from NW).

noted above, the northeastern wall of this compartment entirely collapsed. A heavy damage was also confirmed at Room 3, where the critically inclined southern wall was barely supported with a clay bank fringed with upright boulders. This room yielded an amorphous hearth (H-573) and shallow pit (P-581) near a narrow entrance leading again from Room 4. Room 4, on the other hand, contained four hearths (H-574, -575, 576, and -577) and three pits (P-582, -583, and 584). A slab-lined hearth (H-577), the largest example of the four, was partly covered with a threshold stone of the entrance leading to Room 2, indicating that it was original equipment before the addition of the partition. In light of the overall layout of the structure, there is little doubt that the entrance existed at the southeastern corner of this room. Accordingly, Room 4 probably served as frontal indoor space at the beginning, an antechamber after the addition of the partition walls, and a semi-open forecourt leading to the three roofed compartments after the extensive collapse of its walls, respectively.

The frequency of hearths and pits supports this assumption.

Unit 14

This small round structure, ca. 2.5m in diameter and ca. 0.8m in floor depth, occupied a location ca. 1m northeast of Unit 17, the core of Complex II (Figs. 14-15). Together with the neighboring Unit 15, it constituted the northeastern conglomerate of this complex. Since this structure was poorly preserved, it was briefly examined by means of a 1m wide trench set up along the east-west axis. As a result, it turned out that the masonry walls, a single row wide and six to seven courses high, were still partly preserved at both ends. A stepped entrance was found at the eastern end, but no small features were confirmed on the partly exposed floor.

Unit 15

This unit adjoined the northeastern corner of Unit 17 and incorporated the sturdy wall of the parent structure as a part of its own wall (Figs. 14-15). It is therefore evident that it was constructed after the core structure. It had a similar floor size to the neighboring Unit 14, but the floor depth was relatively shallow (ca. 0.5m). In comparison with Unit 14, it was more carefully constructed using large upright foundation stones. This structure, originally of a round plan, changed into an amorphous form because of the reconstruction of the eastern wall. Interestingly, the flank of the new pit was left uncovered with a masonry wall. The masonry wall of this part started with the ground-level course, a suggestion that the reconstruction was ad hoc in nature. A narrow stepped entrance fringed with a pair of sidewalls opened at the southwestern corner. No small features were found on the floor, but a small pit (P-06) lined with limestone slabs existed at a location ca. 1m south of this structure. No artifact was unearthed from this pit.

Unit 16

This small structure occupied the southeastern corner of Area E-III and its eastern half was covered with the baulk between Area II and III (Fig. 14). A limited excavation of the western half showed that it consisted of a shallow depression, ca. 2.5m in diameter and ca. 0.1m in floor depth, and a short stone alignment along

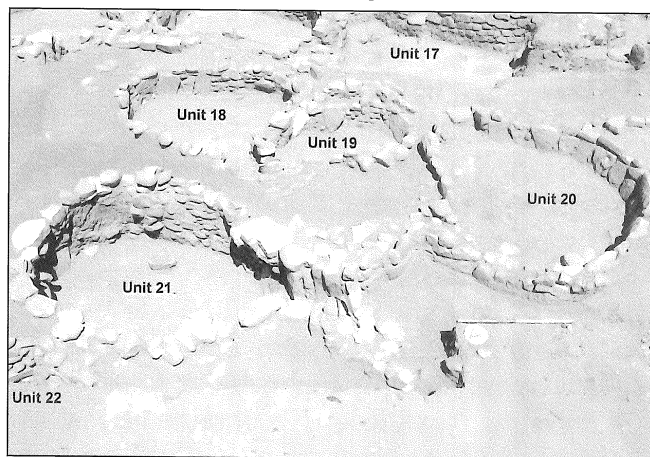
its northwestern edge. This unit can be regarded as the westernmost component of the hut cluster found at the neighboring Area E-II.

Unit 18

This small structure is among minor components that constitute the southern conglomerate of Complex II, and measured ca. 2m in major axis and ca. 0.4m in floor depth (Figs. 14, 18). It is one of the first subsidiary components to be constructed in a shallow pit less than 0.5m in floor depth. It is also notable in terms of the existence of a narrow passage leading to a neighboring structure. Both of these new devices were inherited down to the subsequent minor components to the west. In this sense, this structure can be defined as a forerunner of technological innovations that became more obvious in the subsequent complexes. The masonry wall of this structure was a single row wide and preserved to a height of two to four courses. No clear evidence for an entrance was confirmed, but in light of the existence of a large rubbish pit to the west, the access from the southwest or south seems most likely (The disappearance of a stepped entrance is a natural consequence of the remarkable reduction in floor depth). The northern wall was unnaturally straight in profile, suggesting that, as was the case with Unit 15, this unit was also constructed after the core structure. With the exception of a small pit (P-505) beside the eastern wall, no small features were found on the floor.

Unit 19

This small structure was connected with the neighboring Unit 18 through the narrow bended



18. Unit 17-22 of Complex II: a general view (from N).

passage, thus forming a twin complex (Figs. 14, 18). As with its western counterpart, it was constructed on a shallow pit ca. 0.2m in floor depth. The double wall at the northern and southern parts may be remnants of such reconstruction as was seen at Unit 03. A large plinth stone was found *in situ* beside the southern wall. As was the case with the plinth stone from Unit 11, it occupied a position considerably offset from the center of the floor. This probably indicates that minor structures were briefly roofed focusing on their rear half.

Unit 20

This structure, ca. 2.5m by 2m in floor area and ca. 0.2m in floor depth, was located beside the supposedly collapsed entrance of Unit 17 (Figs. 14, 18). The masonry wall was constructed by a single row and course of large upright slabs, another innovation that occurred in connection with the remarkable reduction in floor depth. It appears that the reduction in floor depth necessitated repeated re-digging of the floor, as suggested by a clear stratigraphical gap between the last floor and foundation stones especially of the southern and western walls. Again, the position of an entrance is unclear, but the existence of a pavement-like limestone slab at the northwestern corner, together with the sudden interruption of the wall alignment at the same locus, hints at the access from the north (As noted above, the absence of a full-fledged entrance marks the shallow-floor type of minor components). A few small hearths were found on upper floors. In addition, a short stone alignment, probably used for storing firewood and the rest, was extended from the northeastern corner.

Unit 21

Unit 21 was a small oblong structure with a floor area of ca. 2.5m by 2m and located to the south of the three minor components described above (Figs. 14, 18). It was a deep-floor type of minor component, having a floor depth of ca. 0.7m. It is precisely for this reason that, unlike the three neighboring units, it was still equipped with a stepped entrance fringed with a pair of sidewalls. Again, the large floor depth caused critical wall inclination and consequent collapse. This was especially the case with the southern wall, where an elongate boulder was

propped against it as a casual support. A shallow hearth (H-510) was found beside the southern wall. In addition, an oblong quern made of flint was found *in situ* beside the northern wall. As for outdoor features, there were several small hearths (H-197 ~ H-113) along a gentle slope in front of the stepped entrance.

Unit 22

This structure was found by chance when tracing the continuation of the southern wall of Unit 21 (Figs. 14, 18). A limited excavation showed that, as with the neighboring Unit 21, it had a large floor depth of ca. 0.7m. No small features were found on the partly exposed floor. The existence of this unit revealed that Complex II was extended further southward.

