

THE HASHEMITE KINGDOM OF JORDAN

Annual

of the

Department of Antiquities

1981

XXV

Department of Antiquities

Amman

The Hashemite Kingdom of Jordan

Editorial Board:

Dr. Adnan Hadidi,
Director General

Dr. Fawzi Zayadine

Mrs. Zein Buran

Mrs. Khawla Qusus-Hanayneh

Subscription Fee

5.000 Jordanian Dinars

Mailing Address:

P. O. Box 88

Amman

JORDAN

Opinions expressed in this *Annual* do not necessarily represent the policies of the *Department of Antiquities*

PRINTED IN JORDAN
BY
MIDDLE EAST PRINTING Co.
Amman — Tel. **94940 - 94941**

Table of Contents

The Qasr Kharana Project, 1979
by S. Urice 5

Preliminary Report of a Survey of Roman Military Installations in North-Eastern Jordan
by D.L. Kennedy 21

Philadelphie de Coelésyrie
by J-P. Rey-Coquais 25

Ḫirbet Es-Samra
Par A. Desreumaux et J-B. Humbert 33

Preliminary Report on the Second Season of Excavations at Qal'at El-Mashnaqa-Machaerus
by Stanislao Loffreda 85

Two Illustrated Pages on Automata in the Metropolitan Museum of Art
by Safwan Kh. Tell 95

Preliminary Report on the Archaeological Survey Between Ma'an & 'Aqaba.
by W. J. Jobling 105

An Investigation of the Prehistory and Paleoenvironments of Southern Jordan.
by Dr. Donald O. Henrey 113

Note on a Paleolithic Flint Scatter in the Jiza Plain of Jordan
by Rolland & Anna Garner 147

A lower Paleolithic Surface Site Near Shobak, Wadi El-Bustan Southern Jordan
by Gary O. Rollefson 153

The Central limes Arabicus Project: The 1980 Campaign
by Thomas Parker 171

Kataret Es-Samra: A late Bronze Age cemetery in Transjordan?
by Albert Leonard Jr. 179

Table of Contents
continued

Coins From Samaria-Sebaste
by W. J. Fulco & F. Zayadine 197

Rescue Excavations at Tell Sahl Es-Sarabet
by E. Suleiman & A. Betts 227

Archaeological Investigations at two Burial Cairns in the Harra Region of Jordan
by Vincent A. Clark 235

Preliminary Report on a second season of Excavation at Pella, Jordan
by J. B. Hennessy, *et alii* 267

Preliminary Report on a second season of Excavation at Pella, Jordan
by Robert Houston Smith 311

Reconstruction of the West Wall of the Qasr Il-'Abd at 'Iraq-El-Emir
by François Larché 327

Restoration and clearance in and Around the Temple of Artemis compound in Jerash
by H. Kalayan 331

The First International Conference on the History and Archaeology of Jordan, Oxford
by Denis Baly 335

The British Institute at Amman for Archaeology and History 339

Recent Excavations and Restorations of the Department of Antiquities
by F. Zayadine 341

The Baq'ah Valley Project
Report from Patrik McGovern 356

Tabaqat Fahl-Pella (1981)
Report from A. McNicoll & R. Smith 358

Plates 361

THE QASR KHARANA PROJECT, 1979*

by
Stephan Urice

Introduction

Qasr Kharana[1] (Fig. 1; Pl. I) is perhaps the best preserved but least well understood building of the late seventh/early eighth centuries C. E. in the Transjordan. It has been the subject of scholarly controversy ever since Gray Hill first published the site in 1896. Although Hill believed the qasr to be Crusader in origin (1896 : 34), most scholars (e.g., Jaussen and Savignac, Stern, Sauvaget) date its construction to the Umayyad period, ca. 661-747 C. E. Others, notably Creswell (1969 : 447-8), have thought it to be Sasanian. Again, recently, two scholars have published conflicting opinions as to the proper attribution of the qasr: Warren (1977) arguing a Sasanian, but Gaube (1977) an Umayyad, sponsorship. In order better to understand this remarkable monument, the writer organized the Qasr Kharana Project to research, survey, and excavate the site. This brief report summarizes the work of the Project in its three short field seasons of 1979.

---

* The Qasr Kharana Project is affiliated with the American Schools of Oriental Research and works in cooperation with the Department of Antiquities of Jordan. The writer wishes to thank Dr. Adnan Hadidi, Director of the Department, for his enthusiastic support of the Project. Miss Nazmia Tawfiq of the Department provided every possible assistance. Thanks also are extended to Dr. Ghazi Bisheh who coördinated the work of the Project with the Department and who excavated with us for part of the August-September season. Funds for the Project have been provided through the American Schools of Oriental Research and by both the Department of Fine Arts and the Fogg Art Museum of Harvard University.

Particular appreciation is expressed for the advice and assistance provided by Dr. James A. Sauer, Director of the American Center of Oriental Research in Amman.

The Director of the Project was assisted in the field by Mr. Steven Ross, lately of Union Theological Seminary, who served more as co-director than as an "assistant". Whatever favorable results have been achieved by our excavations are largely due to Mr. Ross's insightful archaeological method, meticulously recorded drawings and field notes, and supportive wit.

Miss Sana Makhlouf of the Center for Middle Eastern Studies at Harvard University translated the Arabic summary for which the writer is grateful.

Finally, thanks are extended to John and Kathy Abizaid of Amman for hospitality *extraordinaire*.

1. There is no known literary reference to the site earlier than the nineteenth century C.E. (i.e., Hill 1896). Its name -- and therefore a proper transliteration -- is, thus, impossible to determine. For convenience only, the spelling used by Creswell (1969), without diacritical marks, is adopted here.

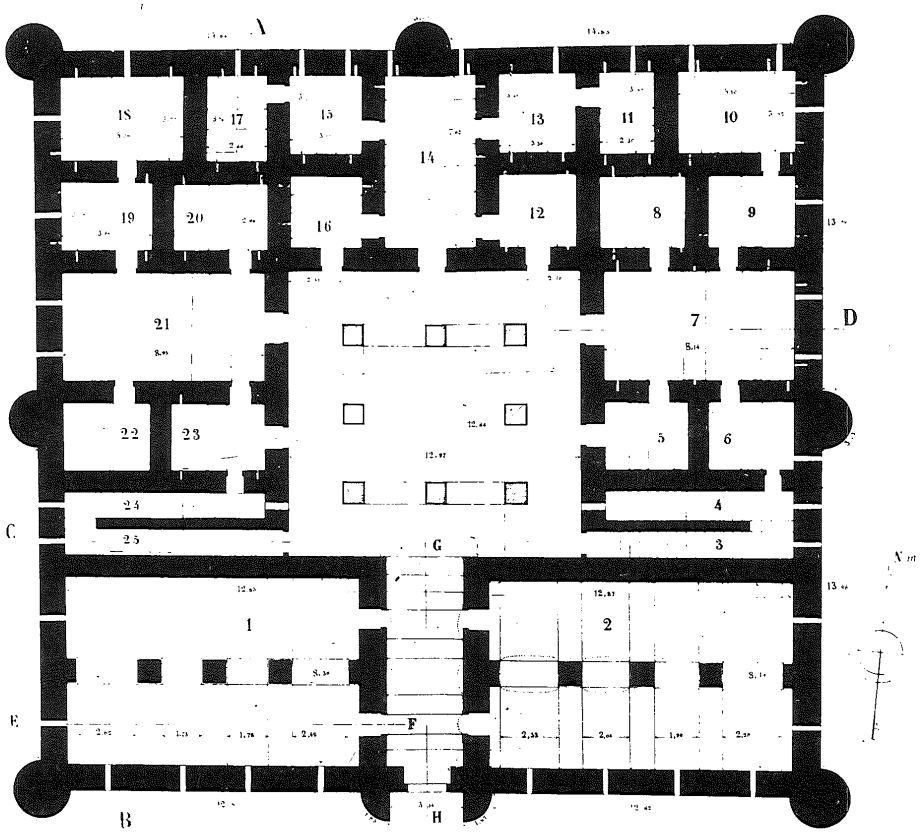


Fig. 1: Qasr Kharana, plan. Ground floor. (After Jaussen & Savignac)

Qasr Kharana: Site and Description

Qasr Kharana is located[2] on a gentle rise above the "Wadi al-Kharana" (a tributary of the great Wadi Sirhan drainage system) some 55 km. east of Amman. On a clear day, the village of Muwaqqar (35 km. to the west) is visible from the roof of Kharana.

Kharana is a two storey structure, approximately 35 m. square, whose excellent state of preservation is nothing short of miraculous. The qasr was not completed in antiquity: several rooms on the northern flank of the second storey were never vaulted. In recent years the Department of Antiquities has strengthened the fabric of the structure, cleared the rooms and courtyard of debris, and restored portions of fallen walls.

The plan of the qasr (Fig. , 1) is organized around a central courtyard, approached from the sole ground floor entry door on the south facade. On the ground floor, two large rooms occupy the southern flank, one opening on either side of the entry passage. These are often interpreted as stables but equally could be storerooms. The northern, eastern, and western flanks are filled by groups of rooms consisting of one large hall surrounded by four or five communicating smaller rooms. These room groups are discrete units, isolated one from an-

2. The exact coördinates of the qasr are variously published. Henry Field (1960 : 208) seemingly follows Musil's maps of 1907 and gives 31°44' N, 36°28' E. Carswell (1978 : 1060) publishes 31°42' N, 36°79' E.

other; communication between them is possible only via the courtyard. Staircases on the western and eastern sides of the courtyard ascend to the second storey and continue to the roof. On the second storey, the ground floor plan repeats itself with minor variations. Here, the room groups communicate one with another allowing a free circulation from room to room. A group of rooms consisting of one large hall with four adjoining side chambers is located above each of the ground floor "stables". A single hall, long the subject of scholarly speculation (cf., especially, Sauvaget 1947 : 127-8) and unique in its vaulting, decoration, and fenestration, is situated directly above the entry passage. The rooms in the extreme northwest and northeast corners of the second storey were not intended to be vaulted and originally were fitted with doorways from which temporary ladders would allow access to the ground below.

Certain rooms of the second storey are carefully outfitted with various decorative motifs and unique vaulting devices. Among these are series of engaged colonnettes, rosette friezes, and squinches supporting semidomes. These details of decoration and construction derive from eastern prototypes and contribute to the persistence in scholarly writings of a Sasanian attribution of the qasr.

A painted inscription (Pl.II), dated to the equivalent of 24 November 710 C. E. (Abbott 1946), in the main hall of the western flank of the second storey provides a *terminus ante quem* for construction of the qasr — or at least for one phase of its construction. A second *terminus ante quem* is provided by our accidental discovery of a group of pot sherds in the plaster flooring of the main eastern hall of the second storey. All of these sherds are typical Umayyad wares; one is painted.[3]

The Qasr Kharana Project, 1979

Introduction

In April and May 1979, surface surveys were conducted at the site and the qasr was measured in detail to verify the accuracy of the drawings published by Jaussen and Savignac (1922). In August-September and again in October-November, we excavated at the site.[4]

Surface survey and measurements

Within the confines of grids of 70 sq.m (subdivided into squares of 35 m) adjacent to the walls of the qasr, we collected surface ceramic finds. This collection, however, produced meagre results. The ground around the qasr appears to have been scraped clean, probably in conjunction with the recent restoration work.[5] South of the qasr, however, lining the two run-off channels that lead from the rise on which the qasr is sited to the wadi below, is a series of dumps. We assume that these contain debris removed from within and alongside the qasr. They are full of pot sherds. A large, ran-

3. The floor in which these were discovered has only one phase of surfacing which is original to the construction of the room.

4. Mr. Jesus Sagasti of the Spanish Archaeological Mission to Jordan served as architect for these two seasons of excavation.

5. Comparison of the state of the ground today with early photographs indicates that accumulated debris has been cleared from against the qasr walls and in their vicinity.

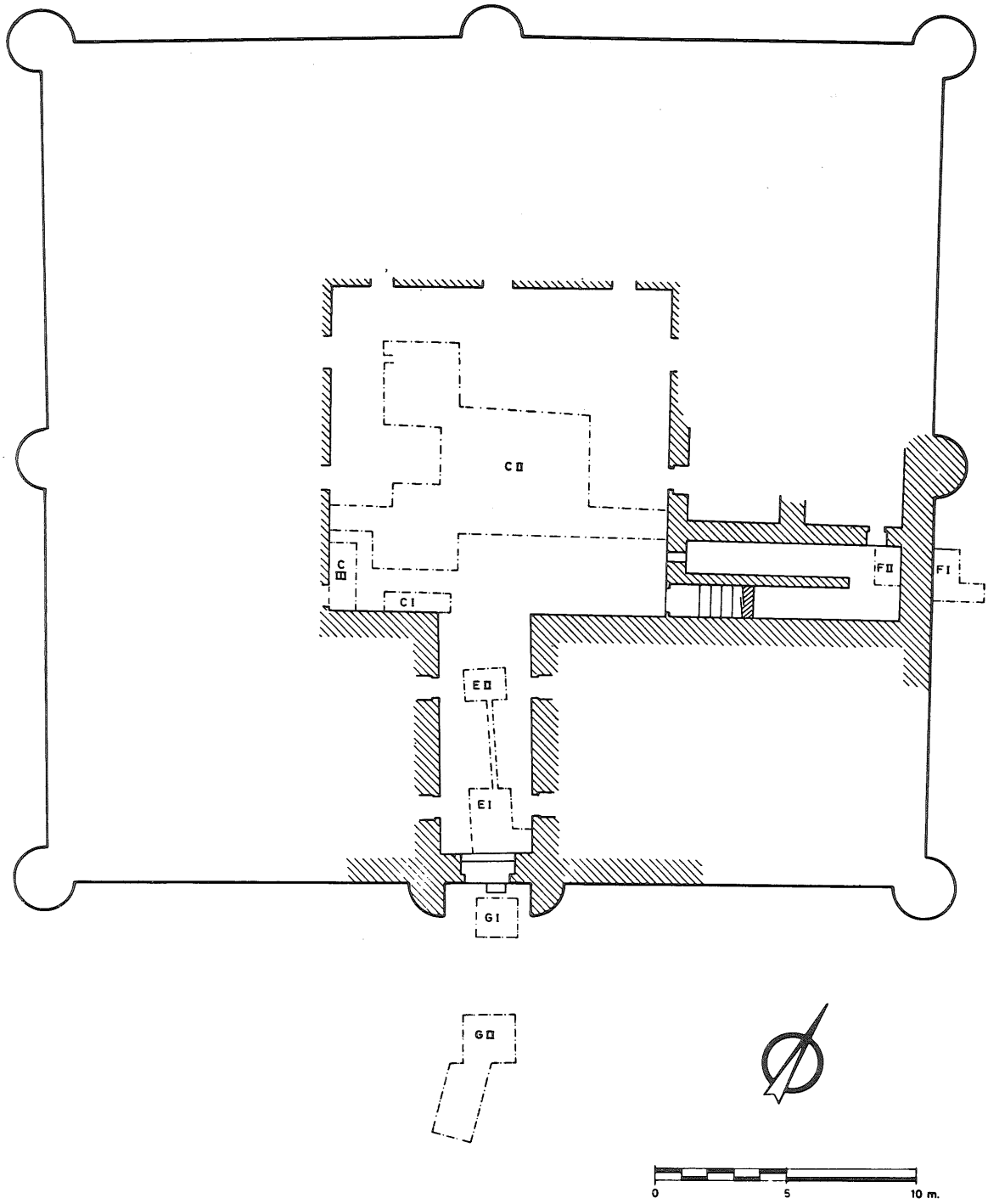


Fig. 2

QASR KHARANA
PLAN SHOWING AREAS EXCAVATED
1979

dom sample of sherds collected from these dumps has been analyzed.[6] The majority of the pottery is Umayyad but early and late Byzantine wares are also attested. A single late Roman and one much later luster ware sherd are also noted. The ceramics indicate that the principle period of occupation at Kharana occurred between the mid-seventh and mid-eighth centuries C.E.[7]

No indications of any out-buildings in the vicinity of the qasr were noticed during extensive searches. There is no evidence of cisterns in the environs of the site, nor of any damming of the wadi adjacent to the qasr. A series of modern *thamail* in the wadi however, indicate the practicality of obtaining water at the site, today, in this manner.[8] There is no reason to suspect that such *thamail* were not in use when the qasr was constructed and first occupied.

Our measurements[9] confirm the essential accuracy of the dimensions given on Jaussen and Savignac's drawings (1922). The regularity with which their plans are drawn, however, does not accurately record the orientation of rooms one to another. Virtually no room contains a 90° corner; nor does any room relate to an adjoining room at right angles. This suggests the necessity of producing new plans, to represent more accurately the alignment of the rooms and the irregularity with which the main walls of the qasr are laid out.

Excavations (Fig. 2)

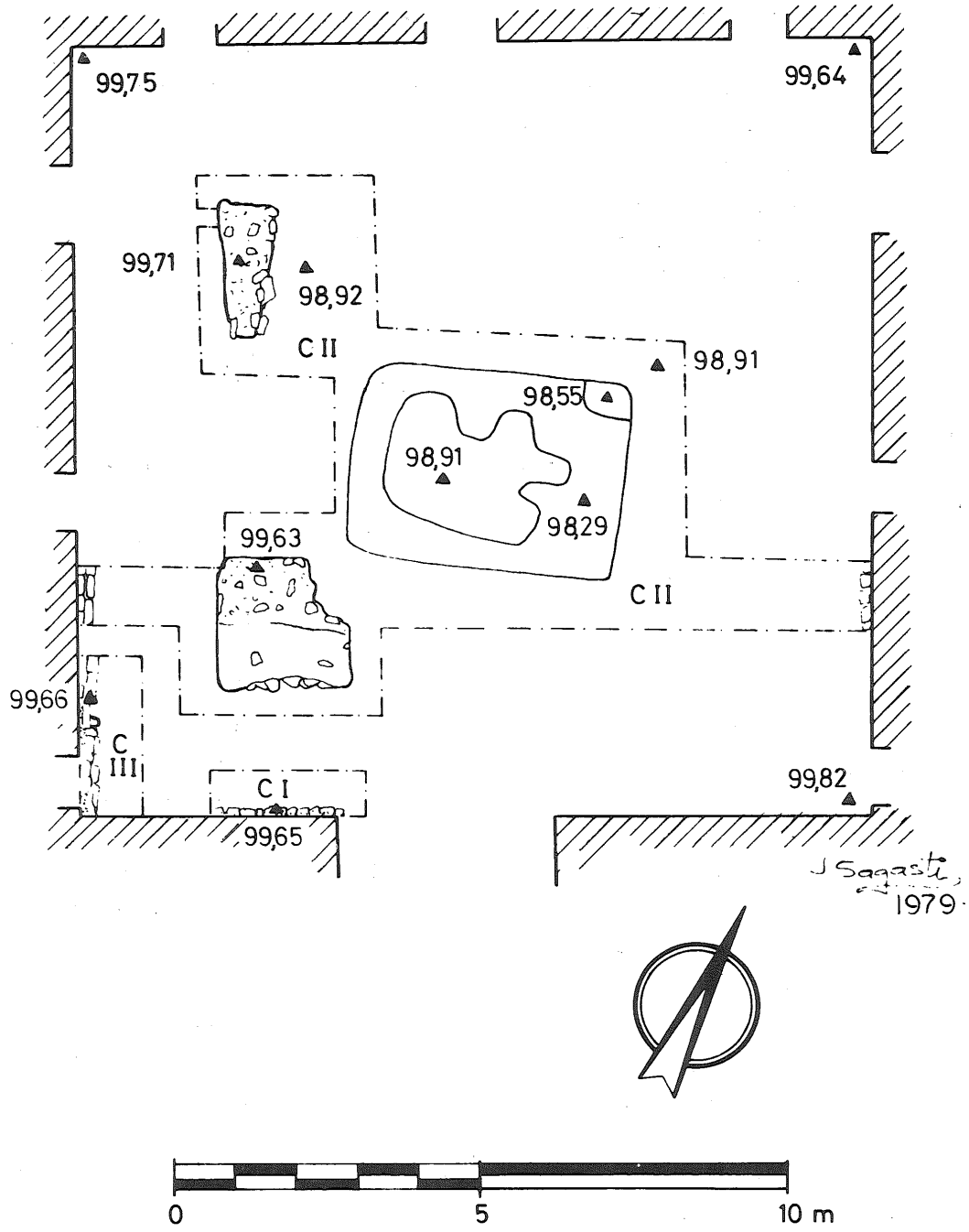
Two goals directed our excavations: first, to discover evidence in secure contexts that would assist our dating the construction of the qasr; second, to learn something of the hydraulic system at the site. We believed that the most likely place to excavate for evidence that would date more closely the construction of the qasr was against the foundations, where foundation trenches could be expected. We excavated against the east, west ,and south walls of the courtyard and on the inside and outside of the eastern exterior wall of the qasr, discovering foundation trenches in all but one location. Although foundation trench fill was sieved, in search of ceramic or other material culture remains, *no* finds were discovered in the foundation trench fill. These probes, however, did reveal the manner in which the foundations were laid, and increase our knowledge of the architecture of the qasr. We addressed our concern for the water system by opening a large square in the middle of the courtyard. There we discovered the remains of foundations for a central cistern. Additionally, a drain was discovered and excavated in the entry passage

6. Dr. James A. Sauer assisted the Project as pottery typologist. Dr. S. Thomas Parker and Dr. Frank Koucky also reviewed the ceramic finds and offered valuable suggestions.

7 Dr. S. Thomas Parker is the investigator who has most effectively applied methods of surface survey to trace occupational history in this part of the Transjordan. Note his *caveat* regarding the limitations of this method (1976:22).

8. A *thamila* (pl. *thamail*) is a well sunk into the gravel bed of a wadi, usually to the bedrock. For a discussion of *thamail* cf. Evenari, Shanan, Tadmor 1971 : 151-6.

9. It is difficult to obtain consistent measurements at Kharana: all walls are covered with a mortar veneer of various thickness and in various states of preservation. None of the vertical walls is perfectly plumb for its entire height. Thus a margin of error of +3.00 cm., at least, is to be expected in measurements and drawings of the qasr.



QASR KHARANA
COURTYARD, PLAN

Fig. 3

and south of the entry door to the qasr. By extending our excavations in the courtyard we were able also to demonstrate that the intended arcade in the courtyard was never completed: two bases for piers to support the arcade were discovered in the western half of the courtyard but not in the eastern, where it can be shown stratigraphically that none was ever constructed.

Foundations

Foundation courses were exposed in the courtyard and on either side of the eastern exterior wall of the qasr. The foundations average 0.67 m. deep. All foundations are three courses deep but each is unique in the relationship of these courses one to another: in every instance the foundations widen to form a bench-like support for the walls they carry, but this widening occurs variously in the first, second, or third course below ground.

The combined drawing of the south balks of Areas F-I and F-II (Fig. 8) clearly reveals the procedure by which the foundations were laid. In Area F-I, Layer 11 represents the original ground level at the time of construction of the eastern wall: it is a layer of black chert pebbles from which the foundation trench (Layers 12 & 16) was excavated. The workmen first raked the chert pebbles away from the area in which they were to dig their foundation trench (hence Layer 11 is thicker closer to the foundation trench). They then excavated a trench to receive the foundations, dumping the displaced earth atop the raked-aside pebbles. The material in Layer 10 matches in composition but not in compaction that in Layer 13 and that of 6, Layer 14. Layers 10 and 6 represent the dumped soil removed in digging the foundation trench. Through time this dump and the new qasr wall have trapped wind-blown dirt, causing a rise in the ground level adjacent to the qasr. In Area F-I (Pl. III), the first foundation course is virtually flush with the wall above. The second and third courses[10] extend beyond the first foundation course to form a supporting ledge. On the opposite side of the wall, in Area F-II, however, the first foundation course juts out from the wall, the second course extends even further, and the third is flush with the second. This kind of variety in the relative positioning of the courses of the foundations was discovered wherever we exposed foundations of the qasr walls (i.e., Areas F-I, F-II, C-I, C-II, C-III).

There is good evidence to suggest two phases of construction for the foundations of the qasr. The foundation trenches in Area F-II and in Area C-II, loc. 005.1 (Fig. 9) are internally stratified: the fill against the bottom two foundation courses differs from that packed against the uppermost course. In Area C-III, at the intersection of the south and west foundations of the courtyard, it was discovered that only the uppermost foundation course bonds. The bottom two merely abut. Additionally, in Area C-I (Fig. 5; Pl. IV) the bottom two foundation courses extend eastward far beyond the wall they carry and further than an extension merely to support the wall would require. The first course, however, essentially aligns with the wall above. These findings suggest that the bottom two foundation courses were laid

10. In Areas F-I and F-II the third, bottom, foundation course does not intersect with the south balk and, thus, does not appear in the drawing of that balk, Fig. 8.

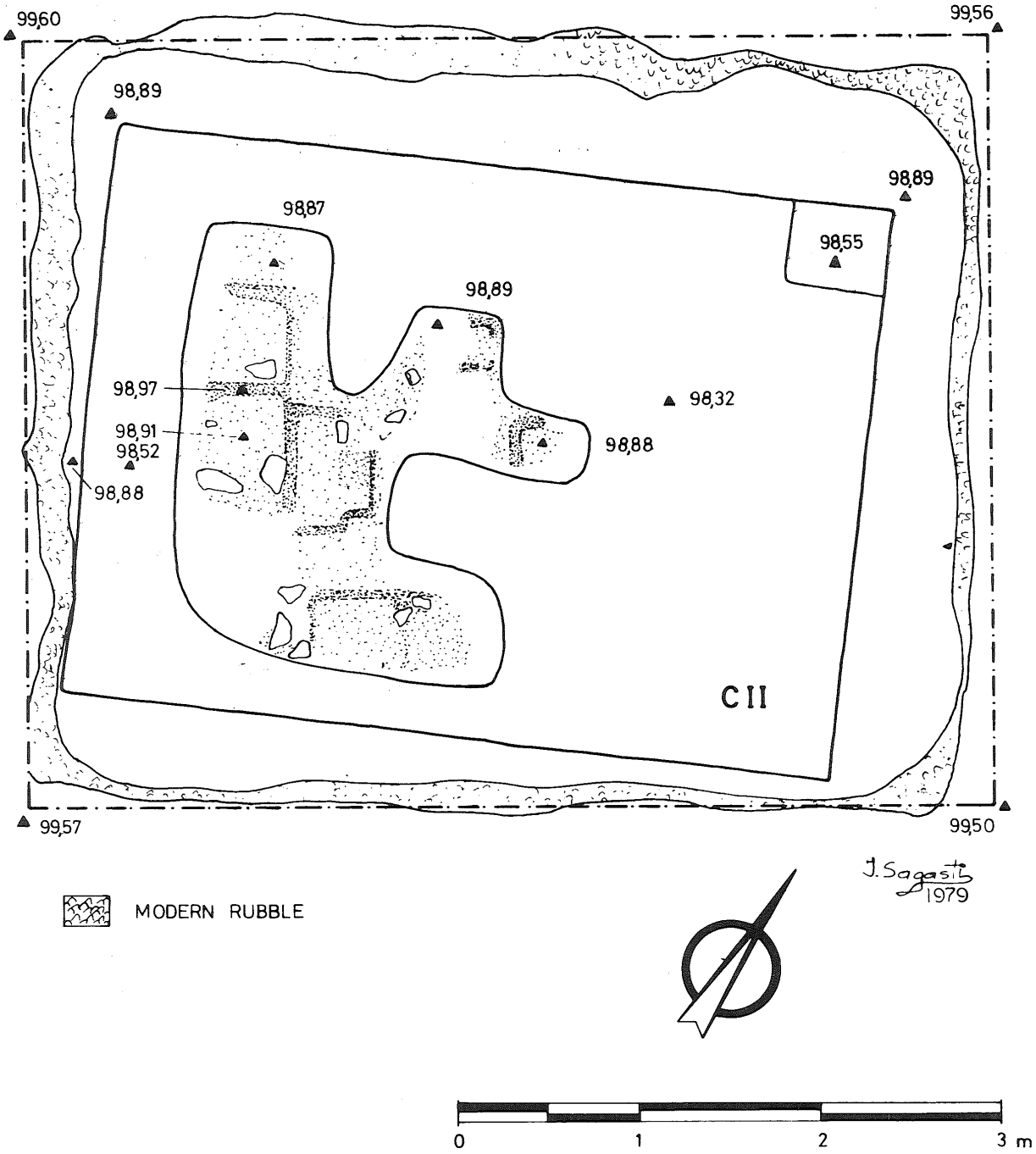
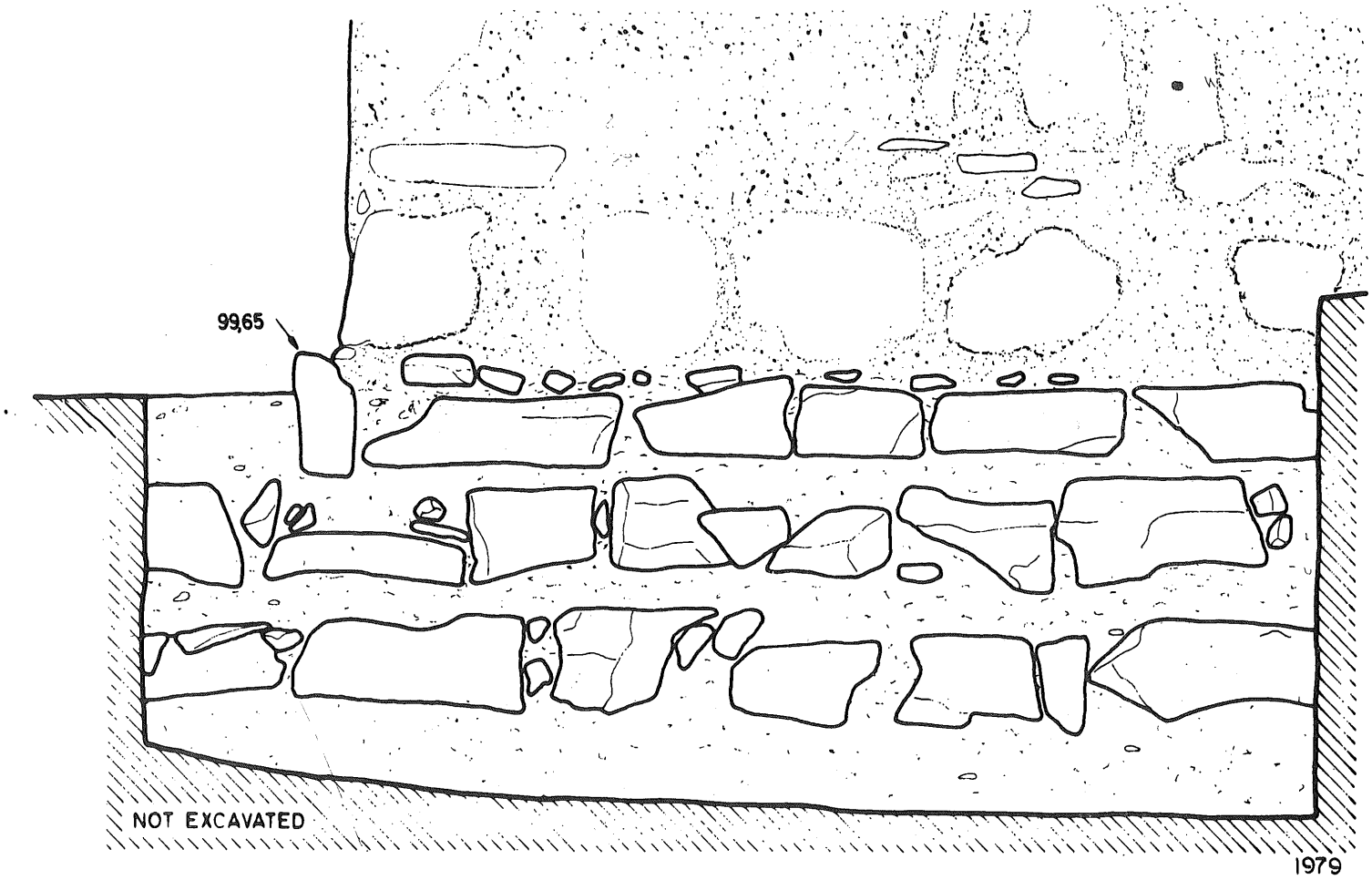


Fig. 4

QASR KHARANA
FOUNDATIONS IN AREA C II
PLAN



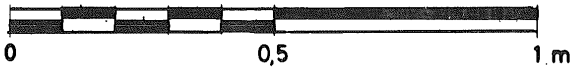
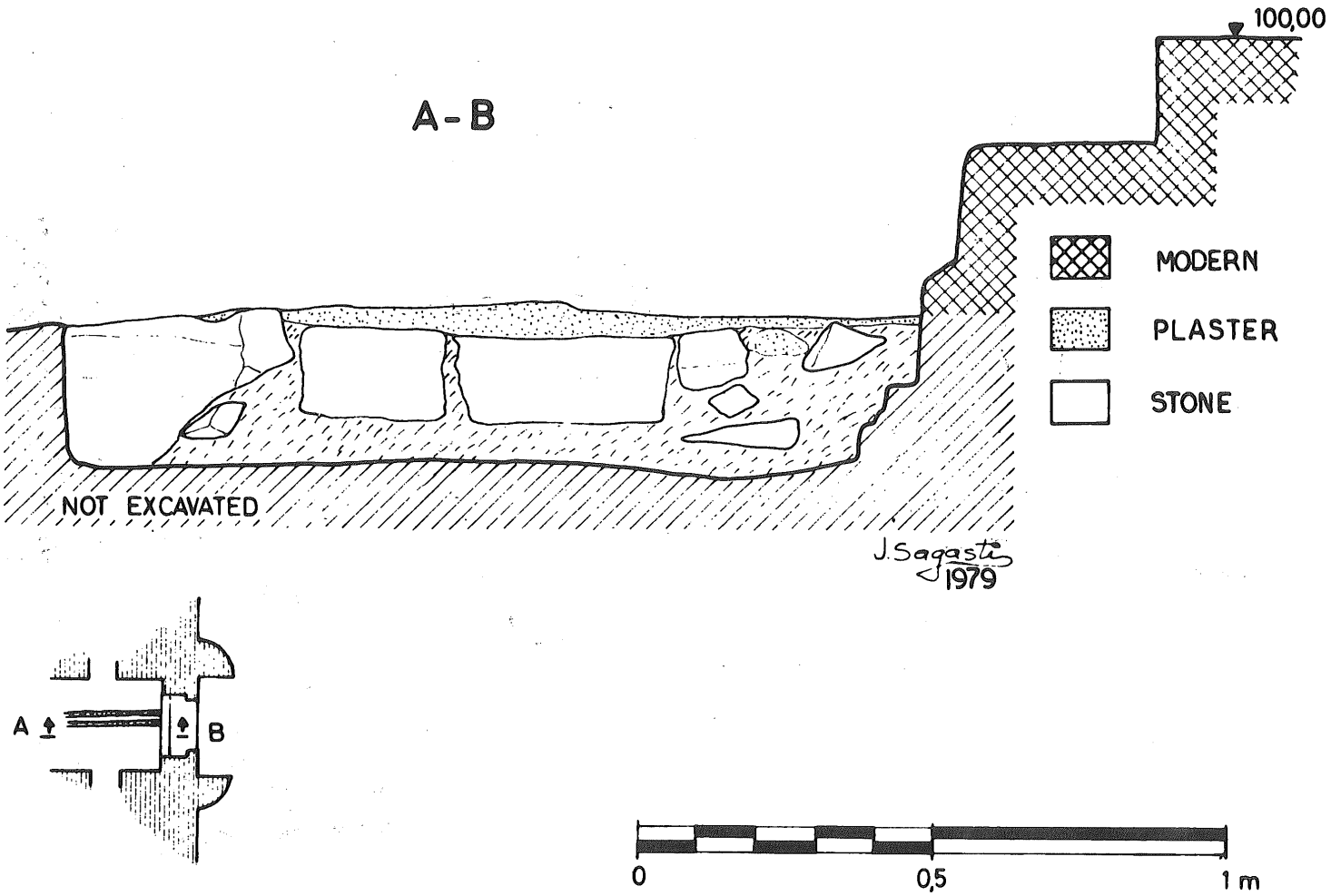


Fig. 5

QASR KHARANA
FOUNDATION STONES IN AREA C I
ELEVATION FROM NORTH



QASR KHARANA
DRAIN IN AREA CII
DETAIL: ELEVATION FROM WEST

Fig. 6

during a first constructional phase. After a hiatus (of indeterminable length), construction began on the uppermost foundation course and the walls of the qasr.

Cistern and drain

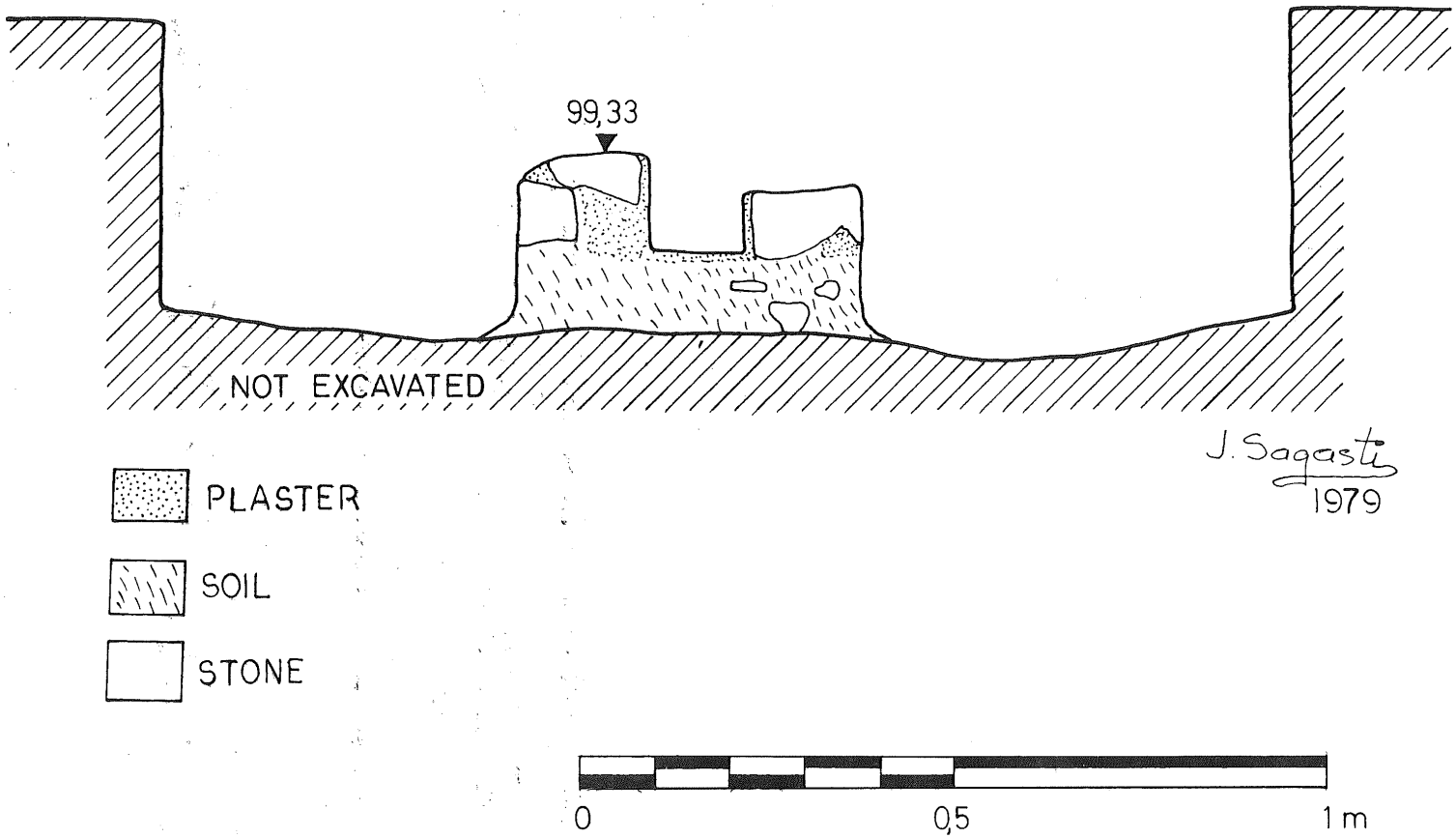
In the center of the courtyard, some 0.66 m. beneath the modern surface, we encountered the mortar bedding of paving stones now robbed-out (Fig 4; Pl. V, VI). This platform, with its enigmatic configuration, can be explained by its architectural and stratigraphic contexts and by the recent history of the site. Architecturally, we consider this to be a centrally situated cistern which would have stored water carried to it from *thamail* in the adjacent wadi and, possibly, water collected from the roof of the qasr. We discovered that the foundations of the cistern were embedded in a rubble fill comprised of countless flashlight batteries, soda bottles, and other modern debris mixed with stone, dirt, and fragments of original stucco decoration from the qasr. We suggest that during recent restoration work, laborers, in search of a possible well in the courtyard[11] came upon the robbed-out remains of the cistern.[12] Not understanding the true nature of this feature, they dug into it, thereby creating the curvilinear shape seen in the drawings (Figs. 3 & 4) and photographs (Pls. V, VI, IX). Eventually, they back-filled their excavation with the debris which we encountered.

Thanks to an unpublished photograph from the collection of the late G. Lankester Harding, now in the Registration Center of the Department of Antiquities,[13] we learned of the existence of a channel which had been excavated, in part, at the time when the photograph was taken in 1940. We discovered this drain (Figs. 6 & 7; Pl. VII, VIII) and followed it from the entry passage to its end some 9.40 m. south of the entry door to the qasr. Where the channel approaches the courtyard, it has been cut by modern restoration work, and a clear link between it and the central cistern is, thus, impossible to prove. The channel served as a drain and exhibits a constant slope of approximately 2^0 throughout its length. The drain is simply built: a channel cut into the ground has been lined on its two sides with roughly worked limestone. The sides and bottom were then plastered for watertightness. There are no indications that the drain was covered. The present end of the drain (Fig. 7) is certainly its original terminus: plaster lining the walls of the channel wraps around the end stones at this point. The south balk of Area G-II, furthermore, did not reveal any indication of a continuation of the drain in that direction, and two small probes on the axis of the drain, south of

11. Mr. Yusuf Alami of the Department of Antiquities who directed restoration at the site generously recalled for the writer that he had instructed the workmen to search for evidence of a water supply in the courtyard.

12. It is not surprising that stones from the cistern were robbed, especially after the cistern had fallen out of use. Nearly every large stone used in the qasr has been taken from the building. Many of these have been reused, at least since the time of Jaussen & Savignac's visit early this century, in the bedouin cemetery immediately southwest of the qasr (1922 : Pl. XIX, 2).

13. Thanks are expressed to Mrs. Hanan Kurdi in the Registration Center for having produced for the use of the Project a duplicate set of these important pre-restoration photographs of the site.



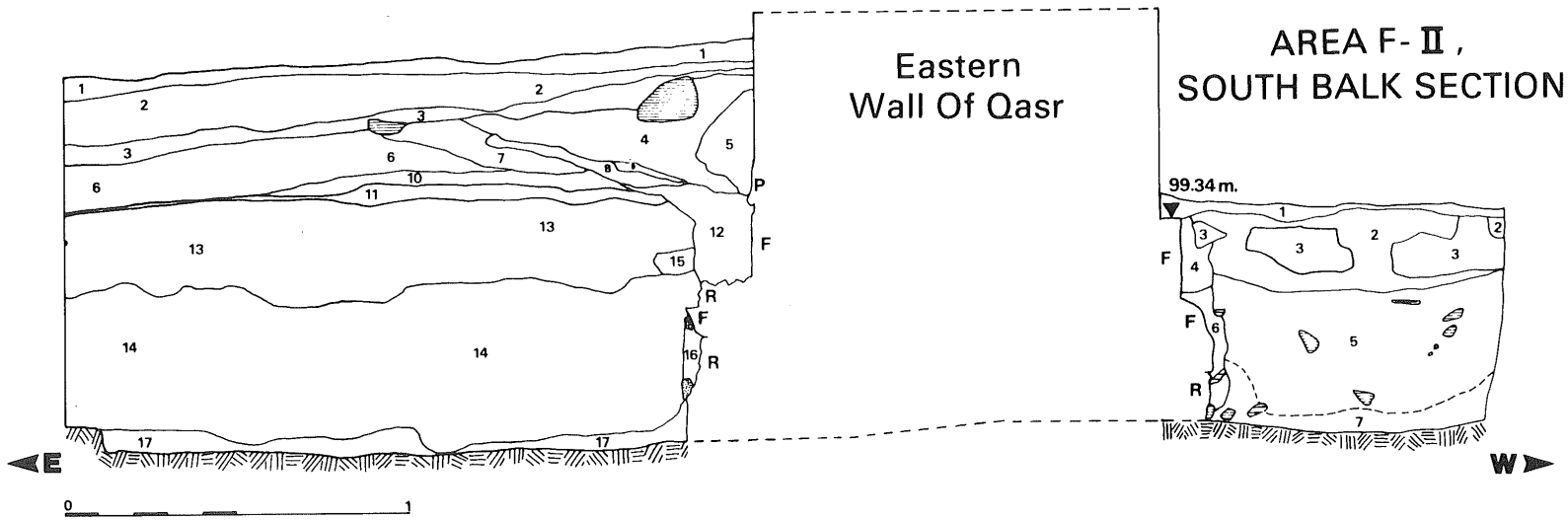
QASR KHARANA
DRAIN IN AREA G II
ELEVATION OF SOUTHERN END

Fig. 7

QASR KHARANA 1979

SOUTH BALK SECTIONS AREAS F-I, F-II

AREA F-I, SOUTH BALK SECTION



1. Modern surface: gray, dusty soil
2. Buff, loose soil
3. Gray soil with organic debris and limestone chips
4. Loose gray fill with limestone chips
5. Original construction debris
6. Medium packed reddish brown earth with occasional chert pebbles
7. Crumbly reddish soil with limestone pebbles
8. Hard packed golden soil
9. Light brown medium packed soil
10. Fine beige soil with a few chert pebbles
11. Layer of black chert pebbles
12. Foundation trench fill: loose reddish soil
13. Extremely fine, medium compact, beige to brown soil
14. Dark reddish brown medium packed soil
15. Extremely fine medium packed beige soil
16. Foundation trench fill: hard packed gray-brown soil
17. Hard packed light gray soil with chert inclusions

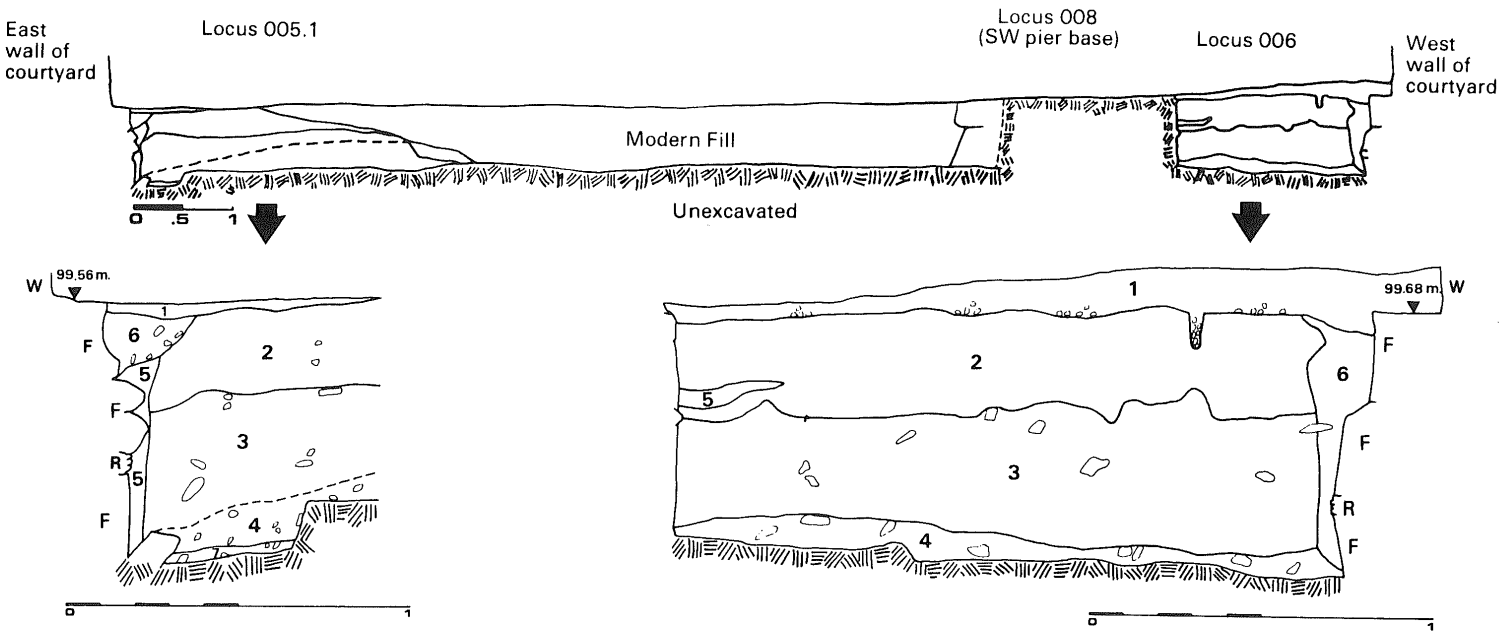
P -Plaster Surface
F -Foundation Stone
R -Rubble Separating Foundation Courses
-Stone
-Gray Fine Ashy Material

1. Modern surface: dusty, gray soil
2. Fine, medium compact, beige to brown soil
3. Dry, crumbly gray soil (animal burrows?)
4. Foundation trench fill: hard gray soil
5. Dark reddish brown, medium packed soil with limestone inclusions
6. Foundation trench fill: hard, light gray soil
7. Hard packed light gray soil with chert inclusions

Fig. 8

QASR KHARANA 1979

AREA C-II SOUTH BALK



AREA C-II, LOCUS 005.1, SOUTH BALK

1. Loose modern surface
2. Soft, fine red-brown soil
3. Brown soil with stones
4. Hard, dark pink to brown soil with stones
5. Foundation trench fill
6. Foundation trench fill (loose, dry red brown soil with pebbles)
7. Buff colored, hard packed soil

W=Courtyard wall
F=Foundation stone
R=Rubble separating foundation courses

AREA C-II, LOCUS 006, SOUTH BALK

1. Loose modern surface
2. Soft, fine red-brown soil
3. Darker brown soil with stones
4. Hard, dark pink soil with many stones
5. Fine, light gray ash layer
6. Foundation trench fill

Fig. 9

Area G-II, failed to reveal its extension there. The drain neither branches nor receives tributaries along the length excavated. It probably served to lead waste water away from the courtyard.

Pier bases

West of the courtyard cistern, we discovered two small paved areas (Fig. 3; Pl. V , IX). These could be explained either as the remnant of a paving that once surrounded the cistern or as the foundations for piers intended to carry an arcade in the courtyard. Springers on the north and south facades of the courtyard attest the possible presence of such an arcade. The paved areas, approximately 0.35 m. thick, consist of roughly worked limestone held in a white mortar. There is, however, no indication in any of the balks which we retained during excavation that these features ever extended further than as preserved to the west, north, or south. Only to the east have they been damaged, in part. There, the modern rubble fill that encased the cistern foundations was found again, packed against the broken edges of the paved areas. The southern area however retains its southeast corner intact. This permits us to reconstruct its original size as approximately 2.20×2.20m. We suggest, therefore, that these are not remnants of a courtyard paving but rather bases for supports to carry a balcony for the second storey rooms that open on to the courtyard. Pier bases in the eastern part of the courtyard, however, were never constructed. Had a pier base ever existed in the southeast quadrant of the courtyard, corresponding to that in the southwest, we should have encontered it — or a robber trench — in our 1.00 m. wide probe that ran east-west across the courtyard. We found no such evidence as is reflected in our drawing of the south balk of that probe, Fig. 9. There is no surface indication that a pier base ever existed in the northeast quadrant. This suggests that the balcony itself was never constructed.

Conclusion

Excavations have not revealed any evidence, numismatic, ceramic, or epigraphic, to date more closely the foundation of Qasr Kharana. Excavations have extended our understanding of the architecture of the site which will allow a more thorough comparative study of Kharana with analogous buildings in Syria-Palestine than previously possible. Surface collection of ceramics suggests that the main occupation of the building occurred in the Umayyad period. Study of the environs of the qasr has not discovered a water source for the structure with the exception of modern *thamail* in the adjacent wadi. A cistern for storing clean, and a drain for transporting waste water has been uncovered within the qasr, however, and helps answer the vital question of how Kharana provided for its water.

A definitive answer to the date of Kharana's foundation does not seem to fall within the purview of archaeological method: the series of sterile foundation trenches does not promise hope for the discovery of firm dating evidence in further excavations. Excavations, however, have broadened our understanding of the architecture of the structure and lead the Qasr Kharana Project to the next stage of its work, one of architectural comparison and broader historical investigation. It is to those tasks that we now address our efforts.

Stephen Urice, Director
Qasr Kharana Project
Harvard University

BIBLIOGRAPHY

Abbott, N. 1946. The Kasr Kharana Inscription of 92 H. (710 A.D.), A New Reading. *Ars Islamica* XI-XII : 190-194.

Carswell, J. 1978. Kharana. *Encyclopedia of Islam*. 2nd ed. Leiden and London.

Creswell, K.A.C. 1969. *Early Muslim Architecture*. 2nd ed. Oxford.

Evenari, M.; Shanan, L. ; Tadmor, N. 1971. *The Negev; The Challenge of a Desert*. Cambridge, Massachusetts.

Field, H. 1950. *North Arabian Desert Archaeological Survey, 1925-50*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, vol. XLV, No. 2. Cambridge, Massachusetts.

Gaube, H. 1977. 'Amman, Harane und Qastal, Vier frühislamische Bauwerke in Mitteljordanien. *Zeitschrift des Deutschen Pelästina-Vereins* 93:52-86.

Hill, G. 1896. A Journey East of the Jordan and the Dead Sea, 1895. *Palestine Exploration Fund Quarterly Statement 1896*:24-46.

Jaussen, A.J. and Savignac, R. 1922. *Mission Archéologique en Arabie, III : Les Châteaux Arabes de Qeseir 'Amra Harâneh, et Tûba*. Paris.

Parker, S.T. 1976. Archaeological Survey of the *Limes Arabicus:* A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 21:30-38.

Sauvaget, J. 1947. *La Mosquée omayyade de Medine*. Paris.

Warren, J. 1977. A Sasanian Attribution of Two Buildings in Jordan. *Art and Archaeology Research Papers* XI : 49-55.

PRELIMINARY REPORT OF A SURVEY OF ROMAN MILITARY INSTALLATIONS IN NORTH-EASTERN JORDAN

By
D. L. Kennedy

The survey began work on 15th July, 1978 and finished on 18th August. Apart from myself as Director, the team consisted of my wife Julie, Mr. Michael C.S. Godfrey and Mr. Kenneth S. Brasil. Permission to carry out the survey was granted by Dr. Adnan Hadidi, Director General of the Department of Antiquities, to whom I am indebted for the courtesy and efficiency with which he handled my plans and enquiries throughout. The project was financed by generous grants from the Craven Committee, the Meierstein Fund, Seven Pillars of Wisdom Trust, Society of Antiquaries, Sheffield University Research Fund, the Graham Willis Fund, and the award of the University of Edinburgh Tweedie Exploration Fellowship. In addition, my wife, who participated in her own right to study the coarse pottery, was assisted by grants from the British School of Archaeology at Jerusalem and from the Graham Willis Fund. The expedition was mounted from the Department of Ancient History and Classical Archaeology at Sheffield University and, while in Jordan, came under the aegis of the newly established British Institute for Archaeology and History at Amman to whose Director, Mrs. C.-M. Bennett, I am indebted for assistance in the preparation and conduct of the fieldwork.

The objectives of the expedition were both positive and experimental. As a result of a visit to Jordan in 1976, I believed that many sites, which had only been visited/studied in the distant past and/or cursorily by travellers or foreign expeditions, would yield much more to a detailed examination. It was my belief that, in view of the very high cost of excavation, a surface examination could be much more cost effective. With this in mind, it was my intention to examine a number of specific sites and to subsequently evaluate the method for possible practise on a larger scale survey in which excavation might play a minor part. With the time at my disposal it would have been absurd to even consider a total survey. Consequently I aimed to look not only at specific sites but also to try and examine them in their wider immediate context. I believed that while this approach would not allow total coverage of any area it would permit experimentation with a variety of different regions and terrains. I believe the experiment to have been a success and it is my hope to carry out a more extensive survey in the same area in a subsequent season.

The region in which the survey was carried out and the sites examined are shown on the map enclosed. A full report of the findings of the survey together with an interim review of the state of our knowledge of the Roman military installations in north-eastern Jordan is currently in progress and will, it is hoped, be ready for publication in the summer of 1980. An interpretation of a small part of the material

will be published in the Proceedings of the XII International Congress of Roman Frontier Studies early in 1980.

Qasr-el-Hallabat :

Three weeks were spent living on the site. The fort and associated features such as the reservoir, agricultural enclosure and a selection of the houses were planned. Sherding was carried out, the water-collection system studied, and the structure of the fort was examined in detail to determine the sequence of building phases as they appear above ground. An attempt was made to record all the blocks of the Hallabat Edict. Only some 35 of the 68 seen by the Princeton Expeditions in 1904 and 1909 were still to be seen. Some may be buried and recoverable but it was my impression that a great deal of the stone from inside the fort had been removed. However, by way of compensation, eight new blocks and fragments were recorded and minor corrections or additions to the published texts of the others were noted. In addition, the text of a broken milestone was discovered. In all, twelve new texts were recorded.

Qasr-el-Azraq :

Two weeks were spent living in the fort. A new plan was prepared of this very difficult site and again sherding was carried out. Fragments of three unpublished milestones will be published in due course together with the texts of the two inscriptions from the site already well-known (G.W. Bowersock, *JRS*, 61 (1971), 241 and pl. XIV). I have also recovered a further unpublished inscription from a manuscript source and one, possibly, two others, briefly mentioned.

Qasr Aseikhin :

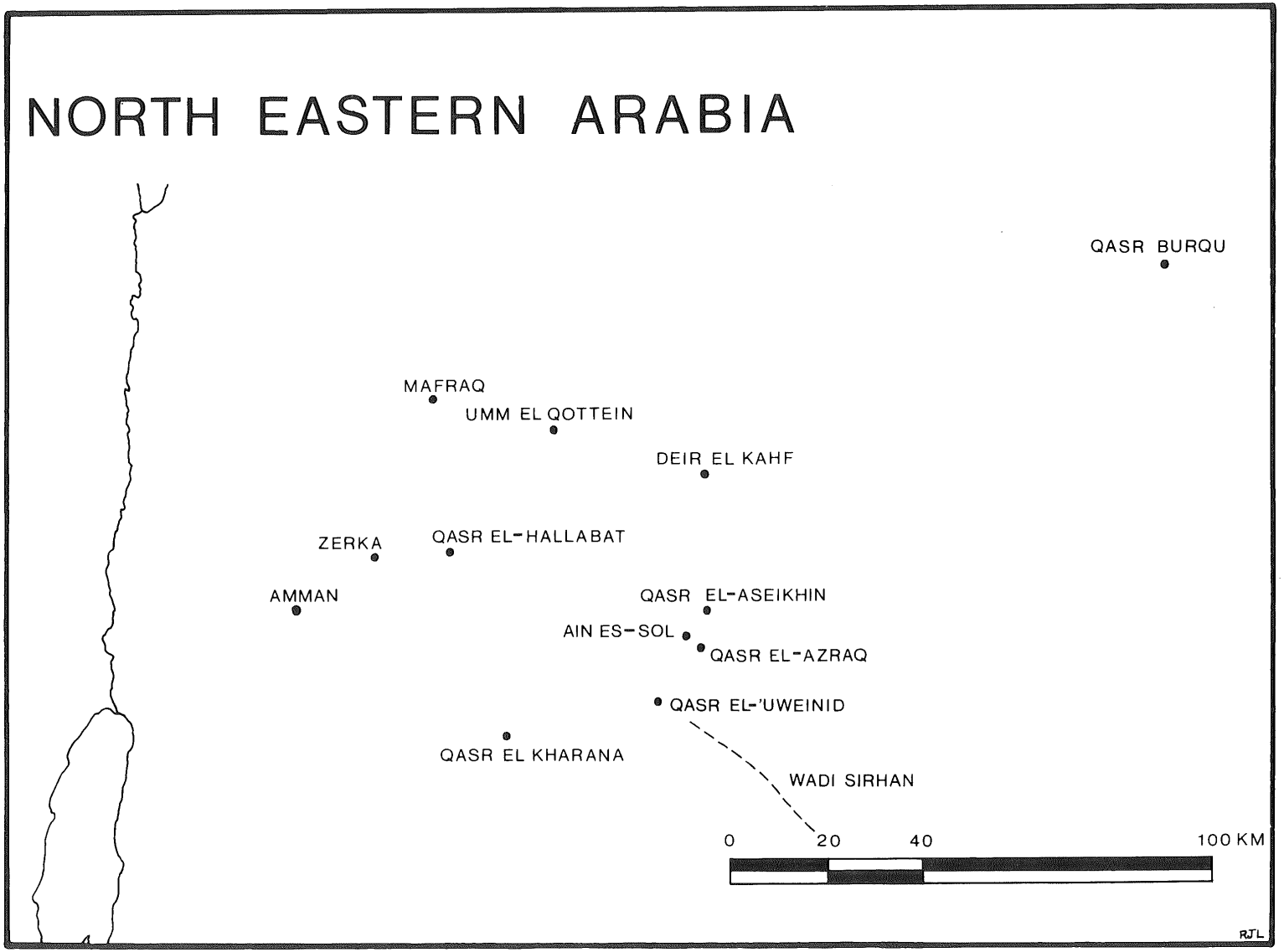
The site was visited from Azraq, planned and sherds collected for study. No inscriptions were recorded but a piece of sigillata — possibly first century A.D. — was found.

Ain es-Sol :

The site is not previously known under this name but it may be better attested as the Ain el-Onqiyya of Musil (*Arabia Deserta*, 339) and other travellers. It had been covered with drifting sand until recently. The guardian of the site has recently cleared the sand to reveal a small square courtyarded building to which a bath extension had been added. As it appears today it may be a fortified farmhouse of the type so well-known from Tripolitania but I am inclined to regard it as a small fortlet taken over and extended in the post-Roman period. A quantity of pottery had been turned up by the guardian's external clearance work together with half of a small decorated lamp. All are now being studied although the preliminary examination indicates that the greater part of the pottery is Ommayad and the lamp late Byzantine.

Qasr el-'Uweinid:

The site was planned on a visit from Azraq and sherds were collected. The building inscription published in 1978 (S.T. Parker and P.M. McDermott, *ZPE*, 29 (1978) 61-66) was re-read and further details were elucidated including the name of the governor: [L. MARIUS] PERPET [VVS]. A further inscription from this site - erroneously proposed for Azraq by Bowersock (*op. cit.* 241) — has been read in


NORTH EASTERN ARABIA
QASR BURQU
MAFRAQ
UMM EL QOTTEIN
DEIR EL KAHF
ZERKA
QASR EL-HALLABAT
AMMAN
QASR EL-ASEIKHIN
AIN ES-SOL
QASR EL-AZRAQ
QASR EL-'UWEINID
QASR EL KHARANA
WADI SIRHAN
0
20
40
100 KM
RJL

full to give the consular year 201 (Kennedy, *Congress of Frontier Studies*, 1980, forthcoming).

Deir el-Kahf :

There was only time for a very brief visit but it was clear that the site was not only gravely endangered by the encroachment of the modern village and needed a close study now but that it would probably repay the sort of examination accorded to Hallabat and Azraq. It is my hope to be allowed to return and carry out this work in a future survey.

With the aid of a generous grant from the British Academy work is now in hand preparing the finished plans, maps and line drawings from all these sites, and relating to the area and remains in it. If the success of the survey is to be measured then it should be clear, I believe, that the provision of new ground plans of the sites — some never before recorded — will in itself be useful for future work. Furthermore, the study of the pottery should make some small contribution in an area so desperately in need of a detailed and extensive treatment. Again, the recovery of 20 previously unpublished inscriptions and the revision of others will make its contribution to a growing corpus of epigraphic material. For myself however, the outstanding outcome of the survey was the revelation of just how much more there was to be studied not only of the classical period but of earlier and later times. With the approval of the Department of Antiquities it is my hope to put into effect a more extensive and longer-term project in the near future to examine in greater detail the desert region extending eastwards from the Amman/Mafraq road to and beyond Deir el-Kahf, Azraq and the Wadi Sirhan.

D. L. Kennedy
July, 1979

PHILADELPHIE DE COELESYRIE

par
J-P. Rey-Coquais

A la mémoire de Pierre Lavergne

L'excellente thèse soutenue à Lyon par M. Pierre-Louis Gatier sur les inscriptions grecques et latines de la région centrale de Jordanie m'a fourni l'occasion de revenir sur quelques questions relatives à Philadelphie de Coelésyrie. L'amicale insistance du Dr. Fawzi Zayadine m'a invité à présenter sans plus tarder deux hypothèses, qui touchent l'une au calcul de l'ère de Philadelphie, l'autre au sens de l'appellation de Coelésyrie. J'avais abordé cette dernière question lorsque j'avais eu l'honneur d'être invité à l'Université de Jordanie en 1974; Pierre Lavergne, alors conseiller culturel à l'Ambassade de France à Amman, si tragiquement disparu depuis, avait organisé ce voyage et ces conférences.

1. L'ère de Philadelphie

A l'époque romaine, Philadelphie, comme beaucoup de villes de la Décapole, use d'une ère propre qui commémore sa libération par Pompée. De ces ères de la Décapole, les unes ont leur origine en 64 avant J.-C., les autres en 63. Depuis une note de A.Alt en 1932, il est admis que l'ère de Philadelphie commence en 63 avant J.-C.[1] Cela ne paraît pas certain.

L'emploi d'une ère pompéienne à Philadelphie est hors de doute. Le *Chronicon Pascale*[2], cité par A.Alt, l'indique de façon vague; après avoir mentionné l'année de consulat de Pison et de Gabinius, le *Chronicon* ajoute: "C'est de là (ἐντεῦθεν) que les gens de Philadelphie comptent leurs années". Le consulat de Gabinius date de 58 avant J.-C. La notice sur Philadelphie a sans doute été appelée par l'action antérieure de Gabinius, lieutenant de Pompée, en Décapole, et c'est ce qui en fait l'intérêt historique.

L'inscription du *tristôon*, le triple portique d'Amman, présentée d'abord par F.Zayadine[3], puis publiée par D.Schlumberger[4]' présente une date, ἔτει ΒΝΣ΄ an 252, qui ne peut être calculée ni selon l'ère des Séleucides ni selon l'ère de la province d'Arabie; une ère pompéienne convient aussi bien au décor sculpté de cette architrave qu'à l'emploi de l'appellation Philadelphie de Coelésyrie.

Les monnaies de Philadelphie présentent des dates qui imposent l'emploi d'une ère pompéienne. Des monnaies de Titus et Domitien

1 A.Alt, *Zeitschrift des Deutschen Palästina-Vereins*, 55 (1932), p. 132-134; H.Seyrig, *Antiquités syriennes*, 6 (= *Syria*, 36, 1959), p.44; J.-P.Rey-Coquais, "Syrie romaine", *Journal of Roman Studies*, 68 (1978), cité désormais seulement *Syrie romaine*, p.45, avec la note 18

2 *Chronicon Pascale*, 351, 16 (Dindorf).

3 F.Zayadine, *ADAJ*, 14 (1969), p.34-35; *Annales archéologiques arabes syriennes*, 21 (1971) (= *Actes du IX e Congrès International d'archéologie classique, Damas*, 1969), p.151-152.

4 D.Schlumberger, *Syria*, 48 (1971, p. 385-389.

sont datees L ΓΜΡ an 143.[5] Cette date doit se situer entre la mort de Vespasien, juin 79, et la mort de Titus, septembre 81 apres J.-C. Une ère commençant à l'automne 64 ou à l'automne 63 avant J.-C. satisfait pleinement à ces exigences. Nous admettons avec A.Alt et H.Seyrig que l'ère de Philadelphie, comme les autres ères de la Decapole et de l'immense majorité des villes de Syrie qui ont une ère propre, commence à l'automne, comme l'ère des Séleucides, selon la tradition greco-macédonienne.

Une seule inscription peut fournir le synchronisme indispensable au calcul de l'ère; c'est une mosaïque byzantine de pavement, trouvée à Yadoudeh, à une dizaine de kilomètres au Sud d'Amman, vraisemblablement dans le territoire de l'antique Philadelphie. Selon la lecture la meilleure, celle de A.Alt, la mosaïque fut posée ἐν μηνὶ Γοοπιέοο χοό(νων) ια΄ ἰνδ(ικτιῶνος) ἐν ἔτους (sic) ΕΞ(Φ΄)[6]
Si l'on admet la restitution de Alt et l'emploi d'une ère pompéienne, la 11 ème indiction mentionnée par l'inscription va du 1 er septembre 502 au 31 août 503[7].

Quelle est la place du mois Gorpiaios dans le calendrier de Philadelphie et dans l'intervalle de temps compris entre le 1 er septembre et le 31 août ? Selon la réponse apportée à cette double question, l'ère de Philadelphie a son point de départ une année plus tôt ou plus tard.

Le calendrier de Philadelphie n'est pas connu. Mais on connaît d'autres calendriers d'Orient, notamment grâce aux *Hemerologia* de Florence, de Leyde et du Vatican[8]. Chez "les Arabes", c'est-à-dire sans doute à Bostra et dans la Nabatène - je ne crois pas que Damas ait suivi ce calendrier -, Gorpiaios allait du 19 août au 17 septembre juliens; l'année civile commençait au printemps. A Gaza, Gorpiaios, du 29 août au 27 septembre, est l'avant-dernier mois de l'année; à Ascalon, Gorpiaios, du 28 septembre au 27 octobre, est le dernier mois de l'année. A Césarée de Palestine, si ma reconstitution de son calendier n'est pas fausse, Gorpiaios allait du 2 septembre au 2 octobre[9]; on ne sait quel était le dernier mois de l'année. A Tyr, où une inscription datée[10] vérifie les données des *Hemerologia*, Gorpiaios, du 19 septembre au 18 octobre, est le dernier mois de l'annee. Dans le calendrier employé en Syrie avec l'ère des Séleucides, Gorpiaios commence sans doute en

5 G.F.Hill, *BMC* (= *Catalogue of the Greek Coins in the British Museum*) *Arabia*, p.37-41, n° 4-5; A. Spijkerman, The Coins of the Decapolis and Provincia Arabia (edited by M. Piccirillo), Jerusalem (1978) nos 9 et 10, p. 246.

6 A.Alt, *loc.laud.*

7 Cf. V.Grumel, *La Chronologie* (*Traité d'études byzantines*, I; 1958).

8 W.Kubitschek, *Die Kalenderbücher von florenz, Rom und Leyden* (*Denkschriften d.Kais.Akad. d.Wiss. Wien, Philos.-Hist. Klasse*, t.57, 3. Abhandl., 1915); cf. V.Grumel, *Chronologie*, p.169, 172-175; E.J.Bikerman, *Chonology of the Ancient World* (1968), p.50; A.E.Samuel, *Greek and Roman Chronology, Calendars and Years in Classical Antiquity* (*Handbuch der Altertumswissenschaft*, 1.7; 1972), p. 171-178.

9. J.-P. Rey-Coquais, "Le calendrier employé par Eusèbe de Césarée dans les Martyrs de Palestine", *Analecta Bollandiana*, 96 (1968), p.55-64.

10 J.-P. Rey-Coquais, *Inscriptions greçques et latines découvertes dans les fouilles* de Tyr, I, *Inscriptions de la nécropole* (= *Bulletin du Musée de Beyrouth*, 29,1977), p.45-46, n° 74.

août et se termine vraisemblablement le 22 septembre; c'est le dernier mois de l'année. Dans les calendriers juliens de Syrie, où, par définition, la distribution des mois se calquait sur le calendrier romain, Gorpiaios à Antioche équivaut à septembre et est le dernier mois de l'année, tandis qu'à Sidon, Gorpiaios, équivalent a novembre, est l'avant-dernier mois de l'année. Dans tous les calendriers où l'année commence a l'automne, Gorpiaios est le dernier ou, plus rarement, l'avant-dernier mois de l'année. Il est donc possible qu'à Philadelphie Gorpiaios ait ete le dernier mois de l'année.

On se rappellera qu'à cette époque, en Orient, l'année du cycle d'indiction ne coïncide généralement pas avec l'année civile en vigueur dans les cités ou les régions qui ont gardé une ère propre; ainsi en est-il à Tyr, à Sidon, à Béryte, dans les régions de Syrie qui usent de l'ère des Séleucides, dans la province romaine d'Arabie [11]. On ne peut donc écarter l'hypothèse que, dans l'inscription de Yadoudeh, la fin de l'année 565 selon l'ère de Philadelphie appartienne à la période du début de l'indiction 11. En ce cas, l'année 565 de Philadelphie aurait commencé au début de l'indiction 10, c'est-à-dire à l'automne 501 après J.-C. Le point de départ de l'ère de Philadelphie serait alors 64 avant J.-C. La date de 63 avant J.-C., traditionnellement admise pour origine de l'ère, implique que Gorpiaios était, entièrement ou partiellement, antérieur au 31 août 503, et que l'année 565 de Philadelphie avait commencé à la fin de l'été 502.

L'imprécision sur le moment de l'année que represente le mois de Gorpiaios dans le calendrier de Philadelphie empêche de préciser si l'ère de la ville débute en 63 ou en 64. Le synchronisme que présente l'inscription d'une mosaïque byzantine de pavament trouvée à Quweisme à six kilométres au Sud d'Amman[12]. ἐν χρ(όνοις) πρώτης ἰνδ(ικτιῶνος) τοῦ ἔτους ΠΦ´ ne permet pas de trancher. La 1 ère indiction commence le 1 er septembre 717. Si l'année civile de Philadelphie retarde sur l'année d'indiction, le synchronisme est vérifié aussi bien avec une ère commençant à l'automne de 64 avant J.-C. qu'avec une ère commençant à l'automne de 63. Il ne semble pas non plus que les monnaies datées de Philadelphie, pour autant que la publication de son monnayage permet d'en juger, imposent pour l'origine de l'ère une année plutôt que l'autre.

Reposant sur une seule inscription dont les données chronologiques ne sont pas aussi contraignantes qu'il pouvait apparaître, lère pompéienne de Philadelphie ne saurait être considérée comme définitivement établie.

2. L'appellation de Coelesyrie

Philadelphie est appelée "de Coelésyrie" dans deux inscriptions et sur ses monnaies. L'une de ces inscriptions est celle du *tristôon* d'Amman, datée de l'an 252 de l'ère de Philadelphie, c'est-à-dire, si l'ère commence en 63 avant J.-C., de 189/190 après J.-C. (ou de 188/189 si le début de l'ère est en 64), où on lit: (Φ)ιλαδελφέων τῶν κατὰ Κοίλην Συρίαν ἡ πόλις L'autre est une inscription inédite d'Amman, qu'a relevée et que publiera P.-L.Gatier; c'est

11 Cf. ma note "Calendriers de la Syrie greco-romaine d'après des inscriptions inédites", *Akten des VI. Internationalen Kongresses für Griechische und Lateinische Epigraphik, München* 1971 (*Vestigia*, 17; 1973), p.564-566.

12 S.Saller, *Studium Biblicum Franciscanum, Liber Annuus*, 19 (1969), p.166.

une dédicace en l'honneur d'un empereur dont le nom a disparu, faite par(ὴ) | τῶν Φιλ)αδελφεων (π)ό(λι)ς | (τ ῶ)ν κατὰ κοίλη ν | Συρίαν , à une époque que l'écriture permet de situer vers le milieu du II e siècle. Depuis le règne d'Hardrien jusque sous celui d'Elagabale, on trouve la même appellation "de Coelésyrie" sur les monnaies municipales de Philadelphie.

A la même époque, d'autres villes de la région, Abila, Dion, Gadara, Pella, comme le montrent leurs monnaies, s'appelèrent sussi "de Coelésyrie"[13].

Le terme de Coelésyrie eut des significations variées.[14] Il faut exclure ici le sens strict, que l'on trouve chez Strabon (16, 753), de plaine comprise entre le Liban et l'Antiliban (encore que l'erreur de Strabon sur l'orientation des chaînes du Liban et de l'Antiliban, qu'il imagine perpendiculaires à la côte de Phénicie, enlève quelque peu sa valeur à cette détermination topographique; pour Strabon, la vallée du Jourdain est aussi en Coelésyrie). Coelésyrie est le nom que portèrent, depuis le début du II e siècle avant notre ère, les régions de Syrie méridionale enlevées aux Lagides par les Séleucides; c'est un sens large du terme Coelésyrie que connaît aussi Strabon (16, 756) et c'est également le sens de ce terme dans le récit que Flavius Josèphe donne des événements du I er siècle avant l'ère chrétienne (par exemple: *BJ* 1, 103, 155, 213...): en ce sens, la Coelésyrie s'étend de Damas à Philadelphie. Rappelons enfin qu'à la fin du IIe siècle de l'ère chrétienne, Septime-Sévère, divisant la grande province de Syrie, fit de la région nord, autour d'Antioche, une province de *Syria Coele*; il ne saurait y avoir d'ambiguïté.

On croira difficilement que l'appellation de Coelésyrie, officiellement portée par Philadelphie et d'autres villes de la région au IIe et au début du IIIe siècle de l'ère chrétienne ait eu une simple valeur géographique, si l'on se souvient que, sous le règne d'Hadrien précisément, apparaît dans l'organisation du culte impérial en Syrie un *koinon* de Coelésyrie dont le siège fut à Damas.

Pour plus de clarté, retraçons brièvement l'histoire du culte impérial en Syrie; on n'oubliera pas qu'avant d'être incluses dans la province d'Arabie créée en 106 par l'annexion du royaume nabatéen, Philadelphie et les autres villes "grecques" de la région étaient rattachées à la province de Syrie. Le culte impérial est fondé en Syrie du vivant même d'Auguste; Antioche en fut le siège.[15] L'*Histoire Auguste* parle d'une séparation entre Syrie et Phénicie sous le règne d'Hardrien; s'il s'agit de circonscriptions administratves ou de *koina* du culte impérial, cette séparation est bien anterieure à Hadrien. Il est vraisemblable que le culte impérial fut célébré dans deux circonscriptions, l'une de Syrie du Nord, l'autre de Syrie du Sud et de Phénicie, à une date que l'on peut seulement conjecturer. Le siège de la circonscription du Sud fut sans doute Tyr, car, lors de la réorganisation des

13 Cf. *Syrie romaine*, p.54, note 24.

14 Voir E.Bikerman, "La Coelésyrie, notes de géographie historique ", *Revue Biblique* 1947, p.256-268; J.P. Rey-Coquais, *Inscriptions grecques et latines de Syrie*, VI, *Baalbek et Beqa'* (1967), p. 21-22.

15 *Syrie romaine*, p.53-54, notes 121-127. - Sur l'organisation des *koina*, voir J.Deininger, *Die Provinziallandtage der römischen Kaiserzeit, von Augustus bis Ende des dritten Jahrhunderts n. Chr.* (*Vestigia*, 6; 1965), notamment p.87 et suivantes.

circonscriptions du culte impérial sous Hadrien, Tyr craignit de perdre son rang de métropole, que ses monnaies attestent depuis Domitien. Je crois en effet que le titre de métropole n'est pas purement honorifique, dépourvu de toute signification et de tout avantage; bien des indices autorisent à penser qu'il était donné aux chefs-lieux des circonscriptions provinciales du culte impérial. S'il en était bien ainsi, c'est au plus tard sous Domitien qu'il aurait existé une circonscription du Sud, à laquelle auraient appartenu Philadelphie et les autres villes "grecques" de la vallée du Jourdain. H.Seyrig a justement mis en lumière les liens, tant économiques que religieux, qui unissaient Tyr aux villes d'outre-Jourdain et tout particulièrement à Philadelphie [16].

Sous Trajan, le gouverneur de la province de Syrie, entre 102 et 104, est officiellement appelé légat impérial propréteur de Syrie, Phénicie, Commagène et Tyr [17]; on voit nommer ici quatre circonscriptions, qui préfigurent sans doute la réorganisation des *koina* du culte impérial en Syrie sous Hadrien. Sous Hadrien, une inscription appelle Tyr métropole de la Phénicie et de la Coelésyrie [18] Si l'on rapproche ces deux inscriptions, on observe qu'en quelque sorte Tyr, dans l'inscription la plus ancienne, représente la Coelésyrie, qui n'y est pas mentionnée et dont l'absence étonne.

Dans l'inscription de Tyr, sous le règne d'Hadrien, quelle région désigne le terme Coelésyrie ? Je ne puis croire qu'il s'agisse uniquement de la région méridionale de la Syrie intérieure, autour de Damas, limitée au Sud par la frontière de la nouvelle province d'Arabie créée en 106. Si des villes comme Philladelphie et Gérasa furent rattachées administrativement a la nouvelle province elles n'en continuèrent sans doute pas moins, pour ce qui concerne la célébration du culte impérial, d'appartenir à l'ancienne organisation. Il faut voir concrètement ce qu'implique la célébration du culte impérial. Une ville - une métropole - est le chef-lieu d'une circonscription où se célèbre le culte impérial: la splendeur des fêtes, attirant une foule de pélerins et de visiteurs, est pour la ville non seulement une source de fierté et de prestige mais aussi une occasion de profits tangibles et de prospérité. L'organisation de ces fêtes coûtent cher; les agonothetes engagent sur leur propre fortune des dépenses considérables. Plus grand est le nombre des villes associées dans le *koinon*, plus les ressources disponibles sont importantes, plus les fêtes ont d'éclat et d'attrait, plus la foule des visiteurs est grande, plus les commerces locaux en bénéficient... Un *koinon*, et surtout sa métropole, ne pouvaient donc sans déplaisir se laisser amputer d'une partie de leurs ressortissants. C'est ce que laissent deviner deux brèves notices tardives de Malalas et de la *Souda*, ou apparaissent, déformés, quelques souvenirs de la réorganisation du culte impérial en Syrie sous Hadrien. [19] Antioche, qui vit son *koinon* diminuer du nouveau petit *koinon* de Commagène, se crut, selon Malalas, en butte à l'hostilité de l'empereur. Une notice de la *Souda* sur le rhéteur Paul de Tyr fait gloire a ce personnage, inconnu d'ailleurs, d'avoir su obtenir d'Hadrien le titre

16 H.Seyrig, *Antiquités syriennes*, 6 (= *Syria*, 36, 1959), p.34-53.

18 W.H.Buckler, W.M.Calder, C.W.M.Cox, *Journal of Roman Studies*, 16 (1926), p. 74-75, n° 20.

19* Voir *Syrie romaine*, aux pages indiquées note 15.

* H.Dessau, *Inscriptiones Latinae Selectae*, n° 8819a; cf. F.Cumont, *Bulletin Acad. Belgique*, 1905, p.204.

de métropole pour sa ville. En réalité, il n'a pas dû s'agir de l'obtention du titre, déjà acquis sous Domitien, mais de sa conservation, la réforme d'Hadrien mettant en cause les droits acquis. On comprend l'inquiétude de Tyr et l'amertume d'Antioche. Le *koinon* tyrien fut scindé en deux nouveaux *koina*: celui de Phénicie dont Tyr resta la métropole, celui de Coelésyrie dont Damas devint la métropole. Je croirais volontiers que, lorsqu'au milieu du IIe siècle, Ptolémée dans sa *Géographie* énumère les villes de Coelésyrie et de Décapole, sans les distinguer les unes des autres, car les deux appellations géographiques se recouvent partiellement, il donne en fait la liste des cités qui constituent le *koinon* de Coelésyrie; les unes sont dans la province de Syrie, d'autres en Arabie, d'autres en Palestine.

L'inscription de Gérasa, datée de 199/200 après J.-C., mentionnant un notable de Gérasa comme prêtre des quatre éparchies à Antioche la métropole, [20] semble précisément avoir trait à cette nouvelle organisation de la Syrie en quatre petits *koina*. Je ne crois pas, en effet, que les quatre éparchies soient les quatre provinces de Syrie, Cilicie, Palestine et Arabie, unies pour une célébration commune du culte impérial; nos informations sur l'orgarisation du culte impérial en Cilicie, en Arabie ou en Palestine sont ou déficientes ou trop tardives pour qu'il soit possible d'être plus affirmatif. Une inscription de Tyr, découverte dans les fouilles dirigées par l'Emir Maurice Chéhab, incite à penser que les quatre éparchies sont bien les quatre patits *koina* syriens [21]. C'est une dédicace en l'honneur d'un gymnasiarque, datée de 43/44 après J.-C. Une main différente a cru bon d'ajouter, plus tard, la précision τῶν δ' ἐπαρχειῶν Le gymnase dont le gymnasiarque avait eu la responsabiliét était devenu le gymnase où s'entrainaient les sportifs qui concouraient aux fêtes du culte impérial. Le gymnase des quatre éparchies à Tyr rappellerait ainsi le *panégyrikon gymnasion* connu par des inscriptions de Pergame [22], ou, toujours à Pergame, dans une inscription de l'Asclépieion, le *γυμνασίαρχος ἐν τῷ κοινῷ τῆς Ἀσίας των ἓξ γυμνασίων*

le gymnasiarque des six gymnases dans le *koinon* d'Asie [23]. S'il y avait un tel gymnase à Tyr, c'est que la ville était le chef-lieu d'une des circonscriptions du culte impérial en Syrie et que des fêtes communes s'y célébraient. Si, plutôt que les quatre *koina* syriens, les quatre éparchies étaient les quatre provinces de l'orient romain, il y aurait beaucoup moins de raisons que Tyr ait été l'un des lieux où elles célébraient en commun le culte impérial.

Plus clair encore pour ce sens du mot ἐπαρχία est une inscription de Salamine de Chypre en l'honneur de Vespasien, difficilement compréhensible si l'on donne au mot son sens le plus ordinaire de "province". Comme

20 C.B.Welles, dans H.Kraeling, *Gerasa, City of the Decapolis* (1938), p.399, n° 53; *Nouveau Choix d'Inscriptions Grecques*, par l'Institut Fernand-Courby (1971), p. 167-168, n° 32.

21 Je prépare la publication, que m'a confiée l'Emir Chéhab, de cette inscription et d'une centaine d'autres, grecques ou latines, trouvéss dans les fouilles de l'antique Tyr.

22 J.et L.Robert, *Bulletin épigraphique*, dans *Revue des Études Grecques* (1962), n° 55; L.Robert, *Monnaies antiques de Troade* (1966), p. 46.

23 Chr. Habicht, *Pergamon* VIII.3, *Die Inschriften des Asklepieions* (1969), p. 165.

l'indique bien P.Roesch en publiant l'inscription [24], le dédicant est grand-prêtre du culte impérial d'une part pour toute l'île de Chypre, qui est une province, d'autre part pour un culte d'un ressort réduit à une partie seulement de l'île Mais, à la ligne 7, incomplète, je ne restituerais pas et ne traduirais pas: "de la métropole de la province", car, si Salamine a, comme Paphos, le titre de métropole, cela ne suffit pas à la désigner clairement, même à Salamine; je proposerai: "de l'éparchie (*vg.* de Salamine)", c'est-à-dire, de la région, du district de Salamine. La dualité de métropoles à Chypre va bien dans le sens de deux petits *koina*, l'un à l'Est, l'autre à l'Ouest de l'île, à l'intérieur du *koinon* chypriote. les inscriptions de Salamine, de Tyr et de Gérasa semblent ainsi assurer la signification donnée au terme d'éparchie.

Ainsi entendue, l'inscription de Gérasa établit qu'une ville, incluse désormais dans la province d'Arabie, continuait de contribuer au culte impérial dans le *koinon* de Syrie. Notons d'ailleurs qu'à l'époque d'Hadrien, Gérasa bénéficie de l'autonomie [25], qui la rend indépendante de la province, de même qu'au milieu du IIe siècle, on voit Capitolias et Gadara, l'une et l'autre en Coelésyrie, jouir de l'autonomie [26].

Les Syriens, avons-nous supposé, ne voulaient pas voir diminuer le nombre des cités qui contribuaient avec eux aux célébrations du culte impérial. Trajan, sous qui fut organisée la province d'Arabie, Hadrien, qui réorganisa le culte impérial en Syrie, avaient eu, avant d'être empereurs, des liens assez étroits avec la province de Syrie; on pourrait également penser à l'influence du grand architecte et ingénieur Apollodore de Damas, si bien en cour à l'époque de Trajan. Il est possible aussi que les cités méridionales de la Décapole, jadis rattachées à la province de Syrie et désormais incluses dans la province d'Arabie, aient eu des raisons de vouloir rester associées aux villes de Syrie; les descendants des colons grecs et les indigènes depuis longtemps hellénisés, qui constituaient ensemble l'élément dominant de ces cités de la Décapole, n'auraient-ils pas éprouvé quelque sentiment de supérioité, quelque dédain ou quelque hostilité vis-à-vis des Nabatéens, tenus pour des Barbares?

Dans notre hypothèse, l'appellation de Philadelphie de Coelésyrie ne nous informerait pas seulement sur l'organisation du culte impérial en Orient; elle enrichirait d'un nouveau trait l'histoirs des mentalités, elle témoignerait de ces rencontres et de ces oppositions de peuplements et de civilisations qui rendent si passionnante l'étude de l'Orient ancien.

Jean-Paul Rey-Coquais
Université de Dijon

24 P.Roesch, *Bulletin de Correspondance Hellénique*, 95 (1971), p. 573-580.

25 C.B.Welles, dans H.Kraeling, *Gerasa*, n° 30.

26 W.Worth, *BMC Syria*, p. 278, Capitolias; p. 304-305, Gadara, n° 6.

HIRBET ES-SAMRA

Contribution à l'épigraphie syro-palestinienne, augmentée de quatre inscriptions en grec.

par
A. Desreumaux et J-B. Humbert

A la suite du P. R. Savignac en 1925, l'Ecole Biblique et Archéologique Française de Jérusalem a organisé un voyage d'étude à Ḫirbet es-Samra', dans la région au nord-est de Zarqa, du 24 avril au 1er mai 1978. Une excursion y avait été effectuée en février. La prospection sur le site et les relevés, dus à l'initiative de A. Desreumaux, ont été menés sous la direction du fr. J.-B. Humbert,[1] avec la participation de Sami Abadi, du Département des Antiquités, de Jean Miler et de Ryad Mazahra.

خربة السمرا Ḫirbet es-Samra'; "La ruine sombre" (coordonnées : 2650/1770, 36° 10/32° 10) est aujourd'hui un modeste village de nomades, les Beni Ḥasan, en voie de sédentarisation. C'est aussi une station sur le chemin de fer ottoman Damas-Médine. (Fig. 1)

Le site ancien, dont l'altitude oscille entre 560 et 565 m représente l'extrémité occidentale du Sahal el-Debbé سهل الدبة ; il est installé sur une croupe rocheuse dans un méandre du wadi Majraf وادي مجرف tout juste augmenté du wadi Bisal وادي بيسال dans le bassin de l'important wadi Dleil وادي الظليل. Le plateau du Sahal Debbé, qui culmine à 590 m, termine en fait au sud-ouest les grandes coulées basaltiques du Ḥauran. Il est très intéressant de noter que Ḫ. es-Samra se trouve juste en deçà de la courbe des 100 mm de chutes de pluies annuelles, par conséquent à la limite des zones semi-désertique et désertique. L'examen d'une carte détaillée met en évidence l'abondance des citernes à l'ouest du wadi Majraf, alors qu'elles sont très rares plus à l'est, celles de Samra faisant précisément exception.

L'existence d'une ville ancienne dans une région aussi aride ne peut se justifier que par sa raison d'être : une ville-étape indispensable

1. J.-B. Humbert a dirigé le travail sur le terrain. A. Desreumaux est responsable de la partie épigraphique. La présentation du site a été rédigée conjointement. Nous sommes particulièrement reconnaissants à E. Nodet avec qui nous avons pu discuter longuement des problèmes épigraphiques. Quelques remarques de E. Puech nous ont été utiles.

Il est évident que ce travail appelle un approfondissement, surtout dans le domaine de l'onomastique; nous pensons le provoquer en fournissant sans tarder le matériel.

Nous sommes reconnaissants au Docteur Adnan Hadidi, directeur du Département des Antiquités de Jordanie, pour son accueil chaleureux, qui a bien voulu nous accorder l'autorisation de commencer ce travail et de le faciliter en mettant surtout à notre disposition M. Abadi et un chauffeur du Département avec un véhicule. Nous avons une dette particulière envers le Dr. Fawzi Zayadine pour son amitié et parce qu'il n'a ménagé ni son temps ni sa peine pour nous aider et sans qui cette étude n'aurait peut-être pas vu le jour: nous le remercions de nous avoir offert de la publier dans la présente revue. Remarque : nous conservons l'orthographe des noms propres donnés par les auteurs cités.

sur la *Via Nova*, voie romaine conduisant de Philadelphia à Bostra. L'organisation de la *Via Nova* entre ces deux cités, en tenant compte des bornes milliaires relevées par J. Germer-Durand, des indications fournies par la carte de Peutinger, et de la *Notitia Dignitatum*, a été l'objet de nombreuses recherches[2]. Toutes les données ne sont pas évidentes, tant s'en faut,

2. J. Germer-Durand, "Rapport sur l'exploration archéologique en 1903 de la Voie Romaine entre Amman et Bostra (Arabie)", dans *Bulletin Archéologique*, Paris, 1904 pp. 3-41, place à Samra les bornes 29, 30 et 31 en supposant qu'elles ont été employées dans les ouvrages de la voie ferrée; il identifie Samra à l'antique *Hattita* ou *Adita* (remarque : les milles romains partent de Bostra. D'ailleurs, sur ce point, voir S. Mittmann "Die römische Strasse von Gerasa nach Adraa", *ZDPV* 80 (1964) pp. 113-136 traduit en anglais "The roman Road from Gerasa to Adraa", *ADAJ* XI (1966) pp. 65-87 qui démontre que Bostra était "caput viae".)

R.E. Brünnow-A. von Domaszewski, *Die Provincia Arabia* II. Der äussere Limes und die Römerstrassen von el-Ma'ân bis Bosrâ, Strassburg, 1905, reproduit (en grande-partie) le texte de Germer-Durand, et celui de R. Lees, "The Geographical Journal" V, 1 janv. 1895, qui décrit des ruines de basalte, avec un grand *birkéh* à 2 h 45 mm de chevauchée de Qalaat ez-Zarqa; cette description peut effectivement faire penser à Samra et la distance semble concorder; alors, *Thantia* ne peut être Umm el-Jimmal pour R. Lees, car c'est beaucoup plus loin au nord. Brünnow s'oppose à Germer-Durand au sujet de *Adita* (p. 317).

R. Brünnow, "Die Kastelle des Arabischen Limes" dans *Florilegium ou recueil d'érudition dédié à M. le Marquis Melchior de Vogüé*, Paris, 1909, p. 65, ne compte pas Samra parmi les "Kastelle" de notre voie romaine; il place (cf. sa carte p. 67) *Gadda* à Kh. Khaw, *Thantia* à Tell es-Shihâb, *Hatita* à el-Ḥadid.

K. Miller, *Itineraria Romano. Römische Reisewege an der Hand des Tabula Peutingeriana*, Stuttgart, 1916 (reprod. photo, Rome, 1964). col. 818 place *Thantia* ou *Thainata* à El Chab (sic), *Hatita*, *Aditha* ou *Anitha* à Samra, ou à el-Ḥadid, *Gadda*, ville de la décapole, à Chau (sic).

P. Thomsen, "Die römischen Meilensteine des Provinzen Syria, Arabia and Palaestina", *ZDPV* 40 (1917) pp. 1-103 reprend l'hypothèse de Germer-Durand en ce qui concerne les milles 29, 30 et 31 et Samra. H.C. Butler "Trajan's Road from Bosra to the Red Sea. The Section between Bosra and 'Amman", dans *Syria* t. III, Leyden, 1921, A 2, App. pp. VII-XVI décrit minutieusement l'exploration de la voie (en combinant ses observations avec celles de Germer-Durand). Il propose une ingénieuse solution qui situe le point marqué *Thantia* sur la carte de Peutinger à 20 milles romains de Bostra, ce qui permet d'identifier *Thantia* à Umm el-Jimmal (situé à 2 milles de la voie) ainsi distant de 24 milles (avec l'aller et retour vers la voie) de Bostra comme l'indique Peutinger; puis *Thantia-Gadda* (identifié à Ḫ. es-Samra'): 11 milles; puis *Gadda-Hatita* (identifié à el-Ḥadid) : 9 milles; enfin *Hatita-Philadelphia* : 13 milles. Distance totale: 53 milles. G. Beyer:, "Studien aus den Deutschen evang. Institut für Altertums-Wissenschaft in Jerusalem 45. Die Meilenzählung an der Römerstrasse von Petra nach Bostra und ihre territorialgeschichtliche Bedeutung", *ZDPV* (1935) pp. 65-87, propose des calculs de distance intéressants sur toute cette voie romaine; pour la portion qui nous intéresse, il nomme les "Kastelle" suivants: *Aditha* = Chirbet el-Hadid, *Gadda* = Chau, *Thainaha* = tell el-Chab. G.W. Bowersock "A Report on Arabia Provincia", *JRS* 61 (1971) pp. 219-242 réclame des fouilles sur tous les forts du Limes; il parle de la voie Trajane de Philadelphia à Bostra via Kh. Samra et el-Khab; pour lui, el-Ḥadid peut être le camp de *Adittha* et soit Kh. Samra, soit el-Khab peuvent être *Thantia*.

S. Th. Parker "Archaeological Survey of the *Limes*

mais après avoir pris connaissance soigneusement de toutes les hypothèses, il apparaît meilleur de retenir les conclusions apportées par J. Germer-Durand. En effet, ce dernier, faisant l'inventaire des bornes milliaires, a dressé une carte de la Via Nova accompagnée d'un catalogue épigraphique[3]. Il a justement localisé Hatita à Samra, sur la carte qu'il propose, à la hauteur du XXXIV ème mille de Bostra. Les autres sources confirment cette donnée. Puisque la distance Bostra-Philadelphia est de 57 milles romains, Samra se trouve à 23 milles de Philadelphia; distance que confirme, à 1 mille près, la carte de Peutinger : Philadelphia-Gadda: 13 milles, Gadda-Hatita : 11 milles, soit 24 milles. Si l'on poursuit vers Bostra : Hatita-Thantia : 9 milles, Thantia-Bostra : 24 milles, on vérifie le total de 57 milles retenu par Germer-Durand. Il est aisé aujourd'hui de mesurer sur une carte, avec une assez bonne précision, et de confirmer les distances entre les étapes de la Via Nova : Qal'at Zarqa-Samra : 17 km, soit un peu plus de 11 milles romains; 'Amman-Samra : 34 km, soit presque 23 milles romains.

Il y a donc une forte probabilité pour que Hatita soit bien localisé à Samra. Par conséquent, le décompte des distances nous invite, à la suite de Germer-Durand, à situer Gadda à el-Ḥadid, plus probablement qu'à Qal'at Zarqa[4]. Le trajet Philadelphia-Hatita (Samra) peut représenter la dernière journée du voyage Bostra-Philadelphia : Robinson Lees compte 5 heures 45 de l'une à l'autre avec une monture.

A notre connaissance, personne n'a décrit les vestiges de la voie romaine à proximité de Ḥ.-es-Samra. Germer-Durand, comme Butler, a dû la parcourir, mais sa carte est trop schématique. Les autres voyageurs n'en parlent pas. R. Savignac, bien qu'il ait séjourné sur le site, ignora qu'il restait, à quelques centaines de mètres à l'est de la ruine, un important segment de la voie romaine, que nous avons repéré sans équivoque sur presque 600 m. On en a pour preuve qu'il propose un tracé de la voie romaine traversant le champ de ruines dans un axe nord-sud[5]. La voie faite de gros galets de basalte est constituée de deux chaussées séparées par un saillant médian; sa largeur totale n'atteint pas les 5 m. Elle arrive du sud-ouest, gravit la colline en 2 virages et évite résolument la ville. A l'endroit où elle franchit la crête, un important bâtiment très ruiné (18 m sur 22 m environ) permet de suggérer qu'un *castellum* avait été édifié en cet endroit d'où l'on embrassait toute la vallée. Au point culminant du plateau, avant que la voie ne file rectiligne vers le nord-est, une ruine[6] peut être interprétée comme une tour de guet pour le versant nord.

Arabicus : a Preliminary Report", dans *ADAJ* XXI (1976), pp. 19-31 note p. 19 : "Despite the large numbers of excavations conducted within Jordan over the years, not a single site within the *limes* has ever been excavated" et p. 28 : "It is hoped that future excavation will reveal more about this system, which is one of the relatively untouched archaeological treasures of Jordan".

3. Quelques inscriptions sur les bornes milliaires avaient déjà été publiées dans le *CIL* III suppl. fasc. IV, 2310-2311.

4. Bien que l'on ait cru retrouver la trace de *Hatita* dans le nom moderne de el-Ḥadid.

5. cf. *RB* 1925, pl. III (Diagramme).

6. Cette ruine a pris la forme d'un tumulus d'une vingtaine de mètres de diamètre, que les bédouins, à une période ancienne, ont utilisé comme lieu de sépultures. De tous ces éléments, on peut s'étonner que S.T. Parker, ne tienne pas compte pour le classement du site.

Il n'est pas impossible qu'une interprétation de la carte de Peutinger suppose une bifurcation de la voie romaine à Samra (si Samra est bien Hatita), vers Rhose (Umm el jimmal ?). Il est permis de concevoir alors cette bifurcation à proximité du *castellum*, la nouvelle voie pouvant filer plus à l'est sur le plateau.

L'intérêt suscité par les inscriptions funéraires en syro-palestinien notamment, dont R. Savignac avait rapporté de beaux estampages[7], légitimait une nouvelle visite sur le site. L'installation du poste turc, puis du village arable moderne et de récents travaux de l'armée ont substantiellement modifié l'aspect des vestiges repérés par les voyageurs au cours du premier tiers de ce siècle[8]. On ne retrouvera guère ce que Savignac avait décrit dans le détail. Le site, incluant les cimetières, s'étend d'est en ouest sur plus de 600 m; mais la ville est confinée à l'ouest du plateau, là où l'escarpement, dominant le wadi d'une dizaine de mètres, lui imposait une limite naturelle. Les ruines de la ville couvrent grossièrement un cercle de 250 m de diamètre. C'est une petite ville tout de basalte extrait du promontoire même, à l'exception d'une maison bâtie en calcaire blanc provenant des collines aux alentours. De nombreux ves-

7. On peut les consulter dans les archives de l'EBAF.

8. Le site avait été visité pour la première fois par H. C. Butler, *Syria*, Leiden, 1919, t. II A 2 App. p. XV, qui note l'existence d'une petite mosquée et émet l'hypothèse d'une forteresse avec tours. Il est brièvement exploré au cours d'un voyage de l'Ecole Biblique en 1924; des détails topographiques sommaires avec diagramme et photos sont fournis par R. Savignac, "Excursion en Transjordanie et au Khirbet es-Samra", *RB* XXIV (1925) pp. 124-131, pl. II et III; c'est cet article qui publie un lot d'inscriptions grecques et syro-palestiniennes. D.C. Steuernagel, "Der 'Adschlun", *ZDPV* XLIX (1926), pp. 1 ss, publie une description du site semblable à celle de *RB* 1925 en ajoutant le plan de l'église et le dessin d'une corniche aujourd'hui disparues. C.C. Mc Cown, "Springfield Trip, 1930", *BASOR* 39 (oct. 1930) pp. 18-20, est celui qui a le mieux examiné les vestiges archéologiques du site. Il discute l'identification de Gadda et approuve la position de Butler. Bien que sa description des ruines de Samra soit sommaire, il a remarqué des éléments que n'avaient pas vus ses prédécesseurs et que nous n'avons retrouvés qu'en partie (un chapiteau à feuilles d'acanthe aujourd'hui disparu, des linteaux, des bases de colonnes); il ne mentionne pas la mosquée signalée par Butler. Il insiste sur les traces d'un mur important, et, comme Butler, il propose d'y voir les restes d'une citadelle. Lui non plus n'hésite pas à retrouver les traces de l'abside d'une église. A. Alt, "Anfang und Ende des altchristlichen Inschriftenwesens in Palästina und Arabia", *PJb* 28 (1932) p. 96, commente globalement l'existence de ces pierres funéraires inscrites qui avaient été publiées par Savignac. Par la suite, Samra est simplement signalé par F.M. Abel, *Géographie de la Palestine*, II, Paris, 1938, p. 188. -- R. Devreesse, "Le christianisme dans la Province d'Arabie", dans *VP*, 1942, (= *RB*), p. 125, note l'existence à Samra de linteaux portant des croix. -- J. Saller, dans *The Town of Nebo*, p. 225 classe Samra au n° 44 du "Survey" de Jordanie du nord. -- R.B. Lemaire, dans *The Town of Nebo*, p. 266 parle des inscriptions publiées par R. Savignac; il les appelle des graffiti, ce qui n'est pas exact. -- N. Glueck, "Nabatean Syria", dans *BASOR* 85 (février 1942) pp. 6 s., puis *Explorations in Eastern Palestine IV*, part I, *Text* (The Annual of the American Schools of Oriental Research, vol. XXV-XXVIII for 1945-1949), New Haven, 1951, pp. 2-3 (où il reproduit son article précédent) classe Samra sous le n° 295; il parle du tronçon de voie romaine qu'il a repéré *au sud*, parle de tessons remassés en surface et conclut à l'importance antique de Samra dont la situation a pu en faire un centre imposant de commerce.

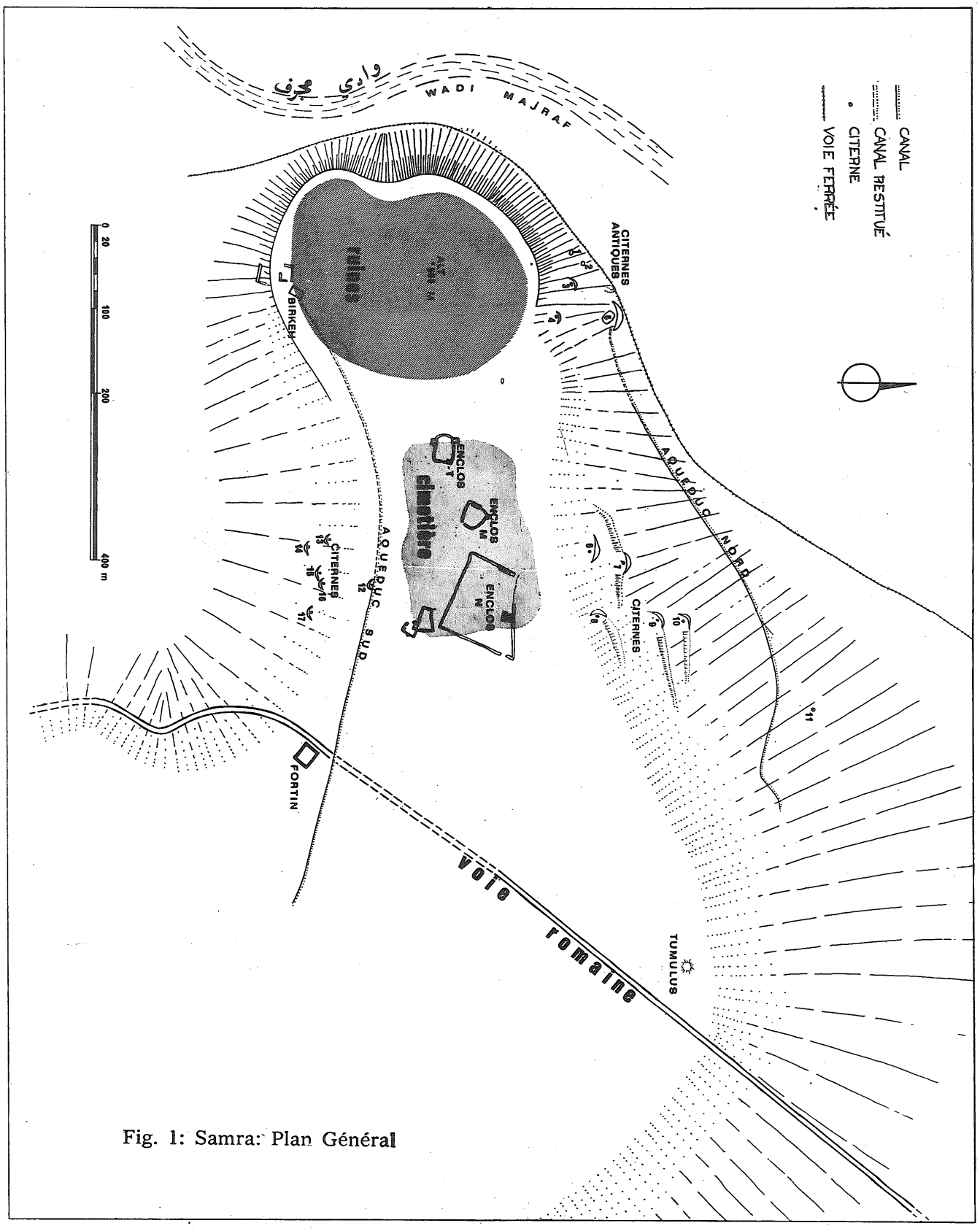


Fig. 1: Samra: Plan Général

tiges de murs (dont la largeur, 0,90 m, est à peu près constante), sont à peu près orientés est -ouest. Des murs plus larges présentent deux parements appareillés avec soin. Vers l'ouest, des tessères de mosaïque, blanches, noires et rouges apparaissent en surface. Les constructions se sont écroulées sur place, mais la plupart des restes architecturaux caractéristiques mentionnés par les explorateurs, ne sont plus visibles aujourd'hui. Quelques fûts de colonnes, linteaux décorés (cf. Pl. XV) et des seuils de portes ont été remployés lors de l'édification des maisons modernes. Rien de la mosquée et de l'abside d'une église remarquées par Butler (cf. *Syria,* t. II, Leyden, 1919, A 2, App. p. XV); rien du mur d'enceinte (?) avec tours, signalé par Mc Cown (cf. op. cit. p. 20). Un arc de cercle construit semble trop étroit pour une abside: il ressemble plutôt à un four à chaux posé sur les ruines. Le site aura été récemment exploité comme carrière de pierres; cependant, le pillage n'aura pu détruire le niveau en place que par endroit, laissant à l'archéologie la perspective d'une fouille fructueuse.

Nous avons signalé plus haut la rareté des chutes de pluie. La pénurie d'eau a impliqué un système adapté d'adduction pour recueillir les maigres précipitations. Sur la crête sud, à la limite des maisons, un beau *birkéh* (Pl. X, 2-3) (17x8,5x5,5m) enduit au plâtre et muni d'un escalier d'accès, et que l'on a tout lieu de supposer ancien, accuse une contenance d'environ 700 m³. Sur le flanc nord, tout à fait en contrebas, très proche du wadi, nous avons repéré trois citernes, dont l'une, en partie refaite, et encore utilisée en 1925 selon R. Savignac, pouvait atteindre 800 m³. L'absence de source en cet endroit avait contraint les habitants de la ville ancienne à récupérer dans ces citernes et le *birkéh* la plus grande quantité possible des eaux de pluie. Un examen attentif a permis de repérer une adduction ingénieuse en deux aqueducs qui, ceinturant le plateau, draine l'eau depuis plusieurs centaines de mètres à l'est jusqu'aux abords de la voie romaine. L'aqueduc sud (Pl. X) alimentait le *birkéh,* tandis que l'aqueduc nord aboutissait aux grandes citernes[9].

Le cimetière qui, pour le moment, suscite l'intérêt pour Samra, occupe largement la partie moyenne du plateau, jouxtant la ville antique. A nouveau la construction de grands parcs à moutons par les bédouins a transformé l'aspect du cimetière que seul R. Savignac avait décrit (Pl. XI, 3). Il est malheureusement impossible aujourd'hui d'en définir même approximativement les limites exactes : les traces d'un enclos du cimetière esquissé par Savignac ont disparu, et la totalité des pierres funéraires ont été assemblées par les bédouins dans la construction des parcs[10]. On ne peut plus observer quels furent les critères de Savignac pour partager le

9. Nous avons observé que les bédouins du lieu ont réparé ou imité ce système d'adduction d'eau. Les canaux destinés à recueillir les eaux de pluie s'étagent sur les pentes selon les courbes de niveau. Toute l'eau tombée est ainsi recueillie. Cf. pl. XI,2 Fig. 2.

10. Ces parcs à moutons, Cf. Pl. XI,3 Fig. 3, en pierres sèches, contiennent la presque totalité des pierres funéraires (quelques-unes sont prises dans les murs des maisons). Un examen superficiel des murs des parcs nous a permis de cataloguer les 110 pierres gravées de croix, dont 20 portent également une inscription. C'est dire qu'une recherche méthodique comprenant un démontage systématique des murs fournirait un catalogue précieux Nous espérons beaucoup que, dans un avenir proche, ce travail pourra être mené sous la protection ferme du service des Antiquités.

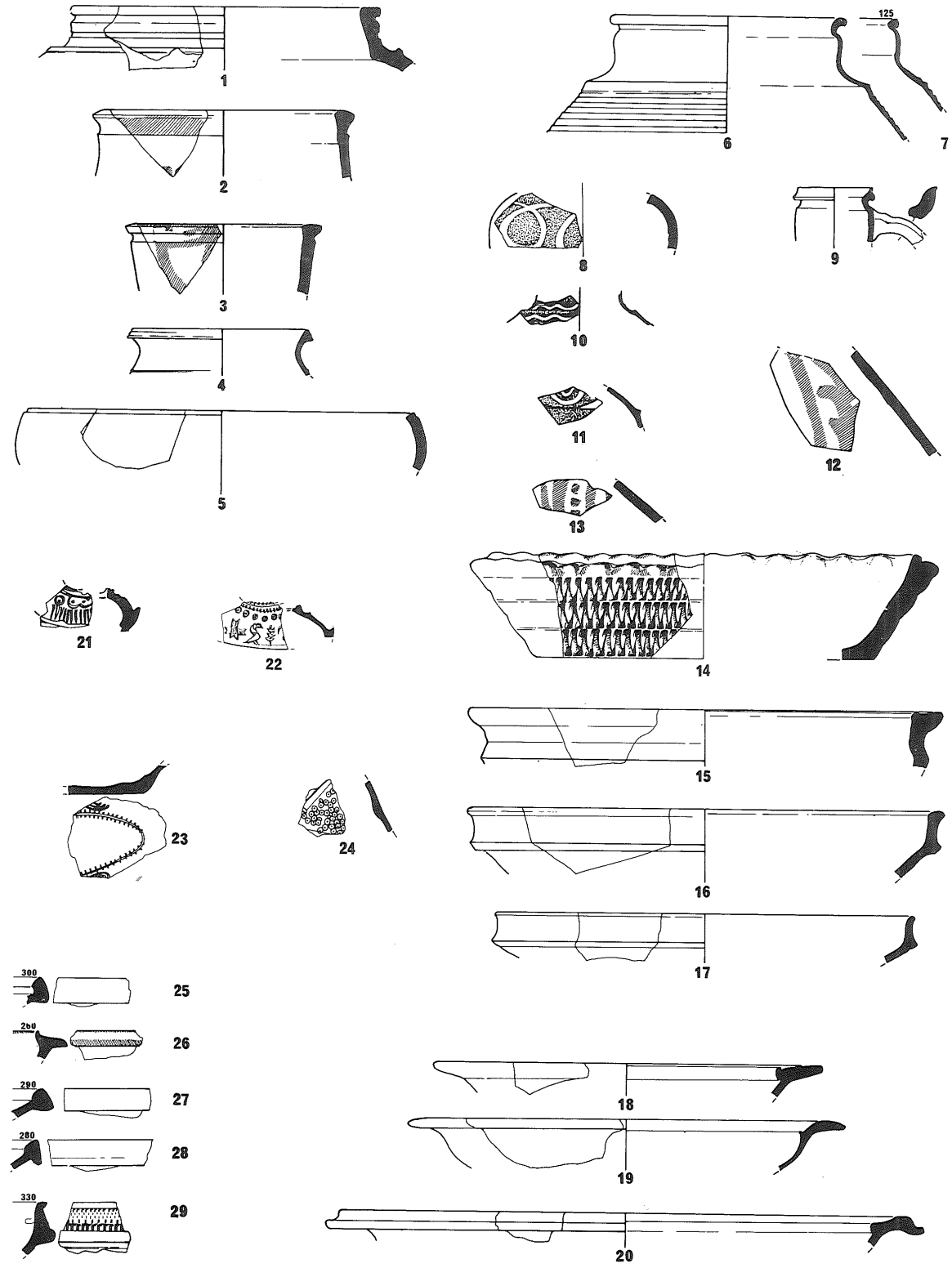


Fig. 2: Samra: Echantillonnage de la céramique de surface.

cimetière en deux quartiers, l'un gréco-arabe, l'autre gréco-syrien. Pourtant, nous devons reconnaître que les inscriptions grecques ont été trouvées dans la partie du cimetière située aux confins de la cité antique; leur petit nombre cependant ne permet pas d'en tirer de plus amples conclusions. Ce qui reste à l'emplacement du cimetière présumé sont de nombreux alvéoles pratiquement orientés est-ouest et de la taille d'un homme**(Pl. XI,3)**A n'en pas douter, nous sommes à l'emplacement du cimetière, mais on explique mal un procédé d'inhumation qui laisserait un creux à l'endroit de la tombe. Dans la plupart des cas, on observe plutôt le contraire. Les creux correspondent au pillage constaté par R. Savignac.

Note sur la Ceramique

Nous avons récolté environ deux centaines de tessons qui abondent à la surface de la ruine de Samra, et parmi lesquels nous avons sélectionné ceux que nous publions ici. Ces échantillons représentent les types caractéristiques; le résultat ne prétend pas être exhaustif **(Fig.2)**.

La poterie la mieux attestée est la céramique rouge fine, bien cuite (types n° 8, 10, 11) décorée de lignes blanches en motifs divers et celle à engobe beige verdâtre, avec décor de lignes et de points à la peinture rouge (n° 13). Notons l'abondance des bassins (type 14) en céramique noire, de profil et de taille variés, façonnés à la main ou tournés, et qui présentent tous la particularité d'être décorés à la roulette ou au peigne. Les fragments des types 6 et 7 sont d'une jarre à provision de fabrication très soignée; ils abondent dans un déblai ancien, situé au nord-ouest et qu'a coupé la tranchée du chemin de fer. Ce matériel homogène semble dater l'apogée, le déclin, puis l'abandon de Samra (VIème-VIIème s.): il semble tout juste antérieur à la période omeyade.

Pour la période qui précède, nous présentons quelques échantillons de "Late Roman Ware" qui attestent une occupation après 450 (types 25 et 29) et au VIème s. (types 26 et 28). On peut en déduire que Samra était établi au Vème s. Rien n'indique pour le moment qu'elle existait avant; mais dans l'état de nos connaissances, on ne peut pas affirmer qu'elle n'existait pas.

De nombreux tessons mamelouks, non tournés, à décor peint en rouge ou en rouge et blanc, montrent que le site fut réoccupé pendant le XIVème s.

1. Fragment de grand vase fermé; col droit mouluré; relief sur l'épaule. Diamètre de l'ouverture: 160 mm. Pâte orangé clair; dégraissant: noir, fin, abondant; quelques grains moyens de craie.

2. Frag. de grand vase fermé (?); col droit mouluré sous une lévre légèrement débordante; diam. de l'ouverture: 130 mm. Pâte orangé clair épurée à engobe gris verdâtre; dégraissant: abondant, noir, fin. Décor de peinture bistre: bandeau sous la lèvre et amorce de décor ondulé à mi-hauteur du col.

3. Frag. de grand vase fermé (?); col droit; lèvre plate; (attache d'anse à la lèvre?); diam. de l'ouverture: 90 mm. Pâte à engobe gris verdâtre; dégraissant: noir, fin, abondant. Décor de peinture rouge sur la lèvre et à l'extérieur du col.

4. Frag. de lèvre de vase fermé: cruche? La pâte, la lèvre triangulaire, et l'épaisseur de la paroi rappellent la marmite byzantine; mais le diam. ne convient pas: une

légère déformation de l'ouverture indiquerait un col de type trifolié. Pâte bien cuite; dégraissant: abondant, blanc, fin; présence de mica très fin. Diam. de l'ouverture: 90 mm.

5. Bord mouluré de grand bol sans lèvre. Diam.: 225 mm. Pâte orangé à engobe rouge mat qui rappelle la terra sigillata; imitation locale ? Dégraissant : noir et blanc, fin, assez abondant; présence de mica.

6. Col et épaule de jarre à provision ; lèvre débordante, col galbé, épaule carénée sous le col; l'amorce de la panse est côtelée. Pâte gris rouge; intérieur gris; dégraissant: noir, fin, abondant; nombreux grains de craie moyens et gros. Pâte fine et bien cuite rappelant celle des marmites. Diam. de l'ouverture: 155 mm.

7. Même type que 6. Profil cependant moins marqué. Pâte très épurée, rouge brique, bien cuite, à intérieur gris; dégraissant : très fin, noir; rares grains de craie; présence de mica. Diam. de l'ouverture : 125 mm. Dans le même esprit, cf. R. W. Hamilton, "Excavations against the north wall of Jerusalem, 1937-38", *QDAP* X (1944) p. 12, fig. 7,3.

8. Epaule de vase fermé globulaire (cruche?). Diam. : 110 mm. Pâte rouge foncé, fine; dégraissant: fin, blanc, abondant; rares gros grains de craie. Engobe rouge foncé. Décor de lignes blanches en boucles.

9. Col de cruche avec amorce d'une anse plate légèrement concave. Pâte à marmite (cf. n° 4); petite lèvre triangulaire des marmites également. Diam. de l'ouverture 40mm. Pâte orangé-rouge; dégraissant: noir et blanc, fin, abondant; rares gros grains de craie. Cf. Hamilton, art. cit. , p. 32, fig. 16.5.

10. Epaule moulurée de vase fermé. Pâte à marmite rouge, bien cuite; intérieur gris; couverte bistre; dégraissant: noir, fin, abondant; rares grains blancs; présence de mica. Décor de lignes blanches ondulées.

11. Epaule de vase fermé. L'épaule est marquée par un saillant. Pâte orangé rouge; dégraissant: fin, noir, très abondant; rares gros grains de craie; engobe bistre. Décor de lignes blanches en cercles plus ou moins concentriques.

12. Epaule de grand vase (jarre ?). Pâte grise, dure, bien cuite; dégraissant noir, fin, abondant; présence de mica. Décor peint en bistre: lignes (brisées ?) et motifs floraux.

13. Epaule de grand vase fermé (jarre ?). Pâte tendre, beige clair; dérgaissant: noir, fin, abondant. Décor rouge foncé de lignes courbes et de points.

14. Frag. de bassin. Forme complète. Diam. de l'ouverture: 240 mm; probablement en "grès"; façonné à la main: pas de trace évidente de tournage, la panse est montée en 2 colombins; l'intérieur est mal fini (trace des doigts). Pâte très épurée ; dégraissant: blanc, fin, abondant; rares gros grains de craie; présence de mica. Décor sur le bord de festons en relief obtenus en pinçant symétriquement l'épaisseur du bord. Décor sur la panse, en relief : 3 registres d'une même roulette.

15. Bord de grand vase caréné sous une lèvre horizontale débordante. Diam. de l'ouver-

ture: 240 mm. Engobe de brun clair à brun foncé sur fine pâte gris beige; dégraissant: blanc et noir, fin, abondant; grains moyens noirs rares.

16. Frag. de grand bol caréné sous la lèvre. Diam. : 260 mm. Pâte fine, brun rouge, à coeur gris clair; dégraissant: noir, fin, et blanc plus gros.

17. Frag. de bol caréné sous la lèvre; le dessous de la carène est souligné par une rainure. Diam.: 240 mm. Pâte très cuite, gris noir dont l'extérieur seul a rougi à la cuisson (rouge brique); dégraissant: abondants petits grains blancs qui ont fait s'écailler la surface à la cuisson. Cf. Hamilton, art. cit. p. 14, fig. 9,8 et J.W. et G.M. Crowfoot — K.M. Kenyon, *Samaria -Sebaste* III, London, 1957, p. 337, fig. 81,5.

18. Frag. de lèvre de vase ouvert (assiette profonde ?). Lèvre plate presque horizontale de 25 mm formant marli; caractérisée par un bourrelet intérieur replié au cours du tournage. Diam. de l'ouverture: 180 mm. Pâte brun rouge; dégraissant: noir, fin, très abondant; gros grains de craie rares.

19. Frag. de bord de coupe à marli convexe large de 28 mm souligné à l'intérieur, au changement de courbe par un bourrelet. Pâte: épurée, mal cuite écaillée poreuse, de couleur brun rouge, au coeur gris ; dégraissant: noir et blanc, fin, abondant; rares gros grains de craie. Remarque: l'extérieur du vase comporte des traces évidentes de feu.
Cf. Hamilton, art. cit. p. 9 fig. 6,11 ; p. 14 fig. 9, 3.6.7.

20. Frag. de lèvre de grand vase ouvert; le marli de 32 mm de largeur est caractérisé par un repli extérieur vers le bas. Diam.: 280 mm. Pâte rouge brique à coeur gris foncé; surface gris clair; dégraissant: noir et blanc, fin, très abondant.

21. Frag. de partie supérieure de lampe moulée. Pâte épurée bien cuite, noire; dégraissant: blanc, fin, peu abondant. Décor en relief.

22. Frag. de partie supérieure de lampe moulée. Pâte noire bien cuite; dégraissant: blanc, fin, abondant. Décor en relief: guirlande de petits cercles, une croix grecque, un oiseau, une palme.

23. Frag. de base de lampe moulée. Pâte brun clair, très fine; dégraissant: blanc, fin, abondant; présence de mica. Décor : Ligne barbelée en relief à la jointure de la base et de la paroi; sur la partie médiane, amorce de cercles concentriques.

24. Frag. d'épaule de vase fermé. Pâte beige; dégraissant: noir, très fin, très abondant; quelques grains blancs; traces de mica. Engobe beige verdâtre clair. Décor triangulaire incisé avant cuisson contenant un fouillis de petits cercles pointés faits au poinçon. Seul tesson probablement omeyade.

25. Frag. de bord de coupe (Roman Red Ware). Bord épaissi vers l'extérieur, de forme triangulaire. A l'intérieur, la base du bord est soulignée per une gorge. Diam. : 300 mm ? Pâte orangé clair. Dégraissant: noir et blanc, très fin, abondant. Couverte brillante.

Cf. F. O. Waagé, *Antioch on-the-Orontes. IV. Part one. Ceramics and Islamics Coins*, Princeton-London-The Hague, 1948, pl. XI n° 937.

26. Frag. de bord de coupe (Roman Red Ware) à lèvre horizontale vers l'extérieur, de 18 mm de large avec saillant vertical vers l'intérieur. Diam.: 260 mm. Pâte très épurée, orangée; dégraissant: noir, fin, très abondant; blanc, fin, abondant; gros grains blancs et gris rares. Trace de décor à peinture rouge foncé par bande sur la crête et sur le rebord de la lèvre.

27. Frag. de bord de coupe à lèvre ourlée. Diam.: 290 mm? Pâte fine orangé clair, bien cuite, épurée; dégraissant: noir et blanc, fin, peu abondant. Engobe brun rouge.

    Cf. Waagé, op. cit., pl. VIII n° 802 u; Crowfoot-Kenyon, op. cit. p. 359 fig. 84,4.

28. Frag. de bord de coupe à lèvre triangulaire; une gorge limite, à l'intérieur, comme à l'extérieur, la jonction avec la panse Diam.: 280 mm ? Pâte orangé clair, bien cuite, épurée. Dégraissant: noir et blanc, très fin, très abondant.

29. Frag. de bord de coupe. Le sommet du bord est plat, légèrement déversé vers l'extérieur; la partie basse du bord à l'extérieur forme un bourrelet épais; le méplat entre la lèvre et le bourrelet est décoré à la roulette. L'extérieur du vase a bruni à la cuisson. Pâte brun rouge fine bien cuite; dégraissant: blanc, fin, abondant; présence de mica.
    Cf. Waagé, op. cit. pl. XII n° 941 f; J. W. Crowfoot — G.M. Fitzgerald, " Excavations in the Tyropoeon Valley, Jerusalem 1927", *PEF Annual* V (1929), pl. XIV,3 avec une différence de languette.

Catalogue des pierres funeraires et du materiel de pierre

Tous les objets de pierre relevés en février et en avril 1978 ont été répertoriés et ont reçu un numéro, pris à la suite de la numérotation de R. Savignac (*RB* 1925), qui avait répertorié 39 objets. Les pierres comportant une inscription (grecque ou syro-palestinienne) ont été déposées au Département des Antiquités Jordanien. Relevés, estampages et clichés sont conservés à l'Ecole Biblique de Jérusalem.

Le catalogue ci-après est la description des planches XII, XIII, XIV, XV. Les croix sont décrites au moyen des sigles définis dans la typologie exposée ci-dessous.

Les objets dont le numéro d'inventaire est écrit entre parenthèses sont des pierres funéraires qui comportent seulement une inscription grecque; on trouvera leur reproduction au paragraphe des inscriptions grecques.

1 à 39 : cf. *RB* XXIV, 1925, pp. 124-131, pl. II-III.

40. Stèle funéraire. Gros galet de basalte non taillé de forme rectangulaire. Croix de type Fc de dimensions 18 x 18 cm surmontée d'une inscription s.p. D W Y D.

41. Stèle fun. Basalte. Forme oblongue. Croix de type Pb. 15 x 20 cm avec inscriptions s.p. : au-dessus: Q Y U M; à gauche, de haut en bas: S W Ṭ U.

42. Stèle fun. Basalte. Forme ronde. Croix type Jb 17 x 18 cm surmontée d'une inscription s.p. S Ṭ Ph N O N.

43. Stèle fun. Basalte. Forme ronde, à base renflée. Croix type Fb cantonée d'une in-

scription grecque S T E Ph A N O S. Trouvée dans les ruines et non pas sur l'emplacement du cimetière.

(44) Stèle fun. Calcaire. Forme carrée. Inscr. grecque M A S Ê Kh. Trouvée non loin du *birkéh*.

45. Stèle fun. Basalte. Forme oblongue avec tête renflée. Croix type Rb cantonnée de 2 lettres grecques P et Ph., de dimensions 14 x 14 cm.

46. Stèle fun. Basalte. Forme rectangulaire aux coins arrondis, avec une bosse. Croix type Pg cantonnée de 2 lettres grecques A et Ô et de dimensions 18 x 22 cm.

47. Stèle fun. Basalte. Forme ovoïde. Croix type Ab de 8 x 11 cm.

48. Stèle fun. Basalte. Forme trapézoïdale. Croix type Ac de 5 x 5 cm.

49. Stèle fun. Basalte. Forme oblongue. Croix type Ac de 9 x 9 cm.

50. Stèle fun. Basalte. Forme oblongue. Croix type Ac de 6 x 6 cm.

51. Stèle fun. Calcaire. Forme oblongue. Croix type Ac de 7 x 7 cm.

52. Stèle fun. Basalte. Forme d'obus. Croix type Ca de 10 x 10 cm.

53. Stèle fun. Basalte. Forme rectangulaire tordue. Croix type Cc de 5 x 10 cm.

54. Stèle fun. Basalte. Forme rect. Croix type Fj de 18 x 21 cm.

55. Stèle fun. Basalte. Forme ronde. Croix type Mc sur fond excisé de 12 x 17 cm.

56. Stèle fun. Basalte. Forme ovoïde. Croix type Ff de 10 x 14 cm.

57. Stèle fun. Basalte. Forme oblongue. Croix type Fe de 11 x 12 cm.

58. Stèle fun. Basatle. Forme oblongue. Croix type Ff de 11 x 15 cm.

59. Stèle fun. Calcaire. Forme rectangulaire. Croix type Fh de 10 x 10 cm.

60. Stèle fun. Basalte. Forme rectangulaire tordue. Croix type Ff de 12 x 15 cm.

61. Stèle fun. Basalte. Forme ronde. Croix type Mc de 9 x 11 cm.

62. Stèle fun. Basalte. Forme carrée (?). Croix type Fe (?) de 14 x 14 cm ? (la pierre a été laissée dans le mur, où elle a été photographiée).

63. Stèle fun. Basalte. Forme ovoïde. Croix type Ff de 10 x 10 cm.

64. Stèle fun. Calcaire. Forme oblongue. Croix type D de 12 x 16 cm.

65. Stèle fun. Calcaire. Forme rectangulaire. Croix type Na de 10 x 12 cm.

66. Stèle fun. Basalte. Forme oblongue. Croix type Pf de 12 x 15 cm.

67. Stèle fun. Basalte. Forme ovoïde. Croix Type Ma de 11 x 13 cm.

68. Stèle fun. Basalte. Forme ronde (?). Croix type Ma de 12 x 12 cm ? (pierre prise dans le mur).

69. Stèle fun. Basalte. Forme oblongue. Croix type Jc de 10 x 10 cm.

70. Stèle fun. Basalte. Forme oblongue très longue. Croix type Qa de 13 x 24 cm.

71. Stèle fun. Basalte. Forme oblongue dont c'est le pied qui est renflé. Croix type Rb de 13 x 18 cm.

72. Stèle fun. Basalte. Forme rectangulaire, équarrie. Surmontant une palme (20 x 13 cm), croix type Aa (22 x 30 cm) cantonnée d'une inscription grecque K R A L I S O S disposée de manière à faire un anagramme avec les 2 lettres I et C (abréviation de I E S O U S). Remploi dans le mur d'une maison construite sur la ruine.

(73). Stèle fun. Basalte. Forme rectangulaire légèrement arrondie au sommet. Inscr. grecque en 5 lignes: Ph O S A / I A Th E / S I Kh / M A L / L O Ù. Remploi dans le mur d'une maison à l'est des ruines.

74. Stèle fun. Basalte. Forme rectangulaire. Croix type Fh de 12 x 12 cm.

75. Stèle fun. Basalte. Forme ovale. Croix type B de 13 x 19 cm.

76. Stèle fun. Basalte. Forme oblongue. Croix type Jc de 11 x 11 cm.

77. Stèle fun. Basalte. Forme oblongue. Croix type Fc 15 x 15 cm.

78. Stèle fun. Basalte. Forme oblongue. Croix type B de 8 x 15 cm.

79. Stèle fun. Basalte. Forme oblongue. Croix type Fe de 9 x 14 cm.

80. Stèle fun. Basalte. Forme ovoïde. Croix type Rc de 10 x 10 et 8 x 8 cm.

81. Stèle fun. Basalte. Forme rectangulaire. Equarrie. Croix type Qc de 10 x 18 cm.

82. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 12 x 21 cm.

83. Stèle fun. Basalte. Forme ovoïde. Croix Fe de 10 x 12 cm.

84. Linteau remployé comme tel au-dessus d'une porte d'une maison au nord-est des ruines. Calcaire. Dimensions : 40 x 120 cm. Une croix centrale (20 x 25 cm) de type Fc est gravée au centre; les ancres de ses bras horizontaux sont tangentes à deux tambours saillants (de diamètre 18 cm) qui l'encadrent de façon symétrique et qui portent chacun une croix type Ab; enfin, symétriques elles aussi, 2 palmes (10 x 34 cm) encadrent le tout.

85. Stèle fun. Basalte. Forme oblongue. Croix de type Sa de 10 x 15 cm. Dans sa partie supérieure, une inscription s.p.: Y U Ḥ N S. Gravure nette.

86. Stèle fun. Basalte. Forme ? (elle est cassée dans sa partie supérieure). Croix type Fc de 16 x 16 cm (?); au-dessous : une inscription s.p. S Q W T. Gravure nette.

87. Stèle fun. Basalte. Forme ronde très bossue. Croix type Jb de 9 x 13 cm surmontée d'une inscription s.p. Z H R Q L Y. Gravure nette.

88. Stèle fun. Basalte. Forme demi-cylindrique. Croix type Ea de 8 x 11 cm. Au-dessous : une inscription s.p. Q Y M U. Gravure régulière sur surface polie.

89. Stèle funéraire. Basalte. Forme carrée au sommet bien arrondi. Croix type Fe de 9 x 10 cm. Au-dessus et à droite : inscription s.p. Sh B T / K Ḥ D. Gravure nette sur surface égale.

90. Stèle fun. Basalte. Forme oblongue avec une grosse bosse. Croix type Eb de 13 x 18 cm, surmontée d'une inscription s.p. ' U B Y D U. Fine gravure surface très lisse.

91. Stèle fun. Basalte. Forme de poire. Croix type Fk de 20 x 20 cm. Dans le quart in-

férieur gauche, une inscription s.p. U ' Q Ṣ. Gravure nette sur surface polie.

92. Stèle fun. Basalte. Forme globuleuse à base étroite. Croix type Sa de 10 x 23 cm. Surmontée d'une inscription s.p. M Q Y.

93. Stèle fun. Basalte. Forme ovale. Croix type Fa de 15 x 20 cm. Surmontée d'une inscription s.p. ZUBYDU. Le coin droit, ébréché, a amputé légèrement l'inscription. Gravure nette sur surface encore rugueuse.

94. Stèle fun. Basalte. Forme rectangulaire équarrie. Croix type Fc de 18 x 22 cm. surmontée d'une inscription s.p. ' B D Y U N. Gravure fine et nette sur une surface tourmentée.

95. Stèle fun. Basalte. Forme oblongue. Croix type Fa de 20 x 23 cm. Surmontée d'une inscription gravée superficiellement et très effacée : M R N ' ou M K N '. (invisible sur la photo).

96. Stèle fun. Basalte. Forme rectangulaire. Croix type G de 12 x 15 cm.

97. Stèle fun. Calcaire. Forme carrée. Croix type Fc de 15 x 15 cm.

98. Stèle fun. Basalte. Forme oblongue très tordue. Croix type Fe de 8 x 10 cm.

99. Stèle fun. Basalte. Forme oblongue. Croix type Fk de 15 x 22 cm.

100. Stèle fun. Basalte. Forme oblongue. Croix type Fe de 8 x 10 cm.

101. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 13 x 13 cm.

102. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 13 x 13 cm.

103. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 15 x 15 cm.

104. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 11 x 14 cm.

105. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 15 x 15 cm.

106. Stèle fun. Basalte. Forme ovoïde. Croix type Fc de 12 x 15 cm. Gravure très soignée sur surface lisse.

107. Stèle fun. Basalte. Forme oblongue. Croix type Fc de 15 x 17 cm.

108. Stèle fun. Basalte. Forme oblongue. Croix type Sd de 13 x 13 cm.

109. Stèle fun. Basalte. Forme ronde bossue. Croix type Fc de 15 x 17 cm.

110. Stèle fun. Basalte. Forme oblongue. Croix type Fh de 7 x 10 cm.

111. Stèle fun. Basalte. Forme ovale. Croix type Jb de 13 x 16 cm.

112. Stèle fun. Basalte. Forme ovale bossue. Croix type Md de 15 x 16 cm.

113. Stèle fun. Basalte. Forme oblongue. Croix type Mb de 10 x 15 cm.

114. Stèle fun. Basalte. Forme ovale bossue. Croix type H de 20 x 24 cm. Gravure très soignée.

115. Stèle fun. Basalte. Forme oblongue très évasée et de base très étroite. Croix type Sd. 15 x 17 cm.

116. Stèle fun. Basalte. Forme ovoïde. Croix type Sd de 12 x 15 cm.

117. Stèle fun. Basalte. Forme oblongue très allongée. Croix type Sc de 12 x 17 cm.

118. Stèle fun. Basalte. Forme semi-circulaire

avec une petite base. Croix type Sa de 12 x 12 cm. Gravure fine et soignée.

119. Stèle fun. Basalte. Forme de triangle posé sur la pointe. Croix type Sa de 12 x 13 cm.

120. Stèle fun. Basalte. Forme rectangulaire. Croix type Sb de 12 x 17 cm.

121. Stèle fun. Basalte. Forme ovoïde. Croix type Ra, 15 x 15 cm.

122. Stèle fun. Basalte. Forme ovale bossue. Croix type Ca de 6 x 6 cm.

123. Stèle fun. Basalte. Forme oblongue. Croix type Cb de 11 x 13 cm.

124. Stèle fun. Basalte. Forme carrée, mais à base pointue. Croix type Fe de 8 x 10 cm.

125. Stèle fun. Basalte. Forme oblongue. Croix type Nc de 15 x 15 cm.

126. Stèle fun. Basalte. Forme trapézoïdale. Croix type Nc de 16 x 16 cm.

127. Stèle fun. Basalte. Forme carrée sur base trapézoïdale. Croix type Ra de 14 x 20 cm.

128. Stèle fun. Basalte. Forme rectangle gauchi. Croix type Nb de 19 x 19 cm. Cravure épaisse au burin par traits.

129. Stèle fun. Basalte. Forme ovoïde. Croix type Pd de 15 x 15 cm.

130. Stèle fun. Basalte. Forme rectangle bossu. Croix type Na de 18 x 18 cm.

131. Stèle fun. Calcaire. Forme oblongue. Croix type Ff de 11 x 11 cm.

132. Stèle fun. Basalte. Forme oblongue. Croix type K de 15 x 20 cm.

133. Stèle fun. Basalte. Forme (? cassée). Croix type Pc de 17 x 17 cm (?).

134. Stèle fun. Basalte. Forme trapézoïdale à tête arrondie. Croix type Pa, de 10 x 10 cm.

135. Stèle fun. Basalte. Forme oblongue. Croix type Fg de 13 x 15 cm.

136. Stèle fun. Basalte. Forme trapézoïdale à très grande base. Croix type Ab, de 7 x 7.

137. Stèle fun. Basalte. Forme oblongue. Croix type Jb de 14 x 15 cm. surmontée d'une inscription s.p. : Q U B N. (= *RB* 1925 n° 28).

138. Stèle fun. Basalte. Forme rectangulaire à base arrondie. Croix type Ac de 10 x 10 cm.

139. Stèle fun. Basalte. Forme pain de sucre. Croix type Ec, de 16 x 20 cm.

140. Stèle fun. Basalte. Forme langue de boeuf. Croix type Pd de 15 x 17 cm.

141. Stèle fun. Basalte. Forme rectangulaire, de dimensions 21 x 60 cm. Inscription grecque de 5 lignes : Th E M / O S B / A D A / R O U / E T XCVIII).

142. Stèle fun. Basalte. Forme oblongue. Croix type Ac de 9 x 9; gravure épaisse par traits griffés.

143. Stèle fun. Basalte. Forme ovoïde à base mal dégrossie. Croix type G de 10 x 13 cm.

144. Stèle fun. Basalte. Forme d'un rectangle cassé (?). Croix type Fe de 6 x 10 cm.

145. Stèle fun. Basalte. Forme carrée bossue sur base pointue. Croix type Fd de 16 x 18 cm.

146. Stèle fun. Basalte. Forme ovoïde. Croix type Fe 9 x 13 cm.

147. Stèle fun. Basalte. Forme rectangulaire. Croix type Ja de 15 x 17 cm.

148. Stèle fun. Basalte. Forme ronde sur une

base très pointue. Croix type L, de 11 x 15 cm.

149. Stèle fun. Basalte. Forme oblongue sur pivot allongé. Croix type Fc de 10 x 15 cm.

150. Fragment de linteau. Calcaire. Guirlande soulignant un motif folié cruciforme inscrit dans un carré. Remploi dans un mur de maison à l'est des ruines. Hauteur du linteau 35 cm. Portée de la guirlande 50 cm.

151. Stèle fun. (?). Basalte. Forme rectangulaire équarrie. Croix type Qb de 15 x 25 cm.

152. Fragment de linteau en calcaire très friable. Trois croix de type Na de 16 x 16 cm.

153. Pierre rectangulaire équarrie. Calcaire. En saillie, un disque de 15 cm de diamètre et épais de 1,5 cm. incisé en damier.

154. Linteau de dimensions 110 x 30 cm. Basalte. Au centre croix de type Fc de 15 x 15 cm.

155. Non identifié : forme de chapiteau à cornes; entablement grossièrement évidé. Calcaire.

156. Fût de colonne. Basalte. Dimensions 106 x 27 cm. Remploi dans un mur de maison bâtie sur les ruines.

157. Base de colonne. Basalte. Hauteur 65 cm.

La typologie des croix gravees

Le nombre relativement important de pierres gravées d'une croix (qu'il s'agisse de stèles funéraires ou d'un autre matériel, qu'elles soient accompagnées ou non d'une inscription) nous a permis de proposer un classement typologique de ces croix, indices des coutumes funéraires chrétiennes de cette communauté syro-palestinienne de Ḥirbet es-Samra. Nous livrons cette typologie dans les fac-similés (à l'échelle 1/5) des Pl. XVI-XX. Nous distinguons 17 classes (désignées par une lettre majuscule), elles-mêmes divisées en plusieurs types (désignés par une lettre minuscule). Nous fournissons au moins *un* représentant de chaque type, choisi en raison de sa forme "exemplaire". Dans la liste ci-dessous qui accompagne et commente notre essai de classification des dessins, nous essayons de nommer ce qui, à notre avis, caractérise ces types. Il est clair que nous considérons cette typologie comme *un essai* vraisemblablement critiquable, tant dans son principe même que dans le vocabulaire utilisé : nous serions heureux d'en discuter. Il est en effet remarquable qu'en dehors des grandes classes depuis longtemps admises (croix grecque, croix latine, croix ancrée, ansée, potencée, . . .), de telles typologies n'ont, à notre connaissance, pas été tentées de façon systématique. Un ouvrage tout à fait récent[11] analyse divers types de croix rencontrées surtout en Palestine et cherche la signification symbolique de leurs différents composants graphiques. L'étude étant basée sur la recherche des symboles philosophico-théologiques qui peuvent être représentés dans ces croix, il en résulte non pas véritablement un classement, mais un commentaire des croix et de leur ornementation. Cet effort n'est sans doute pas à négliger. Nous nous sommes efforcés plutôt de proposer une typologie fondée sur

11 B. Bagatti - E. Testa, *Il Golgota e la Croce*, Jérusalem, 1978, parte II pp. 73-131; 146-154 et tavv. 9-16 (qui fournissent 160 dessins). Un ouvrage ancien, J. Adeline, *Lexique des termes d'art*, Paris, (sans date), propose des définitions pour les divers types de croix (pp. 132-134); nous en avons retenu quelques termes issus des techniques artisanales; il est par ailleurs trop tributaire de l'héraldique.

les traits distinctits des formes graphiques. R. Canova[12] avait déjà publié un inventaire des formes des croix de la région de Kérak. Elle ne propose pas formellement une typologie, bien que sa planche suppose déjà un certain classement (croix grecques et latines simples, potencées, croix dont "le braccia sono ad extremità bifide o palmate", etc .... p. CXXVI) que nous retrouvons en grande partie.

Il serait intéressant qu'un jour une étude complète soit faite sur les croix et motifs chrétiens de Syrie, Palestine et Arabie ! . . . Il y a en effet des constantes remarquables et l'on verra que bien des croix trouvées à Ḫ. es-Samra sont connues dans la région de Kérak: le matériau (calcaire et non basalte), la culture (grecque en territoire moabite) y sont différents de ceux de Samra, mais les régions ne sont pas si éloignées !

Il en est de même de la forme des stèles inscrites en grec et ne portant pas de croix (cippes rectangulaires au sommet en arc de cercle, que l'on trouve assez comparables à Samra et dans la région de Kérak : cf. R. Canova, par exemple n° 8 pp. 36-37, fig. 33; n° 20 p. 47, fig. 44; n° 88 p. 99, fig. 108; etc. . .).

Il est également intéressant de noter que des types de croix qui nous occupent sont connus aussi ailleurs. Parmi les timbres de la poterie dite "Romaine tardive," on notera les types que nous codons Ec, Fe, Fg, L, Qc, Sc[13].

Notons enfin, accompagnant les croix, l'usage de la palme "che su una stele funeraria é simbolo eminentemente cristiano" (R. Canova, op. cit., p. CXXV). On trouve ce symbole fréquemment dans les graffites des pèlerins du Sinaï[14]; les symboles voyagent; il ne serait pas inintéressant d'examiner, grâce à une vaste typologie encore à faire, comment ils se répartissent de la Syrie à l'Egypte.

Les n° sont ceux du catalogue. Les n° en italique sont ceux qui ont été retenus comme exemples-types (Pl. XVI, XVII, XVIII, XIX, XX). Nous intégrons dans cette typologie les croix des pierres publiées par R. Savignac. Comme nous l'avons dit plus haut, les types sont classés selon leurs formes et leurs traits distinctifs; mais nous tenons compte également des proportions (rapport de l'épaisseur des traits à la longueur) : c'est ce que nous désignons par "gravure mince" ou "gravure large".

A CROIX CRECQUES : les bras sont égaux.

Aa accompagnée d'une palme : *72.*

Ab type à gravure mince : *47*, 84, *136.*

Ac type à gravure large : 48, 49, 50, *51*, 138, *142.*

B CROIX LATINES : le pied est plus long que les autres bras : *75*, *78.*

C CROIX GRECQUES POTENCÉES : les bras sont munis d'une potence (trait perpen-

12. R. Canova, *Iscrizioni e Monumenti Protocristiani del Paese di Moab*, *Rome*, 1954, pp. CXXIV-126-CXXVI et Pl. III.

13. J.W. Hayes, *Late Roman Pottery*, London 1972, pp. 348 ss.
Ec: cf. Hayes p. 366, n° 72 h; p. 384, n° 84 h, i, j.
Fe: cf. Hayes p. 384, n° 84 k.
Fg: cf. Hayes p. 364, n° 69 o, p, q; p. 384, n° 84 l, m, n, o.
L : cf. Hayes p. 366, n° 70 r, s; n° 79 p, q, r, s, t.
Qc: cf. Hayes p. 364, n° 61 e; ce modèle, au Rho inversé, n'est donc pas isolé.
Sc: cf. Hayes p. 366, n° 76 n.

14. Cf. A. Negev, *The Inscriptions of Wadi Haggag, Sinai* (Qedem 6), Jérusalem, 1977, p. 62.

diculaire).

Ca à gravure épaisse : *52, 122.*

Cb à gravure mince : *123*

Cc à bras curviligne : 20, *53.*

D CROIX LATINES ANCRÉES : les extrémités des bras sont bifides : 16, *64.*

E CROIX PATTEES : les bras vont en s'évasant.

Ea à gravure large : 22, 24, 34, *88*

Eb à gravure mince : les bras sont longs et effilés ; l'intersection tend vers un point : 23, *90.*

Ec type carré : les bras sont gros et courts par rapport au diamètre de l'intersection : *139.*

Ed type à pied muni d'une languette : Savignac c. .

F CROIX GRECQUES ANCRÉES : les extrémités des bras sont bifides.

Fa type élancé, de grande taille : 37 (?), *93, 95.*

Fb type décoré par une inscription servant de motif : Savignac b, *43.*

Fc type à gravure mince; la taille des ancres est variable : 18, *21,* 25, 26, 29, 36 (?), 39, *40,* 77, 82, 84, 86, 94, 97, 101, 102, 103, 104, 105, 106, 107, 109, 149, 154.

Fd type à pied muni d'une languette: *145.*

Fe type à bras courts : 6, 8, 10, 14 ,15 , 32, 33, 57, 62, 79, 83, 89, *98,* 100, 124, 144, 146.

Ff type à gravure épaisse : 56, 58, 60, 63, 131.

Fg type ramassé à gravure très large ; *135.*

Fh type aux trois bras ancrés : 59, *74,* 110.

Fj type au bras supérieur ancré et aux bras latéraux potencés : *54.*

Fk type à ancre dissymétrique évoquant un motif tournoyant : *91, 99.*

G CROIX À GODRONS : *96, 143.*

H CROIX DONT L'EXTRÉMITÉ DES BRAS PORTE UN MOTIF CHANTOURNÉ : *114.*

J CROIX TRIDENTÉES :

Ja à deux tridents verticaux : *147.*

Jb à quatre tridents: 42, 87, *137* (= 28).

Jc à trois tridents : *69,* 76.

K CROIX À RAYONS : *132.*

L CROIX CANTONNÉES : *148.*

M CROIX ANSÉES (s'agit-il d'un motif anthropoïde : la tête ?) :

Ma ancrée : *67,* 68 (?).

Mb à ancres horizontales : *113.*

Mc ancrée et à anse ouverte : *55, 61.*

Md tridentée : *112.*

N CROIX INSCRITES DANS UN CERCLE :

Na dans un cercle fermé : 38, *65, 130,* 152.

Nb dans un cercle ouvert ménageant un piédestal : *128.*

Nc cercle plus large que la croix : *126. 125.*

P CROIX LOBÉES : (le lobe qui l'entoure rappelle Omega):

Pa croix simple à lobe simple : *134.*

Pb croix ancrée à lobe simple : *41.*

Pc croix ancrée à lobe échancré : *133.*

Pd type à lobe inscrivant la partie supérieure d'une croix ancrée : 9, 12, 129, *140.*

Pe type à lobe inscrivant la partie supérieure d'une croix ansée incluant un cartouche : *13.*

Pf type à lobe inscrivant une croix tridentée : 66.

Pg type à lobe inscrivant une croix ancrée : *46.*

Q CROIX ORNEMENTÉES : (c'est-à-dire sur lesquelles sont ajoutés des motifs autres) :

Qa ornée de triangles : *70.*

Qb croix inscrite et posée sur un cartouche : *151.*

Qc croix crossée : *81.*

Qd croix ornée de *béta* : Savignac a.

R ENSEMBLE DE PLUSIEURS CROIX (ou croix composite) :

Ra "calvaire" (assemblage de 3 croix) : Savignac d, *121, 127.*

Rb croix inscrite (s) dans une croix : *45, 71.*

Rc deux croix juxtaposées : *80.*

S CROIX SUR SUPPORT :

Sa support à degrés (peut symboliser le Golgotha ?) : *85, 92, 118, 119.*

Sb support à pentes marquées : *120.*

Sc sur piédestal (de forme variable) : *17, 19, 35, 117.*

Sd type à ancre inférieure fermée formant piédestal : *108, 115,* 116.

T CROIX INSCRITES DANS UN CARRÉ : (d'après les dessins de *RB* 1925 : c'est pourquoi nous ne donnons pas les fac-similés):

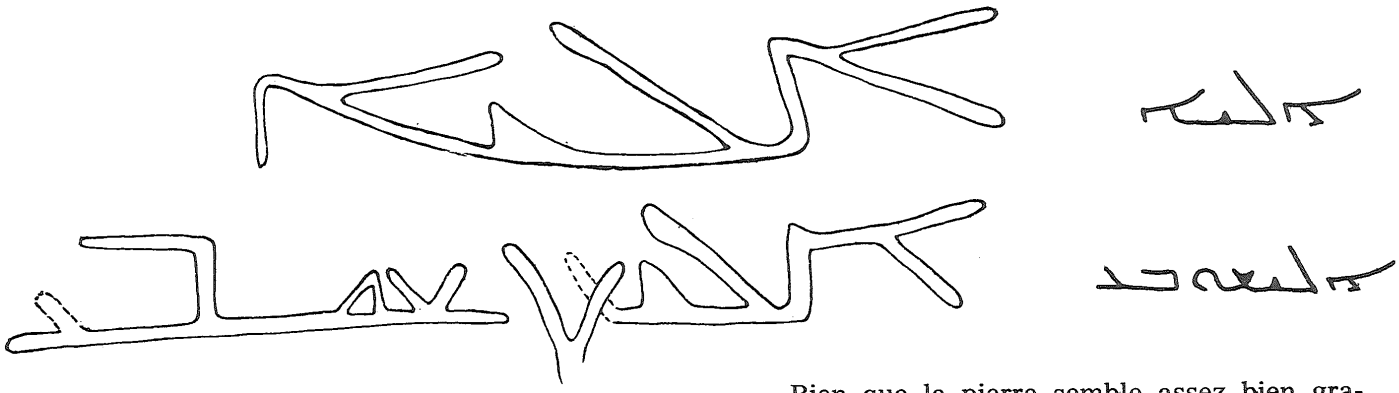
Ta carré fermé : 7

Tb carré ouvert à la base : 11.

Les Inscriptions

Toutes les inscriptions de Samra, que ce soient celles qui ont été publiées par R. Savignac ou celles que nous avons trouvées, qu'elles soient en grec ou en syro-palestinien, sont gravées sur des pierres funéraires. La plupart sont en basalte, deux sont en calcaire (n° 38 et 44). Les pierres inscrites en syro-palestinien (ainsi que celles qui sont simplement gravées d'une croix) sont de forme plutôt oblongue; les pierres inscrites en grec sont de forme quadrangulaire; nous examinerons également ces dernières, car elles révèlent, en transcription, des noms sémitiques qu'il est nécessaire de joindre à la liste onomastique syro-palestinienne. Les inscriptions publiées par R. Savignac sont signalées en référence à l'article cité dans *RB* 1925; pour celles que nous avons trouvées, nous indiquons la date de découverte.

N° 16 (*RB* 1925, p. 124)



l. 1: 'LY' "Elie"

l. 2: 'LYŠUB' "Elisabeth"

Je préfère voir deux noms successifs plutôt que de suppléer par un hypothétique BR (fils de").

Ces deux noms sont très connus.

Le premier n'a encore jamais été trouvé, à ma connaissance, dans des inscriptions araméennes occidentales. Il est très répandu dans l'épigraphie syriaque[15]. Dans le Nouveau Testament, les manuscrits syro-palestiniens connaissent plusieurs formes: 'yly's, 'ylys, 'ly's, correspondant au grec ηλιας (seule forme dans le Nouveau Testament) ou 'yly' et 'ly', formes araméennes. Tous les manuscrits montrent d'ailleurs une grande incohérence orthographique dans l'emploi de ces formes, toutes équivalentes pour eux.

Bien que la pierre semble assez bien gravée, comme le note R. Savignac (p. 124), le second mot est plus difficile à lire. Je retiens la lecture de Savignac, mais en remarquant ceci :

- après le *iudh*, un trait incliné à 45° vers l'avant semble couper l'ancre de la croix; on pourrait y voir la trace d'un *ʿain;* il s'agit plus vraisemblabement d'un accident de la pierre.

  après le *shin*, tout petit par rapport aux autres lettres, je vois un triangle qui, par opposition au *iudh*, ne peut être qu'un *waw*.

  après la liaison du *beth*, la ligne se poursuit, mais très faiblement gravée, au point qu'on pourrait la croire inexistante et conclure donc à un *dolath;* mais je fais confiance à Savignac qui a vu la pierre.

- après ce *beth*, je vois un *ʿain*, faiblement gravé; il se distingue du *iudh* par l'épaisseur.

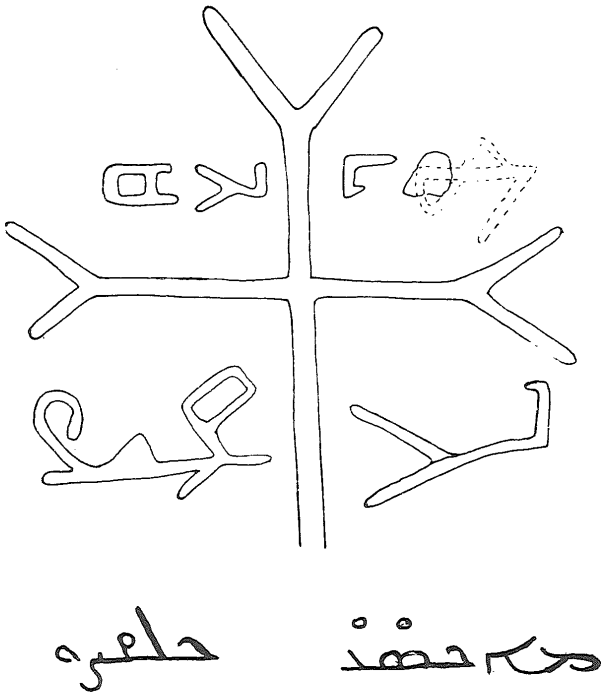
15. Cf. M. Chwolson 1890 d'après J.B. Chabot, "Contribution à l'onomastique syriaque" *JA* 1906-B pp. 286-293, n° 12,1; 16,2; 19,2; 45,1; 48,1; 97,2. Ed. Sachau, "Edessenische Inschriften mitgetheilt und erklärt", *ZDMG* 36 (1882), pp. 142-167 n° 4; 6. Ed. Sachau, "Syrische Inschriften aus Karjetân", *ZDMG* 38 (1884) pp. 543-545, n° C. Ed. Littmann, *Syria* division IV,*Semitic Inscriptions* Section B : *Syriac Inscriptions*, Leyden, 1934, n° 65,21. H. Pognon, *Inscriptions sémitiques de la Syrie, de la Mésopotamie et de la région de Mossoul*, Paris, 1907, n° 52, 3. 9. P. Mouterde, "Une inscription syriaque récemment trouvée en Haute Djéziré", *Ann. Archéol. de Syrie*, 10 (1960), pp. 87-92, 2éme bloc, 1. 8. 13. 27. 28.

En épigraphie syriaque, on trouve des formes variées comparables : 'lyšb'[16] ; 'lyšb'[17] ; 'lšb'[18]. Mais ici, ce nom est écrit en "scriptio plena"; la vocalisation avec *waw* au lieu de /a/ ne saurait étonner: en effet, en araméen, il est attesté que le /a/ au voisinage d'une labiale passe facilement à /w/.

Dans le Nouveau Testament syro-palestinien, on le trouve sous la forme 'lyšbt (Lc 1,5.7.13), 'lšbt (Lc 1,24.41), 'lyšbyt (cf. F. Schulthess, *Christlisch.-Palästinische Fragmente aus des Omajjaden-Moschee zu Damaskus,* Berlin, 1905, p. 96). Nous avons donc affaire ici à la forme syriaque.

L'écriture des deux noms est différente si l'on considère les formes des *'olaph*. Il est possible que cela trahisse une réutilisation de la pierre (et peut-être de la tombe).

N° 17 (*RB* 1925 p. 124)



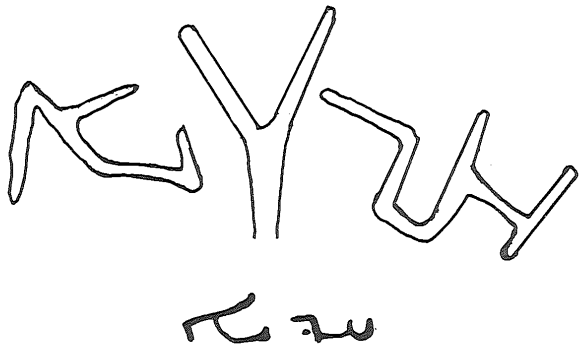
Cette inscription, particulièrement confuse, est très difficile à lire: le quart supérieur droit est abîmé, les lettres, négligées semble-t-il, sont disparates. Le déchiffrement me semble désespéré. On peut peut-être avancer les suggestions suivantes: les deux lignes, qui paraissent de factures différentes, ne seraient-elles pas à lire tête-bêche? (Peut-être serait-ce l'indice d'un remploi de la pierre?). En effet, on aurait, de la sorte, à la ligne 1:

- *mim* ou *kaph* tout à fait reconnaissables;
- *'olaph*, dont le trait vertical final dépasse au-dessus du trait horizontal; cela est tout à fait inhabituel, mais peut s'expliquer par le glissement de l'outil;
- *semkath* de travers, formé de deux triangles;
- une lettre finale équivoque: *nun* au-dessus de la ligne ou *ʿain*?

Le nom ainsi obtenu: m'ksn ou m'ksʿ peut faire penser à l'arabe موكس

A la ligne 2, on peut suggérer la lecture klpṣp, ce qui ne fournit aucun sens satisfaisant. De plus, les deux *pé* (s'il s'agit bien de cela!) sont différents: le premier a la tête rectangulaire, le second, la tête ronde. C'est peut-être un waw.

N° 18 (*RB* 1925 p. 124-125)



16. Cf. M. Chwolson (1897) n° 64;

17. Cf. M. Chwolson (1890) n° 49,8; 51; XVII; Chwolson (1897) n° 97; 108; 161; 176; 197.

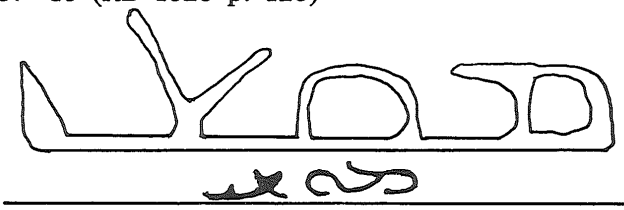
18. Cf. M. Chwolson (1890) XVII (1897) 197; 257.

On lit facilement: ḥdy'. La première lettre est effectivement sans conteste un *ḥeth;* il ne semble pas y avoir de point diacritique dans le *dolath* (en tout cas, cela est impossible à déceler sur la surface très "granuleuse" de la pierre ainsi que l'estampage en témoigne).

On trouve, en épigraphie syriaque, le nom propre ḥdy[19]. En thamudéen, on trouve ḥddy, vocalisé ḥadday selon Ryckmans[20] et ḥdy[21].

S'il s'agit de ce nom propre dans cette inscription, la forme syro-palestinienne avec *'olaph* final se justifie mal: il faudrait alors que la graphie soit ḥd'y, où le *'olaph* marque la prononciation longue de la diphtongue, comme par exemple dans zbd'y, alternance orthographique de zbdy "Zébédée" (cf. Mt 4,21; Mt 26,37 etc...). A côté de cela, la suggestion de Bar-Asher p.351 reste peut-être encore plausible: il s'agirait de la forme (masculine ou féminine) de "joyeux". Toutefois, notons ici que l'arabe connaît le nom ḥadwa (forme parallèle à l'araméen ancien ḥadyan et à l'hébreu ḥazyon ou ḥezyon).

N° 19 (*RB* 1925 p. 125)



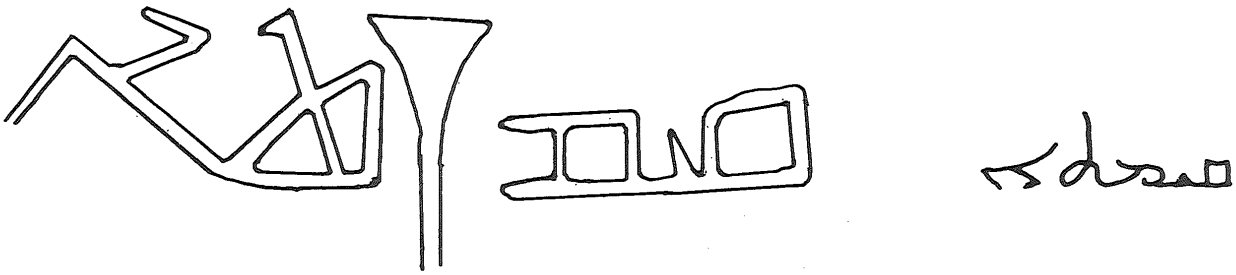
La lecture est sûre: mušy, "Moïse".

En syriaque, ce nom se trouve sous la forme muš' (vocalisé /ê/)[22]. Pour Savignac, il s'agit de l'équivalent de l'arabe موسى Bar-Asher p. 118 n. 255 pense qu'il ne faut pas se référer à l'arabe (ainsi que dans le cas du n° 34, d'ailleurs). Les sources littéraires syro-palestiniennes lui donnent raison. En effet, si, dans les documents épigraphiques, la forme avec *iudh* final ne se trouve que sur cette pierre Samra n° 19, dans les sources littéraires, en revanche cette orthographe est très répandue à côté de l'orthographe avec *'olaph* final[23]. Remarquons que, lorsque les manuscrits sont vocalisés, la vocalisation du *'olaph* final de muš' est variable (point au-dessus, point au-dessous ou les deux à la fois, absence de point) tandis que je n'ai trouvé aucune trace de vocalisation de la forme mušy. A mon sens, cela prouve que l'orthographe avec *'olaph* final posait un problème de prononciation et qu'il était nécessaire de manifester le phonème /é-i/.

Enfin, notons que lorsque le syro-palestinien décalque explicitement l'arabe موسى il écrit mus' (avec *semkath)*[24].

