

PRELIMINARY REPORT ON THE UNIVERSITY OF SYDNEY'S  
SEVENTH SEASON OF EXCAVATIONS AT PELLA (ṬABAQAT FAḤL) IN 1985

by

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### Introduction

The University of Sydney's seventh season at Pella (Ṭabaqat Faḥl) commenced on the 15th December 1984 and continued until February 1985. Staff totalled twenty-nine as follows: Dr. Anthony McNicoll (director), Lady Margaret Wheeler (in charge of early ceramic cataloguing), Dr. Bernard Knapp (Australian post-doctoral research fellow), Dr. Phillip Macumber (geomorphologist), Dr. Christopher Browne (paleopathologist), Mr. Ian Edwards (ceramic technologist and draughtsman), Misses Kathryn Eriksson, Leanda Randle and Sue Thorpe (draughtswomen), Ms. Noel Siver (conservator), Mr. J. Hanbury-Tenison (site director), Mr. Stephen Bourke (osteologist and small finds cataloguing), Mr. A. G. Walmsley and Ms. Susan Bassett (cataloguing Islamic ceramics and site supervisors), Ms. Pamela Watson and Miss Fiona Richards (cataloguing Byzantine ceramics and site supervisors), Miss Leah McKenzie (cataloguing Hellenistic and Roman ceramics), Miss Christine Winzor (cataloguing early ceramics), Miss Margaret O'Hea (glass cataloguing), Miss Sue Colledge (archaeobotanist), Ms. Torla Evans (photographer), Mrs. Maree Browne (small finds cataloguing), Messrs Phillip Edwards, Ian Biggs, Hugh Beames, and Jon Hosking (site supervisors), Mr 'Omar Ersheidat, representing the Department of Antiquities (in charge of tomb excavation), Mr. Badri Maḍi (foreman) and Mr. H. Abu Raḥmi (cook). Sixty

local labourers were hired.

The excavations are funded by the Australian Research Grants Scheme, the Australian National Gallery, and the University of Sydney. Smaller grants were received from the University of Queensland, the Australian Institute of Archaeology and from anonymous donors. To all these go our thanks.

As usual, the Jordanian Department of Antiquities provided much logistic support. To its Director, Dr. 'Adnan Hadidi, and his staff go our deep thanks for their continued interest and encouragement.

The aims of the 1985 season were:

1. To continue the excavation of the outstanding Natufian site in the Wadi Ḥammeh (WH 27).
2. The excavation of numerous E.B. IV tombs at the mouth of the Wadi Ḥammeh (Area XXXI).
3. To complete the excavation of the terminal Late Bronze and Early Iron Age deposits in the 'deep cut' trenches IIIN, IIIP and IVE.
4. To continue the excavation of the Hellenistic and Roman deposits in XXIIIA.
5. To complete the excavation of the Late Hellenistic or Early Roman citadel (?) wall on Tell Ḥuṣn (Area XI).
6. To locate and excavate tombs of Roman date in Area VI.
7. To complete the excavation of the East Church (Area V).

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1. [Editorial Note by A. G. W]. This report is, in part, taken from on-site notes written by Anthony McNicoll at the end of the 1985 season (labelled A. W. McN.). Because of Tony's terminal illness, during which time he devoted his efforts to writing and editing 'Pella in Jordan 2', he was unable to

revise and expand his parts of this report; nevertheless they stand as a concise and lively comment on the season's work. The detailed sections by Edwards, Hosking, Macumber, Watson and Walmsley were added during the course of 1985.

8. Excavations on a small scale of Byzantine and Abbasid structures in Areas IV and XXIX respectively.
9. To continue geomorphological, ceramic technological, archaeobotanical, osteological and palaeopathological studies.
10. To complete the examination and drawing of material back-logged from earlier seasons - a pressing problem.

A major undertaking before the commencement of the season was the rebuild-

ing of the verandah of the dighouse, the cost of which was met by the Sydney team and a generous grant from the Department of Antiquities. The construction work was supervised by Alan Walmsley with his customary skill; the new verandah is a great advance on the previous one, and its enclosed space has considerably improved both the working and living conditions of the house staff.

(A. W. McN.)

## THE WADI ḤAMMEH

### Environmental Reconstruction of the Wadi Ḥammeh Region in the Late Pleistocene

#### Introduction

Wadi Ḥammeh and Wadi Ḥimar are lateral streams flowing down either side of a former single enlarged ancestral Wadi Ḥammeh which in Late Pleistocene times flowed into Lake Lisan then occupying the Jordan Rift Valley.

#### *Geology and Geomorphology*

The Wadi Ḥammeh valley is backfilled by a conglomeratic sequence — the Wadi Hammeh Conglomerates (Macumber, in *PJ 2* Appendix 2) — consisting of chert pebble beds, interbedded red-brown clays and, nearer the Rift Valley, calcareous silts. The conglomerates can be traced out onto the Rift Valley where they merge with pebble and boulder deposits representing ancient shorelines of Lake Lisan. Backfilling of Wadi Ḥammeh is seen as at least partly due to lake level rises in response to climatic fluctuations. The final drying up of Lake Lisan resulted in a rapid fall in base levels and a concomitant incision of the valley fill sequence to form the present day topography with the development of the deeply incised Wadi Ḥammeh and Wadi Ḥimar. The conglomerates remain as a ridge running down the centre of the ancestral valley with the wadis flowing lateral on either side along the boundary between the

conglomerates and Tertiary-Cretaceous units which form the valley sides. Radiocarbon dates from the archaeological excavations towards the top of the valley fill sequences indicate this final incision, and therefore the drying of Lake Lisan, took place soon after *ca.* 12,000 years B.P.

On approaching the junction of the two wadis, the ridge broadens into a narrow plateau, known as the Plateau, which in turn falls to a saddle before finally terminating in a small low butte, or the Knob.

On approaching the mouth of the ancestral valley, the conglomerates are overlain by and partly merge into a limestone unit — the Knob Calcsiltites (see Macumber, in *PJ 2* Appendix 2) — consisting of calcareous silts and tufa. These sediments are essentially detrital and contain plant fragments and a freshwater fauna of *Melanopsis praemorsa*. At their furthest upstream occurrence on the plateau between the two wadis, the limestones are about 4.5m thick but rapidly thicken on passing downstream towards the Rift Valley to be 30-40m. thick in places. Here the upper units of the conglomerates are replaced by limestone in a lateral facies change. The lower conglomerates remain; however the red clay cement is replaced by a buff to light gray calcereous cement.

In places the limestone is separated

from the conglomerates by a thin dark brown clay sequence — the Black Clay (Maccumber, in *PJ 2* Appendix 2) — as occurs at Area XX where it contains the Kebaran site Wadi Ḥammeh 26 dated at *ca.* 19,500 years B.P.

#### *Site Distribution and Environmental Reconstruction*

Chert artifacts are scattered throughout the entire vertical sequence of the Wadi Ḥammeh Conglomerates where they are exposed in the walls of the Wadi Ḥammeh and Wadi Ḥimar. For instance five pebble bands underlying a 10m. thick calcareous sequence on the 'Knob' at the junction of the two wadis contain a number of rolled artifacts, while others were found throughout the conglomeratic sequence passing down to the valley bottom. Similar material frequently occurs upvalley for several kilometers. On the basis of the presence of Epi-Palaeolithic industries dated at between *ca.* 12,000 and 19,000 years B.P. in sediments overlying the conglomerates, it is likely that the Wadi Ḥammeh conglomerates and the industries contained within them span the period at least back to the Middle Palaeolithic. This is also suggested by the typology of the artifacts.

Kebaran sites are found in the Black Clay unit underlying limestones on the nearby plateau where the major Natufian site Wadi Ḥammeh 27 (Edwards 1984) occurs on a thin clay unit immediately overlying the limestone cap.

Within the Knob Calcisiltites a number of *in situ* sites occur downvalley of the Plateau, with a concentration of sites close to the Rift Valley at Area XXXI. These include the Wadi Ḥammeh 31 site regarded tentatively as Kebaran, and a further nearby site, Wadi Ḥammeh 32, tentatively regarded as Upper Palaeolithic (radiocarbon dating of shell material may provide additional back-up for age determinations of these sites). The concentration of sites virtually overlooking the Rift Valley is readily understood given the presence of the fresh-water Lake Lisan at this time.

The facies change from conglomerates

to limestone on passing down the Wadi Ḥammeh reflects the passage from a valley fill sedimentary environment towards a riftside setting where chemically derived sedimentary sequences dominate. The diachronicity of this sequence is seen in the presence of the Kebaran site of Wadi Ḥammeh 26 within the Black Clay beneath the limestones at the Plateau (Area XX) while downstream another Kebaran site (Wadi Ḥammeh 31) occurs within the limestone sequence lying at levels above that of the Black Clay.

Similarly the facies variation on passing vertically upwards from a conglomerate to a black clay to a limestone is seen as indicating a gradual replacement of the high energy valley environment to a low energy environment in response to a gradual rise in base levels during an expansion of Lake Lisan just prior to its final demise. At the same time the position of carbonate deposition has slowly moved up the Ḥammeh Valley, gradually covering the conglomerates as lake levels rose.

Radiocarbon dates straddling the limestone sequence obtained from the Kebaran site in the Black Clay and from the Natufian site above the limestone show the limestone at its uppermost limits beneath the Plateau ranges from between *ca.* 19,500 and 12,000 years B.P. These dates suggest that the highest water levels reached by Lake Lisan occurred immediately before its final major drying phase (Maccumber *PJ 2* Appendix 2).

The facies variations in the lower Wadi Ḥammeh during Palaeolithic times indicate a lake margin setting with marsh-estuarine conditions in the lower wadi passing upstream into a fluvial setting. This environment when coupled with the presence of a nearby hot spring provided an ideal occupational setting buffered from the vagaries of climatic fluctuations. It was especially the case in Epi-Palaeolithic times when Lake Lisan levels were at their highest prior to drying soon after 12,000 years B.P.

(P.G.M.)

## The Excavations in the Wadi Hammeh

### Introduction

During the 1984/85 Pella season excavations at the Natufian site Wadi Hammeh 27 were carried into their third year, and investigations were also made into three newly-discovered stratified sites of the late Pleistocene. These include a Kebaran site (Wadi Hammeh 31) and an underlying Upper Palaeolithic site (Wadi Hammeh 32), discovered in Area XXXI on the south terrace of the Wadi Hammeh near its mouth, as a result of excavations of the Early Bronze IV cemetery located in that area. An additional small Kebaran occurrence, Wadi Hammeh 33, located fifty meters down-valley from the previously reported Kebaran site Wadi Hammeh 26 (Edwards, in MacNicoll *et al.* 1984) was discovered and sampled<sup>2</sup>.

### *Wadi Hammeh 31 (Kebaran) and Wadi Hammeh 32 (Upper Palaeolithic)*

The sites are located near the top of the terrace cut by the Wadi Hammeh where it debouches into the Jordan Valley (*ca.* 200 metres b.s.l.). The clay unit containing Wadi Hammeh 32 outcrops in a number of spots over the top of the south terrace of the Wadi Hammeh. Due to the presence of an E.B. IV cemetery here (see below), the site is also visible in section in the walls of several shaft tombs.

Given the sporadic nature of the exposures, site area is difficult to determine. A minimum area of 6,000 square metres can be judged from the boundaries of the preserved terraces. Although flaked stone can be readily picked up on the surface, 0.25 cubic metres of *in situ* matrix were sieved in order to provide comparative samples to the other sites tested.

Debitage consists mainly of flakes and blades (Table 1). The few bladelets outnumber the blades, yet a good proportion of the broken blades were clearly derived

from blades rather than small bladelets. With such few elements collected it is difficult to make much of frequencies, but one clear difference between Wadi Hammeh 32 and the overlying nucleated site Wadi Hammeh 31 is the lack of small size-fraction material in the former. The absence of flakes under 2 cm. and the small number of chips results in the low artefact density at Wadi Hammeh 32 (516 pieces/cubic metre) compared to the high density at Wadi Hammeh 31 (6,750 pieces/cubic metre). This contrast is due to the more extensive deflation of Wadi Hammeh 32, which accounts for the large and diffuse nature of the site.

Blanks used in making the small tool sample are mainly blades (8/14), the remainder being chunks, flakes and one bladelet. Besides this lone bladelet tool (an obliquely-truncated backed bladelet), retouched tools comprise a variety of truncation burins, dihedral burins, and a burin on natural surface; there is also a small but varied group of scrapers which includes endscrapers, a sidescraper, and a steep carinated scraper.

Some metres up-valley from this site, where the overlying calcisiltite unit has not been truncated by erosion, Wadi Hammeh 31 occurs in section at a point where a tomb dromos has been dug into the cliff. The site is a flaked chert concentration estimated at *ca.* 25 square metres in area. A total of 0.1 cubic metres of the calcereous matrix was dry-sieved and later washed and dissolved in dilute acid.

Debitage frequencies show an orientation to bladelet production and cores are almost exclusively of the single platform type (Table 1). Intensive bladelet utilisation is seen in the retouched tool sample which consists entirely of non-geometric microliths and a few notched pieces. The majority of the microliths (N=31) are broken backed bladelets, plus a few straight-

2. Thanks are due to J.J. Gowlett for providing the services of the Oxford Radiocarbon Accelerator unit, A.N. Garrard for faunal analysis and D.S. Reese for molluscan identifications. Specialist staff of the

University of Sydney Pella team who worked at Wadi Hammeh 27 in 1984/85 included S.J. Bourke, S.M. Colledge and P.G. Macumber.

**Table 1:** Lithic debris, debitage and retouched tool totals.

	<i>WH 27*</i>		<i>WH 31</i>	<i>WH 32</i>	<i>WH 33</i>
	<i>N</i>	<i>%</i>	<i>N</i>	<i>N</i>	<i>N</i>
<i>Debris</i>					
Chunks	11,133	27.0	4	3	3
Chips	29,699	72.1	122	13	5
(Misc.)	368	0.9	-	-	-
Sub-total	41,200	100.0	126	16	8
<i>Debitage</i>					
Flakes	20,211	69.8	140	45	16
Blades	7,702	26.6	354	36	18
Core-trimming elements	282	1.0	5	7	1
Burin spalls	468	1.6	-	-	-
Microburins	42	0.1	3	-	-
Cores	260	0.9	16	11	5
Sub-total	28,965	100.0	518	99	40
<i>Retouched Tools</i>					
Scrapers	117	5.3	-	4	-
Multiple tools	10	0.4	-	-	-
Burins	544	24.6	-	9	1
Retouched & backed blades	54	2.4	-	-	-
Truncations	39	1.8	-	-	-
Microliths	629	28.4	27	1	1
Geometric microliths	359	16.2	-	-	-
Notches & denticulates	300	13.5	4	-	-
Various	163	7.4	-	-	-
Sub-total	2215	100.0	31	14	2
<b>Total</b>	<b>72,380</b>		<b>675</b>	<b>129</b>	<b>50</b>

\* For site Wadi Hammeh 27 (WH 27) Debris and Debitage totals are for plot XX D, Natufian Phase I; Retouched Tools totals are for plots XX D and XX F, Natufian Phase I.

truncated backed bladelets, a bitruncated backed bladelet and a obliquely-truncated backed bladelet. Like Wadi Ḥammeh 26, the backed bladelets are gracile, with a mean maximum width of 5.05 millimetres and a range of 4.25-6.75 millimetres.

Wadi Ḥammeh 31 is similar to Wadi Ḥammeh 26 (dated 19,500 +/- 600 b.p.) in terms of site size, lithic technology and tool typology, and is regarded as an early Kebaran site. It is stratified over a site (Wadi Ḥammeh 32), which in view of its stratigraphic proximity to Wadi Ḥammeh 31, its lack of bladelets, and the types of scrapers and burins present, is characterised as a late Upper Palaeolithic site.

