

**THE ELEVENTH AND TWELFTH SEASONS OF
EXCAVATIONS AT PELLA (ṬABAQAT FAḤL)
1989–1990**

by

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with contributions by

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Introduction to the Seasons

The Eleventh and Twelfth seasons of excavations at Pella (Ṭabaqat Faḥl) were conducted over four sessions: a winter session (14 January–10 March) and an autumn session (mid-November–27 December) in 1989; and a winter session (6 January–28 February 1990) followed by a spring session (1 March–19 April) in 1990.¹

In the first session of the Eleventh season,² the excavations concentrated on three areas (Figs. 1–3): Wadi al-Ḥammah (Area XX), Tell al-Ḥuṣn (Area XXXIV), and Wadi al-Khandaq (Area XXIX). Work in Wadi al-Ḥammeh continued on the Natufi-

an structures (WH 27), and was accompanied by soundings of nearby Middle and Upper Palaeolithic sites. The major programme of excavations on the summit of Tell al-Ḥuṣn, which commenced in 1988, was continued in 1989 to expose terminal Byzantine, Late Hellenistic, and Early Bronze Age material. Following initial soundings in 1985, large-scale excavations were instituted in Wadi al-Khandaq at the site of the Abbasid town centre, uncovering stone structures and artefacts of the eighth to mid ninth (?) centuries AD. Dr Phil Macumber undertook survey work on the expansive plateau between Wadi al-Ḥammeh

1. The Pella Excavations are directed by Prof J.B. Hennessy (University of Sydney) and Dr Alan Walmsley (Australian Postdoctoral Research Fellow, Australian Research Council, Canberra); the Autumn 1989 session was directed by Dr Phillip Edwards (La Trobe University, Melbourne), and the Spring 1990 session by Dr Phillip Macumber (Department of Water Resources, Melbourne). Major funding bodies were the Australian Research Council, the Australian National Gallery (Canberra), the University of Queensland, and the University of Sydney. The Directors would like to thank H.E. Mr Abdul Karim Kabariti, then Minister for Tourism and Antiquities, Dr Ghazi Bisheh, then Director-General of the Department of Antiquities, and Mr Sultan Shreideh, Chief Inspector of the Irbid District, for their considerable interest and support. Equally appreciated is the tremendous help and enthusiasm of H.E. Mr R. Bowker, Australia’s Ambassador to Jordan. Thanks also to Ms Alison McQuitty, Director of the British Institute at Amman, for all her assistance. Once again the people of Ṭabaqat Faḥl welcomed us with great warmth and sincerity, and we thank them for their generous hospitality. Dis-

tinguished visitors included: H.E. Mr Barry Jones, Minister of Science, and Senator Chris Pulkick of Australia; H.E. Mr H. Bartels, Ambassador of Germany; H.E. Mr Watanabe, Ambassador of Japan; and other ambassadors.

2. Team members for the 1989 season were: J.B. Hennessy and Alan Walmsley (Co-Directors); P. Macumber (Geomorphologist), R. Lakey (Geologist) and P. Edwards (Director, Wadi Ḥammah excavations); B. Churcher (Wadi Ḥammeh); Caroline Saunders (Area XXIX supervisor), with Erin. Crumlin, Jodie Benton, Ingela Brylde, T. Batayneh (Department of Antiquities representative) and I. al-Hadi; Pam Watson (Director, Area XXXIV excavations), with Kate da Costa, Andrea Rowe, Amanda Parish, M. Newton, G. Elrington and Z. Tahat (Department of Antiquities representative); Noël Siver (conservator), Karin Sowada, Justine Channing, Judith Sellers and P. Donnelly (draftpersons); Katheryn Eriksson (pottery cataloguing), Rachael Sparks (small finds), Stephanie Licciardo (architect), R. Workman (photographer), Abu Isa (foreman), and Abu Sami (chief cook). A workforce of ninety was employed.

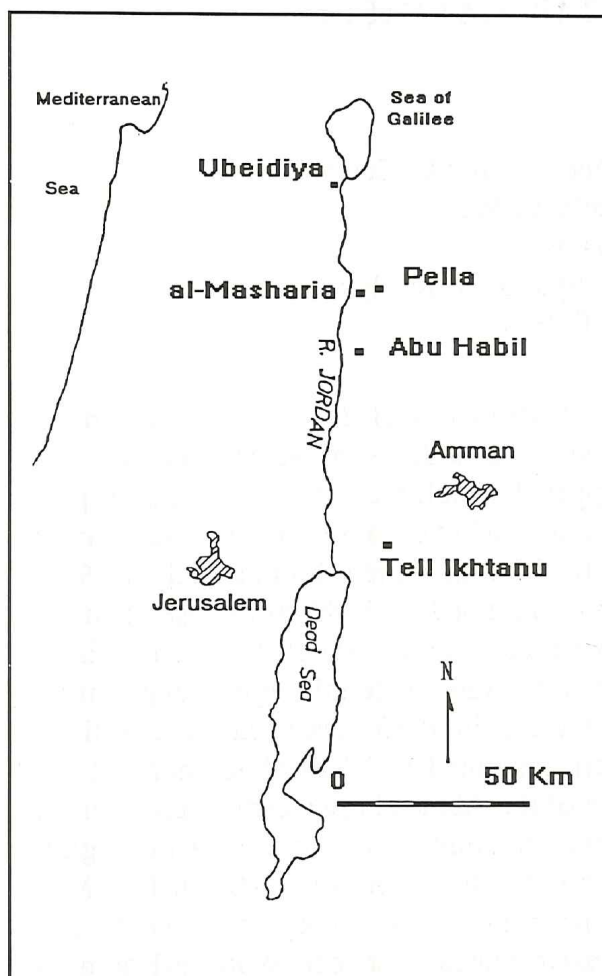


Fig. 1. Map of the Jordan Rift Valley.

and Wadi Jirm, identifying *in situ* Lower Palaeolithic sites. In the autumn session of the Eleventh season, Dr Phillip Edwards and Mr Zayad Tahat excavated twelve stratified open-air sites of Middle Palaeolithic date in the al-Ḥammeh — al-Ḥimar wadi system.

Work in the Winter session of the Twelfth season was a continuation of the programme adopted for the Eleventh, except that the Deep Cut (Area III/IV) with

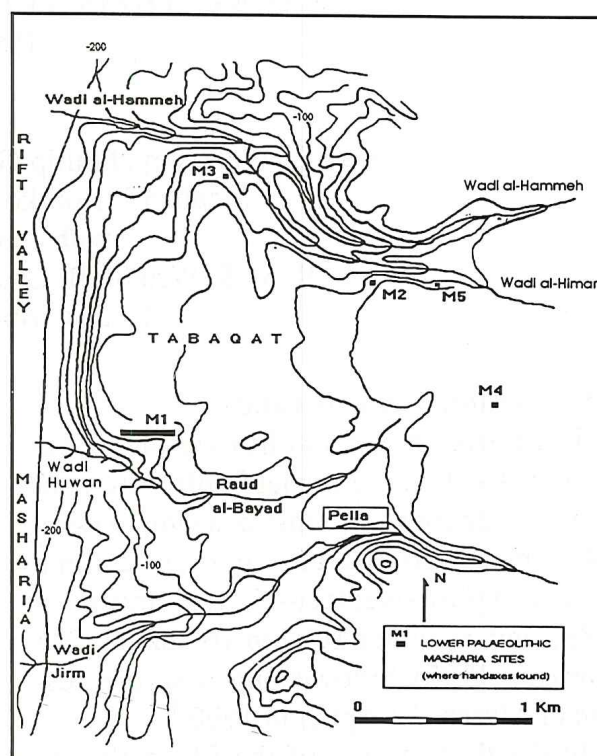


Fig. 2. Contour map of the Ṭabaqat Faḥl region.

associated Area XXXII were reopened and the summit excavations on Tell al-Ḥuṣṣ suspended.³ Discoveries in the Deep Cut dated to the Middle Bronze Age II and Late Bronze Age I and II periods, while the Area XXXII material belonged to the Iron Age and Byzantine period. Work continued in Area XXIX and on the Wadi Ḥammeh Natufian (WH 27). Mr Sultan Shreideh continued the investigation into funerary practices at Pella with a mostly unsuccessful search for Iron Age tombs. Miss Ruba Abu Dalou (Institute of Archaeology and Anthropology, Yarmouk University) spent two weeks at Pella researching Mamluk sugar production in the Jordan Valley, and excavated a

3. Team members for the 1990 season were: J.B. Hennessy and Alan Walmsley (Co-Directors); S. Bourke (Director, III/IV & XXXII excavations), with Erin Crumlin, Jessica Panday, Kate da Costa, Amanda Parish, Fiona Richards, Jodie Benton, and P. Donnelly; C. Saunders (Area XXIX supervisor), with Katherine King and P. Magee; B. Churcher (Wadi Ḥammeh); Mr Sultan Shreideh (tombs and Department of Antiquities representa-

tive); Noël Siver and Wendy Reade (conservators), Justine Channing, C. Bendle and I. Edwards (draftpersons); Margaret O'Hea (glass cataloguing), Katheryn Eriksson and Margaret Wheeler (pottery cataloguing), Rachael Sparks (small finds), Stephanie Licciardo (architect), Roz Sharp (photographer), K. Rielly (bones), Abu Isa (foreman), Abu Sami (chief cook), and a workforce of seventy.

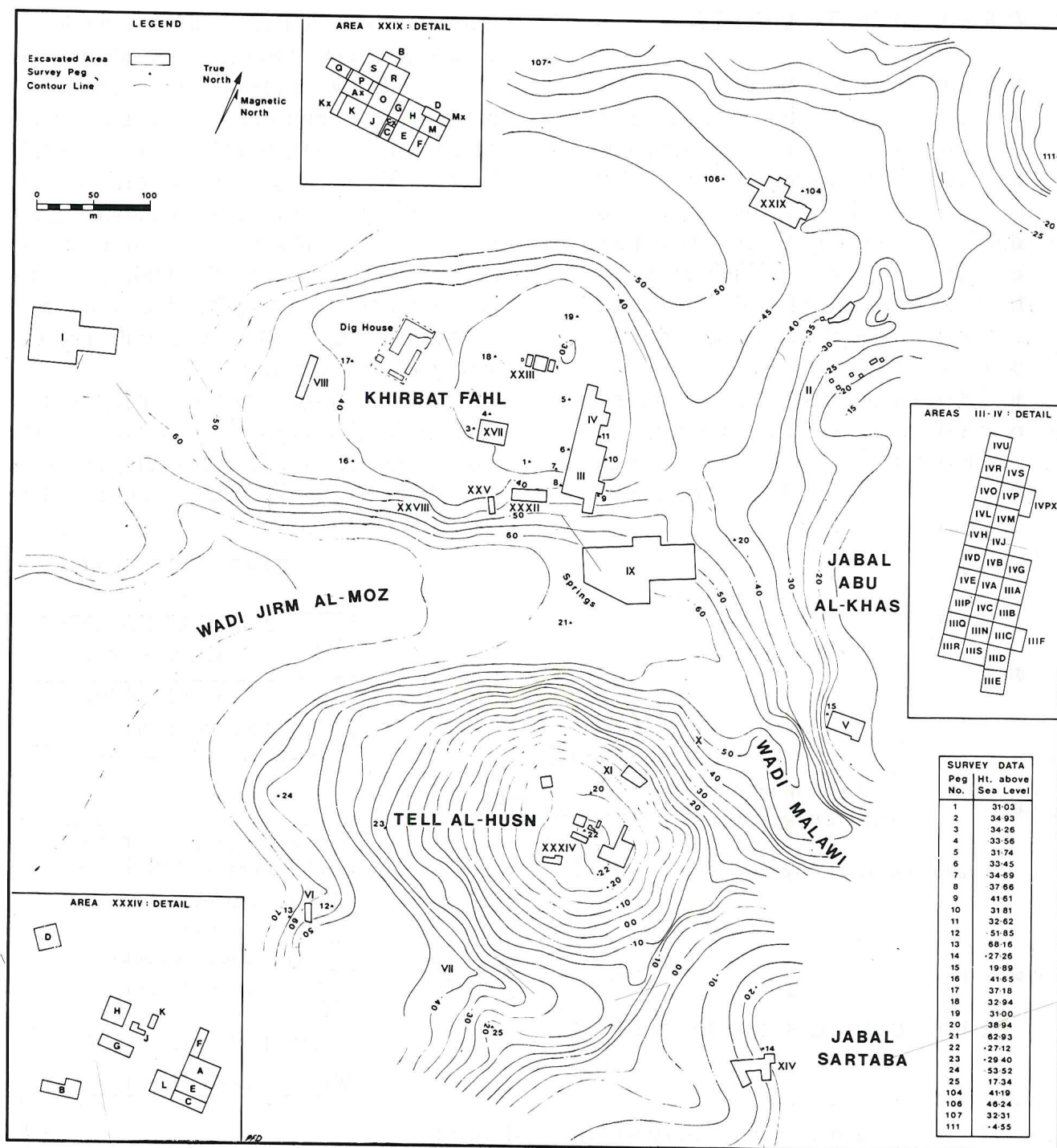


Fig. 3 Contour map of Pella, identifying excavation areas.

water mill near al-Mashari'. The Spring session saw a continuation and expansion of Phil Macumber's survey into the Lower Palaeolithic and the geology-geomorphology of the Ṭabaqat Faḥl region.⁴

This preliminary account is somewhat larger than usual, as it covers all four sessions of both seasons. Reports are presented in general chronological order, with studies on bone, glass, and lamps at the end.

(A.G.W.)

4. Working with Macumber were Drs R. Lakey and J. Head, Prof. R.S.V. Wright and Mrs Sonia Wright.

LOWER PALAEOOLITHIC SITES

Introduction and Previous Work

The Tabaqat Fahl region occupies a 10 km² plateau positioned on the eastern side of the Jordan Rift Valley, about 75 km north of the Dead Sea. The plateau is bounded on the north by Wadi al-Hammeh, and on the south by the Wadi Jirm, on which the ancient site of Pella is situated (Figs. 1 and 2). The plateau is hereafter referred to as the Tabaqah.

The 1990 season was the tenth anniversary of the discovery of Palaeolithic sites in Wadi al-Hammeh.⁵ Over the past decade numerous *in situ* Middle, Upper and Epipa-

laeolithic sites had been found, the geological and palaeoenvironmental settings investigated, and the sequences and sites comprehensively radiocarbon dated. The occupational environment in the ancestral Wadi al-Hammeh during this period was that of a large freshwater spring zone occupying the lower reaches of the wadi adjacent to the Lake Lisan. The main occupation occurred on spring-fed river flats and in the ephemeral wadi for several kilometres upvalley of the lake.

The Wadi al-Hammeh sedimentary sequences infill valleys (Fig. 4) cut into an older sequence of calcareous tufa deposits and fluvial conglomerates termed the

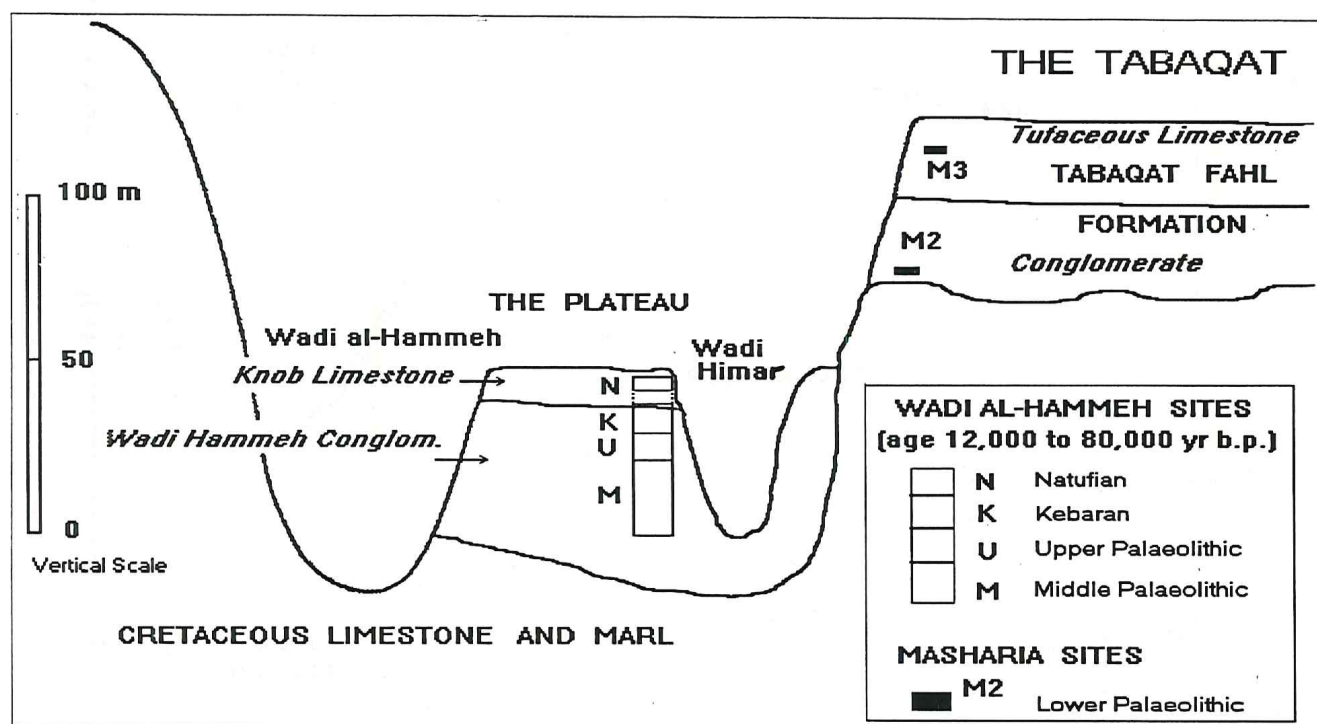


Fig. 4. Section through the Wadi al-Hammeh–Wadi al-Himar System.

5. For earlier reports see P.G. Macumber, 'Geology of the Tabaqat Fahl Area, Northern Jordan' (unpubl. ms., Department of Archaeology, University of Sydney); P.G. Macumber, in A.W. McNicoll, W. Ball *et al.*, 'Preliminary Report on the University of Sydney's Fifth Season of Excavation at Pella in Jordan', *ADAJ* 28 (1984) pp. 55–86; P.G. Macumber, 'The Geology and Geomorphology of the Wadi Hammeh–Wadi Jirm Region, North-western Jordan', in A.W. McNicoll, P.C. Edwards *et al.*, *Pella in Jordan 2* (Sydney,

Mediterranean Archaeology Supplement no. 2, 1992); P.C. Edwards, S.J. Bourke, S.M. Colledge, M.J. Head and P.G. Macumber, 'Late Pleistocene Prehistory in the Wadi al-Hammeh, Jordan Valley', in A.N. Garrard and H.G. Gebel, eds, *The Prehistory of Jordan: the state of research in 1986* (BAR Int. Ser. 396, 1988), pp. 525–65; P.G. Macumber and M.J. Head, 'Implications of the Wadi al-Hammeh Sequences for the Terminal Dryalaeogeography', *Palaeoclimatology, Palaeoecology* (1991).

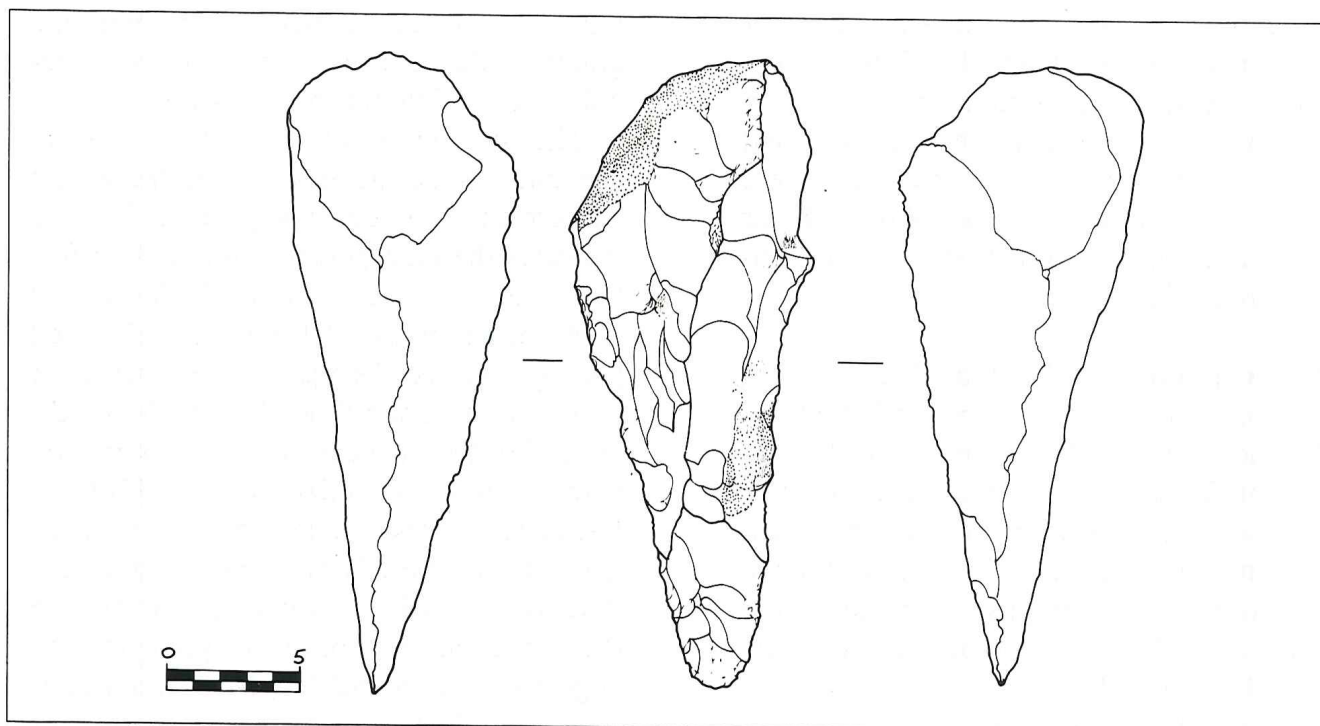


Fig. 5. Acheulian handaxe from the Masharia 4 Site of the Tabaqah.

“Tabaqat Fahl Formation”, after the village of Tabaqat Fahl. The Tabaqat Fahl Formation, which outcrops between Wadi Jirm and Wadi al-Ḥammeh, represents in many respects a very much larger and longer lasting version of the occupational environment in which the adjacent Wadi al-Ḥammeh sites occur. The clear similarities between the Wadi al-Ḥammeh sequences and the Tabaqat Fahl series suggested that the latter area might also have been a favourable area for early human occupation. Investigations in the 1989 season established the presence of scatters of Lower Palaeolithic artefacts both across the surface and within the sediments of the Tabaqat Fahl Formation. Five widely spaced sites contained Acheulian hand axes (Figs. 2 and 5).

Earlier, L. Villiers had described an assemblage of mixed Lower and Middle Pa-

laeolithic artefacts from Abu al-Khas at the eastern edge of the region.⁶ However these excavations were in a reworked conglomeratic deposit derived from erosion of the nearby Tabaqat Fahl Formation and later sediments.

Objectives of the Field Season

The principal objective in the 1990 season was to examine the Acheulian sites found in 1989 and investigate their age, and stratigraphic and palaeoenvironmental settings. Sampling of vertical sections for U-Th and palaeomagnetic dating was carried out on three sections—in Wadi Jirm, Wadi al-Ḥammeh, and Rauḍ al-Bayad (the central part of Wadi Ḥuwan, which drains the Tabaqah, entering the Rift Valley between Wadi Jirm and Wadi al-Ḥammeh).⁷

A second objective was to relate the stratigraphy of the Tabaqat Fahl Formation and

6. L. Villiers, ‘Final Report on Palaeolithic Sampling at Abu al-Khas, Northern Jordan’, *ADAJ* 27 (1983), pp. 27–44.

7. This wadi is referred to as Rauḍ Banat Ya‘qub on the 1:50 000 Deir Abu Sa‘id sheet, however to

avoid confusion with the Lower Palaeolithic site at Gesher Benot Ya‘aqov (Jisr Banat Ya‘qub) north of the Sea of Galilee, the local wadi names (Wadi Ḥuwan and Rauḍ al-Bayad) are used here.

earlier Wadi al-Ḥammeh sequences to other Quaternary units along the Rift Valley. These included the Abu Habil Formation (which occurs only 20 km to the south, and where Lower Palaeolithic industries were noted in the past),⁸ and the Ghor el Katar Series and Shagur Formation from the Central Jordan Valley.

Geomorphology of Ṭabaqat Fahl

Lying between Wadi Jirm and Wadi al-Ḥammeh is the high level buttress-like plateau of Ṭabaqat Fahl—the Ṭabaqah. The Ṭabaqah is bounded on the south by Wadi Jirm and on the north by Wadi al-Ḥammeh. The plateau rises abruptly 125 m above the Rift Valley floor, for which it forms a terrace-like eastern boundary. In elevation, the Ṭabaqah surface lies between the -80 m contour (at its western edge) and the -20 m contour where it adjoins the hills to the east; it is about 10 km² in area. The plateau is formed largely of Quaternary freshwater spring and stream deposited tufaceous limestone passing downwards into a varyingly thick basal conglomerate. The conglomerate gradually replaces the limestone on passing eastwards away from the Rift Valley in a lateral facies change. The bounding valleys are occupied by permanently flowing streams, the Wadi Jirm being fed by the Pella spring while Wadi al-Ḥammeh is fed by the hot spring of Hammamat Abu Dabli.

Acheulian Occurrences at Ṭabaqat Fahl

Of the five handaxe sites occurring within sedimentary sequences, at least two of the sites (Masharia 1 and 3) were clearly archaeologically *in situ*, that is, the artefacts were in their original position of usage. It is likely that the other sites were also archaeologically *in situ*, especially in the two cases where multiple hand axes were found (Masharia 2 and 4). However since these occur-

rences are in conglomerates and not fine grained tufa deposits, further work is required to confirm this relationship.

The distribution of the Acheulian hand axe sites is at the eastern, northern and western edges of the Ṭabaqah (Fig. 2). This indicates the high potential for finding further sites in the area. Indeed, during the 1990 season, isolated flakes were observed poking from the Ṭabaqat Fahl Formation in cliff sections along Wadi Jirm at the southern end of the Ṭabaqah. To avoid confusion with the post-Acheulian sites in Wadi al-Ḥammeh, it was decided to refer to these new sites as the Masharia Series, after the town of al-Mashari' which lies within the Rift Valley at the foot of the Ṭabaqah. The largest site yet found (the Masharia 1 site) occurs within 500 m of the Mashari' post office, near the mouth of Wadi Ḥuwan. It lies high up in a steep cliff section, some 30 m below the surface of the Ṭabaqah.

Three other sites occur high on the southern valley side of Wadi al-Ḥimar, directly overlooking the archaeologically rich Middle to Epipalaeolithic sequences of Wadi al-Ḥammeh (Figs. 2 and 4). These include the Masharia 3 site which occurs in tufaceous limestone towards the upper part of the Ṭabaqat Fahl Formation. A number of hand axes obtained from this site had a white siliceous patina common to artefacts occurring in surficial sediments where they are long exposed to weathering processes. The Masharia 5 and 2 sites are in conglomerate, the latter occurring at the base of the Ṭabaqat Fahl Formation, where it overlies Cretaceous sediments (Fig. 4). Two hand axes obtained from the Masharia 2 site do not have a white siliceous patina.

The Masharia 4 site occurs in conglomerates at the eastern edge of the Ṭabaqah where it rises towards the highlands. Two hand axes were found together at this site,

8. R. Huckreide, 'Das Quartaer des Arabischen Jordan-Thales und Beobachtungen ueber 'Pebble

Culture' und 'Prae-Aurignac'', *Eizeitalter Gegenwart* 17 (1966), pp. 211-12.

the larger (Fig. 5) had only minor patination. The Masharia 4 site lies closest to Abu al-Khas where Villiers worked, albeit higher in the landscape; the surrounding areas probably contributed to the Lower Palaeolithic aspects of her assemblage.

Masharia 1 Site

A number of patinated hand axes were found in 1989 at the Masharia 1 site (Fig. 2). The site is contained within a 120 m thick tufaceous limestone sequence, occurring some 25 m down a 90 m high limestone bluff. In the early part of the 1990 season an additional five hand axes were obtained and many other axes, smaller car-diform bifaces, and numerous stone tools and flakes were observed, both *in situ* and eroded in large numbers from discrete horizons stretching half a kilometre along the cliff face. In a number of instances large clusters of flakes were observed, some protruding from very dense and hard, otherwise uniform limestone. Both patinated and non-patinated artefacts were obtained. A single chert flake was also found imbedded in hard limestone at the base of the limestone sequence. This supports the evidence from the Masharia 2 site—where two hand axes were obtained from basal conglomerates—that occupation had occurred in this area over the entire period of deposition of the 120 m thick Tabaqat Fahl Formation.

The Micoquian character of the hand axes from the Masharia 1 site suggest that this site, in the upper parts of the Tabaqat Fahl Formation, is Upper Acheulian in age (R. Wright, see below).

Geology of the Masharia 1 Site: The basal stratigraphic sequence below the Masharia 1 site consists of steeply dipping marls. The age of these sediments is yet to be determined. The marls are overlaid by the Tabaqat Fahl Formation, there being a 100+ m thick sequence of very dense white nodular limestones and calcareous conglomerates, passing upwards into earthy

pisolitic and nodular limestones and tufaceous limestones.

The form and distribution of the sedimentary sequence indicates that, at the time of its deposition, the area was one in which a number of small wadi channels junctioned to form a broad composite larger wadi system immediately prior to emerging at the Rift Valley edge near the present day mouth of Wadi Huwan. The composite wadi then flowed into a shallow lake system represented by the dense limestone unit outcropping at the wadi mouth. This palaeo-valley system was then buried beneath a thick sequence of tufaceous limestone deposited in a broad (3 km wide) zone of regional groundwater discharge, emerging adjacent to the Rift Valley. On passing eastwards away from the Rift Valley, the thick tufaceous sequence is in turn largely replaced by a thickening conglomeratic sequence which gradually rises to cap the hills to the east of Tabaqat Fahl. As noted above, Acheulian sites occur in both the tufaceous limestone and the conglomerate.

The Tabaqat Fahl sequence and facies distribution is therefore very similar, albeit on a larger scale, to the paleogeographic picture found in the younger Wadi al-Hammeh system, where the ancestral stream passed Rift-wards across a broad spring zone towards a lake (Lake Lisan) then occupying the Rift Valley.

The Tabaqat Fahl sequences are tilted and gently folded in places, but elsewhere are horizontally bedded. This is the case near the mouth of Wadi Huwan, where horizontal sequences are abruptly truncated at the Rift edge. The presence of horizontally bedded sediments occurring up to 120 m above the Rift Valley floor is an indication of the amount of differential movement between the Rift Valley and the adjacent Rift Valley sides. Given the presence of Lower Palaeolithic artefacts within the uplifted sequences, this movement must have occurred within the last 200,000 to 500,000 years.

The Broader Context — Geological Correlations

The presence of Acheulian stone tools in the Tabaqat Fahl Formation raises questions as to its relationship to the other Lower Palaeolithic sites in the Rift Valley—at Abu Habil which occurs only 10 km to the south of Mashari', and at the 'Ubeidiya and Jisr Banat Ya'qub sites to the north.

In its upper part, the Abu Habil Formation is said to contain pebble tools of Oldawan type, and was regarded by Huckreide as Middle Pleistocene.⁹ On this basis it has been variously equated with 'Ubeidiya, now thought to be over one million years old. F. Bender notes that along the eastern side of the Rift Valley, hard, conglomeratic, partly pisolitic limestones of the Abu Habil Formation overlie steeply dipping conglomerates, sandstones, clays and limestones of the Ghor el Katar Series.¹⁰ The Ghor el Katar Series is thought to be lower Pleistocene in age; however there is as yet no absolute dating, and its age is therefore largely conjecture.

Bender had previously noted the presence of the Ghor el Katar Series in the mouth of Wadi al-Ḥammeh, north of Mashari'. In Wadi al-Ḥammeh, steeply dipping conglomerates, limestones and clays (Ghor el Katar Series?) unconformably underlie dense calcareous conglomerates which form the basal sequences to the Tabaqat Fahl Formation. However, according to Bender,¹¹ the Ghor el Katar Series at this site is underlain by "sediments similar to the Shagur Formation". The Shagur Formation occurs in the central Jordan Valley, north of the Dead Sea; its type section being in the al-Shagur region near the village of Rawḍa. It forms the core of the nearby Tell Iktanu, where it consists partly of dense calcareous conglomerate. The Shagur

Formation is, therefore, lithologically similar to the basal Tabaqat Fahl Formation in the mouth of Wadi Ḥuwan and in Wadi al-Ḥammeh. It seems that the relationship described by Bender is the inverse of what occurs. That is, at the mouth of Wadi al-Ḥammeh, steeply dipping sediments similar to the Ghor el Katar Series underlie Shagur-like basal Tabaqat Fahl Formation. If this is the case, then the steeply dipping Ghor el Katar Series which outcrops in a number of places along the Rift Valley between Abu Habil and Wadi al-Ḥammeh, unconformably underlies both the Abu Habil Formation (as shown in Bender) and the Tabaqat Fahl Formation.

The lowermost units of the Tabaqat Fahl Formation at Wadi al-Ḥammeh and Wadi Ḥuwan are lithologically similar to the Abu Habil Formation (hard, conglomeratic, partly pisolitic limestones). Both sequences are unconformably underlain by the Ghor el Katar Series (or something lithologically similar). It is possible therefore that the two units overlap in age. However, while the age of the Tabaqat Fahl Formation may be obtained from the absolute age dating arising out of this field season, its relationship to Abu Habil must await further geological correlations and absolute dating. It is notable, however, that a number of bifaces were recently recovered from a two layer site at Abu Habil.¹² The lower layer was in dense conglomerate; the upper layer, in calcareous silt, had an assemblage tentatively assessed by Muheisen as being late Acheulian.

