STUDIES IN THE HISTORY AND ARCHAEOLOGY OF JORDAN
I

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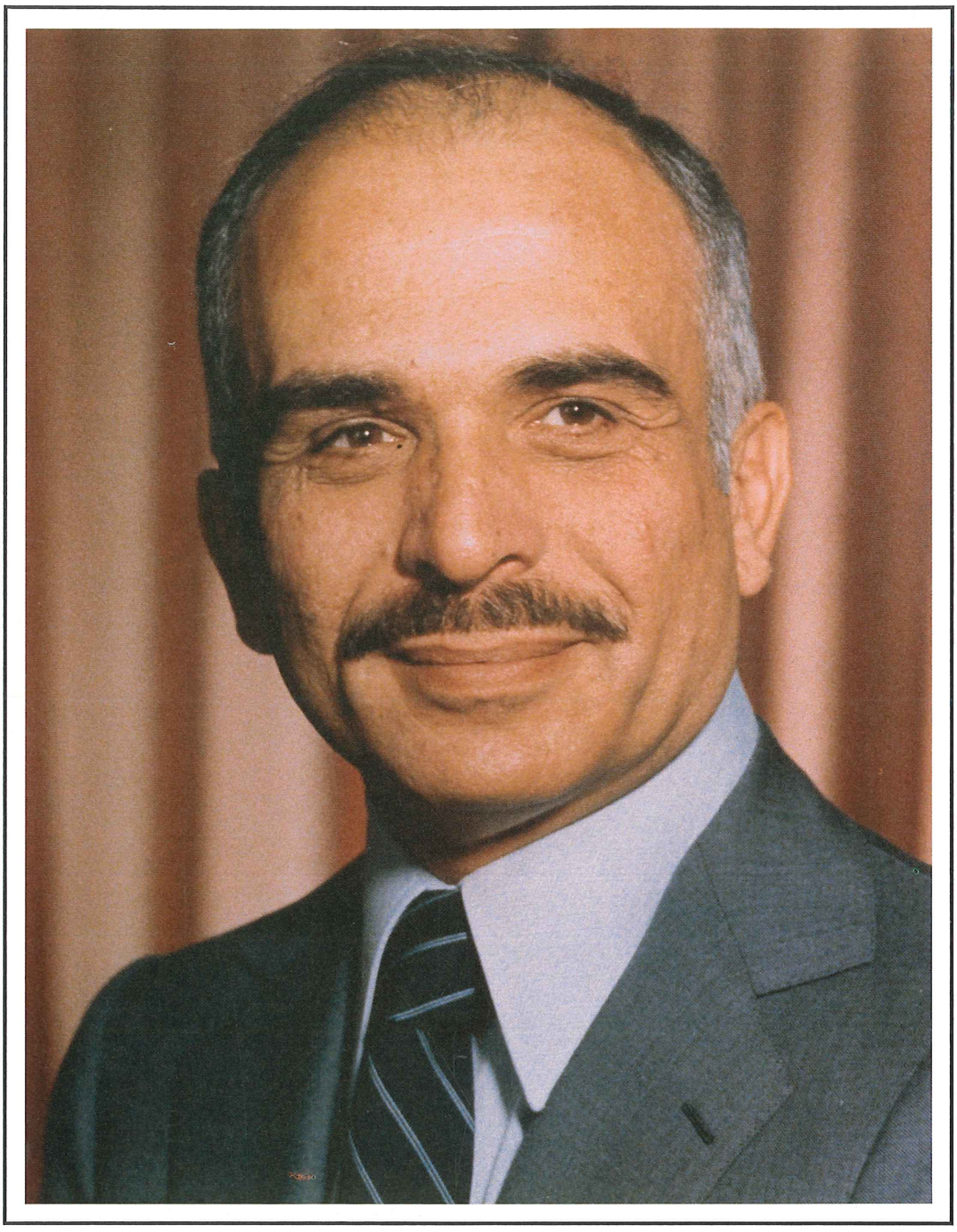

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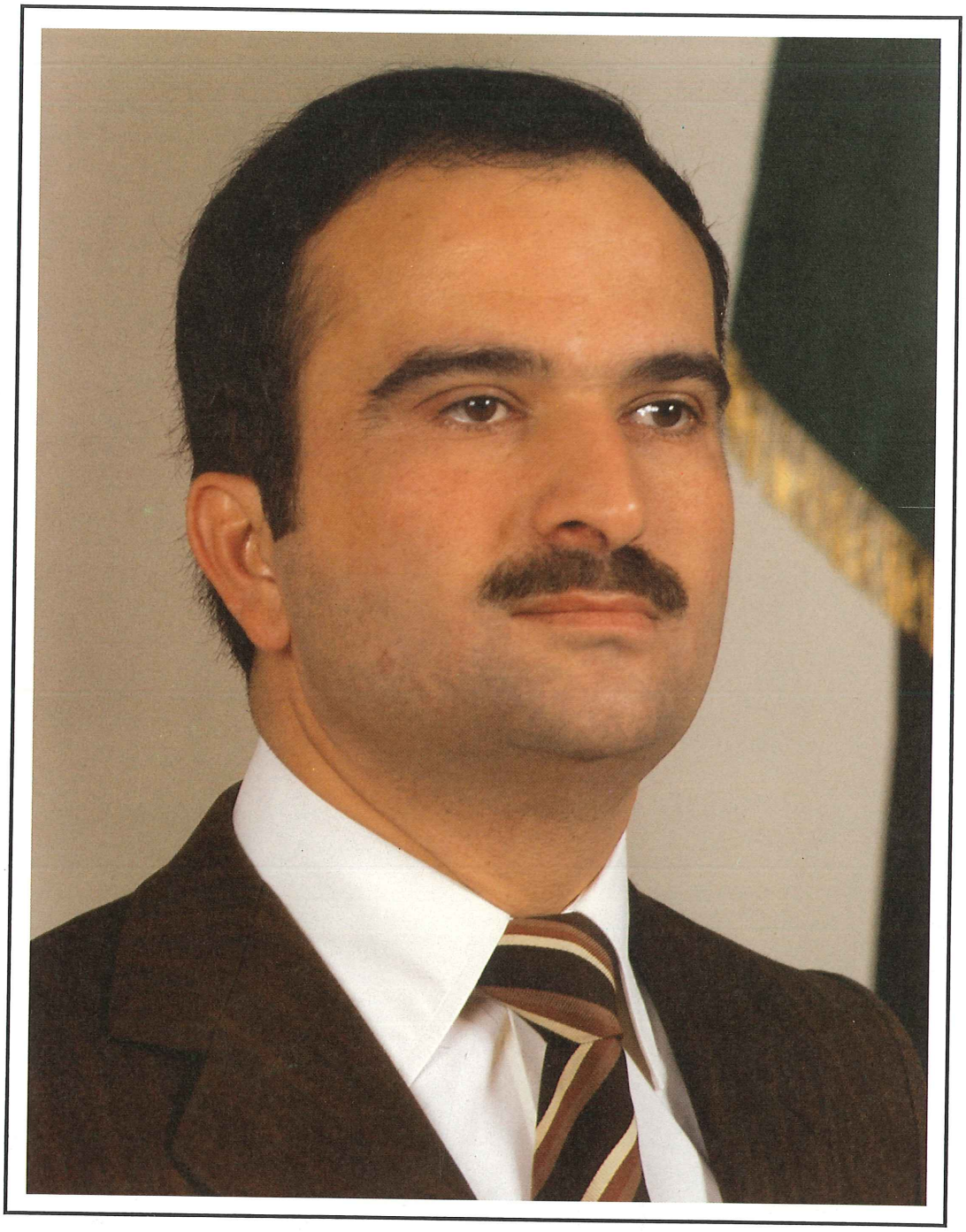

His Royal Highness
Crown Prince Hassan

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Editorial Preface

This volume, *Studies in the History and Archaeology of Jordan*, presents the studies of a group of scholars and archaeologists of a very high caliber and international repute whose work reflects, in diverse ways, the history and archaeology of Jordan from the earliest prehistoric times to the end of the Ottoman period. It contains the papers presented at the First International Conference on the History and Archaeology of Jordan held in Christ Church College, Oxford, England between 25–31st March, 1980 under the patronage of His Royal Highness Crown Prince Hassan who is indeed a scholar in his own right. In fact, it was he who suggested and has been the moving force behind this first of a series of triennial conferences on the history and archaeology of Jordan. Intense archaeological activity in the country has brought to light new cultures, new sequences and new relationships. The development of radiocarbon dating has lent a measure of precision to both relative and estimated dates. The consideration of linkage between Jordan and the neighbouring regions should assist in developing a more coherent picture of the archaeological panorama of Jordan, and illuminate the horizons of the past cultural heritage of the area. Crown Prince Hassan also suggested that we invite to this First Conference, and to subsequent meetings, heads of organizations which have been interested, either financially or culturally, in linking Jordanian Archaeology to contemporary realities.

As a result of the First Conference, which, in Prince Hassan's words, was intended to place Jordan on the map of archaeological research a Concept Group of Jordanian Archaeology was formed. The Group's purpose is to create more interest in and to promote such research in Jordan, and to advise and assist the Jordanian Department of Antiquities in the carrying-out of its responsibilities. In addition, it is intended to help the Department in the development of its financial resources. The members of the Group, who were selected by the Prince from among those attending the Conference, include representatives of Jordanian government bodies, distinguished scholars—both Jordanian and foreign—and prominent figures from among business and banking organizations. The Group will meet once a year in Amman or elsewhere as deemed appropriate.

In the preparation of this volume, early publication has seemed far more important than stylistic regularity or uniformity: since spelling, transliteration, punctuation, capitalization, bibliographical citation, and the like tend to vary from area to area and also according to language, the authors have followed differing usages. For what seems awkward or unclear, and for any irregularities, the editor assumes full responsibility.

Finally the editor wishes to express his full appreciation and deep gratitude to all those who helped in the publication of this volume.

Adnan Hadidi
Amman, Jordan
December, 1981

Speeches

Your Royal Highnesses, Your Imperial Highness, Your Excellencies, My Lords, Ladies and Gentlemen:

It is a great pleasure for me to welcome you all to Oxford on the occasion of the opening of this first conference on the history and archaeology of Jordan. Perhaps, I may be allowed to thank you, sir, for honouring us with your presence and to extend to you a very warm welcome—particularly when we all well recognise that you have a natural allegiance with a younger institution some 80 miles east of this. We are also greatly honoured by the presence of His Royal Highness Crown Prince Hassan, a graduate of this university, and members of his family and of His Imperial Highness Prince Mikaza.

Now I think you'll agree that this Theatre is a fine setting for this evening's ceremony. It was designed and built in 1664 by a young man who was, at the time, the Professor of Astronomy here at the University and you will notice that it has a very large roof span which, at the time, was a great technical tour-de-force; perhaps it was this achievement that contributed to the very many commissions which made Sir Christopher Wren one of the greatest architects of this country. I am sure you will appreciate that this is just one of the many art and architectural treasures of Oxford and I do very much hope that, although I see you have a formidable programme of work during the coming week, nevertheless you will somehow find time to savour some of them. But I wouldn't wish you to think that Oxford is wholly immersed in the past: we are, in fact, among the biggest of the science universities in the country and, for example, the drugs penicillin and cephalosporin were first isolated here in Oxford and their clinical value demonstrated. These two antibiotics have probably been of greater benefit to mankind the world over than any other single drug. And, of course, we also have in Oxford the laboratory for art and archaeology where many new scientific techniques have been developed to assist archaeologists with their work. I do not need to remind you that Oxford also has a long tradition of archaeological studies and has been the home of many distinguished scholars in this field including, of course, the late Dame Kathleen Kenyon. So, I think Oxford is a very appropriate venue for your conference this week and I very much hope that you will have many successful discussions and that you will all enjoy your short stay in this university and city.

Sir Rex Richards
The Vice-Chancellor of the University of Oxford

Your Royal Highnesses, Your Imperial Highness, Your Excellencies, My Lords, Ladies and Gentlemen:

It is a great pleasure as well as a special honour for me to be here this evening to welcome all of you to this the First International Conference on the History and Archaeology of The Hashemite Kingdom of Jordan. I wish to express our sincere thanks to His Royal Highness, The Prince of Wales, for agreeing to attend our opening session. We know that he has a particular interest in archaeology and look forward to being able to show him some of the sites at the discussion today and at some time in the near future. I would also like at this stage to express on behalf of the Department of Antiquities our deep gratitude to His Royal Highness, Crown Prince Hassan, not only for initiating the idea of such a gathering but also for being instrumental in getting it arranged. We are, indeed, indebted to him for his unfailing and continuing support towards a better and improved understanding of archaeology in Jordan. I should also like to thank the Vice-Chancellor for his kind words of welcome and on behalf of all of us we would like to thank all those here and in Jordan for the tremendous efforts that have gone into the preparation and organisation of this conference.

Dr Adnan Hadidi,
The Director of Antiquities, Ministry of Tourism and Antiquities, Amman.

Your Royal Highness, Your Imperial Highness, Vice-Chancellor, Ladies and Gentlemen:

It is a multi-faceted pleasure for me and for my colleagues from Jordan to be here with you today. We have worked over a period of many months to achieve what we hope will be the introduction, the first intellectual awakening of the minds of over 16 nationalities participating in a tribute to the history, not just of the Hashemite Kingdom, as the span of my country's political presence on this earth as a sovereign state, though extending at the end of this year to sixty years, is certainly not matched by thousands of years of history which is its heritage, but of the territory of Jordan. It is certainly an opportunity for us to identify, for the first time, at a seat of learning the University of Oxford, the greatness that the Middle East, often called the cradle of civilization, has held through a time capsule, which is Jordan, a country which is best described as the carrefours-des-nations, the meeting-place of civilizations through the ages.

Why archaeology?—I ask myself as a layman; and my answer is that as we look at the history of Jordan, as we look at the birthplace of the world's monotheistic religions, as we look at the context of dialogue and interchange between the cultures and dynasties that have presented the pre-Islamic and Islamic era, we realise the responsibility that we have towards both; what one author called, 'The Mandate of Heaven' and 'The Mandate of History'. It is unfortunate that, with the turmoil of events in today's world, a country like my own does not have the opportunity of a pause to take breath and recognise the achievements of the past in the task of identifying who we are, to whom we belong and what our perspective of our future will be. Jordan has experienced over the past years a number of highly-specialised seminars. We are at the moment inviting a meeting of what we called '*The Bilad Ash-Sham* Conference'—a conference which represents all those countries which at one time were part of the same civilisations in the North of the Arabian Peninsula and in areas extending beyond that. This meeting, this exchange of ideas, is however an attempt by us to take a standardised view of history, of, I hope, the mandate of heaven and the mandate of history. We speak so much today of the need for technological advance, and we are grateful for the academic and scientific support that archaeology has had in this field. But I believe, firmly, that in terms of the need for a new humanitarian order, a subject on which I had the pleasure of speaking not so long ago and to which we had a very timely response in what the Vatican calls the *Nova Spaea* or the New Hope movement, it is a hope that as we look at the humanitarian requirements of identifying our past, present and future, that

archaeology and history will serve to identify areas of commonality: common ground between civilizations.

For me, it is a singular pleasure to be back in Oxford to meet old friends and, I hope, to make many new ones. It is an occasion where I would be remiss not to pay special tribute to the achievements of British scholarship in my country and in the Middle East—to such names as Dame Kathleen Kenyon, the principal of St. Hugh's and the Director of the British School of Archaeology in Jerusalem—to Gerald Harding, the former Director of the Department of Antiquities and a student of the noteworthy British archaeologist Flinders Petrie—to these I pay special tribute today. Would that Kathleen Kenyon and Gerald Harding were with us at this gathering. To the schools represented in Jordan—the French, the German, the American and to the many other nationalities participating in what I hope will result from this conference, a study of Jordan through the ages and the first in a series, I express my sincere gratitude and the gratitude of all Jordanians. I do not intend to take too much of your time and I know that the programme of His Highness, His Royal Highness, the Prince of Wales, today has been, as in every day that we see him, a heavy one. But I think it would be remiss of me not to express my personal sense of pride in his interest and his participation with us in this inaugural meeting of our endeavour to contribute to the history of humanity and mankind through promoting studies, as I said, not on the history of Jordan, but on the history of the region whence I come, a region rich with contribution.

Once again, thank you one and all and may I permit myself to invite His Royal Highness, the Prince of Wales, to say a few words on the subject of his choice.

His Royal Highness, Crown Prince Hassan

Your Royal Highness, Your Imperial Highness, Vice-Chancellor, Ladies and Gentlemen:

This conference has brought together virtually all the leading scholars, I am told, of the history of Jordan, from the earliest times to the Ottoman period. I see that you have a very full programme indeed, judging by the list I have been sent, so I sincerely hope that you all actually survive each others papers.

Ever since my school days I have known that rather familiar phrase from a well known piece of verse, 'rose red city half as old as time'[1]. It was only when I grew up and eventually studied archaeology that one or two of my tutors at Cambridge told me that this referred to the remarkable city of Petra in Jordan, the world famous capital of the Nabataean in the last century BC and the first century AD, so I hope one day I shall be able to see it.

The timing of this conference is particularly apt since it coincides with the launching of an independent entity, the British Institute in Amman for Archaeology and History, and I believe this opens on the first of April, which must have been chosen by somebody with a very well de.eloped sense of humour. This will be the tenth British School of Archaeology overseas and British involvement in Jordanian antiquities is a long and traditional one.

T. E. Lawrence, who first went to work in the Middle East as an archaeologist with D. G. Hogarth, who I believe was keeper of the Ashmolean Museum here, was keenly interested in the antiquities of Jordan, although his interests turned to other matters at a later date.

Perhaps one of the most notable scholars from the United Kingdom, who was deeply involved in Jordanian Archaeology, was Dame Kathleen Kenyon, who, as the Crown Prince said, ended her official career as Head of St Hugh's College here. When she died two years ago everything passed to her nephew, Jeremy Ritchie, who found himself faced with having to pay £70,000 in death duties but in a most generous gesture, instead of selling her library to meet those death duties, he gave the great part of it to the Library of the British Institute in Amman, and I am sure we are most grateful for that. Kathleen Kenyon, in fact, didn't finish the publication of her work on Jericho and Jerusalem but work on the publication is being carried out by a small unit of four people, Mr Tom Holland, Lady Wheeler, Dr A. D. Tushingham and Dr Key Prag, and I am delighted to know that the publication of these important

[1] J. W. Burgon's winning entry on the subject of Petra chosen by the Duke of Wellington in 1845 for the Newdigate Prize.

works is taking place in the Museum of Archaeology and Anthropology at Cambridge, where I tried studying in my first year as an undergraduate.

Needless to say, there is enormous pleasure in British archaeological circles that His Royal Highness, The Crown Prince, has so kindly agreed to become Patron of the new Institute, and that is splendid news. I am sure everybody here will wish the new Institute all possible success in its endeavours, endeavours which I am sure will further strengthen those close ties of friendship and mutual respect and which have for so long characterised the relationship between Jordan and the United Kingdom and with that I would like, if I may, and I am sure you are most relieved, to declare this Conference on Jordanian Archaeology open.

His Royal Highness, The Prince of Wales

Adnan Hadidi
Director
Department of Antiquities
Hashemite Kingdom of Jordan

Adnan Hadidi

The Archaeology of Jordan: Achievements and Objectives

1 Location, topography and climate

Jordan is situated in the heart of the Arab World. The River Jordan forms a natural boundary between it and Palestine on the west. On the north, the frontier with Syria is also naturally demarcated by the River Yarmuk. On the east and south the country is separated from Iraq and Saudi Arabia respectively by vast stretches of desert and basalt country.

In Jordan there are three zones: a) the Jordan Valley, b) the plateau and mountains, c) the desert. Throughout most of its length the Jordan Valley is very fertile, but the extreme heat at the bottom of the valley, especially in summer, makes heavy work very difficult. The depth of the Jordan River varies from one metre at the fords to three and four metres elsewhere. The total length of the Jordan depression from Mount Hermon in Syria to the head of the Gulf of Aqaba is nearly 428 kms.

The plateau and mountains are mainly of limestone, except in the south where they are continued by the granite which forms the eastern wall of the Wadi Araba. In Petra and Wadi Rum, some mountains are of sandstone. The plateau has a climate similar to that of the Lebanon mountains, but drier and less wooded. This area is really an eastward extension of the Mediterranean province. The rainy season is from November to May and is heaviest from January to March. Summers are dry, rainless and hot, but evenings are generally cool and pleasant. July and August are the months of highest temperatures and the humidity ranges from 27 to 53.

The desert east of the Hejaz railway is gently tilted from west to east until it is submerged in the Arabian Gulf. The principal oases in the desert east of the Hejaz railway are at Azraq in the Wadi Sirhan depression, at Bayir in the south and at Jafr, 60 kms. east-north-east of Ma'an.

Brief archaeological survey

The archaeology of the Hashemite Kingdom of Jordan is unique in its characteristics so that it constitutes a national wealth of which Jordanians are very proud. Many archaeologists, and anthropologists too, believe that if civilization can be said to have begun when man gave up his nomadic life as a food gatherer and settled down to raise crops, then civilization was born in the warm and friendly climate of the Jordan River Valley, mainly at Jericho. Important recent discoveries have revealed that this revolutionary transition in man's economic and cultural history occurred simultaneously at other places in Jordan, notably Beidha, Wadi Rum, the Jerash region and in Wadi al-Yabis, Wadi Dhobai and Kilwa. In fact, two Jordanian sites, Jericho and Beidha, each more than 10,000 years old, are thought to have been the world's first settled communities. If Jordan was not, in fact, the cradle of civilization, it was most certainly its nursery. Archaeological surveys carried out in the country show that Man's activities appeared in Jordan as early as the beginning of the Old Stone Age, some 450,000 years ago. Flint hand-axes and tools of the Palaeolithic Age are spread all over Jordanian land from north to south, but notably in the regions of Aqaba, Wadi Arabah, Wadi Rum, Ma'an, Jafr, Harranah and Azraq, east of Amman where also prehistoric animal bones were found. The best evidence for the Pottery Neolithic phase comes from Jericho in the Jordan River Valley. Other sites have been investigated in the Jordan Valley, such as Tell esh-Shuneh, Tell Abu Habil and Ghrubba in the East Bank of Jordan. A pottery Neolithic culture is also found in the Wadi Yarmuk. Cultural relations between these lands and other neighbouring countries such as Anatolia, the Syrian coast, northern Mesopotamia and Egypt, were extended during this period. Although it is believed that these sites are not typical of East Jordan, they do suggest that further excavations and investigations in this area may throw more light on the archaeology of this remote period.

Many sites from the Chalcolithic Age (copper-stone) (*c.* 4500–3150 BC), can be found in Jordan. Surface explorations indicate that there are numerous sites of this period in East Jordan. One of the most outstanding Chalcolithic settlements in the country is Tuleilat al-Ghassul, north-east of the Dead Sea, where excavations have been carried out since 1930. Some of the well-built houses discovered at this site were decorated with painted frescoes in polychrome. The most exciting find was that of a room, perhaps part of a sanctuary, which contained a colourful painting depicting what looks like a religious procession in front of a shrine. The Jordanian Department of Antiquities, with help from UNESCO and

ICCROM, together with Sydney University of Australia, who had financed and directed the excavations, were able to save a large section of this polychrome painting, which is now on display in the Jordan Archaeological Museums at Amman. The salvage of these frescoes, perhaps the second oldest known in the world after Catal Huyuk in Turkey, is a remarkable example of international co-operation for the salvage and protection of the Jordanian cultural heritage.

Belonging to this period are hundreds of dolmens (structures of two massive vertical slabs of stone spaced about a metre apart and topped with a third large stone slab; and in some cases closed in on one side with yet another slab) distributed on the mountainous regions overlooking Tuleilat al-Ghassul and Ghor Damiah and on the hills east of Jerash, around Irbid, and near Hesban and Ma'in.

Many sites belonging to the Early Bronze Age (*c.* 3150–2150 BC) mostly still unexcavated, could be listed. Two important sites are Tell esh-Shuneh and Tell Um Hammad esh-Sharqi. Two other sites have been excavated at Khirbet Wadi Wala and Bab ed-Dhra' in the Lisan (tongue) on the eastern shore of the Dead Sea. Here a large cemetery of several thousands of tombs were discovered. This cemetery is believed to be the largest ever discovered in the Near East. However, a series of Early Bronze Age fortified towns have been found along the edge of the southern Jordan Valley, south and east of the Dead Sea. At all of these sites there were burials, and at several, the cemeteries were quite extensive. The Bab ed-Dhra' culture has been designated as Late Chalcolithic by R. de Vaux, Proto-Urban by K. Kenyon, and Early Bronze Age I, by G. E. Wright and Paul W. Lapp. However, Lapp's discussion (BASOR, 189, pp. 12ff.) of Bab ed-Dhra' provides enough evidence to justify the designation of this culture as Early Bronze Age I. Yet, there are many questions to be answered concerning this site and the culture it has revealed. The recent survey carried out in this region by Rast and Schaub, has successfully fitted the site into its proper context—one of a series of fortified towns stretching southward along the *Ghor*. But while this survey resulted in disproving the singularity of Bab ed-Dhra', it raises a number of questions. Are these the only Early Bronze Age sites in the area? Were they more visible than other sites because of their fortifications? Can the extent of the cemeteries at these sites be accounted for simply by the populations residing at the sites themselves? More research is needed elsewhere in the southern Jordan Valley to find the answers to these and many other questions. However, one thing is sure, and that is there are more than 400 sites in this area alone waiting for excavation and research.

The Early Bronze Age towns were heavily destroyed around 2150 BC by invading nomadic tribes identified as the Amorites (the Martu in the Sumerian texts). Texts and archaeological evidence indicate that these newcomers arrived from the Syrian desert. The period extending from this date on to around 1900 BC is designated the Intermediate Period between Early Bronze and Middle Bronze Age. Material remains of this period were found in a number of sites mainly at Ader, Khirbet Iskandar, Tell Iktanu, al-Husun, Amman and Bab ed-Dhra'. However, more excavations in other sites are needed to throw a clearer light on the cultural development of Jordan in this transitional stage from the Early Bronze to the Middle Bronze Age.

The tribes which invaded Jordan in the Intermediate Period were driven out of the country by the Hyksos or Shepherd Kings ushering in the Middle Bronze Age (1900–1500 BC). Jordan came under strong Egyptian influence during the Middle Bronze Age. Considerable archaeological material was uncovered in Amman, Na'ur, Mount Nebo, Tell Safut, and Midayineh. Jalul, a site situated at a short distance east of Madaba, is a very promising site judging by surface exploration, and should yield very important archaeological material which may contribute to our knowledge of this period and the period which followed, namely, the Late Bronze Age.

The theory of Dr Nelson Glueck that East Jordan was basically a nomadic area and that it had no permanent settlements from *c.* 1900 to 1300 BC (AASOR, 25–28, 1951, p. 423) can no longer be accepted in the light of new scientific and methodological surveys and excavations. The fine and impressive archaeological material discovered in tombs from Amman, Sahab, Na'ur and Tell Safut, can hardly be attributed to nomadic people.

Recent excavations and surface finds at Irbid, Tabaqat Fahil, Amman, Sahab, Madaba, Wadi Abu en-Naml, Jalul and many other sites surveyed recently by Emory University in southern Jordan show that the country continued to flourish during the Late Bronze Age (1500–1150 BC). Trade with Egypt, Greece and Cyprus greatly improved economic conditions in Syria, Jordan and Palestine. The archaeological finds at Tabaqat Fahil (Pella), Deir 'Alla and Amman indicate that this trade activity penetrated into the Jordan Valley and the Jordanian highlands.

The most prominent Late Bronze discovery was the temple at the Amman airport excavated by G. L. Harding and B. Hennessy. Pottery of Mycenean and Cypriot origin was associated with the temple, as well as scarabs and bronze weapons. The temple shows strong affinities with Iranian temples, especially those at Susa and Persepolis, but more striking parallels are found in the Nabataean temples of Khirbet at-Tannur and Wadi Rum. G. L. Harding also reported a settlement of the same period near the temple, but this was not excavated.

Perhaps a parallel to the ancient situation can be found in modern times. In the nineteenth century AD East Jordan was mostly nomadic or semi-nomadic. Today, although a semi-nomadic life style is still found in the southern part of the country, there are also many urban centres. Perhaps the situation was similar in East Jordan in the Middle and Late Bronze Age-nomadism alongside urbanism.

A challenging problem is the identification of Tell Hesban with ancient Heshbon, described in the Bible as the flourishing Amorite capital at the time of the Prophet Moses

(*c.* 1300 BC). The 1968 and 1971 seasons of excavation have not yielded any traces of Late Bronze Age occupation—seemingly a challenge to the above discussion about urban settlements. Perhaps the Late Bronze Heshbon must be sought elsewhere or the biblical data re-examined.

The picture of East Jordan in the Late Bronze Age is far from complete. The main source of further information is material uncovered by the archaeologist. There are strong indications that much more can be learned about the middle of the second millenium BC in East Jordan through this means.

Jordan became thickly settled during the Iron Age (1150–550 BC). This is the age of the native Arab kingdoms of the Edomites, Moabites, Ammonites and Gileadites. All of these kingdoms and their capital cities are mentioned very often in biblical literature spanning the period from the Early Iron to the Late Iron Age. Many sites and monuments are available for the study of the material culture of Iron Age I and II. Through surface exploration for the most part over 250 sites of this period have been identified. Regrettably, only a few of these sites have been excavated.

The Edomite Kingdom appears for the first time in the Bible when it is mentioned that the king of Edom refused to allow the Israelites to pass through his land (Numbers 14–21). In Genesis 36.31–39 eight Edomite Kings are listed. Mrs Crystal Bennett of the British Institute of Archaeology in Amman, suggests that these kings may have been tribal *sheiks*, for no one of them succeeded his father as king. Perhaps the list reflects the city-state organization of Edom. Fortunately, some important excavations, undertaken at Tell Khalifeh, Tawilan, Buseirah and Um el-Biyarah, have greatly improved our knowledge of Edomite civilization. At Um el-Biyarah, a natural fortress situated in Petra and equated with biblical Sela', Mrs Bennett discovered in the ruins of an Edomite village the seal of *Qaus Gaber*, an Edomite King of the seventh century BC who is mentioned in the reign of Esarhaddon (680–669 BC). But no evidence before the end of the eighth century BC was found—a fact which renders the identification of Um el-Biyarah with biblical Sela' rather difficult. The most exciting of the finds at Tawilan, excavated by Mrs Bennett again, was a scarab decorated with an altar surmounted by a crescent and star-divine symbols.

According to the excavators the evidence from Tawilan would invalidate the identification of Tawilan with biblical Teman. One of the most recent excavations was carried out at Buseirah, believed by Old Testament scholars to have been biblical Buzorah, situated at a short distance north of Tafileh on the famous King's Highway. Nothing earlier than the eighth century BC has been found.

Archaeological evidence indicates that the Kingdom of Moab flourished as early as the beginning of the thirteenth century BC. An important monument of this Kingdom is the Balu'ah stele, discovered in 1930 and now on display in the Jordan Archaeological Museum at Amman. W. D. Ward and M. F. Martin (ADAJ VIII–IX, 1946, pp. 5–29) date this stele to the late thirteenth century or early twelfth century BC. Strong Egyptian influence is evident in the workmanship and rendering of the relief—figures of this monument. It does imply the flourishing urban occupation of Moab in the Late Bronze Age and perhaps even in the Middle Bronze Age. But the most outstanding find was the Mesha' Stele (The Moabite Stone) discovered in 1868 and now displayed outside Jordan in the Louvre Museum. This monument which has a long inscription is dated to the ninth century BC, and records the victory of Mesha' over the Israelites and their king Omri. More important, however, is the description of the king's urban and economic achievements in his country. He dug cisterns, built or rebuilt towns, fortified them and opened roads (the Arnon-Wadi Mujib road is mentioned). Excavations at Dhiban, the capital of king Mesha', by the American Schools of Oriental Research were carried out from 1950 to 1953. More information is now available on the material culture of the Moabites in the Iron Age II period (ninth to eighth century BC). At Madaba and Mount Nebo excavations revealed many tombs from the end of the Late Bronze Age and Early Iron Age. On the other hand, at Hesban, 7 km. west of Madaba, the Andrews University Expedition found no occupation earlier than the seventh century BC.

The Ammonite Kingdom which dominated the political and cultural history of East Jordan along with the kingdoms of Edom, Moab and Gilead to the end of the seventh century BC, had its capital at Rabbath Ammon (modern Amman). The Ammonites and their capital city Rabbath bené Ammon are mentioned very often in biblical literature spanning the period from 1300 to 587 BC (Genesis, 19: 36–38; Deuteronomy, 3: 11; Joshua, 13: 25; 2 Samuel, 11: 1ff, 12: 26–29, 17: 27; 1 Chronicle, 20: 1; Jeremiah, 49: 2–3; Ezekiel, 21: 25, 25: 5; Amos, 1: 14). From the twelfth century to the end of the tenth century BC, the Ammonites were engaged in what appears to have been predominantly defensive wars, first against the incursions of the Amorites and later the Israelites. As Rabbath Ammon was situated on the vital King's Highway, the Ammonites were active in the carrying of trade from the east and south of Arabia. During the reign of David, the Israelites most probably motivated by the desire to control this trade as well as the copper sources in Wadi Arabah, besieged Rabbath Ammon and seizing the water supply of the city, captured it and killed and tortured a great number of its inhabitants (2 Samuel 11: 14–21; PEFQS, 1878, p. 89). It was during this assault that Uriah the Hittite was placed by orders of the king in a post where he was certain to be killed, thus enabling David to marry Bathsheba his widow (2 Samuel 11: 14–21). The Moslem Arabs still traditionally associated the name of Uriah with Amman in the ninth century AD and allude to a mosque that was built on his tomb (al-Makdisi, Bibliotheca Geographorum Arabicorum, III, ed. M. J. de Goeje, 1866, p. 175).

From the middle of the ninth century BC the kings of Beth-Ammon or sometimes simply Ammon—as they were called by the Assyrians—are enumerated in the Assyrian texts,

first as enemies in the reign of Shalmaneser III (858–824 BC) and later as vassals in the reigns of Tiglath-Pileser III (744–722 BC) and Esarhaddon (680–669 BC). When Nebuchadnezzar—conquered the eastern Mediterranean area in the early part of the sixth century BC, the Ammonites fell victim to his power and much of the population was carried off to Babylonia into exile.

Archaeological, architectural as well as inscriptional remains, indicate that the Ammonite civilization attained a high degree of prosperity and refinement. The surviving remains of many fortress towers built from massive blocks of flints around the city of Amman, are a striking feature of their architecture. The arrangement, design, composition, strength and number remain to this day incomparable to any constructions of Western Palestine (ZDPV, 79, 1963, pp. 127f.).

Ammonite pottery from the thirteenth to the sixth century BC which is nearly common to all the Iron Age kingdoms of East Jordan, show a highly developed industry. Much of this pottery is covered with red or brown slip, highly polished and often decorated with horizontal bands of dark brown paint and sometimes with bands of white paint between them. In plastic art the Ammonites show an advanced stage in this field.

Four sculptures dating from the seventh century BC and probably used as capitals were recovered from a Hellenistic water-channel on the Citadel of Amman. Two other sculptures, a male and female, were recently discovered by chance during building operations near Khirbet Hajjar. They are dated in the Iron Age II. Historically important are a group of clay figurines which represent a horse-and-rider type and a small statue in limestone bearing the inscription in Old Aramaic characters, 'Yarah 'azar, chief of the cavalry'. Stylistically this statue shows connections with Northern Syria and Phoenicia. A ninth century Ammonite inscription in Aramaic was discovered outside the walls of the citadel of Amman and when deciphered was found to contain a royal record of a magnificent building scheme which was undertaken at Rabbath Ammon. The excavation of Tell Siran on the University of Jordan Campus revealed a bronze bottle engraved with eight lines of Ammonite script, describing the magnificent works of king Amminadab, son of Hasal' el, son of Amminadab. The works include the planting of vineyards, the digging of cisterns and the erection of a monumental building. This is the most complete Ammonite inscription ever found and will be an important document for the study of the Ammonite language and script in the seventh to the sixth century BC. Middle Bronze Age rock-cave tombs were found to have been re-used during Iron Age I period in Sahab, south of Amman. These discoveries suggest the need of more extensive and systematic excavations in and around Ammonite territory to recover more archaeological material of the impressive Ammonite civilization.

Little is known of Jordan's history during the Persian domination (*c.* 539–332 BC). According to Herodotus, Darius I (522–485 BC), reorganized the administration of the Persian empire into twenty *satrapies* or provinces. Jordan was placed under the fifth *satrapy* of Palestine. As more sites are excavated, surely more evidence of this virtually unknown period of Jordanian history will be available.

During the Hellenistic Age (332–63 BC), Jordan was almost completely hellenized, when the successors of Alexander the Great embarked on a programme of founding a chain of Greek fortified colonies along the ancient caravan trade-route from Damascus southward to Aqaba, and Greek became the *lingua franca* of the whole area. During the second half of the second century BC and down to the year 63 BC the history of Jordan is to be linked with the history of the Nabataeans and the events that took place in Palestine, starting with the revolt of the Maccabees in 168 BC and the later formation of the Hasmonaean Kingdom.

The Nabataeans were an Arab tribe, traditionally believed to have originally migrated from the Arabian peninsula to the land of Edom in southern Jordan, during the first half of the sixth century BC. Apparently, they gradually settled in the sites which were in the possession of the Edomites after the latter had moved to the richer land of Palestine. Petra became the capital of the Nabataean Kingdom, and the meeting centre of the trade-routes coming from the Persian Gulf and by western Arabia and the Red Sea. Nabataean power was constantly rising and during the reign of King Aretas III Philhellene (*c.* 85 BC), they controlled Damascus.

Romantically considered especially since the nineteenth century AD because of the re-discovery then of their extraordinary, beautiful former capital of Petra in southern Jordan, the Nabataeans are beginning to be considered more realistically because of the nature and extent of their kingdom, the uniqueness of their pottery, the international ramification of their widespread commerce, the high excellence of their agriculture, soil-conservation and water engineering and the Hellenistic-Arabian character of their art, architecture, religion and general culture. The Nabataeans made much out of little in the lands of their origin and adoption. Theirs was a record of remarkable accomplishment, extending from commerce to agriculture and from engineering to architecture and art. They carved entire cities out of mountains when necessary and performed prodigious feats of imaginative farming. Only an immensely able people could look at blistering wastelands, such as occur in the Wadi Arabah and the Negeb of southern Palestine, and envisage in them productive farms and burgeoning flocks and flourishing villages connected by thronged roads, and then perform the miracle of translating such dreams into living reality, as the Nabataeans did.

Quick to learn and eager for advancement, the Nabataeans readily assimilated in new environments whatever might promote their well-being. Many and diverse cultural influences were reflected in an altered form through the prism of their genius.

Much about the nature and extent of the Nabataean civilization can be learned from the character and spread of their unique pottery. Only a deeply rooted, permanently

settled people of advanced cultural and economic attainments could have produced it. Much of this wheel-made, kiln-baked ware was almost unbelievably thin, requiring high skills in its manufacture. It was beautifully decorated with sophisticated designs mainly floral and geometrical.

Nabataean cultural remains have been recorded, studied, described and illustrated by many explorers and scholars, perhaps more than any one archaeological subject in the Near East. Yet, in contrast little has been undertaken to investigate the earlier phases of their history and culture. The precise chronological sequence of Nabataean architecture, as well as of Nabataean pottery is, for example, still not established. More excavations and research into Nabataean sites are needed to throw more light on the origins of this remarkable civilization and its consequent development. Furthermore, the tensions between the Hellenistic culture and the indigenous Nabataean culture should be reflected in the material remains to be uncovered by the archaeologists. Such new data should illuminate the dynamics of cultural change and interaction.

In 63 BC the Roman legions under the leadership of Pompey arrived in Syria, and from Damascus he marched on to Palestine and Jordan. One of Pompey's first acts was to declare all Greek cities free in north Jordan. These cities formed a league which came to be known as the Decapolis or League of Ten Cities, and constituted a unique political phenomenon in the Roman Empire. Although subject to the Roman governor of Syria, they were given a considerable degree of autonomy. Among these cities were Damascus, Philadelphia (Amman), Gadara (Um Qeis), Pella (Tabaqat Fahl), Gerasa (Jerash) and a few others. The Nabataeans, by formal submission to the Romans, retained their territory up to the Wadi Zerqa including Hesban (Esbus).