#### *Wadi Ḥammeh 33 (Kebaran)*

In the course of geological prospecting in the dark grey clay unit in which Wadi Ḥammeh 26 occurs, some fifty metres further down-valley from that site, P. G. Macumber discovered a concentration of lithics and bone fragments. Although the volume of matrix and number of artefacts extracted were small, (*ca.* 0.01 cubic metres), the density of artefacts retrieved is equivalent to that of Wadi Ḥammeh 26. Lithic debris and many debitage types occur, as well as blade and bladelet cores despite the low total artefact numbers (Table 1). The only two tools collected were a dihedral burin and a Helwan bladelet. The debitage and the burin seem allied to the Kebaran flaked stone industry of Wadi Ḥammeh 26 from the point of view of the type of chert used as the nature of the cores, core reduction and the thin, laminar debitage products. The greyish Helwan bladelet is almost certainly a deflated product of the overlying Natufian site Wadi Ḥammeh 27, since in this area silty wash from above obscures to varying degrees the section from which the collection was retrieved. Six animal bone fragments, including parts of a mammalian ulna and a *Cervus elaphus* phalanx, indicate that the site represents more than a knapping station.

The significance of this site is not so much in the diagnostic value of the artefacts obtained from it, as in its position fifty metres downstream from Wadi Ḥam-

meh 26. Varied strands of evidence suggest that this latter nucleated site is *in situ* (Edwards in McNicoll *et al.* 1984). It is unlikely that Wadi Ḥammeh 33 is solely derived from material washed from Wadi Ḥammeh 26, rather it seems to represent a broadly contemporary occupation.

The intensity of repeated occupations by small Kebaran groups in the well-watered Wadi Ḥammeh can then be conceived as having given rise to an archaeological landscape in which a mosaic accretion of small, nucleated camp sites is highly visible amidst a background scatter of artefacts produced by a combination of off-site activities and deflation.

#### *Wadi Ḥammeh 27 (Early Natufian)*

Investigations at Wadi Ḥammeh 27 have been continuing for the past three Pella seasons (Edwards, in McNicoll *et al.* 1984; Edwards & Colledge, in Potts *et al.* 1985; Edwards in *PJ* 2). At present the area under excavation totals just under 200 square metres in area, or about ten per cent of the minimum estimated site size.

The latest occupation phase at the site, Natufian Phase I, has been the object of attention in the area excavations, while two earlier occupation phases have been discovered in a sondage in plot XX F. Discussion of the earlier phases will be kept brief in this report since analyses of their materials are less advanced than for Natufian Phase I.

Two large stone structural complexes and a number of smaller stone features have so far been uncovered in Natufian Phase I. (All features discussed below are illustrated in the plans and sections of Fig. 1).

The northerly structure was originally encountered as the 7.9 metre arc of wall 1 in plot XX F. Surviving up to two courses and a maximum height of 0.55 metres, the wall is for the most part dry-built from limestone rubble. Towards the middle of the exposed stretch, several of the basal stones are set into a raised hump of clay well-mixed with pebbles.

In the neighbouring plot XX E, the



projected curve of wall 1 is marked by several discontinuous clumps of stone (F. 2, F. 3 and F. 4 in plot XX E). At least in the region between F. 2 and F. 3 it can be seen that the exterior or westerly floor continues up to this curve but then descends abruptly beneath an occupation fill on the inside of the structure. Pending complete clearance it appears that the structure is elliptical, oriented north-east to south-west, with major and minor axes of nine metres and six metres respectively.

Complete clearance to the Phase I floors in plot XX D has revealed portion of a more elaborate structure, composed of three concentric walls (1-3) which circumscribe a central group of boulders (F. 18). The westerly surviving arm of wall 3 consisted of three oblong calcareous siltstone slabs set on edge and supported by a rubble backing. The south face of each one was engraved with a repetitive array of quadricentric motifs (Edwards 1984).

The method of wall construction was to lay large basal stones against a pre-cut step and then to pile up smaller stones to make the upper courses. Consequently there are drops of about 30 cms from the exterior surfaces to the interior ones (section a-b). In plot XX D this technique has resulted in the creation of three mini-terraces running from north to south.

Accelerator dates have been obtained from carbonised seeds retrieved from layer 8.1, directly overlying the Phase 1 floors in plot XX D:

OxA-393 11,920 +/- 150 b.p. (Humic acids from seeds)

OxA-394 12,200 +/- 160 b.p. (Charred seeds)

OxA-507 11,950 +/- 160 b.p. (Charred seeds)

Performing a chi-squared test on the pooled mean of these dates, according to the method of Ward and Watson (1978, p. 19-31) gives a value less than the tabulated value for two degrees of freedom at the 0.05 level, indicating that the dates are statistically indistinguishable.

A number of smaller stone features are associated with both structures. Stone arcs are laid on the exterior of the XX F structure (F. 3, F. 14 and F. 15 in plot XX F; and probably F. 1 in plot XX G), and on its interior a stone platform (F. 7) and three stone rings occur (F. 6, F. 8 and F. 9). A stone ring (F. 21a) was also built against wall 2 in plot XX D.

The sondage sunk into the south-east corner of plot XX F has revealed two earlier occupation phases, both of which feature stone constructions (section d-e).

Natufian Phase II consists so far of a section of stone wall (F. 5) which follows the curvature of wall 1 in Phase 1<sup>3</sup>. This wall is associated with floor 2.5 on which is seated a stone ring topped by a limestone mortar (F. 4). Floors 2.6 and 2.6a of the earliest Phase III consist of a densely-packed green clay, into which is set another stone ring. Outcrops of travertine are visible in this Phase III floor, indicating that the occupation surface was built up through tramping of material into the travertine unit underlying the site. If so, Natufian Phase III should represent the basal occupation layer in the site.

Large quantities of lithics have been found in all areas examined, but particularly from the interiors of both large structures. The majority is debris consisting of raw chunks of chert, and chips, or percussion shatter products (Table 1). Debitage consists mainly of flakes, smaller numbers of bladelets, and low frequencies of core rejuvenation elements. Many flakes are large, but cores are nearly exclusively exhausted remnants of small bladelet cores, which in many cases would be more accurately described as "micro-flake" cores. Single platform (faceted and unfaceted) types predominate, followed by change of orientation cores, and lesser numbers of multiple platform cores which are sometimes worked down to a globular shape.

Table 2 provides information on retouched tools catalogued so far from Natufian Phase I levels in plots XX D and XX F.

3. In a previous report (Edwards & Colledge 1985), it was suggested that F. 5 may be the base for wall 1.

In fact this feature now appears to be part of an earlier building of Natufian Phase II.



**Table 2 :** Retouched tool list for Wadi Hammeh 27, plots XX D and XX F, Natufian Phase I.

	<i>Plot XX D</i>		<i>Plot XX F</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Scrapers</i>						
Endscraper on chunk	4		1		5	
Endscraper on flake	13		14		27	
Endscraper on retouched flake	3		3		6	
Transversal endscraper	1		1		2	
Endscraper on blade	3		3		6	
Endscraper with notch	-		1		1	
Double endscraper	-		1		1	
Thumbnail scraper	2		-		2	
Rounded scraper on chunk	1		-		1	
Rounded scraper on flake	8		17		25	
Circular scraper	3		1		4	
Sidescraper	1		-		1	
Nosed scraper, thick	6		4		10	
Broad carinated scraper on chunk	4		5		9	
Broad carinated scraper on thick flake	-		6		6	
Broad carinated scraper on blade	-		1		1	
Narrow carinated scraper	2		1		3	
Micro-carinated scraper	1		2		3	
Nucleiform scraper	1		1		2	
Double mixed scraper	1		-		1	
Broken scraper	-		1		1	
Sub-total	54	4.4	63	6.3	117	5.3
<i>Multiple Tools</i>						
Burin/Scraper	-	-	10	1.0	10	0.5
<i>Burins</i>						
Dihedral burin	27		28		55	
Offset dihedral burin	11		9		20	
Dihedral angled burin	26		-		26	
Double dihedral burin	2		3		5	
Burin on natural surface	48		74		122	
Double burin on natural surface	1		-		1	
Burin on straight truncation	24		33		57	
Burin on oblique truncation	41		54		95	

	<i>Plot XX D</i>	<i>Plot XX F</i>	<i>Total</i>		
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N%</i>
Burin on concave truncation	21		25		46
Burin on convex truncation	28		40		68
Double burin on truncation	1		14		15
Transverse burin on lateral retouch	4		1		5
Nucleiform burin	9		3		12
Ventral burin	6		1		7
Double mixed burin	5		5		10
<b>Sub-total</b>	<b>254</b>	<b>20.9</b>	<b>290</b>	<b>29.0</b>	<b>544 24.5</b>
<i>Blades</i>					
Blade partly retouched on one edge	2		1		3
Blade completely retouched on one edge	1		-		1
Blade retouched on both edges	-		3		3
Inverse retouched blade	6		2		8
Alternately retouched blade	1		2		3
Blade with alternating retouch	-		1		1
Backed blade	-		9		9
Curved backed blade	1		1		2
Helwan-retouched blade	6		9		15
Obliquely-truncated backed blade	-		1		1
Straight bi-truncated blade	1		-		1
Broken retouched blade	4		1		5
Blade with silica sheen, unretouched	2		-		2
<b>Sub-total</b>	<b>24</b>	<b>2.0</b>	<b>30</b>	<b>3.0</b>	<b>54 2.4</b>
<i>Truncations</i>					
Truncated piece	29		9		38
Bi-truncated piece	-		1		1
<b>Sub-total</b>	<b>29</b>	<b>2.4</b>	<b>10</b>	<b>1.0</b>	<b>39 1.8</b>

<i>Microliths</i>	<i>Plot XX D</i>		<i>Plot XX F</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>N%</i>
Partially retouched bladelet	8		12		20	
Completely retouched bladelet	11		17		28	
Pointed retouched bladelet	4		1		5	
Bladelet retouched on both edges	1		3		4	
Alternately retouched bladelet	6		3		9	
Bladelet with alternating retouch	4		7		11	
Inverse bladelet	80		39		119	
Helwan bladelet	167		129		296	
Helwan-truncated bladelet	2		2		4	
Broken retouched bladelet	13		11		24	
Completely backed bladelet	11		9		20	
Curved backed bladelet	10		-		10	
Narrow curved pointed backed bladelet	2		-		2	
Obliquely-truncated bladelet	5		-		5	
Obliquely truncated retouched bladelet	-		2		2	
Obliquely truncated backed bladelet	-		2		2	
Straight-truncated bladelet	5		1		6	
Straight-truncated retouched bladelet	2		1		3	
Straight-truncated backed bladelet	5		-		5	
Straight bi-truncated retouched bladelet	2		-		2	
Straight bi-truncated backed bladelet	6		1		7	
Convex-truncated bladelet	2		-		2	
Convex-truncated backed bladelet	1		1		2	
Convex bi-truncated bladelet	1		-		1	
Various backed bladelets	-		1		1	
Broken backed bladelets	28		11		39	
<b>Sub-total</b>	<b>376</b>	<b>31.0</b>	<b>253</b>	<b>25.3</b>	<b>629</b>	<b>28.4</b>

	<i>Plot XX D</i>		<i>Plot XX F</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N%</i>	
<i>Geometric Microliths</i>						
Isosceles triangle	1		1		2	
Rectangle	1		-		1	
Helwan rectangle	-		1		1	
Trapeze	4		2		6	
Lunate	43		26		69	
Helwan lunate	179		101		280	
<b>Sub-total</b>	<b>228</b>	<b>18.8</b>	<b>131</b>	<b>13.1</b>	<b>359</b>	<b>16.2</b>

*Notches & Denticulates*

Piece with small notch	11		12		23	
Piece with large notch	28		32		60	
Piece with notches	68		46		114	
Denticulated piece	48		55		103	
<b>Sub-total</b>	<b>155</b>	<b>12.7</b>	<b>145</b>	<b>14.5</b>	<b>300</b>	<b>13.5</b>

*Various Tools*

Scaled piece	10		4		14	
Retouched flake	22		28		50	
Helwan-retouched flake	2		1		3	
Backed flake	7		1		8	
Drill	11		12		23	
Borer	21		8		29	
Pick	4		7		11	
Biface	1		1		2	
Battered piece	8		5		13	
Varia	9		1		10	
<b>Sub-total</b>	<b>95</b>	<b>7.8</b>	<b>68</b>	<b>6.8</b>	<b>163</b>	<b>7.4</b>
<b>Total</b>	<b>1215</b>	<b>100.0</b>	<b>1000</b>	<b>100.0</b>	<b>2215</b>	<b>100.0</b>

**Table 3.** Wadi Hammeh 27. Basalt tools of Natufian Phase I.  
[C. =complete, F. =fragment].

	<i>XX D</i>		<i>XX E</i>		<i>XX F</i>		<i>XX G</i>		<i>Total</i>	
	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>
Mortar	-	1	-	1	-	-	-	-	-	2
Pestle	3	9	2	-	6	6	-	-	11	15
Grinding stone	6	2	-	-	4	1	1	-	11	3
Hammerstone	2	1	-	-	-	2	-	-	2	3
Bowl	1	16	-	1	-	5	-	-	1	22
Miniature bowl	2	2	-	1	-	2	-	-	2	5
Plate	-	-	-	1	2	1	-	-	2	2
Grooved plaque	-	1	-	-	-	1	-	-	-	2
<b>Total</b>	<b>14</b>	<b>32</b>	<b>2</b>	<b>4</b>	<b>12</b>	<b>18</b>	<b>1</b>	<b>-</b>	<b>29</b>	<b>54</b>

**Table 4.** Wadi Hammeh 27. Limestone tools of Natufian Phase I.

	<i>XX D</i>		<i>XX E</i>		<i>XX F</i>		<i>XX G</i>		<i>Total</i>	
	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>
Mortar	-	-	-	-	1	-	-	-	1	-
Pestle	-	-	-	-	-	1	-	-	-	1
Grinding stone	2	-	-	-	-	-	-	-	2	-
Hammerstone	2	-	-	-	3	2	-	-	5	2
Anvil	-	1	-	-	-	-	-	-	-	1
Shaft straightener	-	-	-	-	-	1	-	-	-	1
Miniature bowl	-	-	-	1	1	1	-	-	1	2
Plate	-	-	-	1	-	2	1	-	1	3
Incised plaque	1	-	-	-	1	-	-	-	2	-
Incised pebble	-	-	-	-	2	-	1	-	3	-
Incised piece	-	5	-	-	-	-	-	-	-	5
<b>Total</b>	<b>5</b>	<b>6</b>	<b>-</b>	<b>2</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>-</b>	<b>15</b>	<b>15</b>

**Table 5.** Wadi Hammeh 27. Bone tools of Natufian Phase I.

	<i>XX D</i>		<i>XX E</i>		<i>XX F</i>		<i>XX G</i>		<i>Total</i>	
	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>	<i>C.</i>	<i>F.</i>
Point	4	21	-	1	2	41	-	-	6	63
“Gorget”	-	2	-	-	-	-	-	-	-	2
Bead	7	-	2	-	8	-	-	-	17	-
Bead in preparation	-	5	-	2	-	2	-	-	-	9
Pendant	4	1	-	1	2	6	-	-	6	8
Sickle haft	-	-	1	-	4	5	-	-	5	5
<b>Total</b>	<b>15</b>	<b>29</b>	<b>3</b>	<b>4</b>	<b>16</b>	<b>54</b>	<b>-</b>	<b>-</b>	<b>34</b>	<b>87</b>

Retouched tool frequencies, compared to total lithics numbers from both plots, are similarly low; 1.70 per cent for XX D and 1.79 per cent for XX F. A wide variety of scrapers on blades, flakes and chunks occur. Burins are particularly numerous and consist of a range of truncation types, dihedral types, multiple mixed burins, and burins made on a natural edge. Scrapers and burins are predominantly made on flake blanks. From the point of view of size a dichotomy exists between these flake tools and the many small tools made on bladelet blanks. Blade tools are few.