Finally, given that the Abu Habil and Ubeidiya sequences are commonly related in the literature, some comment here is warranted however preliminary. The correlation of Abu Habil with Ubeidiya rests largely on the earlier identification of an Oldawan-type industry at Abu Habil. Litho-

9. See Huckreide 1966.

10. F. Bender, *Geology of Jordan* (Berlin, 1974).

11. Bender, *Geology*, p. 94.

12. M. Muheisen, 'A Survey of Prehistoric Sites in the Jordan Valley (1985)', in Garrard and Gebel, eds. *The Prehistory of Jordan*.

logically and stratigraphically, however, the Abu Habil Formation is at least in part comfortably equated with the Tabaqat Fahl Formation (although not necessarily exactly the same age). Instead, the nearest unit found at Tabaqat Fahl, lithologically and structurally comparable to the Ubeidiya sequence, is the steeply dipping Ghor el Katar like sequence which is commonly deemed to be much older than Ubeidiya (again, with no absolute dating).

Whatever the real relationship between the various units, it is clear that the broad scale correlations of Lower Palaeolithic sequences within the Jordan Rift Valley are not yet rigorously based, and previous interpretations on their mutual relationships must be put into question.

(P.G.M.)

THE ACHEULIAN OF THE TABAQAT FAHL SERIES

The Cultural Age of the Tabaqat Fahl Acheulian

The Tabaqat Fahl deposits yield a great range of handaxe forms, including Micoquian-type ficrons. Flakes range from those that are thick with plain platforms, to some with prepared platforms of Levallois technique. The question therefore arises whether the deposits cover a great span in the Lower Palaeolithic.

The answer appears to be no. Fine flaking technique is present even on handaxes that are stratigraphically early in the sequence (e.g. close to bedrock on Rimillah Ridge). If one uses the dating principle of the most advanced type (in this case exquisitely finished handaxes), there is no reason to conclude that the Tabaqat Fahl deposits yield anything earlier than later Acheulian.

Artefacts found *in situ* in the Tabaqat Fahl deposits show pristine flaked edges. There is, therefore, no indication of the inclusion of artefacts derived from older sediments. To strengthen this conclusion of

stratigraphic integrity, it is worth noting that an Acheulian handaxe was seen in the gravel facies of the later Wadi Hammeh Conglomerates, at a level that otherwise yields Levallois-Mousterian. This handaxe has abraded flake scars and is evidently derived from the Tabaqat Fahl deposits. This example demonstrates that although derived artefacts can be recognized in later sediments, they have not so far been identified in the Tabaqat Fahl Series. Thus the crude, but fresh, pieces therein can be seen as part of the normal assemblage of waste that one gets in any advanced industry.

In summary, it seems as though the whole of the Tabaqat Fahl Series yields only a later Acheulian.

Patination on Acheulian from the Tabaqat Fahl Deposits

Flakes and handaxes range from unpatinated to heavily patinated. Might this be an indication of their relative ages? Inspection of the sources reveals that the patinated pieces come exclusively from the slopes below outcrops of Tabaqat Fahl deposits. By contrast, artefacts that are *in situ* within the Tabaqat Fahl deposits have no patination. It appears that the patination results from a reaction with the soil onto and into which they have fallen. If this is the case, differences in degree of patination reflect the amount of time that the artefacts have spent in the soil, not their age. The difference in degree of patination of Acheulian pieces is not a problem.

The Absence of Fauna

No fauna has been reported from the Tabaqat Fahl deposits. This is surprising, given their highly calcareous nature. Special attention was paid to the possibility of the fragmentation of bones and teeth by the expansion of calcium carbonate crystallization, but the search for minute spicules of teeth and bone was unsuccessful.

The absence of bone must be counted as

a taphonomic puzzle. In this connection it is worth noting that the bones from the nearby Natufian burials are deeply corroded, yet they too are buried into calcareous deposits. Research is needed as to why the general rule of "lime means bone" does not apply.

(R.S.V.W.)

THE MIDDLE AND EPIPALAEOLITHIC PERIODS IN WADI AL-HAMMEH (AREA XX)

The Middle Palaeolithic Sites

For the past seven years Sydney University has been investigating archaeologically-rich Late Pleistocene deposits in Wadi al-Hammeh. Efforts have been concentrated on the most recent suite of deposits which encompass the Upper to Epipalaeolithic periods (c. 30–12,000 b.p.),¹³ and in particular on the broad-scale excavation of a Natufian site, Wadi Hammeh 27,¹⁴ located across the top of "the Plateau".

The Plateau represents the termination of an interfluvial ridge (Pl. I, 1) that runs between Wadi al-Hammeh and Wadi al-Himar, both of which flow westward into the Jordan Valley. In the vicinity of our current operations, deep incision by both wadis has exposed a sequence of cultural deposits over forty metres thick. Previously we had excavated sites extending from the top of this sequence (WH 27) down to an Upper Palaeolithic site (WH 34) dating to 28–32,000 b.p.¹⁵

The lower two-thirds of this sequence has awaited formal investigation, although it had long been appreciated that large

amounts of Middle Palaeolithic lithics are continually eroding from the outcrops. Accordingly the author undertook a programme of excavations of these deposits in November and December 1989.

The lower part of the Plateau in this vicinity is composed of interfingering sequences of red, pebbly clays and pebbly marls, of terrestrial and fluvial origin which constitute the Wadi Hammeh Conglomerate. Macumber suggests that the base of the sequence is time-equivalent to the inundation of the adjacent Jordan Valley by Lake Lisan (from c. 80,000 b.p.),¹⁶ and the Plateau Middle Palaeolithic is clearly postdated by a radiocarbon date of 36,000 b.p. (Pl. I, 1) obtained on *Melanopsis* shells.¹⁷

In order to sample from secure contexts, it was decided to deal only with clay beds that could clearly be tracked beneath marker pebble bands across the Plateau sections. The sampling technique employed was to excavate a series of small pits into a target clay bed at successive intervals along an outcrop. Even on the severely eroded westerly face of the Plateau where stratigraphy is well exposed, a certain amount of silt and plant growth obscures the relationship between horizons in several places, so gullies and the spurs either side of them generally proved the most secure places to sample. The motivation to sample in this manner was borne of the prior conviction, based on observations of the surface, that Middle Palaeolithic material is widely and consistently distributed throughout the deposits, but not nucleated in discrete sites. These thoughts were influenced by Isaac and col-

13. See Edwards, Bourke, *et al.*, 'Late Pleistocene Prehistory'. The author would like to thank Dr Ghazi Bisheh, then Director-General of the Department of Antiquities, and Mr Zayad Tahat, Departmental Representative, for their assistance during the season.

14. P.C. Edwards, 'Natufian Settlement in Wadi al-Hammah', *Paléorient* 14/2 (1988), pp. 309–15.

15. See Edwards, Bourke *et al.* 'Late Pleistocene

Prehistory'.

16. P.G. Macumber in A.W. McNicoll, P.C. Edwards, *et al.*, 'Preliminary Report on the University of Sydney's Seventh Season of Excavation at Pella (Tabaqat Fahl) in 1985', *ADAJ* 30 (1986), p. 156.

17. See P.G. Macumber and J. Head, 'Implications' (f.n. 5).

leagues' development of "off-site" archaeology at Koobi Fora in Kenya and their method of outcrop sampling of the Koobi Fora Formation.¹⁸

By these methods it was hoped that broad areas of palaeo-occupation surfaces could be examined, and also that the superimposed deposits lying in the same sector of the cliff face would provide ideal stratigraphic control for the relative ordering of the resultant material.

The main focus of operations was located directly underneath the Natufian site Wadi Hammeh (WH) 27, dated c. 12,000 b.p., the Kebaran site WH 26 dated c. 19,500 b.p., and the Upper Palaeolithic site WH 34 dated c. 28,000 b.p. (Pl. I, 1).

In all, ten successive clay units were sampled (sites WH 42, WH 43, WH 44, WH 35, WH 36, WH 37, WH 38, WH 39, WH 40, WH 41) extending vertically between the -96 m level, and the channel of Wadi al-Himar at -126 m. Wadi Hammeh 35 had already been sampled toward the end of the Winter season in March 1989, and been found to contain an unexpectedly extensive assemblage, characterised by unidirectional Levallois point cores, flake and blade cores, Levallois points, flakes, blades and bladelets, and small shatter debris.

Preliminary inspection of the material indicates that Wadi Hammeh 35 and all sites located below it (WH 36-WH 41) yielded Levantine Mousterian assemblages with a high proportion of sharp-edged lithics. The lowermost WH 41 was clearly the best preserved of the series. Perhaps significantly, this site is embedded in a fine, yellow clay underlying the red, pebbly clays which contain the other sites. Whereas material is

scattered throughout the red clays, WH 41 was manifest dramatically in section as a narrow, clustered band of sharp flakes and blades.

From preliminary inspection, the general characteristics described for WH 35 appear to hold for the other Middle Palaeolithic sites, indicating strong continuity of lithic tradition throughout the long period represented. Levallois points struck from unidirectional point cores persistently occur, along with small numbers of burins and scrapers.

Three other sites, WH 49, WH 53, and WH 54, exposed a hundred metres upstream in the bed of Wadi al-Himar, were excavated. The sites are located at the base of the sequence, in red clays. WH 53 and WH 54 are situated on opposite sides of the wadi channel, but are apparently bedded in the same dark clay unit which has subsequently been cut by the wadi's incision. WH 49 immediately overlies WH 54 on the eastern wadi bank.

(P.C.E.)

FINAL EXCAVATIONS AT THE NATUFIAN SITE WADI HAMMEH 27

The University of Sydney's Winter session of the Twelfth season saw the completion of excavations at the Natufian site Wadi Hammeh 27.¹⁹

The object of the present season was to extend the south-eastern corner of the broad area excavations, and thereby completely isolate one of two structures that had already been discovered. During previous seasons, two large curvilinear limestone

18. G. Ll. Isaac, 'Stone Age Visiting Cards: Approaches to the study of early land-use patterns', in I. Hodder, G. Ll. Isaac and N. Hammond, eds., *Pattern of the Past* (Cambridge, 1981), pp. 131-55; G. Ll. Isaac, J. W. K. Harris, and F. Marshall, 'Small is Informative: The application of the study of mini-sites and least effort criteria

in the interpretation of the early Pleistocene archaeological record at Koobi Fora, Kenya', *X Congresso, Union International de Ciencias Prehistoricas y Protohistoricas*, (Mexico City, 1981), pp. 101-109.

19. See P. C. Edwards in McNicoll, Ball *et al.*, 'Fifth Season', *ADAJ* 28 (1984).

structures had been found in the uppermost constructional phase (Natufian Phase I). The former is centred on Plot XXF (hereafter Structure 1) and a second, partly concentric-walled one centred on Plot XXD (hereafter Structure 2, Fig. 6).²⁰

This aim was achieved by excavating an additional 5 x 5 m Plot (XXK) and its associated baulks, and a small extension (4 x 1 m) in the north baulk of Plot XXH (Fig. 6). The outer circuit wall of Structure 2 (Wall 1 in Plots XXD and XXH) was found to continue in the new Plot XXK (Wall 1), eventually linking up with the wall section in Plot XXJ (Wall 7) to form the perimeter wall of Structure 2. As in other trenches, Wall 1 in XXK is dry-built from limestone blocks, and terraced against the exterior surface (XXK 3.2), leaving a 40 cm drop to the interior. The entire wall sweeps out an oval whose major axis is thirteen metres, oriented north-west to south-east. Few interior fixtures were located in the XXK sector of Structure 2. In particular, the interior concentric wall sections that partition the structure in Plots XXD and XXH were absent in Plot XXK.

Because the westerly margin of Structure 2 has been destroyed by erosion, it can no longer be determined whether that area was open for access, like Structure 1, forming a horseshoe-shaped structure, although the termination of Wall 1 in XXD well before the erosion line suggests this as likely. Otherwise, excavation had shown the perimeter wall to be particularly substantial with no breaks in its construction. However in Plot XXK there is a two-metre gap in the wall's circuit to the north-east (Pl. I, 2). It is possible that this also represents an access point, and in this connection the situation of two exterior features running out parallel from it are interesting.

To the north is a refuse dump (F.9), containing numerous small stones, lithics and

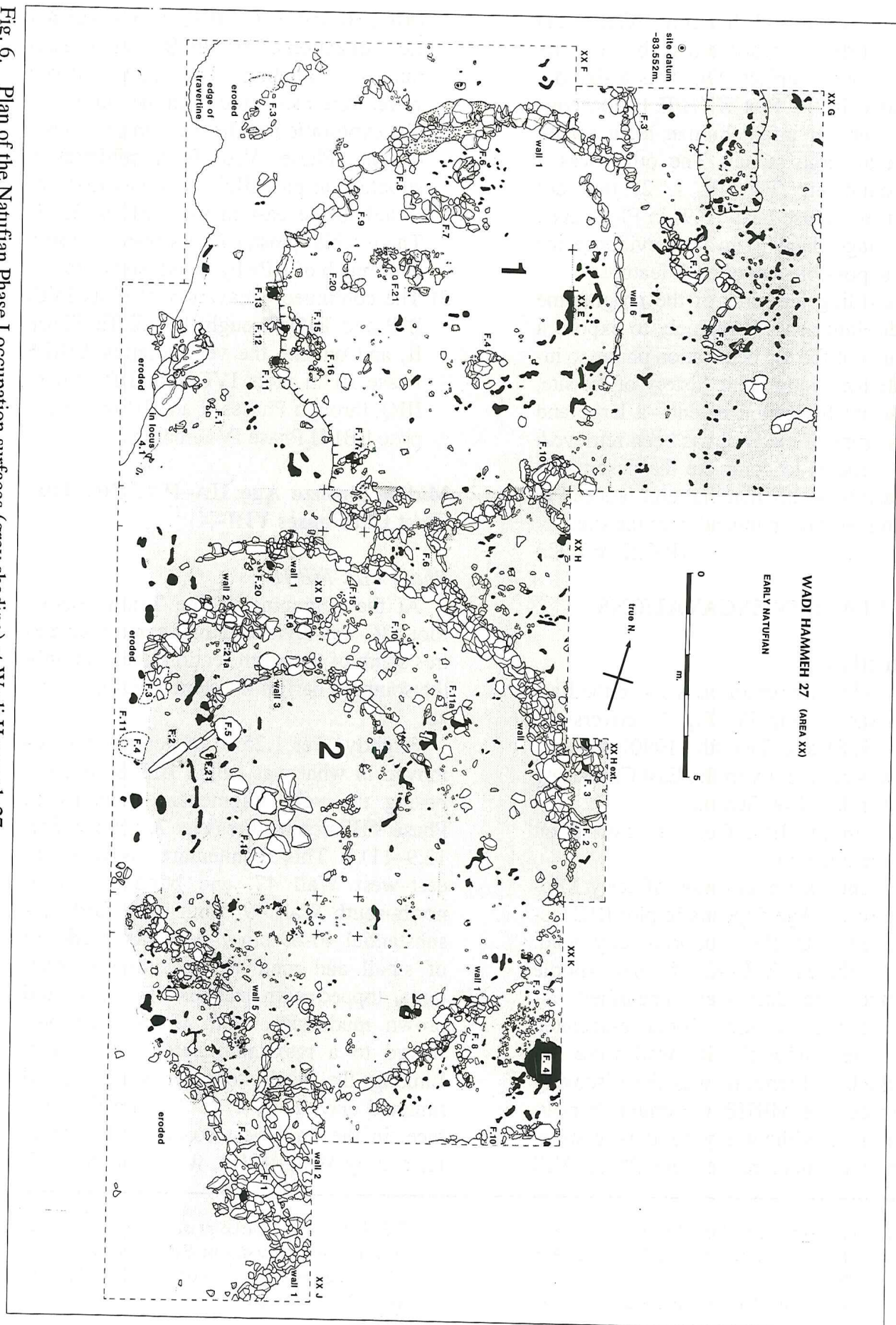
faunal remains, which rests directly on the Phase I occupation surface (XXK 3.2) and which is clearly demarcated within an irregular area of about 2 by 1.5 m. To the south of the opening is a line of stones (F.8) abutting Wall 1. Between these two features, and separating Feature 9 from Wall 1, is a clear area free of debris. The pattern suggests the use of this area as a convenient place from which to jettison rubbish, while leaving a corridor reasonably free for access.

Several postholes have been excavated previously with most located along the western margin of Structure 1 (Fig. 6). These consist of holes dug into the ground ringed by small stones. Another type, a pile of large stones packed around a free area, was excavated in Plot XXJ (F.1), and tentatively identified as a post support. Of similar form is a feature excavated along side and just outside Wall 1 in the Plot XXH extension. This is a pile of limestone blocks (F.3, Fig. 6) ringing two post-sized shafts with small stones in their fill, which appears to have functioned as a support for Structure 2.

Completion of the excavations has now shown that the circuit walls of Structures 1 and 2 dovetail, and also that wall sections belonging to further unexcavated structures lie beyond these two. At the junction of Structures 1 and 2 for example, Wall 4 abuts Wall 1 of Structure 1, thence extends to the south-east following the arc of Structure 2's Wall 1. In the newly excavated Plot XXH extension, Feature 2 also abuts the latter wall and then curves away to the north. A wall section (F.10) runs east-west by the south baulk of Plot XXK, and this may relate to Wall 1 in Plot XXJ which follows a similar curvature.

Finally, this season's excavations revealed two pits made subsequent to the occupation of Natufian Phase I. Both were

20. Edwards, 'Natufian Settlement', pp. 309–15.



dug from a subsoil horizon (XXK 1.2) some fourteen centimetres below the present ground surface. One was a shallow pit located in the Plot XXH/K baulk, containing thirteen infant human teeth sealed by several large stones. The other was a deep round pit (F.4, Pl. I, 2) that cut through the refuse heap (F.9) in Plot XXK. At this stage there is no firm evidence for the latest possible age of each feature.

In fulfilling the aims of the programme at Wadi Hammeh 27—namely to expose a broad area of the top occupation phase, to investigate the stratigraphic history of the site, and also its horizontal extent—a large and varied corpus of material has been retrieved. It now remains to complete the description and analysis of this material and proceed to preparing the final publication of the site.

(P.C.E. & B.C.)

AREA III AND IV EXCAVATIONS

Introduction

The following report on work in the East Cut (Areas III and IV, Fig. 3) covers the Tenth (1988) and Twelfth (1990) seasons. There was no activity in the East Cut during the Eleventh (1989) Season.

Work in the East Cut was carried on with three main aims.

- 1) The continued excavation of early Middle Bronze Age deposits in plot IIIC, associated with the mudbrick city wall. Three phases (VIII-X) of early Middle Bronze Age date were unearthed, although the primary floors associated with the mudbrick city wall were not reached. A highlight was the discovery of three late MBIIB intramural burials, positioned without any obvious relationship to architecture, between Phases VIII

(MBIIB) and VII (MBIIC). A small but rich collection of Middle Bronze Age ceramics, including Tell al-Yahudiyeh ware, were recovered from the burials.

- 2) The exploration of the western two thirds of the Phase VA/VB administrative structure in plot IIIN. This was first detected to the east in plot IIIC in 1981. Thick white plaster floors were exposed over much of IIIN by the seasons end.
- 3) The continued excavation of plots IVE, IIIP and IIIQ through the LBIIB Phase II, and on into the very scrappy LBIIA Phase III in plots IVE and IIIP, and in IIIQ, through Phases II and III to the expose LBI-II Phase IV remains.

Middle Bronze Age IIA-IIA: Plot IIIC (East Cut Phases VIII-X)²¹

Phase VIII: MBIIB

At the beginning of the Tenth season, Plot IIIC was divided in half some four metres south of the north section line, and only the southern half of the trench was excavated.

Slightly over 1.25 m of deposit was removed in what was called IIIC South, exposing the very fragmentary remains of Phase VIII architecture (Fig. 7; pottery, Fig. 12:9-11).²² This architecture consisted of east-west Wall 47, and bonded into it, north-south Wall 49. Both were fairly substantial 40-60 cm wide walls, made up of small and medium fieldstone foundations, topped with patches of yellow and brown mudbricks. Both walls were preserved to a maximum height of 50 cm. Linking the walls together was a good rammed clay floor, 47.5. Set into this surface, in the northwest corner of the room formed by Walls 47/49, was a *ṭabun*, F.97.

21. Plot supervisors: Sheldon Gosline and Helga Fiedler (1988); Kate da Costa and Amanda Parish (1990).

22. For discussion of Phase VI and Phase VII, see

T.F. Potts, S.J. Bourke *et al.*, 'Preliminary Report on the University of Sydney's Eighth and Ninth Seasons of Excavation at Pella in Jordan', *ADAJ* 32 (1988), pp.130-131.

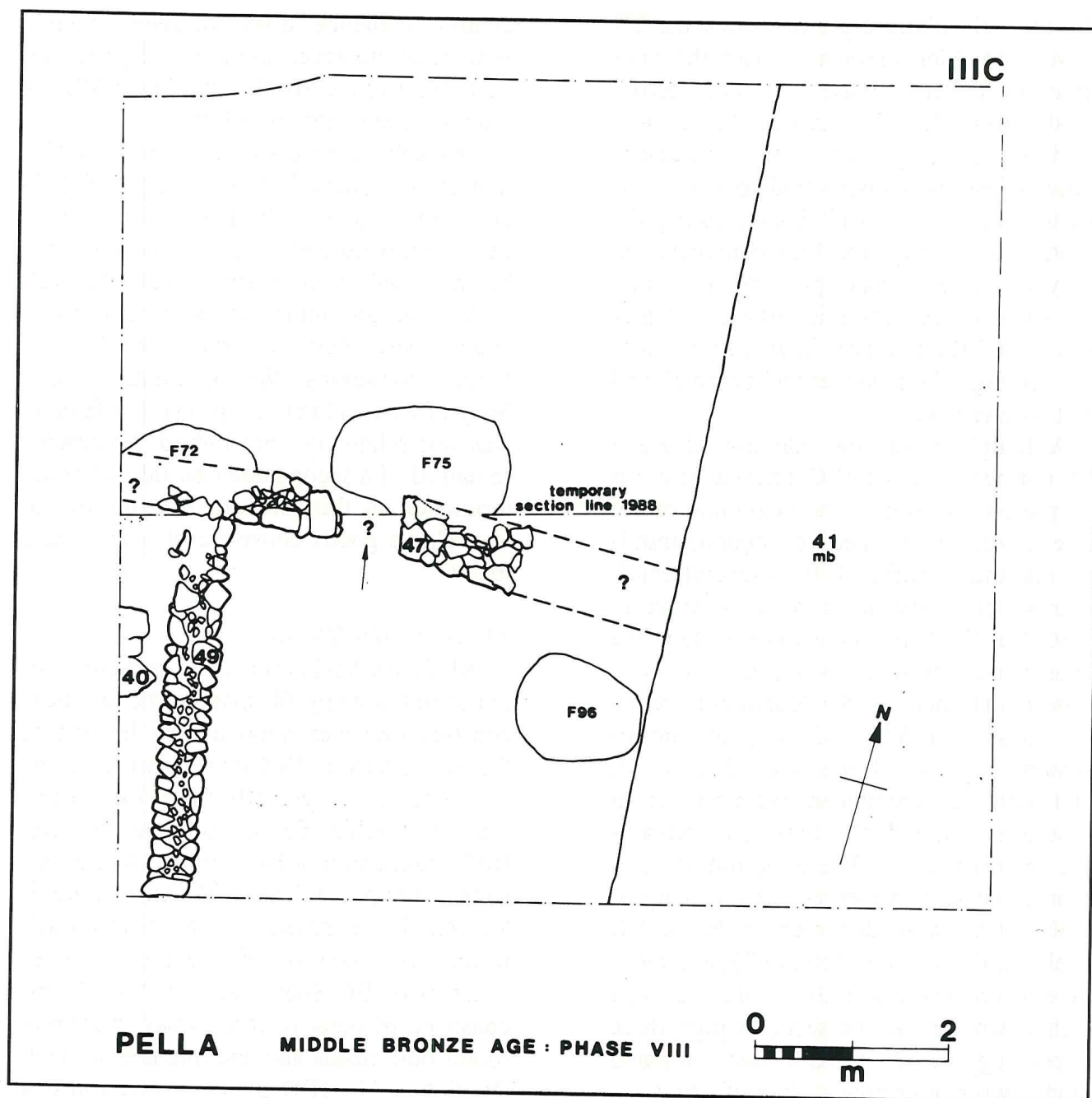


Fig 7. Plot IIIC. Plan of Phase VIII architecture.

The probable stone paved doorway leading north from the centre of Wall 47 was disturbed by the Phase VI Pit F.75. The eastern end of Wall 47 was difficult to determine with precision, as most of the eastern metre of the wall had collapsed to the south in antiquity. However, the line itself was not in doubt, nor was the fact that it abutted the main city wall, Wall 41. In this collapse, a quantity of mudbrick debris (45.7/45.10) had been deposited on occupation

buildup (47.2), on the floor 47.5. In colour and texture, the debris so resembled the city-wall that it seems likely that it fell from the wall's western face. The mudbrick and stone debris from Walls 41 and 47 suggest that Phase VIII was rendered uninhabitable through earthquake activity.

Intermediate Phase: MBIIB/C Burials

At some time after the abandonment of the Phase VIII architecture (Walls 47/49),

and in a still obscure period before the extensive levelling associated with the construction of the Phase VII architecture (Walls 40/42/43), this area of the tell was used as a burial ground. A first intramural burial (F.98) was discovered in the north-western margins of IIIC South, during the Tenth season (Fig. 8). This contained the body of an adult male, portions of a goat, and some sixteen ceramic vessels (ten juglets, three jugs and three bowls; for a selection see Fig. 13), a dagger and pommel, and flint (firelighter?).

Although it was the intention to leave the northern half of IIIC unexcavated for the present, erosion at the beginning of the Twelfth season revealed an elaborate multiple intramural burial (F.106) several centimetres below the limit of excavation in 1986 (Fig. 9). This, too, is to be dated to the "interphase" between VIII/VII, and with more confidence, as the foundation trench for Phase VII Wall 42 cuts the north-western margins of this second grave. It contained the articulated skeletons of at least three individuals, two adult females and an infant child. The easternmost adult is only partially preserved, as the margins of the grave were disturbed by Phase VII levelling, Phase VI Pit feature 75, and modern erosion. The grave also contained some twenty-two ceramic vessels (six jugs, three dipper juglets, six juglets, five carinated bowls, two platter bowls), two of which—a platter bowl and a globular juglet—were of the well known Tell al-Yahudiyeh Ware (Fig. 14). As the grave lay barely 20 cm below the Phase VII walls and surfaces, it seems likely that extensive levelling of the area occurred before Phase VII was constructed. The difference in time, based on

ceramic evidence, does not seem to have been great, however, as the grave goods are best seen as Late MBIIb, and Phase VII ceramics placed early in MBIIc.

Probably to be associated with this "intermediate" phase is a third burial (F.107) cut through, and badly disturbed by a robber (?) pit feature 96. Feature 107 was a cist burial, lined with a single row of well formed yellow mudbricks on its north and south sides. Only the northern half of the burial, containing the articulated upper body of what is likely to be an adult female, was left relatively undisturbed. Fragments remained of a second adult burial (sex indeterminate) in the southern margins of the cist. Grave goods consisted of a jug and a juglet.

Phase IX: MB IIA-IIB

All Phase VIII architecture and some 40 cm of red gravelly fill material below these constructions was removed by the end of the Tenth season. Further removal of some 10–15 cm of red gravelly fill at the start of the Twelfth Season brought the plot IIIC South and plot IIID Bronze Age architecture into phase. This IIID phase of architecture, first exposed in 1984 below thick Roman to Umayyad period dump,²³ was re-designated IIIC South Walls 53/54/55, and consisted of parts of three small mudbrick rooms built inside and abutting the city wall (Wall 41). The IIID locus 11 material can now be designated as Phase IX in the East Cut sequence.

As surfaces associated with the walls had been removed in 1984, only walls and foundation courses remained. When removed (as locus 51), the foundation trench for Wall 53 (48.7) was found to have cut

23. T.F. Potts, P.C. Edwards and S.M. College, 'Preliminary Report on a Sixth Season of Excavation by the University of Sydney at Pella in Jordan (1983/84)', *ADAJ* 29 (1985), pp. 196–197, Fig.

3. See also S.J. Bourke 'Pella in the Bronze and

Iron Ages', in D. Homès-Fredericq and J.B. Hennessy, eds., *The Archaeology of Jordan* vol. 2 (Leuven, Akkadica Supplementum VII & VIII 1989), pp. 417–418.

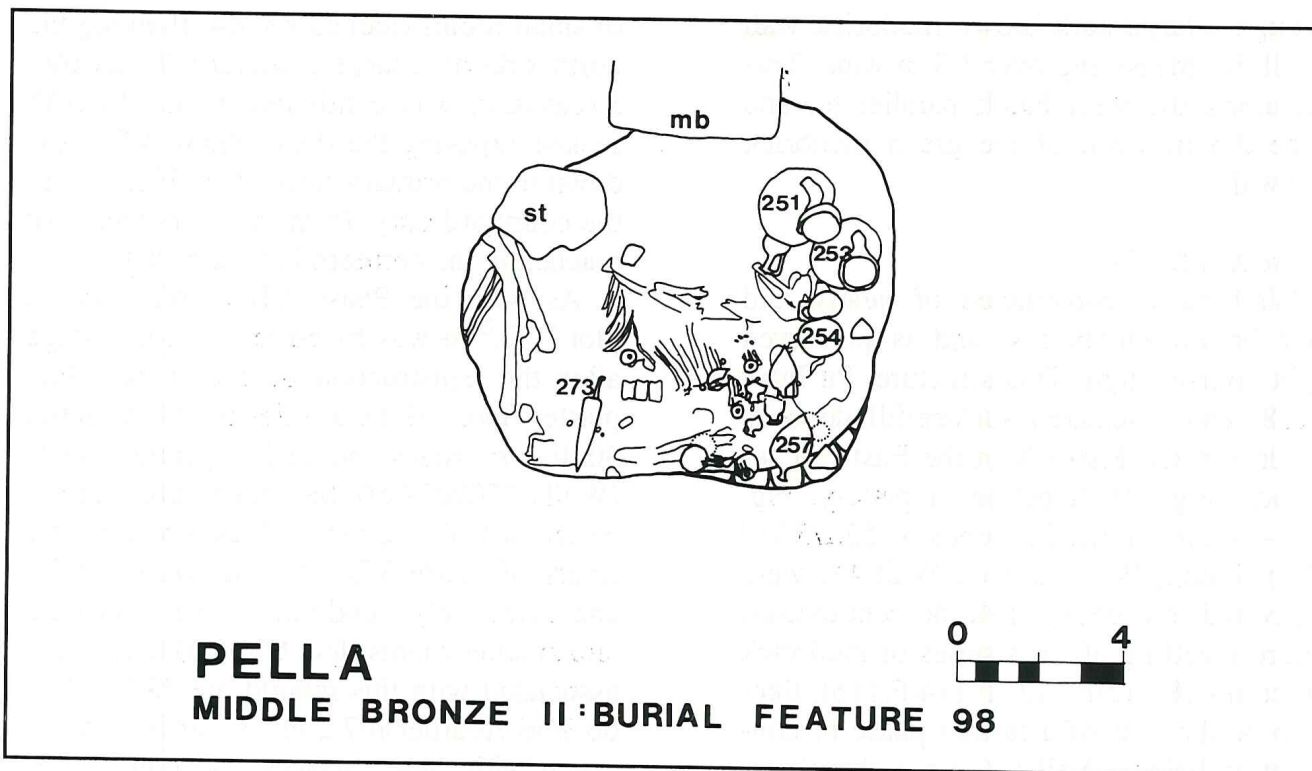


Fig. 8. Plot IIIC. Plan of Burial Feature 98.