19. Cf. Syriaque ḤDY dans H.J.W. Dryjvers, *Old-Syriac (Edessean) Inscriptions* (Semitic Stud. Series n.s. 3) Leiden, 1972, n° 48, 1.
20. Cf. G. Ryckmans, *Les noms propres sud-sémitiques,* t I, *Répertoire Analytique,* (Bibliothèque du Muséon, 2), Louvain, 1934 p. 88.
21. Cf. A Van den Branden, *Les textes thamoudéens de Philby,* vol. II, *Inscriptions du Nord,* Louvain, 1956, n° 280 (c) 7 p. 58 et 352 (l) p. 109.
22. Cf. Chwolson 1897 n° 209; E. Littmann, *Part IV of an american archeological expedition to Syria in 1899-1900. Semitic Inscriptions,* Princeton, 1904, p. 3-56, n° 16; Pognon, op. cit. n° 54,14; 105,3; 107,1.
23. muš': Mt 8,4 dans A.S. Lewis-M.D. Gibson, *The Palestinian Syriac Lectionary of the Gospels,* London 1899 p. 69; Mt 23,2 dans JPN Land, *Anecdota Syriaca,* t. IV, Leyden, 1875 p. 125 et de nombreux exemples. mušy : Ex. 16,9.33; 17,3; 19,8.9.17 dans H. Duensing, *Christlich-palästinisch-aramäische Texte und Fragmente,* Göttingen, 1906, p. 117, 118, 119. Ex 19,9 est significatif: on y trouve les deux orthographes côte à côte; Mc 12,26 dans Land, op. cit. p. 142;I Cor 10,2 dans A.S. Lewis, *A Palestinian Syriac Lectionary* (Studia Sinaitica VI), London, 1897, p. 40.
24. Cf. Lewis op. cit. 1899, p. 293 (codex A, B et C).

N° 20 (*RB* 1925 p. 125)

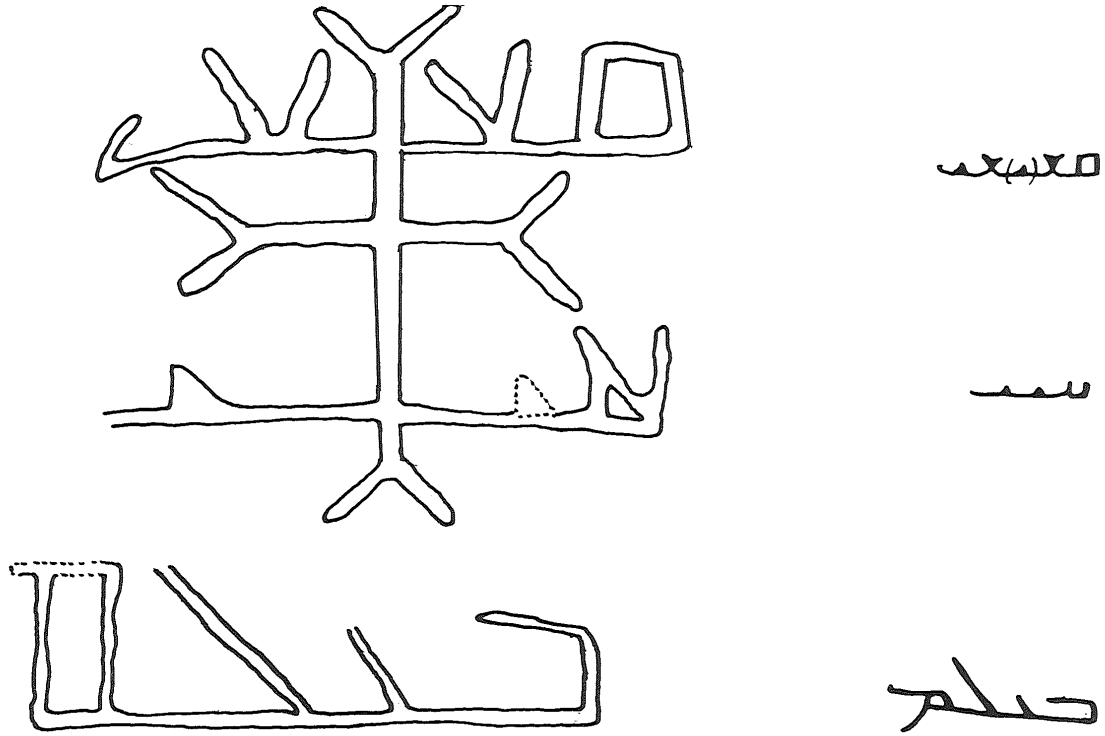


La lecture est sûre: il s'agit du nom propre féminin qymt'. Il faut remarquer que l'on distingue clairement la pointe supérieure de la barre du *taw* et que le *'olaph* possède une grande boucle; il ne se termine pas sur la ligne, mais son trait final est difficile à délimiter, par manque de précision de la gravure.

En nord-arabique, on trouve la forme qymt[25]. Ce nom serait à rattacher à la racine arabe qîma, "persévérance".

En syriaque, l'épigraphie atteste qymt'[26] où il y a des chances pour que ce nom propre provienne du mot "résurrection".

N° 21 (*RB* 1925 p. 125-126)



25. Pour le safaïtique, cf. G.L. Harding, "Safaïtic Inscriptions in the Iraq Museum", *Sumer* VI (1951) n° IM 42702; G.L. Harding, "The Cairn of Hani", *ADAJ* II (1953), n° 194. Pour le thamudéen, cf. G.L. Harding- E. Littmann, *Some Thamudic Inscriptions from the Hashemite Kingdom of Jordan*, Leiden, 1952, n° 494 p. 46.

26. Cf. Chwolson, op. cit. 1890, n° 50,3; 50,23; 98,1; op. cit. 1897, n° 67; 112; 211; 261; 264; 294.

Cette inscription — la plus longue des inscriptions syro-palestiniennes de Samra — comporte 3 lignes. Les deux premières sont étroitement liées à la croix avec laquelle elles restent en harmonie (par l'épaisseur de la gravure et par la disposition symétrique); la troisième se singularise par sa gravure (plus fine et moins profonde; les extrémités des lettres ne sont plus décelables) et par sa disposition (déviante par rapport au parallélisme instauré par la croix et les deux premières lignes et décalée par rapport à l'axe de symétrie vertical). Cependant, l'ensemble fournit un texte acceptable sous la forme d'une courte épitaphe:

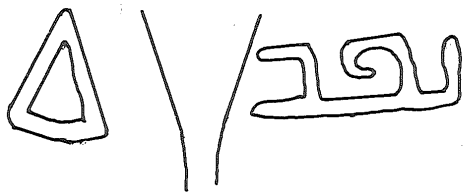
1	qš(y) š (y)	"qš(y) š (y)
2	ḥyy	vis
3	b'lm	à jamais!"

l. 1: ce mot est un nom propre connu. En syriaque, l'épigraphie témoigne de la forme qšyš'[27]. L'arabe équivalent serait قسيس. Bien que qšš (sans *iudh*) soit attesté en lihyanite[28], il serait préférable de supposer que le *iudh* médian est confondu avec l'axe vertical de la croix. Cela n'est d'ailleurs pas un réel problème pour la lecture, puisque les deux formes semblent équivalentes (à rattacher au mot qšyš "ancien, prêtre"), avec ou sans mater lectionis[29]. Beaucoup plus gênant est le trait final, clair sur l'estampage; il est difficile d'y voir le reste d'un *'olaph* (qui serait, d'ailleurs, très tordu) tel que le dessine Savignac; s'agit-il alors d'un *iudh*, dans ce cas bien différent de ceux de la ligne 2 ? D'un point de vue linguistique, cependant, on constate que d'autres noms de Samra se terminent par *iudh* (n° 19, 92).

1. 2: elle est lisible sur l'estamage sans interprétation abusive des traits: le *ḥeth* est très net, ainsi que le second *iudh;* le premier *iudh* est faiblement gravé. C'est l'impératif pa'el du verbe ḥy'.

1. 3:On remarque que le *mim* a une forme très haute, disproportionnée. L'emploi de la préposition *b* surprend: on attendrait l'lm; mais, en syro-palestinien, l'usage des prépositions est assez fluctuant.

N° 22 (*RB* 1925 p. 126)



L'estampage est assez clair, mais les lettres sont très difficiles à identifier dans un mot qui fasse sens. On ne peut que lire un *pé* comme deuxième lettre; la première est-elle *iudh, nun* ou *'ain*? La troisième est-elle *beth* ou *kaph*? La quatrième est-elle *iudh* ou *waw*? Tout cela ne permet pas de lire un nom déjà connu. Par contre, si on identifie la troisième lettre comme un *resh,* on peut lire 'frw, connu en thamudéen[30]

27. Cf. Littmann, op. cit. 1934, n° 18. Cf. l'arabe قسيس.

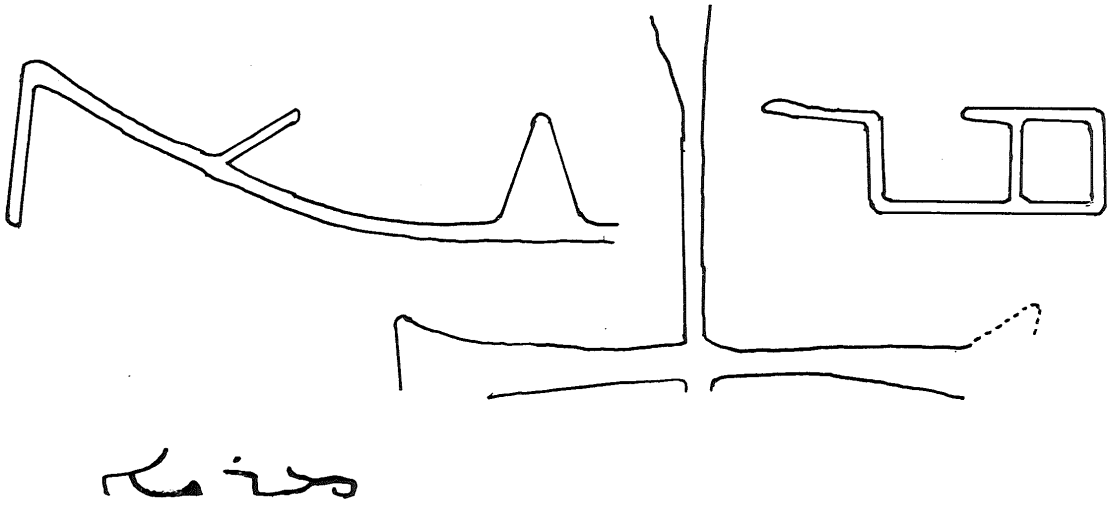
28. Cf. J.A. Jaussen- R. Savignac, *Mission archéologique en Arabie,* vol. II, Paris, 1914, n° 321,2.

29. Sur ce terme en hatréen, en syriaque chrétien, en judéo-araméen, en arabe et dans l'onomastique romaine et byzantine, cf. J. T. Milik, *Recherches d'épigraphie proche-orientale, I, Dédicaces faites par des dieux,* (Institut Français d'Archéologie de Beyrouth. Bibliothèque Archéologique et Historique, XCII), Paris, 1972, p. 368.

30. Cf. Harding-Littmann, op. cit. 1952, n° 137.

et en sabéen[31] ou peut-être 'fry en thamudéen[32] ou encore npry, connu en palmyrénien au VIème s.[33].

N° 23 (*RB* 1925 p. 126)



La lecture est sûre: mry'. Sur une pierre funéraire comme ici, il s'agit d'un nom propre (et non pas du mot "Seigneur" qui supposerait d'ailleurs une invocation plus explicite avec une formule développée).

Ce nom n'a pas de rapport avec le nom propre syriaque connu mry "Mari"[34]; j'écarte également le nom propre masculin apparenté marya[35] du Talmud Palestinien.

Il s'agit en fait ici d'une forme du nom propre féminin maryam. En effet, ce nom est attesté dans la littérature syro-palestinienne sous les trois formes mrym, mry'm et mry', les deux premières dans la quasi-totalité des cas, la dernière en deux occurences seulement, mais dans un contexte qui montre qu'il s'agit bien du même prénom féminin[36].

Les deux formes mrym et mryh sont attestées conjointement sur les ossuaires de Jérusalem[37].

31. Cf. G. Ryckmans, "Graffites Sabéennes relevées en Arabie Sa'udite", *Rivista degli Studi Orientali*, (Rome) 32 (1957), p. 557ss, n° 27 b; *RES* VI (1935), n° 3945/16.

32. Cf. Harding-Littmann, op. cit. 1952, n° 353, mais dont la lecture n'est pas certaine.

33. Cf. *CIS* II,III n° 4204; J. Starcky, "Bas-relief palmyrénien inédit, dédié aux génies Šalman et 'RGY' ", *Semitica* 3 (1950), p. 47.

34. Cf. Littmann, op. cit. 1934, n° 6,2; 12,2; 64; nom masculin aux Ve-VIe s. en Syrie.

35. Cf. M. Jastrow, *A Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature*, New-York, 1950, II, p. 843.

36. Cf. F. Schulthess, *Christlich-Palästinische Fragmente aus des Omajjaden Moschee zu Damaskus*, (Abhandl. der Kön. Gesell. der Wiss. zu Göttingen. Phil. - Hist. K. n.f. VIII n° 8), Berlin, 1905 p. 96 (Marie, femme de Pilate), conjointement avec maryam, donc équivalent indiscultable; et Duensing, op. cit. 1906 p. 12 (Marie, nièce d'Abraham de Qidun).

37. Cf. J. P. Kane, "The ossuary inscriptions of Jerusalem", *Journal of Semitic Studies* XXIII, 2 (1978) p. 270.

L'équivalent syriaque est toujours mrym[38].

Le grec du Nouveau Testament connaît les deux formes μαριαμ et μαρια (Chaque tradition manuscrite a d'ailleurs son habitude en la matière). Il faut souligner le cas de Mt 1,20 où P[1] et B ont μαριαν (contre μαριαμ dans C, D, etc ...). C'est le seul cas dans le Nouveau Testament. Mais cela peut constituer un indice en faveur de l'hypothèse de Kutscher[39] pour qui la forme mryh est plus facilement explicable à partir de *mryn que de mrym et, s'appuyant sur plusieurs exemples de mots qui connaissent l'alternance m/n en finale, il note qu'il y a une tendance en araméen galiléen à attacher un *n* final aux mots se terminant par une voyelle. Comme preuve de la dérivation qu'il propose mrym > mryn > mryh, il fournit le *n* de mryn en araméen samaritain. Pour nous, la preuve absolument décisive de cette théorie n'est pas encore fournie et, dans le cas de mrym, l'apport de Mt 1,20 reste un indice isolé, quoique suggestif.

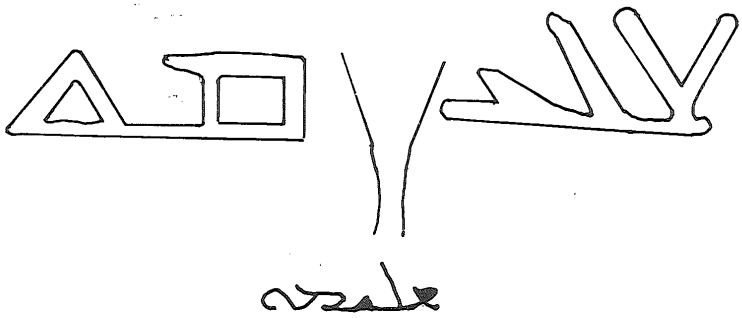
En tout état de cause, et pour résumer, on peut dire:

1. le nom propre hébreu m ryam est connu en araméen occidental sous les deux formes mrym et mryh, en araméen oriental sous la forme mrym.

2. Le grec du Nouveau Testament transcrit l'une et l'autre des deux formes occidentales μαριαμ et μαρια . Il connaît toutefois la forme μαριαν .

3. Le syro-palestinien retient massivement le vieux nom sémitique soit sous la forme brève mrym, soit sous la forme longue mry'm. Cependant, il connaît la forme mry', sans doute transcrite du grec: l'attestent 2 manuscrits et une inscription à Samra.

N° 24 (*RB* 1925 p. 126-127)



La lecture est sûre: šlymw

Il s'agit du nom propre que l'on trouve en Nord-arabique : šuleym et en nabatéen: šlmu, qui a été transcrit Σαλεμος [40].

Cela n'a rien à voir avec "Salomon" dont la forme sémitique est toujours šlmn, avec *nun* (arabe سليمان , syriaque šlymun[41] ou šlumun - šulumun[42]).

En arabe, šulaym est un nom de personne ou de tribu[43].

38. Pour les attestations épigraphiques, cf. Chwolson, op. cit. 1890, n° 19,3; 38,1; etc ... op. cit. 1897, n° 46,1; 51,1; etc ... et P. Chebli, "Notes archéologiques", *RB* 10 (1901) p. 587 n° 1.

39. Cf. E.Y. Kutscher, *Studies in Galilean Aramaic*, Jerusalem, 1976, p. 61.

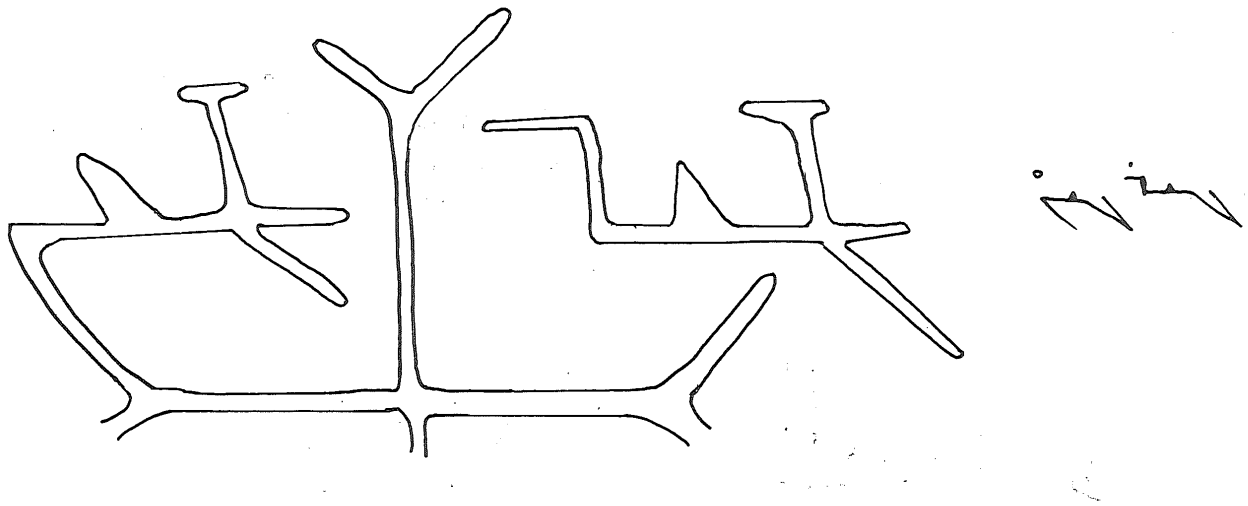
40. Cf. H. Wuthnow, *Die semitischen Menschennamen in griechischen Inschriften und Papyri des vorderen Orients*, (Studien zur Epigraphik und Papyruskunde I,4), Leipzig, 1930, p. 171, avec de nombreuses variantes.

41. Pognon, op. cit. n° 100,5; Littmann, op. cit. 1934, n° 48; Mouterde, op. cit. 1960, n° 2,25.31.

42. Cf. Payne-Smith II, col. 4195.

43. Cf.par exemple *Encyclopédie de l'Islam* IV (1934) p. 542 et J. Wellhausen, *The Arab Kingdom and its Fall*, London, 1973 2, p. 181.

N° 25 (*RB* 1925 p. 127)



La lecture est difficile, comme le reconnaît Bar-Asher p. 352. La proposition de Savignac est la plus compréhensible. Nous retenons gyr-gy(n).

Le gomal est très caractéristique: il est tout à fait semblable à ceux des manuscrits de Mird[44] et du manuscrit de Louvain[45]. Il y a peut-être un point sur le *resh* mais, bien évidemment, l'estampage d'une pierre de basalte ne permet pas de l'affirmer. La grosse difficulté est celle de la lettre finale: le trait se prolonge de telle sorte qu'il semble bien se lier avec l'ancre supérieure du bras de la croix; si cela n'est pas certain, c'est en tout cas possible. C'est pourquoi je propose de lire un *nun* final (quoi d'autre étant donnée l'orientation de ce trait et le fait que le *iudh* ne termine pas le mot?).

Je n'ai nulle part trouvé d'attestation de ce nom sous cette forme.

En syriaque, il exsite un grand nombre de formes équivalentes, mais les finales sont y, ys, s ou ' [46].

En syro-palestinien, on ne trouve guère que grgs dans le manuscrit Vat. Syr. XIX[47] et

44. Cf. J.T. Milik, "Une inscription et une lettre en araméen christo-palestinien", *RB* 60 (1953), p. 533-537, pl. XIX et "The Monastery of Kastellion", *Biblica* 42 (1961), p. 21-27.

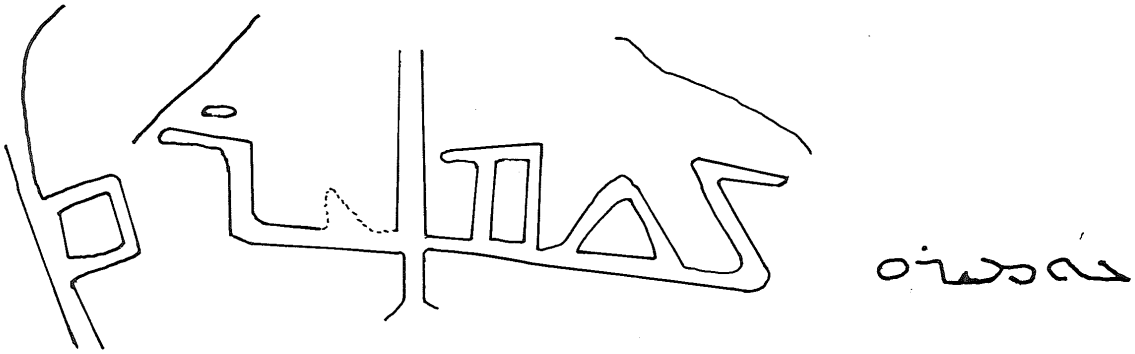
45. Cf. M. Baillet, "Un livret magique en Christo-Palestinien à l'Université de Louvain", Le Muséon 76 (1963), p. 375-401, pl. III-V.

46. En ce qui concerne le nom propre, on peut peut-être comparer aux différentes formes suivantes que l'on trouve dans les inscriptions syriaques: G U G Y (Pognon n° 13,6; Mouterde (1960) 2,9; G U R G Y S (Chwolson (1890) XV; XXVII; 19,2; 34,1; 50,14; 78; (1897) 3; G U R G S (Pognon 117,6); G Y U R G Y S (Chwolson (1890) XXIX; 11,1; 12,4; 73; 83; 98; 1600,1; (1897) 7; 59; 75; 88; 91, 1; 119; 175; 192; 217; 228; 260; 282; 307; 309; H. Leclercq, art. "Chine" *DACL* XII (1914) a, 1353-1385, a, 5; P. Mouterde "Trente ans après les inscriptions de Kamed (compléments)", *MUSJ* 44 (1968) p. 21-29 n° 15; 16; G Y R G ' (Littmann (1934) 21,1); G Y R G S (M. von Oppenheim, *Inschriften aus Syrien, Mesopotamien und Kleinasien gesammelt im Jahre* 1899 (Beiträge zur Assyriologie und semitischen Sprachwissenschaft VII), Leipzig, 1913, n° 6).

47. Cf. F. Miniscalchi Erizzo, *Evangeliarum Hierosolymitanum ex codire vaticano palestino*, Veronae, t. I, 1861, p. 541.

gurgs[48]. On peut émettre l'hypothèse suivante: gyrgyn pour gyrgys serait une variation parallèle à la variation benyamyn - Βενιαμις signalée par Kutscher ou n'ym/n'yn - ναις [49].

N° 26 (*RB* 1925 p. 127)



La lecture est malaisée. La première lettre est un *'ain*, sans aucun doute (les n° 35 et 38 ont des *'ain* de même structure, même si le ductus est différent; c'est l'image également des *'ain* des manuscrits assez tardifs). La troisième lettre n'est pas un *beth* coupé par un trait, comme le pense Savignac: c'est simplement un *mim*. La dernière lettre est sensiblement différente de la deuxième: normalement, il faudrait y voir un *quph;* cependant, le *waw* s'impose en finale (où un *quph* serait absurde): sa forme étrange (trop carrée) est sans doute due à une difficulté de gravure. Je lis 'wmyrw.

En nabatéen, on trouve 'mrw[50]. L'arabe atteste عمرو , qui a donné Αμρου en transcription grecque[51]; Wuthnow (op. cit. p. 158) connaît une forme grécisée Ομερος : cela attesterait bien la prononciation de notre nom où le /y/ serait prononcé ouvert au voisinage de /r/. De plus, on peut supposer que ce /y/ est la vocalisation du shewa, comme cela est fréquent en syro-palestinien[52]. Quant à la finale en *waw*, elle est fréquente en palmyrénien et en nabatéen.

N° 27 (*RB* 1925 p. 128). Pas d'estampage.

Savignac lit 'rbn.

Bar-Asher p. 351 rapproche ce nom du syriaque 'rbn', de l'araméen babylonien 'urbny, du mishnique rbn et 'urbn, traduits en hébreu par "fil" ou "corde" et note qu'il est possible que ce prénom soit le surnom d'une famille qui travaillait dans la corderie[53]. L'hypothèse est séduisante et, de fait, je ne trouve aucun autre représentant ou équivalent de rbn dans les inscriptions des dialectes araméens des alentours ni en arabe.

On peut suggérer une autre hypothèse qui consisterait à voir dans ce nom propre un nom

48. Cf. M. Black, *A Christian Palestinian Syriac Horologion*, Cambridge, 1954, p. 54 et 89.

49. Op. cit. p. 61-62.

50. F.V. Winnett- W.L. Reed- J.T. Milik-J. Starcky, *Ancient Records from North Arabia*, Toronto, 1970, n° 23. Au n° 79, 1, on trouve la forme feminine 'myrt. Cf. aussi G.W. Ahlström, dans *Ex Orbe religionum*, I, Leiden 1972, p. 328.

51. Cf. E. Littmann, *Syria*, division IV, *Semitic Inscriptions*, Section C: *Arabic Inscriptions*, Leyden, 1943, p. 336.

52. Cf. M. Bar-Asher, *Palestinian Syriac Studies*, Jérusalem, 1977, p. 421-422.

53. Cf. le mot ' arban, "étoffe grossière" ou "aiguille employée pour la coudre", (Jastrow, Dictionary, I p. 114).

de la famille de 'rbon, 'rbon', "gage"[54], avec *'olaph* initial au lieu de *'ain,* ce qui est courant en syro-palestinien[55]. Ce nom serait donc, de toute façon, un surnom imagé.

N° 28 (*RB* 1925 p. 128).

Nous avons retrouvé cette pierre sur le site (mais nous ne nous en sommes rendus compte qu'après avoir achevé la numérotation de l'inventaire: elle y porte le n° 137).

Sur cette pierre grossière en basalte, extrêment irrégulière, l'inscription très faiblement gravée, est peu lisible; les lettres semblent régulières et bien formées, bien insérées dans le module. Notre lecture directe confirme celle de Savignac; cependant, nous lisons, en plus, un *nun* final, ce qui nous fait lire qwbn. Il faut reconnaître que ce *nun* est délicat à repérer dans un repli de la pierre et que l'estampage ne permet pas de le voir.

Ce nom est connu en arabe sous la forme قبان (sens de "fidélité").

N° 29 (*RB* 1925 p. 128)

Cette inscription est particuliérement rebutante: les lettres, très épaisses, sont nettes sur l'estampage, ce qui accroît notre perplexité, car nous ne voyons aucun sens à cette suite: kwbbwp. Peut-on lire kwbbqu.?

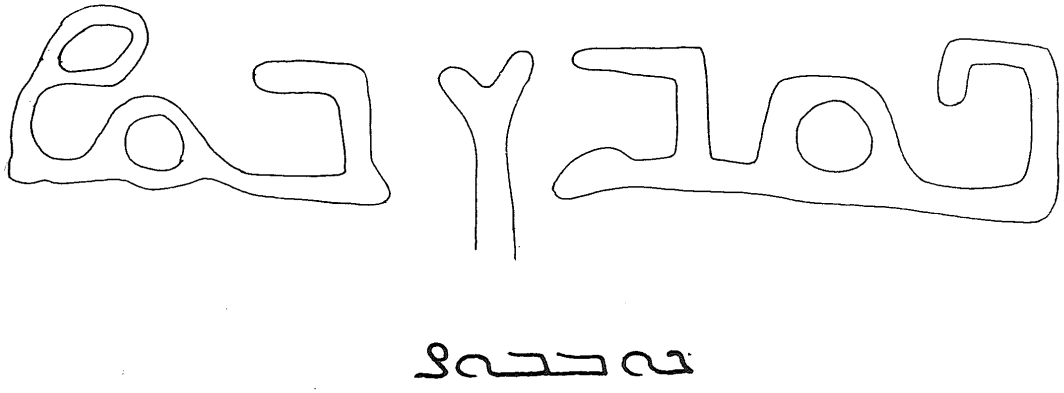
N° 30 (*RB* 1925 p. 128) L'estampage manque.

La lecture ne semblait pas faire de difficulté: ṭuby'.

Pour Bar-Asher p. 351, il s'agit, non pas du ṭubyhu de l'hébreu, mais de la forme syro-palestinienne du nom ṭby' "gazelle"[56]. Cependant, en araméen occidental, le nom propre Tobie existe bien sous les formes ṭobyah ou ṭoby [57]; ainsi, le syro-palestinien ṭoby', avec finale *'olaph* au lieu de *hé,* vocalisé /a/ long, est tout à fait normal; ici, le *waw* fait bien partie de la racine.

N° 31 (*RB* 1925 p. 128)

La lecture semble désespérée.



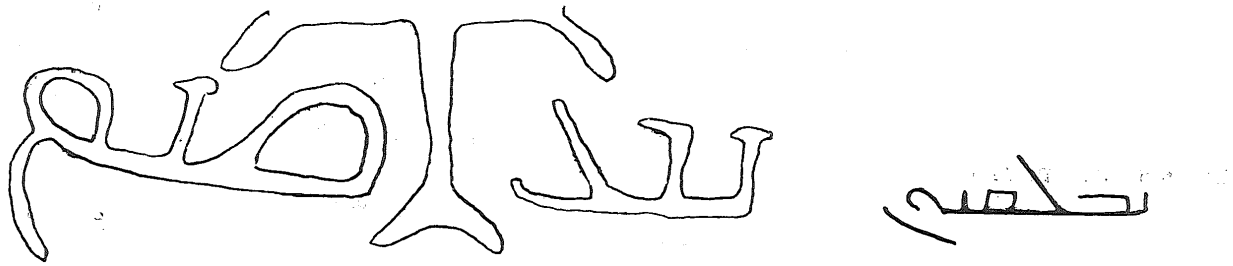
54. Cf. Jastrow, II p. 113.

55. Cf. Bar-Asher op. cit. p. 379.

56. Cf. Jastrow, Dictionary, I, p. 516; il faut ajouter aussi Dt 12,22 (dans Duensing, op. cit. 1906, p. 123) cù le shewa est vocalisé avec *waw*.

57. Cf. Jastrow I, p. 521.

N° 32 (*RB* 1925 p. 129)

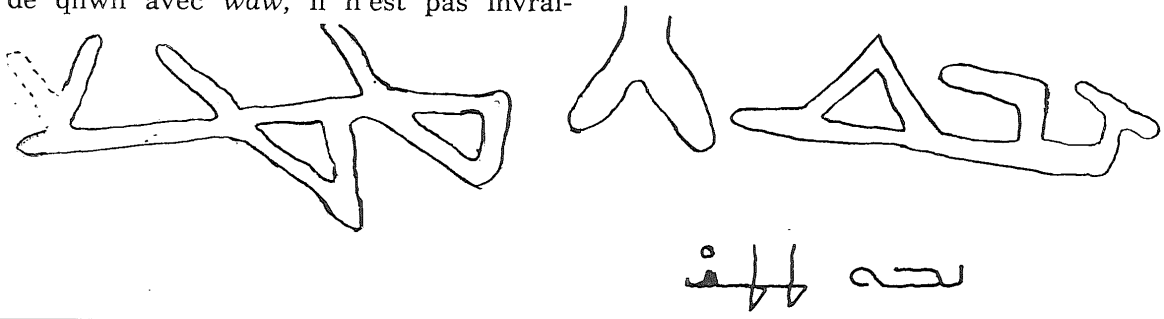


Le tracé est effectivement bien clair. Les deux *nun* médians sont nets; en finale, il ne peut s'agir que de *waw* et de *nun;* les autres lettres sont difficiles à lire: la quatrième lettre est apparemment un *waw;* il n'est pas exclu que ce soit un *quph* arrondi du fait de la gravure; d'ailleurs, il est différent de la sixième lettre qui est un *waw;* la deuxième lettre semble un *kaph;* cependant, l'inscription n° 94 prouve clairement que le *beth* peut avoir cette forme (avec un trait horizontal très court); la troisième lettre est-elle un *lomadh* ou un *'ain?* Tout cela fait que la lecture est difficile; je suggère que la moins absurde serait nblqnwn. En effet, on pourrait y voir un nom propre construit du nom nbl (nom du génie de la pauvreté [58]) et du verbe qnn, "construire"[59]. Quant à la vocalisation de qnwn avec *waw,* il n'est pas invraisemblable de supposer qu'elle reflète une prononciation /non/ du /a/ bref devant une dentale nasalisée.

N° 33 (*RB* 1925 p. 129)

Cette inscription conserve un caractère énigmatique. On peut lire nbwṭṭs ou nbwṭṭy.

Le *waw,* très triangulaire, très pointu, peut prêter à discussion; il est à préférer au *iudh:* il y a bien des *waw* semblables (qui, eux, sont clairement opposés à *iudh* dans le même mot) aux n° 22, 24 et 35. De fait, de nombreux noms propres théophores commençant par nbw sont connus en palmyrénien[60]. L'autre partie du nom est difficile: la dernière lettre est très douteuse. ṭṭy serait le moins invraisemblable, pouvant être une transcription de Titus par exemple.



58. Cf. Jastrow II, p. 869.

59. Cf. Jastrow II, p. 1393.

60. Cf. M. Gawlikowski, *Recueil d'Inscriptions Palmyréniennes provenant des fouilles syriennes et polonaises récentes à Palmyre,* (Extrait des Mémoires à l'AIBL, XVI) Paris, 1974, table, col. 372-373. A. Bouni- J. Teixidor, *Inventaire des Inscriptions de Palmyre,* fasc. XII, (Publications de la Direction Générale des Antiquités et des Musées de la République Arabe Syrienne), Damas, 1975, n° 23, 24 et 25. J. Teixidor, *Inventaire . . . ,* Damas, 1965, fasc. XI, n° 100.

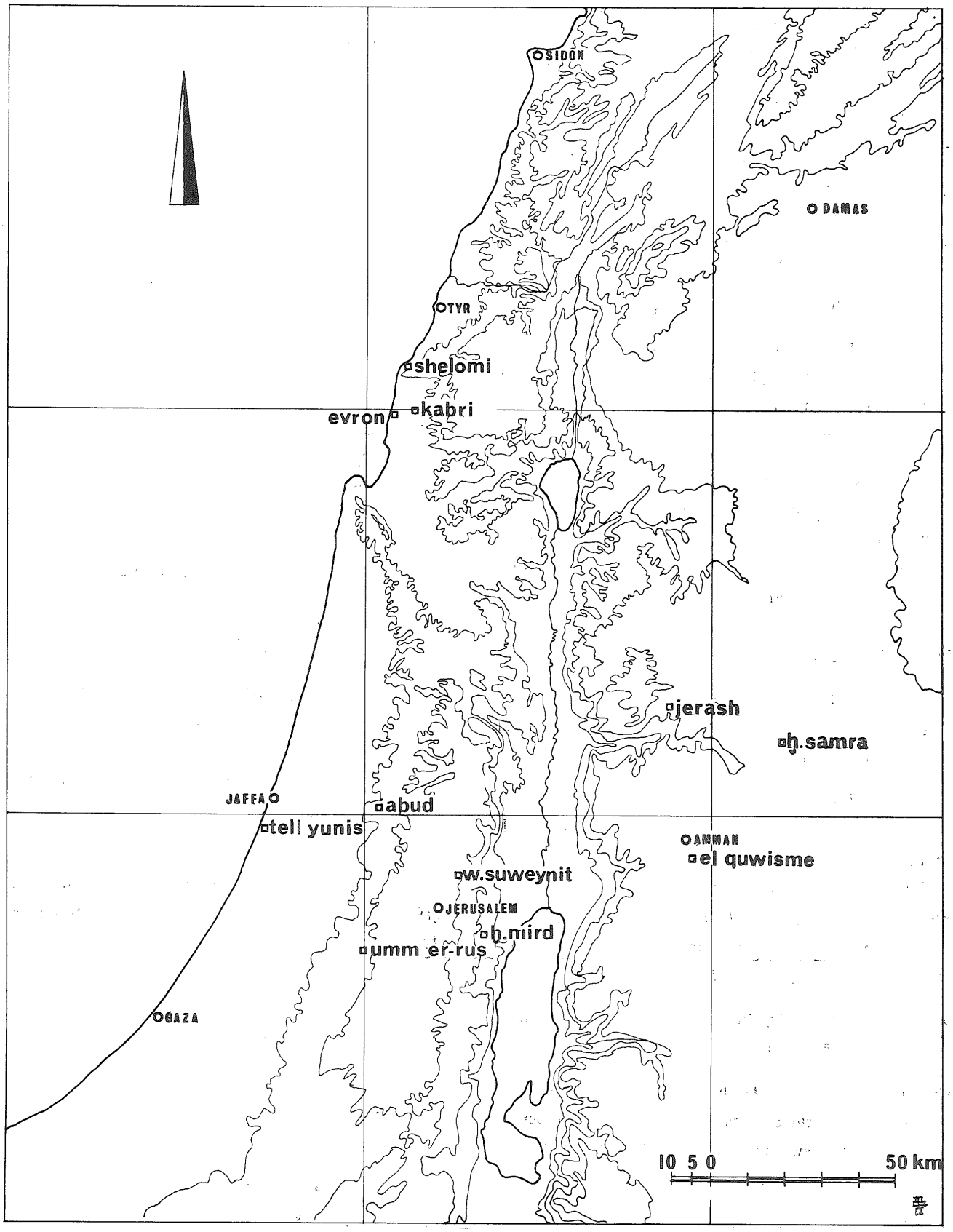
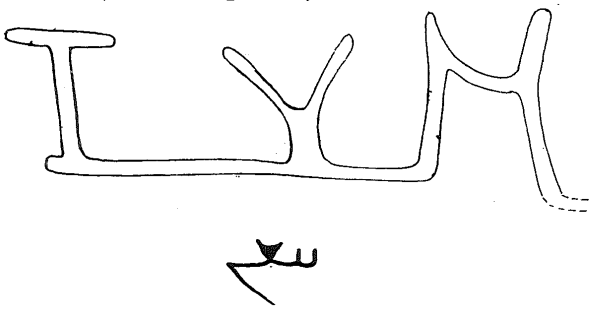


Fig. 3 Carte des sites où ont été trouvées des inscriptions syro-palestiniennes (marqués □)

N° 34 (*RB* 1925 p. 129)



La lecture est sûre: ḥšn.

Le *nun* final est sous la forme pattée (comme un *nun* médian); le *ḥeth*, bien barré à mi-corps, n'est pas posé sur la ligne; c'est le même que dans l'inscription Samra n° 18.

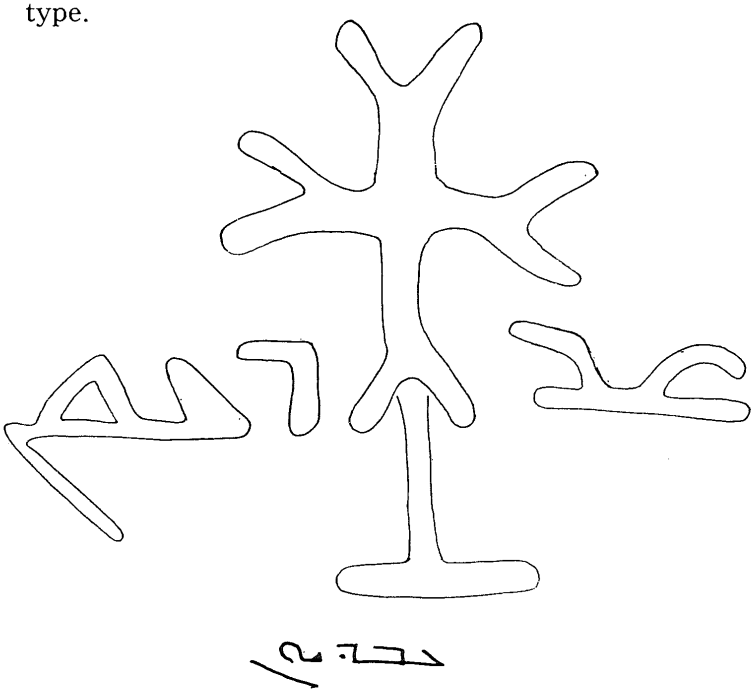
Ce nom propre est bien attesté en Nabatéen[61]. Comme le note Bar-Asher p.343 n. 11, il n'est pas à comparer à l'arabe حسن dont la transcription syro-palestinienne ne pourrait être que ḥsn (avec *semkath*).

N° 35 (*RB* 1925 p. 129)

Inscription gravée de part et d'autre de la base d'une croix ancrée posée sur piédestal. Les lettres sont claires, 'bdywn.

Le voisinage du *iudh* et du *waw*, nettement distingués l'un de l'autre permet d'assurer la lecture *waw* pour le triangle qui est également à lire de cette manière dans les inscriptions n° 22, 24 et 33. Le *dolath* n'est pas pointé; le *nun* final a sa forme finale sous la ligne. Le *'ain* initial est très fortement recourbé vers la droite.

C'est exactement le même nom propre que celui de l'inscription n° 94, dont la graphie est un peu différente, plus angulaire, mais de même type.



On trouve ce nom propre en safaïtique sous la forme bdn[62], et peut-être 'bdy[63], transcrit en grec αβδαιος . Le lihyanite connaît également 'bdn[64]. Le nom 'bdyu se trouve sur un ostrakon de Samarie[65].

En grec, on trouve aussi Αβδαιος, Αβδεος[66]. Peut-être pourrait-on rattacher à ce nom le nom ΟβεδΕ trouvé à Nessana[67] et Αβδεους trouvé à 'Avdat[68].

61 Cf. Wuthnow, op. cit. p. 143.

62 Cf. F.V. Winnett, *Safaitic Inscriptions from Jordan*, Toronto, 1957, n° 948.

63 Cf. Winnett, op. cit. 1957, n° 991. S.G. Oxtoby, *Some Inscriptions of the Safaitic Bedouins*, (American School Series 50), New-Haven, 1968, n° 292, 301, 347, 464. Littmann, op. cit. 1943, Vocabulary n° 1093 et 1264.

64 Cf. Jaussen-Savignac, op. cit., n° 72.

65 Cf. M. Noth, *Die Israelitischen Personennahmen im Rahmen der gemeinsemitischen Namengebung*, Hildesheim, 1928, n° 1014.

66 Cf. Wuthnow, op. cit. p. 7.

67 Cf. H.D. Colt, *Excavations at Nessana*, I, London, 1962, n° 122 p. 185.

68 Cf. A. Negev, "Greek Inscriptions from 'Avdat", *Liber Annuus* XXVIII (1978), n° 43 p. 121.

La racine de ce nom est sans aucun doute 'bd. En hébreu biblique, des noms propres (soit de personnes, soit de tribus) sont construits sur cette racine: on trouve ainsi 'bd', 'bdy, 'bdon, 'bdyh, 'bdyn[69].

Comment expliquer la terminaison que nous trouvons ici et seulement ici? Il n'est pas déraisonnable de penser que nous avons affaire à une forme de 'bdyhu sans *hé* à laquelle est venu s'ajouter un *nun* final, phénomène connu en araméen galiléen[70]. On peut invoquer "le nom šlmṣywn écrit également tant dans le Talmud que dans des sources non-juives sans *nun* final"; d'ailleurs, l'épigraphie des ossuaires de Jérusalem démontre l'existence simultanée des formes šlmṣy, šlmṣyn et šlmṣywn[71].

N° 36 (*RB* 1925 p. 129-130) Pas d'estampage.

L'inscription se trouve au-dessus d'une croix ancrée.

Selon Savignac, on lit : rbky ou rbby.

De fait, le syriaque connaît rby[72]; de même, à Hatra[73]. Or, il n'est pas impossible de trouver une gémination orthographiée en syro-palestinien[74].

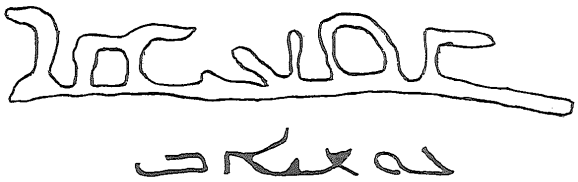
N° 37 (*RB* 1925 p. 130) Pas d'estampage.

L'inscription entoure une croix ancrée.
Selon Savignac, on lit :

l. 1 qṭ pny (?)

l. 2 tuby' ou tudy'.

N° 38 (*RB* 1925 p. 130) La pierre se trouve au musée lapidaire de l'EBAF (n° 24.1)



Savignac ne propose aucune lecture.

La gravure, très nette, mais peu soignée, a été faite au petit burin, par accumulation de petits traits parallèles horizontaux constituant ainsi un tracé de lignes épaisses: cela se constate aisément sur cette pierre calcaire, brute, de couleur jaune pâle à patine foncée.

Une grande partie de la surface gravée est occupée par une croix grecque pattée inscrite dans un cercle. L'inscription est gravée au-dessous. Chaque lettre est complètement posée sur la ligne d'écriture tracée tout entière en premier.

La première lettre est un *'ain* très allongé vers l'arrière; il a la même structure que ceux des n° 26 et 35, mais on remarque que ces trois *'ain* sont réalisés différemment:

- le n° 26: le trait qui descend est oblique;
- le n° 35: la lettre est un seul trait incurvé;
- le n° 38: le trait qui descend est vertical.

Le *'olaph* est digne d'intérêt; il possède la structure incontestable; la réalisation est particulière, mais non pas unique: c'est la même réalisation que l'un des *'olaph* de la mosaïque de

69 On verra là-dessus I. Riesener, *Der Stamm 'bd im alten Testament*, Berlin-New-York, 1979, p. 13-15, pour qui les terminaisons des noms cités ici ont un rôle de vocatif ou de diminutif.

70 Cf. Kutscher, op. cit. p. 61.

71 Cf. Kane, op. cit. p. 271.

72 Cf. Drijvers, op. cit. n° 52.

73 Cf. R. Degen- W. W. Müller - W. Röllig, *Neue Epheˉmeris für semitische Epigraphik* 3, Wiesbaden, 1978, p. 96 n° 295.

74 Cf. Bar-Asher, op. cit. p. 350.

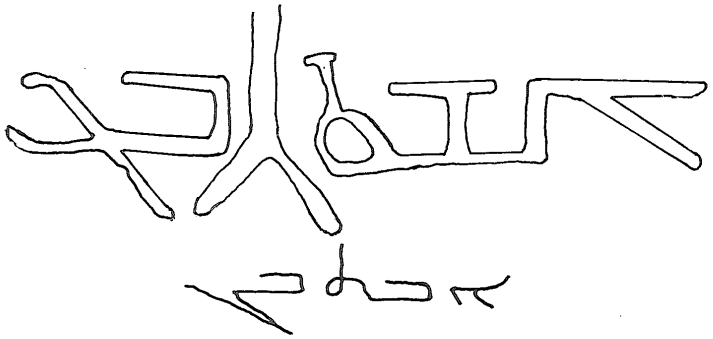
Shelomi[75]; il est composé de 2 angles collés l'un à l'autre, le second étant plus petit que le premier.

La dernière lettre pose un problème. On pense spontanément à un *lomadh* dont le hapex serait très accusé; mais le *beth* n'est nullement exclu: un *beth* semblable (au trait horizontal très court) se trouve dans l'inscription n° 94.

Je lis donc soit 'wšy'l, soit 'wšy'b. Cette dernière lecture est sans doute à préférer. On peut en effet comprendre 'wšy en se référant à l'arabe عشي (racine du "soir"); le nom propre 'šy se trouve d'ailleurs en palmyrénien[76].

Nous aurions donc affaire à un nom composé " 'ušy-père" (" 'ušy est père" ou "père de 'ušy" ?)

N° 39 (*RB* 1925 p. 130)



Inscription à la base d'une croix ancrée.

La deuxième lettre pourrait être un *nun*, par oposition à la quatrième, *beth;* dans ce cas la barre supérieure, dissymétrique, est anormalement longue à gauche, ce qu'il faut expliquer par un glissement de l'outil. La lecture, dans ce cas, est 'ntbg; ce nom ne ressemble à rien de connu. Le glissement de l'outil s'explique aussi bien dans le cas d'un *beth;* la lecture ʾbtbg est alors plausible: "père de tbg". Il reste que la troisième lettre est inhabituelle: on distingue nettement un cercle et une hampe verticale pattée ne recoupant pas le cercle: c'est la structure du *taw,* bien que dans toutes les autres inscriptions, la hampe recoupe le cercle; enfin, la dernière lettre est nette et ne peut être qu'un *gomal.* Je lis donc ʾbtbg.

Le nom tbg n'est pas inconnu en sémitique; on le trouve en sabéen[77] et peut-être en thamudéen (mais là, la lecture n'est pas sûre[78]); il faut noter que Ryckmans hésite entre les deux lectures tbg et tbṣ; or, dans le cas de notre inscription, le *gomal* n'est pas douteux; peut-être pourra-t-on s'appuyer sur celle-ci pour choisir la lecture de l'inscription de Ryckmans.

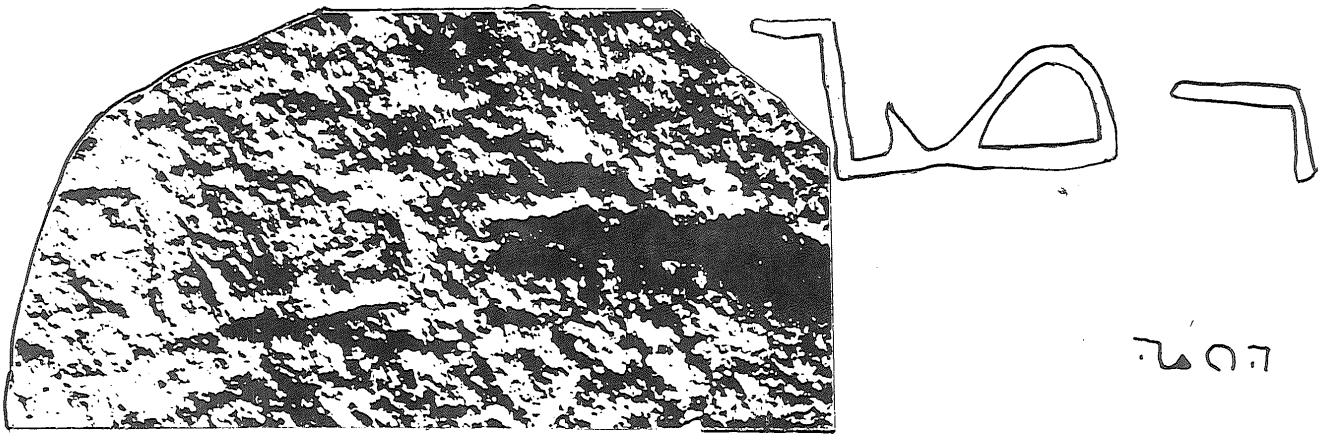
75 L'inscription sur mosaïque de Shelomi (sur la côte palestinienne) a été récemment découverte; elle est en cours de publication.

76 Cf. *CIS* II,III n° 4099/1.

77 Cf. Ryckmans, op. cit. t. I, p. 51 et 282.

78 Id. p. 282.

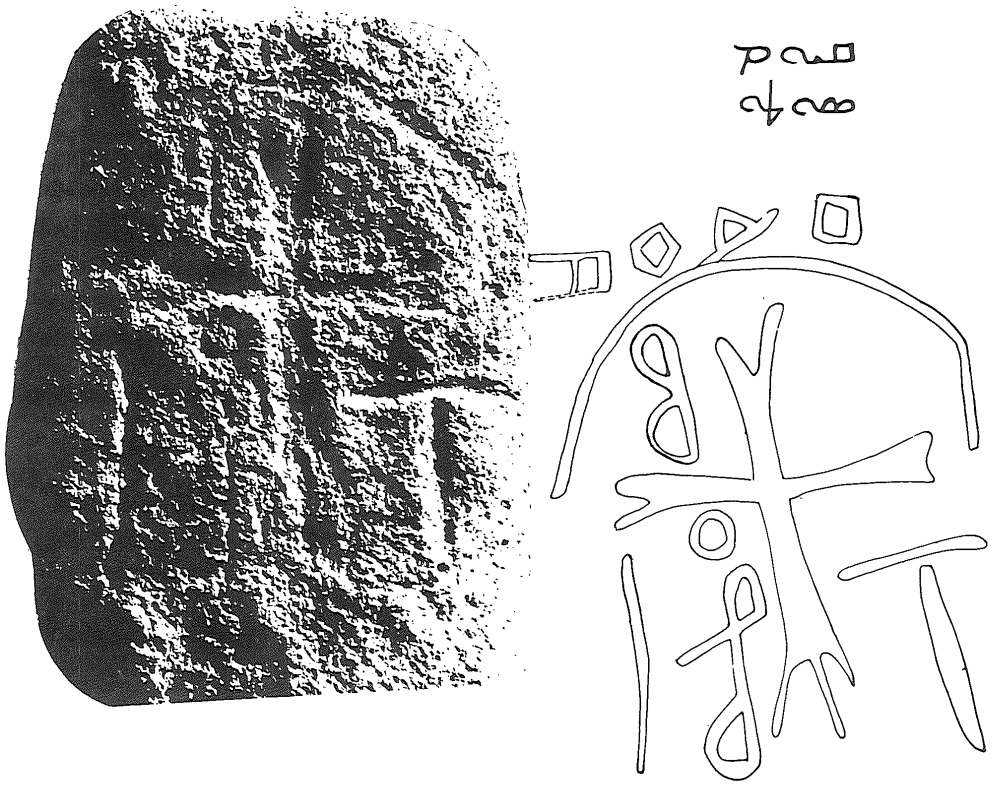
N° 40 (Inédit. Février 1978).



Le mot est gravé faiblement. Au début, la pierre est très irrégulière, mais le mot est entier. On lit dwyd, "David".

Ce nom, évidemment très connu, se trouve sous cette forme dans l'épigraphie araméenne et hébraïque[79]. Les textes syro-palestiniens connaissent deux formes également répandues : dwd[80] et dwyd[81].

N° 41 (Inédit. Février 1978).



79 Cf. J. Naveh, *On Stone and Mosaic*, Jérusalem, 1978, n° 55 et 93. B. Lifshitz, *Donateurs et fondateurs dans les synagogues juives*, (Cahiers de la Revue Biblique 7), Paris, 1967, p. 58.

80 Mt 1,1.6 dans Lewis 1899, p. 251-252, etc...

81 I R 8,24 dans Duensing 1906, p. 125; Mt 1,7 dans Lewis 1899, p. 252, etc...

La gravure de cette pierre est complexe. Une croix grossièrement ancrée aux extrémités supérieures et latérales et dont l'extrémité inférieure est constituée de trois pointes en occupe le centre; une ligne courbe encercle la moitié supérieure. Au-dessus de cette ligne, on lit 4 lettres détachées qui forment le nom qywm. Ce nom est présent à Samra sous la forme grecque Καιουμ (inscription n° 13 : *RB* 1925 p. 123); on le trouve aussi sous la forme Κιουμη à el-'Amaqa[82] et Κοιουμου à Mahna[83]. Il correspond à l'arabe قيوم et قيام ، قيامة . Le sabéen connaît qym[84]. On connaissait le syriaque qyum'[85]. Ce nom a été récemment trouvé en palmyrénien[86].

De haut en bas, à gauche, on lit swṭw. Le *semkath* est très effacé. Ce nom est à rapprocher du nom arabe Suwaiṭ[87].

Enfin, pour compléter la description de cette pierre, notons que, dans le quart inférieur droit, un T de forme très grossière est profondément gravé. A gauche de la deuxième moitié du mot vertical, une ligne est également assez nettement gravée.

N° 42 (Inédit. Février 1978)

Au-dessus d'une croix palmée, un mot est posé sur une ligne continue très nette, légèrement incurvée; il est difficile à lire, étant faiblement gravé sur une pierre à la surface très granuleuse. La lettre finale reste douteuse. Il ne peut s'agir d'un *semkath*. Je lis stfnw(n). Cette forme (du grec στεφανως) est évidemment étrange de par sa finale *nun*. S'agirait-il d'un hypocoristique[88] ou d'un majoratif? Peut-on, là encore, émettre l'hypothèse que le syro-palestinien manifeste une tendance à ajouter un *nun* comme dans le cas que nous discutons au n° 35?



82 Cf. Canova, op. cit. n° 335 p. 318.

83 Id., n° 297 p. 282-283.

84 Cf. Winnett, op. cit. 1957, n° 513; *CIS* IV et V, n° 1185, 2288, etc...

85 Cf. Chwolson, op. cit. 1897, n° 61; 120; 185; 216.

86 Cf. J.T. Milik - J. Starcky, "Inscriptions récemment découvertes à Pétra", *ADAJ* 20 (1975), p. 120-124.

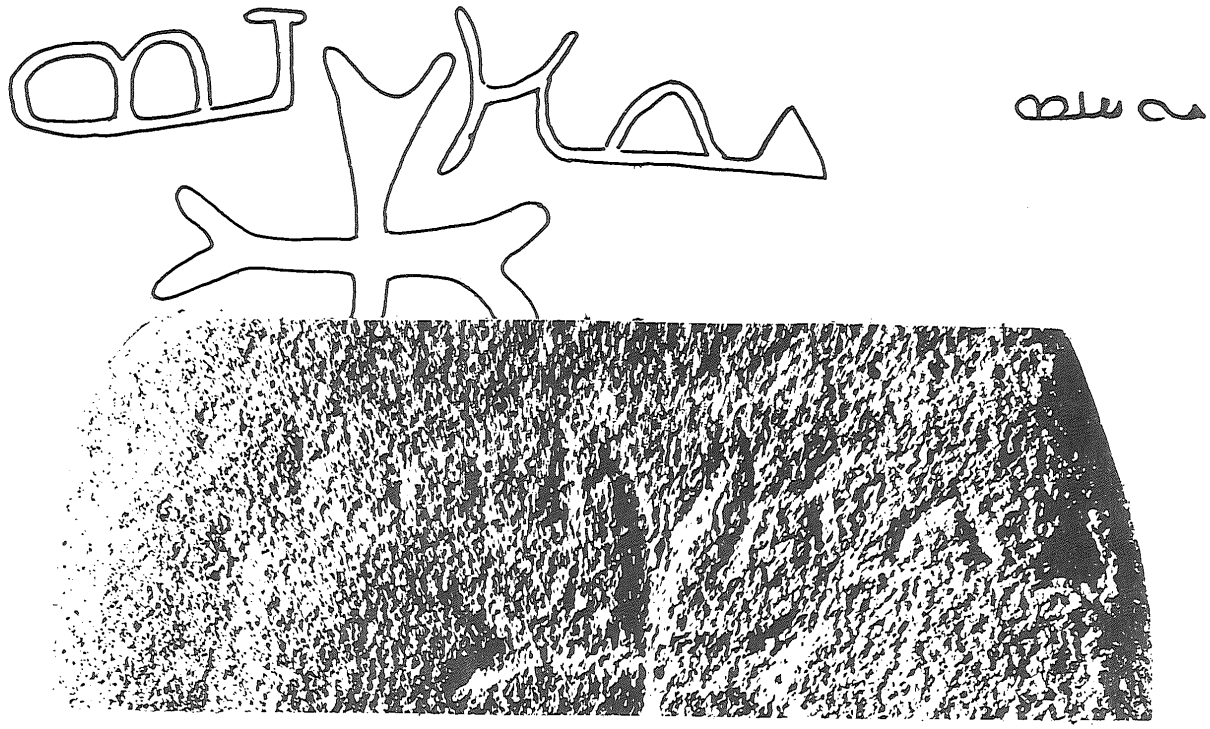
87 Cf. W. Caskel, *Gamharat an-Nasab das genealogische Werk des Hišam ibn Muhammad al Kabbi*, Leiden, 1966, II, p. 521, col. 2.

88 Cf. A. Fick - F. Bechtel, *Die griechischen Personennamen, nach ihrer Bildung erklärt und systematisch geordent*, Göttingen, 1894/2, p. 26ss.

L'examen des inscriptions de Palestine pourrait apporter un appui à cette hypothèse. On trouve en effet l'alternance yhudh[89] ou yudh[90] contre yudn[91] ou ydn[92] dans un nom propre qui est pourtant très courant et au sujet duquel on aurait pu s' attendre à une grande stabilité.

Cette orthographe du nom propre "Jean" est répandue en syro-palestinien[93] à côté d'autres orthographes variées, avec ou sans *waw*, avec ou sans *iudh*. La forme araméenne pales-

N° 85 (Inédit. Avril 1978)



On lit, sans aucune difficulté, sur cette pierre très régulière et bien gravée: ywḥns, "Jean". Le ductus du *ḥeth* (semblable à celui de l'inscription n° 34) rappelle celuí de l'écriture cursive à l'encre.

tinienne de ce nom est sans aucun doute yuḥnn[94]. J'ai pu constater que le syro-palestinien, dans les textes littéraires (et ici, à Samra), préfère massivement les formes transcrites du grec.

---

89 Cf. Naveh, op. cit. n° 28, 57, 105.

90 Id. n° 8.

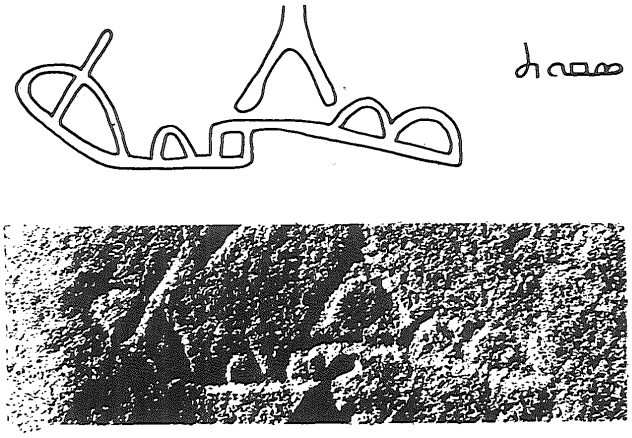
91 Id. n° 2, 13, 17, 29, 33, 37, 40, 80, 82.

92 Id. n° 50.

93 Cf., entre autres nombreux exemples: Mt 4,12 dans Lewis 1899 p. 267 (codex B); Lc 7,22 dans Lewis 1899 p. 274 (codex B et C); Mt 21,32 dans Lewis 1899 p. 154 (codex A et B).

94 Cf. Naveh, op. cit. n° 18 et 75. C'est également celle du syriaque qui connaît cependant yuḥn' (cf. Littmann, op. cit. 1934, n° 16 A; 17,4; 27,5; 44,2) et, bien sûr, de nombreuses formes transcrites du grec.

N° 86 (Inédit. Avril 1978)

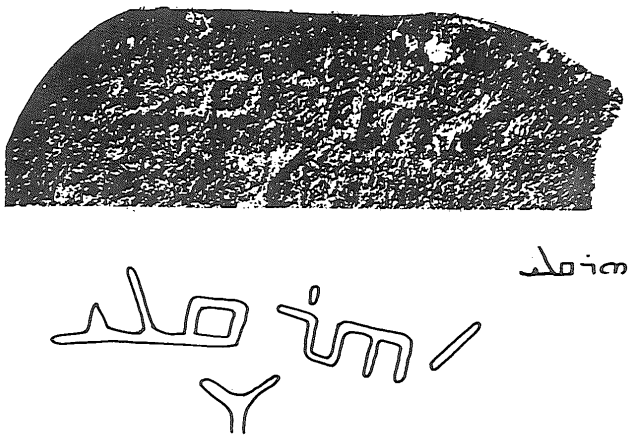


L'inscription est très clairement gravée et les lettres sont soigneusement proportionnées. La caractéristique tout à fait exceptionnelle de cette inscription est la ligature du *semkath* au *quph* par le trait supérieur de ce dernier; cela s'explique très vraisemblablement par la présence d'une forte cassure naturelle de la pierre, qui a obligé le graveur à tracer son trait au -dessus.

In lit sqwt.

Ce nom ne semble pas connu. On peut signaler le nom sabéen sqt[95].
L'arabe connaît le mot saqit, "malheureux"; cela fournit de bons parallèles.

N° 87 (Inédit. Avril 1978)



La pierre, à la surface exceptionnellement plane et régulière, porte une inscription très claire, aux lettres régulières. La première lettre seule est placée curieusement: au-dessus de la ligne et inclinée sans raison apparente; je n'y vois qu'un *zain;* mais il faut reconnaître que cette lettre est fort peu représentée dans l'épigraphie syro-palestinienne et que les éléments de comparaison font défaut.

Je lis zhrqly qui semble être un nom propre composé de zhr (en arabe, "fleur"), et de qly (en arabe, "sommet de montagne").

zhr est un nom propre assez connu en sémitique[96]. qly est attesté en qatabanite[97].

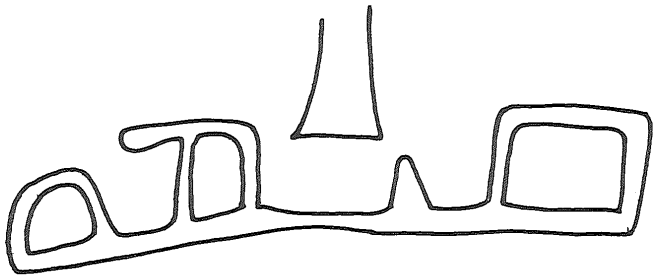
L'ensemble donne un joli nom: "Fleur des cimes montagneuses".

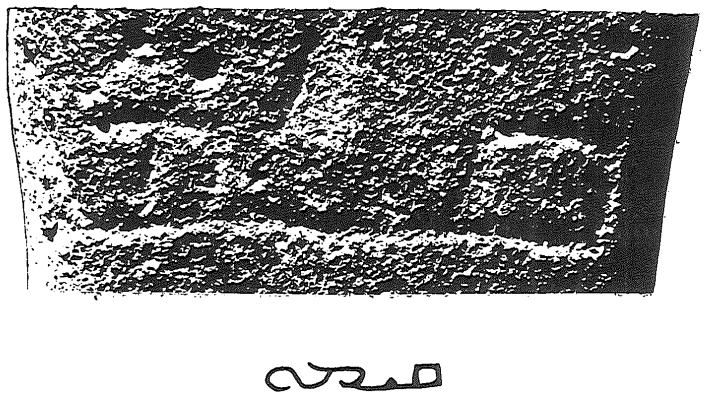
95 Cf. *CIS* v,I n° 3695.

96 Pour le sabéen, cf. *CIS* IV,I n° 157; Ryckmans, op. cit. 1957, d. Pour le safaïtique, cf. Oxtoby, op. cit. n° 480; Littmann, op. cit. 1943, n° 899; Winnett, op. cit. 1957, n° 352; Harding, op. cit. 1953, n° 103. Pour l'arabe zâhir, cf. Caskel, op. cit. p. 598,2 et F. Wüstenfeld, *Register zu den genealogischen Tabellen,* 1853 p. 465. Zahar est un nom féminim (cf. J. J. Hess, *Beduinennamen aus Zentralarabien,* Heidelberg, 1912).

97 Cf.*RES* VI n° 3550,5.

N° 88 (Inédit. Avril 1978)





Cette petite pierre est de forme plutôt sphérique (ce qui explique que la photo ne permet pas de voir la dernière lettre de l'inscription, qui ne pose pas d'ailleurs de problème de lecture); la surface est assez granuleuse, parsemée de petits alvéoles naturels réguliers caractéristiques d'une roche volcanique.

On lit facilement qymw.

Ce nom propre est bien attesté: en palmyrénien[98]; en Nabatéen, Cantineau le signale dans une inscription du Hauran[99], et dans de nombreuses inscriptions du Sinaï[100]. En safaïtique, on trouve le nom qym[101]. En syriaque, on trouve le nom propre féminin qymy[102] et le nom qmy qui lui serait identique sous une orthographe défective[103]?

En transcription grecque, on aΚαιαμος [104] et surtout le nom Καιαμ que l'on trouve à Samra (Savignac n° 14 p. 123).

Toutes ces formes sont très probablement issues de la même racine qym.

Qyum (inscription n° 41) et qymu (ici) sont deux noms différents (prononcés respectivement qayum et qayamu), mais sans doute provenant de la même racine qym. En revanche, qymt' (inscription n° 20) est un nom propre féminin de la racine qwm.

98 Cf. Starcky, op. cit. fasc. X, n° 54,1 (du Ve s.).

99 Cf. *RES* III n° 1476 C.

100 *CIS* II n° 825, 1146, 1323, 1339 dans le wadi mukattab; n° 1484 dans le w. Feiran; n° 2556 dans le w. Khabâr; n° 2925 dans le w. el Akhdar; n° 2931 dans le w. Benâh; n° 3111 dans le w. Hamr; n° 3199 dans le w. Islîh.

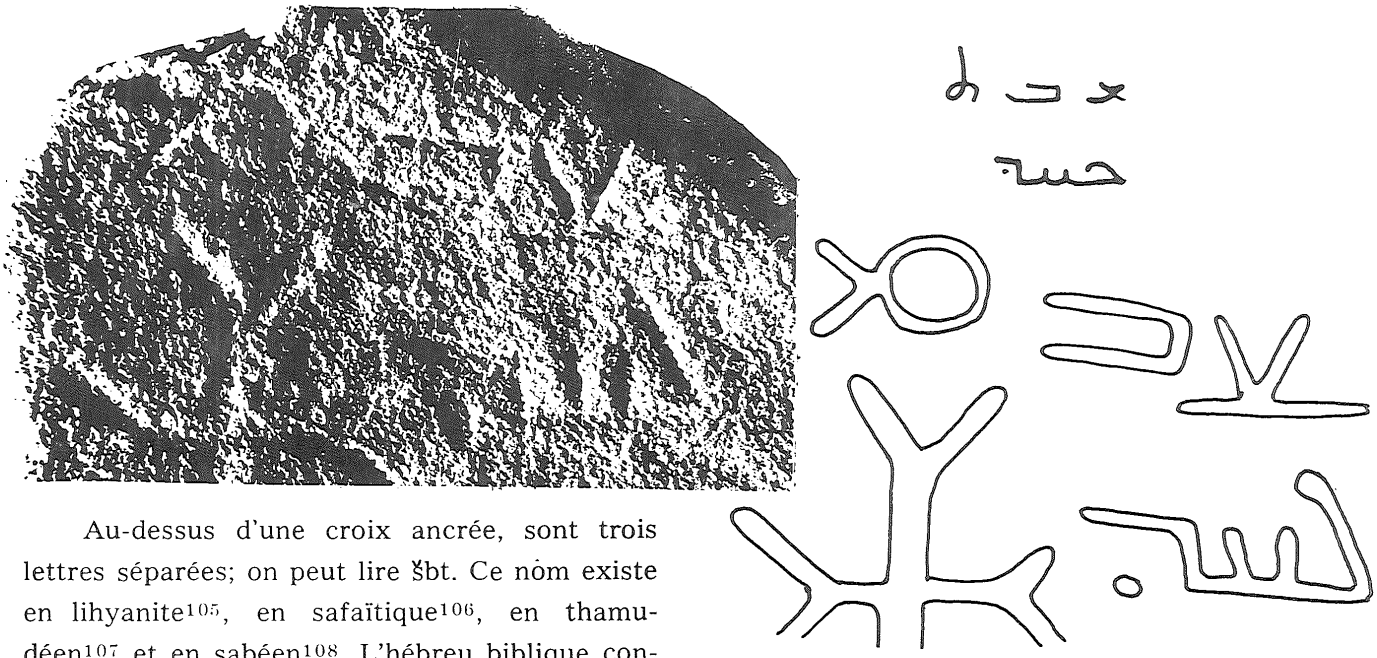
101 Cf. Ryckmans, op. cit. I, 1934, p. 189; Littmann, op. cit. 1904, n° 39. M. de Vogüe, *Syrie Centrale. Inscriptions Sémitiques*, Paris, 1868-1877, n° 93b et 389 a.

102 Cf. Littmann, op. cit. 1912, p. 379ss. Drijvers, op. cit. n° 42,2. Pour Hatra, cf. A. Caquot, dans *Syria* 30 (1953) p. 240-241, n° 35.

103 Cf. J.B. Segal, "New Syriac Inscriptions from Edessa", *BSOAS* 22 (1959) p. 38 n° 9,7 (= Drijvers, op. cit. n° 52).

104 Cf. Waddington, *Recueil des Inscriptions grecques latines de la Syrie*, n° 2103, etc...

N° 89 (Inédit. Avril 1978)



Au-dessus d'une croix ancrée, sont trois lettres séparées; on peut lire šbt. Ce nom existe en lihyanite[105], en safaïtique[106], en thamudéen[107] et en sabéen[108]. L'hébreu biblique connaît le nom šabtay (Esd 10,15; Neh 8,7; 11,16), que l'on trouve également sur l'ostrakon araméen n° 2 de Vienne[109]. Ce nom est attesté en nabatéen[110] et en palmyrénien[111]. En général, le nom šbty (masculin ou féminin ?) est rattaché à šbt et signifierait "né(e) le jour du sabbat"[112].

Le nom de notre inscription n° 89 ne possède pas la finale en *iudh* mais, dans ce même esprit, il n'est pas impossible que quelqu'un ait été appelé simplement "Sabbat".

On remarquera la forme inhabituelle du *taw* dont un ductus cursif a formé l'image: en s'écrivant d'un seul trait, la base est supprimée.

Le second mot, au-dessous et à droite, est trompeur: la première lettre est très grande par rapport au module; or, plutôt qu'un *lomadh*, qui ne donnerait aucun sens, nous y voyons un *kaph* qui possède cette forme dans de nombreux manuscrits, ce qui permet de lire kḥd, participe passif masculin de la racine "disparaître". On pourrait traduire littéralement par "manquant"[113].

Nous avons donc affaire à une courte épitaphe "šbt défunt" (comme on dit, en français: "ce cher disparu . . .") où le nom du défunt est mis en valeur par séparation des lettres. Le *dolath* est ponctué.

105 Cf. Jaussen-Savignac, op. cit., n° 355.

106 *CIS* V, n° 895, 5250.

107 Cf.Jaussen-Savignac, op. cit., n° 203.

108 *CIS* IV n° 308,20.

109 Cf. Degen, op. cit. p. 41 n° 2.

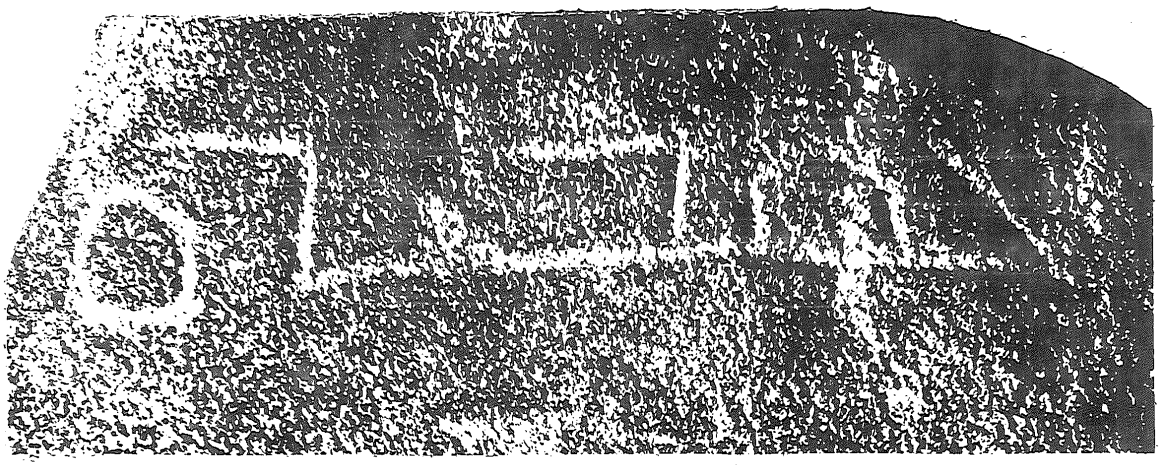
110 Cf Cantineau, op. cit. II, 1932, p. 148 qui renvoie à une inscription du Sinaï, *CIS* II n° 846.

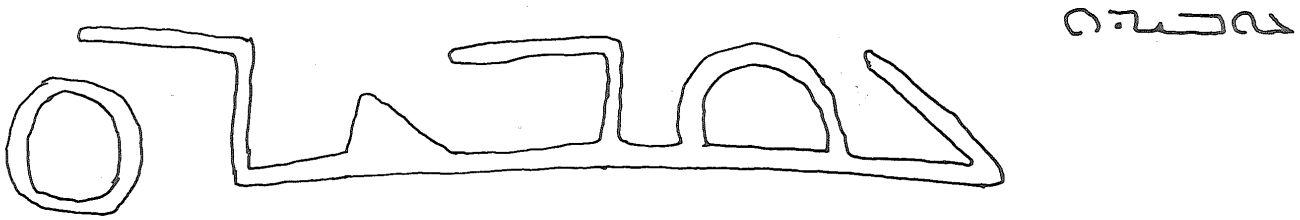
111 Dans une inscription datée du IIIe s. a.d. (*CIS* II,III n° 4048,4); cf. Cantineau op. cit. fasc. VIII, n° 15,2.

112 C'est un vieux nom sémitique: cf. J.C.L. Gibson, *Textbook of Syrian Semitic Inscriptions*,II, Oxford, 1975, n° 27,IV,10; A.E. Cowley, *Aramaic Papyri of the 5th century BC*, Oxford, 1923, n° LVIII,3; E.G. Kraeling, *The Brooklyn Museum Aramaic Papyri*,New-Haven, 1953, n° VIII, 10. On le rattache à l'akkadien ša-ba-ta-ai.

113 Comme en hébreu biblique et en araméen: cf. Jastrow, *Dictionary* . . . , I, p. 628.

N° 90 (Inédit. Avril 1978)





Au-dessus d'une croix pattée, inscription de grande dimension; lettres très fines et très claires. On lit 'wbydw.

Ce nom est attesté en nabatéen sous la forme 'bydw[114]; cette forme se trouve aussi en palmyrénien[115] et à Hatra[116]; Euting (op. cit. 1885 p. 65-66) renvoie à l'arabe عبيد , diminutif de "serviteur"[117]. D'ailleurs, le nom 'byd est fréquent en sabéen; il est attesté en himyarite[118]; le nabatéen 'bdu est vocalisé /o/ initial dans les transcriptions grecques[119].

114 Cf. J. Euting, *Nabatäischen Inschriften aus Arabien*, Berlin, 1885, n° 24,1. *CIS* II, n° 1289, 1481, 1518 et des dizaines d'autres inscriptions dans le Sinaï. *RES* n° 1386, 1430 à Pétra; *RES* 805,6 dans le Hauran.

115 Cf. *CIS* II,III n° 3973,1 (inscription du IIIe s.); n° 4062,3.

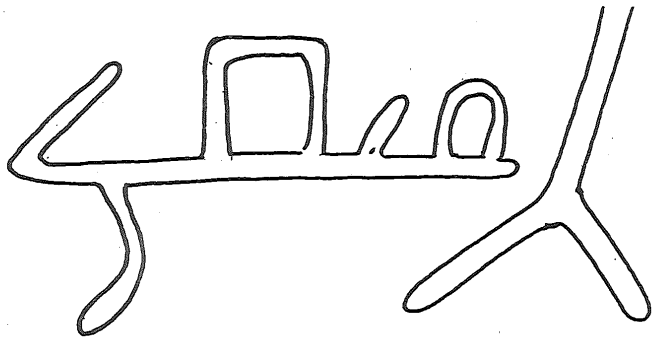
116 Cf. A. Caquot, "Nouvelles inscriptions araméennes de Hatra. VI", *Syria* 41 (1964), p. 265 n° 179.

117 Cf. A. Grohmann, *Arabic Inscriptions*, t. I, dans Expedition Philby-Ryckmans-Lippens en Arabie. IIème partie: Textes Epigraphiques, (Bibliothèque du Muséon 50) Louvain, 1962, n° 110,1; 141,1-2; 206,2; 266,1-2.

118 Cf. A. Jaussen, "Inscriptions Ḥimyarites", *RB* 35 (1926), n° 81 p. 564, sous la forme 'bydm; le *mim* final semble une caractéristique particulière aux nombreux noms propres de cette liste de Jaussen.

119 Cf. E. Littmann, *Syria*, division IV, *Semitic Inscriptions*. Section A: *Nabatean Inscriptions*, Leyden, 1914, p. 70. Wuthnow, op. cit. p. 85 signale la transcription οβαιδος . Enfin, la transcription οβεδος est attestée deux fois à Nessana (cf. Colt, op. cit. n° 122 et 146).

N° 91 (Inédit. Avril 1978)





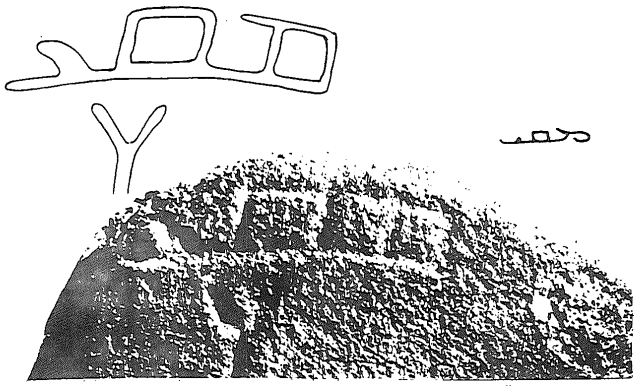
'En bas, à gauche d'une croix ancrée, sur une pierre assez granuleuse et de consistance semblable à la pierre n° 88, un nom est gravé profondément. Les lettres, fort claires, sont disproportionnées. Je lis w'qs.

Le ductus du *ṣadé* dont le trait supérieur est très incliné vers la droite, est étonnant; cependant, en considérant sa composition habituelle (un trait, normalement vertical, posé sur la ligne et un trait courbe accroché sous la ligne), on peut admettre que le trait supérieur a été tracé avec la même inclinaison que le ʿain.

Tel quel, ce nom n'a pas de parallèle; mais on connaît, en arabe, la racine ʿaQaṢa, "être avare", qui donne ʿuquṣ, "avare"; la gutturale (et non pas la voyelle) serait donc simplement mal placée, comme cela arrive fréquemment en syro-palestinien[120]. Ce nom est donc à lire ʿwqṣ, "avare" (?).

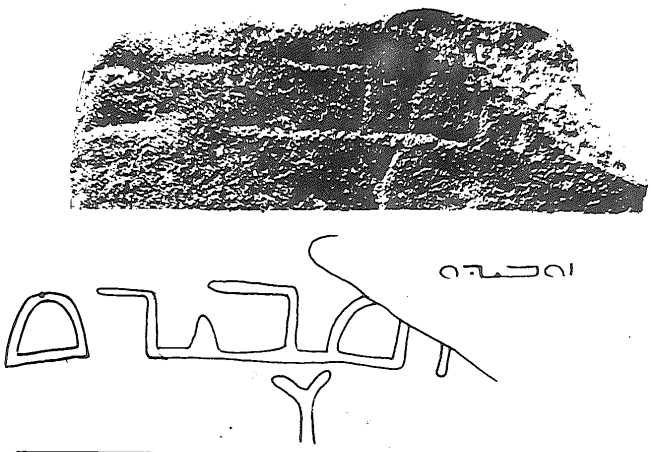
120 Cf. Bar-Asher, op. cit. p. 393ss.

N° 92 (Inédit. Avril 1978)



Au-dessus d'une croix ancrée, un nom est clairement gravé; les lettres sont très régulières. On lit aisément: mqy, nom propre masculin ou féminin très répandu en palmyrénien[121]. Une transcription grecque sur une bilingue fournit la pronociation makkai[122].

N° 93 (Inédit. Avril 1978)



L'inscription est clairement gravée au-dessus d'une croix ancrée. Le coin supérieur droit de la pierre est cassé; il ne reste que le trait inférieur d'une lettre, la première du mot selon toute vraisemblance; la deuxième lettre est aussi un peu abîmée mais se laisse lire sans équivoque; étant donné que le reste de la première lettre n'est pas lié à gauche, alors que toutes les lettres sont liées normalement, je propose d'y voir un *zain*. On lit ainsi zwbydw.

Ce nom propre existe en nabatéen[123]. Il n'est pas impossible que l'on ait affaire à un équivalent hypocoristique d'un nom palmyrénien en zbd . . .[124]. A Hatra, est attesté zbydu[125]. L'arabe connaît la forme زبيد [126]. Il s'agit donc d'un nom sémitique très courant[127] construit sur la racine zbd "donner"[128].

L'apparition ici d'un iudh médian pourrait peut-être s'expliquer par la formation d'une diphtongue provoquée par la construction hypocoristique (déplacement de l'accent); quant au *waw* de la première syllabe, on n'est nullement étonné de le trouver en syro-palestinien pour vocaliser le shewa.

121 Cf. les très nombreuses attestations cataloguées par J.K. Starck, *Personal Names in Palmyrene Inscriptions*, Oxford, 1971, p. 35, pour qui il s'agit d'un hypocoristique de mqymw.

122 *CIS* II,III n° 3910.

123 Cf. Euting, op. cit. n° 29, qui propose de voir ce nom sous les transcriptions grecques Ζοβαιδος et Ζοβεδος et renvoie notamment à Waddington 2127, 2150 et 2520.

124 Cf. Starcky, *Inventaire* X, n° 4; 39; 40; 63; 127; en grec, Ζεβειδας (n°130) ou Ζεβεδος (n°2).

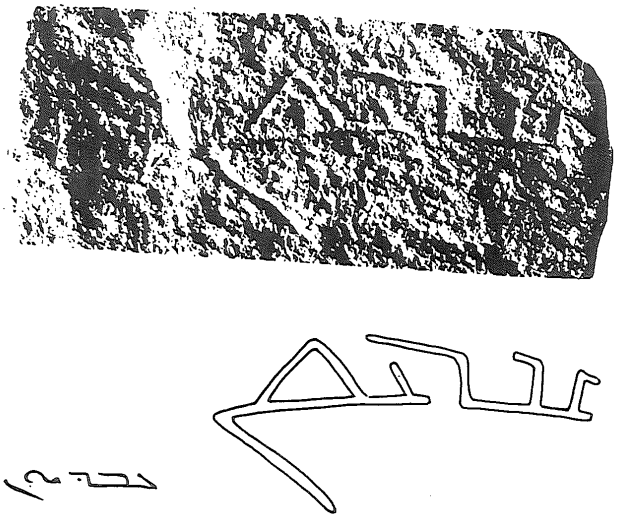
125 Cf. A. Caquot, "Nouvelles inscriptions araméennes de Hatra. III", *Syria* 32 (1955), p. 52 n° 46; id. dans *Syria* 40 (1963) p. 14: inscription de Qabr Abu Nayf; id. dans *Syria* 41 (1964), p. 252 n° 106 b.

126 Cf. Littmann, op. cit. 1943, n° 125 p. 89-90.

127 Wuthnow, op. cit. p. 137 a également relevé les transcription grecques Ζοαβειδου, Ζοβαιδος et Ζοβεδος .

128 En hébreu biblique, on trouve une fois le verbe et le nom (Gen 30,20) et le nom propre zbadyahu (II Chr 17,8).

N° 94 (Inédit. Avril 1978)

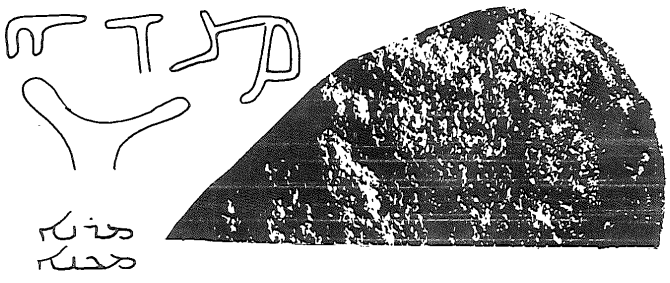


Au-dessus de la croix, le nom propre est gravé avec une certaine négligence; les lettres obéissent au module dans leur structure, mais, quant à leur réalisation, leur taille augmente dans le sens de la lecture. On lit 'bdywn.

Les lettres sont très angulaires, y compris le *waw* (qui devient triangulaire); le *'ain* a la même structure que dans l'inscription n° 38; le trait horizontal du *beth* est très court, ce qui arrive parfois (cf. inscription n° 32); en revanche celui du *dolath*, disproportionné, est démesurément long.

C'est exactement le même nom que celui de l'inscription n° 35 au commentaire onomastique de laquelle on se reportera.

N° 95 (Inédit. Avril 1978)

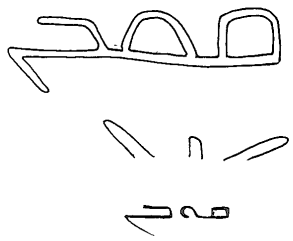


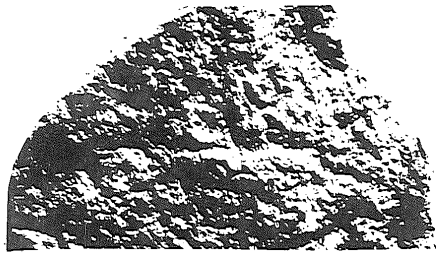
L'inscription, très effacée, peut encore se lire (avec peine!); de toute façon, elle fait le désespoir du photographe. Je crois pouvoir proposer mrn'ou mkn' .

Peut-on comparer ce nom au syriaque mrun'[129]?

Le *mim* est très ouvert; il est lié à la deuxième lettre par le milieu; le *nun* se signale par sa barre supérieure transversale.

N° 137 (cf. n° 28. Retrouvée en Avril 1978)





129 Cf. Drijvers, op. cit. n° 56,2; Littmann, op. cit. 1934, n° 43,2; 45,2; Pognon, op. cit. n° 81,2 (= Littmann, op. cit. 1904, n°7).

B. Les Inscriptions grecques inédites

N° 43 (Février 1978). Cf. pl. XII, n° 43 et pl. XVII, fig. Fb.

Cantonnant les quatre bras d'une croix ancrée, on lit l'inscription στεφανος .

N° 44 (Février 1978)





Sur une petite pierre quadriforme, trouvée un peu au-dessus du grand birkéh, on lit simplement Μα
σεχ

Ce nom propre est la transcription en grec d'un nom sémitique connu, Mskh, attesté notamment dans le Hauran. Pour une liste des diverses transcriptions grecques de ce nom, cf. Wuthnow, op. cit. p. 74 et 150.

N° 45 (Février 1978). Cf. pl. XII, n° 45 et pl. XIX, fig. Rb.

Au sommet, une croix ancrée est entourée d'une croix grecque cantonnée, en haut à droite, de la lettre ΤΤ , en bas à gauche, de la lettre φ dont la barre se prolonge en tournant autour de la croix, de bas en haut et de gauche à droite.

N° 46 (Février 1978). Cf. pl. XII, n° 46 et pl. XIX, fig. Pg.

La pierre porte une croix ancrée cerclée d'une ligne en fer à cheval, aux extrémités ancrées. La croix est cantonnée dans les quarts inférieurs par les lettres A et ω .

N° 72 (Avril 1978). Cf. pl. XII, n° 72 et pl. XIV, fig. Aa.

Autour d'une croix dont le bras le plus long est le bras supérieur, se lit l'inscription Κραλισος . Les lettres sont disposées de telle sorte qu'elles permettent de former l'anagramme ΙC (=Ιησους). Au-dessous, une palme à 3 branches est un symbole cruciforme.

N° 73 (Avril 1978).

Grande stèle, du type de celles qu'avait trouvées Savignac en 1924 (n° 1 à 4). On lit facilement, gravé sur 5 lignes :

φος/Α/ιαθη/CIχ/μαλ/λου

"Lumière. Aiathè (fils) de Sikhmallos".

φος est une orthographe négligée pour φως qui est sans doute le premier mot d'une formule funéraire chrétienne assez fréquente: φως χριστου φαινει Πασιν [130]. Le nom propre Ιαθη a été trouvé à Mahay [131]. Cιχμαλλος n'est pas encore attesté; mais on

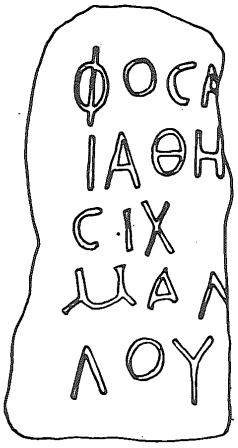
130 Cf. H. Leclercq, art. "Lampes", *DACL* VIII (1927), col. 1108, n° 54 et 55; col. 1110-1111, l'auteur signale que cette formule est très répandue chez les byzantins et provient de la liturgie des présanctifiés. Cf. aussi H. Lecelrcq, art. "Lumière", *DACL* IX,2 (1930), col. 2699.

131 Cf. Canova, op. cit. n° 382 p. 376-377.

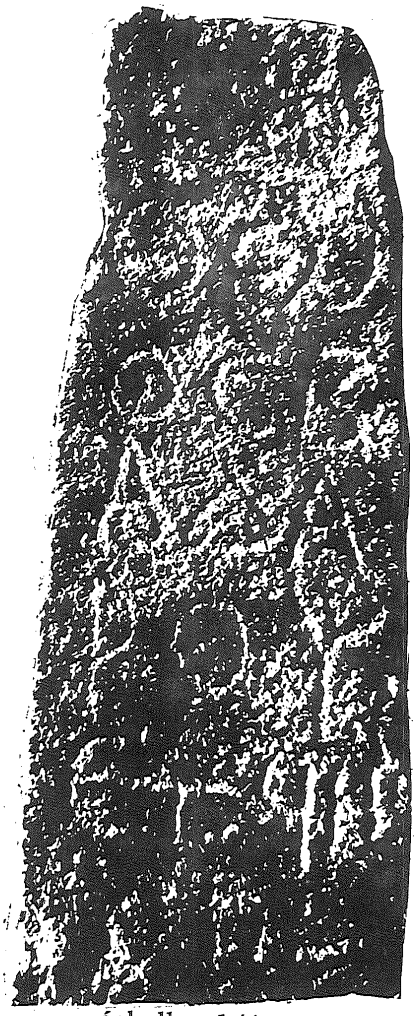
connaît Cιχμου [132] qui pourrait en être l'hypocoristique.



échelle : 1/4



N° 141 (Avril 1978).





échelle : 1/4

Cette grande pierre, du même type que la n°73, porte 5 lignes où se lit facilement: Θεμ/ος Β/αδα/ρου/ετ 4η "Themos (fils) de Badaros, (âgé de) 98 ans".

Θεμος est l'une des transcriptions grecques, très répandue, d'un nom propre sémitique bien connu[133]. Βαδαρος est egalement connu dans les inscriptions de Syrie[134]; c'est un nom nabatéen.

132 Cf. Wuthnow, op. cit. p. 109.

133 Cf. Wuthnow, op. cit. p. 54 et 175; qui l'a relevé dans les inscriptions de Waddington: ce nom se trouve dans des inscriptions du Hauran. Il se trouve aussi 2 fois à Nessana (cf. C.J. Kraemer, *Excavations at Nessana*, 3, *Non-Literary Papyri*, Princeton, 1958, n° 31,43 p. 98 et 79,11 p. 229.)

134 Cf. Wuthnow, op. cit. p. 31 et 130.

Conclusion onomastique

A parcourir la liste onomastique des inscriptions - tant en grec qu'en syro-palestinien - qui ont été trouvées jusqu'à présent à Samra, on constatera une certaine cohérence.

On note d'abord la présence de noms purement grecs (n° 6, 7 et 43) ou latins (n° 2, 3, 4 et 15) en petit nombre. L'essentiel est constitué de noms sémitiques. Un nombre non négligeable de ceux-ci avait déjà été repéré dans l'onomastique de la Syrie et notamment du Hauran dont Samra fait décidément partie tant du point de vue de la géographie physique que du point de vue culturel (des recherches précises sur la céramique seraient précieuses pour éclairer ce point).

La comparaison avec les onomastiques palmyrénienne, nabatéenne surtout, mais aussi safaïtique et thamudéenne montre une parenté qui n'étonnera pas dans cette région. Quant à la comparaison avec le lihyanite et le sabéen, elle tient simplement compte du fait qu'il y a des racines sémitiques communes; mais entre ces derniers et Samra, les formes sont différentes et n'attestent pas de contacts culturels; là encore, ce n'est guère étonnant.

On remarquera enfin que, malgré le petit nombre des inscriptions, on peut constater, d'une part des phénomènes linguistiques propres au dialecte syro-palestinien et, d'autre part, des influences du syriaque et, déjà, de l'arabe, phénomène qui ne fera que croître avec le temps, comme en témoigne la littérature.

Conclusions paléographiques

Ces conclusions seront brèves: avant une remarque sur les inscriptions grecques, que nous sommes peu compétents pour étudier en détail, nous nous attarderons surtout sur les inscriptions syro-palestiniennes.

A. Les inscriptions syro-palestiniennes:

Il convient de rappeler que ce dialecte araméen de l'ouest[135] appelé christo-palestinien (en raison de son usage par les chrétiens de Palestine) ou syro-palestinien (si l'on préfère mettre l'accent sur l'écriture) est écrit à l'aide de caractères empruntés au syriaque estranghelo (qui est un dialecte araméen de l'est); il a certes subi l'influence du syriaque, du grec, de l'arabe, mais il est bien un dialecte à considérer pour lui-même. Eh dehors d'un nombre non négligeable de manuscrits trouvés au monastère du Kastellion (Ḫirbet Mird) et au monastère Sainte Catherine du Sinaï, les inscriptions trouvées en 11 endroits différents en Palestine et Transjordanie (plus l'inscription d'un pèlerin au Wadi Hajjaj dans le Sinaï)[136] permettent de repérer les traces de la répartition géographique de ces communautés dont on sait finalement peu de choses. (Cf. carte pl. XXI).

L'étude de toutes ces inscriptions montre que l'alphabet syro-palestinien constitue un système homogène caractéristique qui se distingue nettement de celui de l'alphabet estranghelo à qui il a emprunté ses signes. Tandis que ce dernier est à base linéaire, l'alphabet syro-palestinien est composé de lettres dessinées selon

135 L'étude linguistique précise et détaillée de M. Bar-Asher, op. cit., a récemment apporté de nouvelles lumières sur ce dialecte; c'est d'ailleurs dans cet ouvrage que l'on trouvera une bibliographie exhaustive.

136 En cours de publication.

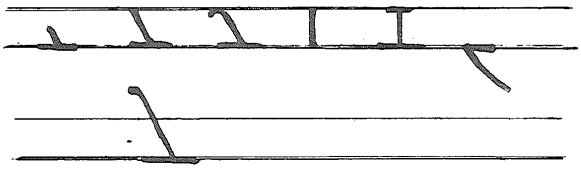
des procédés géométriques; en le regardant, on se retient mal de la tentation de le nommer un alphabet estranghelo majuscule . . . Quoi qu'il en soit, cet alphabet a suivi son évolution propre et a lui-même connu les phénomènes de l'évolution d'une écriture cursive.

Posés sur une ligne, les lettres de l'alphabet sont, dans toute inscription ou ligne d'écriture, de dimension mesurée par ce que nous nommons un module: les corps des lettres s'inscrivent entre deux lignes parallèles (imaginaires), tandis que les hampes ou les jambages sont de longueurs proportionnées à ce module (égale, 1/2 ou 1/3).

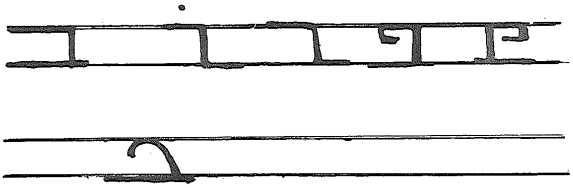
Ces deux principes étant posés, on constate que les lettres se répartissent - quant à leur forme - en quatre classes: la classe des lettres-traits, celle des lettres ouvertes, celle des lettres fermées, celles des lettres complexes. Pour décrire ce système, on opère une réduction, comme le fait toute analyse formelle: des lettres *telles qu'elles sont réalisées,* on extrait l'*image mentale* qui est la forme (abstraite) de la lettre, c'est-à-dire *ce qui permet au lecteur de reconnaître la lettre* par rapport à d'autres. Par exemple, la réalisation du *'olaph* peut être plus ou moins "incurvée", avec deux traits verticaux plus ou moins inclinés sur la ligne, etc . . . : il s'agit de retenir *les traits distinctifs pertinents,* c'est-à-dire le système de caractéristiques qui opposent les lettres deux à deux.

L'alphabet est donc l'ensemble des images mentales qui s'organisent toujours, avons-nous remarqué, selon les quatre classes citées plus haut:

— La classe des lettres-traits comporte des lettres composées d'un trait formant un angle variable avec la ligne et de longueur généralement égale à 1/3 de module, 1/2 module, 1 module, 2 modules. Elle comprend les lettres: *zain, 'ain, nun* (qui a deux formes: une forme initiale-médiane et une forme finale), *lomadh, kaph* (qui, avant le XI^{e} s. n'a qu'une seule forme, contrairement au syriaque), et *iudh.*

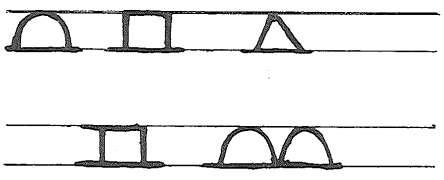


— La classe des lettres ouvertes comporte des lettres formées d'une figure géométrique que l'on peut décrire comme un contour non fermé. Elle comprend les lettres *beth, dolath-resh, phé, pé, kaph.*

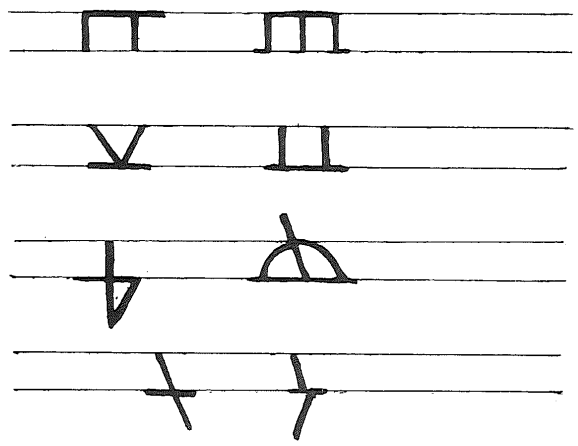


— La classe des lettres fermées comporte des lettres formées d'une figure géométrique que l'on peut décrire comme un contour fermé. Elle comprend les lettres *waw, quph, mim, semkath, iudh.*

Toutes les lettres ouvertes et fermées s'inscrivent dans le module.



— La classe des lettres complexes comporte des lettres formées d'un assemblage de figures géométriques, surfaces et traits. Elle comprend les lettres *'olaph, hé, ḥeth, shin, ṭèth, taw, gomal, ṣadé.*



Tout cela rend compte de l'ensemble des images mentales fondamentales. Mais, à travers les réalisations, les images mentales varient (selon les scribes, le matériau des supports, les époques, les lieux) mais ne dépassent pas, pour chaque lettre, un nombre limité, on va le voir, et toujours dans les quatre classes. Ce système a donc toutes les qualités pour être parfaitement clair (lisible): à savoir que les signes, *au sein de chaque inscription* se distinguent sans équivoque les uns des autres. C'est tout à fait remarquable dans le cas de l'inscription n° 41 de Samra par exemple, où toutes les lettres (sauf le *ṭèth*) sont des lettres fermées et se distinguent les unes des autres deux par deux de façon simple.

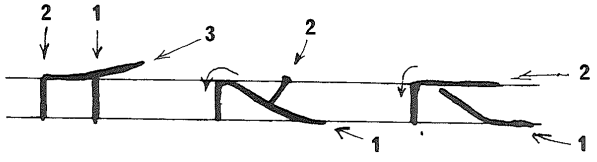
Cependant, on aura remarqué que le système présente des points de faiblesse (et c'est cela qui le rend "déformable" et qui, dans le cas du syro-palestinien, rend possible les variations diachroniques): des lettres, par variation d'image mentale, peuvent passer d'une classe à une autre! Voyons pour Samra:

— Le *iudh* est une lettre-trait dans les n° 16, 18, 19, 20, 21, 24, 25, 26, 35, 38, 40, 87, 92, 94. C'est une lettre fermée dans les n° 23, 41,, 85, 88, 90, 93. On comprend comment: l'image mentale fondamentale du *iudh* peut être décrite comme un trait incliné de 45° vers l'avant; en s'épaississant, il peut devenir un triangle. Nous suggérons qu'il y a des chances pour que l'image "triangle" (lettre fermée) soit diachroniquement postérieure à l'image "trait incliné" (lettre-trait).

— Le *'ain* pose des problèmes plus complexes. Lettre-trait sans équivoque dans les n° 21 et 90, il devient lettre ouverte dans les n° 26, 35, 38 et 94 par allongement du hapex supérieur. Nous suggérons que la lettre-trait est diachroniquement antérieure à la lettre ouverte; c'est ainsi que cette dernière se réalise dans de nombreux manuscrits. Le n° 91 est un phénomène notable: il ne reste que le trait incliné vers l'arrière après disparition du hapex.

La difficulté à Samra est le petit nombre de lettres, ce qui ne permet pas une classification sûre. Il reste en effet à éclaircir au moins deux problèmes: d'une part, comment concilier, dans les inscriptions 26, 35 et 38 la présence conjointe de *iudh*-lettre-trait et de *'ain*-lettre fermée ? D'autre part, comment situer les variantes du *taw* (n° 20, 39, 86 et 89)?

Il faut signaler que Samra n'est nullement isolé dans l'ensemble de l'épigraphie syro-palestinienne. Le *'olaph*, comme dans toutes les autres inscriptions, est représenté selon deux images mentales possibles: deux traits verticaux sur lesquels est posé un trait horizontal (n° 16 et 95), très répandu ailleurs qu'à Samra. A Samra, il devient plus fréquemment un long trait incliné qui retombe verticalement et sur lequel est posé à angle aigu un trait oblique, souvenir du trait horizontal (n° 16, 17, 18, 20, 23, 28).



Le cas du n° 16 est étrange: on a les deux *'olaph* simultanément. Mais c'est aussi le cas à 'Abud[137]. Le cas du n° 39 est également étrange: le premier trait est devenu oblique et le trait horizontal est lié avec le second trait vertical pour former un simple trait à angle droit. On trouve cela dans la mosaïque de Kabri[138].

A Samra, on trouve une troisième forme de *'olaph* (n° 38), si particulière puisque c'est la seule dont la réalisation est faite de deux angles droits accolés; mais cette forme se trouve aussi dans la mosaïque de Shelomi (el-Badda).

Le *ḥèth* est représenté à Samra selon trois images mentales: celle des n° 18, 34, 85; celle du n° 21; celle du n° 89. La première est celle de l'inscr. sur mosaïque de el-Quwismé et des manuscrits de Ḫirbet Mird; la seconde est celle de l'inscr. Ṣur plâtre de Ḫirbet Mird, des inscr. sur les mosaïques de 'Evron et de Umm er-Ṛu'us; la troisième est celle de la pierre de Jerash et de la pierre du musée palestinien.



Le *taw* du n° 89 n'est pas isolé : il se retrouve à 'Abud.

Le *'ain* du n° 91 est connu dans l'inscription de la laure de saint Firmin (dans le wadi Suweinit).



L'ensemble est difficile à dater, dans l'état actuel des connaissances; cependant, le repérage de ce système de l'alphabet syro-palestinien doit permettre, croyons-nous, en utilisant tous les manuscrits connus, de parvenir un jour à un classement paléographique assez complet. Ce qui est sûr, c'est que les inscriptions de Samra ne sont pas paléographiquement homogènes et datent d'époques différentes, à notre sens pas avant la fin du VIème siècle.

B. Les inscriptions grecques:

L'écriture, tant des inscriptions publiées par R. Savignac[139] que de celles que nous avons trouvées (n° 43, 44, 45, 46, 72, 73, 141) semble tout à fait homogène. Nous pouvons la comparer à celle des inscriptions publiées par R. Canova (p. CX-CXII) dont l'alphabet est celui des col. 4 et 5 du tableau II, si l'on considère surtout les lettres A, D, L, M, O, S, Ō qui se distinguent nettement des autres colonnes et me semblent caractériser cette écriture.

Cela nous amènerait à dater ces inscriptions du milieu et de la fin du VIème siècle.

CONCLUSION

A l'issue de la rapide étude que nous venons de faire, beaucoup de questions se posent.

On sait que la voie romaine, établie dès le début du IIème siècle, est l'objet de soins répétés de la part des empereurs et cela, à cause de son importance militaire sur le *Limes Arabicus* et vraisemblablement de son importance économique. Il serait fort intéressant de savoir ce qui existe à Samra entre les IIème et Vème siècles.

137 Ligne 4. Cf. J.T. Milik, "Inscription araméenne christo-palestinienne de 'Abud", *Liber Annuus* 10 (1959-1960), p. 197-204.

138 Qui, sur ce qu'on en a entrevu (aucune fouille n'a encore été faite), ne laisse voir qu'un seul mot: "Abraham".

139 N° 1 à 15 (*RB* 1925, p. 119-123, et pl. II).

Si l'identification de Samra avec l'antique Hatita (ou Aditha) est juste, il faut tenir compte de la *Notitia Dignitatum* où la ville est mentionnée à l'aube du Vème s. et de la carte de Peutinger, où elle existe déjà au IV ème au moins.

Or, notre visite sur le site ne nous a pas permis de récolter un matériel plus ancien que de la fin du Vème s. Il resterait à trouver des parallèles bien datés pour cette céramique de Samra. La rareté des publications où un matériel identique est stratifié est préoccupante; la publication de la céramique de Ḫ. el-Mafjer, par exemple, datée aux alentours de 740, n'offre pas beaucoup de similitudes. Notre céramique, qui date l'abandon du site, est ou bien plus récente que Mafjar ou bien plus ancienne; à cause de la présence des tessons de *Late Roman Ware* (Véme-VIème s.) et des quelques indications données par les monnaies (VIème-VIIème s.), nous pencherions pour l'attribution plus ancienne. On ne peut pas dire plus.

Samra est le seul cimetière syro-palestinien connu; c'est dire son intérêt d'autant plus, nous l'avons vu, qu'un nombre non négligeable d'inscriptions y ont été trouvées et que l'on peut considérer qu'il y a au moins, un millier de tombes. Pour dater ces inscriptions, la paléographie, dans l'état actuel des recherches, n'offre pas de critères sûrs. Cependant, il se peut que la comparaison avec Umm el-Ru'us (Vème-VIème s.), 'Evron (Vème s.), Shelomi (VIIème-VIIIème), Ḫ. Mird (VIème-VIIème) nous permette d'avancer qu'il n'y a vraisemblablement pas d'inscriptions après le VIIIème ni avant le VIème; cet intervalle des deux siècles expliquerait bien la variété épigraphique constatée.

Eu égard à l'absence de fouille systématique d'une cité syro-palestinienne, une investigation approfondie du site de Samra permettrait certainement de dessiner la physionomie d'une communauté syro-palestienne peu connue, proche de Jerash, tout en éclairant des problèmes tels que celui des passages du romain au byzantin et du byzantin à l'omeyade aux confins du *Limes Arabicus*.

A. Desreumaux
J.-B. Humbert
November 1978

INDEX ONOMASTIQUE SYRO-PALESTINIEN

'btbg	n° 39	mry'	n° 23
'l̀y'	n° 16	mrn'	n° 95
'lysub'	n° 16	nbuṭṭy	n° 33
'rbn	n° 27	nblqnon	n° 32
b (prép.)	n° 21	sṭfnon	n° 42
gyrgy (n)	n° 25	suṭu	n° 41
dwyd	n° 40	sqoṭ	n° 86
w'qs	n° 91	'bdyon	n° 35 et 94
zubydu	n° 93	'ubydu	n° 90
zhrqly	n° 87	'umyru	n° 26
ḥdy'	n° 18	'ušy'b	n° 38
ḥšn	n° 34	qubn	n° 28 = 137
ṭuby'	n° 30	qyom	n° 41
yuḥns	n° 85	qymu	n° 88
kḥd	n° 89	qymt'	n° 20
klpṣp (?)	n° 17	qš(y)šy	n° 21
m'ksn ou m'ks'	n° 17	rbby	n° 36
mušy	n° 19	šbt	n° 89
mqy	n° 92	šlymu	n° 24

PRELIMINARY REPORT ON THE SECOND SEASON OF EXCAVATIONS AT QAL'AT EL-MISHNAQA MACHAERUS

by
Stanislao Loffreda

With the gracious permission of the Director of the Dept. of Antiquities of Jordan, Dr. Adnan Hadidi, our second season of excavations at Qal'at el-Mishnaqa-Machaerus took place from Sept. 3 to Oct. 20, 1979. Fr. Virgilio Corbo, director of the excavation, was assisted by Fr. Michele Piccirillo, Fr. Tomislav Vuk, and the writer.

The first season of 1978 was rather a reconnaissance of the site:[1] since our project is to dig the whole fortress, it was imperative from the very start to trace its outer limits, in order to avoid the risk of dumping the debris on top of some structures. This preliminary work enabled us to trace for the first time a general map of the main fortifications. With very few exceptions, we intentionally avoided deepening the soundings: this will be the task of future excavations, as soon as a more exact dating of the fortifications will be fixed by stratigraphy.

The second season of 1979 was mainly devoted to the recovery of the famous palace which, according to Josephus Flavius, Herod the Great built "in the center of the enclosure with magnificently spacious and beautiful apartments"[2]. It is well known that many travellers and archaeologists were rather disappointed by the meager amount of ruins visible on the surface before the excavations. To be sure, the very fact that bed-rock was in some areas visible to the surface, as for instance on the northern side of the fortress near the water reservoir n.31, helped strengthen the impression that very little ground was left for the lofty palace described by Josephus.

The results of our exploration have definitely disproved this false impression. The area on the crest of the mound, some 100 m. long and some 60 m. wide in round figures, revealed a perfectly planned and gorgeous thermal complex in grid MN-3,4.

The second season was also useful in clarifying some problems of chronology concerning the Hasmonaean fortress.

1. The Thermae of the Herodian Palaces. (Pl. XXI, 1-2).

The Thermae are located on the southern portion of the fortified area. From north to

1 Corbo, V., "La Fortezza di Marcheronte. Rapporto preliminare della prima campagne di scavo: 8 settembre-28 ottobre 1978": *in Liber Annuus* 28 (1978) 217-231, and pl.57-70.
Piccirillo, M., "First Excavation Campaign at Qal'at Elmishnaqa-Meqawer (Madabay)": in *ADAJ* 23 (1979) 177-183.
Loffreda, S., "La fortezza asmoneo-erodiana di Mishnaqa-Macheronte". in BibOr. 21 (1979) 141-1550.

2 *Jewish War*, VII. 6.2.

south, we uncovered the Apodyterium (n.18), the Frigidarium (n.17), the Tepidarium (n.16), the Laconicum (nn.15 and 14), the Caldarium (n.13) and the Praefurnium (nn.10-12). The thermal complex is limited on the NW side by corridor n.19, and on the SE side by a large courtyard (n.5).

On the SE flank of courtyard n.5 we started tracing some spacious rooms (nn.2-4).

Apodyterium (n.18). - An almost square hall, measuring 8.70 by 8.90m. The original walls were levelled to the ground or to the very foundations. The hall was paved in antiquity with a black and white mosaic floor, the borders of which could help us in checking the NW and SW limits of the room, while the line of the stone pavement belonging to courtyard n.5 delimits the eastern side. We can assume that the Apodyterium was entered from courtyard n.5 and from corridor 19 as well.

Unfortunately we will never know what kind of scenes, if any, decorated the central part of the floor: everything disappeared, except for some limited portions of the borders, having a straight fascia of black tesserae on a white background.

We can surmise that the mosaic floor was already in a very bad state of preservation before the outbreak of the First Jewish War, since only a few loose tesserae were found in the area; whereas the wholesale destruction which followed the surrender of the fortress in 72 A.D. left clear marks of ashes affecting the very preparation bed of the mosaic floor.

In the last days of the ill-fated fortress, the Apodyterium was reused by the besieged soldiers to build two fire-places: they have been found near the northern corner, together with a coin and pot-sherds.

A white limestone column-base, with a moulding closely resembling those employed in the fortress of Herodion near Bethlehem,[3] was found in secondary use on the southern inner side of the hall.

Tepidarium (n.16) — A fairly small room of 4.30 by 3.50 m. The walls are as badly preserved as those of the Apodyterium, but fortunately a large piece of a mosaic floor escaped the general destruction. The black and white mosaic pavement has an outer fascia, partly preserved on three sides of the room. Some 47 cm. from the outer fascia, another one appears, followed immediately by the classical motif of "cani correnti", that is to say by a series of interconnected volutes. The central part of the mosaic was certainly a circle within a square frame, but, alas, at this point the panel is broken.

Though less pretentious, the mosaic floor of the Tepidarium is stylistically associated with the one found at the fortress of Masada in a room of the Western palace.[4]

Frigidarium (n.17) — This structure, 4.90m. wide and 4.35 long, is better preserved because it was partly underground. The only entrance was from the SE side, that is to say from the Tepidarium. Both the inner walls and the seven

3 Corbo, V., "L'Herodion di Giabal Fureidis. Relazione preliminare della terza e quarta campagne di scavi archeologici": in *Liber Annuus* 17 (1967) 65-121.

4 Yadin, Y., *Masada. Herod's Fortress and the Zealot's Last Stand.* London 1966, p.119-127.

steps were white-plastered. A good number of restorable vessels were stored along the steps, together with about 80 coins of the First Revolt, grinding stones etc.

The stratigraphy is very instructive. To start with, the top layer near to the surface was made up of consolidated patches of mortar, discarded during the systematic pillage of the stone courses belonging to the dismantled walls. The significance of a stray coin of Traianus, rescued on the first steps of the Frigidarium is difficult to evaluate. One single coin is not sufficient to fix the exact date as to when the walls were dismantled. In any case we have to keep an eye open to the possibility that the systematic removal of stones continued even after the fortress was eradicated by the Roman legions.

At the level of the third step from the top we came across a layer of loose soil with ashes. It is from this stratigraphic context that many objects were recovered, together with some forty coins of the First Revolt. Apparently in that date the Frigidarium had already ceased to be used as a place for "dolce vita" ablutions, and was employed for the more mundane needs of the inmates. This would explain the presence of grinding stones, cooking pots with conspicuous soot, etc. An additional observation corroborating this interpretation is the fact that the vessels from this stratum do not bear any sign of incrustations due to constant contact with water, and this is supported by the presence of ash.

A third layer of silted soil mixed with sand and gravel was recorded in the lowest portion of the Frigidarium. Here the pot-sherds did preserve a clear patina due to prolonged immersion in the water.

Caldarium (n.13) — The plan of the Caldarium is preserved at the level of the Hypocaustum. It was a rectangular hall, measuring in the inside 8.10 by 6.35 m. Two or three courses of the well constructed walls are preserved, starting from the floor of the Hypocaustum, with a maximum height of 1.05 m. and with an average thickness of 1.20 m. A small rectangular niche, reaching the pavement of the Hypocaustum, was on the SE wall, close to the S inner corner of the hall. Another niche was found in the center of the NE wall, some 65 cm. above the pavement of the Hypocaustum. The semicircular shape of the niche, with a maximum width of 1.90m. can be reconstructed mostly from the presence of eight suspensurae.

The pavement of the Caldarium, some 65 cm. above the pavement of the Hypocaustum, was completely dismantled. It was, at least in part, in *opus sectile*. This can be deduced on the basis of several stone slabs of geometric form (rectangles, triangles, lozenges, etc) and generally of small size. Hard stone of different color (white, pink, reddish, black, etc) was employed. It is also clear that the inner walls of the Caldarium were lavishly decorated with stuccoes and crustae. The splendor of this and other halls of the palace is gone forever, but can be surmised by a sizeable amount of displaced fragments.

The fury of devastation reached the level of the Hypocaustum as well. Most of the suspensurae supporting the pavement of the Caldarium were removed in antiquity. Fortunately

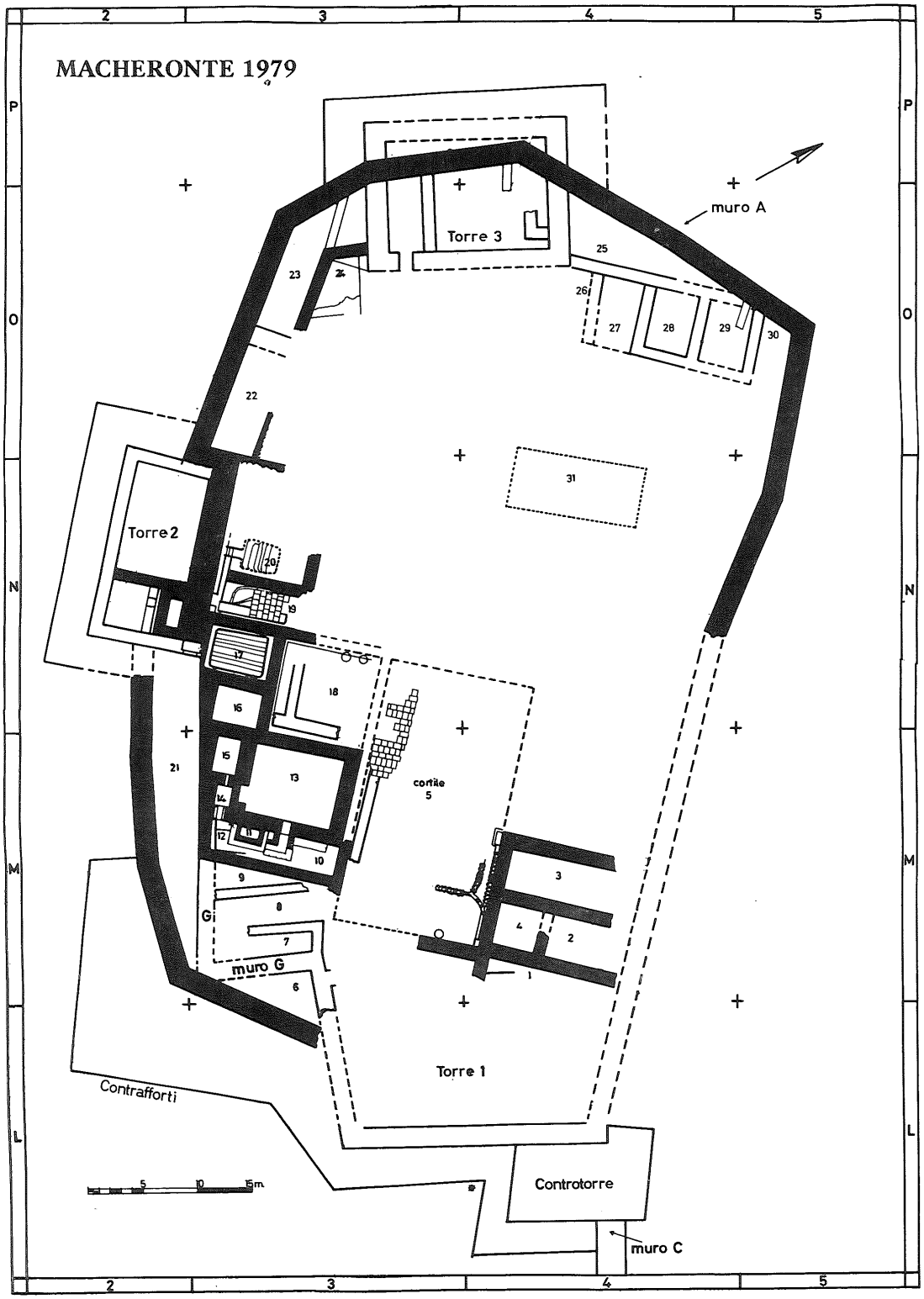

MACHERONTE 1979
muro A
Torre 3
Torre 2
Torre 1
corte 5
muro G
Contrafforti
Controtorre
muro C
5 10 15m

Fig. 1

a great portion of the Hypocaustum pavement was spared. We were able to trace eleven rows of large square bricks (56 by 56 cm.). Similar large bricks were used in the Hypocaustum of the thermal installations at Masada.[5] Though only a few suspensurae were left *in situ, we* were able to reconstruct their original setting on the basis of their imprints left on the brick floor. The suspensurae were made up of superimposed round clay bricks connected with characteristic green clay, and measuring between 19 and 16 cm. in diameter. Several suspensurae were set in close ranks, so as to form solid and more stable pilasters. Finally the arched mouth of the Hypocaustum was well preserved in the center of the SE wall.

Laconicum (nn.14 and 15) — On the SW flank of the *Caldarium* there are two small chambers of great interest: they constitute the *Laconicum*. This additional element of the thermal compound was not found in the sister fortresses of Herodion and Masada, and it was meant for heavy *sudurationes* with a higher temperature than in the Caldarium. The hottest room (n.14) was in direct contact with the *Praefurnium* mouth, while room 15 was warmed up through a narrow opening in the center of the SE wall.

Room 14 was only 1.55 by 2.10 m. large, and room 15 measured 2.35 by 3.42 m. Both rooms are preserved at the level of the Hypocaustum. Six suspensurae were found *in situ* in room n.14, and ten more in room n.15. The round bricks of the suspensurae (16 to 18 cm. in diameter) are based on either square (28 by 28 cm.) or slightly rectangular (25 by 27 cm.) bricks no more than 4.5 cm. thick.

Several *tubuli* were also found. They were clay pipes for hot air circulation, originally fixed to the walls in a vertical position. The standard size of the pipes is 31 by 12 by 6 cm., with a vertical slot on the short flank. A good example of *tubuli in situ* comes from the *thermae* of Masada.[6]

Praefurnium (nn.10-12) — It is an open courtyard, 12 m. long and only 2.70 m. wide. In this area, where fire was made to warm up several rooms of the *thermae*, an extraordinary layer of well depurated ash was preserved; the latter was widely used to strengthen the mortar and to add impermeability to the walls.

Along the NW wall there were two arched openings to warm up both the *Caldarium* and the *Laconicum*, with a plastered tub between them, measuring 1.77 by 1.00 m. and still preserved to a depth of 1.10 m.

Courtyard (n.5) — The thermal compound is limited on the E side by a large courtyard, only partly excavated. If our provisional reconstruction is correct, it measures 24 m. in length and 14 m. in width. Only fifteen courses of the original stone pavement are preserved. Several channels, collecting the water from rooms 2-4 were partly traced.

Rooms 2-4 suffered heavily in the final destruction of the fortress, and additional disturbances took place in recent times. At least one thing is certain: they were paved in antiquity with a mosaic floor, and again , the mosaic was already deteriorated either before or during the First Jewish Revolt. Here in fact, as in the Apodyterium, the ashes of the final destruction rest directly on the preserved mosaic

5 Yadin, *Masada*, p.76 f.

6 Yadin, *Masada*, p.80.

bed, together with the objects of the last inmates. Probably these large halls were reception rooms.

The layout of the Herodian palace so far excavated is very regular and organic. What puzzled us for a long time was the strange and haphazard direction of the wall delimiting the S flank of the Thermae. Why was it not built parallel to the inner sides of the thermal structures? We assumed that a satisfactory explanation could be found in the hypothesis that some earlier walls were reused by Herod the Great.

In order to solve this problem, we cut a trench in locus 12 of the *Praefurnium*. Our suspicion turned out to be correct: the southern flank of the Thermae is indeed based on a massive defensive wall of the Hasmonaean fortress (wall G), originally connecting towers n.1 and 2.

2. The Hasmonaean fortress.

Though the recovery of the Hasmonaean fortress, which, according to Josephus Flavius was built by Alexander Yannaeus and demolished by Gabinius,[7] is still at the beginning, we can already draw some important conclusions.

The three towers on the crest of the mound certainly belong to the Hasmonaean period. To the same period belongs the defensive wall G between towers n. 1 and 2. In the Herodian period, many of these structures were re-used. For example, wall G was re-used as a foundation for the southern flank of the Thermae. Tower n.2 was rebuilt and underwent several changes: the original doorway near the eastern corner was blocked; a massive wall was built along the NE side, and more partition walls were added in the inside.

While digging in the area of the *Thermae*, we came across several walls which were certainly buried under the Herodian level of the *Thermae*. For example, in corridor n.19 a wall, running parallel to the NW flank of the *Frigidarium*, continues both under the stone pavement of the same corridor, and under the massive wall of tower n.2, while another pre-Herodian wall branches off at right angles in the direction of the water cistern n. 20. In the *Apodyterium*, two walls, set at right angles, were partly uncovered under the level of the Herodian mosaic floor. Another pre-Herodian wall was traced in courtyard n.5: this also continues under the stone pavement. In the second room (n.15) of the *Laconicum*, some remains of a plastered wall were found, which were cut when the *Hypocaustum* of the *Laconicum* was built. In locus 12 of the *Praefurnium* a white plastered Hasmonaean structure, possibly a water cistern, was partly uncovered. It was built against the defensive wall G and it was reused in the Herodian period as a foundation for three walls of the *Praefurnium*.

It is also possible that rooms 7, 8, 9 in the south, and rooms 27, 28, 29 in the northern portion of the fortified area, though certainly re-used in the Herodian period, were originally built in the Hasmonaean period. In this case, however, more soundings in depth are needed to substantiate our impression.

So much for the Hasmonaean remains so far uncovered on the crest of the mound. An-

7 *Jewish War*, VII. I.2.

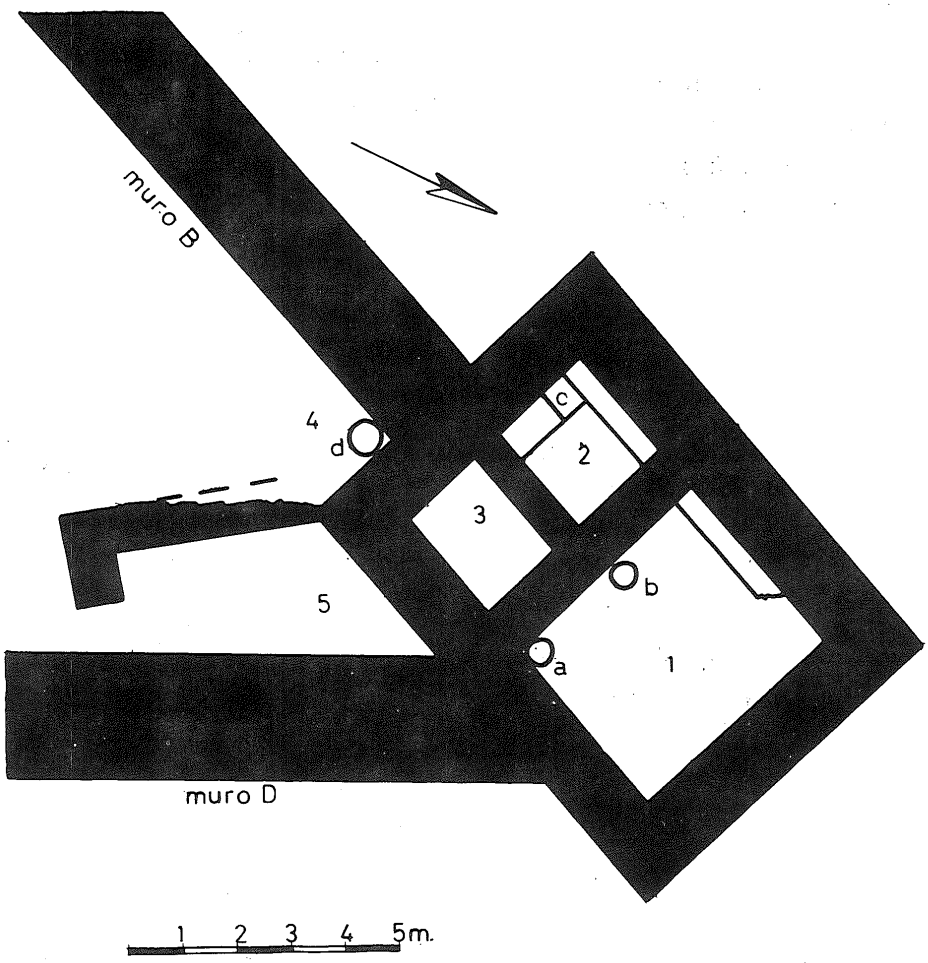


Fig. 2, Tower n.5

other substantial structure of the same period is tower n.5 on the northern slope of Jabal Mishnaqa. A more detailed description will follow shortly.

3. The lower fortifications.

The eastern flank of Jabal Mishnaqa was protected by free standing walls and towers. These are: wall B, 75 m. long from the crest of the mound to tower n.5; wall D, connecting towers n. 5 and 6; and wall C, 40 m. long, between towers n.6 and 1.

What is the meaning of these fortifications? Were they simply built to protect the numerous rock-cut water reservoirs still visible in this area? Or is this area the famous lower city of Machaerus, mentioned several times by Josephus?[8]

In our opinion, there is a very strong possibility that the lower city is indeed to be located in this area. Here are the main reasons. According to Josephus:

1. The lower city was protected by ramparts and towers. Only in this area, and nowhere else, defensive walls and towers appear outside the fortress proper.

2. The city covered a large area. Here we have a fortified area of ca. seven dunams.

3. The lower city was physically connected to the fortress on the crest of the mound. Again, the lower fortifications of this area do reach the summit of Jabal Mishnaqa.

Of course, only full excavations in the next seasons can prove or disprove our suggestion. In any case, through a careful survey we were able to detect several walls, which might belong to the lower city.

Up to now, we have partly excavated tower n.5 in the last days of the second season. The results are very interesting. First of all, we have definite proof that tower n.5 was built by the Hasmonaeans, and not by Herod the Great. In the small rooms of the tower, especially in room n.1 in connection with two ovens *a* and *b*, we collected a large number of restorable jars, bowls, lamps, etc. of Late Hellenistic tradition, together with some Hasmonaean coins. Secondly, we discovered that tower n.5 was connected to a huge rock-cut water reservoir, 8 m. deep and perfectly preserved. The original entrance to the water cistern was from room n.2. The entrance (c) was carefully masked and blocked in antiquity and escaped the attention of the enemy. Finally we reached the conclusion that the area was resettled in the Herodian period. On the eastern side of the tower, in loci 4 and 5, we came across a thick layer of ash, mixed with objects and coins of the First Jewish Revolt (Pl. XXII, & Fig. 2).

4. General remarks.

After two seasons of excavations we know something more about the fortress of Machaerus.

Archaeological data confirm the substantial correctness of Josephus Flavius. The oldest remains are not earlier than Alexander Yannaeus, and the subsequent Herodian fortress was destroyed in the First Jewish Revolt. Except for a very short reoccupation soon after the Rirst Revolt, the site was no longer resett-

8 *Jewish War*, VII. 6.4 and VII. 6.2.

led. Substantial remains of the Byzantine period are instead preserved in the modern village of Mukawer, some 2 km. to the east. In short, we have two main periods of occupation, followed by a short appendix:

Stratum 1 : the Hasmonaean fortress (90 B.C.-57 B.C.).

Stratum 2 : the Herodian fortress (30 B.C.-72 A.D.).

Stratum 3 : short reoccupation soon after 72 A.D.

On the other hand, the excavations help us balance the description of Josephus who was very generous in attributing most of the architectural and logistic achievements to Herod the Great. In this respect, our results illuminate what Josephus passed over in silence, as far as the Hasmonaean fortress is concerned.

The ruins of Machaerus are in a bad state of preservation. As we have seen, several halls of the Herodian palace were already deteriorated before the final destruction in the year 72 A.D. Apparently the surrender of the fortress did not change the Roman determination to eradicate this stronghold once and for all: "This fortress it was absolutely necessary to eradicate." The Romans were not satisfied with destroying the fortress. Very often removing the very foundations of the walls, they systematically threw away most of the stones from the crest of the mound, leaving only piles of soil and mortar. In fact the top layers, sometimes two metres thick, are made up of hard mortar, very difficult to dig, with very few stones. We know by experience that any stone, however large, cannot reach the bottom of deep wadis without disintegrating into hundreds of pieces.

It seems that a different fate befell the lower city. If the results of our soundings near tower n.5 are consistent with other parts of this area, we have to conclude that the Roman legions stormed the lower city in a fierce assault:[9] here in fact piles of stones mixed with heavy ash were left *in situ*.

According to Josephus, "in the center of the enclosure Herod built a palace with magnificently spacious and beautiful apartments". The splendor of the royal palace is gone, but once again Flavius was substantially correct: the

9 According to Flavius (*Jewish War*, VIII. 6.4) "the Jewish party, shut up within, now separated from their alien colleagues, and, regarding the latter as a mere rabble, *compelled them to remain in the lower town and to bear the first burnt*, while they themselves seized and held the fortress above".

After the capture of Eleazar, the Jews "hastily dispatched a deputation to discuss the surrender of the fortress, stipulating for permission to depart in safety, taking Eleazar with them. The Romans and their general having accepted these conditions, the people in the lower town, hearing of the separate compact that had been made by the Jews, determined on their part to make off secretly by night. But no sooner had they opened the gates than information was given to Bassus by those who had made the treaty with him; whether grudging them their lives, or maybe for fear of being held answerable for their flight. The most courageous of the fugitives, however, contrived to cut their way through and escape; *of those left in the town, the men, numbering seventeen hundred, were slain*, the women and children were enslaved. Bassus, holding himself bound to observe his agreement with those who had surrendered the fortress, let them depart and restored Eleazar".

planning of the southern side of the palace, with a central courtyard flanked by the thermal compound and by reception rooms, is perfectly regular. Mosaic pavements were used in the *Apodyterium*, in the Tepidarium, and the reception halls. The Caldarium floor was in *opus sectile*. Walls were lavishly decorated with stuccoes and crustae.

From a strictly archaeological point of view, the fortress of Machaerus provides us with the opportunity of illustrating a short but crucial period, from 90 B.C. to 72 A.D. This period of roughly 16 decades is marked by two radical destructions, easy to recognize. As everybody knows, short and clear cut periods of occupation are a blessing in the field of archaeology.

Up to now, three main homogeneous and rich deposits of pottery have been found: one, belonging to the First Jewish Revolt, was found at a corner of the stone ramparts on the SE side of tower n.1. The second was found in the *Frigidarium* (n.17), with some forty coins of the Revolt. The third one comes from tower n.5 and belongs to the short period of the Hasmonaean fortress. The last assemblage of pottery is by far the most interresting, in my opinion: it will be very useful to complement the horizon of Qumran Ib in a more restricted chronology.[10]

On the other hand, the rich material of Machaerus II makes it possible to check the survival of several Late Hellenistic forms, believed to be still in use in the First Jewish War. To mention just one example, the evidence of Machaerus strongly suggests that jar type 11.2, according to Dr. Lapp's classification,[11] did not last until the outbreak of the 68 A.D. war: and in fact, up to now, not one single piece of this jar appears in contexts belonging to the last days of the Herodian fortress.

Another assemblage, though less conspicuous, can be dated to the very beginning of Machaerus II, around 30 B.C. It comes from the fill below the mosaic floor of the reception hall n. 3, and from our trench in locus 12 of the Praefurnium.

I hope that a thorough study of the pottery from Machaerus will be a happy complement to my previous research on the pottery found both at Capharnaum[12] and Magdala,[13] and — finally — will pave the way to a better understanding of the material coming from the fortress of Herodion.

Fr. Stanislao Loffreda ofm

10 According to DE VAUX, R., *L'Archéologie et les Manuscrits de la Mer Morte*. London 1961, pp. 4-17, Qumran Ib should be dated from Alexander Yannaeas (103-76 B.C.) or from Hyrcanus (135-104 B.C.) to the year 31 B.C.
Dr. LAPP, P., *Palestinian Ceramic Chronology — 200 B.C. — A.D. 70*. New Haven 1961, p.12 writes: "On the archaeological principle that the pottery from any given stratum usually belongs to the last years of occupation it seems desirable to date the groups (of Qumran Ib and Qumran II) respectively about 50-31 B.C. and A.D. 50-68".
If we accept Dr. Lapp's principle, then the well stratified assemblage of Machaerus I (90-57 B.C.) constitutes a happy opportunity to fill the gap between Beth-zur I (140-100 B.C.) and Qumran Ib (50-31 B.C.).

11 Lapp, *Chronology*, p.14 and p.147 (under G).

12 Loffreda, S., *Cafarno, IIH La Ceramica*. Jerusalem 1974.

13 Loffreda, S., "Alcune osservazioni sulla ceramica di Magdala": in *Studia Hierosolymitana. I: Studi Archeologici*. Jerusalem 1976, pp. 339-354.

TWO ILLUSTRATED PAGES ON AUTOMATA IN THE METROPOLITAN MUSEUM OF ART

by
Safwan Kh. Tell

Introduction

The Meropolitan Museum of Art in New York possesses two leaves of a famous Arabic manuscript on "Automata", which are analyzed and discussed below.[1]

The first page represents a double-page illustration; the obverse and reverse miniatures depict an apparatus for raising water by animal power. The second page has a full page miniature representing an elephant clock.

The two illustrations are on paper, beautifully coloured and gilded, and both are clarified by technical alphabets and some Arabic sentences. These illustrations were copied from an earlier illustrated manuscript written by Abul-Izz Ismail ibn ar-Razzazz al-Jazari in 1206 AD. AI-Jazari's important book is concerned with mechanical devices and is called *Kitab fi Marifat al-Hiyal al-Handasiya,* "Book of the knowledge of Mechanical Devices". This book is also called *(Al-Jami bayna al-'ilm wal 'amal al-nafi' fi Sina' at al Hiyal* "Work that combines theory and practice and is profitable to the craft of ingenious contrivances." It was begun by Al-Jazari in 1206 at the request of the Artuqid Prince Nur al-Din Muhammad Qara Arslan, and finished under his son and successor Malik al-Salih Nasir al-Din Mahmud (1200-1222), who resided in Amid (Diyar Bakr) north Mesopotamia.[2]

Al-Jazari's book contains his practical knowledge of scientific methods which are illustrated. His work was partly based on the works of Archimedes and other Greek scientists and also influenced by other Arabic works such as Benu Musa.[3]

There is no doubt that there were many Greek books concerning such methods, also illustrated with drawings or diagrams. The idea of illustration and in many cases the physical elements of the picture were copied from classical sources by Arab scientists to clarify the text of a book, but in this case the illustrations show the influence of an Oriental background. The miniature was a style beloved by the Oriental Court and people[4] and this local tradition influenced works based on classical sources.

1. The two leaves are in the Islamic Department at the Metropolitan Museum of Art in New York, under the numbers: 56.121.II for the Apparatus miniature, and 57.51.23 for the Elephant-Clock miniature. For the latter see: Ettinghausen, R., *Arab Painting,* Skira, 1962, pp. 93.

2. Grube, E., *Muslim Miniature Painting from XIII to XIX century,* 1962, p. 9.

3. Wiedemann, E. and Hauser, F., *"Uber die Uhren im Bereich der islamischen Kultur," Nova Acta der Kais. Leopold, Halle* 1915, vol. I, Bd. 100.

4. Ettinghausen, (*Ibid*), p. 95.

Al-Jazari's work was greatly appreciated not only by the Artuqid Sultans but also by the Turks and Persians many centuries after its completion. Some of Al-Jazari's clocks were meant to be used in palaces or public squares.

Automata manuscripts can be found in many museums and libraries in the East and the West. The Top Kapi Sarayi Muzesi, in Istanbul, contains the earliest known manuscript of Al-Jazari's book dated 1206 AD. (602 H),[5] Library of Ahmet III No 3472. Many pages were taken from the manuscript of the Kevorkian Foundation some of which are in the Museum of Fine Arts, Boston, also the Cleveland Museum of Art and the Freer Gallery of Art in Washington D.C.[6]

The First Page:

Automata, 56.121.11

This double page illustration (Pl. XXIII-XXIV) is 11.5/8 in. high and 8.3/8 in. wide. The obverse and reverse miniatures represent a device for raising water from a well or stream by animal power. Both devices work on the same principle.

The obverse miniature shows a mule in a separate room at the top of the page. The mule moves round and round the upright to which it is attached.[7] This movement causes the horizontal toothed wheel below to revolve and interlock with the vertical toothed wheel (on the right--hand side of the miniature). This in turn, causes the horizontal rod, to which this wheel is attached to revolve. The upper horizontal rod carries four wheels, each of which is toothed only on one quarter of its circumference. The wheels are so arranged that the four sets of cogs point in four different directions. One revolution of the mule causes each of these four wheels to interlock in turn with the corresponding vertical wheel below it. Each section of the lower horizontal rod, consisting of four separately moving parts, is revolved in turn. The lower rod is attached to four scoops which dip into the water. Thus when the mule revolves, the wheels turn the rod attached to the four scoops and the scoops tip the water into the channels. The water flows along the channel to the area to be irrigated or into a special channel prepared to receive the water. The scoops are continuously filled and emptied in rotation.

The miniature on the reverse of this page has the same elements but with only one scoop instead of four (Pl. XXIV).

A comparison of these two illustrations shows the advantages of the four-scoop device over the one-scoop device. Instead of having one mule working all day to irrigate, say, one acre, we can use the four-wheel apparatus to reduce the irrigation time to one quarter of a day, or alternatively to irrigate four acres in one full day. The mule in the reverse miniature looks tired whereas in the obverse miniature it appears active and strong.

5. Grube, (*Ibid*), p. 7.

6. The Kevorkian Foundation at New York City has a unique Automata manuscript which is dated 1315 A.D. It has about 100 pages, but unfornately it has never been published. There are several copies related to al-Jazari in Istanbul (Suleymaniye Library), but the original copy is in the Top Kapi Saray Museum Library no. A. 3472.

7. This type of mechanical illustrations is explained in the second chapter of the fifth section of al-Jazari's treatise.

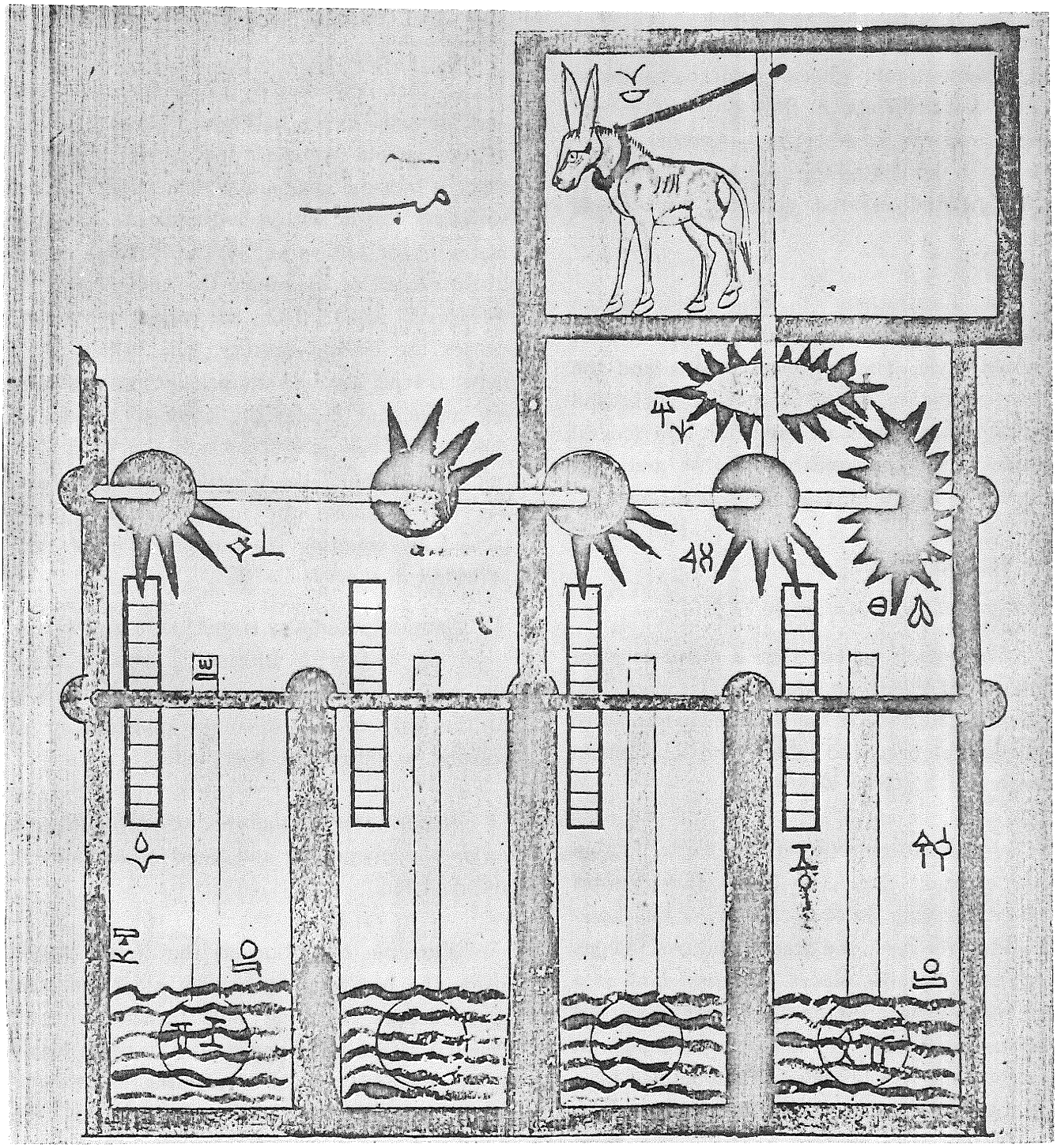


Fig:1 Miniature painting of the four-wheel apparatus. (Museum of Fine Arts, Boston).

A miniature in the Boston Fine Art Museum (Fig. 1) shows a four-wheeled device very similar to that described above. Both must have been copied from the same original. Another miniature also in the Boston Fine Art Museum (Fig. 2) shows a wind-powered appartus for raising water.

The illustrations in the Metropolitan Museum of Art represent the traditional Mamluki style. The technical details and the general rendering of the animals in these and the Boston miniatures are the result of a general attitude which appeared in the 13th and 14th centuries in Baghdad, Damascus and Cairo.

The Second Page:

The Elephant clock Automata 57.51.23

This page is taken from a manuscript of Automata (*Treatise on Mechanical Devices* by Al-Jazari). The obverse has a full page miniature on paper, coloured and gilded, and is 11.13/16 in. high and 7.3/4 in. wide.[8]

This miniature represents a clock, known as the elephant clock[9] (Pl. XXV). It depicts an elephant carrying an elaborate tower-like howdah with three men, one dragon and two falcons arranged in specific places. The first man is a black mahout, wearing only white trousers and a narrow red scarf. He holds a stone-pick in his right hand and his head is surrounded by a typical Christian halo. Inside the howdah there is another figure holding a stick. The third figure is the bearded man who seems to be looking out of a window on the upper left of the howdah.

The clock is worked by a combination of man and animals. Every half-hour the bird on top of the cupola whistles and turns, while the mahout hits the elephant with his pick-axe and sounds a tattoo with his drumstick. The man in the upper left corner of the Howdah moves his arm and leg to induce the falcon below to release a pellet. This downward movement causes the dragon to turn. The little ball or pellet travels through the dragon and the turning movement causes the gong to be struck. Finally the ball is ejected into the little vase (placed just behind the mahout) where the observer can establish the number of half-hours passed, by counting the number of little balls collected in the vase.

Another possibility is that there was a large revolving dial, with alternating arcs of black and white, fixed on the top of the howdah.[10] As the dial turned, the colour appearing at an opening would change every hour.

Within this miniature several different styles of iconography and floral ornamentation are depicted.

With the exception of the figure seated inside the howdah, the figures, their features, eyes, beards, clothing and turbans are all Oriental in character and similar to those found in the Baghdad school of painting in Mesopotamia and Syria at the beginning of the thirteenth century. The scroll and palmette motif and the tasselled border of the saddle cloth is also oriental in style and similar designs can be

8. This illustrated page is a bequest of Cora Timken Burnett to the Metropolitan Museum of Art in 1957.
9. Ettinghausen, (*Ibid*), p. 95.
10. The late Prof. Ettinghausen has suggested this idea, as he thought that the dial is not represented in the miniature. *Arab Painting*, p. 95.

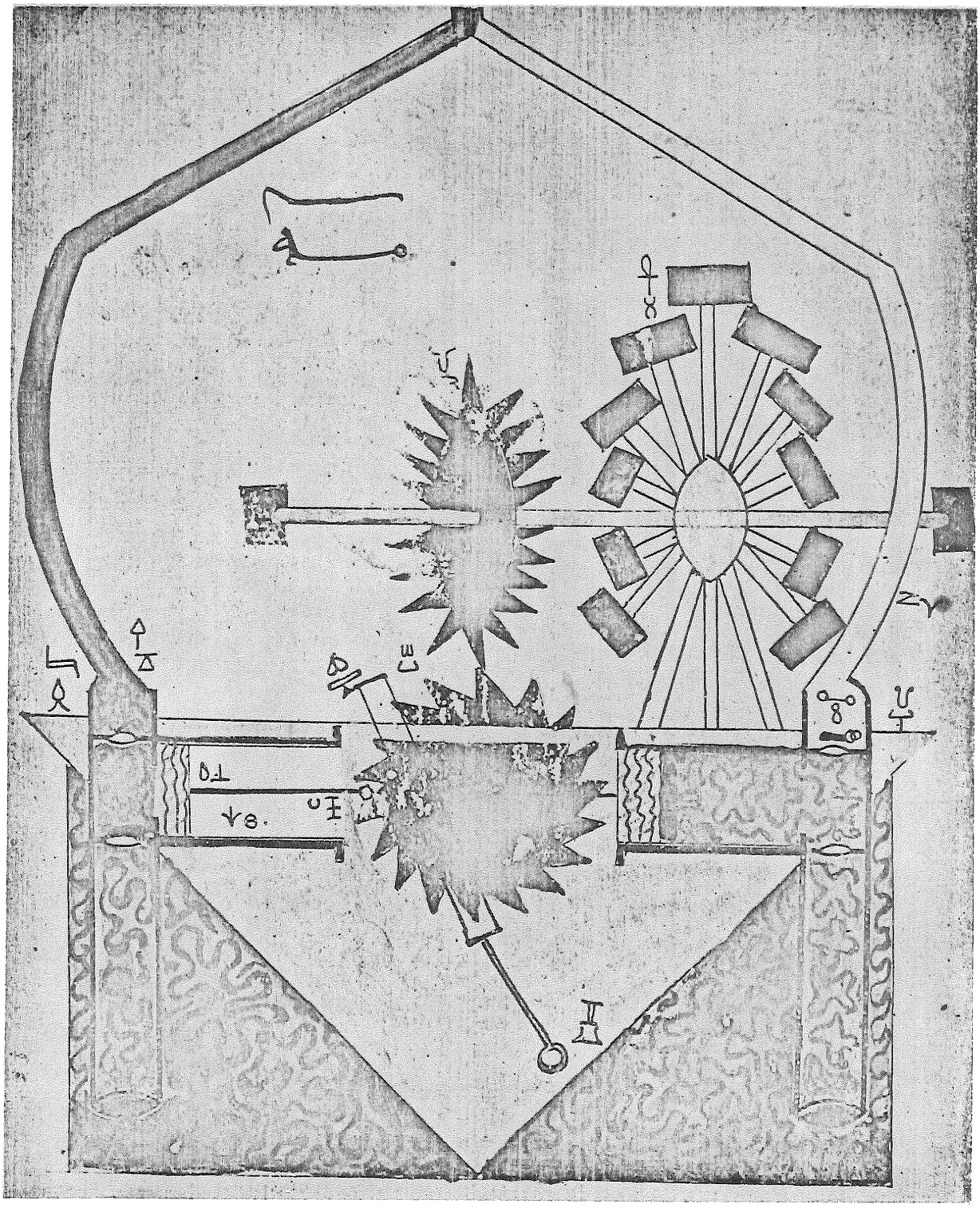


Fig: 2 Miniature painting of an apparatus working by a wind-mill, (Museum of Fine Arts, Boston).



Fig: 3 Miniature painting of a hand washing device. (Freer Gallery of Art, Washington D. C.).

seen in some illustrated pages of *Rasail Ikhwan as-Safa* (The Epistles of the Sincere Brethren)[11] produced in Baghdad in 1287 (686 H.).

Although the general concept of the elephant and howdah was originally Indian in character, the tower-like howdah depicted here is similar to the small chapels which appeared in the miniatures of al-Hariri's Maqamat showing Abu Zayd in Merv and Yemen[12] and dated 1235. However, the stone-pick is an Indian character.[13] It represented the Indian emblem of Saturn.[14]

The dragon is of Chinese origin.

The man seated inside the howdah and the floral palmette motifs are similar to those in the Freer Gallary and Boston manuscripts (Figs. 4-5) and show the influence of the Far East.

Classical sources are also in evidence. The upper part of the tower-like howdah is based on two Corinthian columns and the elephant is shown without any articulation in its legs. It was a classical belief that the elephant was jointless; a belief continued in Byzantine prototypes.[15]

The far eastern motifs in this miniature give an indication of its date. These motifs became dominant in Arab painting only after the Mongolian invasion of Mesopotamia and Syria in 1258.[16] The Mongolian artists who came from Central Asia introduced the Chinese and Indian iconography.[17] If the Automata manuscripts of Boston were copied from the original in the 14th. century,[18] that means they were copied after the Mongolian invasion, in which case it is possible to date this manuscript as a production of the 14th century.[19] However, the painter of this miniature had a different spirit in mind as there are international motifs inserted throughout this painting. Oriental, Chinese, Indian, Classical, Muslim and Christian (witness the halo which surrounds the mahout's head). Thus the Muslim painters were able to challenge the well established Iranian and Byzantine styles of pictorial patterns. The Muslim style became more apparent when the Abbasids left their influence on Christian manuscripts written within the Muslim world. A Chrstian manuscript executed in Mesopotamia for the members of the Jacobite Syrian Church in 1220, show "Christ's Entry into Jerusalem". This manuscript has been greatly influenced by the Mesopotamian school of painting known as the Baghdad School.[20] It has also been influenced to a certain extent by Byzantine models.[21]

A miniature in the Freer Gallery of Art in Washington (Fig. 3) dated 1315 and related

11. Ettinghausen, (*Ibid*), p. 98-99.
12. *Ibid*, p. 106, 107; Oriental Intstitute, Academy of Siences, Leningrad, *MS*. 523, p. 250, 256.
13. Thought mentioned according to al-Jazari specifications in his treatise.
14. Ettinghausen, (*Ibid*ı, p. 60, 96.
15. Ibid, p. 98, 99.
16. Hitti, Philip, *The History of the Arabs*, London, 1951.
17. Grube, E., *Muslim Miniature Painting*, p. 8, 9.
18. Coomaraswamy, Anada, *The Treatise of al-Jazari* on Automata, p. 8-9.
19. Ettinghausen, (*Ibid*ı. p. 95-96.
20. *Ibid*, p. 96, 97.
21. Grabar, André, *The Art of the Byzantine Empire*, 1966, p. 182; Grube, (Ibid), p.2.



Fig: 4 Miniature painting of the Elephant water Clock. (Freer Gallery of Art, Washington D.C.).

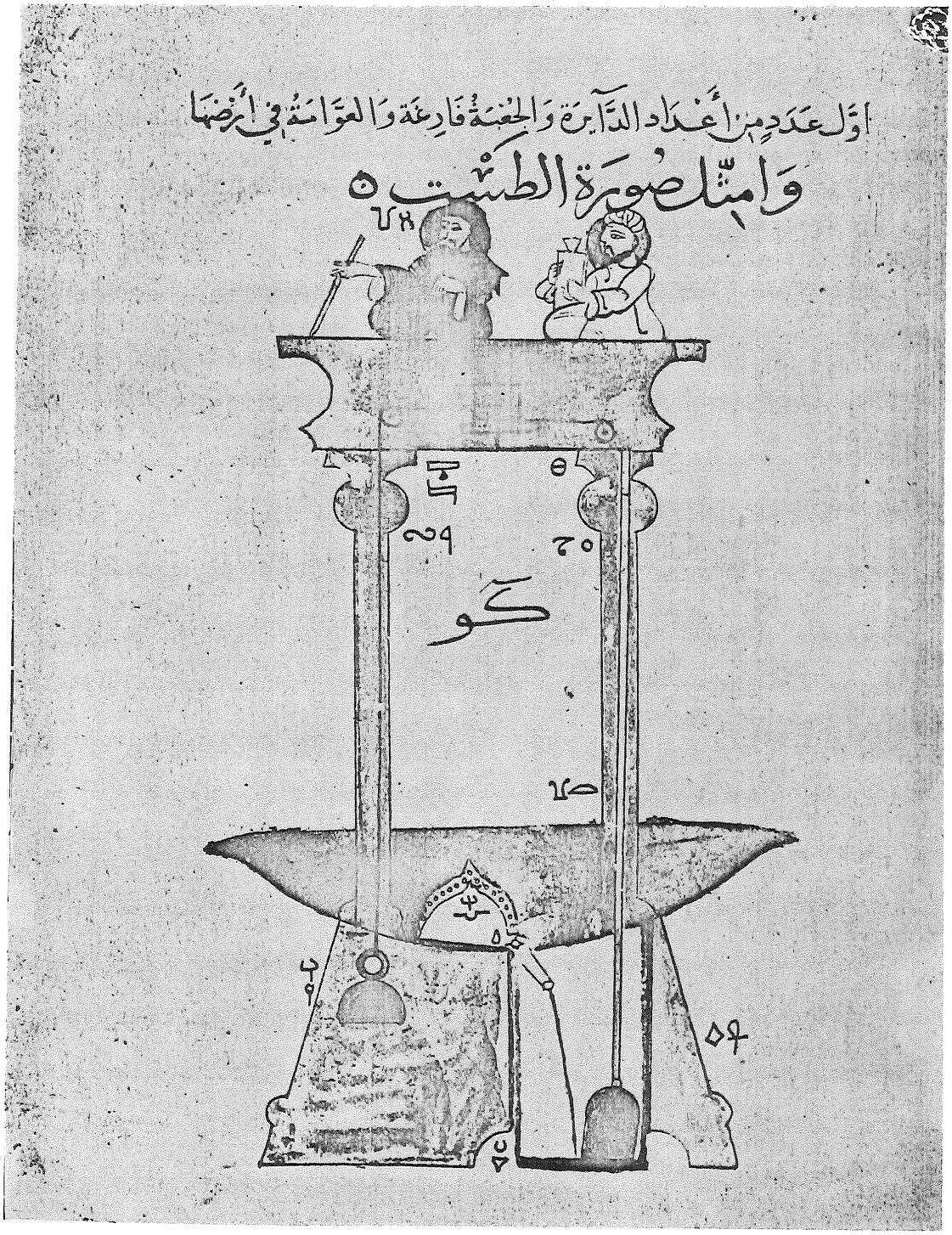


Fig: 5 Miniature painting of the basin with two scribes which is employed in phlebotomy, measuring the exact amount of blood taken from the body. (Museum of Fine Arts, Boston).

to Syria shows a water-pouring device. It is a copy taken from the same Al-Jazari source[22] Although the Boston miniature has great similarities with the elephant clock the figures are quite different There were probably two schools; one influenced by far eastern traditions and the other related to a local Syrian or Mesopotamian school. I believe our manuscript was painted by a painter influenced by the local school while the Boston and the Freer manuscripts were painted by painters of the far eastern school.

Arab painting was deeply influenced by the contacts the Seljuks had with the far east. Many far eastern elements were transmitted to the Mamluk realm where they merged with the local traditions in the 12-13th centuries in Iraq, Syria and Egypt.[23]

Muslim manuscripts on automata exerted a considerable influence on European craftsmen in the 16-17th centuries. Many Europeans used the scientific ideas of the Muslim civilization especially those concerned with clock construction, movable tables, as well as many other works based on automata.

Safwan Kh. Tell
University of Jordan
Amman

22. Atıl, Esin, *Art of the Arab World*, Smithsonian Institution, Washington D.C., 1975, p. 110; Ettinghausen, R., *Encyclopedia of the World Art*, (Automata-Islamic), vol. 2, p. 186.
23. Grube, E., *The World of Islam*, p. 109.

PRELIMINARY REPORT ON THE ARCHAEOLOGICAL SURVEY BETWEEN MA'AN AND 'AQABA

JANUARY TO FEBRUARY 1980

by

W. J. Jobling

The archaeological survey in the Aqaba-Ma'an area of the Hashemite Kingdom of Jordan was conducted over a period of some five weeks during January and February 1980 as part of a preliminary archaeological survey of Southern Jordan which was sponsored by a Sydney University Special Projects Research Grant. The purpose of this survey was to commence the exploration and study of those areas in Southern Jordan which are traditionally considered to form part of the ancient Biblical land of Midian (Medieval Arab Madyan). The permit for this work was granted by the Jordan Ministry of Tourism and Antiquities, and special thanks must be expressed to Dr. Adnan Hadidi, Director of the Department of Antiquities and Tourism for his most considerate assistance in facilitating this research project. The representative of the Department of Antiquities, Mr. Sami Rabadi, was in no small way responsible for the success of this survey, and due recognition and appreciation must also be expressed to him.

The stimulation for this project is due to the research and advice of the Director of the British Institute of Archaeology and History in Amman, Mrs. C.-M. Bennett, O.B.E. Mrs Bennett's long standing interest in, and detailed knowledge of, the archaeology and history of Southern Jordan along with her especial kindness in making available the facilities and Land Rover of the British Institute of History and Archaeology made possible the realisation of this project. Gratitude must also be expressed to Mr. Michael Macdonald for his advice and encouragement. His knowledge of these areas and his warm support and cooperation in the planning and execution of this project are greatly appreciated.

The survey, which was conducted over a period of twenty-one days, was concerned with the area extending from the coast of the Red Sea north to the Hisma area (Pl. XXVI, 1). This is the first stage of a longterm project concerned with understanding the nature of the settlement and development of urban civilization in Southern Jordan and its relationship to other areas in Southern Palestine, Northern Sinai and the North West Hejaz.

It is important to emphasize that the report makes no claim to be exhaustive. Rather this report reflects the general significance of the area and the epigraphic and non-epigraphic archaeological material which, at this stage, it appears to contain.

The stimulus for this research is the changing understanding of the nature of the settlement and the development of urban civilization in these areas (Parr *et al.* 1968: 194, Beit-Arieh, 1978: 11).

The southern end of the Ma'an district was traditionally considered to be a significant

part of the biblical land of Midian. This tradition appears to have been sustained by the toponomy and general nomenclature of the Medieval Arab geographers, and as late as the nineteenth century was the stimulus for considerable scholarly interest and exploration (Burton 1878:175).

An important focus of interest in this survey is the nature of these traditions and the Midianite association with these areas. In particular the vexed question of the character of Midianite society and the nature of its relationship to other ancient peoples such as the Edomites, Amalekites, Kenites and the later Nabataeans, is of considerable concern. In the light of excavations at Timna on the southern side of the Wadi Araba, Tell el Kuleifah in the southern end of the Wadi Araba, and surveys concerned with the Wadi Sirhan, the characteristics of the societies of these peoples stand in need of reassessment (Adams 1977:36). In this regard the present survey found sherd evidence at Um Guwe'ah in the Sel Rumman area of Wadi Rumman which suggests the possibility of a Midianite presence in this area.

The geographical nature of the Hisma area is such that to some extent it would seem to inhibit freedom of movement.(Pl. XXVI, 2). This stands in contrast to the tableland to the north where good grazing and wide open spaces seem to have been characteristics which facilitated human utilization of natural resources. So too the Wadi Araba further to the west facilitated travel and had important mineral resources which were significant factors in the settlement and development of the area. The Hisma area has traditionally been associated with a more nomadic way of life, although good supplies of water from springs such as those at the foot of Jebel Ram, and Jebel 'Ishrin seem to have been important centres of occupation from quite early periods (Harding 1952:6).

Traditions about this Hisma area indicate that it was the northern end of the way to Sheba whence came not only the legendary Queen of Sheba to consult with King Solomon, but also the spice and frankincense trade (1 Kings 10:1-5, Exodus 30:34, Isaiah 60:4, 6-7). While it is clear that both overland caravan trade and the herding and pasturing of flocks were part of the human activity in this area such participation in the regional economy of the area probably reflects only one part (and that traditionally the most well known) of the human activity in this area. Other evidence suggests links with maritime trade as well as mining and metallurgy and a more sedentary occupation of the area from time to time.

Thus while the geography of the area as it extends south into Saudi Arabia forced the caravan trade to follow an inland route, there are also along the coast of the Red Sea south of Aqaba small bays which ultimately connect with the inland trade routes. Further south principal anchorages at Haql and Maqna were known to have trade contacts with the hinterland. During this survey an initial exploration was made of the immediate off-shore marine archaeology potential of the area between Aqaba and the Saudi Arabian border. While time and facilities limited this aspect of the general survey it would seem that a future survey of this area is important, especially with regard to the nature of the occupation and use of the small bays along the coast. (A more extensive archaeological survey of this coastal area and a more intensive exploration of the immediate hinterland up to the mountains will

be necessary.) During the present survey small middens of shells were found on the hills close to the bays. A similar concentration of shells was found further north in the Wadi Yutum at Khirbet el Khalidi.