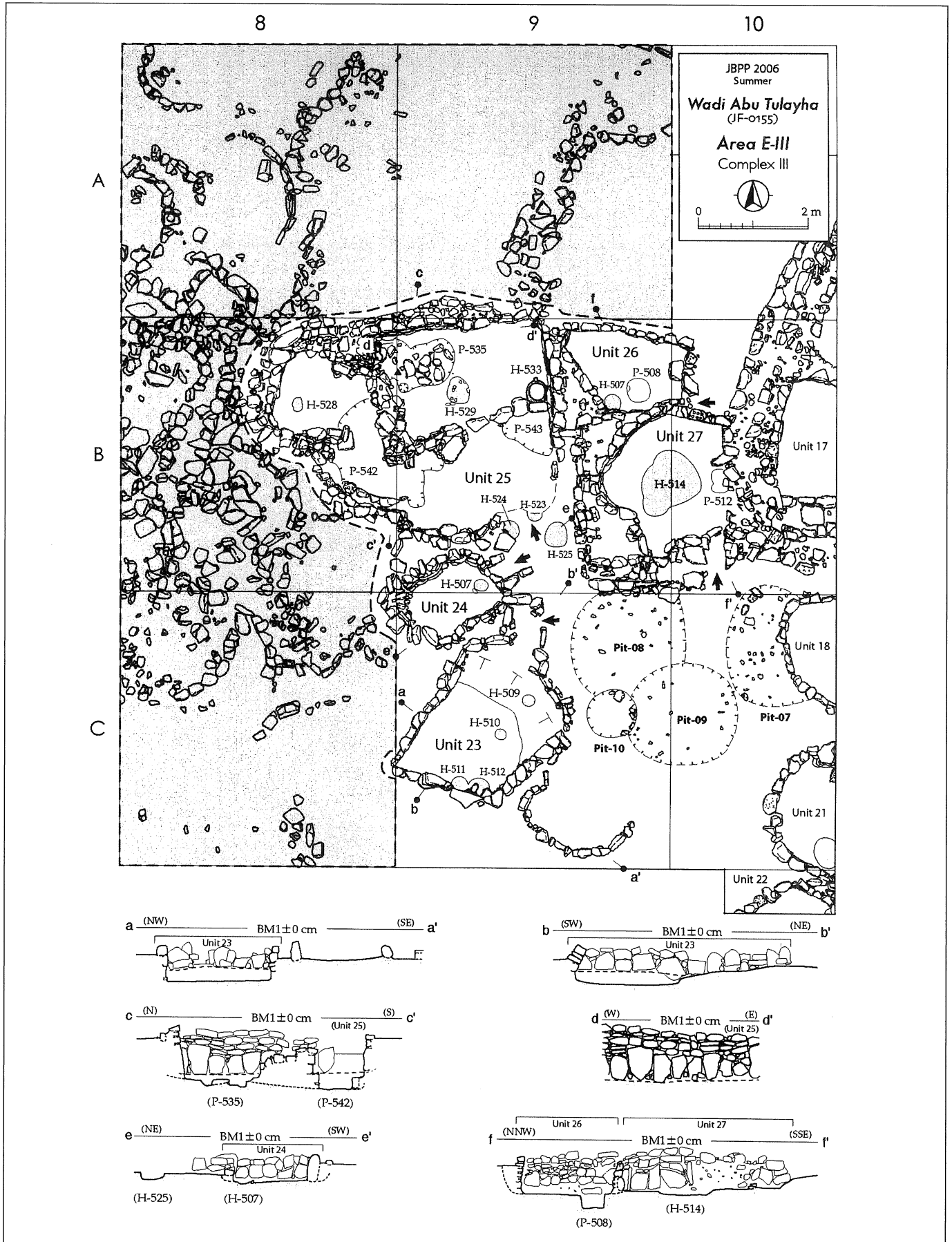
The Components of Complex III

Unit 25

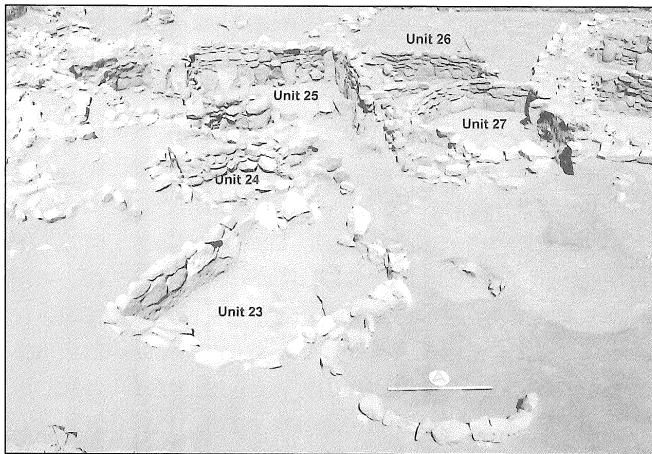
Unit 25, the core of Complex III, adjoined the key structure of the neighboring complex with two subsidiary components (Unit 16 and 27) in between (Figs. 19, 20). It was accompanied by several minor components, which, again, fell into the eastern and southern conglomerates. This structure was less outstanding for a key feature, measuring ca. 5m by 3.5m in floor area. Furthermore, its southwestern half was irregular in plan. Nevertheless, its large floor depth (ca. 0.7m) revealed its role as a core structure of Complex III.

This structure witnessed some technological innovations including the standardization of construction material, the use of large upright foundation stones roughly of the same height, and the horizontal masonry work (Figs. 19, 21). It is for this reason that it was relatively well preserved in comparison to the neighboring core structure. There is little doubt that these devices as well as the remarkable size reduction were intended to overcome a series of structural defects exposed at Unit 17, probably the first quadrangular structure in the outpost. It appears, however, that they were not always successful. Thus, the inhabitants must have taken various measures to cope with wall inclination, including the addition of a buttress to the northeastern corner and the reinforcement work of the southern wall.

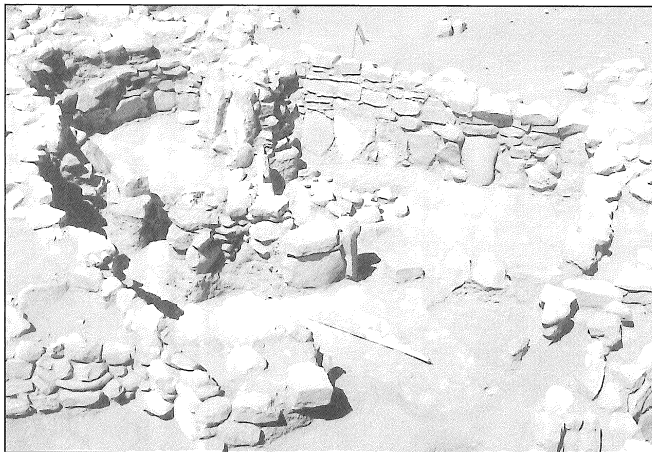
As with the neighboring core structure, this structure was also originally of a single room



19. Complex III (Area E-III): the layout and elevations/sections of the structural remains.



20. Complex III (Area E-III): a general view (from S).



21. Unit 25 of Complex III: a general view (from SE).

type. A narrow alley sandwiched between Unit 24 and 27 probably provided an access to this structure. Nevertheless, no specific evidence for an entrance was preserved due to the extensive collapse of the southeastern corner of the structure. Three small hearths (H-523, -524, and -525) were found in front of the supposed entrance. The indoor space was divided into two by means of the L-shaped partition that was added later as a buttress against the inclining walls. The northeastern compartment thus produced contained two hearths either clay-lined (H-533) or simple hearths (H-529). It also included a large pit (P-535) at the northwestern corner, which yielded a few carefully buried animal bones as well as ash and limestone cobbles (Fig. 22). A parallel example was confirmed at a posthole of Structure B in Area W-I (Fujii 2006b), suggesting that posthole ritual probably for sanctifying ground commonly took place in the outpost. The southern elongate room, on the other hand, contained a large pit (P-542) at its central floor, where a few dozen unbaked small clay objects occurred



22. Unit 25 of Complex III: Pit-535 in the northeastern compartment (from N).

collectively (Figs. 23, 34: 23-46). In addition, a small hearth (H-528) and a smaller pit (P-543) were found beside the western and eastern walls, respectively.

Unit 23

This structure was among minor components that constituted the southern conglomerate of Complex III, and occupied a location ca. 2m south of the core feature with Unit 24 in between (Figs. 19-20). It was trapezoidal in general plan, having a floor area of ca. 2m by 2.5m and a floor depth of ca. 0.3 to 0.5m. The masonry walls were a single row wide and preserved to a height of a few courses. Again, the remarkable reduction in floor depth necessitated repeated floor rejuvenation especially at the southern half (The critical inclination of the southern wall is probably attributable to this episode). A gently sloping entrance fringed with a pair of upright stone alignments opened northward. It can be regarded as



23. Unit 25 of Complex III: a cache of unbaked clay objects in the southern compartment (from W).

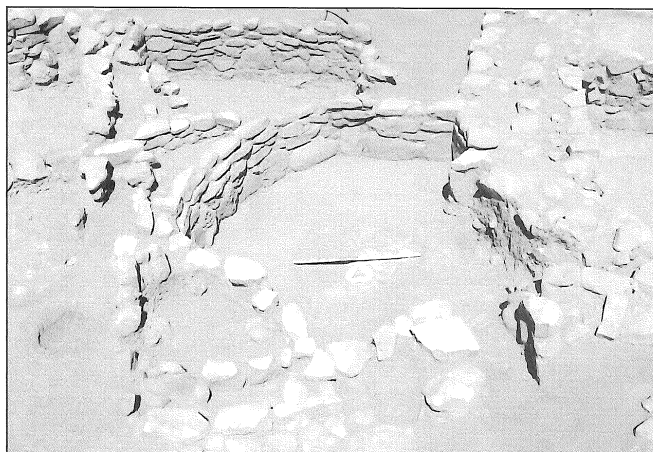
a simple version of a stepped entrance peculiar to the deep-floor type of minor components. The floor contained four small hearths (H-509~H-512). In addition, a semi-circular stone alignment ca. 2m long was extended from the eastern wall. As with a similar feature at Unit 20, it was probably used as an outdoor storage.