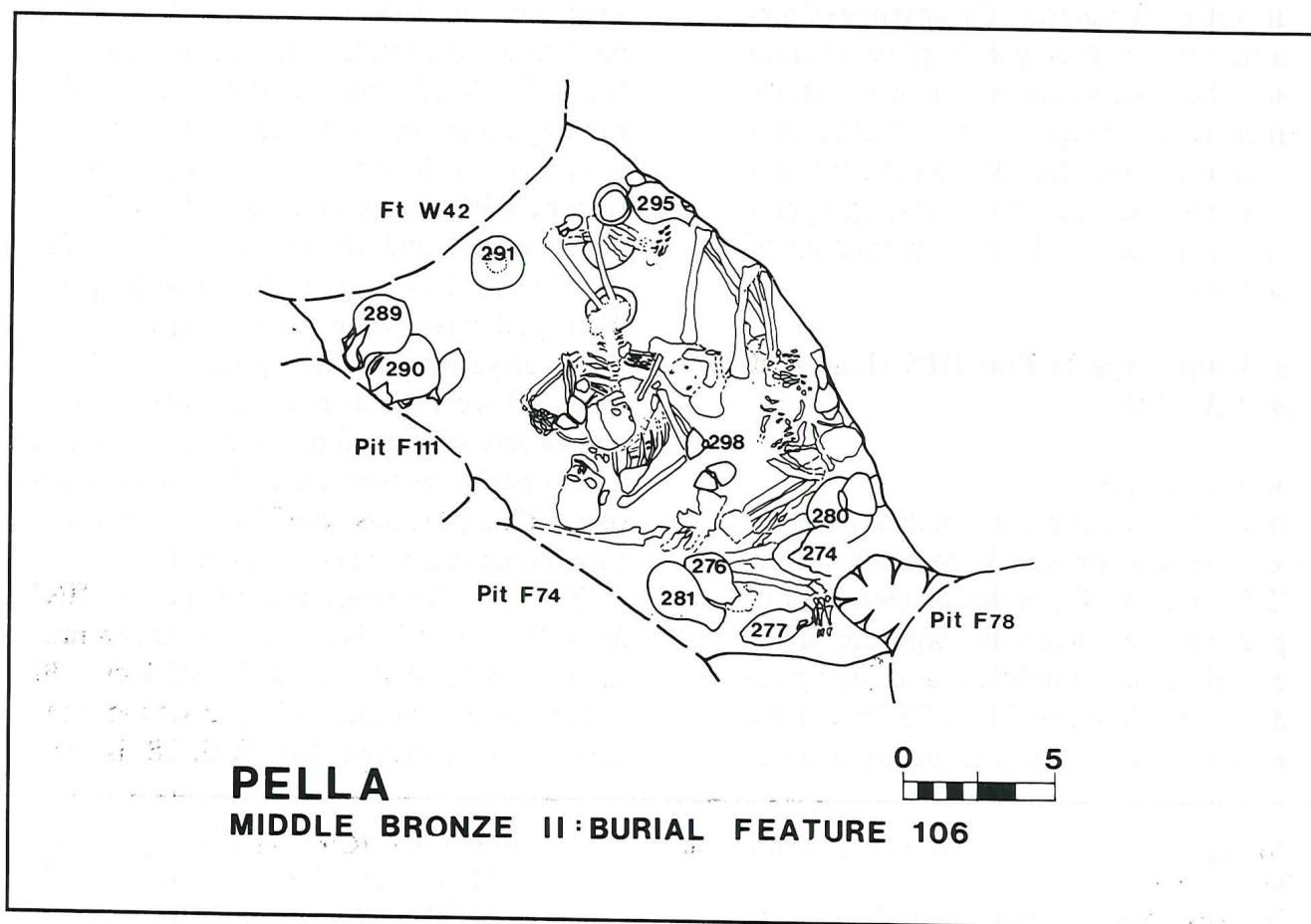


Fig. 9. Plot IIIC. Plan of Burial Feature 106.

through a large dark brown mudbrick wall (Wall 52) measuring over 1.5 m wide. This ran along the west baulk parallel to, and some 3.5 m west, of the green mudbrick city wall.

Phase X: MB IIA

Wall 52 is constructed of neatly laid dark brown mudbricks, and is preserved eight courses high. This structure, Pit/Infill F.108, and associated surface/fill deposits are designated Phase X in the East Cut sequence (Fig. 10; selection of pottery, Fig. 12:1–8). Intentional fill deposits (53.1/53.6/53.9) linking Wall 52 with Wall 41, were excavated to a depth of 40–60 centimetres, before levelling off to a series of mudbrick structures (F.112/F.113; F.114/F.116), likely to be the tops of a further phase of construction below. Whilst it is possible that a living surface may be indicated by the grey clay lens (53.11/53.23, 53.26–27) within the red gravelly fill material, the absence of any constructions on it or debris of occupation favours the interpretation that it is merely an intermediate stage in the infilling process. Although unclear for the moment, this may suggest that the entire infilling operation is associated with the construction of the city wall.

Late Bronze Age I: Plot IIIN (East Cut Phase VA–VB) ²⁴

Phase VA–VB: LBI

Excavation during the Tenth season removed the few Phase IV deposits (Walls 70/72/73; loci 45/47) in the southern half of the plot, and continued the exposure of the large fieldstone, mudbrick and mudplastered Phase VB Walls 71/74/75/76 and the large mudbrick Wall 69, revealing a series

of small rooms (loci 62/63 /64) flanking the north side of a large courtyard (locus 69). Excavation was continued in the Twelfth season exposing the Phase Phase VB walls down to the primary floor 69.1 (Fig. 11), in the courtyard only. Primary floors were not reached in the northern loci 62/63/64.

As with the Phase VB architecture in plot IIIC,²⁵ it was found that at some stage after the construction of the thick white plaster floor (69.1), a series of insubstantial 30–40 cm fieldstone and mudbrick walls (Walls 77/78/79/80) had been built directly on the last of a series of thick white plaster floors of Phase VB, abutting Walls 71/74, and effectively subdividing the courtyard into smaller rooms (loci 65/66/67). Surfaces associated with this rebuild are 53.21/65.3/66.3/66.7(earlier)/67.2 /67.3 (earlier). Associated with these surfaces also note F.143, upright stone (hitching post ??).

This is the so-called Phase VA reconstruction, which re-uses a substantial part of the Phase VB complex, including Phase VB Walls 71/74/75 and the street (locus 60) running down the west side of the complex. It is unclear if the three northern rooms (loci 62/63/64) were utilised in Phase VA.

At seasons end, the Phase VB Walls 71/74/75 were fully exposed down to the good thick yellowish-white plaster floor 69.1 in the courtyard locus. The street gravels of locus 60 were excavated for some 25 cm, and clearly continued on for at least another 25 cm below, as they are visible in the sides of the Phase IA pits (F.97/98/120) that disrup the northern area of the street.

The IIIN floor 69.1 is equivalent to IIIC 36.1, IIIN Wall 71 is the westward continuation of IIIC Wall 15, and IIIC locus 30 continues as IIIN locus 63. The southern return for the complex, IIIC Wall 28, is visi-

24. Plot supervisors: Timothy Potts (1988), Stephen Bourke (1990).

25. For a description of Phase V in IIIC, see A. W. McNicoll, R. H. Smith and J. B. Hennessy, eds.,

Pella in Jordan I, (Canberra, 1982), pp. 50–51; Potts, Edwards and College, 'Sixth Season', AD AJ 29 (1985), pp. 198–200; *PJ2*, Chapter 4.

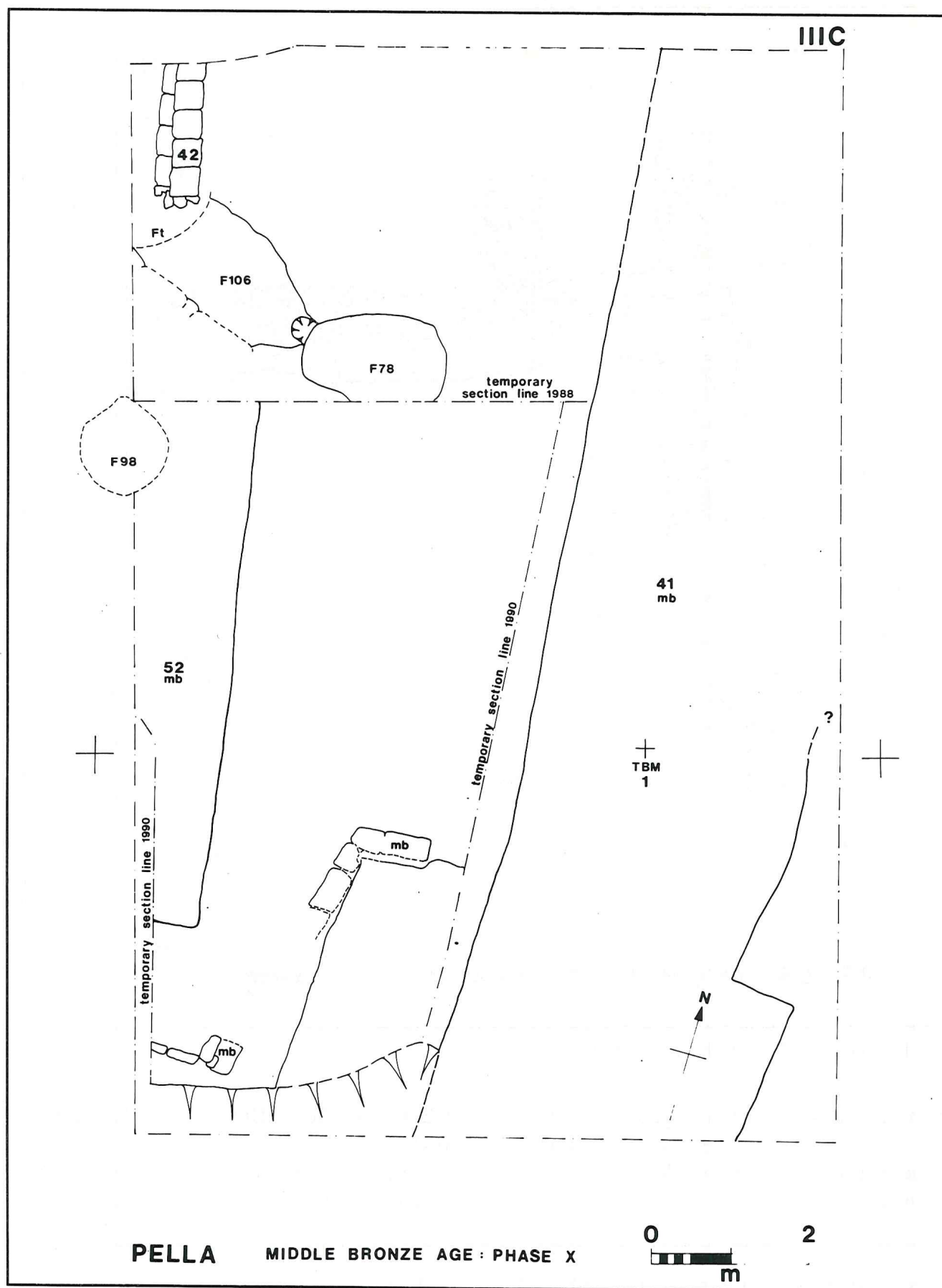


Fig. 10. Plot IIIC. Plan of Phase X Architecture.

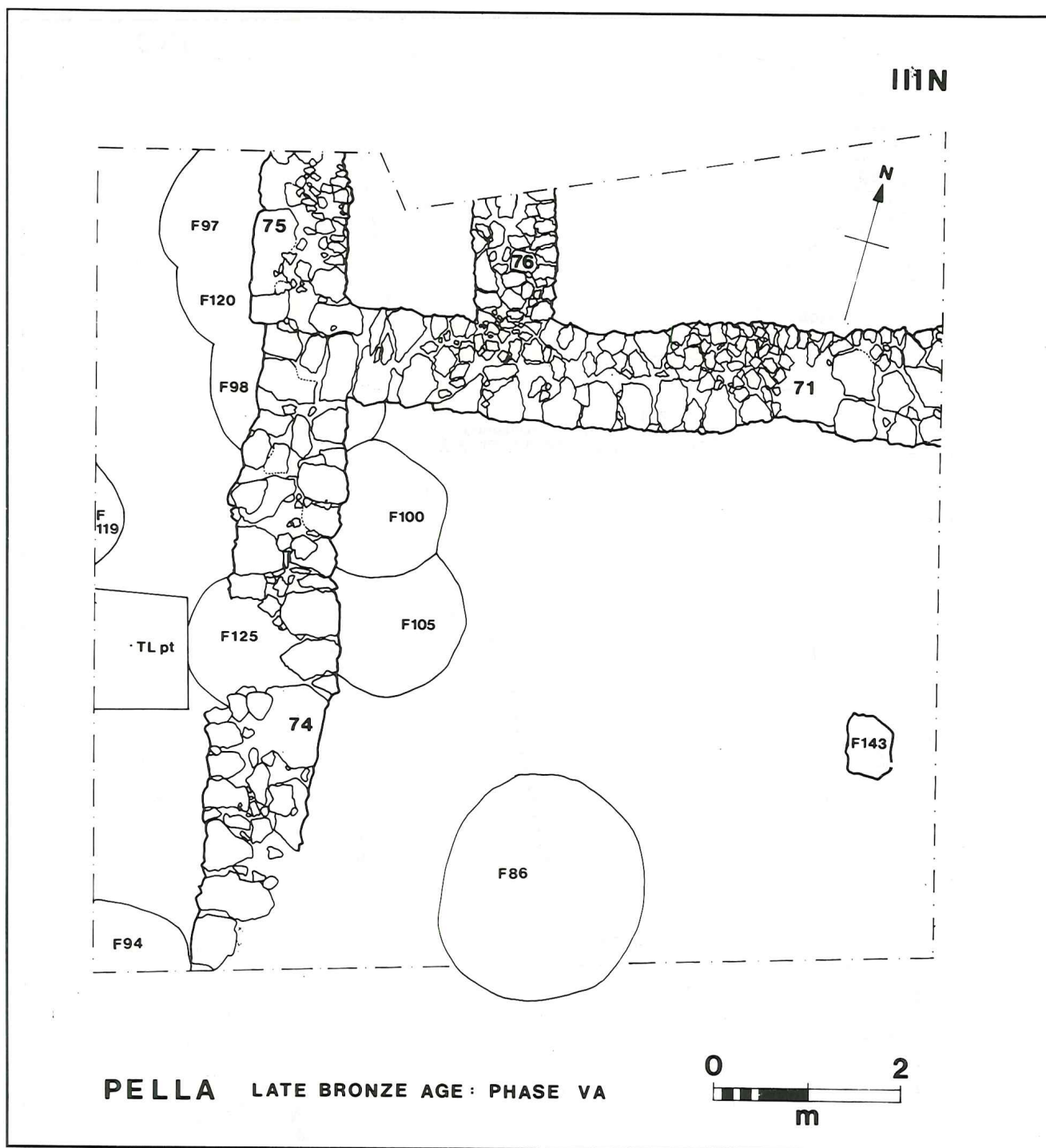


Fig. 11. Plot IIIN. Plan of Phase VA architecture.

ble in the walls of several large pits in plot IIIS. It is planned to recover the entire southern reaches of the complex in a forthcoming season.

LBIIA-B: Plots IIIQ, IIIP, IVE (Phases II-IV)²⁶

Excavation in the Tenth season concentrated on removing the last traces of the

26. Plot supervisors: Mark Hinman, Yvonne Reynolds (1988); Jessica Panday, Paul Donnelly, Fiona Richards (1990).

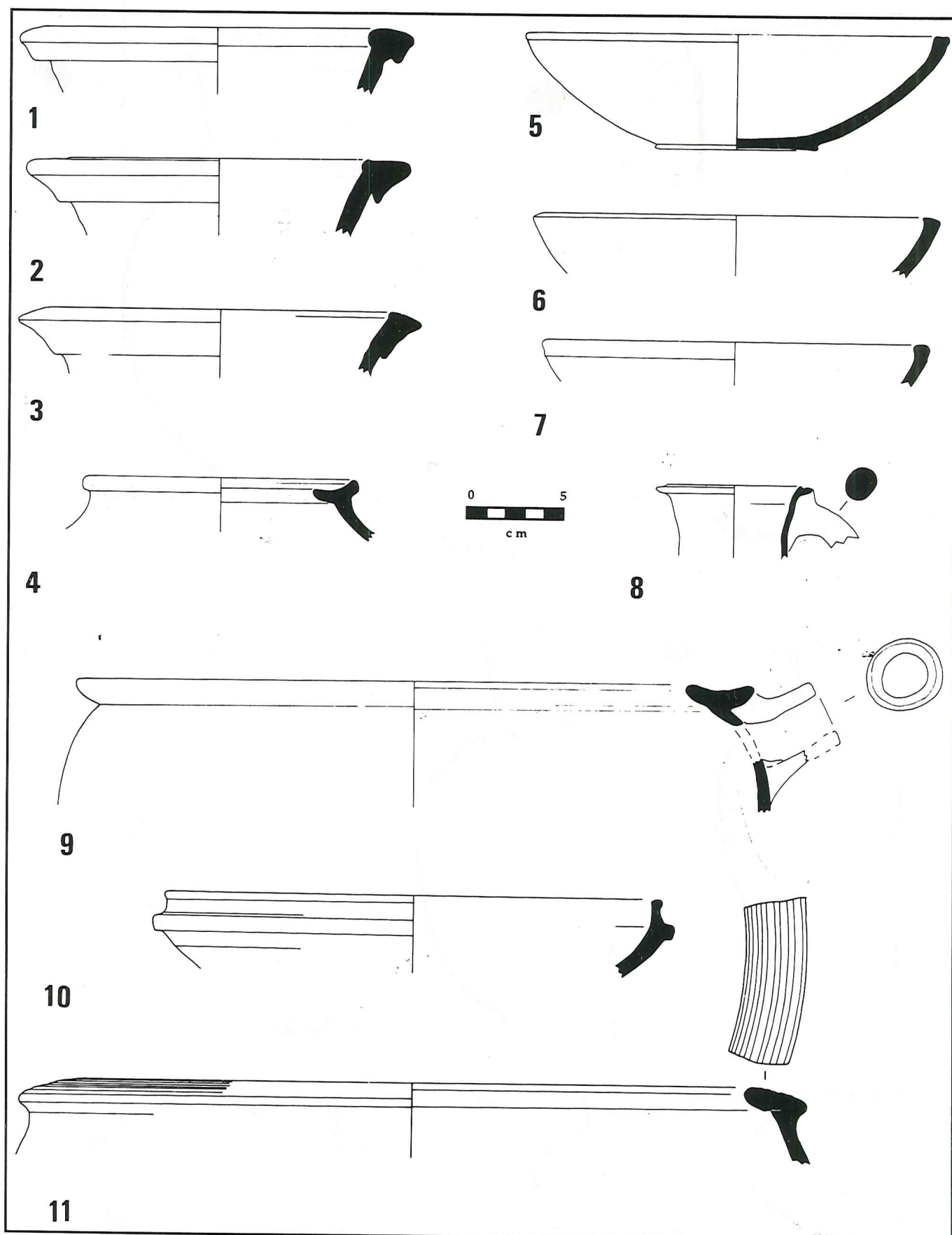


Fig. 12. Middle Bronze Age pottery from Plot IIIC. Nos. 1-8: Phase X (MBIIA); nos. 9-11: Phase VIII (MBIIB).

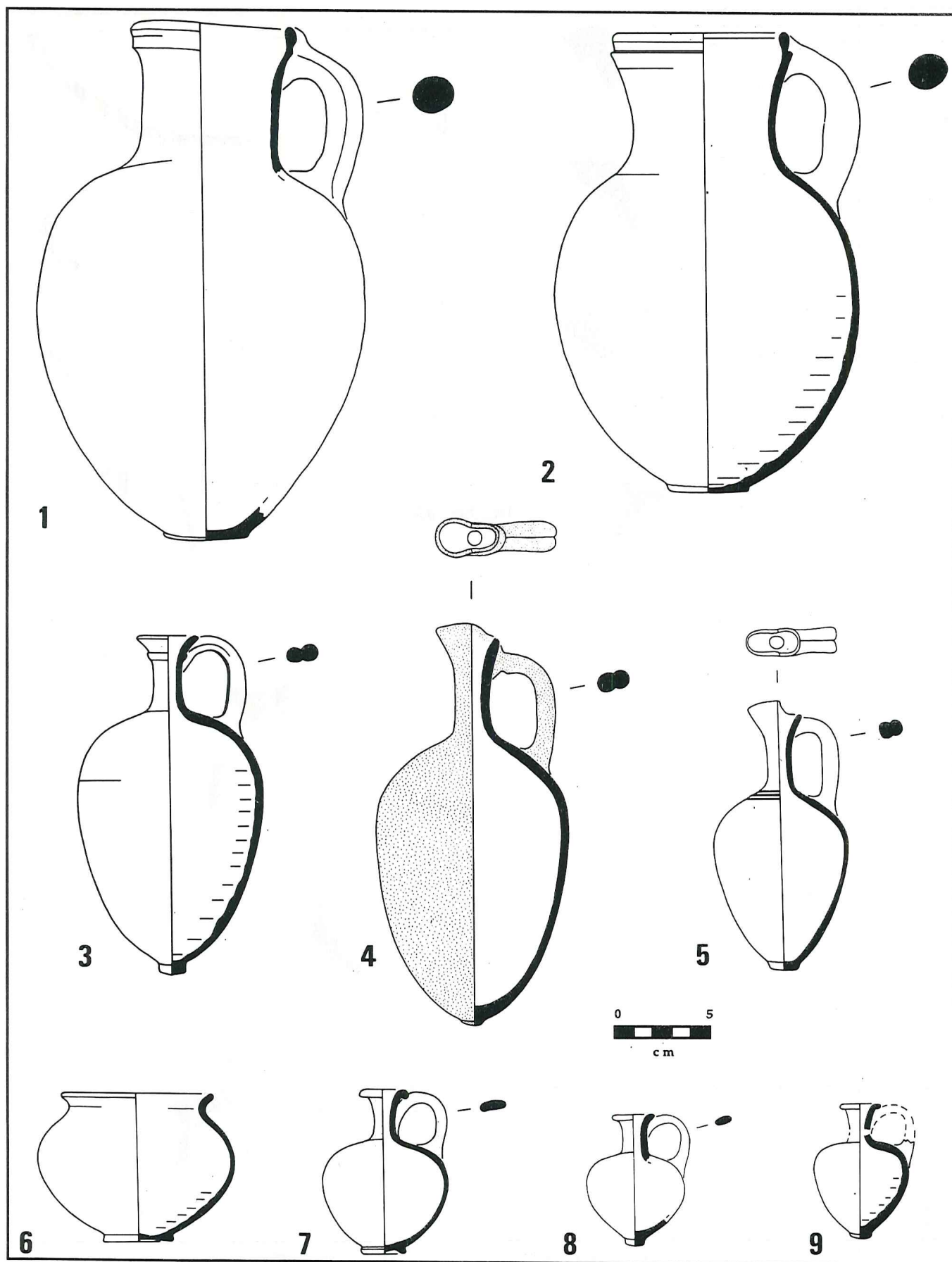


Fig. 13. Middle Bronze Age pottery from Plot IIIC. Burial Feature 98.

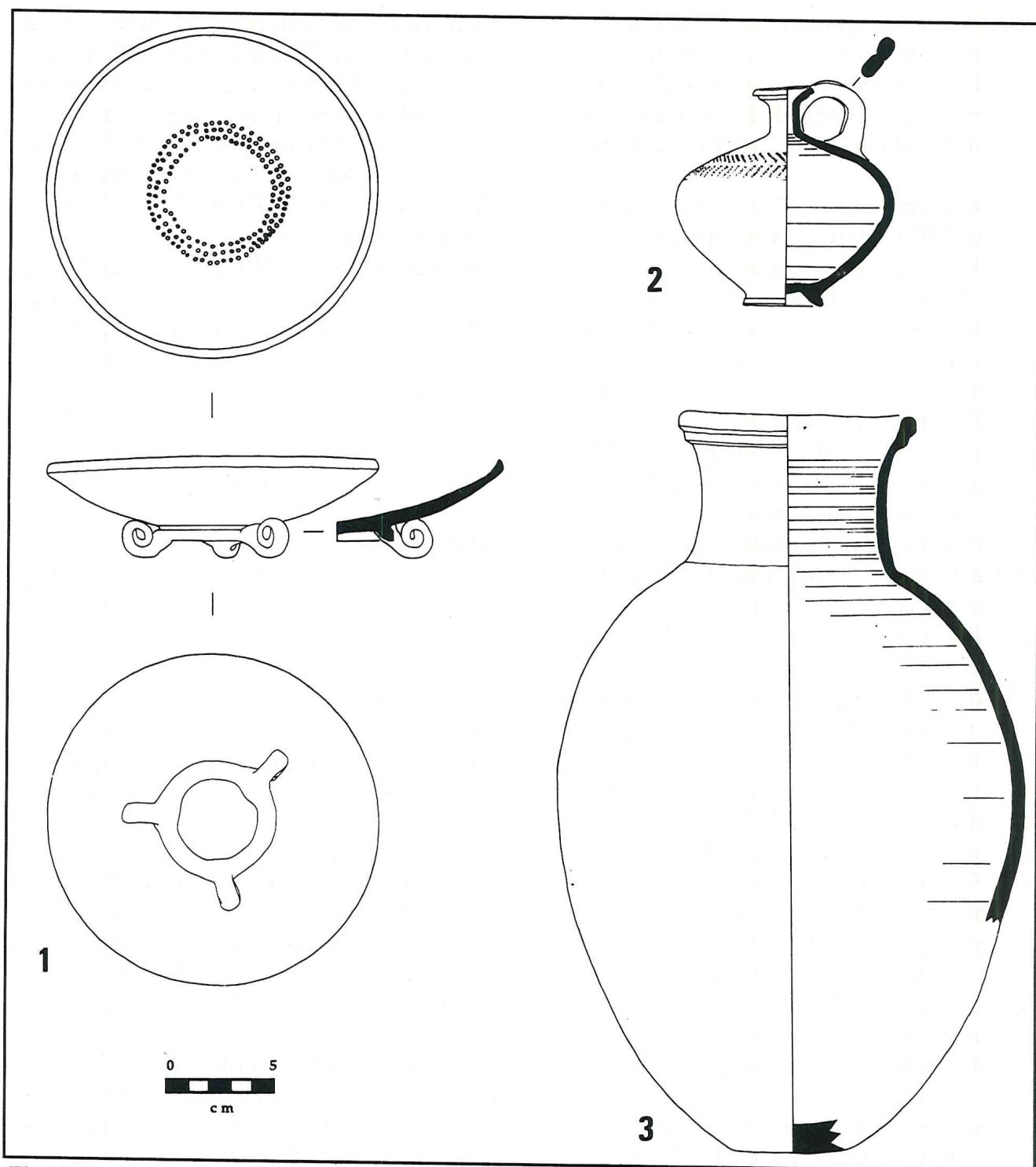


Fig. 14. Middle Bronze Age pottery from Plot IIIC. Burial Feature 106. Nos. 1-2: Tell al-Yahudiyeh ware; no. 3: buff ware.

extensive Phase IA destruction debris in all plots (IVE, IIIP, IIIQ, IIIR), and in isolating the quite similar architecture of the preceding Phase II below.²⁷ By the end of the

Tenth season, Phase II had been isolated over much of plots IVE and IIIP. In plot IIIQ, where the necessity of providing access to the northern plots restricted the ex-

27. For a description of Phase IA excavations in 1986, see Potts, Bourke *et al.*, 'Eighth and Ninth Seasons', *ADAJ* 32 (1988), pp: 136-137.

cavation area to approximately 9 x 7 m on the eastern side of the trench, work progressed more rapidly, and by the end of the Tenth season, the Phase II architecture and all primary floors were isolated and removed.

Excavation of Phase II deposits in plots IVE and IIIP continued in the Twelfth season, where floors associated with the primarily domestic structures were removed. As with the succeeding Phase IA, Phase II is dominated by a fair sized street down the western side of the three plots, and, in the case of plot IVE, a large courtyard to its east, virtually devoid of features. In IIIP, fragments of walls, a series of domestic floors, *tawabeen*, ash deposits, and all the paraphernalia (mortars, querns, storage pits) that make up a food preparation and cooking area were isolated. It seems likely that Phase II structures and features in IIIP can be interpreted as a kitchen.

Work in IIIQ began with the removal of a few remaining deposits and the largely pedestalled Phase II walls. After removing levelling fill deposits, excavation quickly proceeded into Phase III deposits below. Covering most of the plot not cut by large Phase O and Phase IA pits, a north-south wall and an east-west wall were linked by primary grey clay surface. Above this, a series of burnt black clay and ash surfaces were excavated. Together, the features make up parts of two rooms, the southernmost of which, by the nature of its heavily eroded surfaces, may be seen as an outdoor area; perhaps even an early phase east-west street. Most deposits were cut about by many upper phase pits, and tracing surfaces was made all the more difficult by frequent evidence of earth slippage.

By the end of the Twelfth season, Phase

II surfaces had been removed from all IVE loci, and some 50 cm of Phase III deposit (collapse?) besides. Large mudbrick walls of possible Phase III date were reached on the last day of excavation, and await investigation. In plot IIIP, the very cut-about surfaces and features of Phase II are still in the process of excavation, although nearing completion. In plot IIIQ, the scanty Phase III walls and surfaces had been removed, and Phase IV walls were beginning to appear below some 30 cm of fill/debris deposits beneath the Phase III surface.

(S.J.B.)

AREA XXXII EXCAVATIONS

Introduction

After much conservation, cataloguing and drafting during the Eleventh season, excavation resumed in Area XXXII during the Twelfth Season in three plots (A, B and C).²⁸ Work concentrated on the removal of the extensive fifth century Byzantine period remains in XXXIIA and XXXIIB and the excavation of the late tenth century BC Phase D remains in the same plots. As yet no earlier architectural phase has been exposed, although several large rubbish pits, and a number of small fire pits were isolated, and may be deemed the beginning of a separate Phase E, (XXXIIA locus 19, XXXIIB locus 29), perhaps to be dated to the Early Iron Age.

In the more problematic XXXIIC, much disturbed fill and gully/wash layers corresponding to Phases B and C have been isolated and removed. In a small two square metre sondage a large, stone lined storage pit, possibly to be attributed to Phase D, was cleared.

Little earlier material was unearthed, al-

28. For a description of Phase C excavations, see P.C. Edwards, S.J. Bourke *et al.*, 'Preliminary Report on the University of Sydney's Tenth

Season of Excavation at Pella in Jordan', *ADAJ* 34 (1990).

though a small amount of derived Early and Middle Bronze Age material was recovered, particularly in the XXXIIC sondage and, to a lesser extent, in the western loci of XXXIIB.

Iron Age (Area XXXII Phases C–E) ²⁹

Excavation of the well-constructed architecture of Phase D was completed this season. In plot XXXIIA this consisted of three small square rooms which abut each other from north to south, a partially covered courtyard to their east, and a small alleyway, to the north. In plot XXXIIB, to the west, the continuation of these three north-south rooms was exposed, whilst a small north-south passageway was found to separate these kitchen structures from a large open courtyard further to the west.

There is nothing about these structures to suggest anything other than a well constructed domestic housing unit. Extensive ceramic material has been recovered off the floors (Fig. 15:1–3). The complex underwent a fiery destruction, probably at some stage during the tenth century BC.

Although ceramic analysis is still at a preliminary stage, considerably more cataloguing has reinforced the impression that there is but a small interval between the destructions of Phase D (late tenth century BC?) and Phase C (early ninth century BC?).

Canadian excavations at Tell al-Hammeh continue to produce material close to our own in circumstance and kind, and the extensive Iron Age destruction at Tell as-Sa'idiyeh would seem to parallel our Phase D horizon.³⁰ Together they suggest some form of linked circumstance in the de-

structions attested to in the region. Whilst the latter destruction (Phase C) may well have a natural cause—and recent controversy over the extent and impact of Shishak's razzia notwithstanding—the case for the earlier (Phase D) destruction being attributed to Shishak should be considered. Whilst Ussishkin is right to point out that there has never been any compelling evidence to attribute the extensive early Iron Age II destruction horizon in Palestine to Shishak, Dever is equally correct to observe that the extensive destruction horizons do exist, Shishak or no, and some, most probably linked, explanation for the extensive disruption must be attempted.³¹

Whether it be through earthquake or human action, it seems certain now that Pella shares in the misfortunes of its western neighbours in the tenth century BC.

Byzantine Period Remains (Unphased)

Much work this year was devoted to the removal of the Byzantine period remains discovered in 1988. Rooms in XXXIIA, which abutted the south face of a large curved stone retaining wall (Wall 15), and a narrow east-west passageway to their south, were all removed, having revealed at least two closely stratified phases of fifth century AD occupation. In the western margins of XXXIIB, a small room preserved two phases of a similar date. It probably belonged to a separate structure, attested to in fragmentary state in XXXIIC to the west.

Coins recovered during the 1990 season do not alter the conclusions advanced after the 1988 season.³² However, ceramic analysis may favour a date somewhat later in the fifth century than hitherto suggested. Ongo-

29. Supervisors: Erin Crumlin (XXXIIA); Jodie Benton (XXXIIB); Graham Phillip (XXXIIC).

30. J. Cahill, G. Lipton and D. Tarler, 'Tell el-Hammah, 1988', *IEJ* 38 (1988), pp.191–194; J.N. Tubb, 'Preliminary Report on the Fourth Season of Excavations at Tell es-Sa'idiyeh in

the Jordan Valley', *Levant* 22 (1990) pp. 21–38.

31. D. Ussishkin, 'Notes on Megiddo, Gezer, Ashdod, and Tel Batash in the Tenth to Ninth Centuries b.c.', *BASOR* 277–8 (1990), pp. 71–91.

32. See Edwards, Bourke, *et al.*, 'Tenth Season', *ADAJ* 34 (1990).

ing analysis of the Byzantine ceramics from Area IV at Pella reveal a fairly extensive occupation of the southern slopes of the mound in the later fifth century AD.³³

Quite unexpectedly, it was found that XXXIIA Wall 16, which abuts the large retaining Wall 15 on its south face, was built directly atop the stone foundations of an Early Iron Age wall. On excavation, this revealed an upturned lamp as part of a foundation deposit, similar to those found in earlier seasons in Area III. Only very small amounts of heavily eroded Iron Age fill material were found in association with this wall, and no surfaces were isolated.

Excavations in Area XXXII in 1990 fully exposed the Phase D, Iron Age II architecture across all three plots, and removed all but two loci by the season's end. An earlier phase of occupation (Phase E), was reached in places some 20 cm below Phase D, although the nature of the insubstantial 'squatterlike' remains are not clear at present. Two phases of Byzantine remains dated to the fifth century AD have been excavated in plots XXXIIA and XXXIIB, and almost completely dismantled in XXXIIA by the season's end.

(S.J.B.)

TOMBS: AREAS XI/XXVI

The search for tombs continued throughout the Twelfth season, with work concentrating along the northern face of Tell al-Ḥuṣn (Area XI).³⁴ Three tombs (T.102–104) located along the north-eastern slopes of Tell al-Ḥuṣn, produced Roman to Byzantine domestic and industrial material, and although possibly cut initially as Bronze Age tombs, only the evidence of their Late Period domestic and industrial use remained.

