

# Ryszard F. Mazurowski

---

## Tell Qaramel Excavations 2005

---

Polish Archaeology in the Mediterranean 17, 483-499

---

2007

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej [bazhum.muzhp.pl](http://bazhum.muzhp.pl), gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

# TELL QARAMEL

## EXCAVATIONS 2005

Ryszard F. Mazurowski

*The chief objective of the seventh season of excavations at Tell Qaramel, which took place from 7 September to 20 October 2005,<sup>1</sup> was to continue with the exploration of the early aceramic layers (C<sup>14</sup> non-calibrated dating = 8650-7700 bc) representing the so-called Pre-Pottery Neolithic A (PPNA) horizon in traditional terminology. Fieldwork was concentrated in three squares located on the lowest part of the southern slope of the tell (J-8, J-7/K-7 and K-3/4-L-3/4 {Fig. 1}. In square K-3/4-L-3/4, levels belonging to the older cultural tradition provisionally referred to as the Proto-Qaramelian horizon (representing the Proto-Neolithic) were explored. The main focus, however, was laid on the two Early PPNA towers and their immediate neighborhood uncovered in trenches J-8, J-7/K-7; the older of the two appears to have been destroyed by fire about 8350 bc (non-calibrated).*

1 As in previous years, the Syrian-Polish Archaeological Mission was a joint undertaking of the Polish Centre of Mediterranean Archaeology of Warsaw University and the Directorate General of Antiquities and Museums of Syria, partly financed by the Institute of Archaeology of Warsaw University. We would like to express our gratitude to Dr. Bassam Jamous, Director General of Antiquities and Museums in Syria, and Dr. Michel al-Maqdissi, DGAM Excavations Department Director, Damascus, for their continuous help, kindness and hospitality. A special thanks to the staff of the Regional Directorate of Antiquities and Museums in Aleppo and its Director Dr. Nadim Fakesh.

The mission was co-directed by Prof. Dr. Ryszard F. Mazurowski and Eng. Yusef Dabti. On the Polish side, the staff included: Mr. Marcin Białowarczuk (registrar; trench supervisor in squares J-7 and K-7); Mrs. Joanna Gawrońska (registrar, trench supervisor in K-3/4 and L-3/4); Mr. Artur Grabarek (supervisor in K-3/4 and L-3/4); Mr. Piotr Karczmarek (flint objects); Ms Katarzyna Krześniak, Ms Renata Maskowicz (documentalists); and Mr. Bartłomiej Paprocki (preliminary processing of animal bones). Prof. Mazurowski classified the stone finds and was responsible for the photographic documentation. The Syrian team members included Messrs Basel Bedran, Sbahi Fahd, Mohammad Noor Happak and Shiraz Kurdi, students of Aleppo University.

Dr. George Willcox, paleobotanist from Archéorient Maison de l'Orient Méditerranéen, CNRS UMR 5133, Lyon, joined us for a week to examine soil samples for organic remnants. Prof. Dr. Jean-Denis Vigne from the National Museum of Natural History in Paris visited for a day to take samples of animal bones from PPNA levels for DNA analysis of the early domesticates.

TELL QARAMEL  
SYRIA

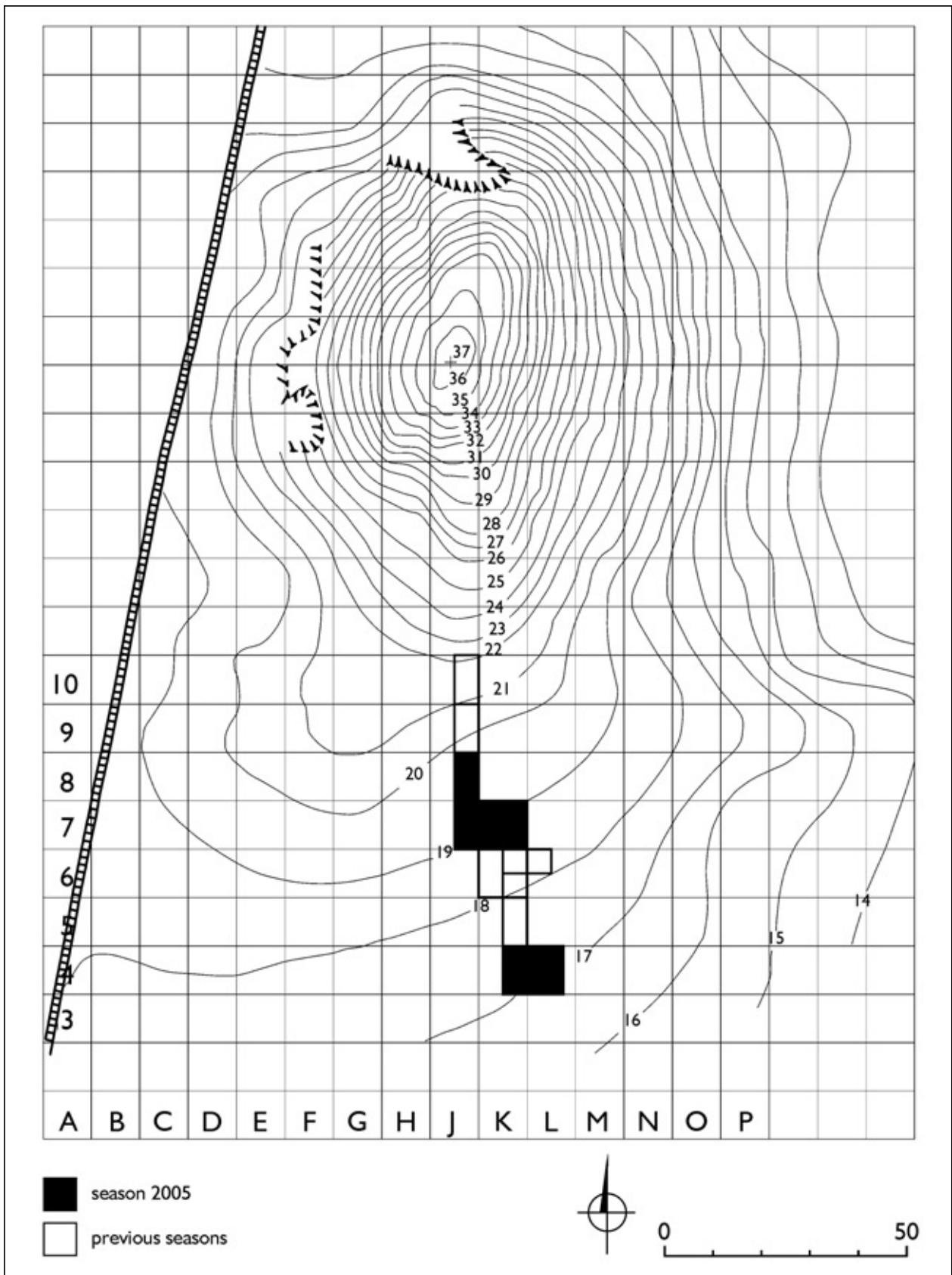


Fig. 1. Trenches excavated in 2005  
(Digitizing R. Mahler)

## SQUARE J-8 B,D

Square J-8 b,d (10 m N-S by 5 m E-W) was the northernmost of the trenches excavated this year. Pre-Pottery Neolithic levels were reached and explored on half the trench surface, the other half being occupied by a huge and irregular Early Bronze Age pit (partly explored this year). The collection of finds from this pit represents a mixed set comprising Early Bronze Age, Proto-Neolithic and Pre-Pottery Neolithic material.