Earlier explorers also reported what appears to have been evidence of early mining activities and extensive settlements further south in Saudi Arabia. (Burton 1878:251) This metallurgical activity may have extended along the coast and in the hinterland and may be linked with Timna and other early mining projects in the Sinai area. Good conditions for travel by sea, as well as by land, facilitated this activity in later periods and there seems reason to argue that small coastal settlements in the bays made living and travel along the coast a distinct possibility.

This year the survey was mainly concerned with the Wadi Rum complex extending west to Wadi Yutum, east to Wadi Qureina and south to the Saudi Arabian border. Of this complex the Wadi Rum has been explored to some considerable extent and the Wadi Yutum, along which the highway and the railroad pass, has been disturbed by these communications projects. Therefore the following sites were explored:

Wadi Yutum

Khirbet el Khaldi

Wadi Rum

Risqeh
Ain el Qattar
Khaz 'ali
Jebel es-Sad
Abu Ain Kheli
Um Kheiret
Makman el Jahali

Khor el 'Ajram

Hidheb el Fala

Wadi Sabit

Abu Hamet

Wadi Marsad

Jebel Shamrah
Um Kheret el Marsad
Jebel Ettaqtaqiya

Hisma

Um Seleb
Um Ghadha
Um Ahada

Wadi Ishrin

Um Uqser

Wadi Dhiqa

Dhega

Wadi Rumman

Sad el Romi
Um Masak Ibn Saari
Rakbat Um Edgeyer
Masit Um Hasa
Um el Usban
Gleb Rumman
Rewes el Khel
Wadi Tegebat
Wadi Eleligat
Um Guwe'ah
Jebel Asalah
Jebel Abu Sagar
Jebel Utud

This complex Wadi system, and in particular these sites, have produced a wide range of both non-epigraphic and epigraphic evidence which will take some time to thoroughly analyse and consider. However, for this interim report attention is drawn to the following aspects of the evidence :

The Stone Circles

Stone circles varying from about 20 to 150 metres in diameter were found throughout the area. These circles, the likes of which have been identified in other areas of Jordan, South Palestine, the Sinai and North West Arabia, were associated with flints in some instances and in others flint evidence was lacking altogether (Pl. XXVII,1). While in some cases the walls of the stone circles would appear to have been built of stones which had been worked, frequently this was not the case. In some few cases there would appear to have been an entrance, but in many cases an entrance was not evident. In some instances small stone cairns were situated close to the larger stone circles and in a few cases such cairns were actually built into the stone walls (Pl. XXVII, 2). It may be that excavation of these stone cairns will reveal that they cover cist graves as is the case in the north of the Wadi Araba at Bab edh-Dhra'h (Clark 1979:69). Meanwhile attention is drawn to the excavation at Risqeh by Diana Kirkebride (Kirkebride 1969). The Risqeh excavation in the south of Wadi Rum showed that a stone cairn there was composed of tall thin slabs of stone worked into schematic human forms. According to Miss Kirkebride's excavation at Risqeh, while the site was destroyed before the beginning of the Christian era, it could have been built at anytime between then and the 5th millenium B.C.

While it is too early to draw definite conclusions about the origin and purpose of these stone circles in this particular area, the spread of this phenomenon throughout the areas under study suggests that they reflect a widely used technique indicative of a regional economy which included a sizeable pastoral element.

Rock Carvings

An important and fascinating characteristic of the general area under survey was the large number of rock carvings which seem to be similar to those known from other areas in Jordan, Southern Palestine, the Sinai and Saudi Arabia. These rock carvings usually occur in clusters and were sometimes associated with Thamudic inscriptions (Pl. XXVIII,1 XXVIII,2 XXIX,1). Fequently they seemed to occur on large stone faces and the patina of the carvings suggests that such sites have been the places of such artistic expression over long periods of time. Many engravings had a patina which was very weathered and dark brown. Such collections at particular sites appear to reflect certain stylistic differences as well as different subject matter. This sort of evidence, when studied at much greater depth, may well elucidate the economic interests and activities of various generations of inhabitants of these areas and also shed light on their general cultural patterns and perceptions.

Flints

Flints were an important part of the survey's findings. (Pl. XXX, 2). The production of such tools is an important guide to the economic and domestic activities of the inhabitants of these areas. While further intensive study needs to be devoted to the flint industries of Southern

Jordan and North West Arabia, with special regard for typology and chronology, it would seem that it may be possible to argue that these southern areas of Jordan had an extensive lithic technology which appears to be parallel to late Neolithic and Chalcolithic flint industries elsewhere in Jordan. However attention is drawn to the behavioural significance of this lithic evidence in that, occurring so frequently in an apparently Chalcolithic ceramic context in these dryer areas, they may be some indication of the tools used to cut and prepare the tough fibrous plants of this area (Shafer & Holloway 1979:398). Further study needs to be devoted to the sources and techniques of stone tool production with a special focus on the place of such lithic material in the general economy, especially with regard to possible trade associations as well as to how production patterns may have varied from time to time. It is suggested that at least for earlier periods in the history of this area the flint-industry is probably an important factor in the definition of its regional economy.

Hidheb el Fala

A large Chalcolithic site was discovered at Hidheb el Fala, which is situated some 12 Km to the east of Wadi Rum, and just to the north of the eastern end of Khor el 'Ajram towards the southern end of Wadi Um Harraq. This site, which is on the eastern side of Hidheb el Fala, consists of clearly discernible wall and house foundations (Pl. XXX, 1). Straight and circular walls of 30m and 50m respectively enclosed what appear to be the foundations of the walls of circular houses which have diameters ranging between 13m and 22m. The site would appear to embrace an area of 250m by 400m. The site had recently been ploughed by Bedouin who may have removed, or significantly disturbed the southern end of the site (Pl. XXX, 2).

As is indicated in the pottery analysis, sherds gathered at this site were predominantly Chalcolithic. A large number of small flints were found, and several flint knapping circles with partly worked flints in situ were found.

Ascending the heights of Hidheb el Fala three other small circular house walls were found. These structures were apparently situated so as to command a view to areas to the east and south. A few stylised rock drawings, quite unlike those mentioned above, were also found on the sandstone walls of Hidheb el Fala. This site seems to be an important indication of the nature and size of village type occupations in this area to the east of Wadi Rum. The size of the site also suggests that conditions at one time prevailed which allowed more extensive and relatively permanent settlement in the area.

As can be seen from this sherd analysis, there would appear to be a very wide range of periods represented. Attention is drawn to the pattern suggested by the Chalcolithic and Iron Age I sherds and the absence of sherds from the intervening periods. At the same time, however, the sherd from Um Guwe'ah in the Wadi Rumman, which seems to be Midianite, suggests that further research may identify other similar Iron Age ware.

Pottery Analysis*	Pottery Neolithic	Chalco-lithic	Iron Age	Roman	Late Roman	Nabataean
Wadi Yutum : Kh. el Khaldi				√	√	√
Wadi Rumman : Rakbat Um Edgeyer			√IAI	√		
Um Skhari				√	√	
Jebel Utud			√IAI-2			
Jebel Abu Sagar			√(?)			
Gleb Rumman	√(?)			√		
Um Guwe'ah	√Late	√		√		
Wadi Rum : Jebel es-Sad				√		
Makman el Jahali				√		
Abu Ain Kheli				√		
Khor el 'Ajram : Hidheb el Fala		√		√		
Wadi Ishrin : Um Uqser	√			√		
Wadi Dhiqa : Dhega			√I.A.2	√		
Wadi Sabit : Abu Hamet		√		√		
Hisma : Um Ghadha		√(?)	√	√		

*The preliminary analysis of these sherds was completed under the supervision of Mrs. C.-M. Bennett O.B.E.

When this analysis is considered in the light of the flints, the rock carvings, and inscriptions in the area, it seems reasonable to argue that this southern part of Jordan was occupied from a very early period. The nature and extent of this occupation as well as the continuity of particular phases of habitation of this area still remain open issues. However, the large Chalcolithic site discovered at Hidheb el Fala, as well as the other smaller sites which have sizeable clusters of wall and house foundations, suggests that the area was able to sustain small villages from time to time.

The Early Iron Age 'Midianite Sherd

This sherd was found at Um Guwe'ah in the Wadi Rumman (Pl.XXV,1-2). It has affinities with the Timna ware and also the Quweira ware from the North West Hejaz. The sherd is full of black grits varying from 3mm to 0.05mm. It is burnished on both sides. The interior, which has been fired to a yellow brown, has a black painted decoration of poorly executed arcs. The sherd was probably the base of a small bowl.

The Chalcolithic Pot from Rewes El Khel

This pot was found at Rewes el Khel with its broken base just visible in the dust (Pl. XXXII,1). The pot appears to have been buried upside down. The pot was full of earth. Part of the base was found nearby.

This is a holemouth jar. It is handmade from very coarse impure clay with many grits of both quartz and flint measuring 4mm to 1mm.

The pot was broken in antiquity and recently. There is some attempt at smoothing on the exterior. The rim is very irregular. There is a stubby ledge handle on one side of the pot,

however, there is no sign of a second ledge handle opposite. The pot was probably locally made. Its dating is difficult as so little is known about this area; probably Chalcolithic.

This particular pot raises important questions with regard to the ceramic tradition of Southern Jordan and the nature of the relationship of that tradition to the traditions of neighbouring areas. It is possible that this pot was designed to be a cooking pot but was cracked in the firing and hence never actually used for the purpose for which it was intended.

Conclusion

The large number of 'early' sites suggests that the Wadi Rum complex was extensively inhabited by small village-type groups of five or more houses. Thus, instead of nomadic occupation which, in the light of the modern Bedouin phenomonology, is often posited for this area, it would seem that there were significant clusters of houses, or basic dwellings, often situated in such a way as to control the entrance to the larger Wadi complexes.

In this survey the term *Wadi Rum complex* is used in the sense that the Wadi Rum appears to have been part of a large system of Wadis each running north-south but interconnected by east-west passages. This complex also extends to the south and in some interesting instances would seem to connect with the coast.

It is suggested that, like the Wadi Sirhan, the Hisma region into which the Wadi Rum complex feeds was not only one of the most important caravan trade routes linking the southern Levant with the trade of the south, it was also clustered with early centres of settlement. How these settlements functioned in past micro - and micro - Sociocultural systems along with a scientific study of the environmental character and ecological stability of Aqaba-Ma'an areas under survey are issues which it is hoped future planned surveys will elucidate. For the time being, however, it has been established that there is substantial evidence of human occupation which appears to have extended to the south and east of the Wadi Rum into areas which had previously been thought to be either unpopulated or purely the domain of the pastoral nomad. Comparison with the settlement patterns of the Wadi Araba suggests that there may be some interesting links connecting the patterns of settlement and the development of human civilization in these two areas.

Dr. W.J. Jobling
Sydney University
Australia

BIBLIOGRAPHY

Adams, R. McC., Parr, P., Ibrahim, M., al-Maghannum, A.S., Saudi Arabian Archaeological Reconnaissance - 1976. Preliminary Report on the First Phase of the Comprehensive Archaeological Survey Program. *ATLAL* Vol. 1, 1977, p.21-41.

Beit-Arieh, I., A Canaanite Site near Sheikh Muksen: Recent Discoveries in Southern Sinai. *Expedition,* Vol. 20, No. 4, 1978, p.8-11.

Burton, R.F., *The Goldmines of Midian and the Ruined Midianite Cities,* London, 1878.

Clark, V.A., Investigations in a Prehistoric Necropolis near Bab edh-Dhra', *Annual of the Department of Antiquities,* Jordan, Vol. XXIII, 1979, p.57-77.

Harding, G.L., *Some Thamudic Inscriptions from the Hashemite Kingdom of the Jordan,* London, 1952.

Kirkebride, D., Ancient Arabian Ancestor Idols, *Archaeology* Vol.22, No.2, 1969, p.116-121; Vol.22, No.3, 1969, p.188-195.

Parr, P.J., Harding, G.L. and Dayton, J.E., Preliminary Survey in N.W. Arabia 1968, *Bulletin of the University of London Institute of Archaeology* Nos. 8 & 9, 1970.

Philby, H.S. & J., *The Land of Midian,* London, 1957.

Shafer, H.J. and Holloway, R.G., Organic Residue Analysis in Determining Stone Tool Function, in *Lithic Use-Wear Analysis* edit. Hayden P., London 1979.

Winnett, F.V. and Reed, W.L., *Ancient Records from North Arabia,* Toronto, 1970.

AN INVESTIGATION OF THE PREHISTORY AND PALEOENVIRONMENTS OF SOUTHERN JORDAN (1979 Field Season)

by
D. O. Henry, F. A.Hassan,
M. Jones, and K. C. Henry

During the summer of 1979, an archaeological investigation was initiated in the vicinity of Ras en Naqb in southern Jordan. The investigation seeks to define and trace the changes in prehistoric adaptive strategies which took place in the region during the late Pleistocene and early Holocene. Adaptive strategies are viewed as the ways in which populations select and secure resources from their environments. Prehistoric adaptive strategies are manifested in the archaeological record in various ways, but subsistence modes, sizes of residential groups, and the permanency of settlements are particularly diagnostic of specific adaptive strategies.

Within the history of human development a major adaptive transition occurred at the end of the Pleistocene and in the early Holocene when hunting and gathering economies were replaced, or at least augmented, with food production. Although this topic has captured the attention of scholars for over a half a century and many of the questions on the chronology and the mechanics of domestication have been addressed, we still know very little of the processes which led to food production. We know much more of when, where, and how than why such an adaptive transition occurred. The question of why a general Paleolithic hunting and gathering subsistence pattern was abandoned after several million years of success remains unanswered. Similarly, we presently do not, in the Near East, understand why the traditional Paleolithic adaptive strategy was replaced some 10,000 years ago and not a 100,000 years or a million years earlier.

Clearly, in order to address these questions it is necessary that the specific adaptive strategies which were operative immediately prior to early experiments at food production be compared to adaptive approaches employed during earlier periods of the Pleistocene. In this manner, the social and environmental conditions which were unique to the terminal Pleistocene, and possibly contributive to early food production, may be isolated.

In an effort to trace the evolution of prehistoric adaptive strategies in southern Jordan, research was initiated in the vicinity of Ras en Naqb on the southern edge of the Ma'an Plateau. The study focuses on the examination of changes in prehistoric settlement patterns and paleoenvironments as a means of defining prehistoric man-land relationships for the region. Several basic observations concerning the spatial distribution, density, size, permanency, and function of sites are used to identify prehistoric settlement patterns. Geological, palynological, and faunal studies are being

conducted to reconstruct past environments of the area. During the first season of investigation primary evidence was sought relative to the: (1) overall antiquity and chronology of sites in the study area, (2) the density of sites in the area, (3) the geologic history of the area and (4) the past environmental settings of the area. This report will concentrate on the results of this first season of investigation.

Modern Environment and Physiography

The study area, in resting on the boundary between the Ma'an Plateau and the broad Wadi Hisma, exhibits striking relief with elevations ranging from around 900m to over 1500m above sea level (Figure 1). The marked diversity in topography of the area results in three distinct environmental zones being in close proximity. The environments are characterized by botanic communities which are elevationally zoned, with Mediterranean, Irano-Turanian, and Saharo-Sindian communities occurring in sequence with decreasing elevation (Zohary, 1962:51-53).

These modern geographic and environmental characteristics of the area result in an ideal setting for collecting information on past climates and prehistoric settlement patterns. The elevational differences of the region which cause the area's current environmental diversity probably played a similar role in prehistoric times. One would suspect that the area was quite sensitive to climatic fluctuations of the past with the elevational zonations of plant communities shifting in concert with changes in precipitation and temperature patterns. The area's environmental diversity and the area's potential for dramatic environmental shifts, associated with climatic change, furnish an ideal situation for examining prehistoric settlement patterns and economics on the basis of seasonal adjustments and long-term changes in adaptive strategies.

Previous Investigations in the Region

Although intensive systematic surveys of Paleolithic sites had not been conducted in southern Jordan prior to the investigation of the Ras en Naqb area, several reconnaissances provide some idea of the varieties and densities of Paleolithic occupations in the region (Kirkbride and Harding, 1947; Zeuner et al., 1957; Kirkbride, 1960; Huckreide and Wiesemann, 1968; Copeland and Hours, 1971; Price and Garrad, 1975; Henry, 1979). These studies indicate that the region contains a high density of prehistoric sites which represent considerable time-depth from Lower Paleolithic to Neolithic periods (Stockton, 1969). A preliminary reconnaissance conducted in the vicinity of Ras en Naqb in 1977 indicated that the area contained a high density and great time-depth of prehistoric sites. The initial season of intensive systematic investigation of the area confirmed the indications of the 1977 reconnaissance with the discovery of 57 prehistoric sites (Table 1). Three additional sites were located outside the primary study area.

Results of the 1979 Survey

A systematic 100% survey of approximately 12 sq.km. was completed in the study area near Ras en Naqb and brief reconnaissances were undertaken near Quweira and the Jafr Depression; located to the south and northeast of the study area, respectively (Figure 1).

Within the study area near Ras en Naqb,

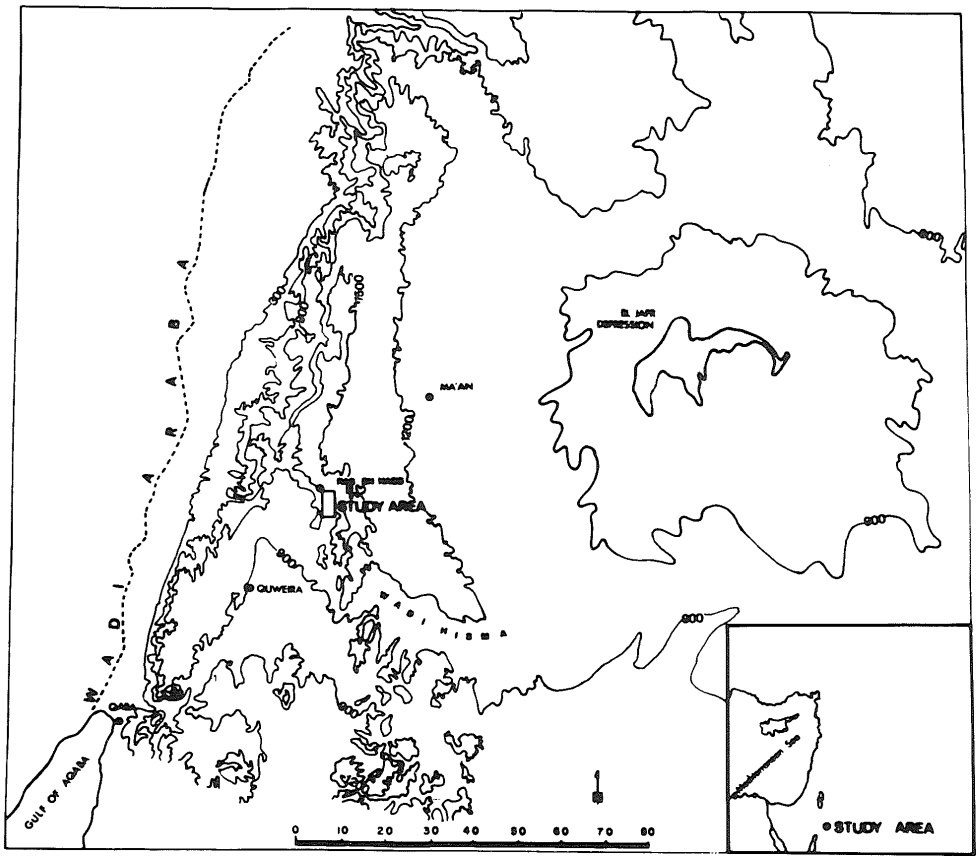


Figure 1: A topographic map of the region showing the location of the primary study area.

survey was conducted in the basin of Wadi Judayid (between 950-1,200m asl) and in the uplands of Ras en Naqb (from 1,200 to 1,600m asl). Approximately 8 sq. km. were surveyed within the basin, while 4 sq. km were surveyed in the uplands. Of the 57 sites discovered in the study area, only 6 were located in the uplands.

Reconnaissances near Quweira and the Jafr Depression resulted in the discovery of three sites. Two *in situ* Epipaleolithic occurrences (J201, J202) were recorded in rockshelters near Quweira, while an open-air Upper Paleolithic site (J301) was found in the area of the Jafr Depression.

The sites discovered during the 1979 season have been ordered chronologically through artifact seriation and geologic associations. A series of radiocarbon dates on materials recovered from Middle Paleolithic, Epipaleolithic, Aceramic Neolithic, and Chalcolithic occurrences should provide greater chronologic resolution.

Middle Paleolithic

Although the uplands of Ras en Naqb are littered with Levallois materials (cores, flakes, point cores, points) suggestive of an intensive occupation, only four sites (J6, J53, J55, J56) were identified due to the heavy erosion of the area. All four of these sites have been severely deflated. A single Middle Paleolithic site (J8) was discovered in the basin. The *in situ* site, located on a terrace, in front of a small cave, yielded Levantine Mousterian artifacts from a white, poorly weathered sand derived from the nearby sand-stone cliff face.

Upper Paleolithic

Only six sites identified as Upper Paleolithic were recorded in the survey and five of these failed to yield sufficient artifact samples for an unqualified designation. The only confirmed Upper Paleolithic site (J301) was discovered on a low hill top on the edge of the Jafr Depression. While the site is deflated, its mere presence on the shore of the dry lake located some 80 km into the eastern desert, has important climatic and environmental implications. A surface collection of the site (4 sq. m) provided 442 artifacts of which 61 were tools. A modest Levallois component implies an early Upper Paleolithic occupation of the site. Five tentative Upper Paleolithic sites (J30, J31, J34, J52, J54) were found in the study area. These sites appeared to be eroding out of reddish sand associated with a former alluvial fan which had coalesced to form a bajada or alluvial fan plain in the basin. Although debitage (large blades and blade cores) and tools (end-scrapers and blades) suggestive of Upper Paleolithic occupations were recovered from the surface, test excavation at two of the sites (J30, J31) failed to isolate discrete Upper Paleolithic horizons.

Epipaleolithic

Epipaleolithic occurrences, defined by microlithic artifacts, account for over 40% of the sites discovered during the survey. With exception to Natufian occurrences in the basin, Epipaleolithic sites were found within or eroding from reddish sands belonging to the bajada, as previously described. Natufian sites (J2, J14) appear in drift sand overlying the bajada. Outside the basin, two other Epipaleolithic sites were found in rockshelters overlooking dry lake beds. Three of the sites (J26, J201, and

J202) contain stratified multicomponent occupations. These occupations display an evolution in the microlithic component of the assemblages from non-geometric elements to trapeze/ rectangles and finally to lunates. Microburins appear throughout the sequence, but increase in frequency with geometric assemblages. Charred materials suitable for C-14 dates were collected from four of the Epipaleolithic sites (J2, J26, J14, J201). Faunal remains were recovered in abundance from J2 and J14.

Aceramic Neolithic

A single Aceramic Neolithic occurrence was discovered underlying a Chalcolithic occupation at site J24. The Aceramic Neolithic horizon is separated from the overlying Chalcolithic occupation by 20-30 cm of sterile sand.

Technologically, the assemblage is characterized by narrow blades and bladelets in sharp contrast to the overlying Chalcolithic levels which are dominated by blades and broad bladelets. Although high densities of debitage (+ 400) were recovered, only 21 tools were recorded. One of these was a point exhibiting unifacial basal retouch and lateral notches identical to Cauvin's (1974) type 26a described for Phase II at Mureybet. A charcoal sample recovered from a hearth associated with the horizon should provide a more precise chronologic determination.

Chalcolithic

Some 25% of the sites discovered in the survey contained a Chalcolithic component. Most of these sites contained one or more circular or semi-circular stone structures in association with thick ash lenses and refuse pits. Well preserved faunal remains and charred materials were normally identified in test excavation or in treasure hunter's backdirt from these sites. The sites normally display moderate densities of lithic artifacts. Assemblages are characterized by microlithic cores (from which rather wide bladelets of flakes have been struck) in conjunction with large, thick flakes. Diagnostic tools consist of large fan scrapers and small bifacial points. Although pottery is relatively rare, rim sherds of holemouth jars were recovered from test excavation. While it is possible that some or all of these sites could belong to the earlier Pottery Neolithic or the later Bronze Age, the combination of attributes point to the Chalcolithic. A series of radiocarbon dates from the sites in conjunction with detailed analysis of the assemblages should resolve the problem.

Results of a Study of the Local Geology

The geomorphological units in the Ras en Naqb area include: the Ma'an-Ras en Naqb Plateau, Ras en Naqb escarpment, alluvial fans, outliers and inselbergs, wadi terraces, modern wadi, and aeolian sand.

The Ma'an Ras en Naqb (Edom) Plateau

This plateau represents a part of theCentral Desert Area of East Jordan in the geomorphological classification of Bender (1947:9). It is bounded in the west by the Ash Sherah highlands of the Eastern rim of the rift valley and slopes eastward to the Jafr Depression. From the north it is bounded by Wadi el Hasa and from the south by the Ras en Naqb escarpment.

The plateau reaches maximum heights just north of Ras en Naqb with an elevation of 1670

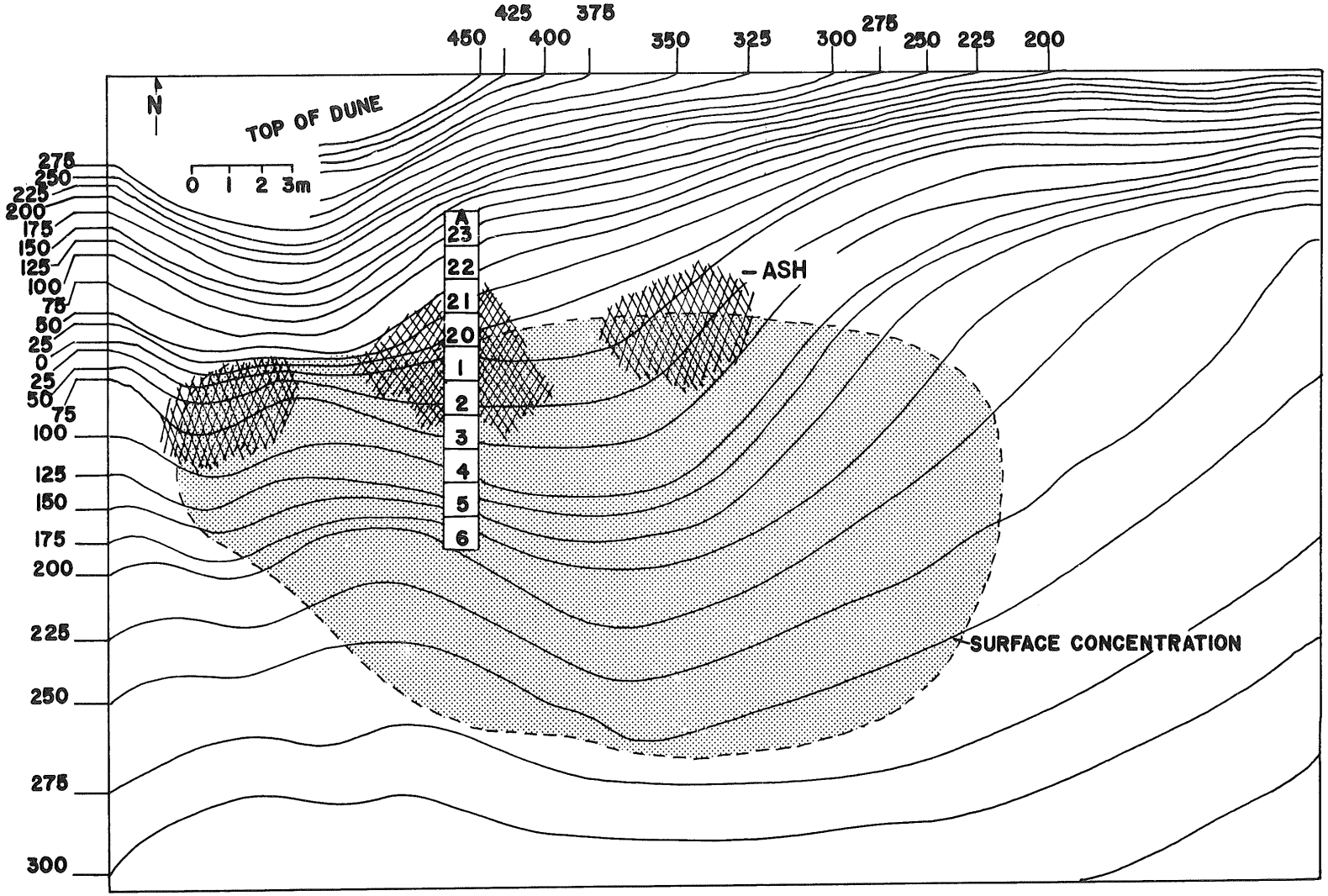


Figure 2. Topographic map of Site J2 showing surface evidence and location of test trench. Note that contours decrease in elevation from "0" contour to the south.

meters asl at Shudayid and Naqb Ishtar. The Plateau slopes both to the east and north to elevations slightly more than 1000 meters. The surface is a hamada desert, i.e., a stony desert covered with clastic detritus. At Ras en Naqb, the stones are mostly made of flint and are variable in size from a few centimeters to 25 centimeters in diameter. The gravel is angular and poorly sorted and is embedded in a sandy matrix of brown-reddish yellow 7.5 YR 5.5/5 color. The surface deposits also include carbonate nodules. The surficial deposits are only tens of centimeters thick and seem to represent residual lag deposits of a Mediterranean red soil. In places, the stones are removed to clear plots for cultivation.

The Ras en Naqb Escarpment

At Ras en Naqb the Ma'an plateau drops precipitously toward the Quweira-Disa depression. The escarpment is controlled by S 33° E - N35 W trending faults. Faults also run a 30°W-N30E direction and guide the drainage toward the escarpment shows three pediments. The top pediment (I) is at 1600 meters asl and its relicts are represented by Tilal Ras en Naqb el Qibliya and its dissected surface represents the surface of the Ma'an plateau described above. The middle pediment (II) of Naqb Ishtar is at 1400 meters asl and also is represented by Jebel el Jill. The Naqb Ishtar Pediment (II) represents a rock surface cover with a thin (0-40 centimeters) mantle of a stony lag deposit. The stones range in size from about five to 25 centimeters. They are palty in shape, angular, and are made of chert, siliceous limestones, and dolomites. The matrix is loamy sand of yellowish brown-brown color (10YR 5.5/6) and seems to represent a residual of a Mediterranean or Yellow Steppe soil. The low, Sumei's Pediment (III) is covered by a surficial mantle about 30 centimeters in thickness. The surface is stony with a loamy sand matrix of brownish yellow color (10YR 6.5/6). The stones consist of siliceous quartzstone and occasionally chert. This reflects the lithology of the bedrock which consists of sandstone. The surficial deposits seem to represent the residue of a yellow steppe soil.

The slopes of the Ras en Naqb escarpment are therefore composite showing, when the surface of the older pediments are preserved, a discontinuous cliff face of vertically connected J-shaped slopes.

The formation of the escarpment and the retreat of the slope seem thus to have progressed in cycles each terminated by a period of relative stability and relaxation of downcutting with lateral planation by stream action. The present surface of the basin bounded by the Ras en Naqb escarpment seems to represent a stage in the development of a fourth pediment.

Alluvial Fans

The Ras en Naqb escarpment overlooks a basin representing the headwater of Wadi Judayid. The basin is filled with alluvial fan deposits. The fans coalesce to form a bajada dissected by more recent gulleys and are eroded toward the center of the basin by stream action.

The fans show the typical profile of alluvial fans in semiarid region. The apex of the fans is steep (gradient 36%) and covered with large stones and grades upward in talus cones (gradient 50%). The middle segment is less

steep (10%, i.e., 10 meters per 100 meters of horizontal distance). The toe of the fans has been modified by stream downcutting and its morphology is not clear. It should be also noted that near gulleys the surface of the fans show a reduction in elevation. The fans consist of massive sand laminated in parts. The sand is medium grained and contains numerous angular flat pebbles and cobbles as well as spheroidal clasts of sandstones. Pockets of large stone blocks are also present. The fans seem to consist of two units: A lower unit of hard compact sand with carbonate nodules. The color of the sediments ranges from light brown 7.5 YR 6.5/4 to strong brown-reddish yellow 7.5 YR 5.5/6. The upper units consist of friable sand, reddish yellow to light brown or pink in color (7.5 YR 7/5 YR 6/6).

Outliers and Inselbergs

These features which represent remnants of the Ma'an Plateau include conical and elongated hills rising in elevation to 1350 at Jebel el Jill and 1200+ in other hills.

Wadi Terraces

Six cut-terraces and one fill-terrace were observed. The cut-terraces stand above the wadi floor at 10 meters (Terrace I), 4.5m (Terrace II), 1.7m (Terrace III), 0.5m (Terrace IV), 1.7 meters (Terrace VI), 1.2 meters (Terrace VII). The fill-terrace (Terrace V) rises at 3.5 meters above the floor of the Wadi.

The highest terrace is the most widespread in the wadi basin. The other terraces are restricted to a band of 200 meters or less along the course of the modern wadi. The gradient of the highest terrace is slightly less than that of the modern wadi. It measures 3% compared with 3.8% for the wadi bed at present. The gradient for the lower terraces approximates that of the modern wadi.

The fill-terrace consists of friable sand, in places laminated with a relatively high content of rubble. The color of the sediments is reddish yellow (7.5 YR 7/8, 7.5 YR 6/6) and is apparently inherited from the sediments of the alluvial fan.

The Modern Wadi

The modern wadi is incised into the deposits of the older alluvial fan fill and the young alluvium of the fill-terrace. The channel is sinuous and quite narrow. It ranges in width from 7 meters to 17 meters. Where the channel widens it often consists of a point bar about 20 cm above the incised channel which can be as narrow as 4.6 meters. On the concave side of the point bars chutes cut across the bar. The walls of the wadi are destroyed by undercutting and mass-wasting. The floor of the wadi channel is covered with sand, whereas the point bars are strewn with flat angular cobbles.

Aeolian Sand

Wind-blown sand consists mostly of drift sand. It consists generally of a thin cover with a maximum of 30 centimeters. The sand is medium grained and moderately sorted. It accumulated in the wadi floor on top of the terraces, and in places drapes over the middle and top segments of the fans. It builds up around bushes forming low hummocks. The sand is in the most part reworked from the top sands of the alluvial fans and from sands of an earlier

episode of mechanical weathering which produced an abundant supply of fresh sand. A slightly moist, and warm, yet still desertic, climate seems to have succeeded the episode of weathering. That episode could have been characterized by a dry, cool climate. The Ordovician and Lower Cretaceous sandstones provide an ample supply of sand. The strata are jointed and the sandstone is semi-consolidate and crumbles easily.

Sequence of Geologic Events

Following the formation of the Wadi Judayid depression, alluviation by tributaries draining the adjoining catchment basin led to the formation of a valley or fill of coalesed alluvial fans. The Mousterian site (J8) in a dune unit may date back to the period following the major episode of an alluviation that led to the formation of the lower member of the alluvial fan. The formation of the depression might thus have taken place in the early part of the Late Pleistocene. The early fan deposits of hard, alluvial sand are cemeted by carbonates and include zones rich in carbonate nodules. The deposits seem to indicate a subarid environment, moist and warm with rainfall perhaps in the magnitude of 300 mm. The development of a reddish yellow color is suggestive of the warm, moist conditions, that were sufficient to mobilize the iron oxides. Seasonal dryness seems also to be indicated by the precipitation of carbonates, which were presumably introduced by solution during the rainy season. The vegetation was perhaps represented by steppe with wooded areas in places, especially at high elevation. Downcutting and accumulation of dunes from freshly weathered sandstone under dry, cool conditions ensued. A relict of these dune sands is preserved in an embayment in the Jebel el Jill in association with artifacts of Mousterian affinity (site J8).

Alluviation resumed under conditions of more open vegetation, warm and somewhat moist conditions, rainfall was perhaps in the range of 250 mm. In the lower parts of the depression, finer sediments accumulated and thin crusts of calcium carbonates were developed. The lack of carbonate concretions and the presence of thin crusts of carbonates suggest drier climate than that which prevailed during the alluviation of the lower unit of the fan deposits. The climate was probably similar to that under which yellow steppe soils are formed. Frequent cut-and-fill structure, rapid lateral and vertical changes in facies, and frequent occurrence of large stone blocks and boulders suggest occasional torrential rainfall. Epipaleolithic sites (sites J26, J31) were located *in situ* in the top part of the upper unit of the fan and it may be thus inferred that alluviation might have lasted until ca. 17,000-13,000 B.P.

The geologic history of the area since that time seems to have been predominantly erosional, with the exceptional episode of wadi alluviation. A series of cut-terraces were established with the lowest visible terrace at .5 meters above the modern wadi floor. The erosional processes seem to have taken place under dry climatic conditions, a thin vegetation cover, and occasional rains feeding streams of high veolcity. Following the formation of the highest terrace (Terrace I), an early Natufian settlement (site J2) was established providing a limiting date for the termination of episode of erosion. The erosional period may have thus lasted from sometime before 11,000 B.P to about 12,000 B.P. Cooler, drier conditions followed

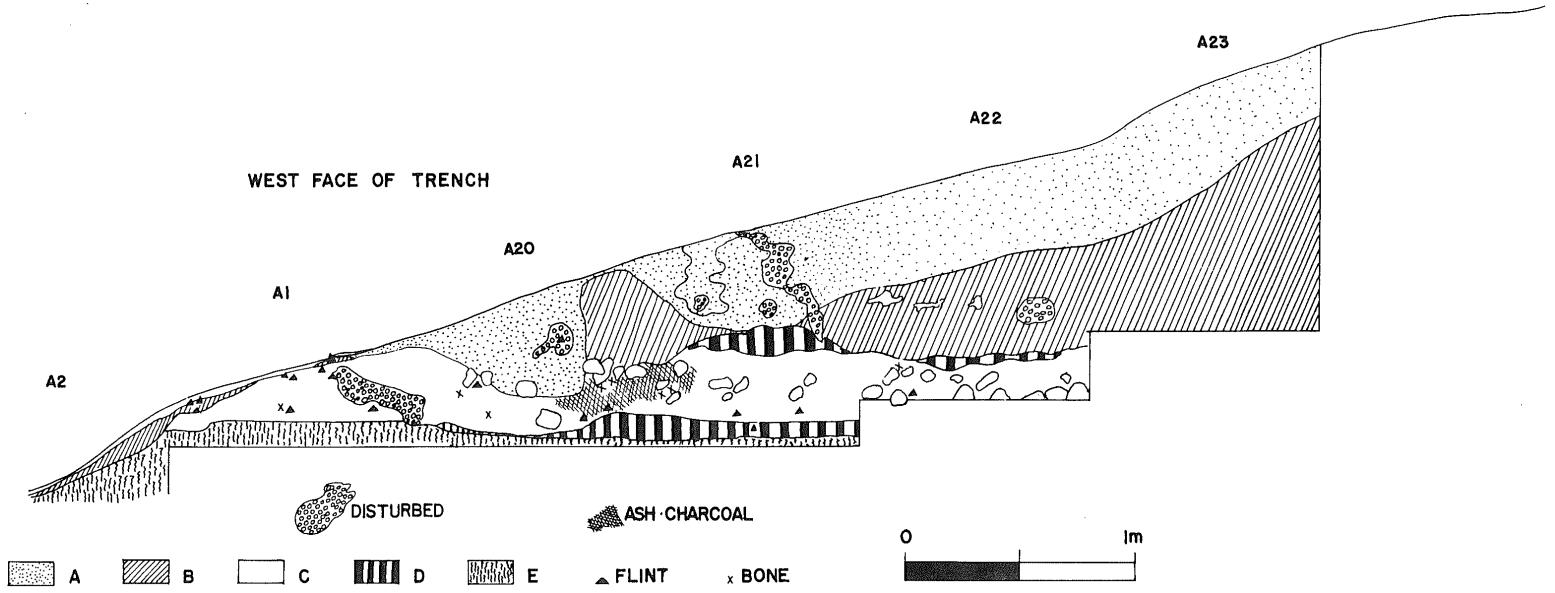


Figure 3. Stratigraphic profile of trench at Site J2. Vertically barred zones represent carbonate lenses.

leading to intensive mechanical weathering and aeolian activity. Dune sands were formed covering the debris of the Natufian occupation. Warmer and somewhat moist conditions followed leading to the liberation of iron oxides. Reddish sands were reworked into drift sand on top of the earlier deposits. The wadi aggradation may date to that period. By correlation with other areas in the Near East and North Africa it is possible that this moist phase dates back to ca. 9,000 - 7,000B.P. Drier and cooler conditions characterized later time periods. The most recent intensification of aridity beginning in 1890 A.D. (Burdon 1959: Fig. 7) seems to have been culminating in the last few years according to observations by local informants. Springs near the Natufian site which were flowing in the recent past (about 60 years ago) are now dried up.

Results of Test Excavations

Nineteen of the 60 sites which were discovered in the 1979 survey were test excavated. Twelve of these 19 sites proved to be *in situ* with four or perhaps five of these sites containing multiple archaeological horizons. The test excavations of eight sites are described in this report because of their importance in achieving the overall goals of the project. These sites include: J2 (Natufian), J8 (Mousterian), J14 (Chalcolithic, Natufian), J24 (Chalcolithic, Aceramic Neolithic), J26 (Epipaleolithic), J31 (Epipaleolithic, Upper Paleolithic), J301 (Epipaleolithic), and J302 (Epipaleolithic).

Site J2 - Natufian

The site is situated along the base of a low sand hill which follows the northern bank of the Wadi Ras en Naqb. A high density of habitation debris (i.e. flint artifacts, bone burned rocks, and ash) is distributed over the surface of the site which encompasses an area of about 400 sq. m. A trench, excavated into the base of the hill, defined the stratigraphy of the site and revealed *in situ* artifacts in a 30-50cm thick layer (Figure 2).

Stratigraphically, the site consists of four distinct layers (A,B,C, and D) in conjunction with two carbonate lenses (Figure 3). Layer A is composed of a medium grained reddish yellow (7.5 YR 7/7) sand of aeolian origin. The layer did not yield artifacts. Layer B consists of a medium grained reddish yellow (7.5 YR 6.5/7) sand of aeolian origin and contains very low densities of artifacts. Layer C, a dark gray (10YR 4.5/1) sand, contains a high density of artifacts, in conjunction with ash, charcoal, burned rock, and bone. Anthropogenic carbonate lenses, associated with layer C, exhibited high densities of charred materials which were collected for radiocarbon dating. Layer D consists of a crumbly reddish yellow alluvium (5YR 6.5/6) which is equivalent with the earliest alluvial unit defined within the study area. No artifacts were recovered from this Layer.

The microlithic assemblage recovered from the test excavation displays consistent typological and technological configurations with depth. Preliminary analysis of two 1 meter square units defined 118 flint tools and over 1,400 specimens of debitage and debris. The tool assemblage is characterized by geometric elements in the form of lunates with predominantly bifacial retouch. Other tool forms and technologic attributes are consistent with an early Natufian designation for the site. Radiocarbon determinations from three charcoal samples recovered from Layer C should provide a check on this cultural-historic designation.

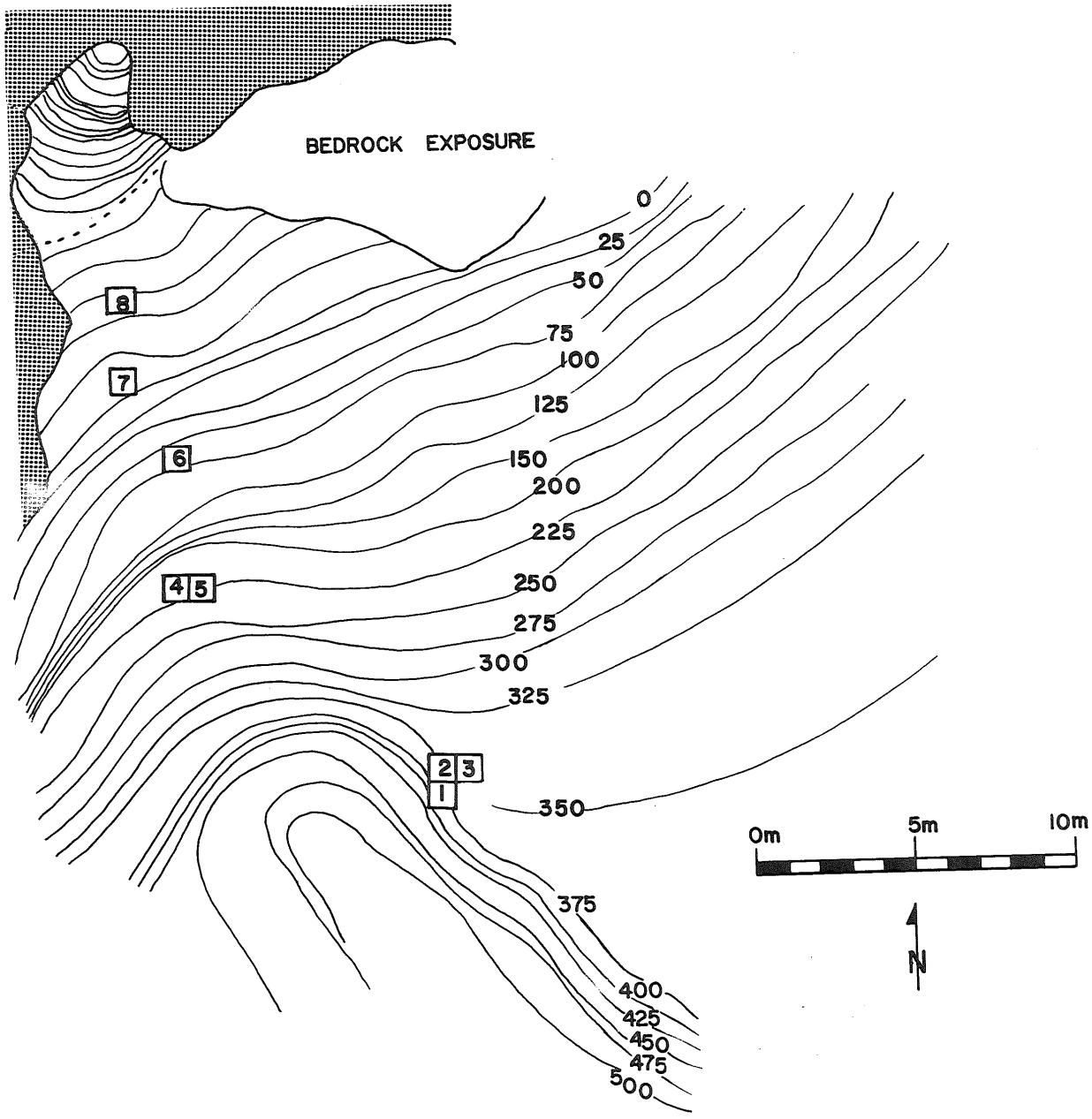


Figure 4. Topographic map of Site J8 showing cave and locations of test units. Note contours appear as below datum "0" readings.

Site J8 - Mousterian

The site is situated on a terrace in front of a small cave at the base of the sandstone escarpment which forms the eastern flank of Jebel el Jill. A high density of flint artifacts were discovered in an erosional channel which delimits the edge of the terrace. A series of eight test units, placed on the terrace from the edge of the erosional cut to the mouth of the cave (Figure 4), isolated the highest concentration of artifacts in the middle section of the terrace beneath the cave (units 4,5,6, and 7).

The test excavations exposed four stratigraphic units (Layers A,B,C,D) with the upper three units containing archaeological evidence (Figure 5). Layer A was composed of a reddish brown friable sand in association with varying amounts of organic material, principally in the form of goat dung, which increased in concentration in the area of the cave. The unit (T8) excavated near the mouth of the cave revealed a 1.7 m thick deposit of dung interspersed with numerous ash lenses. Layer B consisted of a light reddish brown (5YR 6/4) medium grained sand and contained varying amounts of sandstone rubble. Layer C, a pinkish gray (5YR 6/2) friable sand, contained the highest density of artifacts. Layer D, a white (10YR 8/2) coherant sand, failed to yield cultural material.

The assemblage recovered from the test excavations consists of 32 tools and 964 specimens of debitage and debris. Moderate quantities of predominantly poorly preserved bone were also recovered. Typologically, the assemblage is dominated by Levallois points which account for 59% of the tools. Blanks are principally in the form of blades with flakes being much less common.

J14 - Chalcolithic, Natufian

The site is situated in a saddle between sandstone promontories on the western edge of the basin. Flint artifacts are distributed over the southern portion of the saddle in association with remnants of circular stone structures (Figure 6). A series of eight test units, excavated along a north-south axis, revealed a relatively shallow (20-30 cm) cultural deposit in the southern portion of the site and a 50-80cm deposit in the northern section (Figure 7). While a single stratigraphic layer was exposed in the southern portion, alternating ash layers associated with a floor (unit 8) and a refuse pit (unit 6) were encountered in the northern section (Figure 7).

Excavation of the eight test units resulted in the recovery of 41 flint tools and 2392 specimens of debitage and debris. Several ground stone artifacts, rim sherds of a holemouth jar, worked bone specimens, dentalia and other perforated marine shells were recorded in association with the flint assemblage. Well preserved faunal remains were also recovered in abundance.

The flint tool assemblage included typical Chalcolithic elements (i.e. large fan scrapers, large thick flakes with marginal retouch) in association with small abruptly retouched lunates; specimens which are normally affiliated with late Natufian occupations. While the lunates may be part of the Chalcolithic flint assemblage, not previously noted, the seven lunates recorded at J14 may have been introduced from an underlaying Natufian horizon during construction of refuse pits in Chalcolithic times.

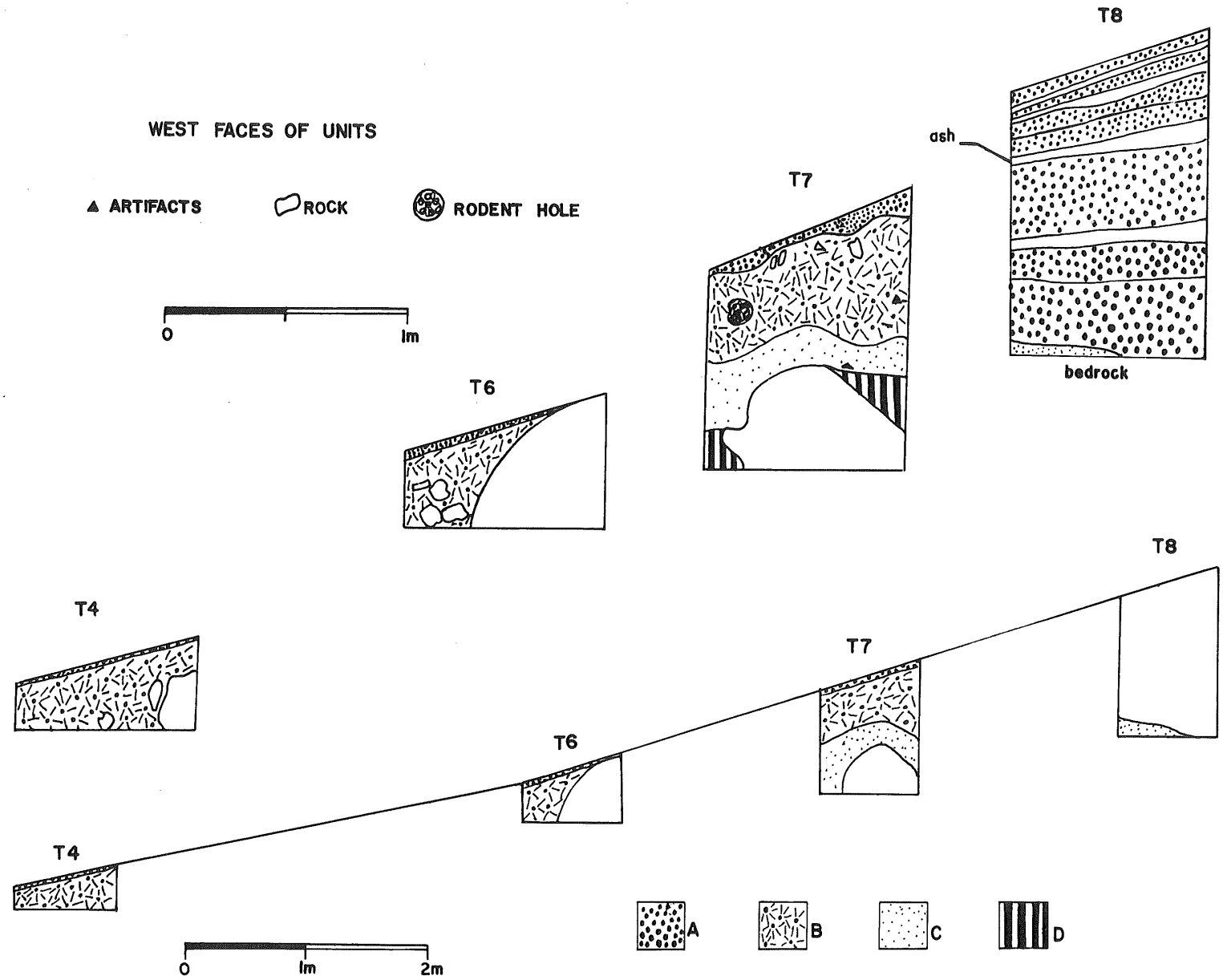


Figure 5. Stratigraphic profile of selected test units at Site J8.

J24 - Chalcolithic, Aceramic Neolithic

The site, defined by a dense surface scatter of flint artifacts, rests on a narrow sand bench beneath a steep sandstone cliff near the western margin of the basin. Remnants of two circular stone structures were also recorded (Figure 8).

The excavation of five test units revealed three stratigraphic layers (Figure 9). The layers were distinguished primarily on the basis of differing ash content. While layers A and B contained typical Chalcolithic artifacts (i.e. holemouth pottery, fan scrapers, small bifacial points), layer C yielded an assemblage identified tentatively as Aceramic Neolithic. Samples of charcoal were collected from hearths associated with each of the layers for radiocarbon dating. Well preserved faunal remains were also recovered from layers A and B.

Preliminary analysis of the artifacts recovered from three of the test units (units 1, 2, and 3) identified roughly equal numbers of specimens for the Chalcolithic and Aceramic Neolithic horizon. The Chalcolithic assemblage consists of 523 pieces of debitage and debris in conjunction with 12 tools. As mentioned the limited tool sample contained typical Chalcolithic elements. Approximately 20-30cm of sterile sand (upper layer C) separated the Chalcolithic horizon from a markedly different assemblage that contained high densities of thin blades and bladelets. A change in the utilization of raw material paralleled the typological and technological transition. Although 423 specimens of debitage and debris were recorded for this lower horizon, these elements were principally restricted to units 1 and 2 due to the distribution of layer C. The excavation of units 4 and 5 also revealed high densities of artifacts in the lower horizon, but these were not analyzed in the field. While only 21 tools were recorded for this lower horizon, one of these was in the form of a unifacially retouched point with a basal stem and single opposed lateral notches. The point was fabricated on a thin pointed blade similar to the other blades recovered from the horizon. This point type is identical to type A26a (Cauvin, 1974) which is associated with Phase 11 at Tel Mureybet in Syria.

J26 - Epipaleolithic

The site, situated on a steep slope on the bank of a deeply incised wadi, is defined by a moderate density of surface material distributed parallel to the wadi (Figure 10). The excavation of five test units indicate that the artifacts are eroding from the member 2 alluvial fan. The excavation revealed *in situ* artifacts to a depth of 70cm. A hearth was exposed in association with the artifacts and a burned matrix sample was collected for radiocarbon dating.

The microlithic assemblage recovered from the site consists of 60 tools and 265 specimens of debitage and debris. Technologically, the microlithic element is composed of rather thin bladelets and blades. Endscrapers, burins, and backed bladelets dominate the tool assemblage. A single geometric piece (trapeze) was recorded in unit F, thus raising the question of whether the site contains two components.

J31 - Epipaleolithic

The site rests on a steep slope between two minor drainages of an alluvial fan on the western margin of the basin (Figure 11). Artifacts are distributed over the surface in high density as they are eroding from sediments of the member

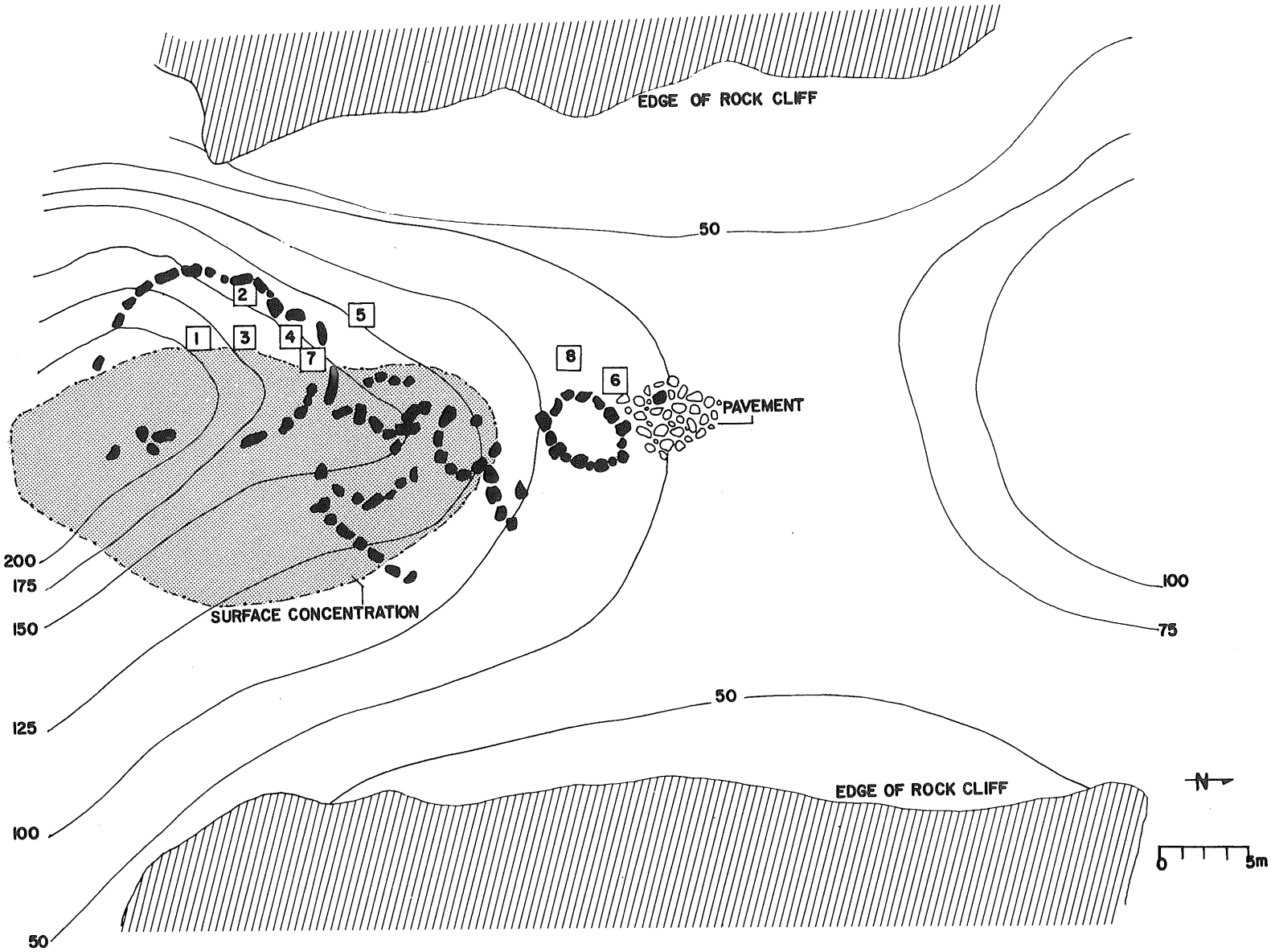


Figure 6. Topographic map of Site J14 showing surface evidence and the positions of units. Note that increasing contour values denote decreasing elevation.

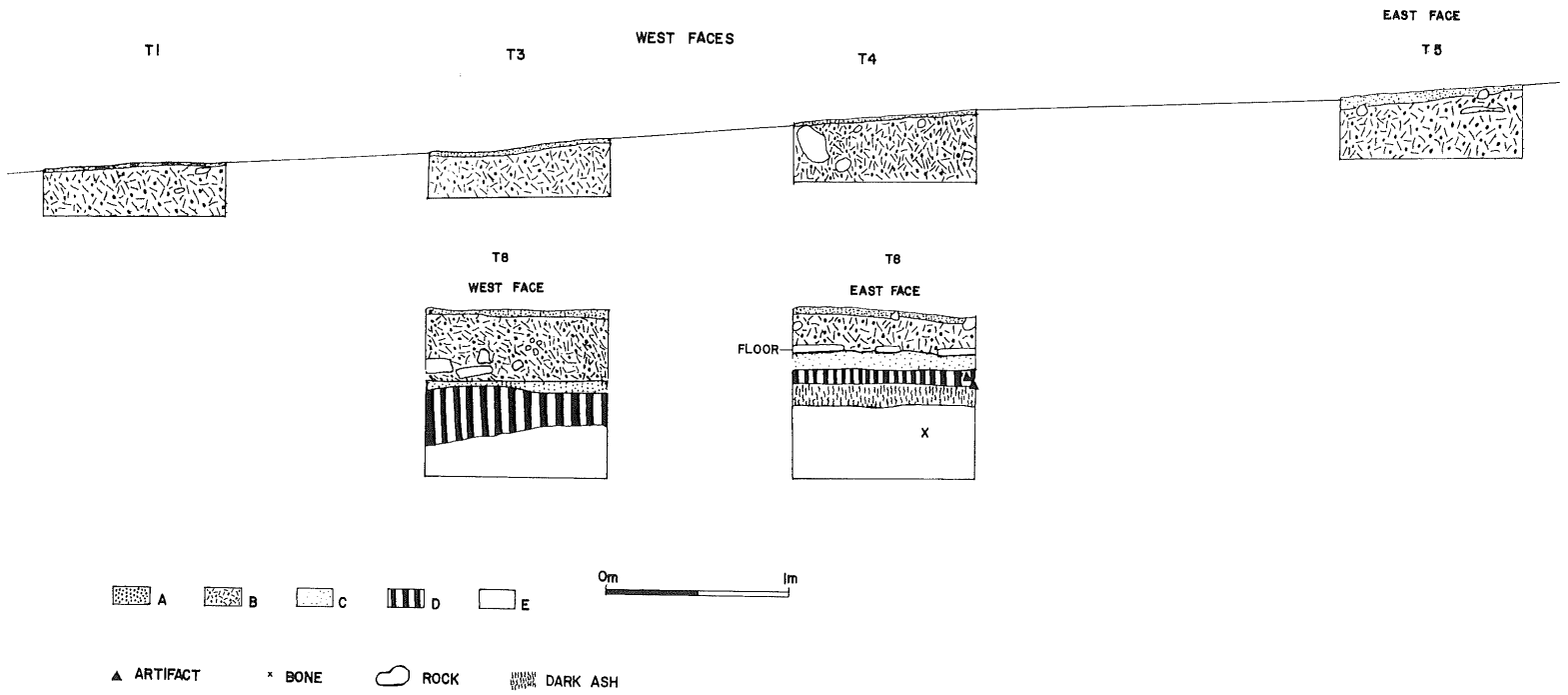


Figure 7. Stratigraphic profile of selected test units at Site J14.

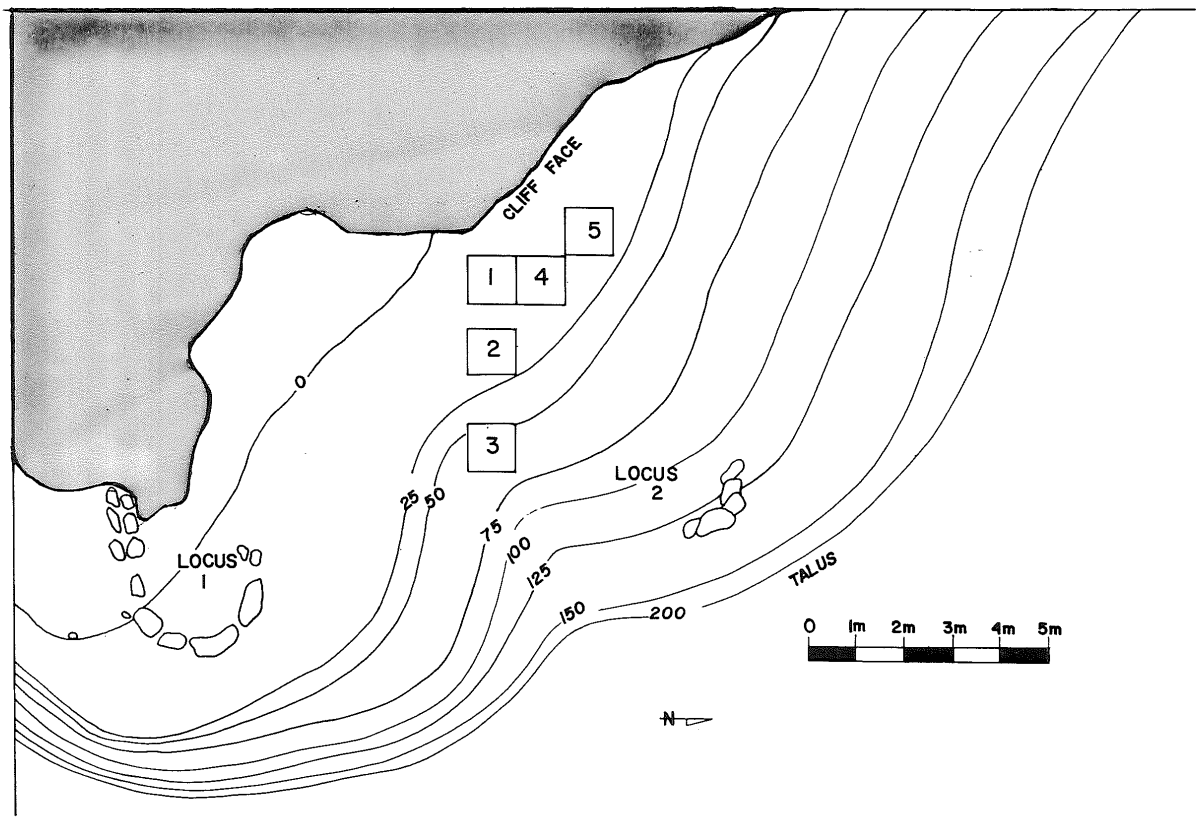


Figure 8. Topographic map of Site J 24 showing the locations of surface features and test units. Note contours appear as below datum "0" readings.

2 alluvial fan. The excavation of eight test units produced *in situ* artifacts to a depth of 70cm. The artifacts were recovered from two stratigraphic layers (Figure 12). The numerous lenses of fine grained material in layer A suggest that it represents layer B sediments which have been reworked through sheetwash of the steep slope. In this respect it is noteworthy that features in the form of ash deposits are restricted to the lower layer. The ash deposits, apparently relicts of former hearths, failed to provide sufficient charred material for radiocarbon dating. Faunal remains were not encountered.

Excavation of the site provided 109 lithic tools and 476 specimens of debitage and debris. The microlithic assemblage is characterized by abruptly retouched and truncated bladelets in addition to geometrics. Over 20% of the tools were in the form of trapezes and rectangles. Microburins were present in low numbers.

Although several artifacts that are typically found in Upper Paleolithic assemblages were noted within the surface collection from J31, the text excavations failed to isolate an Upper Paleolithic horizon.

J201 - Epipaleolithic

The site is located within a rockshelter overlooking a dry lake bed on the southern edge of the Wadi Hisma approximately 20km south of the study area. Lithic artifacts appear in high densities within the shelter and on the slope in front of the cliff face (Figure 13). Text excavations and exposures of erosional cuts on the slope revealed *in situ* artifacts to a depth of 60cm (Figure 13). Faunal remains were recovered throughout the deposit.

The excavation furnished 267 lithic tools and 1636 specimens of debitage and debris. Although the assemblage is microlithic throughout the deposit there is a noticeable increase in the size (length and breadth) of lamellar elements at a depth of 30 to 40 cm which appears to be associated with the layer A - layer B contact. The increased size of elements at 30 to 40 cm coincides with a marked decline in geometrics. Geometric microliths within the assemblage are in the form of trapezes and rectangles. Microburins were not recovered.

J202 - Epipaleolithic

The site is situated in a south facing rockshelter located about 2km east of J201. The rockshelter exhibits a weak talus and rests only 2-3m above a dry lake bed some 400cm to the east. Moderate densities of artifacts are distributed parallel to the cliff face in front of the rockshelter. The excavation of two test units revealed *in situ* artifacts to a depth of 40cm.

The microlithic assemblage contains 257 tools and 4236 pieces of debitage and debris. Although geometrics compose from 12-23% of the tools throughout the deposit, lunates appear to be replaced by trapezes and rectangles with depth. Abruptly retouched bladelets show an inverse relationship to the lunates as they increase with depth. In that these typologic trends define the Geometric Kebaran - Natufian transition in Palestine, it may be that J202 represents such a transition in southern Jordan.

Discussion and Conclusions

The first season's investigation of the prehistory of the Ras en Naqb area resulted in

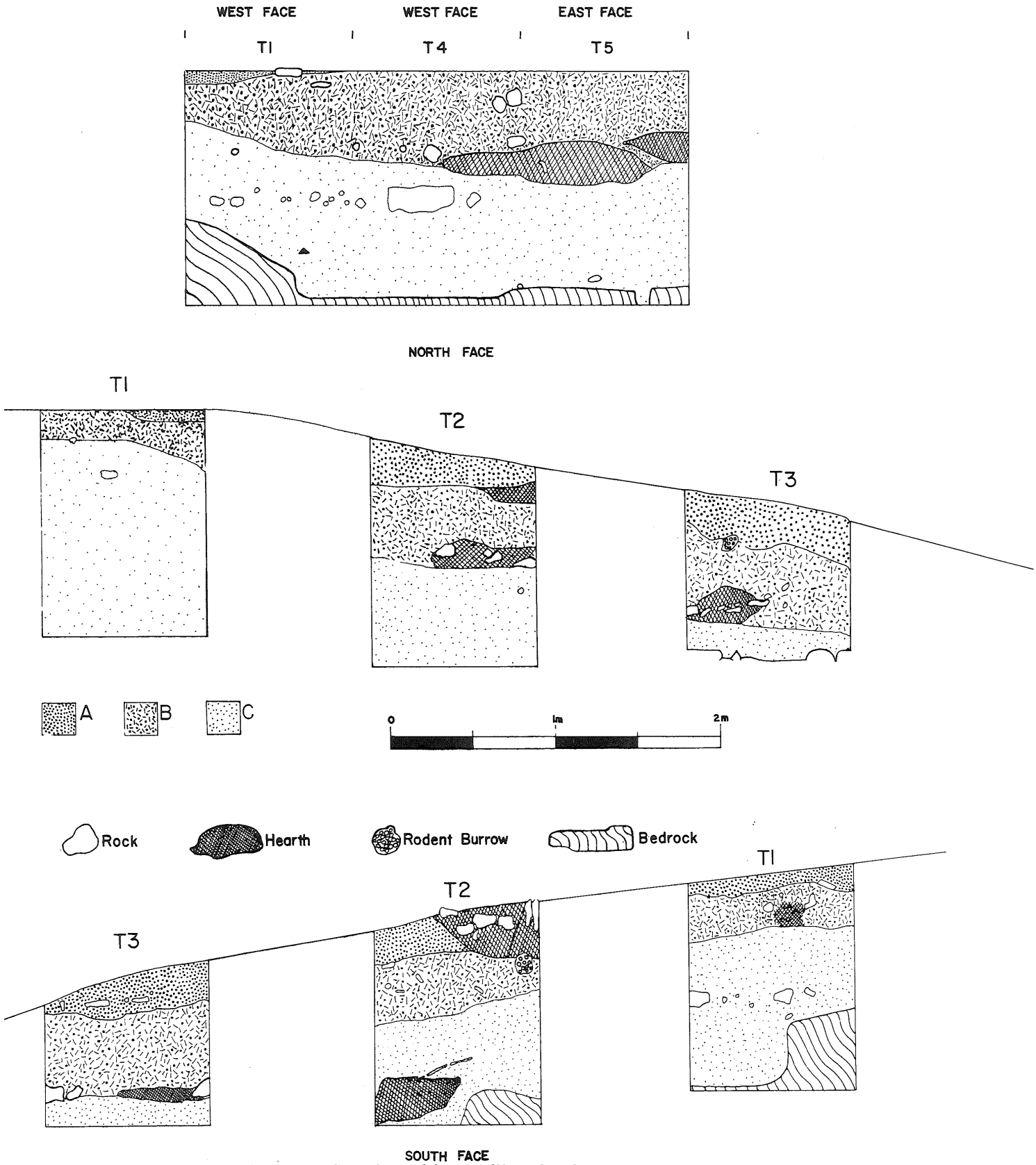


Figure 9. Stratigraphic profile of selected units at Site J24.

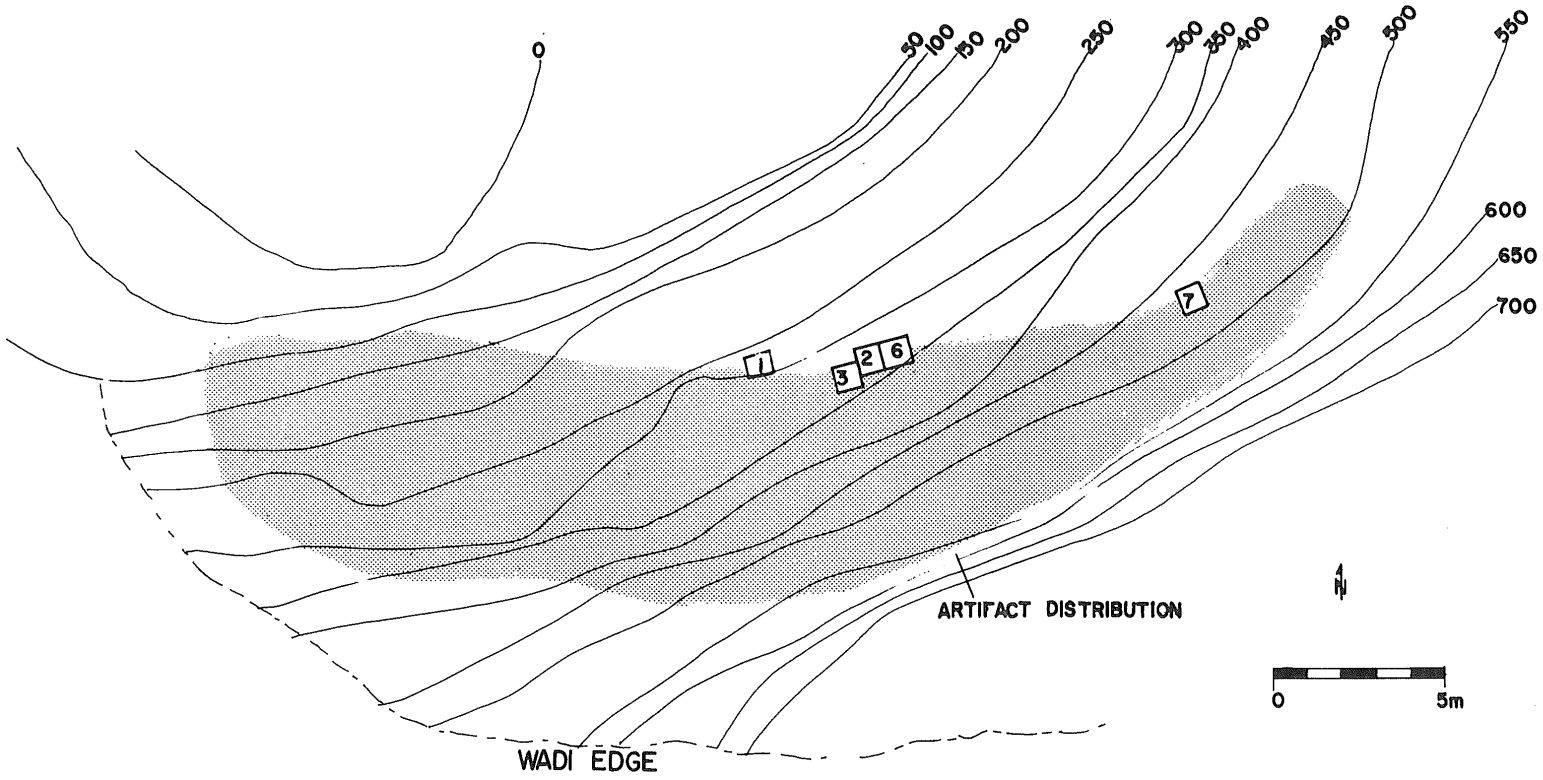


Figure 10. Topographic map of Site J26 showing the surface distribution of artifacts and the locations of test units. Note contours appear as below datum "0" readings.

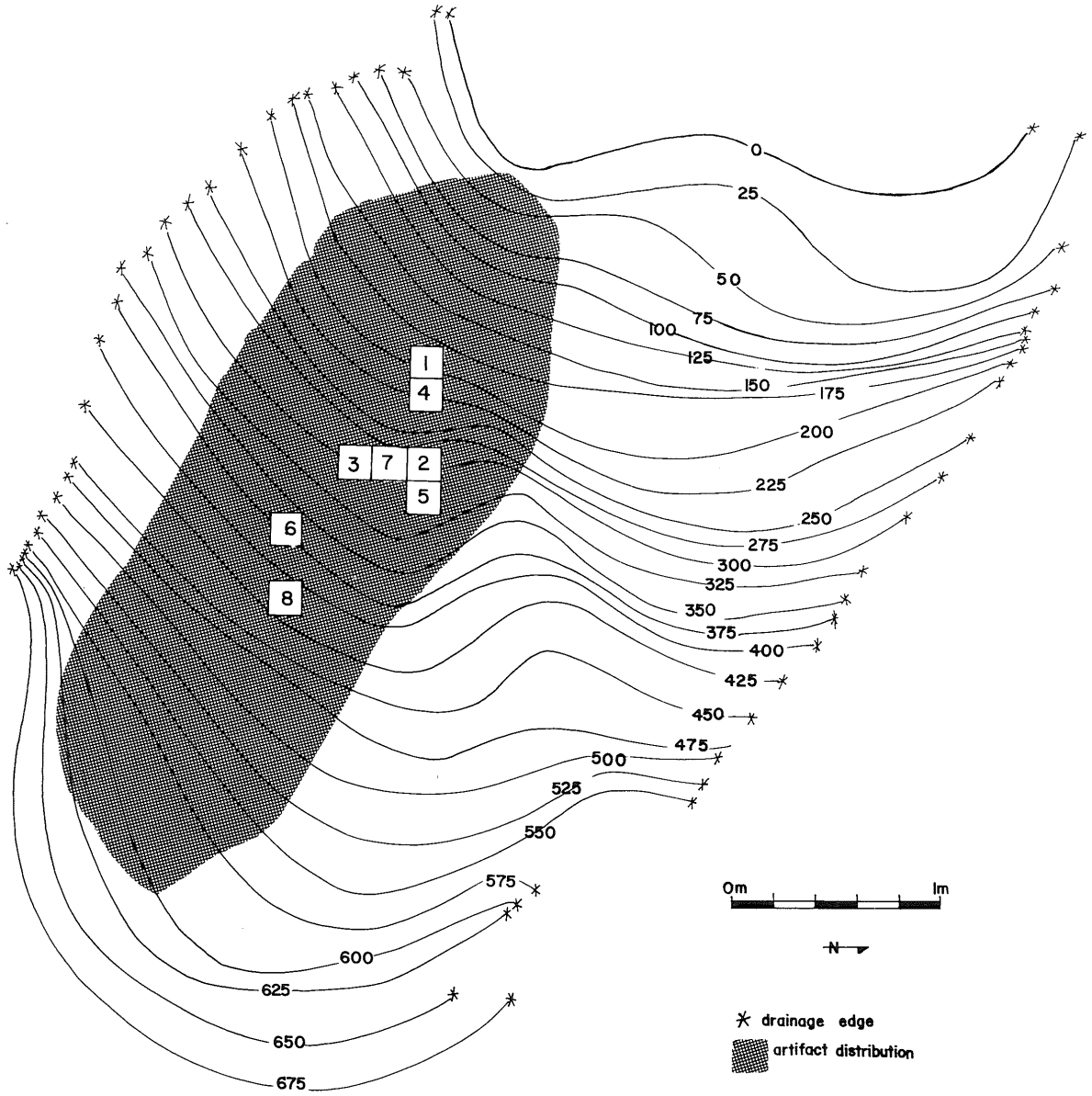


Figure 11. Topographic map of Site J26 showing the surface artifact distribution and the locations of test units.

the development of a tentative cultural-historical and enviornmental sequence. The sequence, as presently understood relies on a chronology generated from the typological/technological seriation of artifactual assemblages and their positions in the depositional history of the area. The paleoenvironmental reconstruction is drawn from geologic evidence and the distribution of archaeological sites. While the cultural and environmental sequence, as presented here, provides a useful framework in which to organize and evaluate data acquired in future studies of the area, the sequence will no doubt undergo significant modification and refinement once faunal and pollen studies have been completed and a series of radiometric determinations becomes available.

The earliest depositional unit defined in the study area is represented by an alluvial fan which filled the basin probably during the early part of the late Pleistocene (Figure 14). Although this unit is not independently dated, either through seriation or radiometric determinations, the presence of Mousterian artifacts in a relict dune immediately overlying the fan suggests a late Pleistocene age. In that this early fan apparently formed under subarid conditions, with annual rainfall on the order of 300mm, it may be equivalent with a moist episode dating to the early part of the last glaciation. This period of greater available moisture has been recognized in pollen records from the Ghab Basin in Syria (Niklewski and Van Zeist, 1970), the Hula Basin in the northern Jordan Valley (Horowitz, 1971), the cave site of Tabun in Israel (Jelinek et al, 1973), and the open site of Rosh Ein Mor in the Negev (Horowitz, 1976; Marks, 1977), among others. Although this moist phase, perhaps a lower latitude expression of an early Würm stadial (Jelinek, et al, 1973: 177, Copeland, 1975:329, Horowitz, 1975:220), has had broad recognition in palynological and sedimentological studies (Butzer, 1975), within the region it is presently poorly dated due to the inherant limitations of the radiocarbon technique. The few available dates and ancillary evidence, however, suggest that moist conditions prevailed from about 75,000 to 60,000 years ago (Copeland, 1975:329; Horowitz, 1975:220, Marks, 1977:6). Early Mousterian occupations are associated with this moist interval in the northern and central Levant and appear to have expanded into such marginal areas as the Negev during this episode of climatic improvement. The intensive Mousterian occupation of the uplands around Ras en Naqb is probably related to this period as are numerous Mousterian sites reported in the vicinity of what was then the extant Jafr Lake (Huckriede and Wiesemann, 1968).

Following this moist interval there was an onset of drier conditions, as revealed in middle Mousterian deposits in the central and northern Levant (Jelinek, et al. 1973:178; Copeland, 1975: 330) and geologic/pollen localities in the Ghab Basin, Hula Basin, and the Negev. The climatic deterioration was accompanied by intense erosion as evidenced by some 80m of downcutting of the Nahal Zin within the central Negev (Marks, 1977). This episode appears to have persisted for some 20,000 years until climatic improvements occurred some 30,000 to 40,000 years ago (Horowitz, 1975:220). During this dry episode the marginal zones of the southern Levant appear to have been unoccupied or at most sparsely inhabited by the middle and late Mousterian groups recognized further to the north (Marks, 1977). Within the study area, the Mousterian site of J8 may be

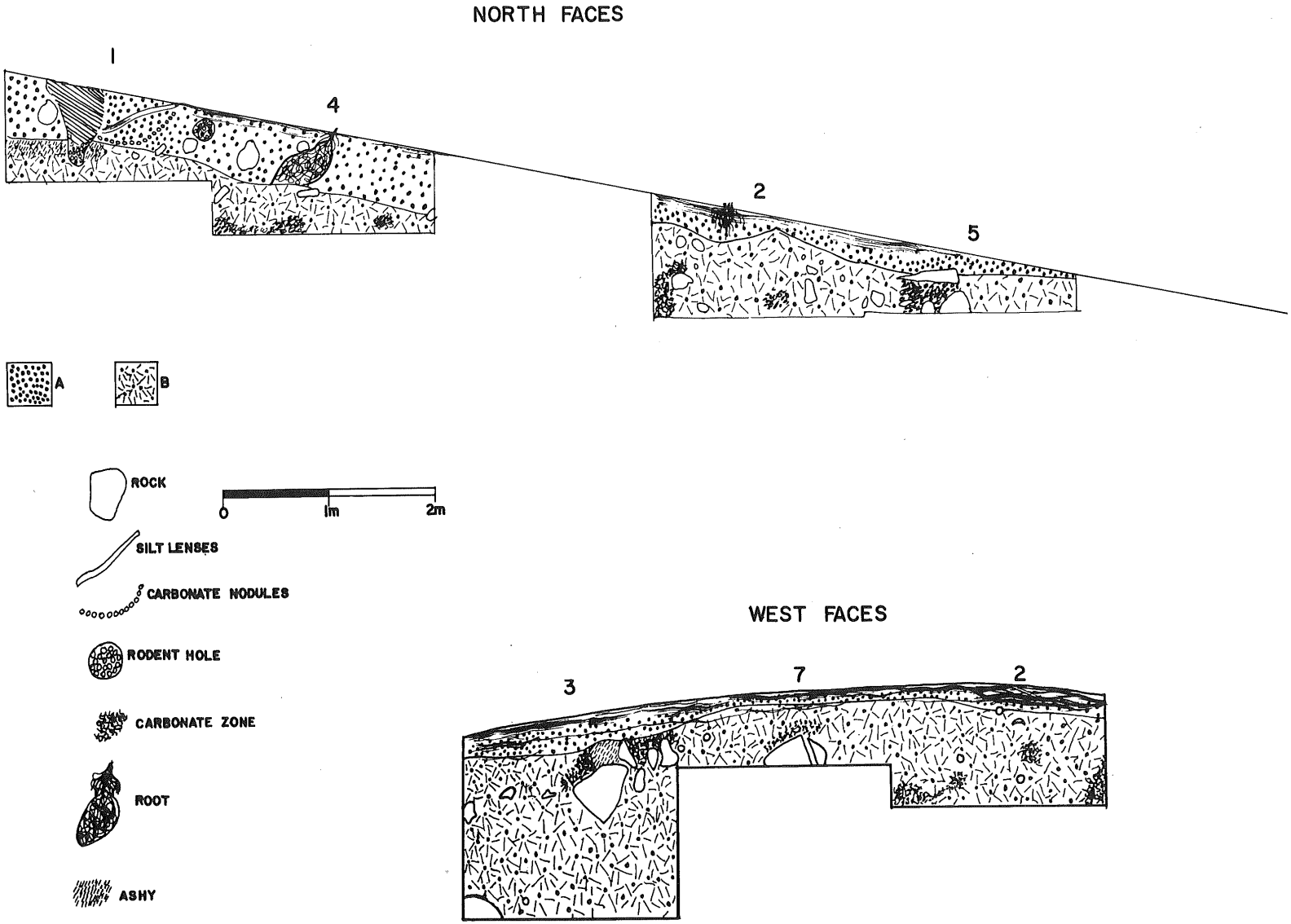


Figure 12. Stratigraphic profile of selected units at Site J31.

TABLE 1: Summary of sites recorded in 1979 survey

Number	Technology	Characteristics	Context	Minimum Area	Maximum Thickness of Cultural Dep.	Artifact Density	Fauna	Datable Material	Paleolithic Period	Comments
J 1	Microlithic	Bladelet; NDT	Deflated	125	0	Low	No	No	E	Deflated on member II alluvial fan
J 2	Microlithic	Bladelets, Bifacial Lunates	In Situ	400	70	High	Yes	Yes	E	Early Natufian , rich midden
J 3	Microlithic	Bladelets, Bladelet Cores	Deflated	250	0	Mod	No	No	E	Deflated on member II alluvial fan
J 4	Microlithic	Bladelets, Pottery	In Situ	400	0	Mod	No	No	C	Structures
J 5	Blade	Blade, NDT	Deflated	150	0	Mod	No	No	?	
J 6	Levallois	Lg, Cores, Lev, Flks, Patinated	Deflated	250	0	Low	No	No	M	Resting on pediment II
J 7	Blade	Blades; NDT	Deflated	100	0	Low	No	No	?	Hilltop, edge of basin
J 8	Levallois	Lev. pts, Lamellar	In Situ	200	60	Mod	Yes	Yes	M	Terrace & small cave
J 9	Microlithic	Core Scrapers, Pottery	Deflated	250	0	Low	No	No	C	
J10	Microlithic	Small Scrapers, Pottery	Deflated	180	0	Low	No	No	C	
J11	Microlithic	Bladelet Cores, Lunates, Pottery	In Situ	300	40	Mod	Yes	Yes	C/E	Multi-component, Chal./Natufian?
J12	Microlithic	Bladelets, Bladelet Cores, NDT	Deflated	150	0	Low	No	No	?	
J13	Microlithic	Bladelet Cores	Deflated	200	0	Low	No	No	?	
J14	Microlithic	Bladelet Cores, Lunates, Pottery	In Situ	1050	80	Mod	Yes	Yes	C/E	Multi-component, Chal./Natufian?
J15	Microlithic	Bladelet Cores	In Situ	125	+	Mod	Yes	Yes	C	Chalcolith Hearth
J16	Blade	Blades, Cores, NDT	Deflated	750	0	Low	No	No	?	
J17	Microlithic	Bladelet Cores, Pottery	In Situ	800	+100	Mod	Yes	Yes	C	Chalcolithic, Vandalized
J18	Microlithic	Bladelet	Deflated	400	0	Low	No	No	?	
J19	Microlithic	Bladelets	Deflated	100	0	Low	No	No	?	

M-Mousterian, Up-Upper Paleolithic, E-Epipaleolithic, N-Neolithic, C-Chalcolithic

Number	Technology	Characteristics	Context	Minimum Area	Maximum Thickness of Cultural Dep.	Artifact Density	Fauna	Datable Material	Paleolithic Period	Comments
J20	Microlithic	Bladelets, Cores, Pottery	Deflated	400	0	Low	No	No	C	
J21	Microlithic	Bladelets, NDT	Deflated	480	0	Mod	No	No	E	
J22	Microlithic	Bladelts, Geometrics	Deflated	1500	0	Low	No	No	E	Trapezes, Rectangles mem.II alluvial
J23	Undetermined	Flakes, NDT	Deflated	240	0	Low	No	No	?	
J24	Microlithic	Bladelet Cores, Bladelets	In Situ	250	170	Mod	Yes	Yes	C/N	Multi-component Chalcolithic/Aceramic
J25	Microlithic	Bladelet Cores, Backed Bladelets	Deflated	640	0	Mod	No	No	E	Member II alluvian fan
J26	Microlithic	Bladelets. Geometric Microlithic	In Situ	256	50	Mod	No	Yes	E	Member II alluvian fan
J27	Microlithic	Bladelets, End Scrapers on Blades	Deflated	600	0	Mod	No	No	E	Member II alluvian fan
J28	Microlithic	Bladelets Cores	Deflated	200	0	Low	No	No	E	Member II alluvian fan
J29	Microlithic; Blade	Bladelets, Blades, Cores	Deflated	120	0	Mod	No	No	E	
J30	Blade	Blade, Blade Cores	In Situ	100	?	Low	No	No	E,UP?	Eroding out of Member II alluvian fan
J31	Microlithic Blade	Blade, Bladelet, Cores	In Situ	200	70	High	No	No	E,UP?	Eroding out of Member II alluvian fan
J32	Microlithic	Cores, Pottery	In Situ	2000	+100	Mod	Yes	Yes	C	Structures, vandalized
J33	Microlithic	Blades, Bladelets, Cores	Deflated	625	0	Mod	No	No	E	
J34	Blade	Blade Cores	In Situ	300	?	Low	No	Yes	E,UP?	Associated hearth eroding out of Member II
J35	Microlithic	Bladelets	In Situ	500	?	Low	No	No	C	Structures
J36	Undetermined	Rounded Structure	In Situ	120	?	Low	No	No	C 1	

M-Mousterian, Up-Upper Paleolithic, E-Epipaleolithic, N-Neolithic, C-Chalcolithic

Number	Technology	Characteristics	Context	Minimum Area	Maximum Thickness of Cultural Dep.	Artifact Density	Fauna	Datable Material	Paleolithic Period	Comments
J37	Microlithic	Bladelets Cores	In Situ	1500	?	High	No	No	C	Structures
J38	Microlithic	Bladelet Cores, Pottery	In Situ	2000	?	Mod	No	No	C	Structures
J39	Microlithic	Bladelet Cores, Pottery	In Situ	2500	?	Mod	No	No	C	Structures
J40	Microlithic	Bladelet, Lg, Flakes	In Situ	1500	?	Mod	No	No	C	Structures
J41	Blade	NDT	Deflated	100	0	Low	No	No	?	
J42	Microlithic	Endscraper, Bladelet Cores	Deflated	750	0	Low	No	No	E	
J43	Microlithic	Bladelets, Geometrics	Deflated	600	0	Low	No	No	E	
J44	Microlithic	Bladelet Cores	Deflated	500	0	Low	No	No	E	
J45	Microlithic	Bladelet Cores	Deflated	50	0	Low	No	No	E?	
J46	Undetermined	Flakes	Deflated	60	0	Low	No	No	?	
J47	Microlithic	Bladelet Cores	Deflated	55	0	Low	No	No	?	
J48	Microlithic	Bladelet Cores	Deflated	200	0	Low	No	No	E	
J49	Microlithic	Bladelets	Deflated	225	0	Low	No	No	E	
J50	Undetermined	Flakes	Deflated	100	0	Low	No	No	?	
J51	Microlithic	Bladelet Cores, Bladelets	Deflated	200	0	Low	No	No	?	
J52	Blade	Flakes, Blades	Deflated	600	0	Mod	No	No	UP?	
J53	Levallois	Lev. Pts., Lev. Cores	Deflated	150	0	Low	No	No	M	Artifacts abraded
J54	Blade	NDT	Deflated	125	0	Low	No	No	UP?	
J55	Levallois	Lev. Pts, Lev. Bld. Core	Deflated	25	0	Low	No	No	M	Artifacts abraded
J56	Levallois	Lev, Pt. Cores	Deflated	25	0	Low	No	No	M	Artifacts rolled
J57	Microlithic	Bladelet. Bladelet cores	Deflated	500	0	Low	No	No	E	
J201	Microlithic	Bladelet; Geometrics	In Situ	112	80	High	Yes	Yes	E	Stratified geometric/non geometric
J202	Microlithic	Bladelet; Geometric	In Situ	500	75	High	No	Yes	E	Late Natufian
J301	Blade	Blade, Blade Cores	Deflated	500	0	High	No	No	UP	Artifacts heavily patinated

1. NDT No Diagnostic Tools.

M-Mousterian, Up-Upper Paleolithic, E-Epipaleolithic, N-Neolithic, C-Chalcolithic

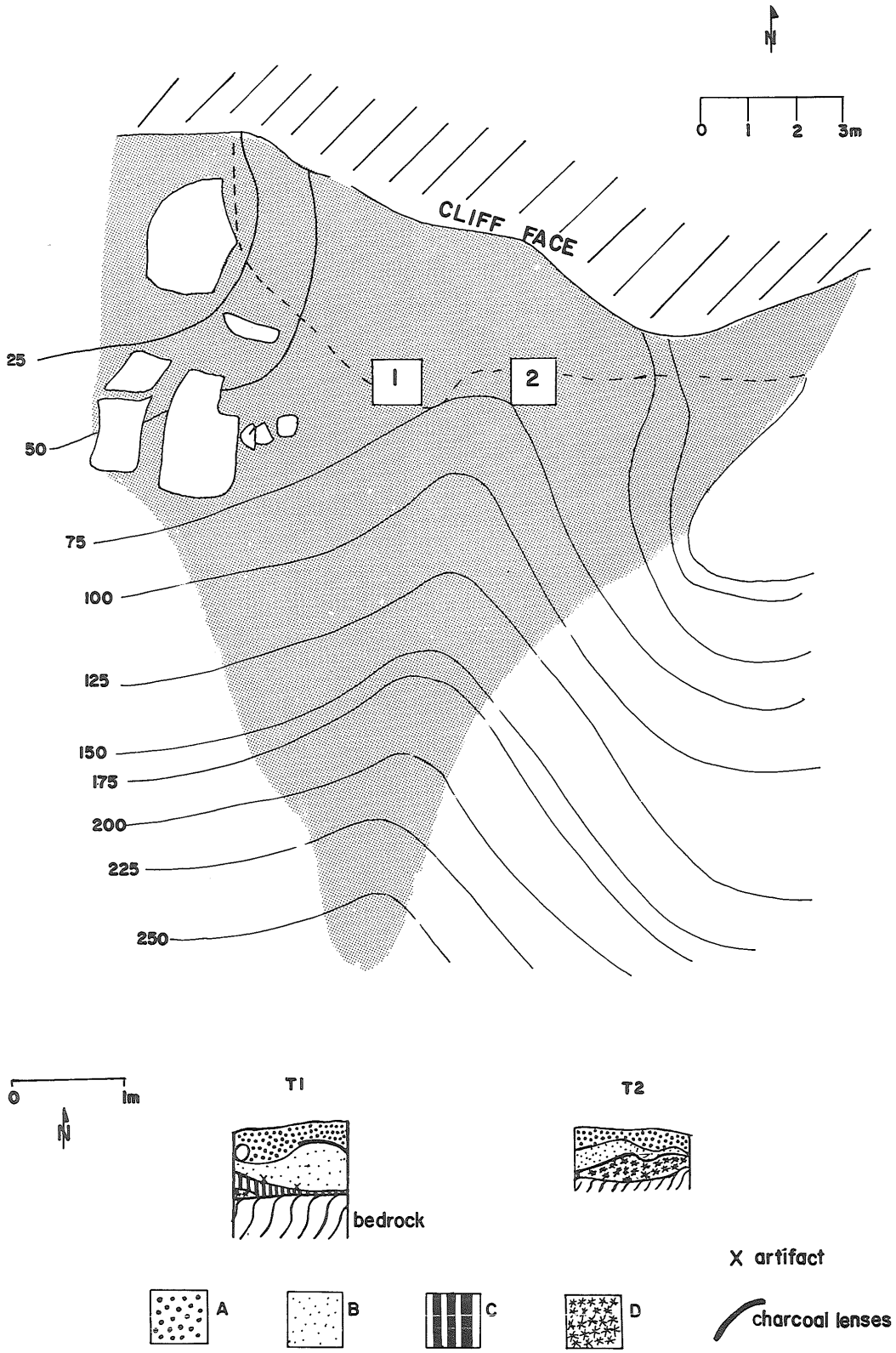


Figure 13. Topographic map of Site J201 showing the surface distribution of artifacts and the location of the te st units.

equivalent with this interval. The position of the site, in a relict dune formed after the down-cutting of the early alluvial fan, is in concert with the regional evidence of an erosional episode followed by a deterioration in climate during middle and late Mousterian times. As a result of the study area being significantly higher in elevation than the surveyed areas (i.e. the central Negev and Sinai) of the southern Levant, the impact of the arid episode was probably moderated by orographic precipitation. Although the evidence suggests that the area experienced a drier climate during this period, the climatic deterioration was apparently not of the magnitude as in the lower elevations of the southern Levant and continued occupation of the Jordanian Plateau was possible.

Climatic improvement, demarking the end of this dry interval, was associated with Upper Paleolithic occupations in the Negev (Marks, 1977:61) and Sinai (Bar-Yosef and Phillips, 1977: 256-257). A series of radiocarbon dates from these occupations indicate that this climatic reversal commenced some 37,000 to 32,000 years ago, but by 26,000 to 27,000 years ago another arid cycle had begun. Another expression of these climatic oscillations is found in geomorphic evidence from the Jafr depression where an episode of extreme aridity, is followed by moister conditions associated with Upper Paleolithic and supposedly Middle Paleolithic (Matakhuim) artifacts (Huckriede and Wiesemann, 1968). Huckriede and Wiesemann interpret these geomorphic successions as having been post Lisan (i.e. 18,000 B.P. according to Begin, et al., 1974) in age and support this interpretation with a single radiocarbon date of ca. 28,000 for the preceding moist interval. The presence of supposedly Middle Paleolithic artifacts in these deposits is not consistent with this interpretation. If Site J301, which was discovered on the northeastern edge of the Jafr depression, is representative of the "Matakhium" an early Upper Paleolithic age would be more appropriate for its antiquity as the assemblage is dominated by Upper Paleolithic tools on blades in conjunction with a modest Levallois element. While an early Upper Paleolithic age for the Matakhium would be inconsistent with the proposed post-Lisan date for the climatic oscillation, such an age would be in concert with the chronology of the climatic events and related archaeology recognized in the Negev and Sinai.

The arid conditions which began some 27,000 years ago appear to have persisted until some 13.000 years ago. At that time dry conditions were giving way to a terminal Pleistocene moist phase associated with late Geometric Kebaran and Moshabian occupations as evidenced by geomorphic data from the Negev and Sinai as well as pollen information from the western Galilee (Henry and Leroi-Gourhan, 1976). Within the study area, the formation of the second alluvial fan probably encompasses this episode of climatic amelioration although the fan may have begun forming during the preceding arid phase. The lack of archaeological evidence from lower portions of the fan prohibits the establishment of a beginning date for its formation. The presence, however, of Epipaleolithic sites (J26 and J31) in the upper portions of the fan in conjunction with an early Natufian occupation (site J2) in an overlying deposit indicates that the alluvial fan ceased to form by 12,000 B.P.

The geomorphic expressions of subsequent

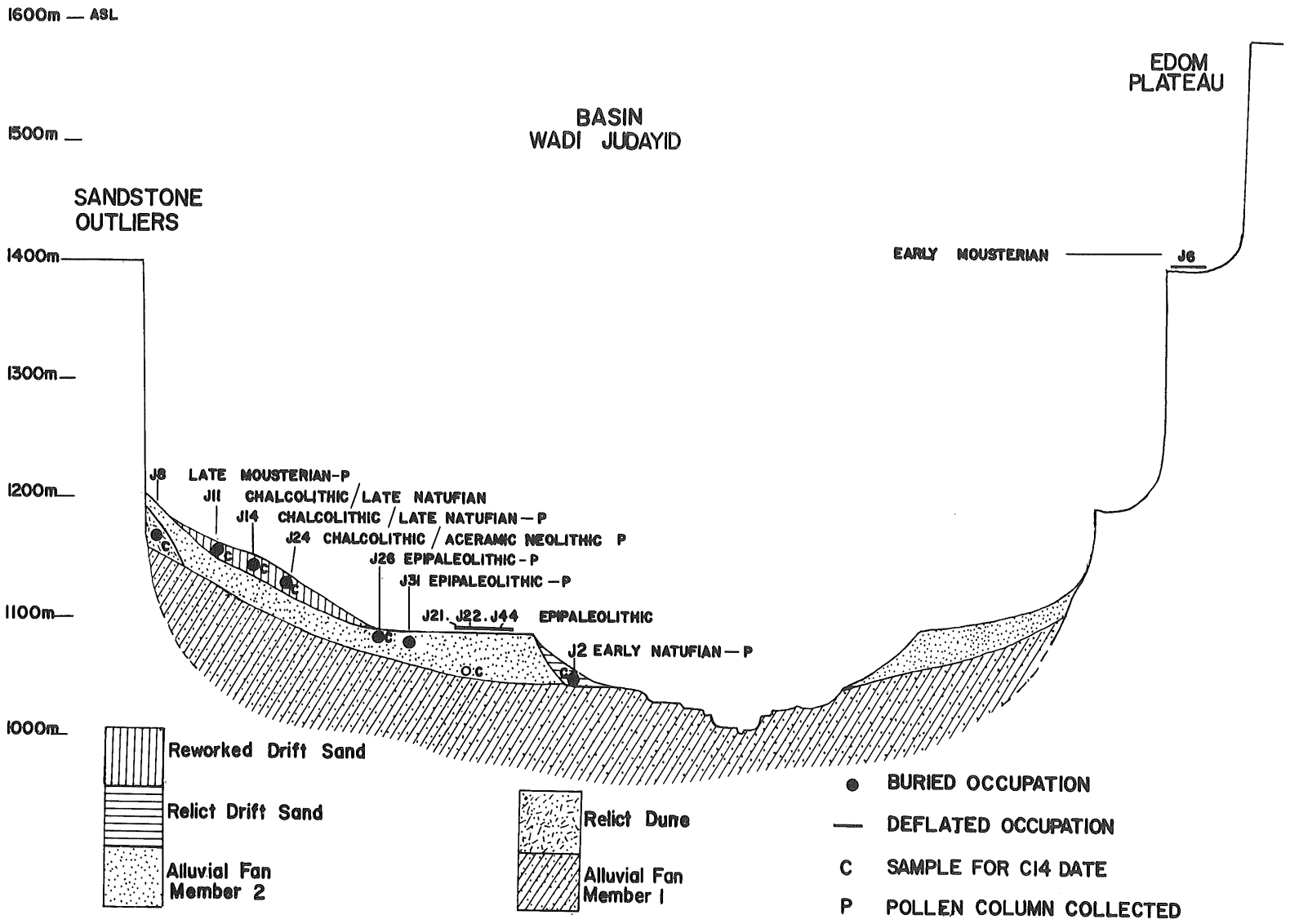


Figure 14. A generalized cross-section of the Basin Wadi Judayid (looking north) showing the positions of archaeological sites in the geologic sequence and associated evidence.

climatic/environmental oscillations within the study area were partially obscured by a predominantly erosional history of the basin during the terminal Pleistocene and most of the Holocene.

Archaeological occurrences attributed to the early and mid-Holocene consist of late Natufian, Aceramic Neolithic, and Chalcolithic occupations. Occupations of these periods are situated in deposits of reworked sand overlying the second alluvial fan.

Following the formation of the second alluvial fan, an erosional episode established the highest of a series of cut-terraces. An early Natufian occupation (Site J2) on this terrace indicates that the erosional interval took place between approximately 12,000 and 13,000 years ago. The erosional episode may have reflected a marked increase in precipitation, as opposed to drier conditions, for there is strong regional evidence for increased available moisture at this time (Henry and Leroi-Gourhan, 1976). An ensuing decline in available moisture, which has been associated with late Natufian occurrences (Henry and Leroi-Gourhan, 1976; Bar-Yosef et al, 1974), is represented by increased aeolian deposition within the basin during this interval. Drier conditions are indicated by dune sand covering the early Natufian occupation at Site J2 in conjunction with late Natufian (Sites J11 and J14) and Aceramic Neolithic (Site J24) occupations appearing in sands which evidence limited mobilization of iron oxides.

A final moist episode followed with reddish sands being reworked into the drift sand on the older deposits and possibly some wadi aggradation occurring. This episode probably took place during the mid-Holocene as based on correlation with similar conditions in North Africa and the southern Levant (Butzer, 1977: 404). In the study area, however, the associated archeological evidence is limited to the later part of this period in the form of Chalcolithic occurrences (Sites J11, J14, J24, and others) as no evidence for a Pre-Pottery Neolithic B occupation of the basin was found. Given the widespread distribution of PPNB sites in the presently marginal regions of the Near East, including Sinai (Bar-Yosef and Phillips, 1977), the Negev (Servello, 1976), and the Jordanian Eastern Desert (Waechter and Seton-Williams, 1938) in conjunction with PPNB sites in the immediate vicinity of the study area (Kirkbride, 1966; Price and Garrad, 1975), the apparent absence of PPNB sites in the basin is probably more of an expression of bias in the survey or geologic exposures, than a real lack of occupation by PPNB groups.

D. O. Henry
F. A. Hassan
M. Jones
K - C Henry

Bibliography

Bar-Yosef, O., P. Goldberg, T. Leveson.
1974 Kebaran and Natufian sites in Wadi Fazael, Jordan Valley, Israel. *Paleorient* 2, 2:415-428.

Bar-Yosef, O. and J. Phillips
1977 Prehistoric Investigations in Gebél Meghara, northern Sinai, *Qedem* 7. Monographs of the Institute of Archaleology, The Hebrew University of Jerusalem.

Begin, Z.B., A. Ehrlich, and Y. Nathan.
1974 Lake Lisan, the Pleistocene precursor of the Dead Sea. *Geologic Survey of Israel Bulletin* No. 63.

Bender, F.
1947 *Geologie von Jordanian.* Berlin.

Butzer, K. W.
1975 Patterns of Environmental Change in the Near East during late Pleistocene and early Holocene times. In *Problems in Prehistory: North Africa and the Levant.*

Cauvin, M.C.
1974 Fleches a encoches de Syrie: essai de classification et d'interpretation culturelle. *Paleorient* 2, 2:311-322.

Copeland, L.
1975 The Middle and Upper Paleolithic of Lebanon and Syria in the light of recent research. in *Problems in Prehistory: North Africa and the Levant,* F. Wendorf and A. E. Marks (eds), 317-351, Dallas.

Copeland, L. and F. Hours
1971 A microlithic flint site in the Wadi Rum, Jordan, and a Review of the Epi-Paleolithic of Northern Arabia. In *Proceedings of the Seminar for Arabian Studies,* 1970: 7-21, London.

Henry, D.O.
1979 Paleolithic sites within the Ras en Naqb Basin, southern Jordan. *Palestine Exploration Quarterly.* 111:79-85.

Henry, D.O and Leroi-Gourhan, Arl.
1976 The excavation of Hayonim Terrace: an interim report. *Journal of Field Archaeology,* Volume 3; 391 - 406, Boston.

Horowitz, A.
1971 Climatic and vegetational developments in northeastern Israel during Upper Pleistocene-Holocene times. *Pollen et Spores* 13:255-278.

1975 The Pleistocene Paleoenvironments of Israel. In *Problems in Prehistory: North Africa and the Levant,* F. Wendorf and A. E. Marks, eds. 207-288, Dallas.

1976 Late Quaternary paleoenvironments of Prehistoric settlements. In *Prehistory and Paleoenvirnments in the Central Negev, Israel,* Vol I. A. E. Marks, ed, Institute for the Study of Man Southern Methodist University, Dallas.

Huckriede, R. and G. Wiesemann.
1968 Der Jungpleistozane Pluvial-See von El Jafr and Weitere Daten Zum Quartar

Jordaniens. *Geologica et Paleontoligica,* 2:73-05.

Jelinek, A. et. al.
1973 New Excavations at the Tabun Cave, Mount Carmel, Israel 1967-1972: A Preliminary report. *Paleorient* 1,2:151-183.

Kirkbride, D.M.
1960 In Chronique Archaeologique. *Revue Biblique* 67:231-235.

1966 Five Seasons at the Pre-Pottery Neolithic Village of Beidha in Jordan. *Palestine Exploration Quarterly,* 98: 8-72.

Marks, A.E.
1977 *Prehistory on Paleoenvironments in the Central Negev, Israel, Volume II.* Department of Anthropology, Southern Methodist University, Dallas.

Niklewski, J. and W. Van Zeist
1970 A Late Quaternary pollen Diagram from northwestern Syria. *Acta Botanica Neerlandica* 19 (5).

Price, S. and A. Garrad.
1975 A Prehistoric site in the Rum Area of the Hisma. *Annual of the Department of Antiquities* Vol. 20:91-93

Servello,
1976 Nahal Divshon: A Pre-Pottery Neolithic B Hunting Camp. In *Prehistory and Paleoenvironments in the Central Negev, Israel.* A. E. Marks, ed. Institute for the Study of Earth and Man, Southern Methodist University, Dallas.

Stockton, E.D
1969 A bibliography of the Flint Industries of Transjordan. *Journal Levant,* 100-103.

Waechter, J. and V. M. Seton-Williams
1938 Excavations at Wadi Dhobai, 1937-1938 and the Dhobian Industry. *Journal of the Palestine Oriental Society* 18:172-186; 292-298.

Zeuner, F. E., D. Kirkbride and B. Park
1957 Stone Age Exploration in Jordan, I. *Palestine Exploration Quarterly,* 17-54.

Zohary, M.
1962 *Plant Life of Palestine,* Israel and Jordan. Ronald Press, New York.

ACKNOWLEDGEMENTS

The research was made possible by a grant (BNS - 7906281) from the National Science Foundation and travel support from the Office of Research, University of Tulsa. The assistance of Dr. Adnan Hadidi, Director General of the Jordan Department of Antiquities, and his staff contributed greatly to the success of the research and is much appreciated. The authors would also like to thank Dr. James A. Sauer, Director of the American Center of Oriental Research in Amman, for his aid throughout the course of the study. Finally we are indebted to Judy Northrup and Khalid Abu Ghanimeh for their participation in the project.

NOTE ON A PALEOLITHIC FLINT SCATTER IN THE JIZA PLAIN OF JORDAN

by
Rolland and Anna Garner
(Figs 1 — 4)

Various flakes, blades, cores and one chopping tool were collected from a relatively sparse flint scatter located on a low rise in the wheat fields near the village of Al Jiza, thirty kilometers south of Amman, Jordan. The implements collected were identified by Dr. James Sauer of ACOR, and Ms. Linda Villiers of the Australian National University in Canberra, as Middle Paleolithic in type.

The implements are dispersed randomly over a distance of at least a 0.3 kilometer radius from the top of the low rise. They are disturbed by the agricultural activities that have continued over many years in the fields where the flint scatter is located. As a result of the ploughing, sowing, harvesting and erosion, the flints are not deposited in any designs that would reveal occupation sites or activities of their Paleolithic manufacturers. Moreover, the artifacts are badly rolled and somewhat weathered; several are recently broken; some are marked by modern machine blades that have ploughed or harvested the fields of Jiza. Presumably from age and exposure, many of the implements are covered with a whitish patina; recent chipping reveals their original buff and light gray chert to dark gray flint material.

The flakes and blades (flakes outnumber other forms contained in the scatter) exhibit certain characteristics in common:

1. the flakes are relatively thick; the average thickness of the ten flakes in the accompanying drawing is 10 mm., measured at the thickest point.

2. broad multi-directional flake scars are typical.

3. many of the flakes are trimmed on the interior surface on the butt end, almost as if there were a conscious attempt to remove the bulb of percussion (observation made by Villiers, personal communication).

4. the flakes and blades are almost all struck from prepared cores; two different shapes of such cores are figures 3 and 12.

5. the two examples in figures 13 and 14 led Villiers to date the artifacts typologically as late in the Middle Paleolithic, because of the resemblance between these two implements and the finely retouched "punched" blades typical of Upper Paleolithic cultures (Villiers, personal communication).

6. the chopping tool, figure 5, is bifacially worked over its complete surface, producing a fairly straight, sharp edge, except for the "hand-hold" which is not sharp and retains bits of cortex.

To reach the find-spot, follow the Desert Highway from Amman to Al Jiza. Turn left into the village of Jiza onto the street opposite the desert police station (a fortress-shaped building past the reservoir, with camels corralled out back). Go through the village and pick up the dirt track which begins as you exit the village near a mosque surrounded by ruins. Pass the Bedouin camp and drive 1.6 km. to the Hijaz Railway. On your left, some distance across the plain, you will see Queen Alia airport. Continue across the railroad track to the top of a low hill, 0.8 km. from the crossing. Turn left onto a wagon track through the wheat fields and go approximately 100 meters to a pile of stones. Surrounding the low rise on which you are now situated, you will find stone implements similar to those described in the present note.

R. & A. Garner

REFERENCE

Zeuner, F.E., Kirkbride, D., and Park, B. "Stone Age Exploration in Jordan, I." *Palestine Exploration Quarterly*, 1957: 17-54.

Fig. 1

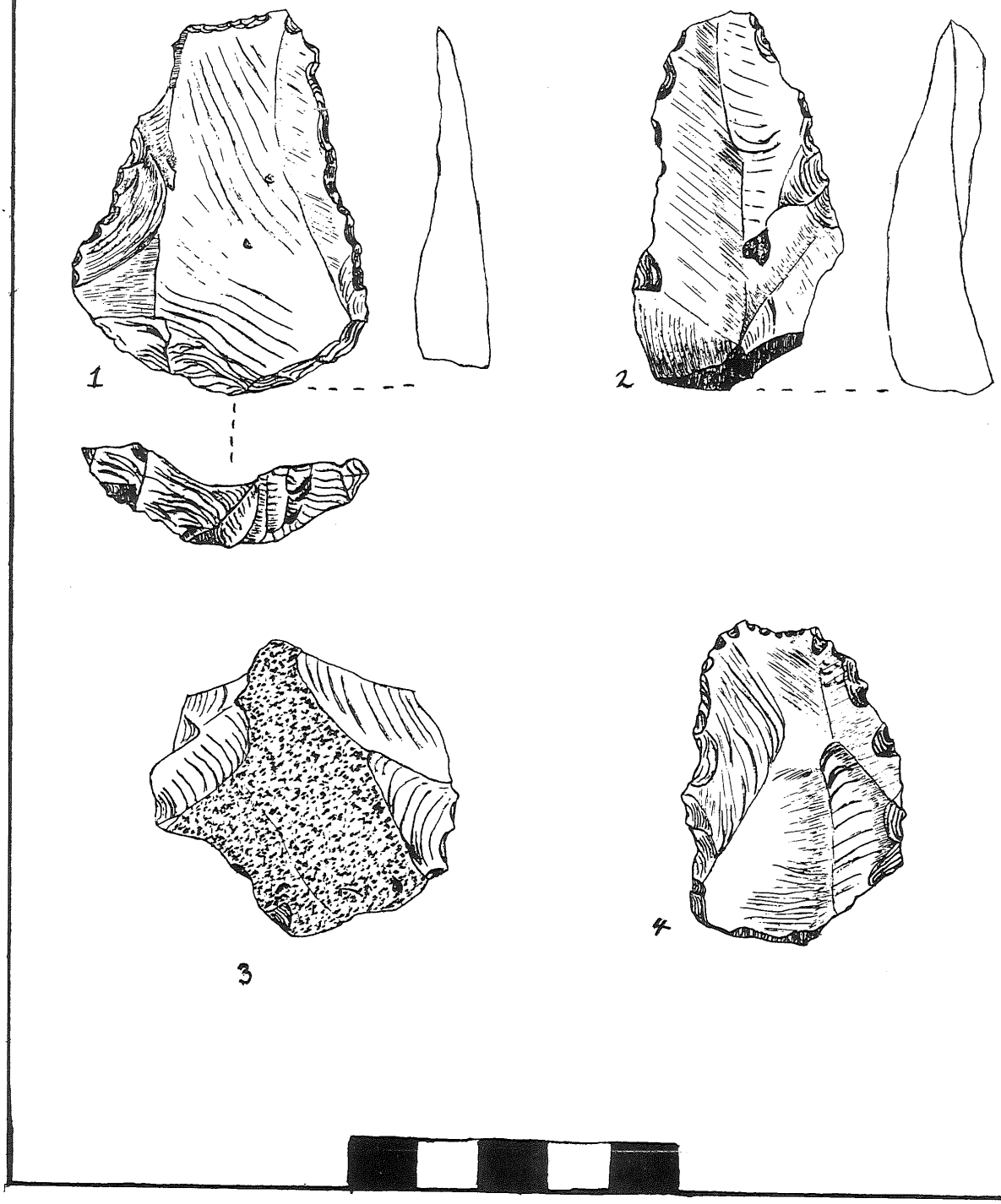


Fig. 2

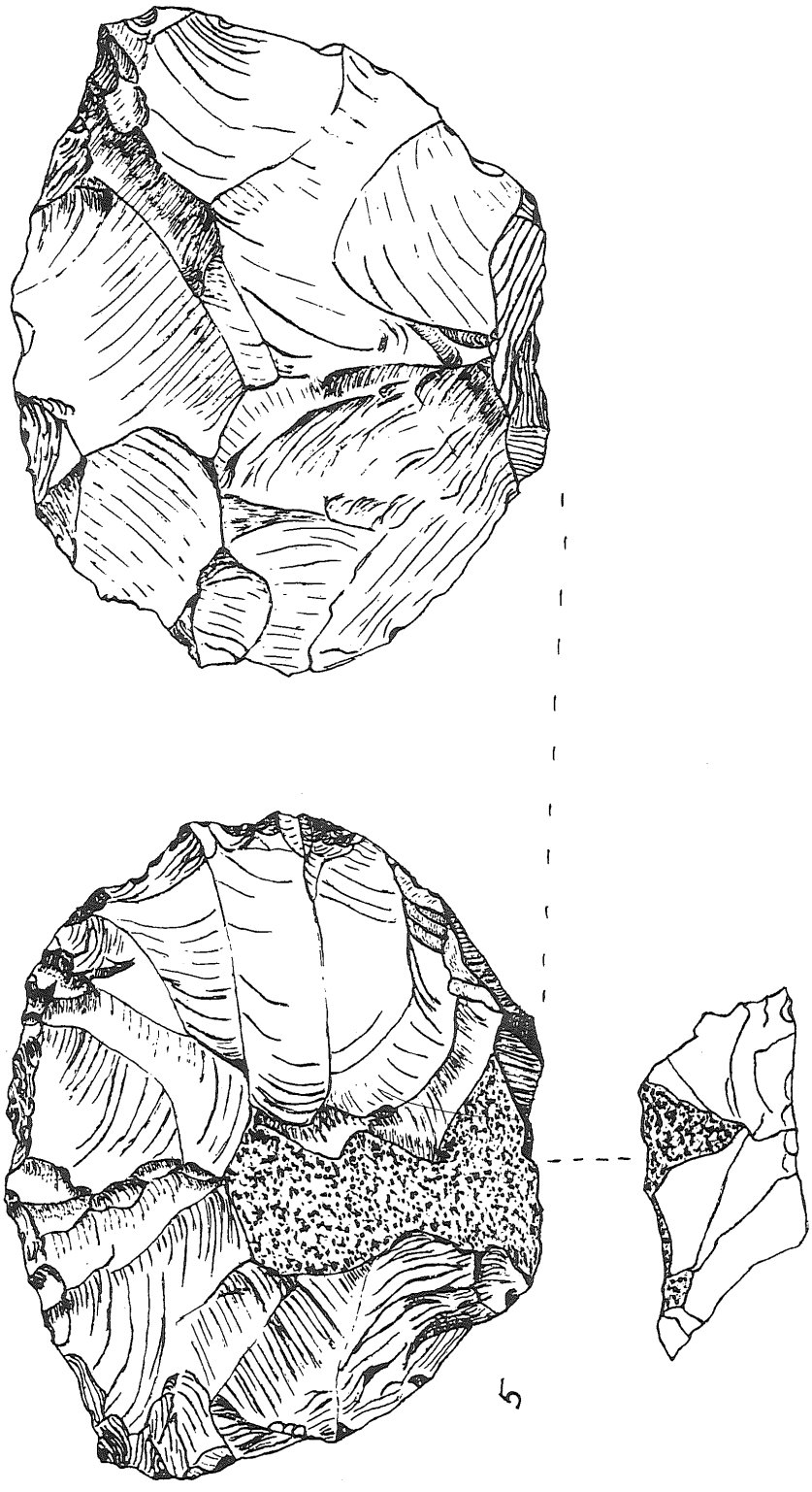


Fig. 3

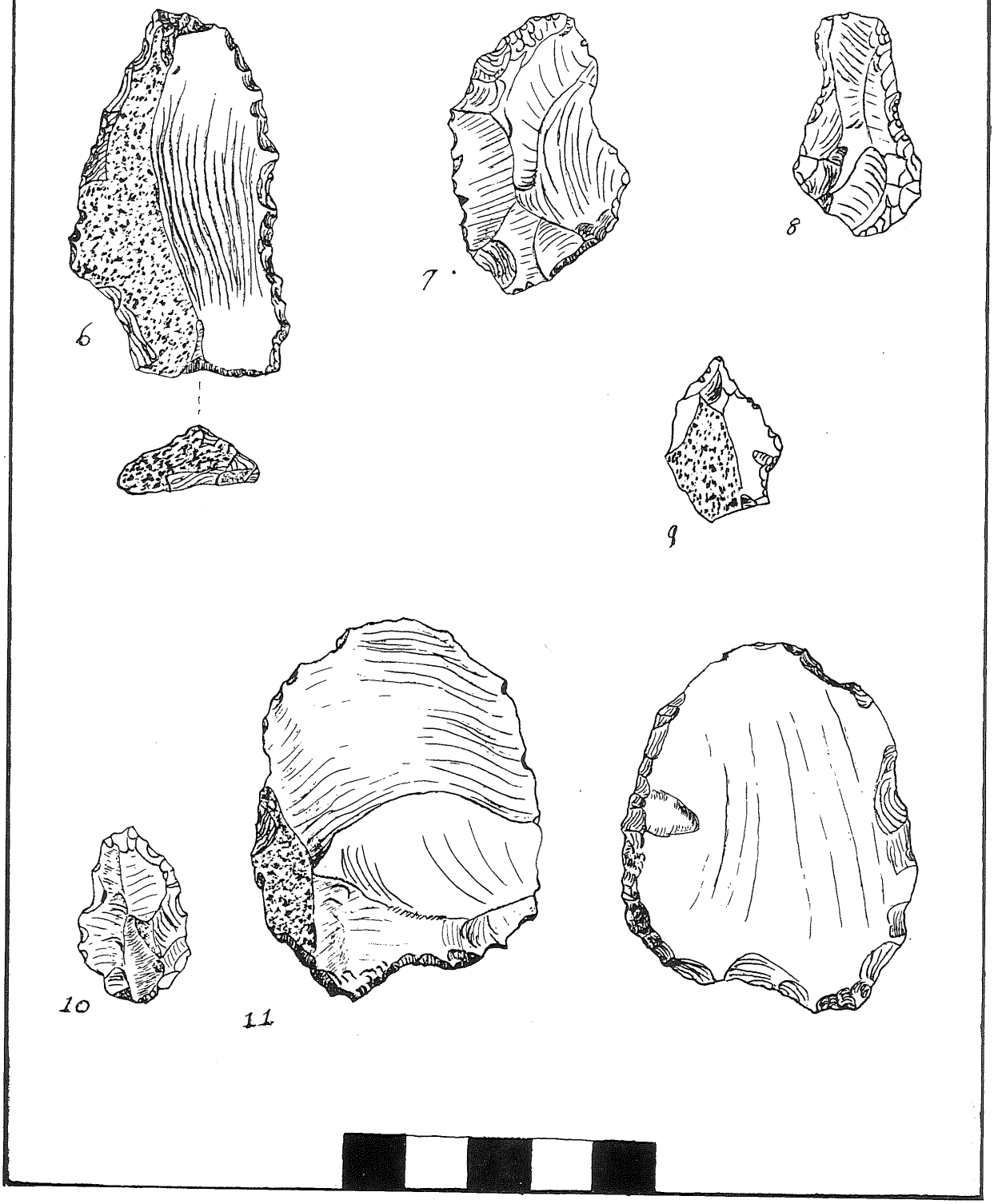
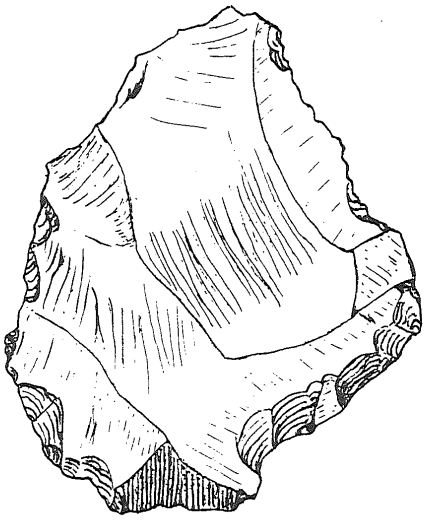
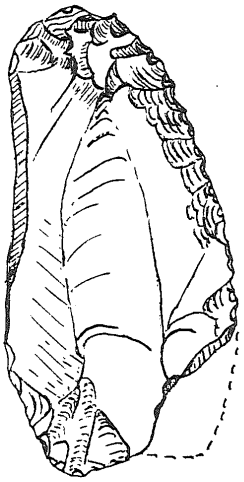


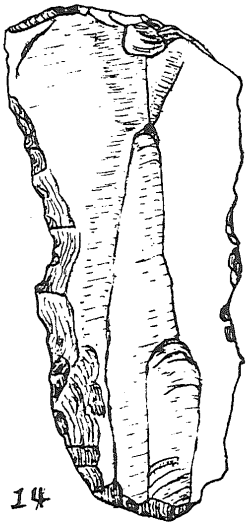
Fig. 4



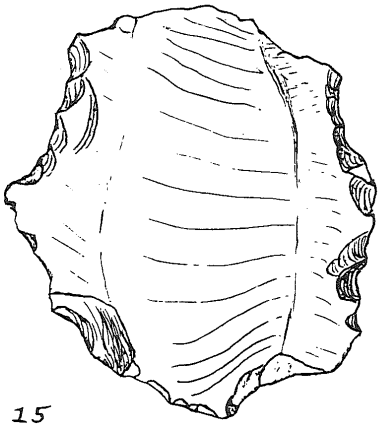
12



13



14



15

A LOWER PALEOLITHIC SURFACE SITE NEAR SHOBAK, WADI EL-BUSTAN, SOUTHERN JORDAN

by
Gary O. Rollefson

Introduction

In contrast to the relative intensity of research performed in some parts of the Near East, the highland regions of Jordan east of the Rift Valley remain virtually unsampled in terms of Pleistocene paleolithic investigations. Early surveys by Field (1960), Rhotert (1938), and Zeuner (1957) demonstrated the wealth of surface sites dating to the Lower, Middle, and Upper Paleolithic times, but beyond a couple of brief excavations (Waechter *et al.* 1938; Echegaray 1970), little effort was focused on the systematic recovery of information from *in situ* paleolithic deposits. Later surveys in Jordan were either limited in temporal scope (Mellaart 1962; de Contenson 1964) or dealt with areas which have been subjected to intensive disturbance due to agriculture or natural post-depositional agencies (Ibrahim *et al.* 1976; Kerestes *et al.* 1978).

As is often the case in paleolithic prehistory, one of the most fascinating sites in Jordan came about as the result of accident: in the course of excavating a sump at Ain el-Assad just south of Azraq in eastern Jordan, large numbers of bifaces, cores, flakes and flake implements appeared in the unearthed sediments (Harding 1967: 155). An examination of the artifacts still remaining in the backdirt piles from this uncontrolled excavation demonstrated the unique nature of this Late Acheulian site because of the very high percentages of cleavers (Rollefson, in press).

It was also by accident that a vast site was discovered at Fjaje, in southern Jordan. In December of 1978 an amateur archaeologist visited the agricultural station there[1], and his notice of several bifaces in the fields brought the attention of the author to this remarkable expanse of Late Acheulian occupation.

Setting and Description

The Fjaje agricultural station is located approximately 4 km northeast of the Shobak Crusader fortress, just north of the road from Nijil to Tafila (Figures 1 and 2). The paleolithic site lies within the fenced confines of the station on a triangular spit of land jutting out between two unnamed drainages which descend sharply to a confluence with the Wadi el-Bustan. The

1. The site was discovered by Dr. Edgar C. Harrell. I would like to express my gratitude to him for bringing the site to my attention. Iwould also like to thank the following people for the opportunity to examine their collections and for the transportation several of them provided to the site: Drs. Edgar and Paula Harrell, Randy and Jody Old, Csaba and Jackie Lengyel de Bagota, Scott Johnson, and Robin and Diana Haines. I would also like to thank Dr. Bruno Froehlich for his valuable help with the photography of the specimens.

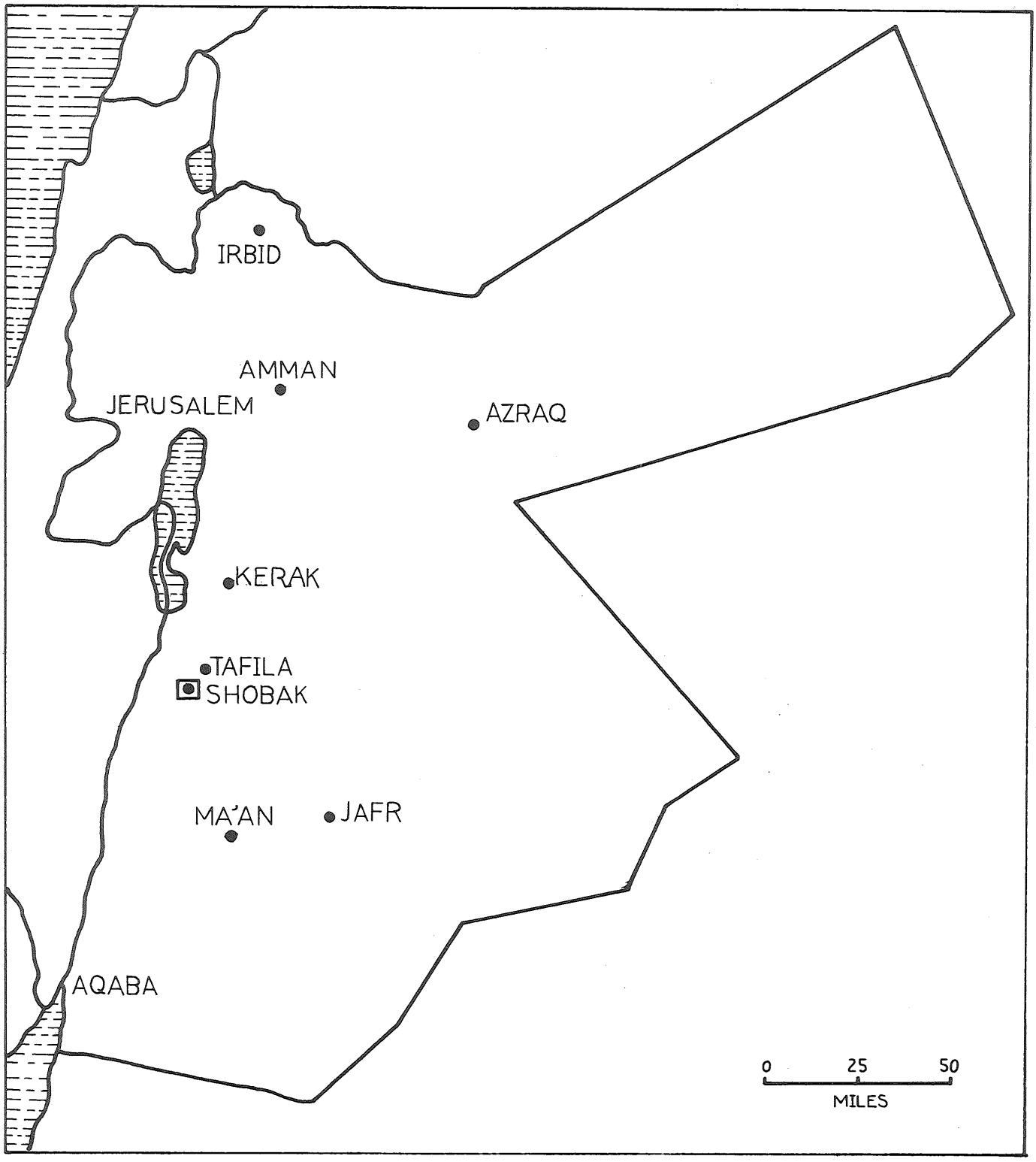


Figure 1. Location of the Shobak area in southern Jordan.

Wadi el-Bustan wends towards the northwest to join the system entailing the Wadi Hamra, the Wadi Ghuweir, the Wadi Dana, and eventually debouching into the Wadi Feinan on the eastern margin of the Wadi Arabah. Within the *ca.* 15 km distance from the Fjaje site to the Wadi Feinan, the absolute elevation of the land falls from approximately 1280 m to 250 m above sea level.

The surface of the Fjaje site slopes gently towards the south, although the fringes of the triangular peninsula drop suddenly to the northwest and northeast near both small wadis. Vegetation on the site includes several windrows of recently planted cypress trees along the driveway and among the buildings of the agricultural station, as well as smaller galleries of eucalyptus trees. In the more open parts of the site, which measures approximately six hectares (15 acres) in extent, the ground is sporadically dotted with low brush and perennials. In the western half of the triangle numerous "potholes" of variable depth and about a half meter in diameter occur in a rough grid at intervals of between one and two meters from each other. These holes appear to be related to agricultural experiments at the station.

Current annual rainfall amounts in the area of Shobak and Tafila vary considerably from year to year, but the average falls between 150-200 mm per year (Harris 1958: 150). Plowed fields just outside the station fences indicate that this rainfall is sufficient for dryfarming. Although much of the lack of forest growth in the immediate vicinity may be attributed to relatively recent cultural interference, this highland area was probably characterized by denser stands of trees and groundcover in the Late Pleistocene (*cf.* Butzer 1978: 7-12).

At present there are no stable natural water sources or basins in which rainfall (a winter phenomenon) can collect. However, near the base of the Wadi el-Bustan there are a number of springs and seeps which support relatively lush vegetation and affords the opportunity for intensive agriculture. Since these water sources are more than 150 m below the site's elevation, and approximately 1.5-2 km away downslope, it must be postulated that in the Late Pleistocene closer sources of stable, if seasonal, water were available to the occupants of paleolithic Fjaje. A kilometer or less south of the site there is a shallow wadi that may have provided the Acheulian inhabitants the seasonally available water necessary for their stay at Fjaje.

The artifacts at the Fjaje station are densely distributed over a broad area, and the size of the site indicates that it was a major focus of Late Acheulian hunting and gathering groups (compare Clark 1967; 1968; *cf.* Clark 1975). The physical nature of the exposed artifacts and the present geological circumstances indicate that few if any of the remains of the occupations of the Acheulian inhabitants are *in situ*. The potholes in the western part of the site, the foundation trench of a sceptic tank, and the exposures of the subsurface stratigraphy in the wadi cuts all indicate that episodes of extreme wind deflation and water erosion have disturbed the original depositional contexts of the artifacts. In some areas up to 15-20 cm of soil can be found above the porous and friable limestone bedrock, but for most of the site the thickness is generally 10 cm or less.

The resulting situation is one of a mixture of surface artifacts which represents unnumbered visits by paleolithic hunters who returned to the Fjaje site time and again, ostensibly timing their stay with the seasonal migrations of animals back and forth from the highlands of Jordan to the canyons leading to the Rift Valley below. Based on the present rainfall patterns in the Near East, the majority of the occupations probably occurred in late autumn or late spring, when major animal migrations probably took place.

The Artifacts

It must be stressed at the outset that the artifacts in the following discussion do not represent a controlled, systematic collection at the site. The following analysis relies heavily on the collections of amateur enthusiasts whose bias is obvious in the relative numbers of bifaces and cores in the collections compared to the numbers of flakes. For this reason, accurate density figures cannot be calculated, nor can relationships among artifact classes (flake to core ratios, for example) be established. Nevertheless, the collections present a remarkable array of the typological and technological expressions of Late Acheulian hunters and gatherers.

Typology

Table 1 presents the absolute and relative frequencies of biface types in the Fjaje collection (Bordes 1961) and Table 2 tabulates these bifaces according to biface classes (Rollefson 1978; in press). Of note in Table 2 are the generally high relative frequencies of lanceolate, cordiform, and ovate classes (Pl. XXXIII-XXXVII), the rarity of cleavers, and the relatively high abundance of diverse types. The general picture conveyed by the bifaces is that Fjaje represents a series of occupations from the Late Acheulian development, probably dating to a time contemporary with the early part of Europe's Last Interglacial or to the later part of the Penultimate Glacial series in the higher latitudes.

Table 1. Absolute and relative frequencies of bifaces in the Fjaje collection.

Biface Type	*All Bifaces*		*Classifiable Bifaces Only*	
	n	%	n	%
Lanceolate	12	7.5	12	9.0
Ficron	8	5.0	8	6.0
Micoquian	9	5.7	9	6.7
Elongated Triangular	2	1.2	2	1.5
Cordiform	8	5.0	8	6.0
Amygdaloid	27	17.0	27	20.1
Sub-cordiform	1	0.6	1	0.7
Ovate	12	7.5	12	9.0
Discoidal	10	6.3	10	7.5
Limande	15	9.4	15	11.2
Cleaver	5	3.1	5	3.7
Nucleiform	1	0.6	1	0.7
Diverse	16	10.1	16	11.9
Partial	6	3.8	6	4.5
Abbevillian	2	1.2	2	1.5
Disc	3	1.9		
Unclassifiable	22	13.8		
Totals	159	99.7	134	100.0

Among the diverse category of bifaces, several patterns are apparent.

Table 2. Absolute and relative frequencies of biface classes in the Fjaje collection.

Biface Class	n	%
Lanceolate	31	23.1
Cordiform	36	26.9
Ovate	37	27.6
Cleaver	5	3.7
Non-classic	1	0.7
Diverse	16	11.9
Partial	6	4.5
Abbevillian	2	1.5
Total	134	99.9

Among the 16 pieces in this category, five are bifaces which were converted to cores; as far as it is possible to determine, two of these were cordiforms, one an amygdaloid, another a lanceolate, and the last one a discoidal biface. In contrast, based on the general configurations of the specimens, three cores had been fashioned by the flintknappers to produce bifaces; one of these pieces bears two different stages of patination, suggesting that a core was selected as a suitable blank for the production of a biface long after it was discarded by an earlier flintworker. Two of the diverse bifaces are "D-shaped", a relatively rare type noted at Ain el-Assad in eastern Jordan and at Tabun in Mount Carmel in Palestine (Rollefson in press). Another of the implements in this classification is a remarkably well-worked, elegantly thin and sharp bifacial knife, also noted at Tabun but absent at Ain el-Assad.

The remaining five diverse bifaces are very individual in terms of their forms and degrees of retouch. One of them might be described as a "nosed" biface with a crudely retouched thick body with special attention devoted to the production of a thick and steeply retouched tip. Opposed to this attention to detail, another thick and crudely worked biface received careful retouch at the tip which resulted in a short area with a pointed and sharply-edged tip. The third of these isolated diverse forms would normally be classified as a lanceolate except for a prominent bifacial notch carefully worked on one of the lateral edges. The fourth is very eccentric in terms of the contours of its edges. Finally, one massive piece, weighing approximately four kilograms, had one area bifacially retouched to a relatively slender and sharp point (Pl. XXXVIII). For whatever purpose this biface was used, momentum was obviously a desired feature.

Table 3 presents the absolute and relative frequencies of flake implements in the Fjaje collection classified according to Bordes' typology (Bordes 1961). Although the tabulation includes unmodified Levallois flakes, blades, and points and irregularly "retouched" pieces (types 45-50), only the essential typology will be discussed below.

As is often the case in the Near East, the use of Bordes' typology results in a rather large relative frequency of "diverse" types (type 62) which include artifacts that do not comfortably conform with the other type definitions. Although this phenomenon may reflect a conservatism among lithic typologists analyzing Near Eastern assemblages, the fact that Bordes' typology was developed on the foundation of flake tools primarily from western Europe (especially France) probably also has much to do with the higher frequencies in this residual category.

Among the "other" implements at Fjaje, two of the pieces are simply too damaged to

classify. Four others are heavily battered *pieces esquillees*, one of which exhibits a proximal truncation. Of the remaining five pieces in this category, one is a poorly fashioned convex racloir with very steep retouch, and it might qualify either as a type 10 (simple convex racloir) or type 26 (racloir with steep retouch). Another tool is a heavily battered concave racloir which bears a burin facet on the same edge; perhaps this piece should be considered a burin variant (type 32 or 33). Another diverse flake implement has very deliberate and continuous interior retouch on one lateral margin, but the retouch does not conform to the inverse scraper type (type 25); perhaps this piece represents an abandoned attempt to fashion a thinned-back racloir (type 27). A small pebble (53 mm) has two edges which bear scraper retouch on opposing faces; technically this might be considered as an alternating scraper (type 29), but since the retouch occurs on a small core, it seems preferable to leave it in the diverse category. And last, a large Levallois flake exhibits crude but continuous retouch on the distal margin, and it is possible that this is a flake chopper (type 61), but it is not certain if the retouch was intentional or if it may represent harsh post-depositional damage.

Table 3. Absolute and relative frequencies of implement types in the Fjaje collection.

	Actual		Essential	
Type	n	%	n	%
1	8	6.5		
2	2	1.6		
3	7	5.7		
5	1	0.8	1	1.6
9	1	0.8	1	1.6
10	7	5.7	7	10.9
11	3	2.4	3	4.7
19	1	0.8	1	1.6
21	1	0.8	1	1.6
25	3	2.4	3	4.7
27	1	0.8	1	1.6
29	1	0.8	1	1.6
30	2	1.6	2	3.1
31	2	1.6	2	3.1
32	4	3.2	4	6.2
33	1	0.8	1	1.6
35	1	0.8	1	1.6
38	1	0.8	1	1.6
40	1	0.8	1	1.6
42	5	4.1	5	7.8
43	13	10.6	13	20.3
45	5	4.1		
46/47	31	25.2		
48/49	1	0.8		
50	5	4.1		
56	1	0.8	1	1.6
59	1	0.8	1	1.6
60	2	1.6	2	3.1
62	11	8.9	11	17.2
Totals	123	99.7	64	100.3
Group I		32.5		0.0
Group II		14.6		28.1
Group III		8.9		17.2
Group IV		10.6		20.3
IR		14.6		28.1
ICh		8.1		15.6
IAu		0.0		0.0

Near the bottom of Table 3 are several indices which characterize the nature of the Fjaje implement collection. The "actual" Group I (Levallois) Index is rather strong and mirrors the popularity of the use of the Leval-

lois technique at the site (Pl. XXXIX), but since there are no retouched Levallois points at the site, the essential Group I Index is 0.0. The Group II (Mousterian) Index is only moderate, and possibly because of the presence of Levallois points, no Mousterian points contribute to this value. The Group III (Upper Paleolithic) Index is low or moderate (Pl. XL), but the Group IV (Denticulate) Index is rather strong.

In the Fjaje collection the Racloir Index (IR) is identical to the Group II value (Pl. XLI). The Charentian Index (IC), which represents the relative importance of racloir types 10 and 22-24, is fairly low, but this is expectable in view of the relatively frequent production of Levallois flakes. The Backed-Knife Index (IAu) demonstrates that no flakes or blades were intentionally backed to produce an implement.

Table 4 presents the absolute and relative frequencies of core types from Fjaje. The definitions of the three Levallois core types, of discoidal and spheroidal cores, and of prismatic blade cores are well described in the literature treating the Lower and Middle Paleolithic of Europe (especially by Bordes 1961); these definitions are used here and will not be amplified (Pl. XLII-XLIV). The types referring to core fragments, unclassifiable (due to damage), and diverse need little comment. However, the remaining five types demand some explanation in order to facilitate further discussion in this analysis and to provide a possible foundation for additional paleolithic core analyses from other sites in the Near East.

Table 4. Absolute and relative frequencies of core type in the Fjaje collection.

Type	n	%
Levallois flake	33	35.1
Levallois point	5	5.3
Levallois blade	1	1.1
Discoidal	24	25.5
Spheroidal (Globular)	2	2.1
Simple prismatic	3	3.2
Opposed prismatic	5	5.3
Opposed prismatic + side flakes	1	1.1
Prismatic + crested	1	1.1
Single-face	3	3.2
Single Platform	1	1.1
Diverse	11	11.7
Core fragment	2	2.1
Unclassifiable due to damage	2	2.1
Total	94	100.0

The single-face core is a type developed by Jelinek (personal communication) in the analysis of the Lower and Middle Paleolithic assemblages from the Tabun Cave. This core is one from which flakes have been detached from only one surface of a nodule (Pl. XLV e). The single platform core type is a variant of the single-face core: not only were the flakes removed from only one surface, but from a single restricted platform area (Pl. XLV f). (This core type, although rare at Fjaje, was developed while examining a large number of cores from numerous sites in Jordan which spanned the Lower, Middle, and Upper Paleolithic periods[2]).

2. (The opportunity to examine the Fjaje specimens arose while I was studying the ACOR lithic collections as the William Foxwell Albright Fellow in 1978-79. I would like to express my sincere appreciation to the ACOR and ASOR boards for this opportunity, and in particular to Dr. James A. Sauer, ACOR Director, for his enthusiastic support and warm friendship.

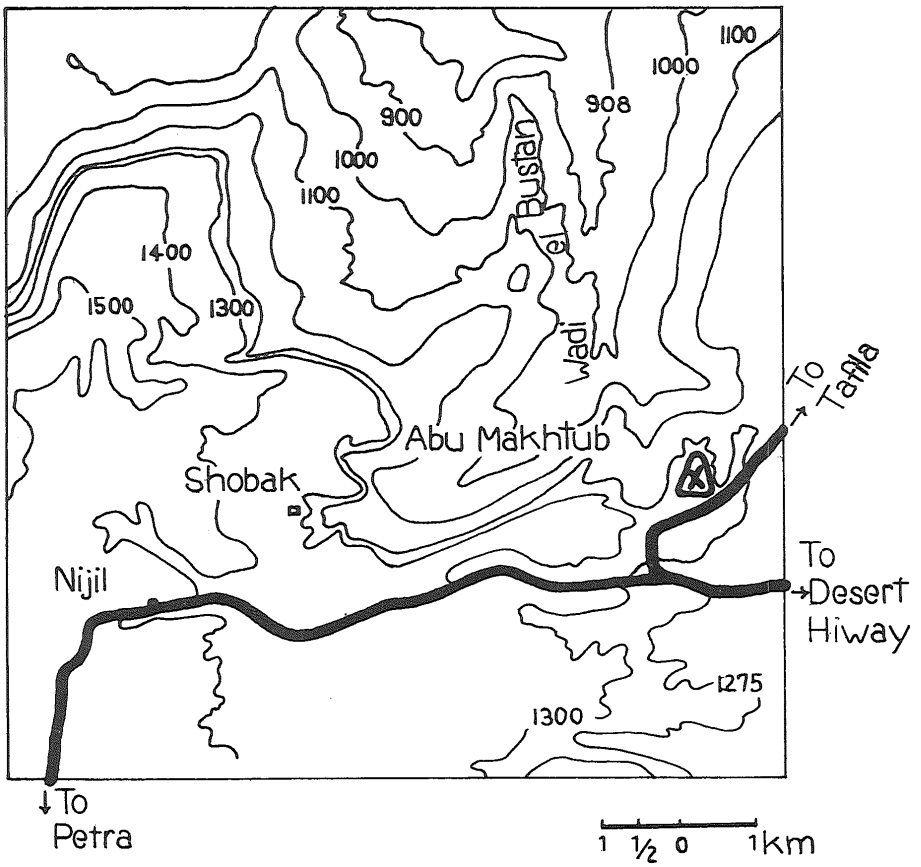


Figure 2. Location of the Fjaje site in relation to Shobak, the Wadi el-Bustan, and the village of Abu Makhtub.

In contrast to the simple prismatic blade core, which has a single platform from which blades were struck, the opposed prismatic blade core has two platforms on opposite ends of the nodule Characteristically, this type is defined by long parallel ridges between which negative ripples proceed from both ends of the core toward the center (Pl. XLV a).

The opposed prismatic + side flakes and the opposed prismatic + crested core types are not only rare at Fjaje, they are probably rare in Lower and Middle Paleolithic assemblages in general; they occur in high frequencies in Upper Paleolithic and more recent sites, and the sparse presence at Fjaje indicates a degree of temporal mixing in the collections. In the former core type, the opposed prismatic blade core discussed in the previous paragraph also bears evidence of the consistent removal of short, broad flakes at an angle of approximately 90° to the axis of the removal of the blades (Pl. XLV b-c). Normally, the negative blade scars on one surface form the platform for the removal of flakes on the opposite surface, but often flakes are removed from the same surface as that from which the blades were detached.

The opposed + crested core type is generally triangular in cross section. The surface from which the blades were removed is generally flat, and opposite to this flat surface is a high longitudinal ridge which forms the platform for the removal of flakes from the other two faces of the trihedral (Pl. XLV d).

The figures in table 4 reveal the strong Levallois influence at Fjaje, with all three types of Levallois cores accounting for 43.3% of the classifiable core types (excluding unclassifiables and core fragments). Discoidal and spheroidal cores represent 28. 9% of the same total, the variety of blade cores make up 11.1%, and diverse cores account for the remaining 11.7%. It has already been mentioned that two of the blade cores are probably Upper Paleolithic. One of the opposed prismatic cores exhibits platform preparation on both platforms, so possibly it should be considered as a kind of Levallois blade core.

Table 5. Absolute and relative frequencies of bifaces from the Fjaje collection in the cortex and patina classes.

Cortex Class	n	%
Partially cortical	43	27.0
Non-cortical	116	73.0
Total	159	100.0

Patina Class	n	%
Unpatinated	4	2.5
Overall Patina	131	82.4
Partially desilicified	24	15.1
Total	159	100.0

Technological Features

A description of the technologically related attributes monitored in this analysis has been discussed earlier (Rollefson, in press) and will not be repeated here.

The cortex and patina descriptions of the bifaces are presented in Table 5. Virtually no cortex was left by the Acheulian flintknappers on nearly three-fourths of the Fjaje specimens, although the remainder maintain substantial

amounts of cortex on the surface area. As for post-depositional changes in the physical state of the biface surfaces, only 2.5% are unchanged from the time they were discarded. Of the remaining huge majority, 24 bifaces have undergone severe chemical and physical alterations to the point of becoming almost chalky in texture. Although all of the bifaces with overall patina have evidently been exposed repeatedly to patinating elements for a long time, the evidently longer exposure of the partially desilicified pieces has subjected them to an increased attack to wind abrasion to the point that on many of them the flake scar ridges have been severely eroded.

Table 6. Absolute and relative frequencies of cores from the Fjaje collection in the cortex and patina classes.

Cortex Class	n	%
Partially cortical	52	55.3
Non-cortical	42	44.7
Total	94	100.0

Patina Class	n	%
Unpatinated	4	4.2
Overall patina	80	85.1
Partially desilicified	10	10.6
Total	94	99.9

In contrast to the bifaces, only about half of the Fjaje cores are non-cortical (Table 6). On the other hand, the relative frequencies of unpatinated, patinated, and partially desilicified cores closely parallels the situation among the bifaces. This circumstance is tentative evidence that the Levallois elements and most of the blade cores are contemporaneous with the Acheulian bifaces. In other words, although the site probably contains a mixture of a number of temporally distinct occupational debris, these pertain overwhelmingly to the late Lower Paleolithic, and substantial components from later Middle and Upper Paleolithic visits to the site are not included in the collection.

The cortex and patina classes for the flakes and flake tools are provided in Table 7. Cortical flakes, with cortex covering 90-100% of the exterior surface, are very rare in the collection, and in view of the large numbers of cores and bifaces, this situation probably represents a bias in the selectivity of the amateur archaeologists who collected the specimens. Of the other flakes in the sample, a relatively high 63% possess virtually no cortex, and on the remaining 34% cortex amounts ranged between 10 and 90% of the surface. Eleven flakes and blades had cortex on one lateral edge opposing a sharp non-cortical lateral, but in only one case was the cortical edge steep enough to be considered a type 38 flake implement.

There is a slight difference in the relative frequencies for the patina classes among the flakes in the sample. The relatively higher number of unpatinated pieces compared to the bifaces and cores is explainable in part by the presence of material from later periods of occupation. Of the 15 pieces in this category, five are undoubtedly blades from Upper Paleolithic or later times, and five flakes appear to be from later periods as well (although this is an intuitive impression). If these 10 specimens are removed from consideration, the unpatinated class represents 3.0%, the patinated categories account for 92.1%, and the desilicified examples make up the remaining 4.9%.

Table 7. Absolute and relative frequencies of attribute states of all flakes, including implements, among the cortex classes, patina classes, and flake condition classes at Fjaje.

Cortex Class	n	%
Cortical	5	2.8
Partially cortical (PC)	46	26.3
PC with cortical platform	3	1.7
Naturally backed flake (NBF)	4	2.3
NBF with cortical platform	1	0.6
Naturally backed blade	6	3.4
Non-cortical	107	61.1
Non-cortical except platform	3	1.7
Total	175	99.9

Patina Class	n	%
Unpatinated	15	8.6
Edge patina	1	0.6
Overall Patina	151	86.3
Partially desilicified	7	4.0
Desilicified	1	0.6
Total	175	100.1

Flake Condition	n	%
Complete	24	13.7
Striking platform absent	3	1.7
Other edges absent	93	53.1
Striking platform and other edges absent	55	31.4
Total	175	99.9

The flake condition classes in Table 7 describe where breaks have occurred on broken specimens and indicate generally the nature of the fragment. Since more than 85% of the flakes and blades at Fjaje are broken in one area or another, this may indicate the degree of post-depositional disturbance and damage at this unprotected open-air site, especially in view of the long period of pastoralism and agriculture in the Near East. During the analysis of the collection, no systematic attention was focused on whether the breaks appeared to be recent or contemporary with the discard of the artifacts based on different patina stages on the same piece, but the relatively high frequency of dubious "tools" (types 45-50) at 40.0% indicates that much of the damage to the flakes did not occur during the paleolithic occupations.

The absolute and relative frequencies of the kinds of platforms on the Fjaje flakes and blades are tabulated in Table 8. Of the classifiable platforms (n=119), only half are plain (or single facet) while almost all of the other half is composed of dihedral or multiple facet platforms. Among the multiple facet platforms are three examples of the classic Levallois chapeau-de-gendarme. In view of the relatively large representation of Levallois cores, these figures are not unexpected.

The combination of platforms and the patterns of flake scars on the exterior surfaces of the flakes permits a determination of the techniques used in lithic manufacture (*cf.* Rollefson, in press). The relative frequencies of these techniques are tabulated in Table 9. In the same Table, the frequencies of flake forms are presented; these are the results of the techniques, whether intended or not. In approximately a third of the cases, the technique used could not be confidently determined, primarily because a large number of blades whose platforms were missing (The presence of the platform is crucial to distinguish between the Levallois blade technique, with a multiple facet

Table 8. Absolute and relative frequencies of platform types among the flakes from the Fjaje collection.

Platform Type	n	%
Plain	59	49.6
Transverse	1	0.8
Dihedral	18	15.1
Transverse dihedral	3	2.5
Multiple facet	34	28.6
Chapeau-de-gendarme	3	2.5
Crushed	1	0.8
Subtotal	119	99.9
Missing	56	(32.0)
Total	175	

platform, and the normal blade techniques, with plain or dihedral platforms).

A comparison of the techniques and forms in Table 9 is very revealing. At the outset, the relative frequencies of Levallois point technique and Levallois point forms are essentially identical, and there is a very close correspondence between the frequencies for all blade techniques and all blade forms (37% and 31%). However, beyond these congruities, superficially expected relationships are not so clear. For example, unspecialized techniques (including normal, Clactonian, and disc core) account for only 42% of the evident techniques, yet unspecialized flake forms (normal and angular) make up 58% of the forms. Part of this discrepancy can be explained by the classification system used: in the results of the analysis it is not possible to distinguish between "normal" flakes produced by normal flaking techniques and "normal Levallois flakes" produced by the Levallois flake technique (see discussion in Rollefson, in press).

Table 9. Absolute and relative frequencies of flaking techniques and flake forms among the flakes from the Fjaje collection.

Technique	n	%
Normal	28	22.6
Clactonian	17	13.7
Levallois flake	14	11.3
Levallois point	10	8.1
Levallois blade	16	12.9
Disc core	7	5.6
Normal blade	29	23.4
Punch blade	1	0.8
Other	2	1.6
Subtotal	124	100.0
Indeterminate	51	(29.1)
Total	175	

Form	n	%
Normal	97	55.4
Angular	5	2.8
2nd order point	14	8.0
1st order blade	11	6.2
2nd order blade	48	27.4
Total	175	99.9

The problems entailed in the failure to distinguish between normal Levallois flakes and normal flakes are emphasized in a comparison of the figures in Table 8 with those in Table 4. Levallois flake cores account for 36.7% of the classifiable cores, yet only 11.3% of the recognizable flaking techniques could be attributed to the Levallois method. Part of this lack of conformity is probably related to the non-random character of the sample, yet some of the variance in the figures is not altogether unexpected. In the preliminary preparation of a Levallois flake core, it is anticipated that a

number of flakes will be produced that are indistinguishable from normal flakes; the shaping of a Levallois flake core requires a normal technique to remove the cortex and thin the core. Comparing the number of Levallois flake cores to the number of Levallois flakes, the resulting ratio of 2.5 flakes per core is not disturbing.

However, the ratio of unspecialized flakes to unspecialized cores is only 3.4 (2.5 if diverse cores are included), and this value is very low, emphasizing the bias in the collection of the sample. Therefore strict correlations of flakes, techniques, and cores are probably misleading.

Table 10. Technological indices for the artifact collection from Fjaje.

IL	32.2
ILty	10.9
IF	48.7
IFs	31.1
I lam	33.7

Table 10 presents the technological indices of the Fjaje collection. The collection is characterized by the Levallois technique (IL=32.2), but the essential Levallois typological index is low (ILty = 10.9), which indicates that relatively few of the Levallois pieces were retouched into other flake tool types. The Facetting Index (IF), which includes dihedral and multiple facet platforms, is strong, as is the strict Facetting Index (IFs, which refers to multiple facet platforms only).

The Blade Index (I lam) is very strong for an Acheulian collection. It should be emphasized that in this analysis the definition of a blade relies on the technique determination, not the more common but misleading metrical definition of the term (see Rollefson, in press, for a more detailed discussion). One of the problems involved with using the length/width ratio to define blades is that this should be applied strictly to complete flakes only, and in the situation at Fjaje, only 24 of the flakes in the sample are complete. Of these, 13 are more than twice as long as they are wide, resulting in a value of 54.2 for a "Long Flake Index". However, since the complete flake sample is so small, it would be improper to use this figure for a meaningful comparison with other assemblages.

Comparisons with Ain el-Assad

The only other Lower Paleolithic site in Jordan to have been analyzed in detail is Ain el-Assad, near Azraq. Both sites are Late Acheulian, but just how specifically close in time they may be cannot be determined on the basis of the present evidence. The occupations may overlap in time, or they may be separated by tens of thousands of years. Both are open-air sites of high artifact density which indicates that occupations were frequent in each site. But here the similarities apparently end.

At present there are no sound paleoenvironmental data available for either location, and any attempt to recreate the Late Pleistocene environments in which each site was situated necessarily requires some considered speculation. The scenarios presented below should be viewed with considerable caution.

If Fjaje was occupied during a time contemporary with the Penultimate Glaciation in

Europe, the climate in the area of the site was probably a little cooler and was characterized by an increase in precipitation (and possibly a different seasonal pattern of rainfall). As a consequence. moderate or dense forest cover may have covered most of the ridges from Kerak to Ras en-Naqb, although how far east this forestation may have extended is difficult to predict. Even if Fjaje dates to a time contemporary with Europe's Last Interglacial, with a climate not substantially different from the present one, still the vegetation cover probably was more dense than at present because of the absence of the cultural impacts of pastoralism, agriculture, and other factors.

The environmental circumstances at Ain el-Assad were probably considerably different, even if a considerable increase in rainfall converted the present desert to a different vegetation zone. Lying several hundred meters lower in absoulute elevation than Fjaje, and probably subjected to a rainshadow effect in some degree by the mountains to the west, the countryside in much of the Azraq basin probably was characterized by savannah vegetation at best. Near the Ain el-Assad site itself, however, local vegetation may have been very lush due to the permanent water of the spring and to the expansion of the standing water in the Azraq Basin. In fact, it is possible that the Ain el-Assad site may have been occasionally underwater as a lake formed and expanded at certain times in the Pleistocene.

The density of artifacts at Ain el-Assad is testimony to the popularity of this location, and the popularity was undoubtedly due to the permanent fresh water of the spring. The water was not only necessary to the hominid occupants, but it would also have served the needs of any animals in the area, making the site doubly attractive for Acheulian hunters and gatherers. This is in direct contrast to the lack of evident permanent water resources at Fjaje. It was mentioned earlier that Fjaje was probably occupied only during certain periods of the year, perhaps during major game migrations to and from the Jordan Valley along the Wadi el-Bustan. Although Ain el-Assad also probably was occupied for only relatively short periods of time, the permanent water resource suggests that the occupations could have occurred at any time of the year.

If these conjectural reconstructions of the environment reflect to any degree the actual circumstances for the two sites, they may provide some insight into the reasons for the disparities in the technological and typological differences in the artifacts in the two collections.

The Artifacts

In terms of the bifaces, the most striking contrast between Fjaje and Ain el-Assad concerns the cleavers: nearly a third of the bifaces from the latter site are cleavers, which is much higher than the 3.7% figure for Fjaje. In fact, the high percentage of cleavers sets the assemblage apart from nearly every other Acheulian site in the Near East (Rollefson, in press). The diverse category is much higher at Ain el-Assad, although roughly a third of the diverse bifaces at both sites were converted into cores. Partially as a result of the increased emphasis on cleavers and diverse biface types at Ain el-Assad, the lanceolate, cordiform, and ovate class frequencies at Fjaje are relatively

much higher. However, if the cleavers from both sites are removed from consideration, the percentages of the cordiform class are much closer (28% for Fjaje and 22% for Ain el-Assad) as well as for the ovate class (29% and 24%); on the other hand, the lanceolate classes remain quite different (24% and 8%). In summary, emphasis on tasks which required lanceolate bifaces occurred at Fjaje, while those involving cleavers were especially important at Ain el-Assad. Other activities using bifaces from the other classes appear to be of similar overall significance (Pl. XLVI).

Pl. XLVII indicates that the essential flake tool components of the two collections are very different. The major variations involve much higher frequencies of notches and denticulates at Fjaje, while at Ain el-Assad simple racloirs (types 9 and 10), transverse racloirs (type 23), and naturally backed knives (type 38) were more important.

The various typological and technological indices for the two sites provide a more detailed comparison. The essential Group I Index is identical at 0.0 for both sites; i.e., no retouched Levallois points occur in either collection. The same value holds for both sites in the Backed Knife Index as well. But in terms of the other indices, the differences are very pronounced. At Ain el-Assad the Group II (Mousterian) and Racloir Indices are nearly twice as high (55.0 and 51.7) as those at Fjaje, and the Charentian Index is nearly 10% higher than Fjaje's value. Conversely, the Group III (Upper Paleolithic) and Group IV (Denticulate) Indices at Fjaje are both more than three times as important as the same indices at Ain el-Assad (5.0 and 6.7).

In the technological realm, the differences between the two sites are just as dramatic. The Levallois Index at Ain el-Assad is negligible at 1.8 compared to the 32.2 figure for Fjaje, and the Levallois Typological Index at the former site is 0.0. The facetting indices, both in the broad and strict senses, are much higher in the Fjaje collection than those at Ain el-Assad (29.6 and 10.4). Finally, the Blade Index at Fjaje is more than five times the 6.2 value at Ain el-Assad. (The "Long Flake Index" for Ain el-Assad is 18.5, about a third of the Fjaje figure).

Overall, there are major differences in the relative numbers of tool types at each site and in the methods used to produce the implements. Although both sites are "contemporary" in the broad sense of having been occupied in the Late Acheulian, the dramatic typological and technological variation indicates that the *kinds* of occupation were different.

In great part this is probably due to the different environmental circumstances of the two sites, but other factors important to the explanation of the differences must not be overlooked (although they may be indirectly associated with the environment). Certainly one of the implications directly concerned with the local environments is the seasonal nature of short-term occupations at Fjaje compared to the less seasonally associated visits of possibly longer duration at Ain el-Assad, where probably more stable faunal and floral communities were available for exploitation. The variations in biface production and flake tool manufacture may very well be linked to differences in the exploitable resources at the two locations.

It is not impossible that the differences

manifested in the tools and techniques of manufacture represent cultural variation and are unrelated to the exploitable resources. In other words, the faunal and floral resources in the areas may not have varied considerably, but the social groups inhabiting the sites had different traditions of exploiting them which show up in the variations of the methods they used to produce the implements. This proposition, while perhaps tantalizing, cannot be substantiated on these two sites alone, and similarities and differences with other Late Acheulian sites in the Near East fail to provide support for such a hypothesis. There is simply not enough available information to determine whether the cultural explanation is more suitable than the functional one.

One aspect which may be crucial to the differences in the use of the Levallois technique at Fjaje and Ain el-Assad is the relative abundance of flint nodules in the immediate vicinity of the two sites. It is possible, for example, that in areas of restricted lithic resources the Levallois technique may be a more efficient method of producing implements (MacBurney 1975: 416-17), especially if the major focus is on utilizing available large nodules for the manufacture of bifaces. Therefore, one of the implications of the prevalence of the use of the Levallois technique at Fjaje is that local flint resources were relatively scarce, while at Ain el-Assad they were much more abundant. Unfortunately, during the times both sites were briefly visited, no reconnaissance for lithic resources was undertaken.