Prospecting further west along the north-

ern face of Tell al-Ḥuṣn, a robbed out Middle Bronze Age II chamber tomb (T.105) was located. It produced a small amount of good late MB II material, and the fragments of a single skeleton.

Several metres west of Tomb 105, a Late Bronze Age tomb, or tomb entrance (T.106), was located along the southwestern slopes of the northern face of Tell al-Ḥuṣn, some eleven metres to the east of the very large Cave–Tomb 1, excavated by the Department of Antiquities in 1963.³⁵

The deposits from this 'tomb' consist of a series of collapse and debris layers on top of a hard prepared surface abutting the sloping natural rock face of Tell al-Ḥuṣn. At least three articulated skeletons were found lying hard against the natural rockface, crushed and covered with debris. One of the skeletons was found to have had a weighty set of bronze anklets attached to its legs. These deposits may well be part of an access way leading up to the entrance to the large JDA Tomb 1. Associated pottery dates to the LBIIA/B period, and is exactly comparable to material from JDA Tomb 1. One cannot, as yet, demonstrate a direct stratigraphic link between the Tomb 106 deposits and JDA Tomb 1. However, as the entrance to Tomb 1 opens into a huge chamber which extends back some eleven metres to the east (ie. directly behind 'Tomb 106'), such an association seems likely. Firm evidence for associating Sydney T.106 and JDA Tomb 1 will be sought in a forthcoming season.

At the very end of the season prospecting began on the hillock immediately to the north-east of Tell al-Ḥuṣn, Sydney Area XXVI. A Middle Bronze Age chamber tomb (T.107), was located along the lower northern slope of the hillock, but proved to have been robbed out in antiquity.

(S.J.B.)

33. I am grateful to Ms P.M. Watson, for discussing this material with me.

34. Supervisors: Sultan Schreideh and Margaret

O'Hea.

35. See Bourke in Homès-Fredericq and Hennessy, eds., *Archaeology of Jordan* 2, (1988), pp.414–425.

SMALL FINDS FROM AREAS III, IV,
AND XXXII

Ceramic Figurines, Zoomorphic

Fig. 15:6. RN 132000, CN 13669, XXXIIB 28.4 (Phase D)

Horse-head spout, buff ware, with lug handle beneath the neck. Ears shown by incised lines; eyes by applied pellets; l. 55 x w. 49 x th. 40 mm.

Fig. 15:7. RN 110052, CN 880219, XXXIIB 15.13 (Phase C)

Horse figurine fragment, buff ware, damaged at nose and ears; l. 54 x w. 32 x th. 30 mm. A harness is indicated by two applied bands over forehead, surmounted by an applied and incised disc. Possible blinkers extend from band to partially cover the eyes. The neck is hollow, and joined to the nose by a narrow opening; however this does not seem large enough to form a functional spout.

Fig. 15:8. RN 110496, CN 881519, IIIQ 102.15 (Phase II)

Horse-head spout with applied eyes and small lug handle beneath the neck. The ears are broken off at the base; l. 45 x w. 35 x th. 27 mm.

Comment

The pieces are all hand-made, and show stylistic similarities in the use of applied

pellets with incised decoration to indicate the eyes—a common feature of the type. Figs. 15:6 and 15:8 are spouted, and belong either to zoomorphic vessels,³⁶ or as rim attachments to kernoi.³⁷ Fig. 15:7, perhaps part of a freestanding figurine,³⁸ has numerous parallels for the form of harness. A double thong appears at Samaria and Tell al-Far'ah,³⁹ with simpler versions occurring at Gezer and Megiddo,⁴⁰ while a possible parallel for the so-called blinkers appears in Megiddo, stratum IV.⁴¹ An applied disc in the centre of the forehead occurs on examples from Gezer, Megiddo, Lachish, Hazor and Jerusalem.⁴² This may have been intended to represent some functional part of the harness, be merely decorative, or have some further cultic significance.⁴³

General comparative material can be found at Megiddo, Strata VIIA to II, Beth Shan VI, Tell al-Far'ah VIIB, Qasile X, Tell as-Sa'idiyeh V, Gezer IV-VI, Lachish T.106 and 1002, and Cave I, Jerusalem, which Holland places around 700 BC.⁴⁴

Fig. 16:7. RN 130152, CN 13947, IIIQ 117.33 (Phase IV)

Mycenaean figurine fragment, finely levigated clay with no visible inclusions, red paint on buff; l. 35 x w. 14 x th. 11 mm. Animal torso (?), broken at both ends, decorated with a broad horizontal stripe running across its back, and the remains of a second

36. T.A. Holland, 'A Study of Palestinian Iron Age Baked Clay Figurines with Special Reference to Jerusalem Cave', *Levant* 9 (1977), Type J.V-VI.

37. Holland, 'Clay Figurines', *Levant* 9 (1977), Type J.I-II.

38. Holland, 'Clay Figurines', *Levant* 9 (1977), Type H1.

39. J.W. Crowfoot *et al.*, *Samaria-Sebaste III: The Objects*, (London, 1957), Fig. B2; A. Chambon, *Tell el-Far'ah I: l'âge de Fer*, (Paris, 1984), Pl. 65: 3-4 (Str. VIIB).

40. R.A.S. Macalister, *The Excavations of Gezer*, vol. 3 (London, 1912), Pls. 195:8 (Str. VII-II), 126:21 (Str. IV.6); H.G. May, *The Material Remains of the Megiddo Cult*, (Chicago, 1935), Pl.

36.M4550.

41. G. Loud, *Megiddo II*, (Chicago, 1948), Pl. 246:31.

42. Macalister, *Gezer II*, Fig. 211:9 (Str. V.6); Loud, *Megiddo II*, Pl. 246:27 (Str. VIIA); O. Tuffnell, *Lachish III - The Iron Age*, (London, 1953), Pl. 27.2; Y. Yadin, *Hazor II: An Account of the Second Season of Excavations, 1956*, (Jerusalem, 1960), Pl. 103:9, 163:11-12; Holland, 'Clay Figurines', *Levant* 9, Fig. 7:20-21, 8:2; K.M. Kenyon, *Digging Up Jerusalem*, (London, 1974), Fig. 61.

43. Holland, 'Clay Figurines', *Levant* 9, pp. 127, 149-150.

44. Holland, 'Clay Figurines', *Levant* 9, p. 136.

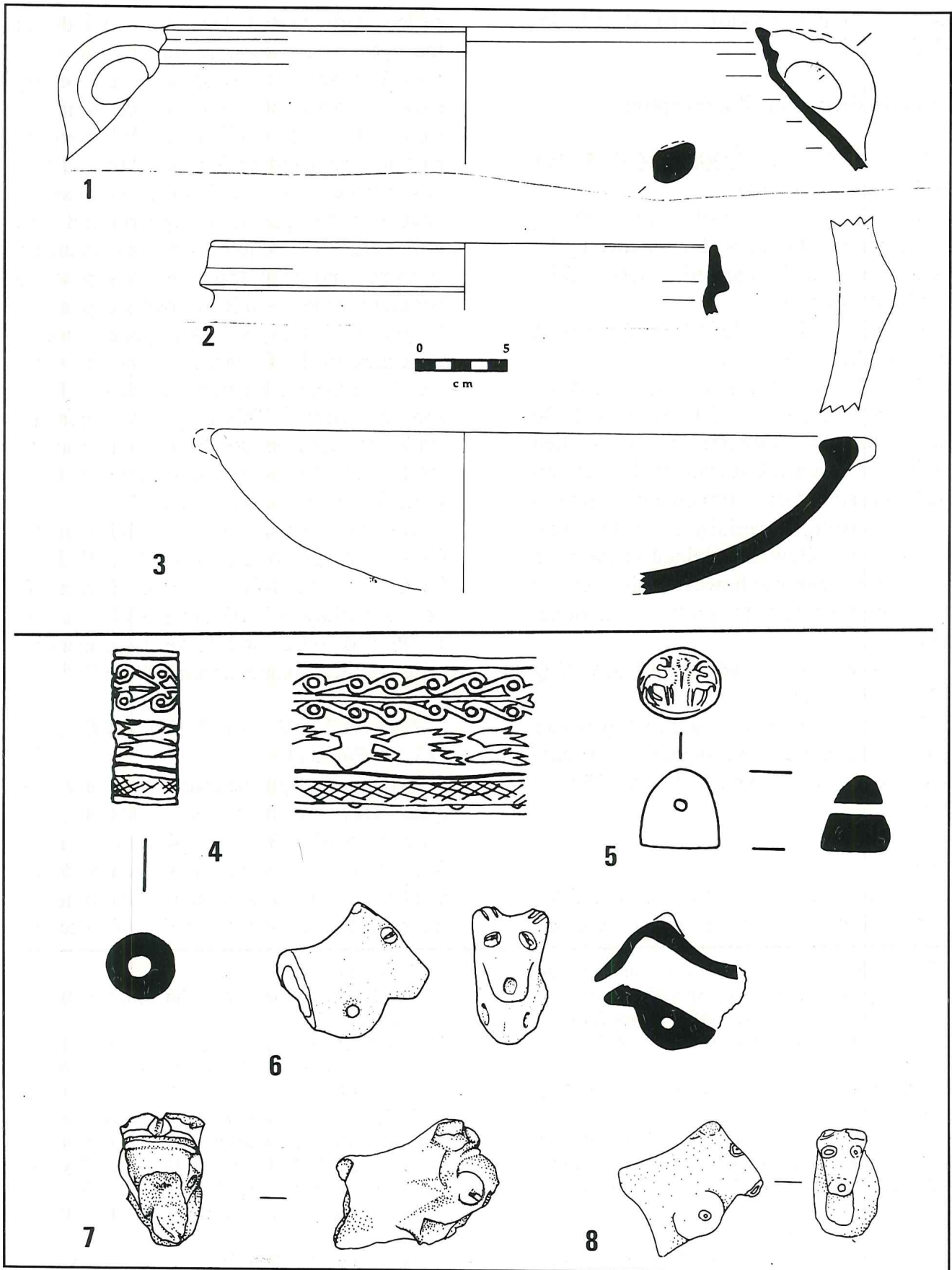


Fig. 15. Nos. 1-3: Iron Age pottery from Plot XXXIIB; nos. 4-8: Small finds from Areas III and XXXII (for dimensions, see text).

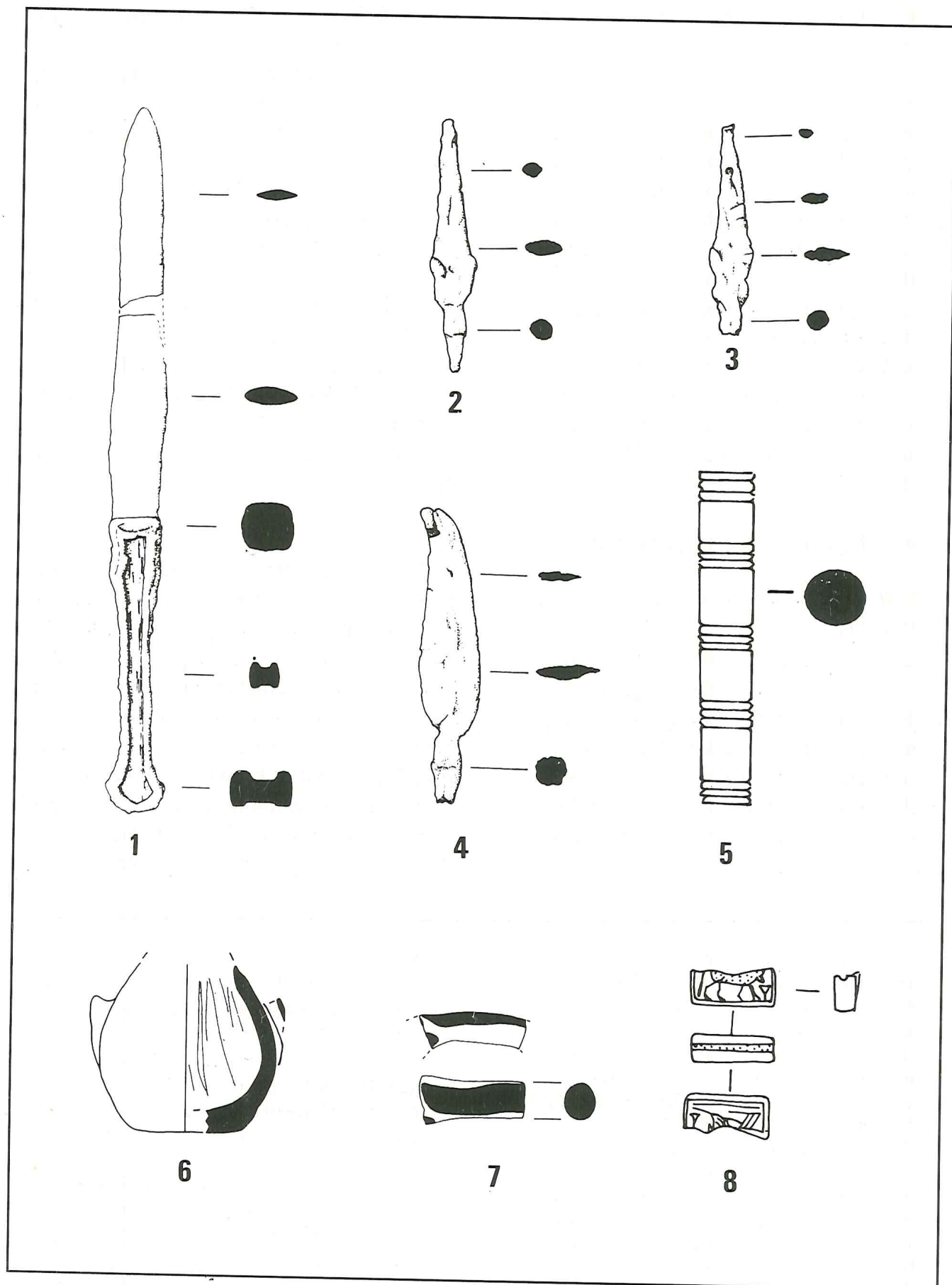


Fig. 16. Small finds from Areas III and XXXII (for dimensions, see text).

stroke, probably running vertically down the leg.

Comment

It is difficult to place such a fragmentary example within the typology of Mycenaean figurines.⁴⁵ The slight wave still evident in the linear decoration might suggest a position early in French's Linear I group (LH IIIA2). On the other hand, the simplicity of a single stripe, in itself unusual, tends to indicate a place later in the sequence in Linear 2, with its tendency towards stylisation. Similar figurines are found at Ras Shamra and Megiddo.⁴⁶ A suggested date for this example would be late LH IIIA2 to early LH IIIB.

Ceramic Figurines, Anthropomorphic

Pl. II:1. RN 130115, CN 900894, IVE 110.120 (Phases II–III)

Fragment, preserved from head to hips; l. 66 x w. 50 x th. 26 mm. The plaque depicts a nude female figure, wearing a heavy wig that reaches to the shoulders. Her arms are held relaxed by her sides, with a double bracelet around her left wrist. The surface of the lower face and chest is slightly damaged.

Pl. II:2. RN 110508, CN 881590, IIIN 45.13A (Phase IV)

Fragment, preserved from just below hips to ankles. Arms are by her sides as in previous example; l. 53 x w. 42 x th. 24 mm.

Pl. II:3. RN 130053, CN 900314, IVE 11.43 (Phases II–III)

Fragment, legs; l. 35 x w. 43 x th. 14 mm.

Pl. II:4. RN 130071, CN 900525, IVE 110.71 (Phases II–III)

Fragment, feet; l. 43 x w. 36 x th. 9 mm.

Pl. II:5. RN 130092, CN 900718, IVE 110.93 (Phases II–III)

Fragment, feet; l. 35 x w. 33 x th. 19 mm.

Comment

These fragments were made in a single mould, and come from a type of plaque often associated with the goddess Astarte.⁴⁷ At least two of these belong to Pritchard's Type III, "Nude female figurines with arms hanging down to sides" (Pl. II: 1–2),⁴⁸ while the frontal position of the feet in Pl. II:4, 5 is not out of keeping with the type.⁴⁹ Pl. II:5 is more carefully modelled, with incised lines used to indicate the toes.⁵⁰ Plaques are very popular in Late Bronze

45. E. French, 'The Development of Mycenaean Terracotta Figurines', *BSA* 66 (1971), pp. 101–187; in which divisions are based on decoration and shape.

46. C.F.A. Schaeffer, *Ugaritica* II, (Paris, 1949), Figs. 59:9, 55:2, 67:8; C.F.A. Schaeffer, *Ugaritica* VII, (Paris, 1978), Figs. 55:6, 10, 12–13, p. 352; Loud, *Megiddo II*, Pl. 246:25.

47. J. B. Pritchard, *Palestinian Figurines in Relation to Certain Goddesses Known Through Literature*, (New Haven, 1943); W.F. Albright, 'Astarte Plaques and Figurines from Tell Beit Mirsim', *Mélanges Syriens offerts à Monsieur René Dussaud* 1, (Paris, 1939) pp. 107–120.

48. Pritchard, *Palestinian Figurines*, pp. 5, 14–18,

nos. 106–150.

49. Cf M. Tadmor, 'Female Cult Figurines in Late Canaan and Early Israel: Archaeological Evidence', in *Studies in the Period of David and Solomon and other essays*, ed. T. Ishida, (Winona Lake, 1982), Figs. 6–8; N. Tzori, 'Cult Figurines in the Eastern Plain of Esdraelon and Beth She'an', *EI* 5 (1958), Pl. 7:2, 4.

50. Cf M. Dothan, 'Ashdod II–III', *Atiqot* 9–10, (1971), Pl. 64:6; F.W. James, *The Iron Age at Beth Shan*, (Philadelphia, 1966), Fig. 111:7; Albright, 'Tell Beit Mirsim II: The Bronze Age', *AASOR* 17 (1938), Pl. 27:8–9; Tadmor, *Studies*, Pl. 1; Macalister, *Gezer* III, Pl. 220:5a.

Age Palestine, occurring at Beth Shan level IX, Tell Beit Mirsim C, Tell Abu Hawam V, Hazor C stratum 1a-b, and Deir al-Balah.⁵¹ It is worth noting that none of the Pella examples were painted, as seems to have been the case elsewhere.⁵²

Cylinder Seal

Fig. 15:4, Pl. II:6. RN110507, CN881586, IIIQ 109.11 pit fill, F. 126 (Phase II)

Cylinder seal, opaque white-green faience; l. 31 x diam. 13 mm. A hollow cylinder, mended from two fragments, missing most of the surface glaze. Designs are in three registers: cross-hatched net, two rows of fish swimming to left, scroll pattern reflected onto either side of a horizontal line.

Comment

Stylistically, this seal belongs to the Mitannian Common Style, a class predominantly formed of examples in faience.⁵³ No exact parallels were found, but the three motives used—net, fish and scroll design—occur separately and in combination on a number of examples.⁵⁴ The closest appear at Ras Shamra (Ugarit Recent 1-2) and Beth Shan, Level VII.⁵⁵ More general parallels range in date from an isolated example at Beth Shan, Level XB, through to Beth

Shan Level VII, Megiddo VII, Tell Abu Hawam V and one example from the Baq'ah valley.⁵⁶ The latter are consistent with the LBIIB context in which the Pella Seal was found.

Stamp Seals

Fig. 15:5, Pl. II:7. RN 110033, CN 880184, XXXIIB 19.1 (Phases C-D)

Ceramic stamp seal, conical body, pierced near top; l. 15 x w. 14 x ht. 15 mm. The base of the seal depicts two horned quadrupeds flanking a tree or bush, with their heads turned back to look left and right respectively. Treatment is cursory, with little attempt at internal detail.

Comment

The closest parallel is provided by a scaraboid from Megiddo, Stratum VIIB,⁵⁷ depicting two animals in an identical pose with a spiky-headed bush between them. Another example from Tell al-Farah South shows the animals facing each other,⁵⁸ but is very similar in the treatment of the tree, high up in the design, the elongation of the animals' snouts, and the distortion of their legs to fit within the frame. Other seals from Ta'anek, Tell al-Farah South, and Gerar display more general comparisons.⁵⁹

Conical seals are common from the Ear-

51. Rowe, *Four Canaanite Temples at Beth Shan*, (Pennsylvania), Pl. 68A:3; Albright, *AASOR* 17, Pl. 26.4; R.W. Hamilton, 'Excavations at Tell Abu Hawam', *QDAP* 4 (1935), p. 55 no. 323; Y. Yadin, *Hazor I*, (Jerusalem, 1958), Pl. 89.15; Tadmor, *Studies*, Pl. 1.

52. Tadmor, *Studies*, p. 156.

53. D. Collon, *First Impressions*, (London, 1987), p. 61; B. Teissier, *Ancient Near Eastern Seals from the Marcopoli Collection*, (Berkley, 1984), p. 91

54. See F. Baffi Guardata, 'Iconographic contributions of Palestinian Glyptic to the Mitannian 'Common Style'', *Insight Through Images—Studies in Honour of Edith Porada*, ed. M. Kelly-Buccellati, (Malibu, 1986), pp. 16–17.

55. C.F.A. Schaeffer-Forrer, *Corpus des cylindres-sceaux de Ras Shamra-Ugarit et d'Enkomi-*

Alasia, (Paris, 1983), p. 101, RS 9.140; p. 140, RS 24.353; p. 79, RS 2.014; B. Parker, 'Cylinder Seals from Palestine', *Iraq* 11 (1949), Pl. 9.63.

56. Parker, *Iraq* 11, Pl. 9. 64; Rowe, *Four Canaanite Temples*, Pl. 37.1-3; Loud, *Megiddo II*, Pl. 161.14; Parker, *Iraq* 11, Pl. 15.98; P.E. McGovern, *Late Bronze and Early Iron Ages of Central Transjordan, The Baq'ah Valley Project, 1977-81*, (Philadelphia, 1986), Fig. 94.5.

57. Loud, *Megiddo II*, Pl. 152.181.

58. E. MacDonald *et al.*, *Beth Pelet II*, (London, 1932), Pl. 73.38.

59. R. Amiran, *Ancient Pottery of the Holy Land*, (New Brunswick, 1970), Pl. 50.1; W.M.F. Petrie, *Beth Pelet I*, (London, 1930), Pl. 48.564; W.M.F. Petrie, *Gerar*, (London, 1928),

ly Iron Age through to Iron II,⁶⁰ with horned animals as one of the most popular motives. The context of RN 110033 would place it somewhere in Iron IIA.

Fig. 16:8, Pl. II:8. RN 110476, CN 881432, IIIQ 101.20 (Phases I-II)

Rectangular stamp seal fragment, pierced longitudinally; opaque mid-blue faience. L. 15 x w. 6 x th. 4 mm. Incised decoration on the two major faces depicts, a) incuse bull facing lotus, right, and b) crouching quadruped (sphinx?), the upper portion of which is missing.

Comment

Two similar examples from Gezer are attributed to the third Semitic period. One features a lion walking towards a lotus, right, with a couchant griffin on the reverse; the other depicts a sphinx walking to the right, versus a crouching sphinx, with cartouches of Tuthmosis III on both sides.⁶¹ A further parallel from Lachish, Tomb 218, shows a crouching winged animal, with a griffin on the reverse.⁶²

Rectangular scaraboids featuring Egyptian, or Egyptianising designs are relatively common in the Levant from the Late Bronze Age through to Iron II.⁶³ The context here best suits a date in LBII.

Alabaster Jars

Fig. 16:6. RN 110229, CN 880503, XXXIIB 27.6 (Phase C)?

Gypsum lug-handled jar fragment, mended from three pieces. Vertical chisel marks visible on interior. Ht. 58 x w. 30 x th. 7 mm.

Comment

This example belongs to a class of gypsum vessel characterised by a broad flat, or slightly rounded base and squat body with two vertically pierced lug handles set at the widest point.⁶⁴ Both material and manufacture suggest the vessels were locally produced,⁶⁵ with parallels occurring at Beth Shan, Levels VI-V,⁶⁶ Pella Tombs 88-89, Megiddo tomb 877, 'Ain Shams Tombs 1-2 and Anthedon.⁶⁷ The type ranges in date from Late Bronze II to Iron I, these examples belonging to the latter period.

Metal Objects

Fig. 16:1. RN 110290, CN 880795, IIIP Wall 102/3 (Phase II)

Flanged dagger, copper/copper alloy. Pres. l. 245 x w. 18 x th. 15 mm. Straight, slightly ridged blade, cast in one piece with the hilt. A small segment is missing at the tip of the blade; the handle shows traces of

60. For example, E. Grant, *Ain Shems Excavations I*, (Haverford, 1931), Pl. 51.48; Macalister, *Gezer III*, Pl. 200.9; *Gezer II*, Fig. 438b-c; Tufnell, *Lachish III*, Pl. 45.147-8; James, *Iron Age at Beth Shan*, Fig. 109.6; Loud, *Megiddo II*, Pl. 163.20.

61. Macalister, *Gezer III*, Pl. 207.48, 208.14.

62. Tufnell, *Lachish III*, Pl. 45.136.

63. Also called dice; see R. Merseraeu, in J.D. Seger and H.D. Lance (eds), *Gezer V*, (Jerusalem, 1988), p. 97. Sporadic examples occur earlier, ie: Macalister, *Gezer III*, Pl. 200.2, dated to the First Semitic Period; Loud, *Megiddo II*, Pl. 162.3 (Stratum XI). See Merseraeu, *Gezer V*, p. 99, F/N 13 for a list of later examples.

64. I. Ben-Dor, 'Palestinian Alabaster Vases', *QDAP* 11 (1945), Type F, pp. 107-108.

65. Ben-Dor, *QDAP* 11, pp. 95-97, distinguished gypsum vessels with chiselled interiors from those made of Egyptian calcite with drilled interiors.

66. Y. Yadin and S. Geva, 'Investigations at Beth She'an: The Early Iron Age Strata', *QEDem* 23, (Jerusalem), 1986, Fig. 36.2; Ben-Dor, *QDAP* 11, F6-10, F12, p. 108; F15, p. 109; James, *Iron Age at Beth Shan*, Fig. 1.7, 5.5, 6.31, 56.16, 57.15.

67. Ben-Dor, *QDAP* 11, F 1-2, 4-5, p. 107; W.M.F. Petrie, *Anthedon*, (London, 1937), Pl. 26.11, 11a.

wood inlay.

Comment

This example is close to Maxwell-Hyslop's Type 32,⁶⁸ although corrosion makes it difficult to distinguish the treatment of the flange. This is usually hammered over the inlay to form slight wings, thereby holding it in place without rivets. The type is perhaps more common to Syria, with parallels at Ras Shamra, Kamid al-Loz, Tepe Giyan and 'Aṭḥana,⁶⁹ although it also occurs on sites in Southern Palestine, such as Tell al-'Ajjul and Tell al-Farah South.⁷⁰ A further example was found on the Ulu Buran shipwreck.⁷¹ The chronological range for the type would therefore seem to be from the Late Bronze Age to Iron I.⁷²

Fig. 16:2. RN 110064, CN 880249, XXXIIA 15.3 (Phase C)

Iron javelin point, l. 90 x w. 18 x th. 3-7 mm. A narrow, straight sided blade tapers from a thickened point to reach its greatest width near the base of the blade. The stem appears slightly swollen.

Fig. 16:3. RN 120188, CN 870325, XXXIIA 2.18 (Phase B)

Iron javelin point, l. 75 x w. 15 x th. 3-7 mm. The point is slightly thickened, and appears to have been damaged. The blade has a profile similar to the previous example,

but with two pronounced shoulders at its base. In both cases the tang appears to be round in section; this is unusual, and should probably be attributed to corrosion.

Comment

Both projectile points are of a type which developed during Iron I,⁷³ with parallels occurring at Tell al-Far'ah, Stratum VIIB, D, Samaria, Period VI, Lachish, and Megiddo, Stratum III.⁷⁴

Fig. 16:4. RN 110063, CN 880248, XXXIIA 15.3 (Phase C)

Iron knife (?), mended from two fragments. L. 104 x w. 21 x th. 3-10 mm. Flat blade, with a slightly hooked end and square tang. The shape is unusual, but paralleled at Gerar and Lachish.⁷⁵

Worked Bone

Fig. 16:5. RN 110497, CN 881520, IIIQ 102.13 (Phases I-II)

Solid bone spindle fragment, highly polished, decorated with incised groups of 3-4 parallel lines at regular intervals along the shaft. L. 64 x diam. 10 mm.

Comment

This fragment is identified as a spindle on analogy with similar examples from Me-

68. R. Maxwell-Hyslop, 'Daggers and Swords in Western Asia', *Iraq* 8 (1946), pp. 37-38.

69. C.F.A. Schaeffer, 'Les fouilles de Ras Shamra-Ugarit: Septième campagne (printemps 1935)', *Syria* 17 (1936), Fig. 13P; Schaeffer, *Ugaritica III*, (Paris, 1956), Fig. 224.17; R. Hachmann, *Bericht über die Ergebnisse der Ausgrabungen in Kamid el-Loz*, (Bonn, 1970), Pl. 11.24; G. Conteau and R. Hirshman, 'Rapport Préliminaire sur les fouilles de Tepe-Giyan, pres Nehavent (Pérse) première campagne (1931)', *Syria* 14 (1933), pl. 1.2; L. Woolley, *Alalakh*, (Oxford, 1955), Pl. 72.Kn.4.

70. W.M.F. Petrie, *Ancient Gaza IV*, (London, 1934), Pl. 25.263 may be of this type; Petrie, *Beth Pelet I*, Pl. 26.102.

71. C. Pulak, 'The Bronze Age Shipwreck at Ulu

Buran, Turkey: 1985 Campaign', *AJA* 92 (1988), Fig. 23.

72. Maxwell-Hyslop, *Iraq* 8, p. 38 also quotes a number of examples from Luristan, which would take the type through to Iron II.

73. F.M. Cross and J.T. Milik, 'A Typological Study of the el-Khadr Javelin and Arrowheads', *ADAJ* 3 (1956), p. 19: Features include a thickened point, with the blade's greatest width near the middle or base.

74. Chambon, *Tell el-Far'ah*, Pl. 68.21-22; Crowfoot et al., *Samaria-Sebaste III*, Fig. 111.9-10; Tufnell, *Lachish III*, Pl. 60.75; Lamon and Ship-ton, *Megiddo I*, Pl. 80.43.

75. Petrie, *Gerar*, Pl. 30.7; Tufnell, *Lachish III*, Pl. 59.1.

giddo.⁷⁶ Close parallels for the decoration come from Megiddo, Tomb 989, and Lachish, Tomb 501.⁷⁷ Similar drop spindles, usually in bone or ivory, occur in Palestine during Late Bronze II, and continue into Iron II.⁷⁸

(R.S.)

TELL AL-ḤUṢN (AREA XXXIV)

Excavations on the summit of Tell al-Ḥuṣn (Area XXXIV) were continued and expanded in 1989.⁷⁹ The main focus of attention was on the eastern summit (Figs. 3 and 17), where in 1988 the excavation of Plots A and C had exposed part of a stabling and living complex, tentatively identified as the cavalry barracks of a Byzantine fortress. This had been destroyed by a major earthquake in the seventh century AD. In 1989, Plot A was extended 5 m^{*} to the east, placing the eastern baulk at the edge of the summit, in line with the eastern baulk of Plot C. The 6 x 15 m area between these two plots was excavated as Plot E and the baulks between these plots were later removed. Plot C was not excavated further this season. The west baulk of Plot A was extended 13 m to the north, in order to establish a stratigraphic connection between the stable in A and a major east-west wall at the northern edge of the summit. The extension was 4 m wide and designated Plot F.

Following the wall lines visible on the surface, the north-western corner of this building complex was situated some 40 m to the west of Plot A (Fig. 18). A 10 x 10 m

plot (H) was opened here, incorporating both the interior of the building and the exterior areas to the west and the north. Six metres south of Plot H, a 5 x 15 m plot (G) was established running east-west across two major wall lines, just within a visible south-western corner of the complex. Two small and shallow soundings (Plots J and K) were placed between Plots H and A in order to clarify the presence of wall returns.

Later in the season, a large 10 x 11 m area was opened as Plot L, continuing the north baulk of Plot E and the south baulk of Plot C for 10 m. This effectively took in a quarter of the tall stone building on the highest point of the tell, partially exposed in Plot C last year, as well as the area to the north and west of it.

To the south-west of the fortress complex, digging continued in Plot B, and the eastern third of the 5 x 15 m plot (east of the massive north-south wall) was expanded to the east and north in order to investigate major features exposed last year. Deeper excavation in Plot B provides a stratigraphic probe for the tell, but otherwise resources were directed towards understanding the fortress complex. Thus Plot D, opened in 1988 on the northern edge of the lower summit, was not continued this season, although major earlier phasing also looks promising here.

Byzantine Structures on Tell al-Ḥuṣn

The results of the Tell al-Ḥuṣn excavations can be subdivided into: the fortress complex (Plots A, C, E, F, G, H, J, K and

76. Found *in situ*, with spindle whorls in place; Lamon and Shipton, *Megiddo I*, Pl. 95.38; Loud, *Megiddo II*, Pl. 19.2. However, cf Loud, *Megiddo II*, Pl. 197.12, for a bone 'tool' of similar form and decoration.

77. P.L.O. Guy, *Megiddo Tombs*, (Chicago, 1938), Pl. 100.29.30; O. Tufnell, *Lachish IV - The Bronze Age*, (Oxford, 1957), Pl. 28.15.