## STRATUM VII

The highest levels yielded remains of a big oval building, which presumably runs under the baulks. The wall of this loc. 8 was made of big stones, rising to a height of 0.60-0.80 m. The interior was destroyed by an Early Bronze Age pit. Two oval pits were found outside the building (and concealed partly under the trench wall). Pit 1 was conical in shape and went down 0.50 m, while Pit 3 was only 0.10 m deep and had a flat bottom. Both were filled with red soil. The southwestern part of the square contained two small oval hearths, about 0.20 m in diameter, filled with grey ash. Charcoal from the first of the hearths was sampled for C<sup>14</sup> analysis. The second hearth was round, 0.22 m deep with several burned stones arranged on the flat bottom. Finally, a section of wall of large pebbles bonded in yellow mud was registered in the southern end of the square, along with two concentrations of big stones inside the fill of a Bronze Age pit.

## STRATUM VIII

The main feature of this level of occupation was also destroyed in part by the Bronze Age pit. It is an oval house (loc. 11), probably about 2 m in diameter, built of hard white mud and small pebbles [*Fig. 2*]. The wall was 0.25 m wide, reinforced on the outside by a double row of pebbles. The fill consisted of white mud and many small pebbles from the collapsed walls and roof of this structure. A hard white floor was recorded 2 cm above the footing of the wall. Small features accompanying this structure included two pits, three hearths and two postholes. Pit 5 was round, about 0.38 m in diameter, filled with red soil and small stones. Small burned pebbles were placed on the flat bottom. Pit 8 was irregular, about 1 m across, filled with red soil and small stones. Both yielded bone remains but no artifacts. Hearths 5 and 8 were similar in construction: round, filled with grey ash, with 10-cm thick red-mud plastering on the sides. The first was round, 0.90 m in diameter, 0.40 m deep, with uneven bottom; the second, only 0.40-0.45 m in diameter and 0.17 m deep, conical in shape and filled with grey ash. Hearth 7, on the other hand, had a surrounding border wall of pebbles standing on end and bigger stones. It was filled with grey ash and charcoal (the latter sampled for C<sup>14</sup> analysis). The two postholes situated 3.00 m to the north of loc. 11 were rather small and filled with black soil.

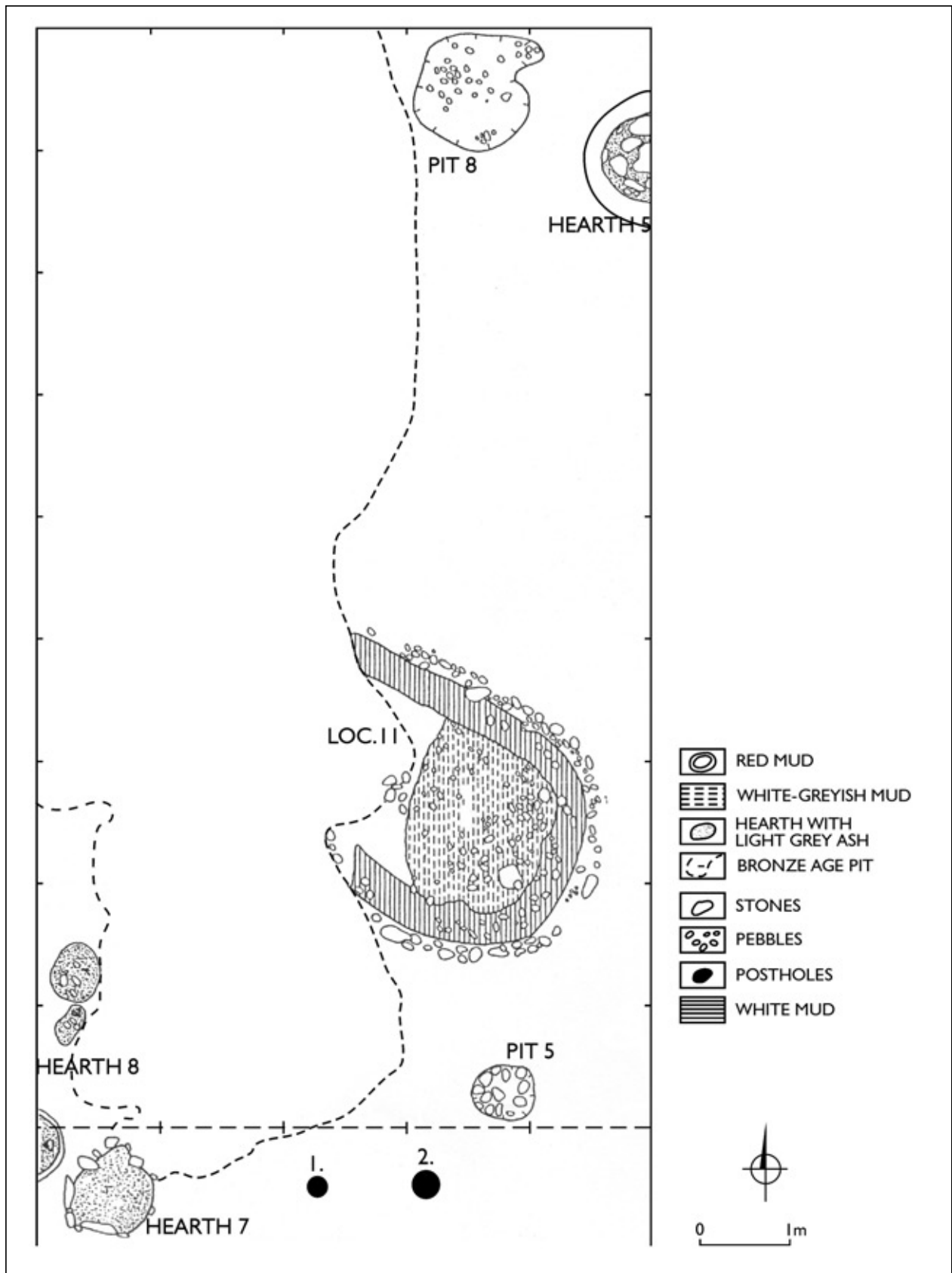


Fig. 2. Square J-8 b,d. Stratum VIII  
(Drawing P. Karczmarek, K. Krzeńskiak and R. Maskowicz)

## SQUARES J-7 AND K-8

Four occupational levels, all connected with PPNA stratum V, were explored in the two squares excavated jointly this season.

## YOUNGER TOWER (II) – LEVEL 6

The younger tower (loc. 24a), partly excavated in 2001-2004,<sup>2</sup> was now explored in its eastern half, which had suffered considerably as an outcome of later PPNA and Early Bronze Age occupation [Figs 3,4,5]. A continuation of the tower wall was uncovered, the wall being built on a thick foundation of pebbles and mud taken from the immediate vicinity. Only a small part of the inner surface has survived. The construction yielded a relatively rich collection of animal bones, flint and stone relics, but no pottery. The fill, however, consisting of two layers of red soil separated by a layer of dark soil, contained a big collection of Early Bronze Age pottery, making it very clear that the entire structure had been flattened during the Early Bronze Age occupation, a fact easily observed in the eastern part of square J-7. Indeed, there is no connection between the red soil and the tower wall, and the bonding of the tower wall is completely different in color and texture. C<sup>14</sup> analysis of samples from the tower wall structure should confirm the chronological assumptions based on stratigraphy.