Beginning with the first century AD, Jordan enjoyed prolonged peace and rising prosperity. In 106 AD the emperor Trajan finally broke up the Nabataean kingdom and annexed its lands to the newly created Province of Arabia, with its capital first at Petra and later at Bosra. A new magnificent road was built along the line of the older famous King's Highway connecting Damascus and Bosra with Aqaba (Aila) on the Red Sea, and was named the *Via Nova Triajana*. It is to this period, beginning with Trajan and the good emperors who came after him, that most of the magnificent Roman remains in the country belong, such as the ruins of Amman and Jerash and the later ruins of Petra.

Two nomadic tribes in East Jordan during the Roman period were the Safaitic tribe and the Thamudic tribe. Although their origins pre-date the Roman times, the bulk of the evidence regarding these tribes date from the early Christian era. This evidence is largely in the form of graffiti, inscriptions scratched on stones and basalt rocks throughout East Jordan—Safaitic in the north and Thamudic in the south. Thousands of these texts are already known especially along the ancient trade-routes crossing Jordan from south to north and from east to west. Apparently they were written by camel-drivers of the caravans which carried the trade along these routes. Although many are very brief—sometimes giving only a name, they do indicate an interesting level of literacy and high degree of culture. Recently, the Department of Antiquities carried out a salvage excavation at the site of the new Queen Alia International Airport, south of Amman, where the contents of more than 130 burials were recovered. Preliminary studies of this large cemetery supported by the discovery of an inscription in Thamudic script, indicate that these burials belong to members of some Thamudic group. The paraphernalia found in these burials including jewellery, glass and ceramic objects and beads betray strong Graeco-Roman influence. This curious cultural and historical phenomenon certainly needs further investigation and research.

The Roman period extends to the beginning of the fourth century AD. Near the end of the third century AD the Roman Empire was divided between the East and the West. In AD 324 (with the death of Licinius) Constantine the Great emerged as sole ruler of the Roman Empire and established the capital at Byzantium, changing the name to Constantinople (modern Istanbul). This is considered the beginning of the Byzantine Age in the Eastern Mediterranean area.

Under the Byzantine Empire (AD 324–636), Jordan's population increased and apparently was very prosperous. Most of the Byzantine remains are located on sites previously occupied. Hence, almost every pre-Byzantine site shows evidence of some Byzantine occupation—an indication of how densely the area was occupied in Byzantine times.

The main archaeological remains of this period are the Christian churches found on sites throughout Jordan. The basic architectural plan was the familiar basilica used extensively in the Mediterranean world during this period.

But the most remarkable and impressive Byzantine cultural remains in Jordan are the mosaic pavements, found extensively throughout the country. Although the art form and technique pre-date the Byzantine period, a distinct development and local skills can be observed in the Jordanian mosaics. Hence, it is proper to speak of a distinct mosaic tradition as originating in the Byzantine period in Jordan. The centre of this development appears to have been at Madaba and Jerash. Madaba was virtually carpeted with mosaics during the Byzantine period. Most of these are floors in the ancient churches, but numerous private dwellings and other public buildings had mosaic floors. In some cases it is possible to date the structures through inscriptions in the mosaic floors or through stratigraphic evidence, although the latter needs considerably more refinement as more Byzantine sites are stratigraphically excavated.

The Byzantine occupation in central Jordan was very extensive. In Madaba alone, there are more than a dozen, large churches with colourful mosaic floors. One such floor, represents the map of Jordan, Palestine and Egypt and a plan of Jerusalem. Only a few of these churches have been excavated. Hence, a great deal of information about the Byzantine period in Jordan awaits the work of field archaeologists and the study of art specialists and historians.

All of these data must be integrated to extend the knowledge of Jordan's past history and to assess the significance of the various periods in the development of the civilization and culture of the Near East.

In the first half of the seventh century AD, a new force was emerging in the Arabian peninsula. The Prophet Mohammad had succeeded in uniting the Arabs under Islam. During his lifetime the Prophet preached the elements of the new religion of Islam, which centres on the oneness of God-Allah in Arabic. The Muslim creed states that 'There is no God but Allah, and Mohammad is his Prophet'. The Prophet's followers, inspired by his teachings, set out after his death to spread the religion. At Mo'tah, just south of the city of Kerak, the first clash between Muslim Arabs and the Byzantines took place, when a small Muslim force engaged the large and well armed opposing army. In AD 636 at the decisive battle of Yarmuk north of Um Qeis (Gadara), the Byzantines were routed and the Muslims marched on to Damascus, where eventually the Omayyad Caliphs established their capital.

As Jordan lay on the direct route from Syria to Arabia, it continued to have its importance, and for a time, life was peaceful and prosperous. Amman (Philadelphia) continued to mint coins under the Omayyads, who also built a magnificent Palace (Qasr) on the ancient Citadel of the city. The Omayyad caliphs and princes built many charming palaces and hunting lodges in the Jordanian desert. But when the Abbasids (AD 750–1258) moved their capital to Baghdad, Jordan soon became a forgotten land; not being on any particular trade route, or possessing any natural resources, the country was allowed to fall into decay. It was, however, still of sufficient strategic importance for the Crusaders in the twelfth century AD to occupy part of it and build castles there, notably at Kerak and Shobak. They also built castles at Tafila, Wöiera, Petra and Aqaba. The castle at Kerak was the most strategic and formidable military centre for the Crusaders who started to threaten and interrupt the Muslim pilgrimage to Mecca. Most of these Crusader castles are not fully excavated yet and need technical investigation to reveal their fine and intricate architectural design and lay-out.

One of the most outstanding examples on Muslim military architecture during the Ayyubid period (AD 1174–1263) is the castle at Rabadh near Ajlun. It was built by Izzudin Usama, one of the leaders of the famous Muslim ruler, Salah ed-Din Al-Ayyubi. The Muslims needed to provide security of transport between Syria and Palestine through this castle in central Jordan. Other Islamic castles built by the Ayyubids in this period were at es-Salt and at Azraq.

During the Mamluk period (AD 1250–1516) Jordan witnessed a great advance in architecture and agriculture. Azzahir Baibars who ruled from AD 1260–77, reconsolidated the castle at Rabadh and rebuilt the castle at es-Salt. But when one of his successors, Al-Ashraf Khalil finally drove out the Crusaders from the country in AD 1290, Jordan again lost its importance and was neglected by the Mamluk Sultans. The Mamluk's only concern at this time was to subdue the nomadic tribes in order to render the pilgrim's road safe. This state of affairs continued under the Ottomans (AD 1516–1916).

After the break up of the Ottoman Empire and World War I, the mandate territory of Jordan was established and *Emir* Abdullah (later His Majesty King Abdullah) the founder of the Hashemite Kingdom of Jordan, moved his capital from es-Salt to Amman and assumed his constitutional power. Thus Jordan started on a long road of growth and prosperity, once again an important kingdom, a kingdom in history.

II The Department of Antiquities

With such a rich heritage, backed by recorded events and physical relics of every period dating from the Palaeolithic to the Ottoman, it is no wonder at all that Jordan should figure prominently in the study of archaeology. Since its establishment in 1923, the Jordan Department of Antiquities has been doing just that and is responsible for every aspect of archaeological work in Jordan. Its archaeologists have been participating with scholars from all over the world in excavating and identifying, preserving and consolidating the many precious relics and monuments of the past. International teams and institutions have been requested to help in the preservation of certain sites, such as *Qasr ʿAmra* (Spanish), *ʾAraq el-Amir* (French), Qal'at er-Rabadh (British), Um Qeis (German & Danish), Umm el-Jimal (American), Tabaqat Fahil (Australian and American), Siyagha-Mount Nebo (Franciscan Fathers), Tuleilat el-Ghassul (UNESCO and the University of Sydney), Jerash and Petra (International Bank, UNESCO and the Jordan Government). Four countries continuously engaged in various archaeological activities have permanent centres in Amman: The American Center of Oriental Research, the British Institute of Archaeology, the German Evangelical Institute for the Study of the Holy Land and the French Institute of Archaeology.

Still, five decades later, what seems certain is that more lies beneath the soil than has been brought to light above it. Recent surveys have indicated that there are more than 200 sites in the Jordan Valley alone and hundreds of others scattered throughout East Jordan, from the Yarmuk in the north to Aqaba in the south. With the assistance of international friends, in funds and in talent, Jordan is determined to continue its search until the last sherd has been dug up and its cultural and archaeological heritage is maintained in the best possible condition. The discovery and preservation of these ancient sites, monuments of civilization, is a grave responsibility. 'We are care-takers' His Majesty King Hussein cautions, 'of a legacy that belongs not only to us, but to the world'.

For millennia, the protective sands of time have kept much of this legacy well hidden and intact. In this century, however as we construct the cement and steel buildings of our modern age, mindless bulldozers and power shovels begin to endanger the vast underground museum that is our heritage. To prevent inadvertent destruction of these treasures, the Department of

Antiquities has been undertaking a series of surveys covering the whole of Jordan. Wherever construction of a dam, a factory or a road is planned, an extensive survey and inventory is conducted. At each building site, an Antiquities officer carefully follows excavation work and stops the shovels at the first evidence of an archaeological find to evaluate its importance. With a soil as rich as ours, not in oil but in antiquities, such precautionary measures are most necessary and often yield exciting results.

The Department's activities have been inspired by its policy of promoting archaeological exploration and research, ensuring the maintenance of the monuments, enhancing the surrounding areas, disseminating archaeological knowledge and establishing archaeological, historic, art and folk museums.

The two national universities in the country, the University of Jordan at Amman and the University of Yarmuk at Irbid have each established faculties of archaeology to teach and train interested Jordan, Arab and foreign students in this field.

The imminent future implementation of all these archaeological development programmes and ambitions needs an assessment of Jordan's cultural resources as well as its natural ones.

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The Prehistory and History of the Jordanian Landscape

Abstract
In the course of its occupation by man the physical landscape of Jordan has undergone profound changes, among them the outpouring of basalts, crustal displacement along faults, fluctuations in the level of the Dead Sea, and the filling and excavation of valley floors. The extent to which man's activities have influenced or been influenced by physiographic history is open to debate; what is certain is that the landscape of today is a poor guide to the conditions that prevailed as little as a century ago.

Introduction

In *The Historical Geography of the Holy Land* (1894), George Adam Smith sought to discover from 'the lie of the land' why history took the course it did and by the same token to isolate the impact of physical nature from the products of moral and spiritual forces. Smith dealt with such complex issues confidently, witness his suggestion that the climate of Palestine lent itself 'to the service of moral ideas' and that its fertility affected immigrants from the desert in two ways: 'an ascent in civilisation and a fall in religion'. In similar vein, Ellsworth Huntington's *Palestine and its Transformation* (1911) set out to investigate the influence of 'geologic structure, topographic form, and the present and past nature of the climate' on man's progress, history and systems of thought. Huntington was able to conclude, among other things, that the physical features of Galilee explained why its history 'was so much less important than that of Judea or even Samaria' and that the timidity of the present Gileadites illustrated 'one effect of the mountainous country'.

According to Smith the topographic variety of Palestine was intensified by differences of soil and climate, and he based his treatment of these differences on present-day conditions. Huntington paid some attention to earthquakes and to the effects of man's 'carelessness and folly' on water supply but otherwise confined his discussion of environmental change to 'pulsatory' climatic variations which, as in the surrounding regions, he considered of importance in determining the course of Palestine's history. Later authors, influenced by the classic studies of W. C. Lowdermilk (1940) and A. Reifenberg (1955), have laid increasing stress on the deleterious effects of soil erosion since antiquity, and in particular during the Middle Ages, generally putting the blame on improvident land use and the neglect of conservation measures (see, for example, Ashtor, 1976). The burial of classical sites by slope wash, the engulfment of ancient bridges by alluvium and even changes in the level of the Dead Sea have come to be regarded as incidental effects of man-made erosion.

Similarly, few prehistorians would still subscribe to the view that, by 'the time Palaeolithic man appeared on the scene, conditions must have been very much as they are now' (Harding, 1959). The environmental record of the Pleistocene, though fragmentary and defective (Butzer, 1975), indicates changes in the morphology and hydrology of Jordan which were sufficiently pronounced to transform the economic potential of the land locally and sometimes on a regional scale. This paper concentrates on the geological features themselves.

Crustal movements

The structural depression occupied by the River Jordan, the Dead Sea and Wadi Araba, known as the Jordan Rift Valley, has long attracted the attention of students of recent crustal deformation, but both the nature and the extent of the movements responsible for its present character remain in dispute. Lartet (1869) was perhaps the first to suggest that Transjordan had shifted northwards with respect to Cisjordan. Quennell (1956) subsequently put the extent of displacement since the Miocene at 107 km.; according to Freund (1965) a post-Cretaceous value of 70–80 km. is more probable. Others find that much of the field evidence can be explained by predominantly vertical movements (Wetzel & Morton, 1959; de Sitter, 1962; Bender, 1968). The amount of movement allocated by geologists to post-Tertiary times is equally variable. Quennell (1956) thought that 42 km. of horizontal displacement had occurred during the late Pleistocene. Zak and Freund (1966) reported that alluvial fans in the Wadi Araba had undergone at least 150 metres of transcurrent faulting in the last 20,000 years. On the other

hand Picard (1966) found that strike-slip fractures crossing the southern Jordan Rift obliquely and postdating Pleistocene alluvial fans and Lisan beds (which, as we shall see below, would place the movements within the last 15,000–20,000 years) had very small displacements, and Bender (1968) likewise found strike slips of no more than a few metres at the three locations on the eastern side of the Rift where he observed transcurrent faulting. The normal faulting that he illustrates from Pleistocene gravels and Lisan beds in various parts of the Rift is also of limited extent.

Two sites display the direct effects of such movements. The Ubeidiya Formation in the upper Jordan Valley, which has yielded hominid remains, artefacts resembling the industries in Bed II at Olduvai and a rich mammalian fauna, locally dips as much as 75°. The folds are associated with normal and reverse faults displaced by a maximum of 15 metres (Picard & Baida, 1966). The movements also affected basalts for which a K/Ar age of 640,000 years has been obtained (Siedner & Horowitz, 1974). The second faulted site is Qumran, where a vertical displacement of 30 cm. has affected Essene structures (Zeuner, 1954).

Regional tilting, even if imperceptible, could have proved of greater significance to man through its effects on the character and rate of erosion. Raikes (1967) has suggested that the valley adjacent to the Neolithic site of Beidha was originally filled with deep alluvium, and that removal of this sediment—which would account for what is otherwise an inexplicable site—was prompted by down-faulting or tilting along the lines indicated by Burdon (1959) for earlier periods. Picard (1965) similarly ascribes to the geographical changes produced by 'tectonic catastrophes' the disappearance, if not the total extinction, of some of the Villafranchian (Lower Pleistocene) land mammals of the Ubeidiya formation.

The influence of earthquakes, including those that doubtless accompanied some of the faulting episodes considered above, is also often conjectural. Extensive earthquake catalogues have been compiled (Amiran, 1950–51, 1952) but archaeological evidence of seismicity has to be treated with caution and even when the earthquake is well attested its effects can only be surmised. Thus the fault at Qumran may well relate to the earthquake of 31 BC but the abandonment of the settlement need not (Harding, 1959). Moreover the Dead Sea zone has witnessed few large shocks in historical times and they do not seem to be directly connected with the Rift proper (Ambraseys, 1978). Even so, archaeological sites antedating AD 1000 that show seismic damage are concentrated along the Rift (Karacz *et al.*, 1977), perhaps because the seismic risk is here accentuated by the unconsolidated nature of the terrain (Arieh, 1967). An additional potential source of damage are the sea-waves which, according to Ambraseys (1978), were provoked in the Dead Sea by two historical earthquakes.

Vulcanicity

Northeastern Jordan is dominated by 11,000 km.^{2} of plateau basalts, which form part of the Jebel Druze basaltic province. Minor flows are found east of the Rift and near the N.E. shore of the Dead Sea (Burdon, 1959). The bulk of the northern basalts is made up of the Hauran series, which had accumulated as extensive sheets by about 1.8 million years ago (Siedner & Horowitz, 1974). Following an explosive phase, the more localised Jebel Druze flows were formed. These have been dated to about 660,000 years ago but two flows from the Golan heights have given K/Ar ages of about 72,000 years, and a radiocarbon age of 4075 ± 160 year BP is reported from Jebel Druze (de Vries & Barendsen, 1954). Further evidence for volcanic activity during human occupation of the area is provided by the presence of Acheulean artefacts beneath basalt flows near Suweimeh (Bender, 1968) and north of Lake Tiberias (Siedner & Horowitz, 1974).

Thermal springs are associated with the younger basalts, which occupy some of the river channels eroded below the level of the older basalts. They include the Callirhoe of classical times (frequented among others by Herod the Great) in the Zerqa Ma'in, and those of El Hamme in the lower Yarmuk, near the Graeco-Roman town of Gadara (Bender, 1968; Harding, 1959).

Sea level

The restricted coastline of Jordan makes discussion of Pleistocene eustatic changes appear of little consequence, especially as the steepness of the topography both above and below sea level would render minimal any corresponding advances or retreats of the shoreline. The same applies to the 3 metres or so of uplift that apparently affected the western shores of the Gulf of Aqaba about 5,000 years ago, and the subsidence that followed 3,000 years later (Neev & Friedman, 1978). On the other hand, the fact that the Straits of Bab el Mandeb are at one point less than 120 metres deep means that the marine regressions associated with major glacial advances restricted the inflow of ocean water into the Red Sea, and perhaps stopped it altogether, with a consequent increase in salinity. Four such episodes have been identified in the record of the last 70,000 years (Degens & Ross, 1969).

Lake history

The Jordan Rift was apparently linked to the Mediterranean in Plio-Pleistocene times (Neev & Hall, 1977). Once the connection was severed the basin was occupied by a succession of water bodies whose extent and composition varied in response to climate, tectonic controls and chemical processes. The oldest of these to be well documented is represented by the Ubeidiya deposits, which outcrop on the western side of the Rift from Lake Tiberias to the mouth of the Yarmuk, and whose accumulation began no more than 1.8 million years ago (Siedner & Horowitz, 1974). Four cycles of deposition have been identified. The oldest represents a lake which was at times brackish. The next is dominated by fluvial deposition in a freshwater lake, with the lake margin occupied by the mammals mentioned above. There followed renewed lacus-

trine deposition under fresh water conditions, and a final episode of fluvial action (Picard & Baida, 1966). How far the sequence simply represents shifts in the position of the shoreline is still uncertain.

Bender (1968) has drawn attention to analogous fossiliferous deposits on the eastern side of the Jordan Valley, namely the Shagur, Ghor el Katar and Abu Habil Formations. The first two of these have been subject to tectonic effects; the last is a conglomerate which contains pebble tools (Huckriede, 1966). A tentative correlation by Bender equates the Ghor el Katar beds with the Lower Ubeidiya and the Abu Halil with the Middle Ubeidiya.

Extensive lake beds make their next appearance during the period roughly between 100,000 and 18,000 years ago, when the Lisan Lake stretched from the northern Wadi Araba to Lake Tiberias (FIG. 1) to cover an area of 2,850 km.^{2} at its maximum. The initial stages were characterised by freshwater conditions which witnessed the deposition of the Samra Beds. There ensued a phase of at least seasonal salinity (Laminated Member) and then of more persistently saline conditions (White Cliff Member) (Begin *et al.*, 1974). The lake then disappeared in steps, as indicated by terraces up to 28 in number (Bender, 1968).

Artefacts of Levallois type have been found in the lower Lisan beds (Picard, 1965) and one artefact dating from 20,000–14,000 years ago has been recovered from the upper part of the sequence in Wadi Jurfa (Vita-Finzi, 1964; Copeland & Vita-Finzi, 1978). Radiometric dating yielded ages for the uppermost deposits of between 20,000 and 15,000 years (Neev & Emery, 1967; Kaufman, 1971; Vogel & Waterbolk, 1972; Huckriede & Wiesemann, 1968).

There are indications that the Lisan Lake dried out about 13,000–11,000 years ago (Neev & Hall, 1977). Both the deep northern basin and the shallow southern basin of the Dead Sea were refilled some 9,500–10,000 years ago. A low level characterised the southern basin (and perhaps also the northern) between 7,000 and 5,000 years ago, to be followed by a renewed rise 600 years later. Between 3,000 and 15,000 years ago the Dead Sea was apparently confined to its northern basin; the rise that filled the southern basin and brought the Dead Sea close to its present level dates from about AD 900. Later fluctuations include a rise of 11 metres in the 19th century and a fall of 6 metres in the first 60 years of the present century (Klein, 1961; Underhill, 1967).

Lake deposits also occur outside the Jordan Rift and its ramifications. At El Jafr an extensive freshwater lake occupying over 1,000 km.^{2} is associated with Lower Palaeolithic and Levalloiso-Mousterian artefacts. The lake became brackish and shallow about 26,400 years ago. Levalloiso-Mousterian occupation coincided with gravel deposition on the lake beds. Solution later removed some of the calcareous lake deposits; Upper Palaeolithic artefacts and material ascribed to a Middle Palaeolithic 'Matakhium' culture are found on the mud-flats and on a delta produced at this time (Huckriede & Wiesemann, 1968).

At Qa' el Jinz there is evidence for a similar lacustrine phase in the form of highly calcareous silts which, like those at El Jafr, contain brackish-water ostracods including *Ilyocypris* and *Candona* (Bender, 1968). Analogous deposits are found in the upper Wadi Hasa, which drains Qa' el Jinz; these yield Middle Palaeolithic and later artefacts and underlie an early Kebaran site, the implication being that deposition had ended by about 18,000–16,000 years ago (Vita-Finzi, 1964; Copeland & Vita-Finzi, 1978). The resemblance to current estimates for the close of the Lisan phase is striking.

Lacustrine deposits at El Azraq indicate a former lake covering about 4,500 km.^{2} but, despite the presence of abundant artefacts (Garrard & Price, 1975–77), including some of Acheulean type (Harding, 1959), its chronology remains obscure. Other basins floored with fluvial and lacustrine material are reported by Bender (1968) 45 km. south of the Dead Sea near Fidan, on the eastern part of the central Wadi Araba near Gharandal, in Wadi Sirhan and at various locations in S.E. Jordan.

Valley evolution

Intercalations of alluvial material are found in the lacustrine beds of the Shagur, Ghor el Katar, Abu Habil, Ubeidiya and Lisan series. The Pleistocene succession in the Jordan Valley also includes a predominantly fluviatile unit—the Naharayim Formation—which is separated by an angular unconformity from the underlying Ubeidiya beds and by a less pronounced break from the overlying Lisan. These gravels are unfossiliferous and devoid of artefacts; according to Picard (1965) they represent a period of strong erosion by the Yarmuk. A further fluvial unit which at present appears to be a localised feature is the gravel deposit yielding Abbevillian-Lower Acheulean artefacts found by Bender (1965) beneath a basalt flow at Jurf ed Darawish, 55 km. north of Ma'an.

The Lisan beds of the Ghor at the margins of the Rift are overlain by the alluvial fans of Picard's (1932) *Oberterrasse*. These can be traced into the tributary valleys as a terraced fill with a maximum thickness of 30 metres, and consist of ill-sorted clastics whose lithology is governed by the country rock. Levalloiso-Mousterian and Upper Palaeolithic artefacts are found within the deposits (Vita-Finzi, 1964). The original view was that the deposits postdate the initial shrinkage of the Lisan Lake, as they apparently overlie the terminal surface of the Lisan unit, but the possibility remains that they are merely part of the marginal deposits found within the Lisan beds proper. This would of course accommodate the 'Upper Palaeolithic' artefact from the Lisan beds at Wadi Jurfa mentioned earlier.

At a few localities the deposit overlies tufa which was laid down by springs to form aprons and terraces. Prominent examples may be seen at 'Ain Duyuk (W. Nu'eima), 'Ain Fasayil (W. Rashshash), 'Ain Auja and near Jerash. Some erosion of the Lisan beds preceded their deposition; the tufa is separated from the overlying alluvium by a weak nonconformity and grades into cemented screes. Renewed tufa

deposition occurs at most of these springs; in Wadi Fasayil it was sufficiently pronounced in Roman times to call for the rebuilding of an aqueduct at least twice (Vita-Finzi, 1978).

Throughout Jordan channel incision prevailed until post-Roman times, when aggradation produced a fill with a maximum thickness of 4 metres. This was in turn trenched by the wadis to form a terrace. In the Jordan Valley the Zor is partly composed of this unit (Vita-Finzi, 1964). The deposit is well stratified and contains Roman pottery. In the Kofrein-Rama catchment freshwater snails in the fill indicate the prevalence of standing or perennial water (Sparks, 1964).

In Wadi Hasa, and doubtless elsewhere, there is evidence of additional episodes of valley filling and trenching. Near Qa'lat el Hasa localised aggradation dated by archaeological methods to between 11,200 and 11,600–8,000 years ago was followed by the development of an extensive silt deposit indicative of repeated overbank flow (Vita-Finzi, 1966). This deposit dates from between 8,000 and 4,000–2,000 years ago (Copeland & Vita-Finzi, 1978).

Discussion

If major earthquakes, volcanic eruptions and rapid rises in lake level are set aside, the physiographic matters outlined above may appear of marginal significance to the development of human settlement in Jordan especially once they are compared with the effects of changes in total annual rainfall or in its seasonal distribution. Yet, unlike climatic fluctuations, which all too often have to be inferred from the settlement patterns they might otherwise help to explain (Neev & Emery, 1967; Garrard & Price, 1975–77), landscape evolution can be traced independently and hence contribute to the interpretation of the human record.

The scope for this approach is greatest in the study of land use in prehistory and history (White, 1961). Less than 12 per cent of the area of Jordan consists of arable land. Its soils closely reflect the local geology (see, for example, Willimott *et al.*, 1964). The modern soil map owes a good deal to successive episodes of basalt extrusion and the emergence of the Lisan marls; erosion has doubtless further impoverished the thin volcanic soils, as it has those that occur on the limestone and sandstone uplands. In compensation, however, the fans and valley fills nourished by this erosion in late Palaeolithic times provide extensive, often well-drained tracts of alluvium which—as in the Jericho area—contrast sharply with the barren country rock. Later episodes of valley filling have carried this process of soil concentration further, this time with the added advantage of gentle surface gradients and nearness to potential sources of irrigation. The East Ghor Project (Beaumont *et al.*, 1976) demonstrates that the potential may not be realised until long after deposition has ceased; but there may have been times when the process of deposition itself favoured cultivation by periodically supplying both silt and water to the valley floor (Vita-Finzi, 1966).

Many components of this theme remain poorly documented. Above all, present-day soil erosion awaits a dispassionate analysis which takes into account not only the neglect of Nabatean and Roman terraces and dams but also the circumstances that made these measures necessary. The demand for such studies must come from the archaeologists and historians whose sites and cultures will otherwise remain set in an anachronistic landscape.

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The Contribution of Aerial Photography to Archaeology in Jordan: with special reference to the Roman period

What distracted me all the time was the unexpected view of the villas and gardens of Roman Branchidae. I would never willingly dig again without air reconnaissance.

(Sir John Myres, Lecturer in Ancient History at Christ Church, Oxford, 1895–1907, recounting his flight as an artillary observer for the fleet over Turkish Didyma in 1916[1].)

Aerial photography is one of the older techniques available to the archaeologist: the first aerial photograph of an archaeological site—Stonehenge viewed from a balloon—was taken as long ago as 1906[2]. Although subsequent developments were slow, the improvement of aircraft design and the need for aerial reconnaissance during the First World War gave the new technique an impetus which soon pushed it into the forefront of archaeological methods. In any examination of the early pioneers of the technique it is evident that the major work and the great developments in application were made in Western Europe and North America, but equally, one should not overlook the activities of aerial photographers in the Middle East. Indeed, some of the very earliest aerial archaeology took place in the Middle East, and it was undoubtedly amongst the most spectacular.

A small beginning was made as early as 1913, in the Sudan, where Sir Henry Wellcome experimented with cameras suspended from kites to photograph his excavations; in 1916, Theodore Wiegand, took aerial photographs of archaeological sites in the Sinai Desert; and, further east, in Iraq, Col. Beazeley discovered that the bewildering ground traces around the site of the ninth century Islamic city of Samarra, were transformed into the clearly laid out lines of an extensive city with many miles of streets, houses, palaces and gardens along the banks of the Tigris[3]. The earliest such archaeological photographs known for Jordan are dated to 1922, but I have heard of two aerial mosaics covering Amman and Salt which were taken by the Royal Flying Corps and must, therefore, be dated to 1917–18 at the latest. Fortunately the stimulus given to aerial archaeology in the Middle East by the Great War was not lost; indeed, work between the two wars centred on Iraq, Syria and Jordan amongst the Arab lands. Most of the activity was carried out by two great explorers. In 1926, Père Antoine Poidebard, began his great surveys over Syria which continued with little interruption for almost 16 years and culminated in his magnificent books on the Roman *limes* and another on the ancient city of Tyre[4]. Scholars today are less inclined to accept all of his interpretations and conclusions but it is no exaggeration to say that Poidebard massively extended what was known and completely revolutionised our understanding of the eastern desert frontier[5]. Furthermore, many of his discoveries would never have been traced by ground survey and such a field survey without the aid of aerial reconnaissance would have been more than a lifetime's work for a whole team of archaeologists. So much was discovered that even now, almost half a century later, very little of Poidebard's material has been exploited by field archaeologists[6].

On a less intensive scale and less well-known are the surveys from the air by the British explorer Sir Aurel Stein. Stein's interest stemmed from his remarkable journeys of exploration into Russian and Chinese central Asia and into Persia, as a result of which he developed a keen awareness of the potential contribution of the aerial photograph to the archaeologist working in remote and rugged terrain[7]. Personal contact with Poidebard, whose work he greatly admired, gave him the idea of extending the Frenchman's

[1] Quoted by T. J. Dunbabin in his obituary for Myres in the *Proceedings of the British Academy*, 1955, 357.

[2] J. E. Capper, *Archaeologia*, 60 (1907), 571, PLS 69–70. For a convenient and highly readable account of the history of aerial archaeology, the reader is referred to L. Deuel, *Flights into Yesterday*, Pelican, 1973. The standard work on aerial archaeology—now 25 years old but still unsurpassed—is J. Bradford, *Ancient Landscapes*, London, 1957 (reprinted 1974).

[3] G. A. Beazeley, 'Surveys in Mesopotamia during the War', *GJ*, 1920, 109–27.

[4] A. Poidebard, *La Trace de Rome dans le desert de Syrie*, Paris, 1934; *Le Limes de Chalcis*, Paris, 1945 (with R. Mouterde); *Un grand port disparu, Tyr*, Paris, 1939.

[5] For assessments of Poidebard's contribution see the reviews by Sir George MacDonald, *Antiquity*, December, 1934, 373–80 and by Sir Aurel Stein, *GJ*, 87 (1936), 66–76; *cf.* the account in Deuel, 94–112.

[6] *Cf.* M. Hassall, *PEQ*, 104 (1972) 159f. and Bradford, *loc. cit.*, 4; Poidebard, *La Trace de Rome*, 14.

[7] See the obituary by C. E. A. W. Oldham, *Proc. Brit. Acad.* 29 (1943), 329–48; esp. 338f. and the recent biography by J. Mirsky, *Aurel Stein*, Chicago, 1977, 459, 494, 509f.

work in Syria by complementary aerial surveys over Iraq and Transjordan which would complete the map of the Roman *limes* from the Tigris to the Red Sea. Stein's interim reports—infuriatingly vague from so meticulous a man—announced exciting new discoveries in both areas during his surveys of 1938 and 1939[8]. Unfortunately the Second World War prevented immediate publication and, at the time of his death, in Kabul in 1943, Stein was still voicing anxiety over the safety of those of his aerial photographs which he had had to leave behind on the airfields of the Middle East when he had ended his survey.

Finally, in this brief survey of early pioneers, in which the services of both the French and British air forces were vital, two men, both serving members of the Royal Air Force, and both in Jordan, deserve mention *honoris causa*. Flight Lieutenant P. E. Maitland was the first to publish—in 1927—aerial views together with discussion, of what he called 'The Works of the Old Men': the complex of walls, enclosures and other man-made structures to be found in the north east of Jordan and overlapping into Syria, Iraq and Saudi Arabia[9]. Two years later, in 1929, Group Captain L. W. B. Rees, VC, commander of the Royal Air Force in Transjordan from 1927 to 1929, produced his own publication in the same journal. Rees, an enthusiastic amateur archaeologist, produced more aerial photographs and commentary on sites in Jordan which underlined even more convincingly just what could be achieved from the air in archaeology[10].

Contribution of aerial archaeology

Aerial archaeology and photographic interpretation are now mature and highly skilled techniques; some would call aerial archaeology a science, still others have sought to make it an independent discipline. For that first photograph of Stonehenge in 1906, and for many subsequent photographs, such as those of Wiegand, the aircraft or balloon was being used as little more than an elevated platform from which a novel perspective could be gained. Photographs such as those of Beazeley in Iraq had clearly begun to reveal that the aerial view was not simply to be regarded as a curiosity but as an important means of learning more about a site. Aerial photographs were already making contributions ranging from simply aiding understanding by placing a site in its local geographical context or illuminating its character by means of the bird's-eye view, through to revealing features, invisible on the ground, both around known structures and in regions where nothing of any sort was even suspected from surface examination.

The major breakthrough in aerial archaeology came with this revelation that from the air one could 'see' features which were too slight to be noticed by or intelligible to a ground viewer, and to 'see' features *totally* buried which left no visible trace in the configuration of the land. For the first category, one has only to think of Crawford's discovery of the Roman siegeworks and encampments around the city of Hatra in Iraq[11]. Invisible buried features such as the ditches of the Roman road from Palmyra to Hit were picked up by Poidebard in Syria and the discovery of such buried features is now well-established.

The principles on which these techniques are founded are essentially very simple though there are a bewildering number of permutations of each, and knowing when and where archaeological features may be 'found' is a highly skilled task[12]. They may be briefly summarised: where remains exist on the ground surface but are slight or unintelligible, their character may be revealed by viewing them at particular times of the day. The principle is simple: seen from the air in the middle of the day there is little detectable tonal difference between the feature and the background; seen in early morning or late afternoon when the sun is low, even the slightest banks cast a dark shadow or produce a highlight which is tonally detectable. Once it was discovered that the time of day mattered, people such as Poidebard could begin to find these *shadow sites* with much more success. Next, there are buried features. In essence, if a pit, a trench, or a ditch is dug, the soil in and over that disturbance will be darker, richer and will retain moisture longer. Consequently, in spring when the land is drying out, these buried features will take longer to lose their moisture and from the air will appear as dark *soil marks*, especially if ploughing brings the soil to the surface. A good example is the fourth century Roman fort at Scaftworth, Yorkshire, totally invisible on the ground, but clearly revealed by the dark soil of the ditches. Later, when crops, grass and even weeds begin to grow on the land, those that are over the top of the pit or ditch will have more moisture and will grow faster and ripen faster than those on either side. Viewed at different times it will stand out first as a darker green as it grows and later it will begin to turn yellow when everything else is still green. Again, the process could be seen at Scaftworth later in the same year. These *crop, weed or parch marks* work in exactly the same way but in reverse, if the buried feature is a wall. Then, of course, there will be less moisture and the cramped roots of the plants will be slow to develop. The technique has been used to discover the outline of buried structures in the western Mediterranean and to trace buried road surfaces such as that leading south from Athens. One of the most celebrated examples of crop-marking comes

[8] A. Stein, *GJ*, 92 (1938), 62–6; *JRAS*, 191 (1938), 423–6; *GJ*, 95 (1940), 428–38; *JRAS*, 194 (1941), 299–316.

[9] C. E. Maitland, '"The Works of the Old Men" in Arabia', *Antiquity*, I (1927), 196–203; *cf.* Bradford, 51f.

[10] L. W. B. Rees, VC, 'The Trans-Jordan Desert', *Antiquity*, III (1929), 389–406; and ibid 89–92. *Cf.* Bradford's remarks, *loc. cit.*, 51, n3.

[11] O. G. S. Crawford, 'Air Photographs of the Middle East', *GJ*, 73 (1929), 501f.; *cf.* Crawford's autobiography, *Said and Done*, London, 1955, 193f. The subsequent examination of the photographs by Bradford, *loc. cit.*, 71–5 is important, some of them being those taken for Stein in 1938–9.

[12] One of the best treatments is that by D. N. Riley, 'The Technique of Air Archaeology', *Archaeological Journal*, 133 (1946), 1–16. Bradford, *loc. cit.*, 1–84, esp. 13–84 is excellent. Refinements and discussion continue: see for example J. N. Hampton, R. Palmer *et al.*, 'Implications of Aerial Photography for Archaeology', *Archaeological Journal*, 134 (1977), 157–93 and D. R. Wilson (ed.), *Aerial Reconnaissance for Archaeology*, CBA Research Report No. 12, London, 1975.

from only a few miles east of Oxford at the Roman villa of Ditchley where the house, barn, well, threshing-floor, enclosure wall and drive-way all stand out in the crops and can be drawn with ease from the photograph[13]. In Syria, Poidebard discovered that the best time to find soil marks was in the early spring as the land dried out, while differential crop or weed marks appeared best in the rains of autumn or the spring, both periods of rapid growth[14].

In short, aerial archaeology has revolutionised archaeological work in many countries and given some archaeologists an embarrassment of material. Its principal contribution is not in the number of discoveries themselves but in very forcefully revealing that the large, well-known sites are merely the tip of an iceberg and are all too often quite unrepresentative of their period. Today, in several countries, the many thousands of flimsy buried remains detected from the air are being mapped and investigated, and archaeologists are turning more to look at entire landscapes rather than just isolated sites within a landscape. Some of the techniques which have made discovery and interpretation possible have already been proven in the Middle East. There is no reason to doubt that they cannot all be employed in Jordan to our considerable benefit, and I shall turn now to looking at a number of recent specific cases from both the Middle East in general and from Jordan in particular.

Case studies—Middle East

The great programmes of aerial archaeological research of Poidebard and Stein at the eastern end of the Mediterranean were not continued after the Second World War. Nevertheless, there have been a number of important contributions in various areas of the Middle East from Algeria to Iraq. The most significant has been the research of Jean Baradez on the Roman *limes* in southern Algeria[15]. Baradez employed the well-established techniques of Poidebard and Crawford utilising, principally, existing vertical photographs, and recovered a detailed plan of the frontier installations and settlements along the desert's edge. Further east, in Libya, R. G. Goodchild too employed aerial photography to locate the remains of settlements of the classical period[16]. On the coast of North Africa, Royal Air Force vertical photographs taken in 1943 over Tunisia have been used to good effect to reveal not only the well-known harbours of Carthage but also the traces off-shore of innundated quays and, inland, something of the land usage in Roman times is preserved in the striking and widespread traces of centuriation blocks[17]. In the coastal area of Cyrenaica, aerial photography has recently played an important part in clarifying the nature of various settlements[18].

At the other end of the Arab world, John Bradford produced aerial photographs not only of such well-known sites as Hatra, Nimrud and Samarra but also a magnificent view of a little-known and inaccessible stretch of Roman road fronted by a stone wall on a Royal Air Force photograph of 1938–9[19].

In Syria there have been still more significant developments. Useful work has been done around both Dura-Europos and Palmyra from aerial photographs[20] but the most important development has been at Homs, the Roman city of Emesa. Emesa became a Roman *colonia* in the early third century[21]. Like other eastern cities granted the title *colonia* at this time it has usually been thought of simply as a change of legal status giving the inhabitants certain privileges but not involving the procedure of earlier times by which new settlers were brought in and land measured out and distributed to them in regular blocks. In the course of examining some vertical aerial photographs of the Emesa area, van Lière observed that one could detect in the modern road and field layout on the eastern side of the city, the clear traces of the centuriation which one associates with traditional Roman *coloniae*[22]. Centuriation is well-known and extensive in the western half of the Roman Empire in France, Italy, Yugoslavia and Tunisia but, until this discovery at Emesa, none had ever been reported anywhere in the lands from Turkey to Egypt[23]. The discovery is important historically too, since it is now evident that the change of status need not have been merely a change in legal privileges for the existing citizens but clearly involved the introduction of new settlers to whom land was allocated. Not only must historians modify their views about the practical effects of such grants of colonial status in the third century, but archaeologists should also be alive to the possibility of such evidence being found around other late Roman *coloniae* throughout the East: especially those such as Singara and Resaina in Mesopotamia with garrisons whose veterans would have made suitable colonists. The importance of van Lière's discovery cannot be over-emphasised: as is well-known, such centuriation is very difficult to detect on the ground and only the most detailed of maps would have allowed it to be picked up. But for the aerial photographs, this area of centuriation would have remained unknown still.