78. With earlier isolated examples in Tomb 3018, Megiddo, and the "First Semitic Period" at Gez-

er - Loud, *Megiddo II*, Pl. 19.2; Macalister, *Gezer II*, Fig. 278.12. Late Bronze Age - Tufnell, *Lachish IV*, Pl. 128.7; Guy, *Megiddo Tombs*, Pl. 100.29-30; Lamon and Shipton, *Megiddo I*, Pl. 84.1. Iron Age: James, *Iron Age at Beth Shan*, Fig. 101.28, 114.1; Loud, *Megiddo II*, Pl. 19.8-11, Pl. 19.13; Macalister, *Gezer II*, Fig. 278.10.

79. See Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990) (f.n. 28) for results of the initial excavations on the summit of Tell al-Ḥuṣn.

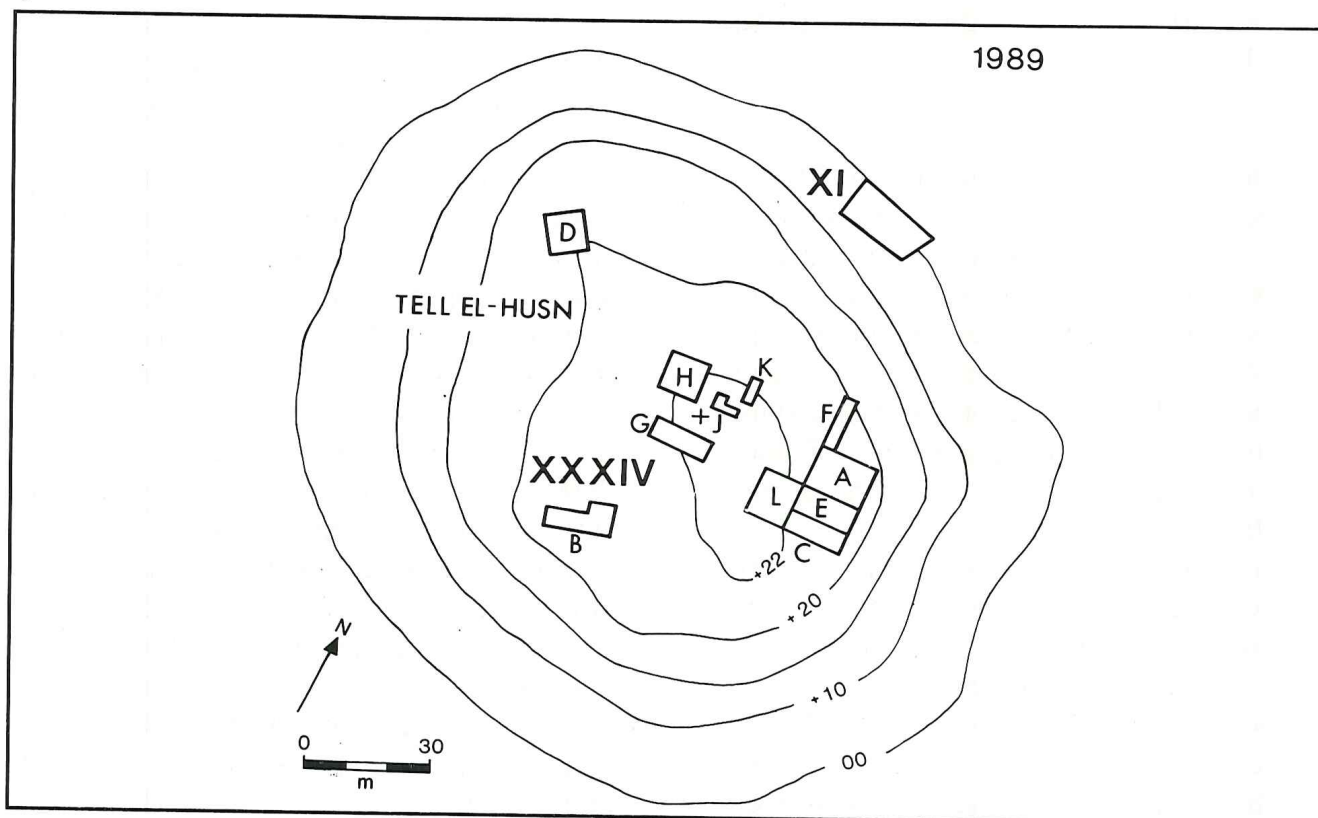


Fig. 17. Contour plan showing location of plots on the summit of Tell al-Huṣn (Area XXXIV), 1988-1989.

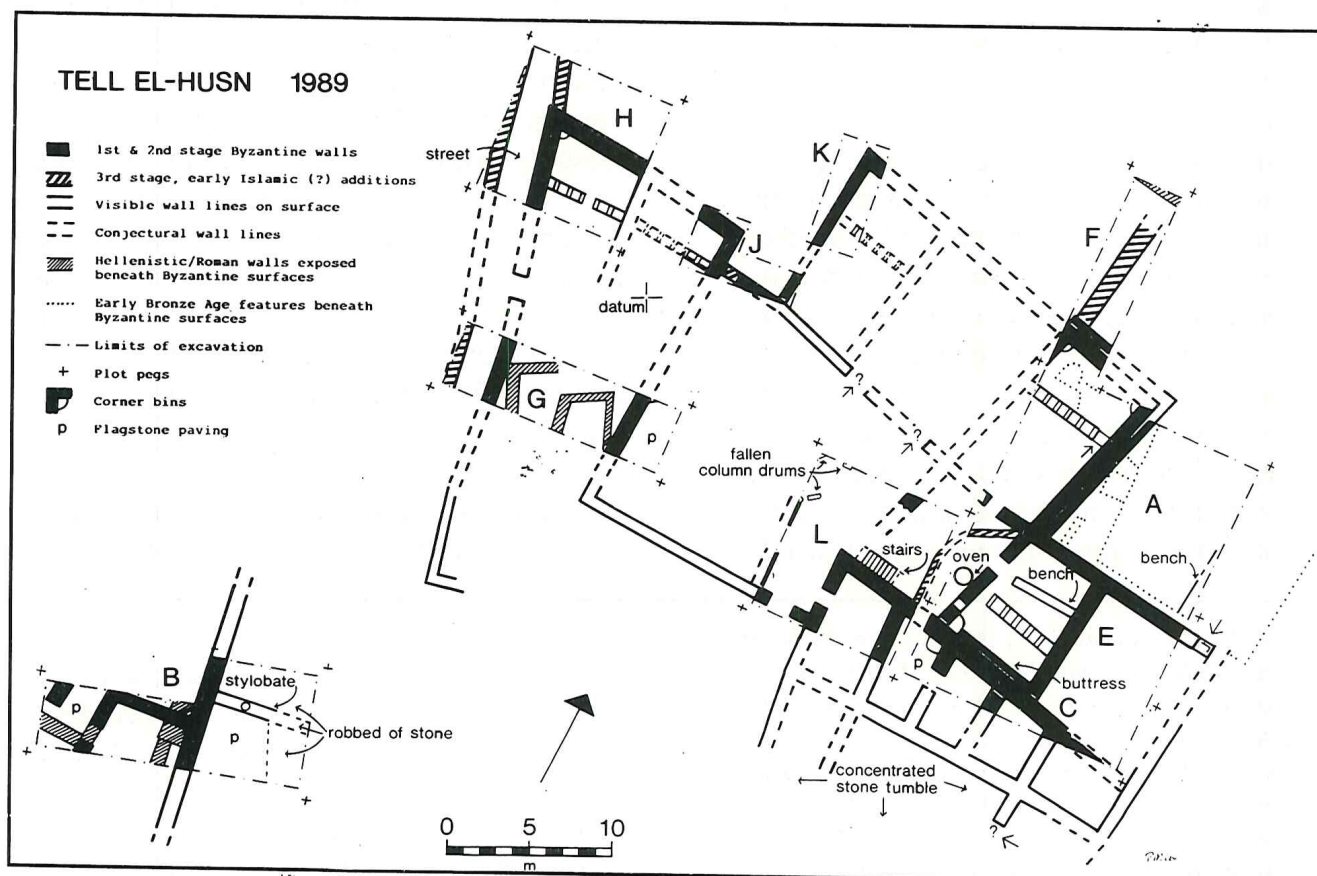


Fig. 18. Schematic plan of structures excavated on the summit of Tell al-Huṣn in 1989.

L), and the south-west stratigraphic probe (Plot B).

The Fortress Complex

The stable exposed last year in Plot A was identified as such by the presence of a long bench c. 70 cms high, divided into compartments by sets of two superimposed orthostat blocks. These are familiar from the Area IV excavations on the main mound at Pella and contemporary extant structures in the Galilee, Jaulan, Ḥauran and the Negeb. Virtually all of the examples from the Ḥauran and the Negeb incorporate stone troughs between the uprights and were undoubtedly used as stables within domestic complexes.⁸⁰ Examples from Pella and the Galilee have flat sills, requiring portable containers for mangers. In the Galilee they have been interpreted more tentatively as "window walls".⁸¹ However the AD 747 earthquake at Pella trapped horses and cows within the complex of rooms on the ground floor, providing dramatic evidence for their function as stables.⁸²

Identical facilities were exposed this season in Plots E, H, J and K, identifying now a total of five rooms built as stables within the one complex, with probably another stable repeated between Plots A and K (Fig. 18). Such a concentration of this type of facility is not only unprecedented in the domestic structures at Pella, but also in those in the above-mentioned areas. Access to the summit of the steep-sided hill would have been difficult at any period and such extensive stabling facilities in this location would

be quite impractical for the care of ordinary livestock, but ideal for defensive purposes. The information from these latest excavations lends further support to the proposed identification of the complex as the cavalry barracks of a small fortress. Each stable seems to provide for five mangers or stalls, with one opening through the bench. We therefore have definite evidence for a minimum of twenty-five horses accommodated in the complex.

The total area of this fortress is well over 2000 sq. m; the southern extent of the tall stone building in the south-east corner is obscured by concentrated stone tumble and any estimation of size is extremely imprecise (Fig. 18). To the east, the perimeter is determined by the sudden drop beyond the easternmost wall outside Plots C and E (Fig. 17). Not that this deterred ancient builders—the alarmingly steep slopes below this point are littered with wall remains, despite considerable erosion of this exposed face. The position of the northern perimeter is suggested on the surface by a milder but noticeable drop in elevation beyond it. Plots H and K reveal two north-westerly corners to the structure, defining an irregular outline. The western perimeter is flanked by a narrow street (Plots G and H) and a sequence of clay street surfaces is preserved in Plot H. Although not within the excavated plots, the jamb stones of a doorway from the street into the western section of the complex are visible on the surface.

In Plot G, the wall on the eastern side of the street was more of a retaining wall for a

80. For the Ḥauran, see H.C. Butler, *Syria. Publications of the Princeton University Archaeological Expeditions to Syria in 1904-5 and 1909*, vol. IIA (Leiden, 1919), for example p. 112 and ills. 88, 100. For the Negeb, see A. Segal, *The Byzantine City of Shivta (Esbeita), Negev Desert, Israel* (Oxford, 1983), pp. 85ff., and M. Avi-Yonah (ed.), *Encyclopedia of Archaeological Excavations in the Holy Land*, vol. 3 (Oxford,

1977), pp. 723, 727 (Kurnub).

81. For example Z. Yeivin, 'Excavations at Khorazin', *EI* 11 (1973), pp. 27*, 146-147, loci 15 and 50; M. Ben-Dov 'Roman-Byzantine Dwellings at Kafr-Nasaj', *EI* 12 (1975), pp. 175, 181; Z. Ma'oz and A. Killebrew, 'Ancient Qasrin. Synagogue and Village', *BA* (1988), pp. 12-13.

82. *PJI*, pp. 36-9.

higher surface east of the street. This surface extended to the top of the retaining wall, and the lack of stone tumble associated with this wall suggests that it was not much higher than found. The surface between the street and the eastern-most wall of G must be an exterior area, with the latter wall (at an extant height of 1.70 m from the west) defining the south-western boundary of the actual building structures. The southern extent of the eastern wall of the street, with a return to the east visible on the surface some eleven metres to the south of Plot G, may well continue as a retaining terrace wall. To the south of this terrace is a large flat area. Surface indications and the excavations in Plot B suggest this was open fallow ground at this time. It may have functioned as a marshalling or parade ground in front of the major entrance exposed in Plot L (see below). The paved room to the east of the eastern wall in G has the edge of a stone bin just visible against the wall and going into the north baulk of the plot. As all other such bins found in the complex have been placed at the junction of two walls (see Plots A, C, F and H, in Fig. 18), it is probable that the northern wall of the paved room in G lies about half a metre beyond the north baulk. A large storage jar (see below) was found crushed on the floor of this room.

A wider-than-average entrance on the south side was exposed in Plot L. This leads into a broad passage flanked by a low wall on the west and the tall stone building on the east, containing a doorway to its western-most room. The depth of stone and mudbrick collapse is much less on the western side of Plot L, away from the tall stone building, suggesting that the passage was an unroofed open area.

The full nature of the low western wall of the passage is unclear, but it seems to end in the north with an upstanding column drum. An adjacent fallen drum has apparently toppled from its position on the up-

right drum, and two more fallen drums in the north baulk may belong to another column set about two metres to the north of the first. This would form an elaborated access to the western half of the fortress. However the more insubstantial nature of the wall, abutting the major south wall, could indicate that it was a secondary addition, and the southern entrance may have originally opened into a courtyard.

On the eastern side of the passage the area opens up slightly, although the termination of the wall emerging from the north baulk is as yet obscured by stone tumble. Abutting the north wall of the south-eastern building is a substantial stone staircase about one metre wide, each step comprised of two adjacent blocks (Pl. III, 1). Seven steps are visible with at least one more to be revealed by further excavation of the lower collapse deposit (at the end of the season, excavation had ceased at less than half a metre above the estimated surface level). The staircase would have led to an upper storey.

As was apparent from the excavation of Plot C in 1988, the massive amount of stone tumble associated with this building in relation to an extant wall height of well over two metres, indicates that the upper storey was also constructed of stone. The construction is poor, with the long northern wall built of uncoursed rubble and roughly-squared stones of varying sizes. It was repaired in antiquity by the addition of a sloping buttress in Plot C. The walls of its western room have sections of rubble interspersed with roughly-squared and snecked blocks in courses (Pl. III, 2), as if they, too, have been patched. Their present condition is unstable, with a pronounced lean. The structure is clearly earlier than the abutting stable complex which also employs a different method of construction (see below). The rooms are much smaller than the stables and one contains a flag-stone floor. The size of the building, its in-

terior layout, and its location on the highest point of the citadel, suggests an administrative and/or guardian function, in its original as well as in its expanded phase.

The southern entrance in Plot L may be the principal point of access into the complex, leading to both the stabling and the administrative facilities. The overall design of the fortress with its original main building and subsequent extensive additions of stables and courtyards, is quite irregular. There is no simple outline of an enceinte, nor evidence of any towers. The only "fortified" point is the double wall in the north-east corner (Plots A and F). Most of the rooms themselves are trapezoidal and the layout of the wall lines seems more determined by the pre-existing contours of an uneven sloping site, than by a concern for cohesive design. Surface remains and the excavations of Plots B and D make it clear that the fortress was surrounded by domestic buildings. It is manifestly not a major defensive structure, although its position implies some consideration of this aspect. It may have functioned as a garrison for cavalry more associated perhaps with a policing than military role, and continued and expanded the function of the earlier building. Sited as it was, it commanded unparalleled views of the road south and then east to Gerasa, the track directly east along Wadi Malawi to the upland valleys, and the approaches to Pella from the north and the west. As the probable date of the expanded complex is just after the mid-sixth century (see below), its construction may reflect a reduced imperial role in regional security resulting from Justinian's shift in defensive policies.⁸³

Evidence from Plot E indicates a secondary phase of use, whereby one of the stable rooms had been converted into a kitchen: a second bench was added parallel to the mangers, containing a basalt recepta-

cle for grinding food and a basin-like structure with a drainage hole (Pl. IV, 1). Just outside the doorway to this room stood a well-preserved oven (Pl. IV, 2) standing about one metre tall and protected from the surrounding area to the west by a rough, low, curving wall which also prevented access from the stable in A through to the kitchen in E (Pl. V, 1).

Clearly the central room in E no longer functioned as a stable. The limited evidence from the other stables exposed does not suggest such reuse in the final phase of occupation; on the other hand there is no positive indication that they were still functioning according to their original design, other than the presence of a soft, fine, organic deposit on the surface of Plot H, as was found in the northern part of the stable in Plot A. Unlike the earthquake destruction of AD 747, the seventh century occupants of these buildings had sufficient warning to pack up and leave before the disaster struck. The presence of a number of broken but complete ceramic vessels within the collapse shows that some belongings were left behind and that most of these were stored upstairs, in what must have been the living quarters.

The nature of the collapse in the newly-excavated plots conforms to that revealed in the 1988 season: over 2 m of mostly solid mudbrick tumble onto the floors. The stone walls of the lower storey virtually survived intact and the two-metre high west wall of the kitchen contains a window (extant height c. 75 cms, Pl. IV, 1). The top course of one wall in Plot E had slipped sideways to the east in a dramatic curve. The ground floor was constructed in stone whilst the upper floor had walls of mudbrick. Plots J and K preserve two courses of these mudbricks *in situ* on the stone wall. They were plastered in yellow clay. The south section of Plot H clearly shows the fall line of this

83. See S.T. Parker, *Romans and Saracens*, (Winona Lake, 1986), p. 152.

upper wall, with its face preserved intact. The stone walls of the ground floor were bifacial with a rubble core, the faces consisting of regular courses of roughly-squared stone blocks compacted with snecking, with intervening levelling courses of small stones.

Building Stages Evident in the Fortress

Several stages of building can be recognized within the stable complex itself. Plot A stable has been built as a bonded four-walled unit, abutting the neighbouring rooms in E, which themselves abut the completely different unit formed by the south-eastern building. The walls defining the stable in H are bonded together, whereas the adjacent stable to the east (in J) abuts both it and the unexcavated unit further east. It is unclear whether these abutting units are chronologically separated or are contemporary with each other; one inclines to the latter view. A definite later stage is represented by the addition of rubble-built walls perpendicular to the exterior walls of the stable complex, in Plots F and H. A later rebuild of a stable wall across an earlier opening, is revealed in J. The western wall flanking the street is of similar construction to the walls added in F and H, indicating that the street itself may be a late feature. This latest architectural phase is probably associated with the reuse of E as a kitchen.

In summary, three major stages of construction can be identified in the fortress:

- 1) The tall stone "administrative" building in the south-east corner.
- 2) The addition of a series of stables and associated areas, abutting 1), as well as repairs to the earlier building.
- 3) The addition of a number of walls to the exterior of the main complex, and the functional modification of at least one room and part of another from a stable and courtyard to a kitchen.

Dating of the Fortress

Foundation trench pottery from the construction of the stable walls in A dates them to the sixth century AD. The most diagnostic piece was a large rim and base sherd of a Late Roman C/Phocaean Ware bowl Form 3 (close to Hayes' Type F no. 25) which could occur any time within that century.⁸⁴ No coins were found in these deposits, but a coin of Justinian I, minted in 562/3 (RN 110314) was found in 1988 within the clay matrix of the exterior Byzantine surface in Plot A. Construction of the stables and the addition of a batter to the north wall of the earlier building were co-ordinated. Wall instability may have been due to the earthquake recorded in AD 551, suggesting a date for the stables just after the mid-sixth century.

The tall stone building in the south-east is the earliest structure in the fortress complex. Dating is uncertain as examination of deposits under the floors and in foundation trenches is yet to be undertaken. The evidence for repairs to this building at the time of the addition of the stables, as well as the very different methods of construction used, suggests some time span between the two stages. The rather crude method of construction is dissimilar both to the sixth century buildings on the main tell and the late third/early fourth century (and earlier) walls. No substantial fifth century walls have survived on the main tell, perhaps a reflection of their poorer construction. We may be fortunate in having the only secular fifth century building yet to be discovered at Pella (the East Church was built in the last quarter of the fifth century).

The final collapse of the Byzantine fortress, on preliminary coin and pottery evidence, occurred in the mid-seventh century. No coins dating later than the sixth century

84. J.W. Hayes, *Late Roman Pottery*, (London, 1972), pp. 334-338.

have yet been found on Tell al-Ḥuṣn. The pottery corpus (briefly discussed below), conforms to that found in the Byzantine Phase V destruction deposits on the main tell, also apparently caused by an earthquake.⁸⁵ Recent analysis of further Phase V deposits has found them to be associated with coins of Constans II (641-668), leaving the 659/60 earthquake the most probable agent for such a widespread collapse.⁸⁶

However at some time before the final demise of the complex, functional alterations and additions were made (Stage 3). There is nothing to indicate at what date these transformations occurred. One event that stands out in the historical record and which would have led to major changes in military organization, is the Muslim Conquest of AD 635. Cavalry may no longer have been required, or their numbers at least reduced. After the earthquake of 659/60 the desirability of maintaining such a facility and even living on Tell al-Ḥuṣn was clearly insufficient to justify clearance and restoration of the ruins, and the whole site was abandoned.

Preliminary dating of the Byzantine fortress is summarized as follows:

Stage 1 – the administrative building, fifth century;

Stage 2 – extensive stabling additions/barracks, sixth century (middle?);

Stage 3 – diminution or cessation of barracks function, post AD 635-659/60.

The South-Western Stratigraphic Probe

The dominant feature of this area is the massive north-south ashlar wall (B, Wall 1) across which the plot was placed. One-third of the plot lies to the east of this wall, and a stone pavement, stylobate and column base

was exposed here last season. Hoping to recover more of these fine features, this third of the plot was extended 3 m to the north and 2 m to the east. Disappointingly, both the pavement and the stylobate proved to have been robbed out in antiquity and the column base stands in splendid isolation. This area seems to have been fallow at the time of the seventh century collapse, as stones from Wall 1 fell onto rubbish deposits sitting on the pavement and mounding against the wall. The robbing may be associated with the later phase of the fortress or even with its construction. A small two-metre square sounding was established against Wall 1 and the stylobate, exposing footings for both. Preliminary reading of the pottery suggests a Late Hellenistic-Early Roman date.

Wall 1 has proved to be a substantial terrace wall, as the latest surface level to the west is 2.5 m lower than the eastern pavement. Part of a Late Byzantine domestic house was revealed abutting the west side of Wall 1, whose four visible lower courses are of rough unsquared boulders and were no doubt meant to be hidden from public view by the roof of the western house (Pl. V, 2). A sequence of six tamped earth occupation surfaces was identified within the main room, leading westwards through a doorway into a roughly paved area. The sequence does not represent a long period of time, judging by the pottery which is mid-seventh century at the latest. Unfortunately, although several coins were found in important deposits, they proved illegible.

Pottery from the Mid-Seventh Century AD

A small selection of pottery associated with the destruction of the fortress is illus-

85. See McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), (f.n. 16) pp. 177-180.

86. For earthquake records see K.W. Russell, 'The Earthquake Chronology of Palestine and North-west Arabia from the 2nd through the Mid-8th Century AD', *BASOR* 260 (1985), pp. 37-59. In-

itial estimations of this destruction date had favoured the ad 633 earthquake on the basis of an Heraclius coin found in IVH locus 50 (see reference, f.n. 85). The association with Constans II coins has now settled the argument.

trated in Figs. 19–21. Some of this corpus has been discussed previously in the 1988 report, although no illustrations were available then.⁸⁷ Figs. 19:1 and 19:3 are virtually complete fine ware bowls smashed on the exterior surface to the east of the stable in Plot A. The former is a stamped Jerash Bowl, and the latter is an imported African Red Slip Ware bowl, Form 107.⁸⁸ The painted Jerash Bowl (Fig. 19:2) and the undecorated common bowl (Fig. 19:4) were found within the upper-storey mudbrick collapse over the kitchen in Plot E.

The pilgrim flask in Fig. 20:1 was one of five such vessels apparently fallen from above into the stable in Plot A. The painted jar (Fig. 20:2) was found nearby against the west baulk, which probably contains its upper half. Smashed on the floor in the same room were cooking jar Figure 20:4, and water jar Fig. 21:1. Numerous examples of the latter type of vessel were found in other plots, especially in E.

The casserole lid (Fig. 20:5) is one of three virtually complete examples from the upper storey collapse in Plot H (suggesting cooking was also conducted here). This piece was misfired and warped during manufacture but was evidently still useable. The kitchen in E/C was another rich source of lids and associated cooking bowls.

Large storage jars in chaff-tempered coarse ware were apparently in use in the kitchen in E/C, and the paved room in G, where a complete jar was crushed where it stood on the floor. Fig. 21:2, 3 illustrate the rim and the base of this type.⁸⁹ The exam-

ple in Fig. 21:3 (a complete base) was actually found set upside-down within the clay floor at the south end of the stable in A, as if it were being reused for some other function.

*Fig. 19. Catalogue of Pottery*⁹⁰

1. CN10492, XXXIVA 3.6/7.3. "Jerash Bowl" (stamped decoration: cross in medallion). Light red fabric throughout, 2.5YR 6/8.
2. CN10659, XXXIVE 3.3. "Jerash Bowl" (painted decoration in white and brown: fragment of basket containing fruit or bread loaves). Red fabric throughout, 2.5YR 5/8; white paint 5YR 8/2, red-brown paint 2.5YR 4/4.
3. CN10489, XXXIVA 3.6/5.3. Bowl, "African Red Slip Ware", Hayes' Form 107. Red fabric and slip, 10R 5/8.
4. CN10635, XXXIVE 4.2. Bowl, "plain Terracotta" ware with flaky self-slip on interior. Light red surface 2.5YR 6/6, reddish-yellow core 7.5YR 6/6.

Fig. 20. Catalogue of Pottery

1. CN10482, XXXIVA 2.6/11. Pilgrim flask, "metallic buff" ware. Pink fabric 7.5YR 8/4, white surface 10YR 8/2.
2. CN10484, XXXIVA 2.6. Jar, "white paint on metallic terracotta" ware. Grey fabric 10YR 5/1, thin white painted swirls, 10YR 8/2.
3. CN10666, XXXIVG 3.9. Jar, "white paint on metallic terracotta" ware. White painted band around neck, diagonal band of six-toothed comb decoration on shoulder. Grey core 10YR 5/1, pale brown

87. Standard ware descriptions and terminology are found in *PJ I*, Chapter 8.

88. Hayes, *LRP*, p. 171.

89. A complete example of this type of jar is illustrated in P. Delougaz and R. Haines, *A Byzantine Church at Khirbet al-Kerak*, (Chicago, 1960), Pls. 38.12, 58.8.

90. Explanation of pottery catalogue terminology: The Pella catalogue number (CN) is followed by the provenance (Area, Plot, locus and level). A

provenance might include more than one plot/locus/level, where a vessel falling from above has shattered over a wide area. The name of the ware generally follows *PJ I* Chapter 8, where they are more fully described. A detailed discussion of Jerash Bowls is to be found in P.M. Watson, 'Jerash Bowls. Study of a Provincial Group of Byzantine Decorated Fine Ware', *Syria* 66 (1989), pp. 223-261.

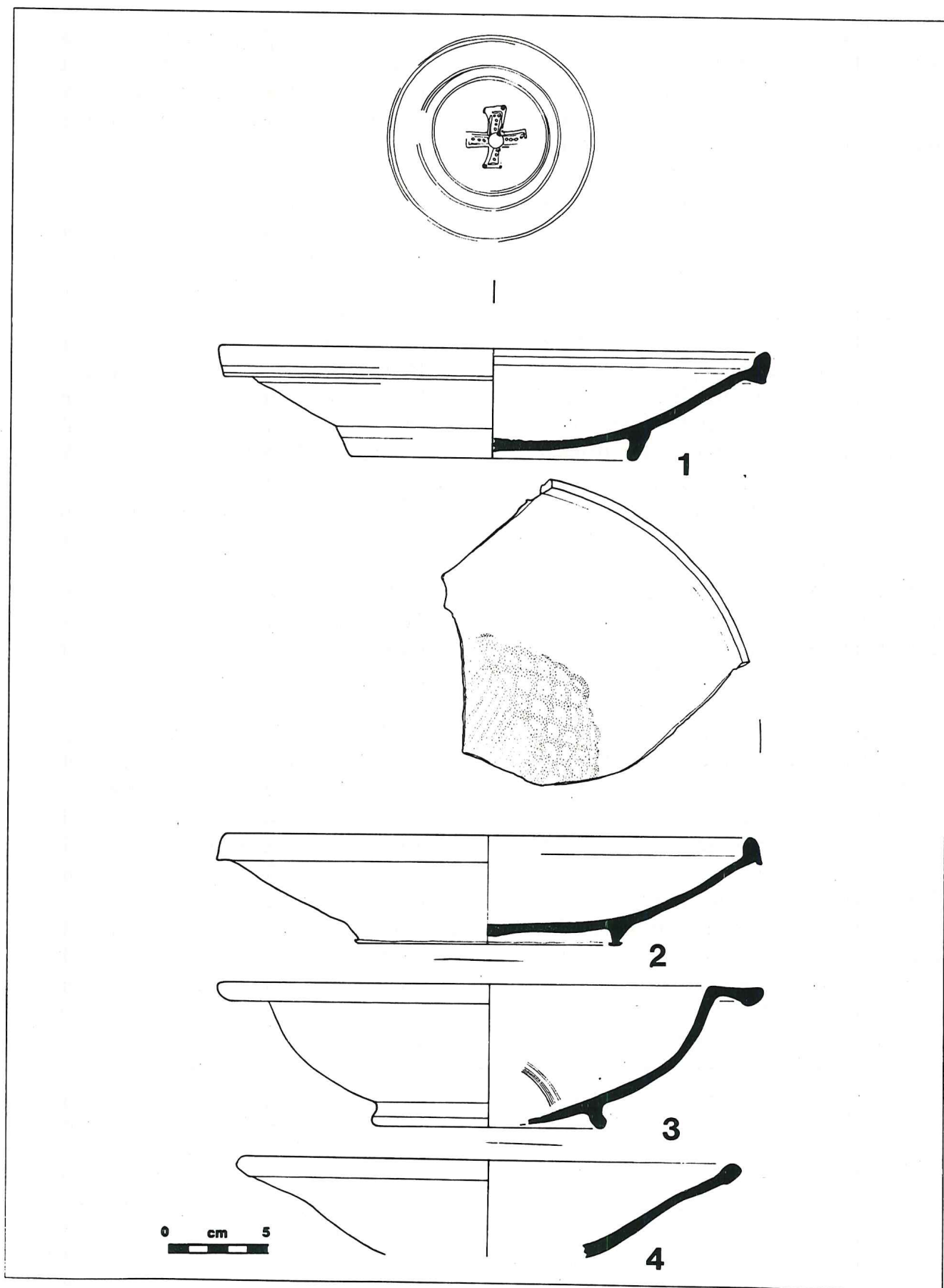


Fig. 19. Pottery of the mid-seventh century AD from Tell al-Huşn.

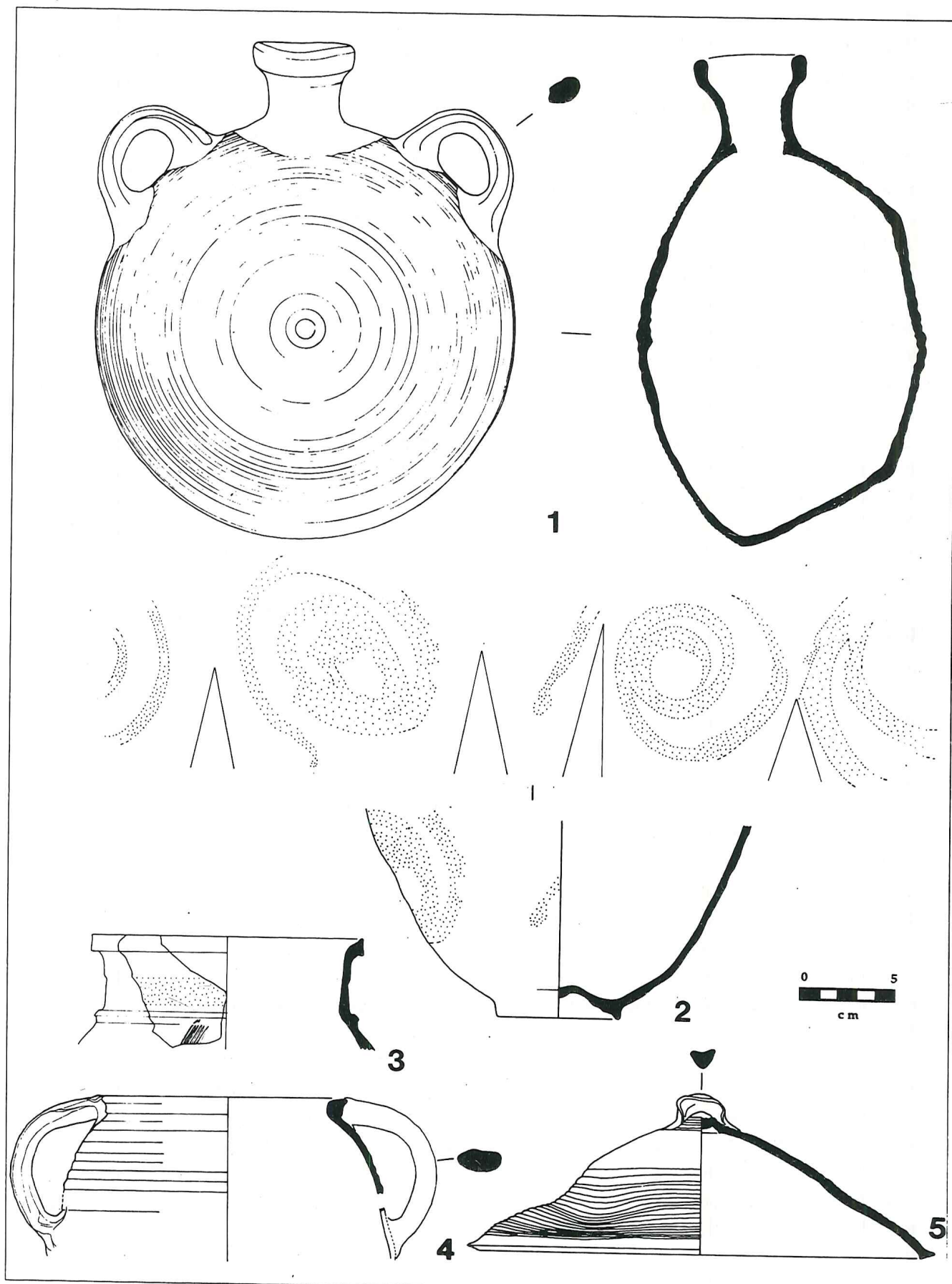


Fig. 20. Pottery of the mid-seventh century AD from Tell al-Huṣn.

surface 10YR 6/3, paint 10YR 7/2.