Unit 24

This small structure, ca. 1.5m by 1m in floor area and ca. 0.3m in floor depth, occupied a narrow lot sandwiched between Unit 25 and 23 (Figs. 19-20). The masonry wall was a single row wide and preserved to a height of a few courses. Overall, the masonry technique was inferior to its neighboring structures and upright foundation stones were used to a lesser extent. These observations suggest that it served as a storeroom. A body fragment of a large limestone bowl (Fig. 30: 11) was found incorporated into the western wall as a construction material. As was the case with Unit 23, a narrow sloping entrance fringed with a pair of upright stone alignments opened toward the alley in front of Unit 25. A small hearth (H-507) was found on the frontal floor.

Unit 26

This unit was one of the two minor components that constituted the eastern conglomerate of Complex III, and adjoined the northeastern corner of the core structure (Figs. 19, 24). It was trapezoidal in general plan and had a floor area of ca. 2m by 1.5m. The floor depth was moderate (ca. 0.5m), falling into an intermediate form between the old and new types of minor components. Again, the repeated floor rejuvenation



24. Unit 26-27 of Complex III: a general view (from S).

caused a remarkable stratigraphical gap between foundation stones and the last floor. Although no clear evidence for an entrance was confirmed, a narrow gap in the eastern wall is likely to have substituted for it (Fig. 25). A shallow hearth (H-507) and a deep pit (P-508) containing limestone rubble were found beside the southern wall. A flint quern, found beside the eastern wall, was placed upside down on the floor. As referred to above, Unit 03 in Area E-I also witnessed a similar episode. The frequency of inverted querns, coupled with the custom of entrance blockade, strongly suggest that the outpost was used on a seasonal basis. In addition, two small game boards made of limestone slab (Fig. 31: 4, 5) were found incorporated into the upper course of the eastern wall.

Unit 27

This structure, another component of the eastern conglomerate, was located beside the entrance to Unit 25 (Figs. 19, 24). Though slightly larger in dimensions, it had much in common with the neighboring Unit 26, including the irregular plan, the moderate floor depth (ca. 0.4m), and the use of upright foundation stones. Interestingly, this structure utilized the sturdy western wall of Unit 17 as a part of its own wall. This fact means that Complex III (including Unit 27 as a minor component) was constructed subsequent to Complex II with Unit 17 as the core. This corroborates our hypothesis that the outpost gradually developed westward. A narrow sloping entrance opened southward and the central floor contained a large shallow hearth (H-514) ca. 1m in diameter. Again, a game board was incorporated into the upper



25. Unit 26 of Complex III: a general view (from S).

course of the northern wall as a converted construction material (Figs. 26, 31: 10).

The Other Features

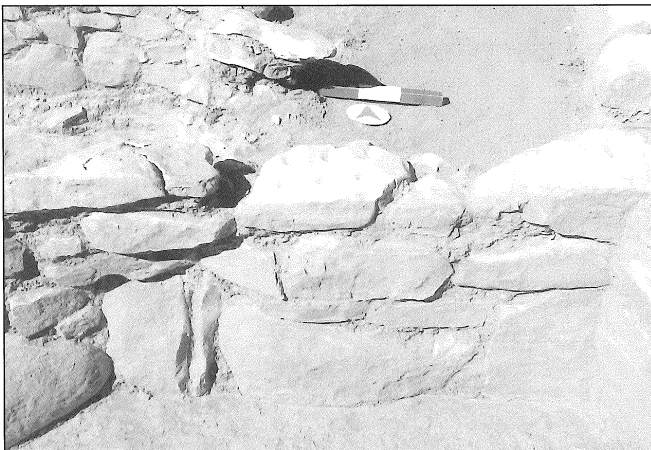
Three large pits (Pit 07, -08, and -09) ca. 2m in diameter were found in front of the alley leading to Unit 25. They contained a considerable amount of ash and charcoal remains, suggesting their use as ash pits for Complex III. A small yet deeper pit (Pit-10) fringed with rubble was also found beside them, but its use is still unknown. In addition, a number of wall alignments were unearthed around the core structure, but their excavations were suspended due to time constraints at the ground level of those days. Subsequent excavations are due to take place in the next field season in conjunction with the investigation at the neighboring Area E-IV.

The Finds

The finds from the eastern operation areas had much in common with those from Area W-I that was investigated in the previous field seasons. Chipped flint artifacts and grinding implements formed two major categories, followed by the other stone products such as stone vessels, plinth stones, and game boards. The finds other than stone products — bone tools, unbaked clay objects, and adornments made of shell and snail, for example — were much less frequent. In addition, faunal and floral remains were recovered in considerable quantities. What follows is a brief overview of these finds.