Summary

The huge Lower Paleolithic surface site at Fjaje represents a major focus of repeated occupations by Late Acheulian groups who probably exploited the seasonal game migrations to and from the Jordan Rift Valley.

An apparently prolonged period of deflation and probably agriculturally and pastorally-related disturbances suggests that little *in situ* associations remain among the artifacts, but on the basis of patination and desilicification, little post-Acheulian mixture is evident at the site.

A comparison of the Fjaje collection with the artifacts from Ain el-Assad in eastern Jordan reveals major typological and technological differences. For the most part these differences probably relate to the supposed variation in the environmental situations and consequent different floral and faunal resources to be exploited, as well as differences in the seasonality nature of the occupations. However, variations in locally available lithic resources may also have played an important part in the observed variations.

The inevitable cliches concerning necessary additional research to resolve the questions and substantiate or refute tentative answers to a variety of archaeological problems are a standard closing in many articles involving paleolithic prehistory. But in no case is this appeal more important than in the investigation of such a poorly investigated area as Jordan.

Bordes, F.

1961 *Typologie du paleolithique ancien et moyen.* Publications de l'Institut de Prehistoire de l'Universite de Bordeaux, Memoire 1.

Butzer, K.

1978 The Late Prehistoric Environmental History of the Near East. Pp. 5-12 in *The Environmental History of the Near and Middle East,* ed. W. Brice. New York: Academic Press.

Clark, J. Desmond

1967 The Middle Acheulian Occupation Site at Latamne, Northern Syria (First Paper). *Quaternaria* 9:1-68.

1968 The Middle Acheulian Occupation Site at Latamne, Northern Syria (Second Paper). *Quaternaria* 10: 1-72.

1975 A Comparison of the Late Acheulian Industries of Africa and the Middle East. Pp. 605-660 in *After the Australopithecines,* eds. K. Butzer and G. Isaac.

de Contenson, H.

1964 The 1953 Survey in the Yarmouk and Jordan Valleys. *Annual of the Department of Antiquities of Jordan* 8+9: 30-46.

Echegaray, J.

1970 Sondeos y prospecciones en Mogaret-Dalal (Jordania). *Ampurias* 31-32: 233-240.

Field, H.

1960 North Arabian Desert Archaeological Survey, 1925-1950. *Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University* 45 (2).

Harding, G.

1967 *The Antiquities of Jordan.* Amman: The Jordan Distribution Agency.

Harris, G.

1958 *Jordan: Its People, Its Society, Its Culture.* New Haven: HRAF Press.

Ibrahimm M., J. Sauer, and K. Yassine

1976 The East Jordan Valley Survey, 1975. *Bulletin of the American Schools of Oriental Research* 222: 41-66.

Kerestes, T., *et al.*

1978 An Archaeological Survey of Three Reservoir Areas in Northern Jordan, 1978. Manuscript on file, American Center of Oriental Research Library, ACOR, Amman.

MacBurney, C.B.M.

1975 Current Status of the Lower and Middle Paleolithic of the Entire Region from the Levant through North Africa. Pp. 427-438 in *Problems in Prehistory: North Africa and the*

Levant, eds. F. Wendorf and A. Marks. Dallas: SMU Press.

Mellaart, J.

1962 Preliminary Report of the Archaeological Survey in the Yarmouk and Jordan Valley. *Annual of the Department of Antiquities of Jordan* 6+7: 126-157.

Rhotert, H.

1938 *Vorgeschichtliche Forschungen in Klein Asien und Nord-africa, Band I: Transjordanien.* Stuttgart: Verlag Strecker und Schröder.

Rollefson, G.

1978 *A Quantitative and Qualitative Typological Analysis of Bifaces from the Tabun Excavations, 1967-72.* Doctoral dissertation, University of Arizona, Tucson.

in press

The Paleolithic Industries of Ain el-Assad (Lion's Spring), near Azraq, Eastern Jordan. *Annual of the Department of Antiquities of Jordan.*

Waechter, J., *et al.*

1938 The Excavations at Wadi Dhobai, 1937-1938, and the Dhobaian Industry. *Journal of the Palestine Oriental Society* 18 (3-4): 172-186.

Zeuner, F.

1957 Stone Age Exploration in Jordan, I. *Palestine Exploration Quarterly* : 17-54.

Gary O. Rollefson

THE CENTRAL LIMES ARABICUS PROJECT: THE 1980 CAMPAIGN

by
Thomas Parker

I. Introduction

In 1976 the first comprehensive survey of the Roman fortified frontier in Jordan (the *Limes Arabicus*) was conducted. This survey indicated that a major military buildup occurred ca. A.D. 300.[1] This significant strengthening of the frontier included the construction of many new fortifications; most of these new posts were built in the central sector of the frontier, roughly the area east of the Dead Sea. This sector of the Arabian frontier remained well fortified for about two centuries. Then, in the late 5th and 6th centuries, most of these forts were abandoned (see figs. 1 and 2 for the frontier ca. 300; figs. 3 and 4 for frontier ca. 550). The purpose of the Central Limes Arabicus Project is to understand the nature and cause of both the massive military buildup of ca. 300 and the apparent withdrawal about two centuries later. Five biennial campaigns are planned between 1980 and 1988. The first campaign consisted of full scale excavations at the Roman legionary camp at el-Lejjūn, limited soundings of two ancillary fortifications (the *castellum* of Khirbet el-Fityan and the watchtowers at Rujm Beni Yasser), local survey of the area surrounding Lejjūn, and a regional survey of the desert region beyond the frontier (east of al-Qatrana).

The project received the institutional sponsorship of the American Schools of Oriental Research and was aided by its affiliate in Amman, the American Center of Oriental Research. A permit was kindly granted by the Department of Antiquities of Jordan. The author wishes to thank Dr. Adnan Hadidi, Director of the Department, and Dr. James A. Sauer, Director of A.C.O.R., for their cooperation and assistance. Major funding for the initial season was generously provided by the National Endowment for the Humanities. Other funds were obtained from junior staff camp fees and several private donors. The author is grateful to all for their support. A staff of ca. 30 and ca. 50 workmen conducted a six week season in 1980, from July 7 to August 17. Senior field staff included S. Thomas Parker as director, Bert DeVries as architect, Frank L. Koucky as geologist and director of the survey, Vincent A. Clark as Semitic epigrapher and leader of the desert survey team, Scott Rolston as human osteologist and photographer, Michael Toplyn as faunal osteologist, and Faul M. McDermott as clasical epigrapher. Area supervisors were Anne S. Haeckl (Area A, the Lejjūn *principia),* Jennifer Groot (Area B, the Lejjūn barracks), Charles Blake Wilson (Area C, the Lejjūn enclosure wall), Suzanne Richard (Area D, Khir-

1 S. Thomas Parker, "Archaeological Survey of Limes Arabicus: A Preliminary Report," *ADAJ* 21 (1976) 19-31; "Towards a History of the Limes Arabicus," in W. S. Hanson and L. J. F. Neppie (eds.), *Roman Frontier Studies 1979* (Oxford: British Archaeological Reports, 1980) 865-878. The final report on the survey, *The Historical Development of the Limes Arabicus,* has been completed and will be published by the American Schools of Oriental Research.

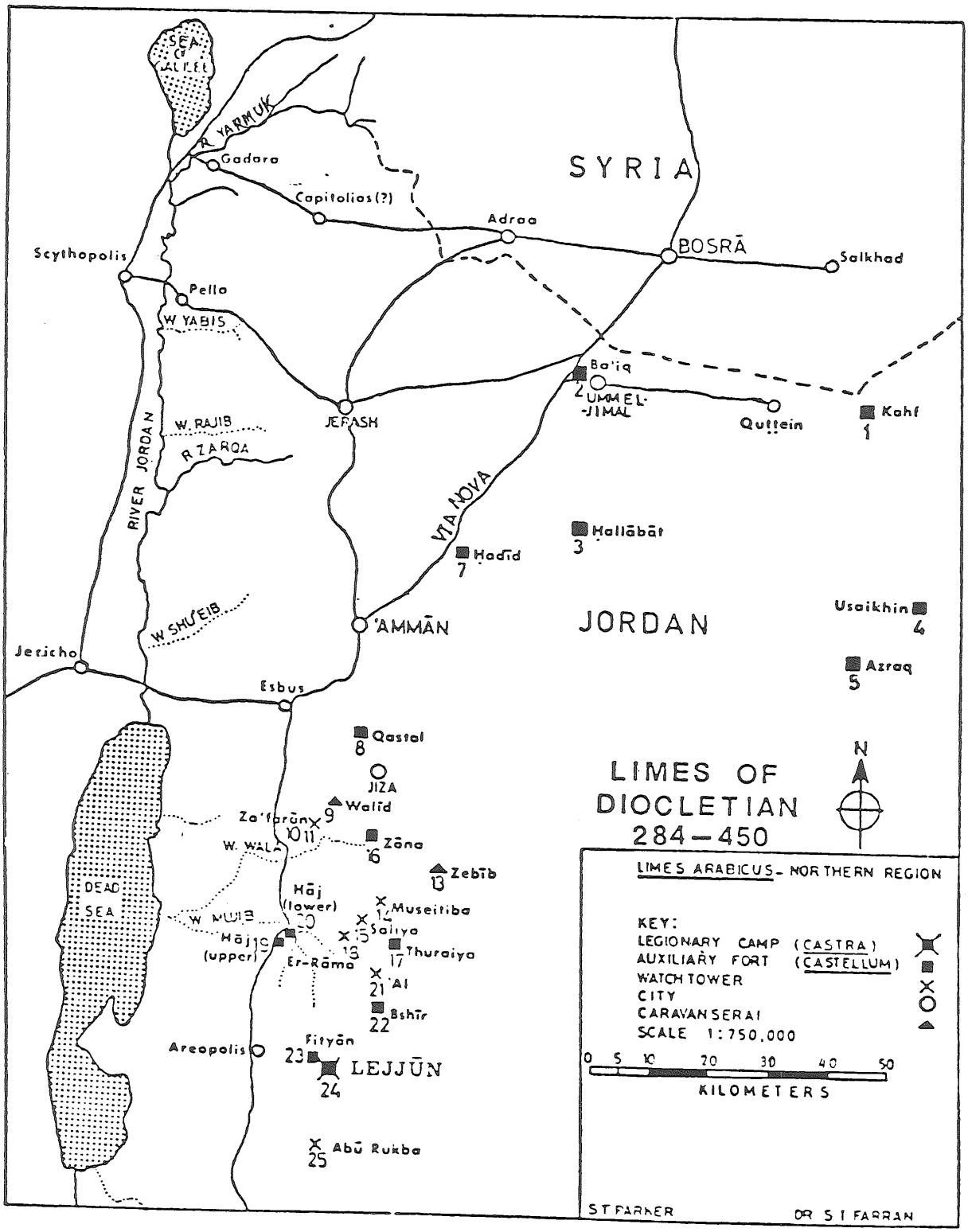

SEA OF GALILEE
R. YARMUK
Gadara
SYRIA
Capitolias(?)
Adraa
BOSRĀ
Salkhad
Scythopolis
Pella
W. YABIS
Ba'iq
2
UMM EL-JIMAL
Quttein
Kahf
1
JERASH
W. RAJIB
R. ZARQA
RIVER JORDAN
VIA NOVA
Ḥallābāt
3
Ḥadīd
7
'AMMĀN
JORDAN
Usaikhin
4
Azraq
5
W. SHU'EIB
Jericho
Esbus
Qastal
8
JIZA
Walīd
9
Za'farān
10 11
Zāna
16
W. WALA
Zebīb
13
DEAD SEA
Hāj (lower)
20
Museitiba
14
W. MUIB
Saliya
15
Hāj (upper)
19
18
Thuraiya
17
Er-Rāma
'Ai
21
Bshīr
22
Areopolis
Fityān
23
LEJJŪN
24
Abū Rukba
25
LIMES OF DIOCLETIAN 284—450
N
LIMES ARABICUS - NORTHERN REGION
KEY:
LEGIONARY CAMP (CASTRA)
AUXILIARY FORT (CASTELLUM)
WATCH TOWER
CITY
CARAVANSERAI
SCALE 1:750,000
0 5 10 20 30 40 50
KILOMETERS
ST FARRER
DR S I FARRAN

Fig. 1

bet el-Fityān), Joanne Bloom (Area E, Rujm Beni Yasser), and Scott Rolston (Area F, the cemetery).[2] Nabil Beqa'in served as the representative of the Department of Antiquities.

II. Results

Three areas were opened within the legionary camp of Lejjūn, probably the base of *legio* IV *Martia*. Area A, consisting of three large squares within the *principia* or headquarters building of the legion, was designed to elucidate the architectural plan of this large structure (64 x 41 m.). An impressive subsidiary entrance through the southern wall of the *principia* was excavated in square A.1. To the west of this entrance two of the three apses noted by Brünnow and von Domaszewski were uncovered in A.1. and A.2. These apses, which were floored by a flagstone pavement, may have served as *scholae* or officers' clubs. In A.3 a portion of the *aedes* or shrine of the legionary standards was excavated, including the ca. 3 m. wide doorway. The threshold block was cut by eight cup-like depressions (four at either end of the threshold), most of which were filled with iron and lead fittings, perhaps the remnant of a barred iron gate or grill. All three squares provided evidence of a Late Byzantine I-II (ca. 500-550) occupation of the *principia*, characterized by slipshod architectural alterations, beaten earth surfaces, ash pits, and numerous animal bones. This suggests that the latest use of the building was a domestic squatter occupation following the withdrawal or disappearance of the legion.

The purpose of Area B was to investigate one of the major barracks blocks in the eastern sector of the camp. Block B consists of a central spine wall with 18 pairs of rooms along either side. Squares B.1, B.2, B.3, and B.4 were laid out to include four pairs of rooms south of the spine wall. The best stratified occupational evidence came from B.1, which may have served as the quarters of a centurion. The northern room of B.1 was roofed originally by a series of three limestone arches connected by long basalt slabs. The collapse of two of these arches was followed by the laying of a thick fill of *huwwar* and dung which averaged 0.75 m. in depth. This fill served as leveling for a *huwwar* floor. Resting on this floor was a vast amount of Late Byzantine I-II pottery (early 6th century); large storage jars were the predominate form. Four whole lamps were also found in this room, which apparently served as a storeroom in the final phase of the camp's occupation. The collapse of the third arch about the middle of the 6th century, perhaps as the result of an earthquake, effectively sealed this material. The discovery of a small hoard of seven bronze coins from the fill beneath the floor should provide more refined dating for the beginning of this occupational phase.

Area C was an 8 x 2 m. trench through the main enclosure wall of the camp. The purpose of this trench was to reveal the method of construction of this wall and to recover dating evidence for the erection of the enclosure wall and thus for the camp as a whole. Squares C.1 and C.2 reached the foundations of the wall on both its north and south faces. The wall proved to be 2.40 m. in thickness and was preserved to a

2 Junior Staff included Julian Bowsher, Aline Carriere, Danielle Chouet, Ian Cowan, Laurette DeVeaux, Susan Downey, Janis Fukuhara-Dyke, Mary Fenske, Joy McCorriston, Robert Schick, Jennifer Shalinsky, Laurie Tiede, and several part-time staff members.

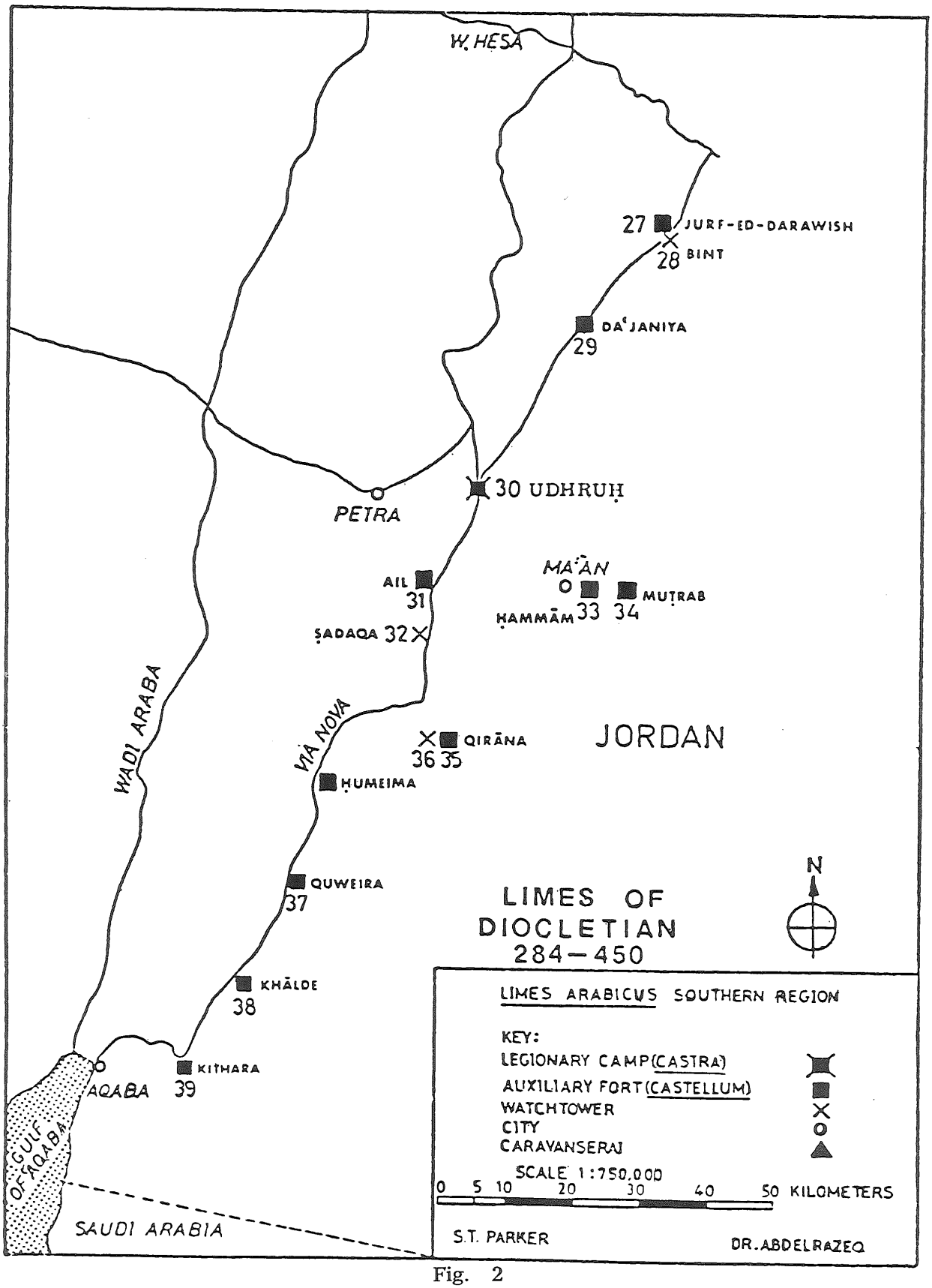

W. HESA
27 JURF-ED-DARAWISH
28 BINT
DA'JANIYA
29
30 UDHRUḤ
PETRA
AIL
31
MA'ĀN
ḤAMMĀM 33
MUṬRAB
34
ṢADAQA 32
WADI ARABA
VIA NOVA
QIRĀNA
36 35
JORDAN
ḤUMEIMA
QUWEIRA
37
LIMES OF
DIOCLETIAN
284–450
N
KHĀLDE
38
KITHARA
AQABA 39
GULF OF AQABA
SAUDI ARABIA
LIMES ARABICUS SOUTHERN REGION
KEY:
LEGIONARY CAMP (CASTRA)
AUXILIARY FORT (CASTELLUM)
WATCHTOWER
CITY
CARAVANSERAI
SCALE 1:750,000
0 5 10 20 30 40 50 KILOMETERS
S.T. PARKER
DR. ABDELRAZEQ

Fig. 2

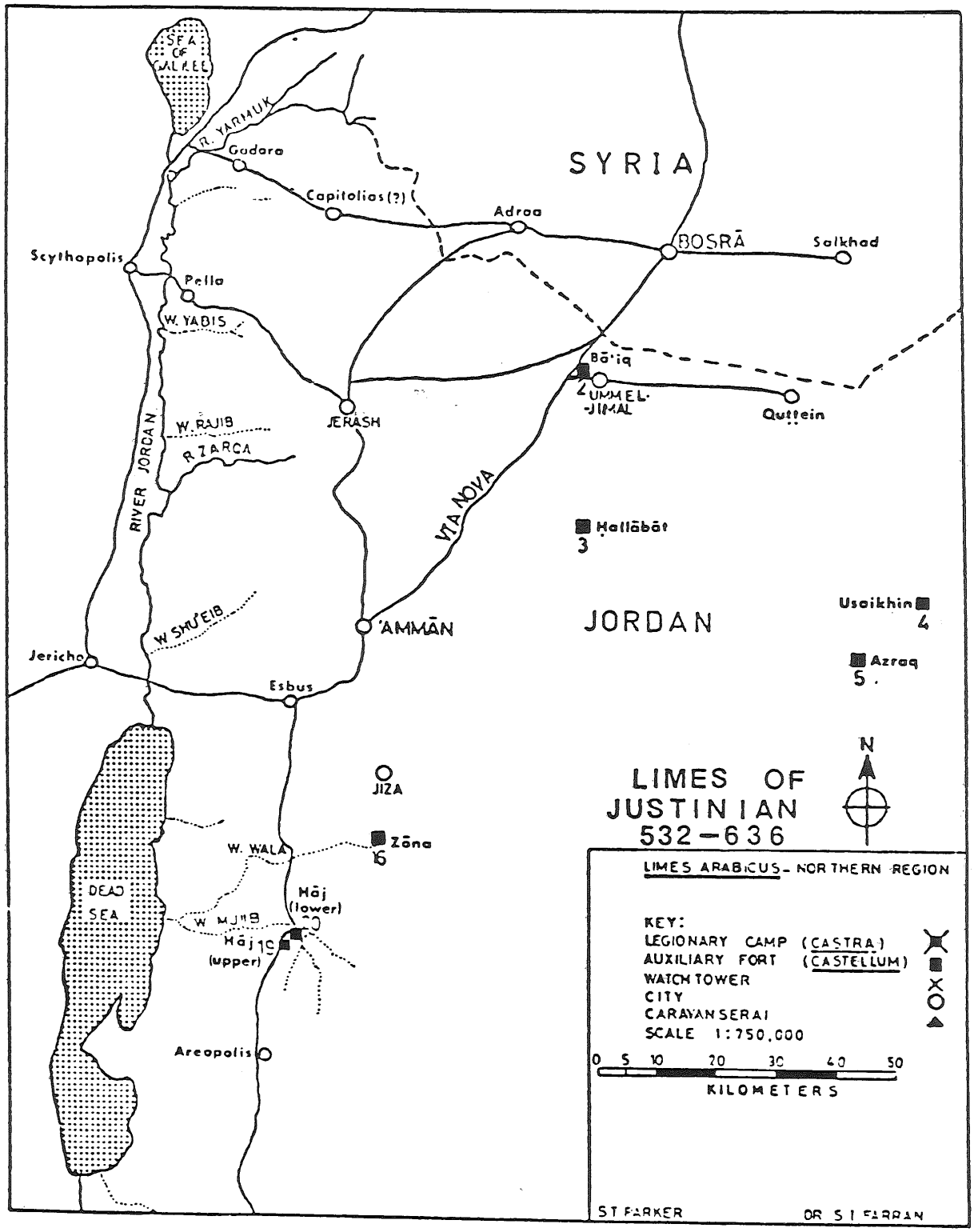

SEA OF GALILEE
R. YARMUK
Gadara
SYRIA
Capitolias (?)
Adraa
BOSRĀ
Salkhad
Scythopolis
Pella
W. YABIS
Bā'iq
UMM EL-JIMAL
Quttein
JERASH
W. RAJIB
R. ZARQA
RIVER JORDAN
VIA NOVA
Ḥallābāt
3
JORDAN
Usaikhin
4
'AMMĀN
W. SHU'EIB
Jericho
Esbus
Azraq
5
JIZA
Zāna
16
W. WALA
Ḥāj (lower)
DEAD SEA
W. MUJIB
Ḥāj (upper)
19
Areopolis
N
LIMES OF JUSTINIAN 532–636
LIMES ARABICUS - NORTHERN REGION
KEY:
LEGIONARY CAMP (CASTRA)
AUXILIARY FORT (CASTELLUM)
WATCH TOWER
CITY
CARAVANSERAI
SCALE 1:750,000
0 5 10 20 30 40 50
KILOMETERS
ST PARKER
DR S I FARRAN

Fig. 3

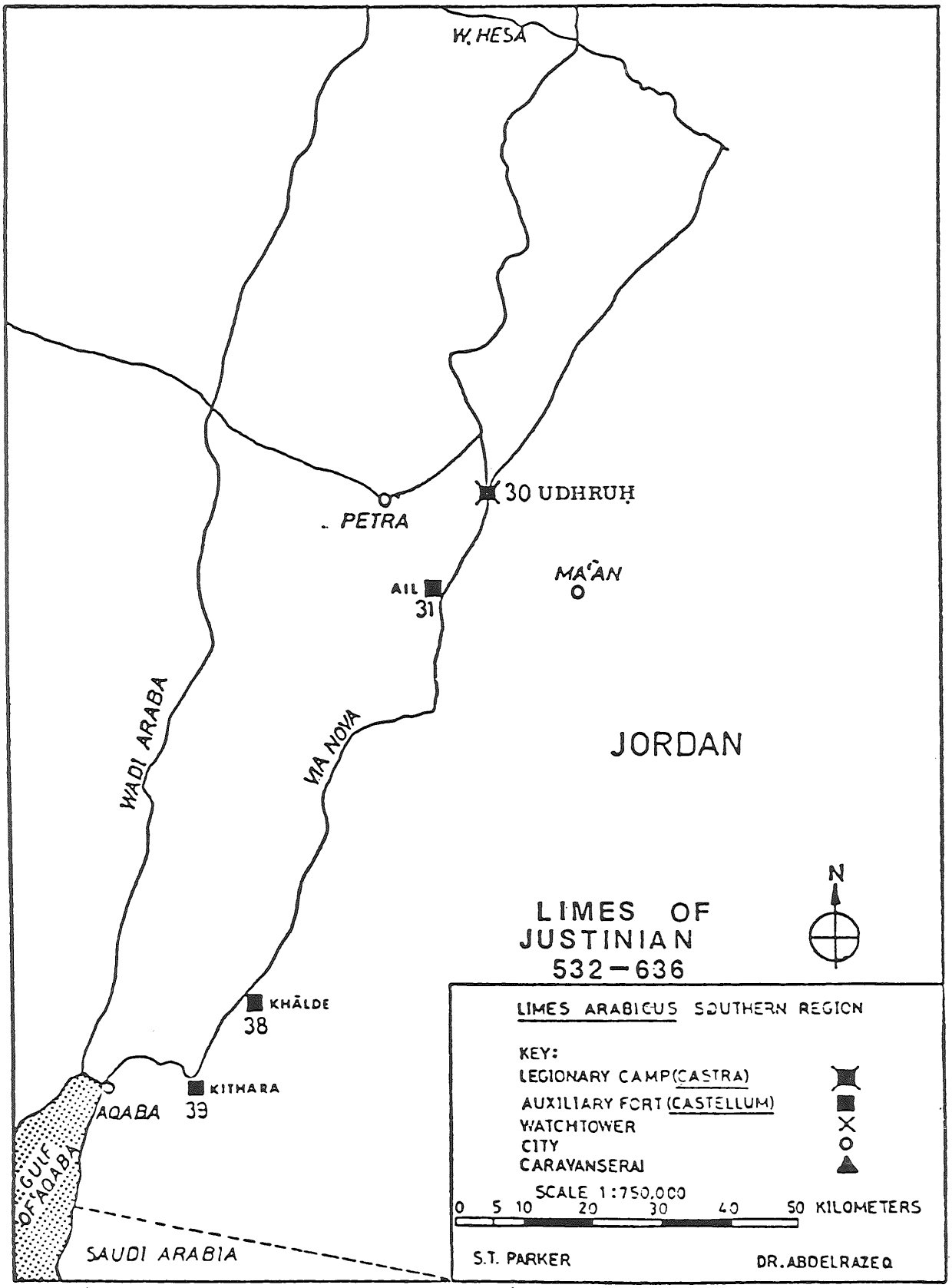

W. HESA
30 UDHRUḤ
PETRA
MA'AN
AIL
31
WADI ARABA
VIA NOVA
JORDAN
N
LIMES OF
JUSTINIAN
532–636
KHALDE
38
KITHARA
AQABA
39
GULF OF AQABA
SAUDI ARABIA
LIMES ARABICUS SOUTHERN REGION
KEY:
LEGIONARY CAMP (CASTRA)
AUXILIARY FORT (CASTELLUM)
WATCHTOWER
CITY
CARAVANSERAI
SCALE 1:750,000
0 5 10 20 30 40 50 KILOMETERS
S.T. PARKER
DR. ABDELRAZEQ

Fig. 4

height of five courses. Beneath the coursed masonry was a massive foundation of smaller, more roughly cut blocks another two m. in depth. This foundation was laid into a very narrow trench cut into sterile soil. After the foundations were exposed the wall itself was dismantled and yielded significant amounts of pottery and glass. Preliminary analysis of the pottery suggests a Late Roman IV date (ca. A.D. 300) for the construction of the enclosure wall.

Soundings at Khirbet el-Fityān (Area D), a *castellum* ca. 75 m. square located two kms. northwest of Lejjun, confirmed that the principal occupation of this site was contemporary with the main legionary camp. Square D.1 unearthed the main gateway, flanked by twin projecting towers, on the north wall. The western tower contained a staircase leading to an upper story. Smaller postern gates, not noticed by earlier investigators, were located in both the east and west walls. Squares D.2 and D.3 revealed two rooms of a barracks block within the fort. The walls of the rooms rested upon a Late Roman IV floor and are probably of the same date. The barracks continued to be occupied into the Early Byzantine period (ca. 325-500), but no trace of Late Byzantine occupation was found.

A series of soundings was also conducted at Rujm Beni Yasser (Area E). This site, located atop a hill 1½ kms. east of the main camp, served as the hub of a complex signaling and observation system that extended towards the desert to the east. The site consists of two watch towers on the eastern and western ends of the hill, connected by an enclosure wall. Ranges of rooms are located along both the north and south walls. The towers and walls thus surround an interior courtyard. Excavation established that the eastern tower and the rooms along the southern enclosure wall are of Early Roman (Nabatean) date. The western tower seems to have been built in the Late Roman IV period when the main camp was built in the valley below. Occupation of the complex continued into the Early Byzantine period but, like Khirbet el-Fityān, there was no evidence of Late Byzantine occupation.

Area F was opened on a gypsum hill southeast of the camp in order to find an ancient cemetery contemporaneous with the legionary camp. Several shaft tombs were located. The pottery from this area was exclusively Late Roman and Early Byzantine, but no undisturbed tombs were found due to the presence of later bedouin graves.

Survey of the vicinity of Lejjūn revealed traces of two water channels that connected the spring in the Wadi Lejjūn with the main camp. Further to the east, along the northern bank of the wadi, a series of three mills and a well preserved masonry dam were found. These mills and the dam are connected by a well preserved roadway and are probably contemporary with the legionary camp.

The survey of the desert region east of Qatrana was designed to locate any outlying posts east of the *limes* and to recover some evidence about the nomadic opponents of the Romans. The survey team, working under the direction of Vincent Clark in late April and early May, located some 50 sites in all. Most of these seem to have been campsites although sevral outlying watchtowers were found. Many of these sites were occupied in the Early Roman

and Early Byzantine periods but there was practically no trace of Late Roman occupation in this region.

III. Conclusion

In general it seems that the historical conclusions drawn from the 1976 survey regarding the archaeological history of Lejjūn and its environs have been confirmed. The legionary camp and the fort of Khirbet el-Fityān both seem to have been constructed about A.D. 300. The watchtower complex at Rujm Beni Yasser, originally a Nabatean foundation, was reoccupied and the western tower was added about this time. All three sites were probably garrisoned by troops of *legio* IV *Martia* and remained occupied into the Early Byzantine period. By 500 both Fityan and Yasser were permanently abandoned. An early 6th century squatter occupation of portions of the main camp suggests that the legion itself may have been disbanded or withdrawn, perhaps as a result of Justinian's reduction of the eastern frontier forces following the conclusion of the Eternal Peace with Persia in 532.[3] A mid 6th century earthquake may have ended this lingering occupation. The site lay abandoned until the Late Ottoman settlement was established just prior to the First World War, perhaps about 1910.

The second season of the Central Limes Arabicus Project is planned for 1982. Work will continue in the *principia* and barracks. A major building in the *vicus*, or civilian settlement outside the walls of the camp, will be examined. Soundings of ancillary sites will continue: the primary objective in 1982 will be Qaṣr Bshīr, a well preserved *castellum* ca. 10 kms. northeast of Lejjūn, securely dated to A.D. 306 on the basis of a Latin building inscription still *in situ*. Survey of the desert area east of the frontier will also continue.

S. Thomas Parker
North Carolina State University

3 Procopius, *Secret History*, 24.12ff.

KATARET ES-SAMRA: A LATE BRONZE AGE CEMETERY IN TRANSJORDAN?

by
Albert Leonard Jr.

Introduction

The *katarrah* region is a geological formation (Pl. XLVIII, 1) consisting of a succession of barren, grey cliffs of Pleistocene Lisan marls separating the *ghor* and the *zor* of the Jordan Valley.[1]

Kataret es-Samra ("*Katarrah* of the dark woman") is the specific, local name given to an area in this region c. one half kilometer square roughly forty kilometers northwest of Amman and five kilometers north of the confluence of the Wadi Zarqa (Biblical Jabbok) and the Jordan River (Fig. I).[2]

Although Nelson Glueck travelled and surveyed extensively in Transjordan he did not apparently explore the area presently under consideration,[3] and it was not investigated archaeologically until it was visited in 1976 by members of the Jordan Valley Survey team whose members were drawn from the Jordanian Department of Antiquities, Jordan University and the American Center for Oriental Research.[4] In addition to recording surface evidence for man's presence here at least as early as the Early Bronze Age, the survey team excavated a Late Bronze Age tomb in order to protect its rich contents from the illicit digging that had already begun.

During May and June, 1978, a more intensive investigation of the Kataret es-Samra region was begun by the author under the auspices of the American Schools of Oriental

1 D. Bably, *The Geography of the Bible*, Harper & Row (New York), 1974, pp. 199-201.

2 Map Reference. 1:10,000 Jordan Valley Sheet 99/70, Hashemite Kingdom of Jordan, published under the direction of the Department of Lands and Surveys of the Hashemite Kingdom of Jordan, 1950, by the Air Survey Company, 1950. The area presently under discussion was concentrated in four grids: 202-204 East/West, and 173-175 North/South.

3 N. Glueck, "Explorations in Eastern Palestine, IV." *The Annual of the American Schools of Oriental Research*, Vols. XXV-XXVII for 1945-49 (New Haven), 1951.

4 Initial results of a portion of this work have been published: M. Ibrahim, J. A. Sauer and K. Yassine, " The East Jordan Valley Survey, 1975," *BASOR* 222, pp. 41-66. The report of their work ta Kataret es-Samra (their site No. 126) will appear in a future publication.

Research.[5] This work was comprised of two facets: excavation, in an attempt to determine whether or not the tomb excavated by the survey team was an isolated occurance or rather a single element in a larger, L.B. cemetery; and survey, in order to initiate a more detailed study of the sequence of cultural development in this transitional, ecological zone. The results of this brief, initial season are presented here.

Excavation

While conducting their exploration of Tell Kataret es-Samra (Fig. 2, our Site 4) in 1976, the joint Jordan Valley Survey team interrupted the clandestine excavation of a large tomb at the end of an adjacent *katarrah* "finger" just to the south of the "tell" (Fig. 2, our Site 2). In order to preserve the contents of this tomb it was subsequently cleared by members of the survey team, producing a rich assemblage of local pottery, bronze weapons and imported L.B. II Cypriot ceramics.

One of the primary goals of the present project was to determine if the tomb excavated in 1976 represented a single, isolated burial, or whether it was, in fact, part of a Late Bronze Age cemetery.

Methodology

When we arrived at the site some of the features of the earlier excavations had survived the erosion of the past two winters, and portions of the tomb floor (above our Loc. 2015), a small loculus on the eastern side of the tomb (our Loc. 2016), as well as an (east-west) north balk, and a diagonal balk running south-west to north-west, were still visible (Fig. 3). In order to gain an understanding of the natural geological stratigraphy of the area, prior to beginning a new sounding, the north balk of the earlier excavation was recut and dressed, producing a section (Pl. XLVIII, 2) which illustrated the natural breakdown of the *huwwar* formation with a sandy, wind-blown soil filling the interstices left by the *huwwar* shift

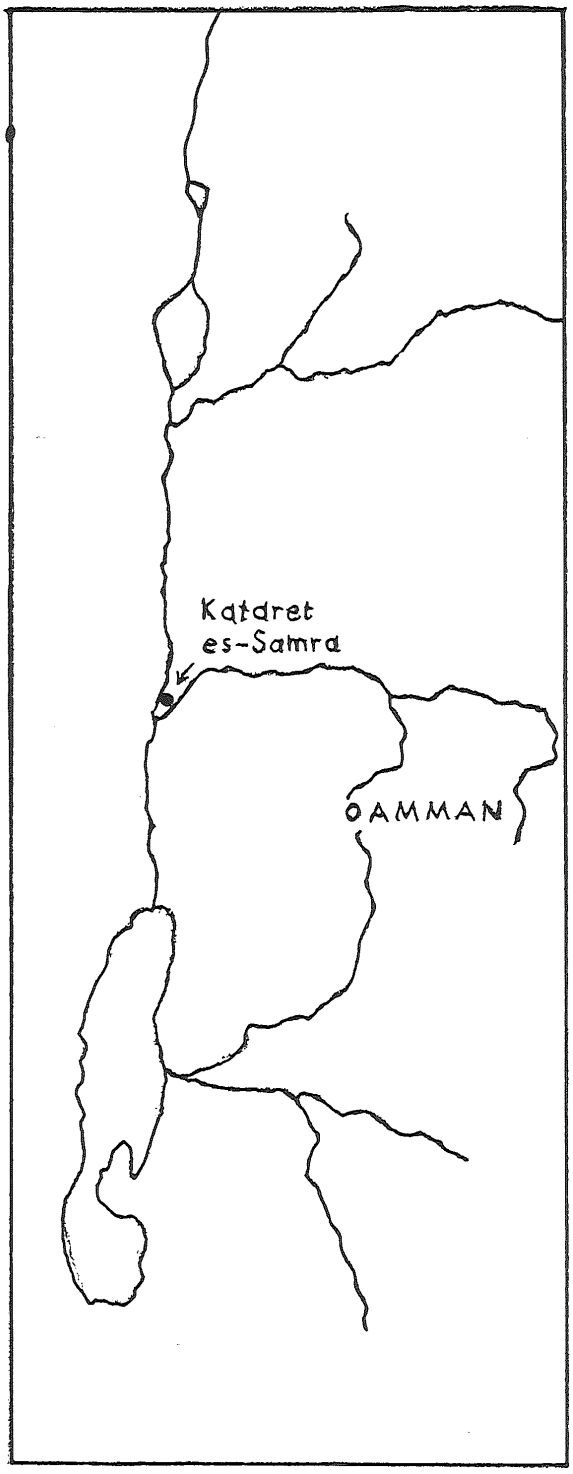
In the course of extending this clean-up operation along the existing, diagonal "west balk" we gained our first clue that not all of the archaeological deposit from this tomb had been recovered. Here, below the mixture of *huwwar* collapse and wind-blown sand, was a thin (5 - 10 cm.) band of brown soil from which protruded a bowl which still contained small fragments of bone (Pl. XLIX, 1), all

5 In addition to the author, our small staff included James Armstrong (University of Chicago), Annie Lee Jones (Eastern Illinois University, and Jericho-trained Khamis Issa Fahed. Our work was greatly facilitated by the kind help of Department of Antiquities representative Ali N. Saidi.

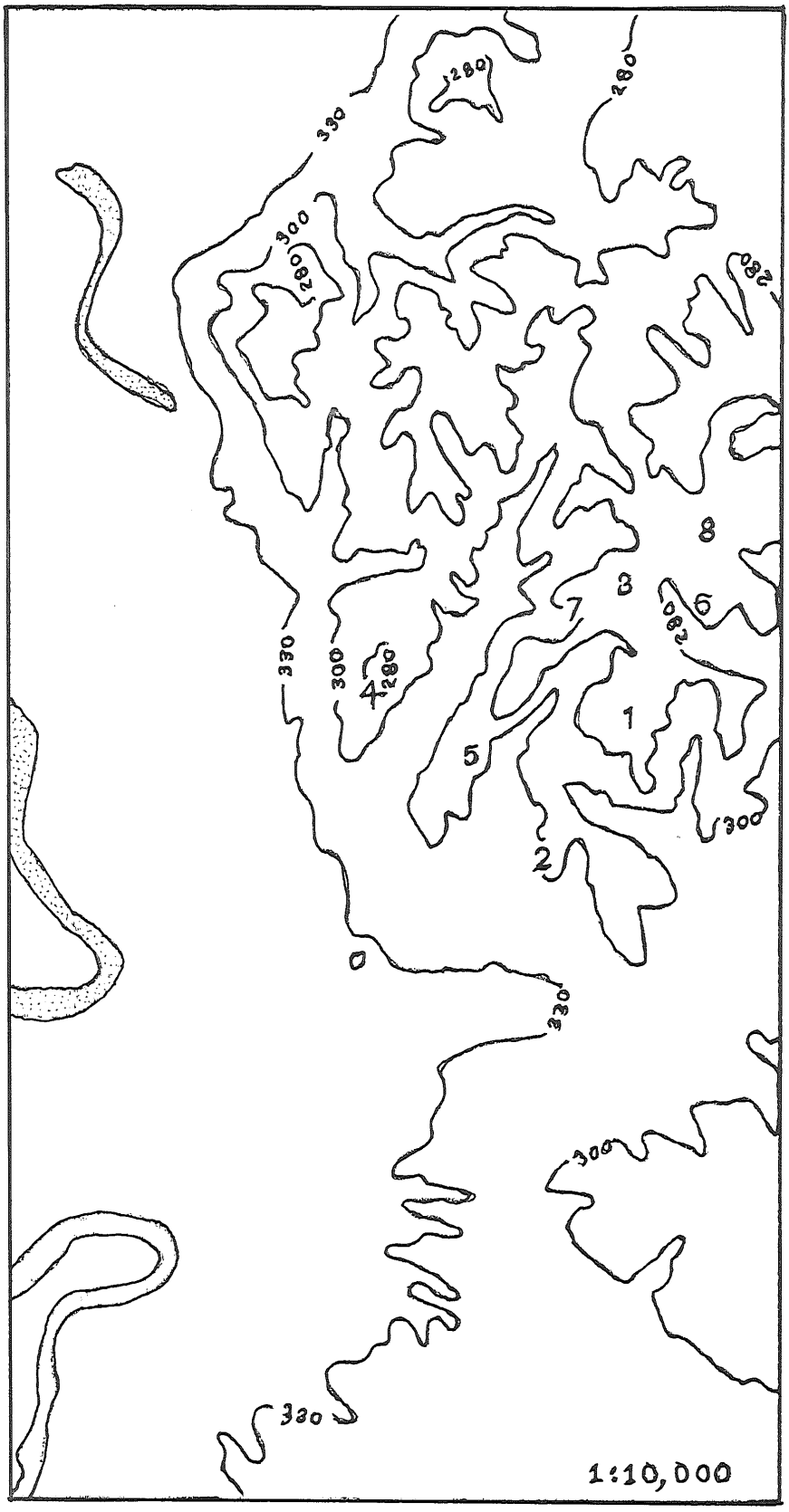
Funding for the pilot season was generously provided by the Research Council of the Graduate School, University of Missouri-Columbia; the Department of Antiquities of Jordan; and the Kyle-Kelso Fund.

Special thanks are here given to Dr. Adnan Hadidi, Director of the Department of Antiquities of Jordan; Dr. James A Sauer, Director of the American Center for Oriental Research; and Dr. Khair Yassine, Director of the excavations at Tell Mazar.

Accomodations were generously arranged by the Department of Argiculture of Jordan University at their field station in the *ghor*. The help given to us there by K.W. Langer-Rujufian, Pr. de Polacky, is gratefully acknowledged.



1. Map of the Jordan Valley indicating the position of Kataret es-Samra, just to the north of the confluence of the Rivers Zarqa (Jabbok) and Jordan.



2. Kataret es-Samra, plan of the survey area.

that remained of the original funerary offering. It was evident that we were dealing with a second loculus, similar to the one on the eastern side of the tomb, but differing from it in the fact that its roof had collapsed, severely crushing its contents.

At this point we began our vertical excavation. Although, for the sake of control, twenty-three loci were utilized in our work (all but four in an area c. $1\frac{1}{2}$ x $2\frac{1}{2}$ M. in the northwestern corner of the area) they can here be combined into four major groups (Fig. 3):

Locus 2001. Top soil. (cf. Loc. 2019).

Locus 2002. A mixture of pebble to cobble-size *huwwar* chunks mixed with sand-size wind and waterbourn soil, definitely the result of the natural breakdown of the cliff. Inside the tomb this collapse had been aided by the original cutting of the tomb; while its proximity to the edge of the *katarrah* finger hastened the slippage of material outside the tomb. (cf. Loc. 2009, 2010, 2011, 2013, 2018).

Locus 2003. Archaeological deposit, from the western loculus (c. 1.00 x 1.50m) of the tomb, consisting of skeletal and ceramic material crushed by the collapse of the roof to a maximum height of 10 cm. The soil matrix consisted of *huwwar* collapse and grainy, brown soil. (cf. Loc. 2004, 2005, 2008, 2012, 2014, 2022, 2023).

Locus 2007. The primary grey *huwwar* of the *katarrah* formation itself, which forms the floor of the tomb and its loculi. (cf. Loc. 2015, 2017).

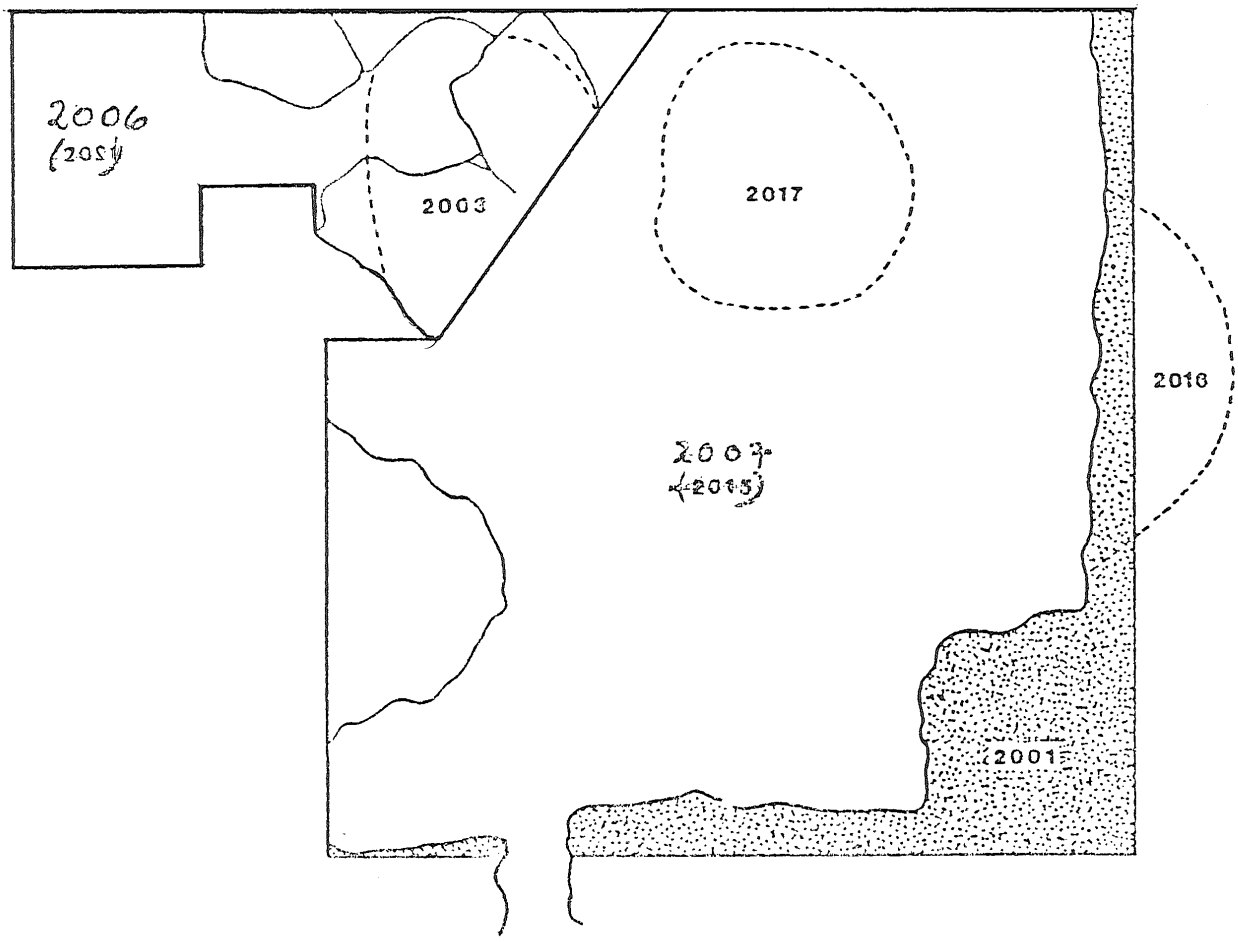
Locus 2006. Material representing the natural breakdown of the geological formation outside the tomb. (cf. Loc. 2020, 2021).

The Funerary Deposit

As has been noted, the archaeological deposit in the western loculus (2003) had been severely crushed, evidently in antiquity, by the collapse of its roof. In spite of this damage, the original presence of at least four skulls, relatively few longbones, and an admixture of animal bones could be determined (Pl. XLIX, 2), while eight vessels could be restored (Fig. 4). The fact that the human skeletal material was completely scattered around the small loculus; combined with the presence of animal bones in at least one of the bowls, and in screes associated with other vessels, suggests that the material remains found in the loculus had been moved there secondarily, from the floor of the main chamber during the course or subsequent interments. This suggestion is strengthened by the fact that some of the vessels exhibit ancient breaks and the missing portions could not be found in the loculus deposit.

The Ceramic Material (cf. Fig. 4)

We know from the earlier excavations that the main chamber of the tomb contained material as late as LB II, but the pottery from the western loculus must be considered a separate, closed deposit, sealed and provided with its own *terminus ante quem* by the collapse of the



3. Simplified top plan of the Late Bronze Age tomb at Kataret es-Samra, indicating the position of the major Loci mentioned in text.

loculus roof. Because of the nature of the deposit, evidently transferred to the loculus from the floor of the main chamber (which need not have been done at one time) we must first look at the pieces individually in an attempt to place each vessel in its proper position within the ceramic development of the Bronze Age, in order to propose, if possible, a *terminus post quem* for the group as a whole. Our task will be complicated by two factors, both of which point out the state of our knowledge of the internal development of Late Bronze Age Syro-Palestinian ceramics. First, the group does not include any of the forms or fabrics usually considered to be type-fossils for specific phases of the local ceramic development. Second, it does not contain imported Cypriot or Aegean wares upon which the Palestinian archaeologist has relied so heavily in the past, in spite of the 'circular' fact that the chronology of the Aegean world is almost solely based on occurances of its pottery in Near Eastern contexts. Compounding these problems is the scarcity of 'secure' Late Bronze Age deposits from the East Bank.

Dipper Juglet (A)

The beginnings of the Middle Bronze Age witnessed a tremendous expansion of vessel types of which small, easily-stoppered juglets are one of the most common. The "dipper juglet," which was perhaps to become the most prolific of these small forms, appears at the very beginning of the period and enjoys a long history, well into the Iron Age. The generally accepted development of this form is that M.B. IIA examples are characterized by ar ovoid body and, more important diagnostically, a flattened base. During M.B. IIB-C the shape of the body becomes much more attenuated and the earlier, flattened base is drawn out into a point. This type continues into L.B. I where, evidently as a reaction to the earlier, pointed shape, a more truncated body begins to gain in popularity; and it is this "dumpy" form that becomes standard for L.B. II.[6]

The flattened base of the Kataret es-Samra juglet might at first glance suggest a date early in the Middle Bronze Age, but this morphological characteristic is not necessarily restricted to this period, for it does in fact continue, albeit infrequently, throughout the Late Bronze Age,[7] making an exact chronological assignment difficult. The abraded sruface of the juglet, unfortunately, precludes recourse to surface treat-

6 This development can be readily seen by comparing *APHL* Pls. 33 (M.B. IIA), 34 (M.B. IIB-C) and 46 (L.B.).

7 For "classic" flat-bottomed M.B. IIA examples, cf. O. Tufnell, "The Courtyard Cemetery at Tell El-'Ajjul, Palestine," University of London, *Bulletin of the Institute of Archaeology*, No. 3 (1962), pp. 1-46, Groups 1 and 2 (her M.B. I). For later M.B. examples, cf. Jericho Tomb A38 (*Jericho* I, Pl. 136:29), M.B. phase iii; Hazor Tomb/Locus 6207 (*Hazor* II, Pl. CXI:7), M.B. II; Hazor Tomb/Locus 9024 (*Hazor* I, Pl. CXX:7), M.B. II; and Megiddo Tomb 912B (*M. Tbs.*, Pl. 35: 7, 8, 10) dated M.B. II (A), but for problems with L.B. II contamination, cf. pp. 69, 72. A long chronological range is given for the early red-burnished juglets of similar form from the Megiddo tell, cf. *Meg.* II, Pl. 7: 20-24 (Stratum XV), and 12:5 (Strata XIV - XII).

L.B. I examples with flattened base include the painted example from Megiddo Tomb II00B (*Meg. Tbs.*, Pl. 47:12), note the Bichrome jug on

ment for aid in clarifying this chronological question, and so it is considered best to assign the vessel to the Late Bronze Age, preferably to the earlier centuries of this phase.[8]

Two-handled Jar (B)

The large, ovoid jar with two handles and a distinct base is a relatively uncommon vessel form in the repertoire of the Palestinian potter. A morphologically similar form with a single handle, however, is quite common and traces its heritage at least as far back as the M.B. IIB-C period. In fact it is often difficult, if not impossible, to differentiate L.B. I examples of this single-handled variant from those of the latter part of the Middle Bronze Age.[9] L.B. IIA examples resemble their predecessors but, according to Amiran, [10] jugs with shoulder handles do not continue into L.B. IIB. Therefore, although the popularity of the form spans the M.B. IIB-C through L.B. IIA periods, it occurs most frequently during L.B. I when it was often utilized by workshops producing vessels decorated in the Bichrome style.[11] Although slight traces of both red and black paint still adhere to the abraded surface of the Kataret es-Samra piece, the temptation to attribute the vessel to the (elaborate) Bichrome style is resisted and it is considered, less specifically, simply as a vessel with bichrome decoration. An L.B. I date for the jar is here suggested since in L.B. II the ovoid form tends to become more compressed, and the handles are set higher on the shoulder.[12] Not only is the two-handled variant most common in L.B. I, but also at this time the body shape and handle placement are closest to the Kataret es-Samra Jar. [13]

Lamp (C)

The oil Lamp with single, pinched spout is probably the most easily recognizable form

fig. 111 and Pl. 48.15. A juglet with a longer neck than the Kataret es-Samra piece is seen in Tomb 26 at Megiddo (*Meg. Tbs.*, Pl. 58:16) and dated L.B. I. Other variants of this form appear at Megiddo (*Meg. II*, Pl. 50:8, Tomb 3028, Strata IX-VIII), Hazor (*Hazor* III-IV, Pl. CCXLIII:15) dated L.B. I, and Lachish (*Lachish* IV, Pl. 78:783 (Loc. 6029) and Pl. 86:995 (Locus 1504). The last two examples are included in Tufnell's dipper Class B. Cf., however, p. 192 where this type "falls outside the normal repertory of the site" and pp. 193 and 255 for her parallels to earlier M.B. pieces.

L.B. II examples include: Hazor Tombs 8144 (*Hazor* II, Pl. CXXXI:21) and 8065 (*Hazor* II, Pl. CXXXIX:8); and Megiddo Tomb 989 A: 1 (*M. Tbs.*, Pl. 16:24) but note p. 40 (L.B. I), and Tomb 989 B : 1 (*M. Tbs.*, Pl. 19:6). For the General Form, cf. also *Hazor* III-IV, Pl. CCXCVI: 8 (Locus 2011), L.B II?

8 Cf. the L.B. I examples cited in note 7 above.

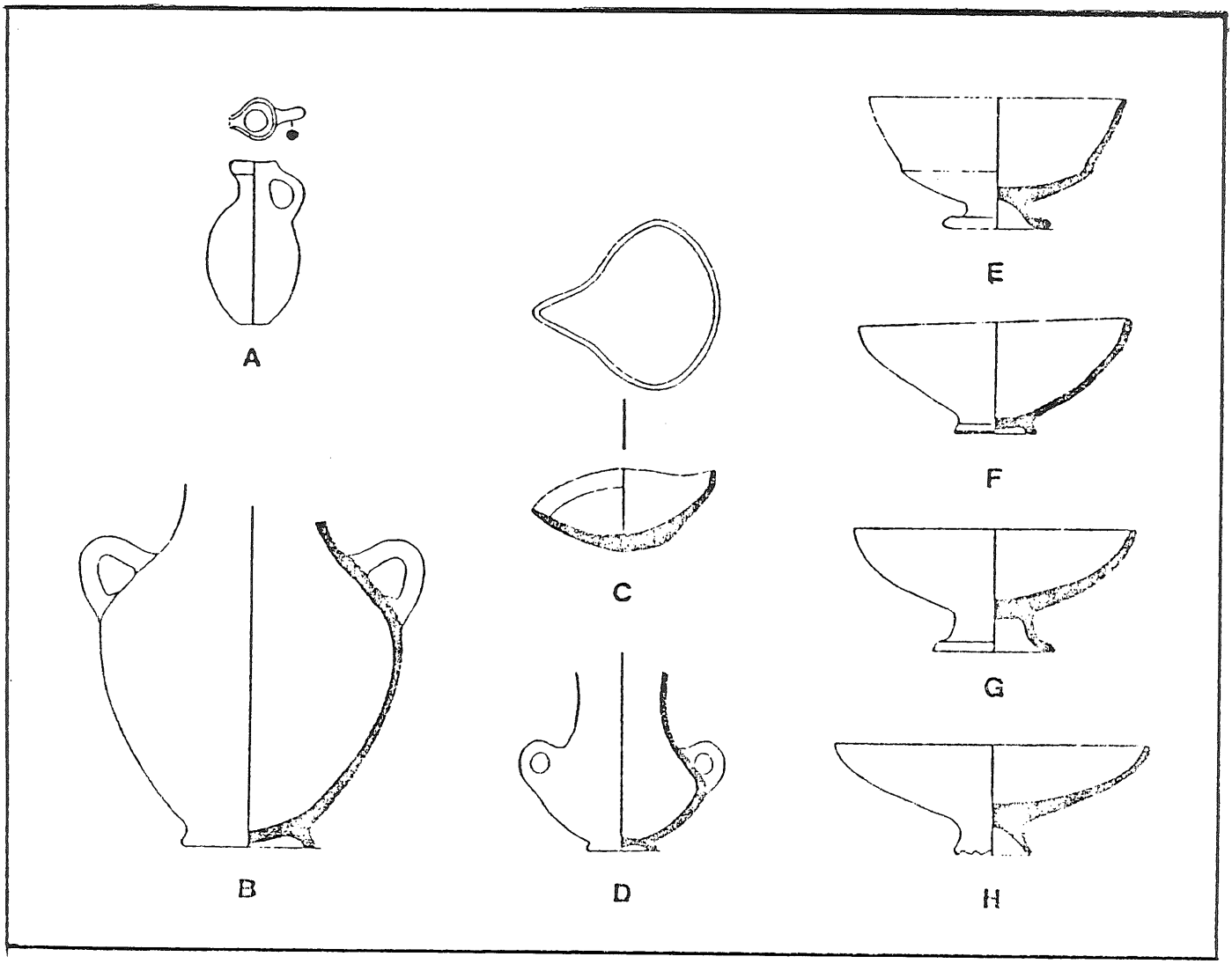
9 Compare *APHL* Pl. 46:1 (L.B. I) with 34:6 (M.B. IIB-C).

10 *APHL*, p. 146.

11 C. Epstein, *Palestinian Bichrome Ware*, Brill (Leiden), 1966, Pl. II : 9-12, her jug type A. i. e (p. 8). For L.B. I examples from Tomb 1100 at Megiddo, cf. *M. Tbs.*, Pls., 46:15, 16 and 48:1,2.

12 *Hazor* II, Pl. CXX:20, Locus 6215 (Area C, Stratum IB).

13 At Megiddo, cf. Tomb 1178 (*M. Tbs.*, Pl. 53:2), L.B. I; and Tomb 855 (*M. Tbs.*, Pl. 44:3), L.B. I. At Beth Shan, cf. E. Oren, *The Northern Cemetery at Beth Shan*, Brill (Leiden), 1973., Tombs 42 (fig. 31:4) and 59 (fig. 26:10), both dated L.B. I.



4. Restored L.B. pottery from the western loculus of the tomb at Kataret es-Samra.

in Syro-Palestinian ceramics, and the one that can show the longest continuous typological development.[14] Although this long development makes the lamp an important element in providing a broad indication of date for a certain deposit, the evenness of progression in such a simple form does not make it a good tool for use in fine dating. It is, therefore, simply considered here as "L.B." with an admittedly subjective preference for the earlier part of the period.

Amphoriskos (D)

The vessel here termed an "amphoriskos," a form considered by Amiran to be a jug-like variant of her "biconical amphoraekrater,"[15] is a type which does not appear to possess an independent Middle Bronze ancestry. It seems rather to be a Late Bronze Age combination of biconical forms which can themselves be shown to be directly or indirectly related to M.B. prototypes. Since the amphoriskos appears in both L.B. I and II contexts, an isolated vessel cannot be confidently assigned to a particular chronological subdivision, yet two morphological traits do seem to characterize the development of the shape. In L.B. I the neck and mouth are much wider than in L.B. II, while the transition between the shoulder and the rim is much less constricted in L.B. I than in the L.B. II examples.[16]

In dating L.B. painted wares, recourse is often made to the degree of "degeneration" of the decoration, and while traces of a metope panel in both red and black paint do remain on the poorly preserved surface of the Kataret es-Samra vessel, they are simply not sufficient to allow categorization by decoration. Although the upper portion of the piece was broken in antiquity and not placed in the loculus, on the basis of the morphological criteria noted above, the Kataret es-Samra amphoriskos would seem to fit most comfortably within the L.B. I period.[17]

The Open Forms (E-H)

The remainder of the restorable pottery from the western loculus contists of relatively simple, open forms: a carinated bowl (E); two bowls (F and G) with curving profiles and differing from each other mainly in the type and height of their bases; and a partially preserved vessel (H) which is here considered to have been a chalice.

Bowl E, in its carinated profile, readily betrays a Middle Bronze ancestry. It is a type that appears at least as early as Kenyon's Group II of the Jericho M.B. tombs,[18] and follows a slow, typological development into, and through, the Late Bronze Age. Amiran succinctly describes the process of degeneration in the carmation of this form,[19] but the Kataret es-Samra piece does not, unfortunately, fit easily into the generally accepted scheme. Note that while Bowl E does possess a rather marked

14 *APHL*, Pls. 59 and 100.

15 *APHL*, p. 147.

16 A convenient comparison is *APHL* Pls. 47:5 (L.B. I), 47:9 (L.B. IIA) and 47:14 (L.B. IIB).

17 Cf. Megiddo Tomb 78 (*M. Tbs.*, Pl. 42:18), L.B. I. Compare also examples at Beth Shan in Tomb 27 (*NCBS*, fig. 36) dated "LBI-II," and Tomb 29 (*NCBS* fig. 36:21,22), dated L.B. II.

18 Bowl Type D (Flaring Carinate) *Jericho* I, p. 269, and Fig. 120:10, 11.

19 *APHL*, p. 129.

carination, it does not share the "folded" ridge customarily found on the more pronounced M.B. II/L.B. I examples.[20] On the other hand, the lower portion of the bowl o the vessel does have considerable horizontality, a feature that could be considered more characteristic of the M.B. examples than those of L.B. II.[21] Such traits could suggest the placement of the vessel within the L.B. I sphere.

The height and type of the base of "Vessel E" causes additional concern. High, delicate bases occur frequently in the Middle Bronze Age,[22] but with the advent of the Late Bronze Age a simplification of this type of base begins, at the same time that the lower ring-base is becoming common and the concave disc-base is well on its way to the predominance that it will demonstrate in L.B. II.

The combination of the various morphological elements of this piece is curious: close parallels are difficult to produce, and the vessel does not fit readily into existing typological compartments. Assignment to L.B. I is done so here, with some hesitation.[23]

Bowl F, slightly asymetrical vessel with rounded profile, has only a single, major, diagnostic feature: its low, slightly outsplayed, ring-base. The ring-base is a common element on a variety of bowl types during the M.B. IIB-C period, a position which is maintained through L.B. I. Toward the end of the L.B. IIA period, however, the ring-base begins to decline in frequency finally succumbing to the challenge posed by the concave disc-base which had been steadily gaining in popularity from at least as early as M.B. IIB-C.[24] The fact that rounded bowls with low ring-bases were so commonly included in funerary assemblages throughout the Late Bronze Age, denies the form much of its chronological integrity, and it is perhaps more prudent to be cautious and not attempt to associate such a simple vessel shape with a specific subdivision of the period.[25]

20 Cf. *APHL*, Pl. 27:7, 10 (M. B. II) and Pl. 39:1-3 (L.B. I).

21 This is, admittedly, subjective reasoning. L.B. I examples can have fairly diagonal lower bowl profiles (cf. *Hazor* I, Pl. CXV:2; *Hazor* II, Pl. CXVI: 8; and *Hazor* III-IV, Pl. CCXLIII), but the reverse does not seem to hold true, i. e. L.B. II forms do not seem to have the sub-carination horizontality of KS409.

22 Most noticeably on the pedestal jars that form such a characteristic facet of Kenyon's M.B. Jericho groups II-V. (*Jericho* I, pp. 269-70).

23 This eclectic juxtoposition of morphological elements makes the piece difficult to parallel. The base is closest, typologically, to the high bases on the series of L.B. I burnished bowls (cf. *inter alia*, *Megiddo* II, Pl. 61:15; *NCBS*, fig. 28: 12,21) than anything else, but the Kataret es-Samra bowl does not share the very high point of carination exhibited on these earlier pieces.

Elaborately rolled "toes," not completely unlike that on the present piece, can be seen on several of the examples from Tomb 42 at Beth Shan (*NCBS*, fig. 28:10, 11).

24 *APHL*, pp. 91, 125.

25 Among the numerous examples assigned to L.B. I, cf. those from Megiddo Tomb 78 (*M. Tbs.*, Pl. 45:20), Tomb 855 (*M. Tbs*, Pl. 43:18), Tomb 1145B (*M. Tbs.*, Pls. 50:3, 52:4) and Tomb 4 (*M. Tbs.*, Pl. 54:4). L.B. II parallels, however, are not uncommon and similar forms were found in Phase 2 of the celler of the Eastern Building in Field XIII at Shechem (*BASOR* 204, Dec. 1971, p. 12 and fig, 8) dated to the Amarna Period.

Bowl G differs from F in that it is slightly more open, and has a higher, outsplayed foot, almost approaching a "pedestal." As has been noted above, the pedestal-base is most frequently utilized in the M.B. ceramic repertoire where it is quite common on closed forms, but rarely appears on open shapes other than the popular carinated chalice.[26] The antithesis is true in the Late Bronze Age when such high bases are reserved almost exclusively for open, rounded chalices.[27] This bowl, however, loses much of its chronological value since it can be demonstrated to be equally at home in both LBI and LBII contexts.[28]

The foot and base of vessel H were broken in antiquity and if the piece was whole when it was originally placed in the tomb, it was not intact when it was transferred to the western loculus. In spite of the loss of its most characteristic and diagnostic feature, the vessel, is here classified as a chalice on the basis of its wide and shallow bowl, the angle of the curve of the surviving portion of the base, and the extreme thickness of the junction between the top of the base and the bottom of the bowl, all features that would be more suitable if the vessel were reconstructed as a chalice rather than a bowl.

Although chalices with both carinated and rounded profiles appear in the M.B. IIB-C period,[29] the carinated variant does not seem to survive the transition into L.B. I, for it is almost exclusively the rounded profile that we find throughout the Late Bronze Age. Amiran's emphasis[30] on the difficulty of assigning an individual vessel of this form to a specific L.B. subdivision is a point well taken. The traces of concentric burnishing on the Kataret es-Samra vessel do not help in assigning the piece to a particular subdivision of L.B., since this type of decoration can be demonstrated to appear as early as M.B. and to persist throughout the Late Bronze Age.[31]

In addition to the eight restorable vessels described above which constitute the bulk of

26 *APHL*, Pl. 27: 21-24. For its use on chalices with rounded profiles cf. Pl. 28:13-15.

For M.B. examples of the hemispherical bowl with relatively high base, cf. those from Jericho Tomb H 13 (*Jericho* I, fig. 209:1) and the "Porcupine Cave" at Hazor (*Hazor* I, Pl. XCIV:3), Locus 9038. The latter context is, however, said to have been mixed with L.B. material (*Hazor* I, p. 103).

27 The point at which a footed bowl becomes a chalice is a moot one, and the possibility is left open as to whether this vessel should be considered a chalice rather than a footed bowl.

28 L.B. I: Cf. Megiddo Tomb 73 (*M. Tbs.*, Pl. 65:4) dated "L.B. I?" and *APHL*, Pl. 40:3 (= *Megiddo* II, Pl. 54:17, Stratum IX). L.B. I-II: Beth Shan Tomb 27 (*NCBS*, fig. 35:16 & 18). L.B. II; Beth Shan Tomb 29 (*NCBS*, fig. 39:9).

29 *APHL*, pp. 95-98.

30 *APHL*, p. 129.

31 M.B.: cf. *Hazor* I, Pl. CI:2, 3 and 4. L.B. I: cf. *Hazor* I, Pl. CXXII:17. L.B. II: cf. *Hazor* I, Pl. XCI:18, (Locus 6136, Shrine), *Hazor* II, Pl. CXXV:7 (Locus 6179), and Beth Shan Tomb 29 (NCBS, Fig. 39:11).

Note, however, the occurance of a similar form in the celler of the Eastern Building in Field XIII at Shechem, where it is considered to be "rare" in its Phase 2 (i. e. Amarna Period) context (*BASOR* 204, Dec. 1971, fig. 8).

the ceramic material from the western loculus, three sherds (two bowl rims and a footed base) were also found in the deposit (Fig. 5: 1-3). Although these fragments do not greatly aid in distinguishing the chronological parameters of the loculus material, they are included here for the sake of completeness, and also to convey an impression of the scrambled nature of the deposit. Human and animal bones were scattered and mixed with both intact and broken vessels, as well as sherds. This was, evidently, the result of a rather unceremonious transfer of funerary material from the floor of the main chamber of the tomb to the small loculus. The question of whether this shift was accomplished at one time is not, unfortunately, clear. The small dimensions of the loculus might argue for a single transfer; but the position of vessel H, with its funerary offering intact, at the internal edge of the loculus could suggest transfer over a period of time.

Our search for an upper chronological bracket for the Kataret es-Samra tomb has not unfortunately, yielded as definitive an answer as perhaps might be desired, partly because of the difficulties in dealing with small funerary assemblages of ordinary, local vessels. However, the frequency of reasonable parallels between the Kataret es-Samra loculus material and L.B. I contexts at Megiddo, Hazor and Beth Shan would seem to allow an L.B. I date for the majority of the pieces. I think, therefore, that it can safely be proposed that the material from the Western loculus excavated in 1978 indicates a *terminus post quem* of L.B. I for the use of the tomb, while the finds excavated by the Jordan Survey team in 1976 show that the tomb continued to be used as a burial place into the L.B. II period.

Evidence for aditional tombs

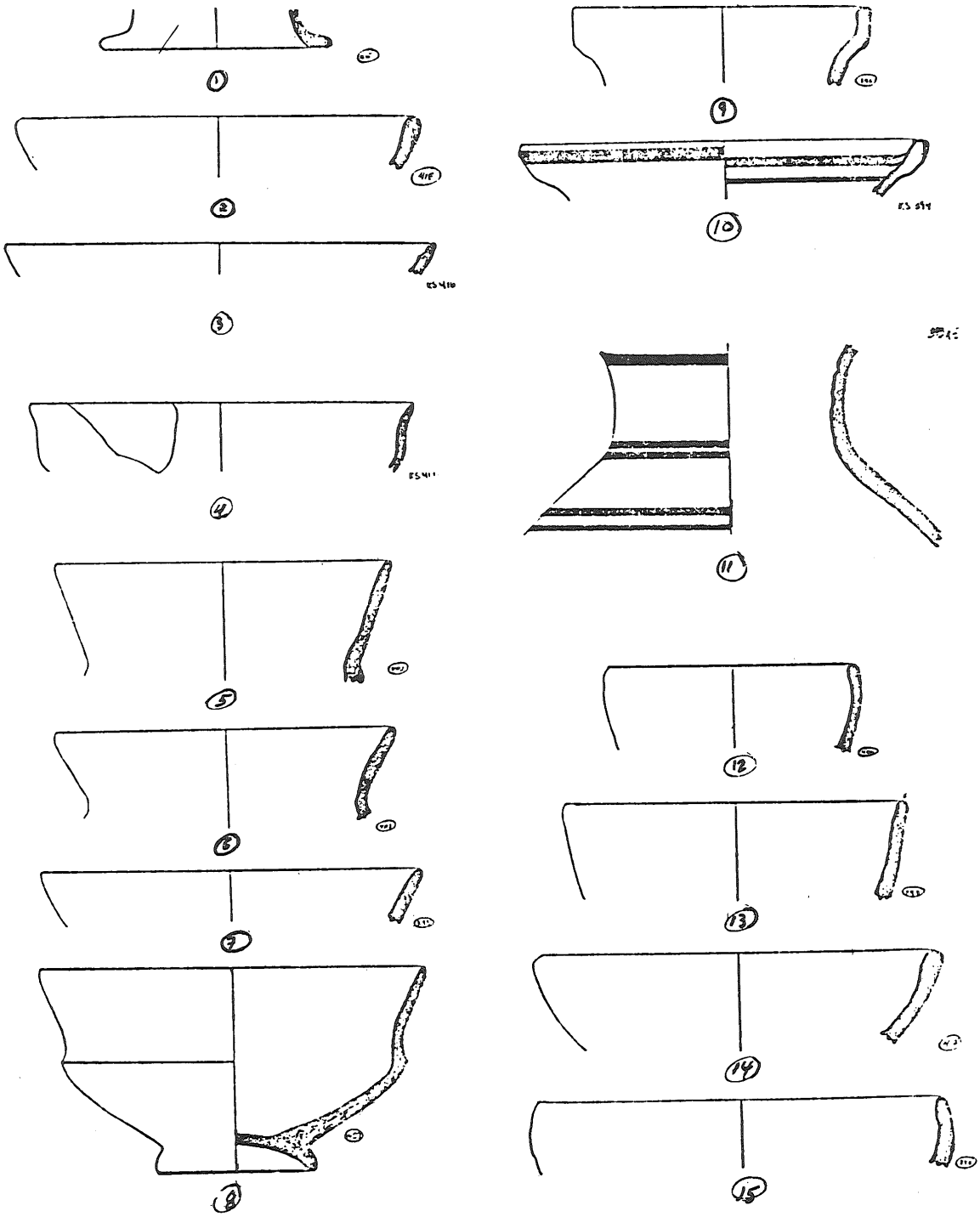
In the course of our excavation, another deposit of pottery was encountered (Fig. 5: 5-15). This material came from several loci of mixed *huwwar* that were definitely *outside* the original outline of the present tomb, and beneath a deep covering of "topsoil." This material all appears to be homogeneously L.B. II in date,[32] and would indicate that either the present tomb, or another tomb in the immediate vicinity, had been disturbed during antiquity. Since ancient disturbance, as opposed to the modern clandestine digging, was not noted by the 1976 excavators, we may have here evidence for the presence of another L.B. tomb on the same *Katarrah* finger, offering the possibility that we are, in fact, dealing with a cemetery, rather than an isolated burial at Kataret es-Samra.

Survey

Additional support for the hypothesis that an L.B. cemetery exists at Kataret es-Samra came from our inspection of an adjacent *katarrah* finger (Fig. 2, our Site V). Here, in an area which had been the object of relatively recent cladestine digging, was found a small scree of sherds. The majority of these pieces were non-diagnostic body fragments of a coarse buff fabric, but they did include the rim and side of a burnished white-slipped L.B. I carinated bowl (Fig. 5:5).[33]

32 The high, concave disc-base (Fig. 5:8) although not the norm, is not unique (cf. *Hazor* I, Pl. CXXVI:20). The linear painted storage jar is very common at Hazor (cf. *inter alia, Hazor* II, Pl. CXXXIX:16, Tomb 8065).

33 Cf. *inter alia, Megiddo* II, Pl. 61:5. The burnished, white-slipped bowl is one of the local type-fossils of the L.B. I period (cf. *APHL*, p. 125) and appears in many of the previously cited L.B. I contexts at Megiddo, Hazor and Beth Shan.



5. L.B. fragments from Kataret es-Samra. Nos. 1-3 from the western loculus; No 4 from "site" V; and nos. 5-15 from outside the Site II tomb, but beneath a thick covering of of top-soil.

The presence of these sherds, in an area otherwise totally devoid of surface artifacts, would suggest the existence of another tomb to the northwest of the one excavated by us this season. The fact that this material included a fragment of a white, burnished bowl, one of the standard type-fossil for L.B. I, would agree well with the early date that has been proposed for some of the vessels from the western loculus of the Site II tomb.

The material gathered during our pilot season at Kataret es-Samra, therefore, presents the strong possibility that during the Late Bronze Age the faces of the *katarrah* cliffs, too barren for either agriculture or grazing and too steep habitation, were utilized by the people of the area as a convenient burial ground.

To identify the site from which these people came, to bury their dead in the grey *katarrah* cliffs, we need not search very far. A short distance to the northwest of Site V, and separated from it by a deep *wadi*, stands "Tell" Kataret es-Samra (Fig. 2, Site IV) which, at 275 M. *below* sea level, is the highest point in our survey area, affording the site a fine view over the *zor* and western *ghor*. The flat summit of this "tell," as it is labelled on many maps, exhibits a heavy sherd and flint cover, including a substantial range of local L.B. pottery as well as imported Cypriot L.B. I (W.P. V-VI) and L.B. II (W.S. II and Base Ring) wares. The proximity of the "tell" to the tomb, combined with the presence of both L.B. I and II material in both areas, offers the hope that continued work at Kataret es-Samra will provide us not only with the rare opportunity to study a Late Bronze Age, Transjordanian occupation site in complex with its cemetery, but also to refine our knowledge of the development of local L.B., forms and fabrics on the east bank of the Jordan River.

(The results of the survey portion of the initial season at Kataret es-Samra will be continued in a forthcoming issue of *BASOR*.)

CATALOGUE

Restored Vessels from the Western Loculus (Fig. 4):

A. KS407. Wheelmade. Moderately-well levigated clay. Core: 5YR 6/4 (Light Reddish Brown) to 5/4 (Reddish Brown). Black and white mineral grit to 2mm. Traces of slip on exterior 10YR 8/2 (White) mottled to grey. H. 14.9 cm., W. 07.5 cm., D. (rim) 03.3 cm.

B. KS414. Wheelmade. Well levigated clay. Core: 5YR 7/6 (Reddish Yellow). White grit to 1mm. Slip: traces of 2.5YR 6/6 (Light Red) on exterior.
H. 32.7 cm., W. 23.5 cm.

C. KS412. Wheelmade. Moderately-well levigated clay. Core: 7.5YR 6/4 (Light Brown). Black and white mineral grit and straw casts to 2mm. Slip: int/ext, 7.5YR 8/6 (Reddish yellow). Traces of burning at spout. H. 06.8 cm., Rim: 14.1 x 15.3 cm.

D. KS413. Wheelmade. Well levigated clay. Core: between 7.5YR 7/4 and 8/4 (Pink). Black grit to 1mm. Slip:exterior 2.5YR 4/6 (Red), interior as core. Traces of black paint (metope pattern?) on shoulder.
H. 15.3 cm. W. 17.0 cm.

E. KS409. Wheelmade. Well levigated clay. Core: 7.5YR 8/6 (Reddish yellow). White and black mineral grit to 1mm. Traces of slip int/ext, 7.5YR 8/2 (Pinkish White).
H. 11.5 cm., D. 20.2 cm.

F. KS408. Wheelmade. Well levigated clay. Core: 7.5YR 7/4 (Pink). White and black mineral grit to 1mm. Slip: int/ext 10YR 8/3 (Very Pale Brown). Traces of secondary burning on interior.
H. 10.0 cm., W. 22.0 cm.

G. KS410. Wheelmade. Well levigated clay. Core: 5YR 5/6 (yellowish Red) to 2.5YR 6/6 (Red). Black and White mineral grit to 1mm. Slip: int/ext, 2.5Y 8/2 (White).
H. 10.2 cm., W. 23.0 cm.

H. KS411. Wheelmade. Well levigated clay. Core: 10YR 7/3 (Very Pale Brown) to 7.5YR 8/6 (Reddish Yellow) just below slip. Slip: int/ext, 2.5YR 5/8 (Red). Circular Burnish. H.09.3 cm., W. 25.6 cm.

SHERDS FROM OR ASSOCIATED WITH THE TOMB (Fig. 5)

1. KS415. Site II. Wheelmade. Well levigated clay. Core: 7.5YR 8/4 - 7/4 (Pink). White and grey grit to 1mm; frequent sand-sized straw casts. Slip: traces of 10YR 8/1 (White). Very abraded.

2. KS418. Site II, Loc. 2002. Wheelmade. Well levigated clay. Core: between 7.5YR 6/6 (Light Brown) and 6/4 (Reddish Brown). Very frequent black, and occasional white, grit to 1mm. Surfaces: Plain.

3. KS416. Site II. Wheelmade. Moderately well levigated clay, but very soft and lightly fired. Core: between 7.5YR 8/6 and 7/6 (Reddish yellow). Occasional sand-sized white grit, frequent straw casts, 3 - 5 mm. Surfaces: as core. Very abraded.

4. KS406. Site V. Wheelmade. Very well levigated clay. Core: white. Sand-sized

white and red-brown grit, occasional fine straw casts. Slip: int/ext, White (No Munsell equivalent). Circular "wheel" burnishing int/ext.

5. KS402. Site II. Wheelmade. Well levigated clay. Core: near 7.5YR 7/2 (Pinkish Grey). Sand-sized white grit, infrequently to 1 mm.; fine straw casts. Slip: int/ext, 10YR 8/3 (Very Pale Brown).

6. KS403. Site II. Wheelmade. Core: 2.5YR 6/4 (Light Reddish Brown). Sand-sized white grit, occasionally to 1 mm. Slip: traces int/ext, 10YR 8/2 (White).

7. KS399. Site II. Wheelmade. Well levigated clay. Core: 7.5YR 7/6 (Reddish yellow). White and grey sand-size grit to 1 mm. Traces of slip, 10YR 8/2 (White) on int/ext surfaces.

8. KS401. Site II. Wheelmade. Well levigated clay. Core: 2.5YR 6/6 (Light Red). Sand-sized white and grey grit. Slip: interior, 5YR 7/6 (Reddish yellow); exterior and under base, 10YR 8/3 (Very Pale Brown).

9. KS396. Site II. Wheelmade. Well levigated clay. Core: 10YR 8/4 (Very Pale Brown). Very fine straw casts. Slip: interior, 10YR 8/2 (White); exterior, 5YR 4/3 (Reddish Brown). Possible brown radial slashes of paint on top of rim.

10. KS394. Site II. Wheelmade. Well levigated clay: 10R 6/6 (Light Red). Core: grey to 2mm. White and grey grit to 1mm. Slip: int/ext 7.5YR 8/4 (Pink). Paint: linear decoration int/ext, 5YR 4/3 (Weak Red).

11. KS395. Site II. Wheelmade. Well levigated clay. Core: 7.5YR 7/4 (Pink). Sand-sized white grit, fine straw casts. Slip: int/ext, 10YR 8/3 (Very Pale Brown). Paint: exterior, linear decoration, 7.5YR 4/2 (Weak Red).

12. KS400. Site II. Wheelmade. Well levigated clay. Core: 7.5YR 8/4 (Pink). White and grey grit to 2mm; straw casts to 1mm. Slip int/ext, as core.

13. KS397. Site II. Wheelmade. Well levigated clay. Core: 7.5YR 6/4 (Light Brown). White and grey grit occasionally to 1mm, very fine straw casts. Slip: int/ext, 7.5YR 8/4 (Pink).

14. KS417. Site II, Loc. 2018. Wheelmade. Moderately well levigated clay. Core: 5YR 6/6 (Reddish yellow). White, grey and red sand-sized grit; infrequent fine straw casts. Slip: int/ext, between 7.5YR 6/4 (Light Brown) and 5/4 (Brown).

15. KS398. Site II. Wheelmade. Poorly levigated, very soft fabric. Core: 7.5YR 8/4 (Pink). Grey and white grit to 1mm; frequent straw casts to 4mm. Slip: int/ext, 2.5YR 5/4 (Reddish Brown).

Albert Leonard Jr.

COINS FROM SAMARIA-SEBASTE

by
W. J. Fulco and F. Zayadine

Introduction*:

From October 1965 to 6 June 1967, the Department of Antiquities conducted an intensive programme of excavations and clearance at Samaria-Sebaste, which had remained untouched since the work of the Joint Expedition in 1932-35.[1] The new project was financed by U.S. Agency for International Development and was supervised by the late Paul W. Lapp of ASOR. On the Jordanian side, the staff consisted of F. Zayadine as archaeologist-in-charge with Hifzi Haddad and Hussein Qandil as assistants. Mr. Rudy Dornemann replaced Dr. Lapp during the fall of 1966. Because the project aimed at the development of the site for tourism, the excavation programme included the reopening of the old trenches and the completion of the previous excavations. The crew, which was gradually raised from 25 to 200 men, extended the work from the Theater to the Colonnaded Street, the West Gate and the Augustus Temple (Fig. 1).

Unfortunately the war interrupted the project and only short reports were published.[2] F. Zayadine remained for a few months at the Ecole Biblique of Jerusalem after the war and published an Iron Age Tomb.[3] He was able to salvage the objects, including the coins.

A short account of the progress of excavations will certainly help place the collection in its archaeological and architectural context, but it is at present impossible to publish the sections and the detailed description of the excavated monuments. It is hoped that in future it will be possible to publish the large amount of pottery, especially the important collection of Rhodian jar-handles.

The Theater, which is built into the northern slope of the *tell* (Figs. 1-2 and Pl. L,1), was discovered, partly excavated and filled back by the Joint Expedition in 1932. This small monument in its present state belongs to the building operations of Septimius Severus at the beginning of the third century AD. as indicated by two Corinthian capitals from the back wall of the stage. But this late theater took the place of an earlier one probably built by Herod the Great (37-4 BC) for we discovered during consolidation that most of the substructures of the actual seats are in fact smaller seats belonging to a previous theater. A sounding dug in the orchestra showed unfortunateley no traces of an earlier phase. The theater was ruined in the late fourth or early fifth century AD : some of its granitic columns were taken to the upper church of St. John the Baptist and

* A registry-book of the collection with preliminary identifications was prepared by Ioanna and Fawzi Zayadine. The final reading and photographs in the present Catalog are the work of William J. Fulco.

1. J.W. Crowfoot and others, *Samaria-Sebaste*, I, II, III, London 1942-1957.

2. F. Zayadine, *ADAJ*, XI (1966), pp. 53-64; *RB* 73 (1966) Chronique, pp. 576-580; *ADAJ*, XII-XIII (1967-68), pp. 77-80; *Bible et Terre Sainte*, 121 (1970).

3. *RB* 75 (1968), pp. 562-585.

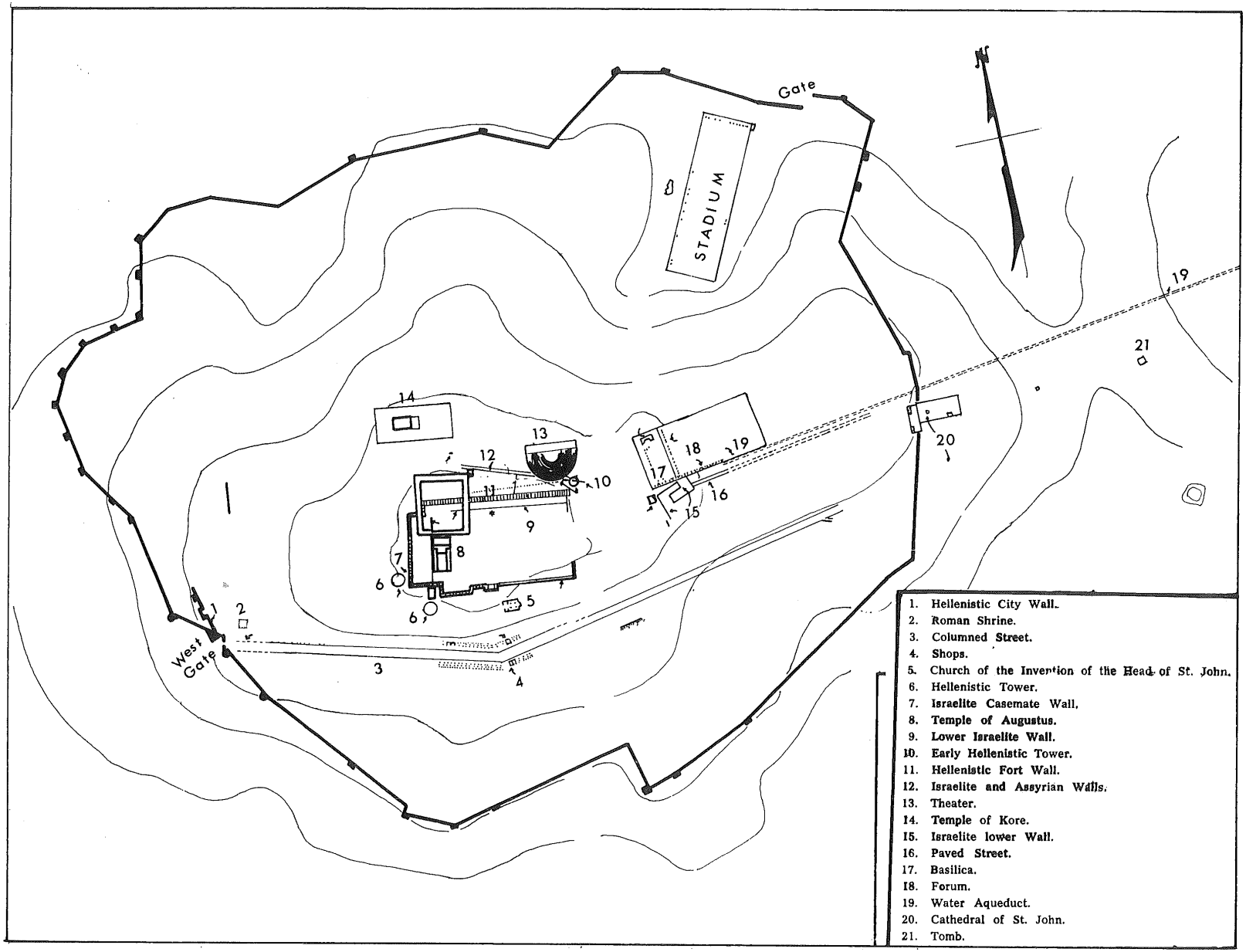


Fig. 1. Plan of Sameria - Sebaste (after Crowfoot SSI)

a lime soil very rich in coins of the 4th and 5th century was laid over the orchestra. Since the monument was very poorly preserved, the Joint Expedition was lucky to discover the stairway still standing in the fifth *cuneus*. Nevertheless, it was in the upper storey that we encountered new and attractive features: in this area three successive walls were exposed, and they will be described from south to north (Fig. 1):

The City Walls :

The innermost defensive wall is the Hellenistic Fort Wall (Fig. 1, 11 which is four metres wide and was built with undressed stones. It ran parallel with the Israelite lower wall of the 9th-8th century BC which averages 3.60m in width and was characterized by its technique of well-dressed headers and stretchers. The Hellenistic round tower of the 4th century BC was built into this wall. But one of our most interesting but puzzeling discoveries was a massive wall (12) about 5.50m wide, which thickens the lower Israelite wall. It was constructed mainly with headers of 1.0m x 0.30m; its northern face (Wall D) was restored during the excavations. The foundation trench of this imposing wall provided pottery of the Late 8th century, including Assyrian bowl rims. Thus, the new structure was related to the rebuilding operation of Sargon II, after the sack of the city in 721 BC, as stated in his Annals.[4] A segment of this wall was excavated by the Joint Expedition and vaguelly identified as "pre-Hellenistic"[5], because of their limited sounding.

The above-mentioned headers were largely robbed in many places to erect the Hellenistic tower, and it was in the robbing pits that interesting finds were recovered: a group of Early Hellenistic pottery[6] appeared in trench V, Sq. 12:5; a late 4th century BC "Achaemenid"-type gold double-daric[7] (Pl. L,2) weighing 16mg was discovered in trench III, Sq.21. In trench II, Sq.56:6 a silver drachma, dated to c.425 BC, came to light (Catalog No. 1 = S247). Several bronze coins of Ptolemy I (304-282 BC) and Ptolemy II (285-246) were found N° s. 13-51). The Seleucid occupation of Palestine is also very well attested: there are 33 coins (n°s 58-90) of Antiochus III the Great (223-187 BC) who captured Samaria from Ptolemy IV in 189 BC.

the Colonnaded Street, which is about 900m long, runs along the southern slope and links the West Gate with the Forum and the East Gate, probably near the cathedral of St. John the Baptist. This main access to the city was lined on both sides by mono-shaft columns, 4.50m high, still standing in the olive trees. A large trench of 50m x 15m was dug down to the original floor. Sporadic flagstones were encountred, for this commercial artery -- certainly in use during the Hellenistic period -- was invaded in Byzantine times by poor and rather ugly little shops, the floors of which were very rich in coins of the 4th century AD. A thick

4. J.B. Pritchard, (ed.) *Ancient Near Eastern Texts*, 1955, p. 284.

5. *Samaria-Sebaste*, I, pp. 16 and 108-109.

6. *ADAJ*, XI (1966) pp. 53-64.

7. In a transition period after the battle of Arbela in 331 BC, Alexander's satraps issued coins (most notably double darics) in imitation of the Achaemenids, especially Darius III (337-330 BC), to whom this coin was earlier (*ADAJ*, 1967-68, p. 78) tentatively attributed. It was issued from Babylon, probably under the satrap Mazaeus, shortly after 331 BC. Cf. D.R.Sear, *Greek Coins*, London, 1979, N°6158.

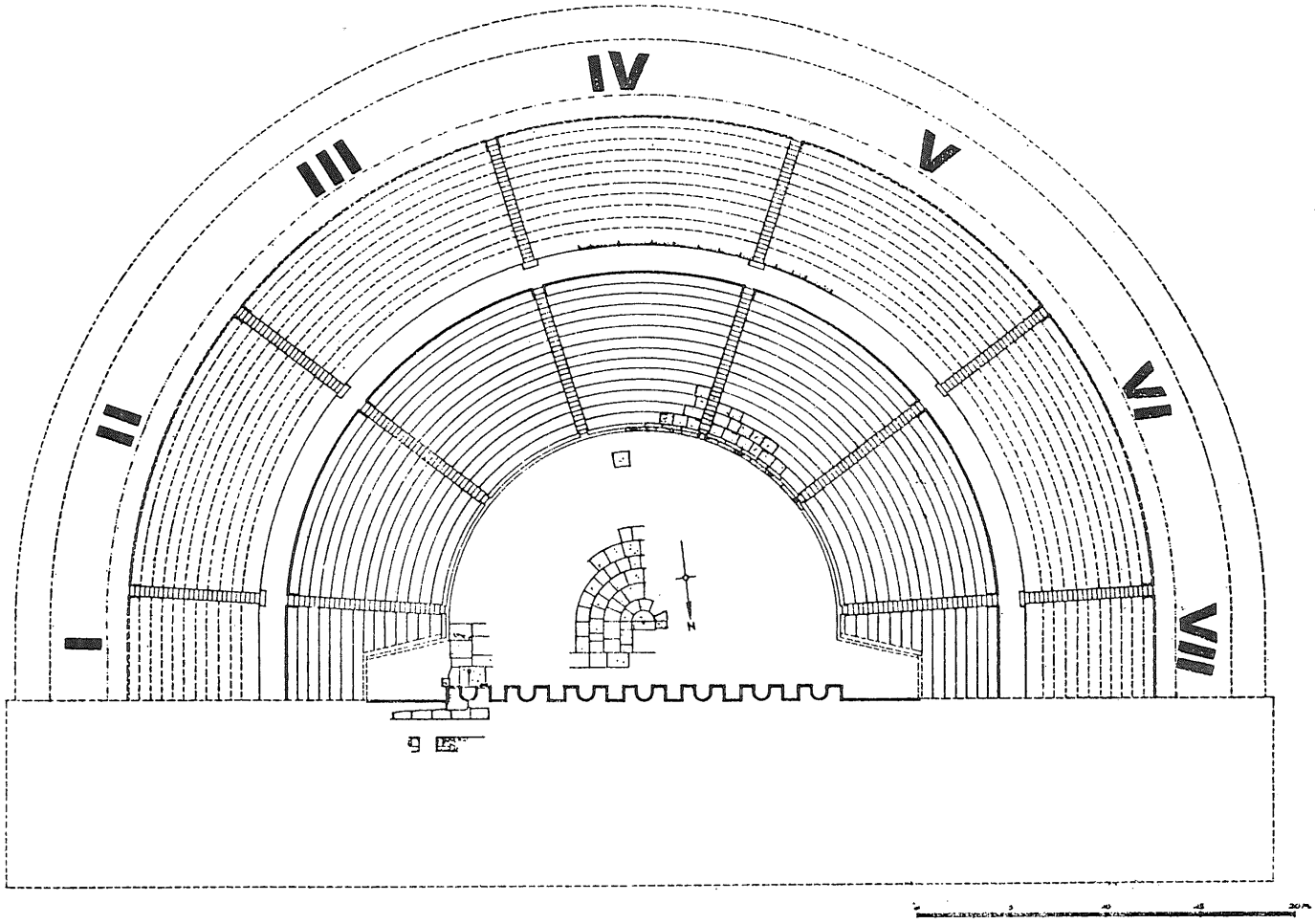


Fig. 2. Restored Plan of Theater (S.S.I, p. 58). The excavated trenches are I-V.

layer of burning marks the end of the early Byzantine occupation and this disaster was associated with the Samaritan revolt[8] in 529 AD or with the 551 earthquake.[9] Some coins (N°s 335-377) attributed to Constans II (641-668 AD) provide the evidence of the latest Byzantine occupation. After the Muslim Conquest, the area was used for agricultural purposes. Retaining walls crossed the whole excavated trench from east to west, and some Umayyad falûs (N°s 338-40) were found, including one of 'Abd-al-Malik ibn Marwan (685-705). Other Arab coins belong to the Abbasid period (N° 341) and, the latest, to the Mamluk rule (N°s 342-44).

At **the West Gate**, the programme included the removal of the old excavation dumps, which obscured the Herodian walls, and the digging of a new control trench near the south round tower. The trench, which reached bedrock, revealed a stratigraphy from the Byzantine period down to the Iron Age II. A quarry was exposed at the deepest level, associated with 9th century BC sherds. The earliest coins, those of Ptolemy I (N°s. 14 and 15), were found in Sq. 6:3 and 14:6, which is the lowest Hellenistic layer. Several Seleucid coins of Demetrius II (130-125 BC) and Alexander II (128-123 BC) were found; while a Byzantine coin of Constantine II (337-361) marks the latest occupation of the site.

When the June war broke out, we were in the process of clearing the courtyard of the temple at the summit, erected by Herod the Great, in honor of his protector, the emperor Augustus and restored in the Severan period. The Idumean king renamed the city "Sebaste" (=Augusta), after his friend, and rebuilt its walls and monuments on a large scale about 25 BC. According to Josephus,[10] Herod "thought of making a third rampart (after the Antonia and the royal palace in Jerusalem) against the entire "nation out of Samaria." The city played a major role in the brilliant but cruel career of this monarch; it is therefore surprising that comparatively few Herodian and Jewish coins (N°s 122-134) were found."

8. F.M. Abel, *Histoire de la Palestine*, II, Paris, 1938, p. 355.
9. D.H. Kaliner-Amiran, *IEJ*, I (1950-51) p. 226.
10. *Jewish Antiquities*, XV, 292.

Catalog of Coins

(Pl. LI - LVI)

The condition of the coins is indicated according to the system used in British and American publications. With Roman coins displaying a portrait on the obverse, the portrait is that of the emperor unless otherwise indicated. Measurements in millimeters (mm.).

FDC	= Mint State	prob.	= probably	hd.	= head
EF	= Extremely Fine	O.C.	= off-center	diad.	= diademed
VF	= Very Fine	illeg.	= illegible	cuir.	= cuirassed
F	= Fine	*	= illustrated	laur.	= laureate
VG	= Very Good			dr.	= draped
G	= Good	Obv	= Obverse	rad.	= radiate
f.	= fair	Rev	= Reverse	stdg.	= standing
p.	= poor	ex.	= exergue	std.	= seated
		leg.	= legend		
T.O.	= traces of	r.	= facing to right	AR	= Silver
ob.	= obliterated	l.	= facing to left	AE	= Bronze
a	= almost, about	adv.	= advancing	Bi	= Billon

* * *

GREEK

(1) [=S247] Athens AR Drachma, c. 425 BC. 15 mm. Holed VG/VG. *
Obv: Hd. of Athene r., wearing crested helmet.
Rev: AΘE. Owl stdg. r., hd. facing.

(2) [S255] Sidon (Persian), c. 375 BC. AE 14 mm. G/f. *Obv only.
Obv: King of Persia adv. r., with bow and arrow.
Rev: War-galley over waves.

(3) [S17] Macedon, Interregnum, c. 286-277 BC. AE 14 mm. f./F. *Rev only.
Obv: Macedonian shield; in center, Gorgon-head.
Rev: [BA] Macedonian helmet with crest.

(4) [S197] As (3), 17 mm., f./p.

(5) [S204] As (3), 17 mm., VG/VG.

(6) [S283] Tyre, 1st-2nd Cen. AD. AE 18 mm., VG/F. *
Obv: Hd. of Tyche, r.
Rev: IERAC MHTPOΠOΛEΩC over galley.

(7) [S246] Tyre, 2nd Cen AD. AE 13 mm. p./f. Rev leg. illeg.
Obv: Hd. of Tyche, r.
Rev: Palmtree.

(8) [S235] As (7); 16 mm., p./f.

(9) [S161] Prob. as (7), 12 mm., p./ob.

(10) [S11] Prob. as (7), 14 mm., heavy module, ob./p., Rev: T.O. palmtree?

(11) [S287] Ptolemais-Ace, 2nd-3rd Cen. AD. 16 mm., p./p., leg. illeg.
Obv: Jugate hds. r. (Dioscuri).
Rev: Intertwined cornucopiae.

(12) [S249] Uncertain, AR 10 mm., .320 gr. (hemiobol?) G/G. *
Obv: O.C., forepart of horse, prancing r. Winged? Horned?
Rev: Clothed figure std. r., spear or staff behind.

Although no such combination of dies is attested for Seleucid coinage, I was tempted to identify the reverse figure as Zeus and, on the basis of style, attribute the coin to Antiochus I, perhaps with accidentally mixed dies.

In a private communication, Nancy M. Waggoner, Curator of Greek Coins, The American Numismatic Society, New York, suggests, "I am more inclined to think it might come from a 4th Cen. BC mint in Cilicia, where we do find small denominations, sometimes with Baʿaltarz seated right, and sometimes winged Pegasus protome; but I cannot find the two in combination with each other."

[Readers of ADAJ who know of some parallel to this most interesting coin are invited to correspond with the authors.]

PTOLEMAIC

Ptolemaic bronzes are notoriously difficult to attribute. Despite the clearcut divions found in some reports, deciding between mintages of one Ptolemy or another is often impossible. The attributions that follow are conservative.

(13) [S18] Ptolemy I Soter, 323-284 BC. AE 20 mm. aVF/aVF. *
Obv: Hd. of Alexander III the Great with horn of Ammon, r.
Rev: Eagle, wings opened, hd. l. In l. field, EY = Mint of Euesperides = Berenice. Leg. off flan.

(14) [S276] Ptolemy I. AE 19 mm. aVF/F. *
Obv: As (13)
Rev: As (13), but in l. field, branch: ℽ. T.O. Inscription. cf. BMC 62.

(15) [S280] Ptolemy I. AE 26 mm. G/VG.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings open, hd. l. In l. field, Σ ; [ ] BAΣILEΩΣ. Mint of Salamis.

(16) [S203] Prob. Ptolemy I. AE 19 mm. p./p.
Obv: Hd. of Herakles, r.
Rev: Eagle. In l. field, EY. leg. ob. Mint of Euesperides.

(17) [S10] Ptolemy I or II, 323-284, 284-247 BC. AE 26 mm. f./f.
Obv: Hd. of Ptolemy I or II, r.
Rev: Eagle, wings open, hd. l. Leg. ob.

(18) [S194] As previous, 18 mm. G/G.*
Obv: As (17)
Rev: Eagle, wings open, hd. l. ΠTOLEM[. At feet of eagle: ● .

(19) [SA27] Ptolemy II, 284-247 BC. AE 42 mm. F+/F. *
Obv: Head of Zeus-Ammon, r.
Rev: Eagle, wings closed, hd.

to r. ΠΤΟΛΜΑΙΟΥ ΒΑΣΙΛΕΩΣ tween feet: ΔΔ .

(20) [S196] Prob. Ptolemy II. AE 25 mm. F/F+. *
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings closed. To 1., club = Mint of Tyre. ΠΤΟΛΕ-ΜΑΙΟΥ ΒΑΣΙΛΕΩΣ.

(21) [S199] Prob. Ptolemy II. AE 16 mm. aG/aG.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd. 1., ΒΑΣΙΛΕΩΣ ΠΤΟΛΕΜΑΙΟΥ. To 1., club = mint of Tyre.

(22) [S201] Prob. Ptolemy II. AE 20 mm. ob./p.
Rev: T.O. Eagle, leg. ob.

(23) [S207] Prob. Ptolemy II. AE 24 mm. F/p. *Obv only.
Obv: Hd. of Zeus-Ammon, r.
Rev: T.O. Eagle, ΠΤΟΛΕΜΑΙΟΥ [

(24) [S209] Prob. Ptolemy II. AE 24 mm. p./p.
Obv: Hd. of Zeus-Ammon, r.
Rev: T.O. Eagle, legend.

(25) [S210] Prob. Ptolemy II. AE 19 mm. G/VG.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings closed, hd. 1. ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ. To 1., club = mint of Tyre.

(26) [S213] Prob. Ptolemy II. AE 20 mm. aVF/p. *Obv only.
Obv: Hd of Zeus-Ammon, r.
Rev: Eagle, hd. 1., leg. ob.

(27) [S215] Prob. Ptolemy II. AE 23 mm. G/aF. *Rev only.
Obv: Hd of Zeus-Ammon, r.
Rev: Eagle, wings closed, hd. 1. ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ.

To 1., club = mint of Tyre.

(28) [S216] Prob. Ptolemy II. AE 28 mm. G/f.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd. 1., leg. ob.

(29) [S220] Prob. Ptolemy II. AE 21 mm. p/aG.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd. 1., ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ.

(30) [S221] Prob. Ptolemy II. AE 28 mm. ob./p.
Rev: T.O. Eagle, leg. ob.

(31) [S223] Prob. Ptolemy II. AE 18 mm. p./VG.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd. 1. ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙΛΕΩΣ.

(32) [S226] Prob. Ptolemy II. AE 28. G/p.
Obv: Hd of Zeus-Ammon, r.
Rev: T.O. Eagle. leg. ob. In 1. field, letter: N? M? W?

(33) [S227] Prob. Ptolemy II. AE 17 mm. p./p.
Obv: T.O. hd. r.
Rev: T.O. eagle, hd. 1. Leg. ob.

(34) [S229] Prob. Ptolemy II. AE 22 mm. p./f. As (33).

(35) [S231] Prob. Ptolemy II. AE 23 mm. p./f. As (33).

(36) [S240] Prob. Ptolemy II. AE 20 mm. p./f. As (33), but club on Rev = mint of Tyre.

(37) [S242] Prob. Ptolemy II. AE 25 mm. F/F. *Obv only.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings closed, hd.

1. [ΠT]OΛEMAIOY BAΣIΛE[ΩΣ]. To lower l., club = mint of Tyre.

(38) [S243] Prob. Ptolemy II. AE 26 mm. VG/VG. *
Obv: Hd of Zeus-Ammon, r.
Rev: Eagle, wings opened, hd. l. leg. ob.

(39) [S245] Prob. Ptolemy II. AE 30 mm. ob./p.
Rev: T.O. Eagle. Leg. ob.

(40) [S248] Prob. Ptolemy II. AE 15 mm. G/f.
Obv: Hd. of Zeus-Ammon, r.
Rev: T.O. Eagle, in l. field: club = mint of Tyre. leg. off flan.

(41) [S250] Prob. Ptolemy II. AE 17 mm. ob./very p.
Rev: T.O. Eagle, leg., and club of mint of Tyre.

(42) [S251] Prob. Ptolemy II. AE 23 mm. p./p.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd. l., to l. club of Tyre; leg. ob.

(43) [S253] Prob. Ptolemy II. AE 20 mm. f./f.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings opened, hd. l. ΠTOΛEMAIOY BAΣIΛEΩΣ.

(44) [S254] Prob. Ptolemy II. AE 30 mm. G/aG.
Obv: Hd. of Zeus Ammon, r.
Rev: Eagle, hd. l. leg. ob. In l. field: ⊡ .

(45) [S256] Prob. Ptolemy II. AE 28 mm. f./f.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings opened, hd. l, stdg. on branch. BAΣIΛ[.

(46) [S262] Prob. Ptolemy II. AE 18 mm. p./p.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings opened, hd. l. To l., club = mint of Tyre. leg. ob.

(47) [S270] Prob. Ptolemy II. AE 23 mm. a ob./a ob.
Rev. T.O. Eagle.

(48) [S206] Ptolemy II or III, 284 -247, 247-222 BC. AE 32 mm. VG/ob.
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, hd l. ΠTOΛEMAIOY BAΣIΛEΩΣ.

(49) [S214] Ptolemy II or III, AE 40 mm. G/VG. *
Obv: Hd. of Zeus-Ammon, r.
Rev: Two eagles, wings closed, hds. l. Between legs of eagle on l, P. Between legs of eagle on r., unidentifiable symbol. ΠTOΛEMAIOY BAΣIΛEΩΣ.

(50) [SA7] Ptolemy II or III. AE 25 mm. ob./p.
Rev: T.O. Eagle.

(51) [SA19] Ptolemy II or III. AE 23 mm. ob./ob. Attribution by appearance of flan.

(52) [S14] Ptolemy III, 247-222 BC. AE 25 mm. aVF/VG. *
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle on branch, wings closed, hd. l. To left, club = mint of Tyre. ΠTOΛEMAIOY BAΣIΛEΩΣ.

(53) [S275] Ptolemy III. AE 33 mm. aVF/aVF. *
Obv: Hd. of Zeus-Ammon, r.

Rev: Eagle, wings closed, hd. l. Upper r. behind eagle, cornucopia. To l, club = mint of Tyre. Counterstamp, r. field:  . ΠΤΟΛΕΜΑΙΟΥ ΒΑΣΙ[ ].

(54) [S19] Prob. Ptolemy III. AE 27 mm. VG/G. *
Obv: Hd. of Zeus-Ammon, r.
Rev: Eagle, wings closed, hd. l. Leg. off flan. Countermark:  = mint of Berytus (trident).

SELEUCID

The remarks made above about Ptolemaic issues apply equally to Seleucid, i.e., the small bronzes are notoriously difficult to attribute with certainty, especially in the earlier period.

(55) [S180] Seleucus II, 246-226 BC. AE 18 mm. very p./f.
Obv: T.O. hd., r.
Rev: T.O. bow and quiver, BA]ΣΙΛ[ΕΩΣ ΣΕΛΕΥΚ[ΟΥ.

(56) [S272] Seleucus II. AE 21 mm. f./p.
Obv: T.O. hd., r.
Rev: Unclear; elephant stdg. r.? At lower center, countermark in square: 

(57) [S258] Seleucus II. AE 22 mm. p./p.
Obv: T.O. hd., r.
Rev: Elephant stdg. r., leg. ob. Counterstamp in square: 

(58) [S4] Antiochus III, 222-178 BC. AE 11 mm. p./F. *Rev only.
Obv: T.O. hd., r.
Rev: O.C. Apollo stdg. l., resting l. arm on bow.]TIOX[

(59) [S62] As (58), 10 mm, ob./p.

(60) [S195] As (58), 11 mm, G/G, Rev. leg. ob.

(61) [S198] As (58), 13 mm, f./F
Obv: hd. r. in circle of dots.
Rev: ΒΑΣΙΛΕΩΣ ΑΝΤΙΟΧ[ΟΥ].

(62) [S202] As (58), 12 mm, p., 50 % O.C./G. Full Rev. leg. as on (61).

(63) [S208] As (58), 11 mm, p./f.

(64) [S211] As (58), 10 mm, ob./p.

(65) [S217] As (58), 9 mm, thick module, VG/VG. T.O. Rev. leg.

(66) [S218] As (58), 12 mm, f./f.

(67) [S219] As (58), 12 mm, G/f.
On Rev: ΑΝΤΙΟΧΟΥ.

(68) [S224] As (58), 10 mm, p./p.

(69) [S225] As (58), 12 mm, f./f.

(70) [S232] As (58), 13 mm, G/VG+.
On Rev: full leg. except for [ΧΟΥ] *Rev only.

(71) [S233] As (58), 10 mm, f./p.

(72) [S234] As (58), 11 mm, aF/f.
*Obv only.

(73) [S237] As (58), 11 mm, p./p.
On Rev:]ΑΣΙ[.

(74) [S239] As (58), 12 mm, ob./p.

(75) [S257] As (58), 12 mm, p./p.

(76) [S268a] As (58), 12 mm, ob./p.

(77) [S269] As (58), 11 mm, p./p.
On Rev:] ΑΝ[.

(78) [S273] As (58), 15 mm, ob./p.

(79) [S291] As (58), 11 mm, aF/aF.
On Rev: ΒΑ]ΣΙΛΕΩ[Σ ΑΝ]ΤΙΟΧΟ[Υ
*Rev only.

(80) [SA8] As (58), 11 mm, f./aG.

(81) [S261] As (58), 11 mm, p./f. On Rev: BAΣI]ΛEΩ[Σ ANT[IOXOY

(82) [SA17] As (58), 12 mm, p./p.

(83) [SA21] As (58), 11 mm, ob./p. On Rev: B]AΣIΛ[EΩΣ A]NTI[OXOY

(84) [S212] Antiochus III, 222-178 BC. AE 10 mm. VG/F. *Rev only.
Obv: hd. r. in circle of dots.
Rev: Elephant stdg. r. in circle of dots. Leg. somewhat sharp, but illeg. Above, ANT[.

(85) [S236] As (84), but 20 mm. f./G. *Rev only.
On Rev: ANTIOX[OY.

(86) [S252] As (84), 12 mm. F/aF.*
Rev: Above, BAΣIΛ[. Below,]NT[?

(87) [SA13] From appearance of flan, Seleucid and prob. Antiochus III. AE 12 mm, obliterated.

(88) [SA11] As (87), AE 11 mm, T.O. Seleucid (Ant. III) Types.

(89) [SA12] As (87), AE 11 mm, ob./very p. On Rev:]OX[

(90) [SA24] Prob. Antiochus III, AE 9 mm, VF/VF but both sides about 75% O.C.
Obv: Hd. r. in circle of dots.
Rev:]XOY.

(91) [S13] Antiochus IV, 175-164 BC. AE 14 mm, slightly serrated, VG/VG. *Obv only.
Obv: Hd of Ant., radiate, r.
Rev: Figure seated, slightly to l. BAΣIΛEΩΣ ANTIOXOY.

(92) [S22] Antiochus IV, AE 15 mm, serrated, f. and 50% O.C./G. Obv and Rev as (91).

(93) [S102] As (91), AE 14 mm, serrated, VG/aG. Figure on Rev. seems to be Athene.

(94) [S230] Prob. Antiochus IV, AE 13 mm, F/aG.
Obv: Hd. of Antiochus, r.
Rev: Naked Apollo std. on omphalos, l. leg. ob.

(95) [SA26] Prob. Antiochus IV, AE 14 mm, serrated, aG/aG.
Obv: Radiate hd., r.
Rev: Figure stdg. l. with spear. BAΣIΛEΩ[Σ A]NTIOX[OY.

(96) [S302] Prob. Antiochus IV, AE 21 mm, serrated, f./G.*
Obv: Hd. r., King? Apollo?
Rev: Apollo stdg. l., BAΣIΛEΩΣ[

(97) [S301] Demetrius II, 1st reign, 146-138 BC. AE 15 mm, F/aVF.*
Obv: Hd. r.
Rev: Tripod-lebes, B]AΣIΛEΩΣ ΔHMHTPIOY, with T.O. other letters.

(98) [S281] Antiochus VII, 138-129 BC. AE 16 mm, ob./very p.
Rev: T.O. headgear of Isis.

(99) [S284] Antiochus VII, AE 20 mm, p./G. *Rev only.
Obv: Hd. of Tyche, r.
Rev: Uncertain figure stdg. l., in square. T.O.]IΛEΩΣ and]EPΓETO[.

(100) [S290] Antiochus VII. AE 16 mm, F/F+. *
Obv: Helmeted hd. of Ant, r., in circle of dots.
Rev: Owl stdg r., hd. facing. BAΣIΛE[ΩΣ] ANTIOXOY EYEPΓET[

(101) [S292] Antiochus VII. AE 13

mm, thick module, p./p.
Obv: T.O. hd. r.
Rev: T.O. EYEPΓET[OY].

(102) [SA20] Antiochus VII. AE 19 mm, very p./very p.
Obv: T.O. hd. r.
Rev: T.O. headgear of Isis, Leg. ob.

(103) [S294] As (102), AE 18 mm, aVF / aF. *
Obv: Hd. r.
Rev: Headgear of Isis, BAΣI-ΛE[ΩΣ] ANTIO[XOY] EYEPΓET[OY].

(104) [S286] Prob. Demetrius II, 2nd Reign, 130-125 BC. AE 19 mm, heavily serrated, VF/G.*
Obv: Hd.r. (full hd. of hair).
Rev: T.O. figure stdg., T.O. BAΣIΛE[ΩΣ and ΔHM[.

(105) [S244] Alexander II, 128-123 BC. AE 21 mm, F/VG. *
Obv: Rad. hd. r.
Rev: Twined cornucopiae, T.O. leg,]AN[.

(106) [S279] Alexander II, as (105), AE 20 mm, F/F. *
Obv: Rad. hd. r.
Rev: Twined cornucopiae, BAΣ-IΛEΩ[Σ] with T.O. [AΛEΞANΔPOY]

(107) [S282] Prob. Alexander II; both sides virtually ob., but perhaps T.O. type of (105-6). AE 16 mm, very thick module. On Rev, two counterstamps:  and  . *Rev only.

(108) [S285] Alexander II. AE 19 mm, aVF/F.*
Obv: Hd. r.
Rev: Athene stdg. l. with spear. BAΣIΛ[EΩΣ]
OEΠ[
AΛEΞANΔ[POY].

(109) [S61] Prob. Seleucus VI, 96-95 BC. AE 12 mm, p./f. and damaged, heavily cleaned.
Obv: T.O. hd. r.
Rev: T.O. double cornucopiae. T.O.]ΛEYK[?

Coins (110) through (121) all have obliterated types, but the size and appearance of the modules suggest in each case that they are Seleucid.

(110) [S3] AE 12 mm.

(111) [S200] AE 12 mm.

(112) [S222] AE 7 mm.

(113) [S260] AE 10 mm.

(114) [S259] AE 11 mm.

(115) [S268b] AE 10 mm.

(116) [SA14] AE 10 mm.

(117) [SA15] AE 8 mm.

(118) [SA16] AE 13 mm.

(119) [SA18] AE 10 mm.

(120) [SA23] AE 14 mm.

(121) [SA25] AE 12 mm.

JEWISH

(122) [S87] Herod I the Great, 37-4 BC. Lepton, AE 14 mm, p./f. Meshorer 53, Reifenberg 33.
Obv: Anchor, leg. illeg.
Rev: Double Cornucopiae

(123) [S137] As (122), AE 13 mm, G/ob.

(124) [S238] Herod Archelaus, 4 BC -6 AD. Lepton, AE 16 mm, aG/aG. M. 61, R. 55.
Obv: Bunch of grapes on branch with leaf, HRw[ΔOY]

Rev: Helmet with cheek-pieces. T.O. leg.

(125) [S39] Agrippa I, 37-44 AD. Lepton, AE 17 mm, F/VG. M. 88, R. 59, Year 6.*
Obv: Umbrella with fringe; [BAΣIΛEΩΣ] AΓPIππA.
Rev: Three ears of barley; LS.

(126) [S2] Agrippa II, 56-95 AD. AE 20 mm, VG/G. M. 121, R.-.*
Obv: Hd. of Domitian, r. ΔOM[ITIANOC KAICAP]
Rev: Nike, r., inscribing shield. [ET] IE BA [AΓPIππ] (= year 15, i.e., 71 AD.) Struck at Paneas.

(127) [S78] Agrippa II. AE 20 mm, broken, very thick module, p./p., corroded. M. 130, R.-.
Obv: Hd. of Domitian, r. leg. ob.
Rev: Palm tree, T.O. leg. (year 25, i.e., 81 AD).

(128) [S300] Procurators (either Coponius or Ambibulus), 9-11 AD (date off flan). M.216-219, R. 120-121. AE 16 mm, VF/VF, Rev O.C.*
Obv: Ear of barley, KAICAPOC.
Rev: Palm-tree with two bunches of fruit.

(129) [S15] Pontius Pilate, 26-36 AD. M.230, R.132. AE 15 mm, p./f.
Obv: Lituus, T.O. leg.
Rev: LIZ (= year 17, i.e., 30 AD), within wreath.

(130) [S105] As (129), 16 mm, F/F.*

(131) [S69] As (129), but date not clear, M.230-231, R.132-133, (30-32 AD), p./p.

(132) [S179a] coin types ob., but from appearance of flan, Jewish lepton. AE 14 mm.

(133) [SA1] as (132), AE 14 mm.

(134) [SA5] as (132), AE 13 mm.

ROMAN PROVINCIAL

(135) [S53] Prob. Augustus, 27 BC-14 AD, diobol of Alexandria. AE 23 mm, f./f., all leg. ob.
Obv: laur. hd. r.
Rev: fig. stdg. l.

(136) [S303] Titus, 79-81 AD., a "Judaea Capta" issue, M.238, R.153 var. AE 24 mm. aF/F+.*
Obv: Head of Titus, r. T.O. leg. (AVTOKP TITOC ҜAICAP)
Rev: Trophy, full length. On lower left, captive Jewess = Judaea, mourning. To r., shield. [IOYΔAIA] EAΛWKYIAΣ.

(137) [S154b] Domitian, 81-96 AD. Samaria: Sebaste. AE 14, f./p., most types ob.
Obv: T.O. laur. hd. r.
Rev: T.O. type.]CEBA[.

(138) [S21] Hadrian, 117-138 AD. Egypt: Alexandria. Bi 30 mm. Prob. diobol, type of BMC 814. f./f. Leg. ob.
Obv: laur. hd. r.
Rev: T.O. bull stdg. r.

(139) [S263] Volusian, 251-253 AD. Samaria: Caesarea. AE 24 mm, VG/VG.* (Type of BMC 220)
Obv: Radiate hd. r. IMPCGV[.
Rev: Emperor on horseback, r. COL [PR] F AVG FC CAES METR[.

(140) [S289] From appearance, Ro-

man tetradrachm of Antioch, prob. 3rd Cen AD. Bi 22 mm, but broken in half. p./p.
Obv: T.O. hd. r., leg. ob.
Rev: T.O. eagle on branch, hd. r., leg. ob.

ROMAN

(141) [S23] Maximus Caesar, 235-238 AD. Sestertius. AE 30 mm. aVF/F.* C. 14, RIC 13, BMC 213.
Obv: draped bust, bare hd. r. MAXIMVS CAES G[ER]M.
Rev: Sacrificial implements, PIETAS AVG - S·C.

(142) [S84] Philip I, 244-249 AD. Sestertius. AE 30 mm. VF/VF.*
Obv: laur. bust r. IMP M IVL PHILIPPVS AVG.
Rev: Fides stdg. l. between two standards. FIDES MILITVM - S·C.

(143) [S68] Gallienus, 253-268 AD. Antoninianus. AE 22 mm. F/F+.*
Obv: Rad. bust r. IMP C P LIC GALLIENVS P F AVG.
Rev: Minerva, r., presenting torch to Gallienus, l. VIRTVS AVG.

(144) [S70] Valerian II, 256-258. Antoninianus. AE(Bi) 21 mm. F/F.*
Obv: Rad. bust r. VALERIANVS NOBIL CAES
Rev: Prince stdg. to l, crowning trophy on l. Holds spear and shield. PRINC IVVENTVTIS.

(145) [S89] Claudius II Gothicus, 268-270 AD. Antoninianus. AE 21 mm. aF/aF.* (C.6)
Obv: rad. bust r. IMP C CLAVDIVS AVG
Rev: Aequitas stdg. l., holding scales and cornucopia.

(146) [S288] Prob. Probus, 275-285 AD. Antoninianus. AE 24 mm. p./p.
Obv: rad. bust r. IMP C [M??
Rev: Emperor receiving globe from Roma or Jupiter. CLEMENTIA [TEMP]

(147) [S181] Diocletian, 284-305 AD. Post-reform radiate. AE 20 mm. aG/aG. (C.34, RIC 284)
Obv: rad. hd. r. IMP DIOCLETIANVS P F AVG.
Rev: Diocletian stdg. receiving Victory on globe from Jupiter. CONCORDIA MI[LITUM].

(148) [S75] Diocletian, as (147), AE 20 mm. VG/VG+.*

(149) [S77] Diocletian. Antoninianus. AE 23 mm. VF/aVF.*
Obv: rad. bust r. [IMP C] C VAL DIOCLETIANVS P F AVG.
Rev: Jupiter and Hercules facing each other, holding Victory between. IOV ET HERCV [C]ONSER AVGG. In ex: XXI. In field: Z.

(150) [S298] Diocletian. Antoninianus or post-reform radiate. AE 20 mm. p./f.
Obv: rad. bust r. T.O. leg.: IMP C C VAL DIOCLETIANVS P F AVG.
Rev: As on (147). leg. ob.

(151) [S76] Maximianus, 286-310 AD. Antoninianus. AE 22 mm. F/

AVG. * (C.54)
Obv: rad. bust r. IMP C M A MAXIMIANVS P F AVG.
Rev: Type as (147). CONCORDIA MILITVM. In field: KE.

(152) [S83] Galerius, 305-311 AD. Follis. AE 27 mm. F+/VF.*
Obv: laur. hd. r. MAXIMIANVS NOB CAES. (C. 153)
Rev: Genius stdg. l. GENIO POPVLI ROMANI. In ex: AQ⌐ = Mint of Aquilea.

(153) [S135] Licinius I, 308-324 AD. Follis. AE 25 mm, F/F.* Leg. very sharp.
Obv: diad. bust r. IMP C VAL LICIN LICINIVS P F AVG.
Rev: Jupiter stdg. l., holds Victory. Eagle at feet. In ex: SKM = Mint of Cyzicus.

(154) [S88] Licinius II, 317-324 AD. AE 3, 20 mm. (Designations such such as AE 2, AE 3, AE 4, etc., refer to relative flan-sizes for a given period.) aVF/F.*
Obv: diad. hd. left. DN VAL LICINIVS NOB C.
Rev: Jupiter stdg. l. with captive at his feet. IOVI CONSERVATORI CAESS. In r. field, ⌐ . In ex: SMANT = Mint of Antioch. (C.32)

(155) [S265] Licinius II. AE 3, 20 mm. aF/F.*
Obv: laur. hd. r. VAL LICINIVS NOB CAES.
Rev: Jupiter stdg. to r., about to hurl thunder bolts. IOVI CONSERVATORI. In ex: TARL = Mint of Arles. In l. field: C. In r. field: S.

(156) [S108] Constantine I the Great, 307-337 AD. Posthumous issue. AE 15 mm. aVF/aVF.*
Obv: Veiled hd. of Constantine, r. DN CONSTANTIVS P F AVGG.
Rev: Constantine in quadriga galloping r. Above, hand of God.

(157) [SA6] Constantine I. Posthumous issue. AE 15 mm. f./f.
Obv: Veiled hd. of Constantine, r. DN CONSTANTINVS P F AVG.
Rev: Constantine stdg. r., veiled. VN MR. In ex: SMKA = Mint of Cyzicus.

(158) [S99b] Unidentifiable, but from appearance = early 4th Cent. AE 13 mm, broken. p./p. Obv. much O.C.
Obv: T.O. diad. bust r.
Rev: T.O. one of the JOVI types with two stdg. figures. In ex: [A]QP = Mint of Aquileia.

(159) [S91] Constantine II, 337-340 AD. AE 3/4, 18 mm. F+/F+.* (C.122)
Obv: diad. bust r. CONSTANTINVS IVN NOB C.
Rev: Two soldiers on either side of two standards. GLORIA EXERCITVS. In ex: ASIS = Mint of Siscia.

(160) [S106] Constans, 337-350 AD.

[With occasional references, C. = H. Cohen, Description Historique des Monnaies frappées sous l'Empire Romain; RIC = H. Mattingly, E.A. Sydenham and others, Roman Imperial Coinage; BMC = appropriate volume of the catalogs of the British Museum collection.]

AE 16 mm. VG/G. *Obv. only.
Obv: diad. bust r. [DN] CONSTANS P F AV[G]
Rev: Two victories facing. VICTO[R]IAE DD [AVG]G Q NN
In ex: AQ = Mint of Aquileia. (cf. C. 179).

(161) [S29] Constans. AE 4, 15 mm. F/p.
Obv: diad. bust r. [DN CONST] ANS PF AVG.
Rev: Traces only. Prob. of the GLORIA EXERCITUS type.

(162) [S63] Constans. AE 4, 15 mm. F+/G.
Obv: diad. bust r. DN FL CONSTANS AVG.
Rev: leg. off flan. Type of GLORIA EXERCITUS. Two soldiers on either side of labarum.

(163) [145a] Constans (as Augustus). AE 4, 14 mm. p./aG.
Obv: T.O. hd r. leg. ob.
Rev: VOT XV MULT XX. In ex: SM[= Mint of Antioch.

(164) [S44] Constantius II, 337-361 AD (here as Caesar, 324-337 AD). AE 2, 20 mm. EF/EF.*
Obv: laur. bust left. FL IVL CONSTANTIVS NOB C.
Rev: Campgate with two turrets, star above. PROVIDENTIAE CAESS. In ex: SMKT = Mint of Cyzicus.

(165) [S49] Constantius II. AE 2, 20 mm. aEF/aEF.* (This piece and the last have also alternately been designated as AE2/3 or as half centenionales.)
Obv: diad. bust r. DN CONSTANTIVS [P F AVG].
Rev: Soldier asv. l. spearing fallen horseman. [FEL TEMP RE]-PARATIO. In ex: ANB = Mint of Antioch.

(166) [S299]Prob. Constantius II. AE 2, 20 mm, fragmentary. very p./ very p. Same type as (165), but leg. ob.

(167) [S72] Constantius II, AE 3, 19 mm. aF/f. Same as (165) with full inscriptions.

(168) [S90] Constantius II, AE 3, 18 mm. aEF/aVF.* As (165)
Obv: DN CONSTA[NTIVS P F AVG]
Rev: FEL TEMP [REPARATIO]

(169) [S66] Constantius II, AE 3, 18 mm, chipped. Same as (165). Full legends. On Rev: in ex: ANT = Mint of Antioch. In l. field: M.

(170) [S52] Constantius II, AE 3, 18 mm, F/VG. Same as (165).
Obv: DN CONSTAN[TIVS P F AVG]
Rev: [FEL TEMP RE]PARATIO.
In ex: ANT = Mint of Antioch.

(171) [S264] Constantius II, AE 3/4, 16 mm, aVG/aVG. Same as (165). Rev. leg. complete.
Obv: DN [CONSTAN]TIVS P F AVG
Uncertain mark in Rev. ex.

(172) [S86] Constantius II, AE 3/4, 16 mm, G/p. Same as (165). On Rev. only T.O. type and leg.
Obv: [DN] CONSTAN[TIVS P F AVG].

(173) [S60b] Constantius II, AE 3/4, 16 mm, VG/G. Same as (165).
Obv:]TIVS P F AVG.
Rev:]REPARATIO. In ex:

ANB = Mint of Antioch.

(174) [S278] Constantius II, AE 4, 15 mm. very p./f. Same as (165).
Obv: T.O. diad. hd r. leg ob.
Rev: Usual type (soldier spearing fallen horseman), FEL TEMP REPARATIO. In ex: AN[ ] = Mint of Antioch.

(175) [S266] Constantius II, AE 4, 15 mm, f./aG. Same as (165). Obv. leg. ob.
Rev: [FEL TEMP REPAR]ATIO. In ex: ANT = Mint of Antioch.

(176) [S189] Constantius II, AE 4, 15 mm, p./p., leg. ob., same type as (165). Ex. illeg.

(177) [S184] Constantius II, AE 4, 15 mm, aVF/F. * Most of legs. off flan. Same as (165)
Obv: [DN C]ONSTAN[TI]VS P F [AVG].
Rev: [FEL TEMP RE]PARAT[IO] In upper l. field: M.

(178) [S101] Constantius II, AE 4, 14 mm, p./p. Same as (165). T.O. types only. On Obv. can be read DN CONST[.

(179) [S65] Constantius II, AE 4, 14 mm, f./f. Type of (165). T.O. types, all leg. illeg.

(180) [S79a] Constantius II, AE 4, 13 mm, p./p. Same as (165). T.O. types only. On Obv. can be read]CONSTAN[.

(181) [S6] Constantius II, AE 4, 9 mm, aF/VG. Same as (165).
Obv: [DN CONSTAN]TIVS P F AVG.
Rev: Complete legend.

(182) [S132] Possibly Constantius II, AE 4, 15 mm, very p./p.
Obv: T.O. diad. h. r. O.C. leg. illeg.
Rev: T.O. type of (165), leg. oblit.

(183) [S144] Possibly Constantius II, AE 4, 14 mm, p./f.
Obv: hd r. leg. ob.
Rev: T.O. type of (165), [FEL TEMP] REPAR[ATIO].

(184) [S50] Possibly Constantius II, AE 4, 12 mm, f./f. All legs. ob. T.O. type of (165) on Rev.

(185) [S160a] Constantius II, AE 3/4, 14 mm, F+/F.
Obv: diad. hd. r. DN CONSTANTIVS P F AVG.
Rev: Two soldiers on either side of a labarum. GLORIA EXERCITVS. In ex: SMANT = Mint of Antioch.

(186) [S38a] Constantius II, AE 3, 17 mm, VG/VG. Same as (185). In ex: SMANTΓ = Mint of Antioch. Full legends.

(187) [S25] Constantius II, AE 4, 15 mm, F/aF. * Same as (185)
Obv:]TIVS AVG.
Rev: full legend. In ex: ANT = Mint of Antioch.

(188) [S55] Possibly Constantius II. AE 3/4, 16 mm, p./f. Same type as (185). Obv. leg. off flan.
Rev: [GL]ORIA EXER[CITVS].

(189) [S297] Constantius II, AE 3/4, 16 mm, aF/aF.*
Obv: diad. hd. r. DN CONSTANTIVS P F AVG.
Rev: In wreath: VOT XX MULT XXX. In ex: SMALE = Mint of

Alexandria.

(190) [S110] Prob. Constantius II. AE 16 mm, but only half of coin. very p./very p.
Obv: diad bust r. leg. ob.
Rev: T.O. votive type.

(191) [SA9] Constantius II, AE 4, 15 mm, f./F.
Obv: diad. hd. r. [DN] CONSTAN[TIVS P F AVG]
Rev: In wreath: VOT XX MULT XXX. In ex: [S]MANT = Mint of Antioch.

(192) [SA22] Prob. Constantius II, AE 4, 15 mm, very p./very p.
Obv: T.O. diad. hd. r.
Rev: T.O. votive type.

(193) [S296] Constantius II, AE 4, 15 mm, EF/VF.* (Cf. C.335)
Obv: diad. bust r. [DN C]ONSTANTIV[S P F AVG]
Rev: In wreath: VOT XX MULT XXX. In ex: SMANT = Mint of Antioch.

(194) [S97] Constantius II, AE 4, 15 mm, F/VG.*Obv. only. Same as (193). Rev. leg. complete except for ex.
Obv: DN CONS[TANT]IVS P F AVG.

(195) [S116] As (193) and (194), AE 4, 14 mm, EF/aF. *
Obv: [D]N CONSTAN[TIVS P F AVG]
Rev: leg. complete, except for exergue.

(196) [S31a] Possibly Constantius II. AE 4, 12 mm. very p./ob.
Obv: diad. hd r. leg. ob.

(197) [S129] Possibly Constantius II. AE 4, 13 mm. very p./ob.
Obv:T.O. diad. hd. or bust, r. DN C[

(198) [S95] Possibly Constantius II. AE 4, 13 mm. very p./very p.
Obv: T.O. diad. hd. r.
Rev: T.O. lettering on edge.

(199) [S37b] Constantius Gallus, 351-354 AD. AE 3, 16 mm.VG/G.
Obv: diad. bust of C.G. r., most of inscrip. off flan.
Rev: T.O. the FEL TEMP REPARATIO type, leg. illeg.

(200) [S42] Constantius Gallus, AE 3, 16 mm. G/aF.*
Obv: diad bust r. DN CON[
Rev: Soldier spearing fallen horseman. FEL TEMP REPARATIO.

(201) [S160b] Unidentifiable, but from style = mid-4th Cen. AE 4, 14 mm. very p./p.
Obv: T.O. diad. hd r.
Rev: T.O. Gloria Exercitus type.

(202) [S43] Julian II, 360-363 AD. AE 1, 27 mm, VF/VG+. * (Cf. C.38 ff.)
Obv: diad., dr. cuir. bust r. DN FL CL IVLIANVS P F AVG.
Rev: Bull stdg. r., two stars above. SECVRITAS REIPVB. In ex: SMANT[= Mint of Antioch.

(203) [S33] Julian II, AE 4, 16 mm, p./G. (cf. C.43
Obv: diad., dr., cuir. bust r. leg. ob.
Rev: Julian stdg. l., holding globe and spear. SPES REIPVBLICAE. In ex: SMKA = Mint of Cyzicus.

(204) [C35] Julian II, AE 3/4, 13 x 11 mm (partial flan), F/f.
Obv: (l. side of flan only),

part of diad. hd. DN IVLIANV [S NOB CAES]
Rev: FEL [TEMP REPAR]ATIO, with T.O. corresponding type. Mint of Antioch.

(205) [S38b] Possibly Julian II, AE 4, 15+ mm, irregular flan. f./f. All legs. ob.
Obv: T.O. diad. bust r.
Rev: Soldier spearing fallen horseman (type of Fel Temp Reparatio).

(206) [S126] Late 4th Cen. style. AE 4, 14 mm, p./f.
Obv: diad. bust r., leg. ob.
Rev: VOT X MULT XX.

(207) [S98] Late 4th Cen. style. AE 4, 12 mm. ob./p.
Rev: T.O. votive type in wreath.

(208) [S143a] Late 4th Cen. style. AE 4, 10 mm, very p./very p.
Obv: O.C., T.O. hd. r. leg. ob.
Rev: T.O. votive type.

(209) [S82] Late 4th Cen. style. AE 4, 9 mm. Virtually obliterated, but on Rev. T.O. votive type.

(210) [S133] Valens, 364-378 AD. AE 3, 18 mm. f./f. (Cf. C.47)
Obv: diad. dr. cuir. bust r. DN VALENS [P] F AVG.
Rev: Victory adv. l. SECVRITA[S REIPVBLICAE]. In ex: ANT = Mint of Antioch.

(211) [S26] Valens. AE 4, 15 mm. VG/VG.*
Obv: diad. dr. cuir. bust r. DN VA[LENS P F AVG]
Rev: Victory adv. l. Style of Mint of Cyzicus. [SECVR]ITAS [REIPV]BLICA[E].

(212) [S164] Prob. Valens. AE 3/4, 17 mm, broken fragment. p./p.
Obv: diad. dr. cuir. bust r. On flan:]AVG.
Rev: Victory adv. l. On flan:]REPVBLI[. Uncertain mint.

(213) [S37a] Valens. AE 3, 18 mm, irregular flan. VG/p.
Obv: diad. dr. cuir. bust r. DN VALENS [P F AVG]
Rev: Soldier with captive and standard. Leg. ob., but of the Gloria Romanorum type. Uncertain mint.

(214) [S37c] Possibly Valens. AE 3/4, 15 mm. ob./G.
Rev: Soldier dragging captive. GLORIA [ROMANORVM]. In ex: ANT = Mint of Antioch.

(215) [S20] Prob. Valens. AE 4, 12 mm. very p./very p.
Obv: O.C., T.O. hd. r. T.O. leg.:]DN V?A?L?[
Rev: T.O. Gloria Romanorum type.

(216) [S178] Gratian, 367-383 AD. AE 3/4, 15 mm, irregular. p./p.
Obv: diad. dr. cuir. bust r. DN GRAT[IANVS P F AVG]
Rev: T.O. Victory type. [SECVRITAS REI]PVBLICAE. C.35.

(217) [S85] Gratian. AE 4, 12 mm. f./p. *Obv. only.
Obv: Very small diad. bust r. [DN GR]ATI[ANVS P F AVG]
Rev: T.O. Votive type.

(218) [S54] Valentinian II, 375-392 AD. AE 4, 13 mm. G/VG.*
Obv: Small diad.dr. cuir. bust r. [DN VALE]NTINIANVS PF AVG.

Rev: Victory adv. l. with trophy, dragging captive. SALVS REIPVBLICAE. In l. field: ℙ. In ex: SMA[= Mint of Antioch.

(219) [S166] Valentinian II. AE 4, 13 mm. aVF/p. *Obv. only. Same type as (218).
Obv: Small diad.dr. bust r. T.O. leg.(mostly off flan.)
Rev: T.O. Victory type. SALVS [REIPVBLICAE]. ex. ob.

(220) [S45] Valentinian II. AE 4, 12 mm. p./f. Same type as (218).
Obv: T.O. bust. DN VA[
Rev: As above. Full legend. In ex: ANT = Mint of Antioch.

(221) [S112] Valentinian II. AE 4, 12 mm. aEF/aVF. *
Obv: diad. dr. cuir. bust r. [DN VAL]ENTINIANVS P F AV[G]
Rev: Camp gate. [GLO]RIA REI-PVBLI[CAE]. Ex. off flan.

(222) [S150] Valentinian II. AE 3, 18 mm. f./aG.
Obv: diad. dr. cuir. bust r. DN VALEN[TINIANVS P F AVG]
Rev: Soldier adv. r. with standard, dragging captive. GLORIA ROMANORVM. In ex: CONS = Mint of Constantinople.

(223) [S59] Valentinian II. AE 4, 15 mm. VF/aEF. *
Obv: diad. dr. cuir. bust r. DN VALENTINIANVS [P F AVG]
Rev: In wreath: VOT X MULT XX. In ex: ANT = Mint of Antioch.

(224) [S80] Valentinian II, AE 4, 13 mm. aG/aG. Same as (223).
Obv: DN VAL[ENTINIANVS P F AVG]
Rev: As above. In ex: CON[ ] = Mint of Constantinople.

(225) [S174] Valentinian II, AE 4, 11 mm. aVF/p. Same as (223).
Obv: DN VALENTIN[IANVS P F AVG]
Rev: As above. ex, illeg.

(226) [S267] Valentinian II, AE 3, 17+ mm. aG/aG.
Obv: diad. dr. cuir. bust, r. DN VAL[ENTINIANVS P F AVG]
Rev: Victory advancing l. with wreath. Leg. ob. except for]AVG. In r. field, star. In ex: CONS = Mint of Constantinople.

(227) [S71] Prob. Valentinian II. AE 3/4, 16 mm. p./G.
Obv: diad. hd. r., leg. ob.
Rev: Victory adv. l. [SECVRI-TAS??] REPVBLICAE. In ex: TEATIX (!).

(228) [S60a] Late 4th Cen style. AE 3, 17 mm, fragmentary. p./f.
Obv: T.O. bust r. DN[.
Rev: T.O. single stdg. figure. [REI]PVBLICAE.

(229) [S128] Late 4th Cen style. AE 3/4, 14 mm. ob./very p.
Rev: Victory adv. l. dragging captive. leg. ob. In ex: AQ[= Mint of Aquilea.

(230) [S142] Late 4th Cen style. AE 4, 14 mm. p./p. all leg. ob.
Obv: T.O. hd r. Rev: as (228)

(231) [S187] Late 4th Cen style. AE 14 mm, irregular. very p. /very p. all leg. ob.
Obv: T.O. diad.hd. r.
Rev: T.O. Victory type.

(232) [S123] Late 4th Cen. style.

AE 14 mm. f., leg. ob./ob.
Obv: T.O. hd. r.

(233) [S104] Theodosius I, 379-395 AD. AE 4, 15 mm. aF/F.*(c.30)
Obv: diad. dr. cuir. bust r. [D]N THEODO[SIVS P F AVG]
Rev: Victory adv. l. dragging captive. In l. field: ℔ . SALVS RE[IPVBLICAE]. Ex. ob.

(234) [S107] Theodosius I, AE 15 mm. aG/aG.
Obv: usual bust r. DN THEODO-SIVS P F AVG.
Rev: As (233), SALVS REIPVB-LICAE. In ex: SM[.

(235) [S114] Theodosius I, AE 13 mm. p. /f. Same as (233, 234)
Obv:[DN THE]OD[OSIVs P F AVG]
Rev: As (233), [SALVS REI]PV-BLICAE.

(236) [S146] Theodosius I, AE 13 mm. VF/VF. * (As above types)
Obv. Bust, as usual. DN THEO-DOS[IVS P F AVG].
Rev: As (233), [SALVS REI]PV-BLICAE. In ex: ANT = Mint of Antioch.

(237) [A47] Theodosius I, AE 13 mm. F/VG. (Same as above types).
Obv: DN THEO[DOSIVS P F AVG]
Rev: SALVS REPVBLICAE. In l. field: ℔ . Mint of Constantin-ople (by type). (Cf RIC 67).

(238) [A67] Theodosius I, AE 4, 9 mm. G/aF.
Obv: Usual bust r. [DN THEO-DO]SIVS P F A[VG].
Rev: Camp gate. T.O. GLORIA ROMANORUM. Ex. ob.

(239) [S74] Theodosius I, AE 4, 13 mm. F+/F+. *
Obv: diad. dr. cuir. bust r. DN THEOD[OSIVS P F] AVG.
Rev:In wreath, VOT X MULT XX. In ex: ANB = Mint of Antioch.

(240) [S145b] Theodosius I, AE 4, 12 mm. F+/VG.
Obv: diad. dr. cuir. bust r. DN TH[EODOSIVS P] F AVG.
Rev: In wreath,as (239). In ex: ANTA = Mint of Antioch.

(241) [A32a] Theodosius I, AE 4, 11 mm. p.-very O.C./oblit.
Obv: T.O. hd. r. D]N THEO[

(242) [S179b] Prob. Theodosius I. AE 4, 12 mm. p./ob.
Obv: T.O. hd. r. and leg., style of Theodosius I.

(243) [A295] Prob. Theodosius I, AE 4, 12 mm, f./f.
Obv:diad. hd r.]S P F A[VG]
Rev: Victory adv. l., dragging captive. S]ALVS R[EIPVBLICAE] In ex: ANT = Mint of Antioch.

(244) [S130] Arcadius, 383-408 AD. AE 4, 14 mm. F/aF. *
Obv: diad., dr. cuir. bust r. DN ARCADIVS [P F A]VG.
Rev: Victory adv. l. dragging captive. SALVS REIPVBLICAE. Ex. illeg.

(245) [S173] Arcadius. AE 4, 14 mm. f./aG.
Obv: diad. dr. cuir. bust r. DN AR[CAD]IVS P F AVG
Rev: As (244). SALVS [REIPVB-LICAE]. In ex: ANTA = Mint of Antioch. In l. field ℔ .

(246) [S100] Arcadius. AE 4, 13 mm, aG/p. As (245).
Obv: [DN AR]CADIVS P F [AVG]

diad. bust r.
Rev: Victory adv. l. Salus Reipublicae type.

(247) [S171] Arcadius. AE 4, 12 mm, very p./aG.
Obv: Ob. except for]ARCA[.
Rev: As (246), S]ALVS REI[.

(248) [S8] Arcadius. AE 4, 12 mm. G/very p.
Obv: diad. hd. r. DN ARCA [DIVS] P F AVG.
Rev: Type as last, leg. ob.

(249) [S158] Arcadius. AE 3, 15 mm, very p./f.
Obv: T.O. hd, leg.
Rev: Constantinople std. facing, holding Victory and spear. [CONCOR]DIA AVG.

(250) [S28c] Arcadius. AE 4, 9 mm, p./f.
Obv: T.O. bust. [DN] ARCA [DIVS P F AVG].
Rev: Cross, rest ob.

(251) [S165] Arcadius. AE 4, 11 mm, p./very p.
Obv: Hd. r. DN AR[CADIUS P F AVG].
Rev: T.O. unidentifiable type.

(252) [S27a] Prob. Arcadius. AE 4, 15 mm. f./p.
Obv: Bust r., T.O. star behind hd.
Rev: T.O. Virtus Exerciti type.

(253) [S168] Time of Valentinian II, Theodosius I and Arcadius, c. 375-408 AD. AE 4, 13 mm, very p./very p.
Obv: T.O. large diad. hd. r.
Rev: Figure with labarum adv. r. dragging captive. Gloria Romanorum type. Leg. ob.

(254) [S125] As (253), AE 4, 13 mm. p./p. T.O. same types.

(255) [S12] Honorius, 393-423 AD. AE 3, 17 mm, F+/f. *Obv only.
Obv: diad. bust r. DN HON [ORI]VS P F AVG.
Rev: Honorius stdg. hd. r., being crowned by Victory. Virtus Exerciti type, leg. ob.

(256) [S28a] Honorius. AE 3/4, 16 mm. aG/aG.
Obv: Diad. bust r. [DN HONO-RIV]S P F AVG.
Rev: Two soldiers stdg. with spears. GLO[RIA ROMANORVM]. In ex: SMN[ ] = Alexandria mint.

(257) [SA28] Honorius. AE 4, 14 mm, p./p.
Obv: Diad. bust r. Star in l. field. T.O. [HONORIVS].
Rev: T.O. one of the Gloria Romanorum types.

(258) [S163b] Honorius. AE 4, 15 mm, p./G.
Obv: Diad. hd. r. DN HO[NOR] IVS P [F AVG].
Rev: Arcadius, Honorius and Theodosius stdg. facing. Ex. ob. GLORIA ROMANORVM.

(259) [S172] Honorius. AE 4, 12 mm, irregular flan. p /p.
Obv: Diad bust r. T.O.]IV[S.
Rev: T.O. a Victory type.

(260) [S140] Honorius. AE 4, 15 mm, irregular flan. p./p.
Obv: Diad. nust r. DN HON[.

Rev: T.O. three stdg. figures.

(261) [S141] Honorius. AE 4, 12 mm. p./p. Traces only of type of (260) above.

(262) [S163a] Arcadius, Honorius or Theodosius II, 383-450 AD. AE 4, 15 mm. f./f., leg. ob.
Obv: diad. hd. r., star behind hd.
Rev: Arcadius, Honorius and Theodosius II stdg. facing. In ex: ANT[, Antioch mint. Gloria Romanorum type.

(263) [S113] As (262), AE 4, 12 mm, p./p., only T.O. types.

(264) [S169] As (262), AE 4, 15 mm, very p./p., T.O. types.
Rev: [GLOR]IA ROMANO[RVM]. In ex: [A]NT = Antioch mint.

(265) [S64a] Probably one of the three emperors of (262). AE 4, 12 mm. G/VG. *Rev only.
Obv: Diad. hd. r., leg. ob.
Rev: Cross on platform. CONCORDIA AVG[G?G?]

(266) [S170] Theodosius II, 402-450 AD. AE 3, 15 mm. VG/f.
Obv: Diad. bust r., star behind head. [DN TH]EOD[OS]IVS P F AVG.
Rev: Two soldiers, holding globe between. leg. ob. Type of Gloria Romanorum.

(267) [S73] Theodosius II. AE 4, 10 mm. p./G.
Obv: T.O. diad. hd. r., leg ob.
Rev: Monogram of Theodosius II: TOE. Constantinople mint.

(268) [S117] As (267), AE4, 8 mm, very p. & O.C./G.
Rev: Monogram thus: TOE

(269) [S182] Theodosius II, AE 4, 10 mm, p./f.
Obv: Diad bust r. DN TH[.
Rev: Cross in wreath.

(270) [S56] Theodosius II or Valentinian III (early 5th Cen.), AE 3/4, 14 mm (broken in half), ob./G.
Rev: Cross on platform in wreath, type of Concordia Avg.

(271) [S192] Probably Valentinian III, 425-455 AD. AE 4, 12 mm, crude f./f.
Obv: Diad. hd. r., T.O. leg.
Rev: Two Victories facing each other. [VICTOR]IA AV[GG] In ex: RM = Mint of Rome.

(272) [S155a] Late Roman. AE 4, 12 mm, p./p.
Obv: T.O. hd. r.
Rev: T.O. Cross in wreath or circle.

(273) [S24] Late Roman. AE 4, 11 mm, very p./very p.
Obv: T.O. Diad. bust r.
Rev: T.O. cross?

(274) [S139] Late Roman. AE 4, 11 mm, ob./p.
Rev: T.O. cross in wreath.

(275) [S186] Late Roman, AE 4, 11 mm. p./p.
Obv: T.O. hd. r., leg. ob.
Rev: Small cross in circle, T.O. leg. around.

(276) [S131] Late Roman. AE 4, 10 mm, ob./very p.
Rev: T.O. cross in wreath.

(277) [S191] Late Roman. AE 4, 10

mm. very p./very p.
Obv: T.O. hd r.
Rev: T.O. cross.

(278) [S51] Late Roman, AE 4, 8 mm, p./f. Both sides badly O.C.
Obv: T.O. hd. r.
Rev: T.O. cross.

(279) [S190] Marcian, 450-457 AD. AE 4, 10 mm, p./p.
Obv: T.O. hd r.
Rev: T.O. monogram of Marcian.

(280) [S155b] Marcian, AE 4, 10 mm, very p./p.
Obv: T.O. diad. hd. r.
Rev: Monogram of Marcian, thus: G. 12. (Rare).

(281) [S147] Marcian, AE 4, 11 mm, f./p. As (280).
Obv: Diad. bust r. D]N M[AR.
Rev: T.O. monogram in wreath.

(282) [S152] Probably Marcian, AE 4, 8 mm, very p./very p.
Obv: T.O. hd. r.
Rev: T.O. monogram.

(283) [S7] Probably Marcian, AE 4, 9 mm, F/p. Both sides O.C.
Obv: diad. hd. r. leg. off flan or ob.
Rev: T.O. monogram.

(284) [S94] Leo I, 457-474 AD. AE 4, 10 mm, f./very p.
Obv: hd. r., in large letters [DN LEO P]F AVG.
Rev: T.O. lion crouching.

(285) [S148b] Leo I. AE 4, 12 mm, very p. O.C./very p.
Obv: T.O. hd. [DN L]EO [.
Rev: T.O. monogram.

(286) [S57] Probably Leo I. AE 4, 10 mm, f./f.
Obv: Helmeted hd. r., leg. ob., barbarous style.
Rev: figure stdg. facing, hd. r., labarum in r. hand, dragging captive in l. Barbarous style.

(287) [S122] Late Roman. AE 3, 16 mm, very p./ob.
Obv: T.O. hd. r.

(288) [S162] Late Roman. AE 3, 16 mm, very p./very p.
Obv: T.O. hd. r.
Rev: T.O. unidentifiable type and leg.

(289) [S156] Late Roman, AE 4, 15 mm, very p./ob.
Obv: T.O. hd. r.

(290) [S103] Late Roman, AE 4, 14 mm, very p./ob.
Obv: T.O. diad. hd. r.

(291) [S188] Late Roman, AE 4, 14 mm, very p./ob.
Obv: T.O. diad. hd. r.

(292) [S9] Late Roman, AE 4, 13 mm, very p./ob. T.O. hd. on Obv.

(293) [S58] Late Roman, AE 4, 13 mm. G leg. ob./p.
Obv: Diad. hd. r.
Rev: abraded, single central figure.

(294) [S79b] Late Roman, AE 4, 13 mm, types obliterated.

(295) [S99a] Late Roman, AE 4, 13 mm, types obliterated.

(296) [S127] Late Roman, AE 4, 13 mm, types obliterated.

(297) [S134] Late Roman, AE 4, 13 mm, ob./v. poor. T.O. unidentifiable type on Rev.

(298) [S148a] Late Roman, AE 4, 13 mm, types obliterated.

(299) [SA10] Late Roman, AE 4, 12 mm, p./very p.
Obv: T.O. hd. r. and leg.
Rev: T.O. Late Roman type.

(300) [S28b] Late Roman, AE 4, 11 mm, types obliterated. Thin.

(301) [S36] Late Roman, AE 4, 11 mm, p./ob. T.O. diad. hd. r. on Obv.

(302) [S111] Late Roman, AE 4, 11 mm, v. poor/v. poor.
Obv: T.O. hd. r.
Rev: T.O. single stdg. figure to r., holding labarum. Proof the Fel. Temp. Reparatio type.

(303) [S115] Late Roman, AE 4, 11 mm, v. poor/ob.
Obv: T.O. hd. and leg.

(304) [S124] Late Roman, AE 4, 11 mm, types obliterated.

(305) [S151] Late Roman, AE 4, 11 mm, very p./ob. T.O. hd. on Obv.

(306) [S176] Late Roman, AE 4, 11 mm, types obliterated.

(307) [SA2] Late Roman, AE 4, 11 mm, types obliterated.

(308) [S32b] Late Roman, AE 4, 10 mm, types obliterated.

(309) [S81] Late Roman, AE 4, 10 mm, types obliterated.

(310) [S143b] Late Roman, AE 4, 10 mm, types obliterated.

(311) [S167] Late Roman, AE 4, 10 mm, types obliterated.

(312) [S175b] Late Roman, AE 4, 10 mm, types obliterated.

(313) [SA3] Late Roman, AE 4, 10 mm, types obliterated. Thick module.

(314) [S31b] Late Roman, AE 4, 9 mm, very p./ob, T.O. hd r. on Obv.

(315) [S48] Late Roman, AE 4, 9 mm, types obliterated.

(316) [S64b] Late Roman, AE 4, 9 mm, types obliterated.

(317) [S93] Late Roman, AE 4, 9 mm, types obliterated.

(318) [S175a] Late Roman, AE 4, 9 mm, types obliterated.

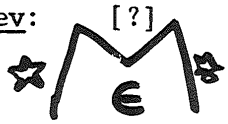
(319) [SA4] Late Roman, AE 4, 9 mm, types obliterated.

(320) [S153] Late Roman, AE 4, 8 mm, very p./very p.
Obv: T.O. hd. r.
Rev: T.O. undertain type.

(321) [S27b] Late Roman, AE 4, 8 mm, types obliterated.

BYZANTINE

(322) [S121] Justin I, 518-527 AD. 40 Nummia, AE 25 mm, p./G.
Obv: Bust r., leg. ob.
Rev:  In ex: T[= Thessalonika Mint. Cf. Sear 79

(323) [S293] Justin I, 40 Nummia, AE 29 mm, f./G.
Obv: Diad. bust r. [DN] IVST [INVS] P F AVG.
Rev: [?]  In ex: [CO]N = Constantinople mint. Sear 62.

(324) [S154a] Justin I, Pentanummium, 18 mm, aVF/aF. *
Obv: Diad. bust r. [DN IVSTI]NVS P P AVG.
Rev:  Mint of Constantinople, Officina Γ . Sear 75.

(325) [S148c] Pentanummium, early 6th Cen., AE 11, very p./v.p.
Obv: & Rev: T.O. types.

(326) [S120] Obliterated, but module and possible trace of Є on Rev. suggest pentanummium.

(327) [S5] Justinian, 527-565 AD, 40 Nummia, AE 30, aF/VG. *
Obv: Diad. bust r. DN IVSTINIANVS P P AVG. Style suggests strike early in reign.
Rev:  In ex: CON = Constantinople mint. Officina ob. Sear 158.

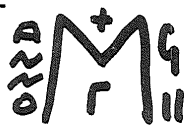
(328) [S34] Justinian I, 40 nummia, AE 30 mm, G/F. *
Obv: diad. and draped bust, r. DN IVSTIANVS P P AVG.
Rev:  In Ex: CON = Constantinople mint. DO 32, Sear 162.

(329) [S241] Justinian I, 20 Nummia, AE 24, G/F. *Rev only.
Obv: Bust of J. facing. [DN] IVSTIANVS P P [AVG].
Rev:  Regnal year 30 = 556/7 AD. Constantinople mint. Sear 165.

(330) [S185] Mid-6th Cen. Dodecanummium, AE 12 mm, very p./p.
Obv: T.O. letters
Rev: $\frac{\text{I + B}}{\text{A}\wedge\text{E}\,\Xi}$ Alexandria mint.

(331) [S40] As (330), dodecanummium, Alexandria. AE 16 mm, ob./f. Same Rev.

(332) [S157] Justin II and Sophia, 565-578 AD. 40 Nummia, AE 30 mm, F/aVF.*
Obv: Justin and Sophia std., facing. DN IVSTINVS P P AVG.
Rev:  Regnal year 3, = 567/8 AD. In ex: CON = Constantinople mint.

(333) [S177] Justin II and Sophia. 40 Nummia, AE 29 mm, VG+/F+.*
Obv: As (332). Complete.
Rev:  Regnal year 7, = 571/2 AD. In ex: CON = Constantinople mint. Sear 360.

(334) [S271] Phocas, 602-610 AD. 20 Nummia, AE 26 x 22 mm, aVF/VF.*
Obv: Bust of Phocas, facing, holds cross. DN FOCAS PERP AVG.
Rev:  Reg. year 2, = 603/4 AD. Cyzicus mint. Sear 670.

(335) [S138] Constans II, 641-668 AD. 40 Nummia, AE 20 mm, VG /F. *
Obv: Constans facing. leg. ob.
Rev: M, parts of letters on either side. In ex: tops of

letters only. Sear 1000.

(336) [S92] Constans II. 40 Nummia, AE 20 x 18 mm, VG/G leg. il-leg.
Obv: Constans facing, holding globe and cross.
Rev: M , rest uncertain.
Type of Sear 1000 as above.

(337) [S183] Constans II, 40 Nummia, AE 17 mm, irregular, clipped. An overstrike. f./f. leg. ob.
Obv: figure facing.
Rev: M , rest uncertain.
Type of Sear 1000 as above.

ISLAMIC

(338) [S277] Umayyad: ʿAbd-al-Malik, 65-86 AH (= 685-705 AD). Fals, AE 20 mm, VG/VG.*
Obv: In center (Arabic): lâ illah illâ Allâh waḥdahu lâ šarîk lahu. Around: Adaptation of Qur'ân 9:33, partly illegible.
Rev: allâhu aḥad lam yalid wa-lam yûlad. (Qur'ân 112:1-3). Marginal inscription ob.

(339) [S119] Umayyad, probably mint of Ramla, c. 700 AD. Fals, AE 16 mm, VG/VG, not completely legible. *

(340) [S149] Possibly Umayyad, Fals, AE 20, very p./ob. T.O. Arabic inscription on Obv.

(341) [S118] ʿAbbâsid, probably al-Ma'mûn, 198-218 AH (= 813-833 AD). Fals, AE 20mm, p./p., mostly illegible. Legends in concentric circles.

(342) [S16] Baḥrî Mamlûk, c. 1300 AD. Fals, AE 21 mm, G/F.*
Obv: al-Sulṭân [?].
Rev: lâ illah illâ [Allâh] wa-Muḥammad rasû[l]
lâ [?]

(343) [S109] Mamlûk, probably Baḥrî. c. 1350 AD. Fals, AE 20 mm, F/aG, O.C. *

(344) [S46] Mamlûk, c. 1350-1400 AD. Fals, AE 20 mm, p./p., mostly illegible. Attribution by style & flan.

OTHER

(345) [S30] Crusader Medallion? AE 12 mm, VF/blank. *
Obv: K E B Θ
A Ξ H N
(branch below)

(346) [S205] AE 16 mm. All ob.

*
* *

REGISTRY CONCORDANCE. Below are listed, in order, the registry numbers of the coins (those listed in second place above, in brackets, prefixed by "S"), followed in parentheses by the number assigned them in this catalog. Field registry information on level, provenance, date of find, etc., will be given, where relevant, in subsequent excavation reports.

1 (Missing from inventory; described in registry simply as "bronze coin"); 2 (126), 3 (110), 4 (58), 5 (327), 6 (181), 7 (283), 8 (248), 9 (292), 10 (17).

11 (10), 12 (255), 13 (91), 14 (52), 15 (129), 16 (342), 17 (3), 18 (13), 19 (54), 20 (215).

21 (138), 22 (92), 23 (141), 24 (273), 25 (187), 26 (211), 27a (252), 27b (321), 28a (256), 28b (300), 28c (250), 29 (161), 30 (345).

31a (196), 31b (314), 32a (241), 32b (308), 33 (203), 34 (328), 35 (204), 36 (301), 37a (213), 37b (199), 37c (214), 38a (186), 38b (205), 39 (125), 40 (331).

41 (Missing from inventory; described in registry as AE of Constantius Gallus [Roman]), 42 (200), 43 (202), 44 (164), 45 (220), 46 47 (237), 48 (315), 49 (165), 50 (184).

51 (278), 52 (170), 53 (135), 54 (218), 55 (188), 59 (233), 60a (228), 60b (173).

61 (109), 62 (59), 63 (162), 64a (265), 64b (316), 65 (179), 66 (169), 67 (238), 68 (143), 69 (131), 70 (144).

71 (277), 72 (167), 73 (267), 74 (239), 75 (148), 76 (151), 77 (149), 78 (,27), 79a (180), 79b (294), 80 (224).

81 (309), 82 (209), 83 (152), 84 (142), 85 (217), 86 (172), 87 (122), 88 (154), 89 (145), 90 (168).

91 (159), 92 (336), 93 (317), 94 (284), 95 (198), 96 (Missing from inventory; described in registry as "Bronze of Constantius II [Roman], Rev: VOT XX MVLT XXX"), 97 (194), 98 (207), 99a (295), 99b (158), 100 (246).

101 (178), 102 (93), 103 (290), 104 (233), 105 (130), 106 (160), 107 (234), 108 (156), 109 (343, 110 (190).

111 (302), 112 (221), 113 (263), 114 (235), 115 (303), 116 (195), 117 (268), 118 (341), 119 (339), 120 (326).

121 (322), 122 (]87), 123 (232), 124 (204), 125 (254), 126 (206), 127 (296), 128 (229), 129 (197), 130 (244).

131 (276), 132 (182), 133 (210), 134 (297), 135 (153), 136 (Missing from inventory; described in registty as "bronze coin, very poorly preserved"), 137 (123), 138 (335), 139 (274), 140 (260).

141 (261), 142 (230), 143a (208), 143b (310), 144 (183), 145a (163), 145b (240), 146 (236), 147 (281), 148a (298), 148b (285), 148c (325), 149 (340), 150 (222).

151 (305), 152 (282), 153 (320), 154a (324), 154b (137), 155a (324), 155b (280), 156 (289), 157 (332), 158 (249), 159 (Missing from inventory; described in registry as "Bronze coin: Byzantine"), 160a (185), 160b (201).

161 (9), 162 (288), 163a (262), 163b (258), 164 (212), 165 (251), 166 (219), 167 (311), 168 (253), 169 (264), 170 (266).

171 (247), 172 (259), 173 (245),

174 (255), 175a (318), 175b (312), 176 (306), 177 (333), 178 (216), 179a (132), 179b (242), 180 (55).