## OLDER TOWER (I) – LEVEL 9

The older tower (loc. 24b) was found just under the younger one [cf. Figs 4, 6]. In stratigraphical terms, it belongs in level 9 and was contemporary with the aurochs-skulls house excavated last season. The

structures differed in shape and dimensions (diameter of 7.50 m of the older tower to 6.60 m of the younger one, and walls 2.25 m thick to the younger structure's mere 0.90 to 1.20 m). The building technology applied to the upper parts of the walls was also different. Only the foundations were constructed in much the same manner, of small pebbles and mud.

The eastern half of the older tower explored this year proved to be as damaged by the later Early Bronze Age occupation as the structure above it. Sections on the south were in somewhat better condition. The tower was quite obviously round, the foundations made of small pebbles and mud, made to carry a superstructure of large boulders, set mostly perpendicular to the faces. Massive upright boulders filled the core of the wall, the intervening space being filled with mud and pebbles, nothing like the traditionally used fixing materials. The floor was of mud of much darker red than the material used for the walls. In the northwestern quadrant, the floor partly covered the foundations, presumably acting as a kind of footpath, which could indicate the presence of an entrance. Two small pebbles were set up on end about 0.70 m from the place and next to one of these stones there was a depression, filled with dark red mud (c. 0.25 m), of unidentified function.

A layer of burned soil with ashes and charcoal was found below the foundations. The remains of a regular construction made of small stone pebbles on this level could possibly belong to an even older tower construction. Further explorations are necessary before this issue can be clarified.

2 See mission reports in: *PAM XIII, Reports 2001* (2002), 297 and Figs 1-2; *PAM XV, Reports 2003* (2004), 360-361, Fig. 4 ; and *PAM XVI, Reports 2004* (2005), 498.

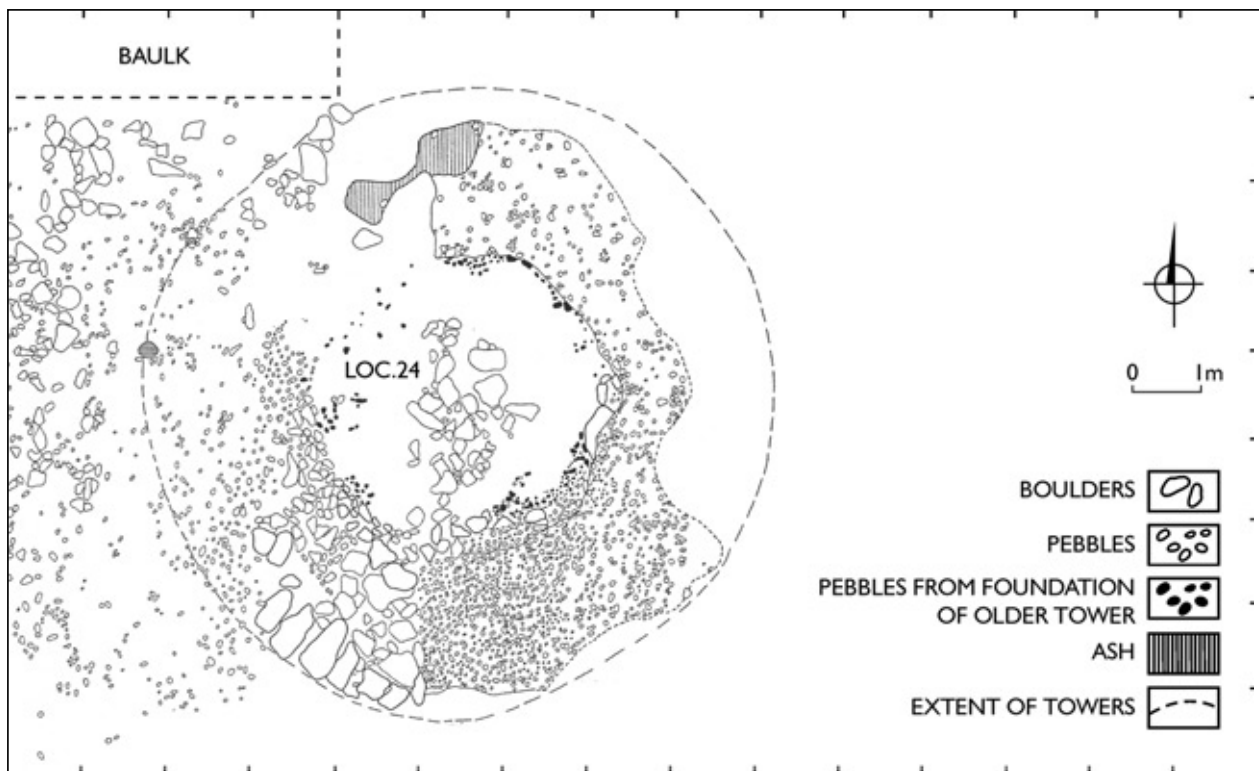


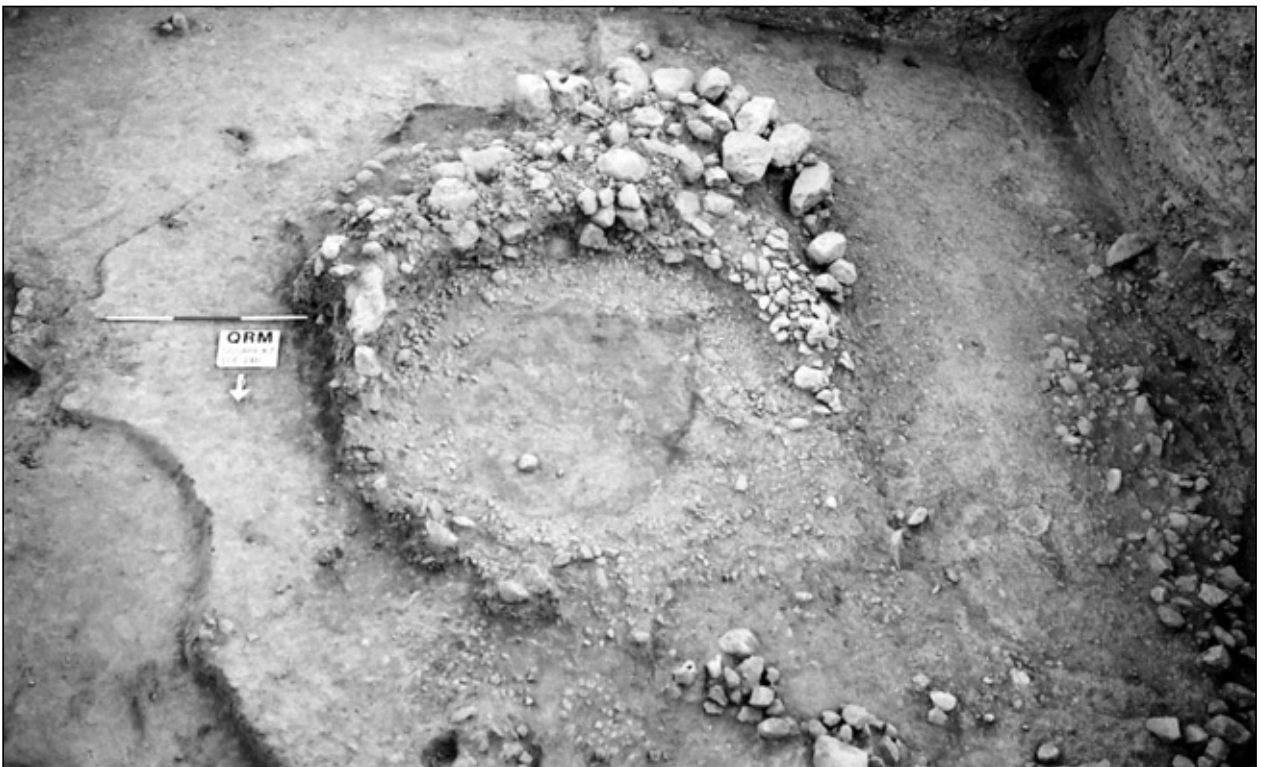
Fig. 3. Squares J-7 and K-7. Stratum V, level 6: younger tower  
(Drawing B. Paprocki and R. Maskowicz)