Chipped Flint Artifacts

The vast majority of chipped flint artifacts

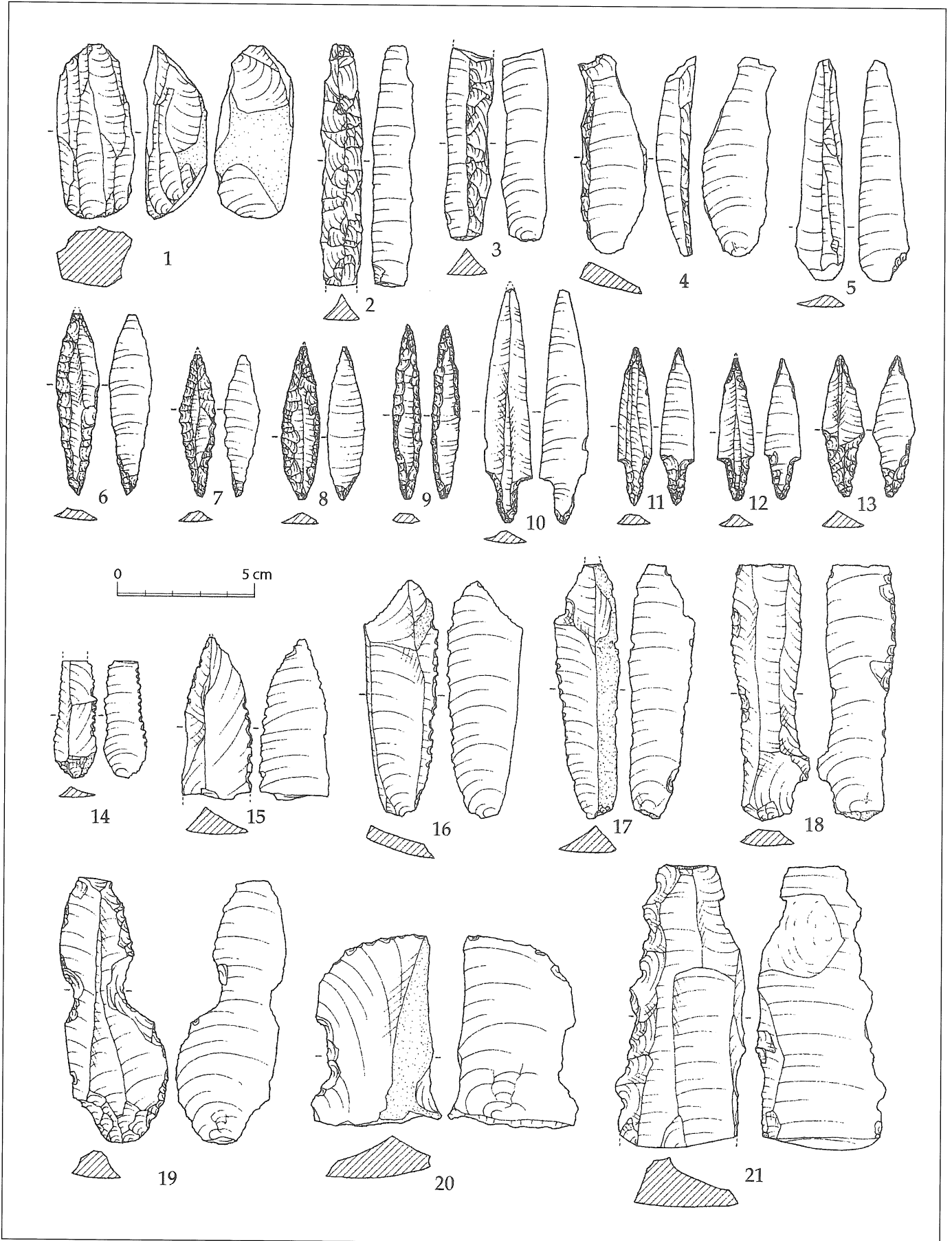


26. Unit 27 of Complex III: a game board incorporated into the northern wall (from S).

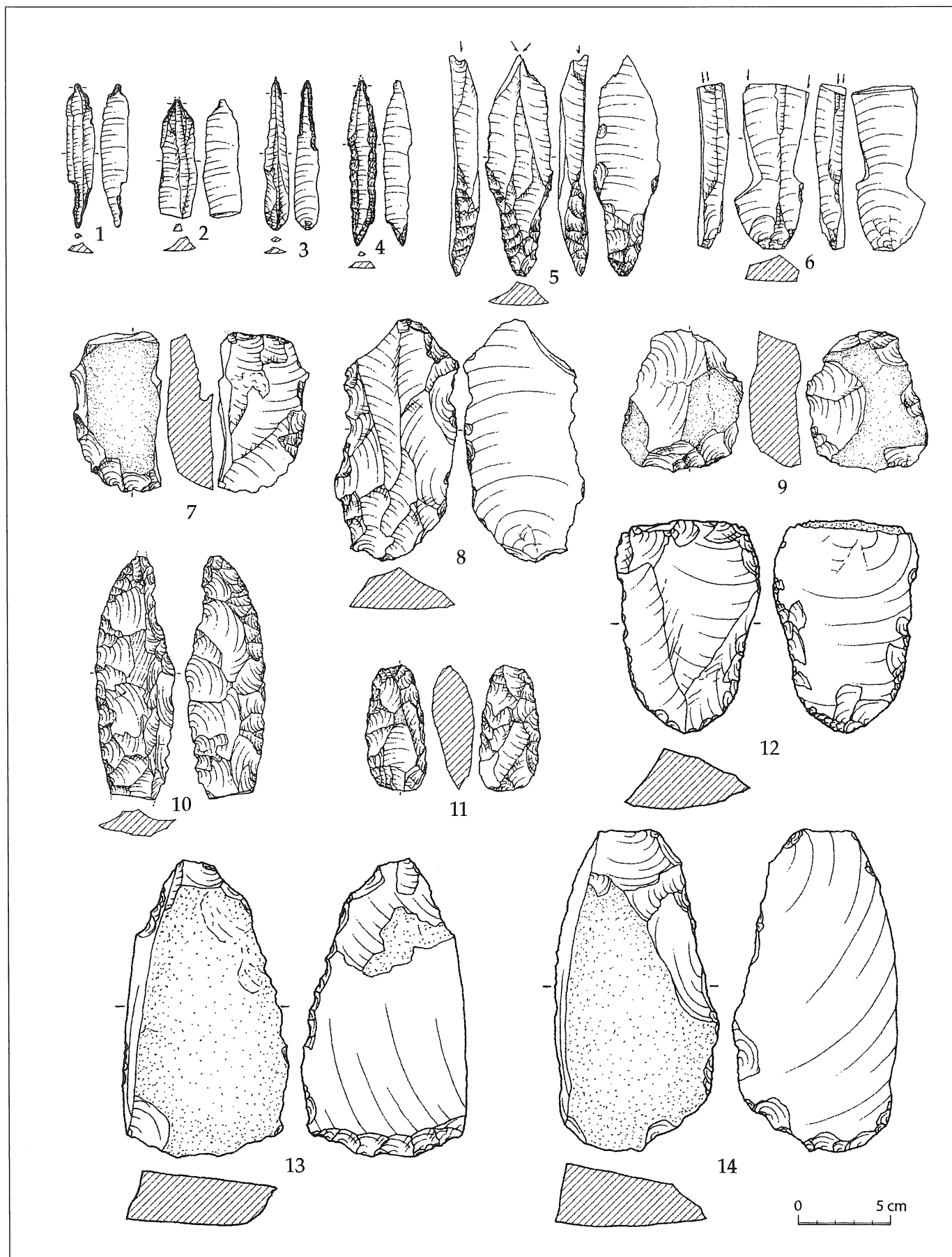
were made of gray to light brown, slightly mat, fine-textured Eocene flint that is commonly available in the Jafr basin, especially in its northern hilly terrain. Technologically, naviform core-and-blade technique was predominant (Fig. 27: 1), but single-platform cores also occurred to a lesser extent. The debitage classes included primary and secondary crest blades (Fig. 27: 2, 3), core tablets (Fig. 27: 4), and unmodified blades and flakes (Fig. 27: 5). The frequency of these waste materials, along with the existence of spherical hammerstones as processing tools (Fig. 29: 18-19), corroborates that most, if not all, of the flint artifacts were produced in the outpost.

Tool classes were well balanced in contents and included points and arrowheads (Fig. 27: 6-13), finely serrated sickle blades (Fig. 27: 14-18), notches (Fig. 27: 19-20), denticulates (Fig. 27: 24), drills (Fig. 28: 1-4), burins (Fig. 28: 5-6), end- and side-scrapers (Fig. 28: 7-9), bifacial knives (Fig. 28: 10), adzes (Fig. 28: 11), and heavy-duty digging tools (Fig. 28: 12-15). Except that notches and denticulates were unexpectedly frequent, and that axes and adzes are very scarce, the tool kit was no different in contents from those of coeval sedentary settlements in southern Jordan. This observation corroborates our view that Wādī Abū Ṭulayḥa served as an outpost derived from the PPNB farming society to the west (Fujii 2006a).

The predominance of Amuq type points and arrowheads (Fig. 27: 6-9) is suggestive of the Late PPNB date for this lithic assemblage (As referred to later, this view was corroborated by C-14 data). In terms of subsistence, the frequency of hunting weapons demonstrates that, as was the case with the heartland, hunting was still among important options for the livelihood of early transhumants. Also of significance is the frequency of sickle blades, which highlights the extensive exploitation of plant resources including cereal crops (Fujii in this volume). Both the rich occurrence of grinding implements and the existence of a basin-irrigation facility beside the outpost argue for this view. In addition, the occurrence of heavy-duty digging tools is also notable. They were probably used for digging large pits for the semi-subterranean structures described above, although they may have doubled as farming implements for the basin-irrigated agriculture.



27. The Finds: chipped stone artifacts.



28. The Finds: chipped stone artifacts.

Grinding Implements

This category consisted of querns as lower stones and various grinding slabs as upper stones. The combination of mortars and pestles was not exemplified. Querns were made of either flint (**Fig. 29: 1-3**) or limestone slabs (**Fig. 29: 4**) ca. 30-40cm long and ca. 5-10cm thick. They were often roughly trimmed at their edge and finely chipped at their working surface. Typologically, flat querns without any conspicuous central depressions accounted for the vast majority, but the limestone products included some trough- or basin-like querns of smaller dimensions (**Fig. 29: 5-6**).

Upper stones were made largely of flint (**Fig. 29: 7-10**) and limestone slabs (**Fig. 29: 11-15**), but they also included basalt (**Fig. 29: 16-17**), sandstone, and granite products to a lesser extent. They were usually standardized at an ideal size fitting both hands, namely, a length of ca. 10-15cm and a thickness of ca. 3-5cm. Some of them still retained traces of parallel abrasions on their working surface. The chipping technique was less conspicuous in comparison with lower stones, suggesting that natural slabs were directly used for upper stones without any remarkable modification. Typologically, oblong or semi-rectangular products were predominant and round examples were much less frequent. In light of their co-occurrence with querns at Unit 02 and 03, a part of spherical hammerstones may also have been used for the same purpose (**Fig. 29: 18-19**).

Stone Vessels

Unlike grinding implements described above, stone vessels were made exclusively of limestone and no flint products were included. They varied in both size and morphology from miniature vessels with a shallow central depression and a slightly rounded base (**Fig. 30: 1-7**), through medium-size shallow bowls with a flat base (**Fig. 30: 8-10**), to a large tub-like vessel more than 50cm in diameter (**Fig. 30: 11**). Their specific use is still unknown. Nevertheless, a few miniature vessels still retained traces of red pigment, suggesting their use as cosmetic palettes. Most of the stone vessels were found in a broken state, a puzzling phenomenon in view of the hardness of their raw material. They might have been put over a fire, but clear evidence to