Finally, before turning to look at Jordan, it is interesting to note the use of aerial photographs by the survey teams working in Saudi Arabia. Despite the small scale—1:60,000—they were able to employ them effectively in the

[13] Photographs are reproduced by Deuel as plates 10 and 11; *cf.* p. 84, FIG. 12.

[14] *La Trace de Rome*, 105–7.

[15] J. Baradez, *La Vue aérienne: Fossatum Africae*, Paris, 1949.

[16] R. G. Goodchild, *Libyan Studies*, London, 1976.

[17] H. Hurst, *Archaeological Journal*, 55 (1975), 11–40, and R. A. Yorke and J. H. Little, *International Journal of Nautical Archaeology and Underwater Exploration*, 4 (1975), 85–101.

[18] G. D. B. Jones and J. H. Little, 'Coastal settlement in Cyrenaica', *JRS*, 61 (1971), 64–79.

[19] *Op. cit.*, PLS 24, 19 and 18.

[20] J. Johnson, 'The Dura Air Photographs', *Archaeology*, September, 1950, 158–9; D. Crouch, 'Use of Aerial Photography at Palmyra: a Photo Essay', *Berytus*, 22 (1974), 71–104.

[21] Digest, 50.15.1.4.

[22] W. J. van Lière, 'Ager Centuriatus of the Roman Colonia of Emesa (Homs)', *AAAS*, 8–9 (1958–9), 55–8.

[23] Bradford, *op. cit.*, 145–216.

detection of networks of canals spreading out from some major springs.[24]

Case studies—Jordan

The single most extensive piece of aerial archaeology carried out in Jordan was the survey of Sir Aurel Stein in 1939 covering, as it did, the steppe and lava areas from H5 to the Gulf of Aqaba. Stein's notes show that over two hundred aerial photographs were taken for him by the RAF of specific archaeological features in this area and it is tragic that they seem not to have survived. Fortunately, a quantity of material—some going back to 1922—*is* available still and my immediate intention is to examine a few specific areas in which this can be exploited before going on to a more general discussion of the contribution of aerial photography to archaeological work in Jordan.

Qasr Bayir, quite well-preserved until this century, was tragically destroyed in 1929 when the British military authorities sanctioned the building of a police post nearby which made use of the Roman material[25]. Fortunately, the site had been visited by Brünnow and Domaszewski a generation before and, as a useful complement, this Royal Air Force vertical view of 1927 records the fort and its immediate vicinity. I need hardly say that the value of aerial photographs for simply making a record of sites is immense.

Almost 80 years ago the members of the Princeton University Expedition visited *Qasr el-Hallabat*, recorded many inscriptions and planned the fort and mosque[26]. Their two visits were very short ones—on the first occasion they were driven off by a snow storm—and it would not be just to fault them for not preparing a full site plan. Nevertheless, as any visitor to Hallabat knows, the fort is only the centre of a complex of ancient remains most of which are now protected with a fence erected by the Department of Antiquities. Just outside the fence, however, lie some remains which make a splendid shadow site. The traces are visible on the ground but show up to best advantage when viewed both obliquely with the sun low, and vertically.

The numerous archaeological remains around and at the foot of the slopes on which the fort stands would have required considerable time and effort if traditional planning methods had been employed. As it was, we were able to concentrate our efforts on preparing detailed plans of individual structures in the time at our disposal. A site plan (see FIG. 1) of all the known features was prepared months later in England working from a series of vertical aerial prints of the site and environs. For all *practical* purposes it is clear that this site plan is perfectly satisfactory[27]. On the other hand, the availability of the photographs enabled us to devote the time of expensive field-work to tasks *which could only be carried out on the ground.*

It has been known for some years that amongst the many walls and man-made features in the north-eastern desert, was a wall to the north-east of Qasr el-Hallabat (see FIG. 2) which was distinctive because of its perfect straightness; the inference was made that it was Roman and it was associated with the fort[28]. Attempts to find this wall occupied the better part of two days searching in the difficult area of lava boulders, until we were guided to it by a local policeman who himself had a great deal of difficulty re-locating it. The character of the wall was easily determined but the task of plotting it on a map, measuring it and determining its relation to the fort some miles away was considerably eased by subsequent access to some aerial photographs. These again allowed mapping to be carried out in England while the time in the field was devoted to detailed examination. It need scarcely be said that the location of the wall would have been much easier had I waited a few days until the photographs were available.

My final example is from the oasis of *Azraq*. Today the well-preserved remains of the *castellum* beside the northern pools are surrounded by the Druse village which laps close up to the walls. In view of the very considerable importance of the site beside a major water source and at the head of the great Wadi Sirhan route down into Saudi Arabia one does not need specific evidence before proposing that the location would have been occupied from very early times onwards[29]. In short, the modern village is probably built over the remains of earlier structures associated with the thirteenth century Arab fort, the third and fourth century Roman fort, and the pre-classical inhabitants. Fortunately, the village only grew up about 1930 and we have the evidence of aerial photographs of the 1920's. O. G. S. Crawford visited the fort in 1928 and spoke of 'remains of habitations of unknown age' all around[30]. No intelligible traces remain today but an oblique view of that period bears out his observation. More important, vertical photographs reveal the outline of an earlier Roman fort of the traditional playing card shape. Such an earlier fort could, of course, have been inferred, but the print preserves the only surviving evidence of it[31].

A feature common to most of the above examples is the contribution made by *old* aerial photographs, a feature which is not simply a matter of availability. In many ways, the contribution which an old aerial photograph can make to

[24] R. MacAdams *et al.*, 'Saudi Arabian Archaeological Reconnaissance', *Atlal*, I (1977), 24f., 32. The authors express the hope of mapping areas of extensive remains by means of low level high resolution aerial photography.

[25] K. A. C. Creswell, *Early Muslim Architecture*, Oxford, 1969, 642.

[26] H. C. Butler *et al.*, *The Publications of the Princeton University Archaeological Expeditions to Syria in 1904–5 and 1909*, Leyden, 1907–21, II.A.2 and III.A.2.

[27] Poidebard, *La Trace de Rome*, 12–44; Bradford, *loc. cit.*, 63 *et seq.* and 143f.; N.B. 63 n.3.

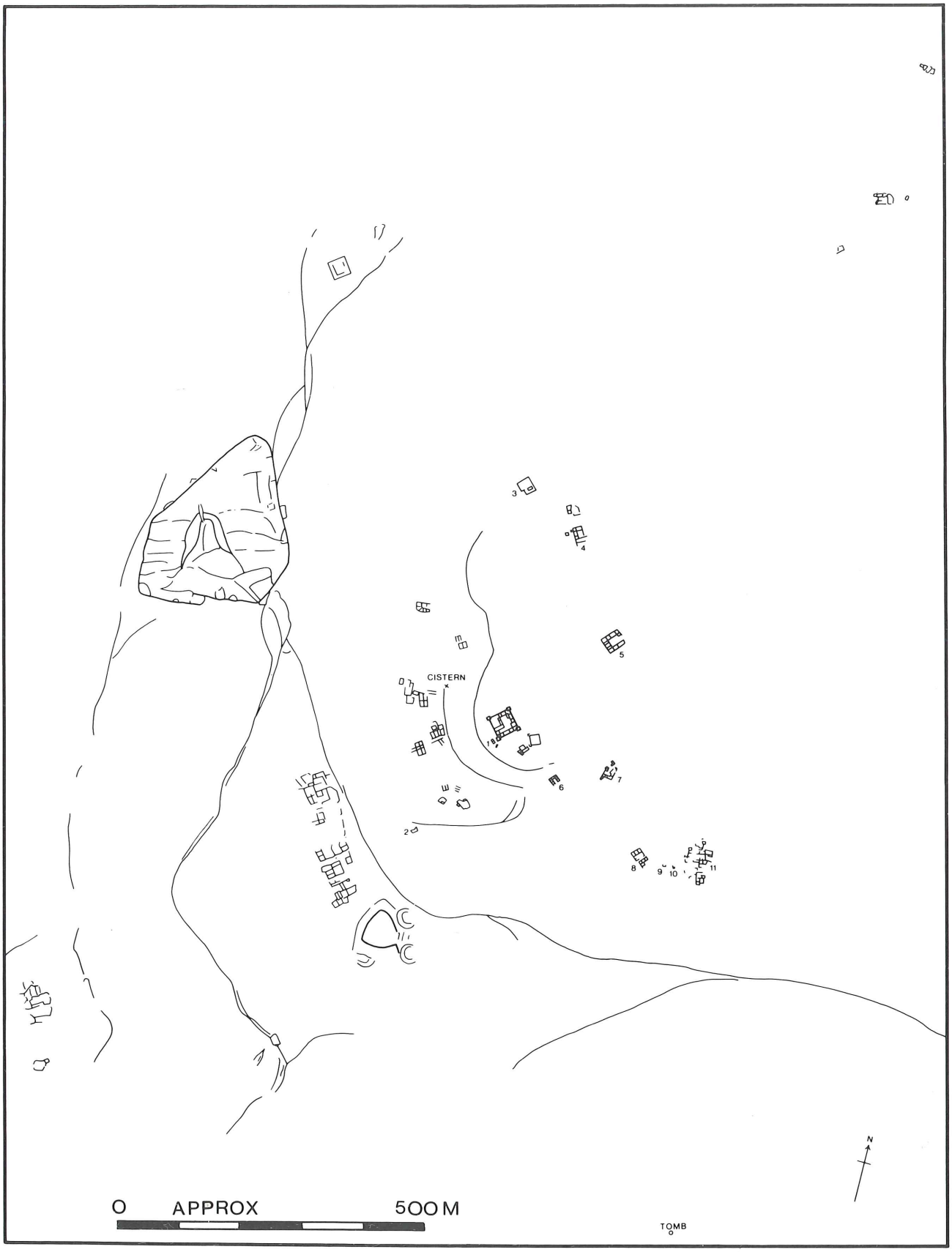
[28] G. L. Harding, *The Antiquities of Jordan*, 1967, 153.

[29] G. L. Harding, 'Recent Discoveries in Jordan', *PEQ*, 90 (1958), 7–18; esp. 7–9. The Latin inscriptions speak for themselves as does the dated building inscription above the main entrance recording (re)construction in the early thirteenth century; for the popularity of the site amongst the early Islamic rulers of the area, see A. Musil, *Palmyrena*, New York, 1928, 285 relating to the eighth century.

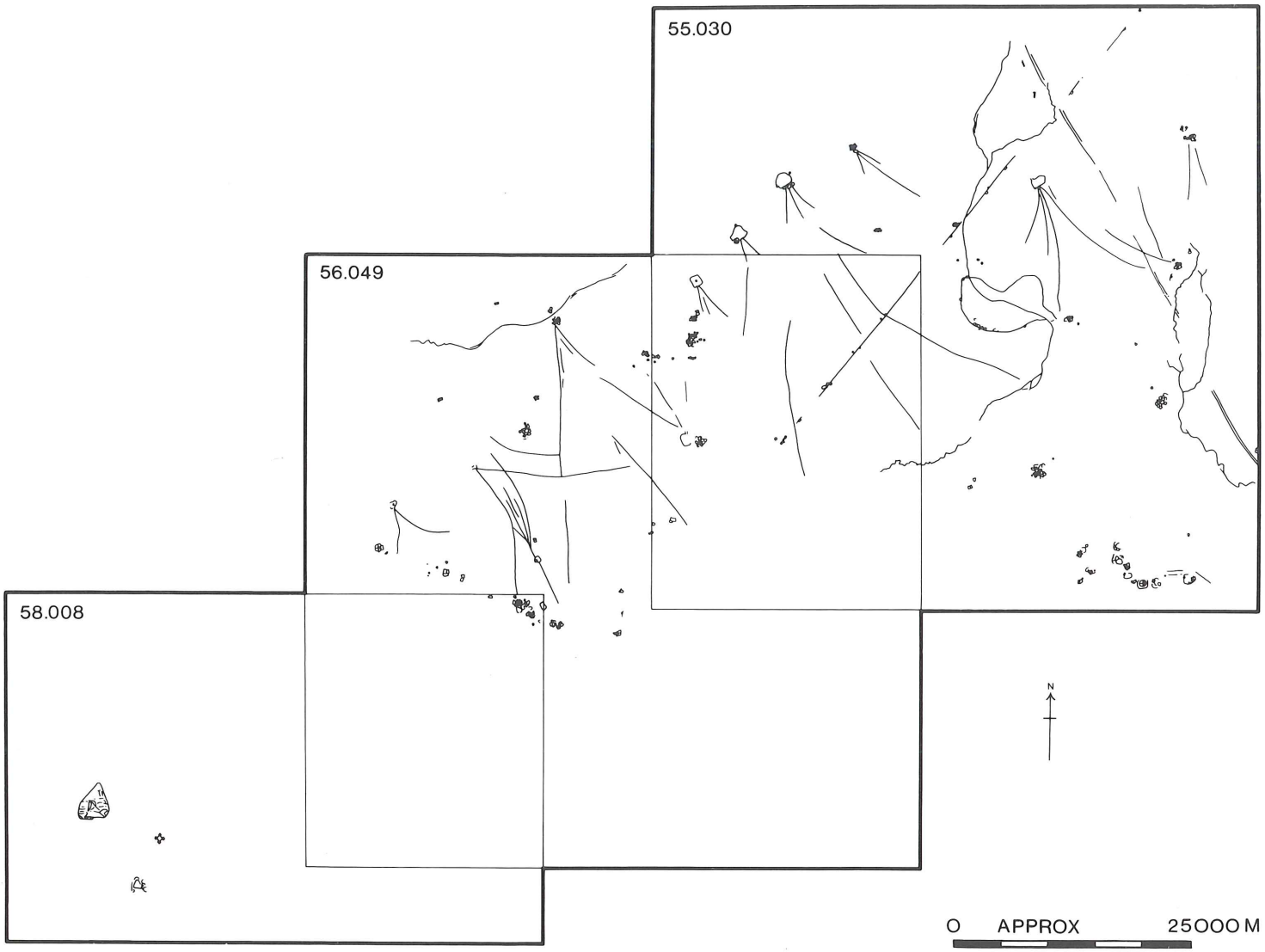
[30] O. G. S. Crawford, *Said and Done*, 196.

[31] D. L. Kennedy, 'The Frontier Policy of Septimius Severus: some new evidence from Arabia', *Proceedings of the XII Congress of Roman Frontier Studies 1979*, Oxford, 1980. Since giving the preceding paper in 1979 I came across the very same observation made by Crawford, *GJ*, 73 (1929), 507.

1. Qasr el-Hallabat site plan.



2. Qasr el-Hallabat and desert wall.



archaeological research in Jordan is one which is unique to the Middle East. Today, Jordan is a country with spreading cities, towns and villages, modern industrial plants, an advanced road network and expanding agriculture. However, unlike most western countries this is not the outcome of a century or two centuries of development but, in the main, of the last 30 or 40 years. In Britain, for example, the Agricultural and Industrial Revolutions of the eighteenth century swiftly wrought dramatic and permanent changes in the man-made landscape destroying and damaging not only thousands of individual archaeological sites but changing the face of the land both by the imposition of canals, railways, roads and cities and by eliminating the widespread traces of age-old agricultural systems. On the one hand, industrialisation and a rapidly expanding population ensured that many well-preserved ancient remains which it had never been worth anyone's time to remove, were finally destroyed or encroached upon; on the other, traces of prehistoric, Roman and Medieval field systems were removed by the revolutionary changes in land usage and exploitation.

Jordan, like most of the Middle East, has been saved from this widespread destruction in that *her* agricultural and industrial revolutions have happened this century, much of it within the last two generations[32]. Even today, one can learn a great deal about the extent and nature of agricultural exploitation in earlier times, about the size and spread of population from examining their surviving traces. Nevertheless, much has already been lost and more will go in the near future as development proceeds. It should be obvious, therefore, that while good aerial coverage may be vital in saving remains from future destruction, old coverage will preserve much that has already gone. Ideally, such old coverage would have been from 50 or 60 years ago, but material even half that

[32] It is interesting, however, to read Gertrude Bell's observations on the Roman fort at Qastal when she saw it in 1906; on a previous visit it had been some distance from the nearest agriculture but now, 5 years later, fields came right up to the walls on all sides: G. Bell, *The Desert and the Sown*, London, 1919, 34.

age is almost as good. In short, it has been possible for Jordan and other Middle East countries to have much of their pre-development landscape preserved on film as a permanent record; such an option has never been open to most European countries. One has only to think of the excitement with which British, German or Italian archaeologists turn to paintings, etchings, and drawings—even early photographs—of monuments and sites as they were before the eighteenth and nineteenth centuries to realise that there is little they would not give to have had aerial coverage of *their* countries before industrialisation[33].

The obvious question then is about what is available. Some aerial photographs were taken in 1917–18 but few of these have survived. It is clear that many more were taken by the Royal Air Force in the next 10 years. The first important landmark, however, is 1928. In that year, O. G. S. Crawford, the great pioneer of aerial archaeology in Britain and the founder of the journal *Antiquity*, visited the Middle East motivated, as he himself records, by the realisation that no official body in Britain was concerned with the archaeological inheritance of Britain's overseas Empire[34]. Crawford made official visits to Royal Air Force camps in Iraq and Transjordan both for flights and for the specific purpose of collecting the nucleus of a photographic archive of these countries. The process of collecting was successful—though resisted in Iraq by the commanding Air Marshal. However, Crawford himself accepted that the intention of building-up the archive would not succeed. Apart from RAF opposition there was the simple fact that training photographs and unwanted photographs were destroyed at six-month intervals. In short, it would have required someone to tour the RAF camps twice yearly to collect the material. The project lapsed; the material brought back in 1928 is now lodged in the Institute of Archaeology in London and its evident quality makes it all the sadder that the archive did not succeed.

The next landmark would have been the material of Sir Aurel Stein in 1939 but that seems not to have survived. However, it is evident that much photography was done if judged only from the prolific amount of Crown Copyright photographs with which Nelson Glueck illustrated his publications[35]. Moreover, there is every reason to assume that wartime activities in the Middle East would have given an impetus to aerial reconnaissance over not only Jordan and Iraq but also Syria. The survival of *any* of this material seems unlikely: in 1945–6 most was simply destroyed and such as survived of North Africa and Europe was due to the personal intervention and energy of John Bradford. The tragedy of such a loss is highlighted by the superb quality of the wartime photography as may be illustrated from the Carthage material of 1943.

Next, there is the Royal Air Force today. Whatever material they destroyed from pre-1945, they still have some photographs taken immediately after the war. The extent of their coverage is still unknown and, since it is small-scale (1:50,000 and 1:35,000) it is less valuable than one might have hoped, though considerably better than nothing.

Finally, there is the vertical survey carried out by Hunting Surveys in 1953 of most of Jordan. I have been able to make valuable use of this material through the courtesy of the Department of Antiquities which enabled me to acquire some prints.

Summary

The above account has, I hope, indicated something of the very respectable pedigree of aerial archaeology both in the Middle East in general and in Jordan in particular. Some conclusions can be set out without difficulty. First, it is clear that all of the techniques of aerial archaeology utilised in Europe and North America can be applied equally well in Jordan. Shadow sites are obvious; expanding agricultural activities will reveal buried sites as soil marks; differential growth marks too are possible both from domesticated crops in the western areas of Jordan and from weeds, grass and scrub in the steppe and desert. Considerable amounts could be learned from planned flights in spring and autumn each year. The objectives of examining existing photographs and of taking new coverage would be the traditional ones of re-assessing *known* sites when viewed from a new perspective, and the discovery and recording of *unknown* features. The potential too, for the examination of historical landscapes is obvious: no one has yet attempted to map the traces of ancient terracing or of field boundaries[36] and no one has recorded and plotted the numerous 'kites' and other man-made structures in the desert[37]. The task of mapping can *only* be carried out from aerial photographs; the quantification and precise location of such features could be very revealing of the extent, scale and nature of human activity in Jordan, but should be done in any case simply because they are beginning to disappear. Cost is always a difficulty: aerial photography is not cheap. However, from both my own experiences as outlined and from the experience of scholars in many other countries, it is abundantly clear that aerial archaeology is cost-effective in terms of discovery and time saved on the ground in survey and excavation.

[33] An obvious example is with the city of Rome where much that is now gone was recorded on paper or canvas by visitors in early medieval times; even in the nineteenth century one of the great gateways in the city walls was totally destroyed—fortunately it was recorded in 1869 on some of the very earliest photographs ever taken: I. A. Richmond, *The Walls of Rome*, Oxford, PL. XVIII.

[34] *Said and Done*, 188–200.

[35] For example N. Glueck, *The Other Side of the Jordan*, 1940; *Deities and Dolphins*, 1966.

[36] *Cf.* Crawford, *Said and Done*, 196 referring to field walls and terraces around Umm el Jemal and around Bosra, 'whose field-walls are perfectly preserved (but unrecorded), row upon row.'

[37] *Cf.* the remarks of R. MacAdams *et al.* (note 24 above) concerning 'kites' in Saudi Arabia, 34–6, esp. 36: 'Together, these two categories of site, the circles and the "kites", present a major problem of archaeological research which requires separate and intensive study. The first prerequisite is accurate planning of a large sample of both, showing not only individual arrangements but also relationships with one another and with the topography. This study can best—indeed, can only—be accomplished with the help of good quality aerial photography in view of the difficulty of seeing many of these structures from the ground, among the boulders of the *harra*.'

Finally, I might say that it is my hope to begin an extensive multi-period survey in the north-eastern desert in 1981 which would continue for a number of years. It is already clear from an examination of the available aerial coverage that there are a good many otherwise unattested features which must be investigated on the ground and, if possible, I intend to begin the task of mapping the walls, circles and kites in the lava and steppe areas[38].

Appendix

Aerial Photographic Archive for Archaeology in the Middle East

Following discussions with various interested parties, I established the above Archive at Sheffield University in 1979 where facilities were put at my disposal by the Department of Ancient History and Classical Archaeology. At the time I was unaware of Crawford's abortive attempt to do much the same almost exactly 50 years before. Such an Archive is no less necessary now than it was then and the objectives are broadly the same. The Archive is intended to bring together in a single centre accessible to all interested scholars, as much aerial photography of the Middle East as is available in collections and private hands. Some 700 photographs form the nucleus, coming from a handful of collections as well as individual donations by former Royal Air Force personnel stationed in the Middle East. No immediate large accretions to the collection are anticipated but negotiations are in hand to obtain substantial quantities not otherwise available at the moment. In the meantime it is hoped that continued additions will come from scholars and others holding aerial photographs of the Middle East who are willing to donate them or allow copies to be made.

Initial funding has been provided by generous grants from the Craven Committee and the Seven Pillars of Wisdom Trust. It is hoped that the accession of substantial quantities of material would be paralleled by placing the Archive on a sounder financial footing by regular grants from one or more sources. Furthermore, unlike Crawford's proposed archive, I would hope that this collection would not simply be available but actively exploited by, at the very least, a part-time researcher, whose work can be followed-up by the essential *verification au sol* and excavation.

[38] The fieldwork upon which some of this paper is based was made possible as a result of generous grants from the Society of Antiquaries, The Craven Committee, Sheffield University Research Fund, The Seven Pillars of Wisdom Trust, Graham Willis Fund and the Meyerstein Fund.

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The Significance of Continuity in Early Jordanian Prehistory

Traditionally, the study of the prehistory of Jordan has been treated as a regional aspect of the prehistoric development of Palestine, with its developmental sequences cast in terms of Palestinian successions. Today it is increasingly realized that the early prehistoric development of Jordan during the late Upper Palaeolithic, the Mesolithic and the Pre-Pottery and Pottery Neolithic must be treated as a regional aspect of a far larger area that included the whole of the Levant and perhaps much of southern Anatolia. Also during the last twenty years, it has become clear that cultural development was continuous throughout these lands bordering the northeast Mediterranean Sea during early prehistoric times. Similar cultural elements found throughout the area could have been due to parallel development of commonly held elements rather than the diffusion of elements from one area to another within the region. This is not to say that there was not contact and trade among the peoples of the area, but as time passed their cultures became increasingly differentiated along regional lines, laying the foundations for the culture particularism of later prehistoric times.

The realization of the existence of the continuity of culture during the early prehistoric period is one of the many by-products of the radiocarbon revolution. While this revolution has greatly increased the time spans of the cultures of late prehistoric times, for many archaeologists it has brought a dramatic reduction in the time span which formerly separated the end of the Palaeolithic from the beginning of the Neolithic. With the destruction of the Mesolithic hiatus that had so long separated Neolithic man from his Palaeolithic forebears, it became possible to think in terms of a continuity of culture extending from the Palaeolithic through the Mesolithic into the Neolithic, which was to make possible the persistence of early culture elements into later times.

Understanding the significance of this continuity was difficult within a conceptual framework which visualized the past as a succession of distinct periods, each of which had become subject to interpretation by specialists devoted to a single period. Within the tradition of the 'Three Ages System', modified by evolutionary concepts and the introduction of new periods following archaeological discoveries and even brought up to date through the introduction of new concepts such as the 'Neolithic Revolution' of V. G. Childs and of intricate successional schemes such as the 'historical sequence' of R. J. Braidwood[1], emphasis fell on culture period. To oversimplify, once a culture had been classified, its explanation was in hand.

In the course of the last twenty years, the 'New Archaeology' has brought about fundamental shifts in the way we think not only about the cultures of the past, but the manner in which they developed. It has altered our concepts of culture change, which was once explained almost entirely in terms of diffusion and migration. With culture change taking place within a very limited range as the result of an endless sequence of diverse random variations, it becomes possible to visualize culture continuity. Yet in the field the archaeologist does not find a cultural continuum but site segments of the past fixed in time and space. When successive segments within a site are similar they are assigned to a culture phase, but after marked differences have developed, they are attributed to a new culture.

The development of methods for the analysis of culture change and continuity in the cultures of the early prehistoric past came from French typologists rather than the 'New Archaeologists'. During the late forties and fifties, a new method for typological analysis of flint industries was introduced in France. It began with the work of the Bordes on the industries of the Palaeolithic which involved detailed descriptive analysis of flint tools and resulted in cumulative diagrams for the comparison of flint industries of various sites belonging to the same or differing cultures[2]. Subsequently Georges Laplace extended the typological system to the Mesolithic[3]. The application of these methods made it possible to establish not only the precise relationship of sites of the same phase, but the relationships of sites of successive phases. In the

[1] R. J. Braidwood, The Earliest Village Communities of Southwestern Asia Reconsidered, *Atti del Sesto Congresso Internazionale delle Scienze Preistoriche e Protostoriche* 1 (1962), 117.

[2] F. Bordes, and his wife, Denise de Sonneville–Bordes, have defined their typological method in a series of articles in the *Bulletin de la Société Préhistorique Française.*

[3] G. Laplace, Typologie analytique: Application d'une nouvelle méthode d'étude des formes et structures aux industries à lames et lamelles, *Quaternaria* 4 (1957), 133–164.

Levant, the application of similar methods has made it possible to establish the existence of continuities of culture similar to those which have been established for the late Upper Palaeolithic and Mesolithic in France and the Italian Peninsula.

The shifts in proportions of tool types found from phase to phase and period to period attest to changes reflecting culture continuity and change. While many of the changes are due to internal technological development, there are at times major shifts in tool types which are best explained in terms of the adaptation of the technocomplex to economic changes. In early prehistoric times, major shifts in the economic basis probably resulted from changes in food supply, probably related to environmental changes.

Until quite recently the influence of climatic change was widely discounted by archaeologists and palaeo-geographers and geologists. Twenty years ago R. J. Braidwood and H. E. Wright pointed out that after 10,000 BC climatic conditions were probably 'not greatly different from those of the present[4]'. Subsequently palynological work undertaken in southwestern Asia at sites such as Lake Zeribar in western Iran and Ghab in northwest Syria has shown that climatic and therefore environmental changes occurred not only during the Pleistocene, but even in the subsequent Holocene[5]. It has also become increasingly clear that these changes cannot be interpreted in terms of inter-regional latitudinal or altitudinal zones through the use of older atmospheric circulation models[6]. Unfortunately it is probably premature to use models for palaeo-atmospheric circulation in the interpretation of palaeo-environmental evidence. However, models of this type, such as those of H. H. Lamb, suggest that while past climatic changes probably involved relatively limited latitudinal shifts in circulation, there was marked longitudinal movement of the steering mechanism responsible for the dispersal of rain-bearing depressions in the Westerlies. This resulted in patterns of distribution of rainfall and temperatures best understood in regional rather than zonal distributions[7].

Increasingly in the current literature, the cultural development of Jordan from the end of the Aurignacian to the beginning of the Pre-Pottery Neolithic is assigned to the Epi-Palaeolithic. Although this expresses very well the increasingly held view of a culture continuity extending from the late Palaeolithic to the Neolithic[8], it must be noted that the first phase of the Epi-Palaeolithic, characterized by the Kebaran culture, was contemporary with the Epi-Gravettian of Italy and the Magdalenian of southwestern France, which have long been assigned to the late Upper Palaeolithic.

In the Levant, the Aurignacian-like Athlitian culture gave way to the Kebaran culture, which is now traced through two major periods, the Kebaran and the Kebaran Geometric A. Carbon-14 dates from Nahal Oren, Ein Gev I and Ksar Akil place both of these periods in the late Pleistocene. In European terms, they belong to the time of the Lascaux Inter-Stadial and the Late Würm (Oldest Dryas I, Pre-Bølling, Oldest Dryas II, Bølling, and Older Dryas). After the warm Lascaux Inter-Stadial, climatic conditions were cold, except for intervals of warming associated with the Pre-Bølling and especially the Bølling oscillation.

The Kebaran culture is known from camp sites found throughout the Levant, and probably extended through southern Anatolia. In Jordan it has long been known from the Wadi Dhobai[9] and the rock shelter in the Wadi Madamagh near Petra[10], and has recently been reported by archaeological surveys[11]. These sites have industries not typical of the late Upper Palaeolithic, because there are many microlithic bladelets and a few geometric microliths. There are also other surprising elements such as the hut found at Ein Gev I and finds of pounding and grinding stones and even mortars and pestles[12]. These new elements are not so surprising today because of the discovery of huts built of mammoth bones in the Kostienki culture of southern Russia and grinding stones in a chronologically comparable context in Nubia. Although the numerous bones of fallow deer (30 to 40 per cent) indicated by an incomplete analysis of the faunal remains of Level IX at Nahal Oren suggest a continuation of Upper Palaeolithic hunting, the equipment for grinding and pounding, together with the remains of carbonized seeds from the same level at Nahal Oren, points to a changing way of life[13].

The Kebaran Geometric A culture has a flint industry which can be derived from the Kebaran culture. The continuity of the flint industry is guaranteed by typological analysis. There are local variations in the flint industry which have been attributed to regional specialization[14], but they may well reflect only differing hunting and collecting practices. The increase in geometric microliths is suggestive of increasing emphasis upon collecting and the hunting of small game. Yet the bones of larger animals continue, but the great

[4] H. E. Wright, Jr. Climate and Prehistoric Man in the Eastern Mediterranean, *Prehistoric Investigations in Iraqi Kurdistan, SAOC* 31 (1960), 95; C. A. Reed and R. J. Braidwood, Toward the Reconstruction of the Environmental Sequence of Northeastern Iraq, *ibid.* 169.

[5] W. van Zeist and S. Bottema, Palynological Investigations in Western Iran, *Palaeohistoria* XIX (1977), 19.

[6] K. W. Butzer, Patterns of Environmental Change in the Near East during Late Pleistocene and Early Holocene times, *Problems in Prehistory: North Africa and the Levant* (1975), 389–410.

[7] H. H. Lamb, *Climate, Present, Past, and Future*, I–II (1977).

[8] O. Bar-Yosef, The Epipaleolithic in Palestine and Sinai, *Problems in Prehistory, North Africa and the Levant* (Dallas, 1975), 363–378; J. Besançon, L. Copeland and F. Hours, Tableaux de préhistoire libanaise, *Paléorient* 3 (1975–1977), 5–45.

[9] J. Waechter, J. Seton-Williams, V. M. Bate and D. and L. Picard, The Excavations at Wadi Dhobai, 1937–1938, and the Dhobaian Industry, *Journal of the Palestine Oriental Society* 18 (1938), 172–186 and 292–298.

[10] D. Kirkbride, A Kebaran Rockshelter in Wadi Madamagh near Petra, Jordan, *Man* 58 (1958), 55–58.

[11] A. N. Garrard and P. S. Price, A Survey of Prehistoric Sites in the Azraq Desert National Park, in Eastern Jordan, *Annual of the Department of Antiquities* XX (Amman, 1975), 83–90.

[12] M. Stekelis and O. Bar-Yosef, Un habitat du Paléolithique supérieur à Ein Gev (Israel), note préliminaire, *L'Anthropologie* 69 (1965), 176–183.

[13] T. Noy, A. J. Legge and E. S. Higgs, Recent Excavations at Nahal Oren, Israel, *Proceedings of the Prehistoric Society* XXXIX (1973), 75–99.

[14] O. Bar-Yosef, *op. cit.*

predominance of gazelle over fallow deer in Levels VIII–VII at Nahal Oren could point to drier climatic conditions, which would have encouraged a turn to collecting. Carbon-14 dates place the Kebaran Geometric A in the time of the Bølling oscillations. Its warmer temperatures may well have meant a shift toward modern environmental conditions in the southern Levant.

The sites of Beidha in Jordan and Mureybet on the middle Euphrates, together with numerous intervening sites, indicate that the Natufian spread through much of the Levant, while sites at Belbasi and Beldihi on the Antalya plain of southwestern Anatolia suggest that either a Natufian or a closely related culture extended through southern Anatolia. Although the Natufian culture shares not only a common territory but many common traits with the Kebaran, there is little agreement on its precise origins. This may be due to its emergence from a Kebaran culture which had already differentiated along regional lines. Furthermore, there is also a division of opinion over its development[15].

Before the Pre-Pottery Neolithic A, some archaeologists such as Bar-Yosef postulate that an Early Natufian rose in central and northern Palestine while the Kebaran continued in the Negeb and south, where it is known as the Kebaran Geometric B. Subsequently population expansion in the north led to an expansion of the Late Natufian which resulted in the displacement of the Kebaran survivors[16]. Other archaeologists such as J. Besançon, L. Copeland and F. Hours believe that there was an earlier main Natufian phase which was followed by an Epi-Natufian phase. They regard the Kebaran Geometric B encampments of the south as Natufian hunting stations[17]. Obviously there is need for well excavated sites and quantified flint typologies to straighten out both the origins and development of the Natufian. (May Jordan have the good luck to yield up such sites.)

Radiocarbon dates for Basal Jericho suggest that it should be attributed to the time of the relatively warm Allerød climate, when temperatures reached to within one or two degrees of modern mean summer temperatures. Environmental conditions in the Levant must have begun to approach those of our day, a conclusion supported by the oak maximum in Horizon Y4 of the Ghab pollen diagram of northwest Syria[18]. Could the impact of drier climatic conditions than in Kebaran times explain the origin of the Natufian? This would explain its initial development in the central and northern Levant while hunting persisted in the south, where environmental conditions may well have approached those of our day.

In later Natufian times there must have been a return of colder climatic conditions associated with the time of the Younger Dryas, which marks the end not only of the Late Würm, but also of the Pleistocene. The cold climate of the Younger Dryas, which is dated to the ninth millennium by radiocarbon as well as varve dates[19], brought a return of conditions of Pluvial type in the Levant. This hypothesis is supported by the sharp decline of oak and AP pollen and the expansion of NAP pollen in Horizon Y5 of the Ghab diagram. While conditions in the northern Levant turned cool and relatively dry, milder, moister conditions prevailed in the south, if one may take the evidence during times of earlier Glacial Pluvials as a model[20]. This would explain the expansion of Natufian settlement into the south, where a site such as Rosh Horesha is dated to the ninth millennium by two radiocarbon dates.

The Natufian development led to the Pre-Pottery Neolithic A culture, which was first defined through the work of K. Kenyon at Jericho[21]. This culture can be traced northward through Syria to Mureybet on the Euphrates[22]. The Pre-Pottery Neolithic A is found largely within the Mediterranean zone of the Levant. The explanation not only for this distribution but in part for the formation of the Pre-Pottery Neolithic A culture may have been warmer climatic conditions during the Pre-Boreal of the eighth millennium. These warmer temperatures brought a trend toward modern climatic conditions, which are indicated by the marked expansion of oak in Horizon Z of the Ghab diagram, beginning just before 10,080/8,130 ± 55 BP/BC. It would also explain the persistence of hunting and collecting groups in the drier areas of the south and east.

In the Levant, the development of the Neolithic is traced through a Pre-Pottery stage, which belongs to the time of the increasingly warm Boreal climate of the seventh millennium, and a Pottery stage, whose beginning falls in the late seventh or early sixth millennium, when an Atlantic climate brought temperatures that exceeded those of our day. Although much of the development of the Neolithic in the Levant is due to the thrust of the internal trajectories of the cultures themselves, which had been set in course in much earlier times, the environmental changes brought by the rising temperatures of the Boreal and Atlantic periods must have had their effect in terms of their influence on settlement patterns and economic potentials.

The Pre-Pottery Neolithic B culture, which extended northward from Beidha in Jordan to Mureybet on the Euphrates, occupied the whole of the Mediterranean zone of the Levant, while a closely related Aceramic Neolithic took over southern Anatolia. It is increasingly clear in the Levant that the

[15] O. Bar-Yosef, *op. cit.*

[16] O. Bar-Yosef, *op. cit.*

[17] J. Besançon, L. Copeland, and F. Hours, Tableaux de préhistoire libanaise, *Paléorient* 3 (1975–1977), 19.

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[21] K. Kenyon, Excavations at Jericho, 1957–1958, *Palestine Exploration Quarterly*, 92 (1960), 88–180.

[22] J. Cauvin, Nouvelles fouilles à Tell Mureybet (Syrie), 1971–1972. Rapport préliminaire, *Les Annales Archéologiques Arabes Syriennes* XXII (1972) 105–115.

Pre-Pottery Neolithic B developed from the preceding Pre-Pottery Neolithic A and represents a development that had been in the making since late Palaeolithic times. It is becoming increasingly evident that the beginning of plant cultivation and probably animal domestication took place in many areas over a vast region, embracing not only southwest Asia but also northeast Africa and perhaps southeastern Europe over a long period of time[23]. The trajectories of development leading to the Pre-Pottery Neolithic must have varied regionally within the Levant. Of course inter-group relationships played their role and led to the development of trade, which must explain the Anatolian obsidian found at Beidha as well as the diffusion of other elements of culture[24].

The Pre-Pottery Neolithic B culture brought many innovations, which must represent developments within a Kebaran-Natufian tradition. This conclusion seems to be supported by the development of architecture at Beidha[25] and the development not only of the Tahunian point, but other elements of flint industries found in the stratigraphically-fixed typological sequence at Tell Aswad[26]. There is, of course, the widespread appearance of skull burials, which suggest an ancestor cult, and of female and animal figures, which have long been taken to be indications of a fertility cult[27]. The skull burials and figurines must reflect a complex of religious beliefs developing within the context of the cultures of the Levant.

The development of Jordan and the Levant during the Pottery Neolithic and subsequent Chalcolithic lies beyond this paper. However, note must be taken of the general abandonment of much of the semi-arid zone of the southern Levant at the end of Pre-Pottery Neolithic B times. Here there began a long hiatus in occupation, which is best explained in terms of environmental changes during the sixth and fifth millennia, at the time of the warm Atlantic climate. Its effects were not so serious for settled life in northern Palestine, the Lebanon and Syria, where the Pottery Neolithic and subsequent Chalcolithic developed in terms of a distinctive regional culture whose roots are probably to be found in the Kebaran-Natufian tradition. Hunters and gatherers must have persisted and expanded their territories in the south and east, but there is still the need for field evidence to prove their survival. One hopes that the current surveys in Jordan will turn up the needed evidence.