181 (147), 182 (269), 183 (337), 184 (177), 185 (330), 186 (275), 187 (231), 188 (291), 189 (176), 190 (279).

191 (277), 192 (271), 193 (Missing from inventory; described in registry as "AR, Sidon; Obv: Galley with rowers; Rev: "King of Persia slaying lion. Late 4th Cen. BC."), 194 (18), 195 (60), 196 (20), 197 (4), 198 (61), 199 (21), 200 (111).

201 (22), 202 (62), 203 (16), 204 (5), 206 (48), 207 (23), 208 (63), 209 (24), 210 (25).

211 (64), 212 (84), 213 (26), 214 (49), 215 (27), 216 (28), 217 (65), 218 (66), 219 (67), 220 (29).

221 (30), 222 (112), 223 (31), 224 (68), 225 (69), 226 (32), 227 (33), 228 (Missing from inventory; described in registry as "AE, Seleucid, Obv: Head of king, Rev: Apollo"), 229 (34), 230 (94).

231 (35), 232 (70), 233 (71), 234 (72), 235 (8), 236 (85), 237 (73), 238 (124), 239 (74), 240 (36).

241 (329), 242 (37), 243 (38), 244 (105), 245 (39), 246 (7), 247 (1), 248 (40), 249 (12), 250 (41).

251 (42), 252 (86), 253 (43), 254 (44), 255 (2), 256 (45), 257 (75), 258 (57), 259 (114), 260 (113).

261 (81), 262 (46), 263 (139), 264 (171), 265 (155), 266 (175), 267 (226), 268a (76), 268b (115), 269 (77), 270 (47).

271 (334), 272 (56), 273 (78), 274 (Missing from inventory; described in registry as "AE, Seleucid; Obv: Hd. of King, Rev: BA[I-]/E[ ] EY[ ]ET[ ]
275 (53), 276 (14), 277 (338), 278 (174), 279 (106), 280 (15).

281 (98), 282 (107), 283 (6), 284 (99), 285 (108), 286 (104), 287 (11), 288 (146), 289 (140), 290 (100).

291 (79), 292 (101), 293 (323), 294 (103), 295 (243), 296 (193), 297 (189), 298 (166), 299 (166), 300 (128).

301 (97), 302 (96), 303 (136).

A1/25 bis (133), A2/19 bis (307), A3/19 ter (313), A4/19 quat. (319), A5 (134), A6 (157), A7/29 bis (50), A8/27 bis (50), A9 (191), A10 (299).

A11/2 bis (88), A12/4 bis (89), A 13/5 bis (87), A14/21 bis (116), A15/21 ter (117), A16/17 bis (118), A17/17 ter (82), A18/30 bis (119), A19/18 bis (51), A20/32 bis (102).

A21/32 ter (83), A22 (192), A23/49 bis (120), A24/51 bis (90), A25/52 bis (121), A26 (95), A27 (19), A28/294 bis (257).

W. J. Fulco and F. Zayadine

RESCUE EXCAVATIONS AT TELL SAHL ES-SARABET 1978/1979

by
Emsaytef Suleiman and Alison Betts

The Department of Antiquities of Jordan organised two short seasons of rescue excavations at Tell Sahl es-Sarabet in 1978 and 1979. The project was funded by Amiantit Jordan Company Ltd on whose potential building land the site lies. The first season was under the direction of Mr. Emsaytef Suleiman of the Department of Antiquities. Excavations in 1979 were directed by Miss Alison Betts with the assistance of Mr. Hazzim Jasr of the Department of Antiquities. The cooperation and assistance of the staff at Amiantit, in particular the General Director Mr. Nicholas Nahhas is gratefully acknowledged. Dr. J. Sauer examined samples of pottery from both seasons. Photographs were taken by Salim Da'ajeh and Alison Betts. Plans and drawings are by Mohammed Salim and Alison Betts.

Tell Sahl es-Sarabet is a low mound some thirty metres in diameter. It is situated on the edge of the Jordan Valley close to the northern end of the Dead Sea, only some two or three kilometres from the Chalcolithic site of Tuleilat Ghassul (Fig. 1). The tell consists almost entirely of Islamic deposits spanning several phases of occupation. In the first season a few chalcolithic sherds were found in the lowest level of Trench 1 (Pl. LVIII: 1). One of the primary objectives of the second season was to examine the possible extent of Chalcolithic occupation at the site.

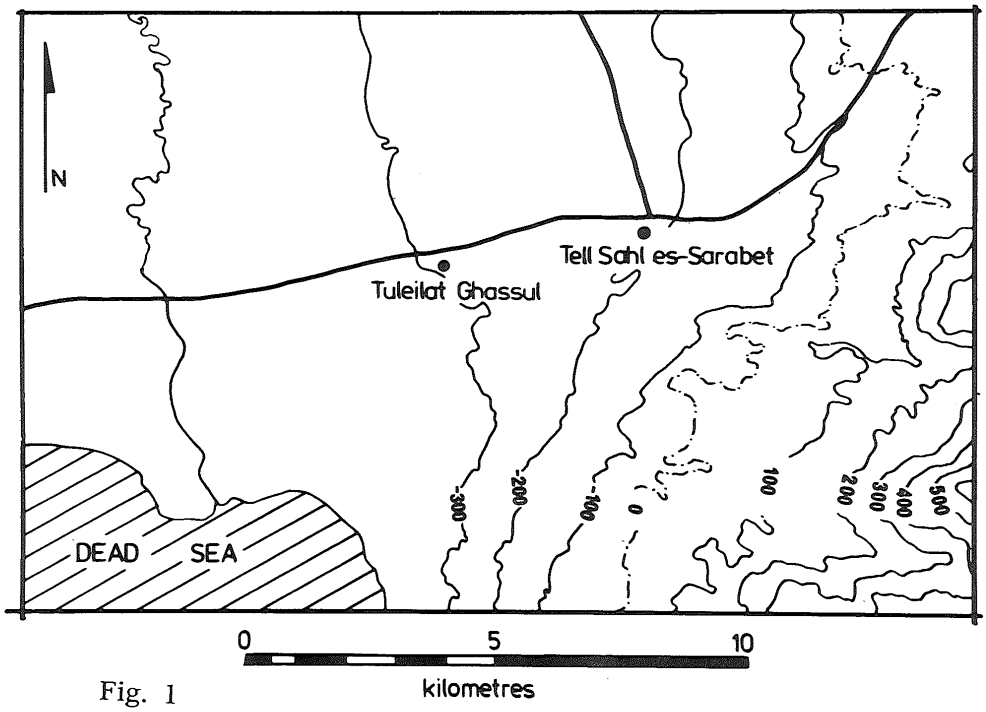
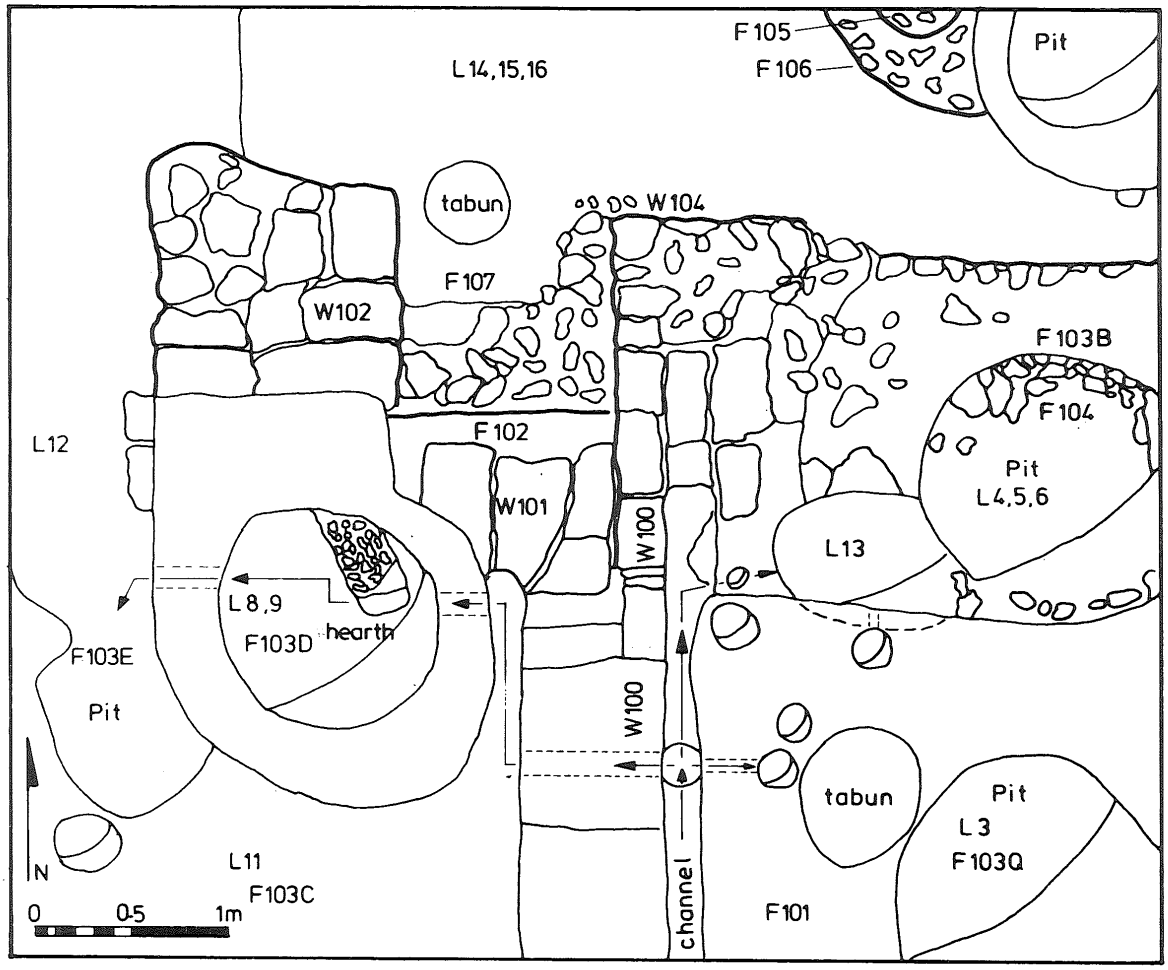


Fig. 1



TRENCH 1

Fig. 2

Excavations in 1978

The site has been considerably damaged on the eastern and southern sides. Consequently work in both seasons was concentrated on the western edge and the undisturbed portions of the centre of the mound. Two trenches were cut in the first season, one 5 × 6m sounding (Trench 1, Fig. 2), on the western side and a 6 × 6m trench (Trench 2, Fig. 3), further to the east, near the centre of the tell.

Trench 1 (Fig. 2, Pl. LVIII: 2 & LXV: 1).

The topsoil (Stratum I) contained Ayyubid-Mamluk sherds Pl. LXII: 1). Stratum II contained a mixture of Ayyubid-Mamluk and Fatamid pottery (Pl. LXII: 2 & LVII: 2). In this level was a round tabun, 70 cm in diameter, lying in the south-east corner. The tabun appeared to be associated with a plaster floor (F101 Fig. 2). In this floor, near the tabun, were four small deep round holes. In the western part of the trench was a round basin.

Stratum III was dated to the Umayyad period and contained painted and incised pottery and fragments of glass (Pl. LXIV: 1,2 & LVII). From this level were cut several large round pits. Three walls (W100, W101, W102) lay across the centre of the trench. These walls were constructed with "headers" and "stretchers" of two different brick sizes, 40 x 40 x 12cm and 40 x 20 x 12cm. Other features in this level included a thin plaster floor (F102) and a stone pavement (F104) lying to the east of Wall 100. At the end of this pavement was a stone wall (W104) composed of medium to large sized stones. A mud-brick wall (W103) apparently visible in the north section was found on further examination to be merely a series of fairly regularly spaced depositional layers.

The large round pits were connected by a channel leading from the south baulk along the east side of Wall 100 (Fig. 2). A stone pavement (F107) lay between walls 100, 101, and 102. F105 and F106, semi-circular features protruding from the east end of the north baulk and composed of pebbles and cement were the upper part of a large stone lined well lying within the baulk between trenches 1 and 3 (Fig. 4). A small hearth lay above the large pit beside Wall 101 and there was a round tabun immediately to the east of Wall 102. A plaster floor (F103) extended over much of the trench.

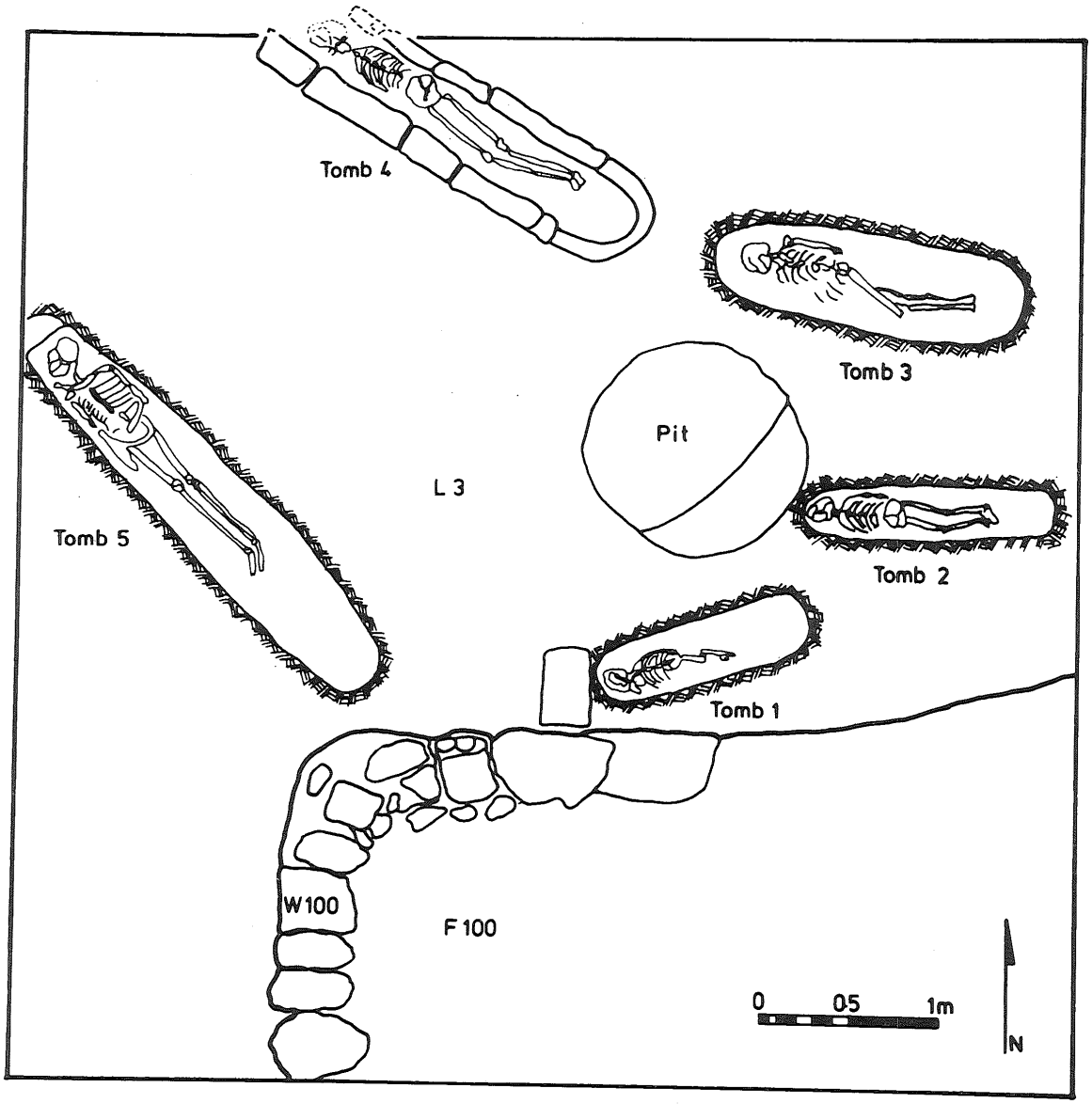
In Stratum IV were found a few Chalcolithic sherds. There was no evidence of occupation or structures in this level. The sherds lay near the north baulk.

Trench 2 (Fig. 3, Pl. LIX: 1, LXV: 2).

Stratum I, topsoil, contained Ayyubid-Mamluk sherds. An 'L' shaped stone wall (W100) with an associated packed mud floor (F100) was found in the south-east part of the trench (Fig. 3). The upper layer of Stratum II was composed of approximately 50cm of black soil containing a considerable amount of charcoal and burnt material. Below this was a layer of yellowish soil containing Fatamid and Ayyubid-Mamluk sherds. Into this were cut five tombs. The burials were in the traditional Islamic manner with the head at the western end and the face turned to the south (el-Qibleh). The graves were covered with large stones and layers of mud.

Tomb No. 1 (Pl. LIX: 2)

This contained the skeleton of a child, apparently with the right arm and leg cut off.



TRENCH 2

Fig. 3

On the left leg was an iron anklet. A bronze toggle pin lay near the left shoulder (Pl. LXVI, 2: 22).

Tomb No. 2 (Pl. LX: 1).

This was the grave of a young girl wearing a necklace of red and painted beads with a small bronze chain (Pl. LXVII: 1).

Tomb No. 3 (Pl. LX: 2).

The grave was covered by large stones and contained the skeleton of a woman. Around her neck was a necklace nearly three metres in length made up of a variety of beads of different colours, shapes and sizes. She also wore a bronze pendant and a broken bronze ring set with a carnelian and had a small square glass mirror. The excavator (Suleiman) suggests that she may have been the wife or daughter of a sheikh or tribal leader (Pl. LXVII, 2 & Pl. LXVIII: 1, 2).

Tomb No. 4 (Pl. LXI: 1)

This was a large tomb with the body surrounded and covered by large stones. The body was that of a man with an iron finger-ring near the arm (Pl. LXVI: 2, no. 23).

Tomb No. 5 (Pl. LXI: 2).

This contained the skeleton of a man without any ornaments.

Excavations in 1979

Two further trenches were opened up in the second season. One (Trench 3) Fig. 4 5 x 6m, was set out immediately to the north of trench 1, separated from it by a 1.0m baulk. The second (Trench 4), Fig. 5, 4 x 6m, was cut to the east of Trench 2, close to the limit of the undisturbed area in the centre of the mound.

Trench 3 (Flg. 4).

The upper levels revealed a series of pits filled with loose ash and charcoal cut into a harder light-brown soil. Scraps of bone in the fill suggest that these pits were for domestic waste. The pits also cut through a thin hard-packed layer of purple silicate which extended over the north-east section of the trench. In the south-east corner was a clay tabun lying in a shallow ash-filled depression. Two small shallow channels ran down to end in cup shaped hollows close to the tabun. A round hole approximately 7cm in diameter opened near to the tabun and led into the adjacent pit. Against the east section were two shallow ash-filled pits with flat plaster-like bases.

Beneath this level lay a more substantial complex of structures. Part of a stone and plaster well extended out of the eastern half of the south section immediately below the tabun. A stone built plaster-lined channel came out from the west section, passed under a wall and led into the well. The well was surrounded by a sloping hollow filled with soft pale grey ash into which led a shallow channel. The wall (Wall A Fig. 4) ran north-south for almost the length of the trench in two sections separated by a hard-packed pise block with some small stones. It was stone built and had no connecting or associated walls. This level also revealed a clay tabun and two deep straight sided regular pits. One of these contained very pure ginger coloured sand and the second was connected by a small channel to the hollow surrounding the well.

Below this complex lay virgin soil. This was cut into to a depth of 1.5m but no evidence of chalcolithic occupation was discovered. Follow-

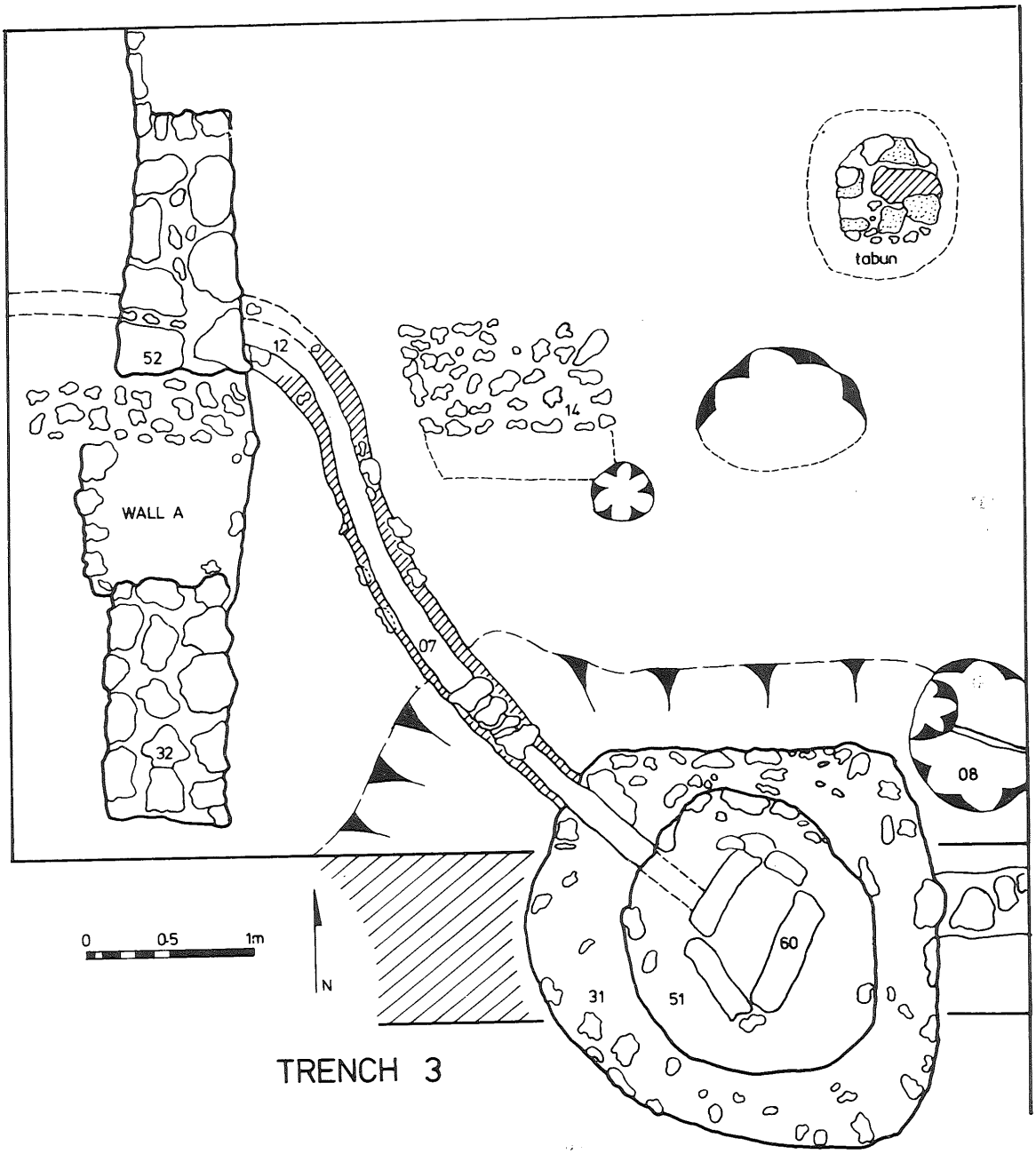


Fig. 4

ing excavation of Trench 3 down to sterile soil, part of the south baulk was removed to obtain a complete plan of the well. It was found to extend into Trench 1 and was roughly 2.5m in diameter with a rectangular mouth 0.5m across surrounded by four large stones (Fig. 4). The channel led directly into the well through an opening below one of these stones. A second channel led in from the east.

Trench 4 (Fig. 5).

This trench contained only domestic structures. The butts of two walls protruded into the trench in the top level. One consisted of four courses of mud brick and the other was a more substantial stone structure. Below this lay three connecting walls (B, C, D) built of mudbrick on stone foundations (Fig. 5). Most of the mudbrick superstructure had been lost and only odd bricks remained. The majority of the stones were irregular in shape but two from Wall C were regular rectangular blocks, one with a door socket on the lower side. These must have been robbed from an earlier building elsewhere on the site. To the south of these walls lay what was probably a courtyard or open space with a clay tabun.

The only structure in the level below this was a wall lying almost directly underneath Wall D. This building had a plaster floor against the north side of the wall. Both wall and floor had been partially truncated at the eastern end. To the south, again probably in an open space was a pebble tabun. The fourth level consisted of a shallow stone-filled depression in the south-west of the trench. This covered a shallow ash-filled pit cut into sterile soil. A second and similar pit was found in the south-east corner.

Finds (1979)

The topsoil of both trenches contained quantities of glazed sherds of the Ayyubid-Mamluk period. It is likely that these relate particularly to levels now eroded away as the pottery associated with the excavated structures was also Ayyubid-Mamluk but with very few glazed sherds and a predominance of painted wares. Trench 3 also contained earlier wares of the Abbasid period, notably fine cream sherds with delicate incised decoration. Other finds were rather few, a bronze pin, a spatula and a fine Islamic pottery lamp (Pl. LXIII: 1). from Trench 3, as well as a quantity of glass fragments. A partially complete pot lacking both base and rim was found in Trench 4 (Pl. LXIII, 2), as was a corroded Roman coin lying just above sterile soil in the rock filled hollow of the fourth level. There are two other coins from the 1979 season but both are surface finds and are thus of little use for accurate dating purposes. Other finds include a fragment of a stone bowl and pieces of iron and bronze, none of which are readily identifiable as artifacts.

Conclusions

It is likely that the latest phase of occupation at the site - probably associated with the Ayyubid-Mamluk sherds in the top-soil of all four trenches - is now completely robbed out or eroded away. The name of the mound, Tell Sarabet, means, roughly translated "The Mound of the Little Columns", and people acquainted with the site mention having seen pieces of broken columns lying on the surface. Only one of these now remains, a plain drum with fragments of plaster still adhering to its surface. These columns, coupled with the finding of tesserae in the topsoil seem to indicate that the final period of occupation was perhaps more

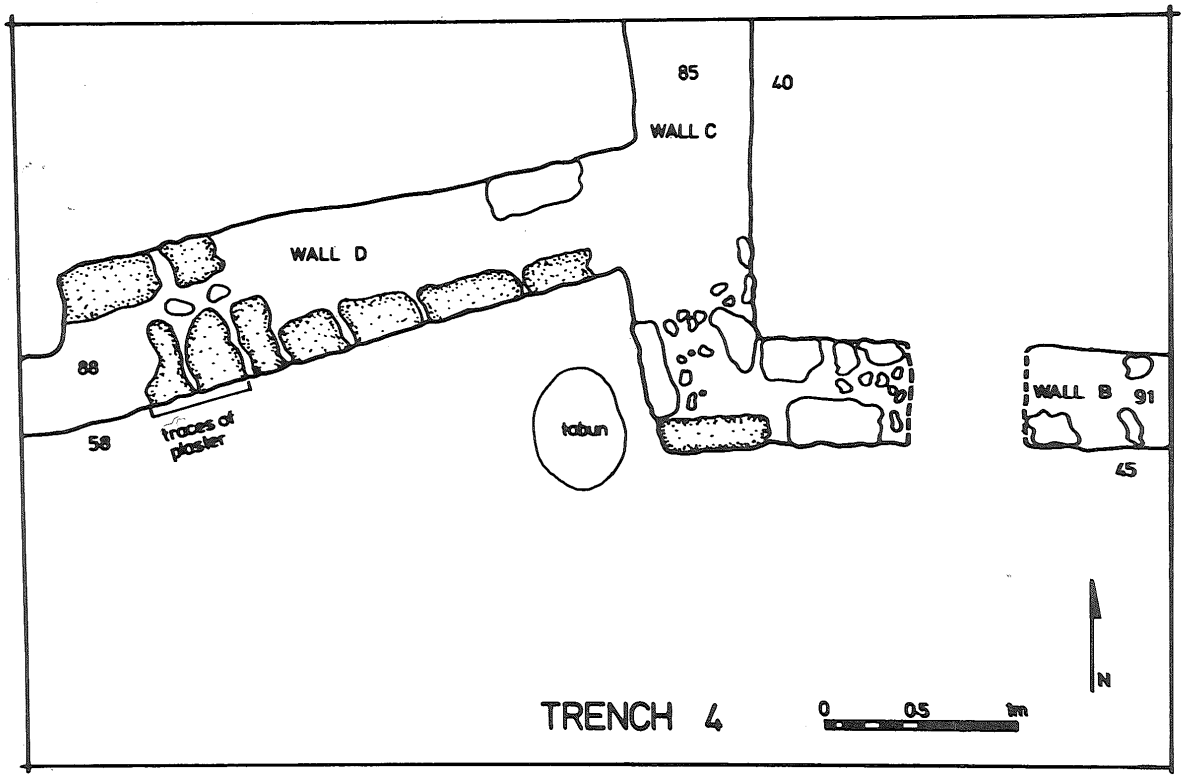


Fig. 5

impressive than the structures revealed in excavation. This hypothesis is substantiated by the discovery of a number of welldressed regular stones around the site, now incorporated into later buildings.

One of the principle aims of the 1979 season was to investigate the possibility of Chalcolithic occupation below the Islamic levels. However, although a few possible Chalcolithic sherds were recovered, a sounding a metre and a half into sterile soil failed to reveal any evidence for prehistoric occupation. It seems most likely that the site never had more than a surface scatter of Chalcolithic sherds, possibly left by a picnic party from nearby Ghassul.

The excavations have not provided an adequate explanation for the complex revealed in Trenches 1 and 3 Figs. 2,4). It seems clear that it was meant for some industrial purpose, but only the western edge of the complex was cleared and it is probable that much of it was not uncovered. Perhaps the most likely explanation is that it was a glass factory. The process of glass-making requires a considerable amount of water, which in this case would be provided by the complex system of channels supplying the well or cistern. The fine pure sand filling one of the pits could also be part of the glass-making process. However no furnace, nor any slag or glass waste was recovered although considerable quantities of glass fragments were found. Thus, this interpretation can only be presented as an unsubstantiated hypothesis.

Emsaytef Suleiman
Alison Betts

ARCHAEOLOGICAL INVESTIGATIONS AT TWO BURIAL CAIRNS IN THE ḤARRA REGION OF JORDAN

by
Vincent A. Clark with contributions from Burton MacDonald and with a report on the skeletal remains by Scott Laird Rolston.

The two cairns, the excavation of which is reported here, were located by Vincent Clark during the course of a survey of Safaitic inscription sites in the ḥarra region of eastern Jordan during 1976. They are located approximately 40 km to the south-south-west of H4, by the track which leads from H4 to al-Wisad. This track crosses the gravel plain for approximately 40 km before meeting the edge of the ḥarra, a forbidding region of black basalt boulders stretching away to the west. Where the track reaches this basalt there is a low ridge on the top of which are two cairns. Here a total of 152 Safaitic inscriptions were found and recorded in 1976.[1] (See map, fig. 1).

Study of these inscriptions made it apparent that the occupant of one of the two cairns could be indentified with some certainty as a woman by the name of ḤRJ bint ḠṬ of the tribe of TM. The unusual circumstance of the discovery of a cairn burial apparently belonging to a woman made excavation at this site an attractive prospect and, as a consequence, excavation was undertaken at both cairns between March 8 to 11, 1980 by the writers and with the assistance of Khalid Abū al-Ghanima, of the Department of Antiquities of Jordan, and Laura Hess, a volunteer.

The objective of the expedition was to attempt to provide a link between Safaitic epigraphy and archaeology and between the cairns and the many pre-Islamic Safaitic inscriptions on rocks both on and around these cairns. Thus it was hoped, firstly, to dispel the controversy of recent years as to the nature and purpose of these cairns (this will be discussed further below). Secondly, if the cairns were discovered to be ancient burials, it was hoped that archaeological evidence from the burials and associated objects would enable closer dating of both the cairns and the inscriptions.

The two cairns are located prominently upon the same ridge of basalt rocks and about 50 m apart. The more northerly was designated No 1 and the other, that of ḤRJ, No 2. (Pl. LXVIII, 1 - LXVIII, 2).

The Excavation of Cairn No 1. (Fig. 2a).

This cairn appeared to consist of a roughly circular heap of basalt rocks, measuring 7m north-south and 6.5m east-west, and standing

1. These inscriptions have formed part of a Ph.D. dissertation - Vincent A. Clark, *A Study of New Safaitic Inscriptions from Jordan*, University of Melbourne, 1979, (abbreviated CNSIJ). This is site H of this study, text nos. 554-706.

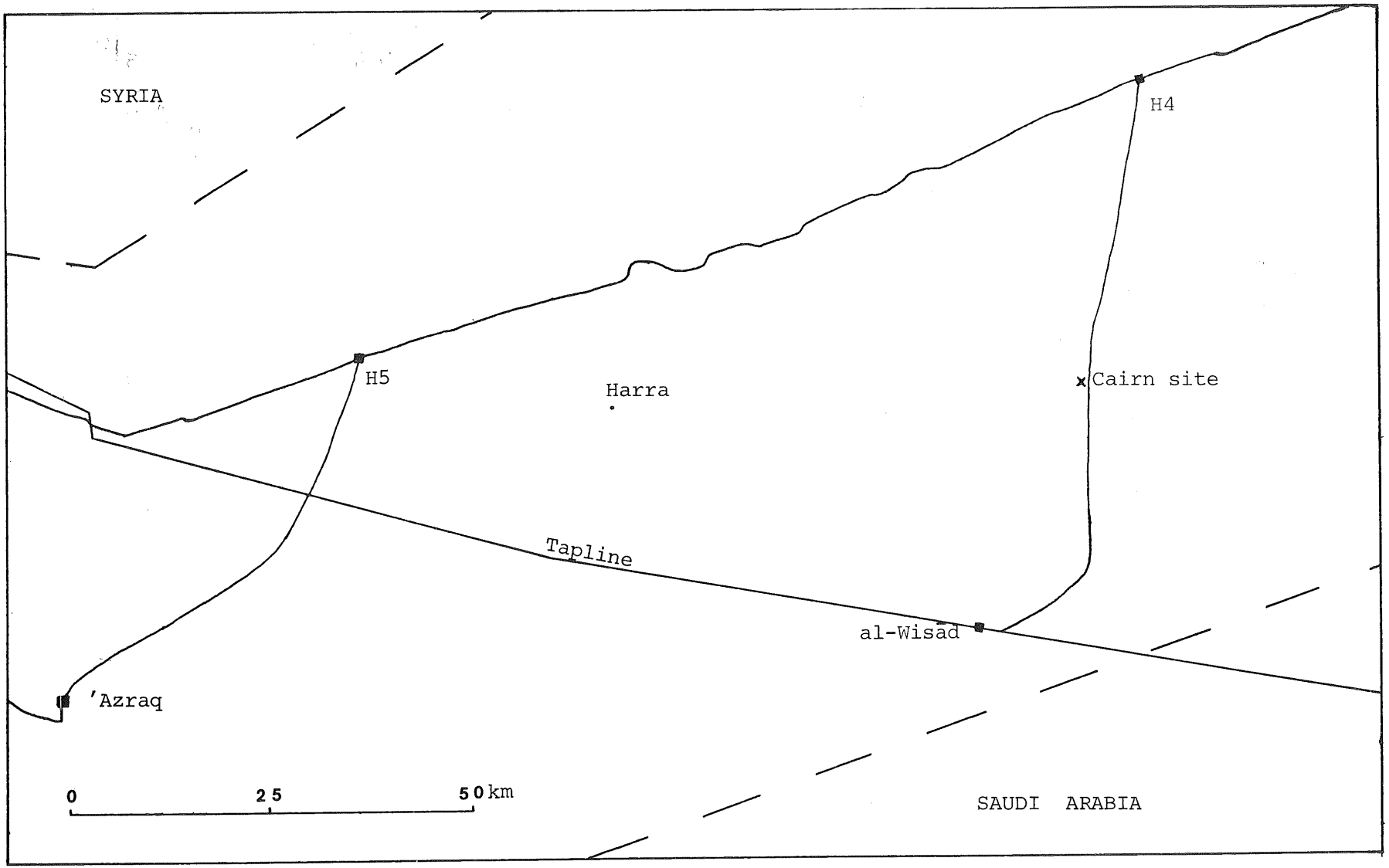


Figure 1. Map showing location of excavation site.(Reference: Jordan 1:50,000, 3654 III, 163598).

1.05m above the surrounding ground level. No definite structure was apparent but it was presumed that there would be a ring of stones forming an inner burial chamber.[2] Accordingly an attempt was made to remove the many stones covering the centre of the cairn in order to uncover this ring. The assumption was that there was a burial, or burials, in the centre of the cairn and that this had been placed in a pit or cist.[3] If such was the case then removal of the innermost stones of the cairn would reveal this burial chamber and cist.

The stones covering the cairn and filling its interior averaged 20-40m in size but were generally irregular in both size and shape. Much larger rocks were positioned on top of one another in such a way as to provide the structure of the cairn. Some of these, resting on or in the original soil surface, were probably naturally occurring boulders built into the cairn. The stones piled together to comprise the cairn were probably taken from the basalt field surrounding it, as clear patches to the west of the ridge indicated. This is in contrast to the supposed practice at the Cairn of Hani' excavated by Harding. There it was suggested that the stones of the cairn had not been gathered on the spot but carried some distance to the site.[4]

Before locating a cist or burial pit in the centre of the structure bones were encountered. Rather than being in a specially prepared cist these were merely lying among the stones of the cairn and had been covered by wind-blown sand and soil after they had been deposited. Thus there was no evidence here for any hole having been dug in the ground. It appears that the two bodies found had simply been laid on the ground and stones piled on top of them. Sand would naturally blow in among the piled stones as time passed.

Burial No 1 was the earlier of the two, while Burial No 2 appears to have been secondary and to have partially displaced No 1.[5] Burial No 1. (Male, 30-45 years). This was found lying among stones and covered over by stones and wind-blown sand. The pelvis, lower vertebrae and the head of the right femur were in articultion, as was the right tibia and fibula, and the body seems to have been interred in a supine position, oriented N-S, with the head to the north. The remainder of the bones were disarticulated. The skull faced south and was lying on its right side. It had been crushed. The appearance indicates that this was a disturbed burial. The partial articulation suggests that cartilage still remained when the bones were disturbed. Thus it would appear that the disturbance took place only a few years after the original interment.

The long bones of this individual were then uncovered stacked neatly along the south side of the cairn chamber. At first it was thought that these long bones all belonged to

2. Such a structure was found by G.L. Harding at the cairn of Sa'd, which appeared to be similar to those considered here. See G. Lankester Harding, "The Cairn of Sa'd" in *Archaeology in the Levant, Essays for Kathleen Kenyon,* eds. P.R.S. Moorey & P.J. Parr, (Warminster, 1978).

3. As was the case at the cairn of Sa'd and at that of Hani' (see G.L. Harding, "The Cairn of Hani' ", in *ADAJ,* Vol. II, 1953, p. 8-56).

4. See G.L. Harding, "The Cairn of Hani' ", p.8.

5. See appendix on the human remains by Scott L. Rolston.

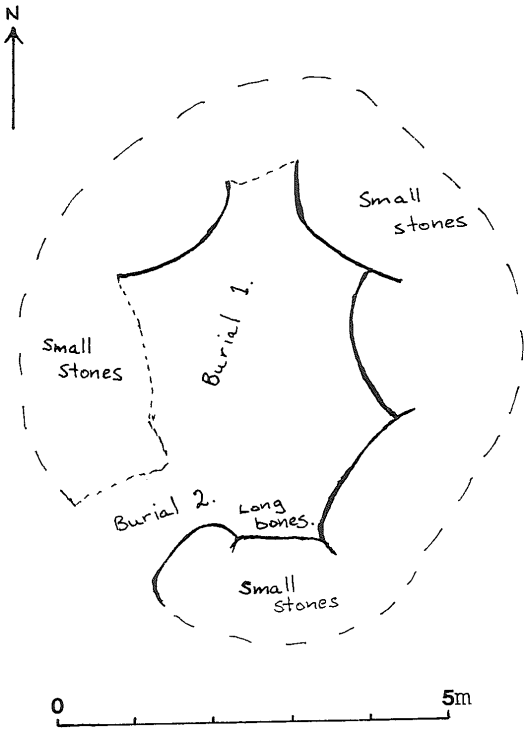


Figure 2a. Sketch plan of cairn #1 after excavation.

burial No 1. However, it was soon learned upon further investigation that there were too many long bones for only one individual. Removal of a part of the west side of the cairn then revealed that there was a second burial, No 2, under the west wall of the structure, and the bones neatly placed along the south side of the cairn chamber were those of two persons. Burial No 2. (Male, 40-55 years). This burial was positioned for the most part under the west wall of the cairn or under the west side of the cairn. The skull, chest cavity, and the pelvis were all found at this location. The long bones of burial No 2 extended into the south side of the inner ring of the cairn. These long bones were mingled with the long bones which belonged to the first burial.

The skull of this second skeleton was resting on the chest, face down. The lower jaw was found to the northwest of the main segment of the skull at a distance of approximately 15-20cm. This body was articulated and lying in a supine position.

Completion of Cairn No 1 Excavation.

After the removal of the two skeletons associated with the cairn excavation continued to a lower level in the attempt to learn if there was a grave dug in the sand under the stones of the cairn and if there were more bones in the cairn. This excavation continued for a depth of 1.30 metres from the point where the first stone had been removed from the highest point of the cairn. No more bones were found at this lower level. Furthermore, there was no evidence that there was a cist or a grave dug in the sand over which the stones had been piled to form a cairn. All the evidence indicated that the bodies had been laid on the sand among basalt stones and then more stones were piled upon them to protect them from animals.

Besides the human bones a large number of animal, mostly rodent, bones were found in the excavation. A few objects and pieces of metal were also discovered. However, there were no objects excavated that would help date the burials in the cairn.

The Excavation ofCairn No 2, the cairn of HRJ bint GT. (Fig. 2b).

This cairn consists of a large pile of undressed basalt rocks ranging from small stones of only a few centimetres in size up to boulders of 75 cm in diameter. The average stone size is about 20-40cm, as at cairn No 1. These were probably collected from the immediate vicinity and piled together to form a heap roughly circular in shape and measuring 9m diameter on the north-south axis and 8.5m on the east-west. This heap stood approximately 1.60m above the surrounding ground level. No plan of construction could be immediately discerned and it was only after considerable clearance of rocks from the top of the cairn that location of the inner burial chamber could be defined. This burial chamber seemed to have been formed by arranging a number of large boulders (averaging 50 by 70 by 50cm) into a ring on the ground. This ring had an internal diameter of approximately 1.9m. Other rocks were then piled up around the outside of this and, after the burials had been placed within, the centre was filled also with small to medium stones.

Excavation began with the clearance of

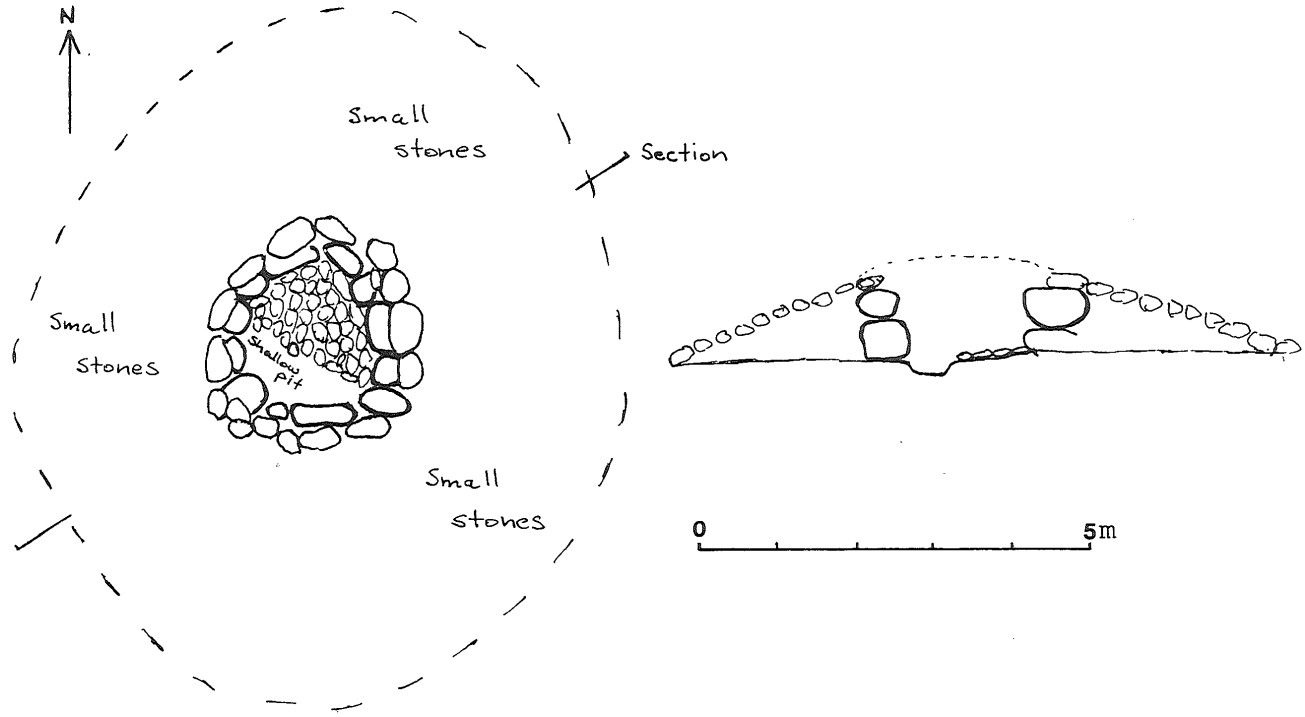


Figure 2b. Sketch plan and section of cairn #2 after excavation.

the loose rocks from the top of the cairn in an attempt to define the burial chamber. This was difficult and not immediately successful, probably because the upper part of the cairn had been disturbed when later burials were made in it. As excavation proceeded, however, the chamber was more clearly defined.

Immediately below the surface rocks was a layer of fine, powdery, wind-blown soil some 20-30cm in depth. This was filled with the skeletal remains of rodents, snakes and birds, rodents being the most common. After some 20cm fragments of human bone began to appear, apparently having been much disturbed, perhaps by the vast number of rodents which appear to have occupied the cairn over the centuries. These bones were mostly fragmentary and in a poor state of preservation, probably as a result of having been so close to the surface and of disturbance by animals. No complete skeleton was preserved. These burials were almost certainly intrusive.

At a depth of about 50cm below the original cairn top the nature of the soil altered dramatically. The loose, wind-blown sand was replaced by a very hard, compacted soil, in which were many rocks, as previously, together with more snake and rodent bones. Also encountered now were scores of ovoid nests, apparently those of beetle pupae. These consisted of hollows in the ground surrounded by a very hard outer shell, presumably formed by secretions from the beetles. Often these were found to be amongst the bones, cemented to them or to the surrounding soil. This often made the excavation of the already fragile bones very difficult. Presumably these beetles were carrion feeders which had entered the cairn in search of food.

In this hard, dry soil were found the badly preserved skeletal remains of four individuals, together with a number of objects. The immediate impression formed was that of the disorder of the bones. It was quite impossible in most instances to discern any articulation or order in them, mingled as they were with rocks, animal bones and beetle nests, all concreted into the soil. The extreme hardness of the soil, which increased as digging proceeded, made the recovery of the bones intact almost impossible. The problem was compounded by the fact that many of the bones appeared to have been partially crushed by the weight of soil and rocks above them. What was readily apparent, however, was that the remains and either been disturbed in antiquity or else interred in a state of partial disarticulation. The activities of rodents may have added to this disturbance. Despite this there was evidence that sufficient cartilage had remained to maintain the articulation of at least some of the bones when they were either disturbed or interred in partial articulation. For example, at a depth of 60cm was found the pelvis of a young female (17-20 years) still in articulation with the left and right femura and the lower vertebra. Alongside these were the left radius, ulna and hand bones of the same individual. However, none of the other bones of this skeleton were found in articulation. The position of these bones indicated that the body had been placed face down with the left arm alongside the body. Just to the west of these bones (which were oriented north-south) and at the same level were four articulated vertebra of the same individual, oriented east-west. A fragment of the skull was found beneath the vertebra and was to the west. In contrast to these articulated bones a jumble of bones was found at the same level

but slightly to the south of them. Here were a part of a skull of a second person, the left half of a mandible, an assortment of fragmentary long bones and a few other fragments together in a heap. Together with these jumbled bones were a few pieces of copper wire and small pieces of sheet copper. These may have been elements of personal adornment. Also found were two stone beads, a shell pendant and part of a broken iron loop, perhaps a bracelet.

These two burials had been placed on an irregular pavement of stones which sloped down slightly towards the west and southwest. Rocks had apparently been piled on and around these two bodies. A few fragmentary bones of an infant were also found here.

In the western part of this chamber, to the west of the stone pavement and probably cutting it, was a shallow pit extending some 20-25cm below the pavement level. In this was a third individual, a female, of middle age, placed directly on virgin soil and oriented northwest - southeast. Bones of this skeleton were in a very friable state and were not found fully articulted. These were found between 80cm to 1.10m below surface. The skull was possibly to the northwest, although the evidence is unclear. The body was so oriented that the skull should have been to the southeast but the only evidence for it here were some fragments found at a depth of between 60 to 70cm. On the other hand, in the northwest part of the chamber, at the level of the rest of the remains of this individual, were found a few skull fragments and a number of teeth. These, however, would have been by the feet. Oriented to the southeast were the bones of the pelvis, torso and arms. The skull fragments by the feet may have belonged to one of the upper burials which had found their way into the pit when this was dug.

Associated with the torso of this individaul were a bronze eye make-up applicator, a twisted bronze bracelet, several small fragments of bronze, an iron buckle, two small beads, one of glass and the other of shell, and possibly a scarab, although the exact context of this latter item is uncertain.

The burials represented in this cairn were as follows:[6]

a) Intrusive, later burials:

1. One female of 23-27 years.
2. One child of 5-8 years.
3. One male, age uncertain.

b) Earlier burials:

1. Male of 40-55 years (on stone pavement).
2. Female of middle age (in pit).
3. Female of 17-20 years (on stone pavement).
4. Infant (on stone pavement).

The positioning of burial b 2. and the evidence of the objects found with the skeletal remains, suggests that this was the principal burial. This we tentatively identify as the remains of HRJ bnt GT. The male found on the stone pavement may have been an individual named as NSR in the inscriptions (see below, Nos. 626, 627, 636), and perhaps the brother

6. Ibid.

grieved for by the author of No. 618. The young woman may perhaps be the FḌWT of No. 638. Identification of course cannot be certain but the association of burials, objects and inscriptions relating to the cairn and to burials allows at least a tentative identification to be made. ḤRJ bnt ḠṬ appears to have been a middle aged woman, evidently of some standing in the tribe of TM. The identification of NṢR is made on the grounds that the remains of individual b) 1. are the only ones of a male available in the earlier burials. FḌWT, if the identification is correct, was a young woman who died just after childbirth. The relationship between these individuals is in no way indicated by the inscriptions.

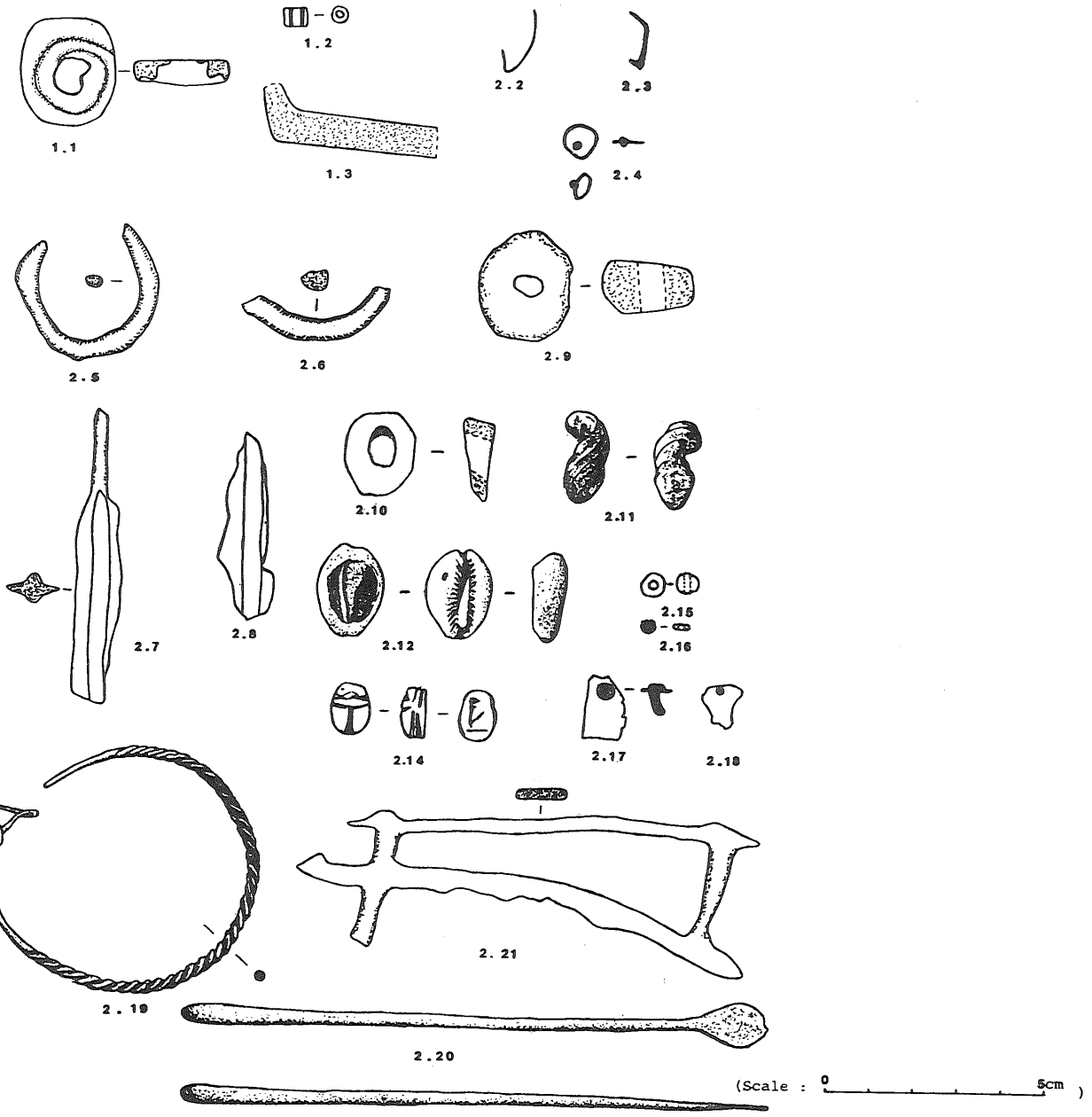


Figure 3. Stratigraphic profile of trench at Site J2. Vertically barred zones represent carbonate lenses.

The Objects.

The number of objects found was not large. Most came from the cairn of ḤRJ. They are itemized here. (Fig. 3 and Pls. LXIX, 1 - LXIX, 2).

Excavation No.	Item	Description	Provenance
1.1	Shell bead		Cairn No 1.
1.2	Faience bead	Cylindrical, with two Cylindrical, with two external grooves. Length 5.5mm, Diam. 4mm, Interior diam. 2.2mm.	Cairn No 1.
1.3	Fragment of stone bowl.	Grey schist. Diagonal tooling marks on exterior.	Cairn No 1.
1.4	Two worked flints.		Cairn No 1, in soil fill.
2.1	Two fragments of thin bronze sheet.		Cairn No 2, east side, depth 50cm.
2.2	Bronze wire.	Bent fragment, perhaps part of personal ornament.	Cairn No 2, east, depth 55cm.
2.3	Bronze wire.	Bent fragment, becomes broad and flat at one end. Perhaps part of personal adornment.	Cairn No 2, east, depth 55cm.
2.4	Two bronze discs with central iron stud, one broken.	Roughly circular, Diam. 7.5mm, section 0.5mm; iron stud diam. 2mm, length 2mm.	Cairn No 2, east, depth 60cm.
2.5	Curved iron object.	Two pieces, broken, forming part of loop, irregular. Diam.3.2cm. Diam. of section 3mm.	Cairn No 2, centre, depth 60cm.
2.6	Curved iron fragment.	Part of loop, similar to previous but slightly larger; diam. 4.6cm. Diam. of section 4.5mm.	Cairn No 2, south, depth 80cm.

Excavation No.	Item	Description	Provenance
2.7	Iron arrow or javelin head.	Blade broken.	Cairn No 2, centre, depth 80cm.
2.8	Iron arrow or javelin head.	Broken.	Ditto.
2.9	Bead.	Yellow glass, polished, pitted surface, asymetrical; 2.4 by 2.1cm by 1cm (av.) thick.	Cairn No 2, centre, 60cm.
2.10	Bead (?).	Irregular shaped black stone with hole in centre. Not worked but probably used as bead. Basalt with oxidized surface.	Cairn No 2, centre, 60cm.
2.11	Shell pendant.	Central spiral of marine mollusc shell, pierced at one end.	Cairn No 2, centre, 60cm.
2.12	Cowry shell.	Back removed, probably bead.	Cairn No 2, south, 75cm.
2.13	Two worked flints.		Cairn No 2, east, 50cm, probably intrusive.
2.14	Scarab.	Faience, pierced, weathered.	Cairn No 2, north-west, level uncertain (60-80cm).
2.15	Bead.	White glass, damaged, collared barrel. Length 5mm, diam. 5.5mm, diam. of hole 1.75mm.	Cairn No 2, south, 1.05m.
2.16	Bead.	Shell. Length 1.25mm, diam. 3mm, diam. of hole 1.25mm.	Cairn No 2, south, 1.05m.
2.17	Bronze piece.	Fragment of copper sheet with iron stud at one end.	Cairn No 2, south, 1.00m.
2.18	Bronze piece.	Ditto.	Ditto.
2.19	Bronze bracelet.	Four strands twisted around central iron core. Looped at one end.	Cairn No 2, south-west, 1.10m.

Excavation No.	Item	Description	Provenance
2.20	Bronze epatula.	One end flattened, the other thickened. Length 13.4cm.	Cairn No 2, south, 60cm, in chamber wall.
2.21	Iron clamp.	Broken. Two parallel strips joined by two rivets.	Cairn No 2, west, 1.10m.
2.22	Flints (Two).		Cairn No 2, west, 60cm, probably intrusive.

These objects present little, if any, firm evidence for the dating of the burials. Even the evidence of the scarab and the copper objects is equivocal.

The scarab may be evidence of contact between the Safaites and Egypt, either direct or through some intermediary. Unfortunately, however, its dating value is minimal. It may have become the property of the deceased as an heirloom, as booty, or through trade. The date of manufacture may have long preceded that of its interment with the burial. The design it bears appears to be that of a seated figure, probably a goddess, perhaps Ma'at. Exact dating of its manufacture is impossible, but this is certainly much earlier than the probable Late Roman - Early Byzantine date suggested for the cairn. Perhaps a date of seventh-fifth centuries B.C. would be appropriate.[7] The material is mould made faience, pale green in colour.

The bronze bracelet (No. 2.19) consists of a core of unidentified metal (iron?) with four strands of bronze twisted around it. It is twisted into a loop at one end to form the fastening. Many parallels to this can be pointed out in the area of the Levant from Roman - Byzantine times. This example is similar to ones found at Amman[8] and at Dhibon.[9]

7. Thanks are expressed to Miss Olga Tufnell and to Prof. William A. Ward for their helpful comments regarding this scarab. Ward (private communication) would suggest a possible date of 7th-5th centuries B.C. and states that the scarab is of a type common in the Mediterranean world in the middle of the first millennium B.C.. Remarks printed here represent the opinion of Vincent A. Clark.

8. G. Lankester Harding, "A Roman Family Vault on Jebel Jofeh", in *QDAP*, 14, 1950, p. 81-94 and Pls. XXIV-XXXI. See reg. nos. 245, 255, 257, 272, 285 etc.. These are not exact parallels. They are probably 2nd century A.D.

9. A.D. Tushingham, *The Excavations at Dibon (Dhībân) in Moab. The Third Campaign 1952-53.* AASOR, Vol. XI, 1972. Pl. XXXV. 12, 15, 35, 36 and Fig. 28, 5, 13, 16, all from tombs in Area K, described by the excavator as "though not specifically Christian, are probably no earlier than the late fourth century," (p. 115).

The spatula (No. 2.20), with a shaft thickened at one end and flattened into an oval disc at the other, can likewise be paralleled in the Roman - Byzantine periods. For example at Amman,[10] Pella,[11] and at Samaria.[12] Unfortunately it is impossible to be more precise with the dating of these objects than probably Late Roman - Early Byzantine.

The cowry shell (No. 2.12) with back removed is likewise a common find in Levantine tombs of the Roman - Byzantine period but are known from at least as early as the early Iron Age.[13] The glass beads (Nos. 2.9 and 2.15) are typically Roman, especially the collared barrel bead, No. 2.19.

The flints (Nos. 2.13 and 2.22) appear to be intrusive. They are very similar to the many flints which are to be found all over the surface outside the ciarns, and indeed all along the eastern edge of the harra. They are probably Upper Paleolithic - Epipaleolithic in date suggest that the area was populous and more hospitable in prehistoric times. A small group of these surface flints, from around Cairn No 1, are shown on Fig. 4.

The Inscriptions: (Figs. 5 & 6).

A total of 56 texts were found on the rocks around cairn No 1 but none of these relate specifically to either the cairn or its occupants.[14]

From the second cairn (No 2), that of ḤRJ, a total of 95 texts were recorded in 1976[15] and of these 12 may relate either to the cairn or its occupants. These are given here. In addition to these a further 6 inscriptions, which were not recorded in 1976, were discovered during the course of this expedition and have been presented here as a supplement to CNSIJ. None of these appear to relate to the burials but were found either in or near the cairn.

Those texts which relate to ḤRJ, especially CNSIJ 620 - 622, make it clear that the cairn should be interpreted as a burial monument to this individual, who was evidently an important woman of the well known Safaitic tribe of TM. In addition, CNSIJ 626 and 627 tell of the authors' grief for a certain NṢR, while at the same time they "build for" (*bny*) ḤRJ. As already noted, perhaps this NṢR was the second of the earlier burials in this cairn, possibly the middle eged male. The reference in CNSIJ 638 to a certain FḎWT may identify the third of the earlier burials, possibly the young woman.

a. Inscriptions from CNSIJ relating to the cairn or the burials.[16]

10 G L. Harding, op.cit., Reg. no. 253.

11. R.H. Smith, *Pella of the Decapolis*, Vol. 1. The College of Wooster, 1973, Pl. 66. 1052, 1053.
These examples are Late Byzantine, 6th-7th centuries A.D.

12. J.W. Crowfoot, G.M. Crowfoot, K.M. Kenyon, *Samaria - Sebaste III - The Objects from Samaria*, London 1957, Fig. 100. 25.

13. G.L. Harding, op.cit., No. 430; A.D. Tushingham, *op.cit.*, Pl. XXXVI. 15.
P.B. Bagatti & J.J. Milik, *Gli Scavi Del "Dominus Flevit"*, Parte I, La Necropoli del Periodo Romano, Jerusalem 1958, Fot. 127. 31.

14. CNSIJ 554-610.

15. CNSIJ 611-706.

16. Only those inscriptions which appear to relate directly to the cairn or the burials have been reproduced here. Where other texts were on the same rock these have been omitted.

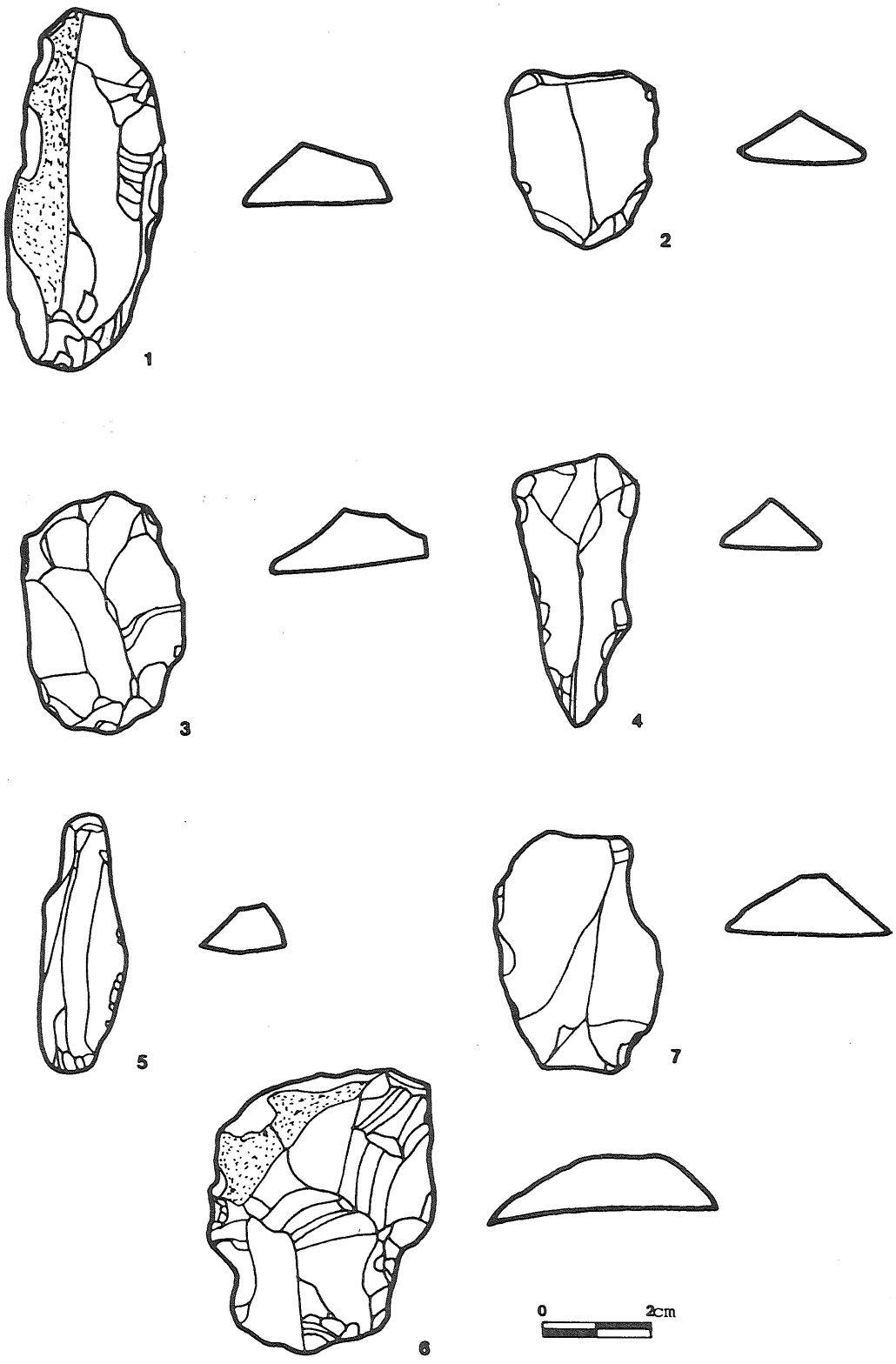


Figure 4. Topographic map of Site J8 showing cave and locations of test units. Note contours appear as below datum "0" readings.

CNSIJ 618 *l wqs whwb 'l 'ḫh* (Pl. LXX, 1)
By WQS, and he grieved for his brother.

For the expression *ḥwb 'l* with the meaning "to grieve for" see WH 73. The identity of the brother here is not known but it may be that it is NSR, mentioned in CNSIJ 627 and 628.

The inscriptions 620, 621 and 622 are almost identical texts. Nos. 620 and 621 are on the same stone and No. 622 is on an adjacent one. All three were inscribed by different hands "for ḪRJ", an individual who was clearly a woman. The content of these texts, and of others from the cairn, make it clear that this was a cairn erected for ḪRJ, the only one as yet discovered which belonged to a woman.

620. *l ḫrj bnt ḡ̄t ḏ̣ l tm whrjm* (Pl. LXX, 2).
For ḪRJ daughter of ḠṮ, she of the tribe of TM, and this is the (her) cairn.

ḪRJ is a name attested in Saf. and Lih. but it is nowhere found as the name of a woman. The 3rd person feminine demonstrative pronoun *ḏ't* occurs here for the first time in Saf.; it is equivalent to the Ar. *dāt;* the expression *ḏ't 'l* replaces the commonly found masculine form *ḏ'l*. The same pronoun recurs in the two following texts. The expression *whrjm* has the sense "and this is her cairn", the *h* having demonstrative force. An alternate interpretation would be that *hrjm* represents a 4th form verb with the sense " a cairn was erected". It should be noted that the two following texts merely read *wrjm*. The occurrence of a 4th form verb prefixed by *h* is not attested, nor is the use of *rjm* as a verb. In all three of these texts the authors remain unknown.

621. *l ḫrj bnt ḡ̄t ḏ't 'l tm wrjm* (Pl. LXXI, 1).
For ḪRJ daugther of ḠṮ, she of the tribe of TM, and a cairn (was built).

The letter ḡ̄ of the name ḠṮ here resembles the letter s̄ but there can be no doubt as to the reading. The scribe began to inscribe the ḡ̄ of this name immediately following the *bn* of *bnt* but, realising his mistake, wrote *t* instead, without bothering to erase the beginnings of the incorrect letter. As a result traces of this can be seen on the stone and the letter *t* is not aligned to the rest of the text.

Nos. 622 - 624 are on the same stone. (Pl. LXXI, 2).

622. *l ḫrj bnt ḡ̄t ḏ't 'l tm wrjm*
For ḪRJ daughter of ḠṮ, she of the tribe of TM, and a cairn (was built).

623. *l bn 'tm bn 'ḏr wwjm wbny 'l ḫrj*
By BN'TM son of 'ḎR, and he grieved and he built for ḪRJ.

624. *l ḥṭ bn bn'tm bn ḏr wbny 'l ḫrj*.
By BN'TM son of 'ḎR, and he grieved and he built for ḪRJ.

The name ḤṬ is attested only in the Had. text J. 892/7 (HIn 608); see the Ar. *ḥaṭṭa,* "to lie, mix", or perhaps *hāṭa,* "to be excited, confused". This text would appear to be by the son of the author of the previous one. However, here the name of the grandfather is given as

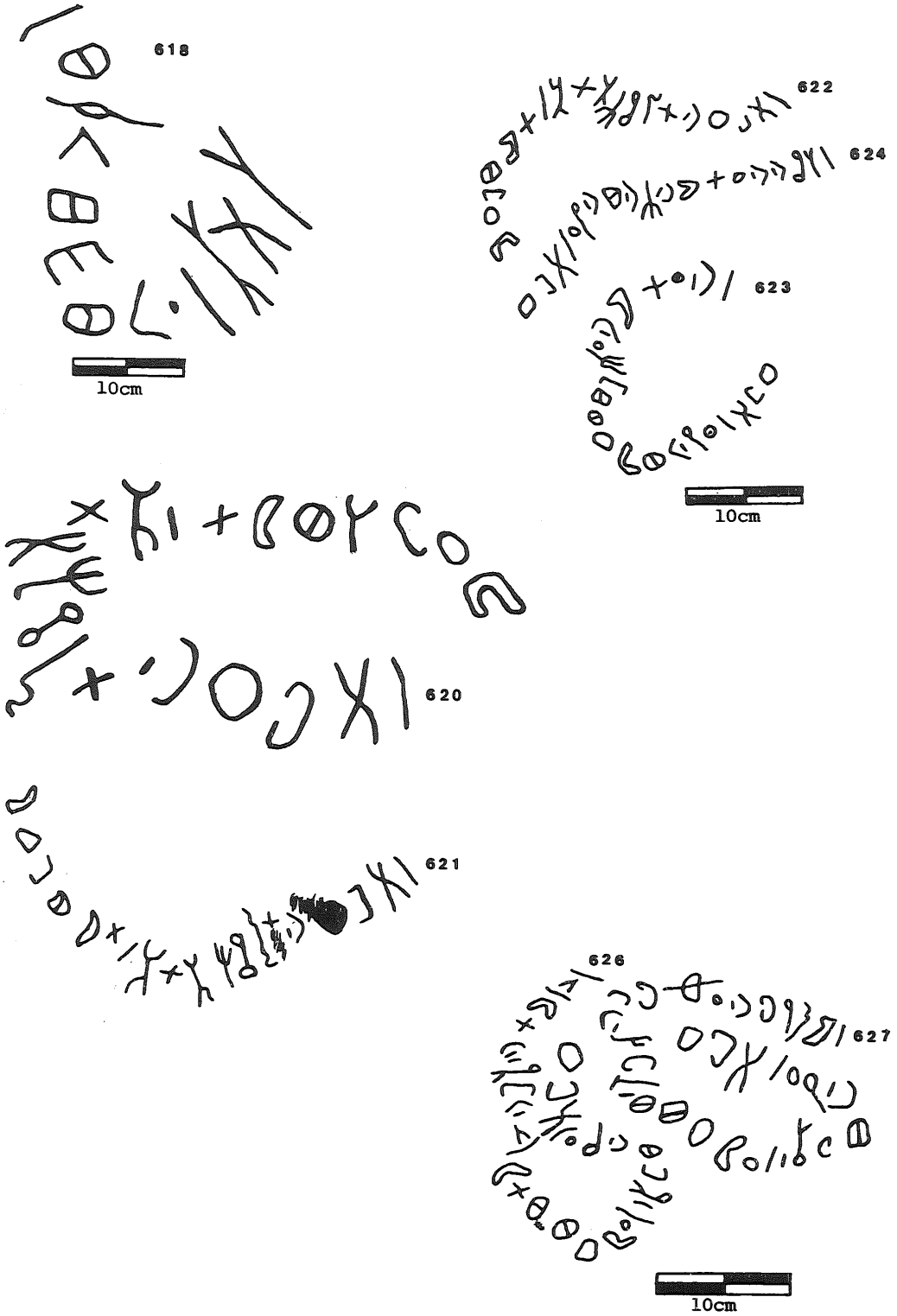


Figure 5. Stratigraphic profile of selected test units at Site J8.

DR, while in the previous text it is 'DR. Both readings are perfectly clear. One may assume that one of the texts contains an error, probably the present one.

Nos. 626 & 627 are on the same stone. (Pl. LXXII, 1).

626. *l slmt bn nṣr bn slmt wwjm 'l nṣr wbny 'l ḫrj*
By SLMT son of NṢR son of SLMT, and he grieved for NṢR and built for ḪRJ.

It is suggested here that NṢR was also buried in this cairn, along with ḪRJ.

627. *l mḡyr bn 'qrb bn krzn wwjm 'l nṣr wbny 'l ḫrj*
By MḠYR son of 'QRB son of KRZN, and he grieved for NṢR and he built for ḪRJ.

Nos. 631 & 632 are on the same stone. (Pl. LXXII, 2).

631. *l qymt bn msk bn w'l. wbny 'l ḫrj*
By QYMT son of MSK son of W'L, and he built for ḪRJ.

632. *lmḥrb bn 'ḏr wbny 'l ḫrj*
By MḤRB son of 'DR, and he built for ḪRJ.

636. *l slmt bn nṣr wbny 'l ḫrj* (Pl. LXXIII,1)
By SLMT son of NṢR and he built for ḪRJ.

This appears to be by the author of No. 626, in which the author also "built for ḪRJ".

638. *l ḡlb bn ḥrḏ wwjm 'l fḏwt* (Pl. LXXIII, 2).
By ḠLB son of HRD, and he grieved for FDWT.

The name ḤRḌ is known only from WH 2833a, while FDWT is new; see the Ar. *faḍā*, "to be broad, empty".

b. Inscriptions recorded in 1980, not included in CNSIJ.

1. *l 'lh bn hmsk* (Pl. LXXIV, 1).
By 'LH son of HMSK.

Nos. 2 & 3 are on the same stone. (Pl. LXXIV, 2).

2. *l 'ḥsn bn 's bn bddh wwlh 'l 'bh 'sr*
By 'ḤSN son of 'S son of BDDH, and he was dejected with grief for his father (who was) taken captive.

This text is by a brother of the author of the following one. ISB 115, 116, WH 2530 and SIJ 1009 may also be by his brothers, while WH 2507 and 3841 may be by his father.

For the word *'sr* see C 2292 and WH 1675.

This may be either a noun or a passive of the verb *'asara*, "to take captive".

3. *l s̄kr bn 's bn bddh wns l mdbr*
By S̄KR son of 'S son of BDDH, and he fled to the desert (?).

This appears to be by the same author as ISB 116. The translation of the expression *ns l mdbr* is uncertain. In WH 580 the expression *nsl l mdbr* is found and is translated "he hastened to the desert". If we were to assume assimilation of the final radical of *nsl* with the preposition *l*

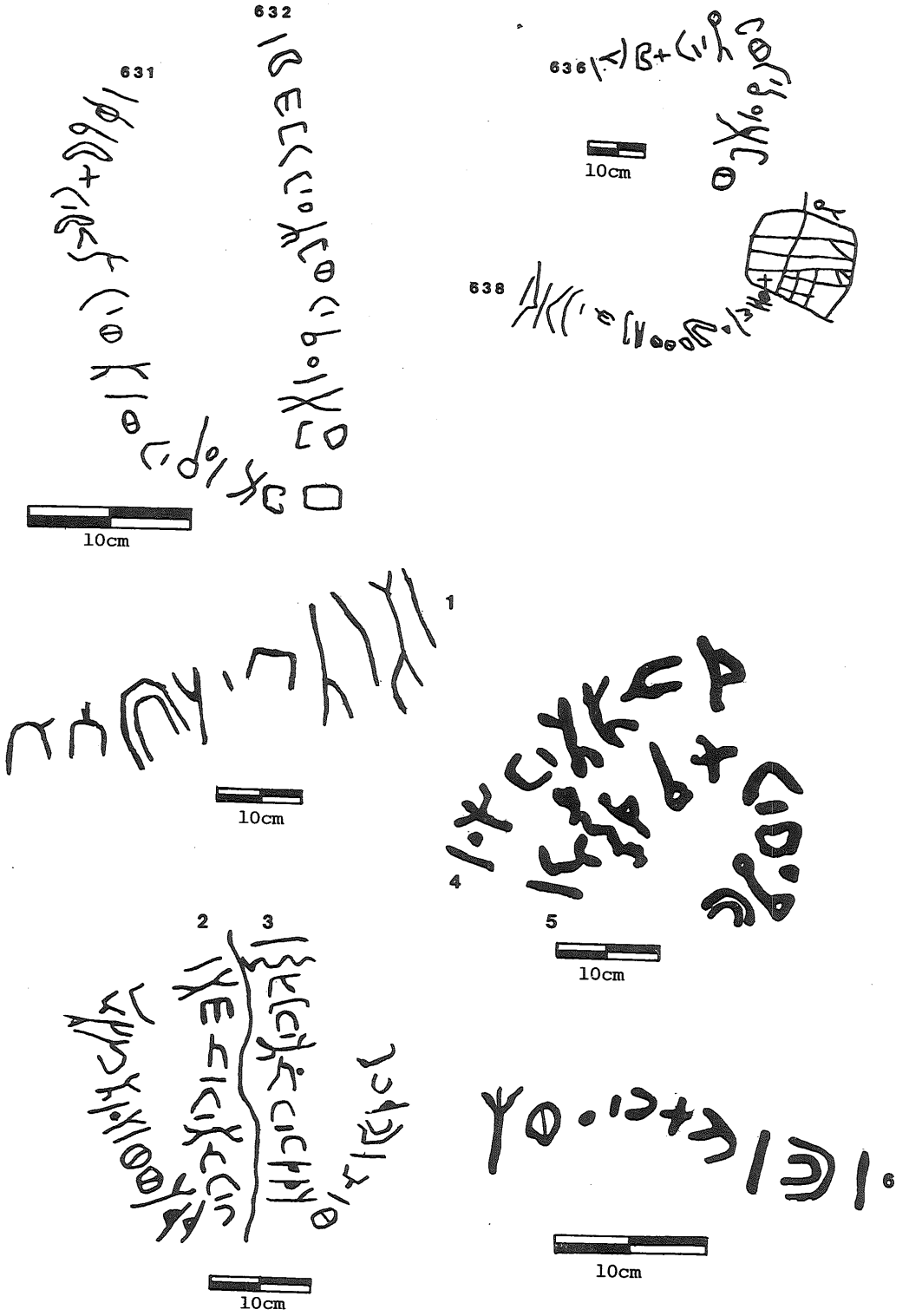


Figure 6. Topographic map of Site J14 showing surface evidence and the positions of units. Note that increasing contour values denote decreasing elevation.

we could translate the present text in a similar fashion. It may be, however, (as read here), that we should read this as a verb, *ns* followed by a preposition, *l*. This would equate with the Hebrew verb *nws* "to flee" (M. Jastrow, Dictionary of the Targumim, the Talmud Babli and Yershalmi and the Midrashic Literature (New York, 1950) p. 888). In C 1362 and 4325 is the expression *nsl s̄n'*, which the editor has rendered as "et surripuit se (ab) hoste", understanding *nsl* to be the 7th verbal form of the verb *salla*. This seems unlikely, firstly as the 7th form is not well attested in Safaitic and, secondly, as one would expect this verb to be followed by a preposition. Perhaps both C 1362 and 4325 should be read *ns l s̄n'* "he fled to an enemy" (reading *ns l* as in the present text) or "he moved back and forth to an enemy" (cf. the Arabic *nāsa*, "to move to and fro").

Nos. 4 & 5 are on the same stone.
(Pl. LXXV, 1).

4. *l ʻḏ bn ' 'sd*
By ʻḎ son of ' 'SD.

5. *l kS̄dyt bn j ʻṯm*
By KS̄DYT son of J ʻṮM.

KSDYT is a new name, comprising the elements K + S̄DYT, the latter of which is likewise new, although both KS̄DY and S̄DY are attested.

6. *l mlkt bn ʻwḏ* (Pl. LXXV; 2).
By MLKT son of ʻWḎ.

This inscription was found on a stone which had been built into the cairn structure on the east side.

Discussion.

For some time now the nature of the so-called "Safaitic cairns" has been a cause for debate, both archaeological and linguistic. The archaeological debate has been centred upon the question of whether or not the cairn structures are Safaitic burial monuments, or indeed bruial monuments at all. This question is linked to the linguistic problem - what exactly do the two words most commonly associated with the cairns, *wjm* and *bny*, really mean and can they be linked in any way to the cairns?

A very large number of the known Safaitic inscriptions have come from, on, or around cairns similar to those excavated. As cairns in the Arabian and Syrian deserts usually were constructed over burials it was naturally assumed that those cairns surrounded by Safaitic inscriptions were Safaitic burial monuments. This assumption seems reasonable enough to anyone who has worked with the inscriptions of the region, as in many cases inscriptions are to be found only near cairns.

G. Lankester Harding was the first to attempt to link the inscriptions at such a cairn to archaeology by carrying out the excavation of the "Cairn of Hani", in 1951.[17] Inscriptions from this site, 15km to the east of H5, make it appear fairly certain that this cairn was indeed the burial place of this Hani'. In 1959 Harding excavated two more cairns, to the northwest of H4, near Burquʻ. Inscriptions here suggested that a certain SʻD bn ṢBH was buried in one of these. Indeed one cairn did contain human remains but the other was empty.[18]

17. G.L. Harding, "The Cairn of Hani' ", op.cit..

18. G.L. Harding, "The Cairn of Saʻd", op.cit..

Inscriptions at the cairn of Hani' containing expressions such as *bny 'l hn' hrjm* (HCH 26), *l hn' ..... hrjm* (HCH 1,2), and the commonly occurring *bny 'l hn'* and *wjm 'l hn'* make it quite clear that the cairn is the burial site of Hani'. Similar expressions at the cairn of S'D bn ŠBḤ likewise confirm that identification. See especially WH 410 and 421, which contain the expression *w bny 'l s'd hrjm*. At cairn No 2, described above, the inscriptions make it clear that the cairn was erected over the remains of ḤRJ bnt ḠT. See especially CNSIJ 620-622. The references to NSR and to FDWT do not necessarily imply that these two were buried here but the discovery of two other individuals in the cairn does suggest that they may have been interred here also. These two were probably buried before ḤRJ and may have been related to her. The relationship of the later, intrusive burials to these earlier ones and to the inscriptions is obscure. It is possible that they postdate the Safaitic tribes.

In the case of many of the Safaitic inscriptions sites, despite the presence of the texts near a cairn, the absence of any references in these which might relate to a burial at the site would suggest that not all of the cairns do cover burials,[19] or that not all of the cairns are to be attributed to the Safaitic peoples. Of course it should be remembered that the practice of erecting cairns over the dead was not unique to these people nor to any one period of time. Thus some of the cairns may be earlier and some later than the Safaites, or they may have reused earlier cairns or had their own reused in turn.

A. Jamme has suggested that as yet there is no proof that any cairn in this region was a Safaitic burial structure. He claims that.

> "No text found so far alludes, directly or indirectly, to a tomb. The expression *wgm 'l*, 'he has mourned over', could hardly refer to a tomb; it is the simple account of a human being grieved by the death of some of his relatives or friends. Even the expression *bny 'l*, 'he has built upon', does not allude to a tomb either. in my opinion, this expression merely describes the writer as 'building' a cairn to the memory of some deceased persons. However, the actual size of such a cairn remains unknown, and we have no proof that these Safaitic commemorative cairns are still standing."[20]

Jamme's comments about these two expressions are valid. *wjm 'l* indeed makes no reference to a tomb, while *bny 'l* may relate to the building of almost anything. But when the two are found in conjunction then it seems clear that the author's building activity was in some way linked to his grief. When such texts are found around a cairn and the grief and building activities are all directed towards one person, then it seems that we must accept that the cairn was constructed in commemoration of the individual named. This is further clinched by the references to the cairn itself, that is *hrjm*, being that of the individual named.[21] For Jamme to assert tha+ "the actual size of such a cairn remains unknown" and that "we have no proof that these.... are still standing" is simply turning a blind eye to the existing

19. As for instance, Cairn A at the Cairn of Sa'd.

20. A. Jamme, "Safaitic Inscriptions from the Country of 'Ar'ar and Ra's al-- 'Anāniyah", in F. Altheim and R. Stiehl, *Christentum am Roten Meer*, I, (Berlin, 1971), p.42.

21. See G.L. Harding, op.cit., p.246.

evidence. Finally, we need not always expect to find a burial cairn at sites where these expressions occur, because, as Jamme himself notes, they do not necessarily refer to a tomb.

Jamme also denies that there is any archaeological evidence that the cairns are Safaitic burials. With regard to the cairn of Hani' he claims that the preservation in this of perishable materials, such as hair, wood and copper, is evidence that the cairn cannot be pre-Islamic in date.[22] Harding has already noted that there is nothing unusual in their preservation,[23] such matters being determined not simply by length of time in the ground but the physical circumstances in each case. Furthermore, it may be noted that, in the case of the cairn of Hani', it could be considered as more than a little unusual to find a burial cairn of the Islamic era located at precisely the same spot as a Safaitic inscription site, as this cairn is the only landmark in an expansive, empty basalt plain. Jamme himself clains to have investigated a cairn in the region of 'Ar'ar,[24] where he found no human remains or artifacts. His description of this is brief:

> "The most orderly cairn I have seen is the first site visited by the expedition, and located at the edge of the cliff west of the pipeline mark 616.02. The almost circular wall is about 1m. high and approximately 4m. in diameter, and the stones are rather well set together. The inside is a disorderly pile of stones. In the lower half of the height of this pile, there is an accumulation of sand that has sifted down between the rocks and has hardened by the rain. All soundings ended on the rocky ground."[25]

This description gives no indication as to the presence or otherwise of inscriptions at the site and does not specify the nature of the "soundings" which he claims to have undertaken. The complete absence of human remains may be explained by the nature of the cairn itself, located on the ridge top. If, as the writer suggests, the cairn was originally no more than a "disorderly pile of stones", into which sand later drifted, then it may well be that any human remains were thoroughly dispersed and destroyed within a short time by the actions of environment and of animals and insects. Thus this sounding alone cannot be taken as proof that the cairns were not burial monuments.

With regard to the objects found in the cairns excavated to date, there is little that would suggest a firm date for them. In the case of that of both Hani' and S'D bn ṢBḤ, no datable objects were found at all. However, with the cairn of HRJ we are on slightly more certain ground, although precision is impossible. The style of the twisted bracelet and of the spatula suggests a Late Roman to Byzantine date, which would agree with the time during which it is assumed the Safaites inhabited the region.

Jamme states his further belief that the cairns were "landmarks or rally signs"[26] or

22. A. Jamme, "L'article de A. van den Branden sur l'expression safaïtique *'tm 'l hr*", *in Al-Machriq*, Vol. 64, 1970, p. 324.

23. G.L. Harding, op.cit., p. 246.

24. A. Jamme, "Safaitic inscriptions from the country of 'Ar'ar...", p.42.

25. Ibid.

26. Ibid.

were groups of stones piled up in a heap when the ground was cleared to form some ancient encampment. He asserts

> "L'emplacement même de la plupart des cairns définit leur fonction: ils sont des points de repère pour les bedouis. Les autres sont des restes d'un campement des nomades, ..."[27]

W.G. Oxtoby has made a similar observation, comparing the cairns which occur along the eastern edge of the harra to "lighthouses", providing landmarks to caravans.[28] If indeed these did serve such a purpose it is most unlikely that they were initially intended to be such. Rather, having been constructed as burial monuments, their prominence in the landscape has inevitably made them landmarks. As noted by Harding, the bedouin of the region do not require such guides, or rally points, to aid them in their travels.[29]

To conclude, it seems certain that the Safaitic bedouin did indeed practice cairn burial in the deserts of Jordan, and many of these sites are distinguished by large numbers of Safaitic inscriptions. A good example of such a burial has been provided by the cairn of HRJ bnt GT. Like the inscriptions themselves, the cairns when taken individually have provided us with only very limited data. Thus it is hoped that in future days more of these cairns can be investigated so that a firmer link may be established between the inscriptions and the archaeological remains of these people, and between the nomads and the settled people of the day.

27. A. Jamme, "L'article de A. van den Branden sur l'expression safaïtique *'tm 'l hr*", *in Al-Machriq*, Vol. 64, 1970, p. 323.

28. W.G. Oxtoby, *Some inscriptions of the Safaitic Bedouin*, American Oriental Series, Vol. 50, (Amenrican Oriental Society, New Haven, 1968), p. 33-34.

29. G.L. Harding, "The Cairn of Sa'd", op.cit, p. 246. See also V.A. Clark, "New Epigraphical Material from the Harra Region of Jordan", in *ADAJ*, Vol. XXI, 1976, p.114.

ABBREVIATIONS.

AASOR	Annual of the American Schools of Oriental Research.
ADAJ	Annual of the Department of Antiquities, Jordan.
C	Corpus inscriptionum Semiticarm, Pars V, Inscriptiones saracenices continens, Paris 1950.
CNSIJ	See footnote 1.
Had	Hadrami.
HIn	G. Lankester Harding, An Index and Concordance of Pre-Islamic Arabian Names and Inscriptions, Toronto 1971.
ISB	G. G. Oxtoby, Some Inscriptions of the Safaitic Bedouin, New Haven 1968, (American Oriental Series No. 50).
J	South Arabian inscriptions published by A. Jamme (see HIn, p.xix for a listing).
Lih	Lihyanite.
QDAP	Quarterly of the Department of Antiquities, Palestine.
Saf.	Safaitic.
SIJ	F.V. Winnett, Safaitic Inscriptions from Jordan, Toronto 1957.
WH	F.V. Winnett and G. Lankester Harding, Inscriptions from Fifty Safaitic Cairns, Toronto 1978.

APPENDIX

Comments on the Human Remains from Two Pre-Islamic Cairns

by

Scott Laird Rolston

The bone sample recovered by Dr. Clark and Dr. MacDonald is small and fragmentary. The material is in very fragile condition as well and required that certain observations be made in situ.

After the excavation, the plotted bone bags were laid out on a table top in order to approximate the relationship their contents had in the ground. Every possible metric and non-metric observation was made.

All metric measurements and indices, except overal stature estimates, are in millimeters.

Cairn No 1 (Dr. MacDonald)

The remains of two individuals were found in this cairn, one original burial (Burial No 1) and another (Burial No 2), apparently intrusive, which had disturbed the original burial. The bones of No 2 are in better condition than No 1, in addition to being articulated. No 1 had been moved to one side during the inhumation of No 2.

On the whole the bone materials from both burials in this cairn are better preserved than are those from cairn No. 2, perhaps reflecting the better drainage situation.

Burial No 1 (The original occupant)

Sex: Male
Criteria: Pelvic fragments and general post-cranial robusticity.

Age: 30-45?
Criteria: Degree of vertebral arthritic lipping (very slight, on one centrum only),* tooth wear (present but not severe), and alveolar resorbtion due to periodontal disease (also present but not severe). Only three teeth were preserved but they showed no decay and very little tartar.

Stature: 163.05 + 5.31 cm
Criteria: Right humerus stature increment 2-3 (Steele, 1970)**

* In the bedouin bones I have seen to date, arthritis seems to set in males somewhat earlier than is usual in populations for which statistics concerning this point are in print, (e.g. Stewart, 1958). Tooth wear can also be considerable in desert dwellers. These two considerations prompted a lower age estimate than I might otherwise have given.

** the figures from Steele (1970) used here are those for white males, as the body proportions are more likely to be in proportion with them than with blacks. No studies of stature estimation for Near Eastern populations exist as yet, so the ± qualification should be taken seriously.

Pathology: A) Some parietal bossing of undetermined cause.***

B) Strong arthritic lipping of a single left first metatarsal, apparently due to traumatic injury.

Metric and non-metric observations

Cranial: Parietal thickness, 6mm

Mandibular: No caries, some (+) wear, some alveolar resorbtion (+), little tartar, wear plane flat.

Post-cranial: Right humerus
Stature increment 2-3, 240mm
Midshaft maximum diameter 24mm
Midshaft minimim diameter 19.5mm
Least circumference 69mm
Robusticity (+)
Supra - condyloid foramen (+)

Sacrum
Breadth 115.5mm
Height 107mm
Sacral index 145.32 + 5 (see: Wilder, 1920)
Sacral hiatus (+)

Left Femur
Maximum head diameter 44 mm*
Vertical neck thickness 34 mm
Neck A-P 22 mm

Left Tibia
Nutrient A-P 34.5 mm
Platycnemic index 66.66 (Mesocnemic)
Nutrient M-L 23mm

Right Talus
Height 31mm

Right calcaneus
Maximum length 85mm
Maximum height 48.5mm

In summary, the remains from burial No 1, cairn No 1 represent an adult male of average robusticity and an estimated stature about that of modern bedouin and somewhat less than that of early 20th century Palestinians (see: Henry Field, 1958, p. 237).

Burial No 2 (The intrusive occupant)

*** Henry Field (1956) notes parietal bossing in a number of ancient populations in the Near East, both urban and village dwellers, though no nomadic remains have survived in any quantity. It seems likely that this is a nutrition-related phenomenon. Those interested in malnutrition and its effects upon bone are referred to Manocha (1972) and Steinbock (1976).

* Stewart (1979, p. 120) would not consider this to be within the male range, but sex = ?. He cautions, however, against the use of indices prepared for European or American populations elsewhere. Research I am currently engaged in concerning the metric sexing of Neolithic populations suggests that a considerable downward shift in the range is in order for primitive societies and I therefore feel safe in placing a 44 mm measurement in the male category.

Sex: Male

Criteria: Fragments of the pubis, cranial robusticity, especially the external occipital protuberance, superior aspect of the mandible, head diameter of the femur and humerus

Age: 40-55

Criteria: Cranial suture closure, tooth wear, arthritic degenerative change on several vertebral fragments, a small fragment of pubic symphysis

Stature: A) 162.9 ± 4.41 cm

Criteria: Left femoral stature increment 2-3 and 3-4 (Steele 1970*).

B) 164.6 ± 4.41 cm

Criteria: Right femoral increments 2-3 and 3-4.

Pathology: The stature discrepancy between the left and right femora may represent the results of partial disuse atrophy of the left leg. The head of the left femur shows eburnation striations in conjunction with a raised, flat eburnated surface (approx. 11 mm diameter) on the superior aspect. The anterior surface of the head is pitted and the wear striations are oriented mediolaterally over the head as though the person was forced to step side-ways in order to a avoid the friction and pain that a normal tandem step would produse. These are degenerative changes common in osteoarthritis, though the condition of the left femur is further affected by an apparently independent infection of the upper diaphysis and metaphysis where periostitis is in evidence both anteriorly and posteriorly. The osteoarthritic degeneration of the right femur is much less, but the condition is nevertheless bilateral. The right proximal femur also shows signs of increased mechanical stress, expressed in several millimeters of diameter increase, as is to be expected when one leg must compensate for another.

The vertebral column is also affected by varying degrees of vertebral osteophytosis, slight in the cervical region and moderate in the thoracic and lumbar.

The right radius is affected by arthritis, though the left bones have not survived and it is therefore impossible to determine whether the condition was bilateral in the arms as well. The right ulna is slightly affected.

* Increment 2-3 of the left humerus yielded a stature estimate of 161.3 +5.31, using the same tables.

The 5th (?) right rib shows signs of a healed fracture distally. Only a few rib fragments were recovered and we were unable to ascertain whether such fractures were a commonplace occurance for this person.

The oral pathology is considerable, with +++* alveolar resorbtion visible on the mandible. Unfortunately none of the face was recovered and the mandibular fragments that were recovered were in very poor condition. Nevertheless it is plain that this person suffered from a degree of carious destruction and periodontal disease unusual in modern bedouin. Of the mandibular teeth, six were too broken to examine, the anterior teeth were lost post-mortem, at least two teeth (left M^1 and left PM^1), were lost antemortem and the four visible molars (right M^1, M^2 and M^3 and left M^2) were so severely carious as to preclude determination of the cusp pattern.

The tibiae showed posterior bilateral lesions possibly symptomatic of non-malignant osteochondroma near the proximal epiphyseal line. The bilaterality is not perfect, however, as the exostosis of the right is more developed and "spur-like". Nevertheless, such bilaterality as exists is an argument against osteochondroma and in favor of an equally benign diaphyseal aclasis, (i.e. hereditary multiple exostoses). Osteochondroma is normally not associated with twin exostoses (Steinbock, 1976).**

Metric and non-metric observations

Cranial: Parietal thickness, 6 mm
Mastoid height, 23.5 mm
Robusticity (+)

Mandibular: Bicondylar breadth, 118.5mm
Symphysis height, 36.5mm
Least ramus A-P, 35.5mm
Bi-mental breadth, 45mm
Bigonial breadth, 94.5mm
Mandibular body height, 38.5mm
Mandibular body thickness, 14.5mm

Tooth dimensions: M1: height, 7.5 mm; length, 10.5 mm; breadth, 10mm

* Discussions of degrees of presence or absence as represented by + or - signs show only that methods have not been standardized. Following Angel's (1971) lead I take one + to denote presence; +++ very prominent or very severe.

** The two tumors are described by Steinbock as being different phenomena. A largely congruent but somewhat altered and taxonomically more complete view is offered by Dahlin (1978) who uses the term "osteochondroma" to describe the multiple lesions elsewhere referred to as diaphyseal aclasis. Dahlin further informs us that osteochrondroma is not always benign. He estimates the incidence of development of secondary chondrosarcoma as being in excess of 10%.

M2: height, 6mm length, 10 mm; breadth, 10 mm

Clavicle, right: Maximum length, 154 mm
Robusticity (++)
Curvature (++)

Right Ulna: Maximum length, 261 mm
Least circumference, 45 mm
Robusticity (++)
Interosseous crest, (++)

Right Radius: Maximum length, 243 mm
Interosseous crest (++)

Right Femur: Subtrochanteric A-P, 30.5 mm
Subtrochanteric M-L, 29.5mm
Platymeric index, 103.38mm
(stenomeric)*

Left Tibia: Maximum length, 359? mm
Nutrient A-P, 39.5 mm
Nutrient M-L, 27.5 mm
Platycnemic index, 69.62
(Mesocnemic, upper range)

Right Tibia: Nutrient A-P, 37.5 mm
Nutrient M-L, 26.5 mm
Proximal Epiphysis breadth, 80 mm
Platycnemic index, 70.66
(Eurycnemic, lower range)

The shift from mesocnemic to eurycnemic in one individual is not significant as the relationship of breadth and depth is similar in both bones and the component measurements are not far apart. What is perhaps interesting is the proximity of this person to modern, well fed populations. If platycnemia (i. e. flattening) is related to malnutrition, (bedouin populations as a whole are not particularly well nourished), then this individual and several of his contemporaries do not seem to have suffered appreciably. Of course, a few individuals do not make a sample. The political and economic relationship between desert dwellers and the urban areas of the Decapolis could be somewhat better illuminated by large amounts of such nutritional information. It is therefore to be hoped that more pre-Islamic bones will come to light.

Cairn No 2 (Dr. Clark)

This cairn contained the remains of seven persons, of whom four were stratigraphically lower and probably represent the earlier, original burials. The three higher and later intrusive burials were actually less complete, having been badly disturbed by animals. Only a few bones remained of these individuals, although those found were in much better condition than the remains of the four below.

The intrusive elements consisted of:

A) One female, age 23-27 ± 2 (criteria: suture closure, epiphyseal union and tooth wear), represented by fragments of a temporal, occipital, parietal, mandible, left scapula, left innominate and humerus.

The following measurements were possible:

* Bass' (1971) statement to the effect that a stenomeric index is usually the result of a pathological condition is borne out in this case, as the degeneration of the left femur forced the subtrochanteric thickening of the right.

Mandibular symphysis height, 32mm

Humeral bi-epicondlar breadth, 51 mm.

B) One child, age 5-8 (criteria. half-formed mandibular incisor), represented by one vertebral, one tibial and one scapular fragment.

Tibia Nutrient A-P. 17mm
Nutrient M-L. 15 mm
Platycnemic index: 88.23

C) One male: represented only by a single, very large right talus (damaged)

The Earlier Burials

Burial No 1*

Sex: Male

Criteria: General robusticity of long bone and mandibular fragments

Age: 40-55?

Criteria: Beginning arthritic lipping on several thoracic centra, also on ulnar notch. Tooth wear is not excessive.

Pathology: A) Some arthritic lipping on vertebral bodies

B) Rather strong lateral bowing apparent on one left ulnar fragment

C) Mild diploic thickening with corresponding thinning of the outer table on two parietal fragments (average parietal thickness, 8.5 mm)

Burial No 2

Sex: Female

Criteria: Fragment of pubis, general post-cranial size and robusticity , mandibular fragments

Age: middle aged +

Criteria: Rarification of head of the femur as well as some cortex thinning, tooth wear and loss, cranial suture closure

Pathology: Some arthritic lipping is to be seen on thoracic (?) centra fragments as well as osteoarthritis apparent on proximal metacarpals.

The wear plane of the surviving teeth is strongly lingual to bucchal and suggests malocclusion.

There was no sign of caries, only a littie tartar and moderate alveolar resorbtion, despite her apparently advanced age. She exhibited a Y5 cusp pattern on M1 and M2 (left mandibular).

Burial No 3

Sex: Female (with associated unsexed infant's skeleton)

* The numbers given here do not necessarily correspond to the numbers given the burials elsewhere in publication. They represent only the chronological order in which they were examined.

Criteria: Pelvic fragments, lack of robusticity and femoral head diameter.

Age: Mother: 17-20 ± 1

Criteria: Cranial sutures open and seven recovered thoracic and lumber vertebrae had fully formed epiphyseal plates, though no union.

Age: Infant: 1-3 months

Criteria: Femoral length (see Stewart, 1979, p. 130-137)

Pathology: The area of the pre-auricular sulcus shows considerable traumatic damage due, no doubt, to her having given birth shortly before her death (Angel, 1971; Stewart, 1957).

The infant's skull was not sufficiently preserved to answer the question of infanticide. This sort of burial of infants and mothers together is not uncommon, but authorative discussion must await larger and better preserved samples.

Metric and non-metric observations

Cranial: Parietal thickness, 5mm.

Post-Cranial: Sacro-iliac articular surface height, 35mm,
breadth 28.5mm.
Femur Head diameter 43mm.
Neck A-P, 29mm.

It is difficult to say whether more than one person was originally intended to be interred in any single cairn, though Dr. Clark is attempting to ascertain that through the study of epigraphic and stratigraphic evidence. It is not thought to be customary among bedouin today except in the case of an infant being buried with its mother if the mother dies before her offspring can be supported by the family without her. Substitute wet nursing is practiced, of course, and holds special place in bedouin oral tradition, but the availability of potential substitute nurses is rather limited in the desert. Infanticide should not be ruled out.

Exceptions to the single burial rule are not unheard of among bedouin, but the evidence is difficult to gather and interpret because bedouin quite frequently insert burials into earlier graves. The soil is softest there and since prominent ruins or terrain features are favored sites, one finds that such places are frequently crowded with skeletons. Just who was buried with whom is a matter of some conjecture. It seems safest to assume that multiple burials were the exception rather than the rule. The fact is that little is known of the long term shifts and trends of nomadic societies and it is merely assumed that economic necessity keeps the customs of a group rather static. If there is merit in that opinion then one might tentatively conclude that pre-Islamic tribes behaved similarly. Islam places little value upon a marked grave. Even though a family might wish to bury its dead in the same cairn, and might occasionally do so, the far-flung grazing habits of nomads and the necessity for rapid interrment would be a stronger centrifugal force.

My thanks are due to Dr. Clark for allowing me to examine this material.

Angel, J. Lawrence 1971 — The People of Lerna Smithsonian Institution Press

Dahlin, David C. 1978 — Bone Tumors Charles C. Thumas Spring field ill.

Field, Henry 1958 — Ancient and Modern Man in Southwest Asia University of Miami Press

Manocha, Sohan L. 1972 — Malnutrition and Retarded Human Development Charles C. Thomas, Co. Springfield, Illinois

Steele, D. Gentry 1970 — Estimation of stature from fragments of long limb bones In: Stewart, T.D. (ed) Personal Identification in Mass Disasters, pp. 85-97 National Museum of Natural History Washington, D.C.

Steinbock, R. Ted 1976 — Paleopathological Diagnosis and Interpretation Charles C. Thomas, Co. Springfield, Illinois

Stewart, T.D. 1958 — The rate of development of vertebral osteoarthritis in American whites and its significance in skeletal age identification The Leech (Johannesburg), 28 (3-5)

Stewart, T.D. 1979 — Essentials of Forensic Anthropology Charles C. Thomas, Co. Springfield, Illinois

Stewart, T.D. 1957 — Distortion of the pubic symphyseal surface in females and its effect upon age determination. American Journal of Physical Anthropology, Vol. 15, No 1

Wilder, Harrison H. 1920 — A laboratory manual of Anthropometry P. Blakistans and Sons and Company Philadelphia

V. A Clark
B. MacDonald
Scott L. Rolston

PRELIMINARY REPORT ON A SECOND SEASON OF EXCAVATION AT PELLA, JORDAN

Winter, 1980

by

J. B. Hennessy
A. W. McNicoll
T. F. Potts
A.G. Walmsley

The University of Sydney[1] conducted its second season of excavation at Tabaqat Fahl (Pella) from December 27th, 1979 to March 10th, 1980 as part of the joint Sydney/Wooster expedition to Pella. The programme of work was commenced in December 1978[2] and is conducted in collaboration with the Department of Antiquities of Jordan. The expedition wishes to express its thanks to the Director-General, Dr Adnan Hadidi and members of the Department of Antiquities for their continued support in all aspects of the work.

A successful season saw excavations continued and expanded in Areas III and IV (fig. 1) on the main mound, where further important information was obtained on settlements of the Umayyad, Byzantine, Hellenistic and Iron Age periods. In Area V (fig. 1), work continued on the excavation of the temple area several interesting tombs were dug high on the northern slopes of Tell Husn, Area XI (fig. 1). The tombs belonged to the late Middle Bronze and early Late Bronze Ages and give promise of further rich rewards in the area. Miss Linda Villiers, a member of the team, conducted an intensive surface survey on the hills a kilometre to the north-east of the main mound and has produced evidence of lower Palaeolithic occupation.

The Tombs - Area XI (Pl. LXXVI:1 & Fig. 1)

Remains of four tombs were discovered high on the northern face of Tell Husn during the latest season of excavations at Pella. Three

1. The expedition was again largely financed by The Australian Research Grants Council, The Australian National Gallery and The University of Sydney. Further contributions were made by The University of Queensland, The University of New England and The Australian Institute of Archaeology, Melbourne. We wish to express our gratitude to all these bodies. The members of the expedition were: Basil Hennessy and Tony McNicoll (Directors); Alan Walmsley (Site Director); Pat Smith (Camp Director/Draughtsman); Liz Roberts (Cataloguing); Jon Hosking (Photography); Ian Edwards (Ceramic Technologist and Supervisor); John Tidmarsh (Expedition Medico/Supervisor); Sue Balderstone (Architect); Annie Searight-Macdonald (Conservator); Karina Kelly, Peta Seaton, Jill Tidmarsh, Tim Potts (Supervisors); Dr Ghasi Bisheh and Mr Sultan Shraideh, Mr Mohammed Darwish (Department of Antiquities Representatives and Supervisors) with Mr Badri Madi as the "all-essential" foreman. Miss Linda Villiers with her representative, Mr Sami Abaddi, have been working on an adjacent Lower Palaeolithic site from the Pella headquarters.

2. See reports forthcoming in the *ADAJ*, Vol. XXIV (in press) and *BASOR* 239.

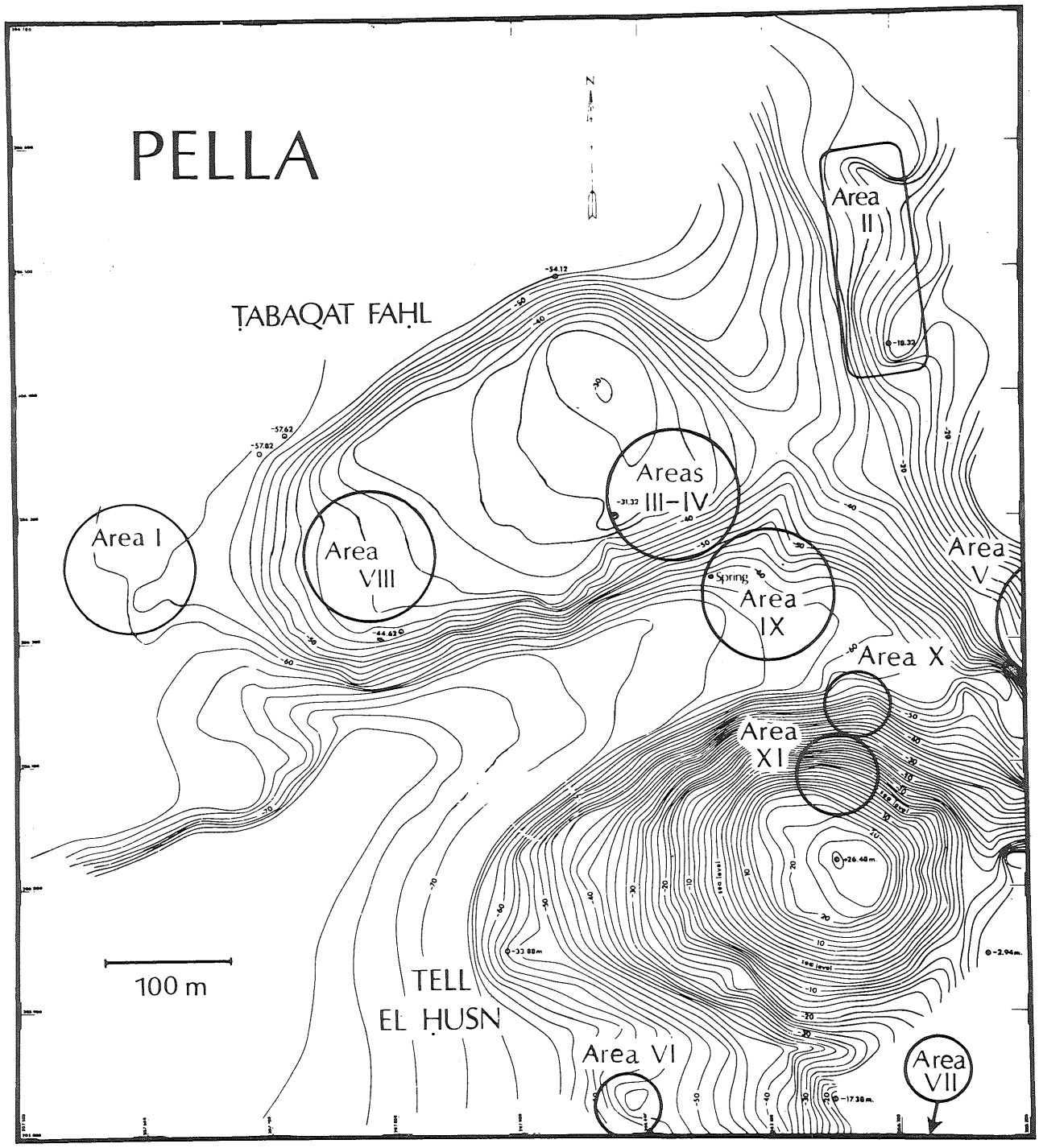


Fig. 1 Tabaqat Fahl (Pella). Site Plan.

of the tombs belonged to the latter part of the Middle Bronze Age. The fourth, a tomb with side chamber, contained material of the early years of the Late Bronze Age.

Two of the tombs, 18 (XI. 1), 19 (XI. 2), were represented by a mere half metre of the rear of the original chambers; the rest having washed down the steep slope of Tell Husn over the course of the past 3500 years. Ten metres to the east, tombs 20-22 (XI. 3-5) were in somewhat better condition, though again they had suffered badly from erosion, and the burials and offerings had been churned by frequent flooding of the chambers.

In the case of tombs 18 and 19 there could be no certainty that all of the finds were part of the original deposits as some of the vessels could quite easily be wash from eroded tombs higher up the slope. The surface soils of Husn are full of such vessels. The groups, however, do appear to be homogeneous. About 10% of the floor area of tomb 20 had similarly disappeared down the side of the hill; the remainder of the deposit appeared to be intact. Above the Late Bronze Age I deposit were vessels of Middle Bronze Age IIC, washed down from tomb 22 immediately above tomb 20. Tomb 21, a small side chamber from tomb 20, was robbed thoroughly, overnight, during the course of the excavation.

In this brief report only the major finds from the groups are published.

Tomb 18 (XI.1) (Fig.2)

Approximately half a square metre of the rear of the chamber remained. The finds appeared to be in place on the floor of the chamber.

Finds

1. Fragment of face vase, M.B. buff. Very finely mixed clay with medium and tiny grits, fired orange-buff with thin grey inner face. Lightly polished creamy-buff slip inside and out. Modelled features with details picked out with added plastic ornament and incision. Thin, matt purple-brown paint to delimit area of face and in band around carination. Rim dia. 17.1 cms.
2. Dipper juglet. Sandy, gritty clay, fired buff on outer face. Lightly burnished wet slurry. Max. ht 19.3 cms; max. width 7.5 cms.
3. Miniature cylinder juglet. Finely mixed clay, sandy with many medium and tiny grits, fired light grey. Lightly burnished wet slurry. Max. ht 6.6 cms; max. width 4.4 cms.
4. Piriform jar. Clay as no. 3 but fired buff throughout. Thin, lightly burnished creamy slip. Decoration in matt purple-brown paint. Max. ht 12.5 cms; max. width 10.8 cms.
5. Lamp. Well mixed clay, sandy, with a great many medium and small grits, fired buff to orange-buff. Wet slurry. Max. ht 3.9 cms; max. width 12.8 cms.
6. Bronze toggle pin. Max. length 17.0 cms
7. Bronze toggle pin. Max. length 17.0 cms.
8. Bronze toggle pin. Remaining length 10.3 cms.
9. Pale green glass bead. Max. width 1.8 cms.

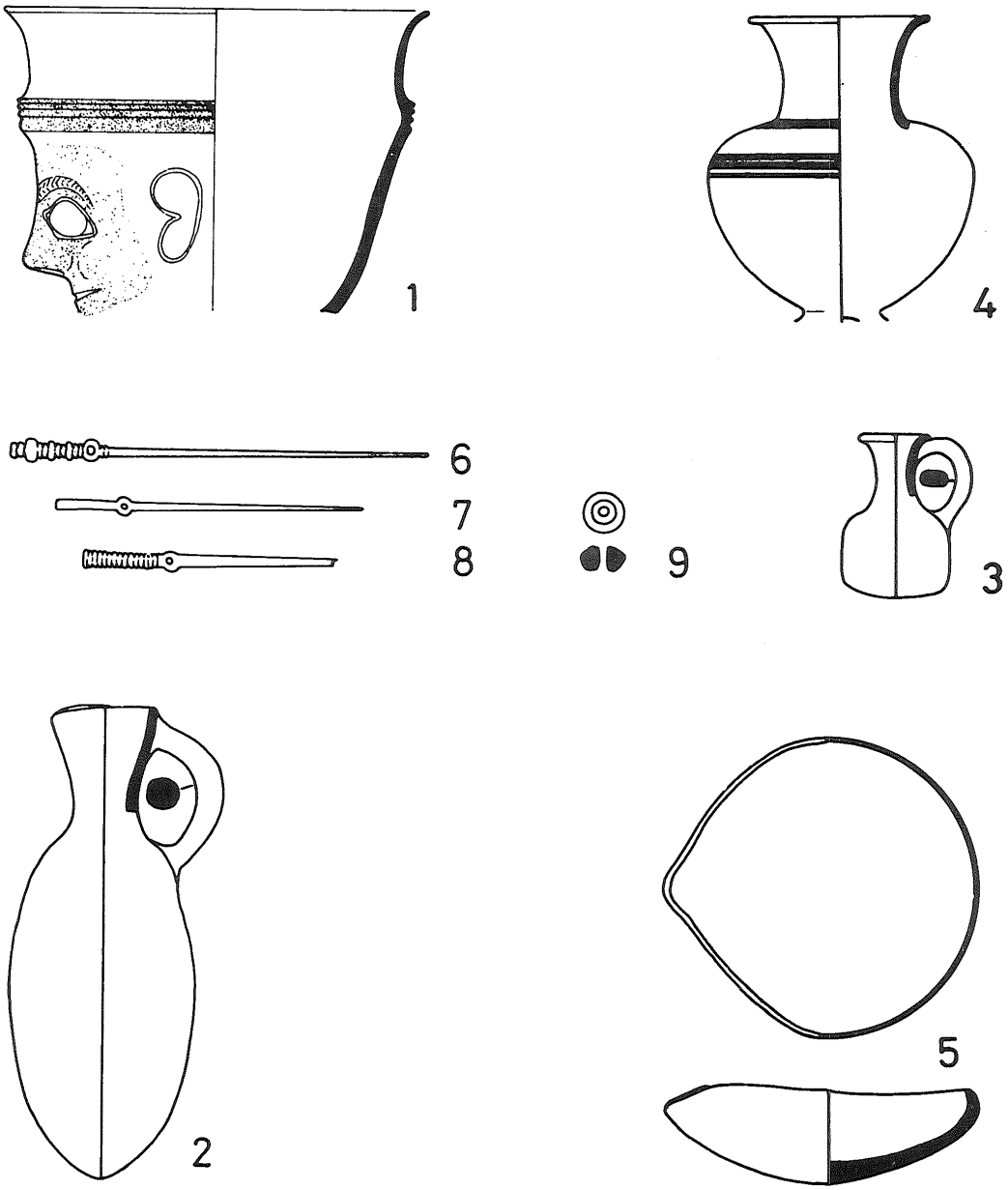


Fig. 2 Pella Tomb 18. Objects (scale 1:3).

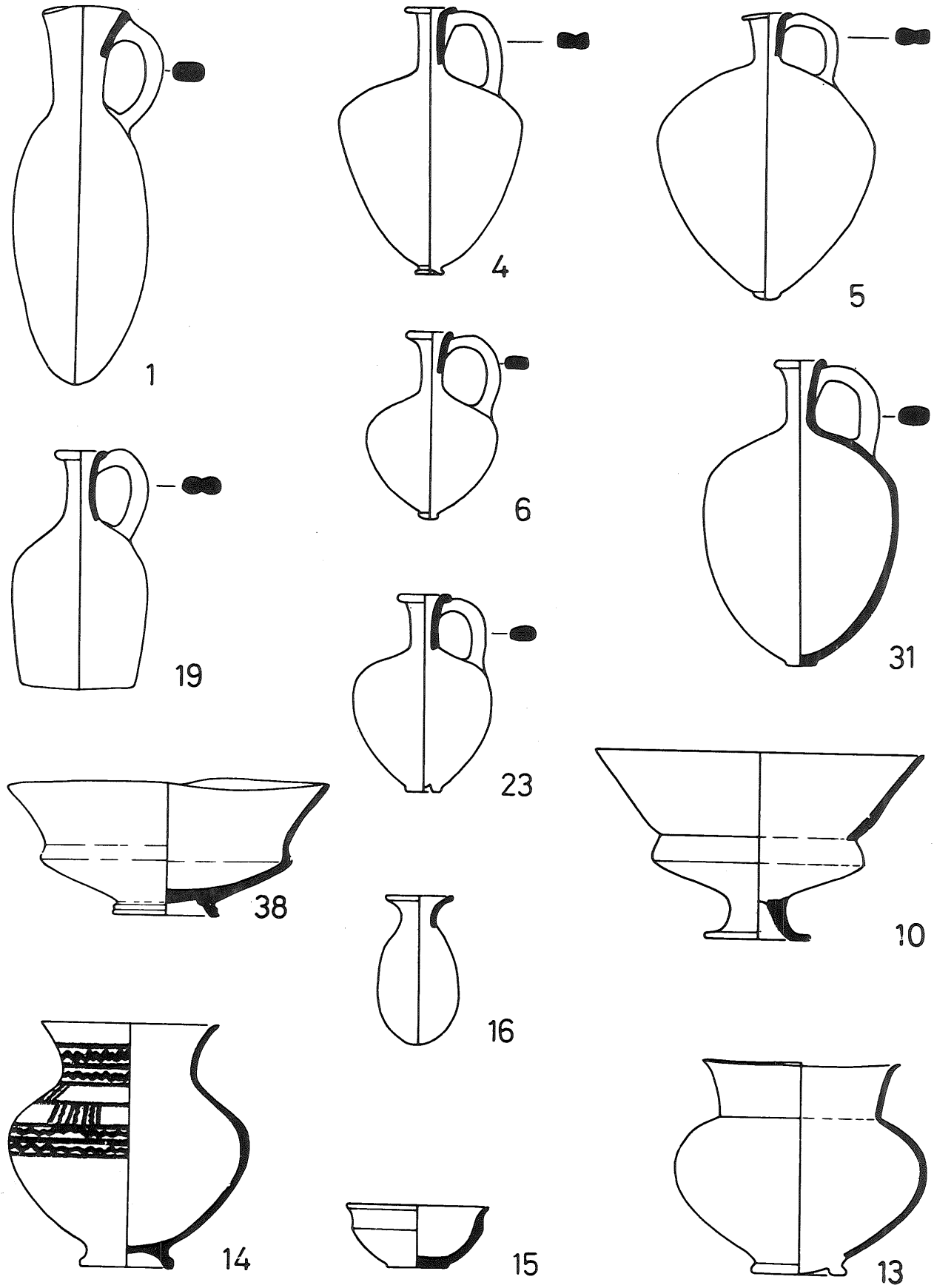


Fig. 3 Pella Tomb 19. Selected types (scale 1:3).

Tomb 19 (XI.2) (Fig.3)

A shallow niche 60 cms deep may represent the remains of a tomb chamber; but the thirty-eight vessels, piled in a heap, gave more the impression of having been washed from a tomb higher up the slope.

Finds

1. Dipper juglet. Very finely mixed clay, sandy with some small grits, fired orange-buff. Thin, burnished greyish-white slip. Max. ht 20.1 cms; max. width 7.1 cms. Nos 2, 3, 24, 25, 26, 27 similar.

4. Piriform juglet. Finely mixed clay, sandy with many small and medium grits, fired buff. Thin, burnished light brown slip. Max. ht 14.0 cms; max. width 9.6 cms.

5. Piriform juglet. Clay as no. 4 but fired grey. Thin, highly burnished brown-black slip. Max. ht 15.0 cms; max. width 11.4 cms.

6. Piriform juglet. As no. 5. Max. ht 9.9 cms; max. width 6.9 cms.

10. Carinate bowl. Finely mixed clay, sandy with many medium and small grits, fired orange to brownish-buff. Thin, smoothed slip fired orange, pink and buff in patches. Max. ht 10.5 cms; rim did. 18.1 cms. No. 11 similar, but shallower.

13. Small jar. Very finely mixed clay, sandy with tiny grits, fired buff. Wet slurry. Max. ht 11.3 cms; rim dia. 10.5 cms.

14. Small jar. Clay as no. 13. Thin, highly burnished white to greyish white slip. Painted decoration in thick, matt reddish-brown paint. Max. ht 12.9 cms; rim dia. 9.5 cms.

15. Miniature bowl. Finely mixed clay, sandy with a great many tiny white grits, fired brownish-buff with grey inner and outer faces. Wet slurry. Max. ht 3.3 cms; rim dia. 7.5 cms.

16. Alabastron. Alabaster. Max. ht 8.0 cms; max. width 4.3 cms. Nos 17 and 18 similar.

19. Cylindrical juglet. Well mixed clay, sandy with a great many medium and tiny grits, fired buff to orange-buff. Wet slurry. Max. ht 12.7 cms; max. width 7.1 cms. No. 20 similar.

23. Piriform juglet. Finely mixed clay, sandy with many medium and small grits, fired buff. Thin, highly burnished reddish-brown slip. Max. ht 10.5 cms; max. width 7.3 cms. Nos 32 and 34 similar.

31. Piriform juglet. Finely mixed clay, sandy with many medium and tiny grits, fired uniformly dark grey. Max. ht 16.2 cms; max. width 11.3 cms. Nos 9, 21, 28, 29, 30, 33 similar.

38. Carinate bowl. Very finely mixed clay, sandy with medium and tiny grits, fired orange-buff. Wet slurry. Max. ht 7.3 cms; rim dia. 17.2 cms.

Tomb 20 (XI.3) (Figs. 4-9)

The greater part of the floor area of the chamber of tomb 20 remained. The dromos and roof of the chamber had been washed away.

There were remains of seven burials in the tomb; but the deposit was so churned that

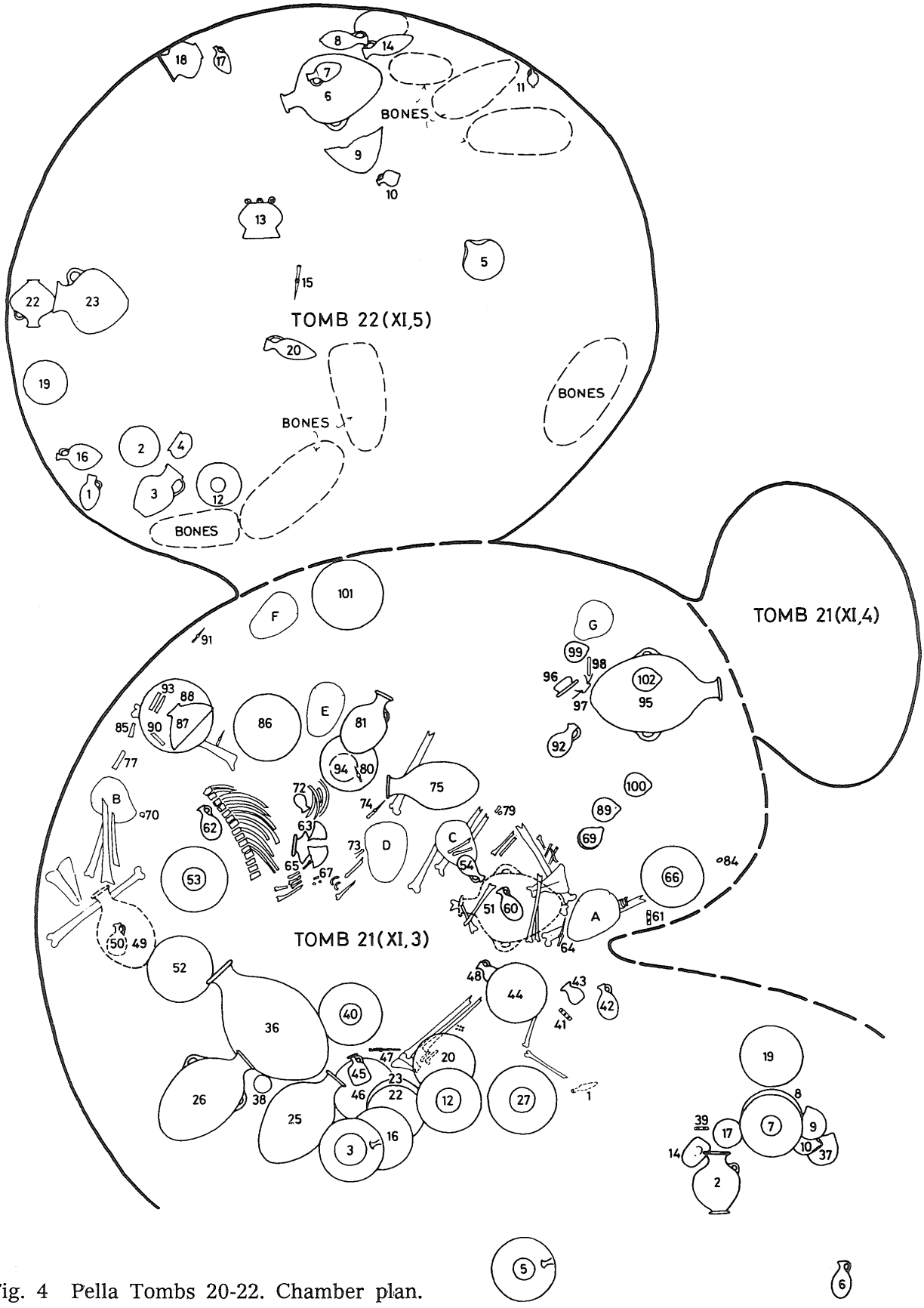


Fig. 4 Pella Tombs 20-22. Chamber plan.

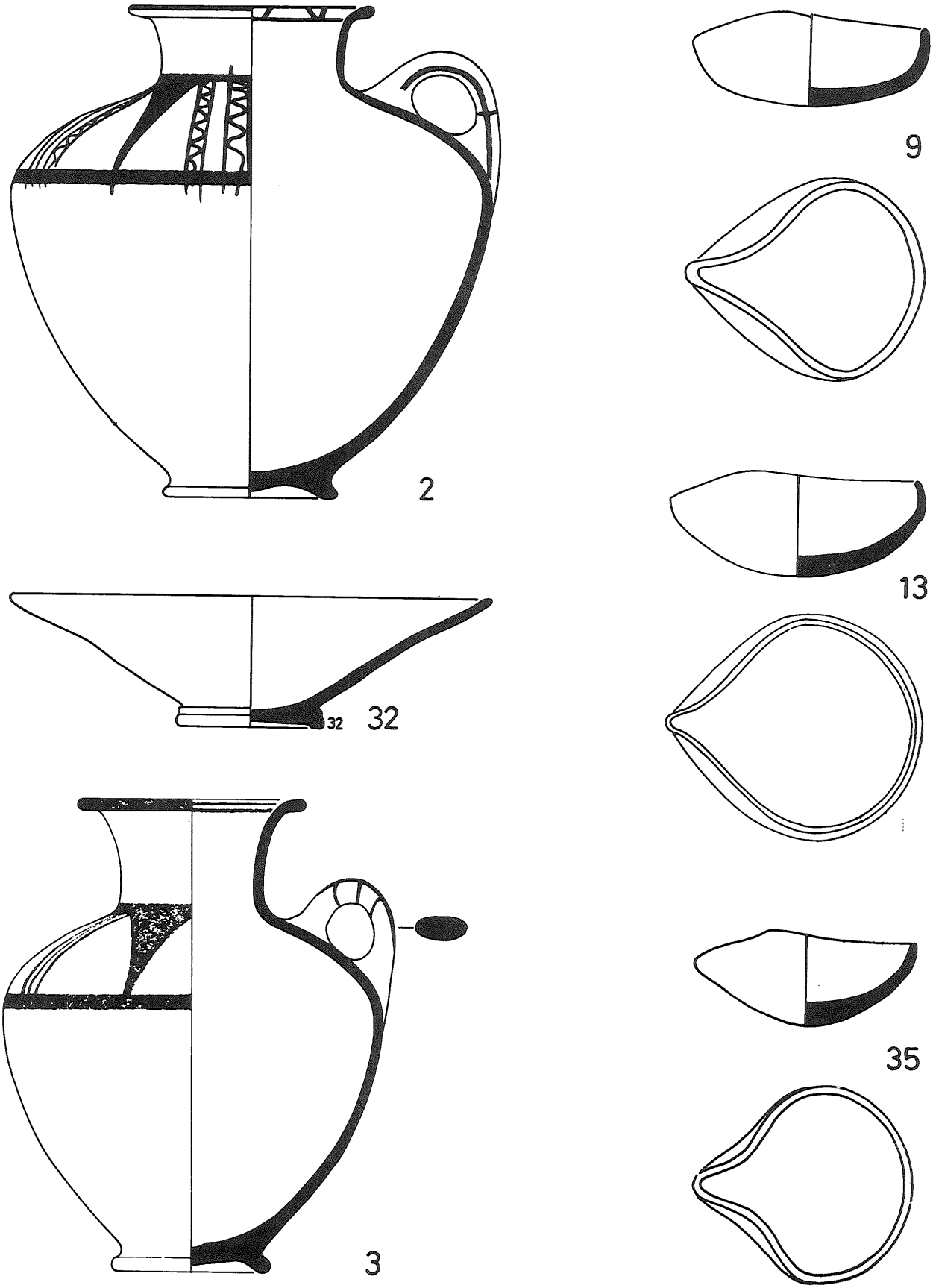


Fig. 5 Pella Tomb 20. Pottery (scale 1:3).

it must be doubtful if any were in their original position.

Tomb objects nos 1 and 51 were in an upper layer of wash, probably from the Middle Bronze Age tomb immediately above. Nos 49 and 50 were also above the main deposit but may have floated up in an earlier flooding of the tomb. No. 49 was inside no. 50.

Finds

1. Javelin (a) with tweezers (b) bronze - attached - length 4.9 cms; hollow-based javelin head with single rivet at end of shaft. Length 13.2 cms.

2. Chocolate-on-white jug. Very finely mixed clay with medium and tiny grits, fired orange-brown with thin grey inner and outer faces. An additional thin, orange-brown face on the body surface giving a sandwich effect in the section. Covered with thick, highly burnished, creamy-white slip. Slip extends over rim. Decoration in thick matt red-brown to orange-brown paint. Max. ht 26.3 cms; rim dia. 12.9 cms.

3. Chocolate-on-white jug. Very finely mixed clay with medium and tiny grits, fired orange-brown throughout. Thick, burnished creamy-white slip extending inside neck. Decoration in thick, matt purple-brown paint. Max. ht 25.2 cms; rim dia. 11.9 cms.

5. Chocolate-on-white jug. Well mixed but very gritty clay, fired orange-buff throughout. Thick, burnished creamy-white slip on outside. Decoration in thick, matt purple-brown paint. Slip and paint mostly worn off. Max. ht 29.6 cms; rim dia. 10.2 cms.

9. Lamp. Well mixed very gritty clay, fired brownish-buff. Wet slurry. Max. ht 4.9 cms; max. length 12.7 cms. Nos 29, 56 similar.

11. White Slip bowl. Very finely mixed clay with medium and tiny grits, fired creamy-buff. Thick, highly burnished milk-white slip. Max. ht 7.5 cms; rim dia. 19.8 cms. Nos 55 and 82 similar.

12. Decorated White Slip (Chocolate-on-white Ware) bowl. Very finely mixed clay with medium and tiny grits, fired buff. Thick, highly burnished milk-white slip inside and out. Decoration in matt reddish-brown paint. Max. ht 7.0 cms; rim dia. 21.2 cms. No. 87 similar.

13. Lamp. Clay and finish as no 9. Max. ht 5.4 cms; max. length 13.4 cms. Nos 10 and 20 similar.

15. Red Slip bowl. Intact. Fired buff on surface. Covered inside and out with matt, dark reddish-brown slip. Max. ht 8.3 cms; rim dia. 19.0 cms.

19. Buff Ware bowl. Intact. Well mixed but very gritty clay, fired brownish-buff. Wet slurry. Max. ht 7.3 cms; rim dia. 24.5 cms.

23. White Slip bowl. Clay and description as no. 11. Max ht 7.2 cms; rim dia. 20.0 cms.

27. White Slip bowl. Well mixed very gritty clay, fired buff throughout. Covered inside and out with a thick matt creamy-white slip. Max. ht 7.5 cms; rim dia. 25.5 cms. No. 88 similar.

32. Buff Ware bowl. Well mixed clay with a

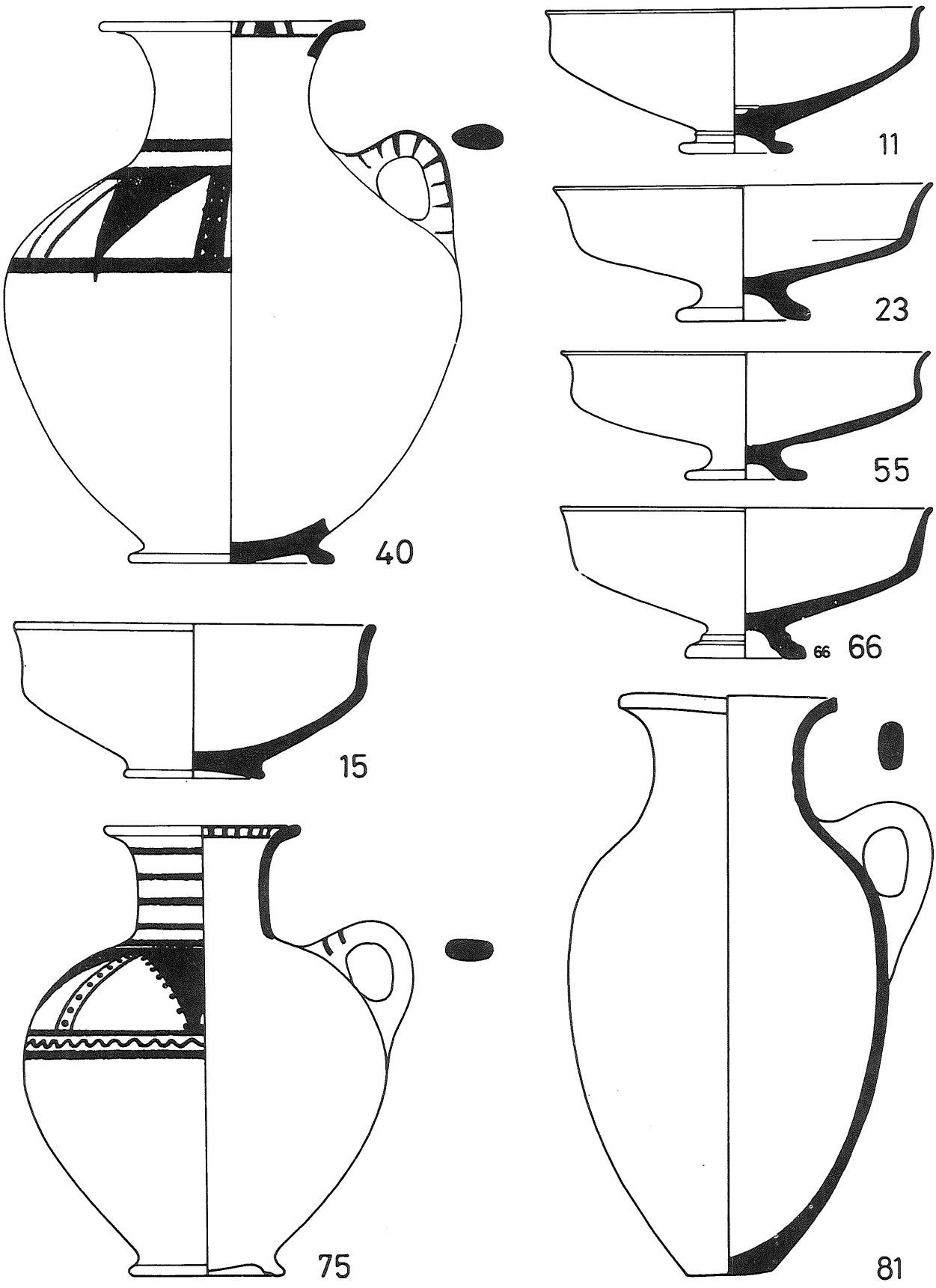


Fig. 6 Pella Tomb 20. Pottery (scale 1:3).

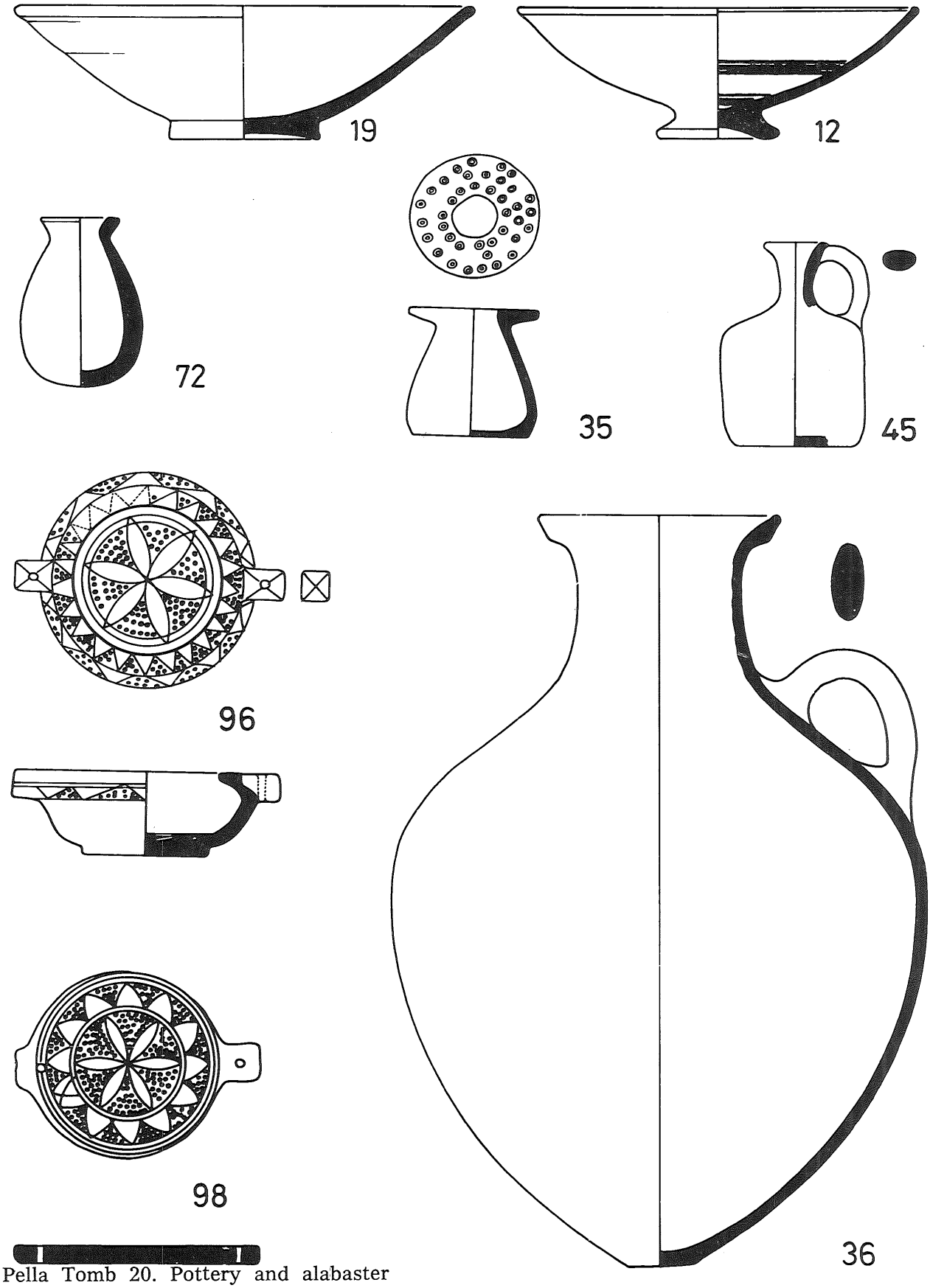


Fig. 7 Pella Tomb 20. Pottery and alabaster (scale 1:3).

great many medium and tiny grits, fired greyish-buff with thin, buff inner and outer faces. Wet slurry. Max. ht 7.0 cms; rim dia. 25.3 cms.

35. Lamp. Well mixed but very gritty clay, fired brownish-buff. Wet slurry. Max. ht 5.1 cms; max. length 11.5 cms.

36. Large jug. Well mixed gritty clay fired brown on surface. Wet slurry. Covered outside with thick matt white slip. Max. ht 40.4 cms; rim dia. 12.8 cms.

38. Alabaster cosmetic jar. Ht. 6.7 cms; rim dia. 6.6 cms. Decorated with incised dot-filled circles.

39. Incised bone inlay fragments approx. 10.0 cms long; max. width 2.0 cms. Nos 41, 61, 68, 71, 77, 85, 90, 93 other examples of incised bone ornament.

40. Chocolate-on-white jug. Intact. Covered with thick highly burnished creamy-white slip. Decoration in matt reddish-brown paint. Max. Ht 28.6 cms; rim dia. 13.8 cms.

45. Buff Ware juglet. Cylindrical dipper juglet. Finely mixed clay with medium and tiny grits, fired buff to brown. Wet slurry. Max. ht 10.9 cms; max. width 7.6 cms.

47. Bronze toggle pin. Upper section of large bronze toggle pin; remaining length 8.0 cms.

48. Buff Ware dipper juglet. Well mixed but very gritty clay, fired buff. Wet slurry. Max. ht 12.5 cms; max. width 6.7 cms.

50. Buff Ware dipper juglet. Clay and description as no. 48 but fired brown in patches. Max. ht 13.7 cms; max. width 6.8 cms.

53. Buff Ware bowl. Well mixed but very gritty clay, fired greyish-buff with thin buff inner and outer faces. Wet slurry. Max. ht 7.3 cms; rim dia. 26.9 cms.

55. White Slip bowl. Very finely mixed clay, with medium and tiny grits, fired creamy-buff. Thick, highly burnished milk-white slip. Max. ht 6.7 cms; rim dia. 19.4 cms.

64. Bronze toggle pin - fragmentary. Remaining length 9.0 cms.

65. Bronze toggle pin. Head of heavy bronze toggle pin; remaining length 11.8 cms.

66. White Slip bowl. Very finely mixed clay, fired creamy-buff. Thick burnished creamy-white slip inside and out. Max. ht 7.9 cms; rim dia. 19.4 cms. No. 22 similar.

67. Beads (a), (b) and (c). Two small carnelian beads and one amethyst bead. Carnelian beads 0.95 cms in dia.; amethyst bead 0.8 cms.

70. Gold ring. Very thin gold foil finger ring; half only with small setting for glass bead. Approx. diameter 1.8 cms.

72. Alabastron. Alabaster cosmetic jar. Max. ht 8.9 cms; max. width 6.5 cms; rim dia. 4.2 cms.

73. Tweezers, bronze, broken. Approx. length 4.5 cms.

74. Bronze toggle pin, small, broken. Approx. length 5.5 cms.

75. Chocolate-on-white jar. Well mixed but very gritty clay, fired buff. Wet slurry. Decoration in matt reddish-brown and black paint. Max. ht 24.2 cms; rim dia. 10.3 cms.

76. Bronze toggle pin, fragments. Approx. length 13.2 cms.

79. Beads (a) and (b). (a) 1 carnelian and 1 bluish marble, 0.85 cms. (b) marble bead 1.7 cms long.

80. Toggle pin, bronze. Approx. length 6.9 cms.

81. Buff Ware jug. Intact. Very gritty clay, fired buff on surface. Wet slurry. Max. ht 30.4 cms; rim dia. 11.4 cms.

83. Toggle pin, small, gold; incised decoration. Length 3.85 cms.

84. Scarab, white with striding figure and uraeus; approx. width 2.0 cms.

86. Decorated White Slip (Chocolate-on-white Ware) bowl. Well mixed clay with many medium and tiny grits, fired buff. Covered inside and out with thick matt white slip. Decoration in thick matt red-brown paint. Max. ht 9.0 cms; rim dia. 27.1 cms.

91. Bronze toggle pin. Length 6.8 cms.

96. Alabaster cosmetic jar. Elaborate incised and black-filled floral, geometric and dot design. Max. ht 4.4 cms; max. width 14.4 cms.

98. Alabaster lid to no. 96. Elaborate incised and black-filled floral, geometric and dot design. Max. width 13.2 cms.

The group belongs to the class so well defined by Amiran[3] as Chocolate-on-white. The ceramic was initially given its name by Petrie[4] and remains a comparatively rare fabric in Palestine and Jordan. Comparable groups have been found at Megiddo[5] and Beth Shan.[6] The scarab belongs to a well defined class in the late Hyksos period.[7] A full discussion of the group must await the final publication. First impressions are that the burials belong to the middle of the sixteenth century B. C., contemporary with the first appearance in Palestine of Proto-Base Ring, Proto-White Slip and Bichrome Wheelmade Ware. Fragments of the splendid White Slip bowls have been collected on the main mound and it may be that the Chocolate-on-white Ware is a product of the area east of the River Jordan.[8] Remains of two vessels in the robbed side chamber similar to types of the main deposit, suggest it was cut as additional space to the main chamber.

Tomb 22 (XI.5) (Figs. 4, 9, 10)

The tomb appears to have been cut in the late Middle Bronze Age period and some of the graves goods had washed into the partly eroded tomb 20 immediately below it.

Finds

1. Piriform juglet. Very finely mixed clay, sandy with many medium and tiny grits, fired greyish-buff, with orange-buff outer face. Wet slurry. Traces of lightly bur-

3. Amiran, Ruth *Ancient Pottery of the Holy Land*, Rutgers University (1970), pp. 158-160.

4. Petrie, Sir Flinders *Ancient Gaza I*, London (1931), p. 10, pl. XXXII, 55-62.

5. Guy, P. L. O. *Megiddo Tombs*, Chicago (1938), Tomb 1100 A-D, pls 45-48.

6. Oren, Eliezer, D. *The Northern Cemetery of Beth Shan*, Leiden (1973), Tomb 42, pp. 68 ff., figs 27-34.

7. Rowe, Alan *A Catalogue of Egyptian Scarabs*, Cairo (1936), pl. VII: 279-293, pp. 74-77.

8. Smith found similar vessels in his Tomb I of the 1967 season at Pella. Smith, Robert H. *Pella of the Decapolis Volume I*, pls 46-47.

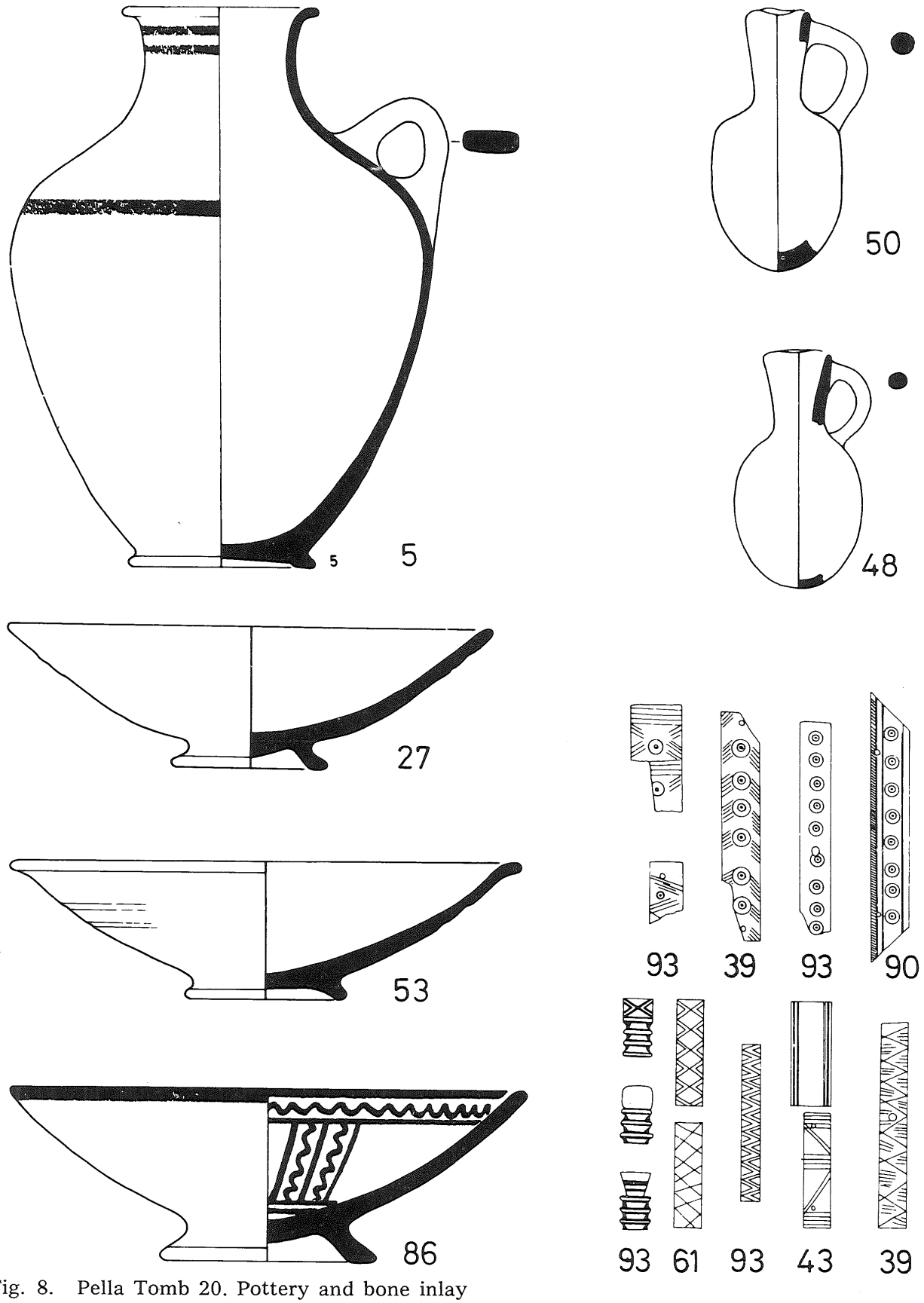


Fig. 8. Pella Tomb 20. Pottery and bone inlay (scale 1:3).

nished black slip. Max. ht 9.4 cms; max. width 6.8 cms. Nos 10 and 11 similar.

2. Buff Ware dish. Finely mixed clay with many medium and tiny grits, fired brownish-buff. Wet slurry. Max. ht 3.9 cms; rim dia. 15.7 cms.

3. Buff Ware jug. Very finely mixed clay with medium and tiny grits, fired buff. Wet slurry. Max. ht 23.1 cms; width 15.3 cms; rim dia. 8.3 cms.

4. Small Red Slip jar. Very finely mixed clay with a few medium and tiny grits, fired buff throughout. Covered on outside with thin, matt red slip. Max. ht 7.5 cms; rim dia. 9.0 cms.

5. Middle Bronze lamp. Well mixed but very gritty clay, fired buff to brownish-buff. Wet slurry. Max. ht 6.5 cms; max. length 16.7 cms.

7. Dipper juglet. Intact. Fired orange-buff on surface. Wet slurry. Max. ht 14.3 cms; max. width 7.4 cms.

8. Dipper juglet. Intact. Gritty clay, fired buff on surface. Wet slurry. Max. ht 19.3 cms; max. width 7.6 cms. Nos 14 and 20 similar.

12. Shallow bowl. Intact. Fired buff on surface, with thick highly burnished creamy-buff slip. Max. ht 4.5 cms; rim dia. 17.3 cms.

13. Jar on tripod feet. Intact. Fired buff on surface. Wet slurry, smoothed. Max. ht 15.7 cms; rim dia. 15.1 cms.

16. Juglet. Very finely mixed clay, fired buff to orange-buff, burnished wet slurry. Max. ht 18.7 cms; max. width 10.7 cms.

17. Piriform juglet. Finely mixed clay with medium and tiny grits, fired buff throughout. Burnished wet slurry. Max. ht 12.5 cms; max. width 7.6 cms.

18. Piriform jar. Very finely mixed sandy clay with tiny grits, fired buff throughout. Burnished wet slurry. Max. ht 15.3 cms; rim dia. 12.1 cms.

19. Carinate bowl. Very finely mixed sandy clay with a few medium and many tiny grits, fired buff throughout. Smoothed, wet slurry. Max. ht 6.1 cms; rim dia. 17.0 cms.

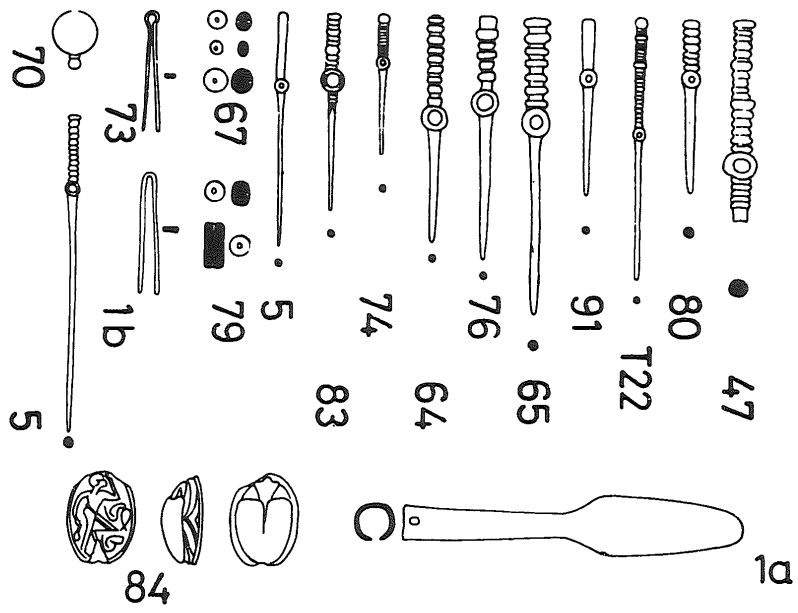
21. Buff Ware bowl. Intact. Gritty clay, fired buff on surface. Wet slurry. Max. ht 7.9 cms; rim dia. 13.5 cms.

22. Buff Ware jug. Intact. Many medium and tiny grits, fired buff on surface. Smoothed wet slurry. Max. ht 20.2 cms; rim dia. 5.5 cms.

The group also probably included nos 1, 49, 50 and 51 of the upper wash above tomb 20. The deposit appears to be slightly earlier than that of tomb 20.

The Iron Age - Area III

The Iron Age deposits in Area III Plot C were excavated further this season with encouraging results. Unfortunately, however, erosion has taken a heavy toll on this side of the *tell* and what is left of these levels in the area covered by the plot represents only a small proportion of their original extent. They have been completely destroyed in the northern sector of the plot (where a sharp wash gully was filled during the Hellenistic period) and to the east and south (where Umayyad and later



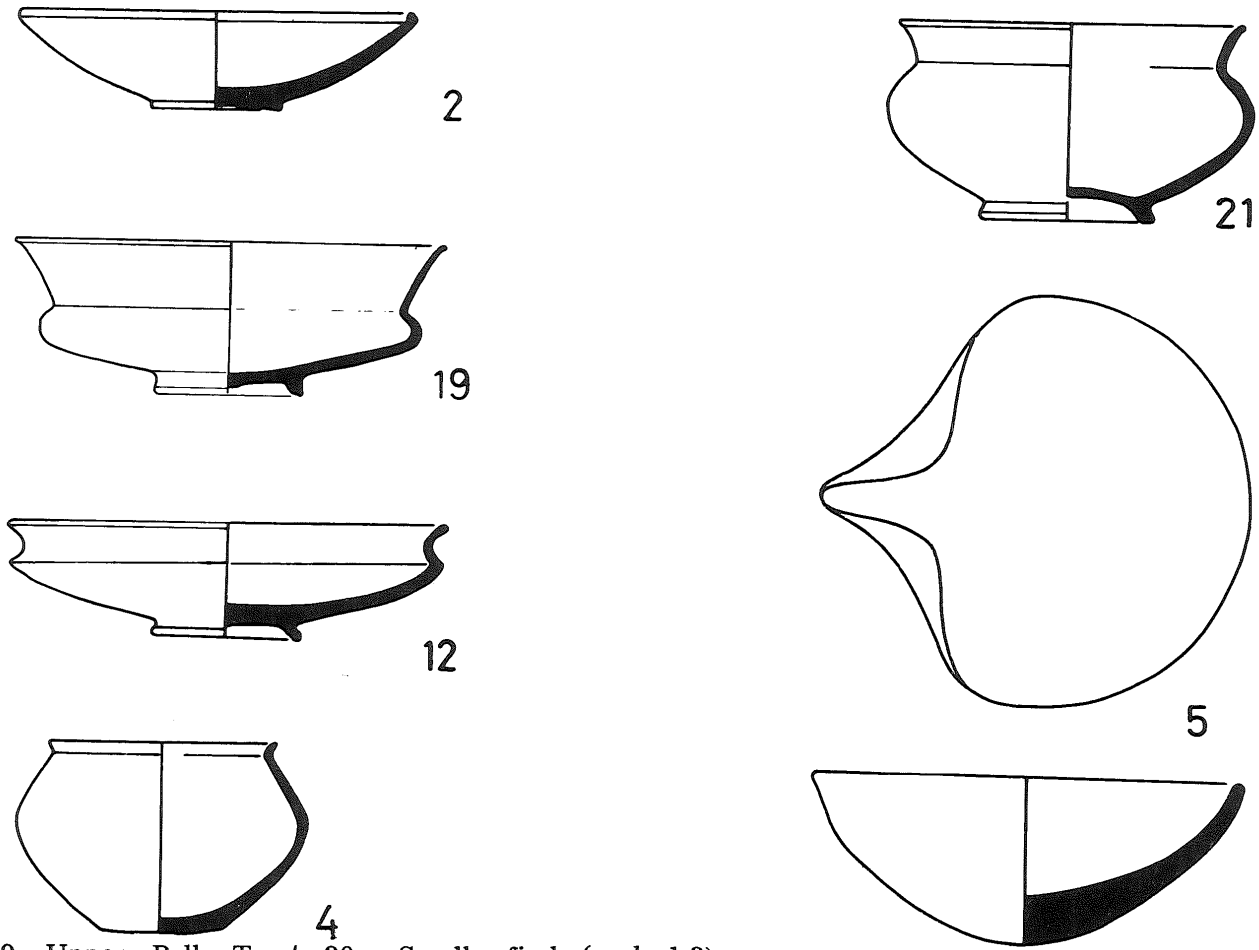


Fig. 9 Upper: Pella Tomb 20. Small finds (scale 1:3).
Lower: Pella Tomb 22. Pottery (scale 1:3).

wash has had a similarly devastating effect). The original architectural situation is, consequently, rather difficult to reconstruct with any confidence.

In the first season of excavation the area to the east of wall F14 was not excavated below the level of the top of that wall. When this material was removed a largely unpaved surface (presumably an outside area) was exposed corresponding roughly in level to the paved floor inside the house. A bowl (fig. 14.2) placed over a small lamp (fig. 14.3) was found on this surface right up against the eastern face of wall F14.

To the north this area was bounded by a rough stone wall (W1) running approximately east-west. It is constructed of a single row of undressed stones. Its western end abutts wall F14; there is no extant return at its eastern end, although this again may be due to subsequent erosion. A doorway approximately mid-way along provided access to an area to the north, no traces of which have survived the Hellenistic wash gully. Plan fig. 11 shows the stone-paved house with the additions brought to light this season. This represents the full extent of the architectural remains of this phase which have survived.

When wall F14 was removed, four intact bowl-and-lamp deposits were discovered under the lowest course (some slightly off-set to the west). Another was discovered under the stone paving where it enters the western baulk (Group 5). They were deposited as follows:

Group 1: lamp (PO 115) in bowl (PO 116), both upright.

Group 2: bowl (PO 117) inverted over upright lamp (PO 118).

Group 3: bowl (PO 119) inverted over upright lamp (PO 120) in upright bowl (PO 123).

Group 4: bowl (PO 121) inverted over upright lamp (PO 122).

Group 5: bowl (PO 124) inverted over upright lamp (PO 125).

Similar groups have been found at other Palestinian sites, especially Gezer.[9] Macalister, who found them mostly in his "Third and Fourth Semitic levels", interpreted these deposits as foundation offerings since they were most often placed beside the lowest stone of a wall or under a threshold. This is consistent with our groups 1 to 4.

Beneath the outside surface east of wall F14 lay a group of broken pots surrounded by burnt destruction debris. These include three virtually complete ovoid, two-handled storage jars (fig. 13.4) and an intact one-handled flask (fig. 14.1). The jars seem to have been broken *in situ*. The surface upon which they lay consisted simply of packed earth and showed no evidence of any significant build-up. Neither this surface, nor the series of closely stratified deposits which have been excavated below the stone paved house (to a depth of about 0.5m.

9. Macalister *Gezer II*, pp. 434-47, fig. 516; *idem. The Exploration of Palestine*, p. 151, fig. 82.3; Dever *et al Gezer I* p. 23, pls. 9, 28. 12-14.

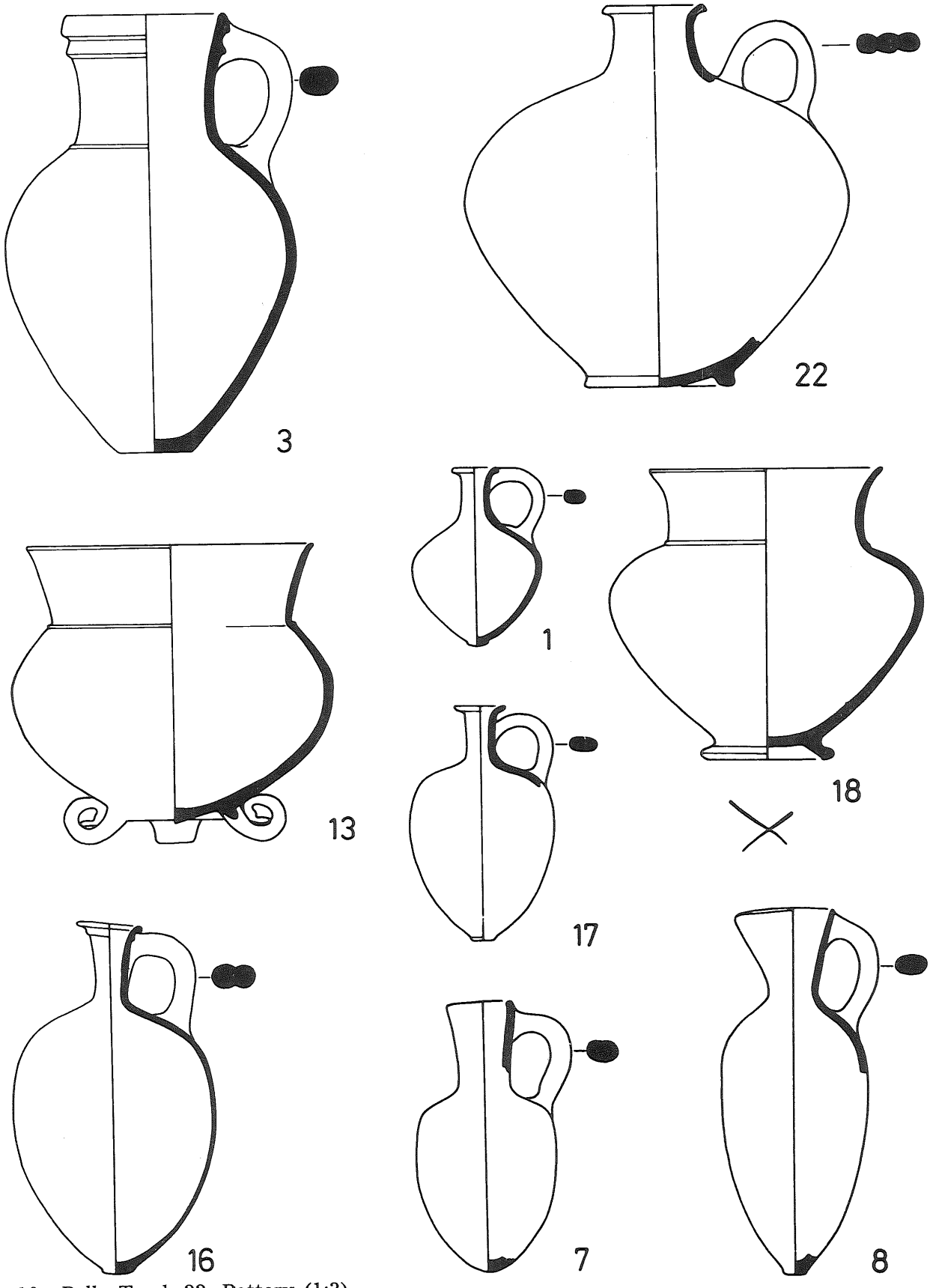


Fig. 10 Pella Tomb 22. Pottery (1:3).

below that floor) can as yet be associated with any significant architectural remains. Again we must contend with the possibility of erosion.