Fig. 4. Squares J-7 and K-7. Towers I and II during exploration. View from the west  
(Photo R.F. Mazurowski)



*Fig. 5. Squares J-7 and K-7. Tower II after removal of the preserved part of the wall made of stones  
(Photo R.F. Mazurowski)*



*Fig. 6. Squares J-7 and K-7. Remnants of the older tower (I) during exploration in 2005  
(Photo R.F. Mazurowski)*



TELL QARAMEL  
SYRIA

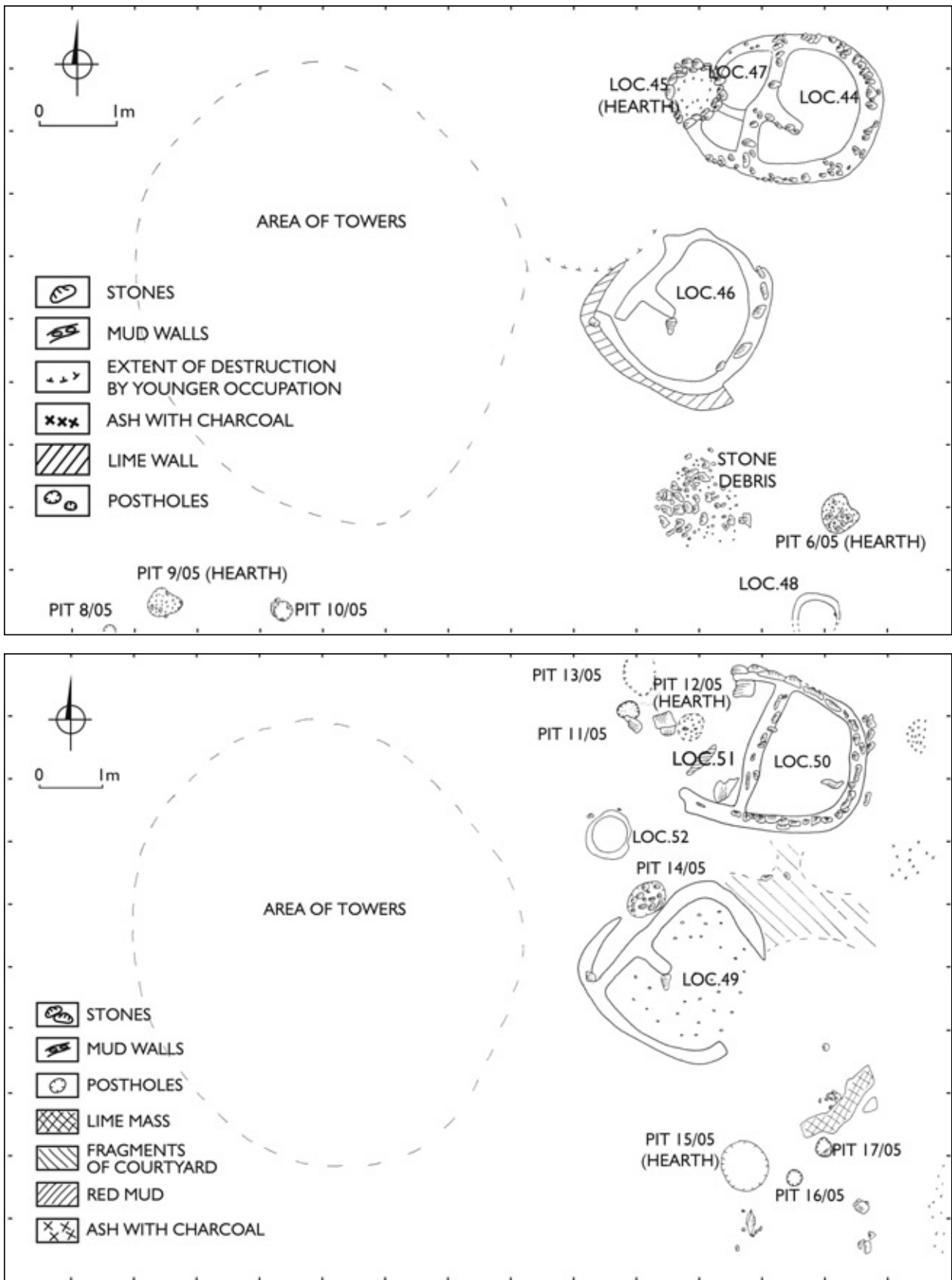


Fig. 7. Squares J-7 and K-7. Stratum V. PPNA structures situated west of the area of the towers in level 11, face A (top) and level 12 (Drawing M. Białowarczuk (with B. Paprocki - top))

## LEVEL 11

Level 11, which belongs in the Early PPNA, revealed two structures around which some kind of everyday domestic activity had taken place and obviously in two separate stages [*Fig. 7, top*].

The first building (loci 44, 45, 47) was located in the northeastern corner of trench K-7. It was oval, c. 3.50 x 2.40 m, divided into two rooms (loci 44 and 47). The walls, c. 0.40 m thick, were made of mud with pebbles. The floor consisted of a c. 2 cm thick layer of mud on a substructure of small pebbles. A round hearth (loc. 45) stood on the west, surrounded by flat pebbles set up in vertical position. This structure, which measured 1 m across, adjoined the walls of loc. 47, indicating that it was accessed from the outside. The fill inside loc. 44 contained numerous stone artifacts, including four decorated shaft straighteners and a few fragments of pestles, grinders and pointed tools. Fragmentary animal bones and flints were also found.

About a meter to the southwest there was another house (loc. 46), round and originally subdivided into two rooms (one room destroyed by EB IV loc. 32). It was c. 2.60 m in diameter with walls 0.30 m thick, made of mud with large flat stones set in vertical position. The construction is typical of the Qaramelian so-called 'framework skeleton' building technique. Floors were again a layer of mud laid over small pebbles. The fill contained large sections of the wall superstructure mixed with some animal bones and flint. A large quern fragment was found under the floor, suggesting that pieces of broken heavy stone tools were often reused for building purposes.