By the time of the Pottery Neolithic of the Levant, the Kebaran-Natufian Pre-Pottery Neolithic tradition had been in existence for more than ten millennia. Put in another way, the ongoing tradition had undergone modification and transformation, passed down through a succession of four to five hundred generations of hunters and gatherers who had in the end become sedentary villagers. Increasingly, archaeological field work and prehistoric investigations indicate that this was not an isolated development. A similar continuous development of culture can now be traced from the late Palaeolithic through the Mesolithic into the Neolithic in the Italian Peninsula and southern France.

The thrust of the Kebaran-Natufian Pre-Pottery Neolithic tradition did not stop suddenly in the Pottery Neolithic. Although the continuation of the older simpler traditions is difficult to detect in the flux of all that was new in the rapidly developing but highly regionalized cultures of the Chalcolithic, there are elements, fundamental cultural elements, that must have roots going back through the Mesolithic to the Late Palaeolithic. The development of the rectangular 'External House' with L-plan, which was common during the Chalcolithic and early phases of the Early Bronze Age (I), may well represent a modification of the houses of the Pre-Pottery Neolithic B[28]. Much the same could be said of burial practices. The practice of burial under the habitation area of Kebaran and Natufian rock shelters and cave mouths led to the sub-floor burials of the Pre-Pottery Neolithic such as those found at Jericho PPN A. The development of multiple burials and the ritual involving the removal of the cranium, which are found not only at Jericho PPN B in the Levant, but at Hacılar in southwest Anatolia, suggest that a widespread transformation of burial practices took place at much the same time within the continuum of Kebaran-Natufian tradition[29]. This possibility is reinforced by the appearance of animal and female figurines at much the same time, which suggest the more general transformation of religion during Pre-Pottery B times to meet the needs of an increasingly complex society. The continuation of these traditions would go far to explain the subsequent development of multiple burial and the separate treatment of the skull in the Chalcolithic and Bronze Ages.

The study of the persistence of elements of culture such as these could provide clues as to the outlook of the pre-Canaanite peoples of the Levant. By the time there are religious and historical records, the older peoples had been assimilated by the incoming Canaanites. Yet the discovery of traits in the Canaanite tradition which are difficult to explain could well have been due to the absorption of older ideas and concepts. These older ideas and concepts would have had roots in the widespread continuum which once extended from the Levant through southern Anatolia.

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Paleolithic Adaptive Strategies in Southern Jordan: Results of the 1979 Field Season

One of the current fundamental concerns of anthropology is in understanding the dynamics of human adaptive strategies, that is, the ways in which populations select and secure resources from their environments. An important aspect of the problem relates to defining man's past responses to critical situations such as population stress, dwindling resources, economic transitions, and environmental fluctuations. Archaeology, as a discipline, is in a unique position for elucidating adaptive patterns through tracing and evaluating cultural responses to critical situations over an exceedingly long time span (Harris, 1968: 360).

Some manifestations of adaptive strategies which are most apparent archaeologically are settlement patterns, economic modes, and settlement size. A traditional view of the evolution of prehistoric adaptive strategies, based upon these archaeological manifestations, stresses the replacement of highly mobile settlement systems, specialized economies, and small in-group populations by more sedentary settlement systems, broad-spectrum economies, and larger in-group populations. In the Near East, this evolutionary trend is normally viewed as culminating at the end of the Pleistocene with large, semi-sedentary populations which employed diversified hunting and collecting economies. The terminal Pleistocene adaptive strategies of this 'settling in' period, although interpreted in different ways, are fundamental to the various explanatory models proposed for the origin of agriculture (Braidwood, 1960; Binford, 1968; Redman, 1978).

While the changes in adaptive strategies recognized for the terminal Pleistocene are well documented in the Near East (Braidwood and Howe, 1960; Hole and Flannery, 1967; Binford, 1968; Mortensen, 1972; Henry and Leroi-Gourhan, 1976; Marks and Freidel, 1977), a question arises as to whether similar transitions occurred at other times during the Pleistocene. The proposed diachronic directional trend of greater sedentism, more diversified economy, and larger in-group size appears to be theoretically unsound given the lack of directionality in such important influential factors as environment and over-all population density of the region. Furthermore, recently acquired empirical data indicate the presence of a settlement pattern associated with sedentary residential encampments during the Middle Paleolithic in the central Negev Highland (Hietala and Stevens, 1977; Marks and Freidel, 1977). If Middle Paleolithic sedentism was a regional as opposed to local phenomenon, the well documented change in adaptive patterns which occurred at the end of the Pleistocene would appear to represent only one of a number of such intermittent occurrences rather than the culmination of an evolutionary trend. If the changes recognized in adaptive patterns at the end of the Pleistocene do not represent a unique occurrence limited to that time period, then many of the existing notions on post-Pleistocene adaptions need to be recognized. The differences between Pleistocene and terminal Pleistocene episodes of sedentism may be considerable importance in explaining the origin of agriculture within the region.

Unfortunately, relatively few areal research projects concentrating on the definition of prehistoric adaptive strategies have been conducted in the Near East. The paucity of such studies is due to a traditional regional orientation of intensively excavating individual prehistoric sites. Although a few notable studies have addressed the problem (Braidwood and Howe, 1960; Hole and Flannery, 1967; Hole, Flannery, and Neely, 1969; Higgs, 1972; Marks, 1976, 1977; Bar-Yosef and Phillips, 1977), their differences in temporal foci, particular topical orientations, and recovered evidence have limited the most complete and detailed sequence of changes in adaptive patterns to the Central Negev Highlands (Marks, 1976, 1977).

Southern Jordan: an ideal study area

Although there are no doubt a number of regions in the Near East which would contain excellent study areas for examining Paleolithic adaptive strategies, the southern edge of the Jordanian Plateau is in many ways unique in respect to environmental diversity and high density of Paleolithic sites. The region exhibits striking differences in elevation which range from 800 metres to over 1,700 metres above sea level. Although in general, the region is desertic, receiving less than 200 mm. of precipitation annually, the marked vertical relief generates significant local variation in precipitation patterns

as evidenced by the elevational zonation of plant communities (Zohary, 1962:51–53).

As an expression of the vertical relief of the region, three distinct phytogeographic zones (Mediterranean, Irano-Turanian, and Saharo-Sindian) appear within short transects running from the floor of the Wadi Hisma to the hills on the edge of the plateau. The transects which incorporate these three zones are normally of the order of 10 km. in length and traverse elevations from 900 metres to 1,400 metres above sea level.

Clearly, Southern Jordan provides an ideal setting for collecting information on past climates and prehistoric settlement patterns and economics. The elevational differences of the region which result in the current environmental diversity, no doubt, played a similar role in prehistoric times. One would suspect that the region was environmentally 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 (Butzer, 1971:78). The region's environmental diversity and its potential for dramatic environmental shifts, associated with climatic change, provide an ideal situation for examining prehistoric settlement patterns and economics on the basis of seasonal adjustments and long-term changes in adaptive strategies.

In respect of our knowledge of the Paleolithic archaeology of the region, the paucity of detailed investigations is surprising given the large numbers of sites that have been reported from Southern Jordan (Stockton, 1969). Although intensive systematic surveys of Paleolithic sites have not as yet been undertaken in southern Jordan, a number of reconnaissances have provided some information on the varieties and densities of Paleolithic occupations (Kirkbride and Harding, 1947; Zeuner, et. al., 1957; Kirkbride, 1960; Field, 1960; Huckreide and Weisemann, 1968; Copeland and Hours, 1971; Price and Garrad, 1975). Over forty sites representing Lower Paleolithic, Middle Paleolithic, Upper Paleolithic, Epi-Paleolithic, and Neolithic industries have been recorded in Southern Jordan (Stockton, 1969). Detailed studies and excavations, however, have only been initiated on late Pleistocene and Holocene occupations attributed to Epi-Paleolithic and Neolithic industries at the sites of Beidha (Kirkbride, 1966; Mortensen, 1970), Wadi Madamagh (Kirbride, 1958), and Wadi Dhobai (Waechter and Seton-Williams, 1938). While a limited number of prehistoric investigations have been undertaken in southern Jordan, it is evident that the region exhibits a high density of Paleolithic occupations which represent a considerable time depth. When the region's environmental features are considered in conjunction with the density and time-depth of Paleolithic occupations, southern Jordan clearly provides a unique laboratory for examining the changes in prehistoric adaptive patterns over a very long time span.

Fundamental information: chronology and environment

The development of sound cultural-historical and environmental sequences are requisite for examining changes in man-land relationships during the Paleolithic. An understanding of the chronological order of cultural and environmental successions is fundamental to studying man's responses to changes in his environmental background.

Our general knowledge of the relative chronologic order of Paleolithic complexes of the Near East has not been greatly altered over the last fifty years. Our understanding of the generic relationships and the absolute antiquity of these complexes, however, has undergone considerable refinement as a result of technical and theoretical advances (Henry and Servello, 1974). The increased precision of chronologically ordering the Paleolithic record has produced a far more complex picture than we previously imagined. While in the past major differences in artifactual patterns were normally given temporal significance, it is now apparent that such variability may represent different functional or regional expressions of a single cultural entity. The recognition of numerous variables other than 'change through time' which may have contributed to variability in the archaeological record has prompted many scholars to develop a more holistic approach in their investigations. Although holistic studies seek to identify the various expressions which the archaeological manifestations of a discrete Paleolithic cultural entity may have taken as a result of seasonal, functional, or settlement differences, temporal control of the archaeological record nevertheless remains a fundamental issue. The necessary precision or resolution of our chronologic scale, however, varies with the problem with which we are dealing. In studying the changes in adaptive strategies for the Paleolithic, the temporal focus defines broadly contemporary occupations belonging to socio-cultural systems which fall within rather wide chronologic partitions. The early Levantine Mousterian and the Natufian would represent examples of such socio-cultural systems which prevailed for tens of thousands and thousands of years, respectively. Fortunately, typologic indicators within the artifactual inventories of these systems facilitate their identification. When the typologic information is then coupled with radiometric and stratigraphic evidence cultural-historical sequences are developed which allow for the examination of changes in adaptive patterns.

While in general the chronology of Paleolithic complexes in the Levant is known, our understanding of paleoenvironmental settings equivalent with these complexes is at present poorly understood. Paleo-environmental reconstructions are restricted to the late Pleistocene with the greatest amount of evidence coming from terminal Pleistocene and Holocene deposits.

Following the last interglacial and equivalent with early Levantine Mousterian times (+60000 BC) palynological, geological, and paleontological data indicate greater humidity and lower temperatures than at present (Jelinek, et al, 1973; Marks, 1977). By late Levantine Mousterian times (c. 45000 BC), after an erosional hiatus, the climate appears to have been similar to todays with slightly cooler temperatures.

Although dry climatic conditions continued in association with Upper Paleolithic manifestations, until around 30000 BC, a slow climatic amelioration apparently began as early as 35000 BC (Marks, 1976). A brief period of climatic amelioration from about 30000 to 25000 BC is indicated by palynological, geological, and settlement pattern evidence (Marks, 1976; Bar-Yosef and Phillips, 1977). An episode of dry conditions associated with lower temperatures than at present appears to have persisted from c. 25000 BC until around 12000 BC with maximum aridity occurring between 14000 and 13000 BC (Marks, 1976; Henry and Leroi-Gourhan, 1976). The end of the Pleistocene in the Levant appears to have been associated with climatic-environmental oscillations which were equivalent in number if not magnitude to the rest of the world. In association with geometric Epi-Paleolithic industries, a mild humid climate prevailed from about 12000 to 10500 BC to be replaced by colder, drier conditions from 10500 to 10000 BC (Henry and Leroi-Gourhan, 1976). Synchronous with the early Natufian, there was an onset of a warm, humid climate which persisted from about 10000 to 9000 BC. The warm humid setting, however, gave way during late Natufian times, about 9000 BC, to drier conditions, with lower temperatures appearing between 8500 and 8000 BC (Leroi-Gourhan, 1974). Beginning with the Aceramic Neolithic (PPN 'A'), around 8000 to 7800 BC, the arid phase gave way to increased temperature and moisture (Leroi-Gourhan, 1974). While I would like to emphasize that the paleo-environmental summary presented here is a tentative one, based upon a limited number of localities in the Levant, it nevertheless provides a useful framework for organizing, developing, and evaluating newly acquired evidence.

Adaptive strategies revealed in settlement patterns

In that a population's settlement system reflects the interplay of the environmental, economic, demographic, and social forces which influence a population's adaptive strategy, prehistoric settlement pattern perhaps provides the most tangible evidence for elucidating prehistoric adaptive strategies. Various classificatory schemes have been used in studies of settlement systems (Beardsley, et. al., 1955; Hole and Flannery, 1967; MacNeish, 1972; Mortensen, 1972). Although the terminologies of the studies differ, settlement systems have principally been viewed as adaptive mechanisms which adjust group size, movement, and scheduling to most efficiently mesh procurement technologies with the locations and seasonal availability of resources.

Two polar types of settlement patterns have been defined, i.e. circulating and radiating. Mortensen (1972), in differentiating between the two settlement patterns, noted that in the circulating pattern the movements of prehistoric groups would have accounted for numerous ephemeral camp sites while a radiating pattern would have contained permanent or semi-permanent base camps which were in part supported by various non-residential satellite exploitation encampments. The site catchments of the two patterns would be expected to differ significantly as well (Henry, 1975: 381) the site catchments associated with a circulating pattern would include areas in close proximities to the sites; perhaps in the order of 10 km. in radius (Vita-Finzi and Higgs, 1970; Jarman, 1972). The site catchments of a radiating pattern, on the other hand, would include considerably larger territories through the channelling of resources from the various radial exploitation camps back to the base camps.

As previously discussed, the changes in settlement patterns within the Central Negev Highlands during the last glaciation appear to have been partially correlated with climatic-environmental oscillations (Marks and Freidal, 1977:153). During moist climatic intervals, coeval with early Levantine Mousterian and Natufian industries, radiating settlement patterns appear to have been operative. Radiating patterns, however, gave way to circulating patterns during drier climatic-environmental intervals associated with Upper Paleolithic, Kebaran and Geometric Kebaran industries. If the settlement pattern changes identified in the Central Negev can be applied regionally, as suggested, a similar sequence should be defined within southern Jordan. In order to evaluate the proposed settlement pattern sequence and to more fully integrate the observed settlement pattern changes into the broader context of adaptive strategies, two specific settlement pattern models are proposed for testing in southern Jordan.

Models for the study area

The models are based upon the premises that: 1) a strong positive correlation exists between population density and rainfall patterns among hunting-gathering populations (Birdsell, 1953); 2) a Mediterranean climate characterized by a marked seasonal distribution in rainfall has prevailed during the upper Pleistocene for the area (Farrand, 1977); and 3) that the orographic features which control rainfall patterns in the area today were operative in the past. Within southern Jordan, rainfall distributions, viewed as having been the most influential factors governing settlement patterns, are principally controlled by the variables of climate, seasonality, and elevation. Two major varieties of climate, moist and arid, are considered in the models. The region is presently experiencing an arid climate, but as discussed mounting paleo-environmental data indicate marked climatic oscillations during the last glaciation. The region exhibits marked seasonality in rainfall with almost all of the precipitation occuring during the months of December, January, and Feburary. Striking differences in rainfall patterns are also caused by elevational differences with two major zones being distinguished. The high elevations (1,000–1,600 metres) of the Edom Plateau receive over 500 mm. of rainfall annually, while the lower elevations (c. 900 metres) of the steppe country of the Eastern Desert receive under 200 mm. precipitation annually.

Moist climatic intervals

It is proposed that during major climatic intervals of greater available moisture than today, radiating settlement patterns

would have existed in the Jordanian highlands with either radiating patterns, circulating patterns, or combinations of the two being operative in the Eastern Desert depending on the magnitude of pluvial conditions. It is also suggested that the sedentary base camps of the groups living in the highlands during these times would have been located in ecotones in order that resources from diverse environmental zones could be procurred from a single locus. In that the environments of the region are elevationally zoned, it is predicted that sedentary base camps of a specific period (e.g. Natufian, early Levantine Mousterian) will be found at similar elevations given their ecotonal positions.

Arid climatic intervals

During arid climatic intervals with moisture budgets similar to or less than that of the region today, it is proposed that circulating patterns prevailed for the highlands and the Eastern Desert. The circulating settlement system would have encompassed both the highlands and Eastern Desert, with the highlands having been occupied during the long dry season (April through November) and the Eastern Desert having been occupied during the wet season (December through March). It is suggested that the residential encampments of the circulating settlements pattern in the highlands would not have been tied to a single environmental locus, but would have been situated in various environmental settings. The site distributions of arid climatic intervals would, therefore, not be expected to exhibit similar elevations.

Although the population density of the region (including both the highlands and the Eastern Desert) was probably higher during major pluvials, the population density of the highlands must have risen considerably during the dry season of arid climatic intervals when populations abandoned the Eastern Desert. These demographic differences should be expressed archaeologically in a significantly greater number of residential encampments being recorded for arid as opposed to moist climatic intervals, even when the inherent differences in settlement patterns are considered.

A methodology for evaluating the models

In order to evaluate these models archaeologically, the examination of the site distributions for each of the time periods should involve: 1) Discerning to what degree the site distributions have been biased by differential geologic exposures; 2) Identifying the different varieties of prehistoric encampments (i.e. permanent or semi-permanent base camps, transitory residential camps, non-residential exploitation camps); 3) Comparing the site distributions by variety to topography, paleo-environmental zones, and fixed resources (lithic sources and water); 4) Studying the locations of abandoned and extant Bedouin encampments.

Geologic exposures

In order to ascertain the degree to which the distributions of sites have been biased by differences in geologic settings, surface maps of the study area should be prepared for each of the archaeological periods. The maps, based upon geologic and archaeologic evidence, will identify those portions of the study area where sediments of a particular period are exposed, removed, or buried. In this manner, the distribution of prehistoric sites can be accurately evaluated for settlement patterns.

Site varieties

The investigation should seek to classify sites discovered within the study area in to permanent/semi-permanent base camps, transitory residential encampments, and non-residential exploitation camps. The classification should be based upon differences observed between the sites and their respective assemblages in regard to: 1) site areas, 2) variability in tool-kits, 3) stages of lithic reduction, 4) curation modes, 5) load applications, 6) tool-to-debitage ratios, and 7) artifact densities. No single attribute to those listed should be considered to be diagnostic of site variety, for a combination of attributes is viewed as necessary for cross-checking and verifying the classification of a site as to variety.

Fixed resources

The sites from each of the prehistoric periods will be compared by variety to the topography, contemporary environmental zones, elevation, and fixed resources (flint, water) of the study area. These distributions will be examined in respect to a minimax strategy where sites were located so as to minimize human energy expenditures and maximize the procurement of resources.

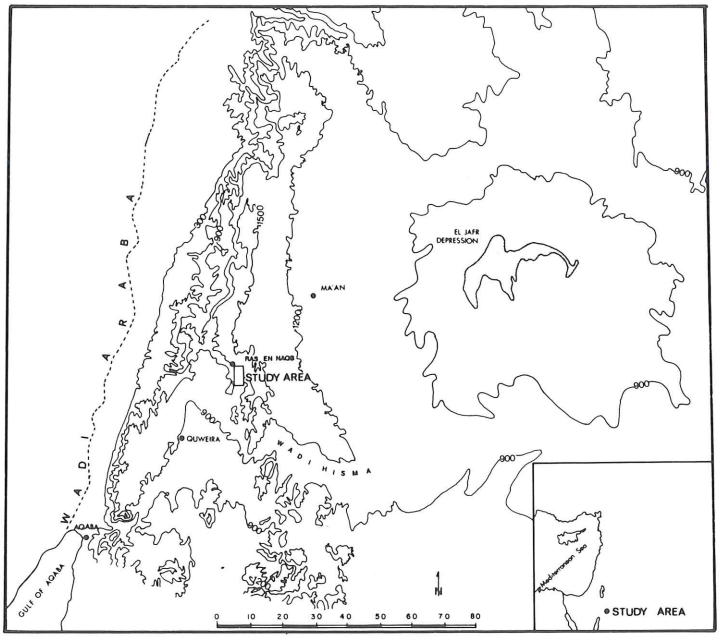
Bedouin settlement pattern

Although the focus of the investigation is on prehistoric adaptive strategies, knowledge of the movements and exploitive practices of Bedouin groups within the region should assist in the interpretation of the prehistoric evidence. In that the seasonal movements of Bedouin groups in the area are primarily controlled by rainfall distribution (Patai, 1958:164–165), their settlement pattern should be similar to the pattern predicted for prehistoric hunters and gatherers who occupied the area during arid climatic intervals. Ethnographic data for the Howetat Ibn Jazi, in fact, confirm a circulating settlement pattern. The tribe occupies the highlands of the Ras en Naqb during the dry season and disperses into the Eastern Desert in smaller social units during the winter rains (Patai, 1958, 164–165).

Preliminary results of the investigation

During an eight week field season in the summer of 1979, a multi-disciplinary archaeological investigation was conducted in the area of the village of Ras en Naqb in southern Jordan (FIG. 1). Although the long term goals of the study focus on tracing and evaluating adaptive changes for the Paleolithic occupation of the area, the first season's fieldwork concentrated on surveying the area for Paleolithic sites, ordering the

1. Study area



discovered sites chronologically, and collecting environmental evidence of the past and present.

The study area captures the marked environmental and elevational diversity exhibited by the region in containing the three major vegetational communities of the Levant in conjunction with elevations ranging from 800 metres to 1600 metres above the sea level. The topography of the study area can primarily be divided into the uplands on the edge of the Edom or Ma'an Plateau and the lowlands which front the plateau and form the edge of the Wadi Hisma.

Chronology

A systematic 100 per cent survey of slightly over ten square km. was undertaken on foot. The survey resulted in the discovery of 56 Paleolithic sites attributed to Middle Paleolithic, Epi-Paleolithic, Neolithic, and Chalcolithic occupations of the study area. While the majority of the sites were deflated, a surprising number were *in situ*, in primary archaeological context, with thick cultural deposits. Many of the sites were also multi-component in containing occupations attributed to more than one Paleolithic Period.

The Middle Paleolithic occurrences include early and late Levantine Mousterian occupations. Although the uplands are dominated by Mousterian artifacts, the sites appear as large sporadic surface scatters of flint artifacts which have moderate to heavy patination. All indications are that the Middle Paleolithic age sediments in the uplands have been removed leaving the sites in deflated contexts. A single Levantine Mousterian site was discovered in association with a small cave located along the western edge of the basin. Based upon typologic considerations, the site appears to have been occupied during late Levantine Mousterian times.

Surprisingly, no Upper Paleolithic occurrences were discovered within the study area. Epi-Paleolithic occurrences, on the other hand, appeared in high density and represent several complexes. The Epi-Paleolithic occurrences included both geometric and non-geometric microlithic assemblages similar in appearance to Kebaran and Geometric Kebaran manifestations. Early and late Natufian occupations were also recorded in the survey. A single aceramic Neolithic occupation was discovered which is tentatively viewed as equivalent in age with Tel Mureybet Phase II on the basis of point typology (Cauvin, 1974). Numerous Chalcolithic sites were encountered in the survey, often overlying deposits containing late Natufian artifacts. The Chalcolithic sites normally exhibited curvilinear structures fashioned from unmodified limestone or sandstone rocks.

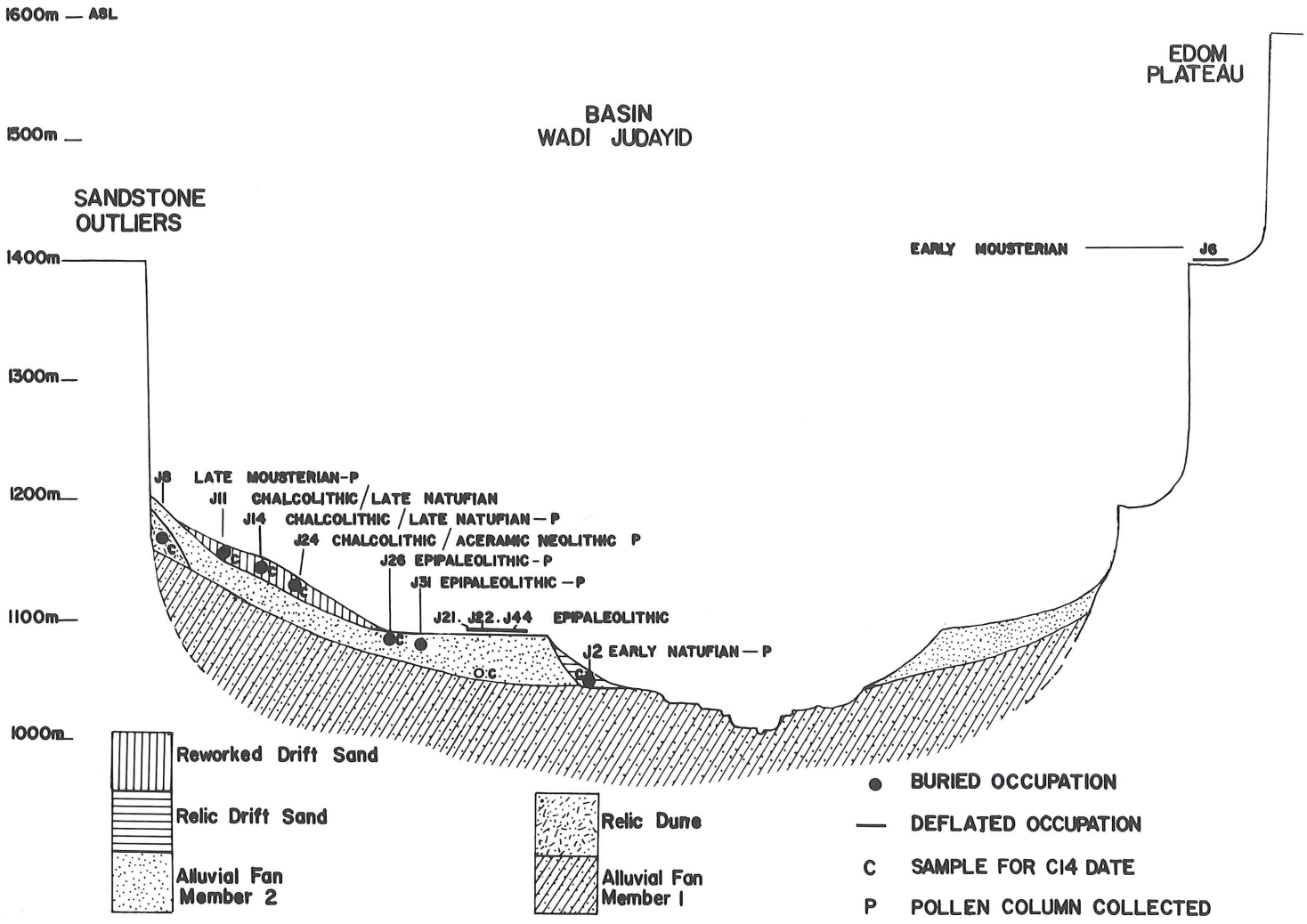
Paleo-environment

In general the chronology and geologic settings of the Paleolithic sites discovered near Ras en Naqb mesh well with the paleo-environmental sequence developed on evidence from other localities in the Levant (FIG. 2). The high density of Levantine Mousterian artifacts distributed throughout the uplands away from permanent water sources probably correlates with the moist phase equivalent with the early part of the last glaciation. Within the basin lowlands, this episode is represented by alluvial fan deposits containing reddish yellow sands cemented by carbonates and including zones rich in carbonate modules. These characteristics are indicative of a sub-arid environment with seasonal dryness. A period of major downcutting ensued which may have been associated with the erosion of the uplands. Following this erosional episode, dunes formed from freshly weathered sandstone accumulated in the basin under dry, cool conditions. A late Levantine Mousterian site is contained within a relict of dune sands of this period.

A period of alluviation followed under conditions which were warmer and somewhat more moist than the preceding episode of dune accumulation. The alluviation apparently continued until c. 11000 BC as indicated by geometric Epi-Paleolithic occupations appearing in situ in the top of this unit.

The subsequent geologic events within the area appear to have been predominantly erosional, with the exceptional episode of wadi alluviation. The erosional cycles resulted in a series of cut terraces with the lowest visable terrace at 0.5 metres above the modern wadi floor. Following the formation of the highest terrace, an early Natufian settlement was established thus providing a temporal bracket for the erosional episode between 11000 and 10000 BC. During late Natufian times cooler, drier conditions followed leading to intensive mechanical weathering and aeolian activity. With the onset of warmer, more moist conditions iron oxides within the sands were liberated and the reddish sands were reworked into drift sand on top of the earlier deposits. This phase is in

2. Chronological/Geological diagram of site.



concert with recent palynological evidence which indicates moist conditions for the chalcolithic (Horowitz, 1974:411).

Summary

Although the cultural-chronologic and environmental sequences presented for the area will no doubt be modified and refined as additional evidence is accumulated in forthcoming field seasons, the results of the first season provide a framework on which to organize the evidence. Radiocarbon determinations on a series of samples collected during the summer of 1979 should provide absolute dates for late Levantine Mousterian, Epi-Paleolithic, Neolithic, and Chalcolithic occurrences. In conjunction with these dated occurrences several sediment columns were collected for palynological analysis. The results of this analysis, which is currently underway, will offer a means of amplifying and evaluating the paleo-environmental reconstruction as based primarily on geologic interpretation.

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Early Jordan: A Survey

Re-reading Runciman's 'History of the Crusades' the other day I came across a passage which, though applied to history, seems equally apt for the contemporary prehistoric scene. The gist is that what he calls 'the mountainous heap of the minutiae of knowledge' although sometimes of great value, should not be considered an end in itself; and here I quote, 'I believe that the supreme task of the historian is to write history, that is to say, to attempt to record in one sweeping sequence the great events and movements that have swayed the destinies of man'.

As a field archaeologist I naturally prefer the broad approach, and as this is the first of what we hope will be a long series of conferences, this paper is offered as an introductory, brief survey of the early days of settlement in Jordan based chiefly on two sites excavated under the auspices of its Directorate General of Antiquities, namely Jericho and Beidha. Thus clearing the way for specialists within the discipline in later conferences.

We are all aware that environment is the determining factor for settled life. Experiments in the cultivation of wild food plants began in those well-watered areas where potentially domesticable plants were available in quantity, and of course the same applies to the domestication of animals. This long process of experimentation, of mutation and human selection took from the Upper Paleolithic to the Late Neolithic before full domestication was accomplished. It also seems to have taken place at roughly the same time in different parts of the Near East. The only areas that concern us here are the uplands of southern Turkey, the Euphrates valley in north Syria and the hills of Palestine and Jordan. Those familiar with the right environments began settling during the Mesolithic, the Natufian, while others in less favourable ecological zones continued their roving way of life. This seems to have led to a most important symbiotic relationship between settler and wanderer from which the trade that was already reaching full spate by the 9th/8th millenia BC gradually evolved.

The Mesolithic peoples were the pioneering settlers, and to my mind this initial step was more or less forced on them because they first brought the wild food plants out of their natural habitats and planted them elsewhere. Once that step was taken man had to stay put to protect the plants all the time. First a form of ground clearance was necessary then, after planting, protection from birds and animal trampling, later from intense competition from other plants, not to mention holding off possible raids from other tribes and animals, and finally for harvest and sowing; after which the cycle repeated itself endlessly. From that moment onwards the irrevocable mutual dependence between men and plants came into being whereby, although the plants were to become the slaves of men, men were equally to become the serfs of the plants, and the same applies to animal domestication. The slow accumulation of knowledge through trial and error which must have preceded the first settling probably began in the Upper Palaeolithic, with the Kebarans almost completing the process and the early Natufians putting the final touches, thereby enabling the later Natufians to commence solid architecture and to proliferate their settlements.

Unfortunately this is a process that cannot be detected by botanical investigation because the plants under cultivation were physiologically wild. Only by man's selection and environmental manipulation did the physiological properties of the plants alter by continuous mutations into full domestication, after which they were helpless without the support of man. At the same time man himself also changed genetically, becoming, as the population densified, totally dependent on his plants and animals. If this had not been the case modern man could not have developed. In short, Natufian man settled by springs where the alluvial soil necessary for plant growth was present. He was cultivating wild plants, not strictly speaking practising agriculture, but he was beginning to be tied to the soil in a primitive way. On the other hand his main subsistence continued to be based on hunting and gathering, the only difference being that part of the tribe was static, looking after the plants. This concept of mine is not in accordance with current archaeological thinking which prefers the Natufian to be a period of intensive food collection leading to primitive agriculture during the later PPNA. This, to me, seems to run contrary to both human and plant nature.

Be that as it may, for proof is not possible, we find Mesolithic settlements along the Euphrates valley and in the

Jordan valley as well as up in the hills where they might be expected. At first the people lived in simple pits with superstructures of branches or leaves, but as their confidence in their great experiment increased they built more permanently: semi-subterranean round houses with stones or clay lining the pit sides. Of course, to emphasize my point, they remained primarily hunters and gatherers, but their territory would now be based on the permanently manned settlement. The latter continued to spill over from the highlands to the lowlands and river valleys, leading to the manipulation of water in a crude way and eventually to the relatively closely packed settlements of the PPNB, now well-known from the Euphrates to Sinai.

These centres of emergence yielded different cultural traditions. Indeed, within each one every local community would be stamped by its immediate environment, but there would be discernible links originating in a common tradition. For instance, flint knapping, certain architectural features and burial customs, pottery forms and decoration, still linked by tradition and a virtual spider's web of trade. By means of the latter new ideas and techniques reached the furthermost outposts, to be either accepted complete, or accepted and modified locally or, of course, to be rejected.

The evolution of trade and identification of supply sources are the most urgent tasks for specialist study needed today. Find the sources of the different minerals and other natural objects of restricted provenance, and search for ancient workings and small settlements. Enlist the services of geologists, petrologists and chemists and leave them to get down to it in the field. The results would surely be rewarding.

Here I would like to point out various factors in human nature which are relevant to our understanding. It is the one thing we can rely on not to have changed. We are strongly territorial creatures on the one hand; on the other, greed has always been one of the main driving forces, though in the main, always led by an intensely aggressive and grasping minority, avarice is mercifully tempered by laziness. Also, we must remember that the mental capacity of man then was the same as ours' today. As man progressed from tentative beginnings through to the efficient self-supporting communities and on to the founding of colonies the *status quo* was disturbed. Springs originally open to all comers were enclosed, this and the expansion of territory around the settlements must have led to many disputes. Finally, when the colonizing movement took place the embryo elements of the future city states were already in existence, expansion was far greater, leading to envy, competition and never-ending wars. At least that is what history and events today seem to show. The colonizing process seems to have been active during the last half of the 7th millenium in the north where, although we lack sufficient excavation for this period, one may deduce that the very rich site of Çatal Hüyük was a dynamic centre based on trade, but founding colonies to provide her with luxuries as well as necessities. At the other end of the scale, the small site Umm Dabaghiyah was founded in a totally inhospitable environment, at least for a Stone Age economy, in order to procure luxury commodities available there and needed by some relatively nearby equivalent of Çatal.

Until this time, the Pottery Neolithic, man's impact on his physical environment had been relatively light. True, he had broken the soil for the first time and thereby opened the way for future erosional processes. Goats were herded during the PPNB, the conspicuous devastators that eat saplings and thereby prevent the rejuvenation of woodland. Also man was manipulating water in a crude way which, in the end, could and did lead to salinization of vast areas. The most important adverse effect on his environment was brought about by his need for fuel. Although initially making inroads on arboreal stands near his settlements and, by the removal of shrubby bushes in open country, adding areas for future erosion, this incessant need had not yet reached the proportions it assumed during the Pottery Neolithic.

During the Natufian, PPNA and PPNB only small hearths for domestic purposes are found. At least as far as Jericho and Beidha are concerned not a single oven was encountered. But in the Pottery Neolithic, ovens of all kinds proliferate alongside the domestic hearths, indicating among other things, that man had already become dependent on articles that could only be manufactured by heat, in this case pottery. Experiments in modelling figurines and small utensils had been carried out intermittently since the malleability of clay became evident, probably in the course of moulding it into embryo bricks during the PPNA. By the PPNB, pottery is found sporadically at various sites including Beidha and Mureybit. In short the tests, though not perhaps a continuously sustained effort, culminated after roughly a millenium in true pottery. By the Pottery Neolithic period man was already enslaved by his plants, animals and his need for fuel for his furnaces. Only the itinerant tribes revolving on the periphery of the settled areas remained as free as humanly possible.

Having seen the probable state of affairs by about 6200 BC; we can look at the preceding stages as revealed by Jericho and Beidha. However, in general our records are lamentably sparse with very few sites adequately tested, these widely dispersed over a vast region with even fewer showing a long sequence. Many other sites are known through surveys, but they are chiefly of the PPNB tradition.

One of the few with a long sequence is, of course, Jericho; situated in a highly favourable environment with, above all, a magnificent spring and alluvial soil concentrating lush vegetation and game. Moreover, with most necessities for a Stone Age economy available in plenty nearby, it is no wonder we have a long tradition of settled living there. Unfortunately we have what amounts to only five soundings into the early levels, widely spaced over a large *tell*, so we lack all detail, even a full house plan. The original Natufian stage of pit-dwelling was not encountered, though doubtless present somewhere. The subsequent stage of semi-subterranean houses with stones lining the pit sides is, I submit, present at

the base of one of the soundings. Here the virgin clay had been removed except for an irregular area with roughly parallel sides. In the dug down area are fragments of curving stone walls. The other stones had probably been removed for later re-use. Although we did not know at the time, these remains are typical of Late Natufian settlements now well-known from, among others, 'Ain Mallaha further north in the Jordan Valley, where the houses are the direct ancestors of the PPNA examples and those of early Beidha. At Jericho these remnants were found with Late Natufian implements.

The next stage was retrograde as regards architecture: simply hut floors surrounded by mounds of clay on which superstructures of plant material were erected. The whole accumulation formed a small 'core' *tell* 3 metres high. The attendant flint industry stemmed from the Natufian. An important detail about this Proto-Neolithic period is that obsidian made its first appearance at this time; proof that trade was coming through from Anatolia by the 9th millenium. Trade from the shores of the Mediterranean and Red seas had already been supplying exotic shells and pebbles to the Natufians, but obsidian does not seem to have been available then.

We all know the next stage, the PPNA, with semi-subterranean round houses with wide walls made of primitive clay bricks in the pits. Clay was used for the domestic architecture according to the dictates of the immediate environment. These houses were the direct descendants of their Natufian predecessors. So in the PPNA we have both domestic architecture and flint industry stemming from the Natufian tradition. The entire built-up area, comprising some four hectares, was surrounded by a free-standing stone wall with a stone staircase tower forming an integral part of it, still standing some 10 metres high. Here I have a suggestion to make. Could not the Proto-Neolithic mound have been formed by the builders of the PPNA permanent settlement? Could they and the PPNA not have been two facets of the same stage?

Those people would have had to camp at Jericho for a long time to consolidate their claim to spring and oasis; a venture probably disputed by others. Presumably they would have enclosed their lightly built settlement and the spring-head by a palisade. They would have had to clear the surrounds of the spring and perhaps experiment in controlling seepage. Finally, no doubt after repulsing various raids and when their confidence both in their own strength and in their ability to control, at least to a certain extent, the living force of the spring had increased, they made a permanent dwelling place by it. Then, contrary to the excavator's idea, the wall would have been erected first, surrounding a much larger area than was immediately necessary, and finally the houses. In my own experience the camping floors, fire-pits and temporary dwellings of the builders of the first permanent houses are always present somewhere. After all, it takes time to decide whether or not a place is entirely suitable for permanent habitation. After that one still has to live somewhere while building.

Be that as it may, when it came to fortification or enclosure the inhabitants put their trust in stone; a material by no means as easily obtainable as clay at Jericho. They would have had to collect the boulders from wadi beds and the screes of the hills. The effort and organization glimpsed is truly awe-inspiring. But there is no sign of hasty building in the parts of the wall uncovered, or in the tower for that matter. At Jericho I think the whole process of clearing and building must have taken many years, long enough for the small Proto-Neolithic *tell* to accumulate three metres high. By counting the floors in the south section of Square M one might come to some conclusion as to how long that time was, if this theory is feasible.