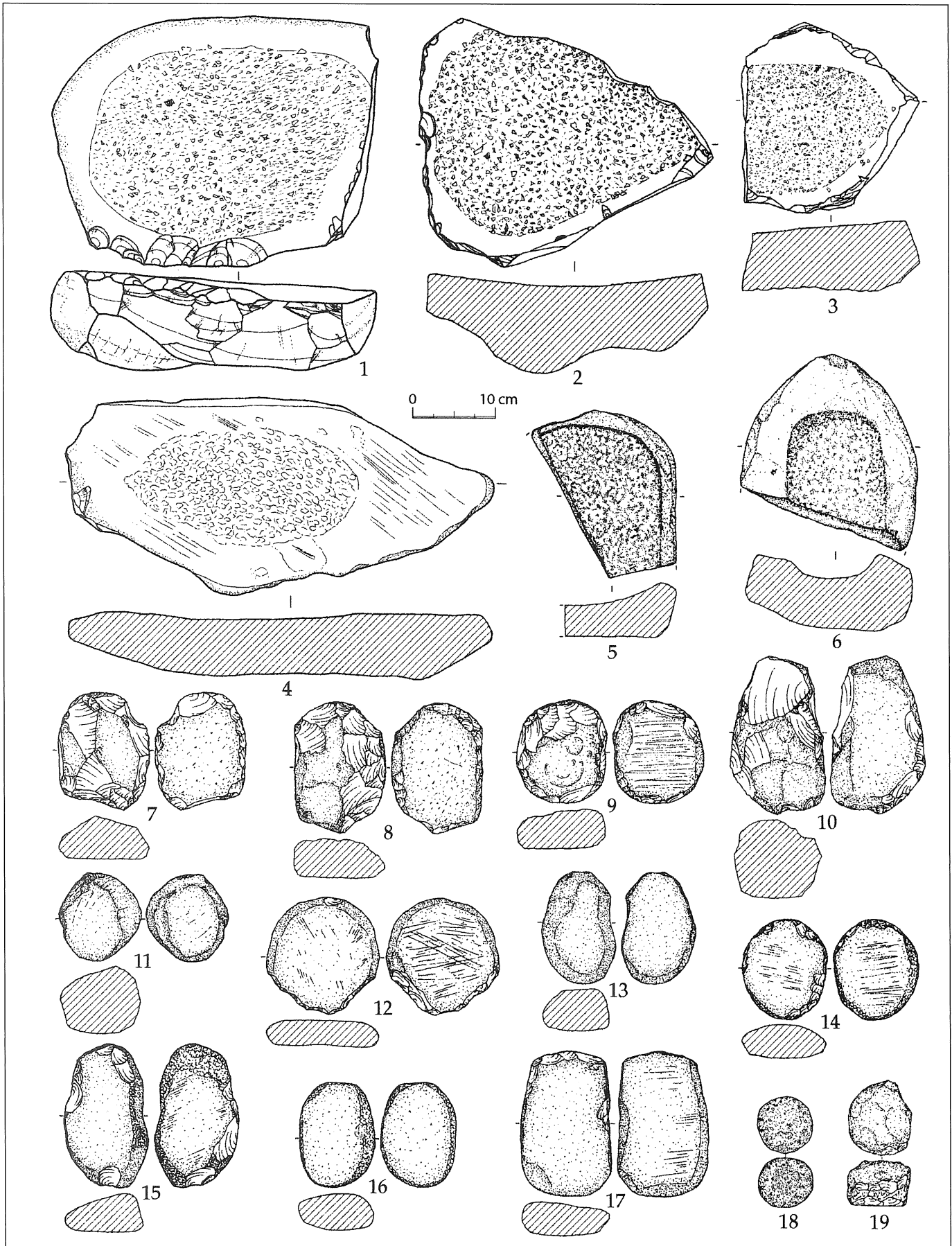
support this assumption is yet to be found.

Plinth Stones

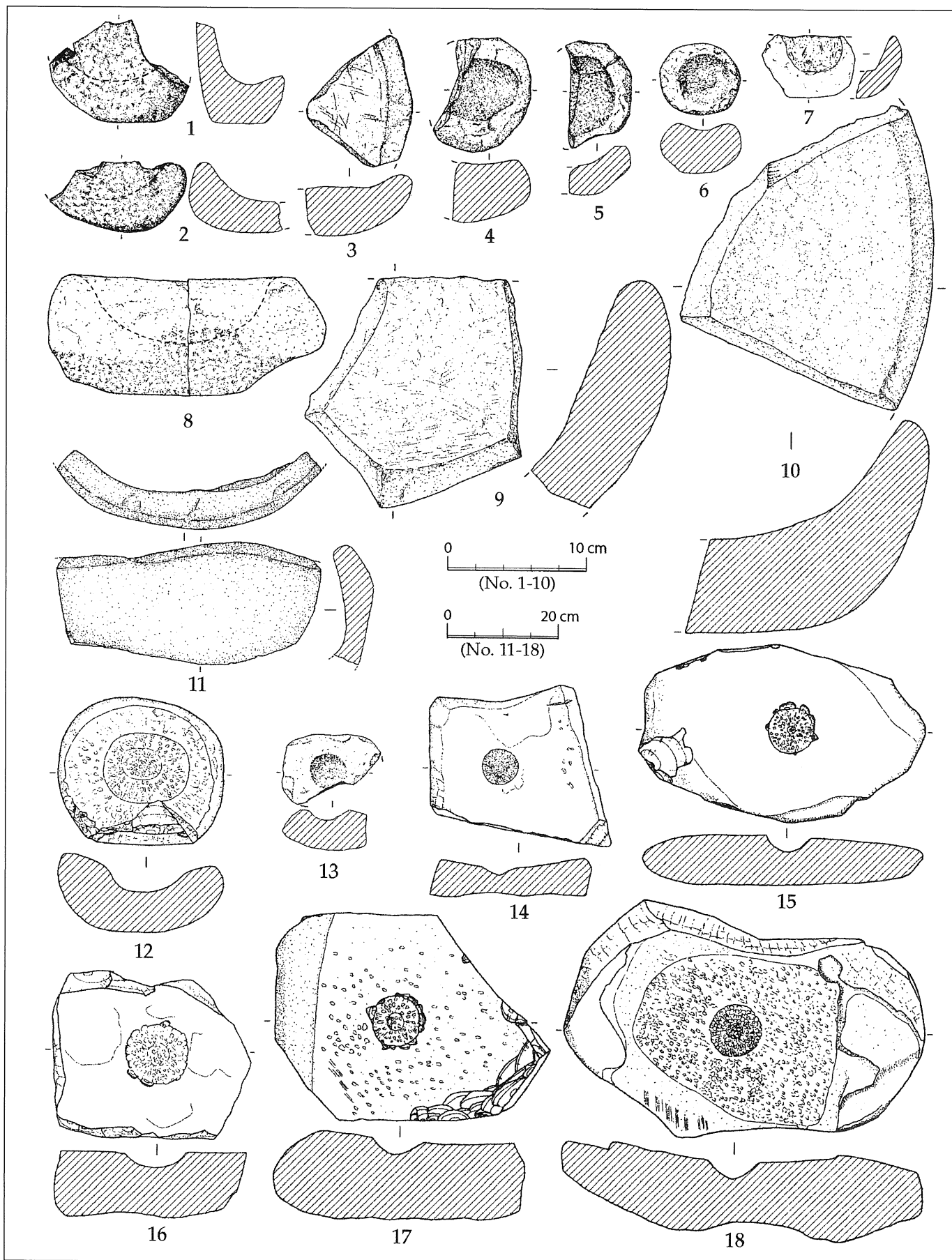
Several plinth stones, defined by a flat upper surface and a relatively small central depression, were found as either *in situ* finds placed on a floor or stray finds from fill layers (**Fig. 30: 12-18**). They were made of coarse-textured limestone slabs ca. 30-50cm long and ca. 5-10cm thick, and roughly trimmed at their edge. As was the case with stone vessels, no flint products were included. Again, the chipping technique was applied in most cases. Typologically, they fall into two types: finely-wrought products chipped throughout the upper surface (**Fig. 30: 12-13, 17-18**) and less elaborate products chipped at the central depression only (**Fig. 30: 14-16**). The depressions, probably a socket for a pointed tip of a wooden pillar, were standardized at a diameter of ca. 7-10cm. It is interesting to note that tent poles now in use in this region are of similar size. Unexpectedly, plinth stones occurred more frequently from subsidiary components (such as Unit 11 and 19 that yielded *in situ* examples) than core structures. Suggestive in this respect is the difference in supposed wall height between the two. It is possible that the former was briefly (in a similar way to temporary huts) roofed by means of a single pole only and, for this reason, needed such large plinth stones. It is conceivable that the latter was carefully roofed putting up beams between substantial walls and, therefore, needed plinths to a lesser extent.