Contemporary with the two houses was an area (in the southeastern corner of the trench) obviously intended for everyday domestic activity. In the younger phase (face B), it was a courtyard of tamped mud. Three

postholes (pits 3/05, 4/05, 5/05), obviously carrying some lightweight roofing over a round hearth (pit 1/05), c. 0.60 m in diameter, were discovered on this level. A storage pit was also found, located about 1.50 m east of loc. 46. Irregular in shape, c. 0.40 x 0.60 m, it contained the bones of a cow's leg in anatomical position.

The courtyard did not exist in the older phase (Face A) [*cf. Fig. 7, top*]. A round hearth (pit 6/05), c. 0.60 m in diameter, was located virtually in the same place as pit 1/05 described for Face B. A feature (loc. 48) located about 1 m south of the hearth appeared to be a pit inside a low mud wall, c. 0.10 m thick. It remains to be fully excavated, but it is already clear that it was about 0.80-1.00 m in diameter and was filled with nothing but grey ash.

Two postholes found in the southern end of square J-7 (pits 8/05 and 10/05) and an oval hearth (c. 0.50 by 0.40 m) between them are suggestive of the already described lightweight shelter discovered in Face B.

## LEVEL 12

Level 12 also represented very early PPNA occupation. The two structures repeated very closely the location of buildings in level 11 [*Fig. 7, bottom*], confirming yet again an evident custom distinguishing the Qaramelian Neolithic village (observed previously in trenches K-6 a,c and K-5 b,d). The first house in the northeastern corner of the square was an oval structure, c. 3.60 by 2.60 m, comprising two rooms (loci 50 and 51), the latter of the two heavily damaged by later occupation. The walls, c. 0.30 m thick, were made of flat stones set in upright position and covered by yellow mud mixed with lime. The floor did not differ from that observed in the structures from level 11. A small hearth was located in the center of loc. 51 and outside the house, there were two small oval pits and a round

pit inside a low mud wall, no more than 0.10 m thick.

The other structure (loc. 49) was probably oval in shape (c. 3.00 by 2.80 m) and divided into two rooms (partly destroyed). Its walls, c. 0.20-0.30 m thick, were made of a hard white lime mass containing no stones inside. The floor was executed again in the same manner as already described above. A short partition wall jutting from the west wall may have been intended as part of a niche or shelf of some kind. The space between the houses appears to have been arranged as a mud plastered courtyard.

The area southeast of the houses (in the trench corner) was devoted to everyday activities, undoubtedly in connection with

the house in loc. 49. There was one big hearth (pit 15/05) here, as well as two post-holes and a large piece of lime mass from an unidentified structure. The hearth was round, 0.80 m in diameter, and about 0.20 m deep. The sides and bottom were caked with a layer of mud plaster 3 cm thick, apparently baked by fire. The fill contained small fragments of plaster and a thick layer of ashes. The two round postholes are indicative of some lightweight roofed construction having been erected above the hearth, as in level 11, but the evidence was too flimsy for a reconstruction of the size and construction details.

Earlier remains (presumably a house as well) were noted below loc. 51 and will be excavated in the upcoming season.

## SQUARES K-3 B, K-4 B,D, L-3 A, L-4 A,C

Excavations in this trench located in the lowest southern part of the tell, to the south and southeast of square K-5 b,d, have brought to light five different occupational strata over the past four seasons. Stratum V continued to be explored this year, starting with level 4, which had been started in the previous season. This, as well as the next three levels (5-7), appear to belong to a very early PPNA horizon or even a transitional phase from the Proto-Neolithic to PPNA, considering the huge number of El-Khiam points found together with Qaramelian ones.

The only feature in level 4 was a very small fragment of the wall of a round house, c. 1.50-2.00 m in diameter (loc. 19), mostly hidden under the western baulk. The wall, preserved to a height of 0.40 m, was made of mud and stones.

### LEVEL 5

Underlying structures from earlier levels are two houses (loci 20 and 21), three storage

pits, three postholes and two hearths [*Fig. 8*]. Locus 20 in the southwestern corner of the trench is partly hidden under the southern baulk. It was approximately oval in shape, measuring 4.50 m by at least 5 m (excavated part). A mud-and-stone wall, c. 0.40 m thick, rose to a height of c. 0.40 m. The mud floor was c. 5 cm thick. Several post-holes identified during the exploration of the fill suggest the presence of wooden posts supporting a roof. Inside, there were two hearths made of burnt pebbles, each c. 0.80 m in diameter, located in the northeastern part of the building, both filled with grey ash, as was also a centrally positioned pit of about 1 m in diameter. The pit seems to have been used as a place for smoking meat. A collapsed mud wall was located outside the house, to the east. A round house (loc. 21), approximately 3.00 m in diameter, stood to the north of loc. 20, the wall rising to c. 0.35 m in height. It was 0.35 m thick and was built of mud and stones. As much as later damage permitted,

TELL QARAMEL  
 SYRIA

it was determined that the door must be situated in the southwestern part of the house. The floor of the building, partly

destroyed by two pits from younger levels, was covered with mud lying on pebbles (c. 10 cm in thickness). No evidence of