Much speculation has been concerned with the function of the tower, and most see it as a part of the defences, for manning the ramparts. But could not its primary function have been as a watch tower? A huge periscope? Once the wall, still standing 3 metres high, had been built the inhabitants could no longer see who was coming, or what was happening outside. They badly needed advance warning on such matters as possible ganging up of tribes against them, or of others poaching their food from the oasis, the movements of game, and perhaps to keep the spring under surveillance in case of seepage. In short they needed a permanently manned watch tower and not a rickety wooden platform on four stilts. Everything at this stage argues for a leisurely progression and not towards hasty building under pressure from some immediate danger.

In contrast, the later addition of an encircling ditch 9 metres wide and 3 deep, cut into bedrock without benefit of metal tools, accompanied by a heightening of the wall does argue for a danger perceived in time to take adequate steps against it.

One wonders what movements were abroad that changed a relatively peaceful scene. For this was a time when the general population was not very high, and when a large portion of that population was busily engaged in settling down at other springs in the Jordan valley which had good alluvial soil, as well as up in the hills. Whatever caused the additional precautions, the PPNA continued for a long time after, long enough for one more heightening of the wall. Finally, for some unknown reason the site was abandoned, later to be occupied by the PPNB people of different cultural traditions. To remind you of a few of these: fully evolved rectangular architecture built at ground level, secondary burial below floors, detachment of skulls and so on. At present it looks as if this tradition came from the north, and from this time onwards a steady infusion from that area was to last for millenia, until the rise of Dynastic Egypt. But our indigenous Natufian line became submerged.

Meanwhile a parallel development had been going on in north Syria along the Euphrates valley. The early settlers had come down from the uplands and were siting their villages along the river banks and no doubt at suitable springs. At Mureybit, near Raqqa, there is a fine sequence, somewhat

earlier than Jericho in date. Starting with Mesolithic huts and a flint technique bearing certain resemblances to the Natufian. Then through periods of round houses with a flint industry evolving from Mesolithic towards the PPNB as found at Beidha, and finally to rectangular architecture, secondary burial below floors, detachment of skulls and so on.

The causes of such radical changes as the evolution of new tools, architecture and burial customs over a very wide area is a matter for conjecture. Was it diffusion? New ideas and techniques spreading along with trade? Or, was it a matter of very slow migration? People camping here and there for a while looking for somewhere to settle, no doubt also having to fight the locals? Personally I prefer a mixture of the two. Innovations by way of trade coupled with slow infiltration, but not a sudden invasion. I think it was this gradual increase in population and the attendant territorial fights that caused Jericho to look to her defences. It is possible the security of Jericho could have led her inhabitants to stagnate during the latter part of the PPNA. It is difficult to recognize any broad innovations in the sparse evidence we possess. This is a charge that might also be laid against the PPNB there, who seem to have continued the same from beginning to end, although in fact, they first herded goats and their plants were practically domesticated.

The prosperity of PPNB Jericho has been ascribed not only to her lush oasis environment, but also to her having cornered the trade in salt, bitumen and various minerals from the Dead Sea. It is possible she could have controlled the N.W. corner, west of the Jordan river, but the Dead Sea is large and we know many sites with equal opportunity and closer access which Jericho could hardly have influenced. After all it is some 20 kilometres away from the Dead Sea and local tribes could easily have supplied her needs and any export surplus while the town continued to live on its own bounty.

Now to Beidha, tucked away in mountainous desert near Petra. Set against the background of Jericho it presents a slight anachronism. With a beginning date of about 7200 BC we have, in effect, PPNA round houses going with PPNB implements in the early levels; a constellation also known from Mureybit some 500 years earlier according to Carbon 14 (Libby). After camping for a while in temporary huts the people of Beidha also built a wall around their inner territory and created their permanent community. Governed by the environment, as always, they built in stone, for real clay is not available in that rocky and sandy locality. The village lies in a very favourable environment and, in contrast to Jericho, in a healthy upland climate at 1,000 metres. Unfortunately only the outer perimeter of what was once a large site remains after erosion, but even so we can deduce a great deal. The inner citadel, as it were, was enclosed, but beyond the wall the wadi bed is full of stone scattered from buildings mostly destroyed by later terracing and the building of soil-retaining dams.

Inside the wall lies the heart of the village. At Beidha there is no sign of the stagnation we suspect at Jericho. On the contrary we can see a steady development. The architectural remains are the most obvious and frequently cited as showing an unrivalled evolution. We all know this sequence. First the semi-subterranean round houses built in clusters, then single round houses with a few old-fashioned clusters. The next stage is sub-rectangular houses with gently curving walls and rounded corners, and finally true rectangular architecture. The only conservative element clung to by the builders was the habit of digging down before building up. All buildings in every level are semi-subterranean, whereas all rectangular buildings found elsewhere at this time were built at ground level.

Alongside this advancement we can detect changes in the inhabitants' way of life. Even during the cluster house period, VI, and within the general muddle, we can see a slight tendency towards differentiation of occupation in the separate elements of a cluster. One room suggests use as a kitchen or livingroom, with baskets of plant remains, a wooden bowl, a quern and grinders, plus a relatively clear space. Next door contained a preponderance of animal bones and ground-stone tools. A third room in this cluster was concerned with less messy occupations, it held a trough, many polishing stones, shells, baskets and a bundle of roughed out flints, arrowheads and fine blades ready for retouching. We have no such details for the later round house period, V, but perhaps this is negative evidence for a general clean-up; and we had found the living houses and not the workshops. The subrectangular houses, IV, were not burnt like the earlier ones. Judging from the care with which they built, these people exhibit a high aesthetic standard visible in their preference for a judicious mixture of flat mud-stone slabs and boulders to form a truly Byzantine aspect; as also the scrupulous way in which they kept their floors absolutely clean. We have very few finds from IV.

In this period too comes an eastward expansion of the village. Still well within the boundary wall, but separated from the larger houses by an open space lie some beautifully built smaller replicas of the bigger ones. Possibly some social stratification was taking place by then. The last periods for which we have evidence for this steadily expanding life see a reduction in the size of the village and the advent of multi-roomed rectangular buildings possibly with lightly built upper storeys. Here we have evidence for specialization of crafts within separate buildings, as well as general workshops. We may here have a mixture of those who specialized in a certain craft for local sale and export, and those who supplied all their own needs themselves. We have specialists in horn-working and in bone-tool and bead-making. The beads were of bone, shell or exotic stone, the last two dependent upon imported raw material. There would also have been such specialists as leather-workers, basket-makers and workers with wood. But unless found in a burnt building there is no hope of proving their presence. One specific trade might be suggested, that of butcher, indicated by large amounts of animal bones, some jointed and still in articulation found

in a small room with various heavy stone implements next door.

We have glimpses of other aspects of these peoples' lives too. Some of their dead were buried in ruined houses. One example is from between Levels VI and V where a ruined house was used for this purpose over a period. Those skeletons were all of young people and they were complete. The only disturbance was caused by repeated digging of graves into the restricted space, thereby disturbing the earlier burials. No evidence exists for the middle levels, but with the rectangular buildings we get secondary burials, usually in unoccupied houses, and in most cases the skulls of adults had been removed. On the other hand the comparatively many infant and child burials were usually intact. These inhumation practices are well-known for this period; for instance, from Mureybit in north Syria, Ramad in south Syria, Beisamun in the northern Jordan valley and Jericho. Everywhere they seem associated with rectangular architecture and flint industries related to the PPNB tradition.

One other aspect of these peoples' beliefs is suggested by three unique structures uncovered outside the boundary wall. A description of the largest gives the best idea. It is a semi-subterranean enclosure or room, carefully paved and roughly oval. It shows signs of enlargement, but essentially it contains a large, flat slab of stone set on edge centrally with the two faces orientated east/west and thin edges north/south. Against the south wall another big stone is laid flat on the floor. Behind the latter on the south side of the wall is an immense shallow stone basin, an installation measuring 3.80 metres long, by 2.65 metres wide and only 25 cm. thick. It has a hole bored through the rim at the apex of its roughly triangular shape, and one or two 'donkey ties' to facilitate handling: an amazing tribute to the masons' art as well as expertise in handling these huge blocks. Below the paving we found an earlier edition of this enclosure; an oval or round area outlined by small, flat stone blocks set on edge, and also with a slab set in the floor near the south wall. This oval lies below the standing stone in the building immediately above.

From these remains found outside the settlement wall one can suggest the area was religious in function. Those just described suggest a solar cult, but taken together this conglomeration of paved buildings, huge stones, basins and other features could also suggest a ceremonial function. Rituals undertaken in the course of secondary burial, for example. Or perhaps, although no burials were found, or looked for, they mark the beginning of the real cemetery as opposed to the privilege, if such it was, of being shovelled into ruined houses. But here one is on thin ice. Possibly I had been on the point of finding out when events stopped me in my tracks.

The inhabitants enjoyed the good things of this world. They were cultivating cereals which, though still showing wild features were well on the way to domestication, and they were probably herding goats. Apart from these activities, fruits, nuts, acorns and pistachio, timber and resin were available on the doorstep, and abundant game also. Their environment contained plentiful supplies of good flint, red and yellow ochre and haematite, all valuable export articles in demand elsewhere. But here again, adjacent villages would all have the same resources. Malachite also outcrops nearby, but basalt for their ground-stone tools probably lay beyond their territory; the closest volcanic field lies near Shobek. Salt could be obtained from their own rocks or from the salt mountain in Wadi Araba. There was no need to go to the Dead Sea. Imports include bitumen, obsidian, pumice, sea shells and possibly steatite.

One is left with the impression of a thriving, more or less self-sufficient community. They imported the few extras they needed and must have had plenty of surpluses of minerals, fruits, nuts and so on as well as finished products to pay with. They were by no means isolated. Many other such sites are known in Jordan, both close to Beidha, in the Wadi Araba and elsewhere. We need some more excavation to see if self-sufficiency was the order of the day, or whether some settlements already show signs of specialization.

At the end, in about 6500 BC, Beidha was abandoned. We do not know why such apparently flourishing settlements as, for example, Jericho were left like this. But there seems to have been a general abandonment at roughly this time in Palestine and Jordan. A climatic change, a slow drying up, is usually cited as the reason, or some temporary reaction to tectonic movement. Pollen analysis and other natural scientific evidence does point to some slight desiccation, but one wonders whether this would be enough to have caused Jericho to be abandoned. Beidha would be more sensitive to drought, but the spring at Jericho would still be active. Could it not be that these places were full of endemic cholera and dysentery which occasionally gave rise to gigantic epidemics like the Black Death transmitted through the villages by traders and other travellers? Regrettably man is not naturally the cleanest of creatures, so the conditions under which these early villagers must have lived defy the imagination. Despite her spring Jericho was abandoned twice, each time for a long period. It is possible that not only did they foul themselves up to a devastating degree, but that they also succeeded in poisoning the spring and ground-water for a time. In which case even those who came to gaze on the deserted town would fall ill if they drank the water. In some such manner these deserted settlements would be shunned and damned by the tribes for generations. The signs would be difficult to trace. All unburied dead would be taken care of by natural means, but perhaps plague pits would exist outside the walls. Some such epidemic would have caused young and old to die. In such a state of affairs the survivors would realize it was necessary to get away from the stricken village and wander in the open with their flocks. Be that as it may, something must have happened within this general period when it seems that in both Palestine and Jordan the PPNB sites were everywhere abandoned. Jericho was re-inhabited later, as she had been after the PPNA desertion, but not Beidha.

There follows something of a hiatus in our knowledge. No

matter the cause, this reversion to nomadic life cannot be detected by archaeology. But after a period, perhaps quite a long one, people did begin settling again, but they did so in a more temporary manner to begin with. They lived in pit dwellings with lightly built super-structures of plant material, and only after a time did they begin building solid structures again. It was a re-enactment of the evolution from Natufian pit dwellings through to ground-level architecture that we have been following, but the later manifestation was accompanied by pottery.

The nomadic period, then, is not traceable, but the pit-dwellings and later periods are. The only trouble is that the former do not leave mounds and so are extremely difficult to find. Apart from the pit-dwellers of the Pottery Neolithic A and B at Jericho I know of only three other such sites in Jordan, although many more will be found and are being found. Two of the three were noticed in road cuttings, and the third was found in the side of an eroded wadi bank. So they do not come easily.

I now finish with a sketch of the later Neolithic, post PPNB, in Jordan. In Wadi Rumm at Abu Nakhailah we have a stone-built settlement with both round and rectangular architecture. The round houses are semi-subterranean and very reminiscent of early Beidha. It has a more advanced flint industry than Beidha, but no pottery. The flints more closely connect with those of the Pottery Neolithic and I placed this village in the mooted hiatus.

In Wadi Shu'aib there is a fine PPNB site with pits cutting into it and with both pits and surface spread with pottery and flints like those of Byblos ancien. This should be about 6000 to 5800 BC. At Umm Salihi on the old Jerash road, lies a site with stone architecture, pottery and flints related to the Yarmukian. This site has now been planted with trees and built over. Our last site, Ghrubba is in the Jordan valley and here the pottery seems to bear a distant connection to Samarra in Iraq, which is the last half of the 6th millenium in date. These faint resemblances also indicate trade was still going strong with the flourishing northern regions. The trade routes into Jordan were either along the Euphrates and down the Levant, or down the Euphrates, up Wadi Hauran, across the watershed and down into Wadi Sirhan.

Thus during the mooted period of desertion we have four known settlements of differing age and cultural tradition; six different phases, if we count the two known from Jericho. This suggests the desertion is more imagined than real. For although the south did suffer some setback at the end of the PPNB, the few sites we find after that do seem to reflect faintly the trends from cultures flourishing elsewhere. For, taking Donne out of context and misquoting: as in the case of man 'No country, town, village or habitation is an island unto itself'.

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Teleilat Ghassul: Its place in the archaeology of Jordan

Teleilat Ghassul is situated at the southern end of the Jordan Valley about five kilometres from the north-east corner of the Dead Sea. It is about 20 kilometres east and slightly to the south of Jericho. The site is c. 295 metres below sea level. Today it is dry and hot but in recent years the area has been developed for market gardening and the soil is good. Tomatoes, beans and beitnjan are the chief crops—eucalyptus trees are at home around the site.

During the course of the first season (1967) a pedological survey was made by Derek Webley[1] and it suggested that, when founded, the settlement was built on sand bars in the midst of slow moving fresh water and surrounded by a luxurious growth of alder, sedge and moss.

The site covers an area of about 20 hectares and has been well known as a group of small *tells* which it was thought, at one stage, might have either temporal or technological significance. The results of our last season of work have indicated that Ghassul was not a group of small, closely tied settlements but one big settlement, as the small, apparently individual *tells* of the present day, are merely the result of late erosion.

Teleilat Ghassul was first excavated by the Pontifical Biblical Institute of Rome, 1929–38[2] and again in 1960, under the direction of Professor Robert North[3]. With the permission and blessing of the Pontifical Institute, the British School of Archaeology in Jerusalem commenced excavations at the site in 1967[4] but the programme of work was interrupted by the war of that year. We were able to return to the site in 1975 and continued there, each year, until 1978. The major finance for the last three seasons came from the Australian Research Grants Council and the University of Sydney[5].

Since the original discussions between Mallon and Albright in the 1930s, there has been general acceptance of the Chalcolithic classification for the settlement at Teleilat Ghassul; but whether early, middle or late Chalcolithic has been undecided[6]. In general terms, with the discovery of the Ghassul/Beersheba sites and the growing evidence for Neolithic occupation in Jordan, Palestine, Lebanon and Syria, the Ghassulian occupation has been associated with the Beersheba sites as evidence for the period immediately prior to the Proto-urban and initial Bronze Age periods[7].

The past four seasons of work have made it fairly clear that there is no demonstrable continuity from the settlement at Teleilat Ghassul into the Proto-urban period; but at the other end of the scale, the discoveries would suggest much closer links with the Neolithic period than has previously been recognised.

During the course of our work we opened up approximately 1,500 square metres in 10 different areas. Of these, three areas, A, E and F (FIG. 1) were carried down to virgin soil and the lowest settlements were uncovered over an area of approximately four hundred square metres.

Area A

Of the eight trenches opened in 1967[8] all but two were abandoned, as earthquake activity in the past had made them an archaeologist's nightmare. A II and A III were excavated to virgin sand, a little over five metres below the present surface of the site.

The final phasing is not yet complete; but there appear to be about ten major building levels separated by camp floor occupations—those presumably occupied during the reconstruction of the settlement after each destruction. The architecture throughout nearly all the building phases was uniform: large rectangular single rooms up to 12 metres long and varying from 3.50 to 5 metres in width. The houses were

[1] Webley, D. A note on the pedology of Teleilat Ghassul, *Levant I* (1969) pp. 21–23.

[2] Mallon, A. et al. *Teleilat Ghassul I*, Rome (1934); Koeppel, R. et al., *Teleilat Ghassul II*, Rome (1940).

[3] North, R. *Ghassul 1960*, Rome (1961).

[4] Hennessy, J. B. Preliminary report on a first season of excavations at Teleilat Ghassul, *Levant I* (1969) pp. 1–24.

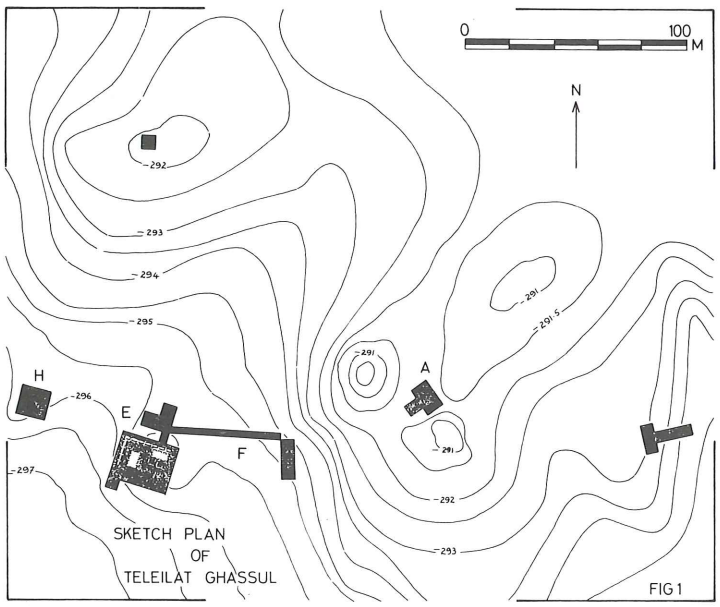
[5] A generous grant was made by His Royal Highness, Prince Hassan towards the recovery of the wall-paintings.

[6] Elliott, Carolyn. The Ghassulian Culture in Palestine: origins, influences, and abandonment, *Levant X* (1978) pp. 37–54; see also Moore, A. The Late Neolithic in Palestine, *Levant V* (1973) pp. 36–68; de Vaux, R. *Cambridge Ancient History, Vol. I.*

[7] Perrot, J. *la Prehistoire Palestinienne* (Supp. au Dictionnaire de la Bible) Paris (1968); Mellaart, J. *The Neolithic of the Near East*, London (1975).

[8] Hennessy, J. B. op. cit.

1. Sketch plan of Teleilat Ghassul.



constructed of large bun-shaped mud bricks either on stone foundations or built directly on the earth's surface. Doorways were normally in the middle of one of the long sides. Floors were mostly of tamped earth; but occasionally a fine lime plaster covered walls and floors of both houses and courtyards. The only variation from this type of architecture was encountered in the lowest phase of occupation, where houses appear to have been circular with sunken floors. There appears also to be some evidence of pit dwellings. The circular, half-sunk house was surrounded by a low pisé wall and had posts in holes to support the roof. There was also evidence, at this period, of carefully laid pebble floors.

Two, quite notable, discoveries within this area, were a complete flint knapping floor with many chisels in varying stages of work and, immediately beneath, a wall painting which we were able to lift. The painting, in brilliant reds, yellow, black and white, shows a human procession of three full length figures holding hands. The leading figure carries a sickle-like object in his right hand.

Throughout this depth of occupation, both the ceramic and flaked stone industries showed changes but I must stress that nowhere, with the possible exception of the lowest levels, was there evidence of anything other than internal development.

A series of radio-carbon dates, uncalibrated and based on the Libby half life, may come as a surprise to some. The earliest building phases where the rectangular architecture was uniform, have given us dates of roughly 4600, 4500 and 4400 BC. These dates have been paralleled in other early occupied areas at the site.

Area E

A small, low mound, approximately 100 metres to the west of Area A was notable as the only area at Teleilat Ghassul where surface material was scanty, though a few rocks through the surface soil suggested a building. Seventeen trenches were opened in the area and provided one of the most pleasant surprises at the site—what appears to be a sanctuary region.

There seems to have been only two buildings on the Sanctuary mound (FIG. 1) enclosed within a stone and mud-brick wall. The buildings were contemporary and fragments of pottery from one sanctuary joined to an almost complete vessel from the other. In general layout, the complex is very similar to the Ghassulian sanctuary at Ein Gedi[9]. A series of radio-carbon dates (taken from roofing beams), again uncalibrated and on Libby half life, gave a figure of 3700 BC for the final use of Sanctuary A.

Both buildings appeared to have been in use for some time and gave evidence of resurfacing of floors. Sanctuary A in particular, was a substantial building with floor level 60 cms below the contemporary surface. The walls, a metre thick, were composed of an outer line of heavy boulders lined with two rows of mud-brick and an inner face of smaller stones. The floor and walls showed evidence of plastering, white on the floor and painted a uniform orange colour on the walls. The second building had originally had a series of wall paintings, eight superimposed paintings were counted on one fragment but it was so shattered, the largest piece a few sq. centimetres, that recovery was not possible. Benches lined the south wall of Sanctuary B and outside the centrally sited doorway a wide platform of carefully selected small stones ran the length of the building. As with Sanctuary A, the doorway opened up on to a shallow flight of stone steps to the sunken floor. At the south end of Sanctuary A a small room ran across the width of the building. In addition, Sanctuary A also had two broad, equally spaced, windows either side of the central doorway. In both buildings the floor had been covered with large rounded stones, and then packed with mud, to give an even surface before the lime plaster was applied.

Both buildings contained cult vessels and pottery figurines of types represented at other Ghassulian sites[10].

Beneath the buildings, the only evidence of earlier occupation were a series of fire pits, rich in animal bones, sheep, goat, pig, cattle but without pottery or flaked stone. Radiocarbon dates for these pits again suggest a figure of c. 4400 BC.

Similar pits were found beneath two building levels of occupation, to the north of the sanctuaries, outside the boundary wall.

The sanctuaries were isolated by a long wall on the northern and western sides, but any evidence of the wall had been completely eroded on the eastern and southern sides. There was no sign of any gateway in the surviving long walls.

Area F

Three trenches, 15 m. × 2.5 m., were excavated to connect

[9]Ussishkin, David. The 'Ghassulian' Temple in Ein Gedi and the Origin of the Hoard from Nahal Mishmar, *The Biblical Archaeologist*, Vol. XXXIV (1971) pp. 23–39.

[10] Amiran, Ruth. *Ancient Pottery of the Holy Land*, Jerusalem (1969) p. 302.

the lower slopes of Mound A with Mound E (the Sanctuary area). Occupation levels and the remains of houses were encountered at the eastern end of F III and the western end of F V; but the entire depth, 4.50 m. of F IV and most of F III and F V, gave evidence of a series of large wash-outs, which had taken place at varied stages of the mound's occupation. Much of the erosion was, no doubt, after the final abandonment of the site; but there is evidence of building over a valley of earlier erosion. One of the building levels at the western end of F V was apparently a painter's workshop, with a splendid bone palette and large clumps of various coloured ochres.

In general, the most recent seasons of work at Teleilat Ghassul suggest the following points:

1) The site was a large one, without any real evidence of technological specialisation in any area of the settlement. The only isolated region appears to have been the Sanctuary area.
2) There is no evidence of any temporal significance to the various mounds—all areas tested showed the same general sequence.
3) The site was occupied for about 1,000 years, ca. 4600–3600 BC. There is strong evidence, in some areas excavated, that at least one building phase had been eroded from the top of the site.
4) The basic culture assemblage shows changes throughout the 1,000 years of occupation; but nothing which could not be explained as simple internal change or development.

The pottery

Changes which do take place in the 1,000 year history of Teleilat Ghassul are most clearly seen in the ceramic industry. In general terms the changes were in shape and decoration, the fabric and firing of the pottery remained fairly uniform.

Buff wares tend to be more common in the earlier strata but even there the majority of the pottery is a red to grey ware with gritty inclusions and well fired. A notable feature of the developed Ghassulian ceramics is the technological skill of its manufacture. Many sherds show evidence of having been taken to a point of vitrification and held there. No wasters have been found on the site, and it is presumed that the firing took place outside the settlement area, probably nearer the foothills of the eastern range, where timber for the kilns could have been more readily available.

However, to return to the ceramic phases. Three major periods can be seen:

1) The earliest pottery, belonging to the period of the sunken round houses and earliest rectangular architecture, has the following features (FIG. 2):
   a) Simple and plain rim, shallow bowls and jars.
   b) Dark faced coarse ware but, as said above, with a notable percentage of buff clays.
   c) Matt red slips (occasionally).

2. Pottery sections from Teleilat Ghassul.

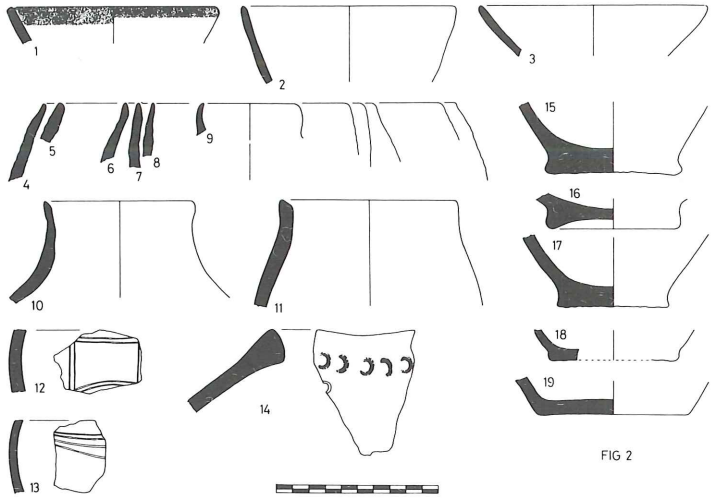


FIG 2

   d) Grass wiped or textured surfaces are common (FIG. 2 *4–8*).
   e) Incised or stabbed decoration (FIG. 2 *12–14*).
   f) Flat bases, often splayed, ring bases rarer.
   g) Circular mat impressions on bases.
   h) Painted decoration is extremely rare and confined to a simple thin red band around the rim of shallow bowls (FIG. 2 *1*).
   i) Bow rims occur (FIG. 2 9) but are rare; as are burnished slips.
2) The middle phases of occupation[11] see:
   a) An elaboration of rim shapes, the common appearance of the cornet shape (plain and heavy) and a uniform hard fired red to grey ware. Buff wares are less common.
   b) Simple geometric painted ornament becomes more common, but is still comparatively rare. Chevrons, solid triangles and loops.
   c) Mat impressions on bases change from a round weave to a square weave.
3) In the upper levels[12]:
   a) Smeared wash and painted wares become common.
   b) The cornet shape is very common and becomes lighter and is commonly decorated.
   c) There is a great variety of deep and shallow bowls, jars and jugs and the common appearance of small multiple lug handles (absent in earlier phases).

Flaked stone

Distinctions within the flaked stone industry are less well marked, apart from a solid Neolithic content in the earliest phases, where there are:

a) Blades with broad denticulation—but also fine denticulates.

[11] Hennessy, J. B. *op. cit.* FIGS 7b and 8.

[12] *Ibid.*. FIGS 5, 6, 7a.

b) Notched blades.
c) Serial flaked blades.

These three elements disappear with the appearance of rectangular architecture. Axes, chisels, points, burins, steep and flat scrapers (round or fan) are common in all periods, and I suspect chisels tend to become much longer and more slender as time advances. Certainly, on our evidence, hollow ground and polished cutting edges are a late feature.

We had no obsidian and all flaked stone work was on local chert and flint. A number of blanks were found and the knappers' workshop of Area A demonstrates that the flaked stone industry was a local one. Arrowheads, with or without tang, do occur.

As yet, the study of the faunal and floral evidence is not complete, but from observations in the course of excavation, there appears to be no major change. Varieties of wheat, barley, peas and olives are common and often found in large storage jars. Remains of pig, goat, sheep, deer and cattle are present at all levels. The suggestions of a mixed pastoral, agricultural and hunting economy would suit the evidence at Teleilat Ghassul well.

We had no evidence at all of metal production; but malachite was traded for beads—presumably with the area of the Wadi Feinan to the south of the Dead Sea. Some simple metal axes were found during the course of the Pontifical Biblical excavations.

The bone and ground stone industries remained uniform throughout the site.

Now, where does all this fit in? The C 14 dates, the Neolithic flaked stone types and the earliest pottery would certainly suggest connections with the pottery Neolithic cultures of Jericho and the upper phases at Ard Tlaili, Middle and Late Neolithic Byblos and the southern Neolithic sites of the Beq'a, but nowhere, so far, are the connections sufficiently close to allow one to fit the earliest Ghassul sequence into a certain slot in the Late Neolithic/Early Chalcolithic cultures of the Levant.

Most of the normally accepted criteria for Late Neolithic—burnished wares, bow rims, herringbone incision, burnished red on cream wares are either missing or rare in the lower levels at Ghassul.

With a few notable exceptions (javelin and projectile heads and tanged arrow heads), the flaked stone industry is close to those Late Neolithic and Early Chalcolithic sites mentioned above, and right from the beginning chisels are a dominant feature. They occur by the hundred and they fit well into Copeland/Perrot's suggestion of an increased dependence on wood and woodwork from the beginning of the Middle Neolithic.

At the other end of the scale the relationships with the Beersheba sites are fairly clear; but there are a few points we should note. Cornets, which have an early origin at Ghassul are more common than they are on the western sites. On the other hand, churns which are comparatively common on the western sites are rare at Ghassul. In the four years of digging we had but one fragment. The smeared wash wares of Ghassul are again comparatively rare outside Ghassul.

It seems that the relationships between the western sites and Ghassul, are confined to those features which are common at Ghassul only in Phases A and B, the very final stages of occupation at the site.

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The Ghassulian Lacuna at Jericho

A communication for the Acta of this Conference was kindly requested from our Institute as initial sponsor of the Ghassul excavation in Jordan. My title was judged suitable to focus the major problem left unsolved even after further campaigns at the site by the British School. Our data on this subject, piled up over a long time, seemed likely to support and supplement Professor Hennessy's results as known from his only preliminary report[1]. Meanwhile his more advanced oral report at this Conference showed that he now sees himself forced to move back the universally-accepted Ghassul dating by some two thousand years, well into the horizon of neolithic Jericho. We may nevertheless hope that this compilation of previous Jericho-Ghassul synchronisms will provide a still useful background to Hennessy's forthcoming final report and to the awaited lively reactions.

The absolute dates now for Ghassul were concretely numbered by Hennessy only as 4600–3600 BC. As he explained, these are based wholly on radiocarbon tests, uncalibrated, which even in that form seemed so implausible that for a long time he was tempted simply to overlook them. Eventually they became so cumulative that he was forced to re-interpret the pottery and other artifacts in this framework, and it all turned out to his satisfaction. However, he also made clear that to be utilized these uncalibrated dates must be put back roughly one thousand years earlier[2]. Thus the lacuna of our title would assume gigantic proportions, at Ghassul as well as Jericho: nearly two thousand years are left unaccounted for in the overall chronology of both sides of the Jordan, or at the very least from 4600 to 3200.

It was pointed out by Jean Perrot at this Conference that the real issue involved is Egyptological. Along with Ghassulian the Egyptian Protodynastic dates would have to be pushed back in some way to fill that void of more than a thousand years. Perrot expressed himself ready to take this in his stride if the Egyptologists were too. But in his further exchange with Hennessy, Perrot admitted candidly that we have here just another proof that radiocarbon dates are still too capricious to be granted a veto power over all other sources of archaeological information. While respecting this latter opinion of Perrot, we are by no means adopting it here. On the contrary, our presumption will be that radiocarbon dates, duly calibrated, are a real scientific datum; and like all other data must be fitted into an overall scholarly pattern, in which no one set of facts is unchallengeable but all must be constantly re-evaluated to eliminate apparent conflicts.

Earlier history of Ghassul digging

Since the start of excavation at Ghassul in 1929, the pottery and other artifacts were rightly recognized to *precede* the earliest definitely-known Bronze Age materials[3]. At that time the firmly-identified Bronze Age pottery types scarcely preceded what we now call MB, so that Mallon and his collaborators could hope to maintain a date in relation to Abraham about 2100. Between the Mari and Ebla discoveries the date of Abraham was unanimously brought down toward 1700[4]. Also, EB finds were gradually fitted into a stratification extending back to 3200 BC. Moreover at Megiddo and Beth-Shan an Esdraelon culture was recognized, also pre-

[1] J. B. Hennessy, 'Preliminary Report on a First Season of Excavations at Teleilat Ghassul [Jan. 16–Mar. 28, 1967]', *Levant* 1 (1969) 1–24; our summary in *Orientalia* 38 (1969) 131–2.

[2] So, for example, the table on p. 205 of David H. Thomas, *Archaeology* (New York: Holt, 1979); or Colin Renfrew, *Before Civilization: the Radiocarbon Revolution and Prehistoric Europe* (London: Cape, 1973) 77.

[3] Alexis Mallon, Robert Koeppel, René Neuville, *Teleilāt Ghassūl I. Compte Rendu des Fouilles de l'Institut Biblique Pontifical 1929–1932* (Rome: P.I.B. 1934). The *bronze* itself from which 'Bronze Age' derives its name becomes normal only in *Middle* Bronze. On the other hand, it cannot be overlooked that Mallon's dating was somewhat influenced by his hope of finding at Ghassul the site of Sodom. See R. North, '"Ghassulian" in Palestine Chronological Nomenclature', *Biblica* 40 (1959) 543; 541–555 [= *Studia Biblica et Orientalia I.VT:* Analecta Biblica 10 (Rome P.I.B. 1959) 407–421].

[4] Early efforts to relate Eblaite names to the Abraham narrative and thus push his date back to 2300 or even earlier [thus erstwhile Mardikh-Ebla epigrapher Giovanni Pettinato, as cited by David N. Freedman, 'The Real Story of the Ebla Tablets, Ebla and the Cities of the Plain (Gn 14)', *Biblical Archaeologist* 41 (1978) 143–164; 39 (1976) 44–54 by Pettinato; otherwise 94–113 by excavation director Paolo Matthiae, also in *Orientalia* 44 (1975) 337–360; 361–374 there by Pettinato] are noticeably left unmentioned in Pettinato's recent book, *Ebla, un impero inciso nell'argilla* (Saggi 126; Milano: A. Mondadori, 1979). On the date of Abraham around 1700, usually in *some* tacit relation to the discredited equation Amraphel = Hammurabi, see Roland de Vaux, *The Early History of Israel* (London: Darton, Longman & Todd, 1978) 1, 265, 216, and 'The Hebrew Patriarchs and History' (unabridged original lecture), *Theology Digest* 12 (1964) 227–240. On the three dates proposed for Hammurabi, all near 1700, see W. F. Albright, 'A Third Revision of the Early Chronology of Western Asia', *Bulletin of the American Schools of Oriental Research* 88 (1942) 28–33, correcting his 69 (1938) 18–21; 77 (1940) 20–22; 78 (1940) 23–30.

Bronze and akin to Ghassul except that it had shiny gray ware with beaded carination and round houses[5]. The influence of William F. Albright secured general acceptance for the view that the name 'chalcolithic' which he seems to have invented, was a good one for the whole pre-bronze millennium, in which Esdraelon-gray *followed* Ghassulian[6]. By a very casual approximation, really just a *hunch*, a date around 3500 was thought suitable for Ghassul, leaving some margin for its own duration as well as for the rise and fall of the gray-bead-carination culture before 3200.

Albright himself also very casually, much more than is generally noticed in the report, suggested that of the four levels which Mallon recognized in an extremely limited sounding, the top one could apparently be subdivided into two, and most of the efforts recorded in *Teleilāt Ghassūl II* tended in that direction[7]. Meanwhile his two closest and most prominent collaborators, Glueck and Wright, endeavoured varyingly to spread out the four (or five) levels through a good part of the fourth millennium; but really the only generally agreed Ghassulian dating remained around 3500[8]. The one significant addition to the Ghassul-related materials was the house-shaped terracotta ossuaries found at Hedera and ʿAfûla, and eventually imposingly at Azor[9].

This 'around 3500' consensus was briefly threatened by the discoveries of Perrot at Beersheba. His materials there were for the most part genuinely Ghassulian, with some interesting innovations like catacombs and ivory statuettes, but no gray-bead-carination. But he also published reasons for dating *his* Ghassulian well into the third millennium[10]. Just at that time Roland de Vaux was uncovering plenty of Ghassulian at (northern) Tell el-Farʿah near Esdraelon but without gray-ware; he called it Beersheba Ghassulian, and tended toward a later date, though not so late as Perrot[11]. Seeing this, Maurice Dunand felt that the time had come to publish a claim that his abundant Eneolithic (a coinage equivalent to chalcolithic) materials at Byblos really fitted the later horizon of Tell el Farʿah (N) Beersheba Ghassulian, and even hinted that maybe Mallon was right in the first place about his date nearer to 2200[12]. Since all four of these experts were French, though of very different background, the horizon for a moment looked cloudy. But de Vaux and Perrot were both on excellent terms with English-language archaeologists, and I recall Wright telling me how co-operative they had both been to his compromise-formula, leaving Ghassul-Ghassulian more or less secure around 3500[13].

The re-opening of excavation at Ghassul in 1959 was really not so much to establish a definitive stratum-dating, but rather to clarify the perplexing absence there of city wall and cemetery, as well as of those features unmistakably associated with Ghassulian elsewhere: round houses, gray ware, house-shaped ossuaries, catacombs. My published report shows the basis for a judgement that from top to bottom of the longest continuous occupation in any trench, no real variation of pottery-types was observable[14]. Moreover, my section-drawings show how difficult it was to trace any particular layer (homogeneous soil-colour with pertinent artifacts) *horizontally* for more than a few feet. Professor Hennessy's own section-drawings shown to this Conference seem comfortingly similar to mine in this respect, as I pointed out publicly there to his apparent agreement (he had also discovered a *reason* for the 'churning-up' in ancient and modern earthquakes to be noticed below). He agreed further that if these fifteen layers (at most six metres from top to bottom) represented a thousand years duration, and *some* of the layers were no more than a couple of centimetres thick, then we would have the anomaly that a single jar or even sherd might lie within two or three layers, representing a median of a hundred years each. But for our present purpose the only testimony I draw from my own excavation of the site is that it left unchanged the consensus-view that Ghassul was occupied around 3500 with very little assurance as to how long before or after.

The Lacuna rears its ugly head

Meanwhile both Hennessy and I had enjoyed the privilege of working for Kathleen Kenyon during her first two seasons at Jericho. It is no embarrassment to me to acknowledge that the privilege was vastly greater and more efficacious in his case, because after several further seasons there with her he went

[5] Geoffrey M. Shipton, 'The Earliest Pottery of Megiddo, Seasons 1937–8', *Journal of the Palestine Exploration Society* 18 (1938) 54; G. M. Fitzgerald, 'The Earliest Pottery of Beth Shan', (Philadelphia) *Museum Journal* 24 (1955) 5–22; on both, our 'Checklist of Allegedly Ghassulian Sites', in *Ghassul 1960* (fn. 14 below) 57 and 43.

[6] W. F. Albright, 'Recent Progress in the Late Prehistory of Palestine', *Bulletin of the American Schools of Oriental Research* 42 (1931) 13–15; also 48 (1932) 10–13, 'The Chalcolithic Age in Palestine'.