Helwan-retouched and inverse-retouched bladelets dominate the microlith category. Various other combinations of truncations and retouch modes are applied to bladelets. Geometric microliths consist mainly of lunates, where Helwan-retouched lunates account for 80 per cent of the total lunate sample (N=349). A smaller number of massive tools such as choppers, picks, bifaces and denticulates are made on cobbles and chunks.

Tallies of all basalt and limestone artefacts catalogued from Phase I are given in tables 3 and 4. Most common amongst the ground basalt artefacts are pestles and grindstones. These types recur less commonly in limestone, in which material there are also larger numbers of incised and drilled artefacts of uncertain use. Several small plaques and limestone chunks are incised with complex geometric motifs.

A diverse bone tool industry known mostly from fragmentary examples has been recovered (Table 5). Most common are bone points; ornaments include tubular bone beads, beads made on gazelle podial elements, and pierced pendants. The major artefactual find of the 1984/85 season was the discovery of five virtually complete bone sickle hafts (Fig. 2), along with five haft fragments which were associated with the XXF structure in Natufian Phase I. (More haft fragments were also found in the earlier phases). The complete specimens range in style from narrow, straight hafts to broad scimitar-shaped ones. They all have central hafting slots with V-shaped sections, which range from two millimetres (Fig. 2.3) to six millimetres wide

(Fig. 2.1). The width of the hafting groove is not always positively correlated with the absolute size of the artefact.

Poorly preserved faunal remains have nevertheless yielded a diverse taxonomic list which includes large and small mammals, birds, reptiles, crustaceans and molluscs (the following list includes all phases of the site): *Equus* sp., *Sus scrofa*, *Bos primigenius*, *Ovis/Capra* sp., *Capra* sp., *Gazella* sp., *Cervus elaphus*, *Dama mesopotamica*, *Capreolus capreolus*, *Canis lupus*, *Vulpes vulpes*, *Felis* sp., *Lepus capensis*, *Aves*, *Testudo* sp., *Potamon potamon*, *Dentalium vulgare* and *Melanopsis praemorsa*.

Botanical samples have been recovered each season by flotation (again the following includes all phases): *Quercus* sp., *Hordeum spontaneum*, *Chenopodium* sp., *Bromus* sp., *Echinochloa* sp., *Stipa* sp., *Cuscuta* sp., *Trifolium* sp., *Dodder* sp., and specimens of the families *Caryophyllaceae*, *Cruciferae* and *Leguminosae*. Two groups of seeds which await definite identifications resemble seeds of the genera *Avena* sp. and *Aegilops* sp. (pers. comm. S.M. Colledge 1985).

During the 1984/85 season human bones were noticed eroding from Natufian occupation deposits exposed in the westerly cliff face of the site. A rescue operation was promptly carried out which succeeded in salvaging the remaining contents of an eroded pit burial (Bourke in *PJ 2 Appendix 3*). Bone scatters representing at least three mature individuals had been laid in a small pit cut into the travertine. Skulls and various long bones were intermingled and some of the bones had been rubbed with red ochre, indicating that previously exposed bones of a number of individuals had been buried. Grave goods included two large chunks of red ochre, and a dentalium necklace made up of 27 fragments, which was found bunched under one of the mandibles.

Several human bone fragments have also been found in the occupation fill of plot XX D. These number a patella, part of an infant femur and a burnt cranial fragment.

(P. C. E.)

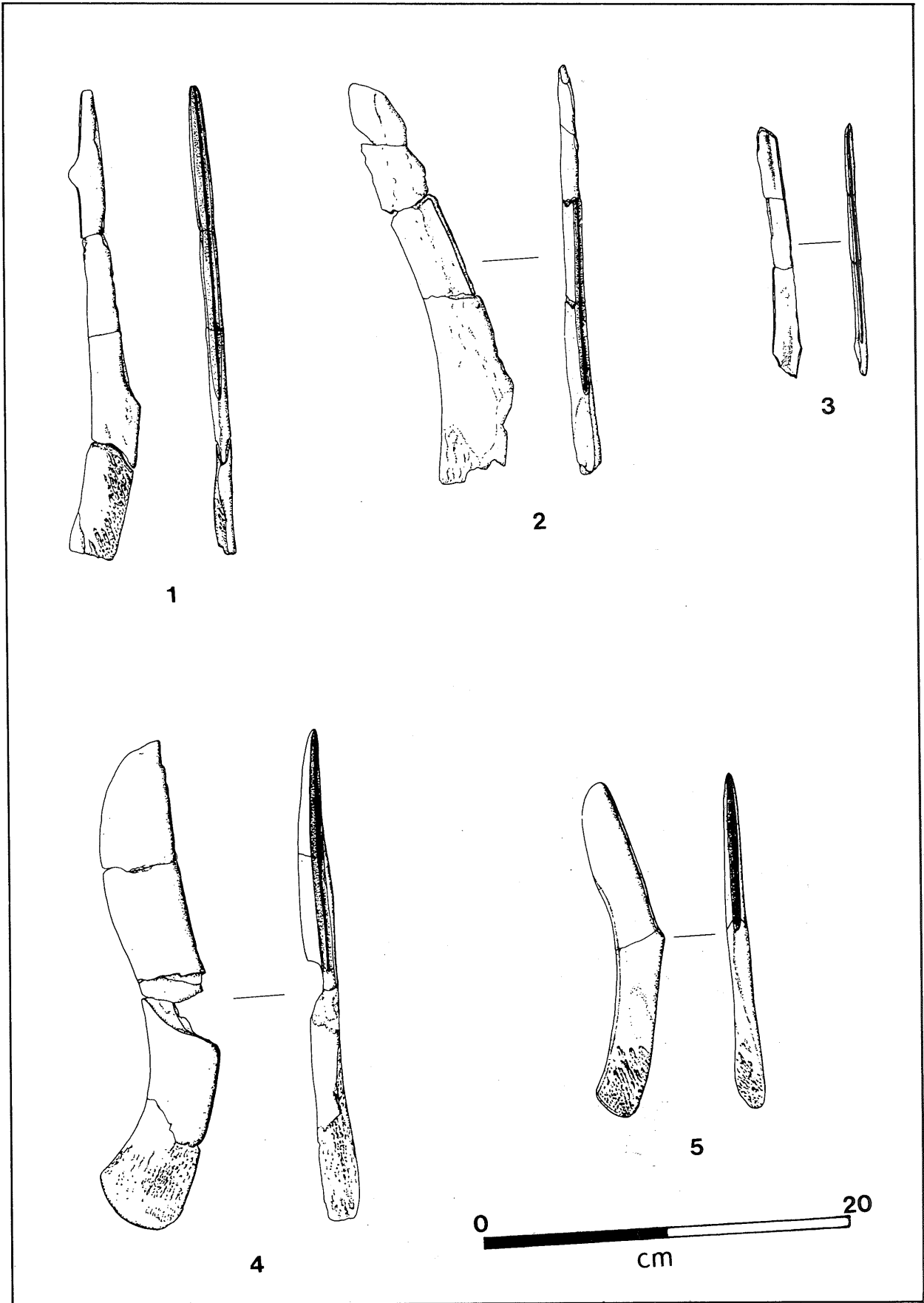


Fig. 2. Bone sickle hafts from Natufian Phase I, Wadi Ḥammeh 27.

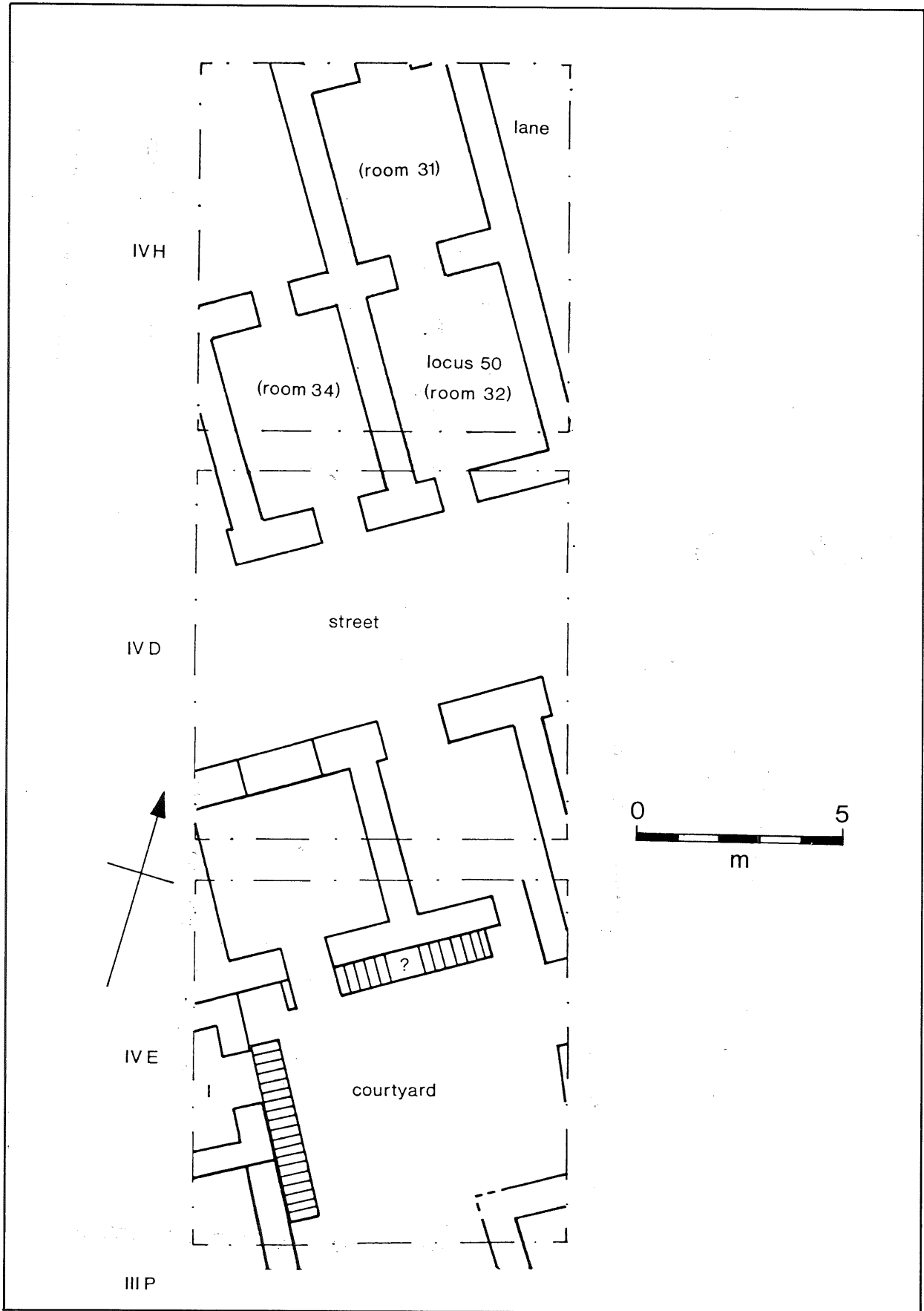


Fig. 3. Schematic plan of Area IV plots H, D, and E in the Byzantine Period (late Sixth/early Seventh Centuries A.D.).



THE E. B. IV TOMBS IN THE WADI ḤAMMAH  
(AREA XXXI)

An important part of the 1985 season's work was the excavation of numerous EB IV tombs in the Wadi Ḥammeh. Although these were noted in the Petocz-Villiers survey of 1982, the increased activity of tomb robbing in the immediate area posed a grave threat.

The tombs were of three basic types:

- 1) bell-shaped pit tombs,
- 2) dromos tombs,
- 3) shaft tombs.

The most common form of E. B. tombs in Area XXXI are simple bell-shaped pits

close to the surface. Some contained no pots, others had more than forty. Most, however, contained less than ten. The two examples of dromos tombs found in this cemetery are entered by a passage from the west; they contained no pottery. The one shaft tomb excavated also produced pottery.

All of the excavated tombs were severely affected by wash and silting, and as a result the burials were in very poor condition.<sup>4</sup>

(A. W. McN.)

### The Iron Age and Terminal Late Bronze Age

Deposits dating from these periods were removed from plots IVE, IIIP and IIIN. All three presented considerable problems because of both human and natural damage — e. g. pits, gullies, and foundation trenches — to the strata being excavated. In brief, the plots produced evidence of the following.

#### Plot IV E

Damage to the Early Iron and terminal Late Bronze Age deposits was caused by a large Late Iron Age gully or depression cutting through the trench from east to west. Occasional fragments of Iron Age houses survived; in the western sector of the trench in particular a dogleg alleway divided two rooms with intact floors. In general the stone footings of the walls were roughly built and narrow with mud-brick superstructures. Below the Early Iron strata, walls of the final phase of the Late Bronze Age appeared. These in turn had been damaged by the Late Iron Age gully,

but the surviving stone footings and paving indicate a larger room (which extended into III P) than those of the succeeding period.

#### Plot III P.

Here the 1985 excavations began with the removal of a limited area of Byzantine deposits (6th Century A.D.). Below these deposits a series of complex Hellenistic strata were uncovered. Unfortunately the Byzantine buildings had entirely destroyed any contemporary occupation surfaces with these strata. Thus the Hellenistic phase in III P consisted solely of wash levels in gullies into which were sunk deep footings of stout stone walls. Material from the gullies and foundation trenches included Eastern Sigillata A, moulded grey ware, imported amphora ware, local storage jar ware. This pottery points to a construction date in the late 2nd or 1st Century B.C. In the S.E. corner of III P a Late Roman period pit over 6m deep produced a wealth of Roman pottery, mainly of the 3rd Century A.D., and

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4. A detailed report on the tombs and their contents is planned for the next Preliminary Report. See also *PJ* 2, ch. 3.

a considerable number of small finds, including a gaming die and a bone or ivory flute.

### Plot III N.

This trench was reopened for a brief period to finish off the excavation of the transitional L.B.-E.I. phase left incom-

plete last year. Although a complex of pits cut from the Late Iron Age phase makes correlation of floors and surfaces extremely difficult, the phase appears now to be successfully isolated.

(A. W. McN.)

## AREA V, THE EAST CHURCH

Excavation of the East Church was completed on 18 Feb 1985. The digging was concentrated at the eastern end of the basilica, where the overburden was up to 5 m. deep. Although the church was extensively robbed in antiquity and finally destroyed in the earthquake of 747 A.D., a full plan has now been recovered with sufficient evidence to allow a reconstruction of the church in its heyday.

### The Church: Its Layout and Decoration

The 1985 excavations confirmed, amended and refined the overall plan and decoration of the church as proposed in the preliminary publication (*ADAJ* XXIX 1985). The plan is basilical with a projecting semicircular central nave and inscribed apses. The northern and southern walls each had two doors.

The eastern end of the church, which stands to a maximum height of 4.50m. without a trace of springing for the hemidomes, is interesting in that it was provided with five glazed and iron-barred windows — one each in the north and south apses and three in the central apse. These were arcuated.

The sanctuary, raised 0.40m. above the body of the church, projected further into the nave than the aisles. Along its edge ran a marble screen, finely carved in relief and with floral and Greek key motifs. This chancel screen, apparently a part of the original furnishings, survived, possibly in a damaged state until the final destruction in the mid-8th Century. Within the southwest angle of the nave sanctuary traces of five holes probably indicate the

site of the auro. The altar, of which no trace remains, presumably stood above the reliquary. Around the eastern wall of the central apse was the sunthronon, a bench *ca.* 1.00m. high with three narrow steps; at its central point were three deeper steps leading to a raised seat.