An earlier architectural stratum is represented further to the east by the junction of two stone walls (walls 4 and 5; see plan fig. 11; the wall stump F24 in the western baulk may also belong to this phase.) These are wider and of somewhat better construction than walls 1 and F14 but, once again, very little of them has survived and it is impossible to be sure of the nature or original extent of the structure. From stratigraphical evidence it is clear that it had fallen completely out of use and was already reduced to its present state by the time the stone-paved house was constructed and the surface south of W1 laid. The lack of any significant build-up on what remains of its floor suggests, however, that the interval between construction, destruction and levelling for the next phase (the stone-paved house) was not great.

When walls 4 and 5 were removed it was found that they were, in fact, wider rebuildings at a higher level of two earlier, narrower walls on the same alignment (walls 7 and 8). By the end of the season signs of other stone constructions were beginning to appear towards the centre of the plot. Their precise date and significance will have to await further excavation.

Towards the bottom (southern) end of IIIC the original deposits stop abruptly forming an almost vertical face about 5m. high. Beyond this point the stratified deposits give way to Umayyad wash which extends into and beyond IIID. This has now been removed, thus joining IIIC and IIID into one continuous cut.

The vertical face created by the Umayyad denudation gives us a glimpse of what we can expect to encounter in IIIC in future seasons. A massive stone wall, the full height of the gully section, protrudes mid-way along. It runs north-south and has already been picked up at the bottom of the Hellenistic wash gully. Packed against its eastern face in the section can be seen courses of mud-bricks metres high. This could well be the beginnings of a town wall.

The Pottery

We are fortunate in having so much ceramic material associated with the stone-paved house. In addition to the pottery from inside the house (see previous report), we now have the bowl-and-lamp deposits from underneath wall F14 (figs. 12; 13.1-3) as well as the group of broken pots from below the outside surface east of that wall (figs 13.4; 14.1-3), and a considerable amount of sherd material from the levels immediately below the stone paving (figs 14.4-12; 15; 16). This allows us to suggest a more secure date for its construction.

As the parallels cited below indicate, the pottery associated with our house, as well as the material from the levels immediately below it, is best dated to the very early Iron Age, i.e. the 12th century B.C. Some of the lamps (fig. 12.7, 8) and cooking pots (fig. 15.5, 9), as well as the pithos (fig. 16.1) and storage jars (fig. 13.4) would be equally at home in L.B. II. Of the characteristically Iron Age types, the various bowl forms (figs 12.1-6; 14.4-12) may be noted. A few sherds of Cypriot White Slip and Mycenaean IIIB were also recovered.

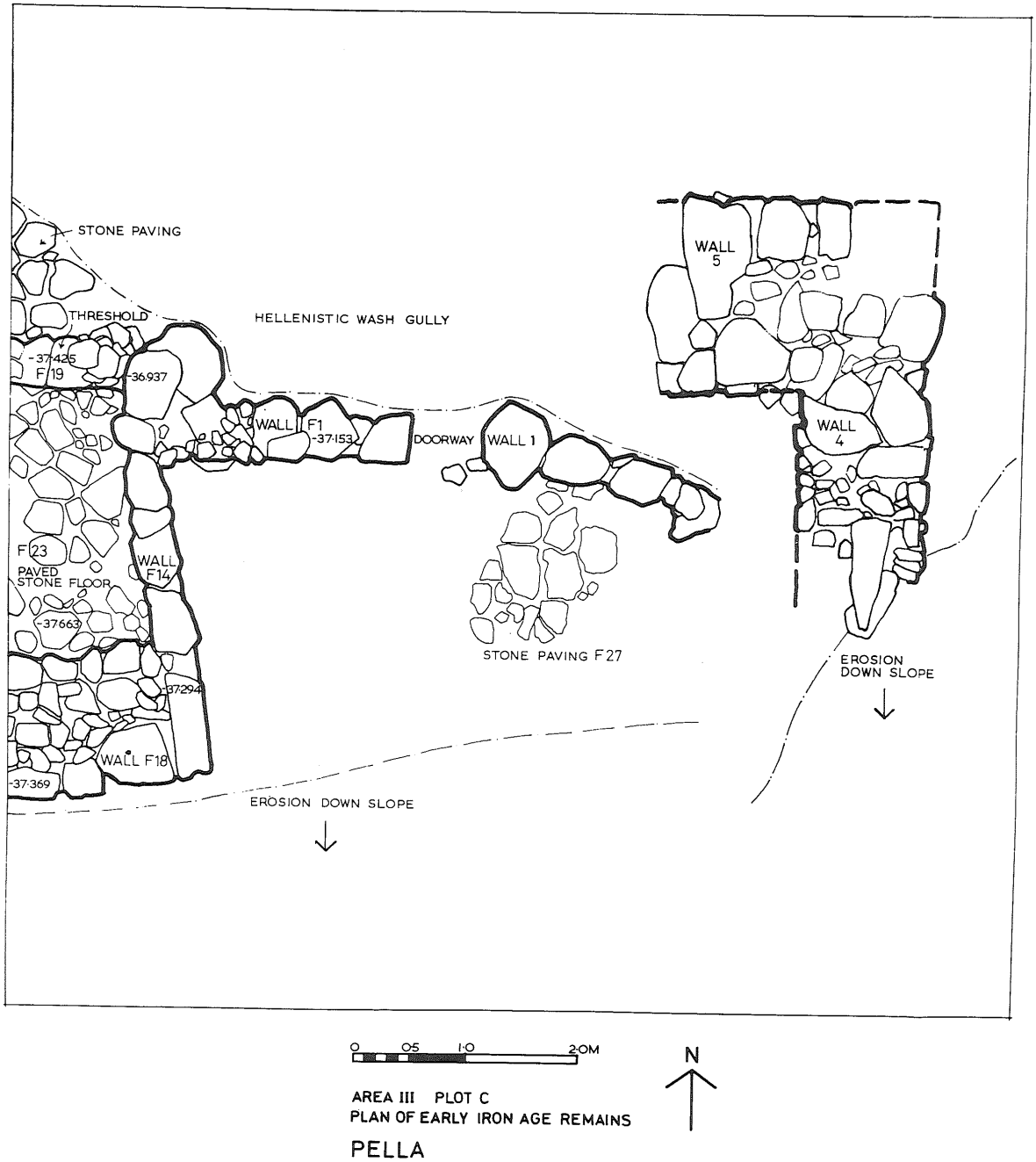


Fig. 11 Pella. Plan of Early Iron Age building in Area IIIC.

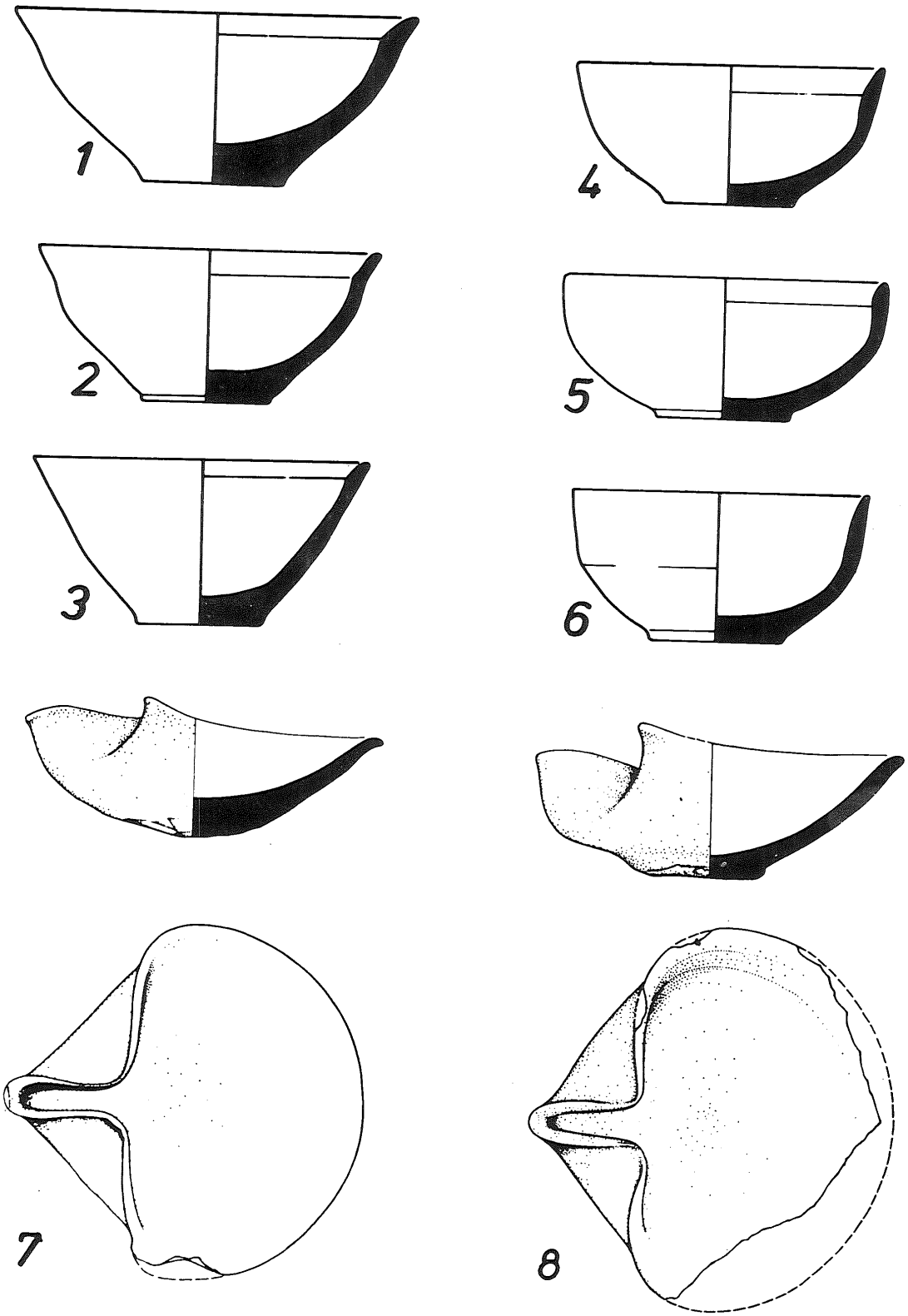


Fig. 12 Pella Area IIIC. Early Iron Age Pottery (scale 1:3).

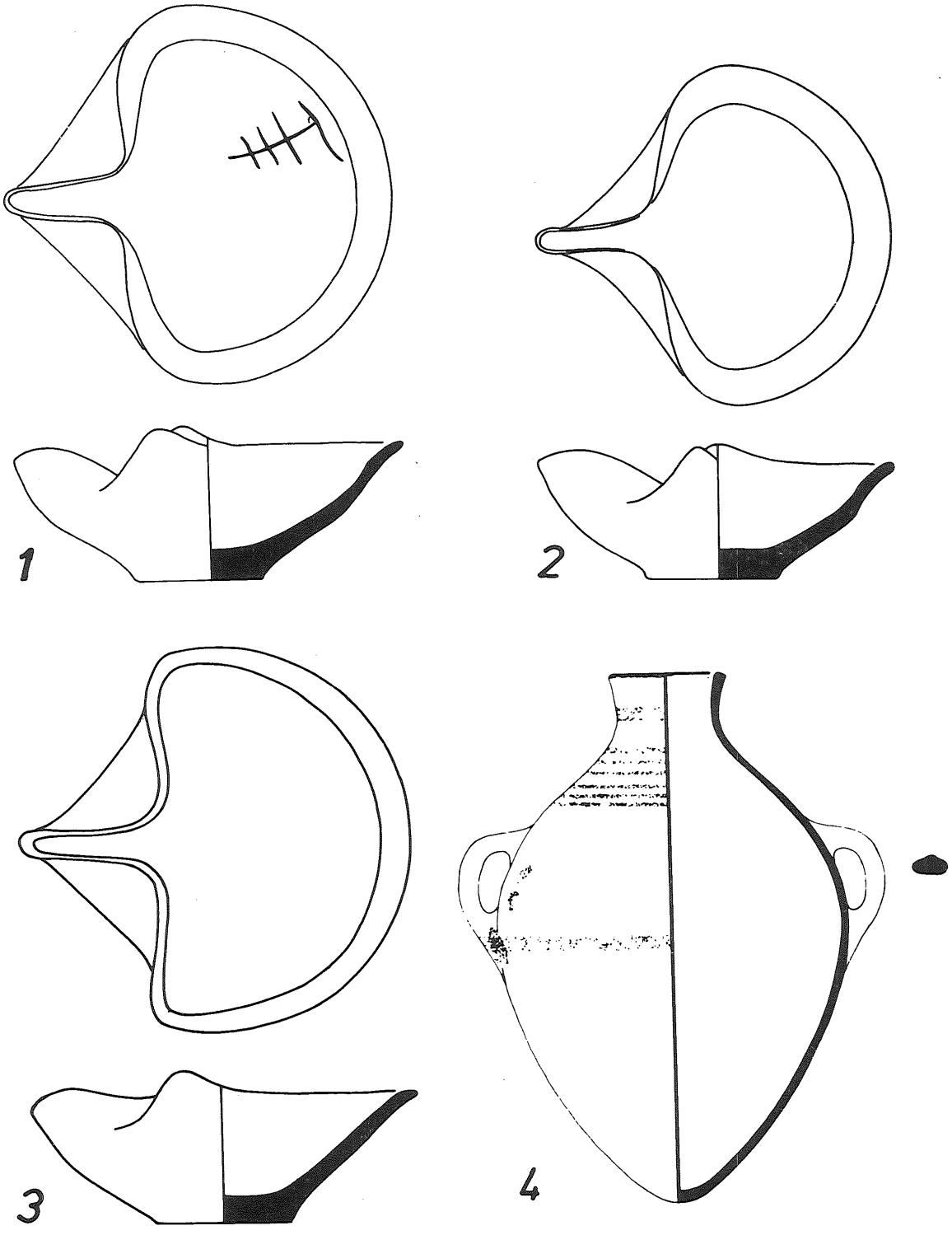


Fig. 13 Pella Area IIIC. Early Iron Age Pottery (scale 1:3).

Iron Age Pottery (figs12-16)

(Fig. 12)

1. Bowl. Coarse, gritty fabric, fired brownish-buff. Wet slurry. Max. ht 8.7 cms; rim dia. 19.0 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 116.
   Parallels: *Gezer II,* pls 24.22; 26.13; *The Iron Age at Beth Shan,* pl. 52.14; *Beth Shan,* pl. XLIV.5.

2. Bowl. Fine fabric with small grits, fired dark buff. Wet slurry.
   Max. ht 7.1 cms; rim dia. 15.5 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 119.

3. Bowl. Well mixed clay with many small and medium grits, fired buff. Wet slurry.
   Max. ht 7.6 cms; rim dia. 16.1 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 121.

4. Bowl. Fabric as no. 3. Max. ht 6.6 cms; rim dia. 14.6 cms. Ill. ex. from IIIC 13.5; Plot obj. 117.

5. Bowl. Coarsely mixed clay, very sandy, fired buff. Wet slurry. Max. ht 6.6 cms; rim dia. 15.8 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 124.
   Parallels: *Megiddo II,* pl. 68.17 (str. VIIA), 71.22 (str. VII).

6. Bowl. Fabric as no. 2. Max. ht 7.1 cms; rim dia. 13.9 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 123.

7. Lamp. Well mixed sandy clay, many grits, fired brownish-buff with buff core.
   Ill. ex. from IIIC 13.5; Plot obj. 115.
   Parallels: *Taanach I,* fig. 90.2.

8. Lamp. Well mixed very gritty clay, fired buff to orange-buff. Wet slurry.
   Ill. ex. from IIIC 13.5; Plot obj. 118.
   Parallels: *Hazor III,* pls CCLXXV.13, 14 (str. 1B), CCXCIII.12, 13 (str. IB): *Ashdod I* fig. 34.9; *Megiddo II,* pls 62.1, 66.9-13 (str. VII).

(Fig. 13)

1. Lamp. Fabric as no. 7 (fig. 12). Max. ht 7.3 cms; max. length 18.3 cms. Interior incised with gradation markings in wet clay.
   Ill. ex. from IIIC 13.5; Plot obj 120.

2. Lamp. Well mixed sandy clay, many medium and tiny grits, fired buff with grey core. Wet slurry. Max. ht 6.3 cms; max. length 16.7 cms.
   Ill. ex. from IIIC 13.5; Plot obj. 125.

3. Lamp. Well mixed clay, small medium grits, fired brownish-buff with buff core. Wet slurry.
   Ill. ex. from IIIC 13.5; Plot obj. 122.

4. Jar. Virtually complete. Well mixed clay, medium and small grits, fired orange-buff. Wet slurry. Decoration in red-brown paint.
   Ill. ex. from IIIC 1.15; Plot objs 97, 99.

   Parallels: *Megiddo II,* pl. 60.2 (str. VIII), 73.6-8, 10 (str. VIIA-VIB); *Deir 'Alla I,* fig. 47.3; *Hazor* I, pls LXXXVI.8, 9; CIX.5; *Hazor II,* pls CXXI.7 (str. 1B), CXXXI.16 (str. 1B).

(Fig. 14)

1. Jug. Intact. Coarse, sandy, gritty clay, fired dark grey with inner brown face. Thin, matt, orange-brown slip, burnt. Wheelmade.
   Ill. ex. from IIIC 1.15; Plot obj. 95.
   Parallels: *Megiddo II,* pls 67.14, 81.7 (str. VI); *Lachish III,* pl. 84.

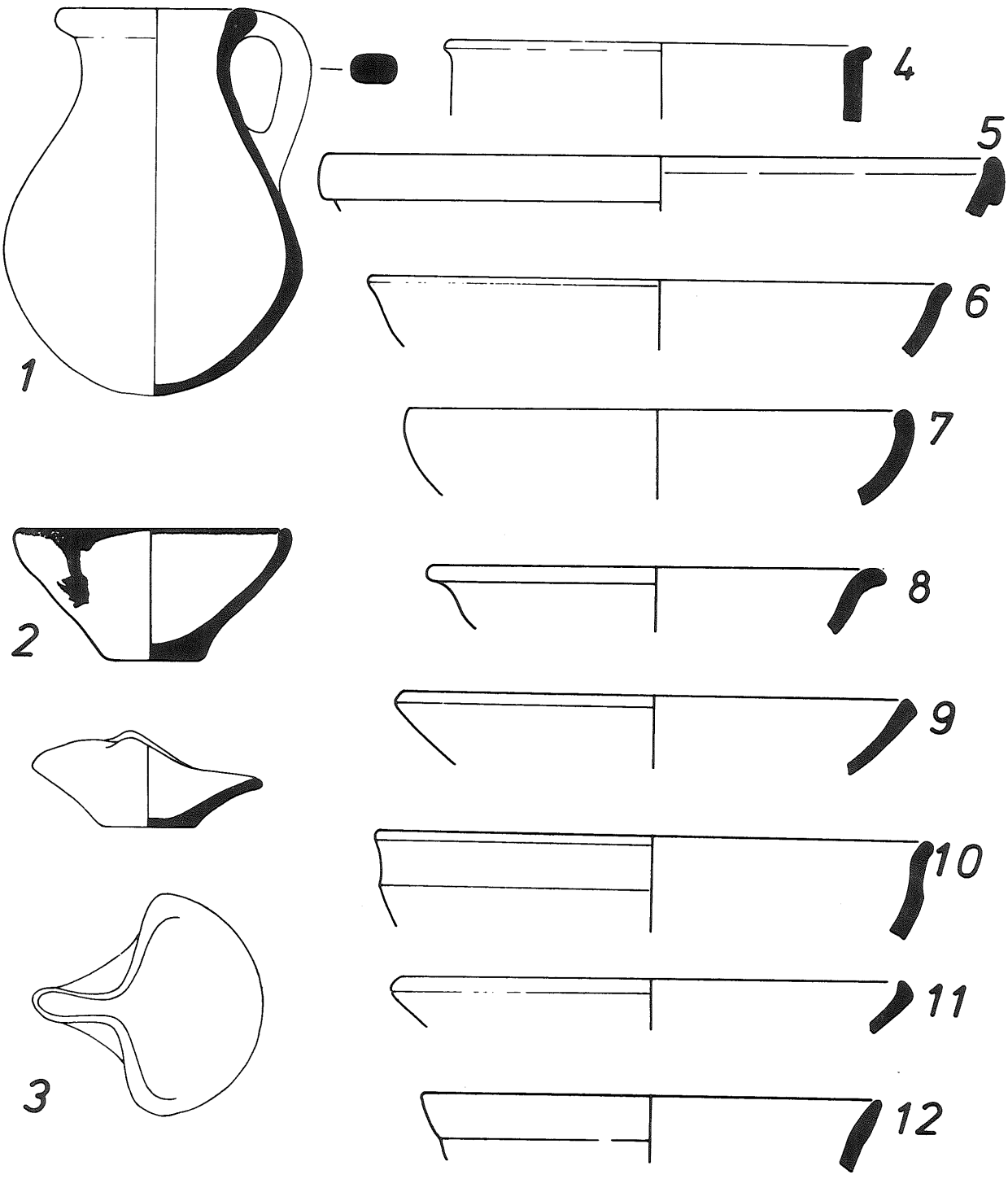


Fig. 14 Pella Area IIIC. Early Iron Age pottery (scale 1:3).

2. Bowl. Intact. Well mixed clay, many medium and tiny grits, fired orange-buff. Wet slurry. Red, matt decoration. Stringcut base.

   Ill. ex. from IIIC 1.15; Plot obj. 87.

   Parallels: *Megiddo II,* pl. 68.14 (str. VII).

3. Lamp. Almost intact. Well mixed very gritty clay, fired buff to brownish-buff. Wet slurry.
   Ill. ex. from IIIC 1.15; Plot obj. 88.

4. Deep bowl. Rim. Well mixed clay, massive grits, fired orange-brown with variable buff core. Thin, matt red slip on exterior.
   Ill. ex. from IIIC 12.1.
   Parallels: *Taanach I,* fig. 16.7; *Deir 'Alla I,* fig. 50.53 (phase B).

5. Deep bowl. Rim. Well mixed clay, many medium and tiny grits, fired dark grey with thin brown inner and outer faces. Wet slurry.
   Ill. ex. from IIIC 13.3.
   Parallels: *Lachish III,* pl. 80.68.

6. Bowl. Rim. Well mixed clay, medium and tiny grits, fired buff. Stroke burnished. Wet slurry.
   Ill. ex. from IIIC 13.3.
   Parallels: *Deir 'Alla I,* figs 45.13, 14; 46.24; *Gezer II,* pl. 27.4.

7. Bowl. Rim. Well mixed gritty clay, fired greyish-brown with thin brown inner and outer faces. Wet slurry.
   Ill. ex. from IIIC 13.1.

   Parallels: *Gezer I,* pls 26.11, 27.24; *Gezer II,* pl. 29.19; *Deir 'Alla I,* fig. 49.56.

8. Bowl. Rim. Well mixed gritty clay, fired orange-buff with thick grey core. Wet slurry.
   Ill. ex. from IIIC 13.6.
   Parallels: *Gezer II,* pl. 28.14; *Deir 'Alla I,* fig. 45.12.

9. Bowl. Rim. Well mixed clay, many medium and tiny grits, fired buff. Wet slurry.
   Ill. ex. from IIIC 13.3.
   Parallels: *Gezer I,* pl. 28.13; *Gezer II,* pl. 26.32; *Deir 'Alla I,* figs 46.39, 50.76.

10. Deep bowl. Rim. Well mixed gritty clay, fired buff with variable grey core. Wet slurry.
    Ill. ex. from IIIC 13.3.

    Parallels: *Hazor III,* pl. CLXIV.12 (str. XII); *Deir 'Alla I,* fig. 49.85; *Gezer I,* pl. 28.7; *Lachish III,* pl. 79.57.

11. Bowl. Rim. Finely mixed clay, few medium and many tiny grits, fired brownish-buff. Matt creamy slip.
    Ill. ex. from IIIC 11.1A.

12. Bowl. Rim. Well mixed clay, very gritty, fired greyish-buff. Thin buff inner and outer faces. Wet slurry.
    Ill. ex. from IIIC 13.6.
    Parallels: *Gezer II,* pl. 26. 19.

(Fig. 15)

1. Chalice. Base. Coarse, very gritty clay, fired buff to brownish-buff with thick grey core. Stroke burnished red slip.
   Ill. ex. from IIIC 12.1.

2. Bowl. Base. Well mixed gritty clay, fired brownish-buff. Burnished wet slurry.
   Ill. ex. from IIIC 12.1.

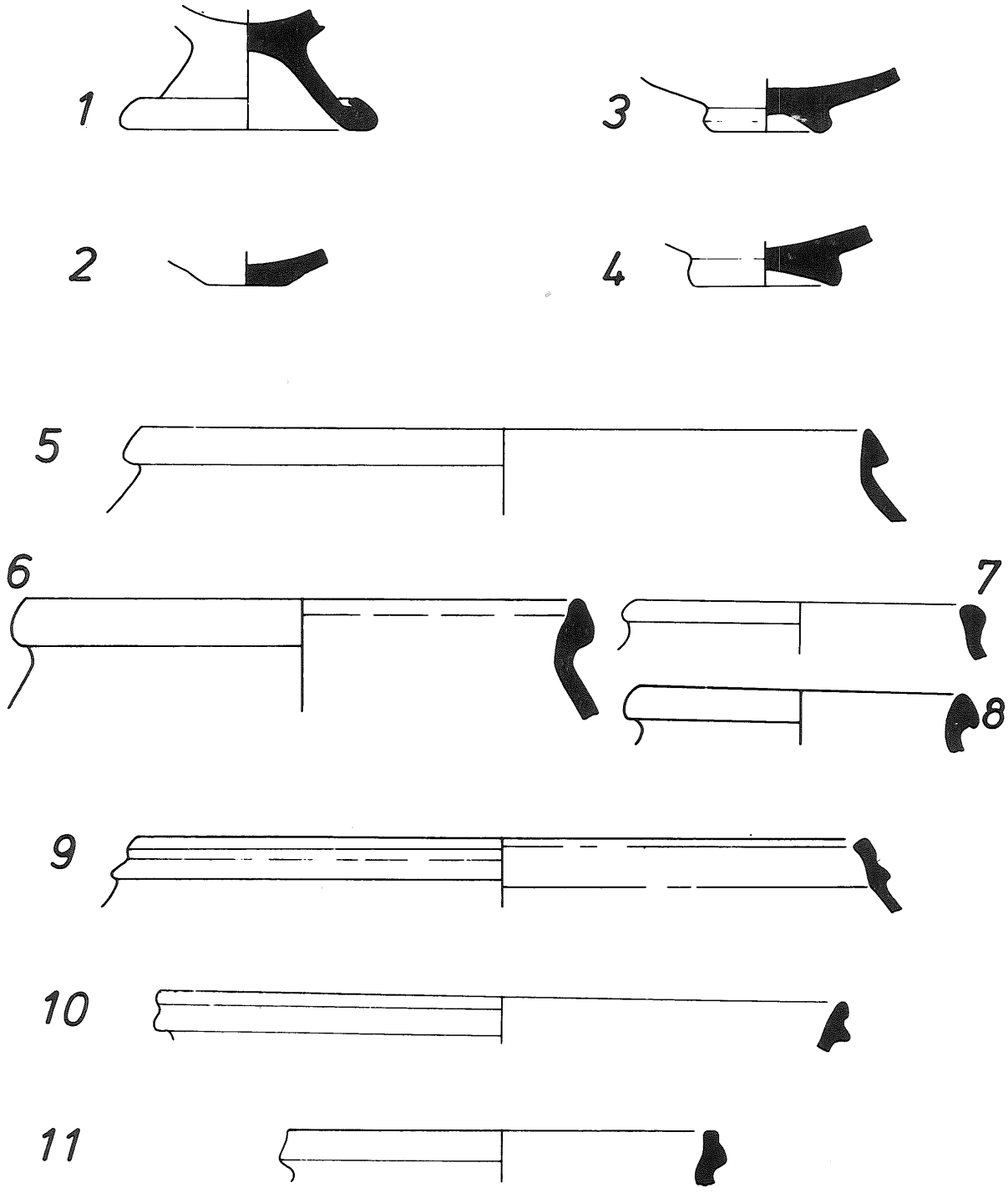


Fig. 15 Pella Area IIIC. Early Iron Age pottery (scale 1:3).

3. Bowl. Base. Well mixed gritty clay, fired buff to greyish-buff. Smoothed wet slurry.
Ill. ex. from IIIC 12.1.

4. Bowl. Base. Clay as no. 3 but surface burnt black inside and out.
Ill. ex. from IIIC 12.1.

5. Cooking pot. Rim. Well mixed gritty clay, fired brown with thick grey core. Wet slurry.
Ill. ex. from IIIC 13.6.

   Parallels: *Taanach I*, fig. 2.2, 3; *Deir 'Alla I*, fig. 49.1, 2.

6. Cooking pot. Rim. Coarse gritty clay, fired dark buff, thin orange inner and outer faces. Wet slurry.
Ill. ex. from IIIC 13.6.

   Parallels: *Taanach I*, fig. 2.4; *Deir 'Alla I.* 46.1; *Gezer I*, pls 26.21, 35.21; *Gezer II*, pl. 26.5; *Megiddo II*, pl. 79.6 (str. VIA).

7. Cooking pot. Rim. Coarse gritty clay with mica inclusions, fired brown with grey core. Wet slurry.
Ill. ex. from IIIC 12.1.

   Parallels: *Deir 'Alla I*, fig. 49.26; *Gezer II*, pl. 29.8.

8. Cooking pot. Rim. Well mixed gritty clay, fired buff. Burnished red slip.
Ill. ex. from IIIC 12.1.

   Parallels: *Gezer II*, pl. 25.26.

9. Cooking pot. Rim. Not yet catalogued.
Ill. ex. from IIIC 13.1.

   Parallels: *Hazor III*, pl. CLXV.19; *Deir 'Alla I*, fig. 46.3; *Gezer II*, pl. 29.3.

10. Cooking pot. Rim. Well mixed clay, many medium and tiny grits, fired buff, grey core. Wet slurry. Thick matt red slip inside and over rim.
Ill. ex. from IIIC 13.6.

    Parallels: *Gezer II*, pl. 26.26.

11. Cooking pot. Rim. Coarse, gritty clay, fired dark grey, thin brown inner and outer faces. Wet slurry.
Ill. ex. from IIIC 11.2.

    Parallels: *Gezer I*, pl. 27.19; *Megiddo II*, pl. 85.14 (str. VII-VI).

(Fig. 16)

1. Pithos. Rim. Well mixed clay, fired dark grey. Thick matt brownish-buff slip.
Ill. ex. from IIIC 13.6.

   Parallels: *Hazor I*, pl. LXXXVIII.11, 12; *Hazor II*, pl. CXLV. 3-5 (str. 1B); *Gezer II*, pl. 28.20.

2. Pithos. Rim. Well mixed gritty clay, fired buff. Wet slurry.
Ill. ex. from IIIC 13.3.

   Parallels: *Gezer I*, pl. 35.28; Gezer II, pl. 29.9; *Deir 'Alla I*, fig. 50.95; *Hazor III*, pl. CLXVIII.9.

3. Jar. Rim. Well mixed gritty clay, mica inclusions, fired brownish-buff, grey core. Wet slurry.
Ill. ex. from IIIC 12.1.

   Parallels: *Taanach I*, fig. 11.11; *Deir 'Alla I*, fig. 46.77; *Megiddo II*, pl. 73.7 (str. VIIB-VI), 82.9 (str. VIIB-VI).

4. Jar. Rim. Well mixed clay, medium and small grits, fired buff. Smoothed wet slurry.

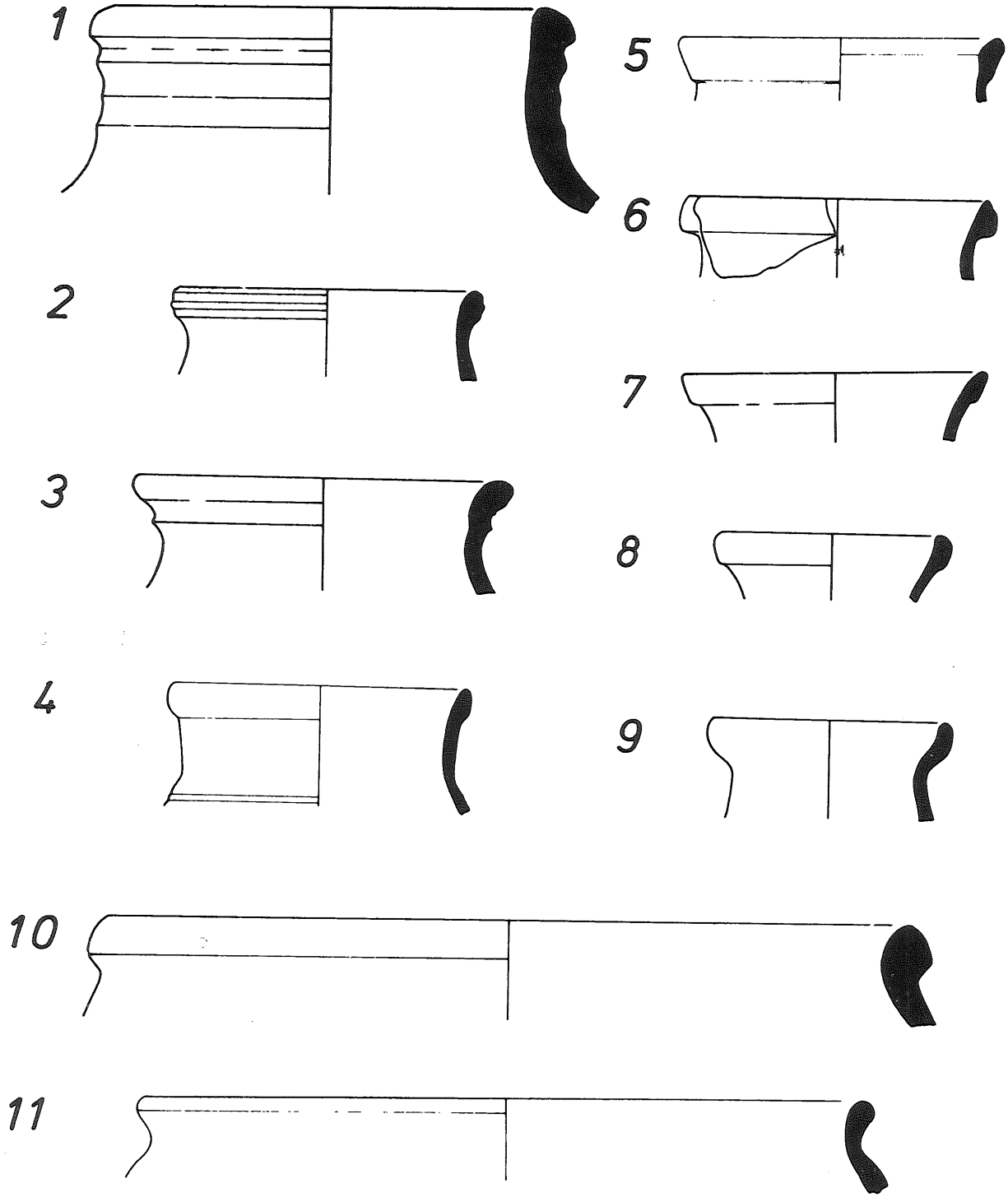


Fig. 16 Pella Area IIIC. Early Iron Age pottery (scale 1:3).

Ill. ex. from IIIC 13.6.

Parallels: *Deir 'Alla I,* fig. 47.2; *Gezer II,* pl. 28.21-23, 25.

5. Jar. Rim. Not catalogued as yet.
Ill. ex. from IIIC 11.1A.

Parallels: *Taanach I,* fig. 15.8; *Gezer II,* pls 24.13, 25.8.

6. Jar. Rim. Not catalogued as yet.
Ill. ex. from IIIC 12.1.
Parallels: *Taanach I,* fig. 3.1.

7. Jar. Rim. Well mixed gritty clay, mica inclusions, fired dark grey, brownish-buff outer face. Wet slurry.
Ill. ex. from IIIC 11.1.

Parallels: *Taanach I,* fig. 6.4-6; *Gezer II,* pls 24.15, 16, 28.25.

8. Jar. Rim. Well mixed gritty clay, fired buff. Wet slurry.
Ill. ex. from IIIC 11.1.

Parallels: *Taanach I,* figs 1.4, 4.7; *Hazor III,* Pl. CLXVIII. 18 (str. XII); *Gezer II,* Pl. 27.11.

9. Jar. Rim. Finely mixed clay, medium and tiny grits, fired pinkish-buff. Smoothed wet slurry.

Ill. ex. from IIIC 12.1.

Parallels: *Taanach I,* fig. 3.4; *Hazor III,* pl. CLXVIII.18 (str. XII); *The Iron Age at Beth Shan,* fig. 51.15 (lev. VI); *Gezer II,* pl. 26.8.

10. Krater. Rim. Coarsely mixed gritty clay, fired dark grey, thin brownish inner and outer faces. Wet slurry.
Ill. ex. from IIIC 13.3.

Parallels: *Deir 'Alla I,* figs 46.5-10, 49.17-21, 25; *Megiddo II,* pl. 66.1 (str. VIIB); *The Iron Age at Beth Shan,* fig. 54.2 (lev. VI).

11. Krater. Rim. Finely mixed clay, many medium and tiny grits, fired greyish-to brownish-buff. Wet slurry. Sherd burnt.
Ill. ex. from IIIC 11.2.

Parallels: *Gezer II,* pl. 28.11, 12.

The Hellenistic Deposits - Area III

The Hellenistic strata excavated during the second Sydney session relate directly to those of the first season (*ADAJ* XXIV, 1980). In Area III Plot C more of the 'fill' beneath the late Hellenistic building was removed, but in it there was nothing to compare with the interesting Group B material of the previous year.

More enlightening were the excavations in IIIB, despite the fact that they were severely limited by the Byzantine/Islamic walls earmarked for preservation. In this Plot, the northward continuation of the east wall of the Hellenistic building was located, together with a short length of the north wall. It is probable, therefore, that we are dealing here with a small rectangular dwelling measuring roughly 9.00 x 5.50 m. (fig. 17), built in the 2nd century and destroyed in the early 1st century (see below,) The three exterior walls unearthed have rubble foundations approx. 0.65 m. wide; this stonework rises above the floor level up to as much as one metre to form a socle. Above the socle a few sun-dried mud bricks survived *in situ;* these and a number of fallen bricks measure about 0.37 x 0.18 x 0.09 m., in contrast to the examples recorded last year.

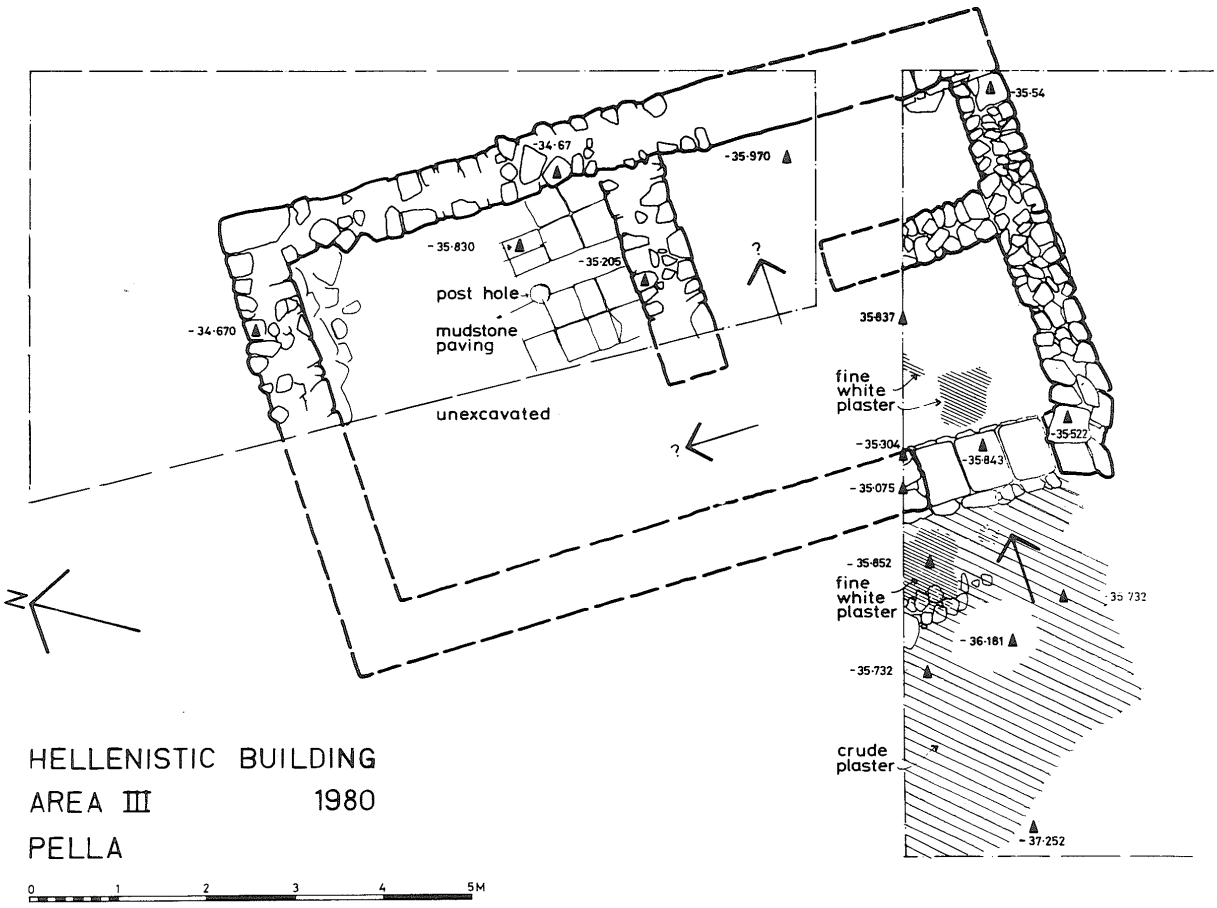


Fig. 17 Pella. Hellenistic building, Area III.

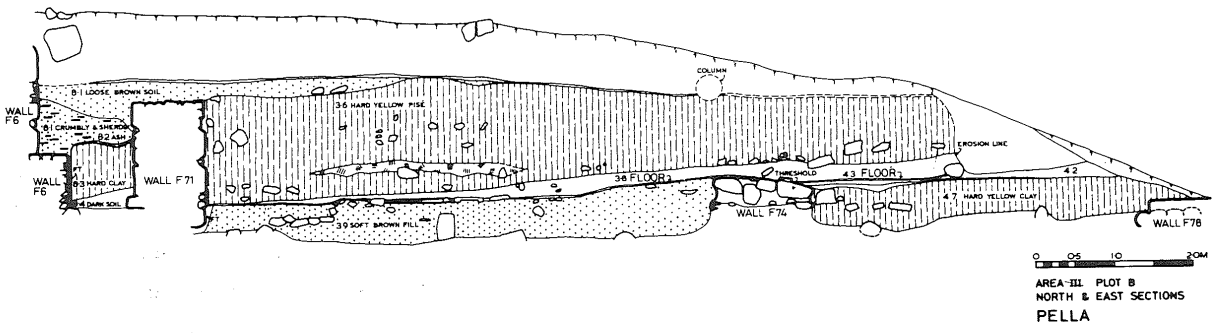


Fig. 18 Pella Area IIIB. North and East Sections.

Of the three walls, that on the east side had by far the most solid foundations, reaching to a depth of nearly 2.00 m. Probably the house stood on the edge of a terrace where the mound fell away to the east.

The interior of the house is divided by two walls. One, butting on the east wall at right angles, is probably part of the original plan, since it was sturdily built and had a fine mud plaster face on the north side. Evidently the house originally consisted of an inner and an outer room. The second internal wall is a late addition which divides the outer room into two.

It is probable that the outer room served a different function from the inner one, since the latter is paved with mud-stone tiles, whereas the former has a whitish plaster floor, suggesting that it shared a common function with the plastered courtyard to the west. Most probably the outer room was used for cooking and the inner for sleeping.

Finds from the deposits overlying the surfaces within the house are few, but there is some chronologically interesting material. Among the sherds are several fragments of Eastern Sigillata A vessels - bowls and shallow bowls or plates. There are also two coins worth mentioning. In a spongey grey deposit overlying the mud-stone floor was found a bronze coin with jugate heads of the Dioscuri on the obverse and a cornucopiae on the reverse. Although marginally smaller than any listed by Kadman, it obviously belongs to the late Hellenistic series from Akko-Ptolemais dating from pre-132 to 110/109.[10] A second coin found within the destruction level of the house is Hasmonean of the type with Hebrew in wreath on the obverse, and double cornucopiae and poppy on the reverse.[11] We would expect that this is a coin of Alexander Jannaeus rather than of one of his successors, but the legend is too damaged to be certain. At any rate, these two little coins do provide further modest support for the proposal put forward last year that the house was built in the second half of the 2nd century B.C. and was destroyed in the sack of 83/2 B.C.

The Late Roman Deposit - Area III

In Area III Plot B above the Hellenistic remains **(supra, p. 290)** we unearthed architecture and artefacts of the Late Roman period. Because of the limited area excavated, the function of the Late Roman walls remains unclear, as does the relationship between them and the walls of the building in Areas III and IV discussed in our first report (*ADAJ* XXIV, 1980). Our initial impression is, however, that these walls in IIIB constituted part of the original house which survived in modified form until the mid-eighth century.

There can be little doubt about the date of construction and initial occupation. Setting aside the ceramics which have yet to be analysed but which include several sherds of African Red Slip ware, initial identification of thirty-two stratified bronze coins from the tumble, occupation debris and floors relating to the walls under discussion (fig. 18, deposits 3.7-3.11 and

10. L. Kadman *The Coins of Akko Ptolemais*, Jerusalem 1961, (Corpus Nummorum Palaestinensium IV), pp. 94-100, pl. II-III.

11. Type as G. F. Hill *Catalogue of the Greek Coins of Palestine*, London 1914, p. 202 f., Pl. XXII, 17 f.

4.2-4.7) gives the following breakdown:-

Ptolemaic	1
Seleucid?	1
Hasmonean?	1
Roman Probus (276-282 A.D.)	1
Constans (337-350 A.D.)	1
Valentinian II (375-392 A.D)	1
Uncertain 4th or 5th cent.	23
Obliterated	3

Two of the uncertains are Constantinian, and the latest precisely identified coin, an Æ of Valentinian II, comes from the pisé tumble 3.7. In all likelihood, then, the walls were erected during the 4th century.

The architecture can be briefly described (Pl. LXXVII, 2). The walls, approx. 0.90 m. wide, are built of tooled faced limestone blocks: those at corners are ashlar, but the others are generally irregular. Snecking is used only to a limited extent, in contrast to the later Byzantine and Early Islamic walls. Within the walls is a simple earth fill. The foundations, though shallow (e. g. 0.25 m.), are carefully constructed of cobble stones. Two doorways located in the N-S wall were 1.50 m. and 1.10 m. wide, and had raised stone-built thresholds. The upper walls were constructed mainly of pisé, with a subsidiary use of mud-bricks. No roof material was identified, though fallen plaster within 3.7 may have come from a ceiling.

The floor 3.8 is comprised of a single thickness of weak whitish plaster and grey ash. By the doorway flagstones prevented wear and tear. In contrast to locus 3 the plaster of locus 4 was refurbished several times, as can be seen in the section fig. 18.

The Tetrastyle Temple And Church - Area V

1. LATE CLASSICAL

Excavation of the portico of the temple in Area V (*ADAJ* XXIV, 1980) was suspended until the columns found during the 1979 season could be re-erected. At the time of writing this work is being carried out by Mr Brian Bowen, Architectural Conservator of the Department of Antiquities.

2. BYZANTINE

Further excavations carried out inside the east church confirmed its tripartite basilical shape. However, the eastern limit of the building has not yet been reached.

Elements of the church's construction are now clearer, though many questions remain unanswered. The principal problem facing us is that most of the church's furnishings were evidently removed before the final collapse of the building.

The outer walls are built of limestone blocks with worked faces, apparently decreasing in size higher up the walls. Many of the blocks were evidently re-used, presumably robbed from the preceding temple, and mortar and snecking stones are extensively used.

The interior faces of the external walls were plastered with a hard pink plaster, patches of which remained *in situ* at the foot of the wall. Whether this plaster covered most of the wall in the final phase is not clear; however, it appears that at some stage a row of dowel-holes c. 0.75 m. above the floor in the north wall supported a dado or panels of marble, a

fragment of which was found *in situ* adhering to a bronze dowel.

In addition to the pink plaster numerous fragments of a finer painted plaster were found, including some still attached to fallen blocks. Designs so far identified are geometric and curvilinear; among the colours are red, yellow, blue, green and brown, and black, white and grey.

Sparing use may also have been made of wall mosaics. In the tumble small tesserae were found attached to white plaster: the colours so far found are red, gold and green, black and white. These small tesserae contrast with the larger coarser red, blue-grey and white tesserae which possibly covered sectors of the floor.

The nave and aisles were divided by colonnades of smooth-shafted fine limestone columns with a variety of Corinthian capitals and Attic bases. Each colonnade was set on a line of neatly worked blocks which forms the continuation of the north and south stylobate of the tetrastyle temple. The nature of the superstructure of the church is still unclear.

The floor of the church had been almost wholly robbed out, but the excavation of the aisles revealed the reticulated pattern left in the grey plaster by the red sandstone and white marble tiles measuring approx. 0.22 x 0.22 m. (Pl. LXXVIII). A small number remained *in situ*. In the nave, however, the marks in the plaster revealed that rectangular tiles, evidently of marble, were used.

Small finds from the church were few. Of the three coins found, one is Hasmonean, and the other two are an Æ 4 of Leo (457-474 A.D.) and a follis of Justin II (565-578 B.C.).

The Area Excavations - Area IV

1. INTRODUCTION

At the east end of the flat-topped main mound of Tabaqat Fahl, an investigation of upper occupation levels over a wide area was continued from last season.[12] A major result of this year's excavations is its contribution to the understanding of continued settlement at Fahl subsequent to the widespread desolation of the site, conjectured to have been caused by the 746 A.D. earthquake. Further exploration in the areas first opened in 1979, unfortunately limited this year by the appalling weather, managed to detail in one section the earlier form and use of the 1979 building. This we shall look at first.

2. THE 1979 "BYZANTINE-UMAYYAD BUILDING" AND IVD

a) *Excavations and Stratigraphy*

Of the area in 1979, only Plot IVD was further explored in the 1980 season. The excessive wet prevented any further work on the floors within the building, this being left over to 1981.[13]

The east and south baulks were re-established to recommence excavation of IVD located in the courtyard to the west of the 1979 building.[14] Clearing of the surface reached

12. "Preliminary Report of the First Season of Excavations at Pella" in *ADAJ* XXIV, 1980 (in press).

13. Limited clearing work was also done in Room 9 (numbers now converted to Arabic from Roman) IIIA, to reach the floor levels.

14 Preliminary Report, *ADAJ* XXIV, 1980.

last year exposed a number of burnt patches, probably from *tabuns*, and an open, stone-lined drain. This ran westwards into the courtyard from the base of the long north-south wall that delineates the western extent of the building. Both north and west of the building the surface slopes from east to west, so it seems likely that the drain was constructed as an afterthought to remove water from the base of the north-south wall.

It was hoped that at this stage further excavation would offer some explanation about the wall stub projecting into IVD from the west baulk, and how the building and its long north-south wall related to this. Removal of the drain and its associated surface exposed a pebbly surface underneath along with an eastern continuation of the wall stub.

The new surface of hard-packed earth and pebbles extended northwards from the newly exposed section of the wall up to the south face of the wall projecting from the north baulk of IVD. On the east the surface seemed to be running under the long north-south wall, while in the north-west corner of the plot it was joined by means of a step down to a threshold and rough cobble stone paving. Most likely this surface was originally a street, flanked on its north and south sides by two parallel walls, with the step down and threshold in the north-west corner being the entrance to a narrow alleyway running northwards off the street. Of interest was the construction of a low dyke just outside the entrance to the alley to prevent water and mud entering from the higher street. This suggests we may have a number of streets, one upon the other, that eventually resulted in the need for a step.

Associated with the street was a number of other features - two or three rough feed bins and, sunk into the street surface, an inverted hollow cone section of a stone mill. These features would have hindered movement up and down the street, so may date to the end of the street's use when it no longer acted as a major thoroughfare.

b) *Architecture*

New architecture is limited to the newly exposed section of wall. The eastern half of this wall had been dismantled to its base course with enough left for two door thresholds to be in place. The one remaining course of the western half of the wall contains a blocked doorway. Undoubtedly, this wall is the original continuation of the north boundary wall of the building as found in 1979, with the long north-south wall, as suspected, being of a later construction.

c) *Finds*

The only find of note is a large coin found embedded in the street surface. A post-reform Byzantine *follis*, it is most probably of Tiberius II (578-580 A.D.).

d) *Summing up*

The removal of the Umayyad courtyard with its *tabuns* and drain greatly altered the character of IVD. The east-west street thus exposed is, on the basis of the coin, most likely Byzantine of either the late fifth or early sixth century A.D. Doorways in the flanking walls on both sides of the street gave access to houses, although at some period at least two of the doorways were blocked. By the time of the construction of the long north-south wall

(or at that time) the walls on both sides of the street were demolished.

Before the construction of the long north-south wall, the street fell into disuse as a means of thoroughfare. At this time it was used as a courtyard attached to the houses that opened onto it. Perhaps it was then that the doorways were blocked, all in all suggesting some form of social adjustment taking place, perhaps that following the Persian invasion of 614 A.D.

Postscript: The building unearthed in 1979 seems certainly to be Byzantine in origin, incorporating elements of an earlier Roman building. Its Byzantine heritage is shown by the keystone of the collapsed arch in room 10 in the 1979 building. This had been moved during the summer exposing a maltese cross in sunk relief, the recessed background high-lighted in red paint.

3. AREA EXCAVATION INITIATED IN 1980

(Pl. LXXIX, fig. 19)[15]

a) Excavation and Stratigraphy

Four new plots, IVO, R, S and U (a total of 400 sq. m.), were opened up 20 metres to the north of the area begun in 1979 on a low mound similar to that first tackled last year. It was expected, therefore, that here we would uncover a house complex much the same as that excavated in 1979.

It is unfortunate that both the weather and the complexities of this new area did not allow us to remove the baulks between the plots as last year. In two plots, IVO and IVS, excavation went as expected with both requiring the removal of up to 2 metres of collapsed *pisé* before floor levels were encountered (fig. 19). Also in both plots, as well as in IVR, initial excavation encountered a liberal sprinkling of burials up to a metre below topsoil. These usually consisted of the body placed on its right side in a pit dug from topsoil, the head pointing west and facing south. The pit was often closed with a capping of stone before backfilling. The greatest concentration of burials was to be found on the top of the mound, in IVR. A major disappointment was the extremely decayed nature of the bone; frequently the earth surrounding the skeleton was harder than the bone itself.

The nature of the thick deposit over the floor levels is best demonstrated in IVS. Here, the collapsed *pisé* from which the upper sections of the walls (perhaps) and postulated upper floor (see below under 'Architecture') were made, has been largely unaffected by later water action. Why this should be so is uncertain, except that the clay here seems particularly impervious to water, and the surface slopes rapidly to the east thereby quickly dispersing surface water. The collapse lines are readily apparent in the west section (fig. 19). The yellow clay *pisé* in a collapsed state is hard but crumbly, with fragments of a hard, mottled grey cement and flat segments of white plaster (sometimes painted) liberally sprinkled throughout the collapse. There are three major fall lines apparent, one from the south and one from the north, the latter likely from wall 1,

15. Building plans from this season's excavations have already been published and are not republished here. See A. McNicoll and A. Walmsley "Pella/Fahl in Jordan during the Early Islamic Period" in *Proceedings of the First Congress on the Archaeology of Jordan* (in press).

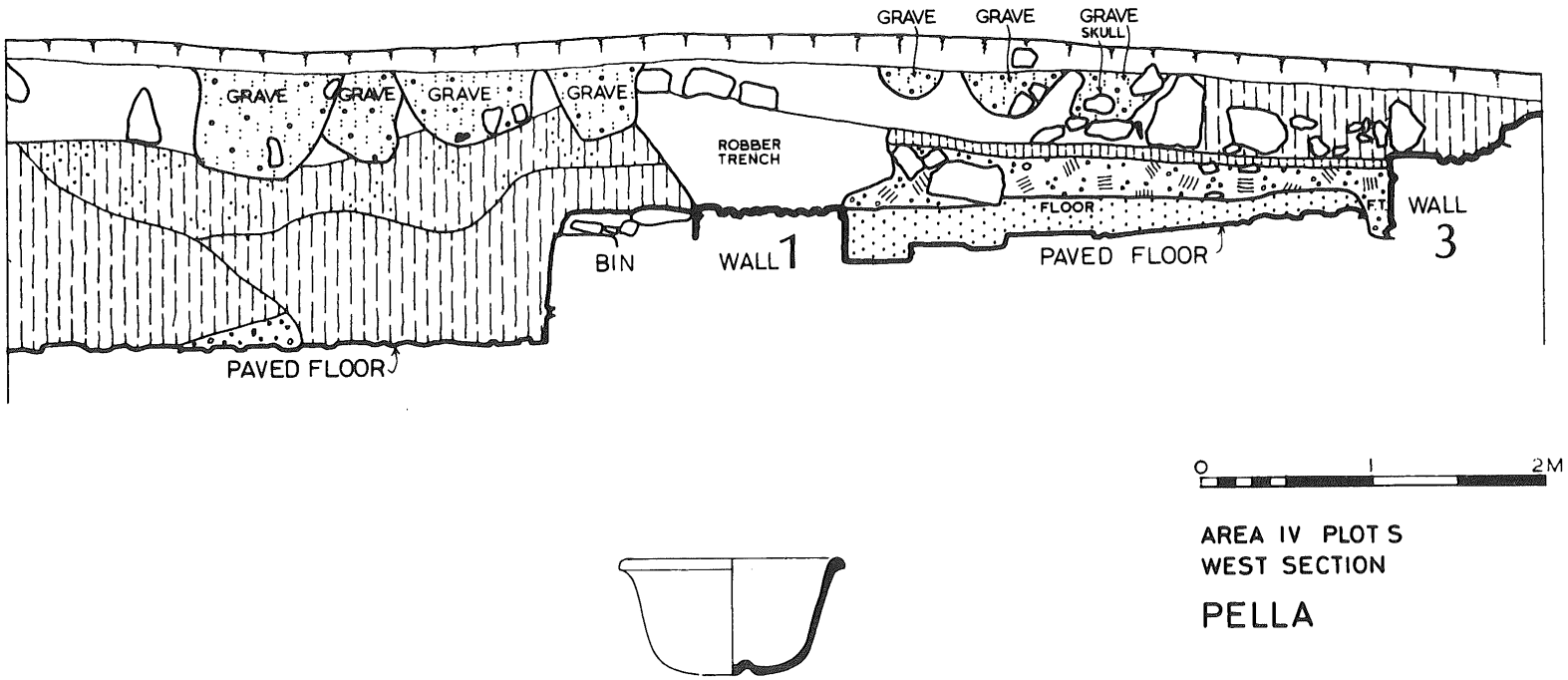


Fig. 19 Upper: Pella Area IV.S. West section.
Lower: Pella. Umayyad bowl. Area IV./O (scale 1:3).

with the third as the central deposit (loose patchy yellow-brown) that has collapsed from the west (wall in IVR).

The cobbled floor on which the collapsed *pisé* rests by the west section of IVS extends eastwards between three piers to a paved area on which, during the removal of the *pisé* collapse, two intact and one badly crushed animal skeletons were exposed. Nearby were found the now-expected feed-bins. Ilse Köhler identified the bones as those belonging to a mature horse and an approximately three year old cow. The badly crushed skeleton was probably that of a sheep.

Plot IVR has provided detailed information about occupation at Fahl subsequent to the collapse of the major building level as unearthed in IVO and IVS, and previously in the area excavations of 1979. The work of last year revealed evidence of habitation after the collapse of the Byzantine-Umayyad building in Area III Plot A, where a small, two-roomed dwelling was constructed on the protruding stumps of walls from the earlier building. Excavation in most parts of Area IV Plot R was suspended at the end of the 1980 season with clearance down to the top of the collapse deposit excavated in neighbouring IVO and IVS. In the process, detailed information was recovered on the sequence of events after the destruction of the building. Briefly, these are:

1. Collapse of the stone block and *pisé* building exposed in IVO and IVS.
2. Dismantling and robbing of stone walls and other building materials.
3. Limited rebuilding. Construction of a new dwelling; associated continued robbing.
4. Squatter habitation in the later house; build-up of a fine silt over the floor with subsequent collapse and robbing of the house. Abandonment.

The evidence from IVO and IVS, and that of the building uncovered in 1979, points to a common cause for the widespread devastation of the solidly built stone block and *pisé* houses. In the report of last season, one of the earthquakes of the Jordan Valley was postulated as the agent of destruction and currently no better explanation can be offered; indeed, the excavations of this season would confirm this interpretation.

After the earthquake, rebuilding was undertaken on a very limited plan. In order to accomplish this, what architectural features were projecting above ground and, in some cases, what had been buried by the collapse, were utilised in the construction of a new dwelling (for a description of this building see below under 'Architecture - Late Phase'). Stratigraphically, the periods of dismantling and robbing with associated rebuilding are represented by a construction surface from which was dug a six metre long robber trench and two walls rebuilt on the wall stubs of the earlier building. One of these walls is actually partly a rebuild, and partly sunk into a foundation trench through a mud floor onto an earlier paving (fig. 19, wall 3) both of which (the floor and paving) belong to the earlier collapsed building - although why a mud floor was used in preference to a paved one is slightly mystifying. This same wall of the late phase building has constructed in its length a blocked door-

way, the doorblocking being built from the construction surface as its base course projects 30 cm. out from the wall. Construction of this wall also involved the truncation of an early period wall; in fact, because of the rough nature of the topography south of the later building, a fill was placed between the remaining wall stubs of the earlier building in order to raise the ground level and create a flat open area. On this fill two short walls were constructed to make a small annexe, one wall of which butted up against the blocked doorway. Thus the blocked doorway was sealed by both the fill and the wall; the only explanation possible for this doorway is that it was open during construction of the main section of the later period building for access to building material, after which it was closed in preference to a main westward-facing entrance. Also on the fill was laid a hard, yellow clay surface which subsequently was cut through to rob out more building stone from the earlier building, probably while the later building was still in use.

Plot IVU was opened in order to expose more of the late period building. As the floor of this building was less than 50 cm. below top soil, stratigraphy was confined to a yellow silt above the floor paving. In areas the paving had been robbed out, and the threshold is gone from one of the internal doorways. In some rooms pits were dug (or dug from topsoil?) but these have not been investigated as yet. This seems to suggest abandonment of the building to be replaced by squatter habitation and eventual collapse and robbing.

In conclusion, the stratigraphy of the area opened in 1980 indicates two periods of occupation, separated by the destruction by earthquake of the building belonging to the earlier level. There appears to be no prolonged period of abandonment between the collapse of the earlier building and the construction of the later one, so provisionally we have called these an early phase and a late phase of the same period. The early phase seems compatible with the last major period of occupation in the building exposed in 1979 and ascribed to the Umayyad period; while the late phase would follow immediately afterwards. If the earthquake which destroyed the early phase building is that of 746 A.D., the late phase would date to the early part of the 'Abbasid Period, but there is no evidence for this. Currently then, it has been decided to call these an early phase and late phase of the Early Islamic Period.

b) Architecture

1. *Early phase*[16]

The early phase building exposed in 1980 was cleared to floor levels over the two plots IVO and IVS. Paved flooring is common, with five of the eight cleared rooms having floors of rough cobble stones or mud-stone paving. The other floors were of hard packed mud, one with the faint remains of a white plaster.

The walls are of the same construction as encountered last year in Area IV. To form the two faces of a wall, roughly shaped blocks were laid back to back in irregular courses with their flattest face projecting outwards. Gaps between the courses were plugged with snecking and a bonding of yellow clay mortar, while

16. Plan published in A. McNicoll and A. Walmsley "Pella/Fahl", pl. 2.

the internal cavities were filled with stone rubble. Overall workmanship is poorer than that found in the 1979 building; the stone blocks are smaller and noticeably uneven in shape, while greater use is made of snecking. Little can be deduced from this; probably available stone resources dictated standards as much as financial factors.

A number of new architectural features were uncovered by this year's excavations. The major room complex in IVO is noticeable for its two orthostat walls and a well preserved staircase.[17] The orthostat walls consist of a series of orthostat stone blocks on a 70 cm. high base of well squared masonry. The orthostates extend for the full width of the wall and stand to a height of 60 cm. These orthostat walls can be seen as the internal subdivision of one larger room approx. 7.5 m. x 7.0 + m., as they project parallel to each other at right angles from one wall of the room, probably as far as the opposite wall although this has not been exposed as yet.[18] Along their length, both orthostat walls are broken by the inclusion of a doorway, these roughly facing each other. In the corner where one of the orthostat walls connects to the solid room wall, a staircase was constructed of large squared steps on a solid stone and clay base. Starting 1.5 m. out from the solid wall, the staircase runs along the side of one of the orthostat walls before turning 90° in the corner to run similarly alongside the solid wall of the room towards the second orthostat wall. The full height of the staircase has not been preserved. By the second orthostat wall, it would have been about 2.0 m. above floor level, hardly an indication of ceiling height.

At Umm al Jimal, that "Pre-Islamic Christian Arabic city *par excellence*"[19] along with the other basaltic cities of the southern Hauran, similar orthostat walls are described by the Princeton Expedition in buildings in a remarkable state of preservation, often to their full height of three to four stories.

In what are classified as domestic dwellings, ground floor rooms are frequently divided by one or two orthostat walls, such as at Qara'ah where, in plan, one room is very reminiscent of the orthostat room at Pella.[20] Butler suggests these rooms are stables, the gaps between orthostates being feed yins. In the Hauran examples, the wall is continued above the orthostats by solid stone masonry, as it probably was at Pella. Staircases in the Hauran are in keeping with Pella through their location at the junction of two walls, such as at al-Medjdel,[21] these giving access to an upper storey, perhaps a loft associated with the stables.

Architectural features in IVS include feed bins in one room and three solid piers on the

17. See plan and photograph in "Pella/Fahl", pls 2 and 4b.

18. On the plan published ("Pella/Fahl", pl. 2), the dividing space between the two orthostat walls is labelled as an "alley way". More likely this is the central section of a subdivided room and would have been roofed over, with an access doorway to the south opening into this part of the room.

19. H. C. Butler "Syria: Publications of the Princeton University Archaeological Expedition to Syria", Division II, Section A, p. 150.

20. Butler, p. 142, ill. 126.

21. Butler, p. 119, ill. 95.

step up into an adjoining room. One solid ledge bin extends the full width of the room on the north wall. This may have been a storage shelf rather than a feed bin initially, while the other bin is a crudely arranged semi-circle of stones built on the paving against one of the piers. The three aligned piers are an interesting construction. The northern one is joined to a wall, the central freestanding and the southern caught in the baulk. The space between the piers is an even 1.5 metres, constructed of well squared oblong blocks. Two were laid back to back and bonded with a grey cement mortar to form the square pier. During excavation a large number of stone blocks was removed between the piers, obviously elements from the collapsed arches originally carried upon these piers.

Again, similarities can be noted with the architectlre of the southern Hauran, At al-Medijdel, in one of the house blocks, the lower storey consists of a stable located behind a large low room spanned by a row of three low arches on piers.[22] Upstairs is a large arched room and long apartments; at Pella the upstairs rooms would have been executed in *pisé*. There seems little doubt, on the basis of the Hauran examples and the depth of *pisé* collapse, that at least in areas the buildings exposed at Pella were two storied with the upper floor being constructed of a yellow mud *pisé*, finished with a white plaster in better rooms and in cases also painted.

The similarities with the architecture of the southern Haurän provokes comment. In the fourth century A.D., north Palestinian architecture was largely influenced by Syrian traditions. By the fifth century A.D. the impact of Aegean styles was more noticeable, particularly in cities associated with pilgrimage and trade.[23] Although this trend is applicable to church architecture in particular, the same change in fashion may equally be true of domestic architecture. At least significant sections of the buildings exposed both in 1979 and 1980 may thus be of fourth century construction, and the excavations in IIIB of this year confirm this suggestion. It seems possible the buildings have undergone a number of architectural changes since the fourth century, the last being associated with the re-use of the buildings in the Early Islamic Period.

2. *Late Phase (Pl. LXXIX)*

The architecture of the late phase is restricted to one dwelling.[24] This is a three-roomed residence, centred on a 4.75 m. x 7.0 m . reception hall with a westward facing main entrance. Two doorways in the north wall lead off from the reception hall to adjacent living rooms. All three rooms are paved with flat mudstone and limestone blocks. Walls are preserved to two courses, of double-face construction and rubble core. Blocks are small, except for the doorjambs, which are a sizeable 38 x 80 x 85 cm. A small annexe was constructed on the south-west corner of the building, this probably being a latrine.

It is likely that at least one further room continued the complex to the north, making it a house of no mean size. Very likely it has the homestead of a small agricultural estate; the

22. Butler, p. 122, ill. 96.

23. R. Krautheimer *Early Christian and Byzantine Architecture*, pp. 116-120.

24. For plan see A. McNicoll and A. Walmsley "Pella/Fahl", pl. 3.

sort of construction popular in rural or semi-rural areas in the 8th century A.D., as Pella obviously was by this time.

C) FINDS (Figs 19, 20)

1. *Pottery*

The excavations of 1980 have confirmed the ceramic typology of the collapse period at Pella as first reported in 1979.[25] In this preliminary report there seems little point in publishing further pottery of the types detailed last year. However, an additional shape is a small cup with a dimple base in a hard, fine orange and brown terracotta (fig. 19). The dimple base seems characteristic of small terracatta vessels, such as cooking jars and juglets, in the Umayyad period.

A few broad trends in the popularity of certain ceramic types can be suggested at this point, although it must be remembered it is early days yet. A pale green ware seems to be more common in the late phase of the Early Islamic Period. This ware is likely of local manufacture and is mostly used to make small, coarse, porous water jars. The pinky-orange, gritty terracotta that was used to make small handled jars and single-handed spouted juglets which were decorated in swirling and wavy white painted lines, seems popular up to the end of the early phase of the Early Islamic Period. Still conspicuous through its absence is the red paint on cream ware. It may be this ware was never popular at Pella, or that it dates to a period previous to the occupation levels dug so far.

In order to be able to demonstrate observations like these statistically, a sherd-weighing programme has been instigated that should allow an evaluation of the changes in frequency of ceramic types over time. This will be of particular importance as the floors of the buildings exposed in 1979 and 1980 are dug, ideally providing a pottery sequence back to the 4th century A.D. Preliminary results have already been published[26] and in the coming seasons the focal point of our studies on the pottery from the Area Excavations will be concerned with establishing the occurrence and popularity of ceramic types in the Byzantine and Early Islamic Periods through this sherds weighing programme.

2. *Coins*[27]

Of the nine coins from the collapse of the early phase building, three were fourth to fifth century minims, while three others were Byzantine, one each from the reigns of Justinian, Justin II and Heraclius. The three other coins are barely identifiable.

The evidence from the coins this season is inconclusive, although the continued lack of any post-reform Islamic coins from the building collapse is a little disturbing if we wish to date this destruction to the 746 A.D. earthquake.

3. *Stone* (fig. 20)

Among the *pisé* collapse of IVS was made one of the more telling discoveries this season. Fairly high up in the level was uncovered a number of architectural elements made of marble. These consist of a small, plain column

25. Preliminary Report in *ADAJ* XXIV, 1980.

26. A. McNicoll and A. Walmsley "Pella/Fahl", fig. 1.

27. Coins identified by A. McNicoll.

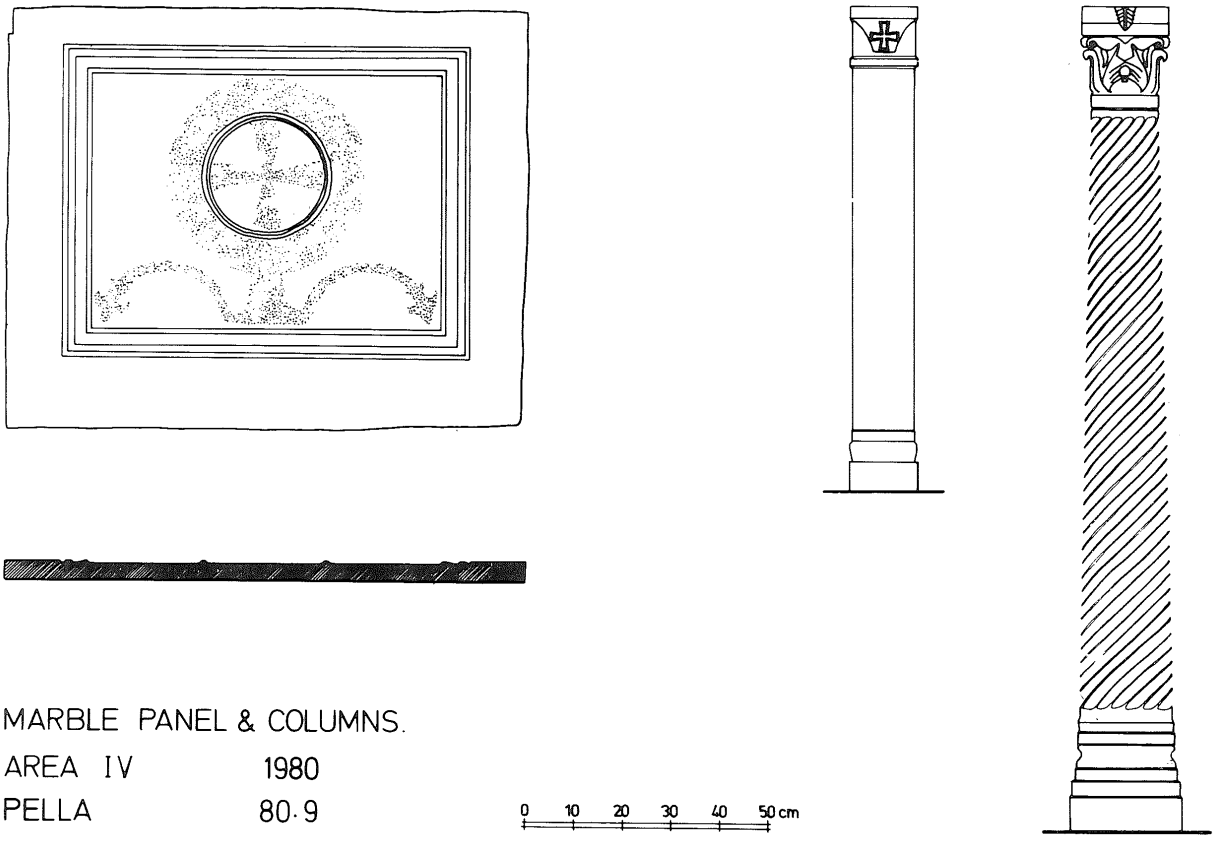


Fig. 20 Pella Area IV. Marble panel and columns.

and a colonnette, both of white marble, and a complete, but broken, white marble slab. The colonnette, a composite piece with base, column and capital in one, had a simply delineated capital distinguished by a cross (fig. 20). The marble slab showed signs of re-use. A border and central raised circle are plainly visible but the cross within the circle and the garland ribbon which ended in a pointed leaf had been erased (fig. 20). The erased decoration is depicted by stippling. In an adjoining area, another broken but complete white marble colonnette was uncovered, this again of a composite type but with a more elaborate capital and a twist-decorated shaft (fig. 20).

These architectural elements undoubtedly originate from one of Pella's churches. Churches of the fifth century in Palestine were commonly finished off with imported Proconnesian marble fittings, although discovery of these fittings *in situ* is rare due to later robbery. The pieces from IVS illustrate the uses to which such robbed materials were put. The marble slab, originally a chancel screen, probably served as a table or shelf, with the colonnette with the cross (which was found immediately underneath) as one of the legs. In its church context, this colonnette would have served a similar function as one of four legs of a stone alter. The twist-decorated colonnette, being of greater height, is probably from a baldacchino, although because is was found by itself, lying broken on a floor, its later use is unknown. Also unknown is from which of Pella's churches these marble pieces came. Excavation at the church in Area V has shown inside fittings such as these were robbed out before the building collapsed, but it would be only a guess that the marble elements found in IVS came from this church.

d) *Summing up*

The most important aspect of the Area Excavations initiated in 1980 has been the clarification of occupation at Pella after the widespread destruction of the early phase houses. We have ascribed this destruction to natural causes, one of the major earthquakes recorded for the Jordan Valley in the first half of the eighth century A.D. Both the alterations to the early phase buildings from Late Byzantine to Early Islamic times, and the limited extent of rebuilding in the late phase, indicates Pella's changing status from trading city to agricultural village. Very likely this trend was underway by the end of the sixth century A.D., being accelerated, firstly, by the Persian invasion then by the Islamic Conquest in the seventh century. This change in status was associated with the continuing depopulation of Pella, so that by the eight century A.D. Fihl, as Pella was called by then, could have played only a minor rôle in the regional organisation of the Jund al-Urdunn as the location of perhaps a number of farmhouses belonging to small agricultural estates.

J. B. Hennessy
A. W. McNicoll
T. F. Potts
A.G. Walmsley

PRELIMINARY REPORT ON A SECOND SEASON OF EXCAVATION AT PELLA, JORDAN

Spring, 1980
by
Robert Houston Smith

The 1980 spring session of The Sydney/ Wooster Joint Expedition to Pella began a few weeks after the conclusion of the winter session conducted by the Sydney team; it lasted nine weeks, from March 22 through May 22. Excavation was undertaken during the first eight weeks; the final week was devoted to the completion of recording, mapping, photography and cataloguing of finds.

The staff consisted of Robert H. Smith as director; Omar Reshaidat and Heikmat Taani, representatives of the Department of Antiquities; Leslie P. Day, Peter Scales, and Barbara Hamann, senior supervisors of excavation; Jack Moyer and Marilyn Saul, physical anthropologists; Brian Cannon, surveyor; Douglas Kuylenstierna, photographer; Ilse Koehler, zoologist; Ewan Campbell, geologist and sometime excavator; Alistair Marshall, conservator and equipment supervisor; Adelaide Fenaille-Kamir, registrar; and excavators Ann Aber, Judith Anilosky, Julie Billingsley, Lynne Bauer, Douglas Byrd, Nate Miller, Niall Slater and Margaret Wehrly. Badri Madi (Abu Issa) served as foreman and Mohammed Karain as cook. Seventy-five to eighty local workmen were employed, of whom an average of about a dozen were paid by the Department of Antiquities, chiefly for work related to the clearing of debris from excavated areas.

As in the previous year, the spring session was funded largely by grants from the National Geographic Society and the National Endowment for the Humanities; additional funds were provided through private gifts, as well as by funds of The College of Wooster. The Department of Antiquities, through the good offices of its Director General, Dr. Adnan Hadidi, provided many helpful services as well as financial assistance in the construction of two additional rooms to the field headquarters.[1] The spring session was carried out in affiliation with the American Schools of Oriental Research and with the cooperation of the American Center of Oriental Research in Amman. Although the Expedition largely owns all needed field equipment, some items were made available for use during the season by The British Institute in Amman for Archaeology and History and the American Center of Oriental Research.

Whereas the winter session had been marked by heavy rains and chilly temperatures, the spring session was characterized by seasonably moderate weather. Initially there were some chilly days and later a few hot ones, but otherwise the temperature remained pleasant. During the first part of the spring session Pella was covered with verdant plant growth,

1. The field headquarters will, when the Expedition finally completes its work, become a local museum at the site, administered by the Department of Antiquities.

and it was possible for staff geoligist Campbell to collect a number of new botanical specimens while exploring the countryside around Pella on foot; Campbell also began the first record of bird species local to the site.

Excavation was undertaken by the Wooster team in four areas: the West Church, the Civic Complex, the West Cut, and one part of Pella's sprawling cemeteries (See Fig. 1 of the preceding report for plan). In the first three of these, the field work continued archaeological investigations which had commenced in 1979.[2] Human and animal remains were studied in the field as they were excavated, and in many cases specimens were retained for possible future analysis. The material that follows is based in part on reports prepared by excavators, field specialists, and consultants of the Expedition.

AREA I : THE WEST CHURCH

Supervisors E. Campbell and O. Reshaidat

Portions of the West Church were excavated by The Wooster Expedition to Pella in 1967, at which time the phases of the church's history were broadly established.[3] Work was resumed in this large 6th-century structure in 1979 and continued in 1980. The goal of these resumed operations was twofold: to uncover more features of the building and its dependencies, and to conduct soundings in selected locations that might help not only to answer questions about the specific aspects of the church and its phases of use, but also to clarify the history of the area prior to the construction of the building.

To continue to achieve these aims, a crew of workmen was set to two tasks in 1980. The first was the continued clearing of the atrium, where during the 1979 season three columns had been reset and a sounding had produced a fill containing sherds and other artifacts ranging in date from late Neolithic through Late Bronze. The second was the exploration of a large rectangular depression located a few meters north of the church, first noted nearly a century ago by Schumacher in his surface exploration of Pella.[4] It was the latter task which occupied most of the crew's time and produced the most notable results.

A sounding was made northward from the massive north wall of the church toward the center of the depression. A previously unrecorded sealed doorway was discovered in the wall, and just north of its threshold a paving of silt-stone largely robbed out-that had once extended outward from the wall approximately 5 m. At the northern end of the paving, parallel to the north wall of the church and in alignment with the northern wall of the dependency that had been discovered during the 1967 excavations, was the northern wall that enclosed the paved floor, of much poorer quality than the church wall itself. Various evidences showed that the dependency had been constructed later than the church. A wall was found

2. See Hennessy, Smith and McNicoll in *ADAJ*, XXIV (1980). and a forthcoming report in the *Bulletin of the American Schools of Oriental Research.*

3. See Robert Houston Smith, *Pella of the Decapolis, Volume I: The 1967 Season of the College of Wooster Expedition to Pella* (Wooster, Ohio, 1973), Chapter IV.

4. Gottlieb Schumacher, *Pella* (London, 1888), pp. 46-49; Smith, pp. *op. cit.*, pp. 7-8.

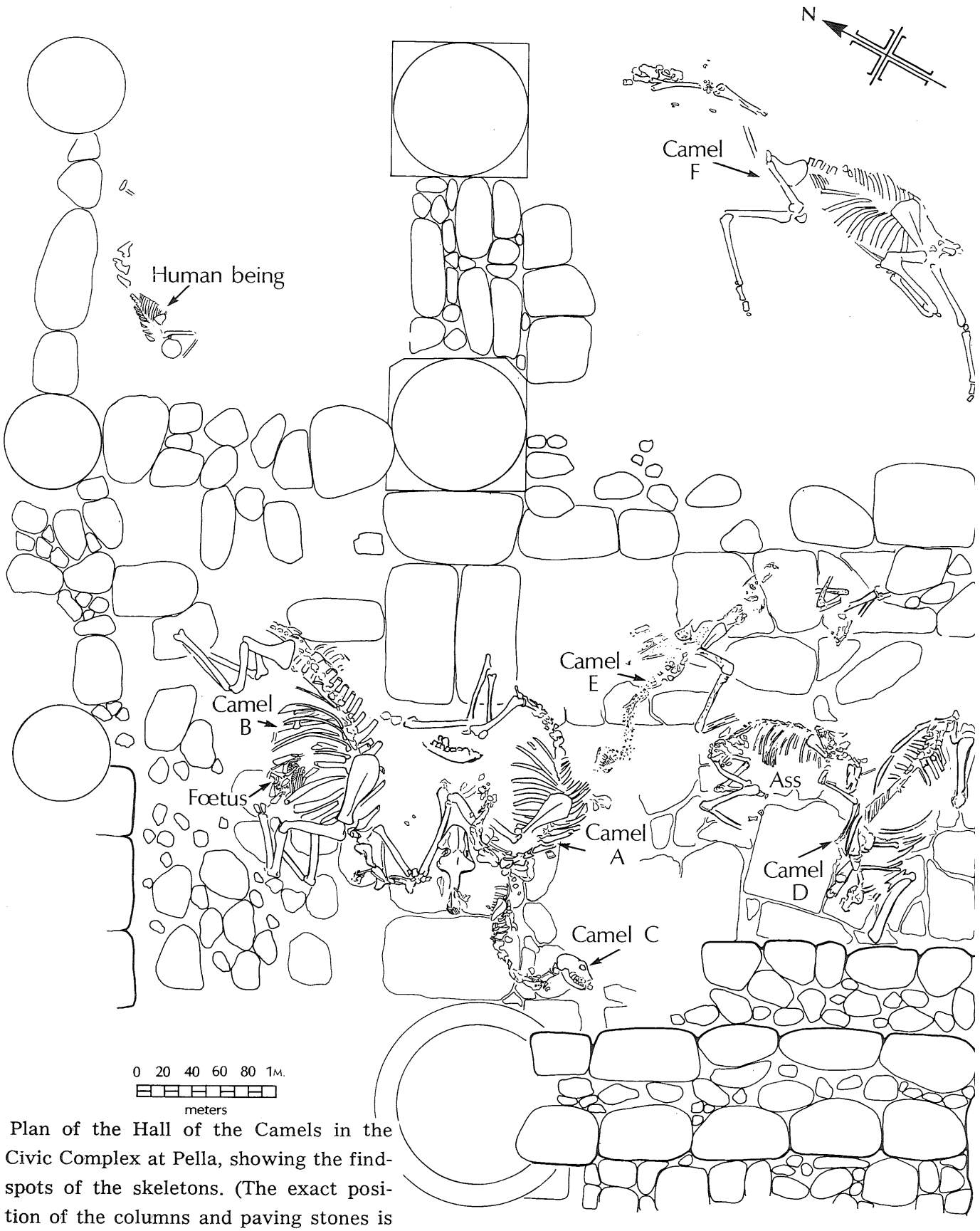


Fig. 1 Plan of the Hall of the Camels in the Civic Complex at Pella, showing the find-spots of the skeletons. (The exact position of the columns and paving stones is subject to revision upon further eurveying of the chamber).

running at right angles to these walls, dividing the paved area into two chambers. The western end of these chambers was formed by the wall of the atrium of the church; their eastern end was not excavated (Pl. LXXX, 1).

In the southwest corner of the western chamber's floor, where the north wall of the church intersects the atrium wall, the paving had been repaired by the utilization of a panel of a marble ecclesiastical screen in place of the original pavers. The screen, which had been broken before its reuse, may well originally have stood in the West Church, and have been relegated to this inferior purpose at a time when the West Church was under repair. One side depicts a Latin cross with splayed extremities and rosettes in each of the angles formed by its arms. The other side displays a phoenix surrounded by ecclesiastical symbols and enclosed within a stylized wreath, from the bottom of which tendrils extend bisymmetrically in either direction. The motifs are presently under study.

In due course the cause of the depression was discovered. Not surprisingly, it was a cistern[5] that had subsequently collapsed and then largely filled in. Constructed just beside the north dependency, it was approximately 11 m. long and 5 m. wide (Pl. LXXX, 2). Its 1.10—m.—thick walls, which in plan formed a rhomboid, were constructed of rough-hewn nummilitic limestone The structure had been covered with a barrel vault of somewhat smaller dressed stones, the purpose of the better masonry having been basically to make the stones fit securely together. When still intact, the exterior of the cistern must have extended about 1.8 m. above the level of the ground, and was entered through a doorway at the southeast corner, at the top of the stairway.

Amid the fill in the cistern were discarded stones, fragments of pottery and other signs that the cistern had been used as a dump after its original function had ceased. The potsherds remained typologically homogeneous throughout meter after meter of this debris, and had a relatively narrow range, that of Late Byzantine into the beginnings of the Islamic period, with very few strays from earlier periods.

A stairway of rough-hewn stones, found much-deteriorated, led eastward alongside the south wall of the cistern; upon reaching the east wall of the cistern, the steps turned sharply back to the west and continued downward until they reached a stone ledge approximately 5 m. below the ground level. A lower stairway led northward from the ledge along the west wall of the cistern to the floor.

Just above the ledge, and continuing across the entire cistern, was a soil layer heavily laced with the bones of tiny animals. A sample of this skeletal material was examined by Dr. Michael Carleton, Assistant Curator of Mammals at the Smithsonian Institution in Washington, who reported that they are predominantly gerbil bones. Dr. Carleton suggested that they represent the remnants of pellets of fur, skin and bones regurgitated by owls resident in the cistern.

Lying directly on the ledge was an articulated male skeleton. The position of the limbs suggested that the body had been shrouded, but there were no funerary objects. The corpse had been interred on its right side, facing south, a dispositon suggesting that the person was Muslim and had been buried facing Mecca. A similar, though probably later, burial had been

5. As anticipated in Smith, *op. cit.*, pp. 149-151, 157.

found in Area IX in the spring of 1979 and the Sydney team had found a number of Islamic burials in their excavations on the eastern side of the tell.

Although it had been hoped that the bottom of the cistern might yield stratified deposits of vessels that had accidentally fallen into the water, the floor held no such accumulation. The lower portions of the walls retained a rough coat of cement into which bodysherds from Late Byzantine water jars had been affixed—a common device intended to provide better adherance of plaster on the walls. Plaster was found partly intact on the walls at lower depths, and the floor proved to be very well plastered. A probe into the floor revealed, some 15-20 cm. beneath the plaster, an earlier floor, also plastered. Why the cistern ceased to be used prior to the time of the earthquake that destroyed it remains at present unexplained.

A small setting tank was discovered at the northeastern exterior corner of the atrium, just outside the dependency (Pl. LXXXI, 1). Constructed of thin fired bricks and almost square in shape, the sump was fed by rectangular drainage channels coming south and west; from the sump a somewhat larger conduit led toward the cistern. Originally the sump had been covered by a custom-fitted slab of some sort, but when found it was sealed in makeshift fashion with the massive marble base of a high pulpit. Holes and slots cut into the stone show that it had rested on eight narrow pillars with slabs (all probably of marble) fitted between them, as elevated pulpits in both churches and mosques often were, and that its upper side had been fitted with a protective railing, probably of metal. It is plausible to suppose that this pulpit once stood in the West Church, and that the base pressed into service after the church had ceased to be used for ecclesiastical purposes. Its reuse must, of course, antedate the last use of the cistern itself in the 7th century A.D.

The archaeological evidence of the chambers of the dependency and the cistern provide clues to the history of the West Church Complex. The church itself, the 1967 excavations had suggested, was probably constructed in the early 6th century, and it is possible that the cistern was also installed at that time. The need for a cistern when there had always been a large flow of spring water a few hundred meters from the church raises important questions about conditions at Pella at this time. In view of the tradition that the water of Pella and nearby Beth Shan were bad during at least part of the Byzantine period, it is possible that Pella's spring had temporarily gone dry or was regarded as unnfit to drink. The cistern stayed in use perhaps until the end of the Byzantine period. Not long afterward it began to be inhabited by owls, whose occupation ended abruptly with an earthquake—most likely that of A.D. 660 or 717—which destroyed the vaulted roof. The debris that gradually filled the cistern antedated the complete abandonment of the complex by 717.

AREA VIII: THE WEST CUT

(Supervisors P. Scales and B. Hamann)

The West Cut was designed to be the major stratigraphic probe that the Expedition will make on the western side of the tell. Its function is to give a profile of the city's history from the earliest settlement to the final occupa-

tion. It was laid out in 1979 as a long trench, in order that as many archaeological features as possible of that part of the city—including streets—might be encountered. By the end of the 1979 season a street had been found at the southern end of the trench, and the excavation had produced remains of occupation from the Hellenistic era through early Islamic times. Not all periods were, however, equally well represented; particularly scanty was evidence for the Late Roman and Early Byzantine phases.

The excavators faced a practical problem of considerable dimensions at the beginning of the 1980 season, for the heavy winter rains had severely damaged the east balk of the 39-m.-long excavation, requiring the removal of an additional meter of overburden along its entire length. The need for this extensive recutting afforded, however, an opportunity for the refinement of the stratigraphy obtained the previous season, and served to widen the area by twenty percent, with the result that the architectural remains were more fully exposed. Even with this extension, no buildings were exposed in their entirety; but the desirability of recovering a profile of Pella's history was regarded as outweighing this disadvantage.

The recutting of the east balk did not result in any modification of the history of occupation of the three large Late Byzantine-Early Umayyad houses that were partially exposed in 1979, but the excavators were able to identify an earlier Byzantine phase, evidenced almost solely by a few architectural remains underlying these houses. It was evident that most of the earlier Byzantine architecture had been removed during the construction of the Byzantine-Umayyad houses. The small quantity of potsherds recovered as the earlier Byzantine walls were being dismantled during excavation was not narrowly diagnostic, and can be dated only to the Byzantine period.

The Early Roman stratum in the West Cut was also more sharply defined in 1980, and the ceramic materials found in 1979 and 1980 were able to be linked with some surviving portions of walls. Because so little had survived Byzantine construction, potsherds were few; to the extent that they were diagnostic, however, they fell within the Early Roman horizon (Pl. LXXXI, 2), and occasionally included Late Hellenistic strays. The most useful corpus of Early Roman pottery from the West Cut was excavated in 1979 at the extreme ends of the trench. The 1980 season showed, however, that the levels containing Late Hellenistic and Early Roman sherds found at the northern end of the trench were not in natural superposition, as had seemed at the time, but were the accidental result of dump formation in ancient times.

The street of the Byzantine and early Umayyad periods at the southern end of the West Cut was found to have had its origin in the Early Roman period. This fact indicates clearly the continuity of the city's occupation over six or seven centuries, even when Byzantine construction swept away most of the buildings erected during the Roman period. The street disappeared, however, when excavation probed into the Late Hellenistic stratum; several Hellenistic walls were found under the spot that the Roman street later occupied. This fact, considered in light of a clear distinction between the ceramic corpus of the Late Hellenistic and Early Roman strata in the West Cut, shows that a considerable amount of time lapsed bet-

ween the destruction of Pella in 83/82 B. C. (see next paragraph) and the reconstruction of the Roman period. It would not be unreasonable to suggest that the part of the city where the West Cut is located was unoccupied from the time of the destruction through the rest of the 1st century B. C.

By the end of the 1979 season extensive Late Hellenistic remains had begun to appear throughout the West Cut, with associated architectural structures. Everywhere there was evidence of burning, not only of pottery but of the soil itself. These phenomena, interpreted in light of numismatic and ceramic evidence, led to the conclusion that this stratum reflected the destruction wrought at Pella by Alexander Jannaeus in 83/82 B.C., of which Josephus tells.[6] It was hoped that in 1980 the excavators would encounter the floors of the houses that had been destroyed by the Hasmonean ruler, and perhaps find much *in situ*. Although more Hellenistic walls (Pl. LXXXII, 1) and large quantities of potsherds were found in 1980, that expectation was not fulfilled. Instead, the debris went homogeneously and almost imperceptibly from Late Hellenistic to earlier occupation in almost every locus. Only one plastered floor was found relatively intact, and it had no objects resting on it.

These conditions do not alter the conclusion that this stratum reflects Alexander Jannaeus' destruction of Pella in 83/82 B.C., for the evidence of coins, stamped jar handles (recently identified and dated by Virginia Grace) and ceramics generally agree with Josephus' account and suggest a *terminus ante quem* of 83/82 B.C. for this stratum. What must be recognized is that the detritus of the Hellenistic levels was much disturbed subsequent to the Hasmonean onslaught, and that when the builders of the Early Roman period came on the scene they further homogenized the stratum by moving soil and leveling the ground in preparation for their constructions. It is because of this disturbance that scarcely a single vessel in this stratum was found intact, and relatively few were complete enough that they could be restored. Still, the stratum was so thick that it yielded a very useful corpus of ceramic forms, one that has particular importance because of its firm terminal date (see (Pl. LXXXII, 2).

Just how far into the Hellenistic period this stratum extends remains somewhat uncertain. Excavation supervisors Scales and Hamann identified two architectural phases within the Hellenistic stratum, but there was no reason to suppose that these phases represented any building prior to about the middle of the 2nd century B.C. Although a very few of the Hellenistic sherds found in the Late Hellenistic debris may antedate the 2nd century, these were found intermingled as strays with the much larger group of Late Hellenistic sherds. The numismatic evidence from the 1980 season is consistent with that found in the previous season; although only a small number of the Hellenistic coins were well enough preserved to permit precise identification, those which could be dated fell within the period of 150 B.C. to the early part of the 1st century B.C.[7] The jar handles fall

6. Josephus, *Antiquities*, 13.392-397 and *War*, 1.103-104. See also Smith, op. cit., pp. 37-38.

7. The Expedition acknowledges its appreciation to Drs. Nancy Waggoner and William Metcalf, curators of Greek and Roman coins, respectively, at the American Numismatic Society, for their assistance in the identification of some of the coins excavated at Pella in the spring sessions of 1979 and 1980.

mainly within groups IV and V of Virginia Grace's classification, which according to Grace's revised dating fall within the years 175-108 B.C. Since Eastern Sigillata A pottery is very frequent throughout the Hellenistic corpus of the West Cut, a *terminus post quem* for the stratum would seem to have to be around 150 B.C., unless one is prepared to give a much earlier date to that ware than most excavators are presently prepared to venture.[8]

The excavators in 1980 discovered that, only a short distance--sometimes a matter of centimeters--below the levels at which they would have expected to find Hellenistic floors, they began to encounter Iron Age sherds intermingled with the Hellenistic ones; then the Hellenistic pottery disappeared entirely and the sherds became exclusively Iron Age. Mixed with the Iron Age sherds, sometimes in transitional levels that also contained Hellenistic sherds, were ocasionally a few Persian period pothsherds. It is not yet known whether or not these represent an occupation of this part of the city during that time or were amid debris brought in for the leveling of the ground preparatory to construction during the Hellenistic period.

By the end of the 1980 spring session the excavation of the Late Hellenistic stratum in the West Cut was well advanced (Pl. LXXXIII, 1). Some walls remained in place, particularly ones that might possibly be of Iron Age date. In each locus where pure Iron Age sherds were encountered, work was halted until 1981, when full attention will be given to the Iron Age stratum. Preliminary examination of the Iron Age sherds found in 1980 shows a generally homogeneous corpus that has affinities with the ceramics of Palestine and Transjordan in the 8th-7th centuries B.C. Thus far few specifically Transjordanian forms and wares have appeared.

AREA IX: THE CIVIC COMPLEX

(Supervisor L. Day)

This important and interesting area was the focus of considerable attention during the 1980 spring session. In the previous year a colonnaded atrium had been found, as well as the remains of large buildings that flanked the atrium on three sides (Pl. LXXXIV, 2). It is by now clear that the atrium was the forecourt of a yet unexcavated Temple, the remains of which are situated to the east. The Temple and its atrium were constructed, as both architectural style and pottery found in soundings made during the excavation of the courtyard in 1979 show, in the 1st century A.D. They were executed in a good provincial Roman style. This Temple will be one of the archaeological objectives of the 1981 spring session. From the atrium a broad flight of steps led approximately westward, down to a paved terrace or landing, and beyond that to an even wider flight of steps that descended into what is today the Wadi Jirm, but what may have been a vast public plaza which perhaps served as a forum for the city during the Roman period.

The excavation of the courtyard was completed in 1980 (Pl. LXXXIV, 1), except for a portion left unexcavated so as to provide a place for the Department of Antiquities to posi-

8. On this matter the archaeological evidence from Tel Anafa in Galilee is of considerable importance, though only preliminary reports have appear thus far. See, *inter alia*, S. S. Weinberg, "Tell Anafa: The Hellenistic Town," *IEJ* 21 (1971), especially pages 101-02.

tion its large crane for the anticipated restoration of the columns of the atrium to their original positions. Most of the columns and capitals of the atrium were extant, in contrast to the ordinary wall stones of the structure, which had been badly robbed out as early as Byzantine times. The paving of the courtyard was largely intact, though how much is original to the building is uncertain. There is ample evidence that the courtyard underwent extensive reconstruction during Byzantine times, almost certainly following a destructive earthquake of yet undetermined date.

The original intervals of the columniation of the atrium were determined with considerable confidence for the north, east and south sides; only the much damaged and poorly rebuilt leaves uncertainty as to the position of columns. Whether or not the columns, bases and Corinthian capitals in the atrium are the original ones, and whether or not they were carved specifically for this structure, cannot easily be said. Although the columns and bases on the north, east and south are relatively uniform, there are some differences of dimensions and design, and the capitals differ widely in their design and execution. Fragments of a 13-stone arch in Roman style that once surmounted the columns on the western front of the atrium have been gathered on the paving of the courtyard, awaiting the time when they can once more be restored to their position above the grand approach staircase to the Temple.

Among the most interesting discoveries in the Temple courtyard were three iron torches, found lying on the paving of the south colonnade (Pl. LXXXVIII, 1). Made of hand-forged iron and attached to the wall with an iron strap at the top, each torch had a 5 mm. coating of plaster on the front and had remnants of wood still clinging to the interior. It would seem likely that the torches had once illuminated the atrium. From their relative positions when found, it is possible that when they fell from the wall they were attached to a horizontal support beam that later disintegrated, leaving the torches in their curious alignment.

The Temple and atrium were constructed of a red and yellow mottled brecciated limestone which the staff geologist, in consultation with Dr. Salameh of the Department of Geology of the University of Jordan, found to be of local origin, having been taken from veins that may be seen even today a few kilometers from Pella, though the actual quarry is still undiscovered. Interestingly, the two columns of the courtyard that flank the large stone doorway that led into the Temple proper are made of a dark greenish-gray chloritic marble of more distant origin, possibly more valued by Pella's builders.

North of the Temple, and relating to it in some way as yet undetermined, is a long columnated hall. The chamber has suffered greatly, first from being constructed of a local limestone that did not weather well, second from earthquakes that severely damaged the structure, and third from extremely poor repairs and alterations made during the final phases of the structure's use. The capitals of the columns of this hall are Ionic, unlike those of the temple, the question of the date of the construction of this chamber cannot yet be answered, since excavation began only in the spring of 1981, and a considerable part of the hall remains to be exposed. Late in the 1981

spring session a probe into debris on the north side of this chamber showed no surviving northern enclosure wall, but only crudely piled up rubble stone, as if the original chamber--whatever its original function--had come be used for very modest purposes, perhaps that of stabling domestic animals upon occasion.

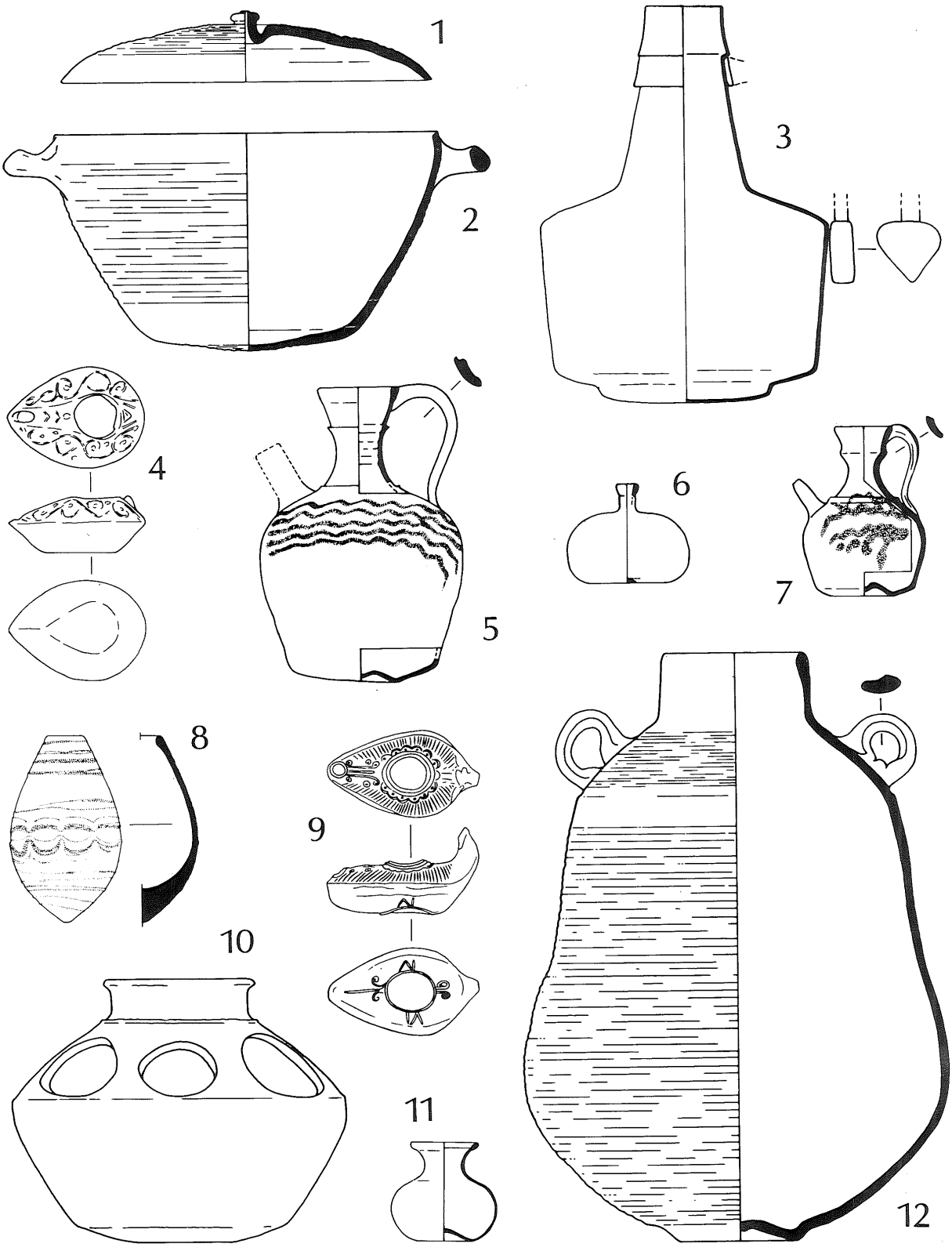
Of great interest was the discovery of a number of articulated skeletons lying on the floor of this hall, where they had been killed by the earthquake that devastated the building. The skeletons of a person, an ass, and six camels were discovered (Fig. 1), and more camels probably lie in the portion of the chamber yet unexcavated. Although most parts of the skeletons were found lying on the paving, some parts were lying contorted amid the tumbled architectural stones, a mute testimony to the violence of their destruction as the chamber tumbled down upon them. One of the female camel skeletons contained a foetus, a fact that may help to identify the month of the earthquake, since camels tend to gestate at fixed times of the year. The camel skeletons are of considerable importance, since this represents perhaps the largest concentration of ancient *camelus* specimens ever reported from this region of the eastern Mediterranean. Operations will continue in this hall in the spring of 1981.

In the debris that filled the colonnaded hall, here was a somewhat higher percentage of transitional Byzantine-Umayyad and Early Umayyad artifacts and sherds than in most places in the Civic Complex. Finds included a bronze jug that had originally had a metal strap handle, two pieces of glassware, and various ceramic vessels, such as small spouted jugs with white decoration painted in wavy lines around the shoulder, an occacional "slipper" lamp, and a vessel with six curious holes cut around its shoulder (Fig. 2). This and the potsherds found in the lowest levels of debris in two rooms in the Late Byzantine-Early Umayyad houses in the West Cut contitute the fullest corpus of 7th-century artifacts discovered during the spring sessions of the past two seasons at Pella.

Of importance for dating the earthquake that shook down the hall and destroyed the creatures in it was a small cache of Umayyad dirhams that had subsequently been hidden amid the fallen stones in the chamber. Although fragile and found in partly fragmentary condition, these coins were successfully cleaned and their mints and dates were read. They range in date from A.D. 700/01 to 730/31. The earthquake may therefore have been that of A.D. 717 rather than 746, and very likely was the same tremor that destroyed the West Church and effectively ended the habitation of Pella as a city.

Of uncertain original provenance are two large stone artifacts found in the debris in the hall. One is a sundial of limestone that lack its bronze vane (Pl. LXXXV, 1); the other is a bowl of simple form fashioned of gabbro (Pl. LXXXV, 2); it may have had some ceremonial use in one of the buildings of the Civic Complex. From fill in a neaby plot in the same area is a third interesting stone object, a small altar of native limectone that was meant to stand against a wall or in a niche. It is decorated on three sides with cult symbols: a patera, an oinochoe, and a stalk of grain (Pl. LXXXVI, 1).

The building that lies to the south of the Temple and its atrium was exposed that it is



F.g. 2 Transitional Late Byzantine-Early Umayyad artifacts from Pella, chiefly from the debris in the Hall of the Camels in the Civic Complex.

now known that it was indeed a theater, as had long been suspected. There was evidence everywhere of extensive Byzantine alteration to the structure, and the kinds of alterations that were made demonstrate that prior to that time the building had suffered earthquake damage so massive that much of its upper fabric had been destroyed, and the use of the seating area was no longer feasible. The surviving Byzantine walls, all of varying degrees of poor workmanship, do not permit identification of the function for which the modifications were made, but they seem to have borne no relationship to the building's original functions.

The Byzantines who drastically altered the Theater's form and function filled the building almost to the top row of seats with debris; during the clearing of the building, this fill produced many tens of thousand of potsherds, virtually none of them more than single sherds, ranging in date throughout the Byzantine period. These will be studied for the information that they may reveal about Pella's patterns of trade and perhaps other matters of significance.

In spite of the extensive Byzantine alterations to the building, enough of the Roman-period structure has survived for the original form to be recovered (Fig. 3). Two of the uppermost row of freestanding seats and a small fragment of the paving behind that row of seats have survived and were found in 1979 (Pl. LXXXVI, 2); in the 1980 excavations rows of stone bench seats appeared as more of the debris was removed from the interior of the structure. Although the western side of the building, facing the Wadi Jirm, long ago collapsed, a 9-m.-long vaulted public entrance on the east and the eastern stage entrance were both discovered in 1980. Thus far only the upper portions of these entrances have been excavated.

An estimated 2 m. of debris must be excavated before the paving of the orchestra will be reached, and the stage has not yet begun to appear. Further excavation will be extremely difficult because at the level where operations ceased at the end of the 1981 season the water table in the Wadi Jirm had begun to be encountered; indeed, the lowest row of seats shown on the reconstruction drawing was determined only by the excavator's feeling about in muddy water that continuously flowed into the small trial excavation made at that spot. The water table was not so high, of course, at the time the Theater was constructed or in active use. There were undoubtedly channels of some sort laid in the Wadi Jirm to carry off both the winter rain water coming down the creekbed from the Transjordanian hills and the powerful flow of water from the spring. These conduits fell into disrepair during Byzantine times or later, with a resultant gradual rise in the debris in the creekbed and a corresponding rise in the water table.

Inside the eastern Theater entrance, at a level almost parallel to the spring of the vaulting, a burial was discovered. The bones lay in a muddy pool that was fed by a constant flow of ground water atop the soil that had accumulated in the entrance, and hence could not be excavated with the precision that was possible in tombs. Anthropologists Moyer and Saul were able to determine, however, that the skeleton was that of a young woman. The pottery found in the silt that accompanied the burial was of the same kind as found in the Byzantine

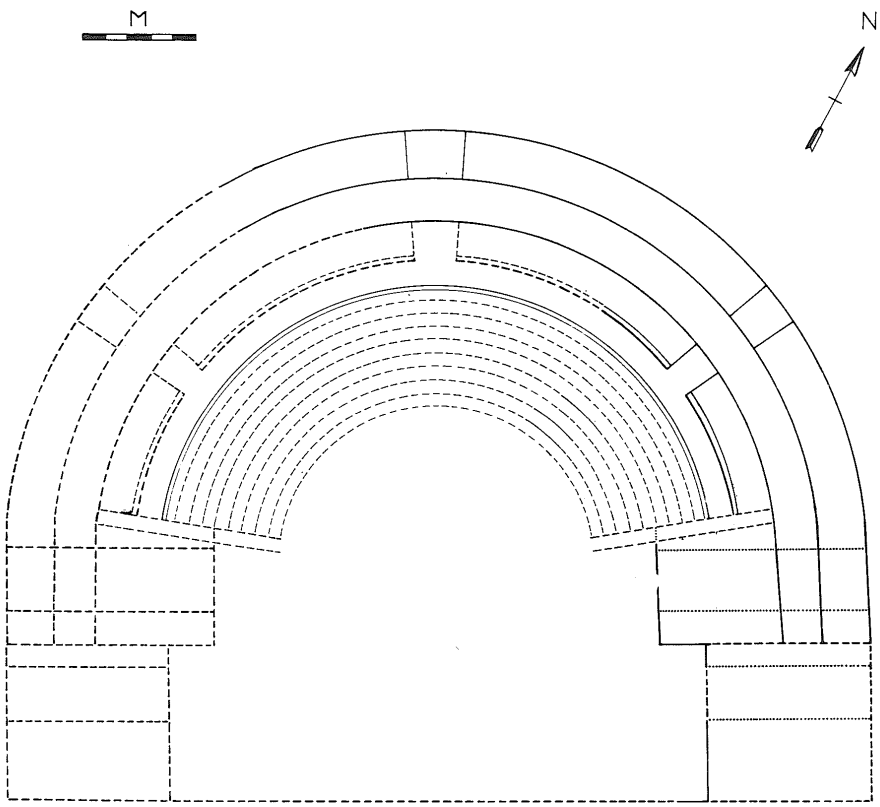


Fig. 3 Measured reconstruction drawing of the Theater in the Civic Complex at Pella. Surviving architectural features are represented by solid lines, reconstruction by broken lines.

fill in the Theater generally. No funerary objects were found with the burial, and the woman wore no jewelry except for a few tiny glass beads. It seems evident that the body was interred in the filled Theater entrance because the passageway seemed to the users to have some of the characteristics of a vaulted tomb, and those who made the interment were too poor or disinterested to undertake to provide a more traditional grave. The burial may have been made in the 7th or possibly 8th century A.D.

In spite of the obvious difficulties, excavation must continue to the floor of the building, and perhaps beneath, if full information is to be gleaned from the Theater's ruins. Even at the end of the season the excavators were still removing the fill deposited by the Late Byzantine builders in their attempt to salvage some usable space within the earthquake-shattered building. One can only hope that at the bottom of the fill may be significant architectural or decorative elements of the original building that were discarded by the Byzantines. Other significant aspects of the building may be revealed by continuing excavation to deeper levels, such as the form and decoration of the stage. Also interesting is the possibility that the Theater's proximity to Pella's spring is not coincidental. Although the structure's form is clearly theatral, the small size of the Theater and the position of its stage so close to Pella's major spring suggest the possibility that it may have had aquatic features, or perhaps was a combination of theater and nymphaeum.[9] Only further excavation will tell.

AREA XI: TOMBS ON THE NORTHERN SLOPE OF TELL EL HUSN

(Supervisors M. Saul and J. Moyer)

In the spring session of 1981 tombs were sought on the steep northern slope of Tell el Husn, where in February the University of Sydney team had found several tombs of approximately the 16th century B.C. In a number of places the hillside was probed to bedrock, which was sometimes not easily distinguished from reconcreted rock debris. Much of this probing was unproductive, but two tombs, numbered 15 (Fig. 4) and 16, yielded artifacts dating from the latter part of MB II (Pl. LXXXVII, 1). The hillside has suffered the erosion of several meters of soil and rock during the past 3,500 years, and as a consequence both of the tomb chambers were half eroded away, and debris from the hillside above had silted up and reconcreted at some time in the past. Some dozens of objects were found in these two tombs, including small alabaster vessels of Egyptian manufacture, scarabs (Pl. LXXXVII, 2), bone inlays from wooden boxes, a bronze dagger with limestone pommel (Pl. LXXXVII, 4), wine jars and a corpus of vessels of the familiar Canaanite type of their time (Pl. LXXXVII, 3). Perhaps the most unusual phemo- from the fragmentary bottoms of household bowls. Only three true lamps were found, in contrast to eleven improvised ones. In addition there was evidence that some poorly made or repaired vessels had been brought into the tombs as funerary offerings. Another interesting feature, though far from unique in Palestine, was the burial of a neonate in a wine jar

9. A nymphaeum is shown on some of Pella's coins of the early 3rd century A.D.; see Smith, *op. cit.*, pp. 55-56. See also A. Spikerman, *The Coins of the Decapolis and Provincia Arabia* (Jerusalem, 1978), pp. 214-217.

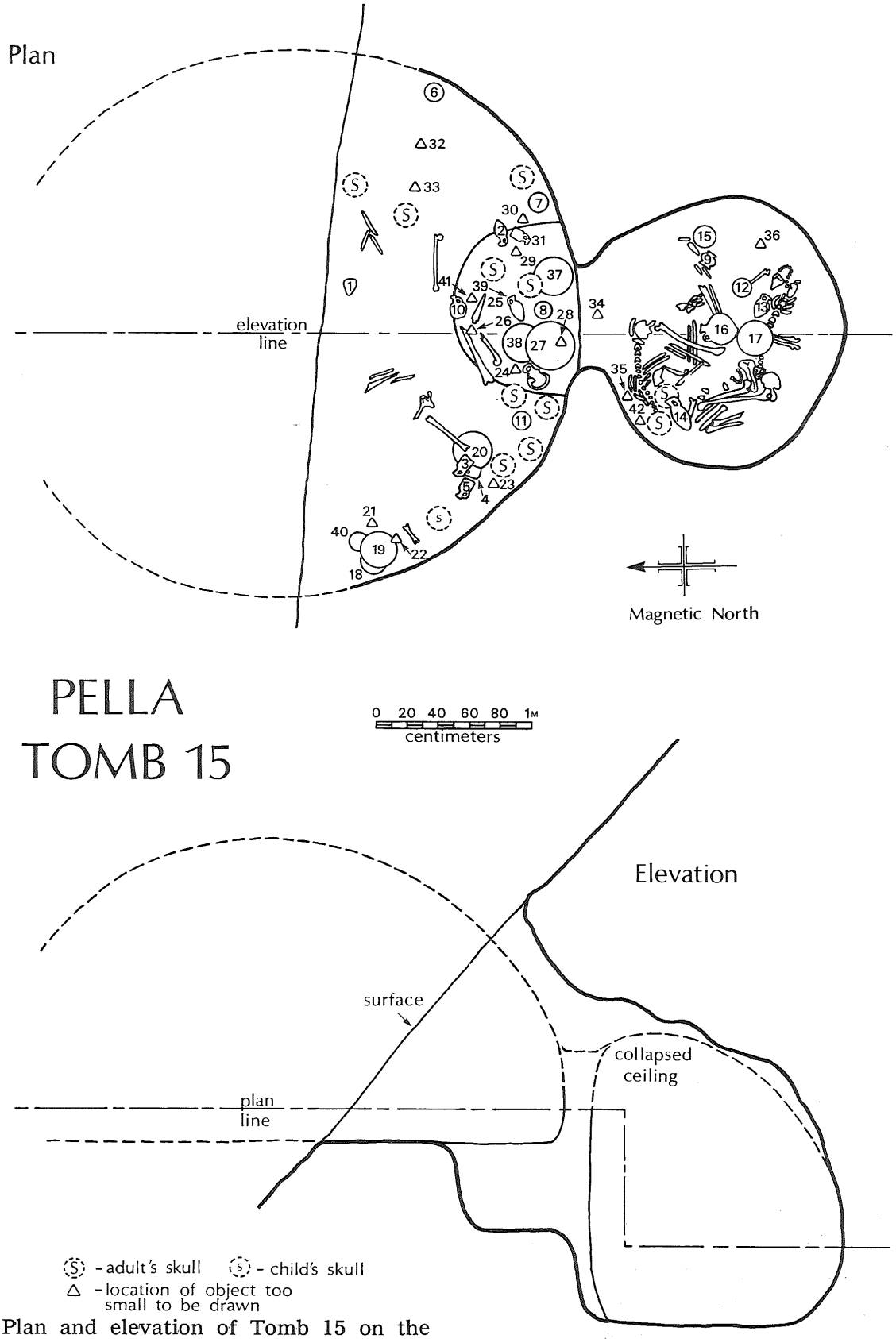


Fig. 4 Plan and elevation of Tomb 15 on the northern slope of Tell el Husn at Pella, dating from the MBII period. More than half of the central chamber has eroded down the steep northern slope of the hill.

that had its rim, neck and shoulder broken away.

Probes were conducted elsewhere on the northern slope of Tell el Husn, but without the discovery of other tombs. There were various indications in the debris that either tombs or occupation, or both, had existed farther up the slope at certain periods in Pella's history. One of the most notable discoveries was a hansome molded and painted fragment of stucco (Pl. LXXXVIII, 2), which might have come either from an elegant house or an ornately decorated Late Hellenistic or Early Roman tomb farther up the slope. Two probes made between the two immense boulders that rest near the top of the northern face of the hill yielded only soil and wash, a rather surprising result if one considers the seeming attactiveness of this spot, with its slightly less steep slope and its magnificent view of the city mound of Pella some 60 m. below. There is no question but that productive tombs on this large natural hill are not easily located, and we now know of a number of places on the hill where there was neither occupation nor cemetery at any time in the past. The nature of the utilization of Tell el Husn by the people of Pella over the centuries must for the present remain a largely unknown factor, but will someday warrant careful archaeological attention.

CONCLUSION

The spring session of the 1981 season of The Sydney/Wooster Joint Expedition to Pella was highly satisfying, and saw significant archaeological discoveries that will contribute toward the Expedition's goal of recovering the history of the city. Particularly significant is the evidence that is gradually accumulating which may eventually help to clarify Pella's decline.

The Sydney and Wooster teams will be back in the field at Pella in 1981 to continue work in the areas already opened. In addition there may be further surveys of the vicinity of that may date from the Iron Age, and traces of Pella, and it is hoped that the Wooster group will have will the opportunity to carry out excavations some to the east of Pella, high in the hill country where during the spring session of 1980 the staff geologist Campbell discovered a long V-shaped stone wall that possibly dates from the Neolithic period, a very large fortress a road that may have been paved in Roman times. Although much has been achieved in the sessions that have been conducted in the past two years, much remains to be done.

Robert Houston Smith

RECONSTRUCTION OF THE WEST WALL OF THE QASR -IL-'ABD AT IRAQ-EL-EMIR

by
François Larché

In May of 1976 few of the blocks of the west wall of this building were visible except at its two ends. Excavation in the intervening area revealed the blocks of the first main course of the wall lying face-down where they had collapsed outward onto the surrounding platform. (Pl. LXXXIX, 1-2). The foundations for the outer slabs and for the smaller blocks of the inner face of this course were exposed in situ. As clearance proceeded westward, successive courses of blocks of this wall came to light, all lying face-down. Beyond the long slabs of the first main course (3mx2m) lay nine blocks which were originally set vertically upon them (1.8x2.7m) with spaces left for seven windows. The smaller blocks which served as windowsills lay between these (1.0x1.0x0.6m. high). Further west we found the series of lintel blocks (3.0x 1.2m) and those of the Ionic cornice with dentils. It thus became clear to us that the entire west wall had collapsed outward and that the positions of the blocks lying on the platform corresponded to their original positions in the wall.

The next step was to draw and number all these blocks. (Fig. 1). The numbers designate the wall, course, and position in the series for each block. An initial "2" indicates the west wall. Thus, block 2.1.10 is the tenth block in the first course of this wall. The five visible faces of each block were then drawn at a scale of 1:50. At this point it was noted that these blocks have mortise and tenons of varying sizes and positions such that each tenon fits only one particular mortise. With this information it became possible to draw this gigantic jigsaw puzzle with great precision. In fact the entire wall was then definitively reconstructed on paper from end to end (37.50m) and to a height of 6.25 metres.

At the request of the Department of Antiquities, Dr.E.Will, Director of the French Institute of Archaeology for the Near East, put me in charge to rebuild the central portion of this wall over a length of 23 metres . Aside from its aesthetic objective this decision enabled us to free the small blocks of the upper part of the building crushed by the enormous blocks of the first story.

We started the reconstruction in April of 1980 using the crane of the Department of Antiquities, operated by the driver and assisted by four workmen. The first problem was to bring the crane into position next to the wall. The blocks we wanted to lift verged on the maximum load for this crane. The horizontal distance between the crane and the load therefore had to be minimized. The fallen blocks themselves filled every possible work space. Even beyond this area we had to fill in to produce a level area where the crane could be positioned. From this point the blocks had to be removed, beginning from the westernmost series, working

on phases until the crane could be positioned next to the foundation.

In the course of this procedure, series of blocks from the upper structure of the wall were indeed found. Under the lintel blocks came first a series of ashlars blocks of a doric cornice, and frieze, and architraves with unfinished guttae, then another course of ashlars. These last, when cleaned, displayed mortise and tenons joints. Two more courses of these appeared under the huge blocks which had flanked the windows. All these blocks, too, had to be removed beyond the work area. The cleared ground having been levelled, the crane was moved into position next to the huge blocks of the second course. These were stood on end in place, while the sill-blocks were removed, together with the ashlars discovered under these.

When the ground thus cleared had been levelled, the crane was brought up to the first course of fallen blocks, these in turn were stood on end, and the second series moved up against them.

It was May before we could finally move the crane up next to the foundation to begin the actual work of rebuilding the wall. The stone slabs of the foundation had split and slumped, so these had to be removed, cleaned and repositioned. In addition, one-third of the length of these foundation had been dismantled to a depth of two metres during the excavations of 1961 and 1962. This space was filled with large blocks at the bottom and reinforced concrete at the top. It was difficult to bring the concrete up precisely to the level of the ancient foundations at either end of the wall.

Once the foundation had been levelled, we could begin to replace the blocks of the first course. There always were a few centimeters in between these blocks and this gap was sufficient to permit the removal of the iron cable after each stone had been positioned. The most critical and difficult task here was to align these blocks with those which had remained in situ, at either end of the wall (2.1.1,2.1.11,2.1.12). Before this, however, we had to remove a portion of the interior face of this course which had remained standing. After the exterior slabs had been reset, we had to reconstruct the missing parts of the backing to get a wide enough upper bed to support the blocks of the second course. Most of the backing stones had been found and stored during the 1976 excavations. By analogy with the better preserved east wall and from the find-spots of these stones we could see that hard limestone had been used for the backing of the upper part of the first course, while soft limestone had been placed beneath these on the foundations. The missing backers were replaced by reinforced concrete. Since the exterior slabs of this course were not joined, we had to pour in concrete to strengthen the whole. The shattered block with a feline in relief (Pl. XC,2), also from this course 2. 1. 3. was reconstructed and replaced, its backing reinforced by concrete.

This feline is one of a symmetrical pair, its counterpart in the east wall having been discovered during Paul Lapp's excavations in 1962. The mouth of each feline was to act as a spout, and the basin behind it as a reservoir.

Not until the beginning of June could we begin to rebuild the second course. Here began the challenging work. For the first time we had to lift blocks weighing up to fifteen tons to considerable heights, testing the crane to the limits of its capacity. With great difficulty

the nine blocks were reset (2.2.9-2.2.3) (Pl. XC, 2 and Fig. 1). With each one, the adjacent window sill block was inserted. These blocks could not be alignel with the first course as precisely as one might wish, for only the margins were finished, and the prominent bosses hindered our view. Then we shifted the lintel blocks into position next to the wall (2.3.4-2.3.9). Although these blocks were lighter than the previous series, a new difficulty arose, for they had to be lifted to an even greater height.

We then gathered the cornice blocks from the block field (2.4.6-2.4.10). We started with block 2.4.6, the only one which was linked to the lintel course by a tenon, which fit the mortise of lintel block 2.3.4. The other cornice blocks followed with dry joints. A crowbar was used to adjust their positions.

During the reconstruction we observed that all the original cuttings and pry-holes were still useful, their positions perfectly suited to the task of reconstruction.

This work would not have been possible without the crane from the Department of Antiquities and above all the skill of its driver, Ahmad Kechwani.

All the blocks of the outside walls are listed, drawn, and more or less intact to a height of at least six metres. It would be possible to rebuild the two corners of the west wall and the north façade to that height, but most of the blocks exceed fifteen tons. A larger and more powerful crane will therefore be needed.

François Larché
IFAPO, Amman

RESTORATION AND CLEARANCE IN AND AROUND THE TEMPLE OF ARTEMIS COMPOUND IN JERASH. 1977 - 1979

by
H. Kalayan

Sarapion passage doors.

The two doors of the passage, from the fountain court to the area west of Artemis compound, pieces belonging to them were identified and restored in their proper places. The southern door bearing the inscription 49 dated 67/68 A.D. is attested by the symmetry of the main entrance to the Cathedral on the cardo, on its southern side, to the effect that there was a part of the complex of the Artemis compound in the part now occupied by the Cathedral and the St. Theodore. Some of the stones belonging to the above door was re-employed in a door constructed on the north eastern side of the cella of the temple of Artemis. At present the passage between the church compound and the vault of the Artemis courtyard (transformed into a museum) is paved with ceilling stones of Roman period. Thus, most probably, the passage used to end at the level of the door leading down to the museum on its western end. (Pl. XCI, XCII XCIII: 1).

The door bearing the Sarapion inscription, has two doors on its sides, communicating with the upper floors of the Glass court (Kraeling plan XXXIII) and the lower floor of that transformed into the baths of Placcus.

The Podium of The Artemis Temple.

The north eastern part of the podium, the part to embrace the stairs leading up to the temple, had been devoid of its crowing cornice pieces all along. These pieces probably were knocked down when the corner column drums had fallen on them, and had rolled side wise creating an over- turning moment at their extreme falling position, thus turning down the cornice pieces, and partly braking their decorated projections. The demolishing of this column was a hand work of later period, when the temple was used as a quarry in search of hard lime stones. The core of the base of this columns is lost, while parts of its decorated circumference are scattered around. The die stone, under the base of th column, was cut into two pieces but not taken away. The same fate has left the drums, of the south eastern corner column of the portico of the courtyard, cut into rectangular pieces; some parts are taken away, others are around the site. We have assembled these pieces for future restoration, but some drums are missing. (Pl. XCIII: 2, XCIV: 1).

The pieces of the podium were all complete and they were replaced in their proper places. The wall under these cornice pieces were slightly displaced, and it was left as it is.

The South Western part of the courtyard of Artemis had been partly excavated in the past. Near the temple, the excavation had cleared down to the rock level. On its southern side it was cleared a little higher than the bases of

the portico colonnade. We cleared down to the level of the bases, and beyond the portico colonnade we tried to find out what is left of the rectangular exedrae and the chambers adjoining them. The clearing showed that all the walls of the exedrae and the columns are taken away, leaving only some bases of columns or those of the pilasters of the exedrae. The invasion of the fill has been from the west side, and has saved some of the westerly columns because they were already invaded by debris. These columns bear painted Greek inscriptions. Their intepretation might reveal some constructional dates: (Pl. XCIV: 2).

A water channel starting from the southern side of these western columns, is directed to the south eastern corner of the temple of Artemis; at this point there is distribution of water through a small basin. One channel directs the water to the front part of St. Theodore the other towards the present museum compound, to the east of it, to a large water reservoir, another towards cardo, and one to north easterly direction. All these Byzantine installations, were executed when the courtyard was cleared of its pavement, and most of the walls of the courtyard was demolished, and the courtyard was clear of debris, in early days of Artemis's fall of favour. Later on the debris had started to be thrown down from the western side of the courtyard, thus covering the water channel, and probably blocking its course.

On the debris, on the southern side of the courtyard, there were three superposed layers of stonedresser's chips, showing that it was an unoccupied ground for general use of stone dressing.

The southern wall of the peribole of the courtyard, has been all demolished, as evidenced on the northern side, and later, to keep the debris from the southern residential quarters, a retaining wall was built. The door noticed on this part (Kraeling XLVI) was a later construction put in the retaining wall.

The Southern Basin.

A long basin situated on the south side of the temple of Artemis, (probably subject of the inscription 28), is partly rock cut, and on top there is a border of well dressed panels of which two layers have survived *in situ*. We could identify some of the blocks from the heap of the stones, gathered on the south eastern side of the courtyard, and place them in their probable places. Quite many of these blocks have been used in St. Theodore. The main entrance, to the peribole of the court yard of the temple of Artemis, is partly in place. The stones which were piled on it were removed and placed to the north of the sill of the entrance. There are pieces of the lintel covering the door way. It is a flat arch. We have assembled some of these pieces to determine the width of the door.

To the north eastern side of the kiln, in front of the Artemis temple, we have executed some superficial clearing. There was a room-like place marked by the drums of columns belonging to the courtyard, and one drum in the room cut to serve as an oil press.

The columns of the upper propylaeum of the Artemis temple are in their places on the southern side, and some of them have fallen on the eastern side of their respective places. One of the pieces belonging to a fallen column was taken out, and its base pieces are assembled to restore it in its proper place. These

columns bear alphabetic numbers starting from the southern end, and the drums have the same letter with bars indicating the number of the drum.

The ramp, in front of the Artemis temple on the cardo, was lowered two layers of its construction. The stones taken away were used for the reconstruction of the step arches of two vomitoria of the south theater; this was done because the stones have been assembied from all over the ruins of Jerash, and they are not marked. Some stones surely belonging to the Nyphaeum were saved. We will try to remove the rest when we start the restoration of the Nyphaeum.

The northern side of the Artemis court was cleared of all additional debris. There were many stones deposited on the podium of the temple of Artemis on the same side, when the wall on the entrance of the cella was demolished and some clearance was done at the inside of the cella. These stones were taken down and placed on the south side of the courtyard, their faces up, to differenciate their provenance for future restoration of the temple. Among these blocks we could identify the die of the north eastern column base and placed it in its proper place.

The clearing of this northern side showed that, the under ground passage, in between the cella and the peristyle colomnade, was receiving light through slits from under the base cut on the podium blocks. There are many wedged blocks to be split into pieces, showing that the western part of this northern podium has served as quarry in very recent period.

The sill of the cella has crossway groves, an evidence that it was covered with a metal sheet to protect the wearing off of the sill. The groves are made where two sheets were overlapping; this is common to all temples and as well to the adyton steps leading up where the statue was placed.

On the Cardo, the southern extreme chamber of the Artemis complex, has a pediment supported by two columns. All pieces belonging to this chamber was identified and collected from the other side of the cardo and at present deposited in front of the chamber and partly in front of the Nyphaeum, but the southern pieces of the pediment could not be found. This will be restored when working on the Nymphaeum. This is the only monument where proper iron dowels are used, inbeded with lead, for the construction of the flat arch covering the entrace.

St. Theodore Entrance.

The southern jamb of the middle entrance to the atrium of St. Theodore had fallen down. It was taken away and placed back to their proper places. A lintel originally in three pieces was found among the blocks, two pieces were placed on the ground in the atrium. We could not find the third one.

Clearing in front of the above mentioned entrance, immendiately north of the side entrance, we cleared a double cistern, one inside the other, fed by the water coming from the south eastern corner of the temple of Artemis, (the one shown in Kraeling plan XLVI cist. 2). This cistern is connected with a lead pipe to two niches of water point inside the atrium of the church. These niches are shown in Kraeling on plan XXXIII as additions. It is probable that when the small cistern inside

the larger one was feeding the water points, they were pouring wine. It was specified that the miracle was in the Martyrion, and St. Theodore is so-called. (Kraeling p. 63). Thus the miracle was not in the fountain court where the need is for several cubic meters of wine, while in the atrium of St. Theodore the need is only for 100 or 150 liters of wine, to make the water points function with a faucet.

The Entrance of Cathedral

The pieces belonging to the entrance of the Cathedral on the cardo were indentified assembled and restored in their proper places. The capitals belonging to the front columns could not be identified, neither the pieces belonging to these columns. So the columns are left without copitals, but they are re-enforced by a iron bar through them to the foundation. This is a precaution against tumbling down.

This door due to its symmetry was constructed for a temple of Bacchus, and kept as it is when the Cathedral was built. The Cathedral's symmetry is 8/7, showing that it was dedicated to a heavenly person, and this is sanctified by the niche dedicated to virgin Mary on the top of the steps leading up to the Cathedral. (Pl. XCV).

The intercolumnal spacing of the columns on the cardo on northern side of the main entrance gives evidence about the precinct of Bacchus.

H. Kalayan

THE FIRST INTERNATIONAL CONFERENCE ON THE HISTORY AND ARCHAEOLOGY OF JORDAN, OXFORD

(25-31 March, 1980)

The first of what is hoped will be a series of biennial conferences on the History and Archaeology of Jordan was held at Christ Church, Oxford, from March 25 to 31, 1980, under the patronage of H.R.H. Crown Prince Hassan. It was attended by more than 250 scholars from 25 different countries, and was formally opened by H.R.H. the Prince of Wales in the Sheldonian Theatre, one of the loveliest buildings in Oxford. By very general consent it proved to be not only an important and stimulating gathering, but also one of the most enjoyable conferences that the various participants could remember. The organization was excellent and for this heartfelt thanks are due especially to Dr. Adnan Hadidi, Director of the Department of Antiquities in Jordan, to Mrs. Crystal - M. Bennett, Director of the British Institute at Amman for Archaeology and History, and to Dr. James Sauer, Director of the American Center of Oriental Research in Amman. The setting in Oxford was, of course, delightful, but what gave the conference its special character was the gathering together of so varied a community of experts, ranging over a wide variety of scholarly interests, but all bound together by a deep and abiding love for the country of Jordan. There was also a sense of excitement at Participating in what was clearly intended to be not just another conference, but rather a moment of creation, the setting in motion of something new and adventurous. H.R.H. Prince Hassan established this sense of adventre in both his opening and closing addresses and in smaller group discussions, when he persistently challenged his hearers to think not only of Jordan, and not only of the immediate future, but to plan on a much larger scale.

This first conference did not concentrate on one topic or one period, as future conferences will do, but laid the groundwork for these later conferences by surveying in one vast, panoramic sweep the whole enormous history of Jordan from the beginnings of the Neolithic to the end of the Ottoman period. It was a very crowded programme, during which more than forty papers were presented, most of them of a very high standard. A short report can obviously not do justice to so rich a feast and so I hope I may be forgiven if I mention only those which, in view of my own particular interests, made a special appeal to me. Many others quite outside my field, such as the very mathematical paper of Dr. H. Kalayan on "The Symmetry and the Harmonic Proportious of the Temples of Artemis and Zeus at Jerash," and Prof. Mohmud Ghul's paper on "Yet Another Rendering of the Safaitic Verb Wjm," have be omitted because of my own incompetence to comment.

The overwhelming intellectual impression left upon me by this conference could be summed up in the words, "Jordan: Known but Chiefly Unknown." We are so clearly just at the threshold of Jordanian Studies, and each paper not only brought new information, but demonstrated forcibly how much still needs investigation and discovery. There is clearly no period at all, in the more than 10,000 years surveyed, for which the small country of Jordan does not possess a rich treasure trove still to be discovered.

This was made clear by the opening papers by Prof. Vita Finzi on "The Prehistory and History of the Jordanian Landscape," and by Dr. David L. Kennedy on "The Contribution of Aerial Photography to Archaeology in Jordan." I would suggest, indeed, that one of the most urgent needs is the development of a comprehensive understanding of the Jordanian environment, perceived both as a varied, but coherent, whole and also in terms of the changes it has undergone in the course of its long history.

Subsequent tantalizing papers, opening up fascinating new possibilities, but posing many more questions than they were able to solve, were Prof. Basil Hennessy's on Teleilat Ghassul, Dr. Svend Helms' on Jawa, and Prof. Peter Parr's on the "Contacts between Arabia and Jordan in the Late Bronze Age." Each revealed dramatically the enormous importance of visualizing Jordan constantly, not in isolation, something on the edge of culture and civilization (as it is only too often conceived by western scholars), but as integral to a great spider's web of communications. Indeed, I am tempted to say-and this has been strongly confirmed by listening to the papers at this conference - that the key to understanding Jordan is "interaction and communication".

My own special field of interest is the biblical period, and what a wealth of research still needs to be done here! It is still an uncomfortable fact that in all the biblical atlases the maps showing the area east of the Jordan (given only slight attention in some atlases) are still largely guesswork. They cannot indeed be anything else, because only very, very few of the sites mentioned in the Bible have been identified with reasonable certainty. For this reason I am particularly grateful to all seven of the papers on Iron Age I and II.

Dr. Asem Barghouti's paper, demonstrating the interplay of Hellenistic and Roman urbanization, with its western formal planning, and the compelling religions, traditions and feel for landscape which characterized the Middle East, as shown especially by the lay-out of Jerash, was for me one of the most interesting features of the conference. It had, however, a close companion in Prof. Hammond's study of the "Intercultural Aspects of Nabataean Architecture, Religion, Art and Influence", as exemplified by the excavations at Petra in 1974.

The final sessions of the conference were devoted to the Islamic period in Jordan, another subject which cries out for more thorough, and also immediate, study, since, as we were told in one of the discussions, much of the later Islamic material is severely threatened by the rapid modern development of the country. Mr. Suleiman Musa's paper, "Toward the End of the Ottoman Empire", provided a very useful reminder of the significance of those final Ottoman years. The area east of the Jordan was

then admittedly very marginal, though, of course, an important section of the Hajj passed through it, as the Hajj forts bear witness. It was then a land of small villages and great pastoral herds, with an interesting interaction of settled and nomadic peoples. Only a few of us who were at the Conference are old enough to remember that life, which still persisted, though already changing, in the time of the Emir (Later King) Abdallah. Soon it will have disappeared even from memory unless active steps are taken to preserve it for posterity. This work has, of course, already begun, but it needs to be strengthened.

The world of scholarship has sometimes been a little too dazzled by antiquity and has been insufficiently aware of the glories of the Muslim, and particularly the Umayyad period in Jordan. Drs. Antonio Almagro and Emilio Olavarri in their paper on the Citadel at Amman demonstrated convincingly that the "palace" is unquestionably Umayyad, related to the so-called "Desert Castles", which must now all be recognized as Umayyad, even though the new *Encyclopedia of Islam* is unaware of this. We still need to know a great deal more than we do about this period of Jordanian history, with its quite remarkably peaceful transition from Byzantine to Islamic rule.

Finally, mention should be made of Prof. Abdel Aziz Duri's paper on "The Idea of Jerusalem in Islam". The western world too easily slips into thinking of "Jordan" as only the area east of the river, and of Jerusalem as somehow primarily Jewish and Christian, so that constant reminders are needed of its Islamic significance.

There can be no better place to end this brief introduction than at Beit al-Maqdis. In a sense everything else is tributary to this and the Oxford conference, despite the wonders of that city, bore witness to spendid and more ancient glories in the Hashemite Kingdom - "infinite treasure in a little room".

Denis Baly,
Kenyon College,
Gambier, Ohio, U.S.A.

THE BRITISH INSTITUTE AT AMMAN FOR ARCHAEOLOGY AND HISTORY

The British Institute at Amman is the first independent overseas Archaeological Institute to be launched by Great Britain for a number of years. It has been established by the British Academy with the support of both the British and Jordanian Governments, and became a fully independent Institute with its own governing body in April 1980. The Crown Prince of Jordan has agreed to be its Patron, and it enjoys a close relationship with the Jordanian Department of Antiquities. Jordan is a country with a great archaeological heritage to which it attaches a high priority. The Institute has an important programme in Jordan, and a significant specialised library. Its Director is Mrs Crystal -M. Bennett, OBE, FSA, whose early archaeological training in this area was under the late Dame Kathleen Kenyon.

The basic needs of the Institute will be met by the British Academy; but its independent development depends on a body of subscribers paying membership and on funds over which it has independent control.

The membership subscription of the new Institute has been fixed for 1980/81 as follows:-

Ordinary Membership

(without Levant) J.D. 1.50

(with Levant, at concessionary rate J.D. 7.50

(or J.D. 8.50 for overseas subscribers not paying by sterling draft)

Members of other Institutes / Schools J.D. 1.

(without Levant) on a reciprocal basis J.D. 1.

Terms of Membership are under Consideration.

Levant, hitherto published by the British School at Jerusalem, is now to be a joint journal of the two bodies for the archaeology and allied sciences of the region. Members will also be entitled to all facilities of the Institute at Amman including accommodation at very modest charges if rooms are available.

An initial fund under its own control is vital for the future of the Institute. £10,000 would provide the income for 2 post-doctoral studentships for a year, or four grants for shorter visits in connection with excavations, survey or historical investigation. Or, it could help to develop the premises to make them still more effective by providing working areas or adding apparatus.

If you wish to become a member, or to make a donation to the Institute, would you please contact the Secretary at 12 Clifton Road, London N8 8HY.

The first officers

President Sir Philip Adams, K.C.M.G.
Chairman Mr H. G. Balfour-Paul, C. M. G.
Secretary Miss Ruby Gwilliam
Treasurer Mr Kenneth Bradford
Editor of *Levant* Dr. P. R. S. Moorey, F.B.A.

The First Members of the Council

The Revd. Professor H. Chadwick, F.B.A.
Professor J. G. D. Clark, C. B. E., F.B.A.
Mrs Lorraine Copeland

Mr A. M. Lewis
Mrs K. R. Maxwell-Hyslop
Mr P. Parr
Mr J. N. Tubb
Miss A. C. Western
Professor D. J. Wiseman, O.B.E., F.B.A.

Director in Amman::
Mrs Crystal-M. Bennett, O.B.E., F.S.A.

RECENT EXCAVATIONS AND RESTORATIONS OF THE DEPARTMENT OF ANTIQUITIES (1979-80)

Prepared by
F. Zayadine

Archaeological discoveries have been stimulated during the last two years by the urban and agricultural development in Amman and its environs, which prompted many salavage excavations. The responsibilities faced by the Department of Antiquities became so heavy that it was decided during the meeting of the Concept Group on Jordanian Archaeology in Amman in April 1981 to give priority to the endangered sites, and that foreign archaeological institutions should help in the rescue operations. On the other hand, the Petra-Jerash Tourism Project conducted many excavations and restorations at both sites.

Amman: *Jebel el Hussein:*

A rock cut tomb was discovered on Jebel el Hussein, opposite the Police Post, during the work of the Water and Sewage Authority. The rectangular funeral chamber, which was entered from the east, was provided with 9 loculi (Fig. 1 a, b). The side loculi were homogeneous in shape and measured 2.30m. in depth, by 0.60m in width and 0.90m. in height, while the corner loculi were of larger size (2.30 by 1.30 by 0.90m.). The excavation, which was supervised by Mr. Wael Rashdan, produced many pottery objects deposited with fragmentary bones in the loculi or the central hall, and can be dated by the so-called Herodian lamps and juglets to the 2nd half of the 1st century A.D.

Swafiyyeh

A wine press was discovered at Swafiyyeh, 5km West of Amman, in a building cut. The complex consisted of two vats, hewn in solid rock measuring 6.60 by 4.50m and separated by a partition wall (Fig. 2). The two vats were surrounded by 12 small basins connected with the vats by drains, and paved with white tesserae. There was a rectangular mortise hole in the northern vat, probably used to support a screw pole. A basin was cut in the southern vat and a cistern was dug outside the two vats. It was unfortunately impossible, because of the high price of land, to preserve this interesting discovery which was soon covered by a modern house. The proximity to the church of Swafiyyeh,[1] and the large amount of Byzantine pottery suggest a date in the 6th century A.D.

Umm es-Summaq:

Agricultural activities at Umm es-Summaq, about 35km southwest of Amman and northeast of Umm el Kundum, led to the discovery of a structure built of ashlar stones, on top of a hill overlooking Wadi el Mashur. A salvage campaign was conducted by the Department of Antiquities in May 1980 under the supervision of Mr. Wael Rashdan and Mrs. Khawla Gousous. The monument proved to be a farm establishement which consisted of a storage hall and a wine press. The hall, which was entered from

1. B. Van Elderen, *ADAJ*, XV (1970) p. 25-27.

حفر بئة جبل الحسين

١٩٨٠

TOMB PLAN

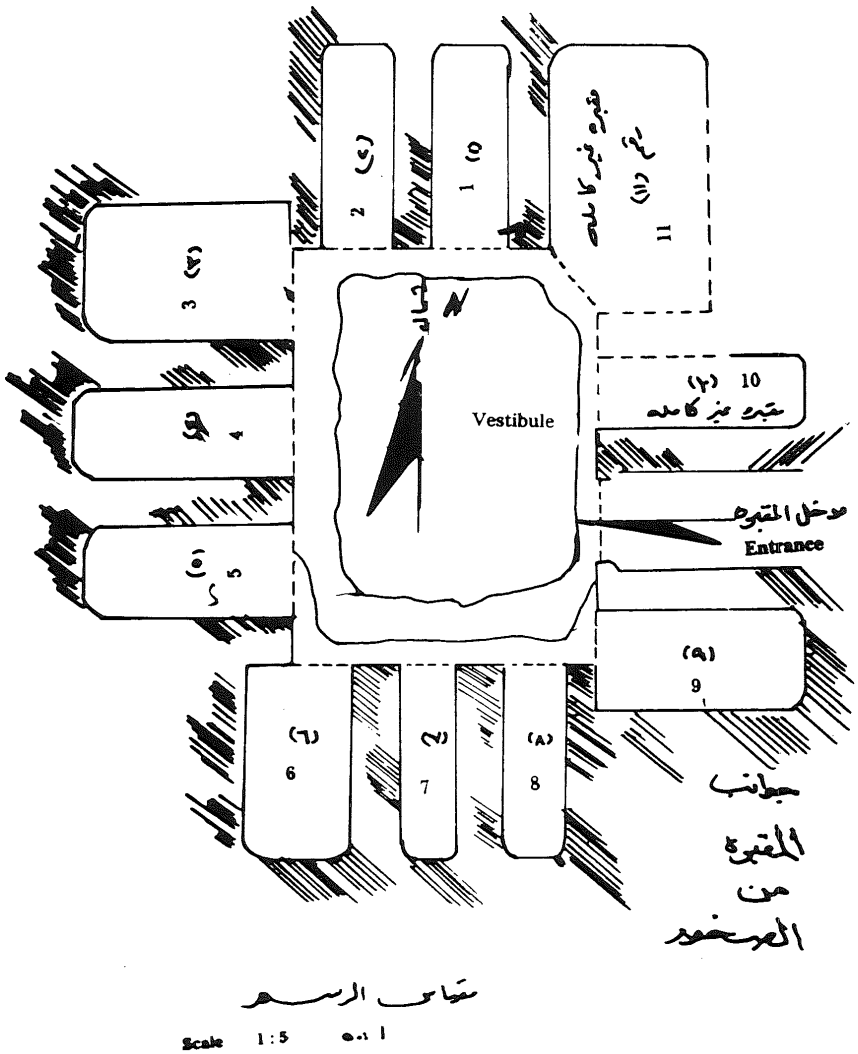
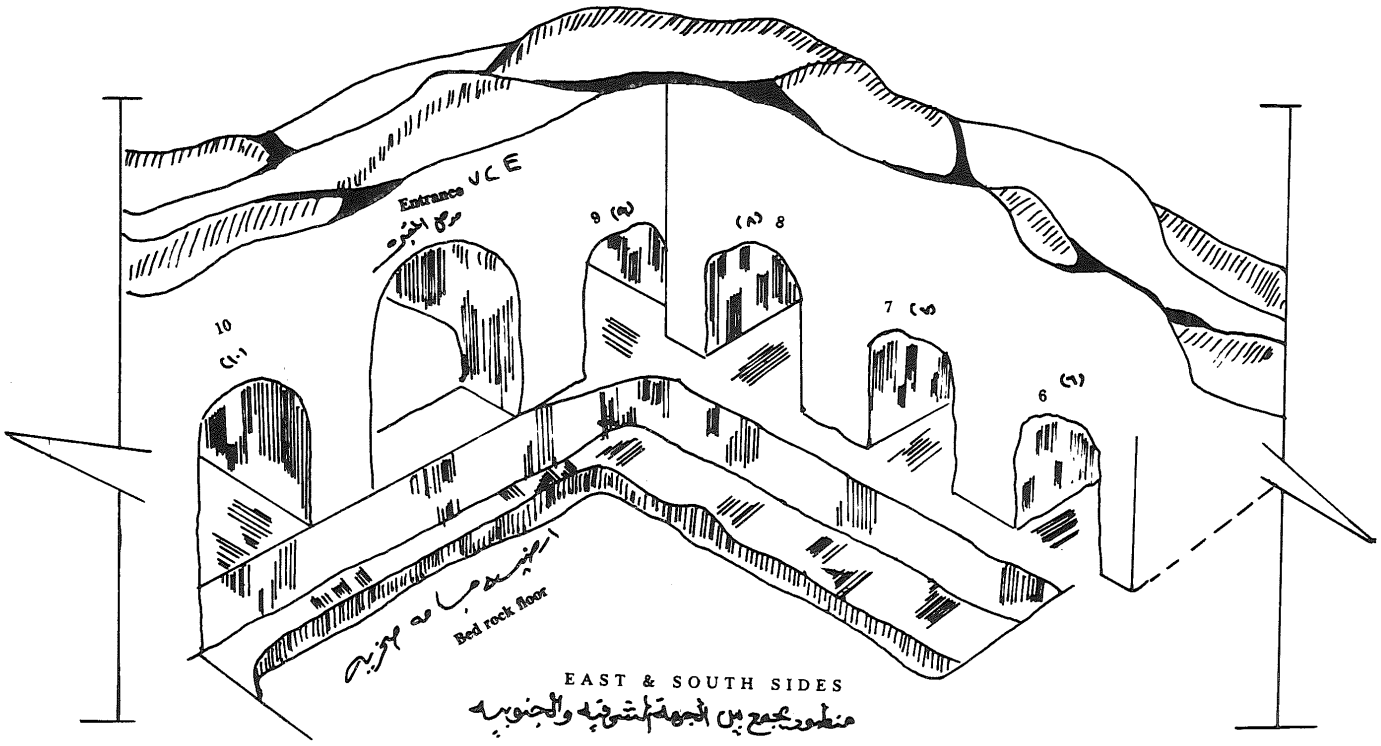


Fig. 1a. Jebel Hussein Tomb

JEBEL el HUSSEIN

TOMB



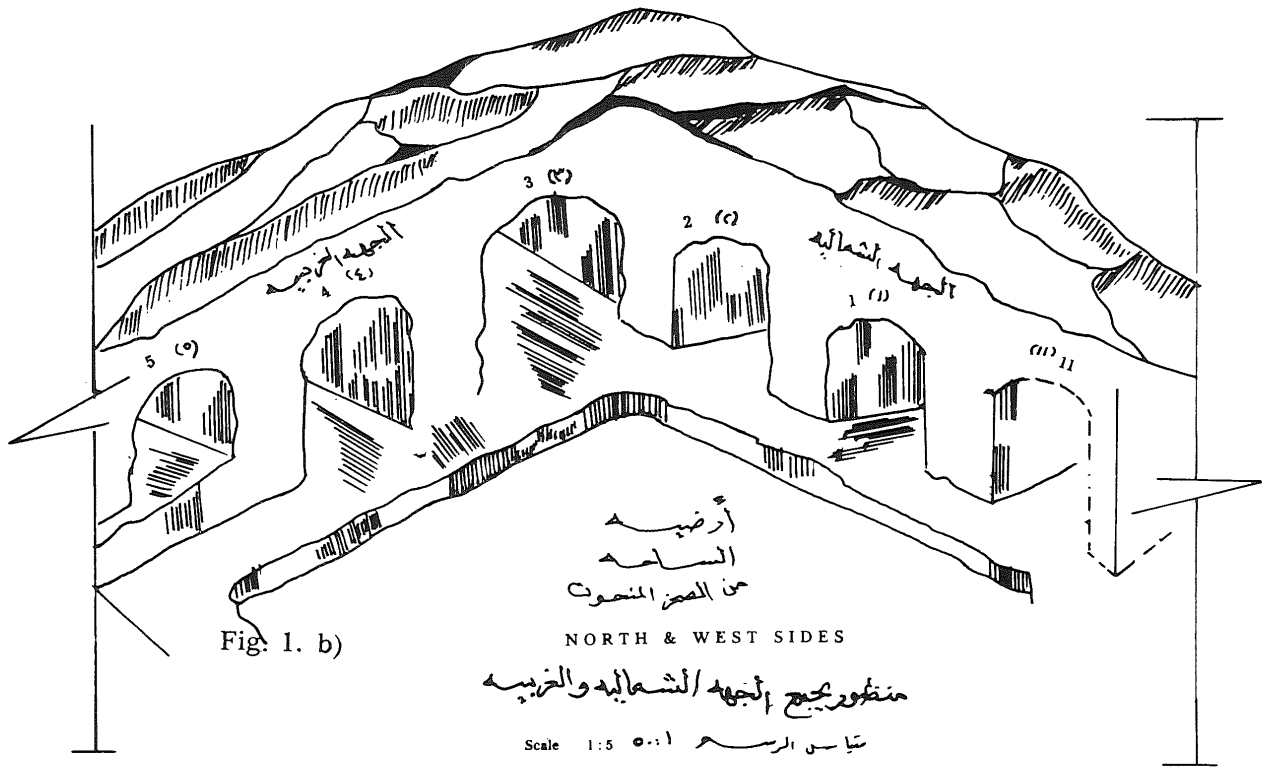


Fig. 1. b)

the east, measured 4.20m. by 2.18m. and was roofed my means of two transverse arches. Some of the blocks were coated with white plaster, and incised with kufic graffiti. Many plain tesserae were discovered in the fill inside the hall, and suggest that a second storey had once existed. Two skeletons of adults were found in the tumble in an unnatural position, and they indicate that the hall was demolished by a sudden catastrophe. Many complete vessels of the Umayyad period, together with agricultural equipment inculding a hoe (majrafeh), a sledge hammer and a sickle were left on the bed-rock floor.

To the north of the storage hall, two plastered vats, paved with white tesserae were connected by a drain. These were the treading basins. In the lowest vat, a block carved with a mortise hole supported the screw pole as shown on a mosaic floor of the 6th century A.D. at Mukhayyat near Mount Nebo.[2] A plastered depression at the southeastern corner worked as a sump.

The pottery and a bronze coin dated to 124H (727 A.D) indicate that the farm was probably demolished by the 746 A.D. earthquake in the Umayyad period.

Murabba'at Musa

A hoard of 29 Ptolemaic tetradrachmas came to light in a bulldozer cut at Murabba'at Musa, some 10km west of Amman, on September 25th, 1979. The coins are dated to Ptolemy I Sôter (304-282 B.C.) and Ptolemy II Philadelphus (285-246); most of the drachmas (23) belong to the reign of Ptolemy II and the collection was minted in the following cities: Alexandria, Joppa, Ptolemais, Tyre and Sidon. Mr. H. Haddad, who conducted a sounding on the spot, found no structure or objects except for a few sherds of a pot in which the coins had probably been hidden. A nearly *khirbet* produced no sherds of the Hellenistic period, but a stratigraphic dig would almost certainly reveal some features relating to the cache.

- Jerash:

An impressive tourism development programme has been adopted in Jerash with a World Bank loan. It includes the restoration of some ancient monuments, a sound and light performance, and the construction of a new restaurant near the visitors' centre. Before the beginning of this work, the poor siting of this restaurant was pointed out to the responsible architects, for its position impinges on the ancient city planning by separating the Hadrian arched entrance from the southern gate. (Pl. XCVI, 1). Besides this, ancient rock-cut tombs which appeared during the excavations were removed. For example, a collection of Iron I pottery, a period so far unknown at Jerash, was salvaged from a bulldozer cut and must have belonged to a burial.

1. *Zeus Temple:* East of this main temple, a paved temenos of 80 by 35 m. has been partly cleared and reconstructed by Pr. H. Kalayan, the architect-in-charge of the Project. Plans and sections of the excavated area were drawn up in November 1980 by architect Mr. J. Rougetet of the French Archaeological Institute. This sacred platform, which was enclosed by a wall

2. Sallers & Bagatti, *The Town of Nebo*, Jerusalem, 1949, p. 60 and Pl. 18, 1. See also Sallers and Testa, *the Shrine of Bethphage*, Jerusalem, 1961, p. 27-41.

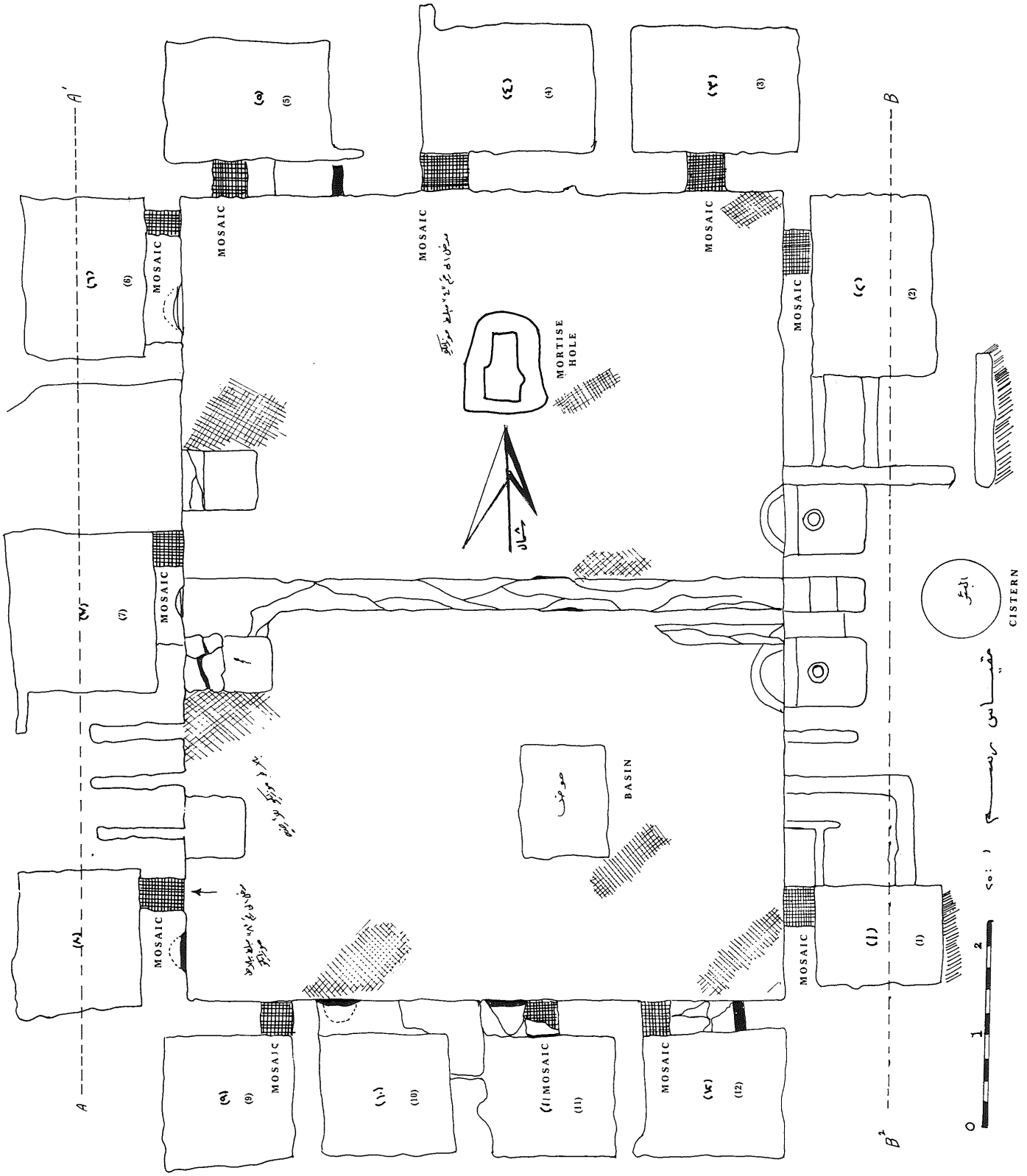


Fig. 2. SWAIFIYYEH
Wine Press: Top plan

الصويفية ــ مسقط افقي للمعصرة

decorated with engaged Ionic columns, had a vaulted entrance from the south. A door jamb, still *in situ* from the north, indicates the position of another gate. The southern flank of the temenos wall was incorporated into the early Byzantine defensive wall in 390 A.D., according to a Greek inscription. This dedication is now built into the sill of the doorway which was probably reshaped during the Umayyad period. The eastern segment of the temenos, opposite the Zeus temple, has been partly rebuilt by H. Kalayan. Plate XCVI, 2 shows alternating blind and open doorways framed by Ionic columns, while the eastern side consists of a vaulted corridor. The entablature of the eastern temenos wall included a carved frieze but no architrave was found as was normal. However, the above-mentioned southern segment of the wall shows two plain stringe courses at the level of the capital (Pl. XCVII, 1) which could play the role of an architrave under the frieze. However, this hypothesis needs to be confirmed by the removal of the later Byzantine wall.

A monumental altar, which was approached through a prostyle and a monumental stairway, was exposed at the western end of the temenos. It was certainly an important cult high-place in the Oriental tradition at the beginning of the Roman period since the temenos was built in 114 of the Decapolis era (50-51 A. D.) and before the rebuilding of the Zeus temple in 160 A. D. Similar altars were common in religious Nabataean architecture[3] and are widespread in the Mount Lebanon.[4] They are generally dated to the same Early Roman period.

2. *The South Theatre:*

This comparatively well preserved monument in the vicinity of the Zeus temple is dated by three Greek inscriptions, recently revealed from 90 to 92 A. D.[5] In order to restore the north wall of the back stage, excavations were conducted under the supervision of Pr. Kalayan. It appeared that the wall, which was knocked down by an earthquake, was "lying down in order" (H. Kalayn, private report) but, unfortunately, no plotting was prepared. Because the inner face of the wall was robbed, the original width of this wall was reduced by 0.50 m. On the other hand, the lintel and door jambs of the rebuilt north gate are missing and the restoration is somewhat incomplete. In the same wall, a group of voussoirs are believed by H. Kalayan to form the top of a niche. However, no impost or recessed blocks have been found. Since the original wall was shortened by 0.50m, the voussoirs project without actual support.

3. *A Late Roman Tomb:* Cf. p11. and Pls. I-VI of the arabic section).

In digging a sewage drain in the city of Jerash, to the east of the Municipality park and outside the ancient defensive walls, the workers broke open a rock-cut tomb which was excavated by Mr. Faisal Qudāt, Inspector of Antiquities. The tomb consisted of a vestibule and two chambers (cf. plan Fig. 1, p. 12). It appeared that the main entrance, which was located on the eastern side, was blocked by a limestone swinging door of 1.40 by 1m. From the door, a flight of four steps led down to the vestibule where three sunken graves of 2.25 by 0.60, covered by slabs, were dug. They contained no bones

3. J. Texidor, *The Pagan God*, Princeton, 1977, 85-87.

4. H. Kalayan, *Bull. Musée Bey.*, XVII (1964) p. 105-110.

5. J. Pouilloux, *Liber Annuus*, XXVII (1977) p. 246-54 and XXIX (1979) p. 276-78.

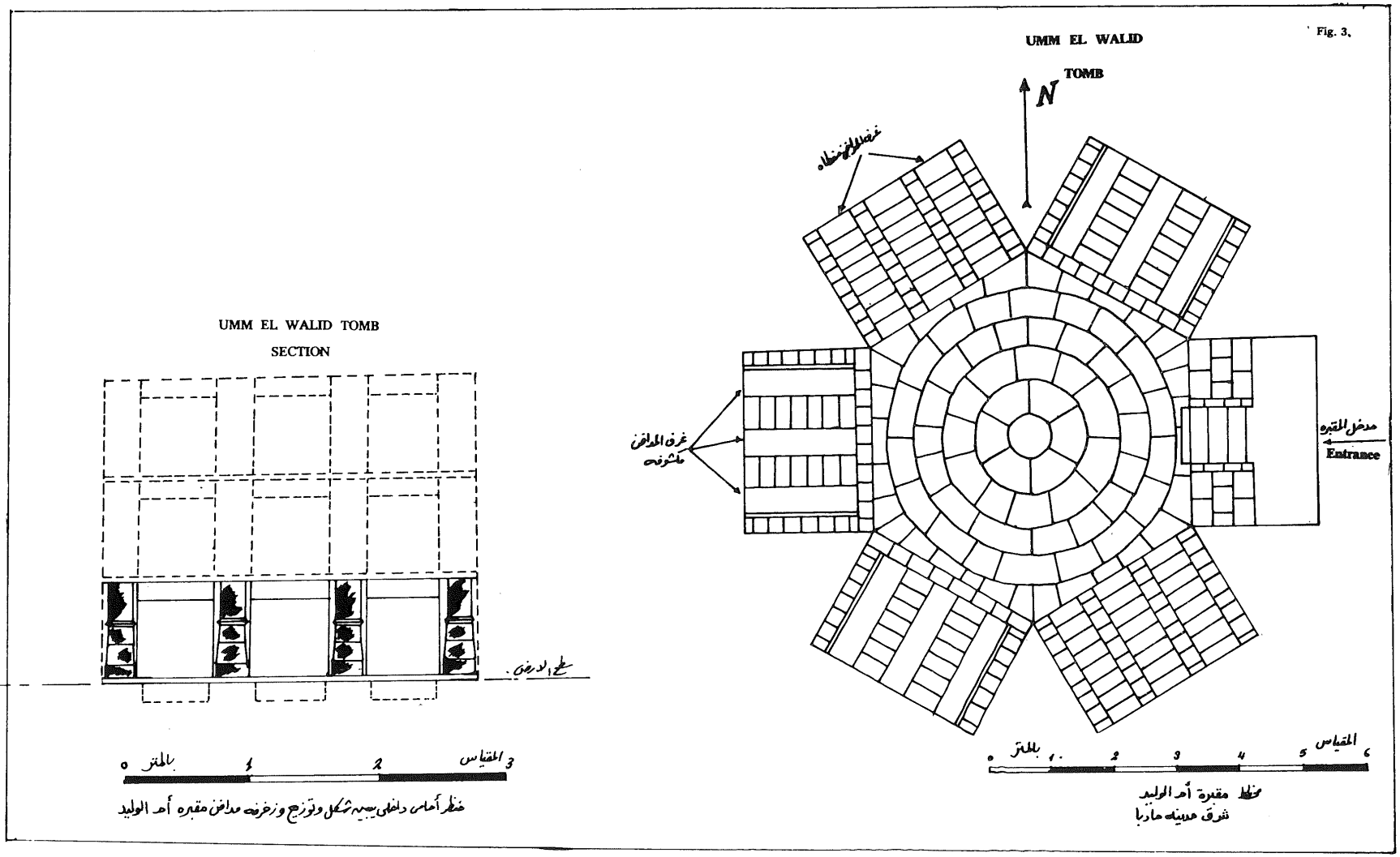

UMM EL WALID TOMB
SECTION
سطح الأرض
0 1 2 3 المقياس بالمتر
قطاع أماس داخلي يبين شكل وتوزيع وزخرفة مداخن مقبرة أم الوليد
UMM EL WALID
TOMB
N
غرفة المدخل
مدخل المقبره
Entrance
غرف المداخن
مشوفه
0 1 2 3 4 5 6 المقياس بالمتر
مخطط مقبرة أم الوليد
شرق مدينة مأرب

Fig. 3.

or objects, but a broken amphora (Pl. III, 3, N° 15) and three lamps were scattered on the bedrock floor (Pl. III, 2 and VI).