Game Boards

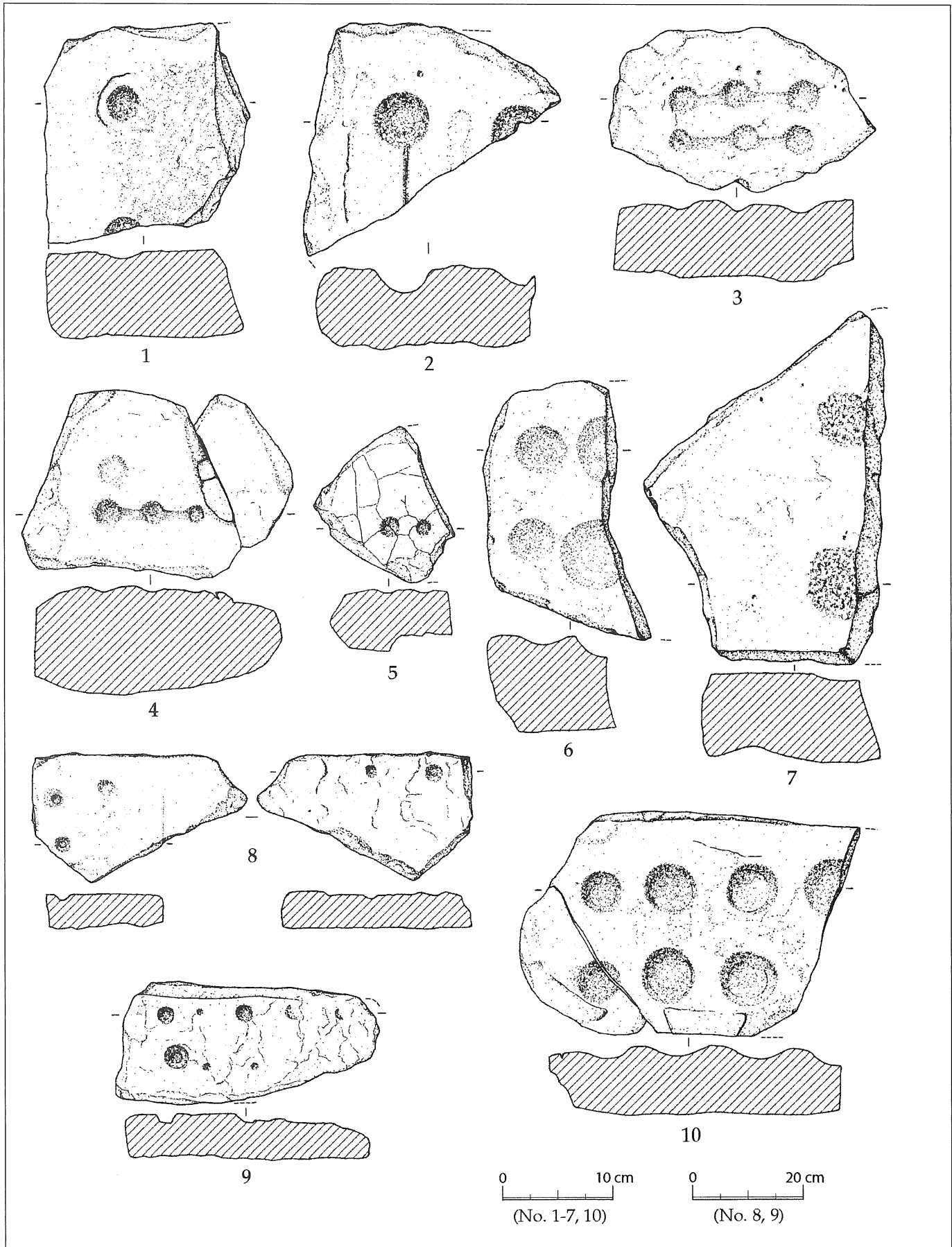
A total of ten game boards and three questionable examples, both made of limestone slabs, were unearthed in this field season (**Figs. 31, 32**) (It follows that the outpost has so far yielded at least sixteen game boards, including six examples found in the previous seasons). In contrast to Area W-I where core structures yielded five of six materials, the eastern operation areas yielded nine of the thirteen examples at subsidiary structures. The reason for this contrast is still unknown, but it may signify a transformation in resident style within the outpost that gradually developed westward. Typologically, as with the finds from Area W-I, they seem to fall into the six-depressions type and the eight-depressions type. Again, a few of them had narrow grooves



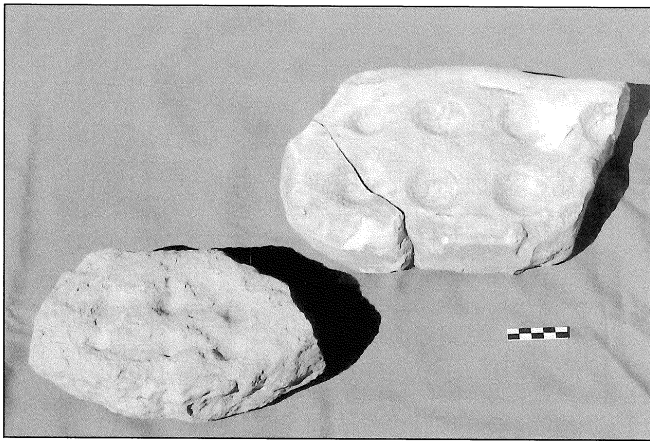
29. The Finds: grinding implements.



30. The Finds: stone vessels (no. 1-11) and plinth stones (no. 12-18).



31. The Finds: game boards.



32. *The Finds: game boards.*

connecting two neighboring depressions (**Fig. 31: 2-4**). The depressions themselves are divided into large and deep examples, on one hand, and small and relatively shallow examples, on the other. A few boards had large and very shallow depressions (**Fig. 31: 7**), but they can be defined as half-finished products of the former type of game boards. The occurrence of such unfinished products highlights the on-site production of these amusement gears. Unfortunately, nothing specific is known about gaming pieces, but dozens of semi-transparent colorful agate pebbles ca. 1-2cm in diameter, which occurred from various archaeological contexts, draw attention as candidates.

Miscellaneous Stone Objects

Miscellaneous stone products encompassed bilaterally notched stone weights, diagonally truncated stone bars, pigment pallets, rubbing stones, and a shaft-straightener. Bilaterally notched stone weights were made of limestone slabs and occurred largely from core structures. They varied in size from smaller examples ca. 10-15cm long or a few kilograms (**Fig. 33: 1-2**) to larger examples ca. 20-30cm long or ca. 10-20 kilograms (**Fig. 33: 3-4**). Their manufacturing was ad hoc in nature and full-scale retouch was limited to a pair of lateral notches in most cases. They were probably used for tying something down in combination with ropes. Similar examples, though much larger in dimensions and heavier in weight, occurred from the two neighboring barrage systems that were investigated in the spring season of 2006 (Fujii in this volume).

Diagonally truncated stone bars, another distinctive artifacts, occurred in small quanti-

ties mainly from core structures (**Fig. 33: 5-6**). They were cylindrical in profile and measured ca. 20-30cm long (or ca. 3-5kg in weight). Unlike bilaterally notched stone weights, they were carefully finished by means of the chipping technique. Available evidence — their concentration on core structures, the rarity as finds, the unique and standardized morphology and dimensions, and the careful manufacturing — strongly suggests that they were of some ritual use. The use as phallic stones seems possible.

Pigment pallets were also infrequent, totaling several examples only (**Fig. 33: 7-10**). Unlike diagonally truncated stone bars, they occurred equally from both core structures and subsidiary components. They were made on thick limestone flakes ca. 10-15cm long and ca. 10cm wide and still retained traces of red pigment on their working surface either slightly concave or convex.