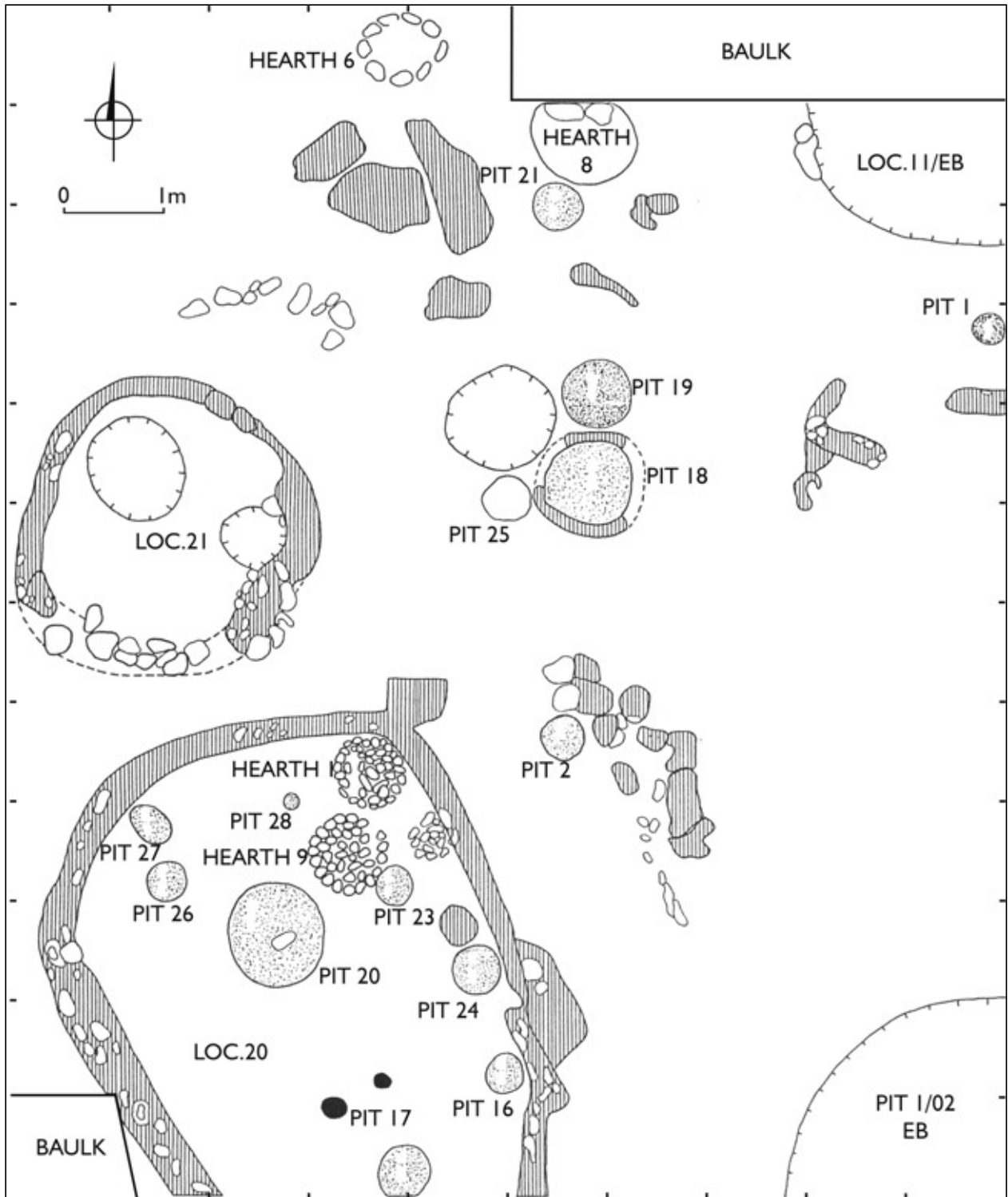


Fig. 8. Squares K-3 b, K-4 b,d, L-3 a, L-4 a,c. Stratum V, level 5 (for legend see Fig. 9)  
 (Drawing J. Gawrońska and R. Maskowicz)

hearths or any other equipment was found inside. Accompanying these structures were two fireplaces (nos 6 and 8), approximately 0.80 m in diameter, each inside a superstructure of stones. The fill contained ash, charcoal and animal bones. Also on the same level were three storage pits and three connected postholes, all located to the northeast of the buildings. The biggest of the pits, lined with mud, was approximately 0.70 m in diameter and 0.40 m in depth. The other two pits were much smaller (0.40 m in diameter). All were filled with grey ash and animal bones.

#### LEVEL 6

Situated in the northern part of the trench (L-4) was a fragment of approximately oval house (loc. 22), partly hidden under the northern baulk [Fig. 9]. The eastern end was partly destroyed by a pit of Bronze Age origin. The unearthen part of the house measured 4.00 by 1.50 m. It appeared to be semi-subterranean. The upper parts of the wall were made of mud and were probably plastered. Inside, a crescent-shaped bench, 0.50 m wide, was located against the south wall, partly sunk into culturally sterile soil. A hearth, apparently located on some kind of white-mud platform, was located in the center of the structure (it runs into the baulk). It was approximately 0.80 m in diameter and c. 0.50 m deep. The fill contained charcoal and ashes together with animal bones. The mud floor proved to be c. 8 cm thick. Two postholes recorded on either side of the hearth are evidence of the presumed posts supporting the roof.

Another partly semi-subterranean round feature (pit 30) was located to the south of loc. 22. It was c. 2.50 m in diameter and 0.20 m deep. In the middle of it, there was a red-mud platform, c. 0.60 m in diameter, partly destroyed by pits from level 5, and in

the center of this platform a single posthole, c. 0.40 m in diameter. Another six postholes were ranged irregularly around the structure. The pit was probably connected with loc. 22 and was used for some everyday activity, as was probably another round pit found to the southeast, c. 0.70 m in diameter and 0.30 m deep. Both contained grey ash and animal bones.

#### LEVEL 7

The installation of pit 30 in level 6 destroyed in part the remains of two older houses (loci 23 and 17a) [Fig. 10]. A third structure (loc. 26) in the northern part of square L-4 a was partly destroyed (eastern side) by loc. 22 from level 6.

Locus 17a was situated below loc. 17, in the eastern part of the trench (running under the eastern baulk). It was semi-subterranean, round (c. 5 m in diameter) with a round mud platform, c. 2 m across, situated in the center. Adjoining the west wall was a crescent-shaped mud bench, approximately 0.50 m wide. The unearthen fill of the structure (the floor was not reached this season) contained grey ash and large quantities of animal bones.

To the west of this structure another house was found (loc. 23), partly destroyed by loc. 21 and two pits from a younger occupational level. It was round, c. 3 m in diameter, with walls of big stones in mud, 0.30 m thick, preserved to a height of 0.30 m. A door was probably situated in the southwestern part of the house. The floor, about 10 cm thick, was made of a layer of mud spread over small pebbles. No evidence of hearths or any other equipment was found inside.

A similar but smaller structure (loc. 25) lay to the northeast. It was c. 2 m in diameter and it was probably a side building or the second phase of reconstruction of

loc. 23. The feature unearthed north of loci 23 and 25 (loc. 26) consists of a bigger pit (c. 0.80 m in diameter) in the middle

and four postholes around it, sunk into a layer of white mud. A small hearth, c. 0.40 m in diameter, was located between