The decoration of the walls and hemidomes is now reasonably clear. The sunthronon and the walls of the whole church had a veneer of rectangular panels alternatively of white and purple marble with some black slate. Above the veneer was painted plaster, with decorations of geometric architectural and sub-floral motifs in green, yellow, red and black on white ground — non-figurative subjects be it noted. This plaster rose to the top of the walls and presumably to the springing of the hemidomes. The best preserved sector of plaster came from a voussoir of the north aisle east doorway — three panels, one with a leaf/palm design, one from which the design was lost, and one with a **column base and shaft**. **In the hemidomes were mosaics of coloured glass and stone tesserae; these were probably figured. Among the colours gold, light green and blue are glass, pink and red, white and black are stone (mainly marble).**

The aisle floors were paved in opus sectile with a reticulated pattern of marble and a roseate (haematitic) limestone tiles, while on the floor of the nave were rectangular slabs of marble. In the sanctuary the apses were paved with a radiating fan pattern of tiles; the remainder had a pattern of roundels with eight-point stars.

During the 1985 season three capitals with crosses were unearthed, each one dif-

ferent. The sanctuary reveal plaster capitals evidently merited crosses, as did the capitals at the NW and SW corners of the nave sanctuary.

Elements of the sanctuary show signs of reworking or restoration. Portions of the screen were apparently recemented and the bases of two of the columns have been chipped away and set up on a crude pedestal to give them the requisite height to bear the column shafts (both these occurrences may indicate either the reuse of classical bases and column shafts or of a remodeling of the sanctuary).

It remains uncertain how the roof of the church was constructed and supported. The absence of voussoir blocks from along the stylobates indicates only that the colonnades were trabeated in the final phase; however for aesthetic reasons it seems unlikely that the original slender (0.50 m diameter) columns would have supported an arcade. An architrave seems more probable. It was suggested in *PJ 1* (1982, p. 114) that the stumpy columns found beside the stylobate bases had originally belonged to a clerestorey colonnade. This remains a possibility: proof still lacks. Without this knowledge it is an open question whether the tiled roof was broken above the stylobates to continue at a lower level above the aisles or whether the roof had a continuous, unbroken slope from the roof tree to the north and south walls.

The church was well-lit with natural light at the east end. The windows, later blocked, were glazed and barred. The glazing consisted of large rectangular panes of clear green tinged glass. All the fragments of window glass were extremely small; the larger reconstructed piece indicates that the individual panes were greater than 0.18 sq. metres. Since no lead was found (although this useful metal may have been robbed out after the abandonment of the church), it is possible that the panes were fitted into wooden frames, which were dowelled into the sills, jambs and lintels of the windows. The windows were barred inside the glass with a stout iron grill consisting of two upright and four horizontal bars.

The evidence for windows in the south, north and west walls is tenuous. Only the lintel by the west door in the north wall gives a hint that the building might have had windows in the long walls. The effect, one suspects, would have been similar to the northern Syrian churches. On the lintel the horizontal fasciae turn upwards at the east end as if to frame a window. Against this, it seems unlikely that a window would have been located so close to the doorway so that the east jamb would have served both doorway and window.

### *Chronology*

The major events relating to the church — construction, flourish, robbing, reconstruction and destruction — are clear. However the chronology and precise sequence of vicissitudes which the East Church underwent remain less than certain. The following is thus tentative (see *PJ 2* ch. 8 for a more detailed study of the church's chronology).

1) It was suggested in the first interim report (*PJ 1* 1982, p. 119) that the church was probably constructed in the late 5th Century A.D. The bases for this suggestion was the style of the pilaster capitals on the responds and the nave to aisles width ratio. In 1985 further broad indications of date were gleaned from coin finds. In the groove into which the sanctuary screen had been set was found a hoard of fifteen minims. Six more were scattered nearby. All are extremely worn, and preliminary cleaning has not enabled identification. However, size and fabric suggest a 5th Century date. The purpose of depositing a small number of low-value bronze coins is uncertain, but it is probable that, since minims were replaced by the reformed currency of Anastasius from 498 on for a decade or two, this hoard would have been deposited at latest by 525 A.D. The possibility of a total rebuilding of the sanctuary must be considered, but no stratigraphic evidence for it has been found, nor is there any ceramic, glass or other evidence from the deposits in Area V for occupation before the late 6th Century A.D. In other words, the minims constitute the earliest broadly dat-

able Christian period material with a *t. a. q.* of ca. 525 A.D. The suggested date of the last quarter of the 5th Century thus remains, in my view, most likely for the construction of the church.

2) It is unclear how long the church remained in use in its full splendour. At some point major structural elements, such as the roof, rooftiles and the main order of columns and the fittings — tiles, wall slabs and sanctuary furnishings — were stripped from it. Before this event there may or may not have been a collapse, either by earthquake or by the hand of man. Again, the dating evidence is tenuous and unclear. Interpretable pottery directly related to this event was not found, but outside the west door of the south wall in a small sondage a deposit which contained sweepings from the church — window glass, pottery and fragmentary glass utensils — was found. The pottery appears to date to the late 6th Century or perhaps the early 7th Century A.D.; therefore the cleaning of the church after the collapse (or stripping) probably occurred between about 575 and 625 A.D.

Support for this proposition may be adduced from the group of four folles found in the mixed soil and cement between the cement base of the south apse floor and the cement which held the veneer slabs of the west face of the sanctuary. These coins were probably lost in the robbing of the church and sealed within the second phase surface. The coins are all of Justin II (565-578 A.D.) and date to his first (567/8), third (567/8), sixth (570/1) and twelfth (577/8) regnal years. A fifth follis of Justin II was found in the body of the church. (The only other post-reform coin from Area V is a half-follis of Justin I or Justinian).

Among the identifiable Byzantine post-reform coins at Pella the preponderance of coins of Justin II is marked. The same phenomenon has been observed at Jerash (S. Bassett pers. comm.). It appears likely that the three Byzantine provinces of Palestina received large quantities of copper coins from the mints of Nicomedia and Constantinople during the reign of Justin II, and it is probable, judging by the comparatively

low numbers of his immediate successors' coins that these coins circulated for a long time. The presence of Justin II folles in the apparent infilling of the second phase floor is thus only vague indication of the date of reconstruction.

It seems unlikely that the church would have been robbed out or stripped in the period of Christian control. In the improbable event of the basilica being desanctified, the reliquary would surely have been removed. The two events, then, which may be associated with the despoiling are:

1. The Persian/Sasanian incursion of 614 A.D.
2. The aftermath of the Islamic conquest (A.H. 13/635 A.D.) and the eclipse of Christianity's politico-economic primacy in the Pella district.

The former may have caused destruction, but is unlikely to have given rise to the systematic removal of such elements as the wall veneer and floor tiles and slabs, let alone the columns. It is more probable that the stripping may relate to the Islamic political domination over a Christian population with a declining social status, which in order to meet the poll- and land-tax obligations may have been compelled to remove and sell the firmments and furnishings and original marble columns. On historical grounds it is probable that this event would have occurred in the second half of the 7th Century or first half of the 8th. An alternative explanation for the stripping of the church is simply the decay of Christianity at Pella. But the preservation *in situ* of the reliquary until the destruction argues strongly against this.

The stripping of the church preceded or was preceded by a major collapse or demolition. Obviously to remove the original columns would have entailed the demolition — or succeeded the collapse — of the whole superstructure of the building (i.e. roof and putative clerestory). Since the floortiles were preserved as originally laid in few places (particularly along the south wall), it seems probable that the debris of the demolition/collapse overlay the original floor so deeply in places that it was impossible to remove the tiles easily.

3) Reconstruction. The major structural aspect of the reconstruction was the use of stumpy limestone columns about 2m high, possibly originally part of an upper (clerestorey) colonade, on the original ground floor bases. The positions in which these column shafts fell in the final destruction show clearly that they were actually placed on the marble bases. The effect must have been aesthetically appalling, and the combined base-shaft-capital height of less than 3m, along with the absence of large quantities of tiles in the nave, make it unlikely that the central part of the church was roofed at this period. Presumably the sanctuary with its hemidomes was still roofed, and the quantity and location of roof tiles recovered suggests that the aisles at least were roofed.

Other major efforts to restore the church included the laying of a simple orange packed mud floor over the cement basis of the original flooring; the blocking

of the east end windows; and in all probability the blocking of the eastern doors in the north and south walls and the western door in the south wall. Finally, the repaving of most of the area around the reliquary container dates to this phase of restoration, as does the retiling of the eastern side of the atrium. It remains impossible to date this event precisely: our only indications are the pottery and the coins. The former is sporadic and generally not diagnostic; what can be dated is late 7th and 8th Century. The coins only provide a rough *terminus post quem*.

4) Destruction. Again there is no precise chronological information for the final destruction of the church. However the extent of the disaster and the subsequent total abandonment parallels the dated devastation of the Pella settlement in the late Umayyad period and in all probability dates to 747 A.D.

(A. W. McN.)

#### AREA XI B

A 12 × 12m. trench high on the north-eastern slope of Tell el-Husn was reopened in 1985 with the aim of excavating to the footings of the putative Hellenistic-Roman citadel wall, and of revealing a longer stretch of the wall on the west. The first aim was achieved in a small area: the wall was not as deeply founded as had been hoped, and the strata in front of the wall (the northern, down-slope side) had been badly disturbed by the collapse and wash.

In view of the small area excavated to the natural pebbles of the tell (3 × 1.50m) the chronology of XIB must be considered tentative. The wall may have been built in the 1st Century A.D. to judge by fragments of Herodian lamps and 1st Century A.D.

pottery. However, a considerable number of mould-made glass fragments and sherds of 1st Century B.C. indicate late Hellenistic-Early Roman activity in the vicinity — possibly related to the structure in XI A.

The western extension of XI B was closed early in the new year to enable staff to catalogue the pottery backlog. Although the continuation of the wall in eastern XIB was at that stage not exposed, a rubble-built wall appeared to have been constructed along its line, with a surface to the south. The deposits in this trench contained material of the 1st Century B.C. and 1st Century A.D.

(A. W. McN.)

#### ROMAN AND LATE ROMAN REMAINS

Three weeks of excavation in plot XXIII A produced our first stratified occupation levels of the Late Roman period. A small rectangular structure with stone

walls underlay the Byzantine occupation. Potsherds indicated a date in the late 3rd Century. This evidence confirms the presence of Late Roman dwellings at Pella,

first seen in plots IIIE and IIIQ.

Under the Late Roman occupation a thick destruction layer was found overlying a good surface. It was expected that this would be Late Hellenistic, equivalent to that exposed in 1984, but preliminary analysis of the sherds indicates a rather different assemblage; another Late Hellenistic surface may well underlie it.

In Area VI two Roman period tombs were fully excavated. Tomb 64, located and partially excavated in the previous season, was re-opened and fully cleared during December. It is the usual Roman type, with dromos leading into a chamber, off which run eleven loculi - two of these were extremely wide, occupying the space of two normal loculi; one of these wide loculi had a longitudinal grave over which were placed large, lightly baked capping tiles.

The bones recovered from Tomb 64 are the best preserved yet found at Pella. Some thirty individuals were interred; the state of preservation of material threw interesting light on mortuary practices. Among the evidence:

1. The use of beds of laurel, box or bay leaves on which to place the bodies.
2. The use of wooden coffins, at least one

of which contained several bodies.

3. Plaster was used in one coffin, poured over the winding sheet (a hessian-type cloth) of the first corpse buried.

The lamps indicate that the tomb was in use from the 1st to the 4th Centuries A.D. Glass (small jars, flasks, unguentaria) date to the 2nd and 3rd Centuries. The tomb appears to have been looted in Byzantine times.

The second Roman tomb excavated in 1985, no. 56, lies in the hillock of Mugharat al-Khalas (Area VI). It is architecturally the finest tomb found by the Australian team at Pella, consisting of a large well-cut chamber with a central pillar of natural rock; in the chamber were six sarcophagi, and off it ran eleven loculi. Access was by a vaulted dromos built of ashlar masonry with a decorated *cyma recta* string-course. Although the door was locked, entry had been forced above the lintel and the whole tomb systematically plundered. A few fragmentary pots and glass vessels and one intact juglet show that the tomb was in use in the 3rd Century A.D. at least.

(A. W. McN.)

## LOCKING DEVICES FROM ROMAN TOMBS AT PELLA

Excavations in Area VI at the southern base of Tell el-Husn have located a number of tombs dating to the Roman Period (see above, also *PJ 1*, p. 84-101). To date three stone locking devices, either complete or in fragments, have been recovered from tombs 24, 52, and 56 in this area, all of which are rock-cut chamber tombs of around the 3rd Century A.D. The locking device from tomb 56 (Registration No. 80060) was *in situ* and closed (i.e. locked) when discovered. This showed very clearly how the lock was assembled. Other tombs in the vicinity also had locks, but these are now missing.

### Description of the Tomb Doorways

The Roman tomb doorways at Pella consist of five major architectural ele-

ments, all of dressed limestone. The lintel was mortised on its left hand side to take the upper projecting pivot of the door. The threshold, also mortised on the left hand side, received the bottom pivot of the stone door. The two door jambs consist of a single block on the left side and two separate blocks on the right, within and between which was placed the locking device with its external access hole for a key. The massive, one piece, stone-slab door opened inwards, and was equipped with a socket on its right-hand vertical edge to receive the lock bolt when closed. An external metal handle facilitated the closing of the heavy door.

### The Lock

The locking device within the right-hand jamb of the tomb doorways consists of

two worked stone elements, an oblong bolt and a guiding lock case. The bolt was pierced by several holes which contained the traces of bronze pins, and has a boss on one side (Pl. XXVII). The boss fitted into a groove cut into the bolt-guiding slot of the square lock case, and stopped the bolt moving too far in either the open or closed position, or from falling out. A hole on one

side of the lock case, which was aligned with a key hole in the right door jamb, permitted external access for the key device. The bolt could only be moved from the locked position by use of the key. The form and functional nature of these keys is currently under investigation.

(J.H.)

#### THE BYZANTINE PERIOD IN PLOT IVH.

(Figs. 3-5, Pl. XXVI)

A room which had been partially excavated in 1980 was reopened for excavation in 1985. Dug as IVH locus 50, it forms part of the Umayyad complex described as the "North Building" in Area IV (*PJ 1* 1982, p.132, Fig.28 and room 32 of end-plate 2). This complex has been retained and conserved, but investigation into the preceding Byzantine levels was continued in Area IV Plots D and E, and Area III Plot P, providing a good sequence of occupation phases throughout the Sixth and early Seventh Centuries A.D. It was established that the Umayyad structures have their origin in the Late Byzantine period. Room 32 had been left in a state of collapse at some stage; it was certainly never used by the latest Umayyad occupants of the North Building. The purpose of the 1985 investigation was to determine when the collapse had occurred, and how it related to the five Late Byzantine phases observed in IVD, IVE and IIIP (see *PJ 2* ch.8).

The room (Fig. 3) is situated on the north side of the east-west Byzantine street, whose function ceased when it was blocked by a wall during the Umayyad alterations to the buildings. These alterations had included the complete razing of structures south-west of the North Building and the street, and the creation of a large courtyard in their place (in IVD, IVE and IIIP). The southern wall of room 32 was rebuilt at this time, blocking the doorway to the street. The collapsed remains inside

the room were not removed and the room was rendered inaccessible. The trench for the rebuilding of the wall was cut into the collapse deposit. While the extant deposits in IVD, IVE and IIIP shed little light on the reasons for this extensive demolition and rebuilding programme, the evidence from room 32 makes it clear that there had been large-scale structural collapse. A coin-dated corpus of pottery and other objects associated with the collapse and the preceding occupation layers, has provided a solid terminus for the Byzantine sequence of architectural phases.

#### Stratigraphy and Finds (Figs. 4-5, Tables 6-7, Pl. XXVI)

Three phases of occupation are revealed in room 32, followed by a fourth phase of abandonment after the collapse (Pl. XXVI, 1). While the room to the west (room 34) was similarly abandoned, loci to the east (a laneway), north (room 31), and south (the former street), were cleared and continued to be used.