The entrance of chamber I, situated on the north-western side, was flanked by two imported Ionic columns and its walls reinforced by roughly shaped stones. Irregular flagstones, into which was built a rounded millstone, covered the floor. Along the walls, three sarcophagi decorated with garlands and Amazone's shields were deposited. They were covered by lids fixed by rivets but were already visited by robbers. Nevertheless, in the northern sarcophagus, a glass unguentarium (Pl. III, 3 and V) and a bronze coin of Licinius (309-324 A.D.) were found. Two glass beads only (Pl. IV, 1) were recovered in the western sarcophagus.

A fragmentary column supported the roof of chamber II while the rock cave was reinforced by a stone wall. One sunken grave, half covered by slabs was uncovered; it was empty but two pottery bottles with two juglets (Pl. III, 1) were deposited around. A three-handled storage jar of light brown colour (Pl. II, 2) was embedded in a roughly rounded structure, coated with stucco.

Dating: Good parallels to this pottery group were discovered at Jerash in a domestic complex,[6] situated west of St. Theodore's Church and south of the Artemis Temple. The wine amphora (Pl. II, 3) is identical to the amphora discovered in Room 5, (*AASOR*, XI, Pl. 11 and Fig. 3). The juglet (Pl. II, N° 2) is similar to Pl. 12, 20. The objects discovered in Room 5 were dated to the second half of the second century A.D.[7] This date can be accepted for the wine amphora, the bottles and the two lamps (Pl. III, 5 and 7). But the storage jar (Pl. II, 2) and the pear shaped lamp (Pl. III, N° 8) indicate the use of the burial in the early fourth century A. D. This date is corroborated by the Licinius coin.

Umm el Walid:

A family mausoleum, built with finely dressed stones, was uncovered at Umm el Walid, 13 km east of Madaba and excavated in May 1979 by Mr. Omar Yunes. The funeral chamber which is hexagonal in plan is approached from the east by a flight of three steps (Pl. XCVII, 2) and was covered by a dome. Its inner diameter is 5.20m and each side measures 3m. Three loculi, flanked by engaged pilasters 0.75 m high average 1.80 m in length and 0.58 m in width and are built in three superimposed stories (Fig. 3, a, b), the lowest one being a cist of 0.25m, in depth. The floor is paved with concentric flagstones.

6. C. S. Fisher & Ch. McCown, Jerash-Gerasa, 1930 *AASOR*, XI (1929-30) p. 131-149.

7. *Ibid.* p. 32.

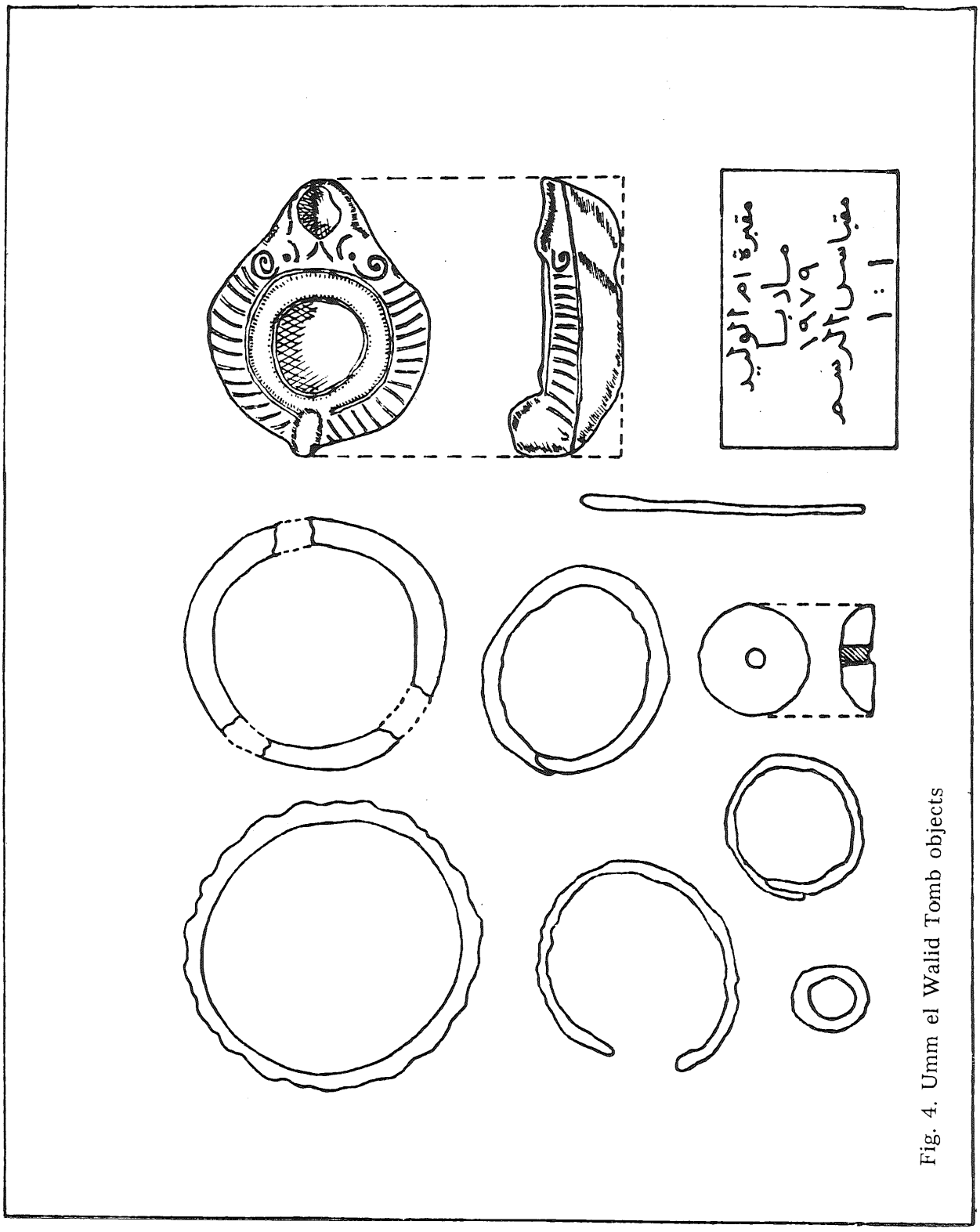


Fig. 4. Umm el Walid Tomb objects

The Finds:

Few objects were recovered from the monument for it was plundered in ancient and modern times. A Late Roman lamp was discovered inside the chamber, together with glass



Fig. 5. Umm el Walid funeral stele

bracelets and beads. (Fig. 4). However, the most interesting discovery is a Greek epitaph which was found at the south-western corner of the entrance. It is 0,55m high by 0.35m wide with a base about 0.20m thick (Fig. 5). It reads:

Ϣάρσ[ι],
Ηρανη,
οὐδὶς ἀ-
θάνατος,
ζήσασα ἰ-
τῶν
ιε′

be strong Eranè, *for no one is immortal. Lived 15 years.* The last line is difficult to interpret for the inscription is corrupted *itôn for etôn.* At any rate, the monument is of the Late Roman period, probably the third century A.D.

I - Wadi Musa:

1. A Nabataean inscription of six lines was revealed in October 1979 in the stable of Khaled Tweisy at the village of Wadi Musa, near the mosque. It was brought to the attention of Mr Nabil Qadi, the Petra Inspector, and of Dr Nabil Khairy of the Jordan University who is going to report the discovery in the 1981 issue of *PEQ*. On a visit to Petra in November 1979, Father J. Starcky and the writer photographed and made a hand copy of the text. J. Starcky was able to decipher the first line which was the most difficult to interpret and also the most interesting of the whole inscription: "*This is the sanctuary which was erected for Ba'alshamin, the god of Maliku...*" The text is dated at the latest to the 34th year of Aretas IV (36 AD) and is evidence of the presence at Wadi Musa (ancient Gaia) of a temple to the Syro-Phoenician god Ba'alshamin, A year ago, the building of a school adjacent to the mosque brought to light many architectural fragments, including the medallion of a god (Pl. CIII, 1) to be published later by Mr Mujahid Muheisin who supervised the excavation.

2. A Potter's Kiln: (Fig. 6).

Although a large amount of pottery had

been discovered at Petra, no attempt was made to locate a potter's workshop on the site. It was only by accident that a kiln was discovered in November 1979 when a new road, connecting the Resthouse area with the new housing project of the Bdul in Dhra' Umm es-Sahun to the north of the Petra Basin, was being built. The road was diverted and a rescue campaign was initiated by the Inspector of Petra, Mr. Nabil el Qadi and continued later by the writer. Work is still in progress.

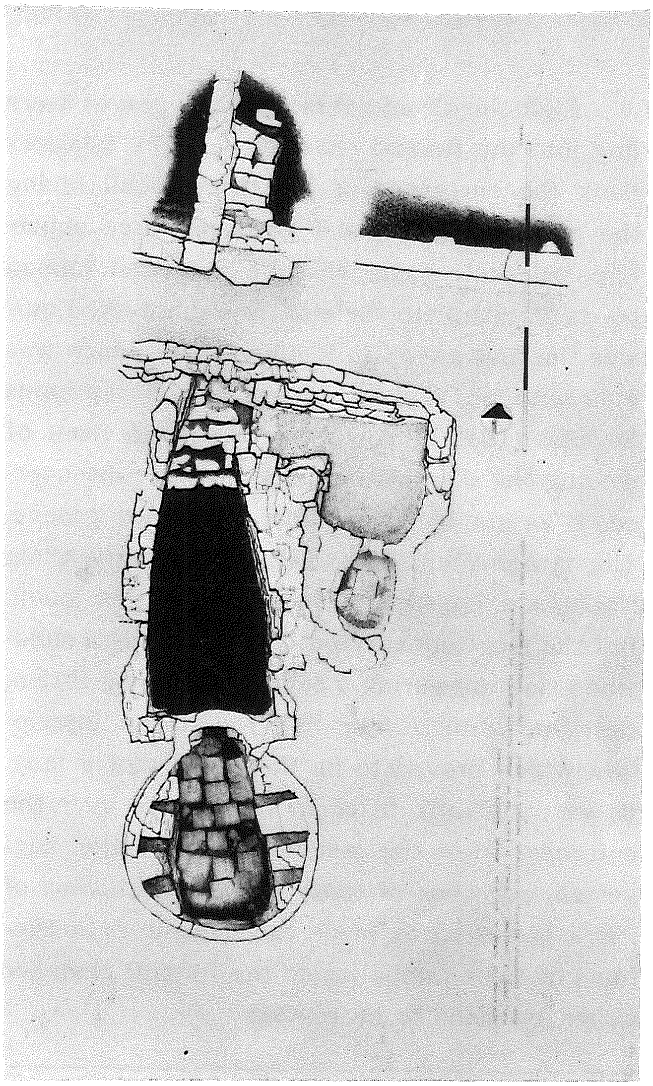


Fig. 6. Petra - Potter's Kiln

The first season exposed two kilns: the main kiln, which is oval in shape, averages 2.95m in diameter and its gabled entrance is preserved to a height of 1.80m. The fire box is constructed of brick and its dome was supported by four arches (Fig. 6 and Pl. XCVIII, 1). A storage passageway, about 1.15m. wide and built with field stones, extends to the north of the kiln and is approached by a flight of six steps.

To the east of the main kiln is a smaller one, about 0.90m in diameter and preserved to about 0.75m in height.

North of the kilns, a complex of three rooms was uncovered. The main hall, constructed of field stones, was roofed by means of three transverse arches and measures 2.15m by 6m. It was accessible by a flight of six steps and coated with a thick gray plaster. Many wasters were uncovered on the floor, of the same type of pottery already collected in the kilns. It is most probable that these buildings belong to the potter's workshop.

From the large amount of ash and brick in the area, it is clear that we have found the industrial area of Gaia (Wadi Musa) and Petra. From the coins and the large amount of pottery lamps and vessels, it is evident that the last phase of the complex dates to the Late Roman and Early Byzantine periods, characterised by coarse pottery painted with black motifs on an orange background. However in one square (6) a large amount of fine Nabataean of the early 1st century A. D. ware was collected. As yet we have not found a kiln dating to the Nabataean period but the pottery finds suggest that there was a kiln of this period in the vicinity.

II - Petra:

1. *Siq clearance:* The removal of accumulated debris in the Siq bed since 1979 uncovered substantial segments of the pavement (Pl. XCIX, 1) which were immediately restored by Mr Muhammed Murshed, the project's supervisor. The water channel, carved in the rock along the left side of the cliff, can be examined *in situ* for a substantial distance. About four hundred metres from the Khazneh, a Greek dedication of Sabinus,[8] son of Alexander, *panegyriarches* of Adr'aa (Der'a in the Hauran) is now visible under the relief of a god, standing on two lions. The semispherical betyle of the city, (Pl. XCIX, 2) represented on its coins has been exposed.

Five hundred metres from the Khazneh, facing a niche protecting ten betyles,[9] a sandstone alter of 0.66m in height by 0.33m at its base is carved with a cup for incense burning. Pl. C,). Its face bears a Greek dedication to the *"saint god, who listens [to prayers]"*, engraved by Victorinus, most probably a Roman soldier of the 2nd century A.D. The *"saint god"* is to be identified with Zeus-Dusares to whom a chapel was carved on the top of Umm el Biyara.[10] Another altar, to the same divinity, was discovered by the Horsfields "on the flat top behind the north slope of the Wadi Musa... opposite Kasr el Bint".[11] It is dedicated to *"Saint Zeus-Dusares, who listens"* and is dated to the late 1st or 2nd century AD.

2. *Tomb 64:* It is a rock-cut tomb of the Hegra type, carved in the eastern Khubtha cliff, opposite the Khazneh, which was sealed by about 2.50m of wadi debris. The clearance of the entrance with the mechanical assistance of the Project's grader gave access to the funeral chamber which was then excavated. This was a long operation (from September 1979 to March 1980) which was successfully supervised by Mr Nabil Qadi.

Eight loculi and three sunken graves were dug into the funeral chamber (Fig. 7). Pilasters flank the entrances of the three loculi facing the entrance. Loculus 4 contains three superimposed shelves on which were found human bones. A complete skeleton was discovered outside the first grave. In loculus No. 5, which was built with two shelves, a silver coin of Septimius Severus (193-211 A.D.) was found. In front of loculus No. 6, a pyramidal stele was discovered. It originally stood in a depressed groove. The remains of these memorials, *"nefesh"* in Nabataean, appeared in front of the other loculi. But the most unexpected discovery was a sandstone slab measuring 0.38m by 0.45m by 0.12m, engraved with a four line Nabataean inscription which proved to be the epitaph of a lady. It was originally fitted in the groove over the entrance, from the inside. As the writer suggested, *a propos* of tomb 813,[12] the citizens of Petra preferred to place the dedicatory insriptions of their tombs inside the funeral chamber either, on slabs or on plaster.

8. Dalman, *Petra und seine Felsheiligtümer*, Leipzig (1908) N°s 149-50, p. 145-46.
9. *Ibid* N° 147, p. 144-45.
10. See C-M. Bennett, in *ADAJ* XXIV,)1980) p. 205-212.
11. P-J. Parr, *PEQ*, 89 (1957) p. 13-14 and Pl. XV B.
12. *R.B.* 86 (1979) p. 134.

The excavated pottery clearly indicates that the monument was in use in the Roman period.

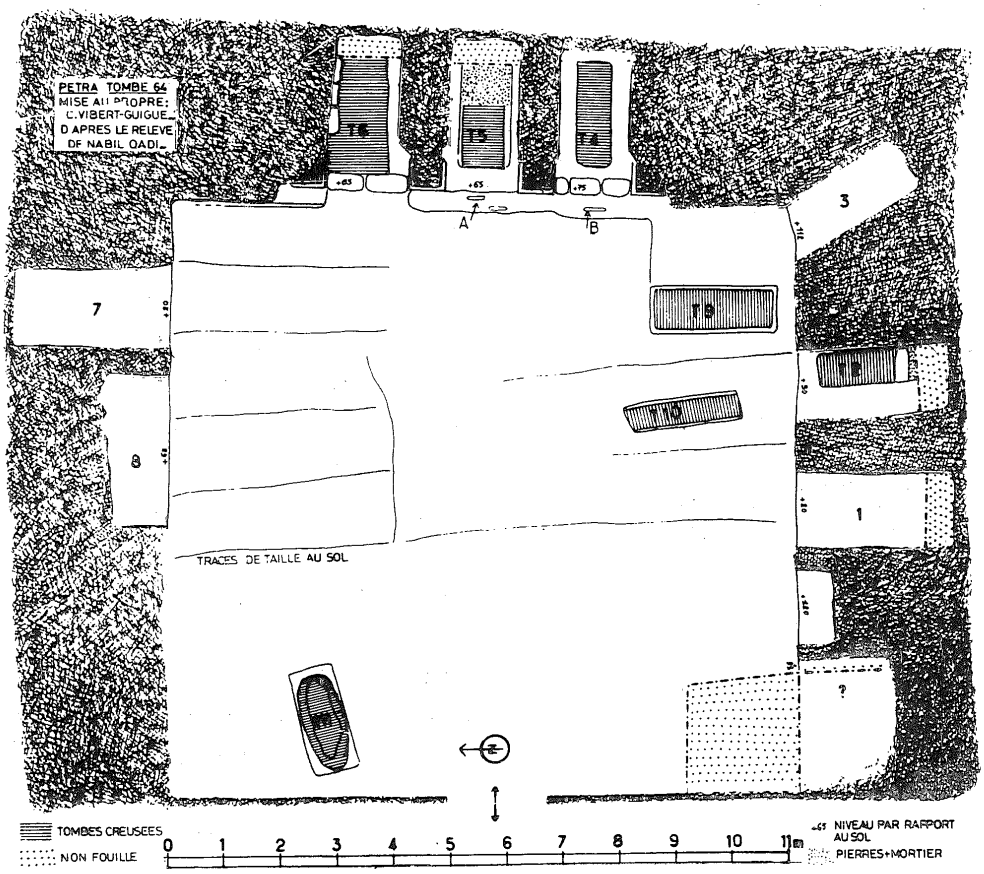


Fig. 7. Petra - Plan of Tomb 64

3. *The Monumental Gate:* This monumental entrance[13] to the Qasr el Bint temenos, at the end of the paved street, was partly restored in 1968 by the Department of Antiquities, but without proper supervision. On the eastern façade, two of the four free standing columns were rebuilt and crowned by zoomorphic pseudoionic capitals (Pl. CI, 1 & Fig. 8). But it later became obvious that the reconstruction was erroneous; the columns' shafts were of a smaller size than the original ones, which can be examined *in situ* in front of the side arches. This failure was rectified in 1979 by dismantelling the two undersized columns. It is not clear to what structure the capitals belong.[14] According to the bedouins, they were discovered inside the doorway, east of the Gate. The engaged capitals of the western façade are of the Nabataean type and are 1.05m in diameter[15] as demonstrated by a half capital still lying at the side of the street. It is reasonable to suppose that the eastern free-standing capitals were of the same type and size. Thus, the argument of Marguerite Lyttleton[16] to date the Gate by the zoomorphic capital is not convicing.

13. See W. Bachmann, in Th. Wiegand, *Petra*, Berlin-Leipzig (1921) p. 49-56; G.H. Wright, 'The arched Gate, 1959-60' *PEQ* (1961) p. 124ff; 'Structure et date de l'arc monumental de Pétra' *R.B.* 73 (1966) p. 404-419.

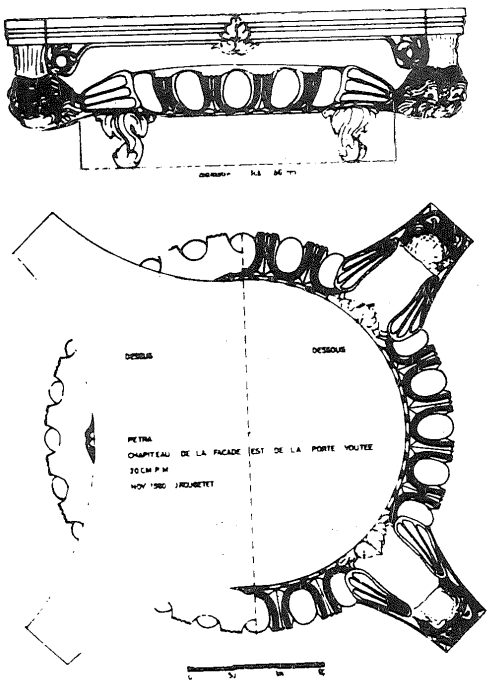


Fig. 8. Petra - Ionic capital

4. *The Qasr el Bint Temple:* Although the joint works of the Department of Antiquities and the British School of Archaeology had previously revealed evidence concerning the date of the main temple of Petra and its precinct, Mr. Peter J. Parr, who was in charge of the excavations, pointed out after the 1965 campaign "that many problems remain unsolved and many aspects of the area are uninvestigated".[17] The resumption of the excavations by the Department of Antiquities had no such ambition in mind but aimed at the clearance of the southern flank and the adyton for the restoration and consolidation of the building. The first season of excavation was from December 1978 to the end of January 1979 under the supervision of the writer with the assistance of Miss Zahida Ismail and architect Mr. François Larché from the French Institute of Archaeology. Over many seasons, the latter has been able to draw up plans and architectural details of the whole structure. The present season has been in progress since October 1980.

a) Clearance of the pronaos of the temple in the northwest corner exposed a floor of sandstone flagstones of irregular shape which served as a bedding for the marble pavement, which has been stripped away except in front of the entrance. Here slabs of 56 by 54 cm were exposed below the artificial ramp which averages 1.80m in height and was built with column drums and other architectural fragments. Three marble steps, 10cm in height, are still *in situ* under the fill of the ramp, which was probably constructed in the Ayyubid-Mamluk periods.

b) More occupation of the same period was exposed on the monumental stairway, to the north, between the western *anta* and the first column. It consisted of a room built with irregular blocks and paved with flagstones. A circular lamp and many handmade pottery sherds came to light. A coin of al Malik al Adel, brother of Saladin was unfortunately a surface find. Nevertheless, the sherds indicate a date in that medieval period.

c) New marble steps were discovered on the monumental approach. (Pl. CII, 1). A sandstone block (Pl. CII, 2) engraved with a Naba-

14. In her report on the paved Street, *ADAJ*, IV-V (1960) p. 117-124, D. Kirkbride made no mention of this capital a fact which means that the capital was discovered later.

15. Bachmann, in Wiegand, *op. cit.* p. 50.

16. *Baroque Architecture*, London, 1974, p. 64.

17. *ADAJ*, XII-XIII (1967-68) p. 6.

taean inscription reading, *"Su'udat, daughter of Maliku"* was discovered in the tumbled fragments. Other Nabataean inscriptions[18] mention Su'udat as the daughter of King Maliku II (40-60 AD). It is probable, in this case, that the inscription was placed under the statue of the princess in the precinct area.

d) A 5 by 5m square was opened along the southern wall of the Qasr in an attempt to determine the presence of a podium. The appearance in the trench of large fallen blocks made the excavation difficult, especially in the absence of any mechanical means of removal. In the rubble, one stone was identified as part of a pediment. A fragment of the pilaster capital decorated with vegetal scrolls was also uncovered. A column drum, 70 cm in diam., suggests the existence of a podium, similar to the one uncovered lately by Dr. Ph. Hammond "along the eastern flank". But evidence of it did not show up before October 1980, when a floor paved with small regular flagstones appeared in a limited area. The floor extends apparently along the western wall of the Qasr.

It is hoped that more architectural and sculptural elements will come to light in the future to complete our knowledge of this unique free-standing monument, dated to the beginning of the 1st century A.D. or earlier.

5. An Architectural Fresco:

While exploring the Wadi es-Siyyagh caves, on the way to the spring, in January 1980, Mss Nabil Qadi and Claude Vibert of the French Archaeological Institute in Amman were surprised to discover a new fresco in an inaccessible rock-cut cave. It depicts doorways in large panels of red-brick, red-brown or ochre framed by blue and black bands (Pl. CIII, 2). In some cases, the doorways are topped by a gable with an eagle acroterion. The cave appeared to be part of a domestic complex already surveyed by the Horsfields[19]. Many rock-cut dwellings preserve traces of painted frescoes unfortunately blakned by smoke.

Thanks to Dr. Martin Almagro, Director of the National Museum of Madrid, two specialists were urged to start the cleaning and restoration of the frescoes in September of the same year.

It is still pramature to ventu a dating of the new discovery before exhaustive clearing and restoration. Nevertheless, it is going to shed light on the art and architecture of Petra with the possible connection of the architectural representation with both Alexandria and Pompeii.

Fawzi Zayadine

18. J. Cantineau, *Le Nabatéen*, II, Paris (1932) p. 6.

19. *QDAP*, II (1938) p. 16-17 and Pl. XLIV, 1-2. The authors noticed the stucco decoration of the houses. But were not able to reach the new cave.

THE BAQ'AH VALLEY PROJECT

Report from Patrik Mc Govern

The third season of the Baq'ah Valley Project was carried out between May 15 and June 30, 1980, again sponsored by the Department of Antiquities of Jordan, the National Geographic Society, the Museum of Applied Science Center for Archaeology (MASCA) and the University Museum of the University of Pennsylvania under the Direction of Dr Patrick McGovern: The Project is affiliated with ACOR/ASOR. This season proved to be an excellent follow-up to the 1978 geophysical survey.

From a priority list of thirty-one significant magnetic anomalies of various intensities and areal dimensions, a 5 x 5 m, 20 nanotesla high was chosen for the initial test excavation. It was in the vicinity of the cave excavated in 1977 as well as other robbed-out caves and theoretical calculations had indicated that the anomaly most likely represented a completely filled-in and hopefully undisturbed burial cave. Theory was borne out by excavation and a completely undisturbed Iron IA (ca 1200-1050 BC) burial cave was discovered in the area of the magnetic anomaly. The elliptically shaped cave, ca 5 x 4m in area, was completely silted up and the entrance, which faced due east on to a cobble-floored court, was blocked off by six large boulders (ca 1.5 m in length). Into this small space over 270 secondary burials had been deposited in two heaps, with women and children to the south and men to the north. With the burials was an excellent, and possibly unique, assemblage of Iron IA whole vessels (total 78, including bowls, lamps, jugs, kraters, juglets, beer-strainers, chalices and basalt mortars) together with mild steel and bronze anklets/bracelets, earrings and rings, beads, toggle-pins, buttons and one example each of a pendant, scarab, stamp seal and cylinder seal. The anklets/bracelets(which appear to retain substantial amounts of uncorroded metal, are some of the earliest dated steel artifacts from Transjordan. In general, this tightly dated burial cave promises to shed important light on the cultural development and ecological conditions of a critical transitional period.

In an attempt to locate the settlement site (s) to go with the LBA and Iron IA cemetery, soundings were made at Rujm al-Henü (east and west) and Hirbet Umm ad-Dananir. The eastern building of Rujm al-Henü, which has a ground plan similar to the Amman Airport Building, unfortunately had only 30 cm of a mixed fill above bedrock. The presence of some LBA sherds, however, suggests that it may have been constructed during this period and cleared and used by later peoples. The western building had a clear Iron IIC (600-500 BC) destruction level, with smashed storage jars found under the "megalithic" stones (ca 1.5m in length) from the upper courses of the wall, of which five courses had remained and been buried under the fall. The main LBA-Iron IA settlement site now appears to be located at Hirbet Umm ad-Danänir, which is strategically located at the head of the Wadi Umm ad-Dananir and above the perennial spring of the same name. The small sounding opened here produced mixed deposits dating to the LBII, Iron IA, Iron IIC and Early Roman III periods, as well as a 3m

high outer wall of a house probably dating to the Early Roman III period. It is hoped that remains of the LBA Iron Age settlement will be found here in future seasons.

MASCA will now conduct an extensive programme of scientific analyses using the artifacts and ceramic material. The Baq'ah Valley region is especially rich in clay deposits and the LBA and Iron Age wares must be tested against these sources. The iron and bronze will be exhaustively examined and related to the known metallurgical resources of the region. In addition to radiocarbon and thermoluminescent dating of the carbon samples, bone and pottery, the cave will provide a check on the traditional pottery chronology and soil samples from vessels will be examined for palaeobotanical remains.

An intensive aerial survey of the region was also carried out and was very successful since it coincided with the drying out of the abundant winter/spring vegetation.

Tabaqat Fahl--Pella (1981)

Report from A. McNicall and R. Smith.

The third season of the Sydney/Wooster Joint Expedition to Pella was conducted during the winter and spring of 1981. It consisted of two sessions, the first under the auspices of the University of Sydney from 15 December 1980 through 23 February 1981, and the second under the auspices of the College of Wooster.
(a) Winter Session (Sydney)

The work of the season is a continuation of the previous seasons, involving:

1. The excavation of the Early Islamic remains in Area IV.

2. The excavation of the 'deep cut', a line of 9 x 9 m trenches on the S. side of the *tell*, which is exposing successive eras of Tabaqat Fahl's occupation.

3. Excavation of the East church (Area V).

4. Further excavation of tombs of the Middle/Late Bronze Age periods, and Roman/ Byzantine era.

In addition to the above, we carried out the following programmes relating to the archaeology of Tabaqat Fahl.

1. Investigation of the sources of clay, the firing temperature of the various wares, and the recording of other phenomena relating to the ceramics of the site.

2. The examination of the geomorphology of the surrounding area with a view to establishing the sequence of geological deposition and also the complete sequence of hominid occupation of the area.

3. Investigation of the Stone Age sites of the wadis to the north of the Wadi Jirm complex.

The season has provided further evidence for the importance of Pella in many epochs.

1. The geomorphological and archaeological surveys of the Wadi Hammeh, Himmar and Jirm, north of Tabaqat Fahl, give clear indication of the antiquity of human occupation in the area: tools dating back to the Palaeolithic were found in the Wadi Himmar bed and in the related pebble conglomerate. In deposits on top of the conglomerate concentrations of Kebaran-style artefacts have been found.

2. In the deep cut (Area I levels. In IIIC these levels relate to a large stone .wall (probably the city wall), and to various subsidiary walls of mudbrick and stone.

3. In the area excavation (Area IV) further sectors of the Early Islamic town were exposed. The remains show further evidence that some houses were two-storied, and that animals were kept in the lower (ground(floor.

The most dramatic find of the season was made in IV JMP locus 10, where the skeleton of a young male was found in a small room. The man, about 25 years old, 166 cm high and well muscled, was crushed by the earthquake

which destroyed Pella at 11 a.m. on 18 January, 746 A.D. With him was found his savings consisting of four dinars, and his collection of ceramic and wood kitchen and dining ware. The importance of this find for the Islamic archaeology of Jordan cannot be overestimated.

4. In Area V the atrium and narthex of the East church were exposed. The question of the church's antecedents remains to be solved, and many problems about the form of the church are not yet answered. However, the layout of the western part of the building is clear. Entry was through an atrium consisting of a peristyle, cloisters and a small courtyard, in the middle of which is a hexagonal pool, possibly of Umayyad date. Passing through the narthex, one entered the tripartite basilical church through one of three doors. The church probably had a major order surmounted by a clerestory. Bases and pilaster capitals of the lower order have been found, along with bases, shafts and capitals of the upper order.

5. In Area VI south of Tell Husn, tomb material, both artefactual and skeletal, was recovered. One rich tomb of the Middle/Late Bronze Age (c. 1550 B. C.) and one of the Late Roman Empire (3rd-4th Centuries) were excavated.

Summary

Further important finds and architecture of the Bronze and Iron Ages and of Roman, Byzantine, Early Islamic and Ayyubid periods were made. Additional studies were made of the geology, prehistory and ceramic technology of the area.

(b) Spring Session (Wooster) (Report from R. Smith)

The field operations of the Wooster team, directed by Prof. Robert H. Smith with a staff of more than two dozen persons, were focussed on four areas, two of them new.

Area VIII, The West Cut, is the major stratigraphic probe into the history of the western side of the *tell* of Pella. Previous seasons had brought to light Byzantine-Umayyad remains and below those extensive Late Hellenistic remains, with some scanty representation of intervening periods. This year the stratum of particular interest was that of the Assyrian-Babylonian period, beginning in the 8th Century B. C. and continuing, it seems, into the early 6th Century. Little substantial architecture has yet been found, but a useful corpus of ceramic types is being assembled.

Area IX, The Civic Complex, is another area in which work of previous seasons was continued in 1981. The sanctuary east of the atrium was partially cleared, and evidence now suggests that the entire church and atrium had no Roman temple antecedents on that spot, but were built from the ground up with earlier architectural materials. South of the atrium, the floor of the odeon was finally reached, and the form of this small theater can now be reconstructed. On the west of the atrium a broad flight of stairs was exposed, part of a late Byzantine embellishment of the church. North of the atrium excavation continued in the chamber where six camel skeletons were found in the previous seasons, but the original function and form of the building--which seems originally to have been a temple--have not yet

been clarified, and cannot be understood fully untill excavation proceeds further.

Area XIII was a new undertaking, the excavation of a large fortress situated 2.2 km. east-southeast of Pella, 350m. higher than the city on one of the highest hills in the entire vicinity. Sufficient evidence was found to enable the excavators to date the construction of the fort to Hellenistic times. Curiously, the structure does not seem to have been completed, and never occupied. Various nearby structures and walls have also been explored and mapped during the season.

Area XIV was a small Chalcolithic site discovered during the first days of the Spring Session. During the eight weeks of field operations, three chambers of the site were excavated, producing much pottery--all found broken--and a number of basalt vessels. The assemblage is characteristically Chalcolithic; its usefulness lies not in any novelty of occupation or artefacts, but in the fact that the site appears to have had but a single period of use, so that all the artefacts are contemporary with one another.

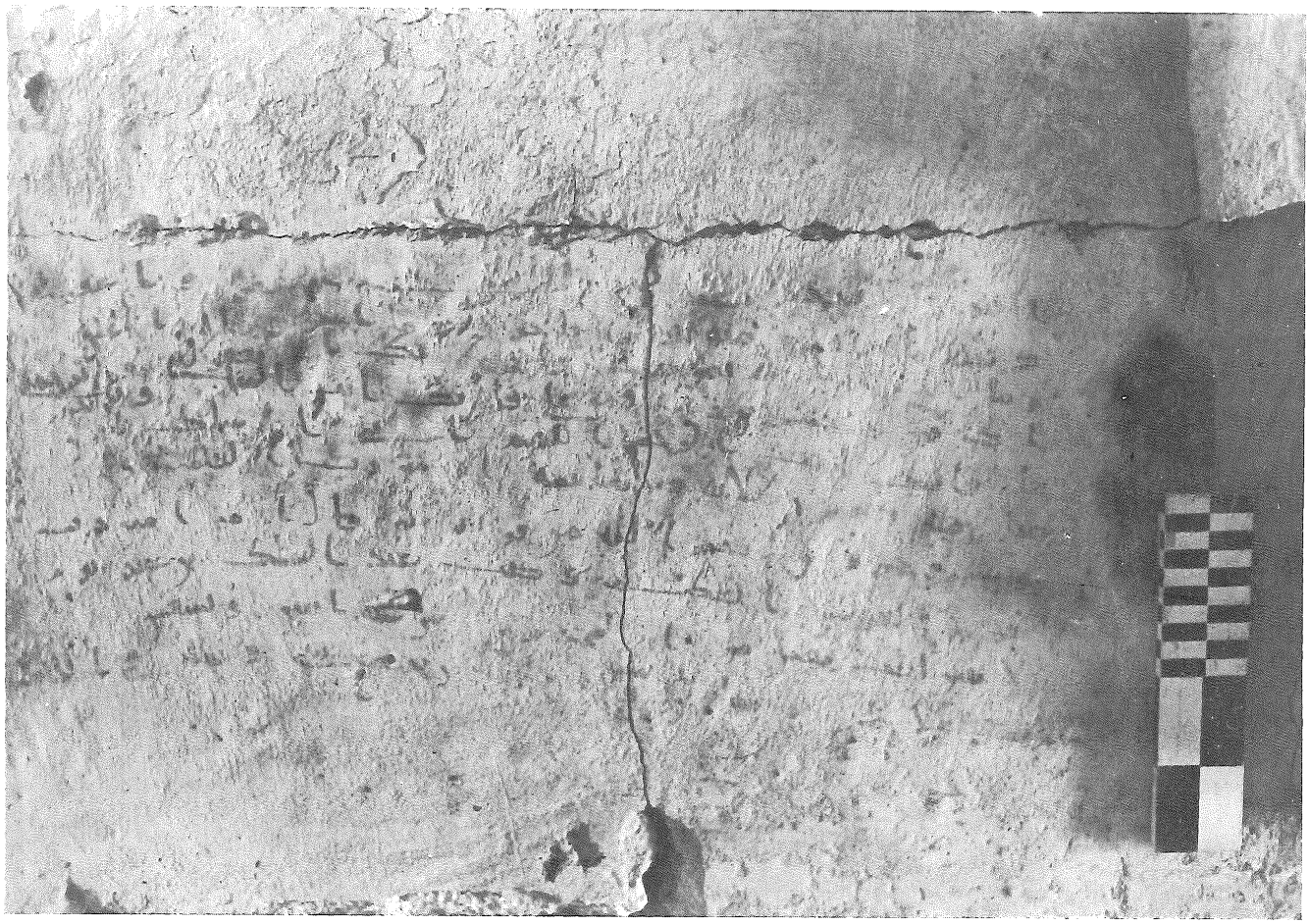
Summary and Prospects

The Spring Session of 1981 was productive of much new information about the history of Pella, particularly in Chalcolithic, late Iron II, Hellenistic and Byzantine-Umayyad times. The weather was excellent throughout the time of field operations. In the future work will continue in the two major excavational areas, provided some mechanized aids for earth removal can be utilized.

PLATES



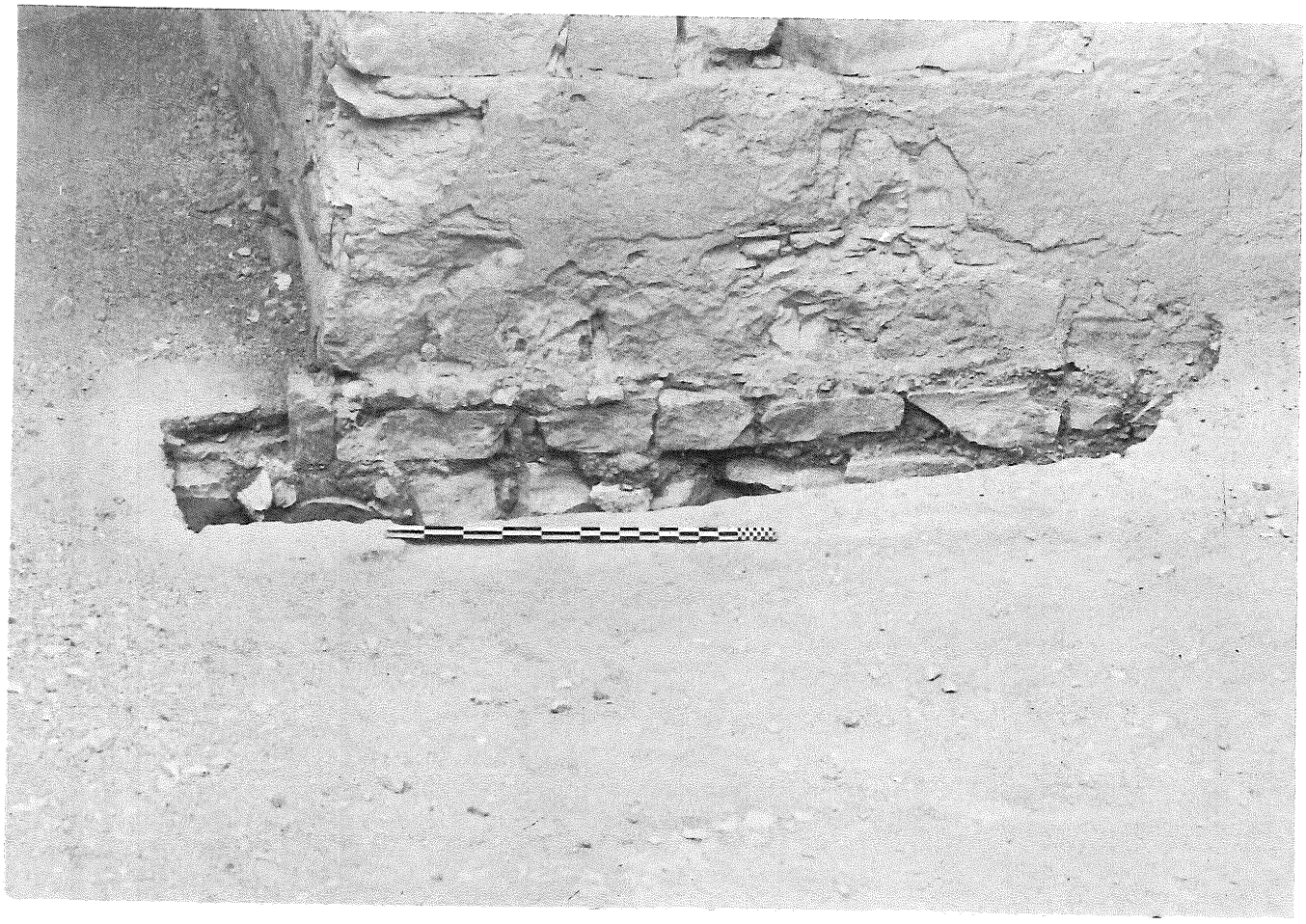
Qasr Kharana, view from southwest.
(Photo Urice QK 79.25/1).



Qasr Kharana, the Qasr Kharana Inscription. (Photo Urice QK 79.28/24).



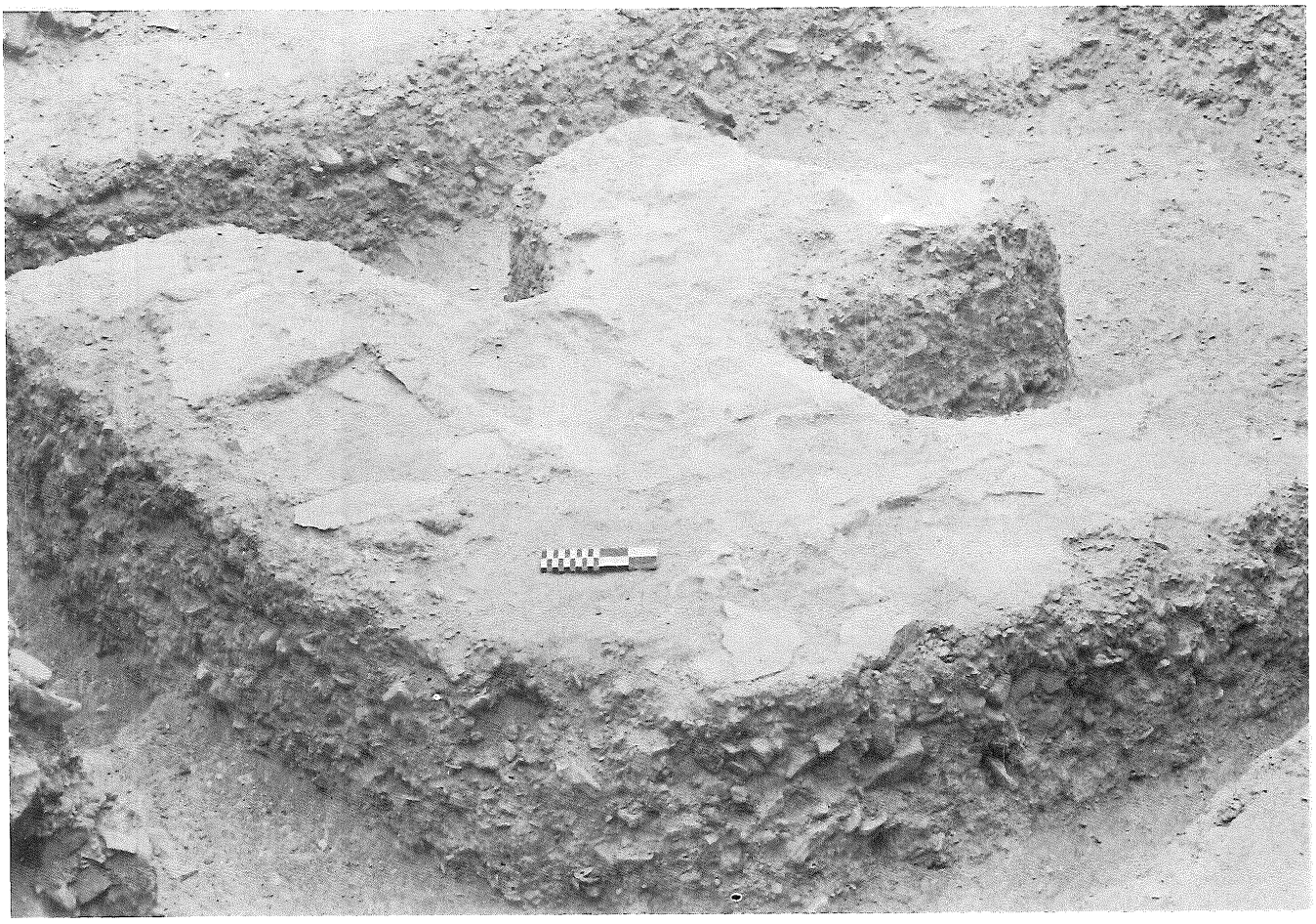
Qasr Kharana. Area F-I, south balk,
(Photo Urice QK 79.15/7).



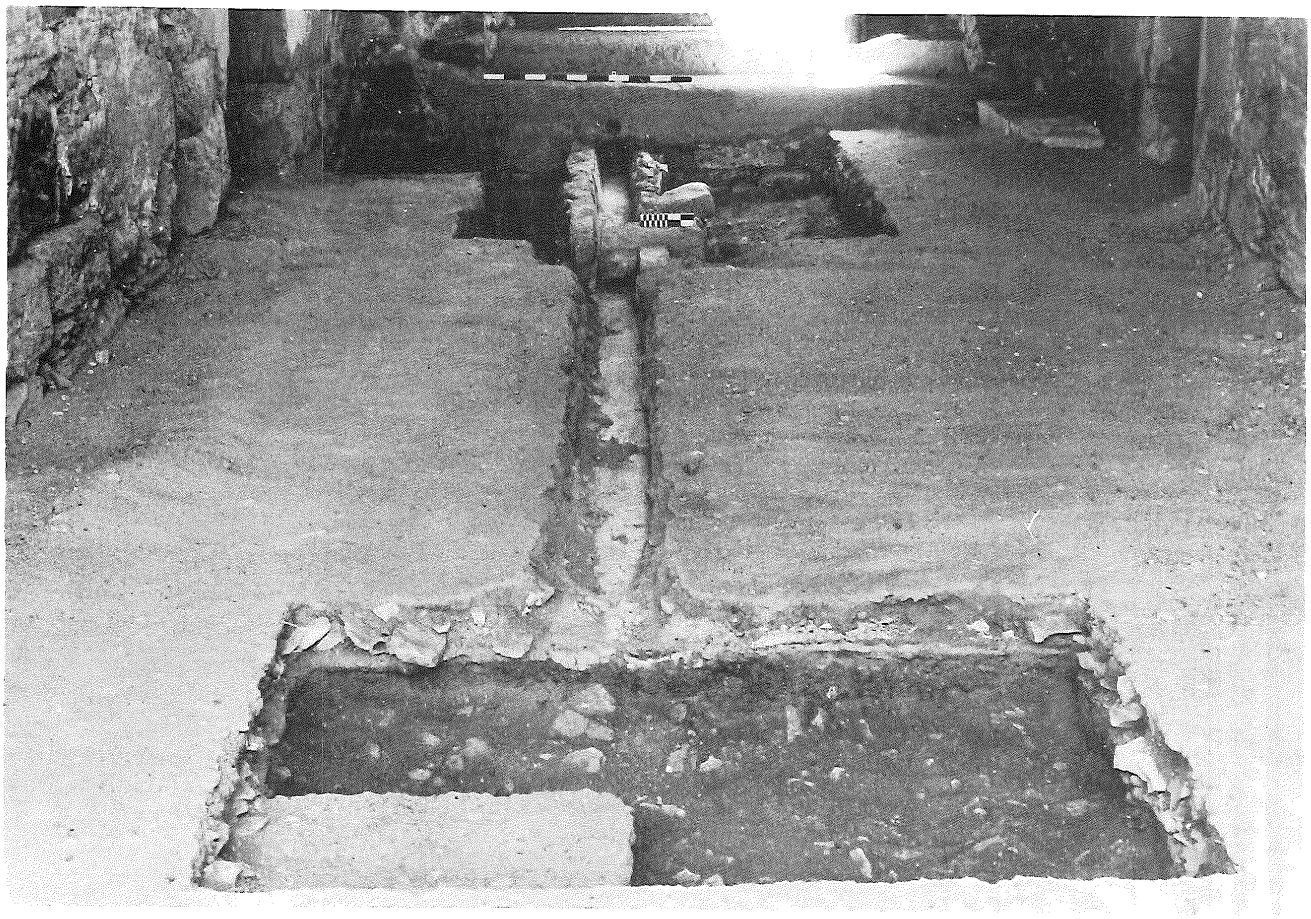
Qasr Kharana. Foundation stones in Area C-I, view from north (Photo Urice QK 79,9/13).



Qasr Kharana, Courtyard: cistern foundations and southwest pier base. (Photo Urice QK 79.26/3a).



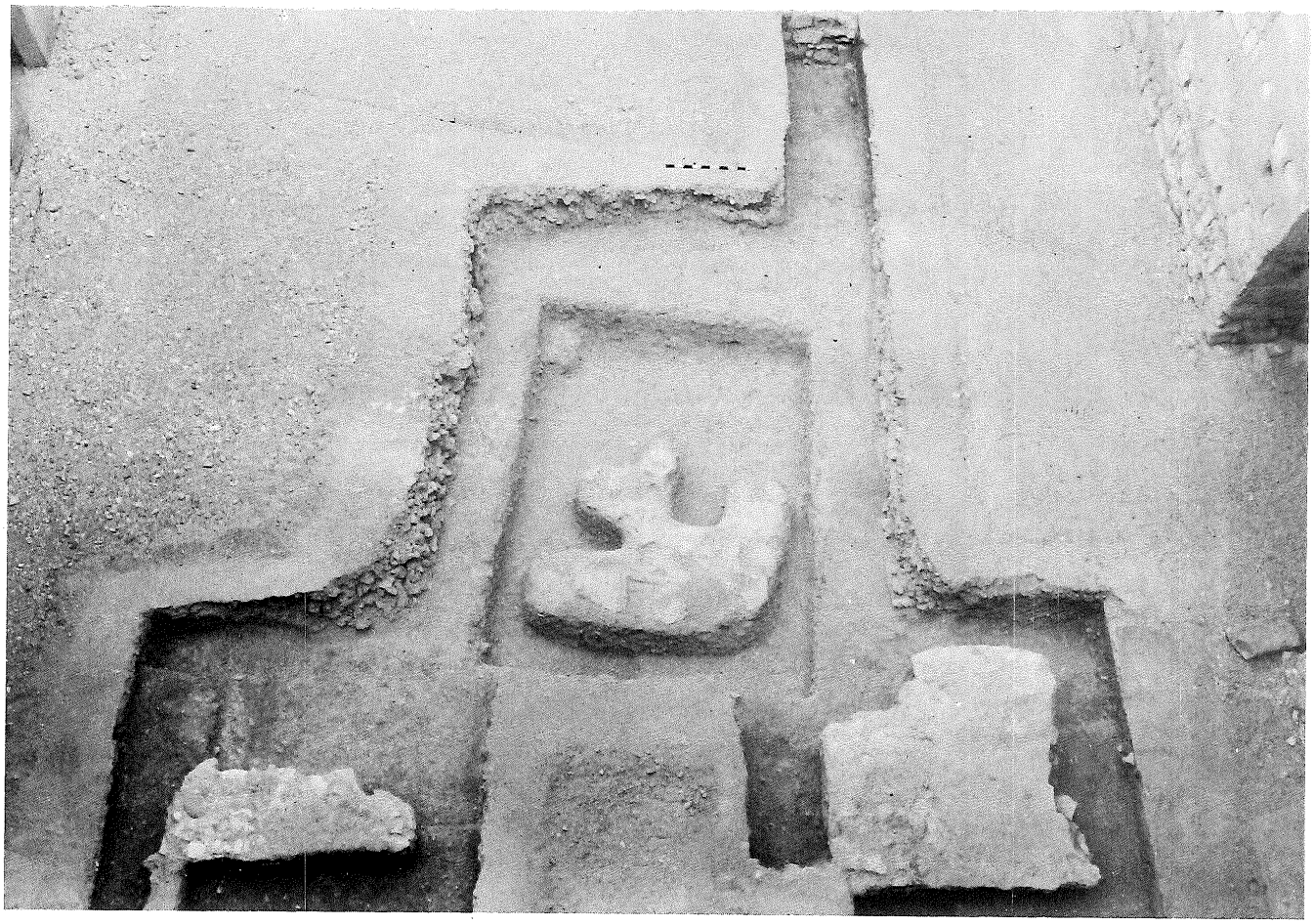
Qasr Kharana, Courtyard: remnant of cistern foundations in Area C-II (Photo Urice QK 79.26/2/a).



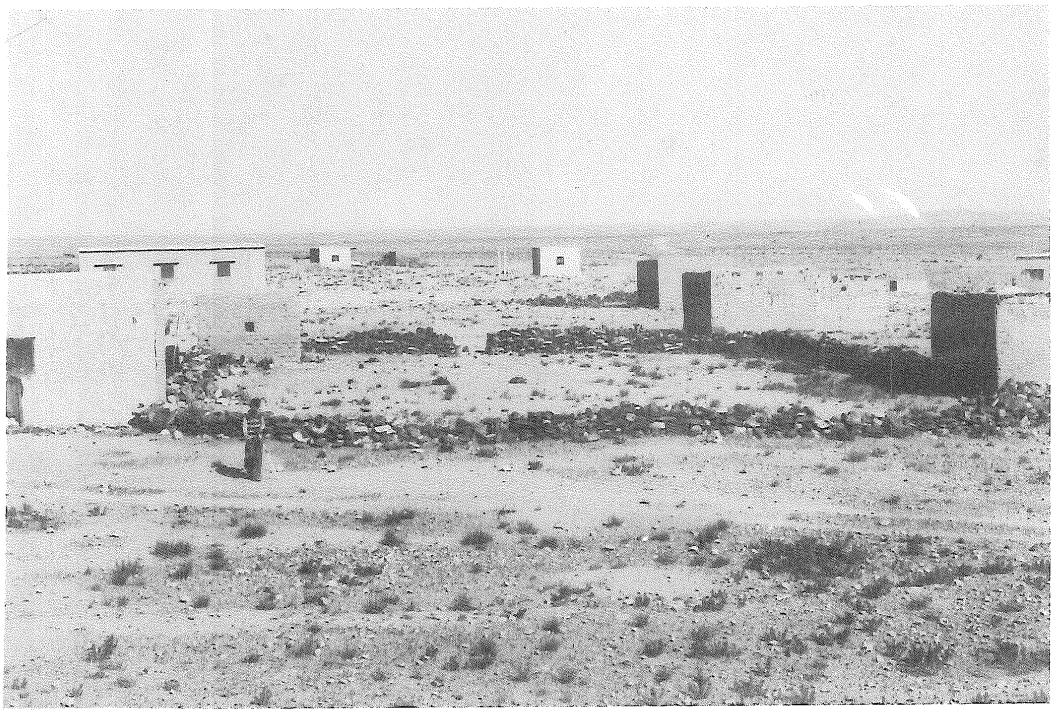
Qasr Kharana. Entry passage: drain in areas E-I & E-II. (Photo Urice QK 79.3/34).



Qasr Kharana. Drain in Areas G-I & G-II, view from southwest. (Photo Urice QK 79.12/5.



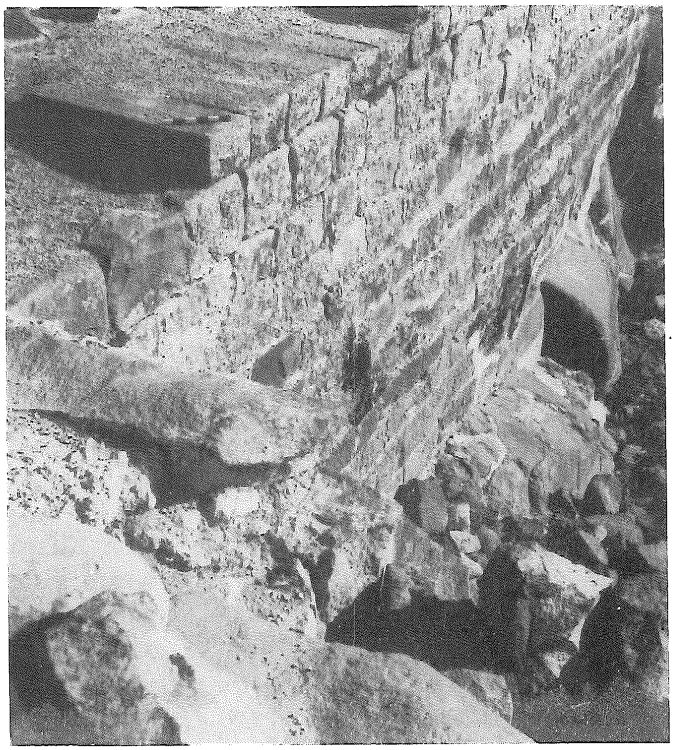
Qasr Kharana. Courtyard, view from west: cistern foundations, western pier bases. (Photo Urice QK 79.26 - 4a).



1- L' enclos bédouin.



2- L' escalier du birkeh



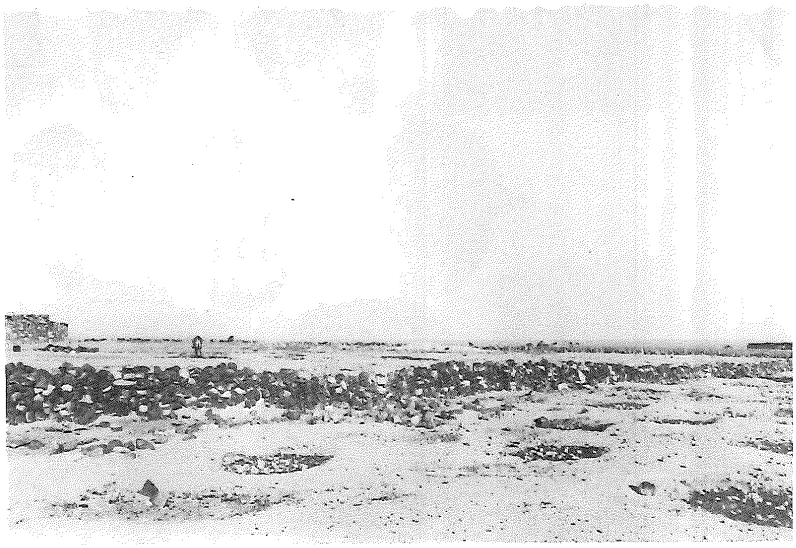
3- Detail de L'appareil.



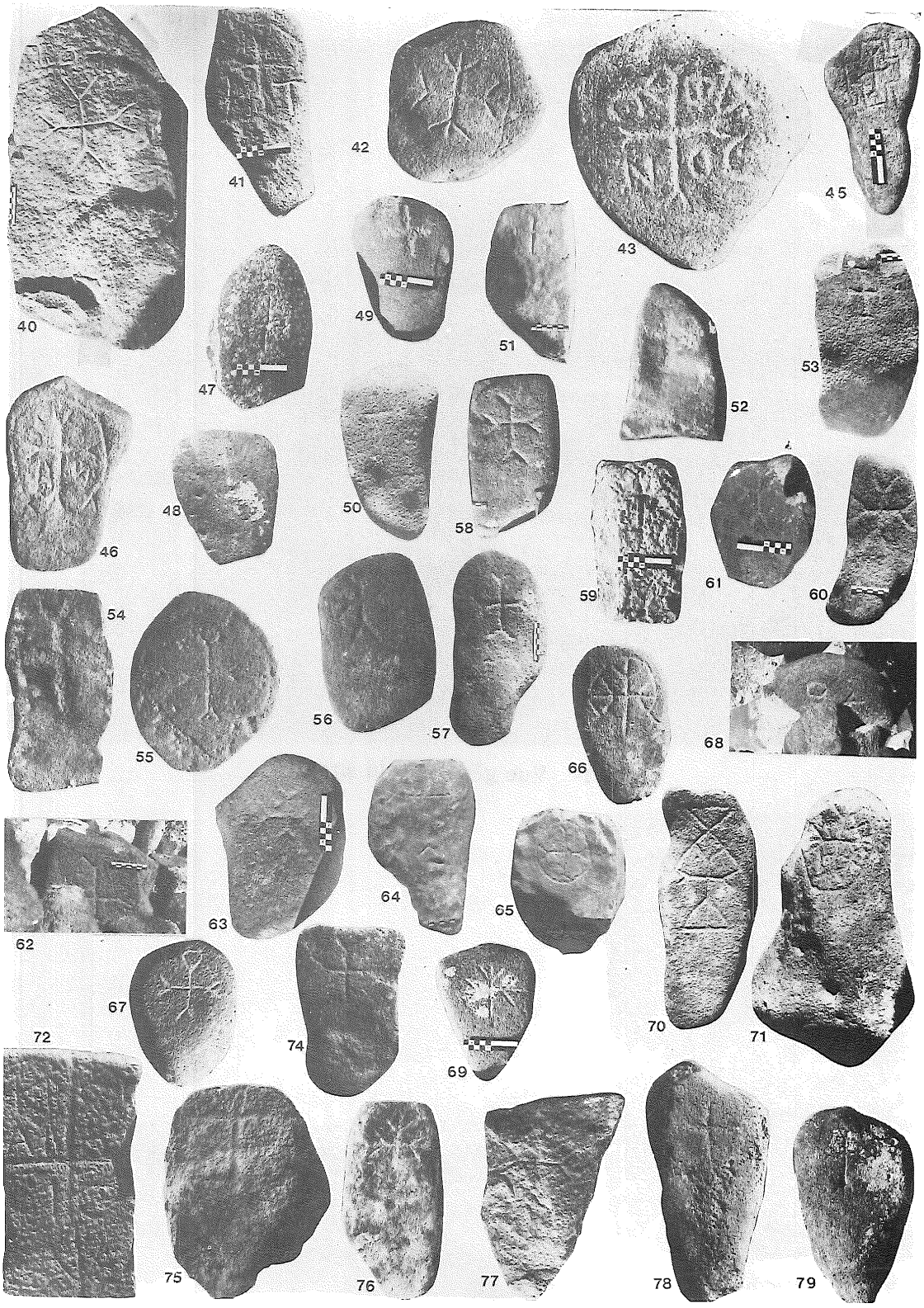
1- Vue générale du site



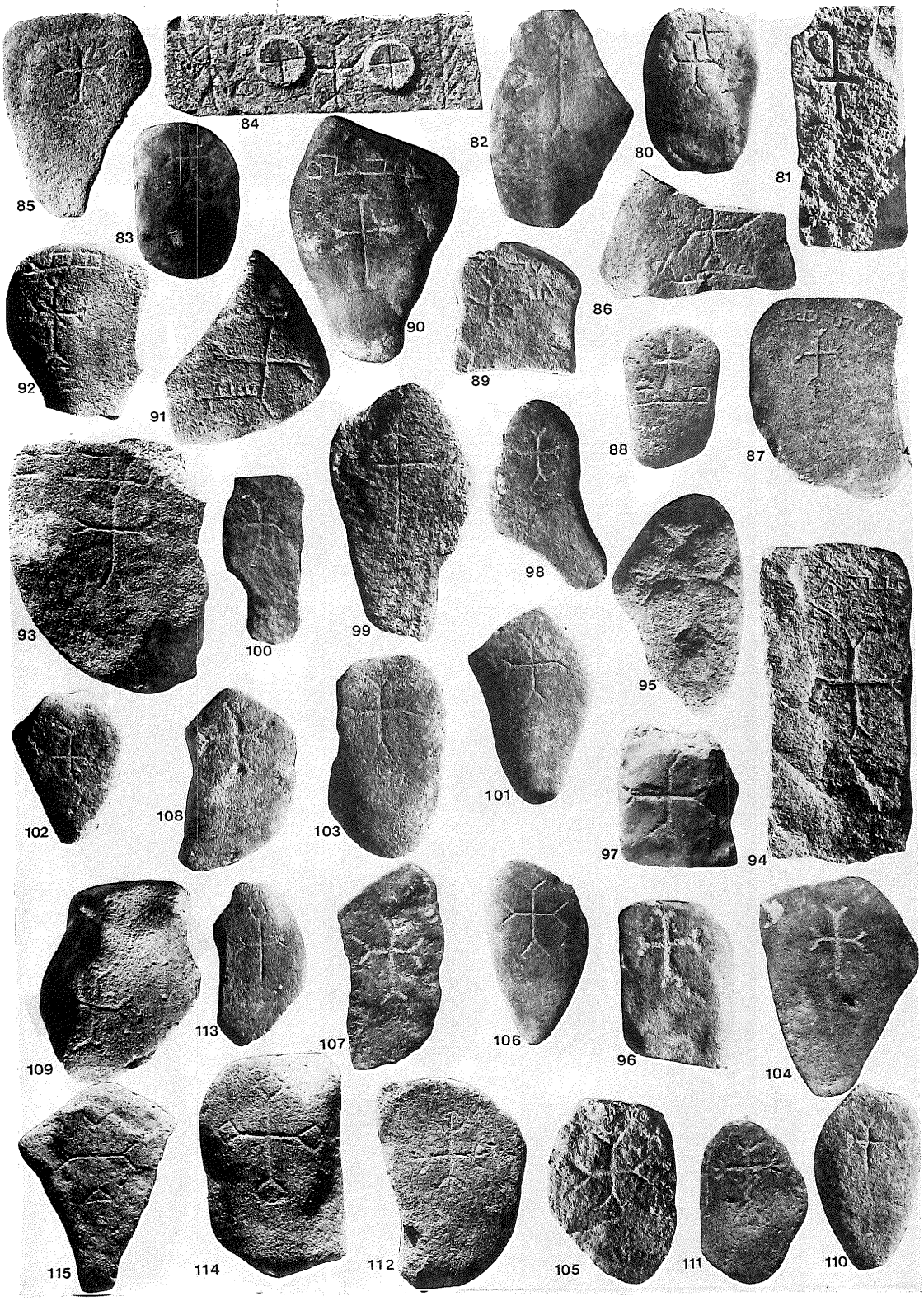
2- L' Aqueduc.



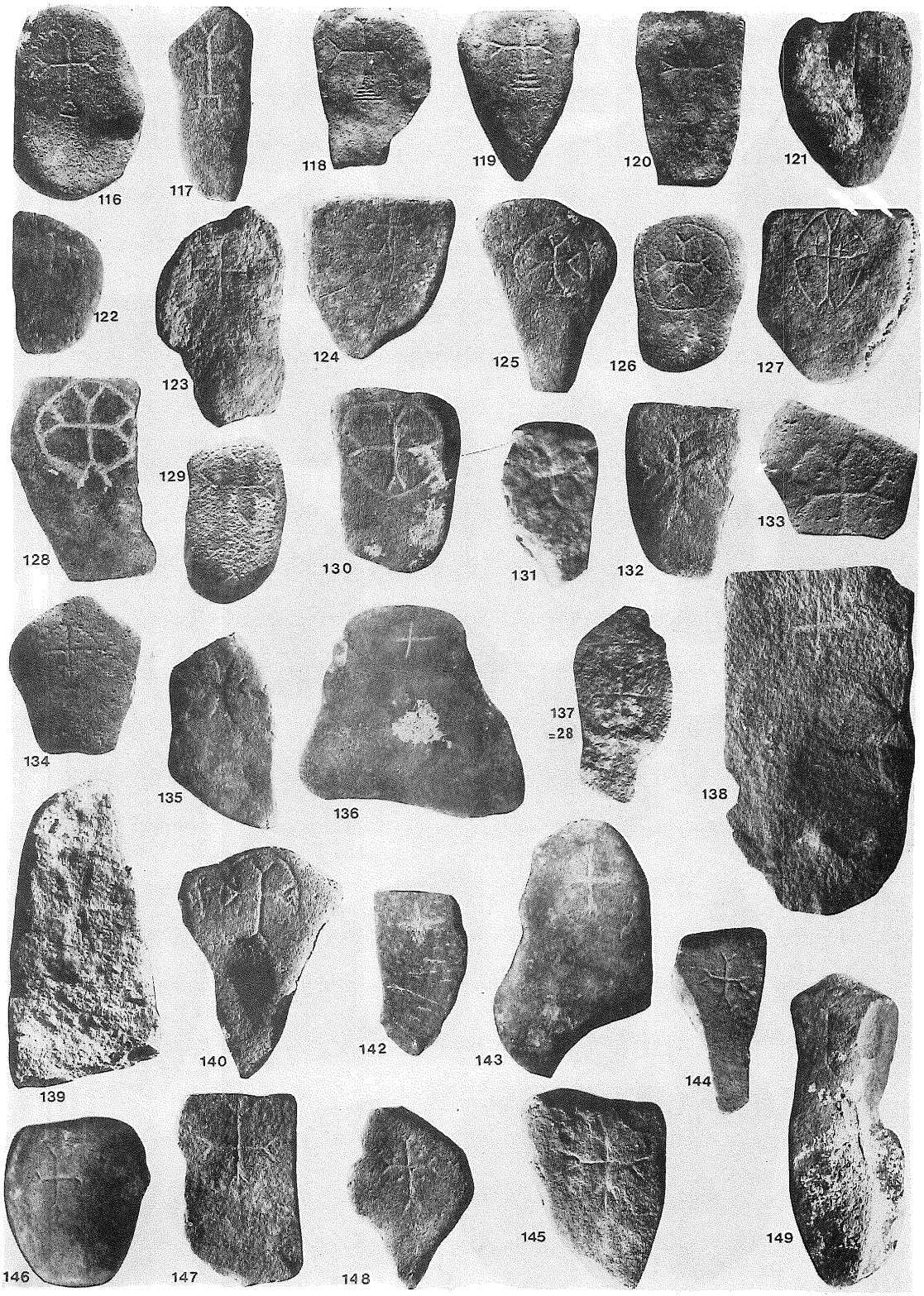
3- Vue partielle du cimetière.



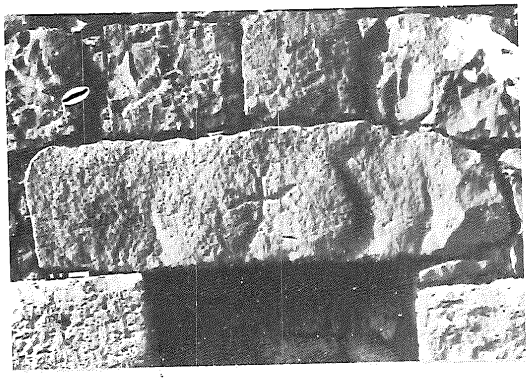
Ḫ. Samra: Stèles funéraires (n° 40 ä 79)



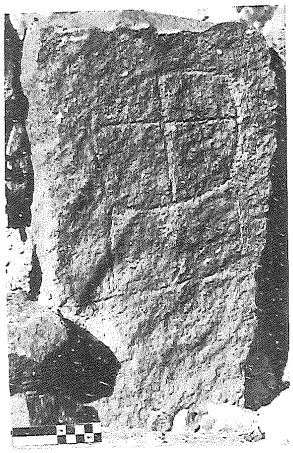
Ḥ. Samra: Stèles funéraires et linteau (n° 80 - 115)



H. Samra: Stèles funéraires (n° 116 - 149)



154



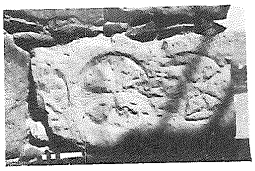
151



150



153



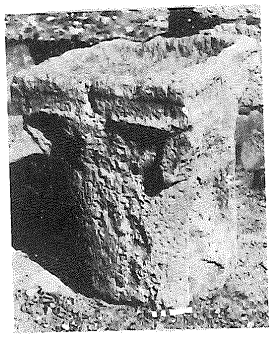
152



156

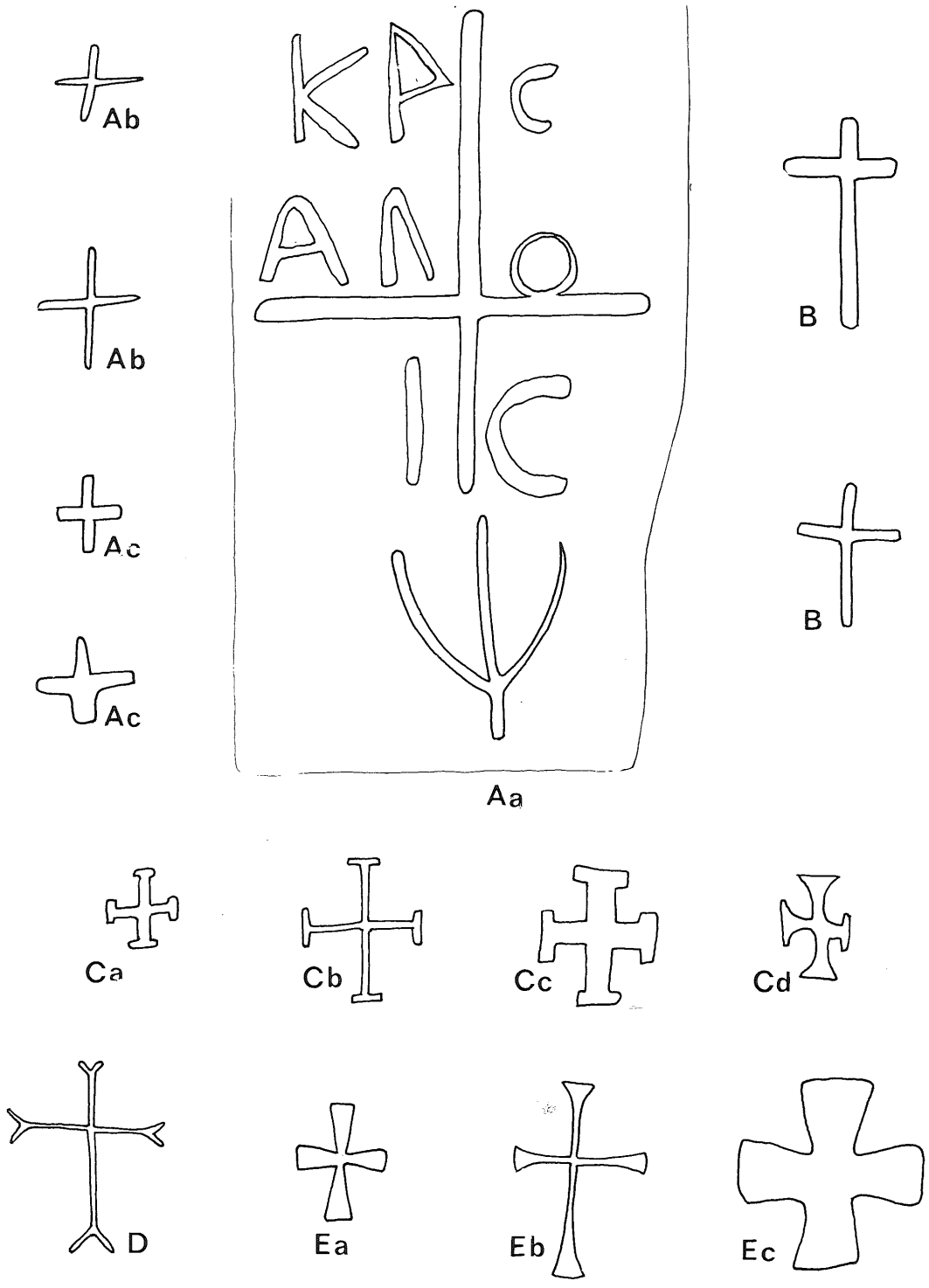


157



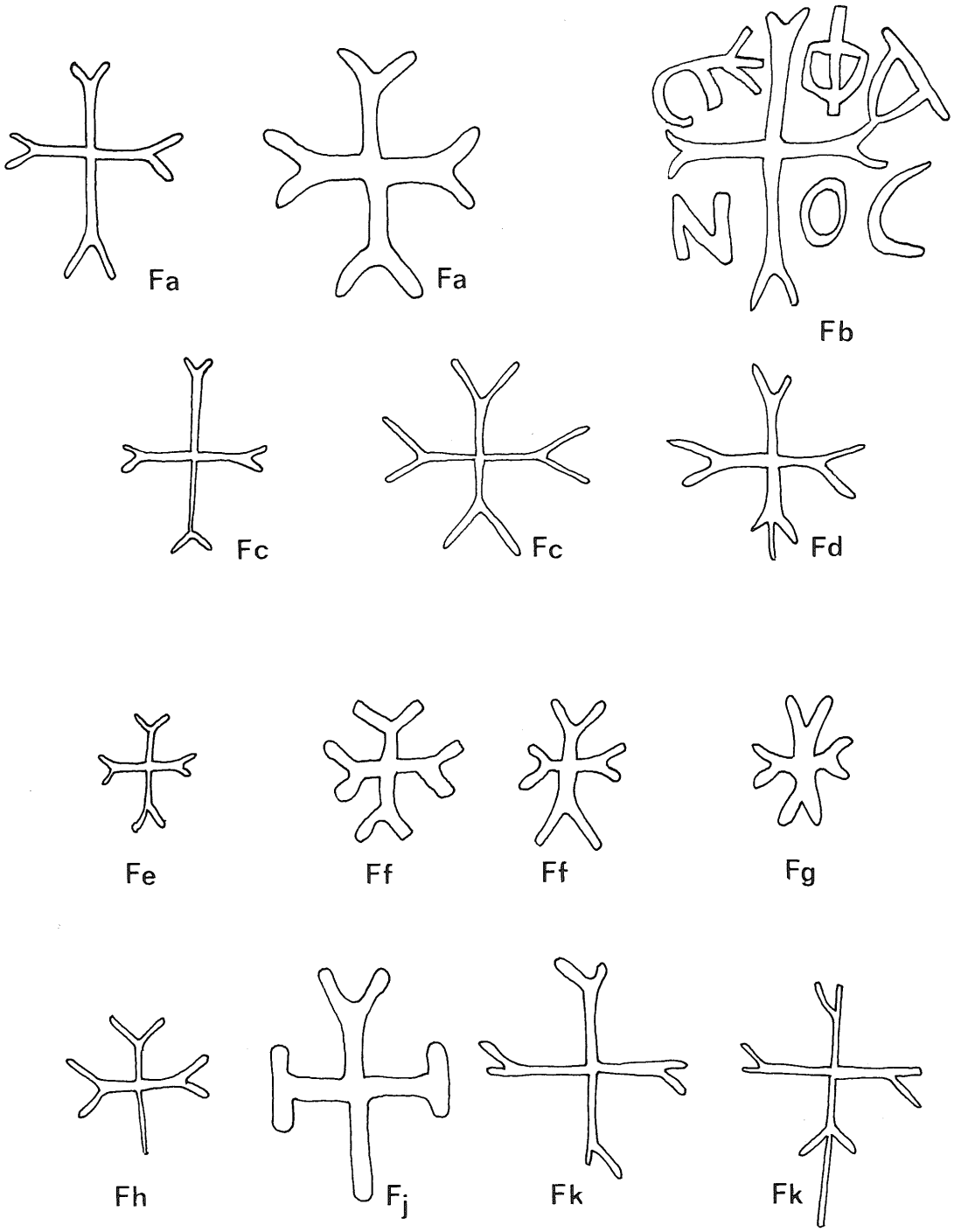
155

H. Samra: Divers objects de pierre (n° 150 ä 157)

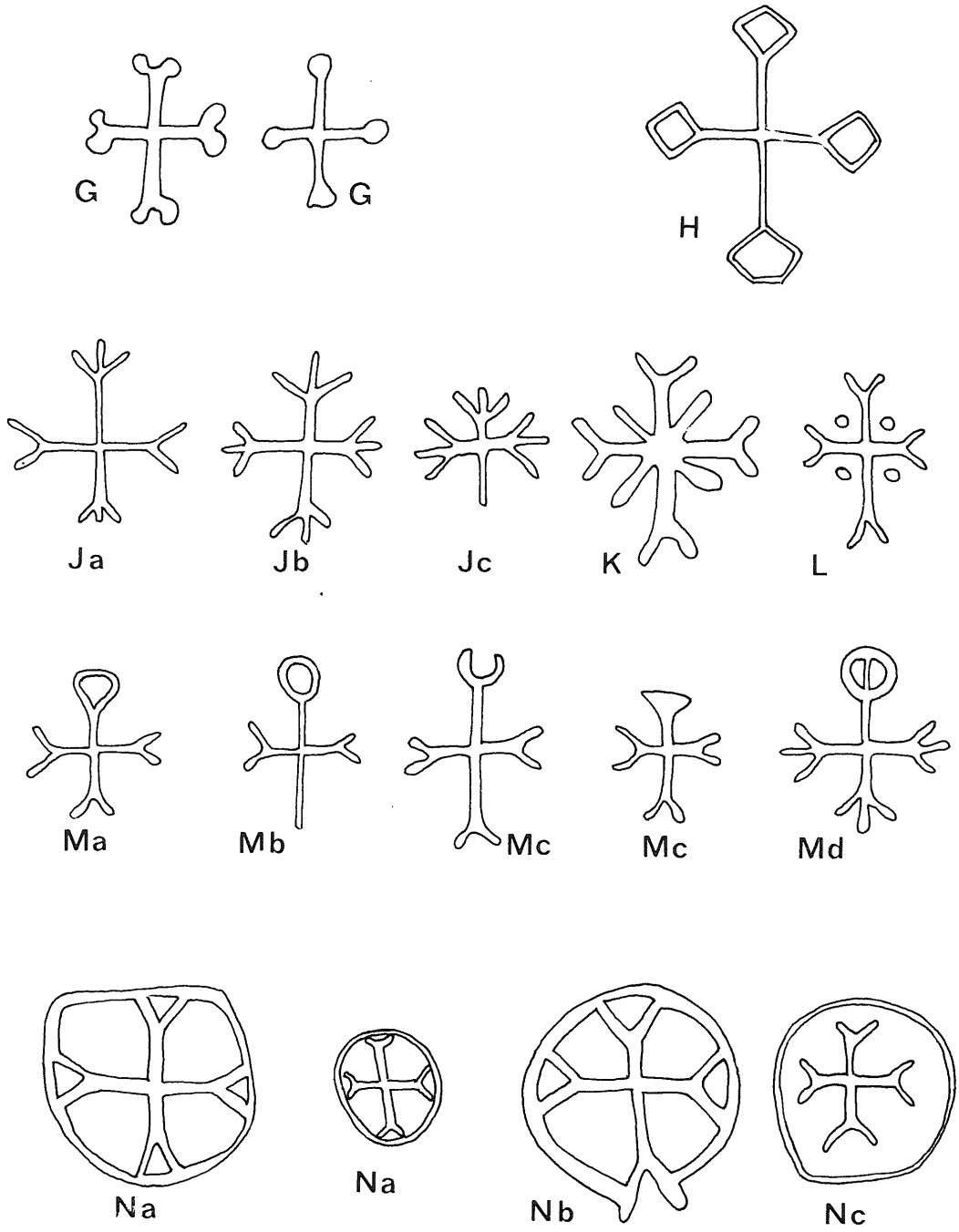


H. Samra: Typologie des Croix

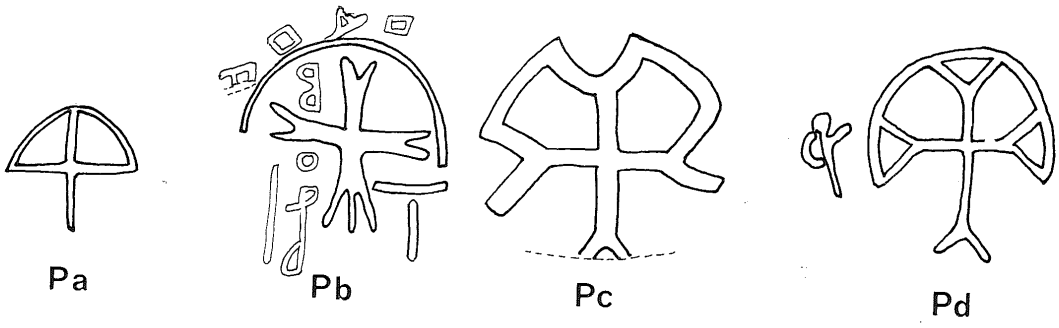
A. Desreumaux, J.B. Humbert — Pl. XVII

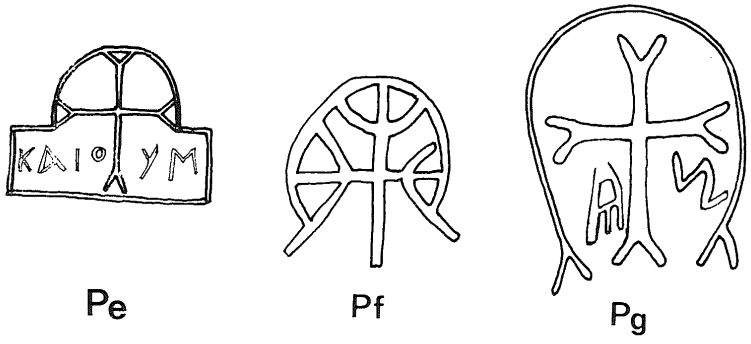


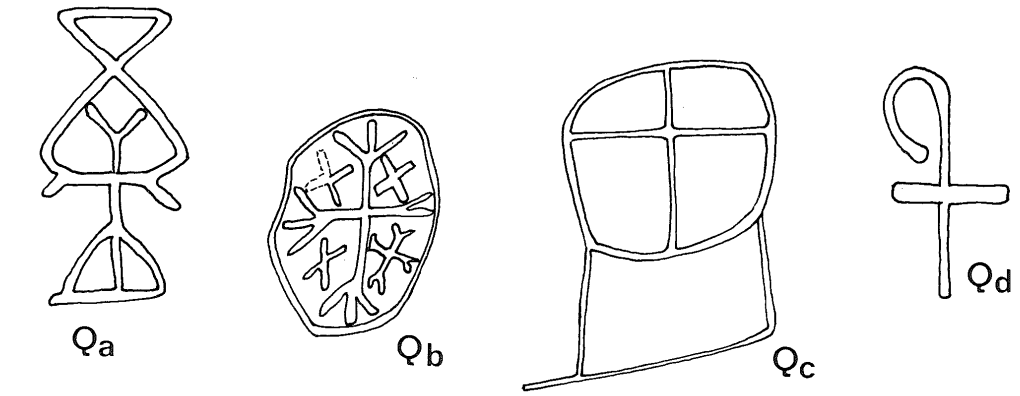
H. Samra: Typologie des Croix

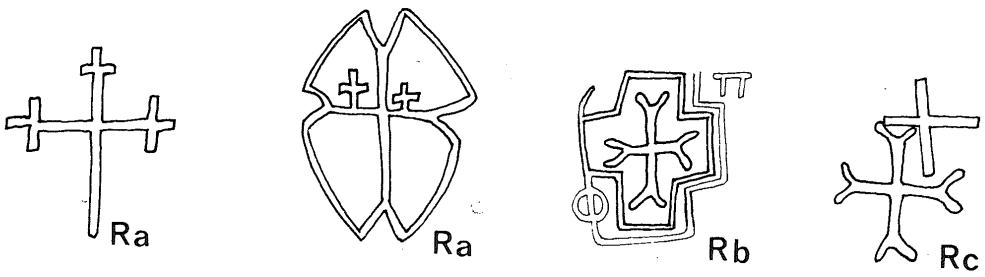


H. Samra: Typologie des Croix

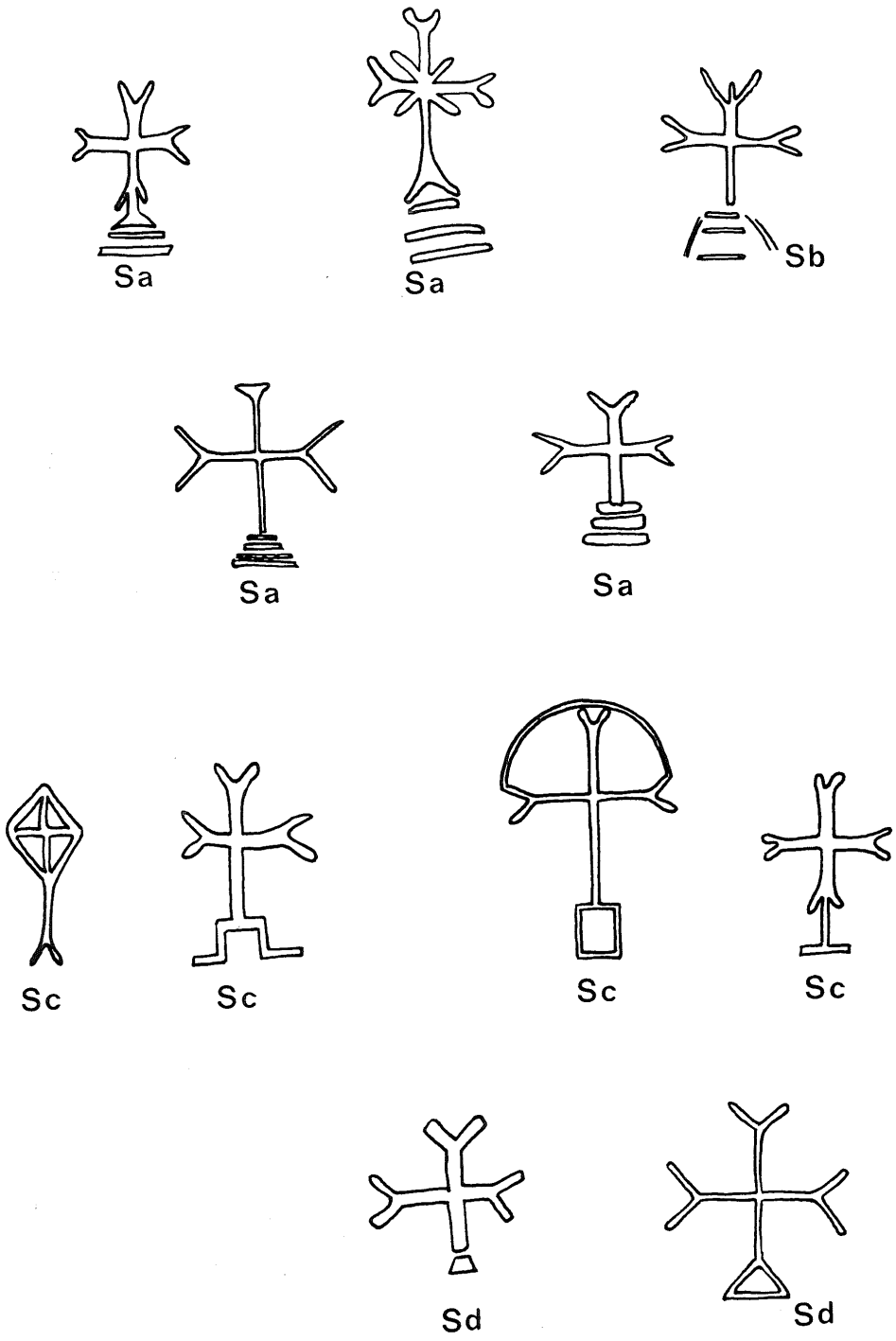








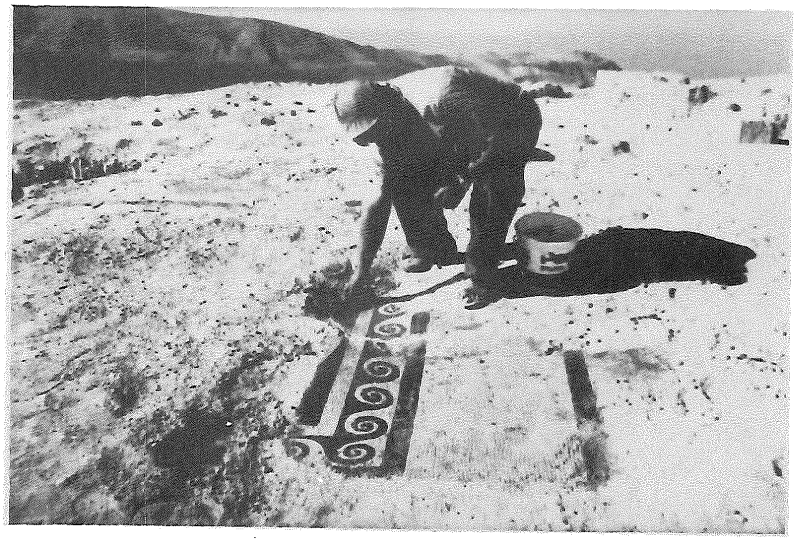
H. Samra: Typologie des Croix



H. Samra: Typologie des Croix



1. Machaerus: "*Laconiucum*" of the Herodian baths.

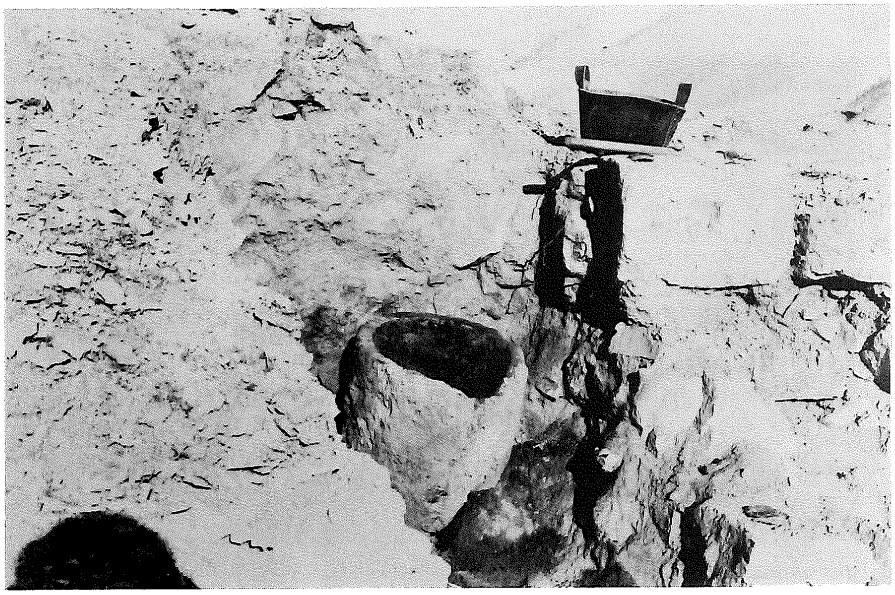


2. Fragment of the mosaic floor of the *apoditerium* of the Herodian baths.

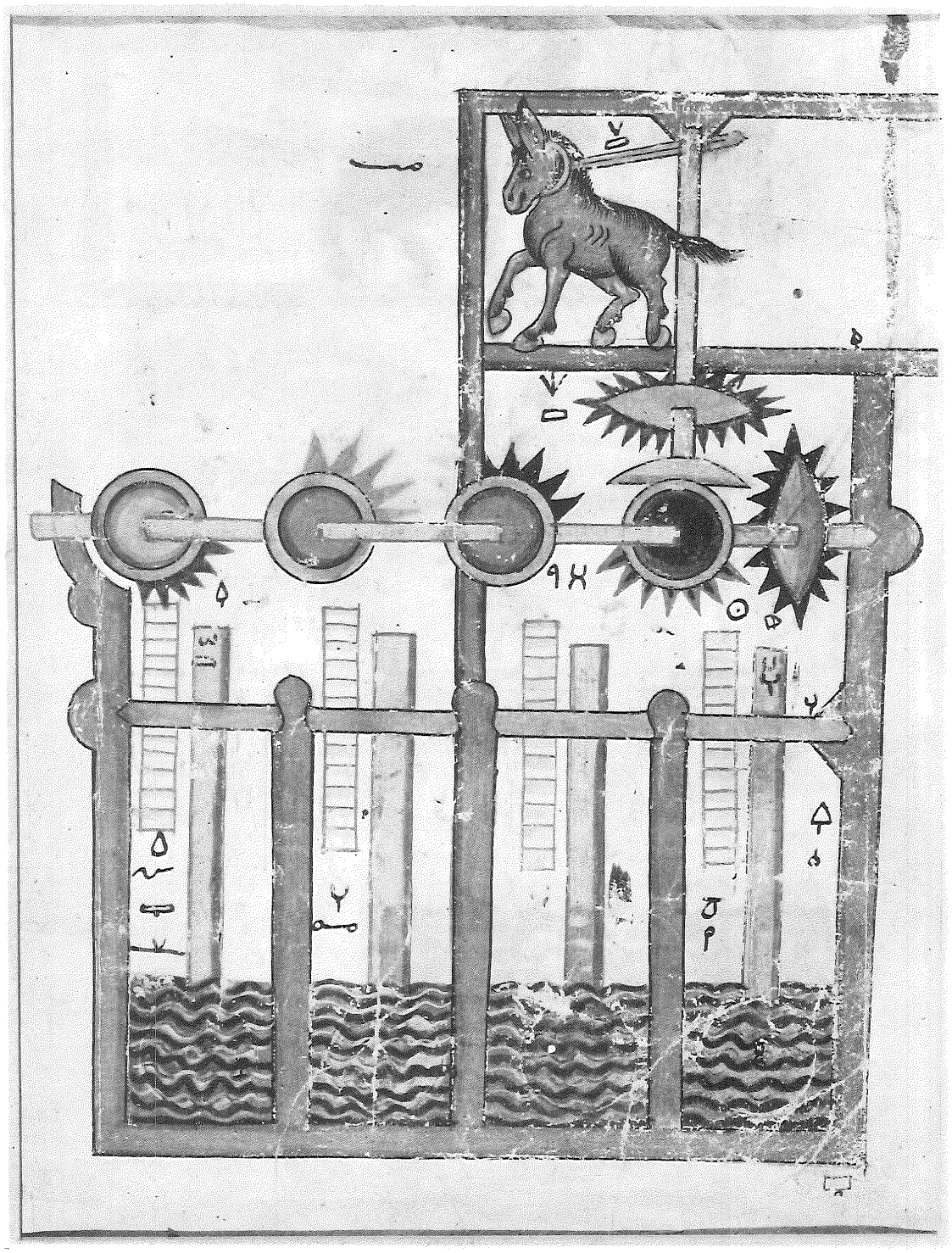
S. Loffreda, Pl. XXII



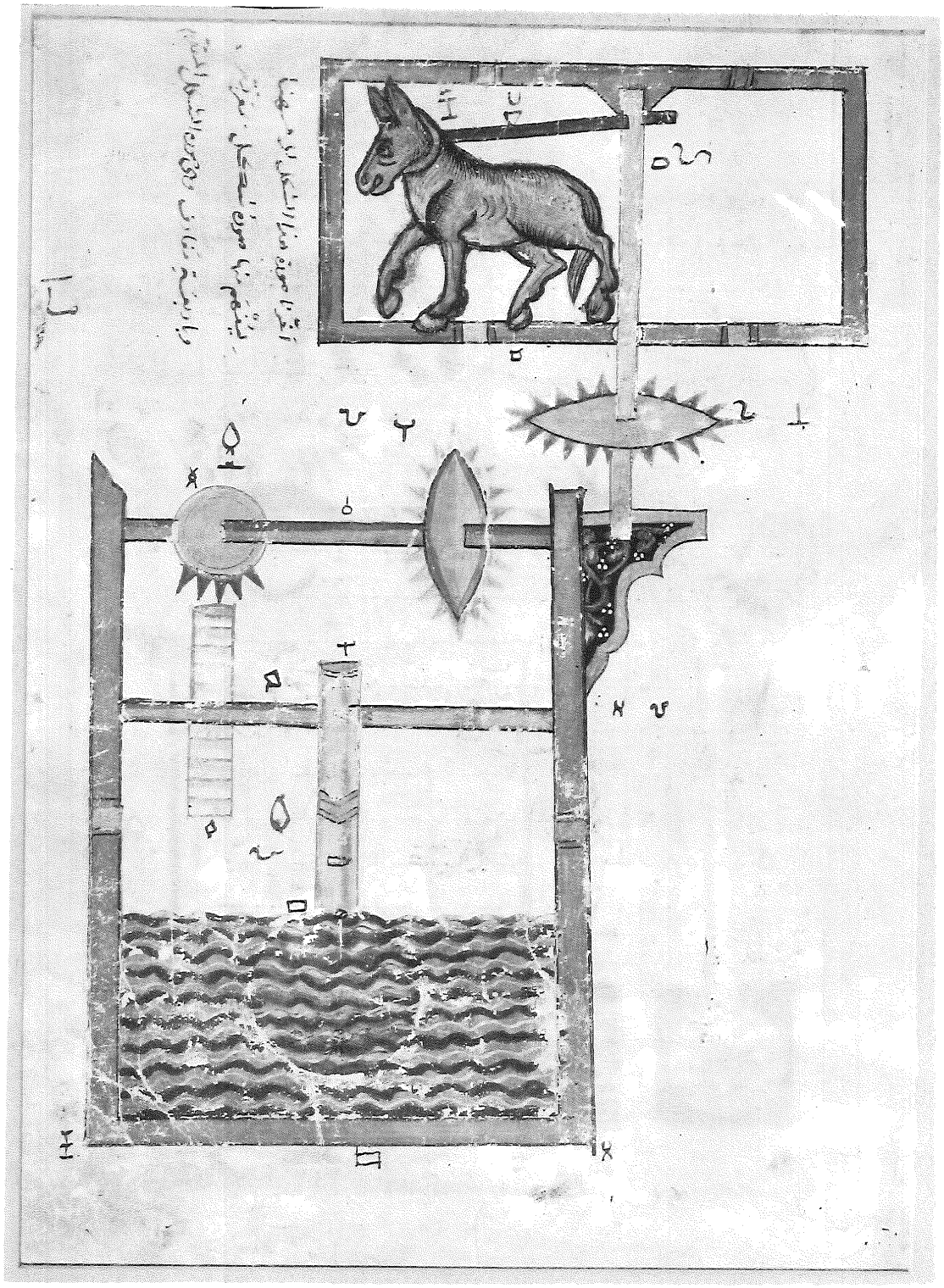
1. Machaerus: two ovens dated to the first Jewish Revol.



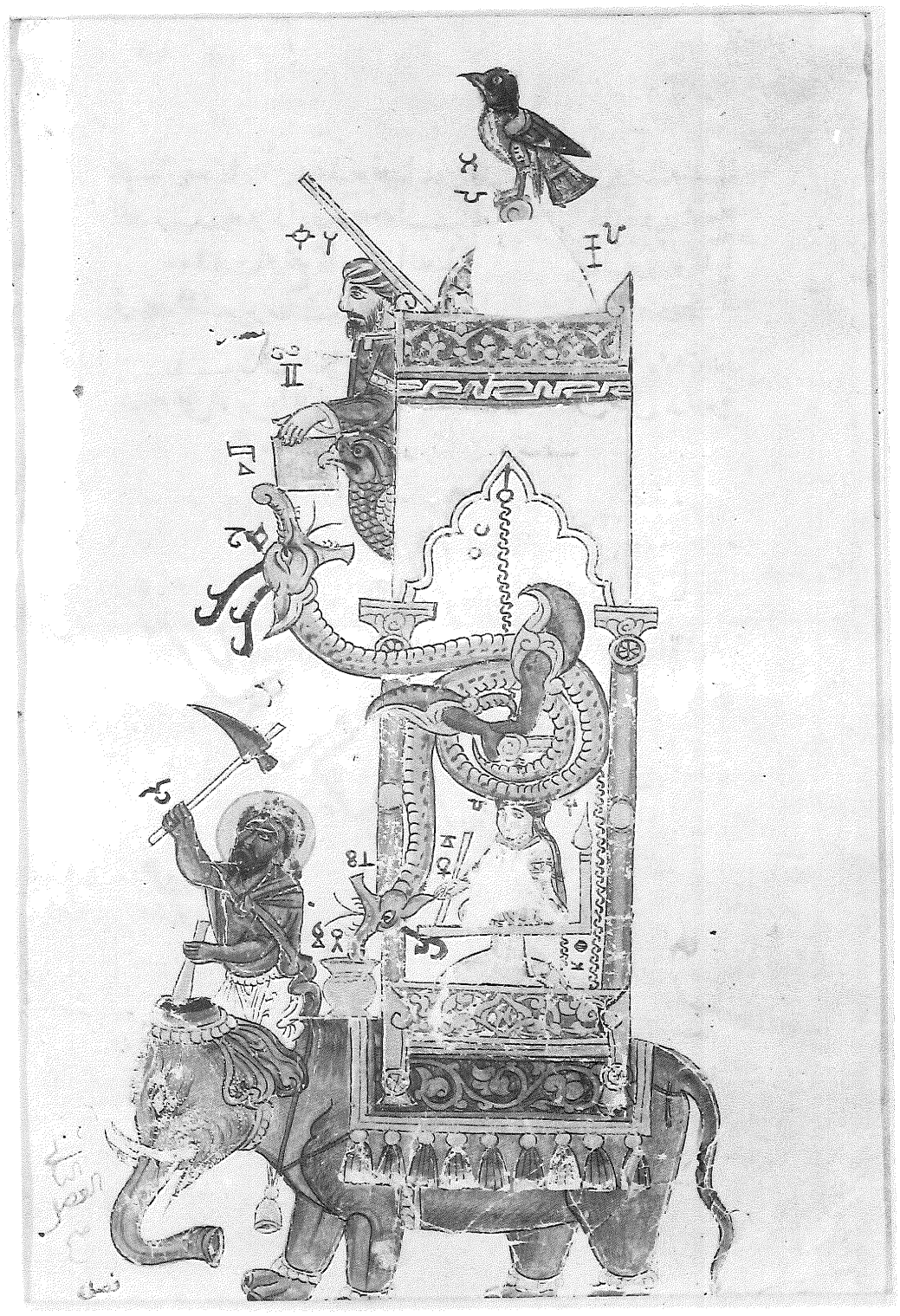
2. Burned water basin in the tower near the reservoir.



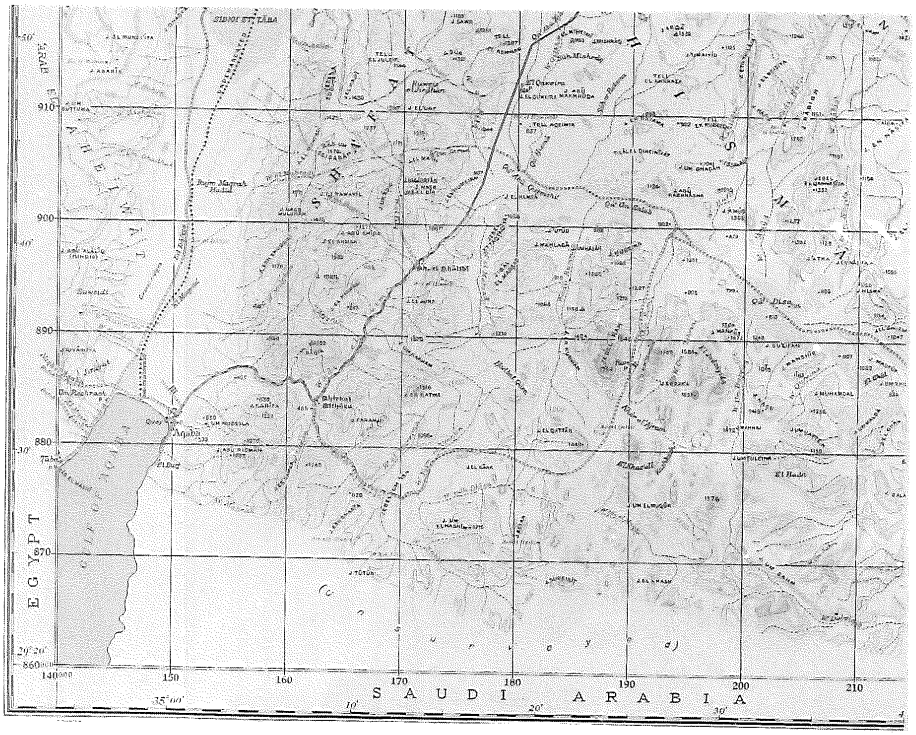
The obverse page: Miniature painting of the four-wheel apparatus for raising water by animal power. (Metropolitan Museum of Art, New York.



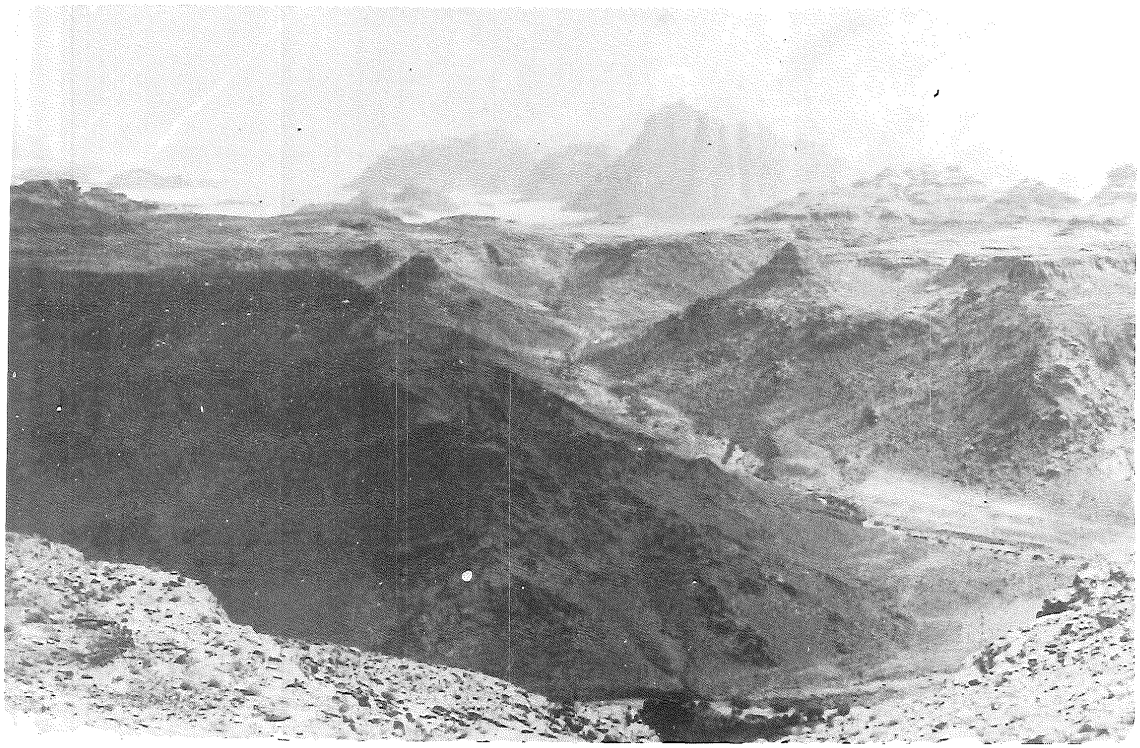
The reverse page: Miniature Painting of the single wheel apparatus. (Metropolitan Museum of Art, N.T.).



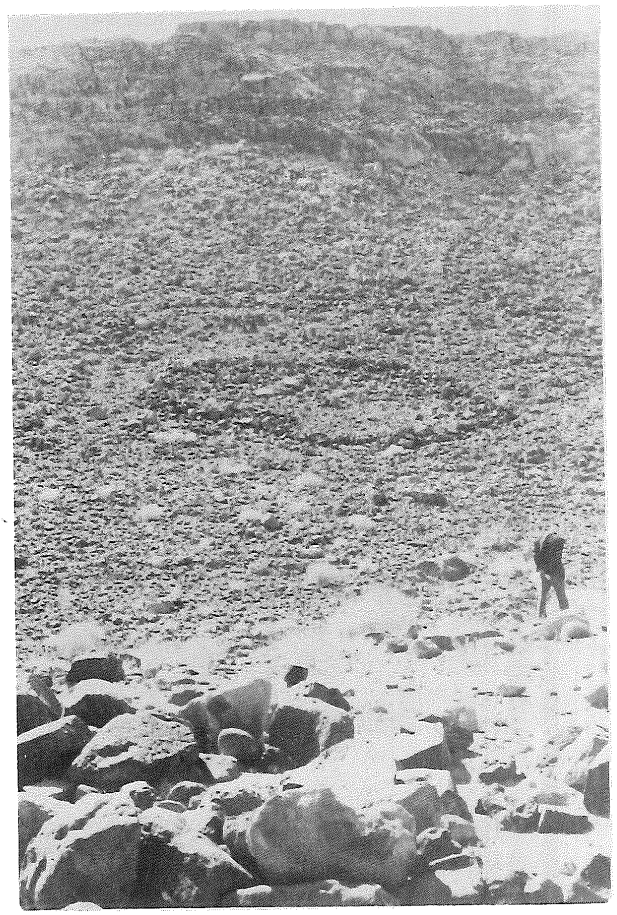
Miniature painting of the Elephant Clock. (Metropolitan Museum of Art, N.T.).



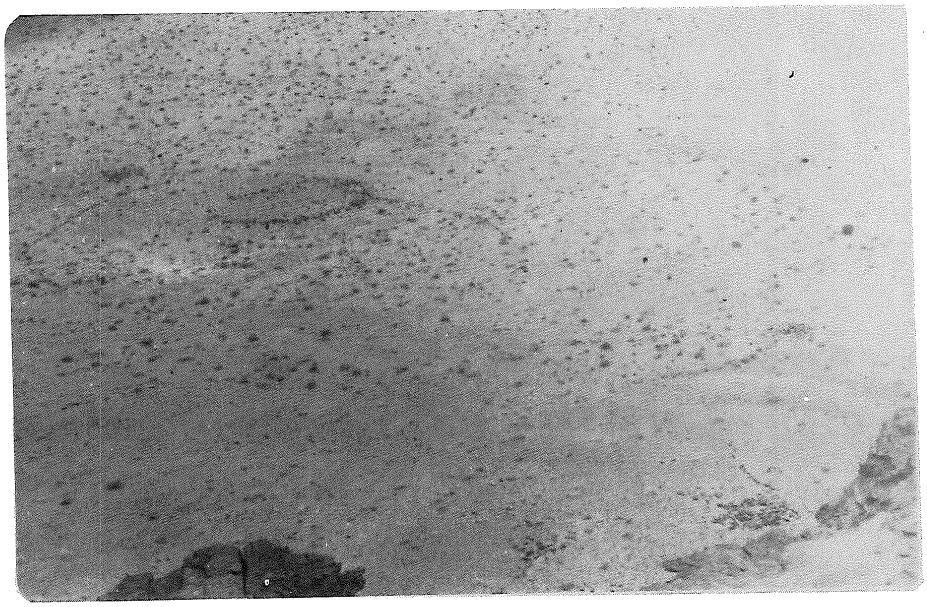
1. Map of Hisma area, Southern Jordan.



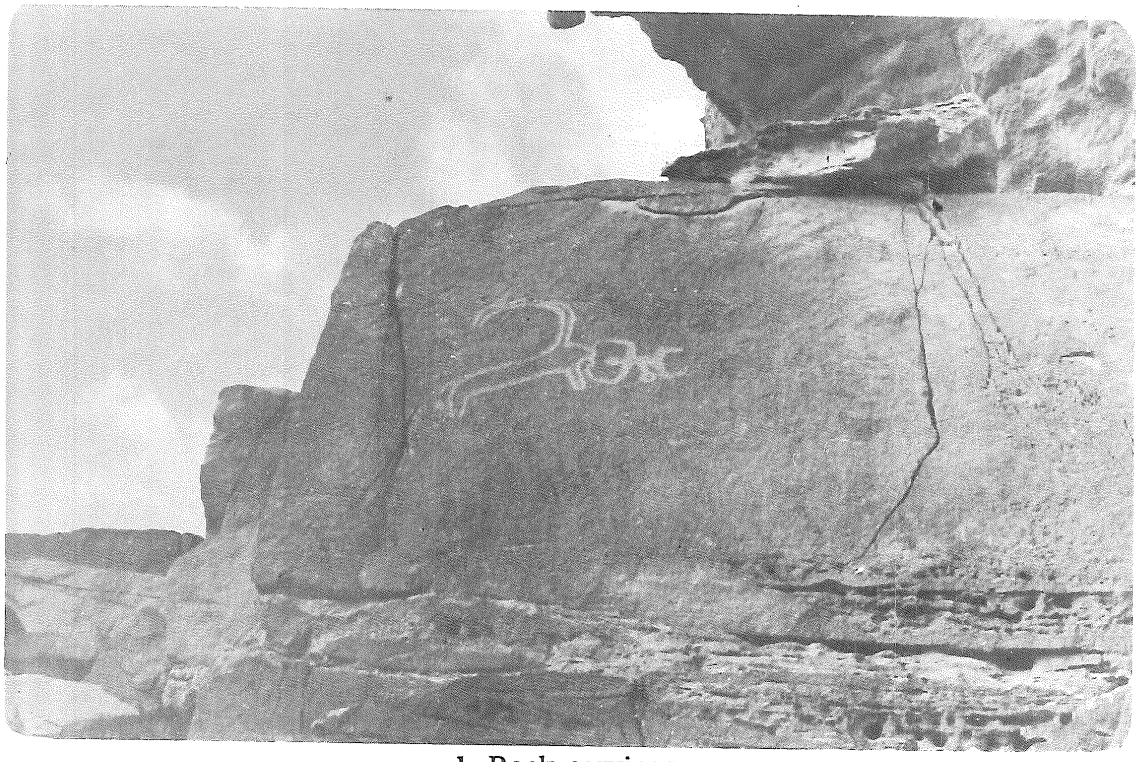
2. Hisma area



1. Stone Circle.



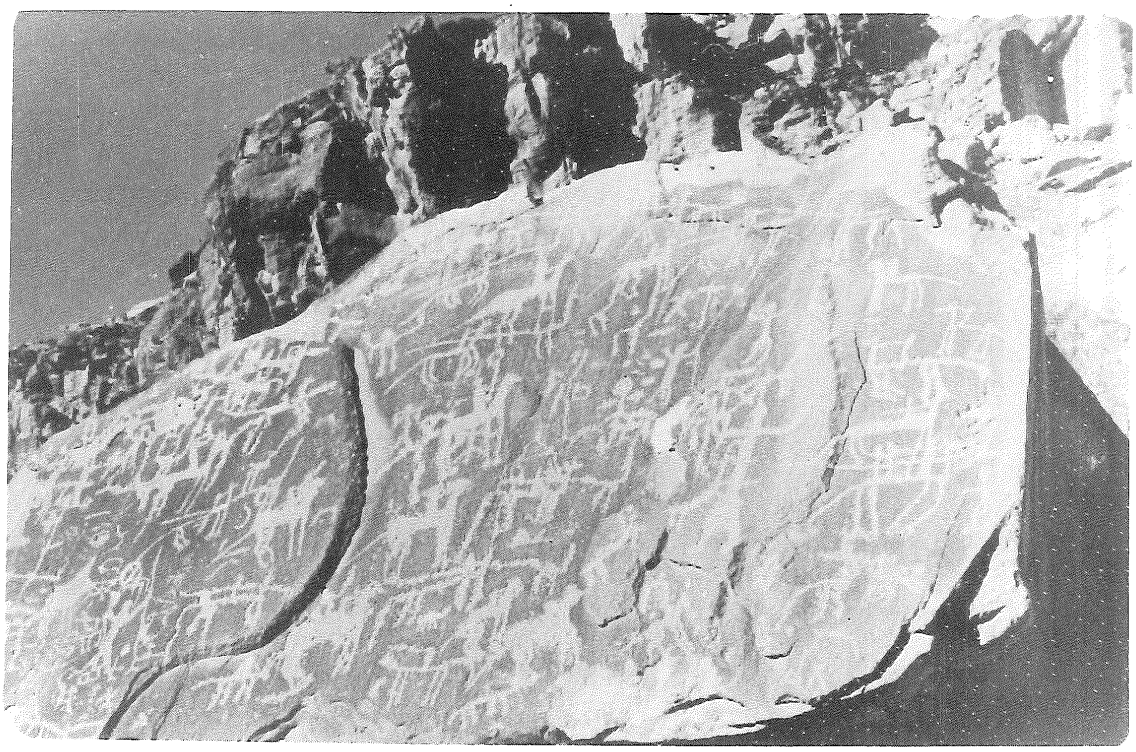
2. Hidheb el Fala - stone circle and built-in cairns.



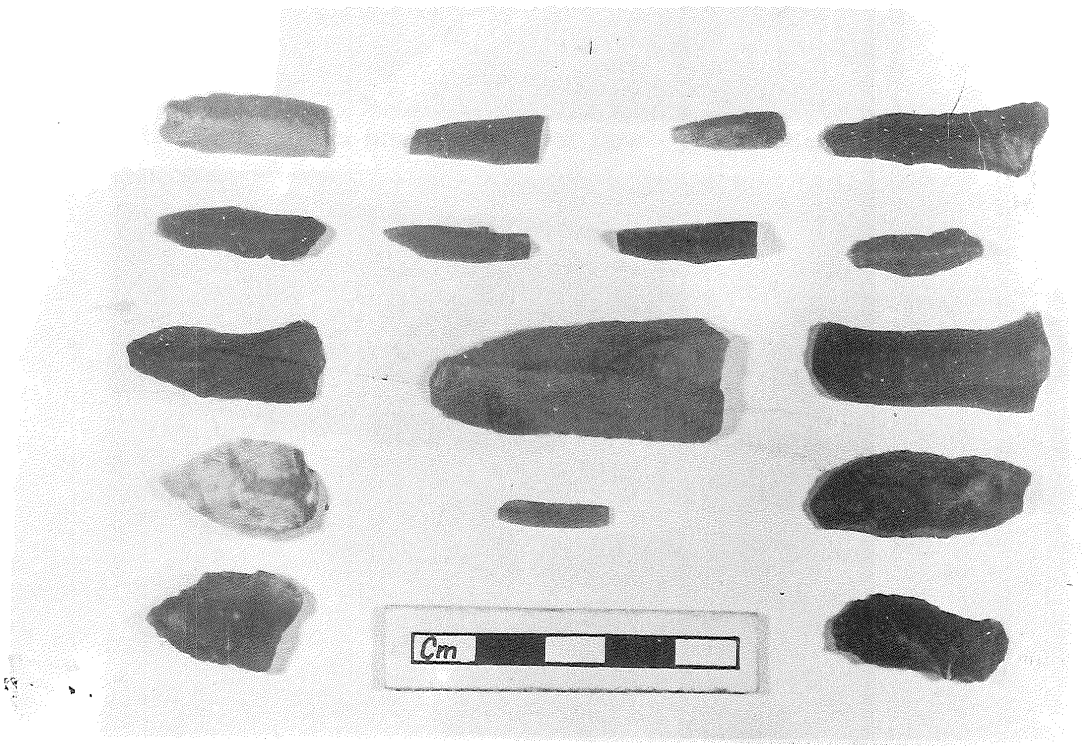
1. Rock carvings.



2. Rock carvings.



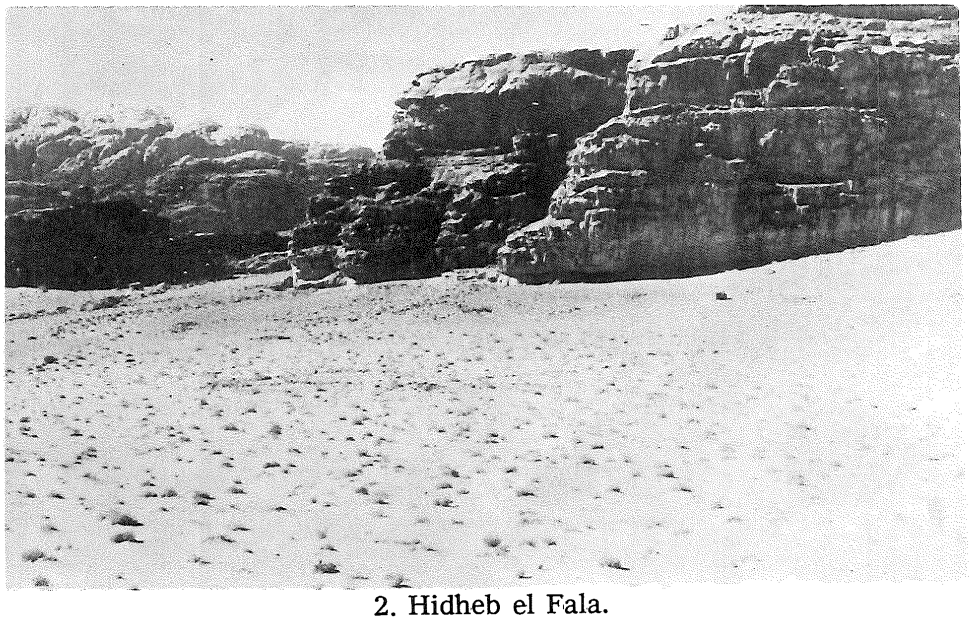
1. Rock carvings and inscriptions.



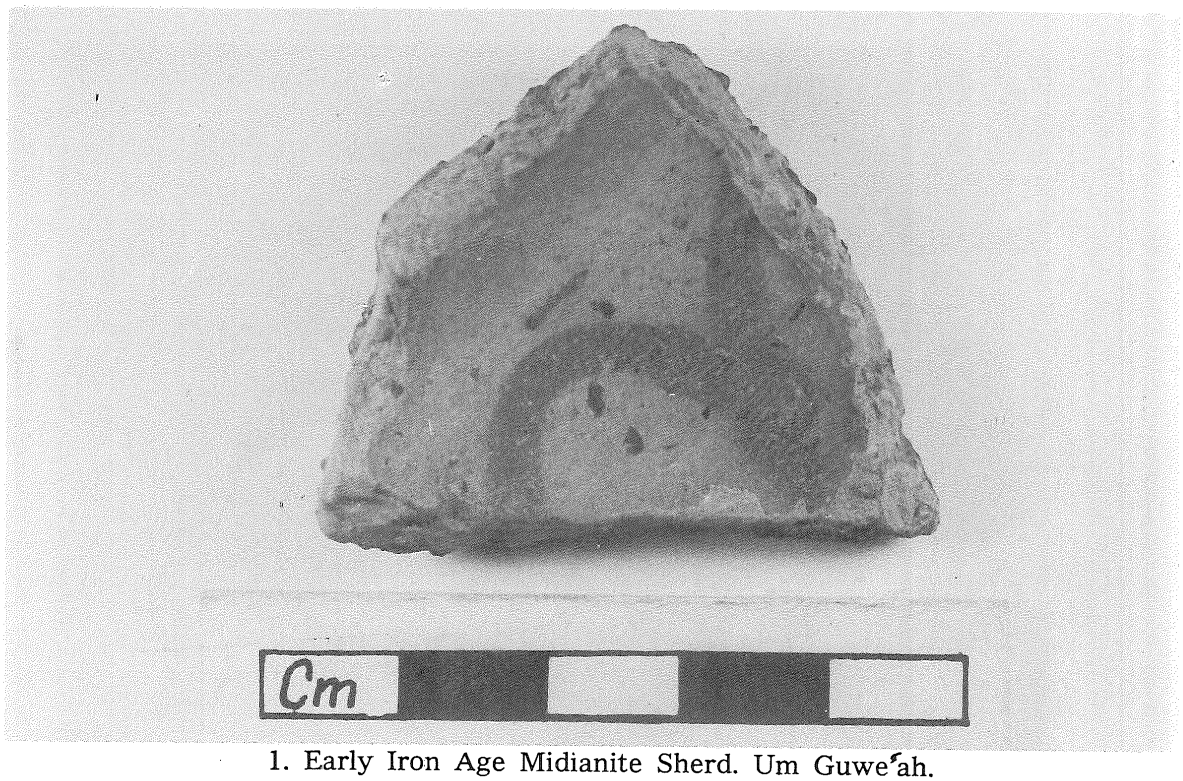
2. Flints.



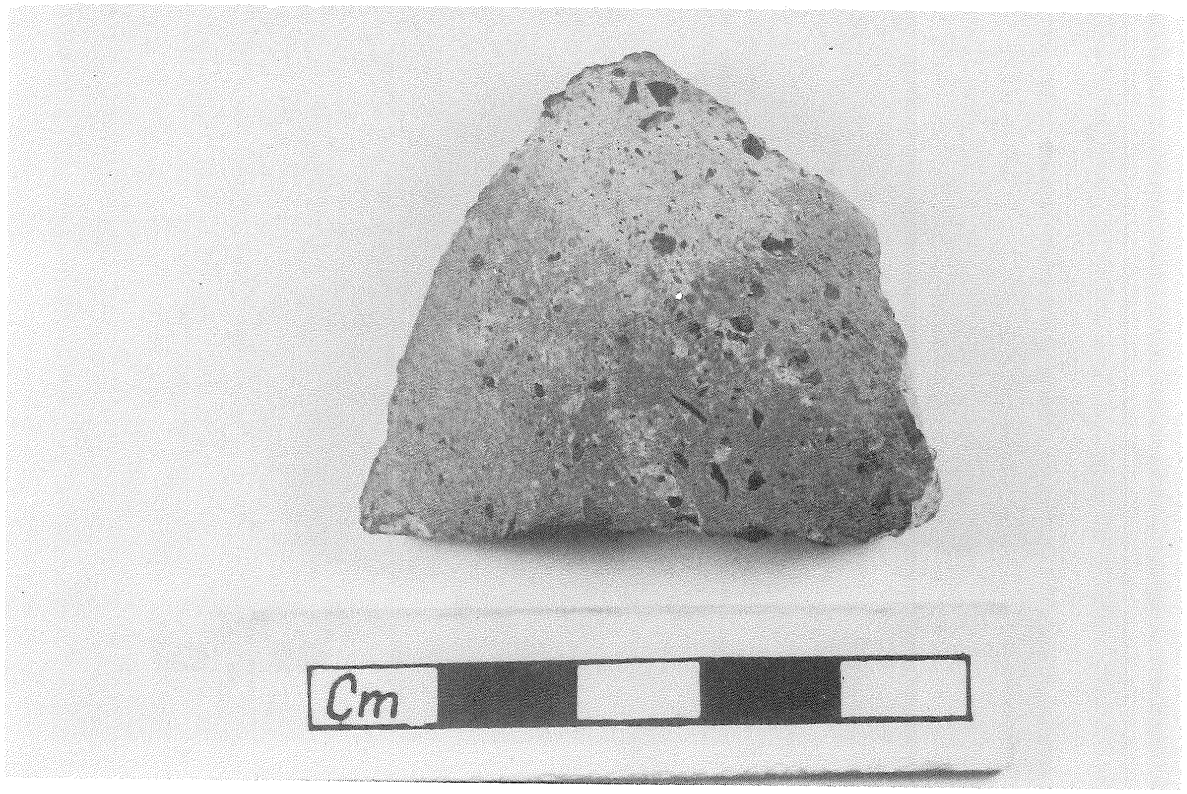
1. Hidheb el Fala - wall foundations and cairns.



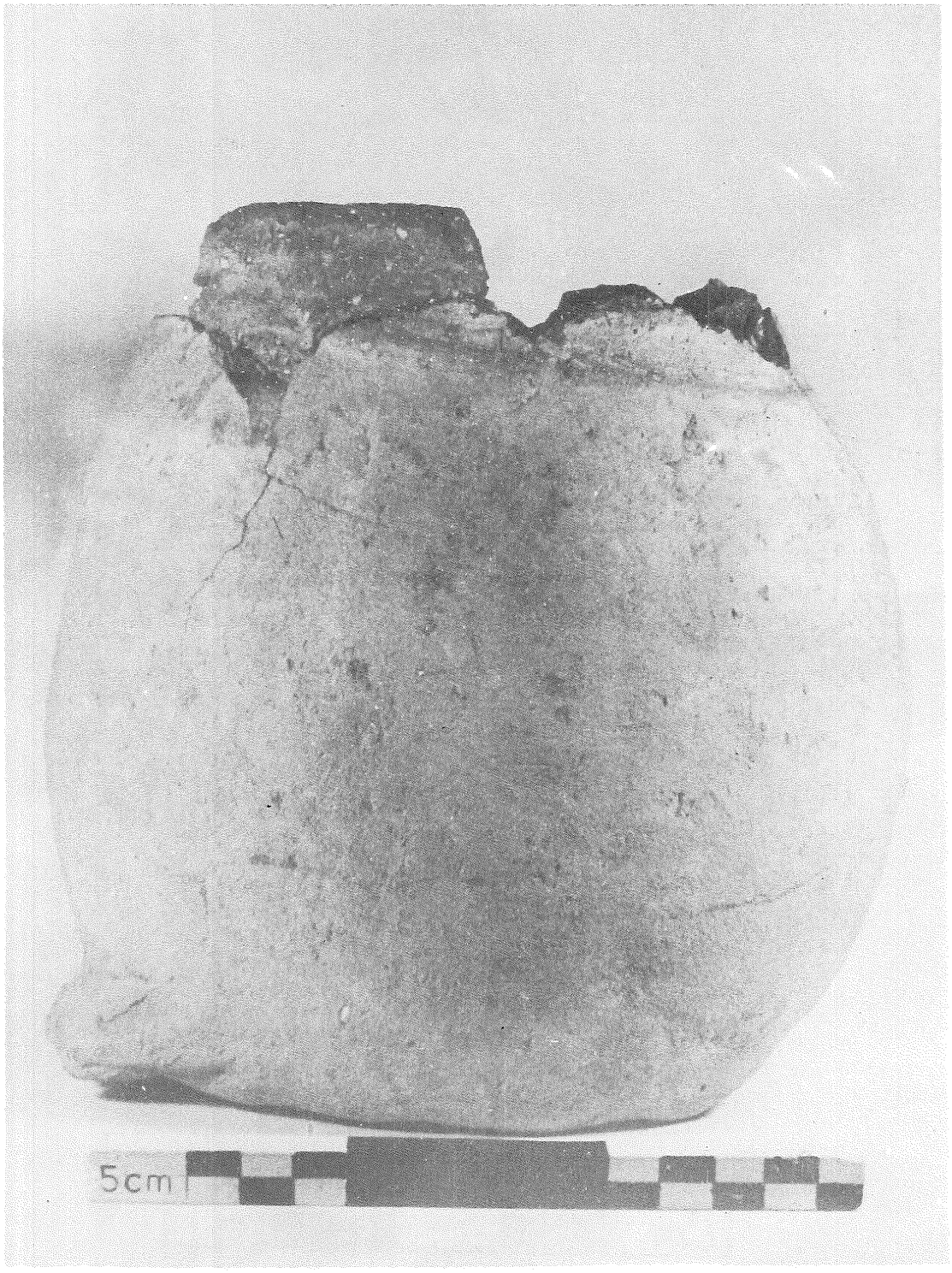
2. Hidheb el Fala.



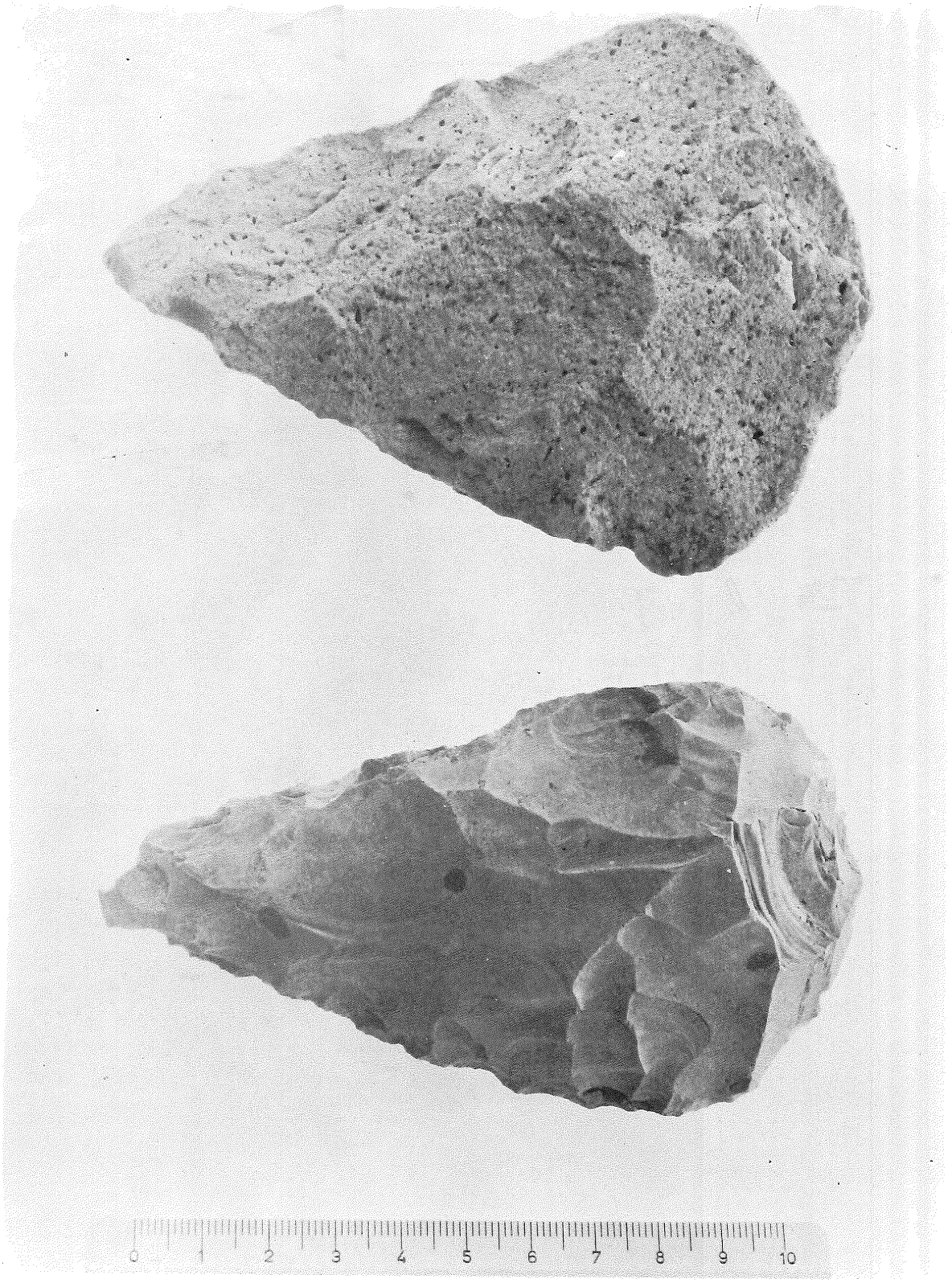
1. Early Iron Age Midianite Sherd. Um Guweʿah.

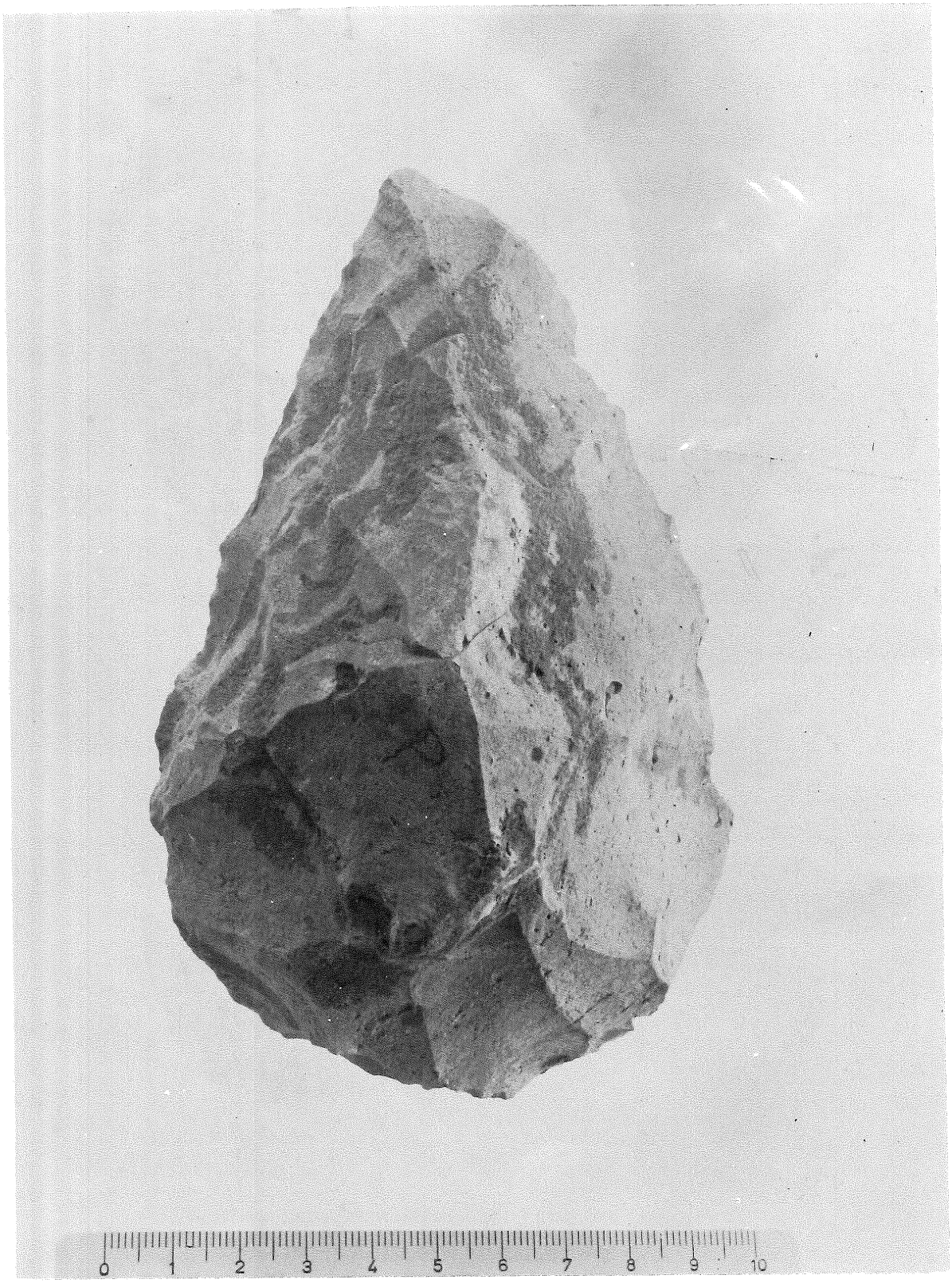


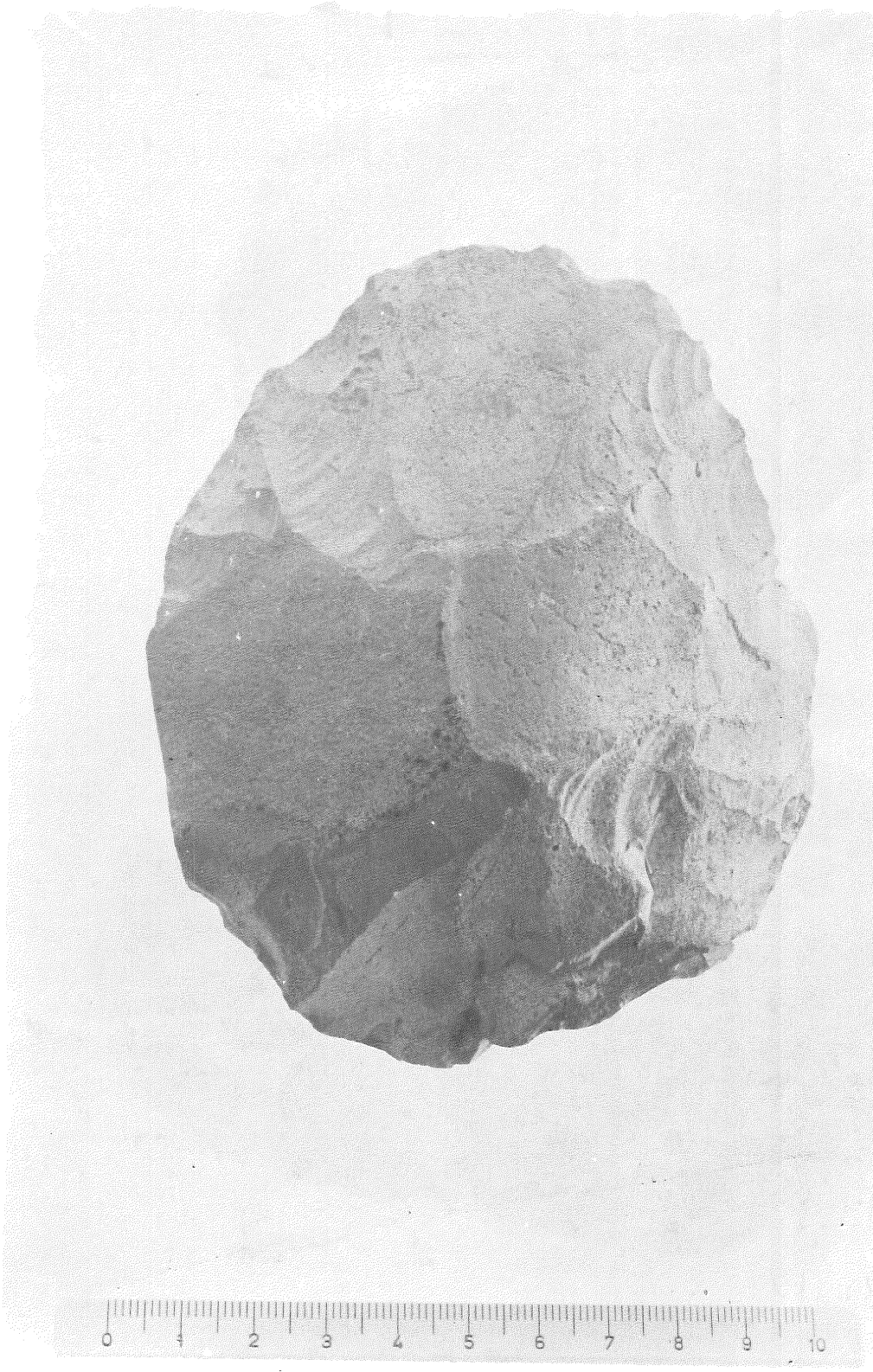
2. Early Iron Age Midianite Sherd. Um Guweʿah.



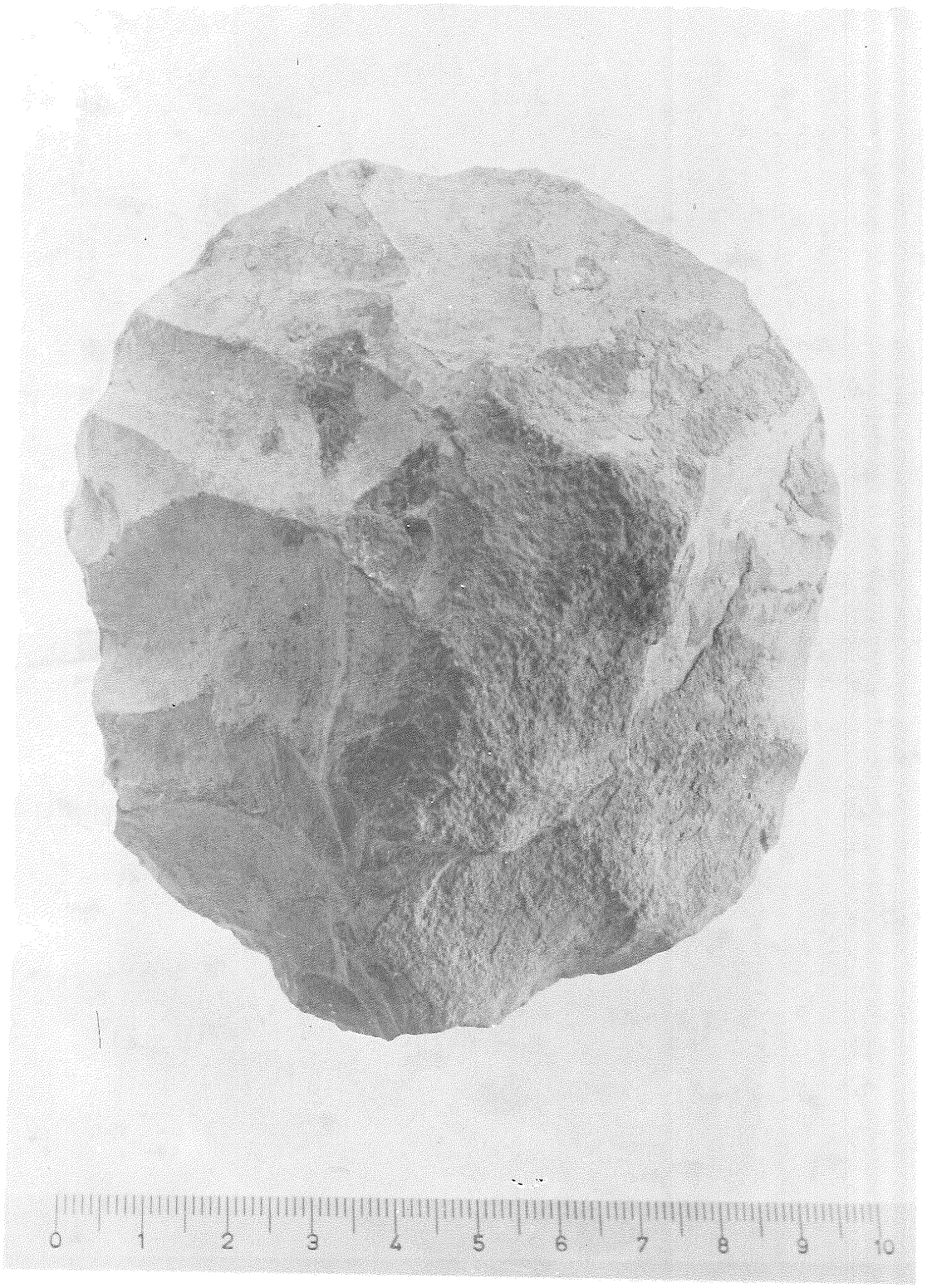
1. Chalcolithic Pot from Rewes el Khal.