[7] Chiefly J. W. Murphy and G. S. Mahan in R. Koeppel, H. Senès, *Teleilāt Ghassūl II: 1932–1936* (Rome: P.I.B. 1940); for the later campaign we have only Koeppel, 'Die achte Grabung in Ghassūl (3. Jan.–1. März 1938): Vorläufiger Bericht', *Biblica* 19 (1938) 260–266.

[8] G. Ernest Wright, *The Pottery of Palestine from the Earliest Times to the End of the Early Bronze Age* (New Haven: ASOR, 1937) 14–42 (but see n. 13 below); Nelson Glueck, *Explorations in Eastern Palestine IV = Annual of ASOR* 24 (1951) 327, and BASOR 122 (1951) 15.

[9] E. Sukenik, 'A Chalcolithic Necropolis at Ḥedera' and 'Archaeological Investigations at 'Affûla', in *Journal of the Palestine Oriental Society* 17 (1937) 24; 21 (1948) 17; 'Late Chalcolithic Pottery from 'Affûleh', *Palestine Exploration Quarterly* 68 (1936) 150–154. [J. Perrot, Azor]: *Israel Exploration Journal* 8 (1958) 133; nothing further in 11 (1961) 171–175, on M. Dothan's Iron Age cemetery excavation there [or A. Ben-Tor, *Qedem* 1 (1975)].

[10] Jean Perrot, 'The Excavations at Tell Abu Matar, near Beersheba', *Israel Exploration Journal* 5 (1955) 17–40, 73–84, 167–189; we further quoted him in *Biblica* 40 (1959) 552: 'he is on the whole disposed to admit for all the Ghassul material an indissolubly homogeneous relatively short occupation', even after his parley with Robert Braidwood, Wright, and others in Chicago 1958.

[11] R. de Vaux, 'La première [sixième] campagne de fouilles à Tell el-Farʿah près Naplouse', *Revue Biblique* 54 (1947) 399 [64 (1975) 555]: to be qualified by my oral report in *Biblica* 40 (1959) 551.

[12] Maurice Dunand, 'Date de l'installation IV de Teleilat Ghassoul', *Bulletin du Musée de Beyrouth* 9 (1950) 87.

[13] G. Ernest Wright, 'The Problem of the Transition between the Chalcolithic and Bronze Ages', *Eretz-Israel* 5 (1978) *37–*45, relying heavily on de Vaux's N-Farʿa to prove that Esdraelon culture, whose date Wright lowers to 3250, is contemporary with Wright's previous EBIa.

[14] R. North, *Ghassul 1960 Excavation Report* (Analecta Biblica 14; Rome: Pontifical Biblical Institute, 1961) 37 and Fig. 16 after p. 32.—Fuller data on the frescoes in 'A Unique New Palestine Art-Form', *Estudios Eclesiásticos* 34 (A. Fernández Festschrift, 1960) 381–390; on incised pottery, 'Ghassul's New-Found Jar Incision', *Annual of the Department of Antiquities of Jordan* 8f (1964) 68–74.

on to become the official representative of the Jerusalem British School which she headed, and it was in this capacity (according to repeated formulations in her latest book noted below, not just as head of archaeology operations for the University of Sydney) that he supervised the renewal of excavation at Ghassul. Here may be the most pertinent place to note a curious and chronologically important detail of our work at the two nearby sites. (Tell es-Sulṭân is 17 km. from Teleilat Ghassul in a straight line, 22 km. by the nearest bridge; but the nearness is realistically much greater in the sense that virtually no human settlement other than Greater Jericho has ever intervened between them.)

At Jericho in 1952 Hennessy's recognized achievement was to discover for Miss Kenyon that the brick-wall collapse which Garstang had attributed to an *earthquake* (described all unawares in Joshua 3, 16 and 6, 20) was really due to no cataclysm at all but just to the ordinary wear-and-tear of a mud-brick wall rebuilt 17 times before 2000[15]. But when Hennessy followed me at Ghassul, his equally sensational discovery was that here there *were* earthquake-destructions which no prior excavator had noticed. Though several of these affected the chalcolithic settlement, the worst of all was only a few years before Mallon's excavation in 1929. Participants at this Conference will recall that Hennessy proclaimed aloud explicitly (though with an inescapable wry humour), What's the use of wasting our time excavating at a site whose strata have been so mercilessly and irretrievably churned up? A lament not without chronological significance.

As for Jericho Ghassulian, Hennessy summarized the prevailing consensus for this Conference with admirable accuracy: at Jericho-Sulṭân, despite one or other small object or remote resemblance, and the possibility of having overlooked larger deposits, there is an almost total lack of the Ghassulian or in general chalcolithic materials which dominated Palestine for nearly a millennium, and whose parent-site was so near across the river. This was at root the view of Jericho's latest excavator, Kathleen Kenyon. It may safely be added that for her as for anyone else this Ghassulian floruit was around 3500, certainly not later than 3200 when EB was generally held to begin, also hardly later than 3400 in order to allow a certain duration for the Esdraelon gray-ware culture; furthermore not specifiably *earlier* than 3500, though in a vague general way thought to occupy the whole fourth millennium.

Before tracing more in detail Dame Kenyon's purview on Ghassulian at Jericho, this might be the best place to insert the *only* published study by an expert who has excavated at both places. This study was made by Hennessy himself, though in a chapter only preliminary to what was his essential Early Bronze focus[16].

Ghassul's pre-bronze foreign relations

Hennessy there begins by apparently accepting a major breakthrough toward *lowering* the date of chalcolithic: Kenyon and Wright have recently demonstrated the contemporaneity of the Esdraelon gray-black ware and the painted and red burnished wares of Wright's former EBIa. In a recent article, Wright has included the Esdraelon culture within the Early Bronze Age[17]. Hennessy questions only the existence of *subdivisions* which Wright claimed to find in this new unit 'Esdraelon = EBIa'. More relevant here than the (non-)existence of such subdivisions is Hennessy's argument regarding them. It is drawn from Meṣer, where the most significant connection is the [clear] contemporaneity of the gray-burnished Esdraelon ware with painted cornets, churns, cream ware and other elements of the Ghassul-Beersheba culture[18]. We note in passing that like the rest of the world, Hennessy here *presumes* a certain vague *homogeneity* of painted cornets, churns, and cream ware which are in fact found in *all* depths of *all* excavations at Ghassul[19].

He adds that Meṣer II has apse-buildings like Jericho Q-N-M (and Megiddo-Beth-Shan gray-ware chalcolithic) and its stratification makes sense of the assemblage of the upper phase of Megiddo XX, with both Ghassulian features and elements of the Late Chalcolithic of northern Palestine side by side[20]. The excavations at Tell ('Gath') have again demonstrated the equation[21]. While thus denying subdivisions in the contemporaneous Ghassul-Beersheba-Esdraelon EBIa, Hennessy then adds that there *are* subdivisions within the period which immediately precedes the Early Bronze Age, namely at Jericho Q-M, Meṣer, and 'Gath'. Since these are precisely the sites which have just proved for him that EBIa is indivisibly

[15] K. Kenyon, 'Excavations at Jericho 1952, Interim Report', *Palestine Exploration Quarterly* 84 (1952) 64; 62–82; R. North, 'The 1952 Jericho-Sulṭân Excavation', *Biblica* 34 (1953) 1–12; 'Fosoj de Jeriho kai ekzegezo de la Biblio', *Biblia Revuo* 9 (1973) 223; 215–232; 'Les murs de Jéricho', *Bible et Terre Sainte* (Oct. 1958) 10–17 ['Le camp de Josué autour de Jéricho' 52 (Jan. 1963) 6–20] reprinted in our *Fouilles dans la région de Jéricho* (Rome: P.I.B. 1967) 63–72 [3–22].—In the same Sulṭân trench, earthquake traces were indeed found by Hennessy, but at a much lower level, some thousands of years before either Joshua or the mud-brick wall.

[16] J. B. Hennessy, *The Foreign Relations of Palestine during the Early Bronze Age* (Colt Archaeological Institute Publications; London: Quaritch, 1967) pp. 16–18, 9, and 47.

[17] P. 15, citing Wright as in my n. 13 above, but with no reference to any Kenyon publication.

[18] Moshé Dothan, 'Excavations at Meser, 1957', *Israel Exploration Journal* 9 (1959) 13–29.

[19] It is this *homogeneity* (mentioned also by several other experts whom we quote in turn) which seemed the main problem involved in acceptance of the thousand year *span* of the radiocarbon dates (which is really a separate question from whether they began in 3600, 4600, or 5600) and this was my answer to our Jericho comrade G. R. H. (Mike) Wright, who asked me whether (apart from quite legitimate loyalty to an existing terminology) it would not be quite easy to agree on a sweepingly new framework for 'the real facts'. I certainly agreed *fully* with him that there is nothing at all sacrosanct about terms like 'chalcolithic' or 'Ghassulian' [already in 1961 I published as final word of my excavation report (p. 77), 'Our hope is that continuing researches into the Beersheba culture will reveal a new architectonic pattern of the whole Protoceramic Age, both Neolithic and (if the term be needed any more) Chalcolithic'.] Equally negotiable are the particular dates attached to the objects hitherto called Ghassulian, and their coalescence with what had hitherto been called Neolithic, provided they can be fitted into an overall framework with all the other Jordan-area excavation results. But the *homogeneity* (and therefore relatively brief duration) of the materials dug up at Ghassul seems to me and to others at least an apparent *fact*, until proof to the contrary is forthcoming.

[20] Gordon Loud, *Megiddo II* (Chicago: Oriental Institute, 1948) PL. 1, 2, 92–95, cited as in M. Dothan, 'Some Problems of the Stratigraphy of Megiddo XX', *Eretz-Israel* 5 (1958) 38–40, Eng. p. *85; from which I add 'Most Megiddo XX is Ghassulian [cornet!]; some is pre-Ghassulian'.

[21] Shemuel Yeivin, *First Preliminary Report on the Excavation at Tel 'Gat'* (Jerusalem 1961): no specifics cited.

contemporary with Beersheba-Ghassulian and Esdraelon chalcolithic, one must conclude that at that time he regarded the so-called EBIa as really *pre*-Bronze Age, though he does not specify whether he accepts the corollary that the commonly received *outset* of the Bronze Age must be lowered nearer to 3000 (3100 in Miss Kenyon's view to be noted below), or whether on the contrary he had some ace up his sleeve to show that the EB-outset can be kept at 3200 or pushed even earlier. As noted above[13] Wright claimed to be lowering the date of Esdraelon culture to 3250, although its whole duration had generally been set prior to 3200. But significantly Albright in a 1965 team-survey firmly dates the Late Chalcolithic as 3400–3000[22].

While skirting this absolute-dating problem, *Foreign Relations* adds further strengthening of the parallels between the painted wares of Proto-Urban B [i.e. Jericho tombs akin to Q-M] and Ghassul IV, from which he cites no less than nine close but not direct parallels of pottery, which concern us in detail[23]. He adds that neolithic Ghrubba too shows with the Ghassulian culture, parallels which are certainly legitimate but again not direct for equating Jericho Proto-Urban B with Chalcolithic Ghassul[24]. Is this meant perhaps to distinguish from the above Ghassul IV = Beersheba = Esdraelon? What follows leaves this unclear: 'The important suggestion is the contemporaneity of the Proto-Urban A, B, C cultures, the Late Chalcolithic of Beersheba, Meṣer and Gath and Ghassul IV.' Page 9 had suggested that Kenyon's [Jericho Neolithic] Proto-Urban A and B are contemporaneous, and p. 47 will extend this explicitly also to C. We thus hear Ghassul IV is coextensive with Jericho [Neolithic] Proto-Urban A, B, *and* C. He adds some radiocarbon dates, of which Ghassul IV is perceptibly the earliest but all are in the range of 3300 BC; though he qualifies this radiocarbon operation as recent he does not hint whether it is calibrated. From p. 47 we learn further that the *beginnings* of Jericho ('Neolithic') Proto-Urban (not, however, A rather than C) and Ghassul IV are possibly contemporary with the rise of Gerzean in Egypt; and the *end* of Jericho Proto-Urban (A, B, C; *also* Ghassul IV) overlaps the beginning of the First Dynasty in Egypt. Moreover, Proto-Urban in all of Palestine is in general contemporary with Byblos Eneolithic B and possibly with Uruk ware (chart p. 48).

We see that thus what Kathleen Kenyon long called Neolithic at Jericho is brought down not merely *into* the Ghassulian Chalcolithic period but *to its very end*. Why do we not rather say that 'the *end* of Ghassulian is pushed *back* to the time of Jericho Neolithic'? Only because *Foreign Relations* has given no hint of what will fill the gap between EBI (now Ib) and what is called neolithic at Jericho. Before approaching this gap, we must make sure that we have well understood just what the excavators of Jericho-Sulṭân have really said on the subject.

Sulṭân Diggers' own view of Ghassulian

The German theologian Ernst Sellin and his architect Carl Watzinger knew nothing, of course, about 'Ghassulian' or the term 'chalcolithic' later popularized by Albright. Though they had already discovered (and interpreted conflictingly) all the walls which loomed so large later in relation to Joshua, their only published pre-Bronze materials are all lumped together as 'Canaanite', and indeed the most Ghassulian-looking samples (rope moulding) are described as '*Late*-Canaanite'[25].

British Mandate antiquities director, John Garstang, in earlier reports of his Sulṭân excavation maintained uncompromisingly 'the characteristic Ghassūlian pottery is fully represented in the chalcolithic level at Jericho, i.e. in the deposits found (in the 7th metre) between the Upper Neolithic and the Earliest Bronze'[26]. Especially striking, and valid today, is the parallel between Jericho and Ghassul mat-base pottery[27]. He gave this statement in 1936: 'a series of chalcolithic floors (later than the neolithic floors found a year ago) have been uncovered'[28]. (Our own efforts to compare Byblos and Jericho neolithic floors illustrate much relevant material but with no new judgment on the chalcolithic question[29]). Garstang suggests that Ghassulian would be even more noticeable at Sulṭân if it had been published more adequately at Ghassul.

[22] W. F. Albright, 'Palestine before 1500', in Robert W. Ehrich, *Chronologies in Old World Archaeology* (Chicago U., 1965) 47–60; the chart p. 49 puts before Ghassulian, 'Jericho VIII etc. chalcolithic 4000–3600', and then 'Ghassulian 3700–3300', thus with an overlap of one hundred years on both sides. Ehrich's volume is really the updating of a 1954 *Relative* Chronologies: p. v notes that the 'relative' can be dropped because [of the 'extraordinary precision', Albright p. 47] of radiocarbon!

[23] J. B. Hennessy, *The Foreign Relations of Palistine during the Early Bronze Age*, London, 1967 p. 17: (1) Small spouted bowls with painted decoration: *TC II* (my n. 7 above) pl. 94: 11, 12, as J. Marquet-Krause, *Les fouilles d'Aï (et-Tell)* [Paris 1949] PL. 67; 72. (2) Deep straight or curved bowls, painted on the interior: *TG I* (n. 3 above) PL. 42: 9, as *Jericho I* (n. 42 below) FIG. 22: 4; *Jericho II* (n. 41 below) FIG. 7: 1, 4; *Fouilles d'Aï* PL. 67; 72: 18, 828. (3) Shallow bowls with simple, vertical, linear decoration: *TG I* PL. 65: 9; *TG II* PL. 89: 20, as *Jericho I* FIG. 11: 18; 22: 9; *Jericho II* FIG. 4: 3. (4) Shallow bowls with interior painted decoration of circle and radiating lines: *TG I* PL. 42: 8 as *Jericho II* 4: 7; 7: 14. (5) Wavy line decoration: *TG I* PL. 54: 111; frontispiece fresco; *TG II* PL. 80: 15, 19; 90: 9, 10, 17, 19 [no parallels noted from Jericho or elsewhere]. (6) The use of a light to pinkish white slip and red paint: *TG I* PL. 65 [no parallels]. (7) Bottles with or without small pierced lug handles: *TG I* FIG. 50: 3; PL. 43: 3. (8) Use of applied plastic ornament; thumb impressed jar and bowl rims [no parallels cited; these are both admittedly *very* numerous at Ghassul, and perhaps more than anything else would have lent themselves to being chronologically subdivided and interrelated]. (9) Serrated ledge handles [no examples, and like others here cited I doubt whether the ledge handles of Ghassul are sufficiently proved].

[24] J. B. Hennessy, *The Foreign Relations of Palestine during the Early Bronze Age*, London, 1967 p. 18; James Mellaart, 'The Neolithic Site of Ghrubba' [10 km. N of Ghassul], *Annual of the Department of Antiquities of Jordan* 3 (1956) 24: 'a small beaker (no. 30) of Ghassulian type'.

[25] E. Sellin and C. Watzinger, *Jericho, die Ergebnisse der Ausgrabungen* (Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft, 22; Leipzig: Hinrichs, 1930) 109 FIG. 97; 108 FIG. 94.

[26] J. Garstang, 'Jericho Fifth Report', (Liverpool) *Annals of Archaeology and Anthropology* 22 (1935) 222; he compares his illustrations there 41: 1–5 with *TG I* FIG. 38; his 41: 7, 8 with *TG I* FIG. 40; his 41: 28 with *TG I* FIG. 62; his 35: 17 and 41: 6 with *TG I* FIG. 40; his 43: 6 with *TG I* FIG. 41. On p. 223 Garstang holds that Mallon's Level IV at Ghassul is really EB [4], as Mallon had always claimed, with the unwavering support (despite other strong oppositions) of L.-H. Vincent, *Revue Biblique* 44 (1935) 87–100, never later qualified.

[27] J. Garstang, *Annals of Archaeology and Anthropology* 22 (1935) PL. 55a, as *TG I* PL. 39: 1–2; on which, see A. Jirku in *Biblica* 29 (1948) 270 n2.

[28] *Palestine Post* Feb. 3, 1936; cited by Albright, BASOR 61 (1936) 24; he continues the quotation from Garstang, 'the top [floor] yielded two Egyptian objects, similar to those of the last predynastic culture in Egypt': for Albright this would date the floor rather in the EB 1 of 'Ai and Megiddo.

[29] R. North, 'Byblos and Jericho Neolithic Floors', *Fifth World Congress of Jewish Studies* (1969; Jerusalem 1972) 2, 35–49.

The Sulṭân pottery analysed by Droop is firmly called chalcolithic[30]. In criticism, the Beth-Shan excavator, Fitzgerald, insisted that the alleged 'ledge-handles' of Ghassul are really not what is meant by that name at Jericho and elsewhere[31]. Perhaps because of this criticism, or similar ones communicated to him orally, Garstang performed a rather bold about face. His ceramicist in 1936 was Immanuel Ben-Dor, and he handed to Garstang his report with the title 'Pottery of the Neolithic and Chalcolithic Periods'[32]. Garstang, attestedly without securing the consent of the expert whose name was signed to the article, changed its title to 'Pottery of the Middle and Late Neolithic Periods', as it now stands[33]. Several of the world's top experts have stated supportively, Ben-Dor has declared that he cannot endorse the transformation, and desires that an 'oral tradition' should restore uniformly the expression of his reasoned conviction[34].

Albright too endorsed Ben-Dor's position[35]. Yet in this case as in others the emphatic views of himself and his school undergo changes. His claim that Garstang's Sulṭân VIII is 'pre-Ghassul' must mean 'pre-Ghassul-IV', since that is the only stratum discussed in the book under review[36]. Anyway, he there admits that his earlier view dating Ghassul IV after Sulṭân VIII has now been shown erroneous by Joan Crowfoot[37]. The view that Ghassul III is prior to IV (and thus equated with Sulṭân VIII) is presumably reflected in Glueck's statement which Albright published[38]. Glueck, however, denies the assertion of Ben-Dor that the 'neolithic culture of Jericho had a long duration and its latest phase existed contemporaneously with Ghassulian chalcolithic'[39]. Yet Wright's long-definitive chronology of early pottery finds Garstang's pottery with Ghassulian affinities at Sulṭân to be the absolute proof of Albright's position regarding the pre-Bronze date of Ghassul[40]. Miss Kenyon at Jericho showed an understandable hesitancy about publishing during Garstang's last years her discoveries discrediting his Joshua wall chronology; later changes in her terminology suggest that she might have felt a similar initial hesitancy to proclaim that Ben-Dor was right after all in calling 'chalcolithic' what Garstang changed to 'neolithic'.

[30] J. Droop, 'Jericho Fifth Report: the Pottery from the Chalcolithic and Neolithic Levels', AAA 22 (1935) 169–173.

[31] G. M. Fitzgerald, review of *TG I* in *Journal of the Palestine Oriental Society* 16 (1936) 46–48; similarly J. Perrot in IEJ 5 (1955) 180.

[32] Cited in this form with the note 'titre corrigé par l'auteur' by Claude F. M. Schaeffer, *Ugaritica I* (Paris 1939) 8 n4.

[33] I. Ben-Dor, 'Jericho Sixth Report: Pottery of the Middle and Late Neolithic Periods, AAA 23 (1936) 77.

[34] L.-H. Vincent, *Revue Biblique* 47 (1938) 579; Schaeffer, n. 32 above.

[35] W. F. Albright, BASOR 86 (1942) 10.

[36] Albright's review of *TG II* in *Biblica* 28 (1947) 309.

[37] Joan Crowfoot, 'Notes on the Flint Implements of Jericho 1936', *Annals of Archaeology and Anthropology* 24 (1937) 39–46.

[38] N. Glueck on Sa'idiyya, AASOR 25 (1951) 327; 'Go, View the Land', BASOR 122 (1951) 15.

[39] Ben-Dor AAA 23 (1936) 90; Glueck BASOR 97 (1945) 17.

[40] G. E. Wright, *Pottery* (fn. 8 above) 16.

What Miss Kenyon's only definitive report actually published about Ghassulian or any chalcolithic at her own Sulṭân excavations, concerns the *tombs*. Even this is not really definitive, insofar as there is no synthesis not only with the tell-material, but even between the two groups of tombs excavated in 1952–4 and 1955–8. For this latter group K2 has a Phase I which is like Tell el-Farᶜah (N) Late Chalcolithic Proto-Urban C or Esdraelon ware[41]. In the earlier volume tomb A94 is taken as the basis (p. 5) for a Proto-Urban period in the second half of the Fourth Millennium, with groups A, B, and C. A and C groups were hitherto (by Garstang? or by herself?) called Late Chalcolithic, and B group EB 1a. Wright in EI 5 now recognizes that the three classes of pottery are contemporary. He would prefer to call them EB. Kenyon does not agree; they are too different. Her own inclination is to label all these groups Late Chalcolithic (p. 9). The absolute dates 3400–3100 are suggested on p. 19, presumably *not* Ghassulian, and not necessarily corresponding to any occupation level on Tell Sulṭân itself[42]. Since already in an earlier publication she had noted for these tombs a *radiocarbon date* of 3260 ± 110 (precisely the received date of post-Ghassulian Esdraelon chalcolithic), one must wonder whether the artifacts were dated by this norm rather than by any typological resemblance to excavated chalcolithic wares.

Kenyon's pre-Bronze Tell materials

During Miss Kenyon's first two seasons at Jericho, my work with her team was in the capacity of apprentice-archaeologist from that Institute which had sponsored Ghassul and had hopes of further excavation work there or elsewhere. During those two seasons she sometimes mentioned the amazing absence of Ghassulian material at a site so near and so rich in materials from just before and after. I beg pardon for describing here a generally unnoticed detail which my own 'family interest' in the Ghassul results had enabled me to discover for the first time at Jericho. I had been assigned to watch over the dismantling of some possibly cultic rooms in an area which both Garstang and Kenyon firmly called neolithic. I noticed quite by chance that the workman's pick in tearing off the wall-plaster laid bare a long mud brick which had finger-impressions to hold the mud-cement, exactly the same type as Mallon had published from his Ghassul discoveries[43]. The holes were in two rows running along parallel, made by two fingers prodding at successive

[41] Kathleen M. Kenyon, *Excavations at Jericho II. The Tombs Excavated in 1955–8* (London: British School in Jerusalem, 1965) 13–14. Note that all *her* tombs are in an extensive cemetery *north* of the tell (under the refugee village) and *not* in the tomb area west of the tell excavated by Garstang and controverted by Vincent.

[42] Kenyon, *Excavations at Jericho I. The Tombs Excavated in 1952–4* (London 1960) 4–51.

[43] R. North, 'El nuevo "Santuario" de Jericó', *Estudios Eclesiásticos* 27 (1953) 336 [325–337 = *Fouilles dans la région de Jéricho* (Rome: P.I.B. 1967) 47–62] and FIG. 10 [Biblica 34 (1953) PL. 2] comparing *TG I* 34 and PL. 14: 1. Miss Kenyon's 'Early Jericho', *Antiquity* 26 (1952) 116–122 says on p. 120 that the Ghassul markings 'in no way resemble' the 'cigar-shaped' bricks of Jericho; but the fact remains that what little resemblance there was, furnished the first occasion for recognizing the existence of such bricks at Jericho.

intervals[44]. At Jericho-Sulṭân we eventually found many such complete bricks, which I would describe as loaf-shaped, but Miss Kenyon called at first cigar-shaped and later hog-back. She duly publicized this discovery, but neither she nor I apparently thought to wonder why a culture-feature already solidly recorded as chalcolithic should turn up at neolithic Jericho.

Indeed, during the whole of those two seasons there was hardly even any hesitancy expressed at the established fact that the Sulṭân mound contained no chalcolithic at all. Much less was there any effort to set up precarious parallels of the Sulṭan pieces called neolithic or EB with chalcolithic types, or even make soundings expressly in the hope of discovering chalcolithic (as we were incessantly doing for Joshua-era LB). The archeological consensus which Hennessy quite correctly described for this Conference, without attributing it explicitly to Miss Kenyon, must have emerged chiefly during the later seasons, when a) it became clear that the Sulṭân chalcolithic lacuna was a frightening and implausible datum; b) it might or indeed must be that chalcolithic deposits could yet be encountered; c) *some* of the Neolithic or EB pieces at Jericho upon careful examination show remote chalcolithic traits; d) there were negligibly few real Ghassulian pieces really found at Sulṭân after all.

Taking for what it is worth this haphazard record of my own direct experience of the Sulṭân excavation, let us get on to the real question of what Kenyon herself has seen fit to put into the published record.

She took the responsibility of publishing, with her 1954 report, her geochronologist Zeuner's detailed proof of a ±300-year lacuna on the Tell between the Neolithic and Early Bronze ages[45]. Whatever others may think, I find that this allotting of only 300 or so years to the duration of *both* Ghassulian and the subsequent Esdraelon(-?Beersheba) chalcolithic has not been contradicted either typologically or stratigraphically by the materials (chiefly pottery) excavated at Ghassul. Naturally, I have had no chance to study the Ghassulian pottery-sequence which Hennessy has been able to divide to his satisfaction into separate periods extending over a full thousand years. His success in this enterprise may well remain unshaken, independent of the separate question of whether those thousand years were 4000–3000 or 5600–4600. But the point of greatest interest will be not merely the development alleged for the various *forms* already well known at Ghassul, but much more the proof of their discovery in a *stratified sequence* corresponding *both* to the asserted form-development *and* (eventually) to the radiocarbon dates of the *respective* pieces.

Despite Zeuner's stand, however, Miss Kenyon herself in publishing the 1955 campaign actually assigns a subtitle to the Chalcolithic Period. Here is her justification of that subtitle. 'A study of the pottery from these [tell] pits shows that it can be clearly distinguished from a considerable quantity of other pottery, certainly ante-dating the Early Bronze Age, which has now been found, which equates with the pottery assigned by Professor Garstang to his Level VIII (none illustrated). It is to be presumed that when the removal of Early Bronze Age levels . . . has been completed, levels of the Chalcolithic phase will be reached. The occupation was perhaps on a smaller scale than that of the two Neolithic periods, and was [now not 'perhaps' or 'presumably'] concentrated toward the spring on the east side [where no materials whatever survive the highway-building operations before Sellin's time], leaving the west side of the tell unoccupied. . . . The culture represented by Professor Garstang's Level VIII does not immediately precede the Early Bronze Age'[46].

This already subtle position is further nuanced in her 1957 popularizing volume: 'the archaeological evidence of a gap is that at Jericho there are no traces of a culture, usually accepted as Chalcolithic, which has now been found widespread over Palestine (i.e. Ghassulian) characterized by very individual types of pottery and flints, and these are not found at Jericho. . . . Ghassul is only some nine miles from Jericho, and it seems very improbable that there would be no traces of contact if Jericho had been occupied at the time, particularly as there is a small Ghassulian site only about a mile away [?Dûq] . . . The Ghassulian culture is the most striking element which has to be fitted into this gap. . . . It is clear that it is the product of an intrusive group, of which the origins have not yet been satisfactorily established. It is likely that remnants of some indigenous culture or at least one with older roots in the country, are to be found, and these are probably represented by the earliest levels found at sites like Tell el-Farᶜah (N) (=Tirzah) and Beisan. At neither of these is there any trace of the Ghassulian culture, but there were remains which were earlier [than EB or post-Ghassulian chalcolithic], and which have some links with the Pottery Neolithic B period at Jericho. But at Jericho [-Sulṭân] itself, this culture too is apparently lacking'[47].

This about covers what she has published directly on the Jericho excavation itself. She also did relevant chapters for the Cambridge Ancient History, but only on the Late Bronze chronology; the two chapters on Neolithic-Chalcolithic and EB were by Père de Vaux, who well indicates that despite the confusion of terminology her work at Jericho showed no Ghassulian occupation[48]: (p. 520) 'Great confusion prevails . . . Material from Jericho VIII, called by J. Garstang Chalcolithic in 1935, and Late Neolithic in 1936, became Pottery Neolithic B with K. M. Kenyon . . . Wright classified Jericho VIII as Middle Chalcolithic in 1938; as Early Chalcolithic,

[44] Note that an extremely different type of indentation, with all five fingers of one hand stuck deep into the gooey-mud surface, was found in my Ghassul 1960 excavation (n. 14 above) p. 14 and PL. 8 lower left.

[45] F. E. Zeuner, 'The Neolithic–Bronze Age Gap on the Tell at Jericho', *Palestine Exploration Quarterly* 86 (1954) 64–68.

[46] Kenyon, 'Excavations at Jericho 1955', *PEQ* 87 (1955) 113.

[47] Kenyon, *Digging Up Jericho* (London 1957) 94.

[48] Roland de Vaux, 'Palestine [in the Early Bronze Age I/2 (1971) 208–237] during the Neolithic and Chalcolithic Periods', *Cambridge Ancient History* ³I/1 (1970) 499–538.

together with Yarmukian, in 1962 [further Kaplan, Amiran, Anati; p. 521:] . . . uniformity of this culture, which is called Ghassulian; p. 529, Subterranean dwellings at Beersheba may have been contemporary with Ghassul I–II; p. 534, Kenyon's A and C groups, contemporary but of different origins, she held to be intermingled at Tell el-Farᶜah (N); p. 536 (despite Kenyon and others) Ghassul was later than Jericho VIII and Pottery Neolithic; . . . Jericho was abandoned during the Ghassul occupation'.

But we have yet to examine some even more definitive and recent statements of Miss Kenyon in successive editions of her survey of the whole of Palestinian archaeology. The first edition in 1960 had said: 'Ghassul pottery has some affinities with that of Jericho . . . but many highly individual forms found at Ghassul are not found at Jericho . . . It may be that Ghassul belongs mainly to a period when there was a gap in occupation at Jericho . . . The present weight of evidence does suggest that the Ghassulians were newcomers from outside Palestine, and the fact that near-by Jericho shows only slight evidence of connection with them may support the idea of a gap there covering most of the period of occupation at Ghassul'[49].

The fourth, entirely rewritten, edition of this work was published after her death in 1979, under the supervision of T. A. Holland, who singles out for comment in his preface, 'Recent excavations at Teleilat Ghassul provide pottery links with the final stages of Pottery Neolithic Jericho'[50]. Her own first relevant statement is that Byblos Eneolithic A and B is slightly like Sulṭân neolithic (p. 48). She thereupon (p. 50) regrets that 'the difficulty in deciding where to place the transition from the Neolithic to the Chalcolithic is reflected in the existing confusion in nomenclature'. But the terminology which she herself is creating and following is not clearly set forth at any one place in this volume either, and so we must dig it out of statements like this under *Halafian/Protoliterate*:

> (p. 51) the first discovery of a group which seemed to belong to this period was at Teleilat Ghassul, which has given its name to the Ghassulian culture. The pottery on this site has some affinities with that of Jericho Pottery Neolithic B [no mention of the thumb-indented bricks] . . . Some fragments of cornets found at Jericho [no reference to any published source] . . . But many highly individual forms found at Ghassul are not found at Jericho . . . It may be that Ghassul belongs mainly to a period when there was a gap in occupation at Jericho . . . (p. 52) that Ghassulians were newcomers from outside Palestine. (p. 54) The household goods, tools, and weapons of the inhabitants of Ghassul differ greatly from those of any of the Jericho stages.

In this 1979 volume the Jericho Neolithic B stage is only obscurely linked with an A and C stage. The Megiddo lowest levels, though hitherto not properly analysed, have material allied to both Jericho Pottery Neolithic A and B and Chalcolithic sherds 'with some contact with Ghassulian' (p. 77). The phrase enclosed in separate quotes cannot simply be taken to mean Ghassulian; but neither does it seem to be implied that she has criteria for making these materials more undoubtedly 'chalcolithic' than 'Ghassulian'). In the following statement about the B stage, the second sentence seems to apply rather to a C stage: (p. 80) as a date for B 'that of the third stage of Jericho and Ghassul, the first half of the fourth millennium has been tentatively suggested. There is no doubt that the period shortly precedes and eventually merges into the Early Bronze Age and at that point Palestinian stages can be linked with Egyptian chronology'.

As for changes in Sulṭân-Ghassul relationship brought about by Hennessy's excavation (which in the *text* she always refers to as that of the 'Jerusalem British School', presumably thus under a kind of responsibility of her own) we have two statements: (p. 57, at Ghassul) 'at least ten successive building periods were identified, with a uniform architectural style, though developments in the pottery style can be suggested [I call attention to the words *uniform* and *suggested*] . . . but it remains certain that the main occupation of Ghassul is subsequent to the end of the Pottery Neolithic stage at Jericho'; and in the footnote mentioning Hennessy's name and mine at Ghassul (p. 328) 'At the base there was a level linking with Pottery Neolithic at Jericho, with above it a long and homogeneous succession of the Chalcolithic Ghassulian'. But really the most significant sentence in the whole book is the one by which she faces up to an already existing problem of radiocarbon dating much more conservative than Hennessy's, which nevertheless (p. 65) 'leaves us in Palestine with a nasty long period to fill'.

Conclusions

There has never yet been a generally accepted chronology spreading the *whole* of chalcolithic over a period more specific than from 3500 to 3200 BC, allowing time also for an Esdraelon and/or Beersheba culture *after* Ghassulian. There has also never been any definitive evidence from Jericho to exclude, during this whole relatively mild 300-year term, that it had no *real* Ghassulian or other chalcolithic (apart from 'indirect' similarities, which basically means '*not* chronologically-probative *parallels*'). *This* was the lacuna with which my paper was to have been concerned.

It is obvious that much of my compilation consists in resurrecting long-forgotten description of evidence, inadequately interpreted at the time of its discovery. Even if it had been reported *adequately*, scholarship does not make progress by idolatrous exegesis of what bygone or current experts have pronounced, but rather by constant re-examination of the *facts* on which they claimed to be basing themselves; and jointly by the search for *new* facts. We venture to hope that in re-tracing the history of the older claims, a few of the facts themselves will have been thrown into a more usable light.

[49] Kenyon, *Archaeology in the Holy Land* (London: Benn, 1960) 70.

[50] Kenyon, *Archaeology in the Holy Land*[4] (London: Benn, 1979) vii.

1) Relative *homogeneity* of the Ghassul material is a more generally-accepted factual datum than its subdivision into five successive strata or even typological developments.
2) This homogeneity would of itself seem to postulate a fairly short duration, such as would make a *total absence* of simultaneous occupation at Jericho-Sulṭân less implausible.
3) From the very start, however, certain remote or rare similarities to Ghassul in the pre-bronze Sulṭân materials have been noticed, always leaving open the chance that Ghassul could be a contemporaneous *local* variation due to immigrants.
4) All subdivisions of chalcolithic customarily taken to be later than Ghassul (Esdraelon, Tell el-Farʿah-N, Beersheba), as well as the alleged *earlier* chalcolithic (pre-Ghassulian or Ghassul I–III; Jericho VIII) have recently and plausibly been shown to be in some sense identical with the minutely-analysed Pottery Neolithic of Jericho.
5) This whole batch of materials is also now generally admitted identical with what had hitherto been called Early Bronze Ia, whether it now be subsumed into the Bronze Age or, as seems preferable, kept in a prior epoch.
6) The Ghassulian which, at least in part, is now admitted simultaneous to some EB (Ia) and also to some Neolithic could just as well be called Pottery Neolithic (hitherto held prior to 4000 BC) except for the even more alarming gap which this would create in existing archaeological frameworks (4000–3000 or even worse).
7) Radiocarbon dates around 3300 hitherto furnished in support of a date for chalcolithic materials outside Ghassul have perhaps been taken uncritically as the only real basis for alleged *typological* or *stratigraphic* dating of those materials (chiefly pottery, but including, of course, flints).
8) A radiocarbon date, like an inscription or any other solid evidence, cannot automatically disqualify the norms, *either* typological or stratigraphic, which are meanwhile justly being taken as the basis of overall excavation chronology. Radiocarbon can only suggest and demand that the pottery-criteria be *re-examined* and if necessary *revised* on their own terms.
9) Even a long series of radiocarbon dates does not automatically assure either the typological or the stratigraphic sequence of the materials from which the samples were drawn. As specifically as possible, each separate sample must be *independently* shown to have a) a *form* showing technically and artistically a stage of development proving (or at least compatible with) the date suggested by radiocarbon; b) a *location* in the ground amid materials demonstrably *preceded* by those which radiocarbon declares earlier, and *followed* by those it declares later.
10) In any case the Ghassul-Jericho comparison confronts us with an *enigma* still unsolved despite persistent efforts: in face of which there is need of bold innovating scientific hypotheses.

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The origins of the Early Bronze Age walled town culture of Jordan

An assessment of current theories in the light of recent evidence

Introduction

It has long been recognized that the development of urban centres in the Ancient Near East was one of the great revolutions of man's early history. In Jordan the phenomenon of urbanization takes place at the beginning of the Early Bronze Age which makes this period one of the most intriguing and attractive for the archaeologist.

The most intensive research on urbanization has taken place in Mesopotamia where this cultural process appears to originate[1]. Recent work has focused on the changing settlement patterns leading up to urbanization which is now seen by some to have been more of a gradual process than was previously recognized[2]. When one compares the density of settlement and the size of the urban centres in Mesopotamia with the evidence of Palestine, it is obvious that 'urbanization' occurs on a different scale of magnitude in Mesopotamia than that taking place in Jordan. A city in Mesopotamia is described as an area over 50 ha. (Adams, 1972; 742). Some were enormous, such as Uruk whose walls include an area over 400 ha. at the beginning of the third millenium. In Palestine the average 'city' is in the range of 10 to 15 ha., a size which is described as a small town or village in Mesopotamia. For this reason we have chosen the term walled town to keep a proper sense of scale and also will refrain from the theoretical problem of whether or not the Jordanian walled towns are true 'cities'.

Despite the much smaller scale of the town centres it is obvious that important changes were taking place in Palestine at the beginning of the Early Bronze Age. In a recent compilation of sites, Thompson (1979) lists some 888 sites on the East and West Bank of the Jordan during the Early Bronze Age. Since his work was completed in 1974 hundreds of new sites have been identified in the extensive survey work that has taken place on both sides of the Jordan (cf. infra). Among Thompsons' 888 sites 436 are described as settlements or tells and 256 as large or very large. (Large equals 10–20 dunams or 1–2 ha.; very large over 20 dunams or 2 ha.) Only 99 of these sites have been excavated or sounded (twenty-one on the East Bank) and only three (Arad, 'Ai, Tell el-Far'ah(N)) have exposed large horizontal areas in the first period of the Early Bronze Age.

The large quantity of sites underlines the importance of this period. The limited number of excavated sites reveals the difficulties of attempting to construct a coherent theory on the town culture. Yet information has been sufficient to evoke a series of theories which have proposed a wide range of explanations for the origin of the town culture in Palestine. The purpose of this paper will be to compare these theories and their arguments, searching for the critical areas of difference and then to examine the latter in light of the most recent archaeological work[3].