Phase i)<sup>5</sup>. This phase is represented by the original surface (50.8) associated with use of the room opening south onto the street and north into room 31. The deposit may originally have been a packing beneath a removed pavement, as a number of fragmentary mudstone slabs formed part of the surface. However an overall blackening of this surface, and the overlying traces of occupational detritus (50.7) show

5. Phase numbers are localized to this sequence and are not applicable to the broader Byzantine phasing

sequence outlined in *PJ 2*, ch.8. Phases are numbered from the earliest to the latest in this report.

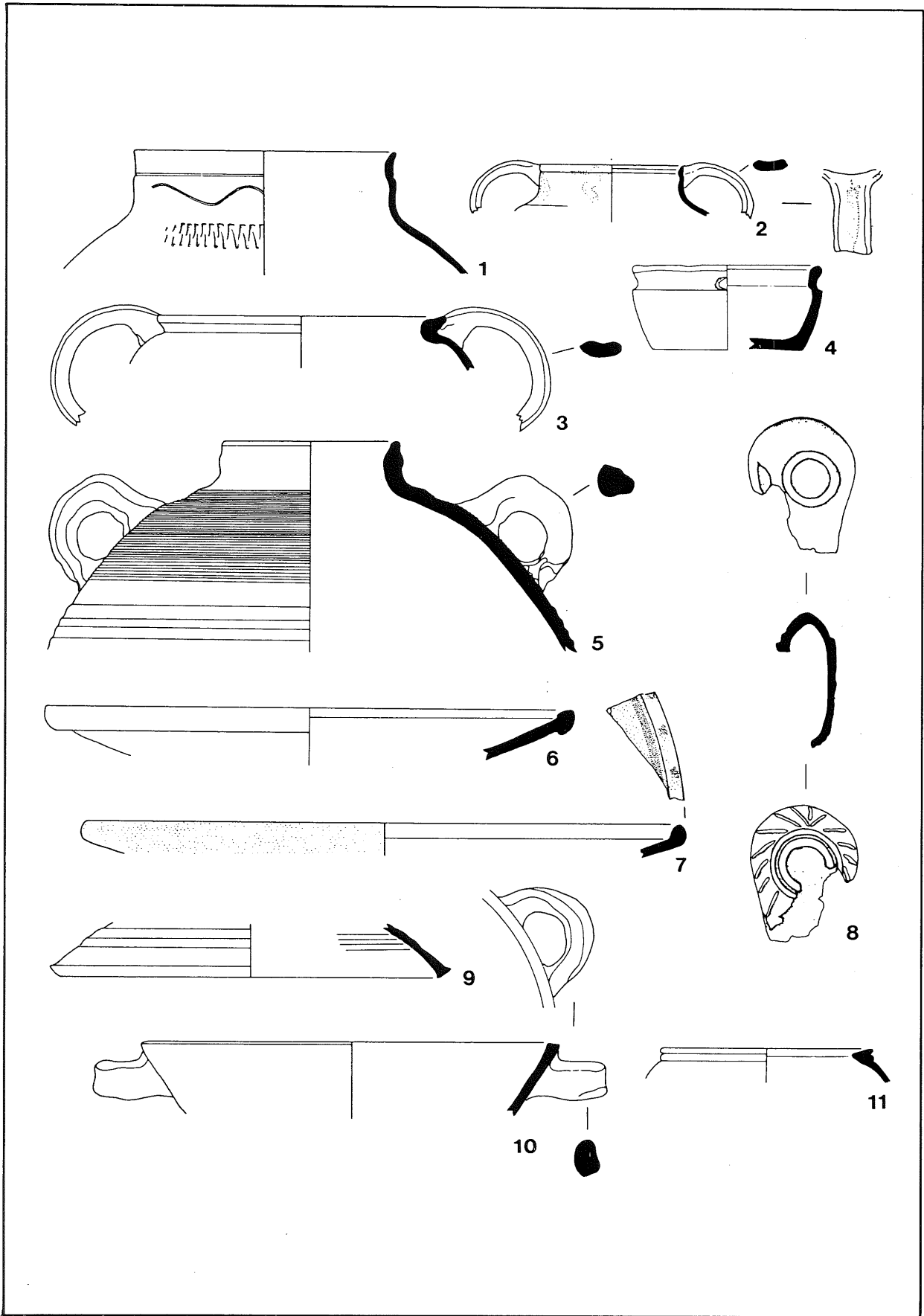


Fig. 4. Selection of terminal Byzantine pottery from IVH locus 50 (occupation).



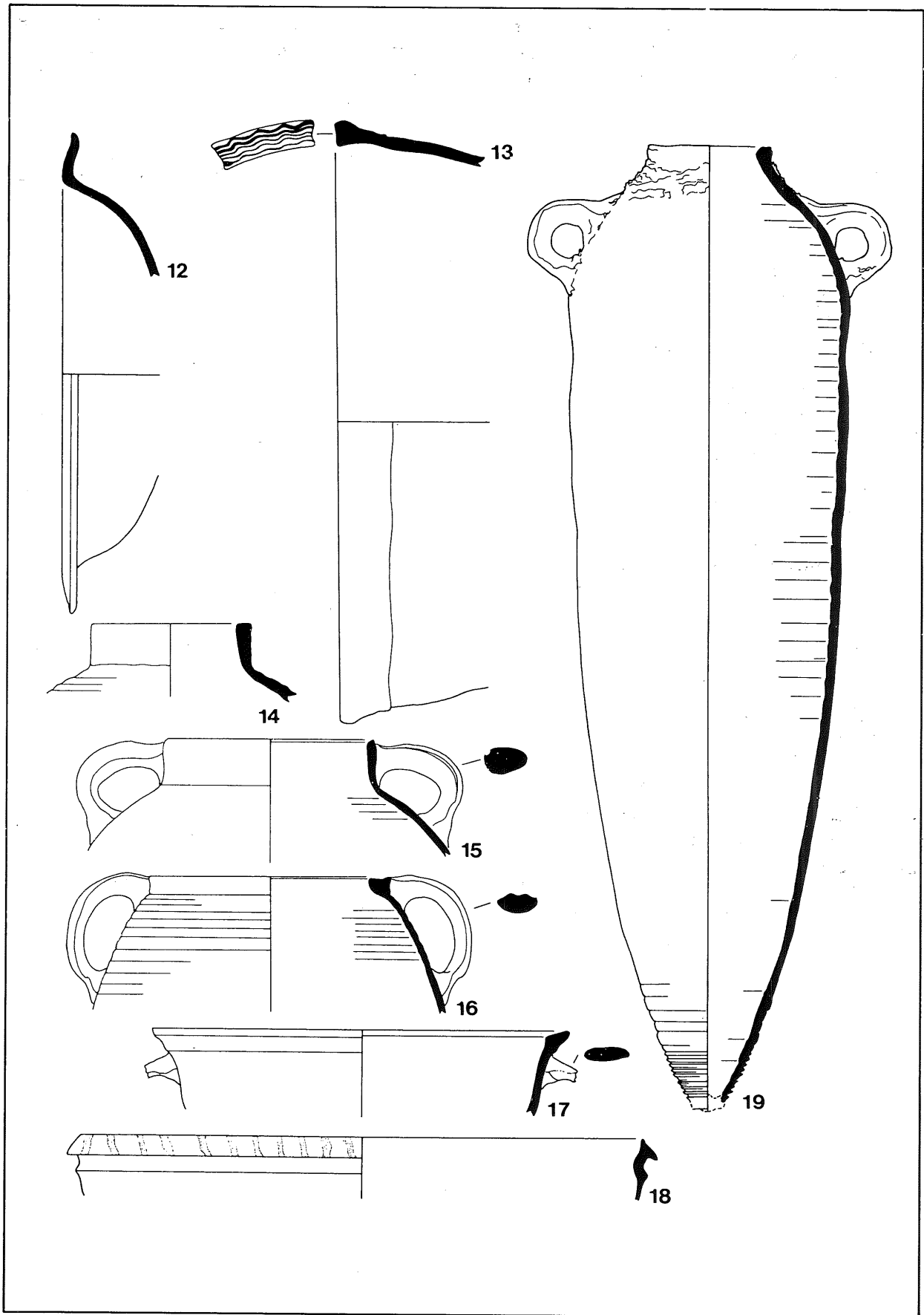


Fig. 5. Selection of terminal Byzantine pottery from IVH locus 50 (collapse).

that it also served as a floor. An earlier wall can be seen emerging in the western half of the locus, immediately beneath 50.8.

Phase ii). Subsequently the room seems to have been used to house animals. The surface is very soft fine brown above a soft fine yellow organic deposit. An identical deposit was found in IVE locus 5/14, which had associated feed bins. The size of the doorway and the lack of any built feed-bins or obvious tethering facilities, suggests the accommodation of small animals.

Phase iii). A period of disuse is indicated by mounds of domestic rubbish thrown into the centre and the north west of the room (50.3, 50.4). They contained charcoal, carbonized seeds (lentil, olive, wheat and barley)<sup>6</sup>, and a large quantity of animal bones, especially small bird, within a soft organic earth. In the south and partially blocking the doorway, was a mound of earth covered and lensed with thick ash (50.5).

Phase iv). The room collapsed, filling with a piśe-like deposit containing ash lenses and large stone tumble (50.1, 50.2). The east wall collapsed neatly inwards to the west, retaining the line of the wall face. The other walls remained standing roughly 0.50m above the surface. Within this deposit (but not *in situ* on the floor), were the remains of numerous "Gaza" amphorae (Pl. XXVI, 2), a cooking jar, a

grey krater and other vessels that were probably complete (Fig. 5, descriptions in Table 7). Also notable were the imported fine ware bowls classified by John Hayes as African Red Slip Form 105, and Cypriot Red Slip Form 9C (Hayes 1972, p.166, 379), and fragments of the painted pictorial bowls known as "Jerash Bowls". The evidence suggests an upper storey with piśe walls that was occupied at the time of the collapse. Many utilitarian objects were found: nails of various sizes, a bronze cup-hook, iron rings, an iron clamp, arrow-heads (which preserve impressions of wood in the corrosion), knife blades, a pick head and an object resembling the blade of a hoe. A good quantity of glass was retrieved, none identifiable as Umayyad, but best set within the late Sixth/early Seventh Centuries<sup>7</sup>. More useful however was the recovery of a follis of Heraclius, minted at Constantinople in 615/616 A.D. (R.N. 80164, from IVH 50.1).

It is reasonable to assume that the collapse occurred not long after this date and the damage could perhaps be attributed to the Islamic Conquest of the town in 635 A.D. The sources do not state whether this involved any extensive damage (Smith 1973, p.69-74) and the archaeological evidence is equivocal. Earthquakes were endemic in the area during this decade (Amiran 1950, p.226) and the collapse pattern of the east wall of room 32 suggests this as a likely cause.

(P.M.W.)

6. Identified by Sue Colledge.

7. Information kindly supplied by Margaret O'Hea.

**Table 6.** Byzantine Pottery Descriptions for Fig. 4.

1. CN 1645. IVH 50.3. Jar. Well mixed, finely gritty fabric with occasional small lime grits. Fired hard. Red core, light red interior, light reddish-brown exterior. Incised wavy line on neck, chiselled decoration on shoulder.
2. CN 10278. IVH 50.3. Jar. Ware as 1. Red core and interior, grey exterior. Thin white paint on neck and handle.
3. CN 10282. IVH 50.3. Jar. Well mixed with many small grits including quartz and lime. Fired hard. Reddish-brown to reddish-yellow core, reddish-grey interior, grey exterior.
4. CN 10277. IVH 50.3. Bowl. Finely mixed with some fine dark grits and occasional lime grits. Fired hard. Light brown core reddish-yellow interior and exterior.
5. CN 10268. IVH 50.3 Jar. Well mixed, very sandy fabric with scatter of fine lime grits. Fired medium-soft. Red core, light brown interior, pink exterior.
6. CN 102686. IVH 50.6. Bowl. Imported African Red Slip ware, Form 104 (Hayes 1972, p.166). Abnormal colouring: reddish-yellow throughout, slip very eroded.
7. CN 10276. IVH 50.3. Bowl. Well mixed, with some small and occasionally medium lime grits. Fired hard. Red core, very pale brown slip interior and exterior. Weak red painted decoration.
8. CN 10319. IVH 50.7. Lamp. Finely mixed with some fine dark grits and occasional lime grits. Fired soft. Buff throughout.
9. CN 10281. IVH 50.3. Lid. Ware as 3. Yellowish-red core, reddish-brown interior and exterior.
10. CN 10284. IVH 50.4. Bowl. Ware as 3. Reddish-yellow core, greyish-brown interior, pinkish-grey exterior.
11. CN 2526. IVH 50.3. Jar. Ware as 3. Yellowish-red to grey core, grey interior and exterior.

**Table 7.** Byzantine Pottery Descriptions for Fig. 5.

12. CN 10287. IVD/H B2. Bowl. Very finely mixed, dense fabric with tiny grits. Fired hard. Slipped surface with flat burnishing-tool bands on exterior. Red and grey core, reddish-yellow interior and exterior.
13. CN 10261. IVH 50.1. Bowl. Very well mixed, dense fabric with many small and some medium grits. Fired hard, slurried surface. Reddish-yellow to light yellowish-brown core, yellowish-red interior and exterior. Incised comb decoration on rim top.
14. CN 10273. IVH 50.2. Jar. Very well mixed, with small and occasional medium lime grits. Fired very hard. Light brown core, dark grey interior and exterior. Type generally has white painted decoration of swirls and strokes on body.
15. CN 10265. IVH 50.2. Jar. Ware as 3. Reddish-brown throughout.
16. CN 10266. IVH 50.2. Jar. Ware as 3. Reddish-yellow core and interior, dark brown exterior.
17. CN 10270. IVH 50.2. Bowl. Ware as 4. Slurried surface. Pink to light brown core, light brown interior and exterior.
18. CN 10290. IVH 50.10. Bowl. Ware as 1. Red and grey core, light reddish-brown interior, brown exterior. Thin white painted stripes on rim.
19. CN 10318. IVH 50.1,2. Amphora of "Gaza" type. Ware of average mix, with many fine and some medium to large grey and lime grits. Fired medium-hard. Reddish-yellow core and interior, pinkish-brown exterior. Characteristic rough "applied" clay adhering to neck/shoulder.

## THE ABBASID OCCUPATION IN AREA XXIX

(Figs. 6-9, Tables 8-10)

Area XXIX was assigned to a large ruin located in the Wadi el-Khandaq ('the ditch') to the north-east of the main tell (Khirbet Faḥl) and immediately north of the tell — Abu Khas saddle. The Wadi el-Khandaq is a broad, dry valley susceptible to severe flooding after rain. It drains a small area of gently sloping fields and mounds to the east, and is bound on the north by series of yellow clay *tulul*. Because of the flooding and the clayey nature of the silt, the valley floor is both stoney and unfertile. Only in a good (*i. e.* wet) year do the northern and eastern flanks of the wadi produce a viable grain crop. There is, however, a marked improvement in the soil quality further west to the north of the main tell. Here the slope of the valley floor lessens and most of the silt originates from the northern slope of the mound. Olive trees have recently been planted in this area. At the western end of the wadi lie the houses of northern Ṭabaqat Faḥl.

The architectural remains of Area XXIX, although extensive, have not claimed the attention of either travellers or archaeologists in the past. The ruins apparently escaped Schumacher's notice, probably because they were obscured by the luxuriant spring growth of 1887. However Richmond, during the course of his 1933 survey, noticed a number of wall lines in the Wadi Khandaq, although the single open-ended rectangular structure depicted in his map is very inaccurate (Richmond 1934, pl. V). It is possible that he thought these remains represented another church or monastery (thus the plain rectangular shape), a view that has been recently offered by a number of visitors to Pella.

Closer inspection of the surface remains indicates that the structure is a complex and probably not a church. Although details are not clear, it is possible to trace the substantial but rough stone walls of two large rectangular buildings standing adjacent to each other. In both cases the long axis of the buildings run in an east-west

direction. The Western Building lies to the south of its eastern counterpart, and is flanked with smaller columned structures to its north and west. Both buildings appear to have the same internal layout of a central court surrounded by rooms on sections of all four sides. No gateways are identifiable from the surface features.