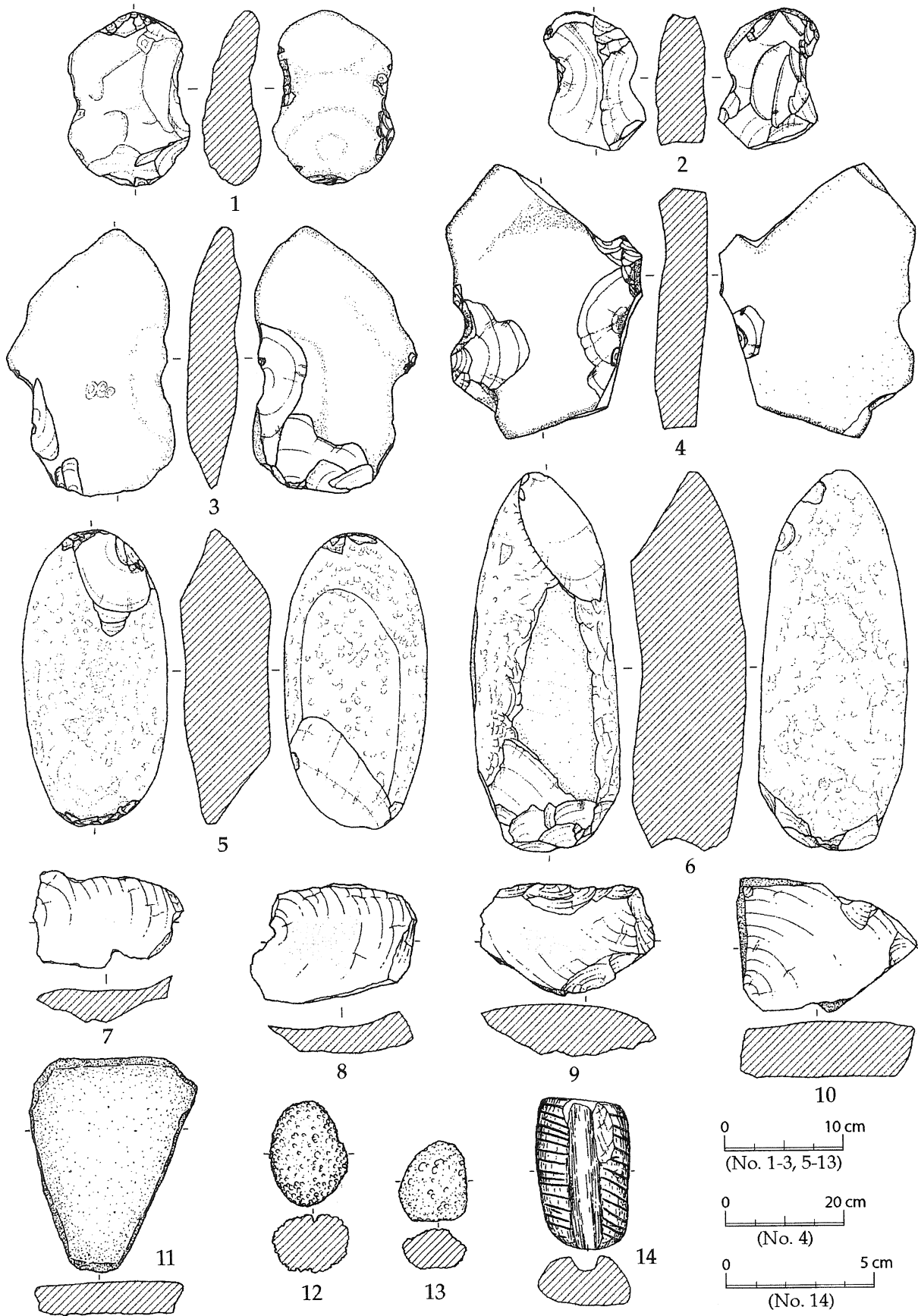
The stone products also included several flat rubbing stones made of porous basalt (**Fig. 33: 11**) and a small shaft-straightener made of schist-like pebble (**Fig. 33: 14**). The latter occurred from an upper fill layer of Unit 08 of Complex 0. It was ca. 5cm long, ca. 3cm wide, and ca. 1.5cm thick being decorated with sharply delineated diagonal incisions. The central ditch ca. 0.8cm wide still retained longitudinal abrasions probably caused by rubbing operation of arrow-shafts and the rest. In addition, palm-sized unmodified porous pumice stones occurred in small quantities (**Fig. 33: 12-13**). Local workers claim that similar stones used to be used for scrubbing grime off the skin, but it is uncertain that their view also applies to the finds from the prehistoric outpost.

Bone Tools

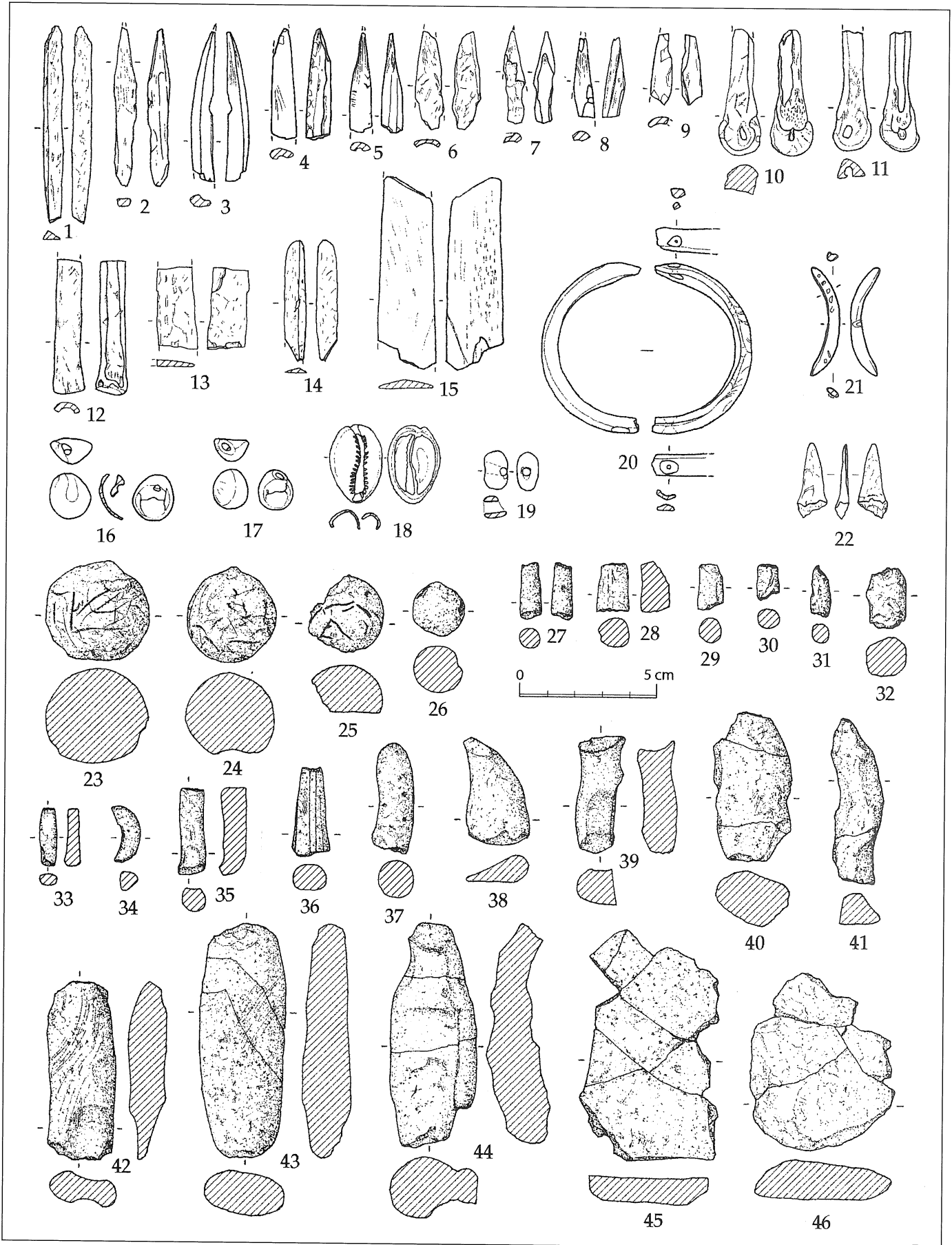
Considering the large amount of faunal remains, bone tools were unexpectedly scarce, totaling a few dozens only. Most of them were small products less than 5cm long and less elaborate in manufacturing. Pointed tools (probably used for drills or awls) accounted for the vast majority (**Fig. 34: 1-12**), but a few narrow spatulas made of rib were also included (**Fig. 34: 13-15**). It is our first impression that the bone tool production was less vigorous at the outpost.

Adornments

Only a dozen small adornments, made large-



The Finds: miscellaneous stone products: bilaterally notched stone weights (no. 1-4), diagonally truncated stone bars (no. 5-6), stone palettes (no. 7-10), rubbing stones (no. 11-13), and a shaft-straightener (no. 14).



34. The Finds: bone tools (no. 1-15), adornments (no. 16-22), and unbaked clay objects (no. 23-46).

of shell and snail, occurred sporadically from various contexts. They included three pierced adorns (Fig. 34: 16-18), a half fragment of a bone with a repairing hole at both ends (Fig. 20), a curvilinear bone rod with dotted decoration (Fig. 34: 21), and an unmodified fragment of a half shell. In addition, a shark tooth (Fig. 22) and a pierced stone bead (Fig. 34: 19) were unearthed. Since these materials are (and are) unavailable in the Jafr basin, it is apparent that they were imported from the outside. This is not to say, however, that the outpost was directly incorporated into the long-distance trade network of those days. Rather, it seems more likely that they were indirectly brought into the outpost via a parent settlement to the west. It is probably for this reason that the outpost yielded only a limited number of adornments.

Clay Objects

A few dozen unbaked clay objects occurred only from core structures. Most of them were all products less than 5cm long. Typologically they fall into spherical (Fig. 34: 23-26), stick-like (Fig. 34: 27-41), and plaque-like products (Fig. 34: 42-46). Unlike clay objects from the neighboring communities to the west, neither geometric nor representational examples were included. Nothing specific can be said about their use, but their concentration on core structures, and collective occurrence from a large floor pit in Unit 25 in particular, is suggestive of their ritual use.

Rock and Mineral Fragments

A few dozens of rock and mineral fragments were found largely from core structures. A close examination of these materials is now in progress by Dr. Mitsuo Hoshino, the geologist of our team. In view of their colorful appearance, they were probably used for pigment and raw material of adornments. The occurrence of stone pendants and stone beads described above attests to the first and second use respectively. Since these materials are unavailable in the Jafr basin, they were probably carried from the western mountain range where various geological formations are exposed. In this sense, these materials provide insights into the itinerary of early transhumants who used the outpost on a seasonal basis.