4. CN10563, XXXIVA 2.11. Cooking jar, "coarse terracotta" ware. Reddish-yellow fabric 5YR 7/8, dark grey exterior surface, 10YR 4/1.
5. CN10722, XXXIVH 2.10/11/17. Lid, "coarse terracotta" ware. Dark grey fabric, 10YR 4/1.

Fig. 21. Catalogue of Pottery

1. CN10562, XXXIVA 2.11. Jar, "brown-grey slipped, white painted" ware. Reddish-yellow core 5YR 6/8, grey surface 10YR 5/1, with light red mottle 2.5YR 6/6 towards base.
2. CN10579, XXXIVC 2.4/XXXIVE 8.3/4. Storage jar, "chaff-tempered coarse ware". Yellowish-brown fabric 10YR 5/4, reddish-yellow surface 5YR 6/6.
3. CN10488, XXXIVA 2.11. Storage jar (base), "chaff-tempered coarse ware". Reddish-brown fabric 5YR 5/3.

The Hellenistic/Roman Remains

Beneath the floors and walls of the house in Plot B, a new series of walls and deposits has emerged. Of interest is a major lower buttress to Wall 1 (Fig. 18; Pl. V, 2). Although only the tops of these walls have been exposed, associated pottery again indicates a Late Hellenistic/Early Roman date. Wall 1 is thus contemporary with these walls and stands at present 3 m in height from the west. Its considerable size and the fine nature of its upper construction (four extant courses of ashlar blocks laid in alternate horizontal and vertical courses) demonstrates the importance of this structure. It functions as the retaining wall and boundary for a large open and flat area to the east, articulated on its western side at least by a stone pavement and colonnade. The ground then rises to the north-east, to the upper summit. It is conceivable that we have here the temenos wall of the Hellenistic/Roman sanctuary, whose summit was crowned by a temple now hidden or destroyed by the administrative building of

the Byzantine fortress. The eroded remains of a monumental staircase approximately 5 m in width, marks the approach to the pavement from the steep slope to the south.

The exterior Byzantine surface to the north of the stable in Plot A (excavated in Plot F) lies directly above a thick Hellenistic rubbish deposit. The major northern wall of this plot is apparently of this date; the Byzantine surfaces were eroded away to the north and removal of topsoil against this wall immediately exposed semi-complete Hellenistic pottery vessels.

Beneath the western exterior Byzantine surface in Plot G, a completely new sequence of walls has been uncovered on a different orientation (Pl. VI, 1). Their associated deposits have not been excavated, but preliminary observation of the pottery dates them to the Late Hellenistic/Early Roman period. Removal of Byzantine surfaces in five plots on the summit has exposed Hellenistic/Roman structures in all but one, demonstrating the extensive occupation yet to be explored on the citadel at this time. Earlier remains in the fifth plot take us back even further in time.

The Early Bronze Age

Removal of the exterior Byzantine surface to the east in Plot A exposed a massive stone platform, approximately 10 m wide, dating to the Early Bronze Age I/II (Fig. 18, Pl. VI, 2). The east and west faces of this feature consist of medium-large stones flattened on the exposed side, and the area between is filled with a concentrated rubble of unworked field stones. The length north-south is unclear, but surface indications on the eroded eastern slope, suggest there are returns at roughly 12.60 m apart. A small sounding 1.10 m deep was dug into the feature, in order to determine its date. It was halted when the concentration of stones changed to a deposit resembling slurried or decayed mudbrick. A square "buttress" abuts the centre of the western face of the

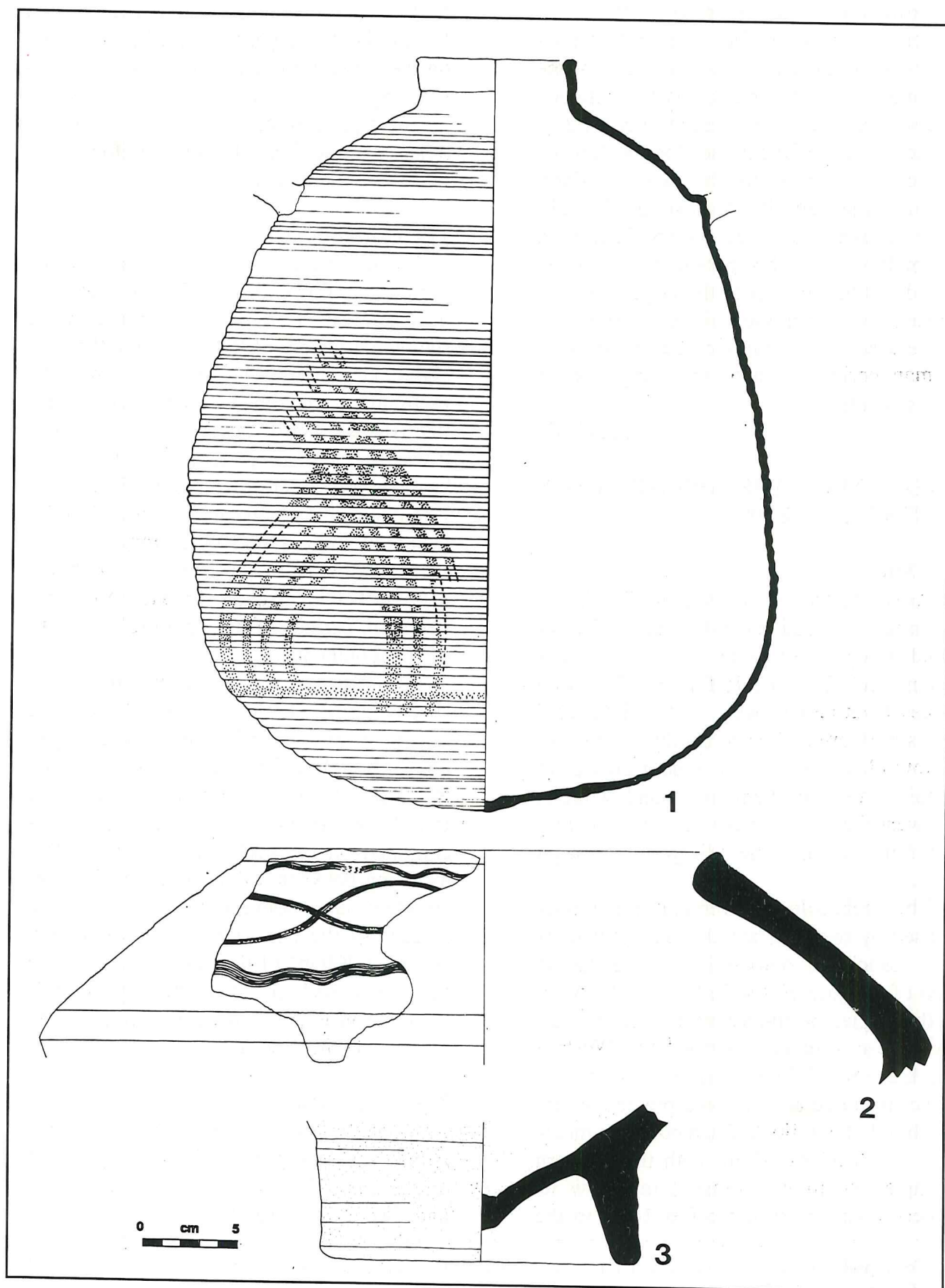


Fig. 21. Pottery of the mid-seventh century AD from Tell al-Huṣn.

platform, and a thick return abuts the northern end of the same face. This return continues west beneath the double walls of the Byzantine fortress and seems to terminate in a semicircular stone feature (a buttress?). Removal of the Byzantine floor within the stable in A immediately exposed Early Bronze Age deposits, consisting of blackened surfaces and large pottery fragments. A small wall of this period was also exposed just to the west of the large platform. Clearly the Byzantine builders in this area had erased any remains of the Hellenistic/Roman period down to the Early Bronze Age structures.

(P.M.W.)

AREA XXIX – THE ABBASID TOWN CENTRE (1989 & 1990)

The Site

Area XXIX is located in Wadi al-Khandaq, a broad, even-floored valley located immediately to the north of the central mound (Pl. VII, 1; Fig. 3). The wadi slopes from east to west, and is delineated on its northern and eastern sides by a series of low clay *tulul*. A low saddle crosses to Wadi Jirm east of the main mound, while to the west the valley opens out onto undulating fields around the village of Ṭabaqat Faḥl.

The archaeological remains are monopolised by two substantial square structures and associated outbuildings covering an area of roughly 50 (N–S) by 100 (E–W) m at the higher north-eastern end of the valley. These structures, termed the Western and Eastern building complexes, were built adjacent to one another on a previously uninhabited clay hillock. Each complex measured about 35 by 35 m, with the Western Complex positioned some 2 m below its eastern counterpart and offset 14 m to the

south. A 4 m wide street separated the two. Both buildings appear to have been flanked on the west, north and east sides with free-standing domestic units, while stone walls belonging to a number of outlying constructions protrude from the surrounding fields to the west and south.

The Excavations

Large-scale excavations in Area XXIX during the Eleventh and Twelfth seasons have confirmed an important phase in the settlement history of Pella (Fiḥl) in the later eighth and ninth centuries AD. Once the preliminary soundings of 1985 had identified Abbasid Period occupation at the site,⁹¹ it was decided to expand the excavations in keeping with the following objectives:

- to uncover a representative area of architecture by linking the 1985 soundings;
- to increase the corpus of material culture;
- to further investigate the date(s) of construction, periods of use, and probable date of abandonment.

Over the two seasons, eleven new plots (E-H, J-K, M, O-R) were opened and three of the original 1985 soundings enlarged (Ax, Cx, Dx). Except for XXIXP and XXIXQ, which sectioned across the slope into the Western Complex, these plots concentrated on the higher Eastern Complex, exposing between a third and a half of this structure on its south and west sides (Figs. 3, 22). At the end of the Twelfth season, around 1,200 m² of the Abbasid centre had been excavated, producing pottery, ceramic lamps, iron implements, a few coins (fils), glass, and other artefacts.

The Architecture

Stone was the commonly used building material for the ground-floor level of both complexes. Walls ranged 70–95 cm thick, and were constructed out of roughly

91. For a preliminary report on the soundings see McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), (f.n. 16) pp. 182–191.

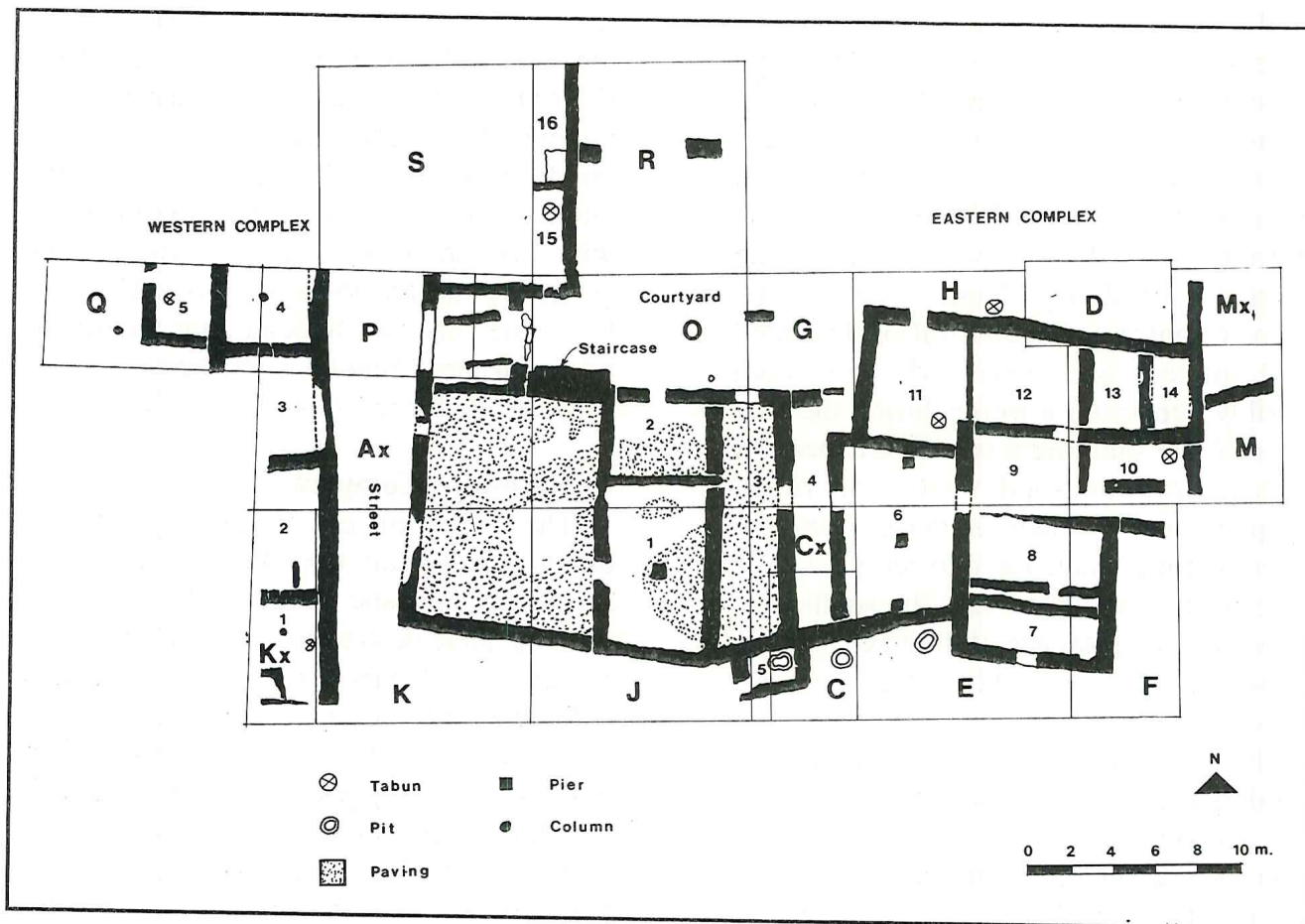


Fig. 22. Plan of the Abbasid Centre (Area XXIX).

dressed blocks laid in reasonably even courses and “sneaked” (interces jammed with small stones). The firm clay of the hillock dispensed with the need for deep foundations; most walls were provided with foundation trenches of no more than 20 cms. Some rooms and courtyard areas in the Eastern Complex were neatly paved with flagstones. The destroyed Umayyad town provided much of the stone resources.⁹²

Both the Eastern and Western complexes offer evidence for an upper floor of unbaked brick. A staircase in the central courtyard of the Eastern Complex probably led to an upper level above the gateway, while the depth of clay brick debris in the Western Complex would confirm the exis-

tence of a second storey. The discovery of a number of light yellow to red roof tile fragments suggests that some roofs were pitched and/or sloping.

The Eastern Complex

The Eastern Complex consists of two parts: the original public building around a central courtyard (the Courtyard Building, Pl. VII, 2) and domestic additions to the east.

The Courtyard Building was entered from the street through a 2.5 m wide gateway in the western wall. This gave access to a vestibule equipped with two flanking benches, followed by an open portal at the south-west corner of the large central courtyard. The courtyard was gravelled, and fea-

92. As evidenced by old plaster on the faces of the blocks and robber trenches in Area IV.

tured an arched portico to the north and a staircase along the south wall. Doorways led to at least eight ground floor rooms on the four sides of the courtyard (Fig. 22, rooms E2–4, E6, E11, E15–16, and a room north of XXIXR in XXIXB). Room E9 probably marked the eastern limit of the Courtyard Building. Built without any means of entry and found full of discarded glass, pottery and metalwork, this room possibly supported a tower during the first phase of the building's use. The expansive paved court in the south-west corner of the complex had its own entrance from the street, and may have led into room E1. The slope of the paving towards the south-west corner and the presence of drainage holes in the wall at this point shows that the court was open to the sky.

The general layout of the Courtyard Building (gateway, benched vestibule, court with flanking rooms) can be compared with other public buildings of about the same date at Amman and Baysan.⁹³ Although the Pella example is less distinguished, this reflects Fihl's secondary role in the Umayyad/Abbasid administration of ash-Sham.

In the second phase, irregular single-storeyed domestic units, each with independent external entrances, were added along the eastern boundary of the Courtyard Building around the possible tower base E9. Rooms E7–8 formed one small unit of 7.5 by 7.5 m, and rooms E10, E13 and E14 another. The relationship of room E13 with adjacent room E12 is unclear as excavation is incomplete in this area. Both houses show later alterations to their ground plan; for instance the unit of rooms E7–8 was re-

duced to a single room (E7) by a later blocking wall. Changes to the layout of the Courtyard Building are also discernible, involving the closure of doorways and the rebuilding of walls. Domestic use of the building at this time—not incompatible with a continuing official function—is suggested by the *tawabeen* in rooms E11 and E15. The ceramics indicate that the whole of the Eastern Complex continued in use up until the final evacuation of Area XXIX.

The Western Complex

The five rooms excavated in part on the eastern limits of the Western Complex served a domestic function immediately prior to their destruction, as evidenced by *tawabeen* and benches in rooms W1 and W5. Support for an upper floor was provided by columns in rooms W1 and W4, and an upper storey is suggested by a 1.8 m deposit of collapsed clay bricks in rooms W1–W4. It is very likely that these upper rooms could have opened out onto the street east of the Western Complex, with perhaps a third floor to match the height of the Eastern Complex. Room W5 was a later, probably single-storey addition of inferior construction that encroached on a courtyard area.

The sudden and simultaneous destruction of the Western Complex points to a tectonic cause once again. Unfortunately, identifying the event historically is not as easy as the AH 130 / AD 747 earthquake. There is a lack of relevant numismatic evidence, and known events from literary sources do not easily agree with the material evidence at this stage. A date as late as AH 425 / AD 1033–4, when Palestine and

93. A. Northedge, 'Survey of the Terrace Area at Amman Citadel', *Levant* 12 (1980), pp. 135–54; G.M. Fitzgerald, *Beth-Shan Excavations 1921–23. The Arab and Byzantine Levels*, (Philadelphia, 1931); see the recent paper by A.H. Zeyadeh, 'Baysan: a City from the Ninth Century A.D.', *Bilad al-Sham During the Abbasid Period: Proceedings of the Fifth International Con-*

ference on the History of Bilad al-Sham, eds. M.A. Bakhit and R. Shick (Amman, 1991), pp. 114–34, but I cannot agree with Zeyadeh that the summit structures "were probably residential units". The similarities with the Amman Citadel configuration are too strong, suggesting that the Baysan Summit was the administrative heart of Early Islamic Baysan.

Jordan were devastated by a massive earthquake, is attractive but not as likely a cause as the "vigorous" shake of 239/853-4 which partially destroyed nearby Ṭabariyah (Tiberias).⁹⁴ A mid-ninth century destruction would entail a short hundred year lifespan for the East and West complexes. At a guess, a century would be the minimum time needed to accommodate the stratigraphical sequence and ceramic modifications identified in Area XXIX.

The Ceramics

The corpus of pottery from Area XXIX forms an homogeneous group without significant contamination from earlier or later material. This is attributable to the fact that the Abbasid town centre is a single period site; built shortly following the AH 130 / AD 747-8 earthquake and occupied for a specific period thereafter. As outlined above, two major phases are recognisable: the initial settlement dating to the second half of the eighth century AD and the last main period of use around the middle of the ninth century. The second date assumes that the 239/853-4 earthquake lay behind the abandonment of the site; detailed analysis may require a revision of this tentative chronology and the adoption of a later date, but probably not as late as 425/1033-4.

The representative selection of later eighth and ninth century pottery presented below covers all of the identified Abbasid-period wares.

List of Abbasid Wares at Pella/Fiḥl (Later Eighth–Ninth Century AD)

Ware I

Fabric. Slightly gritty with small to medium white and other inclusions, coloured patchy orange/brown/grey.

Decoration. White paint in banded wavy lines and strokes on rims/handles.

Forms. Small jars and juglets with fine metallic-thin bodies; thicker lidded casseroles and basins.⁹⁵

Comment. This ware has a demonstrable origin in late Byzantine ceramics. As a product of Jerash, it was very widespread in north Jordan during the seventh and eighth centuries before decreasing in importance early in the ninth century. The ware is not represented in the final occupation levels of Area XXIX.

Ware II

Fabric. Fine ware with small and sometimes medium white and grey inclusions. Light orange fabric, sometimes apparently white slipped.

Decoration. Freely-painted loops, bisecting lines, and parallel wavy lines in a reddish-brown pigment.

Forms. Jars, often with mid-body carination, juglets, bowls, cups (Fig. 23:1–4).⁹⁶

Comment. Increasingly common by the middle of the eighth century, and continuing strongly throughout the ninth. A predominantly Abbasid ware at Pella, without a recognisable precursor and from an unknown (south Jordan?) source.

Ware III

Fabric. Gritty ware with small to medium grey, white and transparent inclusions, coloured dark grey.

94. Y. Ghawanmeh, 'Earthquake Effects on Bilad ash-Sham Settlements', *SHAJ* 4 (1992), pp. 53–59.

95. Examples from an Abbasid context have been published in earlier reports. See: Walmsley in Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), (f.n. 28) pp. 84–85, Fig. 13:6; Walmsley in McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), p. 187, Fig. 7:1–6.

96. See also Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), pp. 82–84, Fig. 12:12; McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), p. 188 Fig. 7:7–8.

Decoration. Usually none; occasional single or multiple wavy lines below rim.

Forms. Hand-made basins and bowls with pointed outer rim (Fig. 23:5).⁹⁷

Comment. A continuation of the more highly decorated Umayyad series.

Ware IV

Fabric. Very gritty with copious white, transparent and grey inclusions, coloured greyish-brown (cooking pot fabric). Later variant has a redder fabric.

Forms. Lidded casseroles, late form with button rather than loop handled lid (Fig. 23:6-7); necked cooking pots.⁹⁸

Comment. Very difficult to distinguish from the Umayyad series until their replacement by the red ware casseroles (no jars attested) around the middle of the ninth century.

Ware V

Fabric. Hard, brittle fabric with small to medium white, grey and/or brown inclusions; grey/brown surfaced.

Decoration. White paint in broad intersecting wavy lines.

Form. Large bi-ansulate jars.⁹⁹

Comment. Continuation of the well established Byzantine/Umayyad tradition, with taller necks and a more obtuse angle characterising the neck-shoulder junction in the ninth century.

Ware VI

Fabric. Fine ware with small red to orange, clear and/or grey inclusions; aerated and pale cream in colour.

Decoration. Incised, applied and occasionally moulded, if any.

Forms. Egg-shell thin jars and strainer jugs with pared bases (Fig. 23:8-9), also water flasks (Fig. 24:1).¹⁰⁰

Comment. Becomes very common in the ninth century levels, replacing Ware I.

Ware VII

Fabric. Fine, compact orange ware with small white and grey inclusions.

Decoration. Burnished exterior, often with grooved spiral or circle on underside.

Form. Cups with pared base and lower body (Fig. 24:2).¹⁰¹

Comment. This fine table ware emanates from the Byzantine/Umayyad series and continues into the tenth century.¹⁰²

Ware VIII

Fabric. Many small white inclusions, fired to a dark grey. Related to Ware I.

Decoration. Incised date palm trees.

Form. Cup.¹⁰³

Comment. Probably a one-off piece, notable for its decoration.

Ware IX

Glazed wares, provisionally divided into three varieties.

IXa: Orange fabric, white-slipped, with splashed polychrome glaze. Form: bowls

97. See also Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), p. 84, Fig. 13:1; McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), p. 188 Fig. 8:1-2.

98. See also Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), pp. 81-82, Fig. 12:1-4; McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), pp. 188-189 Fig. 8:3-6.

99. See Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), p. 84, Fig. 13:2-3; McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), p. 189 Fig. 8:7.

100. See also Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), p. 83, Fig. 12:6-11; McNicoll, Edwards, *et al.*, 'Seventh Season', *ADAJ* 30 (1986), pp. 189-190 Figs. 8:8, 9:110.

101. See also Edwards, Bourke *et al.*, 'Tenth Season', *ADAJ* 34 (1990), p. 84, Fig. 13:5; McNicoll, Edwards, *et al.*, 'Seventh Season', *ADAJ* 30 (1986), pp. 190-191 Fig. 9:11.

102. R. de Vaux and A.-M. Steve, *Fouilles à Qaryet al-Enab=Abu Gosh*, (Paris, 1950), pp. 123ff.

103. See McNicoll, Edwards *et al.*, 'Seventh Season', *ADAJ* 30 (1986), p. 191 Fig. 9:12.

(Fig. 24:3).

IXb: "Coptic glazed" or variant. Reddish-orange fabric with bubbly green and yellow glaze divided into zones by painted black lines. Form: carinated bowls (Fig. 24:4).

IXc: Heavy greenish fabric, thick turquoise or blue glaze. Form: jars.

Comment. Ware IXa makes its first appearance in later eighth century deposits, but these glazed varieties are more ninth century in date and represent a new, introduced ceramic tradition at Pella. They occur in very limited numbers.

Ware X

Fabric. A compact ware with many white, yellow, grey, red and black inclusions of various sizes, fired a brown to orange colour.

Decoration. Cut, incised and red and/or painted decoration in panels on the exterior; red and white painted lines inside.

Form. Hand made small basins with flat ledge handles (Fig. 24:5-6).

Comment. This "chip-carved" or Kerbschnitt ware is well represented in the later Abbasid levels.

Fig. 23. Catalogue of Pottery

1. CN 16050, XXIXH5.3 & XXIXH-E Baulk 1.2. Jar, Ware II. Flat lip with groove below rim; band of dark red paint along groove and wavy line on neck. Body fabric pale yellowish (2.5Y 8/2), paint 2.5YR 3/3.
2. CN 16052, XXIXH 5.3. Jar, Ware II. Carinated mid-body, ring-base with omphalos; red-painted loops and wavy line. Body fabric light brown (5YR 7/4), paint 10R 4/4 to 2.5YR 5/4.
3. CN 16054, XXIXH 5.3. Cup, Ware II. Out-turned, pointed rim, slightly concave body; crisscrossed lines in red paint. Body fabric patchy pale yellow-brown to orange (2.5YR 6/8 to 2.5Y 8/2), paint 7.5R 3/4.

4. CN 16053, XXIXH-E Baulk 1.2. Cup, Ware II. Out-turned, pointed rim, straight body; liberal red-painted loops and half circles. Body fabric patchy orange to pale yellow (2.5YR 7/6 to 2.5Y 8/3), paint 2.5YR 2/3.
5. CN 16068, XXIXM 12.5. Basin, Ware III. Applied rim, turned on slow wheel; band combing of straight and wavy lines on exterior. Fabric grey (N 4/0).
6. CN 16028, XXIXE 4.4. Casserole lid, Ware IV. Button handle, mild ribbing on exterior. Fabric reddish-brown (10R 4/4).
7. CN 16029, XXIXE 4.4. Casserole, Ware IV. Horizontal loop handle, broad ribbing on exterior. Fabric as previous.
8. CN 16022, XXIXQ 3.3. Jar (handles missing), Ware VI. Simple rim, outflaring neck, no evidence of decoration. Fabric pale yellow (2.5Y 8/3).
9. CN 16027, XXIXE 4.4. Three-handled jar, Ware VI. Applied "turban" knobs, incised decoration, trimmed base and lower body, sieve in neck. Fabric pale yellow (2.5Y 8/3).

Fig. 24. Catalogue of Pottery

1. CN 16030, XXIXE 4.4. Pilgrim flask, Ware VI. Incised lines on neck and body, loop handles, evidence of paring. Fabric pale yellow (5Y 8/3).
2. CN 16023, XXIXQ 3.3. Cup, Ware VII. Trimmed lower body and base. Fabric reddish-brown (5YR 5/4) on lower body, creamy upper body (10YR 8/3).
3. CN 16036, XXIXM 8.2. Bowl, Ware IXa. Splash decoration in green, turquoise, and yellow glassy glaze over white slip. Fabric pale orange (5YR 8/4).
4. CN 16025, XXIXM 2.1. Bowl, Ware IXb. Bubbly yellow and green glaze separated into zones by brown paint/glaze lines. Fabric reddish-orange (5YR 6/6).
5. CN 16033, XXIXM 3.1. Bowl, Ware X. Incised, cut, and painted red (7.5R 4/4) on exterior; painted red and white lines on interior. Fabric orange to brown

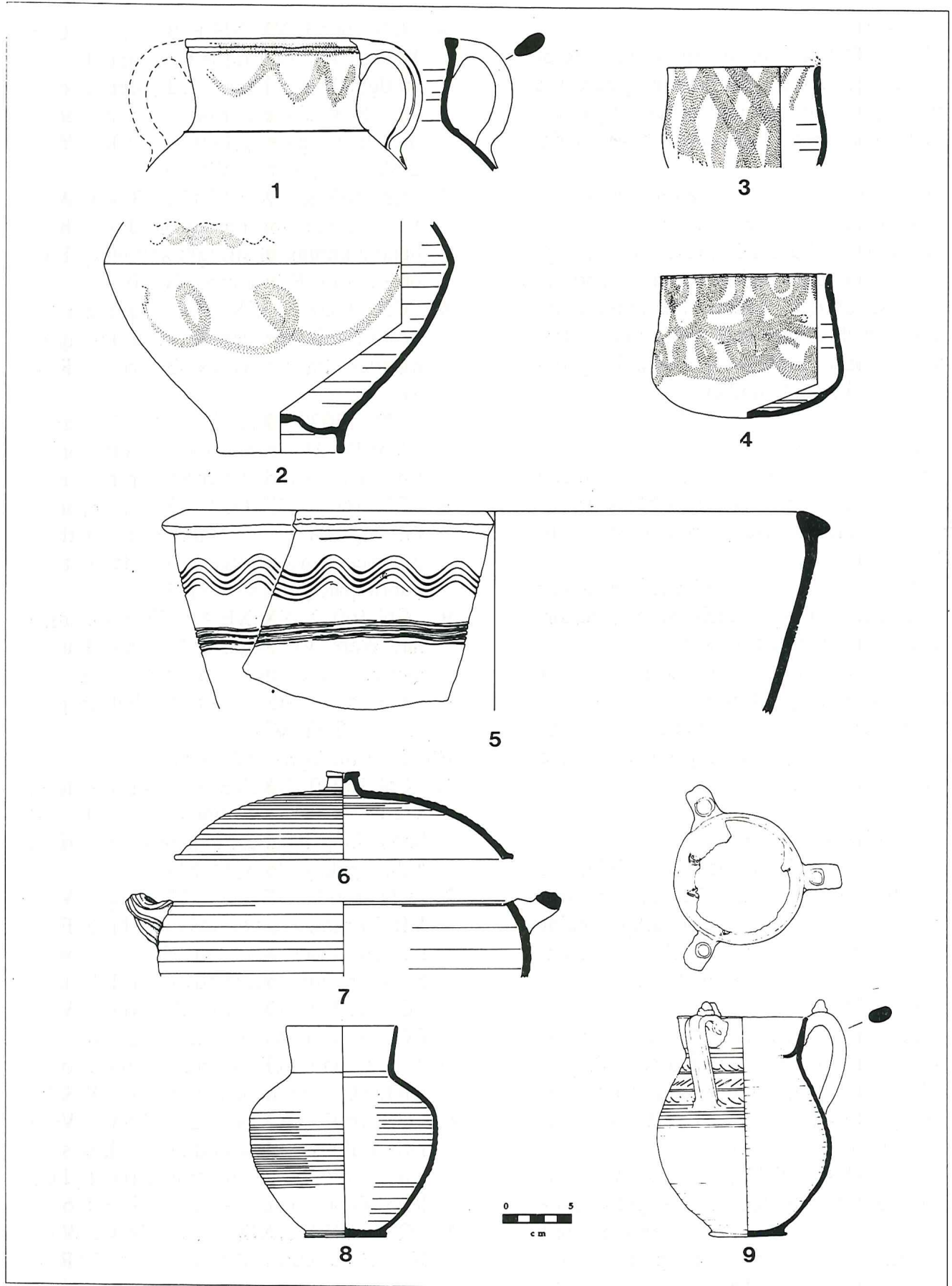


Fig. 23. Examples of Abbasid pottery, Area XXIX. For descriptions see text.