Current theories

Theories attempting to explain the origins of the walled town culture in the ancient region of modern Jordan at the beginning of the Early Bronze Age have emphasized either a foreign origin, the imposition by newcomers of an urban life on the local population, or an indigenous solution, the gradual evolution by the same basic population from village to urban life.

Hypotheses proposing a foreign origin have been more dominant. Kathleen Kenyon, Roland de Vaux and Paul Lapp are in basic agreement concerning the ultimate foreign origin of the town culture, although each of their interpretations have their own individual nuances and different terminologies. Their theories have been frequently analyzed and discussed by one another as well as by others. (Kenyon, 1979; Lapp, 1970; Miroschedji, 1971; de Vaux, 1970, 1971; Wright, 1971). It is not our intention here to repeat that analysis but rather to focus on their assessment and arguments for the arrival of one particular group, the painted pottery group of the central region, or the Proto Urban B people of Kenyon. We shall refer to this group as the B tradition or culture.

[1] For bibliography, see R. McC. Adams (1960, 1972) and P. Amiet (1979).

[2] R. McC. Adams placed considerable stress on the gradual development of urbanization in Mesopotamia in a formal keynote address at a symposium on the rise of Early Civilizations at the Carnegie Museum of Natural History, Pittsburgh, March, 1980.

[3] I am indebted to my colleague, Walter E. Rast, with whom many of the interpretations of the Bab edh-Dhra evidence have been reached.

Père de Vaux recognized the B tradition as being responsible for the introduction of town life. Among the various groups arriving in Palestine during the Late Chalcolithic period the B culture is perceived as the latest to appear and provides 'the only valid link with the Early Bronze Age' (R. de Vaux, 1970; 536). These newcomers are seen as arriving from the north, perhaps by way of the Jordan valley, and then penetrating the central region bringing with them new crafts, especially an established tradition of architecture and urban life. 'The sudden efflorescence of fortified cities in phase Ib cannot be explained in any other way' (R. de Vaux, 1971; 234).

Kenyon agrees that the B group was the latest to arrive and that its appearance 'does not long precede the beginning of the Early Bronze Age' (Kenyon, 1979; 70). At Jericho it was set apart not only by its distinctive painted pottery but by a new burial tradition in the upper levels of T. A 13. But she also prefers to see all three of her Proto Urban groups, A and C as well as B, involved in the development of the following urban culture. 'It is from the component groups of this stage that emerges the population which developed the urban civilization of the Early Bronze Age' (Kenyon, 1979; 82).

Lapp also recognizes a series of newcomers arriving in Palestine preceding the formation of the urban culture. His assessment of the various groups is different (the red and grey burnished are two aspects of the same culture) and their arrival is seen as sequential, described as the 'rapid absorption of successive and closely related population increments' (Lapp, 1970; 109). The B tradition was the third increment to arrive and is assigned by Lapp to his EB IB period. But the role of this group in the formation of the urban culture was apparently subordinate. It shared a number of cultural traits with the urban culture that followed revealing 'kinship' but town life was directly imposed by the arrival of a fourth group in EB IC who absorbed the EB IB element. 'The association of the EB IC–III defences, architecture and ceramic with a distinct population group seems inescapable' (Lapp, 1970; 111).

In summary Lapp, Kenyon and de Vaux all agree that the painted pottery or B tradition arrived from outside Palestine and immediately before the development of the urban culture. De Vaux assesses this tradition as introducing and establishing the following town culture. Kenyon assigns the B tradition a less prominent role as one of the components in bringing about the urban culture. Lapp recognizes the B tradition as possibly related but absorbed by a distinct group which arrived later and imposed town life. Their varying assessments of the role of the B tradition are critical in the formation of their theories on the origin of the town culture.

One of the major difficulties, recognized by all three authors, with the foreign origin of the B tradition is the absence of ceramic parallels outside of Palestine[4]. Concern with this factor has given rise to more recent theories which place more stress on an indigenous development.

Joseph Callaway notes 'strong Chalcolithic influence in the artifacts of the first settlers at Ai' and comments that 'this influence would be inexplicable apart from people who descended from the Chalcolithic population and retained fundamental elements of their culture' (Callaway, 1972; 70). Yet these indigenous 'elements' were submerged under the new influences of the B tradition which arrived from outside Palestine. An explanation for the interaction of the two groups is found in the suggestion that the B tradition absorbed 'scattered indigenous remnants into their group' (Callaway 1972: p. 70) on their way from Jericho to Ai. Callaway argues that the B tradition people settled in an open village at Ai in Phases I and II and eventually dominated the new settlement. Yet he also agrees with Lapp that the urban culture itself was later imposed by a new group in EB IC. In phase III at Ai,

> At every site the components of this city show no indebtedness to those of the previous unwalled settlement. Only the population continues to some extent, as the pottery indicates. The conclusion seems warranted that leadership for construction of the first urban phase at Ai was not indigenous but was imposed from the outside. (Callaway, 1972: 117)

Basil Hennessy agrees with Kenyon in distinguishing three contemporary cultures, A, B and C immediately preceding the establishment of the town centres. All three groups are perceived as also contemporary with the later phases of the Beersheba settlements and Ghassul IV[5]. The A and C cultures arrived from outside Palestine but the B tradition may have been indigenous (Hennessy, 1967; 46). Support for this view is found in the absence of foreign parallels for the B tradition and a series of features that this tradition had in common with Late Ghassulian culture. The foreign, A and C cultures, intermingled with the possible indigenous B tradition and from this point the development into an urban culture 'appears to have been an internal one and merely marks the final establishment of the groups who arrived during the Proto-Ubran period' (Hennessy, 1967; 49).

Ruth Amiran has focused more directly on the process of urbanization which is seen as emerging from a type of population explosion in the preceding periods. She emphasizes population continuity throughout the early phases of the Early Bronze Age (adopting Wright and Lapps' terminology) and concludes to an unbroken development from village community to urban society (Amiran, 1979; 85). At Arad the village culture reflects the B tradition. Yet Amiran also is not willing to see urbanism in Canaan developing out of purely and exclusively local conditions. She stresses a series of

[4] P. Lapp mentions the Çiradere tradition as a possible foreign parallel (Lapp 1970: 119; 1968: 29–31). Other scattered parallels have been cited by Hennessy and by Schaub (1973: 285). The meagre evidence seems hardly sufficient to support the foreign origin of the B tradition.

[5] This view needs to be revised on the basis of Hennessy's paper delivered at the Oxford conference (see below) in which he argues for a possible earlier absolute date for the Ghassulian cultures and especially the need to avoid the term Ghassulian as specifying a distinct culture and time period for all of Palestine.

foreign elements from both Mesopotamia and Egypt brought in by 'migratory-infiltrating movements' or features that 'reflect a vital cultural and material intercourse that encourages population growth and culminates in the emergence and progressive definition of cities and urban life' (Amiran, 1970; 86–89).

The strongest case for an indigenous development is presented by Pierre Miroschedji in his study *L'Epoque Pré-Urbaine en Palestine*. Miroschedji posits a phased local development over a period of three to four hundred years leading to the establishment of the town culture. His emphases on the ecology and environment of the region and total assemblages of cultural artifacts represent an important contribution to the research of this period[6]. Although Miroschedji does not focus on the walled town culture itself his hypothesis poses an indigenous development of the town culture dating back to the Wadi Raba culture of Middle Chalcolithic. The Ghassulian culture is seen as a foreign interlude which gradually dies out while the local culture re-asserts itself. His Pre-Urban period is divided into three phases, the last of which evolves into the urban phase of EB I without migration or invasion from outside. His third phase bascially corresponds to that represented by the painted pottery or B tradition.

Among this latter group of theories the B tradition again emerges as the critical factor in the origin of the walled town cultures. Callaway describes the B tradition as arriving from outside Palestine and establishing the village at Ai while absorbing local elements. It is in turn absorbed and becomes subject to a new leadership element—again introduced from outside. Hennessy allows a possible local development of the B tradition which may be influenced by Ghassulian elements. Amiran sees the B tradition as eventually responsible for the development of the urban culture but does not directly address the question of its local or foreign origin. Miroschedji describes the B tradition as definitely indigenous. It developed from earlier local traditions and in time brought about the urban culture. As in the first set of theories there is general agreement concerning the chronological position of the B tradition as immediately preceding the origin of the walled towns.

It seems quite clear that the role of the B tradition is critical in the varying hypotheses for the origin of the town culture. Yet, surprisingly, this tradition is rarely fully described. For de Vaux, Kenyon and Lapp with the information available to them it is basically associated with the painted pottery tradition found in tombs. Yet at Jericho there was an insufficient number of examples of the B tradition for Kenyon to construct a typology. Hennessy notes that the B tradition never occurs alone. It is always found with the A and C groups in tombs. One reason for this limited assessment may be found in the extremely large tomb groups of Jericho, Ai and Tell el-Far'ah(N) which were obviously used over a long period of time. A second reason emerges from the tendency to limit the B tradition to the painted pottery. A much fuller description of this tradition now appears possible with the publication of the excavations of Ai and Arad and the ongoing excavations at Bab edh-Dhra.

[6] Kathleen Kenyon recognizes this contribution in her review of Miroschedji's volume although she is harshly critical of the work in general, especially his use of the ceramic typology of Jericho (Kenyon, 1974: 88–90).

The B tradition

The B tradition in tomb groups at Bab edh-Dhra

Paul Lapp distinguishes a four stage pottery sequence in the EB I period at Bab edh-Dhra from the evidence of the 1965–67 excavations (Lapp, 1970; 107). The first stage is represented by the typical shaft tomb pottery exemplified by tomb A 76 (Lapp, 1968; 18–41). A second stage is associated with a rough painted tradition introduced in late EB IA, similar to that found in some examples of tomb A 94 Jericho. The line group painted tradition distinguishes the EB IB phase which is also set apart by a change in burial patterns. The fourth stage (EB IC) is characterized by the introduction of the dominant pottery tradition for the remainder of the EB period which is linked with the establishment of the town site. As the cranial evidence is similar in all four phases and because of the different burial practices in the latter phases, Lapp argues for the rapid absorption of successive and closely related population increments.

The evidence of the more recent excavations at Bab edh-Dhra from 1975–1979 continues to support a sequential development but also narrows the differences between the stages, lending itself to the hypothesis of a more gradual introduction of new types as well as a different interpretation of the changes in burial practices (Schaub, 1980b). Two major phases in EB I, A and B, are well represented. The separation of a third phase (EB IC) seems unwarranted. This material has been assigned to early EB II.

Six tombs containing pottery associated with the B tradition have been excavated at Bab edh-Dhra during the recent excavation series. A seventh tomb had pottery belonging to early EB II. Including the 1965–67 evidence there are now nine B tradition tombs and two associated with early EB II[7].

The relative chronology of these tombs is firmly established as falling between the dominant shaft tomb tradition of the EB IA period and the rectangular charnal houses dominant throughout EB II–III. Three of the B tradition tombs are located directly over the shafts of EB IA tombs. Two others are in a clearly earlier stratigraphic relationship to rectangular charnal houses of EB II–III.

In contrast to the uniformity of the EB IA and EB II–III traditions, the B tradition shows considerable variety in tomb types (Schaub, 1980a). Five of these tombs are chamber tombs related to shafts. Four of these five are single chamber tombs. The fifth example is associated with three EB IA chambers connected to the same shaft but one of these chambers is unique in that it contains two burial groups. The

[7] The B tradition tombs excavated by Lapp have been analyzed in Schaub's doctoral dissertation (1973: 234–287).

latter circumstance suggests it was moved out of the neighbouring chamber to make room for the B tradition burial[8]. Two of the tombs with B pottery are round mud brick houses with formal stone-lined entryways. The stone-lined entryway is also found in late EB IA chambers and in one of the B tradition shaft tombs excavated by Lapp. The two tombs with early EB II pottery also have formal stone-lined entryways. One is a round mud brick house. The second is an unusually large round chamber interpreted as a shaft tomb but for which the shaft was never found. The remaining examples of B tradition tombs are shallow surface chambers directly over EB IA shafts.

The tombs with B tradition pottery thus continue the shaft tomb tradition but with a preference for single chamber tombs. The round mud brick burial house is introduced in EB IB and is continued in early EB II. The stone-lined entryways used in late EB IA tombs, B tradition tombs and throughout EB II–III link all three phases in one cultural trait. The two shallow surface chambers have been associated only with the B tradition.

The burial practices associated with the B tradition display the same variety of old and new with the latter continued in the EB II phase. Three shaft tomb chambers have secondary burials with disarticulated central bone piles. This feature continues earlier practices but the skulls in two of the B tombs are scattered around the chamber breaking the uniform pattern of the EB IA tombs which always have the skulls to the left of the bone pile as seen from the doorway. A fourth B tradition chamber has an articulated adult burial inside the doorway laid on a stone platform similar to the Tomb A 13 upper group of Jericho. A few articulated burials have been associated with the rough painted tradition in late EB IA tombs. Primary articulation appears to have been the common practice in the EB II–III tombs. The two round charnel houses containing B tradition pottery have multiple successive burials with the earliest apparently moved aside to make room for the later. The same practice is found in the tombs with early EB II pottery and was the standard practice throughout EB II–III.

A sequential typological series of the pottery of the shaft tombs of EB IA, the B tradition pottery and that of the EB II–III charnel houses manifests remarkable continuity from stage to stage along with the introduction of new types (Schaub, 1980b). The small tomb groups in the early phases of this sequence along with stratigraphical evidence of tombs cutting into one another are factors which lend more credence to this typology than those established in larger groups which were obviously used over a longer period of time.

The painted pottery of the B tradition is distinctive but it also includes the same forms unpainted and many types continue from EB IA with slight modifications in form. In the round mud brick burial houses the B tradition is more fully developed without the more typical EB IA types but it is found together with the types which emerge in early EB II and predominate throughout the EB II–III periods.

All aspects of the EB IB period in the cemetery (the B tradition phase)—the tomb types, burial practices and the ceramic evidence—support the description of this period as a gradual transitional stage between the shaft tomb burials of the EB IA period and the charnal house burials of the EB II–III period.

A number of explanations can be offered for the cultural processes involved in these changes. Lapp chose the hypothesis of increments of related groups from outside Jordan. The recent evidence for a more gradual transition as well as the lack of foreign parallels for the B tradition are definite arguments against this hypothesis. A second possibility is the interaction of distinct groups within Palestine. Here the obvious similarity and continuity in traditions is not easily explained. A third possibility is a change in settlement pattern from seasonal migration of peoples who came to the site periodically to bury their dead to the gradual establishment of a more permanent settlement at the site. The latter situation would explain the appearance of articulated burials. It is also supported by the evidence for the B tradition at the town site.

The B tradition at the town site of Bab edh-Dhra

The excavations at the town site of Bab edh-Dhra have not yet cleared sufficiently broad areas in the earliest phases to provide a full description of this period. Yet enough has been cleared to establish a sequential pattern of occupation (Rast, 1980). The earliest occupational phases are associated with the B tradition. Mud brick structures with B occupation layers have been uncovered underneath the EB II–III sanctuary area within the town, and below and outside of the massive EB III stone trace at the west end. B tradition pottery was also found by Lapp in 1965 in layers beneath the mud brick trace at the east end (Schaub, 1975; 272–274). There does not appear to have been a wall around the site in EB I. The first settlers may have relied on the natural ridges of Lisan marl lining the site on the north and south sides and partly on the east for some protection. It is possible that mud brick structures associated with both the east and west ends of the site were associated with gates and were the first stage in closing off the settlement area while still relying on the ridges surrounding the site[9].

An area west of the town area provides the best complete sequence of occupation encountered so far. The Lisan marl of the north ridge had been originally used for EB IA shaft tombs. A settlement area, associated with the B tradition, had cut into these tombs, bricked them up and built a number of domestic mud brick structures. The same area later had EB II–III occupation (Rast, 1980).

Much more needs to be done at the town site but the basic sequence is clear. The first settlement, unwalled, was established by the B tradition. Settlement at the site by the B tradition also offers a reasonable explanation for the change

[8] The evidence for this hypothesis is discussed in detail in the 1977 preliminary report of the Bab edh-Dhra excavations (Schaub, 1980a).

[9] A reconstruction of the mud brick structures at the eastern end as a postern gate has recently been attempted by Helms (1975).

in burial practices from secondary to primary articulation as well as the need for larger burial houses. The first stage of enclosing the town site area is revealed in mud brick structures at the east and possibly the west end dated to EB II. The massive EB III stone trace is built over these structures at both the east and west end and along the entire southern length. The present evidence suggests a gradual, rather than sudden, development of town planning at Bab edh-Dhra.

The open village of the B tradition, a pattern repeated at many other new sites preceding the walled town development, (see below) maintains a well established tradition of the Chalcolithic periods. The major difference would appear to be that the early EB I villages are located (re-located?) on a high, defensible position in close proximity to water sources.

Other cultural features of the B tradition continue or repeat features found in preceding periods along with limited innovation. In architecture there is extensive use of mud brick[10]. Both round and rectangular structures are found, both of which have numerous precedents in the Local Chalcolithic earlier traditions[11]. In constructing the charnal houses as well as structures at the town site of Bab edh-Dhra the builders frequently cut deep into the slopes of hills leaving the resultant structures partly subterranean. The techniques employed as well as the use of the natural terrain appear to be similar to those associated with the subterranean dwellings of the Beersheba complex (Perrot 1965 and Anati 1955).

Technical innovation is found in the possible introduction of formed mud bricks during the B tradition. The earliest round charnal house at Bab edh-Dhra used small plano-convex bricks only one course wide. The second house, with later pottery, employed large formed rectangular bricks bound in alternate double header stretcher courses. The brick burial house of early EB II is beehive in shape and uses small rectangular mud bricks one course wide. In all three houses there is a forecourt of mud brick which is rounded to circular and appears to perpetuate the idea of a shaft.

A recently completed study of the flints of Bab edh-Dhra describes the assemblage as a distinctively Palestinian tradition dating back to Pre-Pottery Neolithic times. (McConaughy, 1979). The Bab edh-Dhra types closely resemble those of Teleilat Ghassul. The only tool form traced to outside influence is the trapezoidal Canaanean blade which occurs rarely at Bab edh-Dhra.

The plant assemblage demonstrates a similar continuity. Barley, wheat, flax, fig and grape are found consistently in the EB I–II samples. The cultivation of such crops dates back to Neolithic times in Jordan. There does appear to be a much larger proportion of figs and flax compared to earlier sites. The large size of the linseeds also suggests that this crop was irrigated as early as EB I (McCreery, 1980).

The secondary burial practices found in the early stages of the B tradition have an established precedent in the practice of the Ghassul-Beersheba cultures with the major difference found in use of ossuaries by the latter culture. Skeletal types also reflect a basic continuity with earlier periods in Palestine apart from a few isolated examples found at Bir en-Safadi[12].

It is quite striking that the most distinctive features of the ceramic repertoire of the B tradition, bell spouts, lug handles, tiny ear handles, deep V shaped bowls, and the use of red paint as a decorative feature all appear as technical features of the late Beersheba-Ghassulian tradition[13]. Earlier similarities with the EB IA tradition of Bab edh Dhra could also be singled out in the uniform practice of secondary burial, the basalt vessel tradition and raised band and puncture decoration.

It is beyond the scope of this paper to enter into full debate on the complex factors involved in the transition between the Chalcolithic and Early Bronze Age but the present evidence from Bab edh-Dhra, while allowing for innovation, seems heavily weighted towards continuity with earlier indigenous traditions. Hennessy's insight (1976a: 17, 47) that there is a strong bond between the late Ghassulian assemblages and the early traditions of the following phase, particularly the B tradition, merits more attention than it has received. Miroschedji's arguments for the resurgence of an indigenous tradition following the apparent disappearance of the Ghassulian tradition also need to be carefully examined.

The B tradition on the West Bank

The comparative isolation of Bab edh-Dhra in the southern Ghor could be used as an argument to limit its evidence as applicable only to remote regions. But a comparison with other cemeteries and major excavated sites of EB I, found mostly on the West bank, reveals a strikingly similar role for the B tradition in the development of the walled town culture.

In the Ai tombs Callaway discerns a gradual development of ceramic types through the EB I period with the B tradition types playing a transition role between EB IA and EB II. (Callaway, 1964: 16–20 & appendix 1, Pl. 3) A comparative study of the Bab edh-Dhra evidence with the pottery of the tombs of Jericho and Tell el-Far'ah(N) also strongly supports a similar gradual introduction of the B tradition at those sites (Schaub, 1980b).

Arad, Ai and Tell el-Far'ah(N) are the only three sites where there has been wide horizontal exposure of the early EB levels. The evidence at all three sites reveals the association of

[10] This feature has been used to suggest a foreign origin for the B tradition from an alluvial environment (de Vaux, 1971; 234). The same reason is given by Kirkbride for the arrival of the foreign settlers at Beidha as early as the Natufian period. Mud brick architecture is consistently found in Palestine in pre-pottery Neolithic A & B, and in the immediately preceding Late Chalcolithic periods.

[11] Given the long earlier history of both of these forms in Palestine (c. Kirkbride, 1967; Perrot, 1967, Kenyon, 1967) as well as the limited forms available, it is difficult to see the round form as a foreign introduction at this stage. In the Beersheba culture the rectangular form appears to have been used first, in underground shelters, then adapted to egg-shaped rooms, then round or oval houses on the surface, then back to rectangular. The round mud brick houses at Bab edh-Dhra appear to continue the same form found in the shaft tomb chambers.

[12] Miroschedji (1971; 105–106), relying on the analysis of Ferembach (1959), has pointed out the problems in using these rare examples as evidence for a population shift in Palestine in the Late Chalcolithic period.

[13] For Beersheba, see de Contenson (1956: FIGS 3: 7, 8; 4: 1–3; 7: 4, 7, 8, 10, 11, 12; p. 226 & FIG. 11: 1–4, 7, 10) and for Ghassul, see Hennessey (1967; FIG. 5: 1; 6: 1, 2, 4, 6, 7).

the B tradition with an open village before the areas are walled.

ARAD At Arad, the earliest phase (V) is assigned to the Late Chalcolithic revealing the cultures of the Ghassul-Beersheba complex. The relationship between this phase and the succeeding phase IV is unclear in the excavation report but Amiran interprets it as a cultural break (Amiran, 1978; 116). Phase IV is an open walled village associated with the B tradition clearly revealed in the ceramic assemblage, architectural features and most recently by a B tradition tomb group (Amiran, 1977; Pl. 36D). On the basis of continuity in pottery forms and installational features such as the cooking platform, Amiran concludes an unbroken development from the non-urban village stratum IV to the urban stratum III of EB II (Amiran, 1978; 116).

AI At Ai the first open village settlement in Phases I–II discloses the definite presence of the B tradition in practically every aspect of the cultural assemblages including the burial practices. Although Callaway assigns the tradition to newly arrived elements in Palestine he also recognizes strong Chalcolithic local influences (Callaway, 1972; 70). A similar blending of continuous and new features is reflected in his conclusions concerning the relationship of the village settlement to the following urban phase. On one hand the B tradition 'newcomers' 'eventually dominate the settlement' and 'their culture persists in the succeeding phases at Ai' (Callaway, 1972; 70). On the other hand the components of the planned building operation of Phase III are perceived as entirely new with 'no indebtedness to those of the previous unwalled settlement' (Callaway, 1972; 117). The people are basically the same but 'leadership' is imposed by a newly arrived elite group. If one considers the recognized continuity between the B tradition and the urban phase in ceramic features, burial practices, basic architectural techniques, flint tools and agriculture at Ai as well as at other sites, the conclusion of a new group arriving hardly seems justified. The 'leadership' group imposing town planning suddenly appears as a rather ethereal 'elite' with few artifacts or a material cultural tradition to identify them—only new ideas and new techniques.

TELL EL-FAR'AH (N) Tell el-Far'ah(N) is perhaps the most critical site among those excavated for understanding the emergence of the fortified towns. Its location near Nablus and particulary its pottery assemblages reveal the influences of both north and south. The long earlier occupation of Far'ah also allows the possibility of tracing previous cultural development at the same site. Although de Vaux stresses the new urban elements of his Early Bronze Age levels he is also one of the most definite in assigning a forerunner or stimulating role to the B tradition. A careful reading of his preliminary reports discloses considerable continuity with earlier phases as well as stages of development similar to those observed in the southern sites. The Late Chalcolithic phase is an open village with stone and brick walls which have 'les grandes lignes du plan qui se precisera aux trois niveaus de l'Ancien Bronze' (R. de Vaux, 1978; 63). The ceramic range of the late Chalcolithic levels includes the B tradition wares along with the distinctive red lustrous ware most typical of Tell el-Far'ah for this period. All of the ceramic features of these occupational phases are related to those of the Late Chalcolithic tombs by de Vaux among which the B tradition is well represented (see below). The ceramic forms of the first levels of Early Bronze also appear to be derived primarily from the B tradition. These levels correspond to the first urban levels at Ai (Ph. III) and Arad (St III).

The Early Bronze buildings re-utilize earlier building traces but on the whole these levels reveal a new plan (de Vaux, 1962; 212–221). The town wall section dates to EB I. It is a mud brick wall, 2.60–2.80 metres thick stretching along the west side of the tell. The wall defends the most vulnerable area of the village and has a number of towers associated with it, especially at the corners. The same wall was not found in excavations on the north end nor on the south which has a steep slope descending into the wadi below. The east end was not excavated. In Phase 3 of the Early Bronze Age a major stone wall, at first 6 metres wide and then enlarged to 9 metres wide with a glacis, is constructed on the north side of the tell. This wall is built over the earlier occupational phases of Early Bronze and abuts the first mud brick wall of the western slope at the NW corner. It is clear that the fortification of Tell el-Far'ah (N) went through stages which are remarkably similar to those that are appearing at Bab edh-Dhra. Helms has noted similar stages in the development of complex fortifications and gate systems at practically all of the Early Bronze Age excavated sites in Palestine. (Helms 1975). The gradual development of the towns would seem to argue against the sudden imposition of town planning by a foreign group. As Helms suggests, 'it seems Palestine may have been a source rather than recipient of ideas' (Helms 1975: 150).

Distribution of the B tradition

The formative role of the B tradition in the development of the walled town cultures is given added weight by the growing body of evidence for the wide distribution of this tradition. Lapp was one of the first to recognize this feature (Lapp, 1968; 38–39). Wright also pointed out the need to trace this distribution by concentrating on the forms without relying on the group line painting alone (Wright, 1958; 39). The forms with line group painting appear to be concentrated in the central hill country and in the South at such sites as Jericho, Ai, Jerusalem, Tell en-Nasbeh, Arad and Bab edh-Dhra. That this may be due to the accidents of discovery may be suggested from the large cave tomb of Arqub edh-Dhahr in north Jordan (Parr, 1956). The B tradition forms without line group painting certainly have a wide distribution. The column handled jar appears in the north at Megiddo in St XIX

(Shipton, 1939; 213, PL17: 8, type 12) recognized as distinctive in this Stratum, and at Beth Shan XVI (Fitzgerald, 1935; PL. 1: 8). In the lowlands it is found at Gezer (MacAlister, 1912; vol. II., 153, FIG. 316:3) and on the coast at Azor. (Ben–Tor, 1975: FIG. 9:5–8) A similar distribution may be shown for the bell spouted jars which appear in the north at Assawir (Dothan, 1970; 6–9 7:19–20) and Meser (Dothan, 1957: FIG. 4:10) and again on the coast in the cave tombs of Azor (Ben-Tor, 1975: FIG. 5:28–30) and Givaytim (Sussman & Ben-Arieh, 1966; FIG. 9:26).

The recent evidence published from Azor is quite striking. All of the forms upon which line group painting appears at Bab edh-Dhra—spouted bowls, amphoriskoi with ear handles, both wide mouth and narrow necked vessels, column handled jars and medium bowls with sloping sides—appear in quantity at Azor. There are a total of 46 B tradition vessels but only two have line group painting (Ben-Tor, FIG. 5–12). Tomb 17 of Tell el-Far'ah (N) provides another excellent example. Four of the B tradition forms are represented although there is not one painted vessel in the tomb (Vaux, 1955; 550, FIG. 3).

The relationship of this distribution to the changing settlement patterns between the Chalcolithic and Early Bronze ages has been strudied by Miroschedji (1971; 76–84, FIGS 21–23). The B tradition is found in his third Pre-Urban phase immediately preceding the urban EB I period. Eight Pre-Urban sites are listed which do not continue into the Early Bronze Age. Most of these sites are small or are located near large Early Bronze Age towns. Twenty seven are described as continuous from Pre-Urban into the Early Bronze Age. Only six sites are noted as Early Bronze Age and not Pre-Urban but at least three of these sites have yielded definite evidence of the B tradition[14]. Although Miroschedji's maps need considerable revision based on new evidence and expansion to include the East bank evidence, the pattern is significant in manifesting the predominant distribution of Early Bronze Age towns developing from pre-urban B tradition settlements.

The B tradition on the East Bank

With the exception of Bab edh-Dhra the evidence for the B tradition on the East Bank appears confined to a few soundings, tomb groups and survey evidence. Arqub edh-Dhahr testifies to the presence of the B tradition in the north and tomb groups from Ghor es-Safi and Feifeh represent the tradition further south than Bab edh-Dhra (Rast & Schaub, 1974).

In the Jordan valley the soundings at Tell esh-Shuneh also have yielded evidence for the B tradition. De Contenson describes St II at this site as a mixture of Ghassulian and Late Chalcolithic elements (Contenson, 1960; 25). Red and grey burnished wares represent the Late Chalcolithic but the Ghassulian elements are definitely questionable. The combination of loop, ledge, lug and ear handles is more consistent with the B tradition and in fact distinctive forms and the painted ware of this tradition are well represented at Shuneh (Contenson, 1960; 23, 25; FIG. 9: 9–10; 12: 15). In addition Mellart illustrates a round mud brick building dated to EB IB which is closely similar to the round charnal houses of Bab edh-Dhra in form and structure if not in function (Mellart, 1962; PL. XXV–XXVI, FIG. 4, 5). It is clear at Tell esh-Shuneh that there was occupation from the middle Chalcolithic into the Early Bronze Age.

At many other sites in the Jordan Valley there is continuity in occupation from the Chalcolithic to the Early Bronze Age. But there are also indications of a shift in settlement pattern. The East Jordan Valley Survey of 1975 by Ibrahim, Sauer and Yassine (1976) lists 47 Early Bronze Age sites, 20 of which were recognized as such for the first time. In general the other Neolithic-Chalcolithic sites are described as located near side wadis in the eastern foothills. The EB sites are also located primarily along the eastern foothills, especially on top of isolated foothills which overlook the valley floor. The same pattern is found at the EB sites of the southern Ghor. Most of the EB sites in the Jordan valley appear to be fortified villages or cities. Band slip pottery, used as diagnostic for EB I, is found at many of the EB sites, and particularly at the eight major sites listed by the survey. Among these latter sites six have either definite or possible Neolithic-Chalcolithic pottery.

Surveys on the plateau have not revealed a similar continuity between Chalcolithic and EB. Almost all the sites in the highlands identified by Glueck were assigned to EB with few Chalcolithic remains reported. Mittmann's recent survey (1970) between the Jabbok and the Jarmuk disclosed a similar pattern (1970). Of the 43 sites attributed to EB 36 included EB I pottery, 32 were also assigned to EB II and only 23 yielded EB III sherds. At only two of the 43 sites were Chalcolithic sherds also reported.

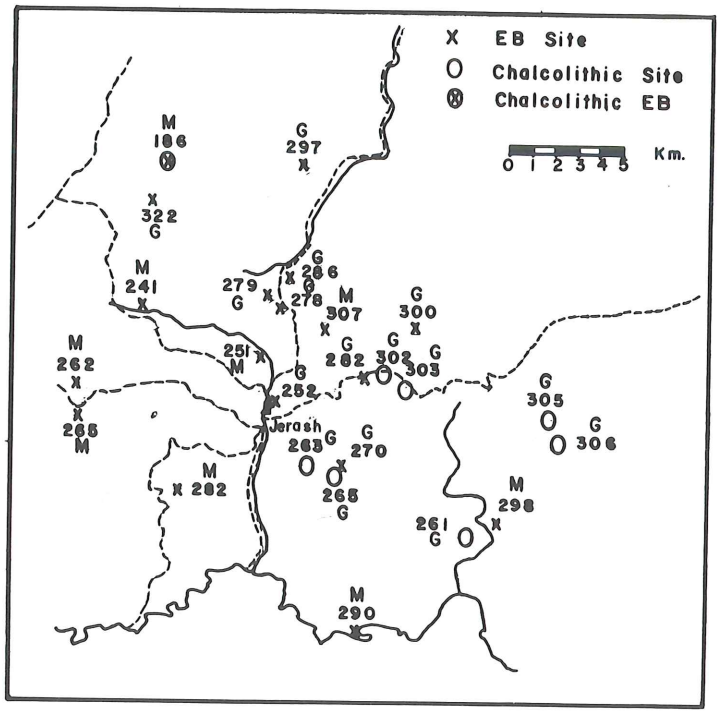
Yet the recent excavations at Jawa report late Chalcolithic–EB I occupation along with a large walled city (Helms, 1976). Soundings at Sahab have also yielded Late Chalcolithic as well as EB I cultural remains (Ibrahim, 1975; 80) and the sounding at Kh. Iskander reports Late Chalcolithic in possible association with a town wall (Parr, 1960). It seems likely that future excavations will continue to yield evidence of continuity at some Chalcolithic sites into the Early Bronze Age.

It is also quite possible that a change in settlement pattern from less defensible Late Chalcolithic sites to the isolated defensible ridges characteristic of EB I on both sides of the Jordan was taking place. In the Jerash region Glueck identified a number of sites described as almost unrecognizable because of the lack of tells and brief occupation evidence. (Glueck, 1951; 71–75). He assigned these sites to the Middle Chalcolithic on the basis of a distinctive squared type of ledge handle which he called 'axe blade'. These handles, as well as other features of the pottery from these sites, appear identical to examples for the EB IA tombs at Bab edh-Dhra[15]. The later

[14] Ras el-Ain (Illife 1936: 113–126): Hebron Hammond 1966: 566–569; 1968: 253–258) and Arad.

[15] The pottery from some of the Jerash region sites is illustrated in Glueck 1951: PL. 32 and 163: 3 (Sabri); 65 and 163: 7–9 (Tell el Meghaniyeh); 108 and 163: 1, 2, 4–6 (Umm

1. EB and Chalcolithic sites in the Jerash Region.



very heavy concentration of EB I–II sites in the Jerash region are all located to the north and west of the 'chalcolithic' sites (FIG. 1). If these sites indeed are Late Chalcolithic or EB IA a change in settlement similar to that found elsewhere seems indicated.

A second mystery of the Glueck surveys—the apparent absence of EB I–II sites in the south—is also being gradually dispelled. Glueck assigned most of the sites in this area to the EB IV period and the ceramic evidence definitely testifies to abundant occupation during that period. He also described most of these sites as fortified which is contrary to the more recent evidence for this period which reveal the EB IV sites as consistently unfortified. Glueck recognized the difficulty when he wrote that many of the sites he ascribed to EB IV–MB I in southern Jordan probably go back to EB I (Glueck, 1951; 60). Abundant evidence has emerged in soundings and surveys since to support that conclusion. Soundings at Kh. Iskander, Dhiban (Morton, 1955; 5–6) and the excavations at Bab edh-Dhra demonstrate earlier occupation. The 1973 survey of Rast and Schaub discovered EB I tombs at Safi and Feifeh in the Ghor and EB III occupation at Numerira and possibly Feifeh (Rast and Schaub, 1974). A number of other sites examined on the plateau during that survey-especially the large site of Tell el-Muddowerah may be assigned to EB I–III. In addition a recent examination of sherds from the surveys of Glueck stored at the Smithsonian Institution in Washington revealed at least one southern EB I site with B tradition evidence[16]. The recent survey in Moab conducted by Miller should help to fill in the picture of earlier occupation.

Although the surveys have yielded little information for the B tradition in East Jordan the excavation results from Bab edh-Dhra, Tell esh-Shuneh and Arqub edh-Dhahr, widely separated sites from the southern Ghor, Jordan valley and the plateau region, offer the possibility that the B tradition will emerge in quantity when and if some of the other major EB I sites are excavated.

Summary

Any assessment of archaeological results must recognize the incomplete picture presented by both excavation and survey. This is particularly true of prehistoric periods and for geographical regions where only limited areas of a particular time period have been exposed. The limited facts revealed may also be interpreted according to different models and it is highly unlikely that one model will be convincing to all. That, of course, makes the formation of archaeological hypotheses challenging.

The arguments cited above stress the possible formative role of the B tradition in the origin of the walled town cultures during the Early Bronze Age in Palestine. The evidence from the ongoing excavations at Bab edh-Dhra has been extensively used but that evidence is strongly supported by similar results at the only other EB I sites horizontally exposed. The wide distribution of the B tradition, especially on the West bank but also on the East, suggests a possible similar role for this tradition at other EB I sites.

The indigenous roots of the B tradition also seem supported by the archaeological record, particularly by the fact that many of the cultural traits have local prototypes and others appear only gradually in the B tradition, rather than suddenly, as the argument for extensive migration would demand. The major argument against foreign origin is the lack of foreign parallels and evidence for a route of migration to Palestine. It is possible that future excavations, particularly in Syria and Jordan, may produce those traces but the present available facts seem to strongly favour the indigenous development of the town culture. Although the possibility of limited cultural import from outside Palestine should not be excluded, the origin of the walled towns in EB I Palestine can best be understood at present in terms of the social and cultural dynamics of the local inhabitants.

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Beteimeh) and III (Zekhireh). See especially the basalt bowl fragment (PL. 163: 8), and the puncture decoration on jars (PL. 163: 9, 12), the lug handles on a narrow neck jar (PL. 163: 10) and the ledge handles (PL. 163: 1–7). Although the Bab edh-Dhra material remains to be published one can compare the ledge handles and puncture decoration in Schaub's typology of the Bab edh-Dhra material (1973: FIG. 21–25).

[16] Rujm el Qleib (121). The site is located near the Wadi Mujib and is described as having traces of a wall which surrounded the entire site (Glueck, 1934: 57–58).