Faunal and Floral Remains

Faunal and floral remains were recovered in considerable quantities. A preliminary examination by Dr. Hitomi Hongo, the zooarchaeologist of our team, tentatively concludes that gazelle is the most frequent among the excavated fauna, and that domesticated sheep and goats are included to some extent. On the other hand, Dr. Kenichi Tanto and Dr. Hiroo Nasu, the archaeobotanists of our team, suggest that lentil and barley-like carbonized seeds are included in small quantities. Both observations corroborate our view that the inhabitants of the outpost were engaged in hunting of wildlife, transhumance bringing along sheep and goats, and small-scale agriculture probably based on the basin-irrigation facility beside the outpost. Their preliminary reports are due to be published elsewhere in the near future.

Summary and Discussion

The excavation results of this field season have corroborated anew our previous view about the date, function, and subsistence strategy of the outpost (Fujii 2006a). To begin with, three C-14 data from Structure K in Area W-I — 8409±41 uncal. BP (NUTA2-11406), 8464±51 (NUTA2-11408), and 8443±51 (NUTA2-11409) — have provided solid evidence for the dating of the outpost to the Late PPNB period. The predominance of Amuq type points is consistent with this dating. Thus it is reasonably concluded that the outpost was roughly coeval with mega-settlements in southern Jordan (Gebel 2004). Second, excavated evidence — the custom of entrance blockade, the existence of querns placed upside down on a floor, and the frequency of infant gazelle among the excavated fauna — demonstrated anew that the outpost was used on a seasonal basis. Third, the multiple subsistence strategy of the outpost was also revalidated by a series of evidence. Of significance is the fact that the date and function of the neighboring barrage system was clearly defined (Fujii in this volume). It is now evident that the seasonal stay at the outpost was based on the mixed economy consisting of hunting of wildlife (mainly of gazelle), short-distance transhumance (bringing along domesticated sheep and goats), and opportunistic agriculture (using the basin-irrigation facilities nearby). To put it the other way around, the

combination of these distinct options first enabled early transhumants to infiltrate into arid peripheries such as the Jafr basin.

The constitutive principle of the outpost has also become clearer. There is ample evidence to show that the outpost consisted of several structural complexes, and that every complex consisted of a large core structure and plural subsidiary components. It also turned out that the minor components originally fell into the two (i.e. eastern and southern) conglomerates with the entrance space of the relevant core structure in between. This layout makes sense in terms of the protection against the northwesterly predominant wind in this region as well as the accessibility to the core structure.

The extensive investigation has also brought about a better understanding as to the formation process of the elongate outpost. It leaves little doubt that the outpost began with the combination of a large oblong core structure and plural small round huts at Complex I, followed by the combination of a rectangular key structure and plural round huts at Complex II and III. It appears, however, that the construction of a quadrangular semi-subterranean structure caused lots of troubles noted above. What happened in parallel with this techno-typological transformation was the remarkable reduction in floor depth of minor components, which led to the gradual shift from a stepped entrance fringed with a pair of sidewalls to a simple entrance without any ancillary facilities. It also brought about the repeated floor rejuvenation and the appearance of a connecting passage between two neighboring structures.

The excavations have also captured the initial state of the outpost before the construction of full-fledged structural complexes. Available evidence suggests that the hut cluster unearthed at Area E-II was used as a campsite to accommodate the first group of transhumants who were concerned with the construction of Complex I. Notable is the fact that both the number and size of the temporary huts are roughly equal to those of the minor components belonging to the complex. This probably means that the first group of transhumants moved from the temporary huts to the minor components after the construction was completed. Given this, it follows that the round structures were used for their living

space, as suggested by the frequency of hearths and querns. This in turn suggests that the core structure served as their shared space probably for assembly and ritual, a likely assumption in terms of its large dimensions and superior construction quality. It is probably for this reason that while minor components fluctuated in number depending on complexes, the core structure was consistently singular in every complex.

On the basis of these discussions, the occupational history of the outpost can be tentatively reconstructed as follows:

- 1) A small group of LPPNB transhumants came to this area and noticed its ideal topographical conditions (Fujii in this volume). They embarked on the construction of an outpost as a seasonal stronghold for their livelihood in *al-Hamād*. What they addressed first was the digging of several temporary huts (Complex 0). Lodging in this immediate accommodation while they were engaged in the construction of Complex I, the first full-fledged structural entity of the outpost.
- 2) Complex I thus constructed consisted of a large oblong core structure (Unit 01) and several subsidiary round huts. It was the latter components that served as living space for the initial transhumants who moved from the temporary huts. The core structure, on the other hand, was probably used for their communal space. This constitutive principle, although it underwent minor changes, was basically passed down to the subsequent complexes.
- 3) The core structure of Complex II underwent a techno-typological transformation to a rectangular plan. This change caused further difficulty to an already delicate semi-subterranean structure that is subject to strong sideways soil pressure. The traces of repeated restoration to cope with wall inclination and consequent collapse highlight the fact that they were still inexperienced in the construction of a semi-subterranean quadrangular structure. This complex also saw the appearance of a shallow-floor type of round structures. In this sense, it can be defined as a transitional form from Complex I to the subsequent complexes.
- 4) The same is roughly true of Complex III. Again, the sub-rectangular core structure un-

derwent repeated restoration, and both deep- and shallow-floor types of minor components were used concurrently.

- 5) What markedly contrasts with Complex II and III (with one or two as-yet-unexcavated complex(es) in between) is the northeastern complex at Area W-I. Structure B, the core of this complex, attained a technological zenith by virtue of the use of standardized building materials and the elaborate masonry technique (Fig. 2). The minor components, on the other hand, decreased in number and, instead, slightly increased in dimensions. It is needless to say that they were unified to the shallow-floor type.
- 6) Nevertheless, the zenith did not last for a long time and the construction of a full-fledged core structure ended with Structure F. Subsequent core structures became as small as and, at the same time, as shallow as their subsidiary components. Not only that, they further lessened the number of attending minor components. The curvilinear development of the outpost terminated with Structure K, which was reduced to a simple combination of a small shallow core feature and a subsidiary semi-round forecourt. It can be suggested that pastoral nomadization in the Jafr basin took place immediately after this episode, as represented by the appearance of *pseudo-settlements* at Ḥarrat al-Juhayra (Fujii 2005) and Qā' Abū Ṭulayḥa (Fujii 2003).

Such is an outline of the occupational history of the PPNB agro-pastoral outpost at Wādī Abū Ṭulayḥa. Although future investigation at Area E-IV and additional soundings at the eastern and southern edges of the outpost might necessitate minor revisions, the essence of the flow chart suggested above will not undergo serious change.

Concluding Remarks

Owing to a series of operations in this field season, an overall picture of the site has come into sight. To begin with, it has become clearer that the site can be defined as an agro-pastoral outpost dated to the LPPNB period. Excavated evidence has also corroborated anew our previous perspective that the gradual westward development led to the formation of this elongate outpost. It also turned out that the structures underwent a wide

range of techno-typological transformations in the process of the westward development. Of special interest is the finding of the hut cluster at Area E-II, which has revealed the initial state of the outpost. The next field season, due in summer of 2007, would hopefully contribute to a better understanding of this unique site, a key to tracing back the pastoral nomadization in the Jafr basin as far as its very beginning.

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Bibliography

Fujii, S.

- 2002 A Brief Note on the 2001-2002 Winter Season Survey of the al-Jafr Basin in Southern Jordan. *ADAJ* 46: 41-49.
- 2003 Qa' Abu Tulayha West, 2002: An Interim Report of the Sixth and Final Season. *ADAJ* 47: 195-223.
- 2005 Harra al-Juhayra Pseudo-settlement: A Preliminary Report of the Jafr Basin Prehistoric Project, 2004. *ADAJ* 49: 57-70.
- 2006a Wādī Abū Ṭulayḥa: A Preliminary Report of the 2005 Spring and Summer Excavation Seasons of the Jafr Basin Prehistoric Project, Phase 2. *ADAJ* 50: 9-32.
- 2006b A PPNB Agro-pastoral Outpost at Wadi Abu Tulayha, al-Jafr Basin. *Neo-Lithics* 2/06: 4-14.

Gebel, H.G.K.

- 2004 Central to What? The Centrality Issue of the

ADAJ 51 (2007)

LPPNB Mega-Site Phenomenon in Jordan. Pp. 1-19 in H.D. Bienert, H.G.K. Gebel and R. Neef (eds.), *Central Settlements in Neolithic Jordan. Studies in Early Near Eastern Production, Subsistence, and Environment 5*. Ex Oriente: Ber-

lin.

Jordan National Geographic Center *National Atlas of Jordan, part 1: Climate and Agroclimatology*. Jordan National Geographic Center: Amman.