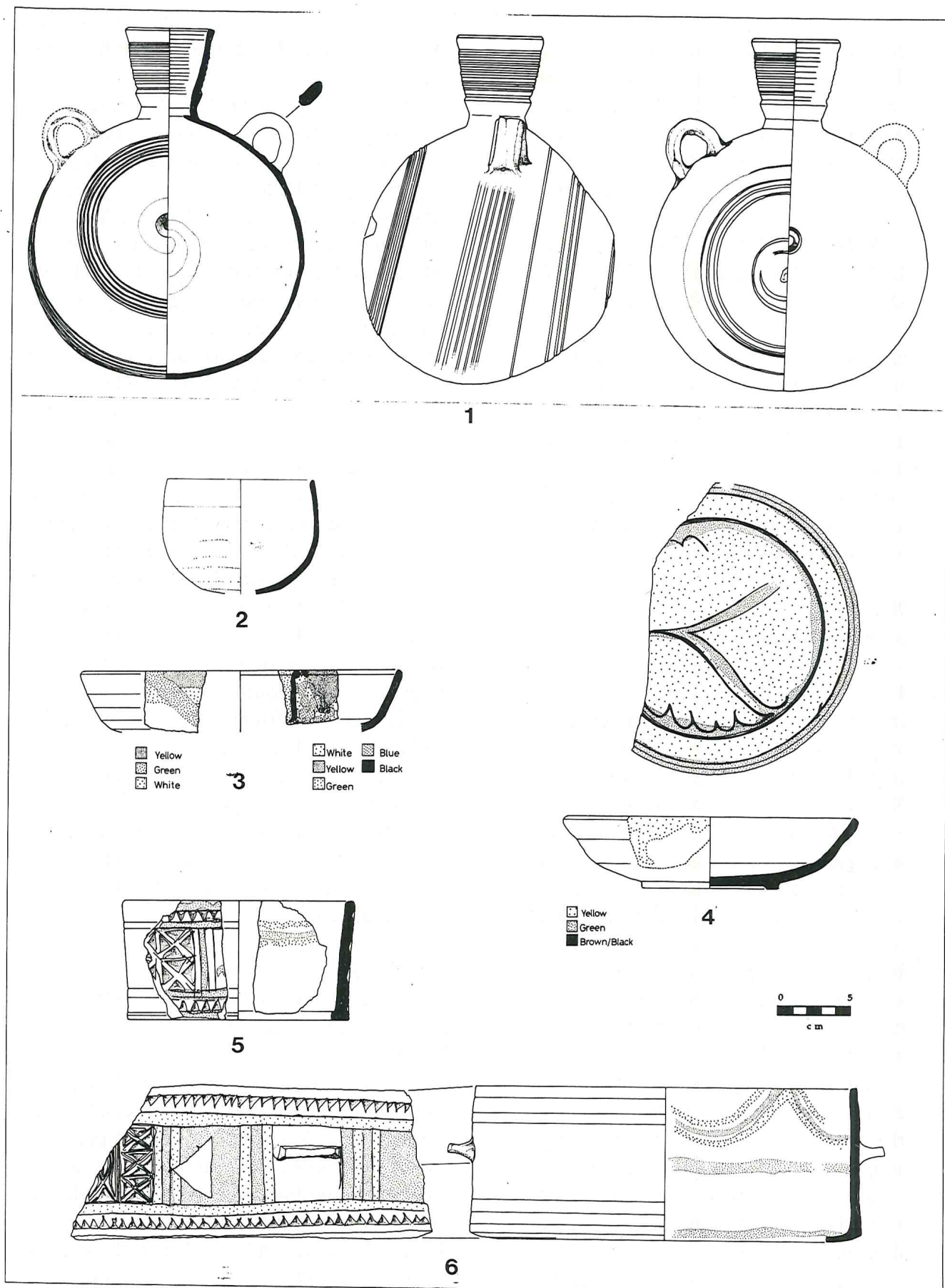


Fig. 24. Examples of Abbasid pottery, Area XXIX. For descriptions see text.

(2.5YR 7/7 to 7.5YR 5/3).

6. CN 16031, XXIXM 10.1. Bowl, Ware X. Incised, cut, and painted red (10R 3/3) and yellow (10YR 7/3) exterior; painted red and white lines on interior. Fabric brown (10YR 5/2).

(A.G.W.)

THE ANIMAL BONES FROM TELL AL-ḤUṢN (AREA XXXIV) AND THE ABBASID COMPLEX (AREA XXIX)

This report is limited to a discussion of the representation and range of species identified within Areas XXXIV and XXIX, and includes brief notes on the possible use of each species in the relevant site economy. A few species have yet to be identified, and in the following text and tables are mentioned in broad terms, e.g. large deer.

Area XXXIV

A total of 5746 animal bones were recovered during the two seasons of excavation (1988 and 1989). All the bones were recovered by hand. The effect on retrieval efficiency in the absence of sieving is described in the next section with regard to Area XXIX. Bones were found in each of the eleven plots excavated and these have been amalgamated according to the four main periods of occupation i.e. Early Bronze, Hellenistic, Late Hellenistic/Early Roman and Byzantine, as shown in Table 1. Few bones were recovered from Early Bronze or Hellenistic levels, and the vast majority of the site assemblage dates to the Byzantine period (83.5%).

For reasons of sample size, comparison between periods is limited to the Hellenistic/Early Roman and Byzantine assemblages. Though there is a large time gap between these two periods they are quite similar in their representation of species, with sheep/goat predominant, followed by cattle, then pig and chicken (see Table 1). There is also little variation in the propor-

tion of sheep to goat—Hellenistic/Early Roman: 11 and 9; Byzantine: 47 and 34 respectively.

The majority of the species represented are likely to have been kept for meat, with the possible exception of horse/donkey and dog. Sheep and goat would have supplied most of the meat, followed by (in descending order) cattle, pig and chicken. The remainder, including camel and the wild species, i.e. gazelle, deer, dove and partridge may represent an occasional addition to the diet. It is possible that the dove was in fact a domesticate (see last section). The size of the pig bones indicates the presence of domestic animals and the possible absence, at least no clear identification, of wild boar.

Equid bones are quite well represented in the Byzantine period. Their importance to the inhabitants of Tell al-Ḥuṣn at that time is clearly shown by the presence of stables within plots A, E, H, J and K. Approximately half of the *equid* bones were identified as donkey which presumably would not have required stables. A few definite horses were found while the remainder could conceivably represent either ponies or mules. Both *equid* and dog were probably used for work purposes only. No butchery cuts were found on bones representing these species and also 5 out of the 11 dog bones recovered from the Byzantine levels are articulated.

Area XXIX

A total of 3750 bones were recovered from the three seasons work within Area XXIX. The short 1985 season produced only a small quantity of bones, the majority coming out of the 1989 and, especially, the 1990 season. Quantities are related partly to the size of the excavation and partly to the recovery techniques. Sieving was employed in plots E, F, and M (excluding topsoil) in the 1989 season, and for all the plots excavated in the 1990 season. The species representation for each of the three seasons of

Table 1: Tell al-Huṣn (Area XXXIV) species representation (total fragment count).

	Periods					
	<i>EB</i>	<i>Hellen.</i>	<i>LH/E Rom.</i>		<i>Byzantine</i>	
	No.	No.	No.	%	No.	%
Sheep/Goat		21	202	69.1	1049	61.9
Cattle		6	56	19.1	234	13.8
Pig		1	14	4.8	150	9.0
Donkey			2		19	
Other Equid*			1		23	
Camel		1			12	
Large Deer					4	
Gazelle			1		5	
Dog					11	
Chicken		4	16	5.5	182	10.7
Chukar Partridge					1	
Rock/Stock Dove		1			2	
Unidentifiable						
large§	3	9	68		750	
small¶	16	50	395		2190	
indeterminate			82		165	
Total	19	93	837		4797	

* horse, mule or indeterminate

§ cattle size and larger

¶ sheep/goat size

excavation are shown in Table 2. Subdivision of the site assemblage is necessary due to the differences in quantity and recovery technique mentioned above and also due to the great variation in the proportions of certain species between each season. Each of these three facts are likely to be interrelated.

The effect of sieving is to reduce the biases inherent in manual recovery. Sieving increases the chance of finding the bones of fish, rodents and other small species, as well as the smaller skeletal elements of larger species, e.g. sheep/goat phalanges. In the latter case manual recovery overrepresents certain elements in favour of "large" species, i.e. cattle size and larger (for definitions see Table 1). This argument can also be applied to "large" versus "small" uniden-

tified shaft fragments. The 1985 and 1990 assemblages show differences which can be attributed to the recovery techniques: the proportion of "large" to "small" unidentified shaft fragments for 1985 is 1 to 4 and 1990 is 1 to 9 respectively; the presence of fish, other bird (smaller than dove) and rodent in 1990; the greater proportion of chicken in 1990. It might be expected that the representation of sheep/goat relative to cattle would be greater in the 1990 assemblage, however this does not seem to be the case (see Table 3). The 1989 assemblage also shows signs of relatively poor recovery, i.e. an under representation or absence of all three element types/species described above plus a smaller proportion of sheep/goat relative to cattle, in comparison to the

Table 2: Abassid Centre (Area XXIX) species representation (total fragment count).

	Excavation Season					
	1985		1989		1990	
	No.	%	No.	%	No.	%
Sheep/Goat	79	76.7	202	59.4	430	57.8
Cattle	7	6.8	64	18.8	54	7.2
Pig			3		2	
Donkey			6		2	
Other Equid*					2	
Camel					1	
Large Deer					1	
Gazelle			2			
Dog			6		6	
Cat			1		1	
Chicken	16	15.5	55	16.1	235	31.6
Rock/Stock Dove	1		1		10	
Other bird					3	
Fish					19	
Rodent					75	
Unidentifiable						
large§	25		141		143	
small¶	101		629		1292	
bird			1		54	
indeterminate			40		40	
Total	229		1151		2370	

* horse, mule or indeterminate

§ cattle size and larger

¶ sheep/goat size

Table 3: Area XXIX representation of sheep/goat and cattle.

	Excavation Season		
	1985	1989	1990
	%	%	%
Sheep/Goat	91.9	76.0	88.9
Cattle	8.1	24.0	11.1

1990 season (see Table 3). Yet sieving was employed in the 1989 season (see above) and approximately 75% of the assemblage was recovered from 100% sieved levels.

Obviously the recovery techniques cannot fully explain the difference between the 1989 and 1990 assemblages. The distribution of bones in the last two seasons were

almost exclusive, apart from some overlap in plots E, M and R. Thus it is possible that the noted differences in species representation may reflect some variation in the pattern of refuse disposal throughout this part of the site. Alternatively these figures may simply reveal the dangers of too detailed an interpretation of relatively small samples.

Whatever the differences between these three assemblages, there are clear similarities in the predominance of sheep/goat bones and the good representation of cattle and chicken. The proportion of sheep to goat is also approximately similar—1985: 6 and 9; 1989: 7 and 10; 1990: 13 and 13 respectively. As with the Area XXXIV assemblage (particularly the Hellenistic/Early Roman and Byzantine periods) the species representation shows a dependence and/or preference for sheep and goat meat and to a lesser extent, the meat of cattle and chicken. A much smaller part of the meat demand would have been met by two of the remaining domestic species, i.e. camel and pig, and also by the few wild species represented, i.e. large deer, gazelle, fish, the small birds and possibly dove (see last section). Most of the pig bones were discovered in well sealed contexts and are domestic rather than wild in form. The majority of the equid bones are donkey sized, and this species along with dog and cat were probably used for work purposes only. It is likely that the majority of rodents represented are intrusive.

Areas XXXIV and XXIX: A Comparison

A comparison between these areas will obviously be handicapped by the difference in recovery methods employed at each site. The lack of sieving in Area XXXIV may have resulted in the absence of some spe-

cies and the underrepresentation of others.

Comparing the 1985 and 1990 Area XXIX assemblages, sieving reduced the proportion of sheep/goat in favour of chicken, although sheep/goat remains the predominant species. The abundance of sheep/goat within the two latest periods in XXXIV is approximately similar to that shown by the 1985 Area XXIX season assemblage. Thus it is possible that, with sieving, the XXXIV assemblage could have displayed a greater proportion of chicken, but with sheep/goat still predominant. As manual recovery favours the recovery of bones from "large" animals, some comparison can be made. An approximately similar proportion of cattle was found in both areas and equid and pig were more abundant in Area XXXIV.

The greater part of the meat demand in both areas was met by a small number of domestic species, i.e. sheep/goat, cattle and chicken (and pig in Area XXXIV). A supplement to the diet was provided by camel and a few wild animals and birds (plus fish in Area XXIX). Deer and gazelle may have lived within or near the Jordan valley at the time these sites were occupied.¹⁰⁴ The chukar partridge and rock dove are year round residents, and the stock dove a winter visitor in this area today.¹⁰⁵ The doves found on both sites may represent domestic birds, as they were popular in the Roman and Islamic periods,¹⁰⁶ either for racing or fattening for the table.

(K. R.)

GLASS FROM AREAS XXXIV AND XXIX (HELLENISTIC-ABBASID)

Glass from the 1989 and 1990 seasons comprised three categories: cast wheel-

104. F.S. Bodenheimer, *Animal and Man in Bible Lands*, (Leiden, 1960).

105. H. Heinzel, R. Fitter, and J. Parslow, *Birds of Britain and Europe*, (London, 1979), p. 170.

106. S. D. Goiten, *A Mediterranean Society, The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*, vol. 1 (Los Angeles, 1978), p. 250.

grooved bowls from terminal Hellenistic/early Roman levels on Tell al-Ḥuṣn (Area XXXIV); sixth century AD wares from the same area; and an important datable corpus of vessels from a two-phased Abbasid occupation in Area XXIX. Only a selection of this last group will be discussed in detail.

Glass from Tell al-Ḥuṣn

The Hellenistic cast glass—from conical to shallow bowls both with and without small vertical external ribs—closely follows the Tel Anafa series,¹⁰⁷ but still awaits stratified phasing at Pella. It may be chronologically significant that only one marvered early Roman bowl fragment has appeared, as rubbish survival. Nor are there blown ribbed bowls, or any cast bowls alongside blown glass in levels on al-Ḥuṣn uncontaminated by late Byzantine material: this to date implies a gap between second-first century BC occupation and subsequent Byzantine fortification. The sixth century glass parallels that on the main tell, and will be fully described in a forthcoming monograph. In summary, the prevailing fabric is blue-greenish and slightly bubbly, often decorated by finely wound trails in yellowish, mid-bluish or cobalt bluish glass. Decoration requiring skills beyond those of basic glassblowing—mouldblowing, cutting or engraving—are absent from al-Ḥuṣn and extremely rare in the Byzantine houses on Pella itself. Al-Ḥuṣn yielded only the commonest Levantine types of tall- or funnel-mouthed flasks (some with vertically-ribbed bodies), both hollow and solid-stemmed lamps, flared-rimmed beakers, hollow- and knob-stemmed goblets and large footed bowls, including those with folded flanged lips or with hollow band below rim.

Abbasid Glass from Area XXIX

Abbasid glass from Area XXIX falls, like the pottery, into two very clear chronological and stratigraphical groups. The earliest includes a cesspit dug in 1985 whose plain freeblown beakers exactly parallel those from a context in the Eastern Complex (XXIXH), where careful sieving produced scores of nearly but not quite complete ceramic and glass vessels.¹⁰⁸ From XXIXH came at least a dozen freeblown, blue-greenish cylindrical beakers with rounded, uneven bases and slightly inturned rims (Fig. 25:1), either plain or decorated with one or more horizontal or vertical rows of small S-shaped nips (Fig. 25:2-3), sometimes in only a short band (Fig. 25:4). Several bluish miniature footed bowls with strongly Byzantine/Umayyad antecedents (Fig. 25:8) appear only in this early context, as does a series of medium-walled, light olive-greenish, broad-shouldered flasks with short funnel mouths (Fig. 25:10). A related group of dark greenish, broad-shouldered flasks with distinctively half-folded rims and highly kicked bases appears in both Abbasid phases, but not in Umayyad tell levels, confirming the eighth century date suspected for them at Kursi.¹⁰⁹ The earliest phase also yielded a small amber beaker with pulled-out vertical ribs, a squat yellow-greenish jar with trailed arcades in the same fabric, and a narrow olive cylindrical flask wound with thick, indented ribbon-trail in the same colour, and added amber coiled base (Fig. 25:5-7).

Phase 2 provisionally includes the latest strata from XXIX and a purely Abbasid rubbish pit dug in 1987 on the main tell. These levels yielded a large number of pinched glass beakers and bowls (mostly beakers) whose undecorated fragments are

107. G. Weinberg, 'Notes on Glass from Upper Galilee', *JGS* 15 (1973), pp. 35–51.

108. Glass from Area XXIX was sorted, conserved and rejoined by conservator Noël Siver. Nb.: Opaque and translucent colours are distin-

guished here as "green" vs. "greenish"; "amber" is assumed to be inherently translucent.

109. D. Barag, 'Glass Vessels', *Atiqot* (ES) 16 (1983), p. 37, no's 5–6 Fig.9; possibly also no. 1 (dated Late Roman).

often identifiable by their simple upright rims (diam. 9-10 cm), a characteristically strongly-coloured, thick and bubble-free fabric (Fig. 25:13-19), and distinctive bases (Fig. 25:16-17). Also present were large tall-mouthed, trail-decorated flasks (Fig. 25:9) and, in smaller numbers, the earlier series of plain and nipped cylindrical beakers.

Preliminary ceramic analysis dates the first phase to the late eighth and early ninth centuries. If so, certain rather abrupt changes appeared within Pella's conservative range of Umayyad fabrics and shapes, all of which derive directly from the late Byzantine glass corpus. Amber and olive-greenish fabrics surged in popularity, especially for toiletry vessels, from the later eighth century onwards, perhaps in imitation of Islamic bronzeware.¹¹⁰ More importantly, the nipped cylindrical beakers clearly preceded the arrival of pincer glass at Pella, although they co-existed in later ninth-tenth century contexts. Whether or not pincer glass appeared elsewhere in the Levant only from the late ninth century is yet to be determined.

Nevertheless, at Pella—as at Jarash and Baysan, with whom it shares a very similar corpus of glass from Roman to Islamic times—the earliest Abbasid ornamentation remained that associated with free-blown glass; added fine trails on funnel-mouths (but no longer on bodies), nips, or, less frequently, drawn out ribs. The flat, indented

trail of GN12449 (Fig. 25:7) derives from earlier, more pinched single ribbon-trails on beakers or flasks, but its application over the whole body, vessel-colour, knobbed base, and ridged neck, all form a specifically Abbasid type not found in pre-747 levels at Pella. Closely related but more globular versions are perhaps incorrectly labelled Umayyad in collections.¹¹¹ Trail-arcaded jar GN12459 (Fig. 25:6) is an unusually free blown rendition of a motif from metalware more frequently imitated on mould blown, pincer or cut glass. Its shape loosely resembles a ribbed jar from Fustaṭ which, despite a lack of comparable vessels, was similarly dated as early Abbasid.¹¹² A Fustaṭ ribbed bowl also recalls the ribbing on beaker GN12457 (Fig. 25:5), where a decoration used previously on Umayyad flasks appears on a slightly undersized version of the Abbasid footless cup with inturned rim.¹¹³

Pella's nipped beakers have very obscure antecedents. Flasks with horizontal bands of nips around the shoulder—labelled “Byzantine” at Levantine sites such as Khirbet al-Karak and Nessana¹¹⁴—are absent from Byzantine or Umayyad Pella, despite large quantities of glass from here; and only beakers, not flasks, are nipped in Abbasid Pella (four nipped beaker sherds from the tall topsoil are probably post-747). Persian Islamic flasks with vertical, fin-like nips derive perhaps from Sassanian bowls as much as Byzantine flasks,¹¹⁵

110. Summarised by R. Hasson, *Early Islamic Glass*, (Jerusalem, 1979), pp. 22–32.

111. P.C.V. Baur, ‘Glassware’, in *Gerasa*, ed. K. Kraeling (New Haven, 1938), p. 539 dated two variations c. AD 500, whilst noting collected Islamic parallels. *Catalogue of the Constable-Maxwell Collection of Ancient Glass*, (London, 1979), p. 197 nos 346–47 relies on other museums for an Umayyad date, as presumably does *Ancient Glass: The Elijah Dobkin Pavilion*, (Jerusalem, 1981), unpaginated.

112. R.H. Pinder-Wilson and G.T. Scanlon, ‘Glass Finds from Fustat: 1964–1971’, *JGS* 15 (1973),

p. 19 no.7.

113. Pinder-Wilson and Scanlon, p. 21; but this is mouldblown, not freeblown like Pella's beaker.

114. Baur, pp. 522, 536 Fig.18, no.67; P. Delougaz and R.C. Haines, *A Byzantine Church at Khirbet al-Karak*, (Chicago, 1960), Pl. 50 no.9; dated fourth-seventh century AD by Harden in *Excavations at Nessana*, ed. Dunscombe Colt (London, 1962), p. 88 no.75; and in collections (eg. A. von Saldern *et al.*, *Gläser der Antike*, (Mainz, 1974), pp. 240, 243–246 nos 713–14).

115. Hasson, *Early Islamic Glass*, p. 6.

but are unlike Pella's deep horizontal nips, some of which pierce the wall. More comparable nips appear at Kish on Abbasid flasks which were pinched along mould-blown ribs; at Nuzi, nips and ribs alternate on a "late" bowl with everted lip.¹¹⁶ The beaker form itself has contemporary ceramic parallels but no immediate glass prototype at Umayyad Pella.¹¹⁷ This well-defined series of nipped and plain beakers has not yet been published elsewhere; and if they prove to be absent at Baysan, it will be the clearest suggestion yet of a Pella glass workshop in any period, albeit of course one influenced by externally-driven fashions.

With the advent of nipped beakers came also the sudden demise after AD 750 of the goblet which had overwhelmingly dominated the glassware of Pella from the sixth to early eighth centuries. Only five goblet fragments—both hollow- and knob-stemmed—have emerged from Abbasid levels, all disturbed by topsoil; none resemble the flanged goblets found in later Abbasid Egypt and Syria.¹¹⁸ Parallel changes to drinking habits at Pella can be postulated but are by no means demonstrable from this.

Similarly, hanging stemmed-lamps had greatly outnumbered contemporary handled bowl-lamps in both domestic and church contexts in Byzantine and Umayyad Pella, as elsewhere in the Levant. Yet from both phases of Abbasid houses, only three stemmed lamp fragments were retrieved, the type having been rapidly replaced by numerous handled bowl-lamps. Unusually, at no period did Pella's bowl-lamps ever hold glass wick-tubes, so they must have used either metal wickholders or floating wicks.¹¹⁹ Pella's bowl-lamp preference may be paralleled at Nessana,¹²⁰ but sites as dispersed as Fustaṭ and Samarra used stemmed as well as bowl-lamps into the tenth century if not later.¹²¹

An absence of angular-cut molar flasks is also striking here. If, as is often assumed, cut flasks were produced in Persia or Syria,¹²² it is noteworthy that although present in both Egypt and Syro-Mesopotamia, they seem to have by-passed many Levantine sites.¹²³ Pre-Islamic Pella has never yielded any identifiably Syrian-decorated glass—that is, engraved or snake-threaded—so Abbasid wares deviated little from this long-standing trade pattern. Cut Islamic glass is often decolourised to mimic rock-crystal,

116. D.B. Harden, 'Glass from Kish', *Iraq* 1 (1934), p. 134 no. 26 Fig. 5; and an unnumbered fragment now stored in the same box in the Ashmolean. I am grateful to Dr R.S. Moorey (Ashmolean Museum, Oxford), for granting permission to view the glass from Kish, Ninevah, and Nessana stored at the museum. R.F.S. Starr, *Nuzi* (Harvard, 1939), p. 501, Pl. 140P is post-Roman, probably Islamic.

117. Although a plain and rounder beaker with rim rolled int. appears in levels with pincer glass at Baysan: G. Fitzgerald, *Beth-Shan Excavations 1921-1923: The Arab and Byzantine Levels*, (Pennsylvania, 1931), pp. 42-43 Pl. 39 no.32.

118. Hasson, *Early Islamic Glass*, p. 9 no.11.

119. G. Crowfoot and D.B. Harden, 'Early Byzantine and Later Glass Lamps', *JEA* 17 (1931), pp. 20-37.

120. Harden, *Nessana*, pp. 84-85, Pl. 20:51-54.

121. Pinder-Wilson and Scanlon, p. 22; C. J. Lamm, *Das Glas von Samarra*, (Berlin, 1928), p. 26 nos. 27, 145.

122. These regions specialised in expensive cut, faceted or engraved glassware; see A. von Saldern, 'Achaemenid and Sassanian Cut Glass', *Ars Orientalis* 5 (1963), pp.14-16, and Hasson pp.11-16; for Syria, see Harden, 'Ancient Glass, III: Post-Roman', *Arch. J.* 128 (1972), p. 94. Egyptian provenance has also been suggested: A. Lane, 'Medieval Finds at Al Mina in North Syria', *Archaeology* 87 (1938), pp. 64-46, following Lamm.

123. Nessana produced incised and pincer glass but no molar flasks: Harden, *Nessana*, pp. 76-67, nor are any recorded for Baysan, which has pincer bowls: Fitzgerald, *Beth Shan*, nos 31, 35. Cf. molar flasks from Mit Rahineh in C.C. Edgar, *Graeco-Egyptian Glass*, (Cairo, 1905), Pl. XI.

but no such fragments have emerged from Abbasid levels here.

Only three sherds are by rarity and decoration probable north-eastern imports, all stratigraphically dated to the mid ninth century. Strongest contender is a tiny, medium-walled sherd of incised cobolt blue beaker GN12495, as yet undrawn, whose design resembles an abstracted leaf pattern of a sherd in the Benaki Museum;¹²⁴ the linear incision resembles that found at Raqqah and Susa,¹²⁵ more than the crosshatching of a nearer Tiberias workshop.¹²⁶ Too small to be drawn, blue-greenish sherd GN12488 with intersecting mouldblown ridges could also be an import. A third sherd of indistinct form has pale yellow swirls marbled onto a freeblown, medium-thick dark amber wall (Fig. 25:20). A rare decorative technique for this period, it recurs on an undated "Islamic" bottle from Syria and two sherds from Iran attributed to the ninth-tenth centuries,¹²⁷ and is quite distinct from the much later Mamluk dark brown or purple glass with fine white mavered and combed lines.

Finally, pincer-decorated glass—restricted by technique to open shapes—has been attributed to Egypt, largely on the basis of Kufic inscriptions (including "Made in Egypt") pincer-decorated onto some beakers; yet it does not follow that all pincer-decorated glass, or

even the special tongs used to impress double-sided motifs into vessel walls, emanated from there. The uneven past retrieval of Abbasid material may distort the picture, but even if pincer-decorated glass is rarer at non-royal Mesopotamian sites than more southern cities, it remains an almost ubiquitous fineware from Egypt throughout the whole Levant into Syria. Perhaps a shared koine of pincer-decorated glassmaking should be envisaged throughout the caliphate, rather than a huge export-market from either Egypt alone or from a second Syrian centre,¹²⁸ for whatever their origins, pincer-tongs could have travelled widely, needing little skill to produce cheaper local wares than the deeply cut Persian glass whose ornament they imitated. Individual pincers carried separate motifs to create a plethora of designs. No bird or animal motifs occur on Pella's thirty or so pincer-decorated examples, merely related but never quite repeated combinations of combed parallel lines, lozenges, circles and ovals (Fig. 25:14-16, 18-19). The commonest pincer-decorated fabrics at Pella were pale greenish and blue-greenish, although amber, yellow-greenish, and cobolt blue were also favoured; the preferred form was the cylindrical beaker with slightly kicked base, such as the almost complete example (Fig. 25:12) from the Abbasid earthquake level.¹²⁹ The unusually rounded amber bowl

124. C. Clairmont, *Benaki Museum Catalogue of Ancient and Islamic Glass*, (Athens 1971), Pl. XVI no. 259.

125. M. Abu l-Faraj al'Ush, 'Incised Islamic Glass', *Archaeology* 24 (1971), p. 203; C. Lamm, 'Les verres trouvés à Susa', *Syria* 12 (1931) Pl. LXXVII:2.

126. E. Oren, 'Early Islamic Material from Ganeit-Hamat (Tiberias)', *Archaeology* 24 (1971), p. 275.

127. M. Manzari *et al.*, *Ancient and Antique Glass in the Queens College Art Collection*, (N.Y., 1976), p. 31 no. 12; Lamm 'Susa', Pl. LXXIX:10. C. J. Lamm in *Glass From Iran in the National Museum*, (Stockholm, 1935), pp. 14-15, Pl. 8C (undated) thinks this Syrian; cf.

marbled bird-flasks found in Iran: G. Platz-Horster, *Antike Gläser*, (Berlin, 1976), p. 196 no. 197, dated ninth-tenth century by Hama examples; and Syria: P. J. Riis, 'Les verreries', in *Hama*, vol. IV.2 (Copenhagen, 1957), p. 62, dated in turn by Lamm.

128. As Lamm suggested in *Glass from Iran*, p. 12, and *Samarra*, (fn. 122) pp. 45ff.

129. Our beaker is a common shape and colour, but I know of no direct parallel in design; close are *Catalogue of the Constable-Maxwell Collection of Ancient Glass*, (London, 1979), p. 191 no. 331 (ovals above double arches); Manzari, *Antique and Ancient Glass*, p. 30 no. 3, and one with triangles above double circles in the Islamic Museum, Cairo.

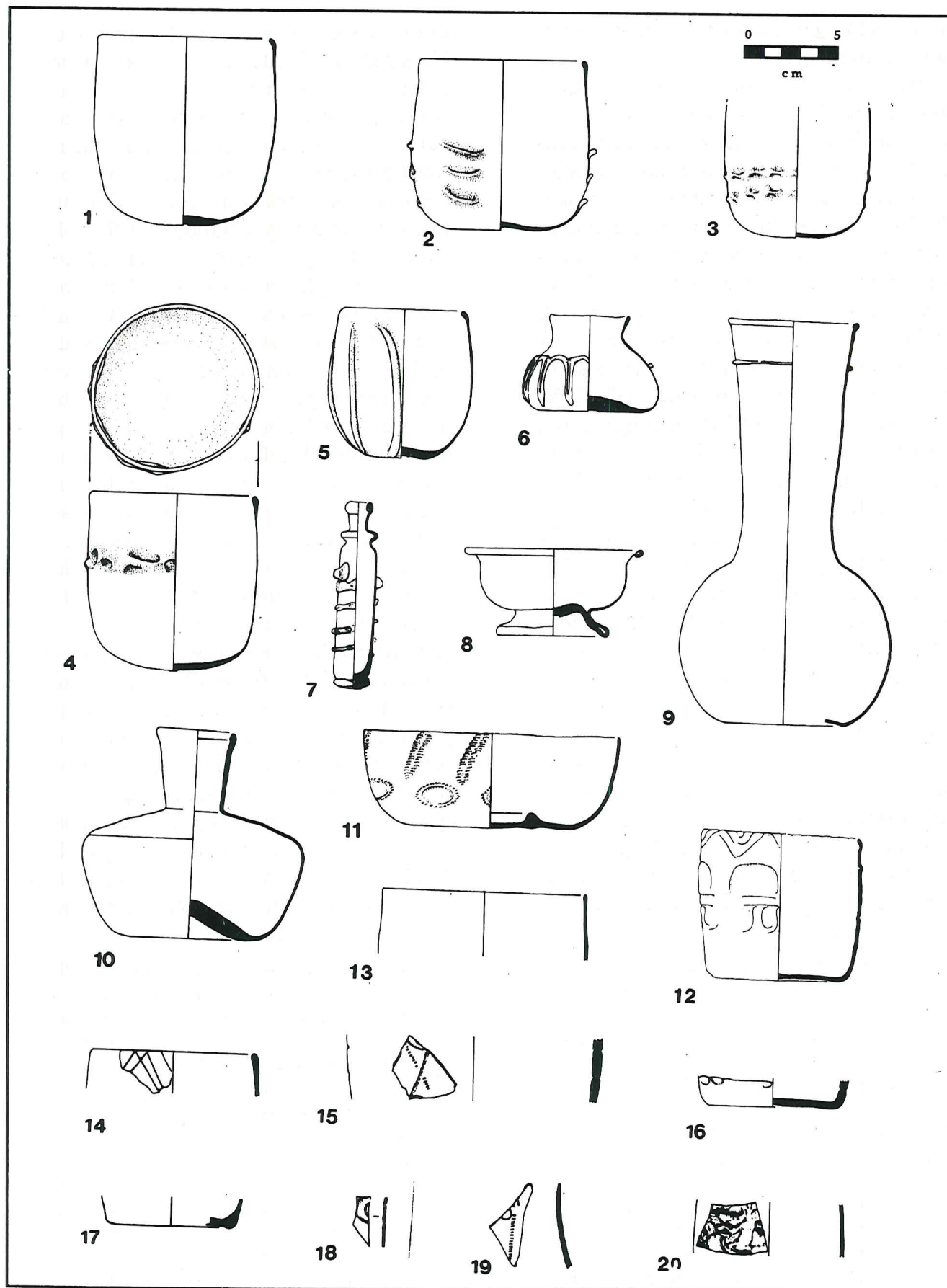


Fig. 25. Selection of Abbasid glassware. For descriptions see text.

GN12364 (Fig. 25:11) from the main Tell has a rare, thickened circular ridge on the interior of its simple base. Normally the base of pincer bowls found in Egypt or Syria is merely kicked slightly. Pella's closest parallel for the ridge comes from Samarra:¹³⁰ whether coincidence, or an indication of northern links, its later ninth-tenth century dating is now well-demonstrated.