Both the unusual plan of these buildings and the scatter of Early Islamic pottery in and around them posed many questions concerning their function and the date of their construction and use. It was therefore decided to probe the Eastern Building in four locations with the following intentions:

1. To clarify the layout of the Eastern Building and define its relationship with the Western Building.
2. To establish the date of that building's construction and periods of use and the connection between this chronology and that revealed by the excavations in Area IV.
3. To determine the use(s) to which the building was put from its construction to its abandonment/destruction.

### The Excavations and their Results

*Plot XXIXA. (Excavated by S. L. Bassett)*

Plot XXIXA was a 6 by 2 metre sounding designed to section across the western wall of the Eastern Building. Roughly half of this plot was inside building, while the other half was located over a passage-like strip between the two buildings. This plot has the honour of being the only one in the history of excavations at Pella that was both started and finished on the same day. Yet in spite of its short life this plot revealed some significant architectural details. Inside the wall the removal of 40 to 50 cms of topsoil exposed a regular stone paving — perhaps a courtyard — over the whole locus, while outside the wall no surface could be satisfactorily identified. Af-

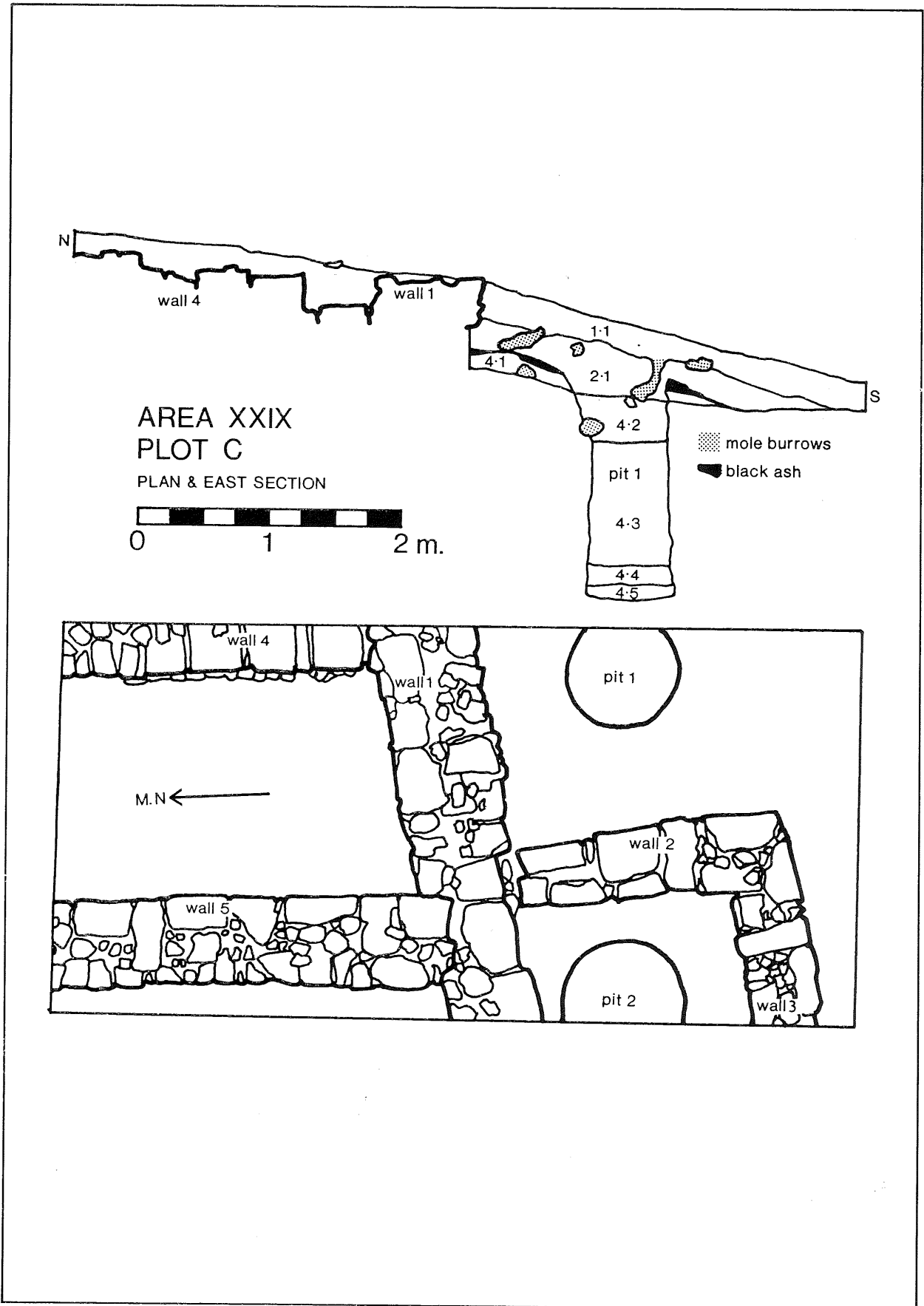


Fig. 6. Plan and east section of Plot XXIXC.

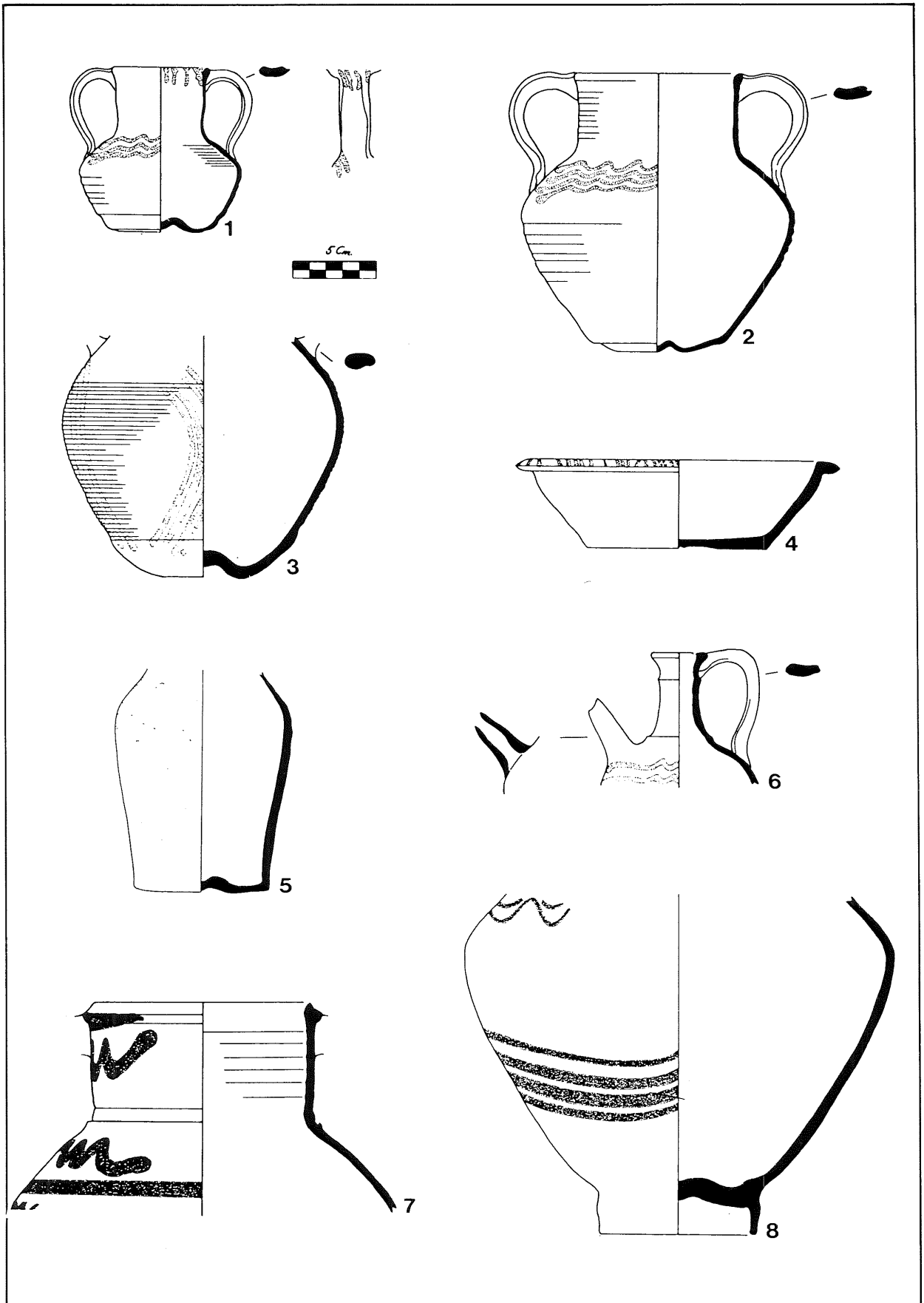


Fig. 7. Abbasid Pottery from Area XXIX (see table 8 for descriptions).

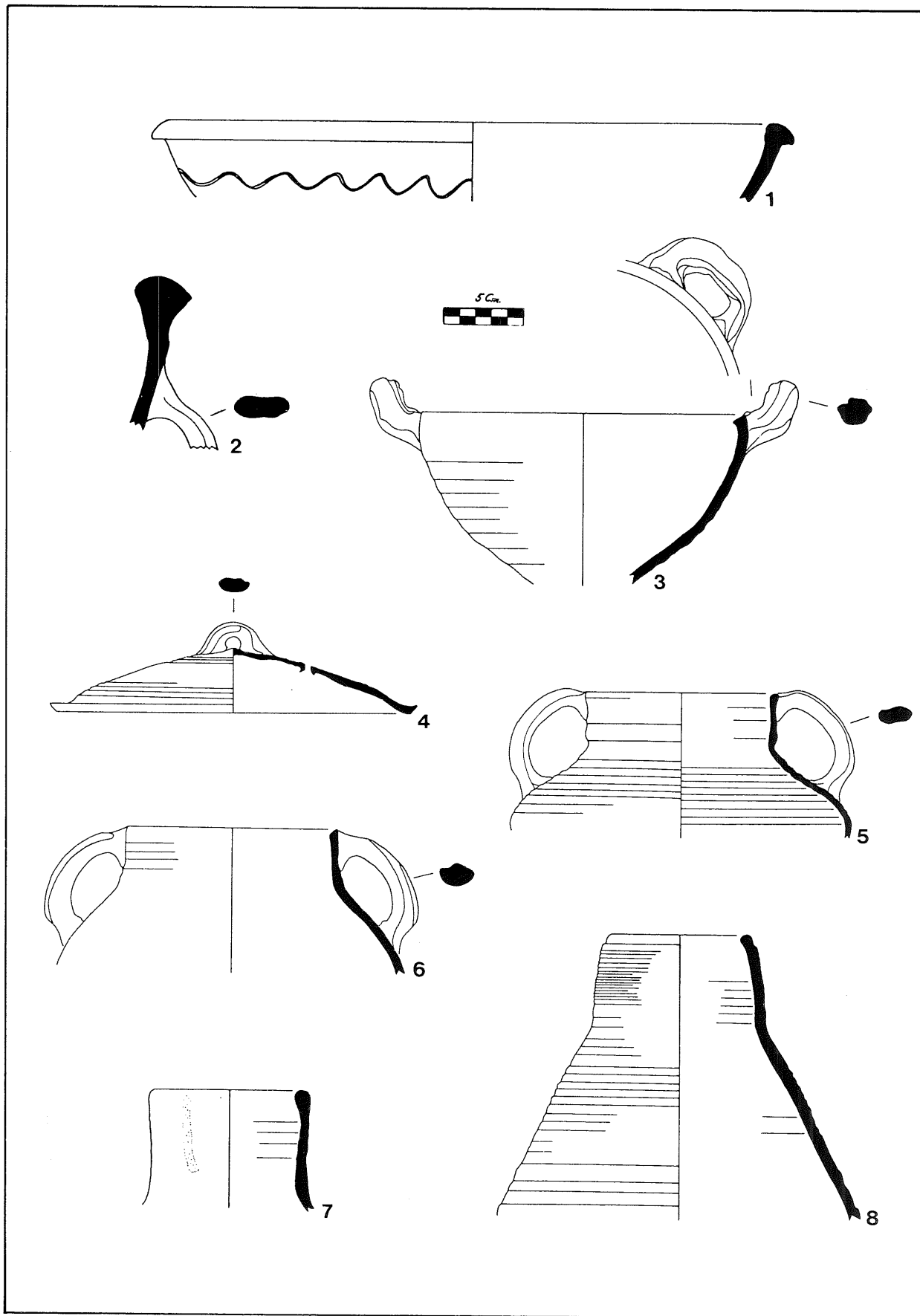


Fig. 8. Abbasid Pottery from Area XXIX (see table 9).

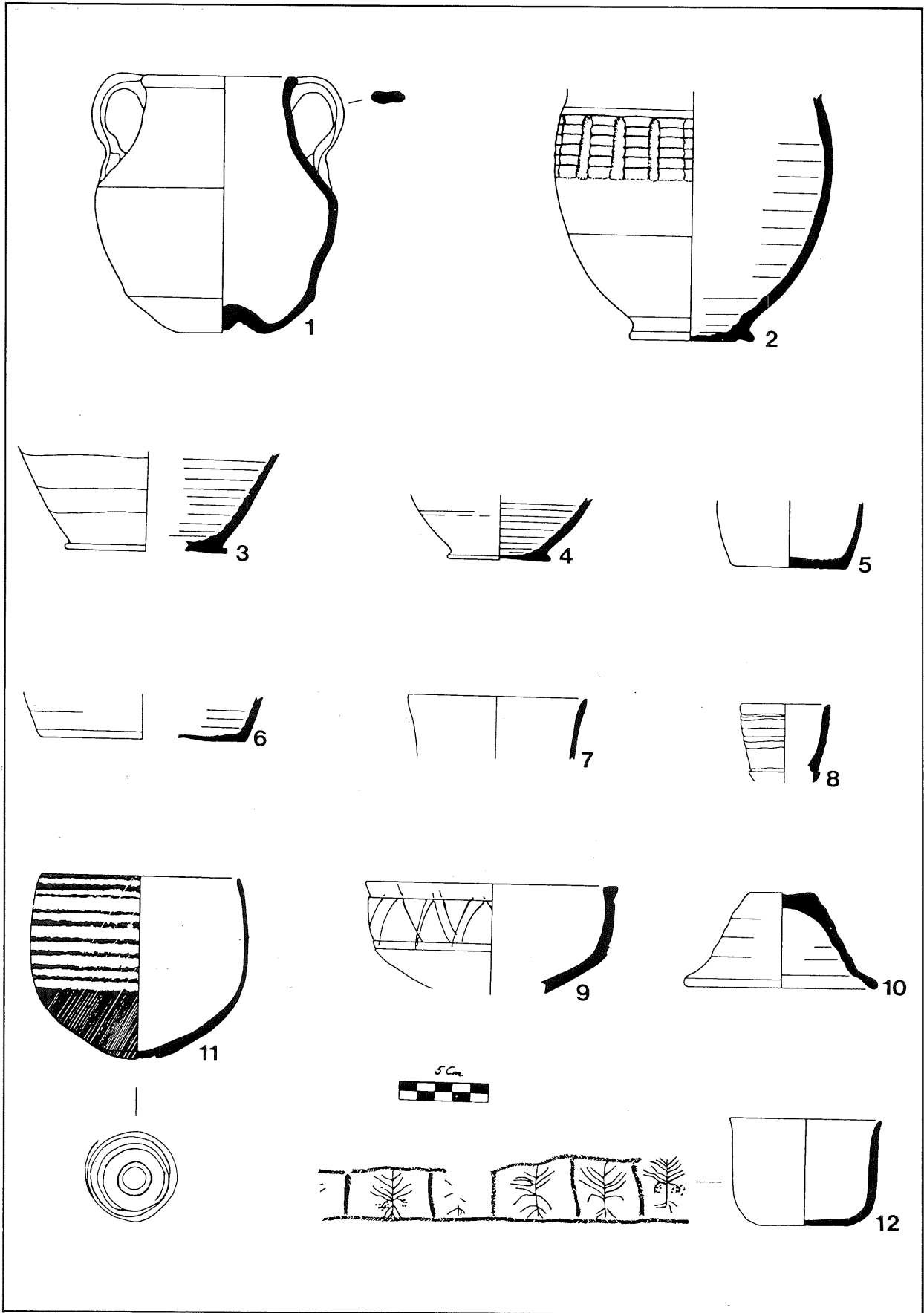


Fig. 9. Abbasid Pottery from Area XXIX (see table 10).