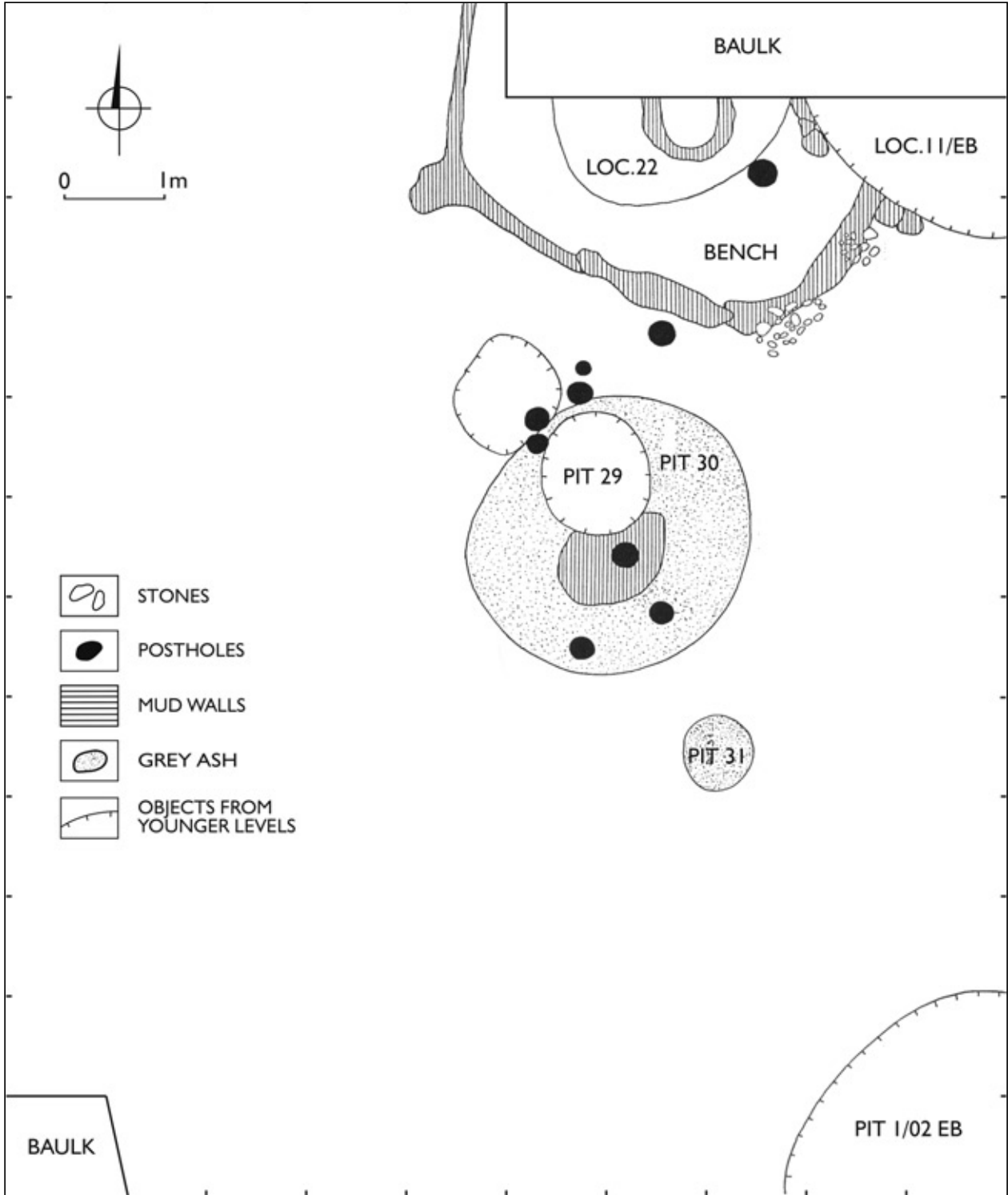


Fig. 9. Squares K-3 b, K-4 b,d, L-3 a, L-4 a,c. Stratum V, level 6  
(Drawing J. Gawrońska and R. Maskowicz)

the postholes. Its fill comprised grey ash and animal bones. Loc. 26 should be interpreted as a kind of shelter.

Remains of a Proto-Neolithic oval or round house with mud walls were discovered below these structures.

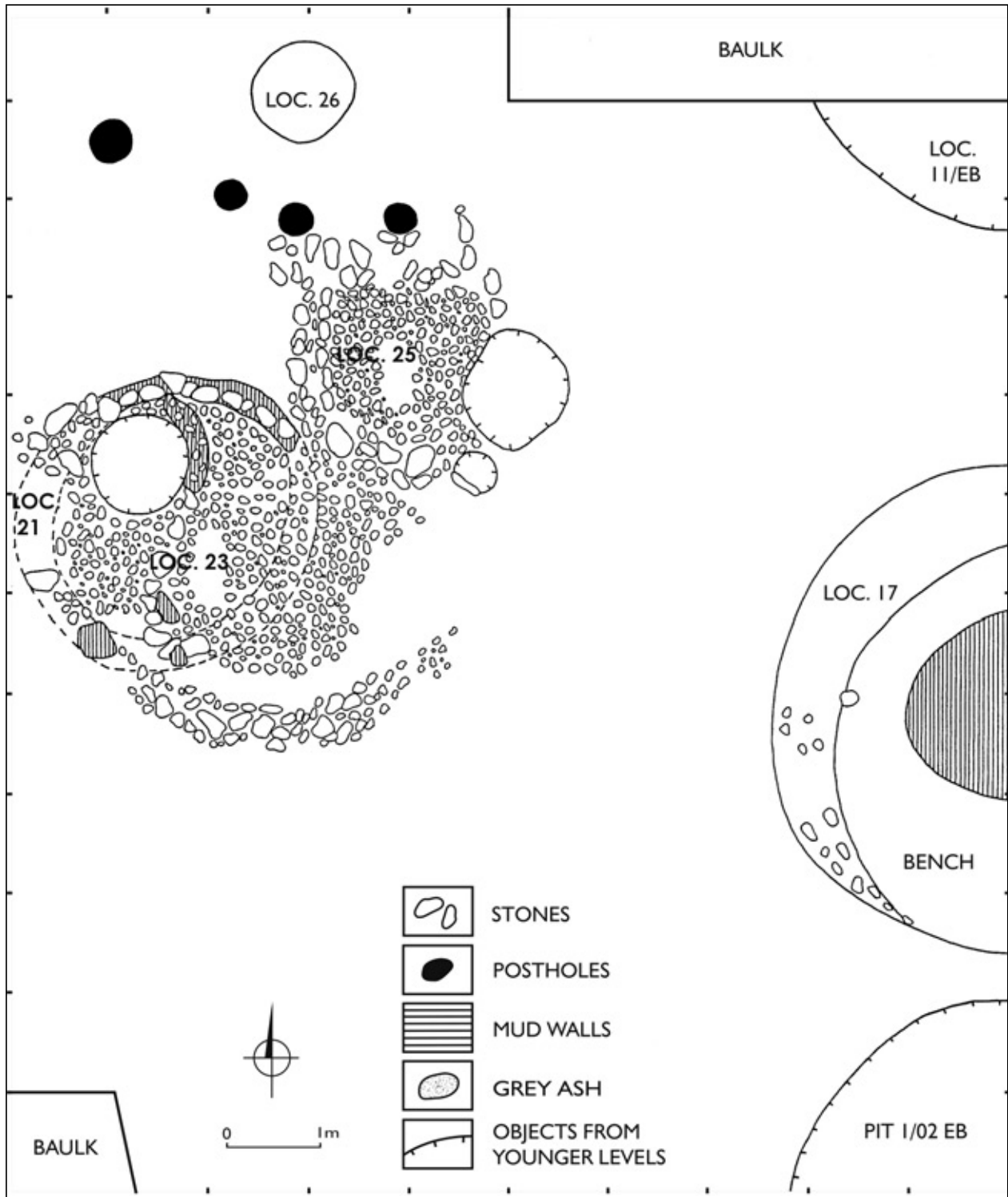


Fig. 10. Squares K-3 b, K-4 b,d, L-3 a, L-4 a,c. Stratum V, level 7  
(Drawing J. Gawrońska and R. Maskowicz)

## GROUND AND PECKED STONE INDUSTRY

Registered finds included 145 objects representing the ground and pecked stone industry of the Early PPNA. The collection contained:<sup>3</sup> *bolus* ball made of flint (IA2); two fragments of circular quern-like forms with trough-shaped section, reused as elongated polishing stones (IXA); 31 fragments of oval querns with trough-shaped section (IIB1a), nearly all made of basalt and sporadically of limestone or calcareous mudstone; 25 complete or fragmentary unipolar (IIIA1) or bipolar pestles, mostly made of chlorite pebbles, including a decorated specimen; 21 complete or fragmentary unilateral or bilateral oval grinders of basalt, very often with traces of wear also on the lateral edges (IIIE1a,b; IIIE2a,b); one bilateral mortar of limestone with bowl-shaped depressions on opposite surfaces (IVB1); four pounders (VD1, VD2) made of basalt or chlorite; seven two-sided trapezoidal celts with oval transverse section (VIIA1a) made of chlorite or green diabase ("greenstone") pebbles, including two with grooves on the lateral edges; three trapezoidal adzes (VIIIA) made of chlorite, of which two have grooves on the lateral edges; one elongated polishing stone (IXA) made of limestone; two grinding and polishing plates made of flat pebbles (IXB1) of limestone and calcareous mudstone; two fragments of "kitchen" plates (IXB2) made of limestone; two ovoid maceheads of basalt (1-XC1, 1-XC2); three slender pebbles of chlorite with one end pointed and the other broad end used as grinder (XIB), one of these grooved; three needles (XIC1) of chlorite pebbles, grooved; three awls (XIC2) of chlorite pebbles;