0 1 2 3 4 5 6 7 8 9 10


0 1 2 3 4 5 6 7 8 9 10

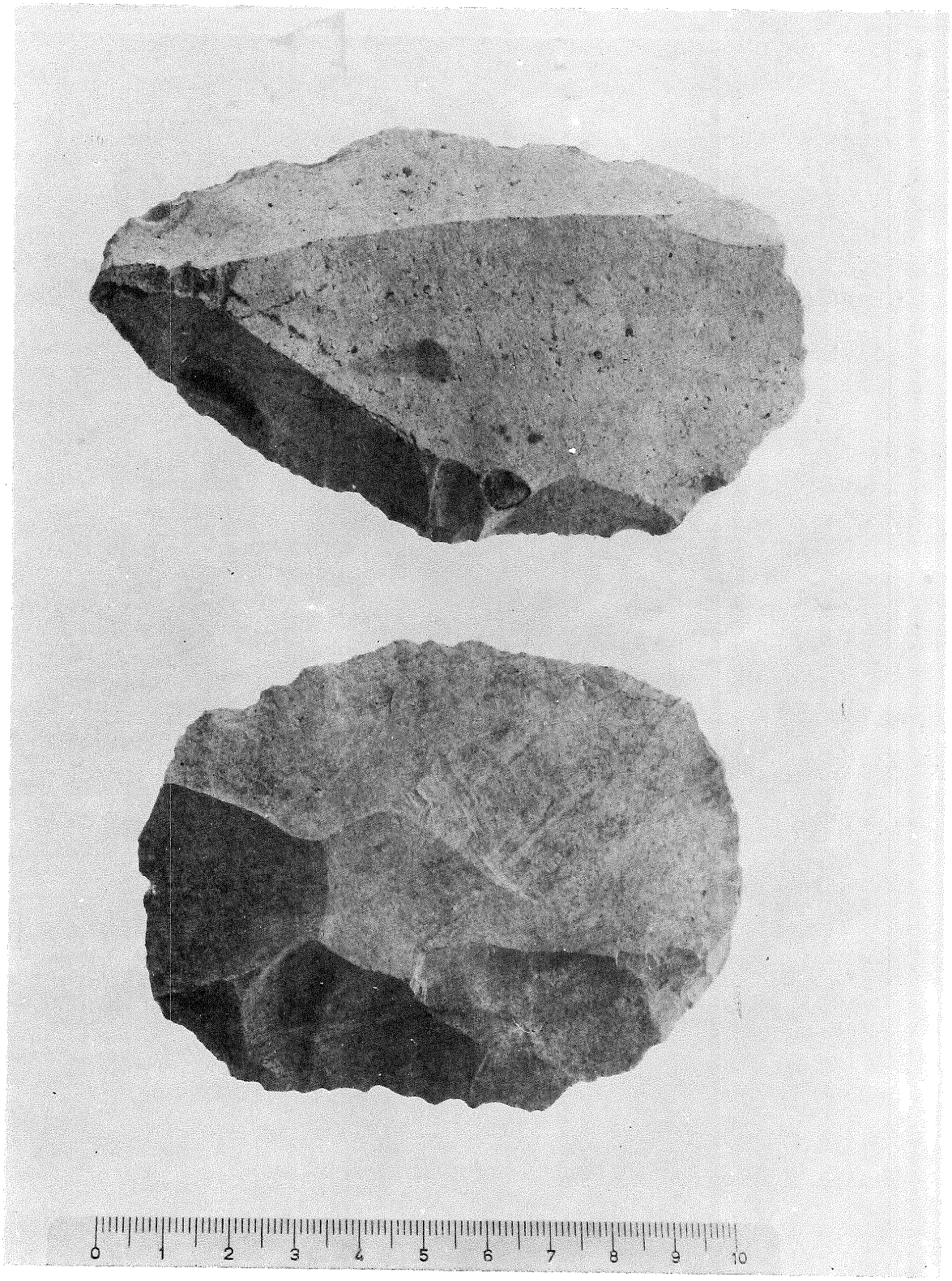

0
1
2
3
4
5
6
7
8
9
10


0 1 2 3 4 5 6 7 8 9 10

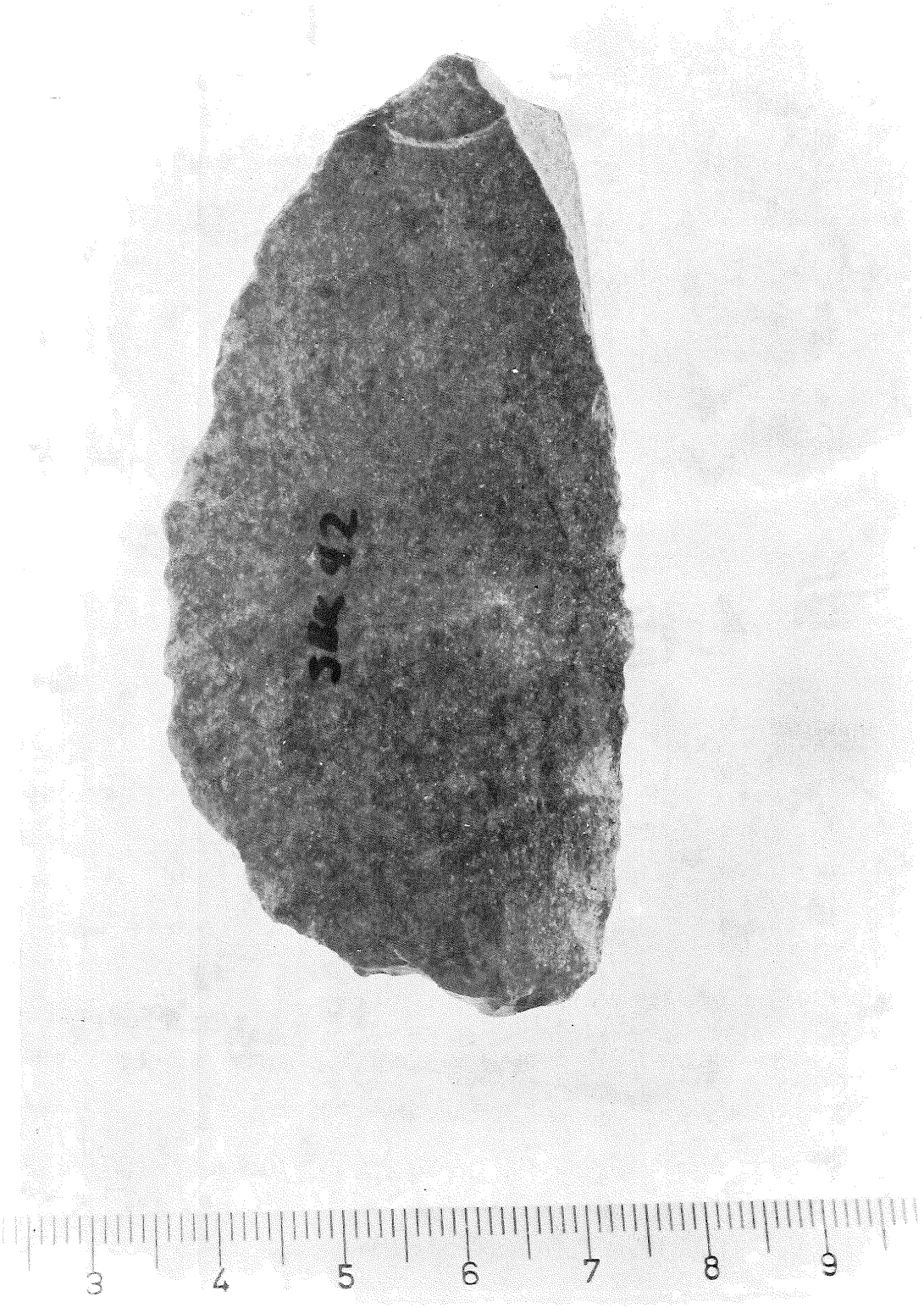

0
1
2
3
4
5
6
7
8
9
10

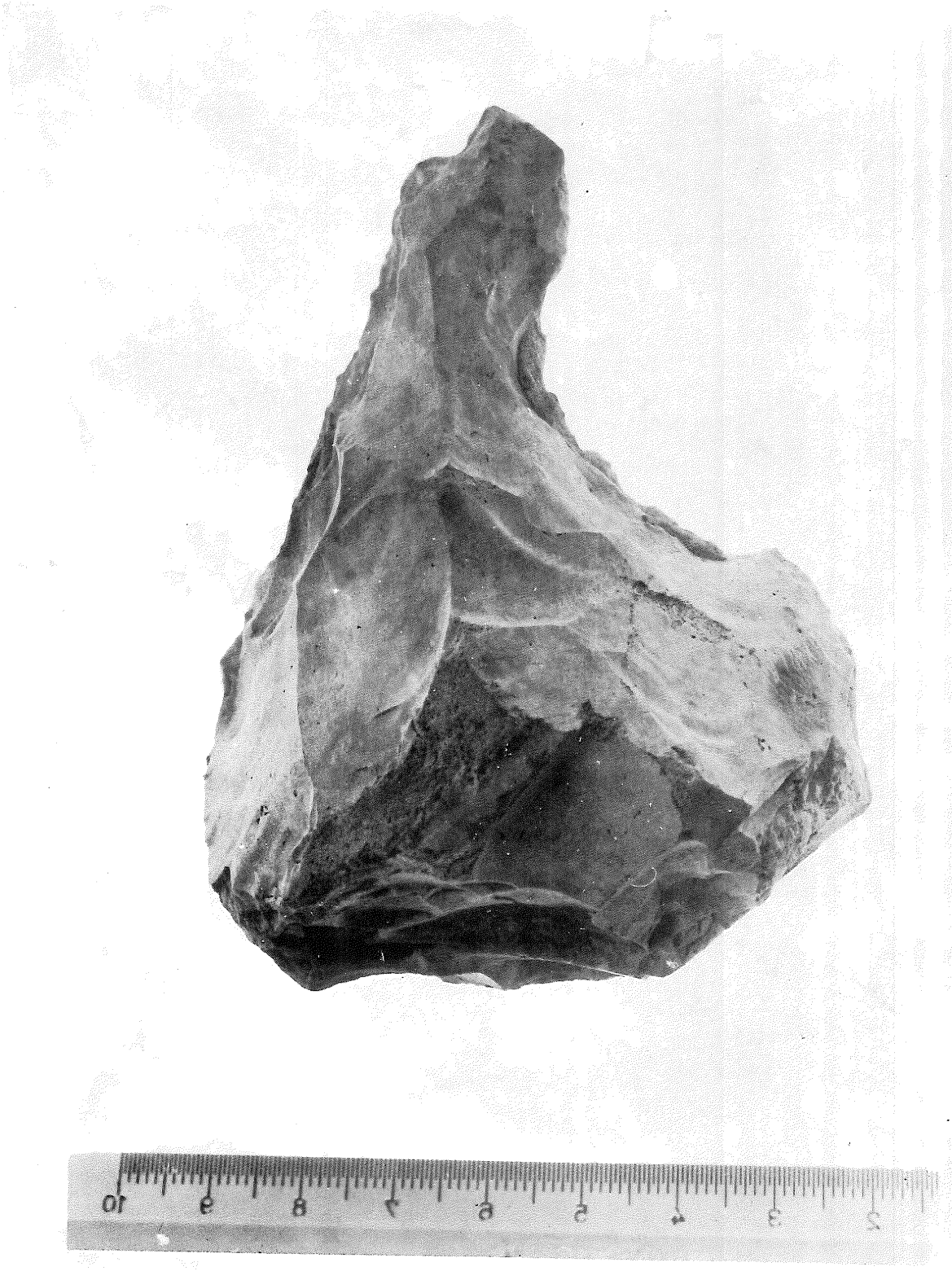
G. O. Rollefson — Pl. XXXVIII

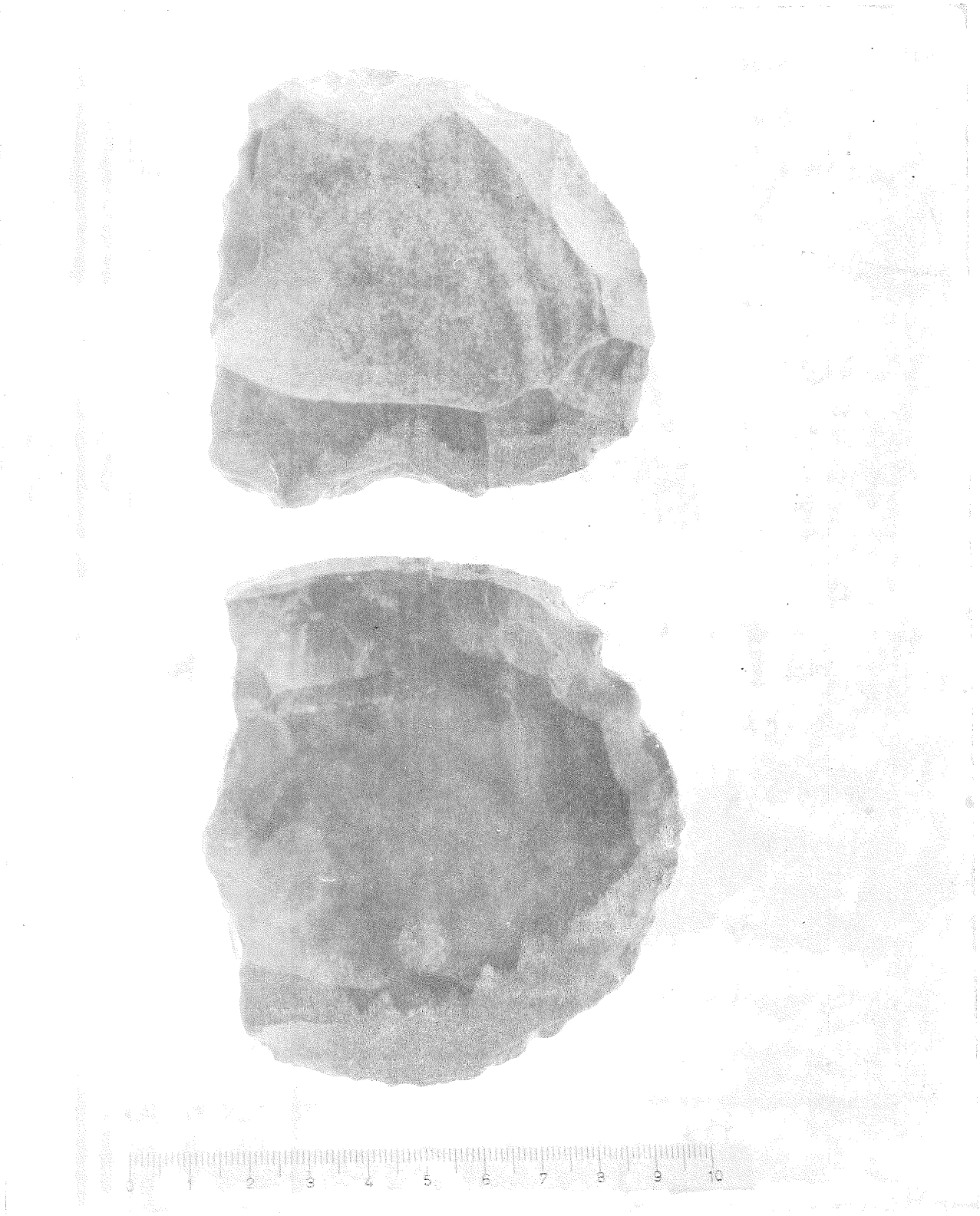


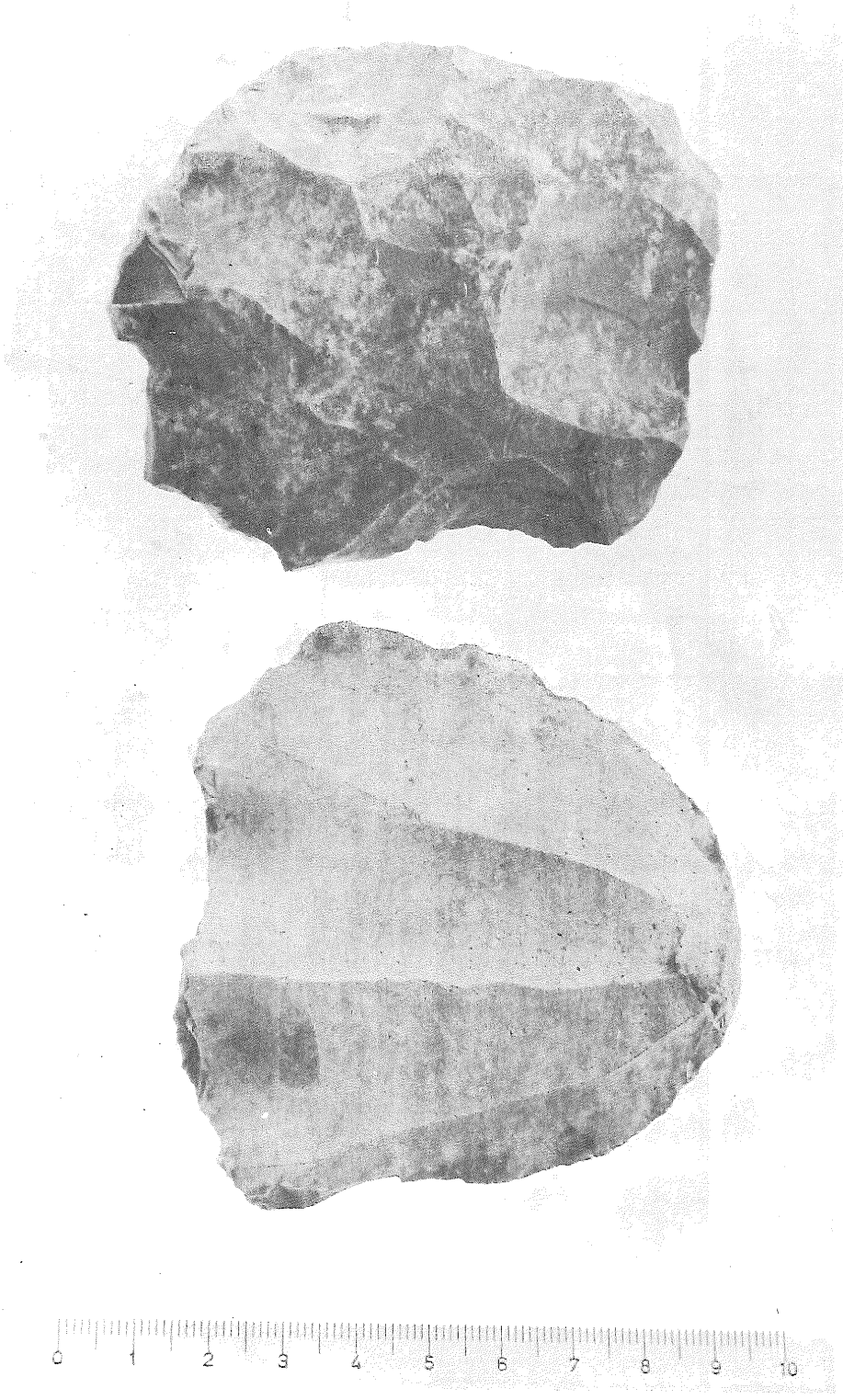

0 1 2 3 4 5 6 7 8 9 10

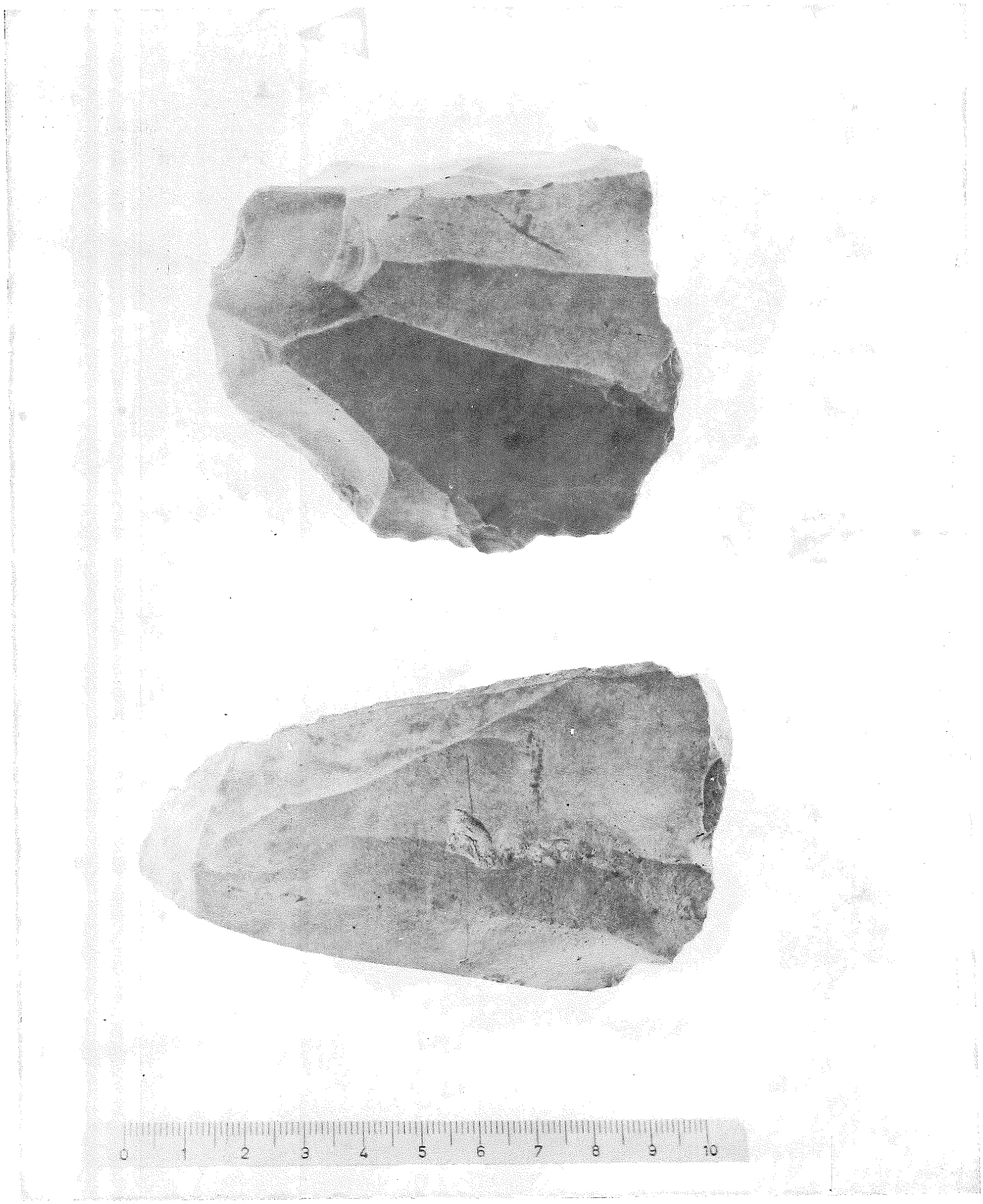
G. O. Rollefson — Pl. XL

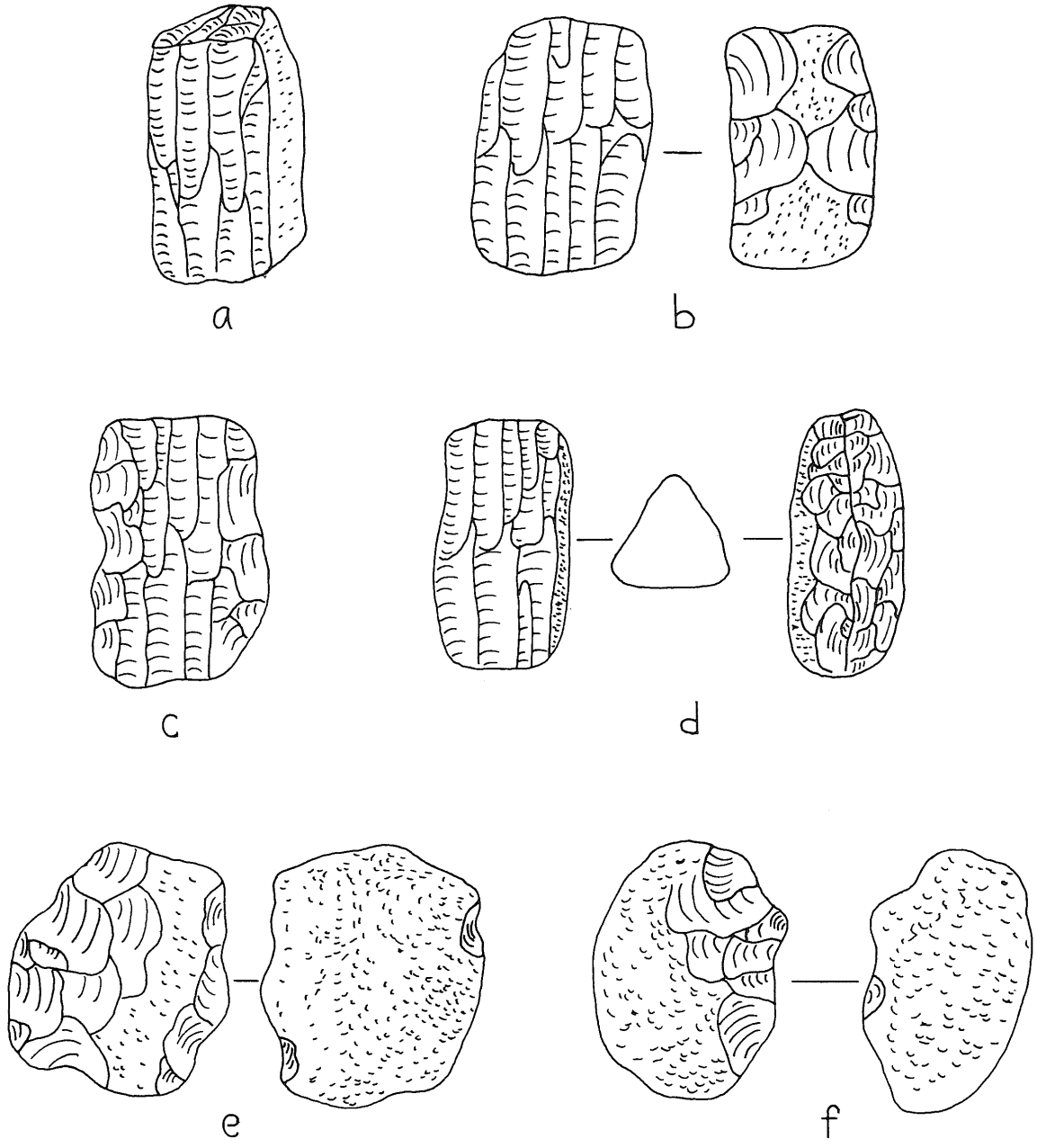


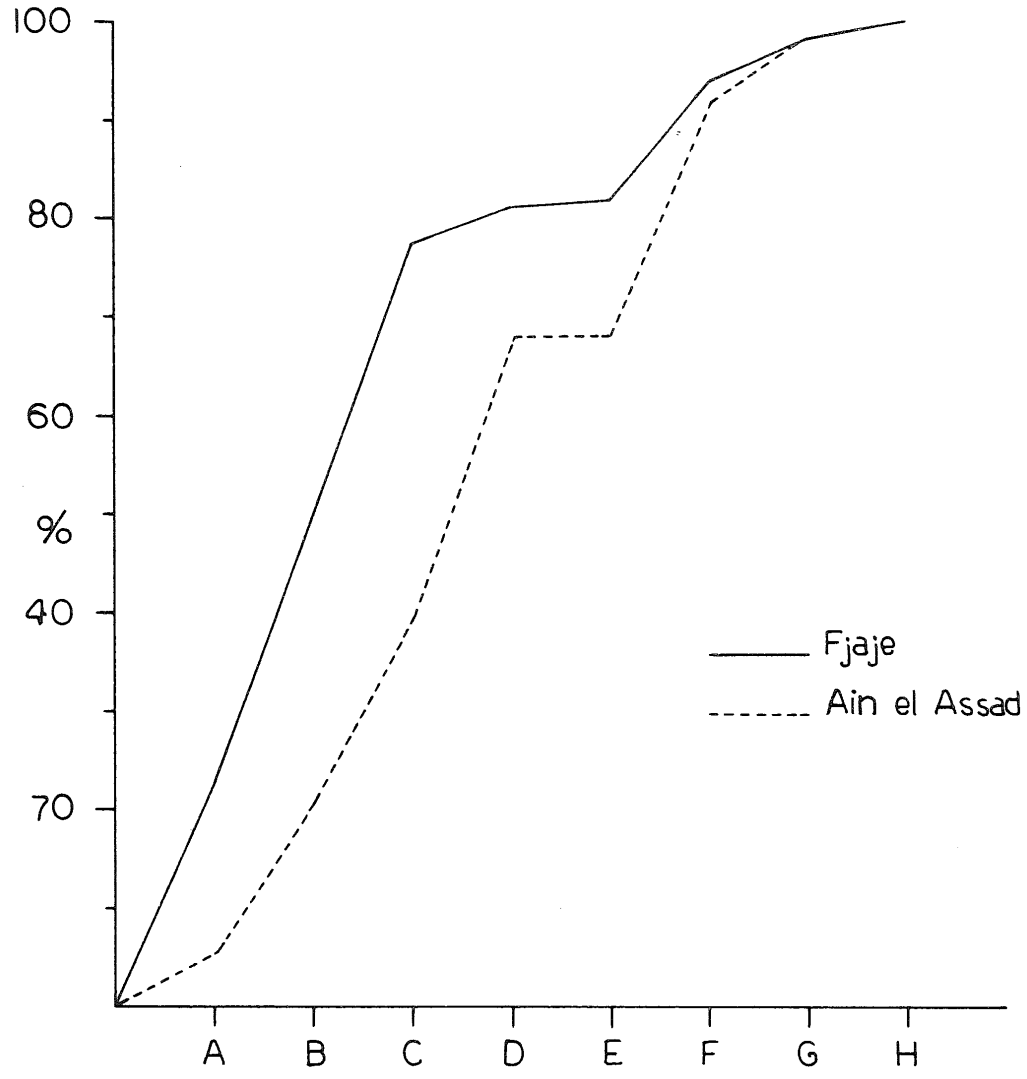


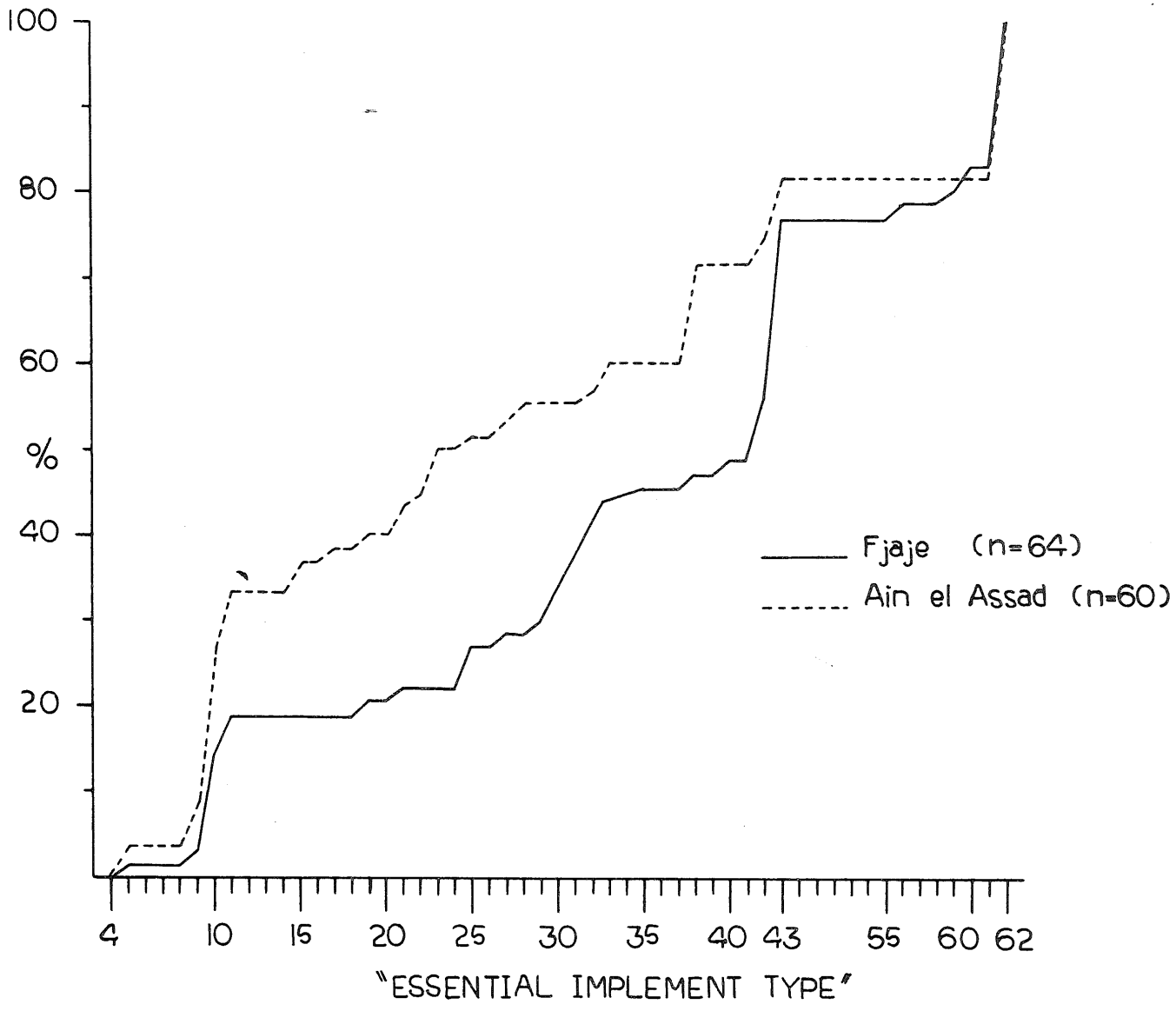



0 1 2 3 4 5 6 7 8 9 10


0 1 2 3 4 5 6 7 8 9 10

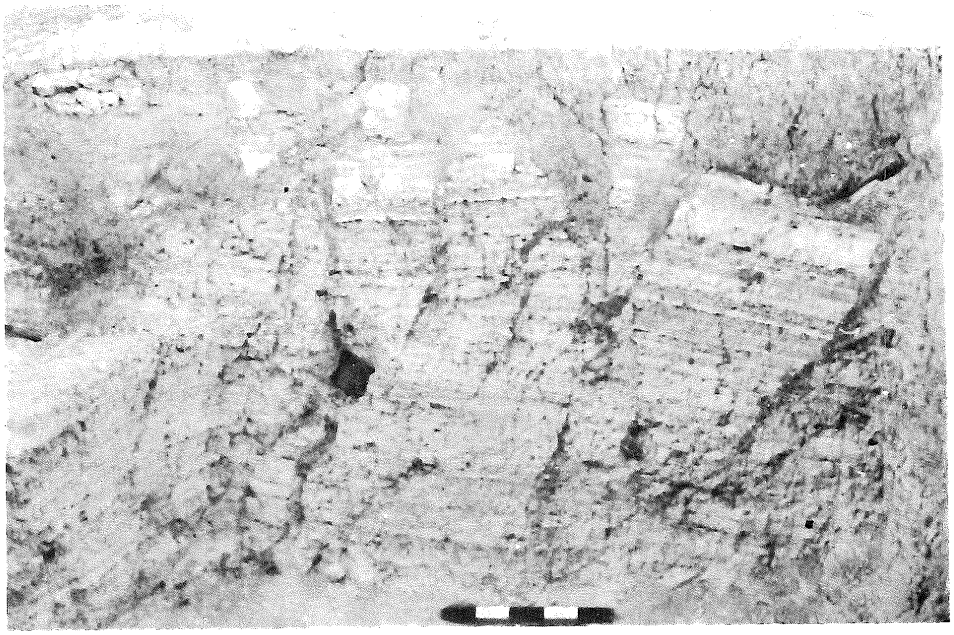

a
b
c
d
e
f


100
80
60
%
40
70
A
B
C
D
E
F
G
H
Fjaje
Ain el Assad


100
80
60
%
40
20
Fjaje (n=64)
Ain el Assad (n=60)
4
10
15
20
25
30
35
40
43
55
60
62
"ESSENTIAL IMPLEMENT TYPE"



1. View of the Kataret es-Samra area from the southwest.



2. Retrimmed North balk of the Site II, L.B. tomb illustrating the natural, geological stratigraphy.



1. The existing diagonal, western balk, after retrimming. Note the crushed bowl in the center still containing the animal bones of the funerary offering.



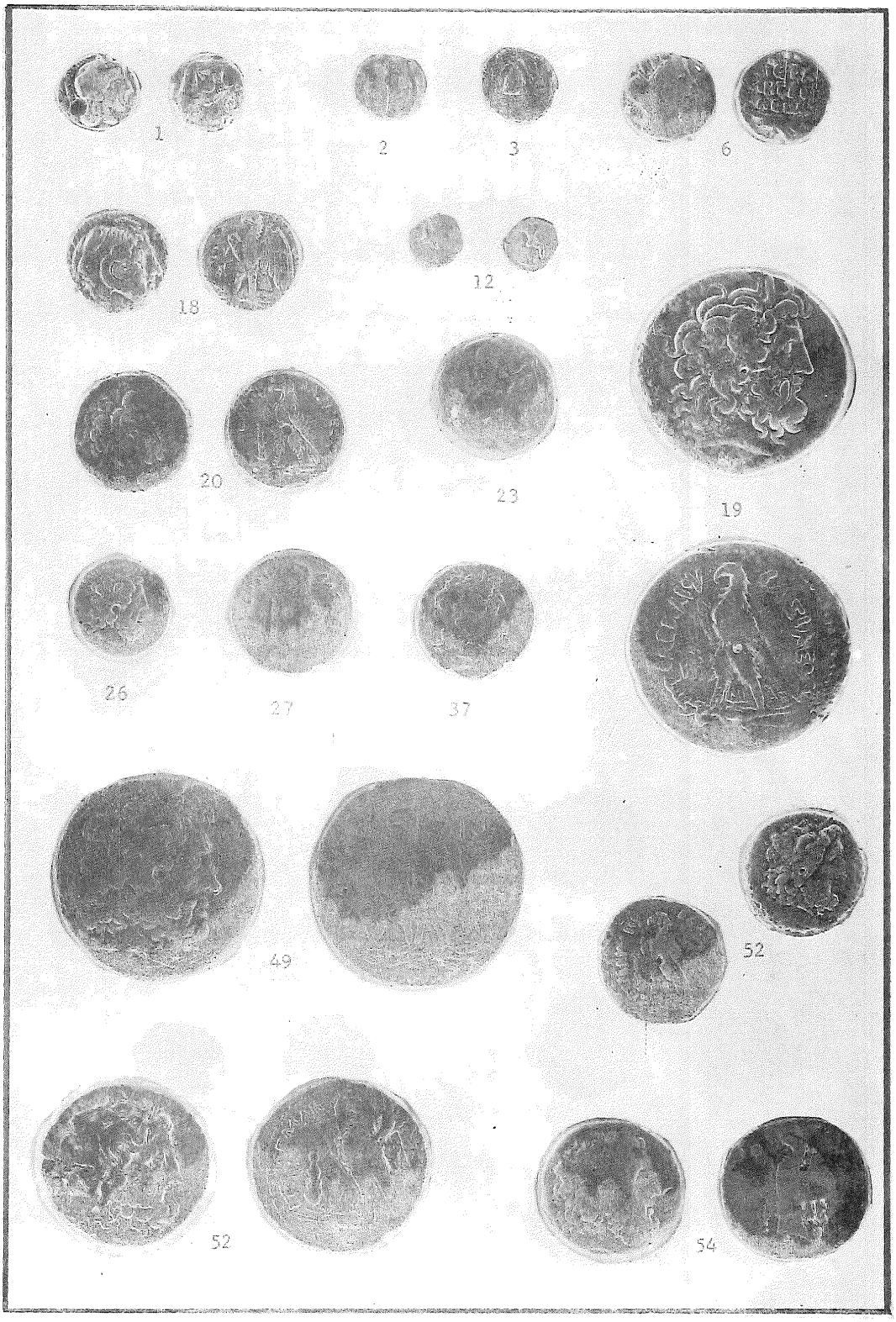
2. Detail of the crushed and scattered skeletal remains in the western loculus.



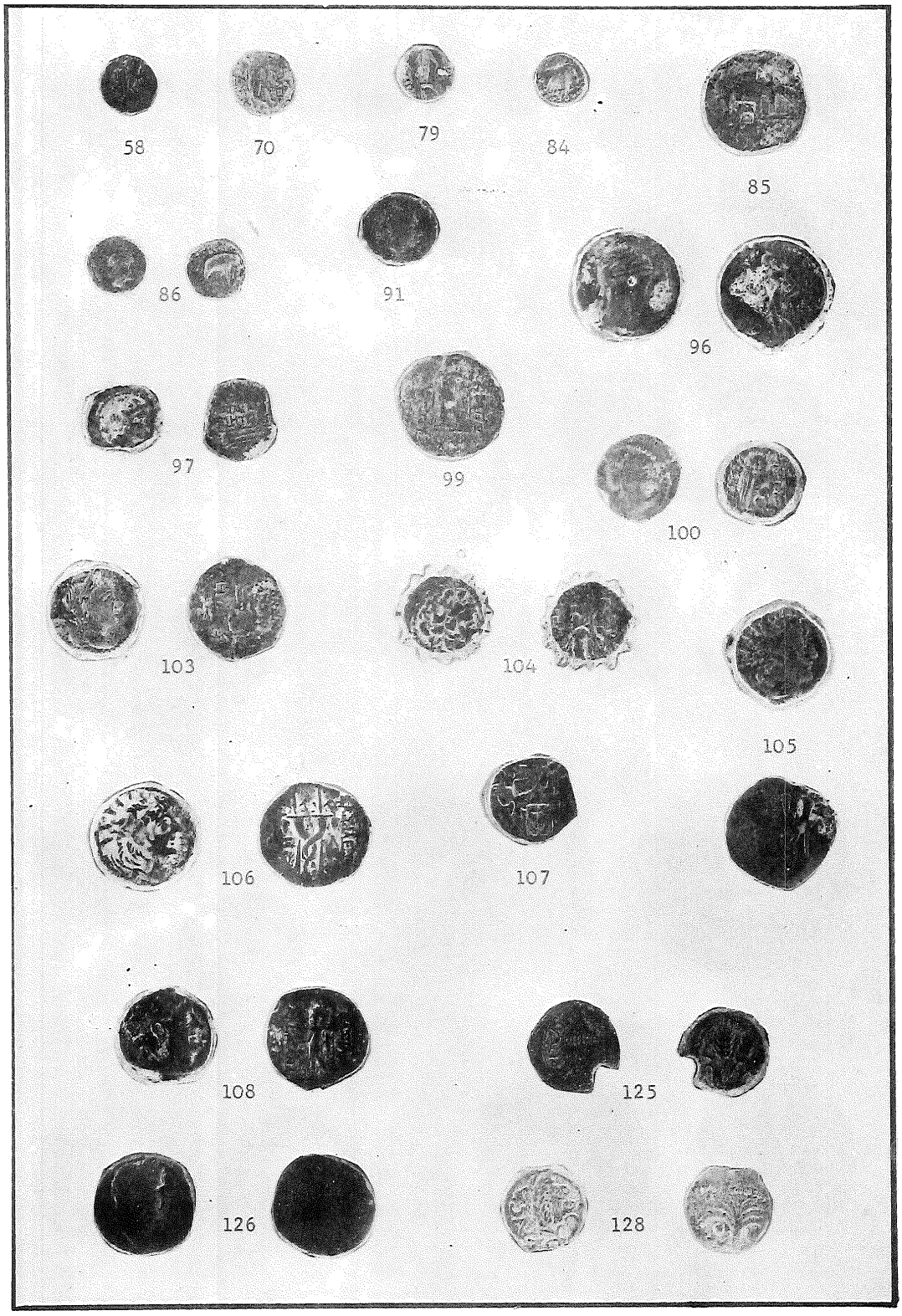
1. Double daric of the IV th Century B.C.



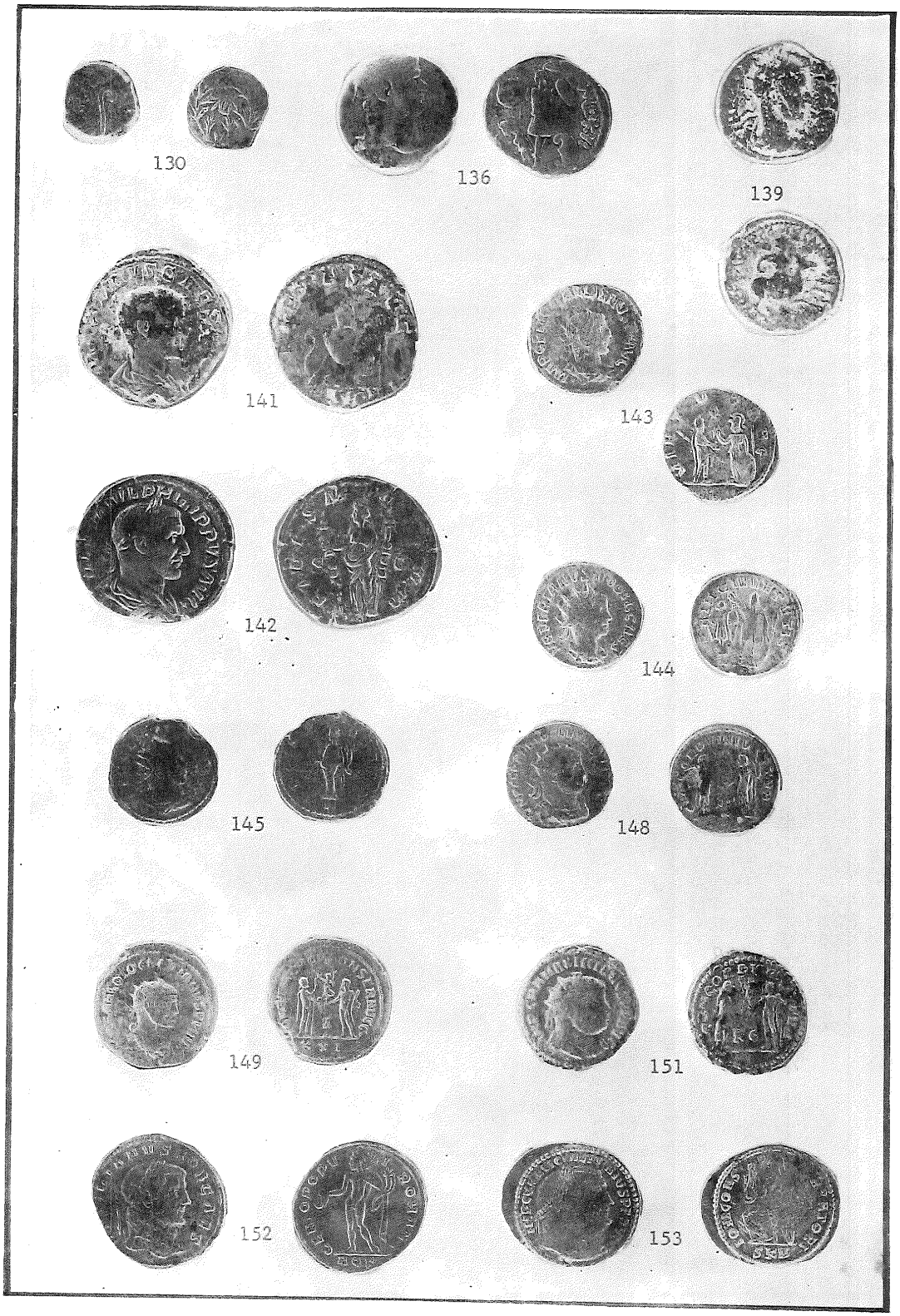
2- The theatre of Samaria after the 1967 excavations Hellenistic and Assyrian walls in the background.



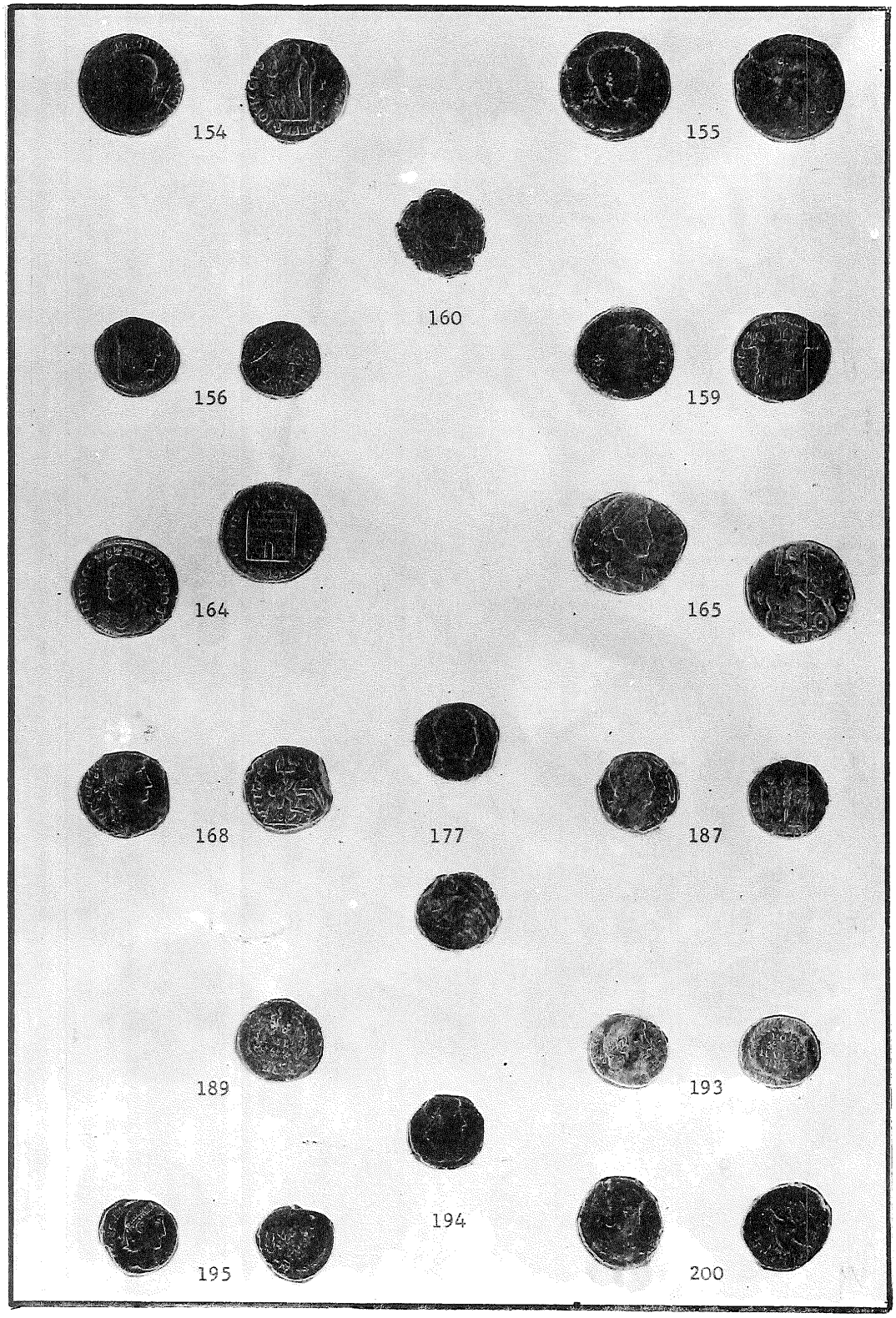
Samaria - Sebaste Coins



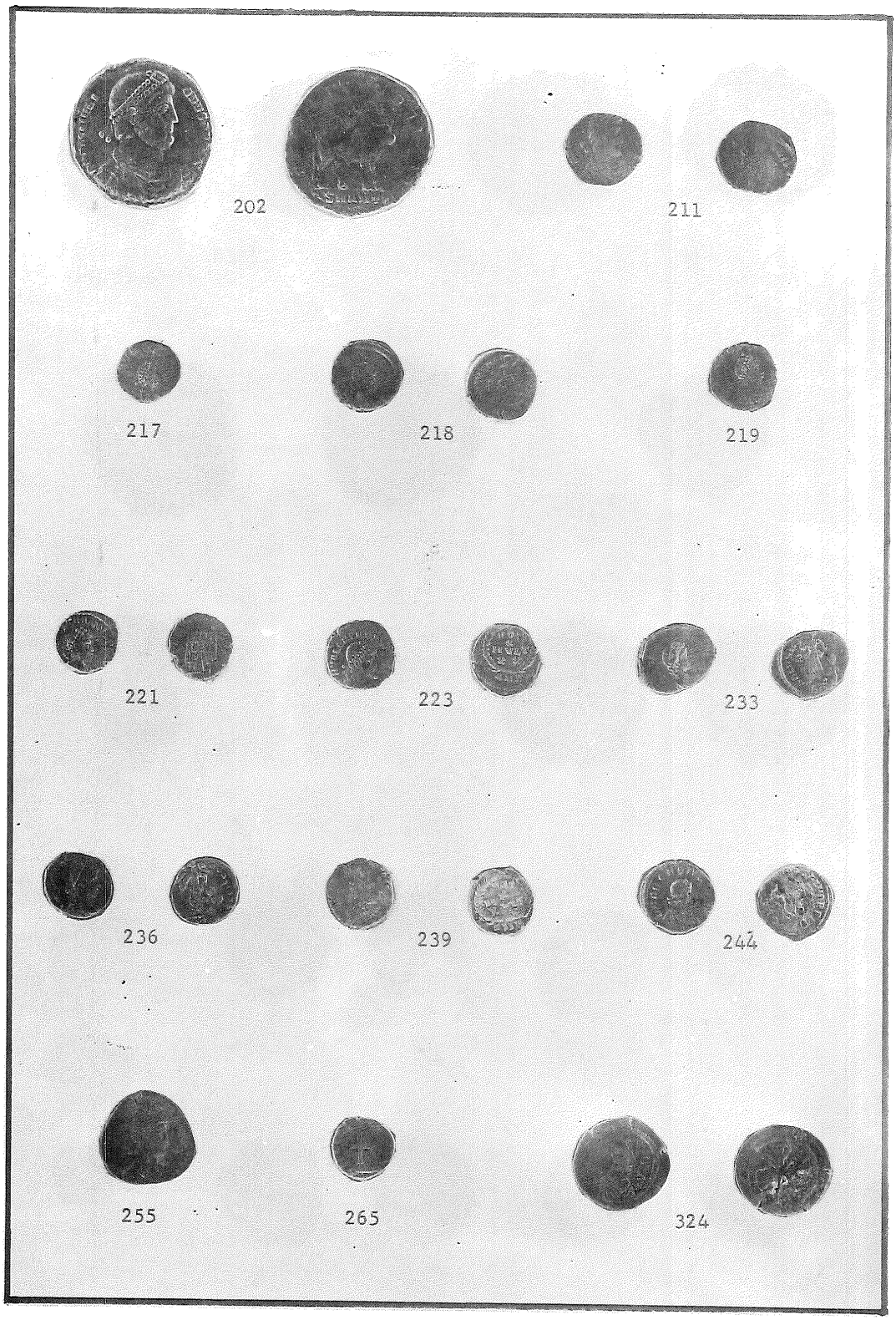
Samaria - Sebaste Coins



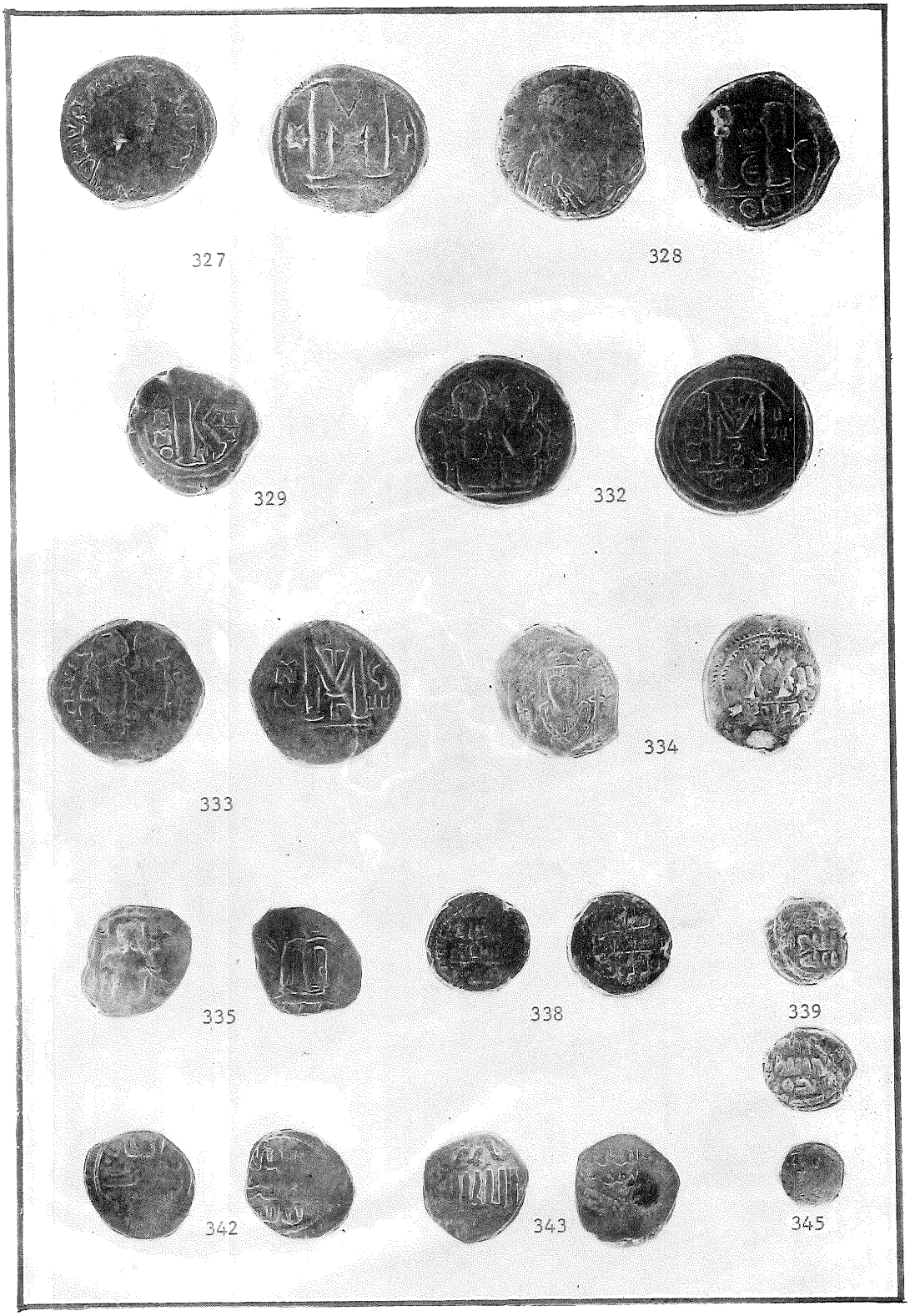
Samaria - Sebaste Coins



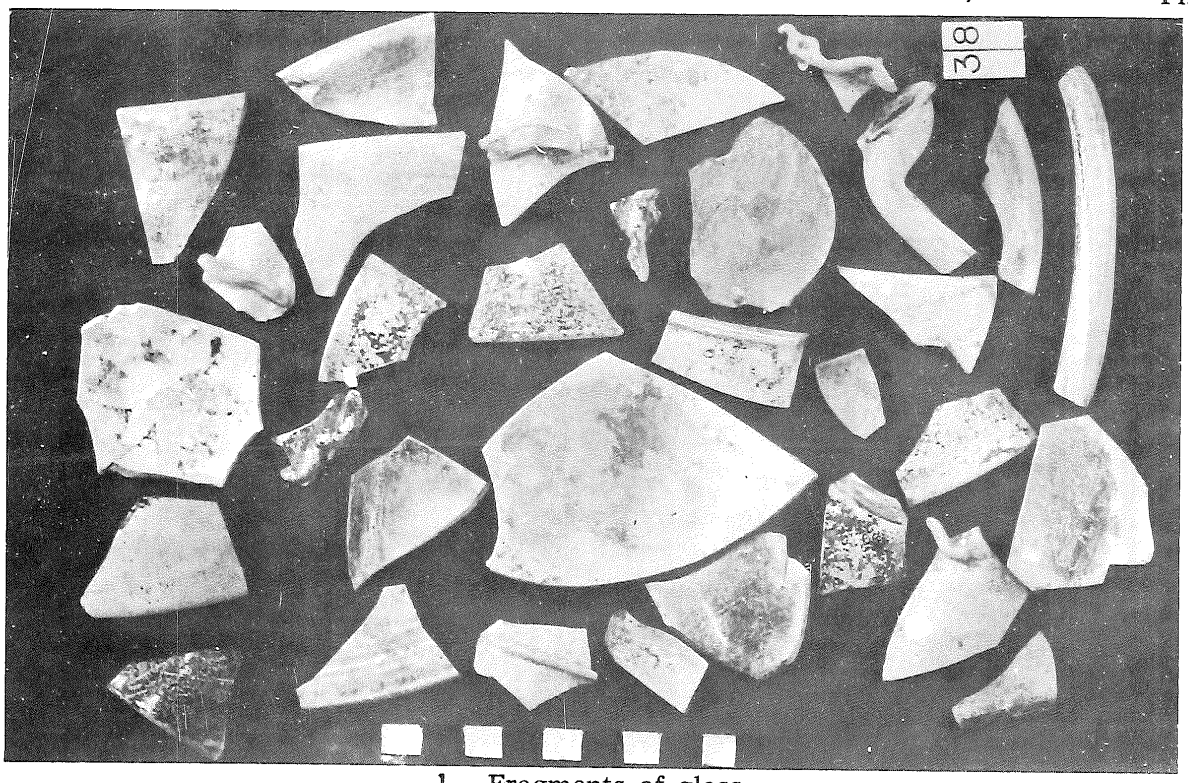
Samaria - Sebaste Coins



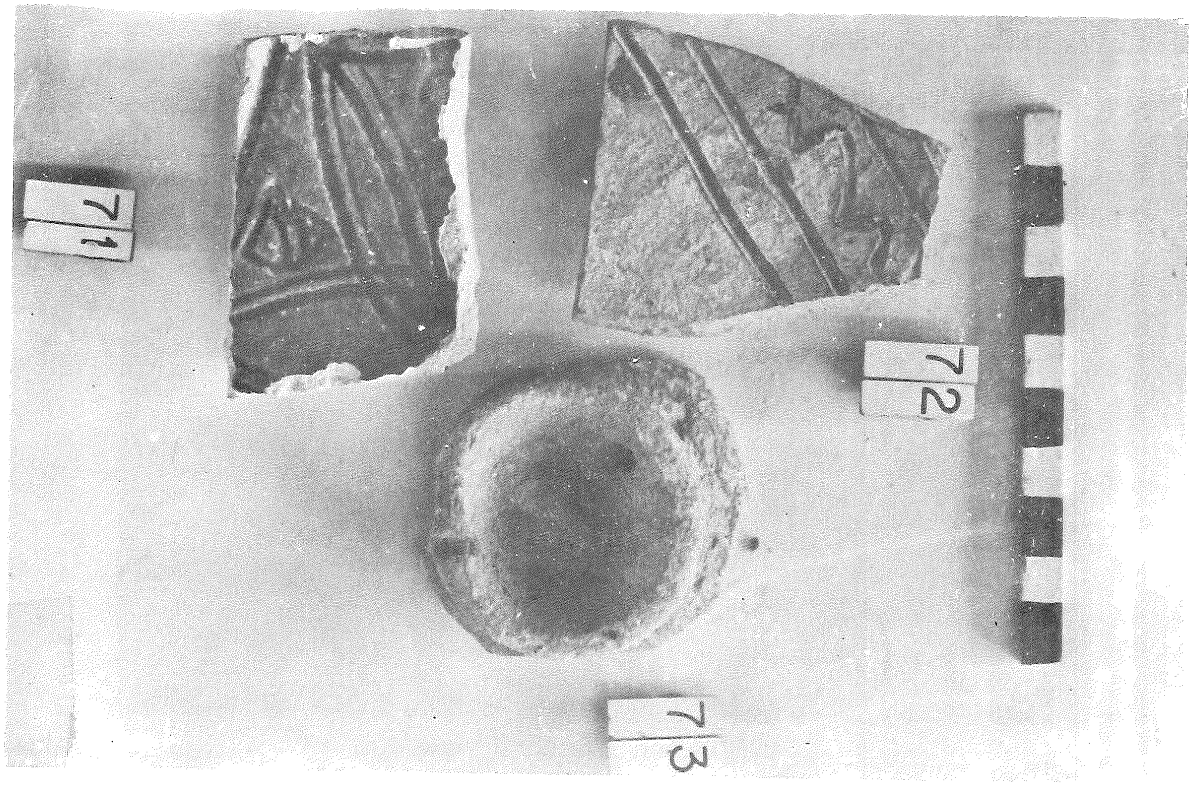
Samaria - Sebaste Coins



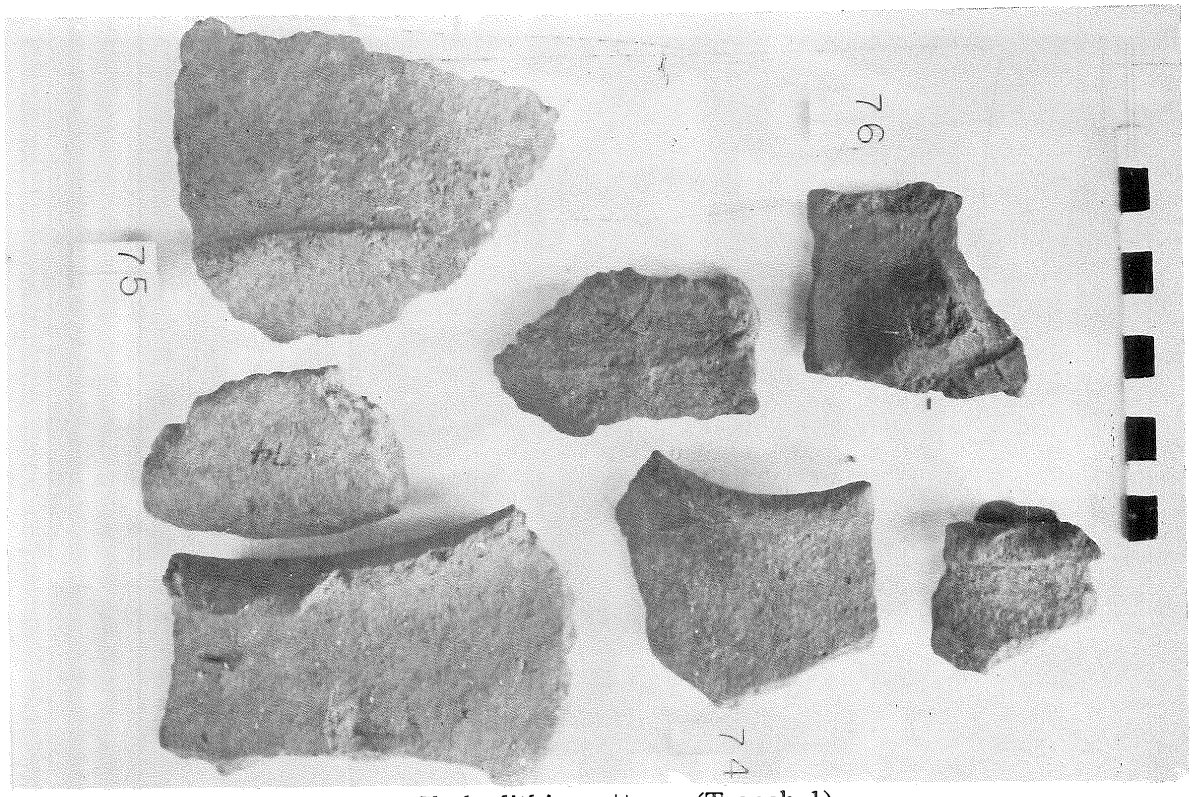
Samaria - Sebaste Coins



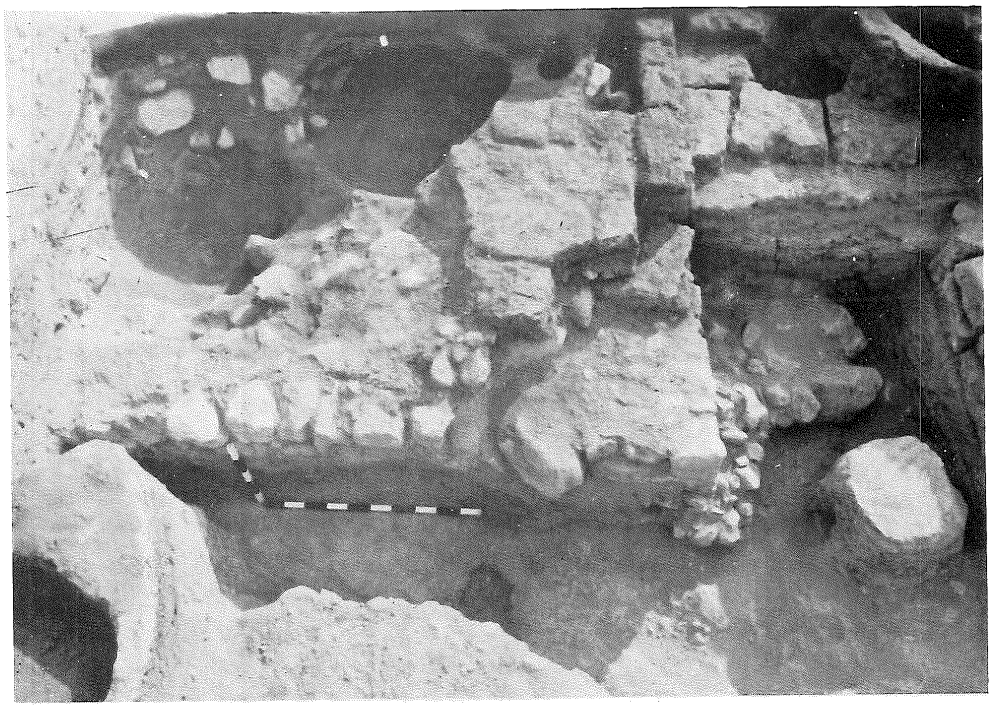
1. Fragments of glass.



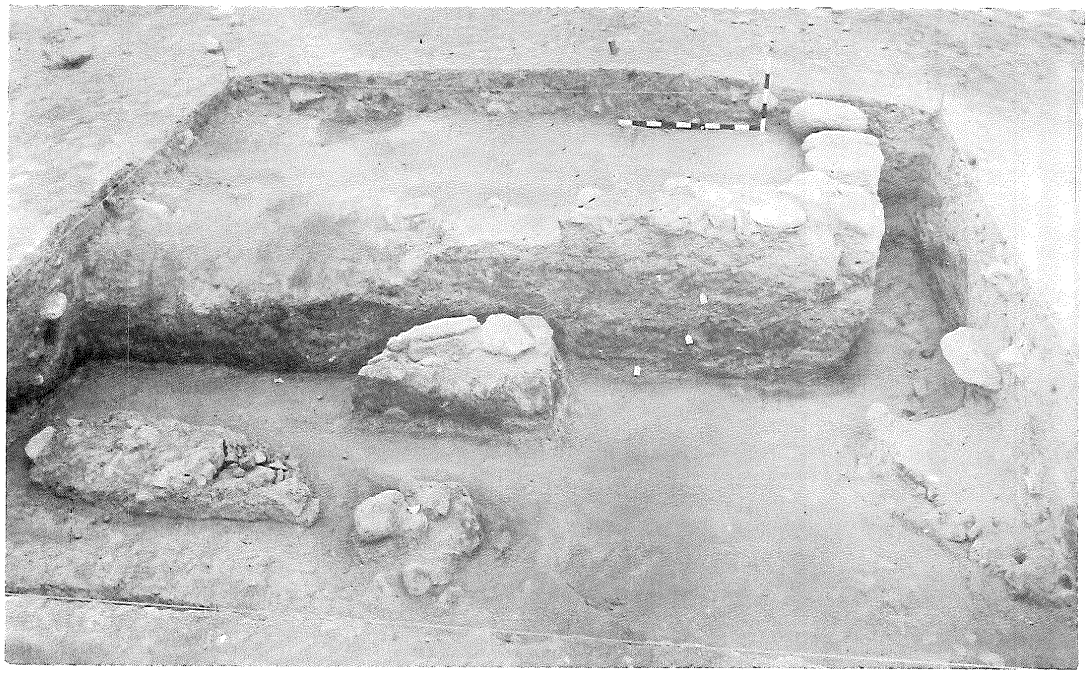
2. Ayyubid - Mamluk & Fatimid pottery.



1. Chalcolithic pottery. (Trench 1)



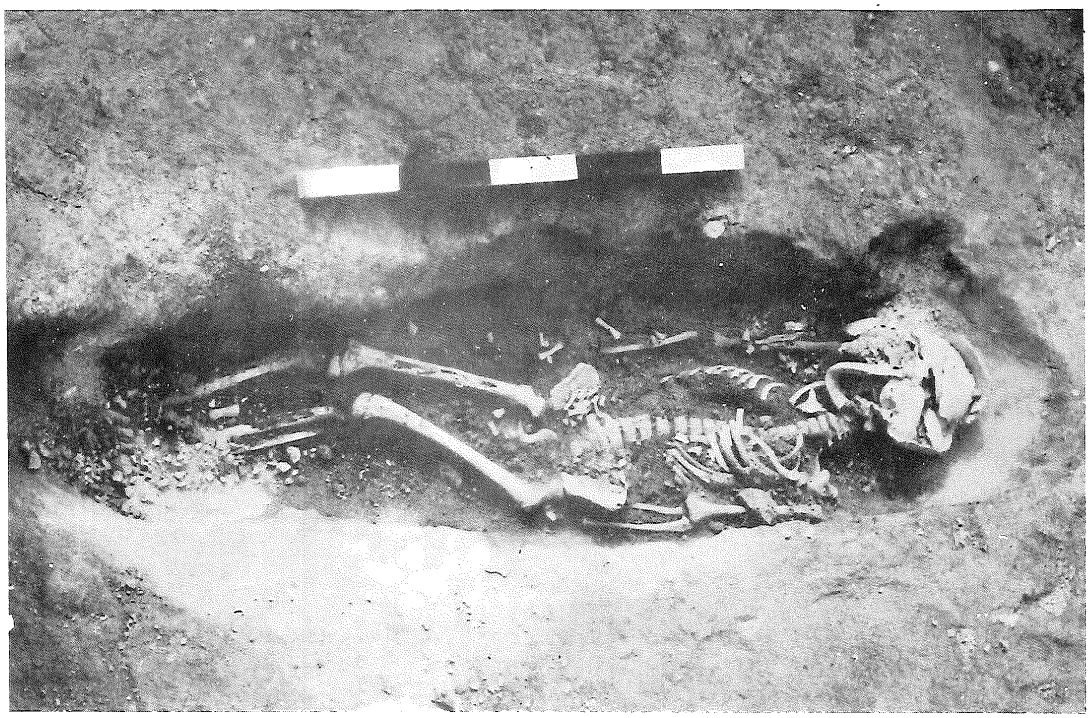
2. Trench 1 General view.



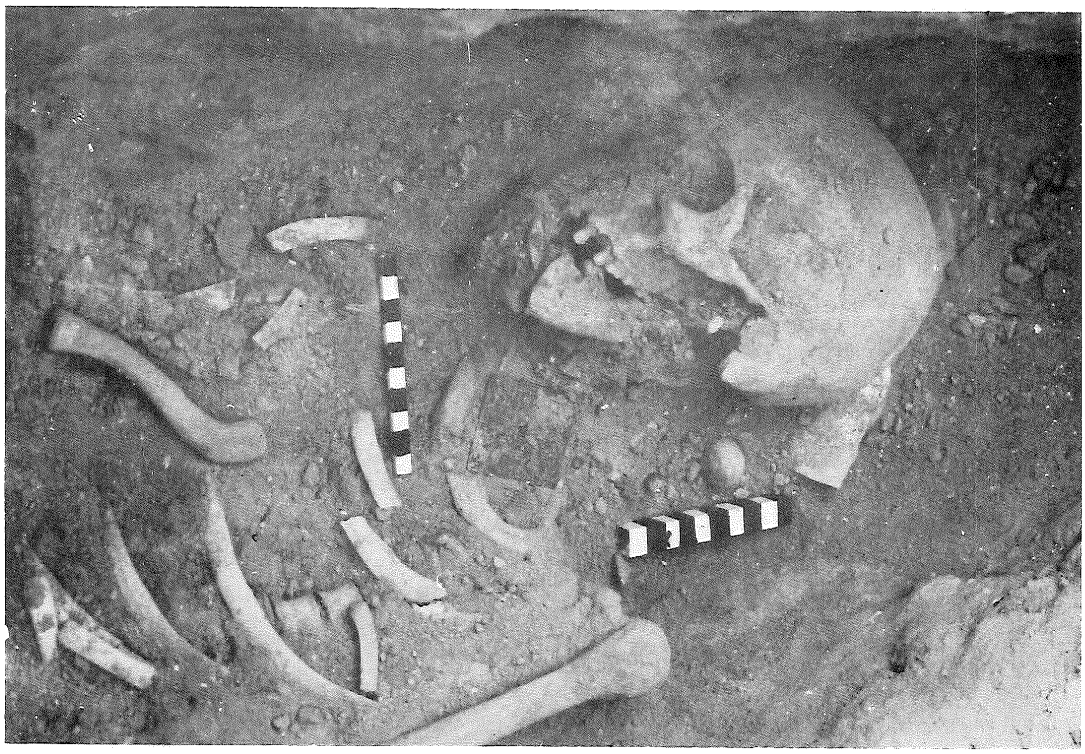
1. Trench 2 General view.



2. Trench 2 Tomb 1.



1. Trench 2 Tomb 2.



2. Trench 2 Tomb 3.



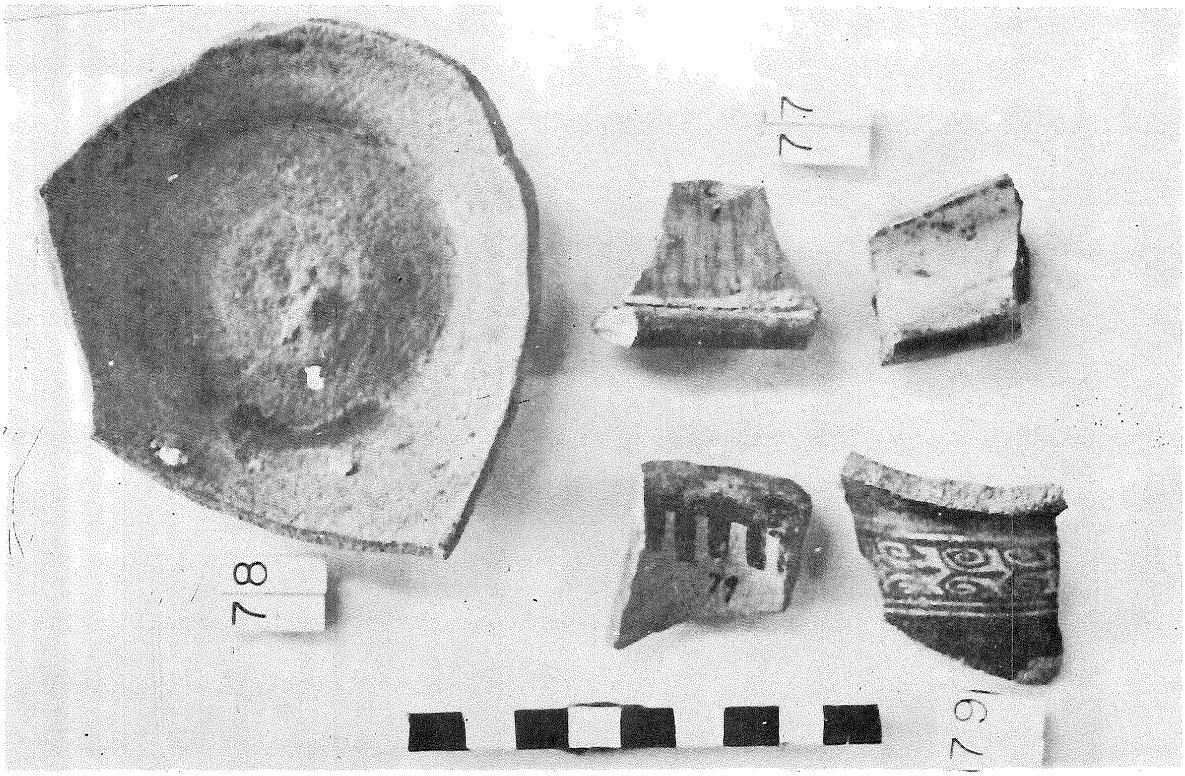
1. Trench 2
Tomb 4



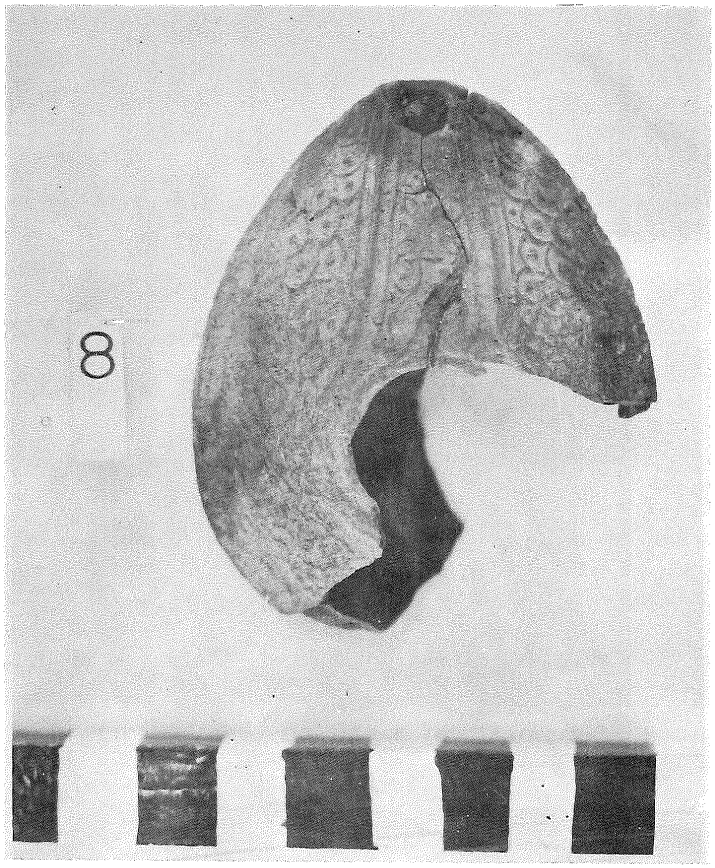
2. Tomb 5



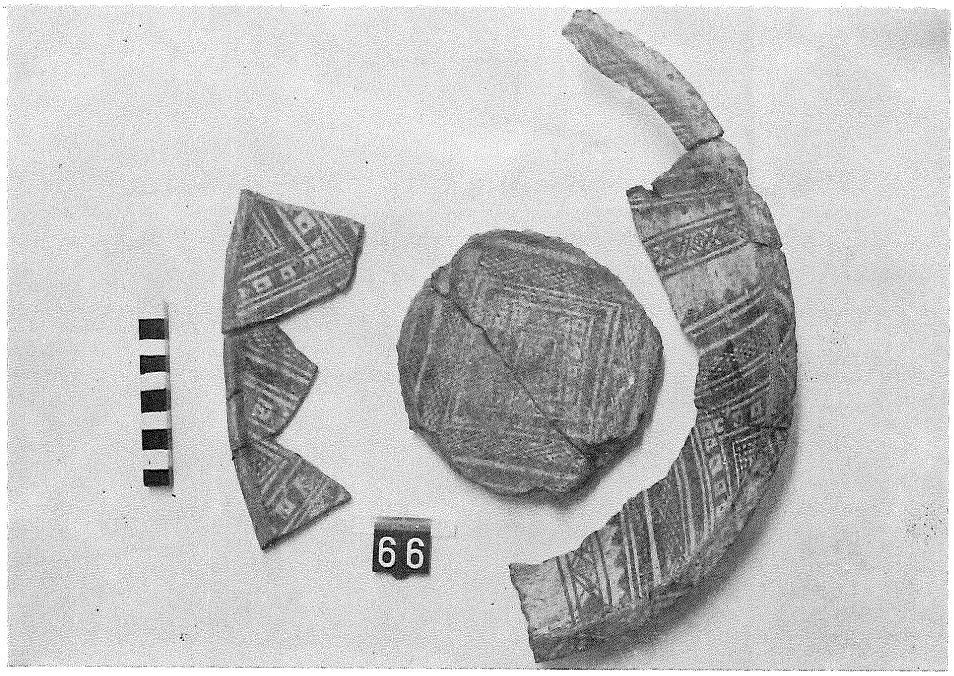
1. Ayyubid - Mameluk pottery.



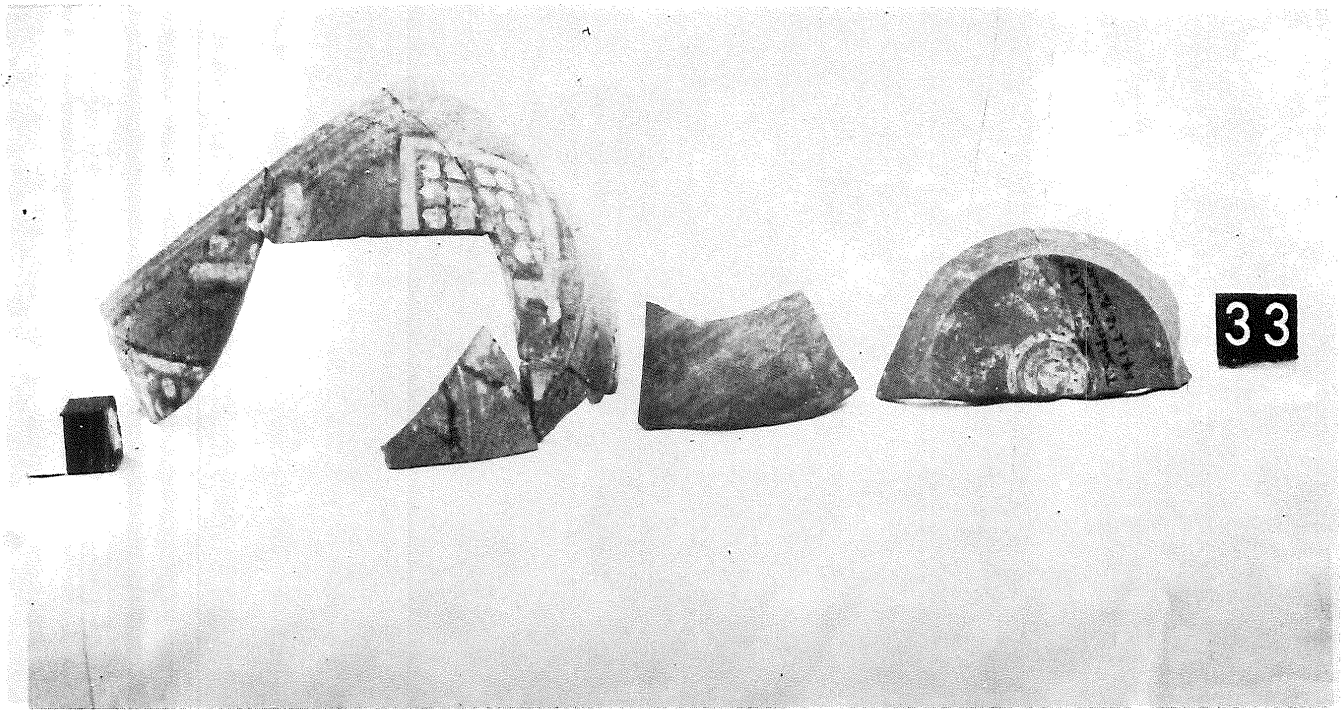
2. Ayyubid - Mameluk and Fatamid pottery.



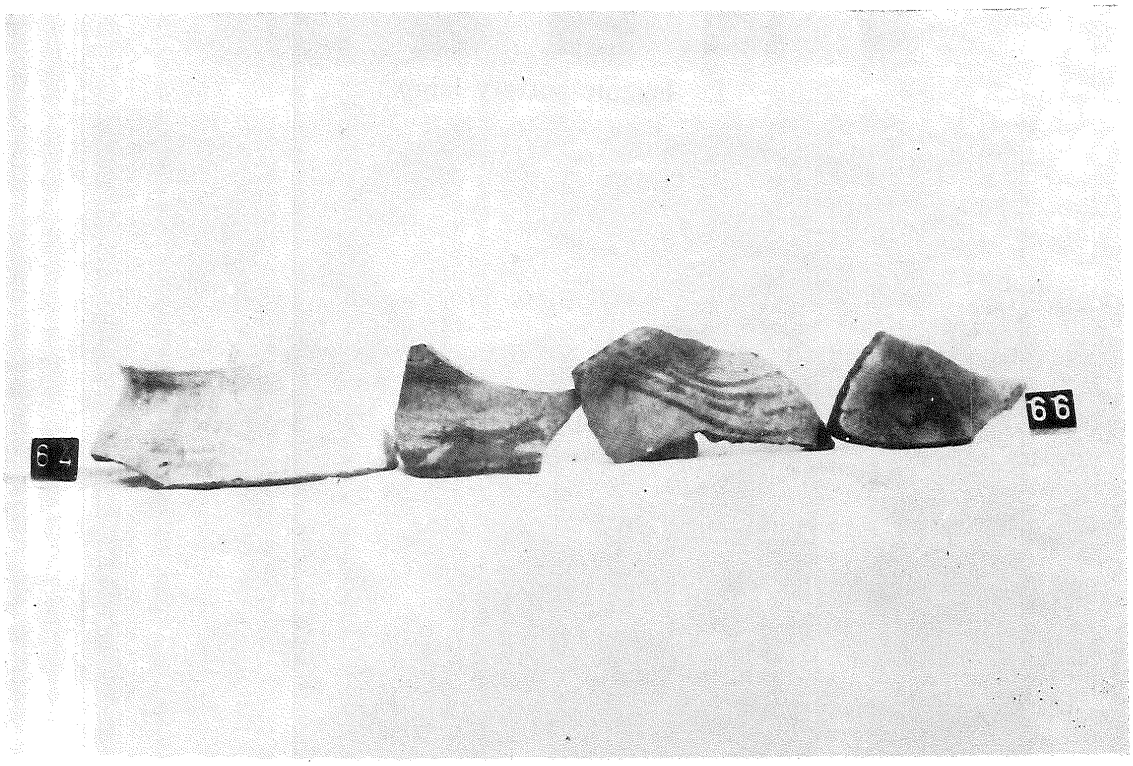
1. Islamic pottery lamp.



2. Painted pot (uncomplete)



1. Fragments of a painted Umayyad bowl.



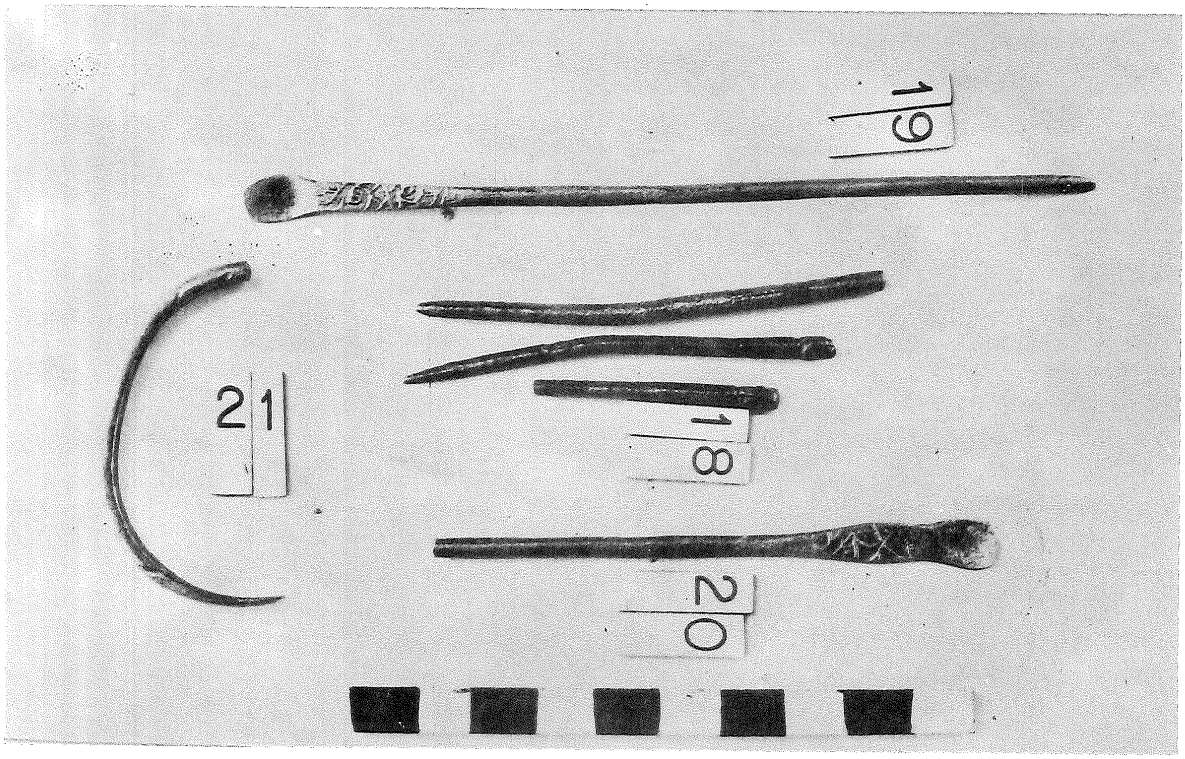
2. Umayyad pottery.



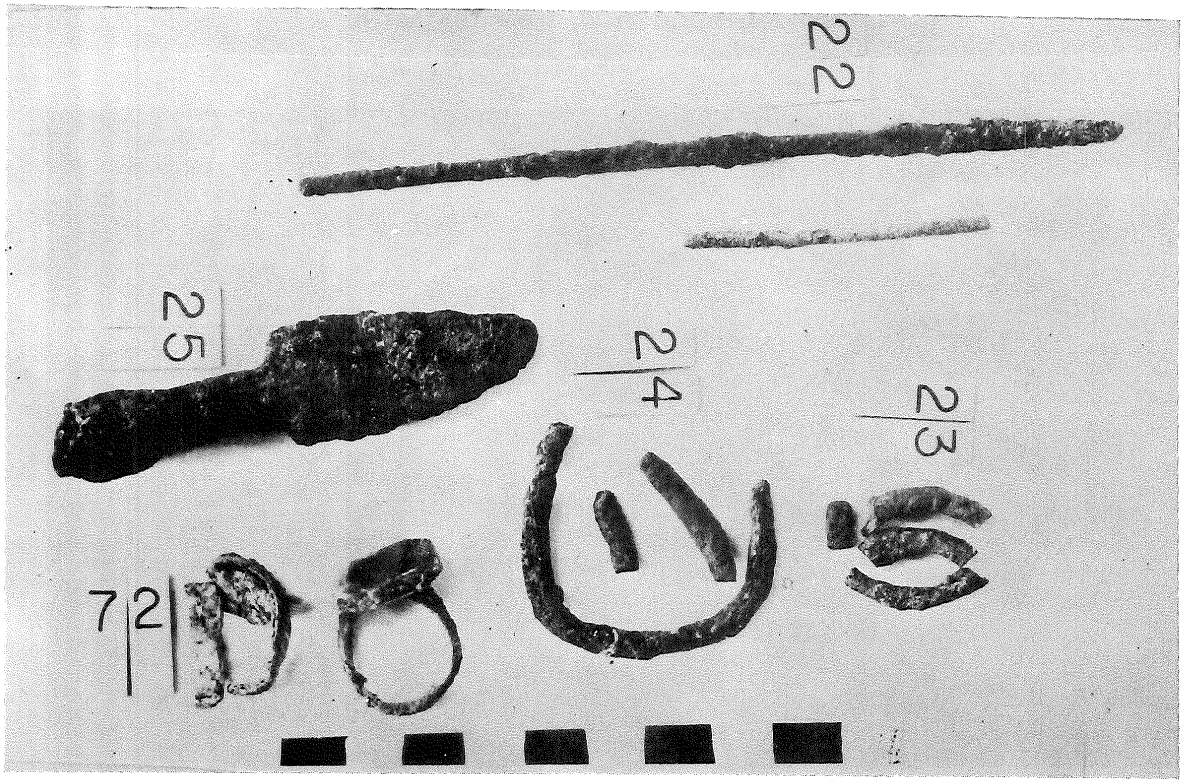
1. Trench 1 General view, from the north.



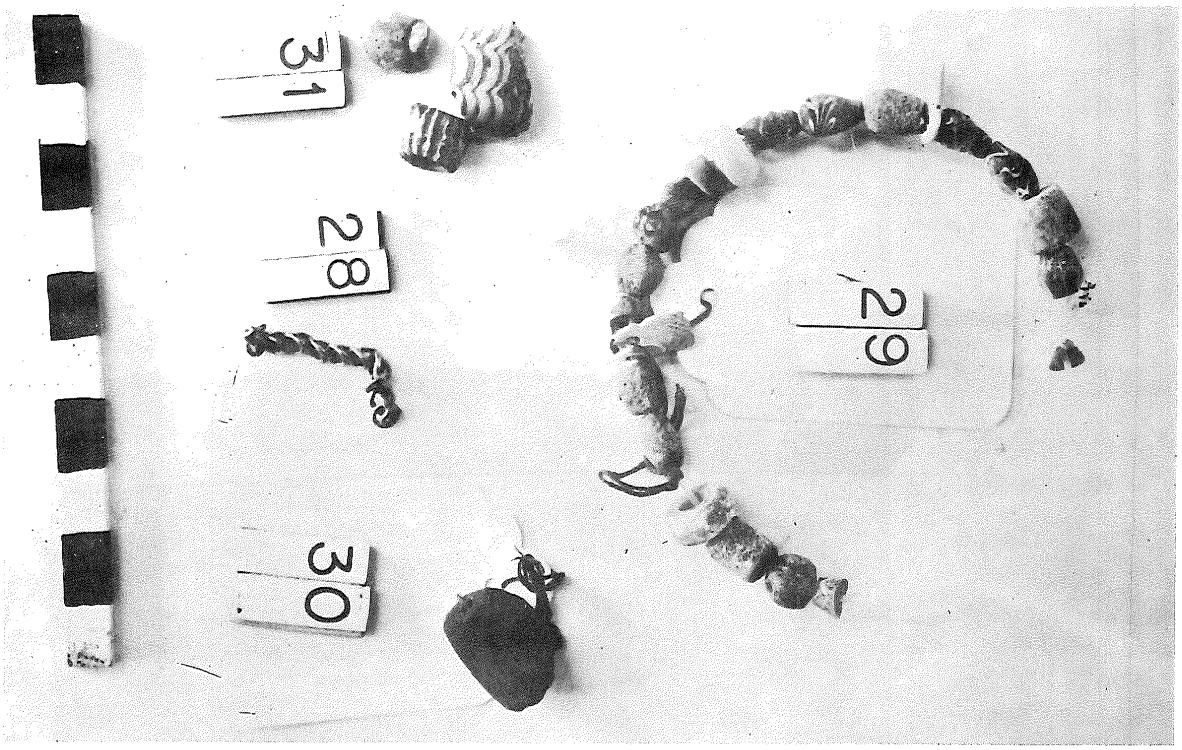
2. Trench 2 General view, from the east.



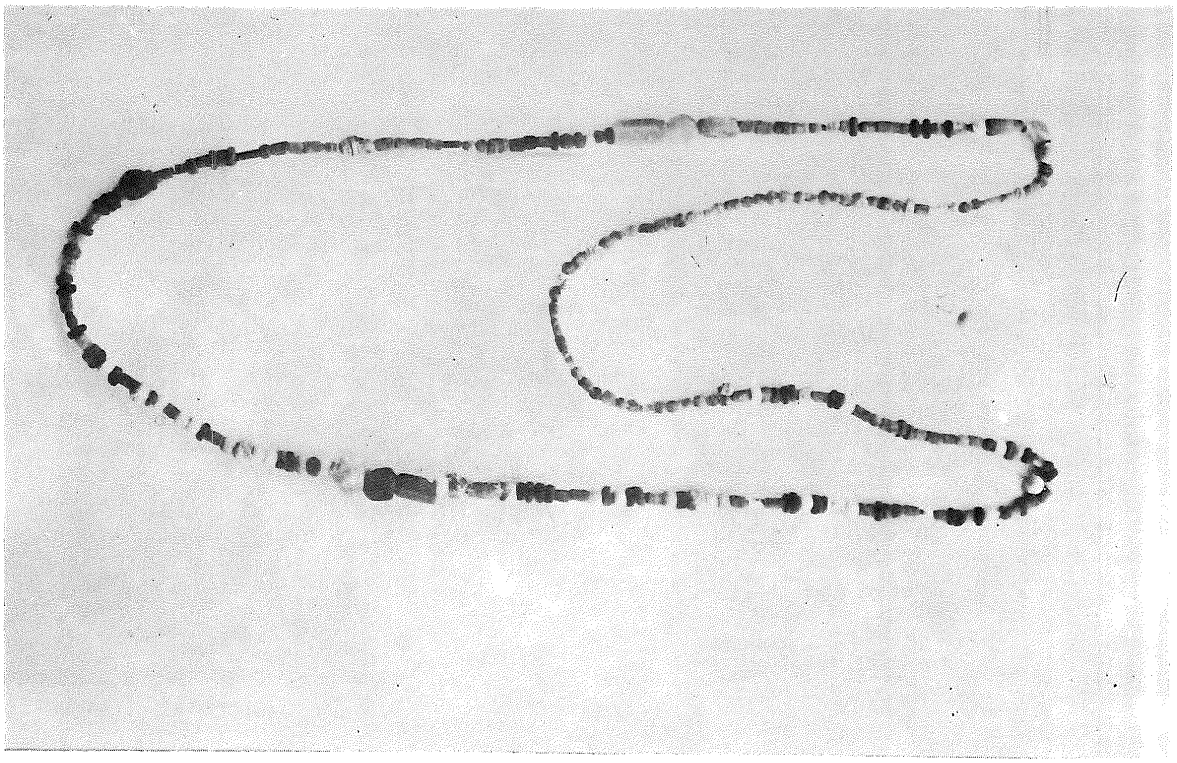
1. Bronze needles, kohl sticks and bracelet.



2. Bronze toggle pins and ring, iron anklet, rings and arrowhead.



1. Small bronze chain, necklace and beads.



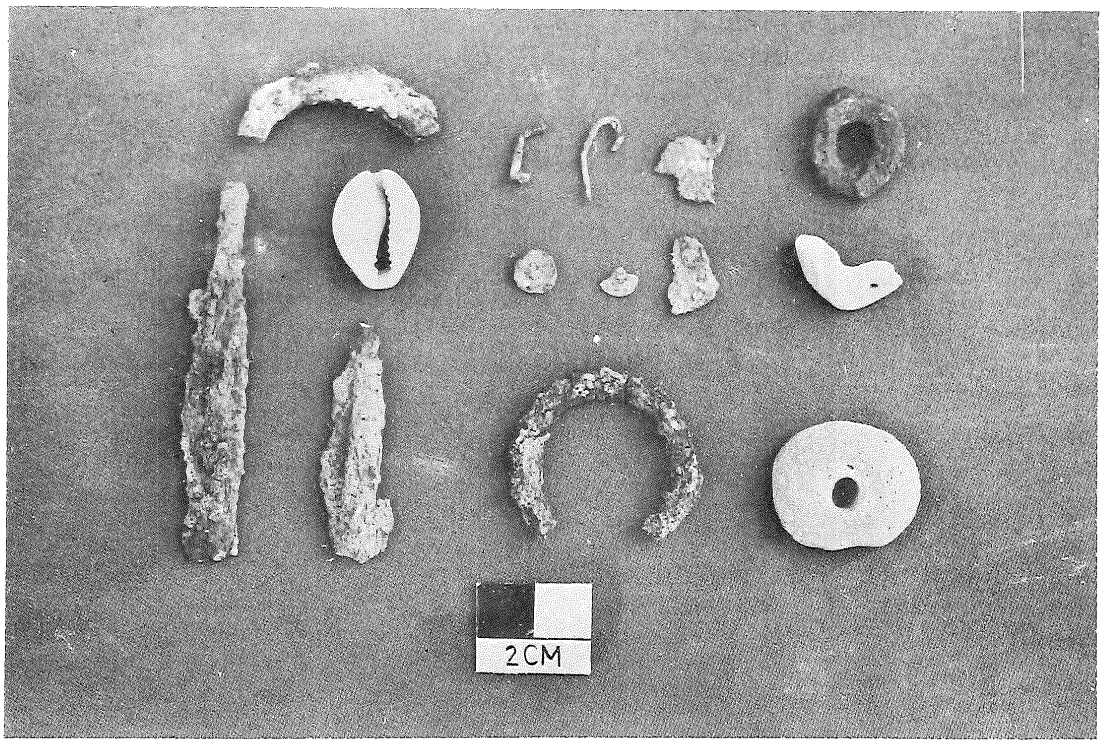
2. Long necklace.



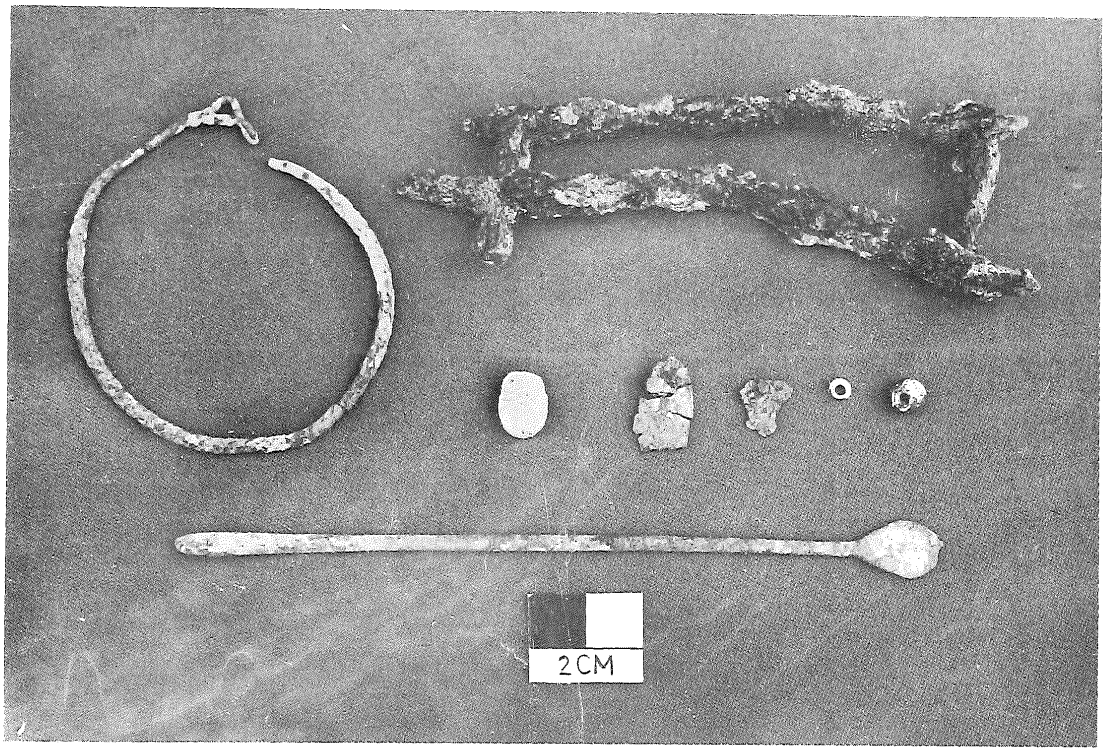
1. View west of the site showing the two cairns n° 1 to right, cairn 2 to left.



2. View north with cairn n° 2 in foreground and cairn n° 1 in background.



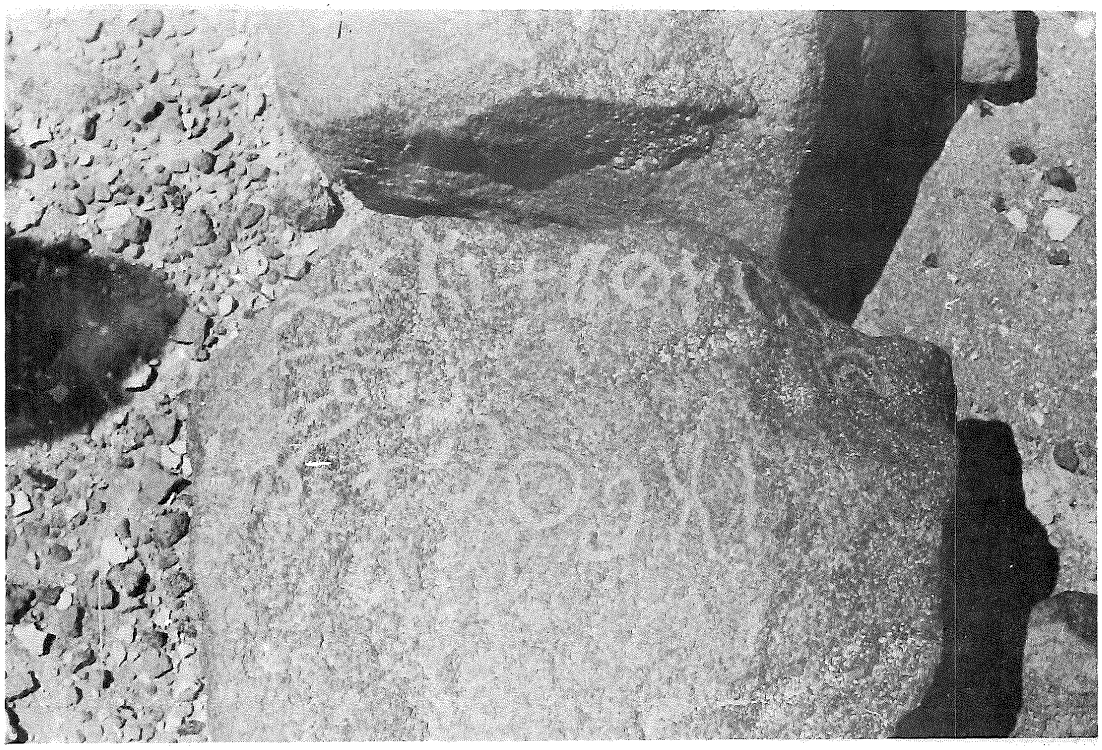
1. Objects from cairn n° 2 (left to right). Top 2. 6, 2.3, 2.2, 2.1, 2.10, Centre 2.12, 2.4, 2.1, 2.11, Bottom 2.7, 2.8, 2.5, 2.9.



2. Objects from cairn n° 2 (left to right) Top 2.19, 2.21, Centre 2.14, 2.17, 2.18, 2.16, 2.15, Bottom 2.20.



1 Inscription CNSIJ 618.



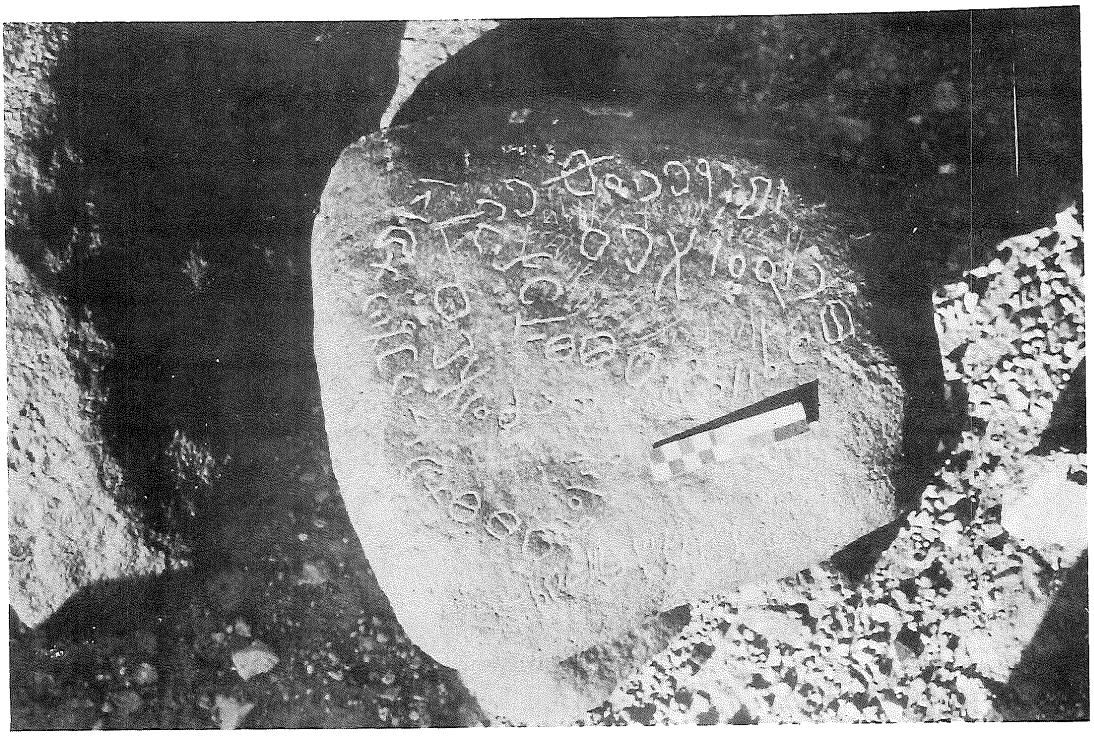
2. Inscription CNSIJ 620.



1. Inscription CNSIJ 621.



2. Inscriptions CNSIJ 622, 623, 624.



1. Inscriptions CNSIJ 626, 627.



2. Inscriptions CNSIJ 631, 632.



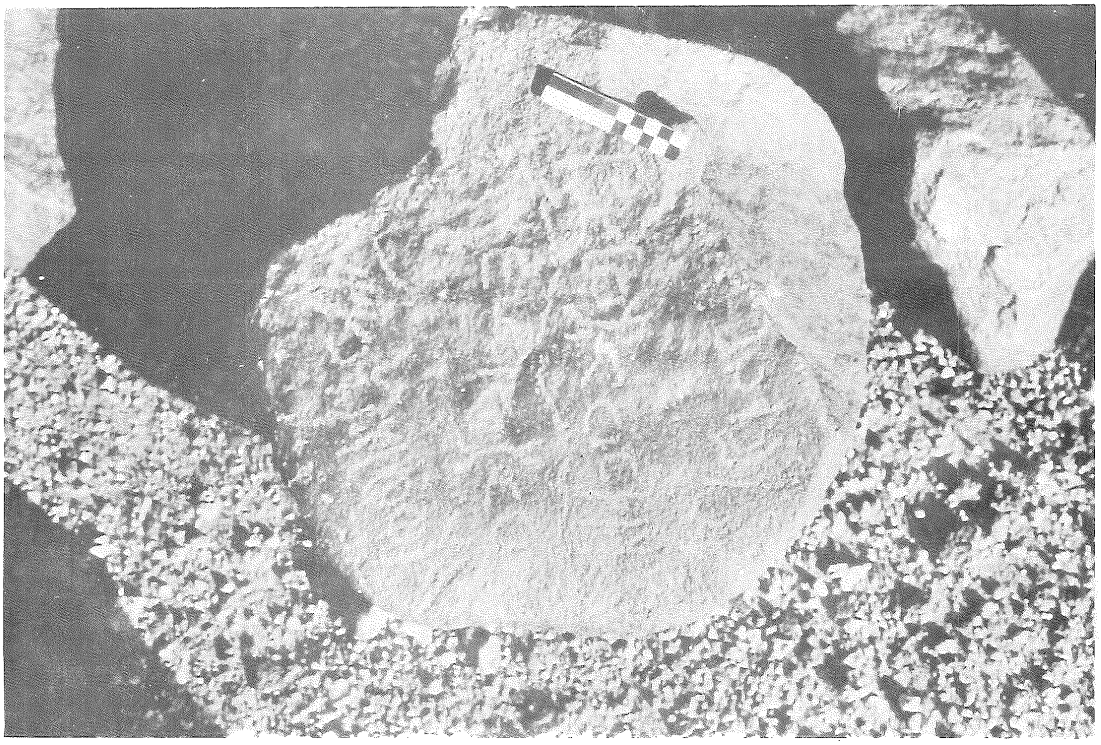
1. Inscription CNSIJ 636.



2. Inscription CNSIJ 638.



1. New Inscription 1



2. New Inscriptions 2, 3



1. New Inscriptions 4. 5



2. New Inscription 6



1. Tell el Husn. Tomb Area XI circled.



2. Pella Area III. Part of Late Roman building.



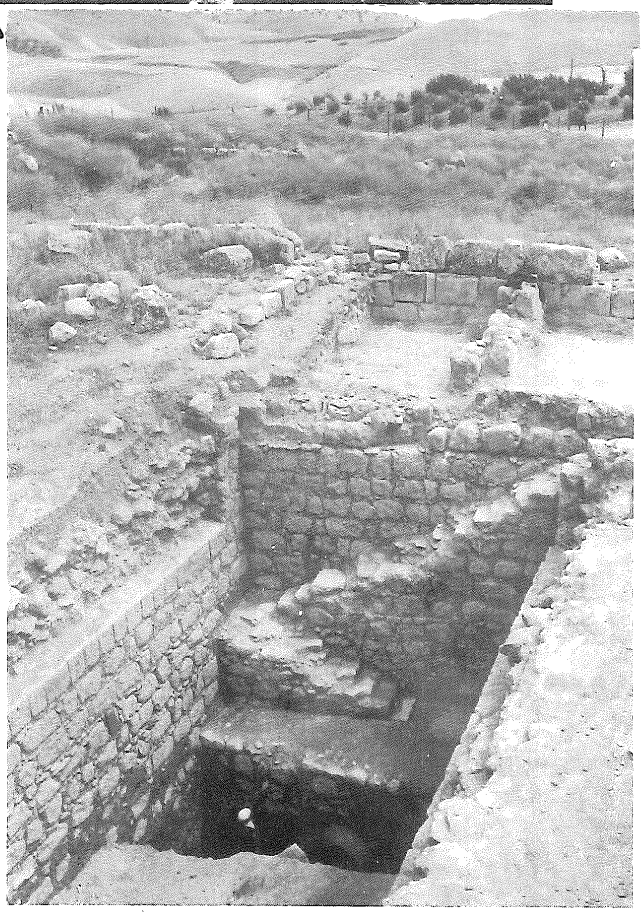
1. Pella. Floor of N. aisle of Church. Area V.



1. Pella Area IV. Early Islamic buildings.



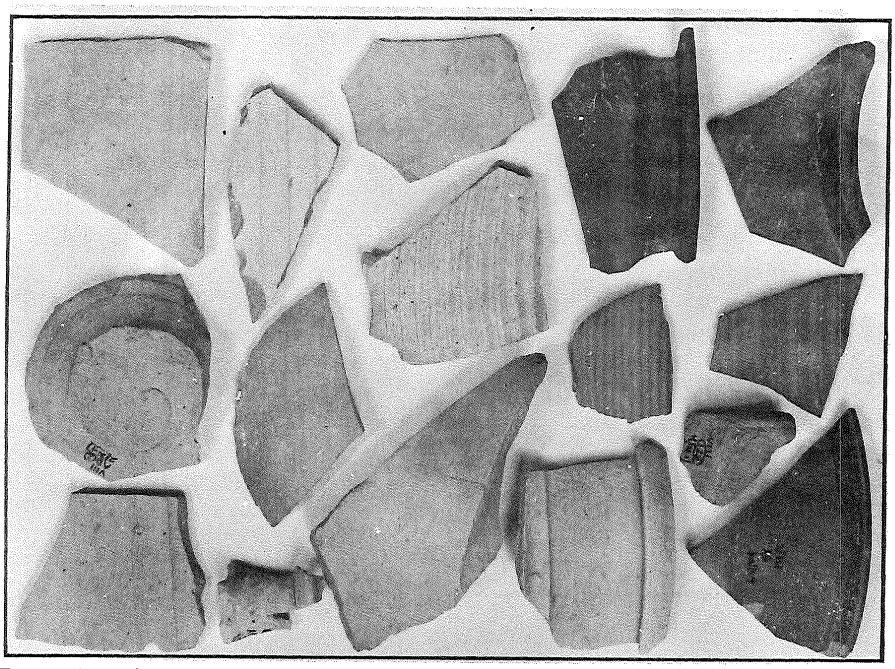
1. The west Church at Pella, view toward the west-southwest. The two rooms of the north dependency excavated in 1980 can be seen, as well as the south wall of the cistern and a part of the stairway descending into the cistern. In the right background is the north wall of the church, and beyond that the reset columns of the church's atrium.



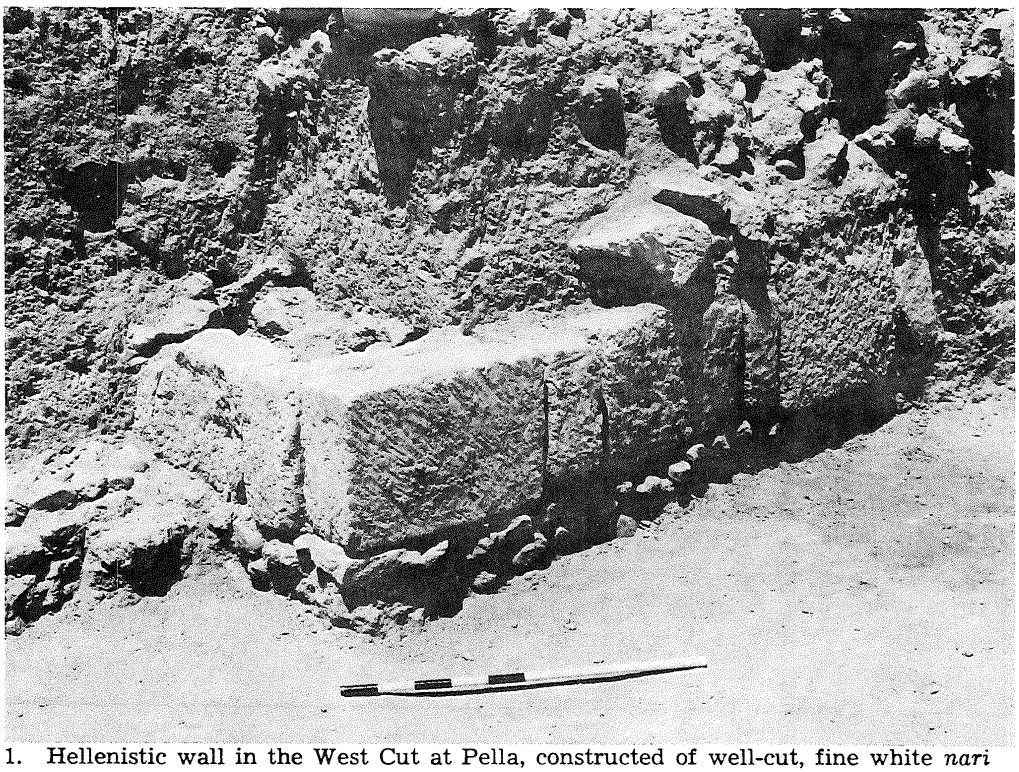
2. Cistern in the West Church Complex at Pella, view toward the south. In the background is largely unexcavated the nave of the church, overgrown with spring vegetation.



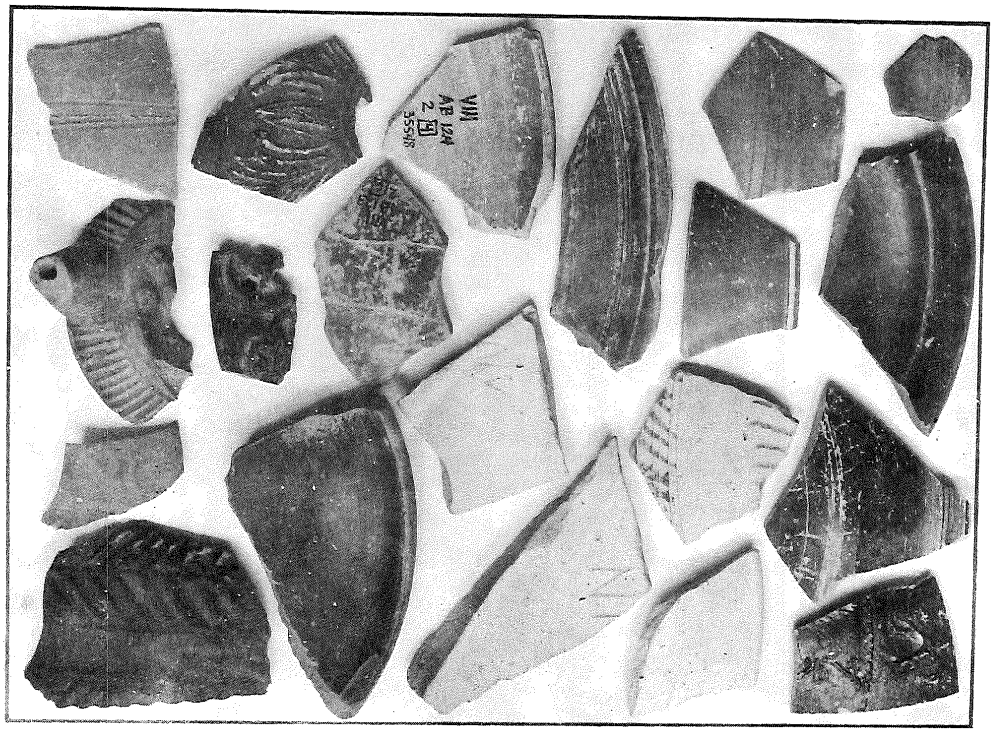
1. Sump at the northeast corner of the atrium of the West Church at Pella, view toward the south.



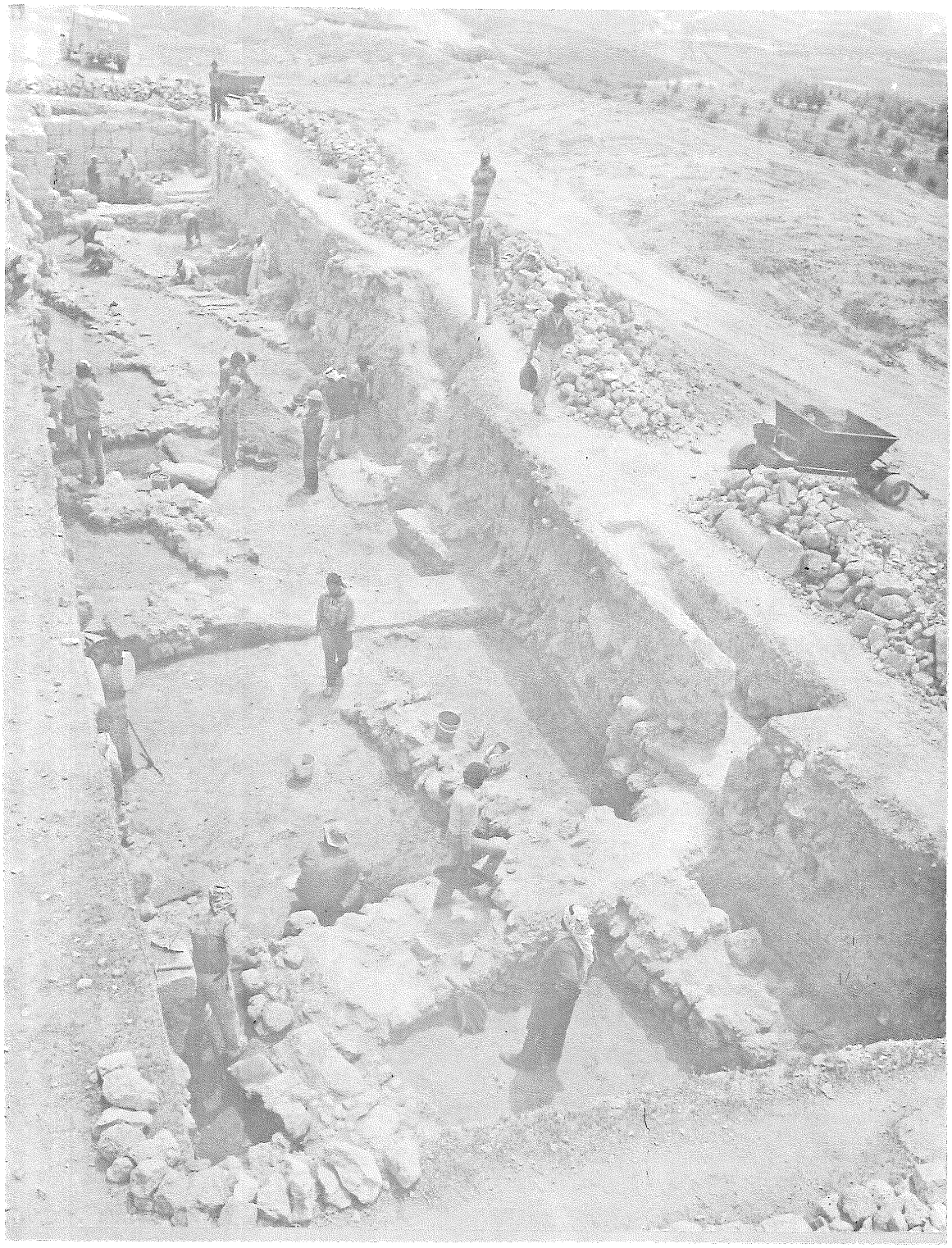
2. Examples of Early Roman pottery from the West Cut at Pella. Delicate ribbing is common on the body sherds. A few forms, such as the string-cut base, are survivals from the Hellenistic period.



1. Hellenistic wall in the West Cut at Pella, constructed of well-cut, fine white *nari* limestone blocks, laid in header-stretcher fashion.



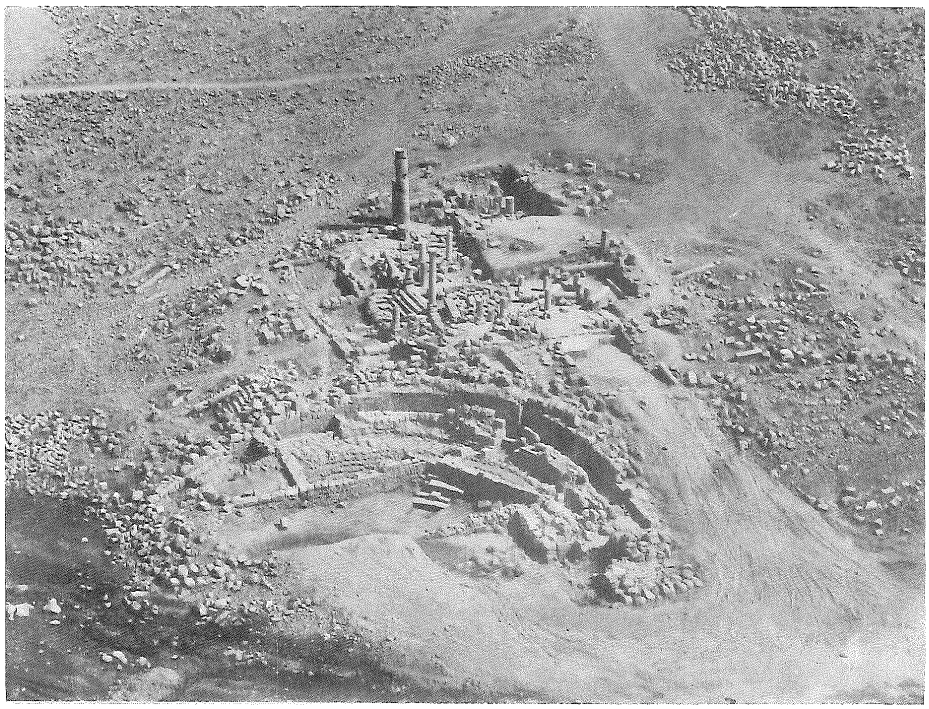
2. Hellenistic sherds from the West Cut at Pella, largely of the period 150-82 B.C.



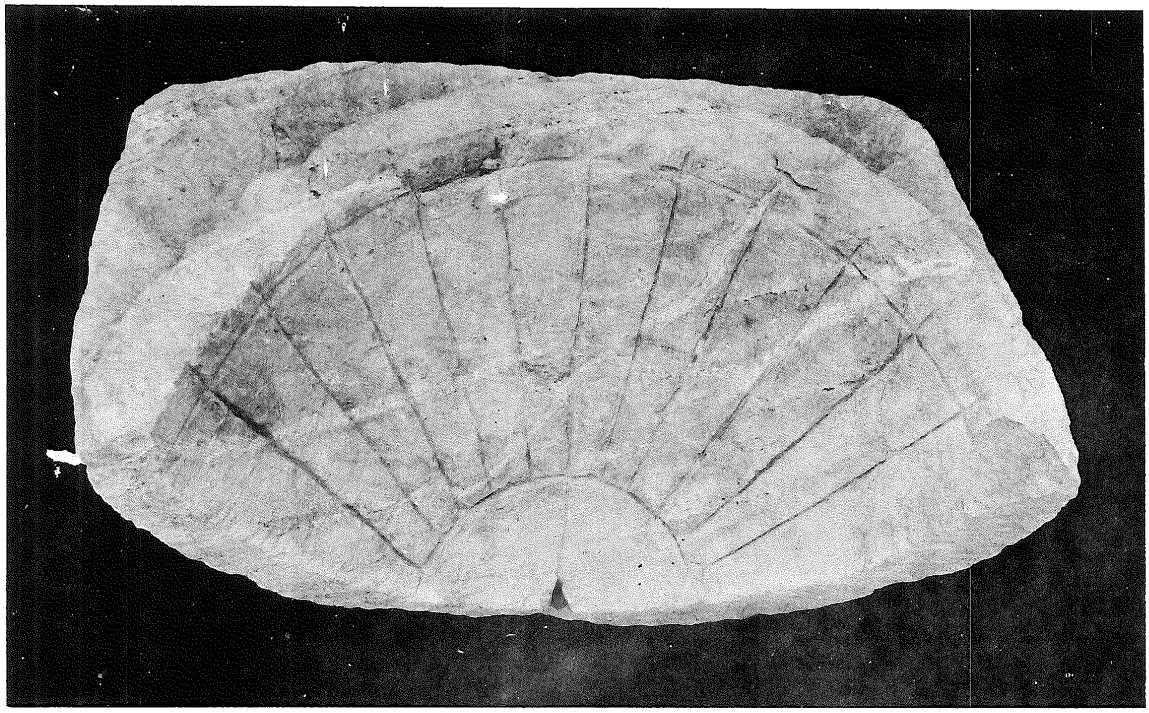
1. The West Cut at Pella, during excavation in the spring of 1980, view toward the north-northeast. Many of the walls that lie exposed are of Hellenistic date.



1 The 1st-century Temple atrium in the Civic Complex at Pella, view from the north after debris has been removed and some column drums have been temporarily reset. Other significant architectural members have been left in the position in which they were uncovered.



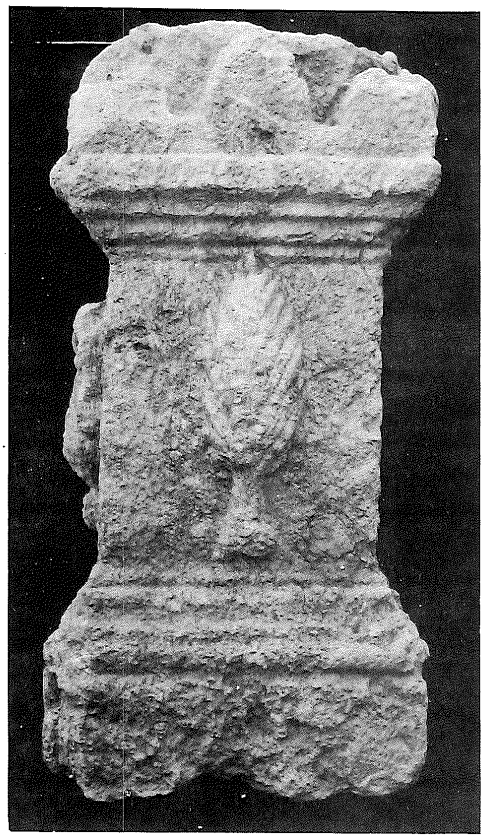
2. Seen northward from the top of Tell el Husn. At the top, to the east (right) of the large column is the Hall of the Camels; just below it is the temple atrium, where smaller columns can be seen partly reset; further down, just above the Wadi Jirm, is the Theater, its debris excavated to the water table.



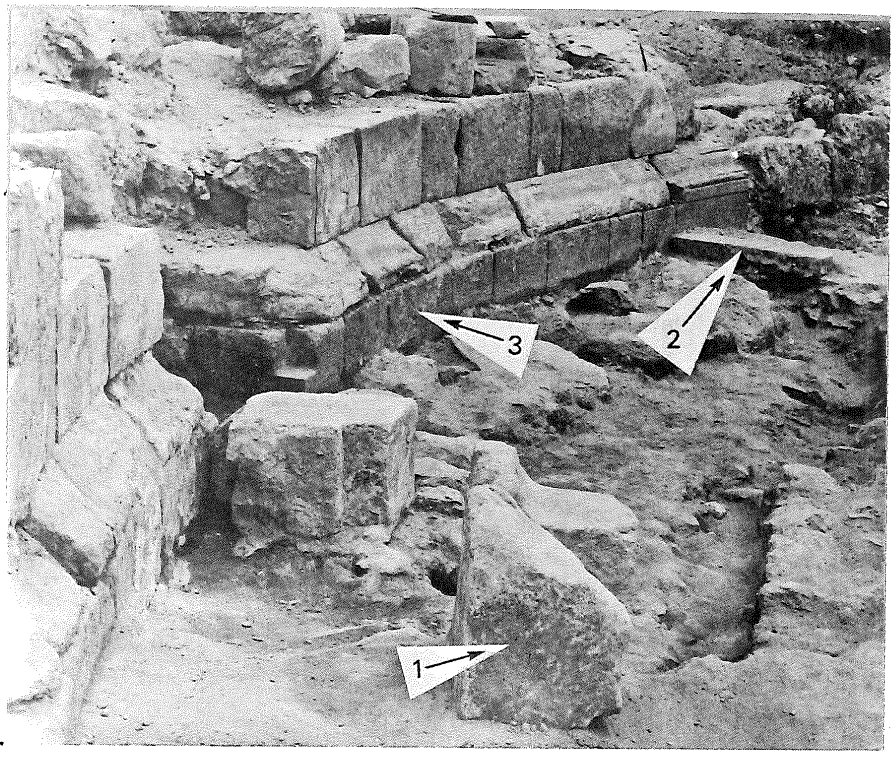
1. Sundial, approximately 50 cm. long, found in the Byzantine fill in the Civic Complex at Pella. The original bronze vane is lacking.



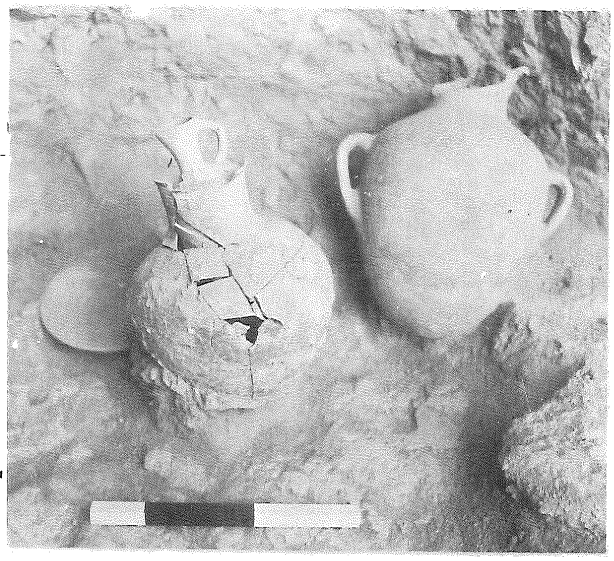
2. Gabbro bowl, 44 cm. in diameter, found in the Byzantine fill in the Civic Complex at Pella.



1. Altar of local limestone, 47 cm. hign, found in the Byzantine fill in the Theater in the Civic Complex at Pella. The top has a bowl-shaped cutting to hold offerings.



2. Architectural remnants of the 1st-century Theater in the Civic Complex at Pella, view from the west showing, at 1 the two surviving stone chairs of the uppermost row of seats, at 2 a fragment of the original paving behind the uppermost row of seats, and at 3 the back wall of the interior of the Theater. The original rubblestone bedding is just beginning to appear beneath these architectural features.



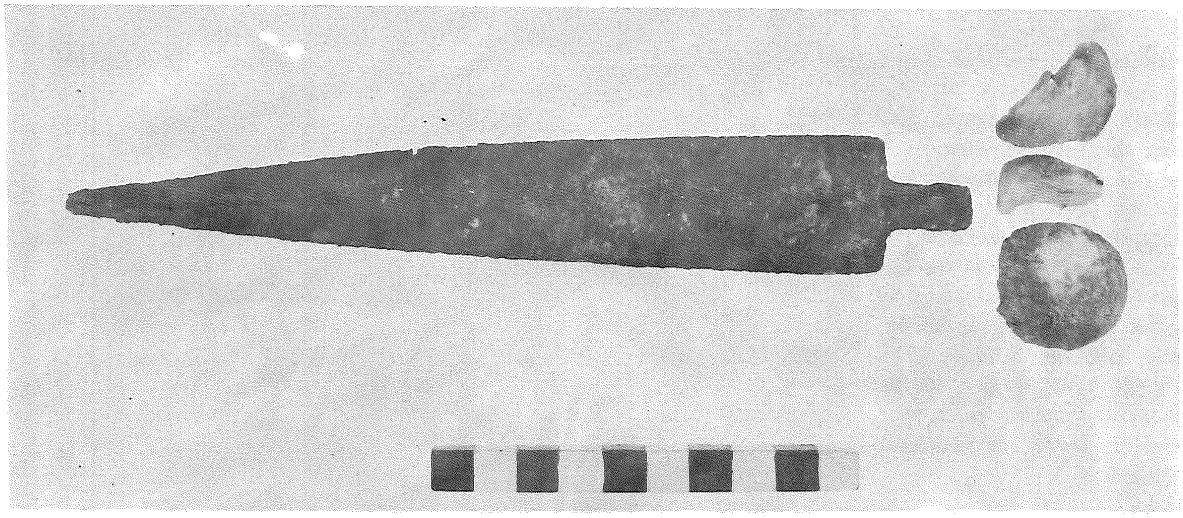
1. MBII vessels from Tomb 14 on Tell el Husn at Pella. The handleless pot on the left, with a dipper jug in its neck, was made of poor-quality clay, but was decorated with chocolate-red spiral lines on the shoulder (not visible in the photograph).



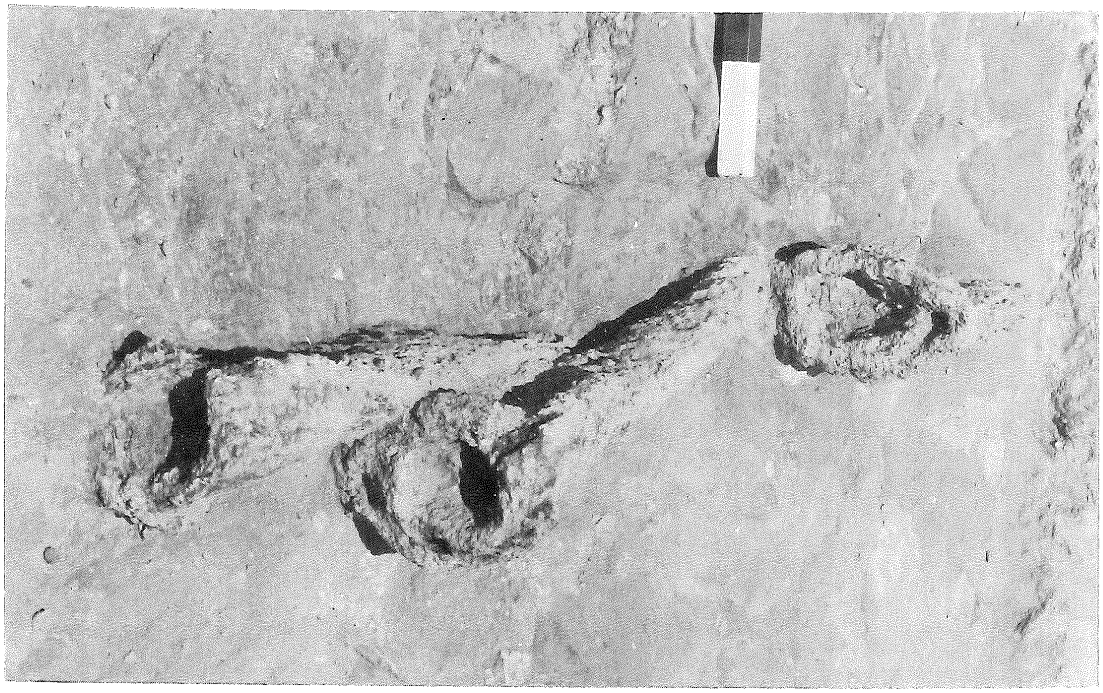
2. Scarab found at Tomb 15 at Pella.



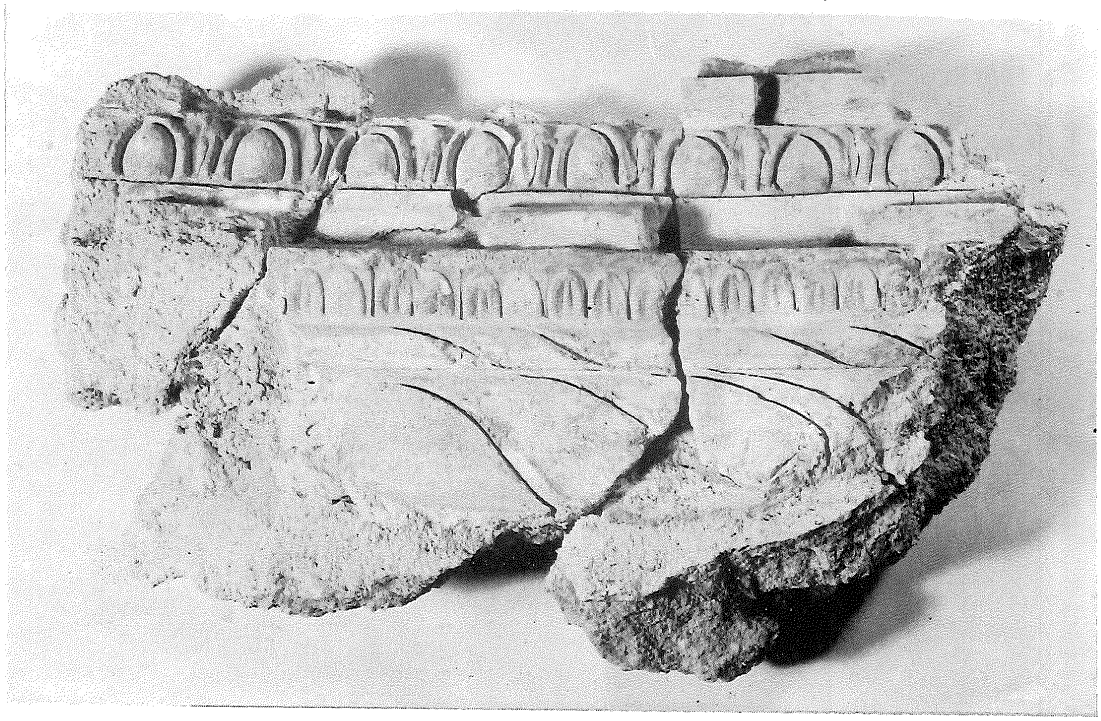
3. MBII jar, 20 cm. high, from Tomb 15 at Pella. The handle is formed of three poined strands of clay and there is a small knob at the lower end of the central strand.



4. MBII dagger, 21.5 cm. long, with fragments of limestone pommel, found in Tomb 15 at Pella.



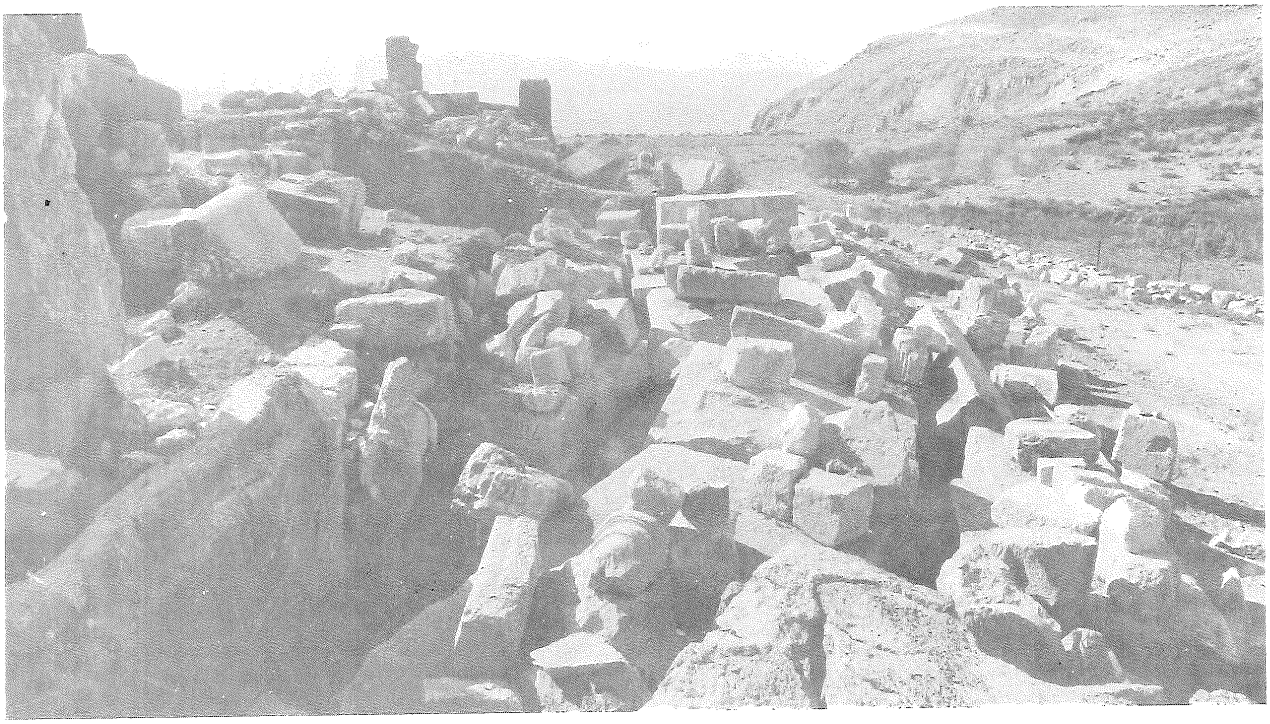
1. Three hand-forged iron torches, found fallen onto the paving in the south colonnade of the Temple courtyard in the Civic Complex at Pella.



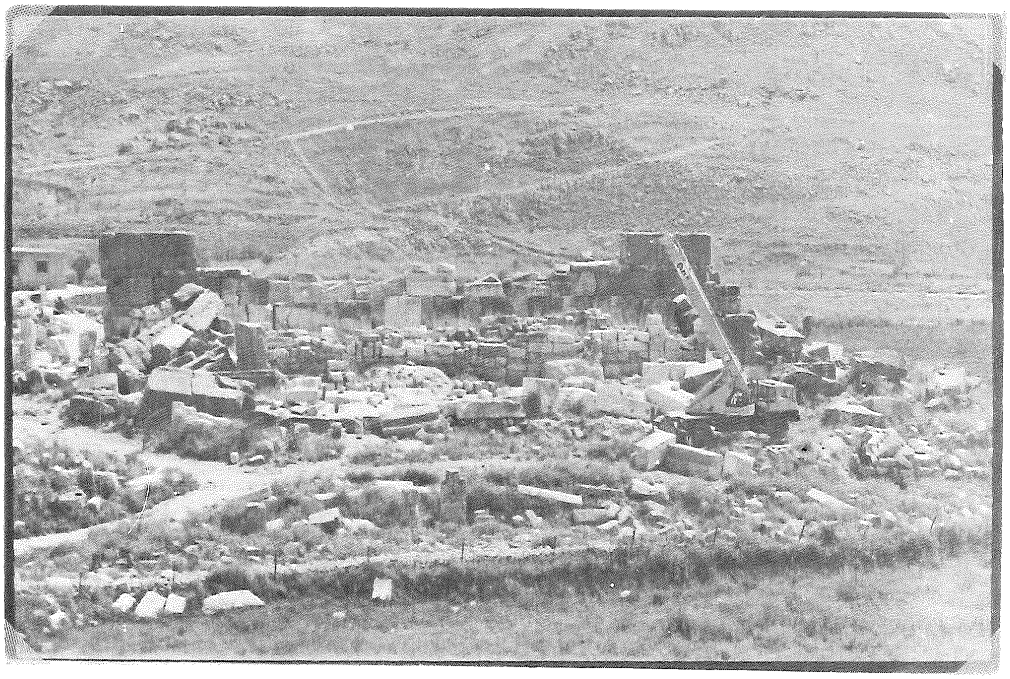
2. One of Two fragments of moulded stucco found on the slopes of Tell el Husn during a probe for tombs. The stucco has retained some of its bright decoration of red, yellow, blue and white.



1. 'Iraq el Emir, Qasr el'Abd: collapsed western wall (looking North).



2. Collapsed western wall. Note recently discovered feline fountain in the background, left. (looking South).



1. 'Iraq el Emir, Qasr el'Abd: western wall before reconstruction.

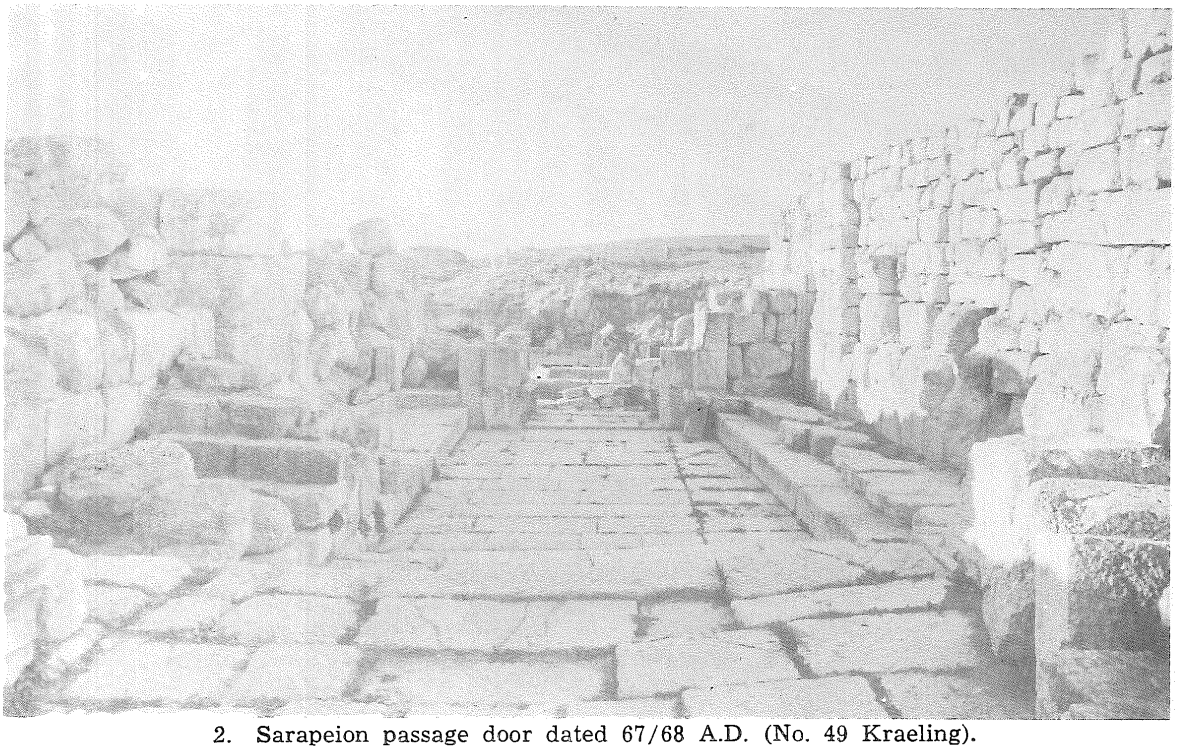


2. Western wall after restoration.

H. Kalayan — Pl. XCI



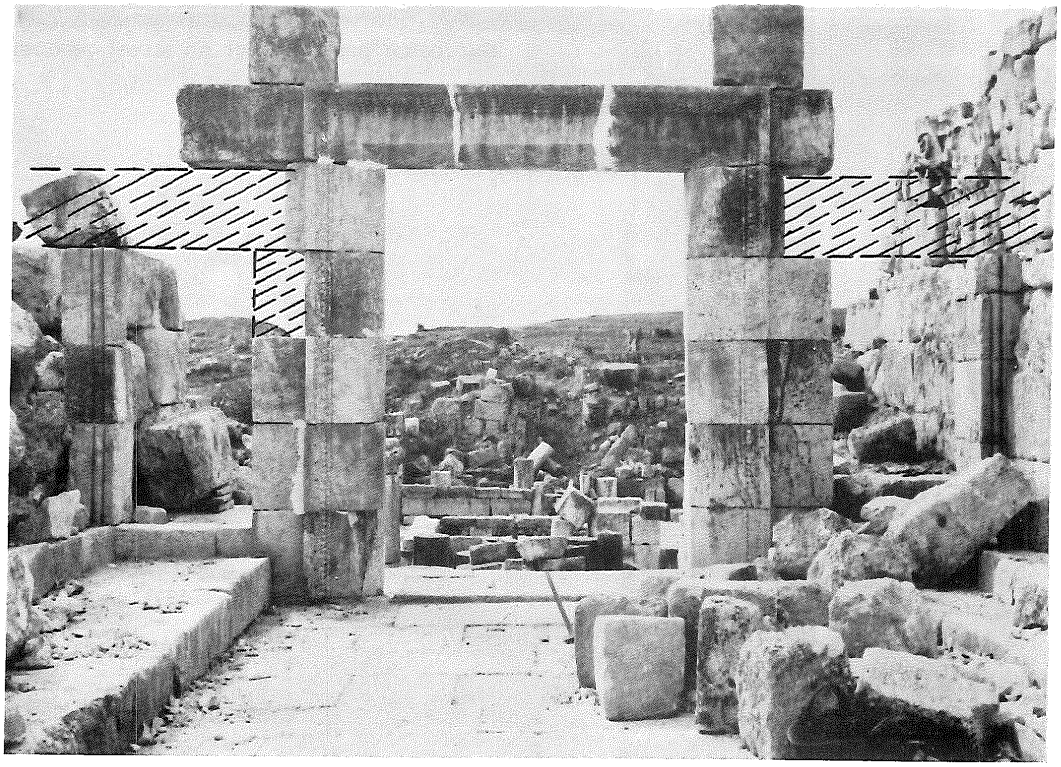
1. Sarapeion passage door on the street near the museum.



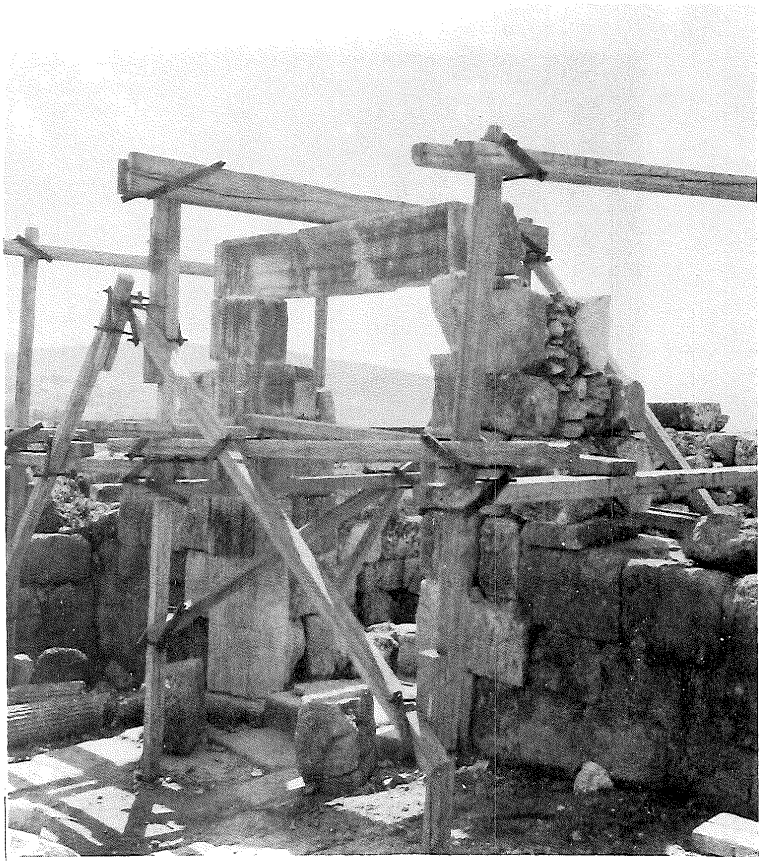
2. Sarapeion passage door dated 67/68 A.D. (No. 49 Kraeling).



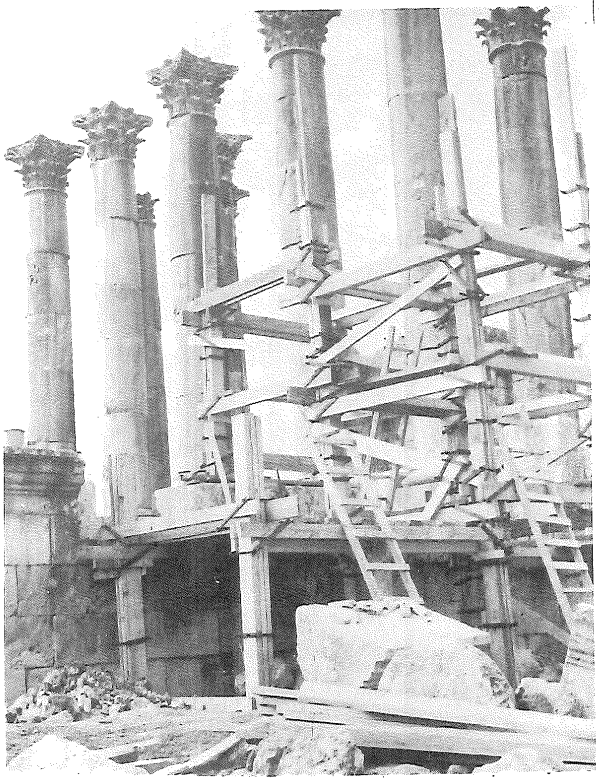
1. Elements of Sarapeion passage door dated 67/68, installed on North side of the Cella, Temple of Artemis.



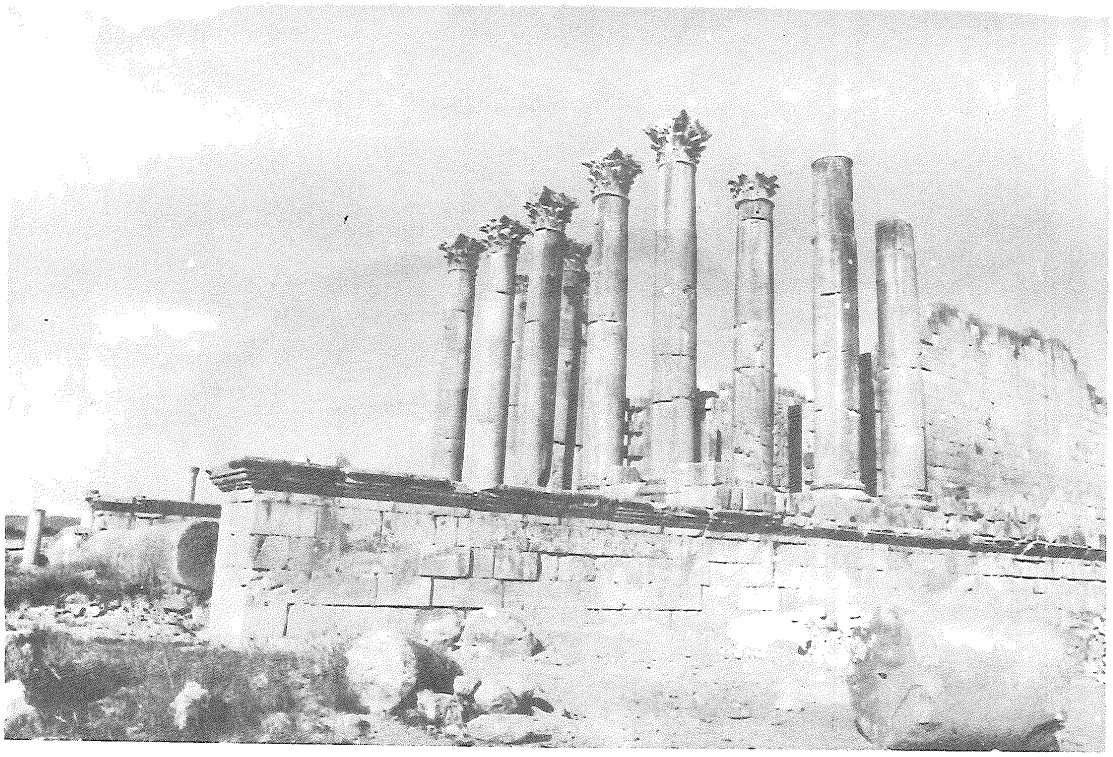
2. The elements of Sarapeion passage door dateed 67/68 A.D. in place; dotted lines indicate the side doors lintel not found.



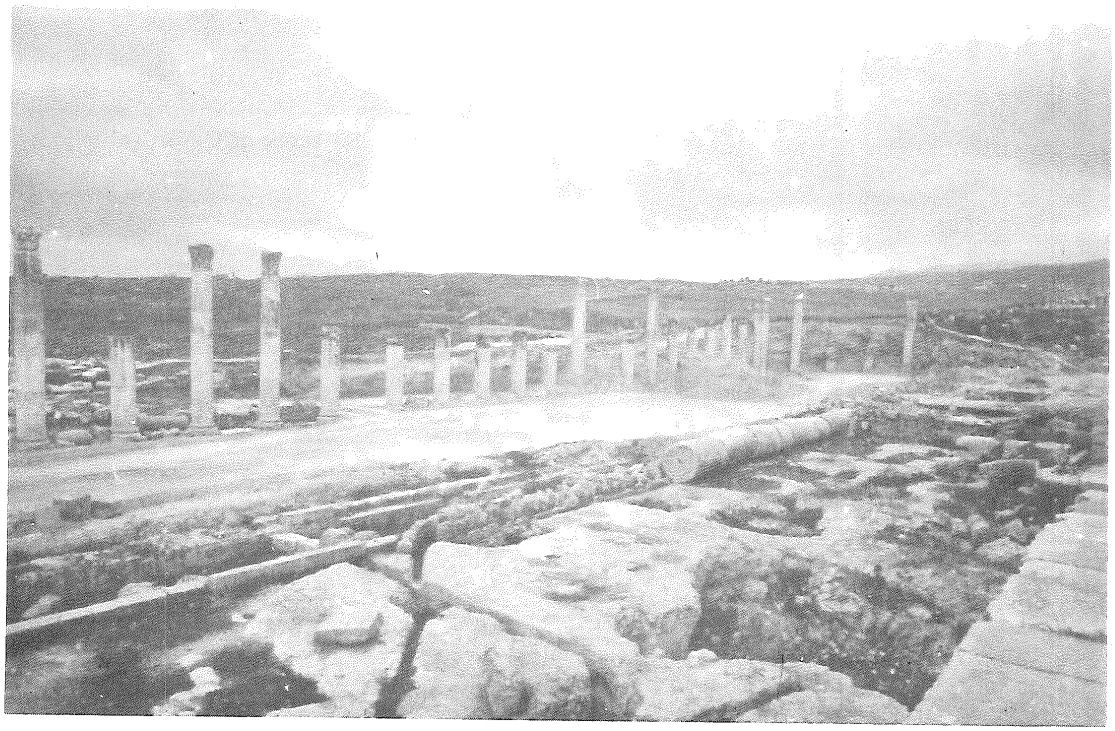
1. Sarapeion passage door on street restored.



2. Ante of the podium of Artemis during restoration.



1. The North Ante of Artemis Restored.



2. The Southern section of the court (Artemis) cleared.

H. Kalayan — Pl. XCV



1. Entrance of Cathedral before restoration.



2. Entrance of Cathedral restored.



1. Jerash: the South Gate, the new restaurant and the Hadrian Gate in the background. (looking south).

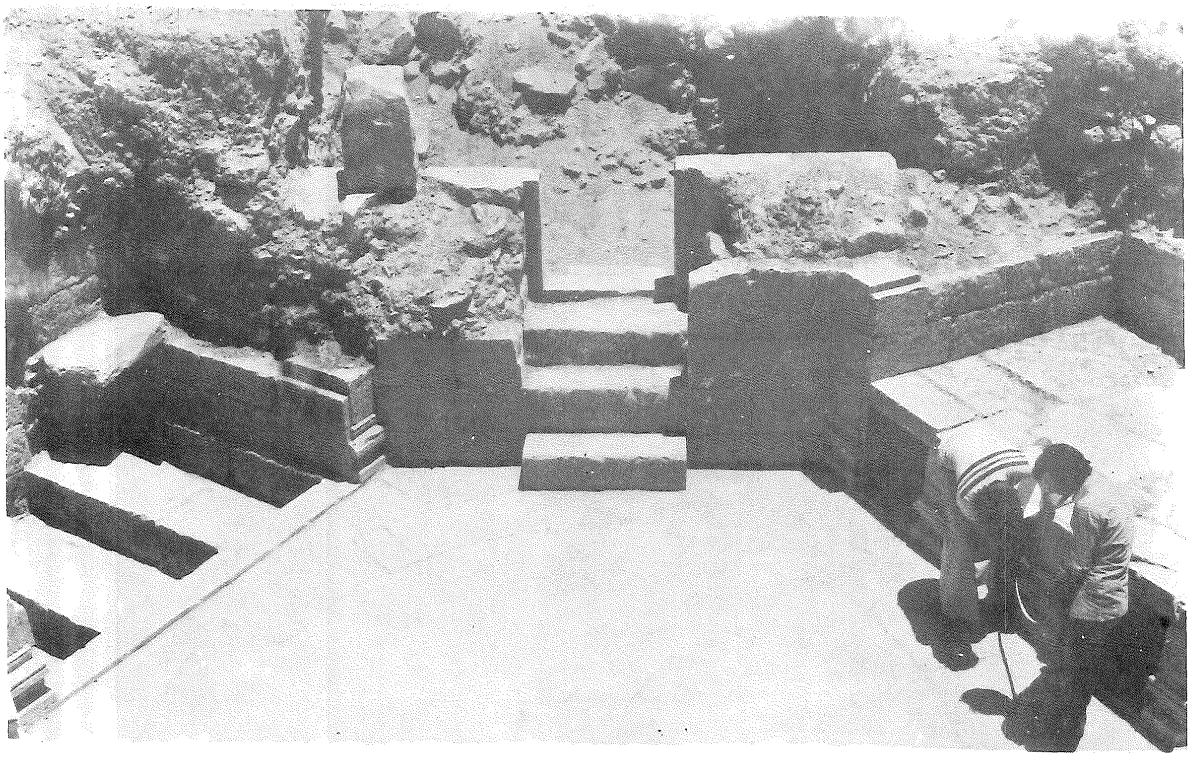


2. The temenos wall East of the Zeus temple (l. east).

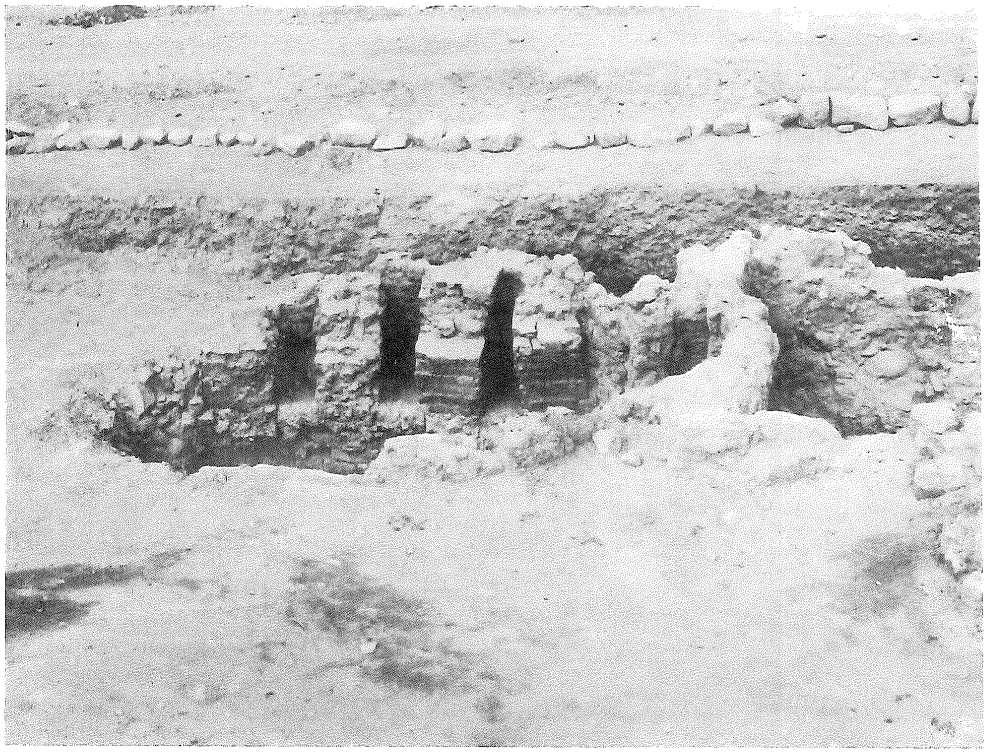
F. Zayadine — Pl. XCVII



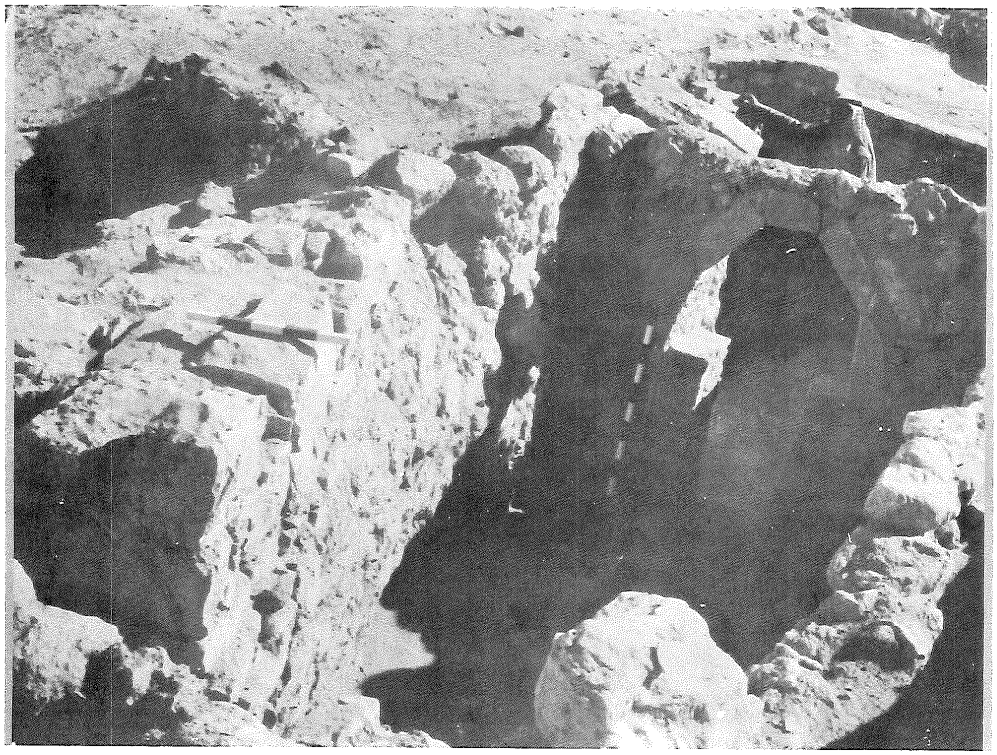
1. Jerash: a string course in the southern segment of the temenos wall.



2. Umm el Walid mausoleum.



1. A potter's kiln at Zurrabeh, between Wadi Musa and Petra. (l. west).



2. Entrance of the kiln. (l.south).

F. Zayadine — Pl. XCIX



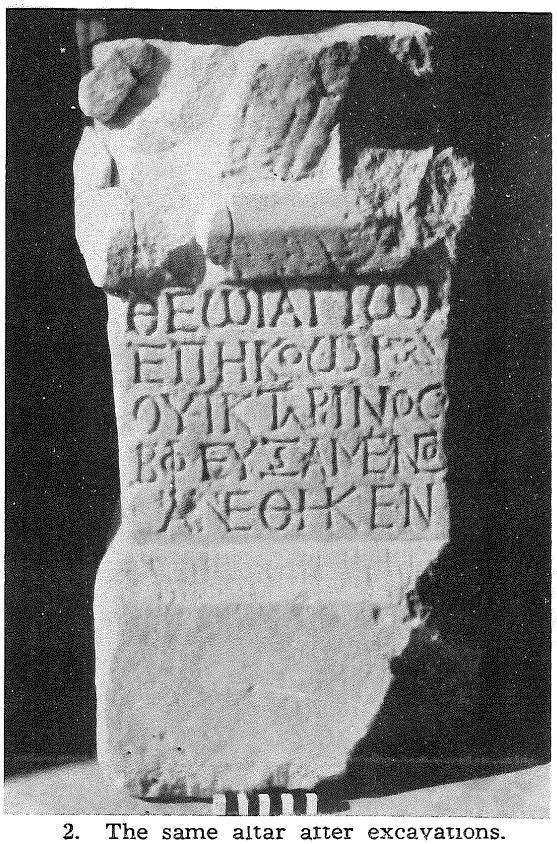
1. Petra: a stretch of the paved street in the Sîq.



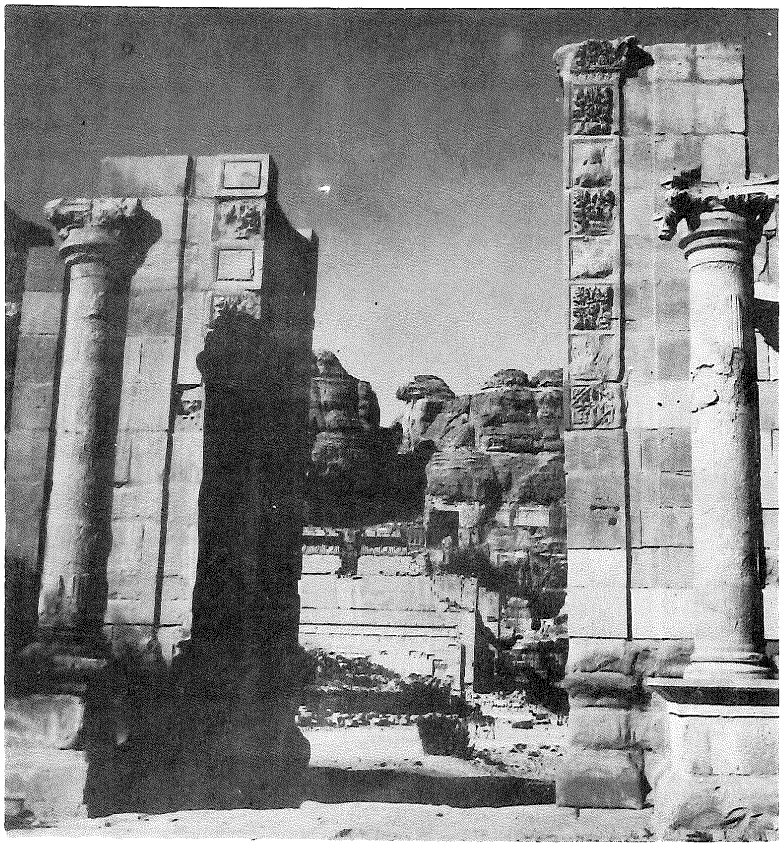
2. Cultual niches in the Sîq.

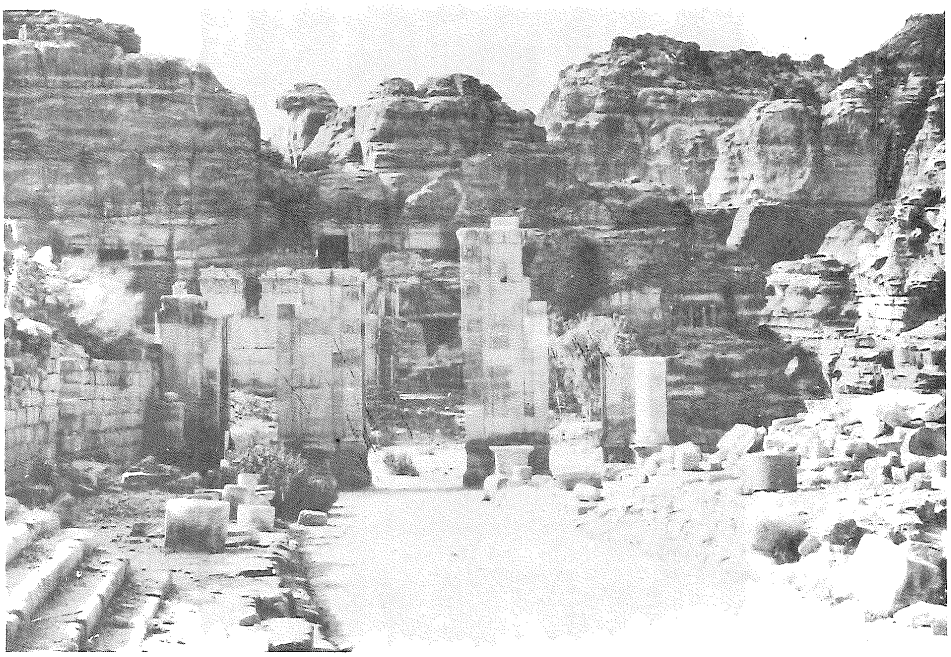


1. The altar dedicated to the saint god, *in situ*.



2. The same altar after excavations.

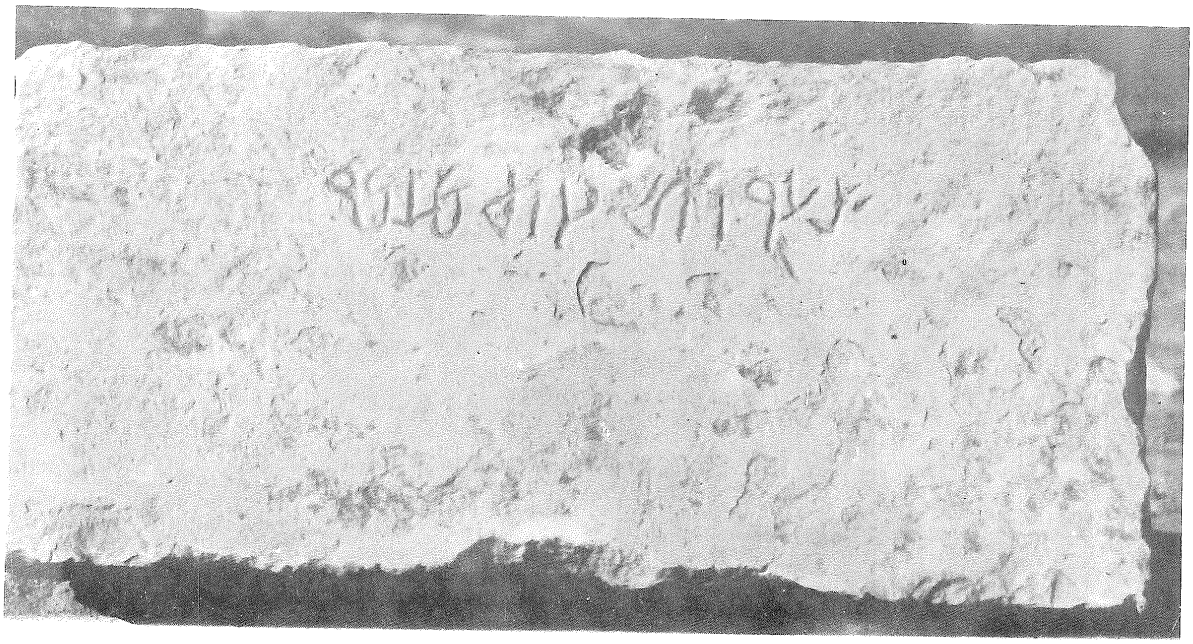




1,2. Petra: The monumental Gate before and after the removal of the erroneous columns.



1. The excavated marble steps of the Qasr el Bint, (l. south).



2. Nabataean dedication of Su'udat daughter of Maliku.



1. A medallion discovered at Wadi Musa



2. Juan, Ruiz Pardo of the Archaeological Museum of Madrid during the restoration of the new fresco at Petra.