**Table 8.** Abbasid Pottery Descriptions for Fig. 7.

*Ware: White Paint on 'Metallic' Terracotta*  
(*PJ I*, p.146).

1. CN 10251. XXIXC 5.3. Complete.  
Form: small, thin-walled jar with two vertical 'strap' handles, tall neck, carinated body and dimple base.  
Temper: small and occasionally medium-sized white limestone grits.  
Dec: white paint in bands of wavy lines on shoulder and vertical multiple strokes on handle and rim.  
Col: core & int. - 2.5YR 5/6  
ext. - patchy 2.5YR 5/6 to 7.5YR 7/4  
Ils: *PJ I*, pl. 144.6 [mid 2nd/8th Century].
2. CN 10260. XXIXC 6.2. Complete.  
Form: as previous, but larger in size.  
Temper: many small white limestone and grey chert grits.  
Dec: white paint in bands of wavy lines on shoulder.  
Col: core - N 5/0  
int. - 7.5YR 6/4  
ext. - patchy 2.5YR 5/8 to N 5/0  
Ils: *PJ I*; pl. 144.4 [mid 2nd/8th Century].  
Walmsley 1986, Fig. 2.1 [2nd quarter of the 8th Century A.D.]  
Clark & Falkner 1986, Fig. 21.8 [8th Century Umayyad].  
Schaefer 1986, Fig. 12.2 [700-750 A.D.]  
Baramki 1944, Fig. 3.5 (no paint) [prior to A.D. 746/7].
3. CN 10241. XXIXC 4.5. Body only; neck and handles missing.  
Form: thin-walled jar with two handles and dimple base.  
Temper: small white limestone and grey chert grits with occasional larger white limestone grits.  
Dec: white paint in vertical, curving parallel bands.  
Col: core - 2.5YR 6/8  
ext. - patchy 5YR 6/3 to 5YR 5/1
4. CN 10247. XXIXC 5.2. Largely complete.  
Form: shallow bowl with flat base and out-folded rim.  
Temper: small to medium-sized white limestone and quartz-like grits.  
Dec: multiple strokes of white paint on rim top.  
Col: core - N 4/0  
int. - 2.5YR 6/6  
ext. - patchy 2.5YR 6/6 to 7.5YR 6/4 to N 5/0  
Ils: Walmsley 1986, Fig. 1.1 [2nd quarter of the 8th century A.D.]
5. CN 10250. XXIXC 5.3. Body only; neck and handle missing.  
Form: spoutless, wide-necked jug (see parallels) with slender body and dimple base.  
Temper: many small to medium-sized white limestone, grey chert and quartz-like grits.  
Dec: white paint in freely applied bands of wavy lines.  
Col: core - N 4/0  
int. & ext. - 2.5YR 5/8  
Ils: *PJ I*, pl. 144.2 [mid 2nd/8th Century].  
Clark (1986), pl. XIV.27 [1st half of the 8th Century].
6. CN 10235. XXIXC 4.4. Upper half of vessel.  
Form: spouted jug with single vertical 'strap' handle between rim and shoulder; narrow-neck and squat body.  
Temper: many small and some medium-sized white limestone and grey chert grits.  
Dec: white paint in wavy lines on body and horizontal strokes on handle (the latter not shown in the drawing).  
Col: core & int. - 2.5YR 6/8  
ext. - patchy 2.5YR 6/8 to 10YR 6/1 to N 5/0  
Ils: *PJ I*, pl. 144.3 [mid 2nd/8th Century].  
Schaefer 1986, Fig. 12.3 (no paint) [700-750 A.D.].  
Gawlikowski 1986, pl. X [Umayyad, 7th & 8th centuries].  
Clark & Falkner 1986, Fig. 21.9 [8th Century Umayyad].

*Ware: Purplish-brown Paint on Light Fabric (PJ 1, p.147).*

7. CN 10257. XXIXC 6.2. Large sherd from upper part of vessel.  
Form: tall-necked jar; having an enlarged pointed rim with vestiges of two handles, pointed ridge at junction of neck and body, and finger 'rilling' on inside of neck.  
Temper: mostly small but some medium-sized white limestone and grey chert grits.  
Dec: red-brown paint of straight and wavy lines.  
Col: core & int. - 7.5YR 7/4  
ext. - fabric 10YR 8/3, paint 10R 4/3  
lls: *PJ 1*, pl.143.1 [mid 2nd/8th Century].  
Homès-Fredericq & Franken 1984, p.239 no. 782 [Umayyad, mid 8th Century].
8. CN 10256. XXIXC 5.3. Body only; neck and handles missing.  
Form: wide-bodied jar with pronounced shoulder and high ring base; neck very likely as previous vessel.  
Temper: small to medium-sized white limestone, grey chert and miscellaneous other grits.  
Dec: red-brown paint of horizontal parallel lines, slightly curved on lower body and wavy on upper body.  
Col: core - 10YR 7/3  
int. - 5YR 7/3  
ext. - fabric 10YR 7/3, paint 2.5YR 4/4  
lls: *PJ 1*, pl.140.12, 143.1 [ca. A.D.720, mid 2nd/8th century respectively].

**Table 9.** Abbasid Pottery Descriptions for Fig. 8.

*Ware: Dark Grey Fabric (PJ 1, p.149)*

1. CN 10243. XXIXC 2.1. Large rim sherd.  
Form: basin with enlarged rim.  
Temper: mostly small but a few medium to large quartz and limestone inclusions.  
Dec: shallow-incised combed wavy pattern ext.  
Col: N 5/0 throughout.
  2. CN 10220. XXIXB 2.1. Rim-handle sherd.  
Form: basin with external vertical loop handle(s) and enlarged rim with pointed lip ext. Rim diameter 55 cm.  
Temper: copious small to medium sand grits.  
Dec: none apparent.  
Col: N 5/0 throughout.  
lls: *PJ 1*, pl.148.5 [mid 2nd/8th Century].
- Ware: Coarse 'Cooking-pot' Fabric (PJ 1, p.148).*
3. CN 10238. XXIXC 4.4. Large rim-handle sherd.  
Form: cooking bowl with horizontal loop handle, sharply upturned and grooved on top; shallow ribbing on body ext.  
Temper: copious small quartz grits.  
Dec: none.  
Col: blackened through use.  
lls: Smith 1973, p.230 [Umayyad].  
*PJ 1*, pl.140.7, 143.2 [ca. A.D. 720, mid 2nd/8th century respectively].  
Tzaferis 1983, p.33, Fig.6.9 [Periods II-III, 614-mid 8th Century].
  4. CN 10259. XXIXC 6.2. Complete.  
Form: lid of a cooking bowl with central loop handle and single offset steam hole.  
Temper: as previous entry.  
Dec: none.  
Col: core & int. - 2.5YR 4/6  
ext. - 5YR 5/1  
lls: *PJ 1*, pl.143.2 [mid 2nd/8th Century].  
Schaefer 1986, p.431, Fig.14.14 [700-750 A.D.].  
Tzaferis 1983, p.33, Fig. 6.14 [Periods II-III, 614-mid 8th Century].
  5. CN 10255. XXIXC 5.3. Large rim-handle sherd.  
Form: tall-necked cooking jar with flat-sided ovoid handles from rim to shoulder; ribbed neck and body.

Temper: copious small to medium quartz grits.

Dec: none.

Col: 7.5YR 4/4 throughout.

lls: *PJ 1*, pl. 145.1 [mid 2nd/8th Century].

Clark & Falkner 1986, Fig. 21.13 [8th Century Umayyad].

Homès-Fredericq & Franken 1984, p. 235-6 [Abbasid, probably 9th Century according to Gawlikowski 1986, p. 117].

Tzaferis 1983, p. 33, Fig. 6.5-7 [Period II, 614-late 7th/early 8th Century].

6. CN 10233. XXIXC 4.3. Large rim-handle sherd.  
Form: necked cooking jar with vertical handles and very shallow body-ribbing.  
Temper: as previous entry.  
Dec: none.  
Col: core - 5YR 4/4  
int. - N 4/0  
ext. - 5YR 5/2  
lls: Clark & Falkner 1986, Fig. 21.12 [8th Century Umayyad].  
Schaefer 1986, Fig. 13.6 [700-750 A.D.].  
*PJ 1*, pl. 140.1, 147.11 [ca. A.D. 720, mid 2nd/8th century respectively].  
Walmsley 1986, Fig. 2.3. [2nd quarter of the 8th Century A.D.].

*Ware: White Paint on a Grey/Brown-surfaced Fabric (PJ 1, p. 149, where this pottery is inaccurately labelled 'Brown slipped, white painted ware')*

7. CN 10234. XXIXC 4.3. Rim sherd.  
Form: tall neck of bag-shaped amphora (see parallels).  
Temper: many small grey chert, white limestone, and red-orange 'grog' grits.  
Dec: white painted vertical stripe ext.  
Col: core - 5YR 6/6  
int. - 5YR 7/6  
ext. - 5YR 7/3  
lls: Baramki 1944, Fig. 3.3 [mid 8th Century?]

*Ware: Pale Cream Fabric (PJ 1, p. 147).*

8. CN 10237. XXIXC 4.4. Rim and body

section.

Form: tall-necked jar with deep groove below rim ext, fine ribbing on neck and broader ribbing on body.

Temper: small grey chert and red-brown 'grog' grits.

Dec: none.

Col: core - 10YR 7/4

int. - 5YR 7/3

ext. - 5YR 8/3

**Table 10.** Abbasid Pottery Descriptions for Fig. 9.

*Ware: Pale Cream Fabric (cont.).*

1. CN 10252. XXIXC 5.3. Complete.  
Form: wide-mouthed jar with two flat-sectioned vertical handles between rim and shoulder; concave lower body; thick dimple base.  
Temper: small and occasionally medium-sized grey chert inclusions.  
Dec: none.  
Col: 5Y 8/4 throughout.  
lls: *PJ 1*, pl. 140.4, pl. 145.5 [ca. A.D. 720, mid 2nd/8th Century respectively].
2. CN 10242. XXIXC 4.5. Body & base.  
Form: thin-bodied jar, with finger 'rilling' marks int.; fine ribbing on mid-body ext. evenly interrupted by broad vertical finger grooves; panned base and lower body.  
Temper: many small grey chert and white limestone grits, occasional larger limestone pieces.  
Dec: ribbing/finger grooves on mid-body.  
Col: core - 2.5Y 7/4  
int. & ext. - 2.5Y 8/2  
lls: see next entry for similar base-types.
3. CN 10228. XXIXC 4.1. Base.  
Form: thin-bodied jar with pronounced finger 'rilling' marks int. and knife trimming marks ext. & under base.  
Temper: many small grey chert grits; aerated fabric.  
Dec: none apparent  
Col: core - 10YR 7/4  
int. & ext. - 10YR 8/3  
lls: de Vaux & Steve 1950, pl. C nos.

- 5-7 [10th-11th Century].  
 Sauer 1982, p.333, Fig.5 [Abbasid  
 ca. 750-969 A.D.].  
 Tzaferis 1983, p.34, Fig.8.16  
 [Phase III, towards the mid 8th  
 Century].  
 Meyers *et al.* 1976, Fig.7.22.56  
 [Stratum VI, 640-850 A.D.].
4. CN 10229. XXIXC 4.1. Base.  
 Form: as previous entry.  
 Temper: as previous entry.  
 Dec: none apparent.  
 Col: core - 10YR 7/4  
 int. & ext. - 2.5Y 8/2  
 Ils: as previous, especially:  
 Tzaferis 1983, p.34, Fig.8.17  
 [Phase III, towards the mid 8th  
 Century].  
 Meyers *et al.* 1976, Fig.7.22.57  
 [Stratum VI, 640-850 A.D.].
5. CN 10232. XXIXC 4.3. Base.  
 Form: thin-bodied jar with knife-  
 trimmed flat base.  
 Temper: same as CN 10242 (table  
 10.2).  
 Dec: none apparent.  
 Col: 5Y 7/3 throughout.  
 Ils: Tzaferis 1983, p.34, Fig.8.19  
 [Phase III, towards the mid 8th  
 Century].  
 Meyers *et al.* 1976, Fig.7.22.52  
 [Stratum V-VI, late 5th - mid 9th  
 Century A.D.].
6. CN 10277. XXIXC 3.3. Base.  
 Form: as previous entry, but mild fin-  
 ger 'rilling' int.  
 Temper: as previous entry.  
 Dec: none apparent.  
 Col: 2.5Y 8/2 throughout.  
 Ils: Meyers *et al.* 1976, Fig.7.22.45  
 [Stratum V-VI, late 5th-mid 9th  
 Century A.D.].
7. CN 10218. XXIXB 2.1. Rim Sherd.  
 Form: thinly thrown jar with outplayed  
 neck; body perhaps as CN 10242  
 (Table 10.2).  
 Temper: small and occasionally  
 medium-sized grey chert grits; aerated  
 fabric.  
 Dec: none apparent.  
 Col: 5Y 7/2 throughout.  
 Ils: Meyers *et al.* 1976, p.219-220,  
 Fig.7.19.21 [Stratum VI, 640-  
 850 A.D.].
8. CN 10230. XXIXC 4.2. Rim/neck.  
 Form: flask; irregular grooves on neck  
 ext.  
 Temper: same as CN 10242 (Table 10.2)  
 Dec: none apparent.  
 Col: 2.5Y 8/2 throughout.  
 Ils: Tzaferis 1983, p.34, Fig.8.22  
 [Phase III, towards the mid 8th  
 Century].
9. CN 10236. XXIXC 4.4. Large rim/body  
 sherd.  
 Form: deep carinated bowl.  
 Temper: same as previous entry.  
 Dec: incised double zigzag lines within  
 a continuous panel formed by one upper  
 and two lower cut grooves ext.  
 Col: core - 5Y 7/4  
 int. & ext. - 5Y 7/3  
 Ils: *PJ I*, p.148, pl.147.4&5 [possibly  
 post A.D. 746/7].  
 Tzaferis 1983, p.32, Fig. 4.22  
 [Phase III, towards the mid 8th  
 Century].  
 Meyers *et al.* 1976, p.212, Fig.7.  
 18.6 [Stratum VI, 640-850 A.D.,  
 although authors  
 favour 12th Century].
10. CN 10253. XXIXC 5.3. Complete.  
 Form: jar lid with string-cut markings  
 on flat top.  
 Temper: small white limestone and  
 brown (?grog) grits.  
 Dec: none.  
 Col: 2.5Y 8/2 throughout.
- Ware: "Fine Byzantine Ware" (Gichon  
 1974).*
11. CN 10246. XXIXC 5.2. Complete.  
 Form: deep bowl (=cup) with pared and  
 grooved base.  
 Temper: very small white limestone  
 and chert grits.  
 Dec: body between pared base and rim  
 spiral-burnished with the paring knife.  
 Col: core - 7.5YR 7/4  
 int. & ext. - fabric 7.5YR 6/4, bur-  
 nishing 5YR 6/6  
 Ils: Gichon 1974, p.123 [Early Arab,

perhaps 9th c. A.D.].

de Vaux & Steve 1950, p.123-4,  
pl.B nos 1&2 [9th-10th Century  
A.D.].

Schneider 1950, p.116 no.503  
[end of the Byzantine Period and  
the beginning of the Arabic Period  
(p.118)].