chlorite pebble with initiated processing on one edge (XIIIE); natural chlorite pebble with one lateral surface scarred (XIIF); conical decorated bowl with outturned rim (XIVA1), made of chlorite; decorated hemispherical bowl with inturned rim (XIVA2); miniature ovoid vessel made of a white limestone pebble (XIVD2); eight beads made of white or grey marble and chlorite pebbles, including a long tubular shape (XVIA1a), a small round one (XVIA2a) which is rectangular in transverse section and either as long as its diameter or a third of this value, and a barrel-shape with ovoid (1-XVIA3a) or rectangular (XVIA3c) transversal section; two pendants (XVIB1) of natural chlorite pebbles without any working of surface and edges; circular disc with subrectangular transversal section (XVIC2) made of a chlorite pebble; two fragments of decorated plaquettes (XVIK) remade from broken shaft straighteners of chlorite; 13 complete or fragmentary oval (10-XVA), elongated (1-XVB) or rectangular (2-XVC) shaft straighteners made of chlorite pebbles, including 11 specimens with geometrical, zoomorphic (snakes, birds) and anthropomorphic carved motifs; two massive choppers (XXA) made of mudstone pebbles; chopping-tool made of a pebble of mudstone.

Geometrical motifs (grooves, parallel lines of incisions, zigzags) or zoomorphic (snakes, birds) and anthropomorphic images were recorded on 23 objects from this year's collection of finds (15.86%). More importantly, the decoration appears on tools of everyday use, like pestles, awls, celts, adzes, pointed tools and especially

3 Classification based on R.F. Mazurowski, *Ground and Pecked Stone Industry in the Pre-Pottery Neolithic of Northern Iraq* (Warsaw 1997).



shaft straighteners, the latter frequently reused as plaquettes once they had been damaged. Obviously, the Qaramelians appreciated their art, which finds parallels in artifacts and their decoration from sites in the Taurus Region (Göbekli, Nevala Çori, Demirköy) and the Middle Euphrates area (Mureybet, Jerf el-Ahmar, Tell Abr, Mugaret el-Jade), evidently suggesting a fairly similar if not the same ideology (religion?) being cultivated over large areas of Early Neolithic civilization and apparently independently of considerable differences in material culture, architecture, spatial organization and economy.

Basalt appears to have been the raw material of choice for the production of heavy-duty tools, such as querns, grind-

ers, pounders. Calcareous mudstone and limestone were used sporadically for the same purpose. Small tool categories, like pestles, celts, adzes, shaft straighteners, decorated bowls and ornaments (beads, pendants, discs), were made of chlorite pebbles and sometimes "greenstone" (diabase) and calcite. A natural lump of copper about 6 cm big was discovered in a layer belonging to the Early PPNA horizon in square K-7.

Most of the above described stone artifacts were discovered reused in walls, abandoned in the fills of houses and sporadically in the floor substructure. The small number of mortars and pounders is also very characteristic of the PPNA settlement on Tell Qaramel.

## FLINT INDUSTRY

Proto-Neolithic levels explored in squares K-3 b, K-4 b,d, L-3 a, L-4 a,c and K-7 yielded flint material that could be subdivided into two different units. The uppermost levels are characterized by flints connected with the exploitation of bipolar cores with one striking platform, similar to "navy forms", but with less intensive preparation on both sides. From such cores blades 6-8 cm long and 0.8-2 cm wide were obtained and used for manufacturing different kinds of tools. Sickle blades in the form of long backed pieces with back situated on the shorter side were the most common, along with points of El-Khiam type with straight or slightly concave base and with one or two pairs of notches. Point size ranged from 2 cm in length and 0.8 cm in width to 5-6 cm and 1.5 cm respectively. Other numerous tools included borers and perforators with long, slender and almost always straight sticks, burins in many varieties (corner, wedge, sometimes pyramidal), end-scrapers made of small flakes

(cortical) deriving from core preparation, and also irregular scrapers and retouched blades and flakes. Some fragments of lunates appeared, but were hardly common.

The oldest levels connected with Proto-Neolithic occupation offered less flint artifacts compared to later levels. Mainly unipolar cores were exploited, usually for blades production, with alternate direction of striking being extremely characteristic. Apart from that, the majority of the tools represented the same types as in the levels above.

Only one type of El-Khiam point with slightly concave, but sometimes straight base and one pair of notches was present in the lowest levels. Size is diversified (points included), but the most frequently encountered specimens are 3-4 cm long and about 1.5 cm wide. The number of burins was on the rise, while sickle blades in the shape of backed pieces were fading away.

The flint collection from square J-8 b,d is completely mixed due to the huge Early

Bronze Age pit dug there, which has yielded over 80% of the finds. The remaining 20% originated from undisturbed contexts and is typical of the late phases of settlement on Tell Qaramel. It consists mainly of tools made on blades, among which the predominant forms included straight perforators, big-end-scrapers, burins and Helwan-type points

with short straight handle and one, seldom two pairs of notches. No Erminette-type tools were found anywhere in the excavated levels.

As far as raw-material is concerned, almost 98% of the tools were made of brown ('chocolate') flint. Making up the rest were burned, unidentified kinds of flint, as well as a rosy flint with thin and feebly-formed cortex.

## HUMAN AND ANIMAL BONES

Animal bones from the excavated PPNA layers were found most often in places of presumed domestic activity (courtyards), but also in pits, fills of buildings and in the walls (including both towers). Represented in the collection are the whole and fragmentary bones of wild cattle, sheep, goat, gazelle, pig, onager, donkey, horse, as well as different kinds of birds. The more exotic animals included red deer, dog, cat, wild boar and rodents. Snail and turtle shells are very rare.

Post-consumption traces on bone surfaces have been observed, but bone was rarely used for producing tools. Such rare

tools included mainly perforators made of the long bones of cattle, sheep and goat, and cutting tools made of ribs and pieces of polished ribs.

Human bones were very rare and nearly all of them came not from burials but from layers, pits and sporadically also from the fill of houses. Fragments of skulls predominated in this set, frequently originating from intentional deposits located in the pebble foundation of the younger tower (II). In our absence, between campaigns, a deposit of five skulls situated in the foundation of the tower was vandalized by children from the village.

## CONCLUSIONS

Present excavations have provided data for the transition from the Proto-Neolithic to PPNA. The evidence of a thin layer of intensively red mud, evidently the outcome of flooding but containing little archaeological material, was observed dividing the two occupational horizons. It is still difficult to tell how long the hiatus lasted and whether it was continuous all over the site.

The chronology of the towers has also been clarified and more can be said now on the technological and technical aspects of their construction, as well as the circumstances of their destruction. The older tower (I) was settled on a level of intensive

occupation, about 4 cm thick. It appears to have been destroyed about 8350 bc (non-calibrated) and the ruined wall was reused in the construction of the younger tower (II). The foundation was in both cases a thick level of small pebbles, but the dimensions differed. Also the upper parts of the stone walls evinced a completely different technology. The younger tower was finally leveled in the Early Bronze Age, which was also responsible for some disturbance of the fill inside the tower. There are also some indications of an even earlier tower being located on the same spot, to be explored in the upcoming season.