Fig. 25. Selection of Abbasid glassware

1. G.N.12464. Beaker, blue-greenish.
2. G.N.12458. Beaker, blue-greenish; six columns of 3 nips.
3. G.N.12463. Beaker (rim missing), blue-greenish, with two nipped rows.
4. G.N.12444. Beaker, blue-greenish, short band of nips around half-body.
5. G.N.12457. Small beaker, amber, with 8 vertical pulled-out ribs.
6. G.N.12459. Trail-arcaded flask, light olive greenish.
7. G.N.12449. Narrow flask with colored rim and thick indented trail, thick-walled, olive greenish; amber coiled base added.
8. G.N.12456. Small bowl, rim folded ext, high folded foot, thinwalled, bluish.
9. G.N.12465. Large tallmouthed flask, yellow-greenish, trail on upper neck.
10. G.N.12460. Large funnelmouthed flask, thickwalled, light olive-greenish.
11. G.N.12364. Wide bowl, thickwalled, amber; pincer combed lines and circles.
12. G.N.12422. Cylindrical beaker, pale greenish; pincer.
13. G.N.12475. Simple rim, thickwalled, strongly yellowish.
14. G.N.12463. Simple beaker rim, thickwalled, strongly yellow-greenish; pincer overlapping inverted Vs.
15. G.N.12468. Very thickwalled lower

body fragment, blue-greenish; pincer pairs of concentric circles, intersecting combed and plain lines.

16. G.N.12466. Beaker base, very thickwalled, blue-greenish; pincer 5 pairs of volutes.
17. G.N.12472. Simple mediumwalled base, thickened edge, strongly greenish.
18. G.N.12461. Upright, mediumwalled body fragment, cobalt bluish; pincer concentric circles.
19. G.N.12473. Upright, thickwalled body fragment, blue-greenish; pincer vertical pairs of combed lines between small circles, below double-Vs.
20. G.N.12470. Medium-thickwalled body fragment, yellow marbling on dark amber.

(M.O'H)

CERAMIC LAMPS FROM AREA XXIX

The ceramic lamps and fragments recovered during the 1990 season of excavation in Area XXIX have expanded our knowledge of the range of types in use between the late eighth and late ninth centuries AD. The stratified material from Area XXIX represents a well-dated corpus that, unlike the oft-cited mixed tomb and cistern deposits, makes a major contribution to lamp chronology in Palestine and Jordan.

In the catalogue that follows, ware types are taken from Walmsley's table presented in this article. Similarly, the dating of the lamps is based on the Abbasid ceramic groups defined above. These dates are largely relative, with Group 1 dating no earlier than AD 750. The type numbers assigned are relevant to this article only.

Catalogue

Except for type 1, all the lamps are slipper

130. Lamm, *Samarra*, p. 14 no. 5. Pella's motifs recall a yellow-greenish fragment from Nessana: Harden, Pl. XX:27 and Edgar, *Graeco-*

Egyptian Glass, p. 71 no. 32739, Pl. IX, without the combed lines.

shaped with a channel. Around the filler hole are normally two rings, the outer of which splits open to form the channel borders.

Type 1

1. CN 16045 (PO 6); XXIX H/E (Baulk) 1.2 = XXIX H 5.1 (Fig. 26:1). Two fragments of a handle and shoulder. Ware I (terracotta)—variant. Fine paste, some lime and chert inclusions, occasional airholes and red/brown grog inclusions. Fired hard with a slightly browner core. Non-standard fabric for this type of lamp: 7.5YR6/4 to 7/4—light brown to pink; core slightly browner: 7.5YR5/4. Mohs: 7.5.

Very finely modelled animal head handle. Two rings around filler hole. Pomegranates on a branch on one side, other motif unclear (? tail of a fish).¹³¹

Date: early Group 2 (or earlier).

Type 2

2. CN 16046, RN 132023 (PO 65); XXIX H 2.3 (Fig. 26:2; Pl. VIII,5). Two-thirds of a lamp, nozzle and part of shoulder missing. Signs of use. Later variant of Ware IV (coarse terracotta, red). Flaking at breaks. Fired red through and hard: 2.5YR5/6 red. Mohs: 8.5? Slipped (10YR8/3 very pale brown).

A high and low thin ring around filler hole. Double frieze on shoulder: dots above and short lines below. Conical handle in centre of frieze. Ring base.

Date: probably Group 2b.

Type 3

3. CN 16040, RN 132018 (PO 8); XXIX H 1.3 (Fig. 26:3; Pl. VIII,1). Almost complete with tip of nozzle missing. Signs of use, and surface stained. Ware VI (put-

ty): medium paste with grog inclusions on surface only. Fired uniformly in colour: 10YR8/3 very pale brown. Mohs: 3.5.

Double inverted V's on shoulder. Bar across channel behind wick hole. Corrupted Kufic writing in channel, probably meant to read *bism*.¹³² Mould seems to have been damaged. Double arcs and line within almond-shaped base.

Date: early Group 2 or earlier.

4. CN 16044, RN 132022 (PO 15); XXIX H 5.1 (Fig. 26:4). Complete lamp but surface badly abraded. Signs of use. Bricky ware, possibly a variant of Ware IV: medium paste with many red/brown grog, grey, quartz and lime inclusions. Some larger of each. Fired red/brown. Unusual fabric for Pella: 5YR6/6 to 7/6, reddish yellow, core slightly browner. Mohs: 3.5.

Frieze of double arcs on shoulder. Nozzle pinched in, quite pointy and slopes down. Ring base.

Date: early Group 2 or earlier.

5. CN 16041, RN 132019 (PO 23); XXIX R 1.5 (Fig. 26: 5; Pl. VIII,2). Two-thirds of lamp top. Signs of use. Ware I (terracotta): 10YR8/6, yellow, to 7.5YR8/6, reddish yellow; Core: in places pinker, in places greyer. Mohs: 2.5. Slipped: 2.5YR6/8 light red.

Linked spiral on shoulder, dots in channel and flanking bridge.

Date: possibly Group 2.

Type 4

6. CN 16043, RN 132021 (PO 14); XXIX H 5.1 (Fig. 26: 6; Pl. VIII,3). Complete lamp. No sign of use. Ware VI (putty): uneven colour, paler on top; 10YR8/6 yellow. Mohs: 4.5.

Shoulder decoration of dotted arcs in

131. For the unusual motif see G. Bisheh, 'The Second Season of Excavation at Hallabat, 1980', *ADAJ* 26 (1982), pp. 133-143; S. Berthier, 'Sondage dans le secteur des thermes sud a Busra (Syrie) 1985', *Berytus* 33 (1985), pp. 5-

45, Pl. 2:14, 15.

132. For similar complete examples see A.-J. 'Amr, 'More Islamic Inscribed Pottery Lamps from Jerash', *Berytus* 34 (1986), pp. 161-163, in particular numbers 9 and 10.

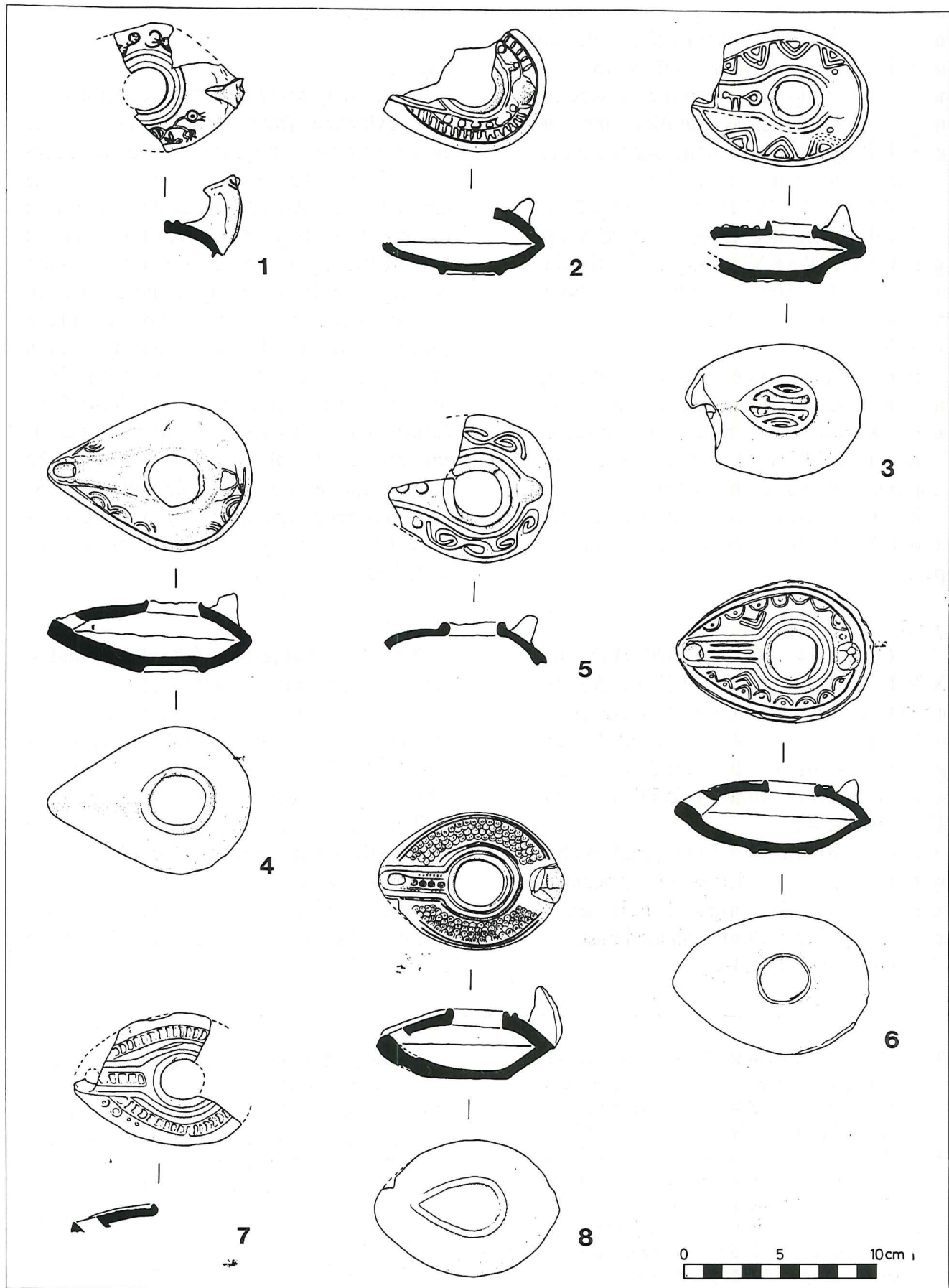


Fig. 26. Islamic lamps from Area XXIX. For descriptions see text.

tear-shaped border ending at wick hole. One double inverted V flanks either side of channel. A second thin line follows the outline of the lamp top, forming a second, empty, register. Three parallel lines in channel. Ring base on almond-shaped base.

Date: early Group 2 or earlier.

7. CN 16047; XXIX S 1.1 (Fig. 26:7; Pl. VIII,4). Almost complete top of lamp. Signs of use. Ware VI (putty): slightly flakey at breaks, fired evenly throughout; 7.5YR8/4, pink to 10 YR8/4, v. pale brown. Mohs: 3.5.

Thin frieze of short, curved, radiating lines on shoulder. Dots and circles under frieze, just before wick hole. Possible traces of a thin line following outline of lamp top, as lamp no. 6. Ladder in channel.

This is a difficult fragment to catalogue without the handle. It could be a variant of type 2.

Type 5

8. CN 16042, RN 132020 (PO 18); XXIX R 1.4 (Fig. 26:8; Pl. VIII,6). Almost complete lamp, a few chips missing under nozzle. Signs of use. Ware VI (putty): flaking at breaks, fired yellow/buff throughout and hard; 5YR8/2 white, to 2.5YR8/4 pale yellow. Mohs: 4.5

On shoulder 4 rows of arcs, each with a tiny star underneath. Lines and concentric circles in channel. Tongue handle set at back of lamp. Plain almond shaped base.

Date: Group 2 (later).

Comments

Type 1

Commonly known as "Jerash lamps".¹³³ The evidence from Jarash gives a date range from the last quarter of the sixth century AD into the eighth century AD.¹³⁴ The example from Area XXIX at Pella therefore extends this range into at least the second half of the eighth century, if not the ninth century AD. It is usually assumed that all examples of this type of lamp were made in Jarash. However, the fabric and decoration of lamp no. 1 are not at all standard. This, together with a date later than those from Jarash, might suggest another manufacturing centre. An obvious choice would be Baysan, and an Early Islamic pottery workshop has been reported from the recent excavations,¹³⁵ though no lamps or moulds have been published.

Type 2

This is a variation of Types 3 and 4 where the decoration on the shoulder forms narrow bands which do not cover the whole top, but meet the channel halfway along its length.¹³⁶ Most examples seem to derive from the same prototype.

The type is known throughout southern Bilad ash-Sham from at least Khirbet al-Mafjar to Dehes.¹³⁷ At Buşra it occurs in deposits ranging from the late second half of the eighth to the beginning of the ninth century.¹³⁸

133. See R. Rosenthal and R. Sivan, *Ancient Lamps in the Schloessinger Collection*. Qedem 8 (1978), p. 139, no. 574 (their "Islamic lamps: Group 4—Lamp with High Curved Handle").

134. I. Kehrberg in W. Ball *et al.*, 'The North Decumanus and North Tetrapylon at Jerash: An archaeological and architectural report', *Jerash Archaeological Project I*, ed. F. Zayadine (Amman, 1986), p. 369; T. Scholl, 'The Chronology of Jerash Lamps', *JAP I*, pp. 163–166.

135. G. Mazar in Z. Yeivin *et al.*, 'The Beth Shean

Project', *Excavations and Surveys in Israel* 6 (1987–88), p. 21.

136. Y. Israeli and U. Avida, *Oil-lamps from Israel*, (Jerusalem, 1988), pp. 153–163 nos. 436, 446–452.

137. J-P. Sodini, G. Tate, B. Bavant *et al.*, 'Dehés (Syrie du Nord) campagnes I–III (1976–1978). Recherche sur l'habitat rural', *Syrie* 57 (1980), pp. 1–303

138. Berthier, *Ancient Lamps*, pp. 7–8, 11–12, Pl. 1: 1–4.

Type 3

Lamps of this type have a small conical handle set on the outer of the two rings around the filler hole. There tends to be an almond-shaped base ring, which contains lines, arcs or flowers. The decoration on the shoulders is thick, simple and in high relief.¹³⁹

Three lamps of this type have been published by Walmsley; two belonging to Group 2b from Area XXIX, and one of Group 3 from the main tell.¹⁴⁰ The evidence from this season in XXIX extends the date range earlier than the previous examples, possibly to the initial occupation in the second half of the eighth century AD.

Type 4

These lamps have a small conical handle set between the outer ring of the filler hole and the back of the lamp. The decoration is in low relief and is smaller than that of Type 3, covers less of the shoulder and is still relatively simple. The channel borders can be pinched in to form a spoon shape.

On stylistic grounds this is either a transitional form between Types 3 and 5 or a workshop variation of Type 5, but our dating evidence is not yet adequate to test this.

Type 5

This is the standard Islamic slipper shaped lamp with channel and tongue handle. A good parallel for the decoration on

lamp no. 8 should be sought on moulded Abbasid creamware vessels. This type is generally dated to post AD 747, on the Khirbet al-Mafjar evidence. From Fustat in Egypt comes a ninth to tenth century AD date.¹⁴¹ Both examples so far from Area XXIX date to the latest phase of the buildings, therefore falling within the traditional date range for the type.

Conclusions

The lamps recovered from Area XXIX fall within the normal corpus of lamps in Bilad ash-Sham during the eighth to tenth centuries. Two points need to be stressed. Lamp no.1 is a very late example of a Jarash-style lamp which may well not have been made in Jarash. Apart from lamp no. 4, all the lamps are made from the same fabrics that are used in other ceramic production. The widespread distribution of types and the use of the same fabrics used for other classes of ceramics stands in contrast to the situation in Jordan and Palestine in the Byzantine period.

(K.d.C.)

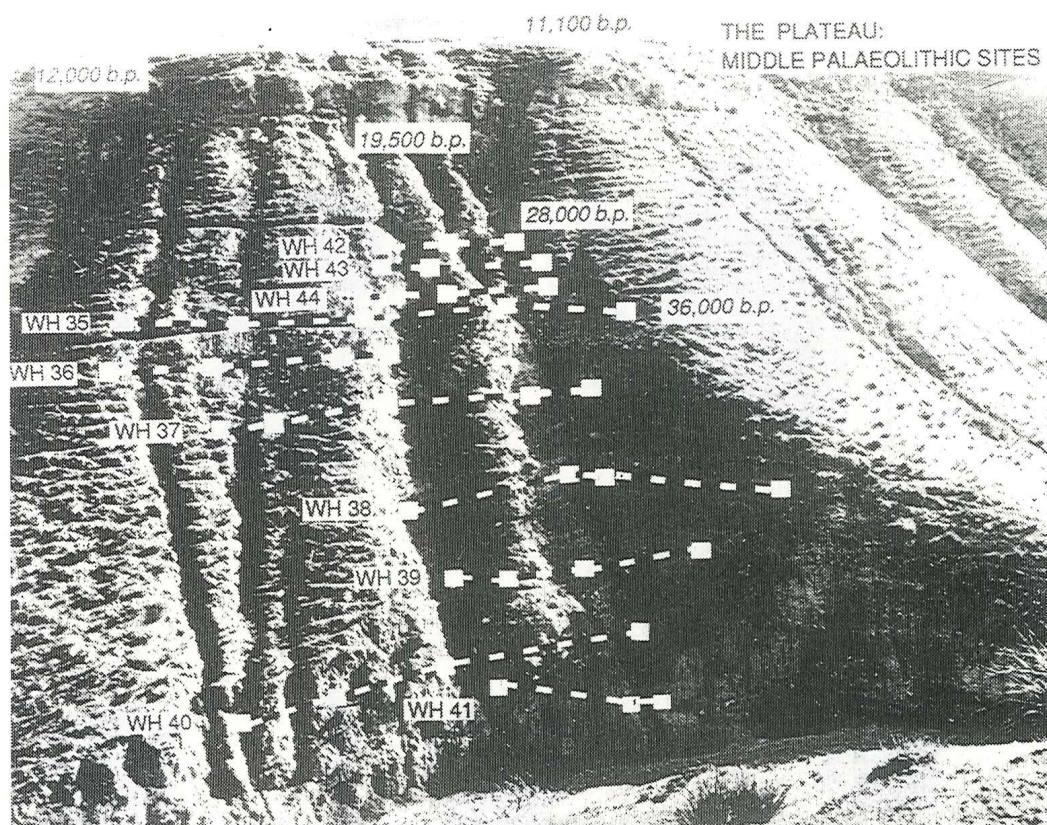
A. G. Walmsley
P. G. Macumber
P. C. Edwards
S. J. Brouke
P. M. Watson

139. Rosenthal and Sivan *Ancient Lamps*, no. 533 and possibly no. 537; Israeli and Avida, *Oil-lamps*, no. 445

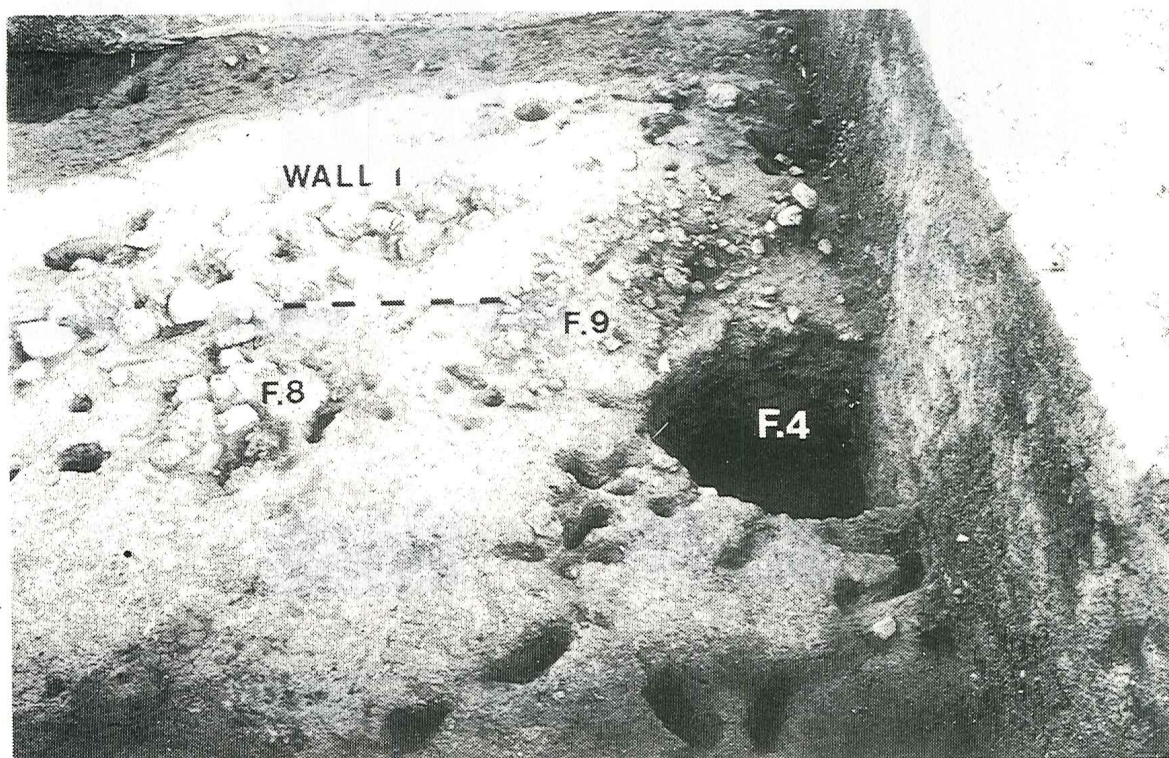
140. A. Walmsley, 'Architecture and Artefacts from Abbasid Fihl: Implications for the cultural history of Jordan', *Bilad al-Sham in the 'Abbasid*

Period: Proceedings of the Fifth International Conference on the History of Bilad al-Sham, eds. M. A. Bakhit and R. Schick (Amman, 1991).

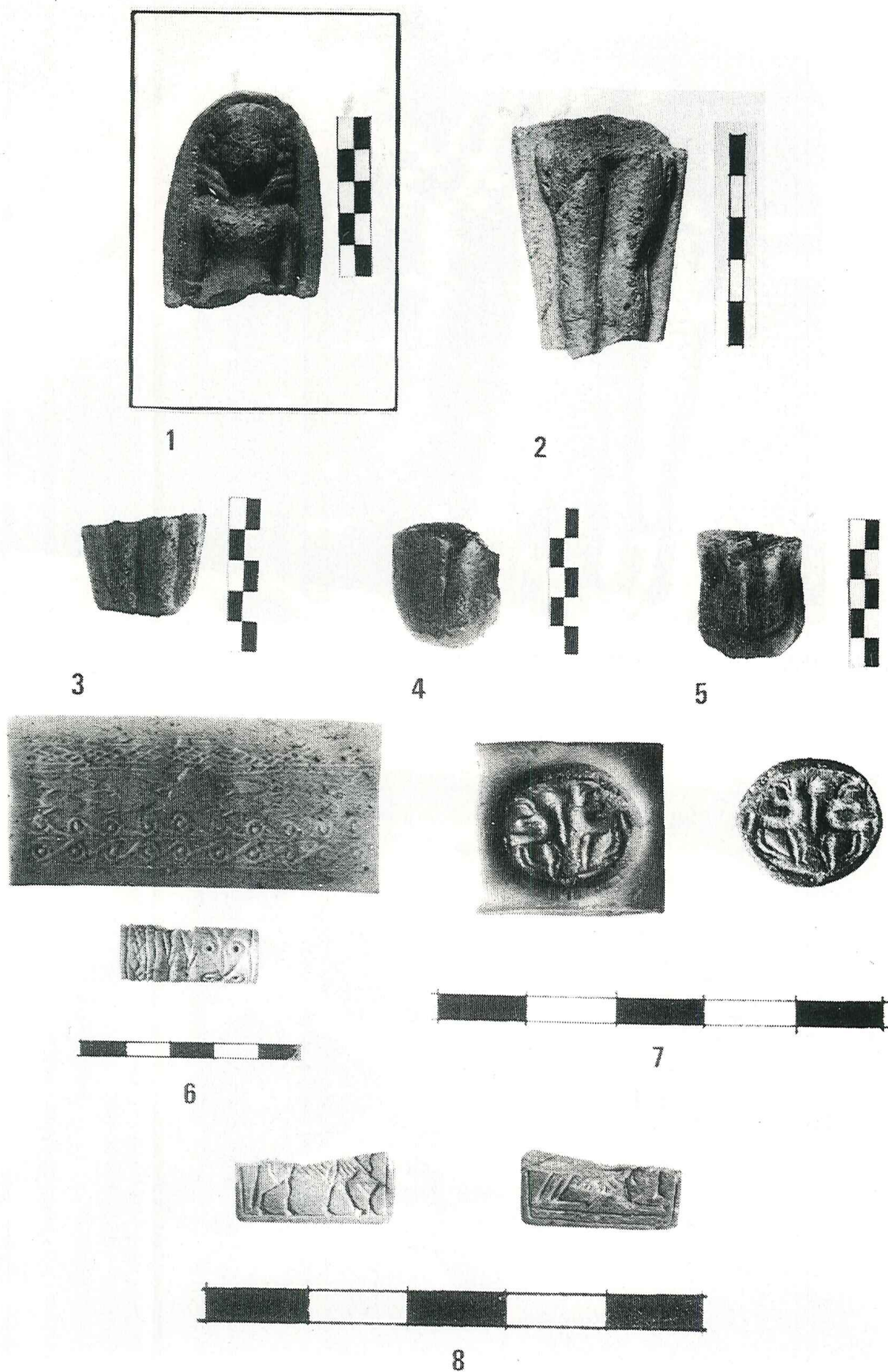
141. W. Kubiak, 'Medieval Ceramic Oil Lamps from Fustat', *Ars Orientalis* 8 (1970), pp. 1-18, his Type A, 2nd variant: text Fig. 1a-b.



1. Middle Palaeolithic sites in Wadi al-Hammeh.



2. Wadi Hammeh 27, Plot XX K. View north to Natufian Phase I surface.



Small finds from Areas III and XXXII.



1. View south-east of the partly-exposed staircase in XXXIVL, abutting the north wall of the "administrative" building.



2. Detailed view south-east in XXXIVL of the partly-excavated walls of the western room of the "administrative" building, showing rubble repairs. The wall on the right is a Stage 2 addition.



1. View north-east of XXXIVE showing the manger stalls and kitchen bench beyond. Note the corner bin and window. The sloping buttress is on the left.



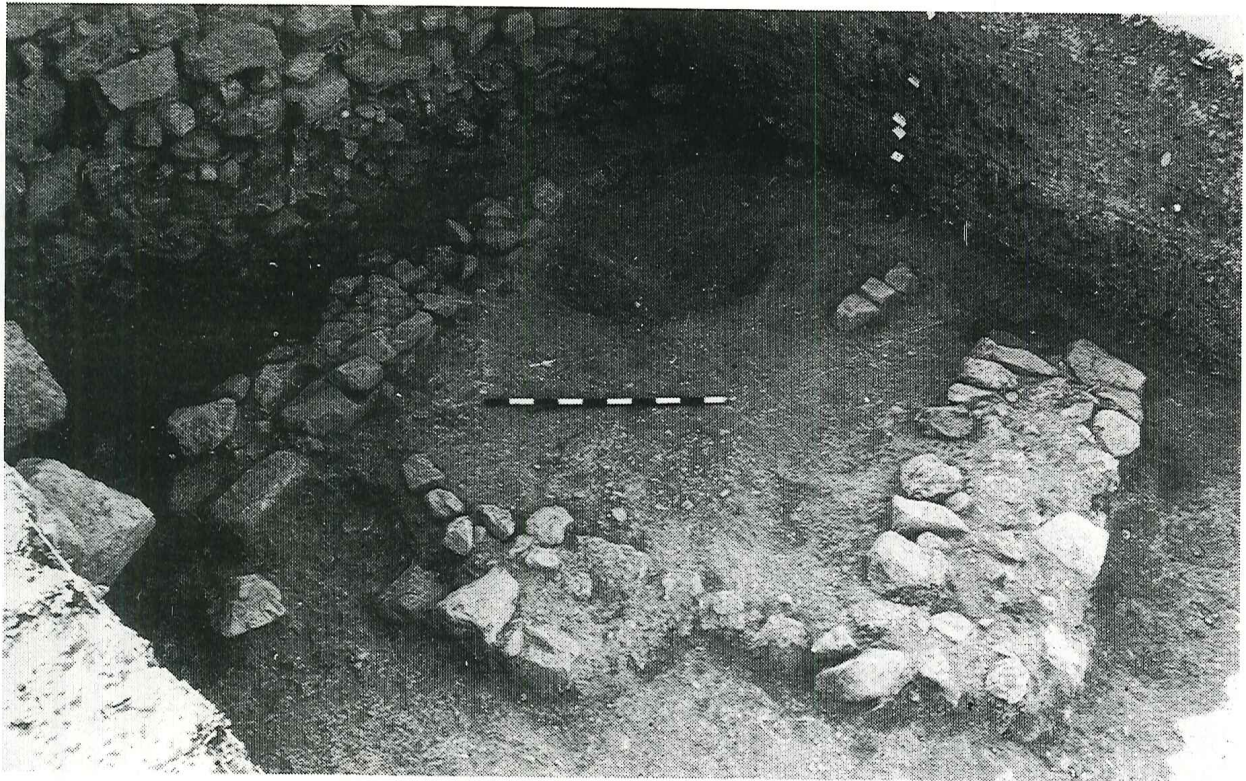
2. View south-east of the oven in XXXIVE.



1. View south-east from XXXIVA stable (with Byzantine surface removed) to XXXIVE. Note the oven in the shadowed distance, and its low enclosure wall beyond the doorway in A.



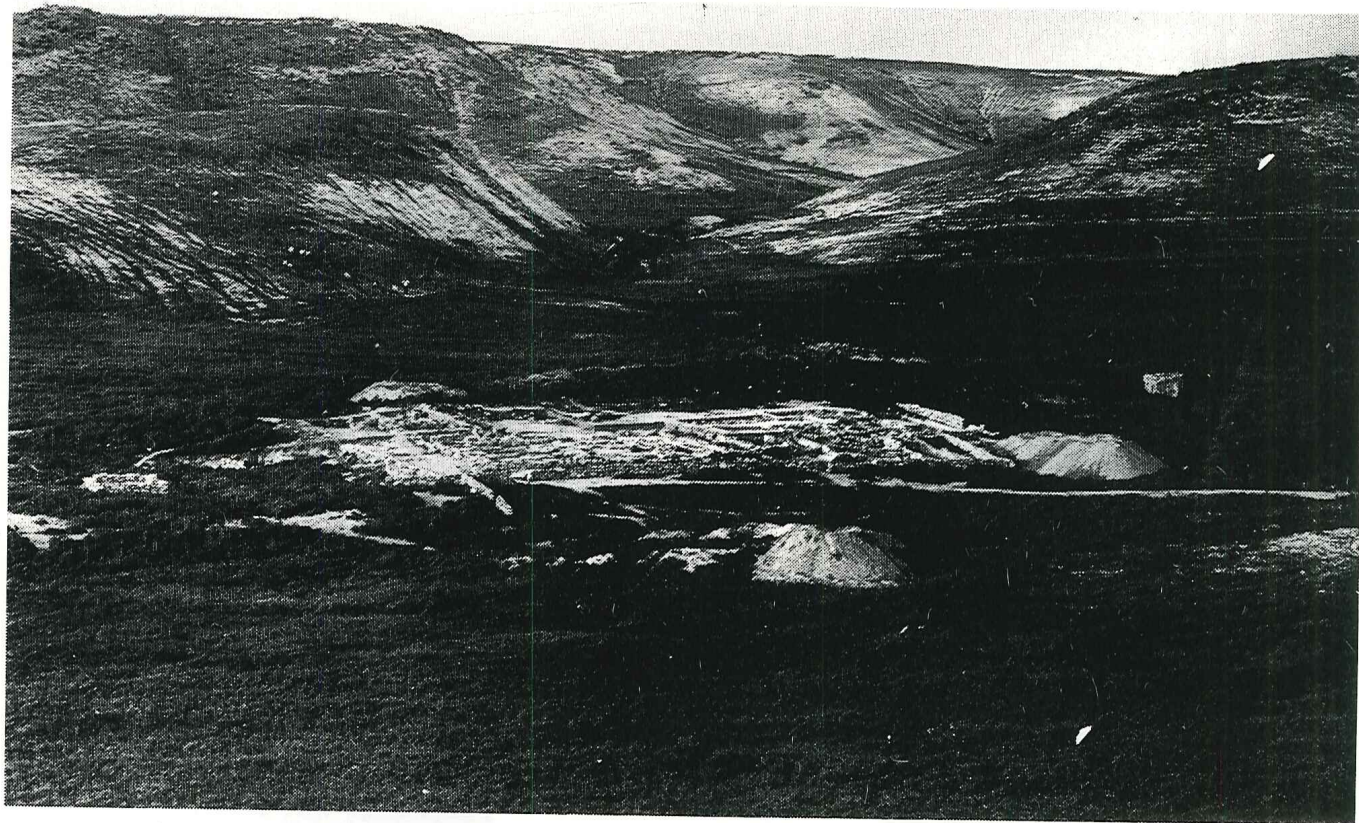
2. View east in XXXIVB showing the the upper ashlar masonry of Wall 1 over lower rough masonry. The Hellenistic/Roman buttress stands to the left of the scale, and other pre-Byzantine walls are exposed.



1. View south-east in XXXIVG showing Hellenistic/Roman walls exposed beneath the Byzantine surface. Note the overlying eastern Byzantine wall (upper left) and the horizontal line of the Byzantine surface visible in the south section (upper right).



2. View north-east in XXXIVA of the Early Bronze Age platform, showing its western face and abutting features.



1. Area XXIX (Abbasid). General view from the Main Mound, looking NNE.



2. Area XXIX (Abbasid). The Courtyard Building of the Eastern Complex, looking west.



Islamic lamps from Area XXIX.