Baramki 1944, Fig.7.21 [disturbed  
level].

Saller 1957, p.270 no. 5889 [6th  
to 8th Century A.D.].

*Ware: Incised Fine Terracotta* (later var.  
of *PJ 1*, p.155?).

12. CN 10248. XXIXC 5.2. Largely com-  
plete.

Form: straight-sided cup with slightly  
outsplayed rim.

Temper: many small white limestone  
grits; fabric close to white painted met-  
allic terracotta.

Dec: incised date palms (note date bun-  
ches) within finely 'chiselled' borders  
on smoothed surface ext.

Col: core - 10YR 6/2

int. & ext. - 10YR 5/1

lls: Gawlikowski 1986, pl.XII - but  
white (or red?) painted lines in  
place of incised dec. [late  
Umayyad/Abbasid].

*Abbreviations used in tables 8, 9 and 10*

CN: Catalogue Number from the registra-  
tion book of the pottery type series.

Dec. decoration.

Col. colour (from Munsell colour charts).

int. internal faces.

ext. external faces.

lls: parallels. See text for the significance  
of the parallels quoted. Dates in square  
brackets are those stated in the refer-  
ence. Dual dates are A.H./A.D.

pl. plate.

var. variation.

ter some 50 cms the wall bottomed out and excavation ceased.

*Plot XXIXB. (Excavated by A. G. Walm-sley)*

As with plot XXIXA, this plot was intended to section across a wall of the Eastern Building already visible on the surface. The area chosen for Plot XXIXB was on a highpoint at the northwest corner of the building where, it was surmised, the depth of deposit would have preserved the occupational sequence of the site. For this reason plot XXIXB, which measured 6 m. east-west by 3 m. north-south, was laid out over an inside, rather than outside, wall of the building.

Excavations on either side of the wall revealed an earlier major and a later minor period of occupation separated by a collapse layer of about 45 cms. The occupation levels were represented by various domestic features such as feed bins and a *tabun*, associated floor surfaces, and a number of artefacts. These included an iron dagger blade and a complete ceramic lamp as well as sherds (see below), glass fragments and small pieces of moulded white marble. Bone, especially chicken, was the most common ecofact.

The architectural remains in plot XXIXB consisted of two stone-block and rubble walls. The more substantial Wall 1, some 60 cms wide, was constructed in a foundation trench cut into the streaky white and brown sterile silts that underlie the site. The east face of this wall is a competent construction in which fairly large stone blocks (*i. e.* can be lifted by two men) with roughly dressed outer faces have been laid in even courses on rubble foundations. Snecking was used liberally. In contrast the west face was usually little more than rough packing behind the uneven internal surfaces of the eastern face blocks. Wall 2, in the south baulk, was of poorer quality and, as it abutted Wall 1, later in date.

*Plot XXIXC. (Excavated by S. L. Bassett)*

This plot was a 6 m. (north-south) by 3 m. (east-west) sounding midway along the approximately 34 m. long southern

wall of the Eastern Building. It was envisaged that XXIXC would provide a section either side of the wall, both outside the building (south of the wall) and within it. It was also thought that a *mihrab* would be found here if this building had served as a mosque.

The excavation of plot XXIXC failed to find any evidence for a mosque, but instead exposed a complex arrangement of subsidiary walls with associated floors and features on either side of the main southern wall of the Eastern Building (Fig. 6). A series of floors/occupation levels were identified in the room bound by walls 1, 4, and 5 (locus 3 levels 2-4). Under the lowest of these floors another surface (loc. 3 lev. 5) was exposed which ran under wall 1 and was cut by the footings of wall 4. However this surface abutted walls 5 and 2, placing these two walls chronologically earlier than walls 1 and 4. Walls 2 and 3, which were one continuous construction of rather poor quality, had traces of a white-plastered outer face and the remains of a painted Greek inscription on the east face of the northern end of wall 2.

Unfortunately the construction of wall 1 destroyed the structural relationship between walls 5 and 2/3, and it is therefore uncertain if they were built at the same time. Their poor alignment would suggest otherwise, as would stratigraphical considerations. In the later occupational period (walls 1, 4, and 5, room with floors), walls 2 and 3 were no longer functional. They were dismantled to their lowest course and filled over with ashy earth, probably during the construction of wall 1. This fill around walls 2 and 3 was subsequently cut by two deep rubbish pits which were, therefore, most likely contemporary with the occupation of the room on the other side (north) of wall 1 (Fig. 6, East section). These pits contained a wide range of broken ceramic vessels as well as other artifacts of iron (dagger, nails) stone (limestone box, marble fragments, tesserae) and some glass fragments. Bone (fragmentary — as yet unidentified) was also present.

Thus a provisional three-phase chrono-

logy can be suggested for XXIXC.

1. The original construction, of which only walls 2 and 3 remain. Fragmentary Greek inscription on wall 2 (*in situ* ?); function uncertain.

2. Additions or rebuilding, evidenced by wall 5. Its relationship with walls 2 and 3 is unclear, but these walls were still exposed in this phase (common surface with wall 5).

3. Major reconstruction. Walls 2 and 3 probably destroyed, walls 1 and 4 built, incorporating the already standing wall 5. Note that wall 1 is built around the southern end of wall 5 (Fig. 6). Domestic occupation with living surfaces and rubbish pits.

However it is possible that the walls in phases 1 and 2 were part of the same building, or wall 5 was the original construction with walls 2 and 3 as later additions. Further excavations in this area, planned as part of the Program Grant, may illuminate this problem.

*Plot XXIXD. (Excavated by A. G. Walm-sley)*

Another 6 by 3 metre sounding was put down near a column and wall structure at the eastern end of the Eastern Building. It was thought this could represent a gateway into the compound of the building. However it quickly became apparent that this plot was outside the eastern limits of the building as only levels of redeposited sherds within a gravelly wash were encountered. It was also concluded that the architecture referred to above was the superstructure of a ?Medieval grave, and once no further pottery was being recovered from the wadi wash the plot was immediately abandoned.

### **The Pottery and Other Artifacts from XXIXB and XXIXC**

The bulk of the diagnostic pottery from Area XXIX came from the pits in plot C (see above). This consisted of broken but complete, or near complete, domestic pottery vessels, including small and large jars — some painted in either white or red designs — juglets with white painted decora-

tion, coarse ware cooking jars and bowls with their lids, as well as a variety of other bowls and basins in dark grey, red-orange, or off-white wares. One pit also contained pieces of a yellow, green and purple-brown glazed bowl. In addition a few sherds were recovered from stratified primary deposits in plot B. All of these were from vessels of the same ware and shape as those found in the refuse pits of XXIXC. The other artifacts recovered from plots B and C have already been mentioned (above).

*Comments on the Pottery (Figs. 7-9, Tables 8-10)*

The selection of pottery from plots XXIXB and XXIXC published in this report concentrates on the material from XXIXC pits (see Tables 8 to 10 for the catalogue). A preliminary study of this pottery has identified eight ware subdivisions within the corpus. Both the ware types and the vessel shapes have much in common with the late Umayyad (second quarter of the 8th Century A.D.) ware recovered from the domestic housing complex in Area IV and the Civic Complex of Area XI (*PJ I*, chs 7 & 8), although the appearance of new forms and manufacturing techniques would suggest this corpus is of a post A.D. 747 date.

Fig. 7 (descriptions in Table 8) illustrates examples of two distinctively A.H. 2nd/8th A.D. Century ceramic types. The white painted 'Metallic' Terracotta jars, flat-based bowls, tall jugs and spouted juglets have mid-Eighth Century A.D. parallels in both form and decoration (Fig. 7.1-6, see Table 8 for selected parallels). The large, thin-bodied, ring-based jars (Fig. 7.7&8) decorated in purplish-brown paint on a light fabric do not make an appearance at Pella until the early 8th Century, and only become popular there in the decade or so prior to the A.D. 747 earthquake (*PJ I*, p.156). Thus on the basis of these examples the pottery from the pits in plot XXIXC should not be dated earlier than *ca.* A.D. 715-730.

The hand-made grey ware basins, coarse ware cooking pots and casseroles, and white-painted thin-walled amphora

illustrated in Fig. 8.1-7 are less diagnostic than the previous examples, although the parallels quoted in Table 9, especially those from Jerash and Area IV at Pella, leave little doubt that these vessels belong to the Early Islamic Period. Of particular interest is the cooking jar CN 10255 (Fig. 8.4, Table 9.4), already known at Pella from a late Umayyad context (*PJ 1*, p.148 CN 43). However the discovery of a group of these cooking pots during the excavation of an early Abbasid potters' workshop to the north of the South Decumanus at Jerash suggests that this form remained popular well into the 9th Century A.D. (Homès-Fredericq & Franken 1984, p.235-6 nos 763 & 764; for dating see Gawlikowski 1986, p.117).

Quite outside the ceramic tradition of Umayyad Pella is much of the pottery illustrated in Fig. 9. Although wares are similar to the Umayyad types (Table 10), this cannot be said for both the vessel shapes and their methods of manufacture. The new forms consist of pale cream ware jars with thin walls and a knife-trimmed base (Fig. 9.2-8) and also finely made cups, either burnished with a pared and grooved base or incised (Fig. 9.11-12). The extensive use of a paring knife is characteristic of this pottery, as is the deep finger rilling marks on the inside of the pale cream jars. Incised pale cream ware bowls (Fig. 9.9) are already known from Pella (*PJ 1*, pl. 147.3-5), although their continued absence from the Umayyad destruction levels in both Area IV and Area XI (the Civic Complex) is a potent argument in favour of placing these bowls in the period after the A.D. 747 earthquake (*PJ 1*, p.148).

#### *Dating of the Pottery*

The appearance of new forms amongst the pottery from plots XXIXB and XXIXC, especially the presence of sherds from a yellow, green and purple-brown glazed bowl, would strongly imply a post-Umayyad date for this corpus. This view finds additional support from many of the parallels quoted in Table 10. Particularly noteworthy is the burnished cup with a pared and grooved base (Fig. 9.11), reliably dated at

Abu Ghosh to the 9th and 10th Centuries A.D. (de Vaux & Steve 1950, p.123-4; cf. Gichon 1974, p.123). Furthermore the pale cream ware bowls and jars, with their incised and applied decoration and pared bases respectively, are commonly ascribed to the Abbasid Period. These may have started as early as the end of the 8th Century, but were very frequent in the 9th and 10th Centuries A.D. (de Vaux & Steve 1950, p.127-30; Sauer 1982, p.333; Meyers *et al.* 1976, p.219-20, 232-3). Dissenting views are held by Tzaferis (1983, p.32-5) who dates his "buff ware" bowls, jugs and flasks from Kursi to the early - mid 8th Century, and by Meyers *et al.* (1976, p.212) who prefer a 12th Century date for the incised bowls at Kh. Shema. However the Pella evidence refutes both of these opinions, as both the incised/applied decorated bowls and the pared-base jars in a pale cream ware are not present in either the extensive pottery corpus from the late Umayyad destruction level in Area IV (*PJ 1*, ch.9), or the material from Medieval deposits in Areas II (Smith 1973, p.236-43) and XVII (*PJ 2*).

#### *Conclusions on the Pottery*

The pottery from the pits and occupation levels in plots XXIXB and XXIXC shows an interesting mix of both late Umayyad and 10th-11th Century late Abbasid/Fatimid ceramic traditions (compare, for example, the Umayyad assemblages in Smith 1973 and *PJ 1* with the pre-Crusader material in de Vaux & Steve 1950, p.119-32; see also Sauer 1982, p.330-4). Accordingly this pottery is datable to the intervening period, most probably the very late 8th to mid-9th Centuries A.D. During this time Islamic Pella (Fihl/Fahl) functioned as a capital of a 'qurah' (district) in the *Jund al-Urdunn* (see the contemporary sources of Ibn Khuradadbeh, Ed. de Goeje 1889, p.78.7 and al-Ya'qubi, Ed. de Goeje 1892, p.327.22).

#### *The Significance of Area XXIX*

The discovery of the first well-stratified Abbasid remains at Pella has further



expanded the Islamic cultural history of the Fihl region. Until this season only the 1st/7th and 2nd/8th Centuries and the Mamluk-Early Ottoman Periods were definitely represented in the occupation levels of the site. Hints of an Abbasid presence had been found on the main mound in the form of a post-Umayyad destruction refuse pit in plot IVC and stray surface sherds in IVS (originally thought to be possibly Umayyad — see *PJ 1*, p.148), but these finds lacked confirmation.

The architecture and artefacts from Area XXIX, when taken with the finds from the main mound, indicate a reasonable Abbasid presence at Pella. The existence of a rubbish pit on the main mound suggests associated houses, and there is some architectural evidence for these (e. g.

wall stubs in IIIA). The function of the structure in the Wadi Khandaq remains unclear, although both its size and layout suggests it is more than a mosque. Possibly it served as the market and *khan* of the early Medieval settlement of Fihl, although further excavation is required before the full plan of the complex becomes clear. Also unresolved is the building's date of construction. If the Greek inscription was *in situ*, then the post-Umayyad, even post early 8th Century A. D. date, is unlikely for the original structure. However the tentative Phase 3 could easily be Abbasid. These tantalizing problems must remain unanswered until time and finances permit our return to Area XXIX.

(A. G. W.)

#### A SUMMARY OF OTHER STUDIES AND PROJECTS

The ceramic technologist Mr. Ian Edwards carried out further kiln tests, concentrating his efforts on the heat treatment of flint (a study of considerable importance for the Natufian culture); further studies of clay sources are in train, along with an examination of the ceramic technology of the different periods represented on the site (see *PJ 2*, appendix 10).

Mr. Stephen Bourke has continued work on the human skeletal material, particularly the material from Tombs 64 and 62. The discovery of Natufian skeletal remains on site W.H. 27 has added a new dimension to the study of human beings in the Pella district, expanding the chronological range enormously (see *PJ 2*, appendix 3).

Dr. Christopher Browne continued his work on ancient diseases and abnormalities, concentrating on osteo-arthritis. Some interesting specimens were found in the Roman period population; a number have been taken back to Australia for fur-

ther examination (for results see *PJ 2*, appendix 4).

Dr. Bernard Knapp commenced work on the adaptation of the *Minark* computer programme for recording the ceramic typology. During the season Dr. Knapp also collected clay samples for neutron activation analysis in Australia.

During the 1985 season, special attention was paid to the cataloguing of material backlogged from earlier seasons. This saw, by the end of the season, the late Bronze and Iron Ages, Hellenistic, Late Roman, Byzantine and Umayyad ceramic backlogs fully recorded and mostly drawn, much to the credit of those involved. The glass cataloguing was also brought up to date by Miss M. O'Hea. Intensive drafting (Kathryn Eriksson, Leanda Randle, Sue Thorpe and Ian Edwards) as well as artifact conservation (Noel Siver) continued throughout the season.

(A. W. McN.)

## OTHER ACTIVITY DURING 1985

The research team associated with the University of Sydney's excavations at Pella concentrated their attention on two significant objectives during 1985.

i» The bulk of our research time was occupied with the preparation of the second interim report of the Joint Sydney - Wooster Expedition to Pella (*PJ 2*, forthcoming). This exercise made us aware just how much has been accomplished since the publication of the first interim report (*PJ 1*, 1982).

ii» The award of an Australian Research Grants Scheme 'Program Grant' to ensure funding and the continuation of excavations at Pella until 1992. Our deepest gratitude is due to the A. R. G. S. Committee

for this award, which will facilitate detailed forward planning and allow greater flexibility should unforeseen discoveries occur. In this regard, the continuing support by the Council and Director (Mr. James Mollison) of the Australian National Gallery is also gratefully acknowledged.

So, in effect, 1985 was a pivotal year during which the University of Sydney's Pella team set about assessing its past achievements. From this basis, and with the knowledge of guaranteed funding, the team is currently putting the final touches to the future research objectives of the excavations.

(A. W. McN.)

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