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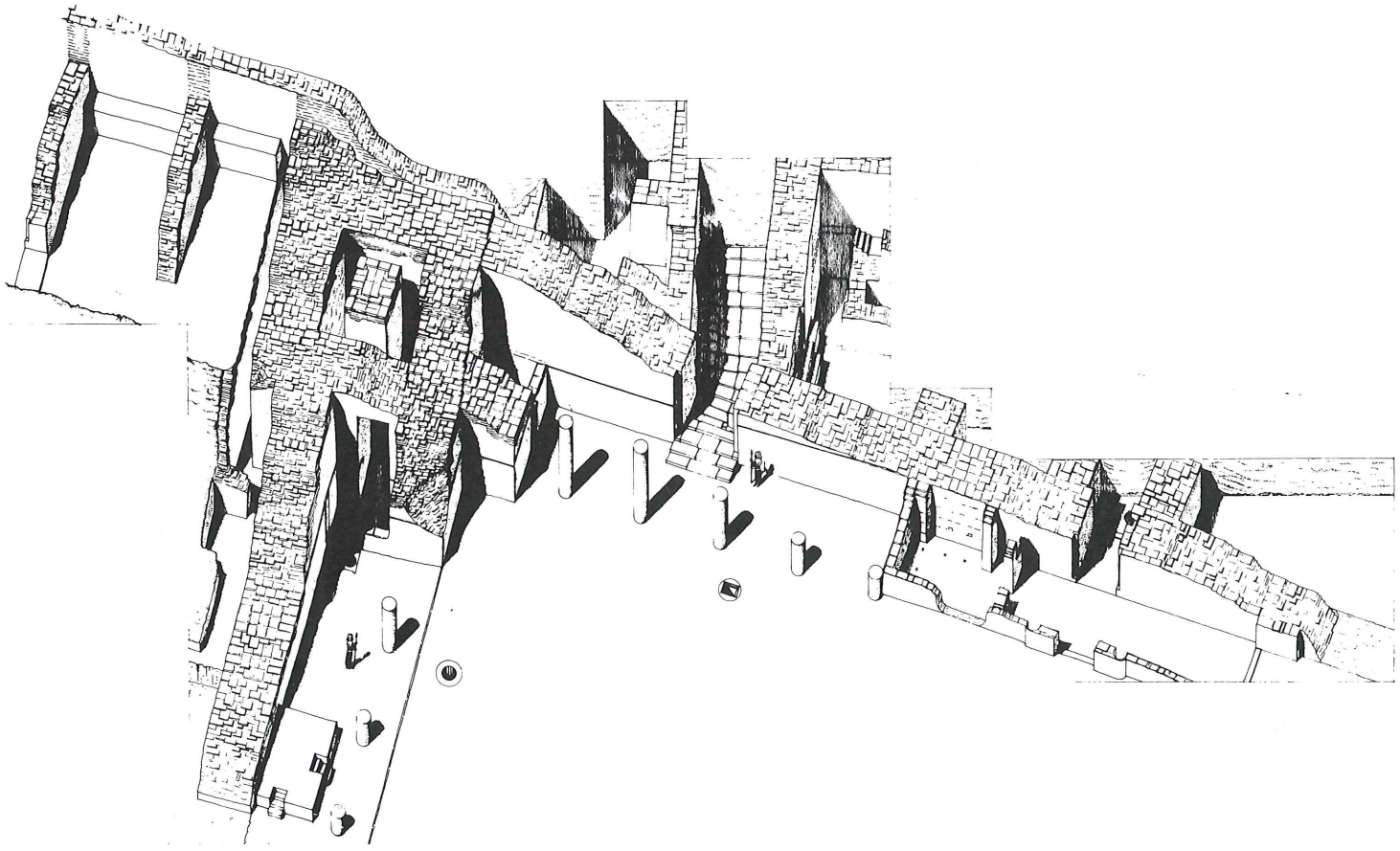
The Mature Early Syrian Culture of Ebla and the Development of Early Bronze Civilization of Jordan

The culture revealed in an untouched archaeological context by the Royal Palace G and by the State Archives of Ebla is the final accomplishment, and probably the apex of the development of the great urban culture of North Syria in the third millennium BC. The definition 'mature Early Syrian culture' for this phase aims at underlining its typically Syrian aspect, and the apogee of its development, with the terminologic parallelism also making an allusion to the last phase of the Early Dynastic culture of Mesopotamia.

1. Royal Palace G: isometric view of the ruins of the Audience Court (c. 2400–2250 BC) drawn by Arch. Carlo Cataldi Tassoni.

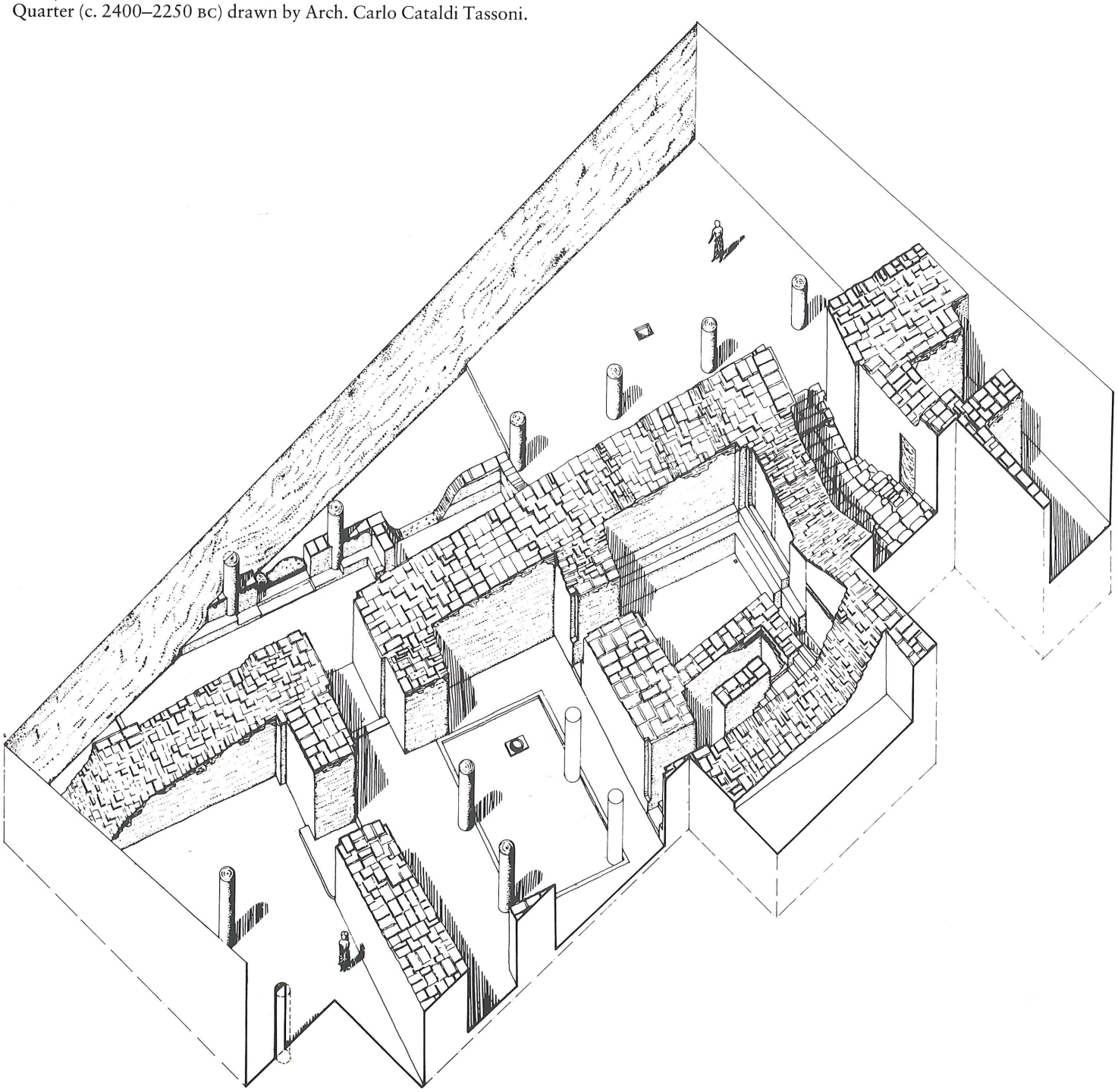
The complex of evidence of Mardikh IIB1 is exceptional as its context is limited to the Palace at Ebla. In Syria there are no parallels with such a context. For this reason, however, the evidence of Mardikh IIB1 illustrates in a very representative way the mature Early Syrian culture of which Ebla probably was the centre of political power. In a historical perspective, the high urban culture of Ebla is better characterized in comparison with Early Dynastic Mesopotamia, with which, according to the indications of the Archives, there must have been quite frequent interactions.

In the architecture of Palace G (FIG. 1) the technical elements, but particularly the planimetrical aspects and the



characteristics of the planning project, are quite significant. The massive foundations with stone bases are a peculiar North-Syrian element. In the palatial complex, the large Court of Audience outside the core of the Palace, devoted to the collection of tributes, the organization of caravans, and the expedition of messengers, is an organic planimetric structure linking the palatial quarters of the Acropolis with the Lower City. If single features of the Court may find parallels in Palace A of Kish, the urbanistic conception of the large Eblaite court is a peculiarly Syrian one. The organization of the inner spaces of the Administrative Quarter of Palace G at Ebla (FIG. 2) around the smaller inner court with portico is also a typical element of the beginning of the architectural tradition of Syria that has its foundations in the Early Syrian period. The originality of the method of architectural planning in the mature Early Syrian culture is again quite clear when considering pre-existing landscape elements and

2. Royal Palace G: isometric view of the ruins of the Administrative Quarter (c. 2400–2250 BC) drawn by Arch. Carlo Cataldi Tassoni.



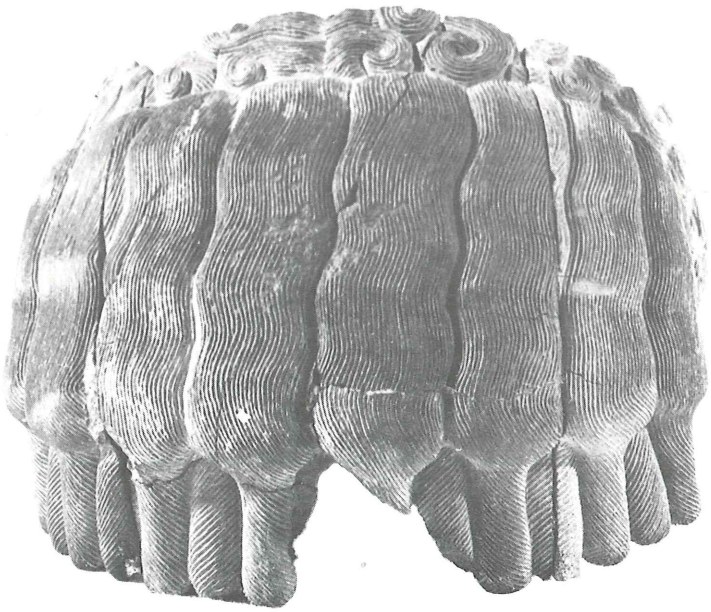
architectural structures. This can be found in the taste for scenographic effects mostly in the North façade (FIG. 3) of the Court of Audience in contrast with the aggregational system of the palatial buildings of Mesopotamia. Lastly, while the open plan of the palace at Ebla may perhaps descend from an inspiration from the Proto-historical Period of Mesopotamia, it is surely the opposite of the enclosed plan of the pre-Sargonid palace of Mesopotamia, from Kish to Mari, and of the fortress-palace of the Akkad dynasty, at Tell Brak and maybe at Assur.

The sculpture of Palace G at Ebla, which remains in scattered but significant fragments, is characterized by the composite structure of wood, steatite, gold and limestone, used together in making works in the round, and also reliefs. This is the case with two admirable remains of heads, a male (FIG. 4) and a female one (FIG. 5), almost life-size, of which only the steatite plaques composing the two hairdresses are almost completely preserved: the faces of these heads were

3. Royal Palace G: the North façade of the Audience Court from the South; in the foreground, the royal dais (c. 2400–2250 BC).



4. Aleppo, Archaeological Museum: hairdress of male head; steatite; from the Royal Palace G, L. 2913 (c. 2400–2300 BC).



5. Aleppo, Archaeological Museum: hairdress of female head, steatite, from the Royal Palace G, L. 2913 (c. 2400–2300 BC).

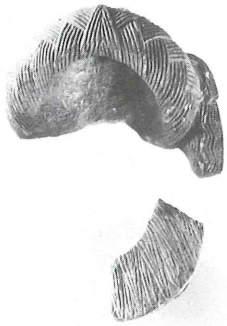


quite probably carved in wood covered with gold, employing a technique that should date back, though with differences in the details, to the tradition of the Proto-historical period of the late Uruk phase.

One of the most typical kinds of works kept in the Administrative Quarter of Palace G were certainly the composite panels (FIG. 6) in high relief showing figures of kings in full-face. In these reliefs, the bare parts of the bodies were in wood covered with gold, as is proved by the discovery of gold leaf in the shape of a foot or of a leg, while skirts, belts, turbans and beards were in limestone, and the hairdresses in steatite or lapis lazuli. These composite reliefs seem to be valuable palatial artifacts, with more celebratory than dedicatory aims, similar to works used in Mesopotamia during the Early Dynastic II and III Periods, and known by the name of 'Weihplatten'. The frequency with which the technique of wooden sculpture covered with gold leaf occurs in mature Early Syrian Ebla, is proved by figurines like that of the completely reconstructed human-headed bull (FIG. 7), with the fleece represented by two plaques of steatite, or by figurative knobs like that in the shape of a miniature lion head, always from the Administrative Quarter. Though the high quality and the valuable materials employed make comparison difficult for this kind of artifacts, it is certain that the tradition of sophisticated artistic craftsmanship (FIG. 8) of Mardikh IIB1 is parallel with that documented by some works of the royal tombs of Ur, where the conventions in the use of the materials are the same.

The open-work carvings in wood, rich in figurative themes and showing an extraordinary fineness in execution, were, on

6. Aleppo, Archaeological Museum: composite panel representing a probably royal figure wearing the turban, limestone, from the Royal Palace G, L. 2913 (c. 2400–2300 BC).

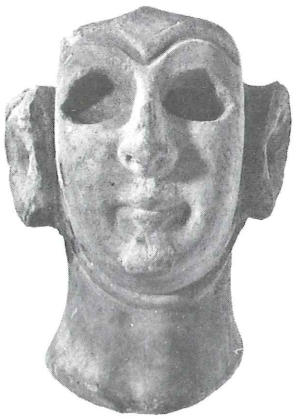




7. Aleppo, Archaeological Museum: human headed bull, wood, gold and steatite, from the Royal Palace G, L. 2764 (c. 2400–2300 BC).



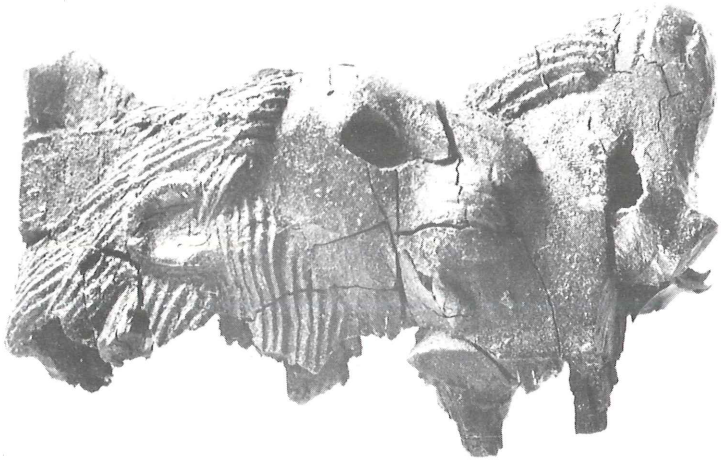
8. Aleppo, Archaeological Museum: miniature male head, limestone, from the Royal Palace G, L. 2913 (c. 2400–2300 BC).



9. Aleppo, Archaeological Museum: lion attacking a bull, wooden carving, from the Royal Palace G, L. 2601 (c. 2400–2250 BC).



10. Aleppo, Archaeological Museum: lion biting a goat, wooden carving, from the Royal Palace G, L. 2601 (c. 2400–2250 BC).



11. Damascus, National Museum: figure of a king wearing the cloak and the turban, and holding an axe, wooden inlay, from the Royal Palace G, L. 2601 (c. 2250 BC).



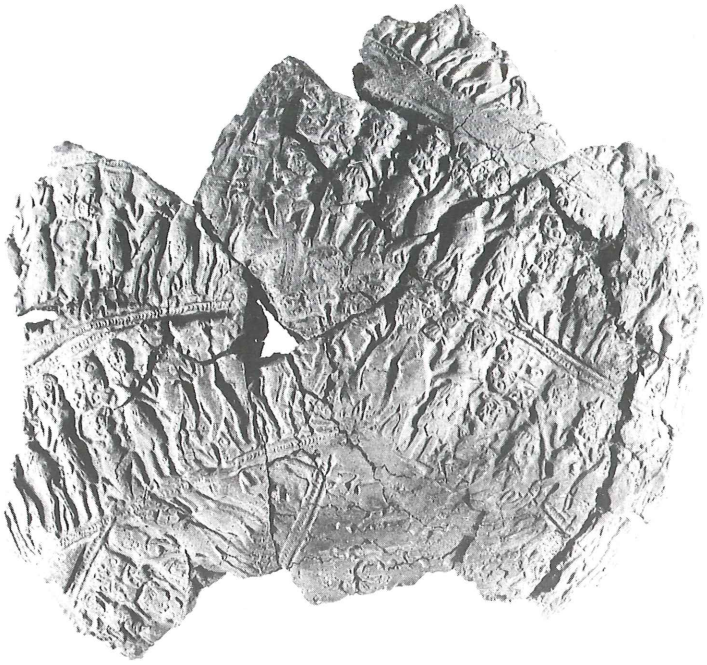
the contrary, a peculiarity typical of Ebla in the production of furniture of a very high value. The friezes on these pieces of furniture alternated scenes of a local conception, such as the lion attacking the bull (FIG. 9), with traditional motives. The latter are derived from the iconographic repertory of the glyptics of the late Early Dynastic culture of Mesopotamia, such as the standing lion that tears to pieces the goat standing with backturned head (FIG. 10). But several, sometimes quite fragmentary, remains of figures, like the naked hero piercing the belly of the lion with his sword, the royal full-face figure wearing the Eblaite turban (FIG. 11), flounced woollen cloak and holding an axe, or the warriors piercing each other with their swords, are works of a school of Eblaite artists, that cannot be considered a provincial one. Both some antiquarian elements, like the helmets and skirts of the warriors, and the stylistic characteristics which follow a strict naturalism, as in an admirable female figure (FIG. 12), show that this art of Mardikh IIB1 is very near the experiences of the dynasty of Akkad.

The glyptic of the high officials of Ebla of the State Archives is found in several impressions on clay bullae, which allow us to reconstruct about fifteen cylinder seals of high quality. The cylinders of Mardikh IIB1 constantly depict friezes of figures with animals, lions and bulls, standing according to the models of the classical Mesopotamian glyptic of the Early Dynastic III Period. In the light of more general considerations we must also point out that the composition of the scenes depicted in the glyptic of Royal Palace G never shows the uninterrupted chain of oblique figures found in the seals of Early Dynastic IIIa, but groups of two, three or up to five rigidly vertical figures typical of the earliest tradition of Early Dynastic IIIb in the so-called Lugalanda style. But figures from the iconographic repertory and of the stylistic structure of the mature Early Syrian Ebla are the result of a typically Eblaite development, and probably in a more general way, of

12. Aleppo, Archaeological Museum: female figurine, wooden carving, from the Royal Palace G, L. 2601 (c. 2400–2250 BC).



13. Aleppo, Archaeological Museum: bulla with cylinder seal impressions, from the Royal Palace G, L. 2716 (c. 2300/2250 BC).



the urban culture of northern Syria of Early Bronze III–IV; for example, the full-face goddess, dominating the wild animals; the cow-goddess that seems to be the parallel deity of the bull-man; the kneeling Atlas supporting a quadripartite symbol of the cosmos; the mythical being with a lion's head fighting the animals; the bearded male figure, probably royal, wearing the Eblaite turban; the female figure with long hair that, symmetrical to the preceding one, could also be a royal image. The stylistical structure of the seals corresponds to a strict naturalism that is certainly a different artistic achievement from the synthetic naturalism that gradually prevails in the art of Akkad from the end of Sargon's reign. In the glyptic, the palace culture of Ebla acted in a figurative patrimony following the Early Dynastic tradition, introducing a series of figures that reflect typically Syrian ideologies (FIG. 13). The goddess dominating the wild animals belongs to the religious type of deity of the pre-Sargonid glyptic friezes, but it is unknown in the Early Dynastic Mesopotamian world and it must have later produced a divine type in the Syrian area of the Middle and Late Bronze Age. The quadripartite symbol of the cosmos supported by the kneeling Atlas could not be foreign to the quadripartite conception of the universe that is first documented in the title 'king of the four regions', meaningfully taken for the first time by Naram-Sin of Akkad, who boasts of the conquest of Ebla. The presence of the male and female presumed royal figures (FIG. 14) in the friezes illustrating some aspects of the balance of nature, is certainly related to the important role of the royal ancestors in the cult of Syria of the Middle and Late Bronze Age.

The ceramic horizon of Mardikh IIB1 (FIGS 15–17) is defined by its close relation with the ceramic culture of Hama J8–6 and by the notable, albeit not completely corresponding elements of the culture of Amuq I. The most distinctive ceramic type of the culture of Mardikh IIB1, as at Hama J8–6 and Amuq I, is the goblet with corrugated surface (FIG. 15: 1–3); the bowl type with swollen rim, that rarely has a corrugated wall, is also quite characteristic; the bowls with rims moulded on the outside originate from this phase (FIG. 15: 4–6). In these small vases with thin walls, there are two major types of ware: the first one has quite porous and mealy grain, very light green or white in colour, with a low firing; the second one has compact grain and a metallic sound, light grey, light brown or pink in colour, with a quite high firing. To the latter kind of pottery belong the rare small jars with red decoration painted in thin horizontal bands (FIG. 15: 7–9), that are quite distinctive forerunners of the classical

14. Aleppo, Archaeological Museum: bulla with cylinder seal impressions, from the Royal Palace G, L. 2716 (c. 2300/2250 BC).



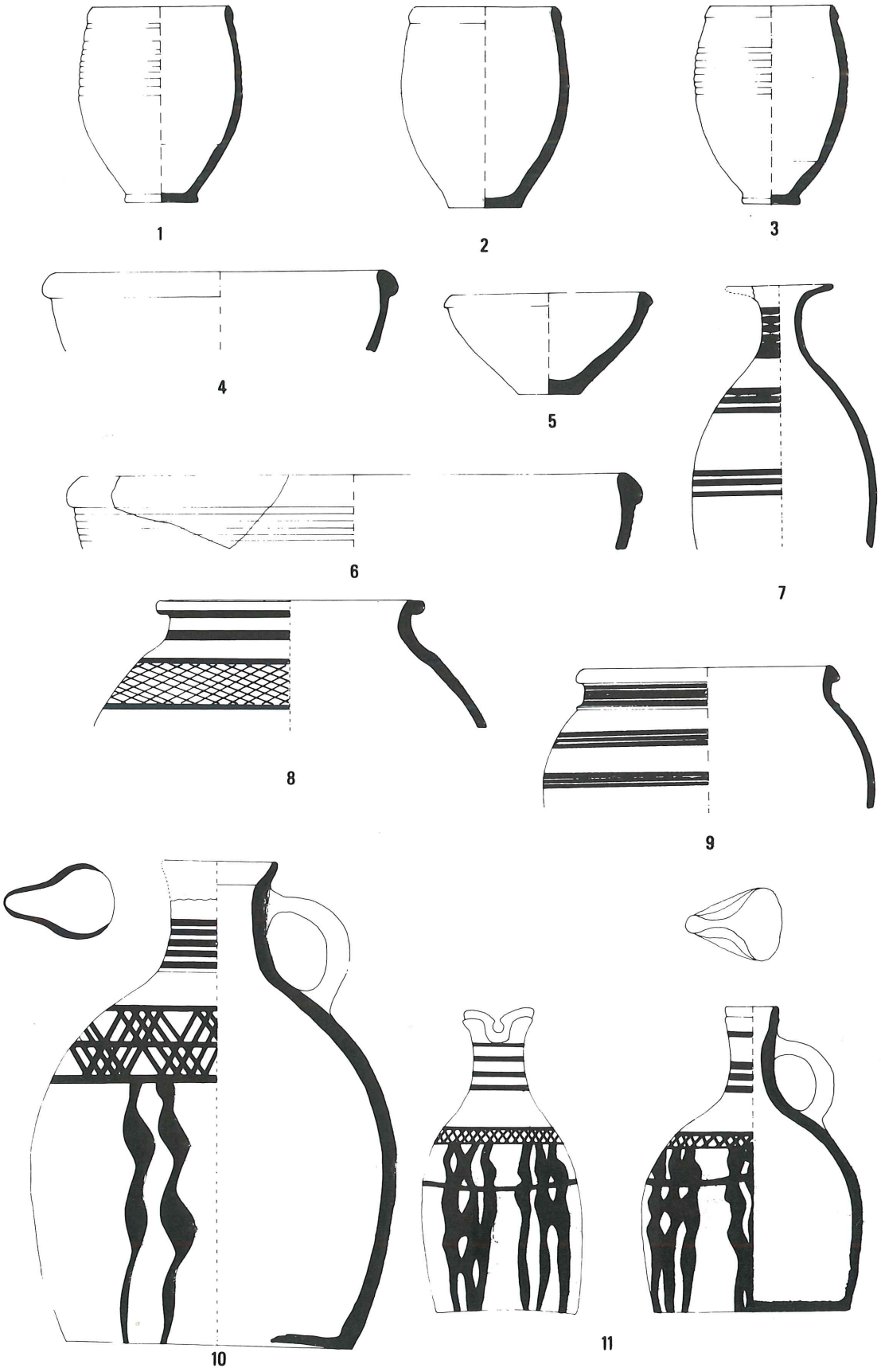
'Painted Simple Ware' of the following phase of Mardikh IIB2. Another rare, though quite distinctive specimen of painted ware is the hand-made juglet with oval base and monochrome painting with vertical plaits on the body (FIG. 15: 10–11). Among the large vessels, several kinds of jars are known; these probably had different functions, though it is now quite difficult to single out their use, except in a hypothetical way (FIG. 16: 1–6, 8–9). The most common kind is a water jar, of quite porous ware, grey or light green in colour, often with a white wash and large base: the rim of this jar is turned out with the outer face vertical and moulded (FIGS 16: 7; 19: 1–2). Another hand-made jar of medium to large size for liquids, has a typical egg-like shape, large base, and a flaring, rounded rim with a sharp edge in the lower part (FIG. 17: 3–4). Other jars, probably provision-jars for cereals, have a rounded shape with a short pointed vertical rim. As regards the wares of the final phases of the third millennium BC of upper Syria, some presences and some absences are quite meaningful: the 'Red-Black Burnished Ware', the so-called Khirbet Kerak ware, appearing frequently in Amuq I, is completely absent from Mardikh IIB1; the 'Reserved-Slip Ware' appears, although in a small amount, with a smaller percentage in Mardikh IIB1 than in Amuq I; the 'Smeared-Wash Ware' is completely absent from Mardikh IIB1, while it is well documented in the late phase of Mardikh IIB2, as is also the case in Amuq I in comparison with Amuq J; the 'Painted Simple Ware', absent from Amuq I and widely present in Amuq J, is almost completely absent from Mardikh IIB1 as regards the goblets, while it is quite frequent and typical of Mardikh IIB2.

The evaluation of the pottery of Mardikh IIB1 allows us to consider the problem of the diffusion of the culture we call 'mature Early Syrian', which probably had its political and cultural centre at Ebla. It is certain that this unitarian and homogeneous culture was attested to in the region of Homs towards the South, up to the region of Karkemish and perhaps to the feet of the Taurus mountains in the North, from the chain of the Jebel Zawiyyah in the West, towards the Euphrates valley in the East. The rich plains of the Orontes in the West, the Ghab and the Rujj and in the North-West the plains of the Afrin and the lower course of the Orontes, the Amuq region, were quite probably peripheral within the same culture with distinctive characteristics, namely, at least in the North, the strong presence of the 'Red-Black Burnished Ware', almost completely absent from inland Syria. A similar problem occurs in the Eurphrates valley: along the middle course of the Euphrates, from Karkemish to Mari, only local variants of this culture that probably had its major centres mostly in the inner region between Aleppo and Homs are attested to. Above all, the ceramic materials from the necropolis of Tell Halawah and from the settlements of Tell Selenkahiyyah in the region of Lake Assad Along the Euphrates, show notable parallels with Mardikh IIB1.

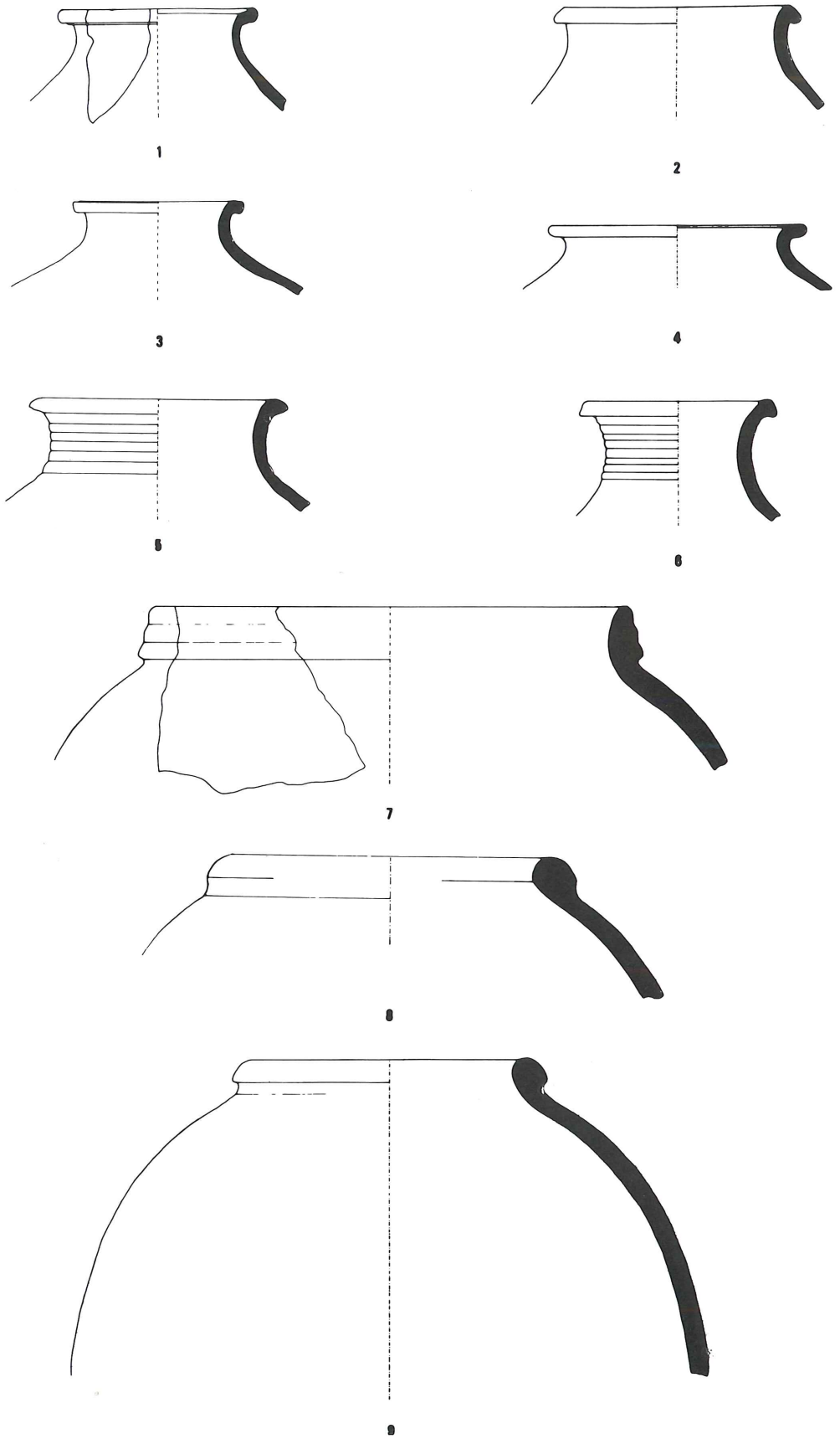
After pointing out the regional differences particularly with the Amuq phases, as the comparison with Hama is actually quite close, we may say that Mardikh IIB1, the culture of the Royal Palace G and the State Archives, corresponds to Hama J8–6, i.e. to the ancient levels of Hama J, and to Amuq I. The phase of Mardikh IIB2 that followed the destruction of the Royal Palace G and the end of the political pre-eminence of Ebla, corresponds, on the other hand, to Hama J5–2, i.e. to the late levels of Hama J, and to Amuq J. From the beginning we must point out clearly that, exactly like the whole phase of Hama J and between Amuq I and Amuq J, there is a fully continuous development between Mardikh IIB1 and IIB2. They show, therefore, the continuous development of the north Syrian culture, defined several years ago as the 'caliciform culture', which at Ebla, and most probably in other important centres of the northern regions, but perhaps not significantly at Hama, was fiercely destroyed at the end of Mardikh IIB1. Ebla was destroyed and its political hegemony probably came to an end, but in the same centre cultural development continued: the destruction put an end to the political pre-eminence of Ebla, but not to the Early Syrian culture that goes on into the phase we call late Early Syrian culture.

The historical role of the culture of Ebla in the time of the Royal Palace G and of the State Archives of Mardikh IIB1 for the history of the culture of the Mesopotamian area, on the

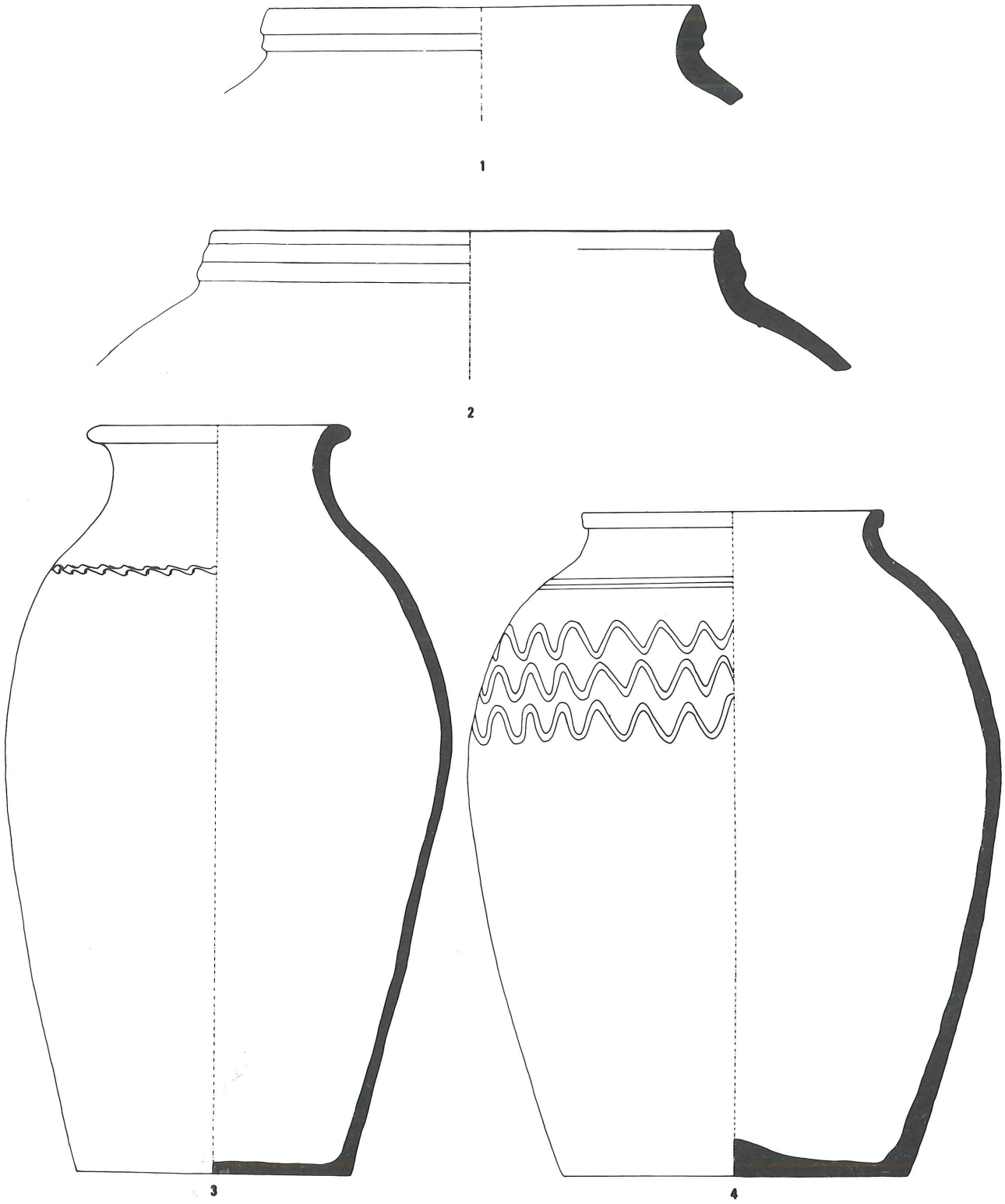
15. Royal Palace G: pottery from the destruction of the building (c. 2300/2250 BC).



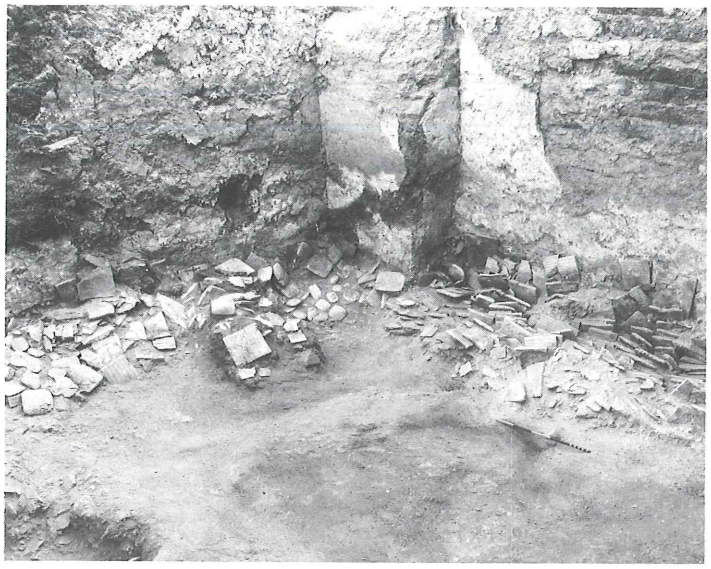
16. Royal Palace G, pottery from the destruction of the building (c. 2300/2250 BC).



17. Royal Palace G, pottery from the destruction of the building (c. 2300/2250 BC).



18. Royal Palace G: the tablets in situ against the North and East walls of the archive room L. 2769 from the South-West (c. 2400–2250 BC).



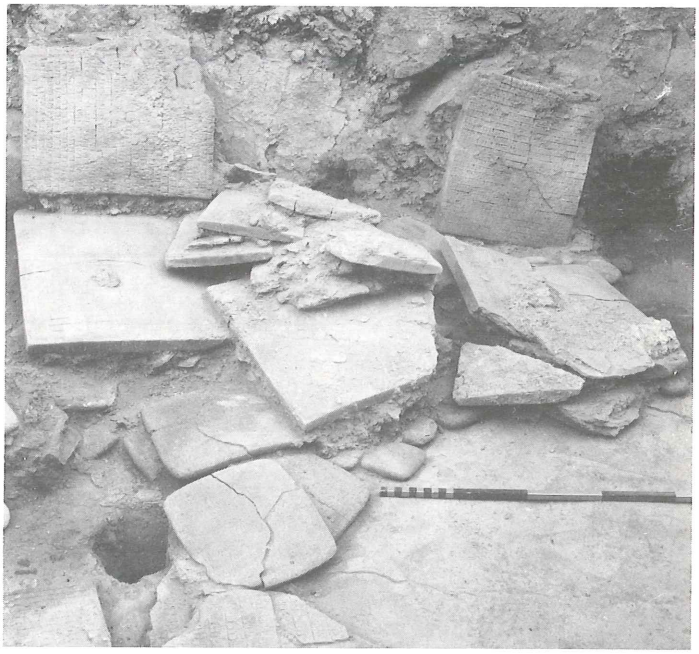
19. Royal Palace G: the archive room L. 2769 from the South (c. 2400–2250 BC).



20. Royal Palace G: the lexical tablets in situ against the North wall of the archive room L. 2769 from the South (c. 2400–2250 BC).



21. Royal Palace G: the large tablets of the administrative records of textiles on the floor of L. 2769, against the North wall, from the South (c. 2400–2250 BC).



one hand, and of the Palestinian area, on the other, largely depends on the chronology that can be attributed to the phase of Mardikh IIB1. Immediately after the discovery of the first rooms of Palace G and of the first tablets (FIGS 18–21) in 1974, the chronology I proposed for Mardikh IIB1 was 2400/2350 BC for the beginning of the phase and 2250 BC for its end: these absolute dates were conventionally proposed using the middle chronology which dates the advent of Hammurabi of Babylon to 1792 BC and the advent of Sargon of Akkad around 2335 BC. This chronological hypothesis attributed the destruction of the Royal Palace G of Ebla to Naram-Sin of Akkad, during the first years of his reign, and was based on the following considerations. In the first place, the archaeological correspondence between Mardikh IIB1 and Amuq I, with the exception of the presence of the 'Red-Black Burnished Ware', which may probably be explained in the light of geographical diffusion; this agrees with M. J. Mellink's idea,

of Amuq I being contemporary with the dynasty of Akkad. In the second place, the characteristics of the mature Early Syrian culture of Mardikh IIB1, that, compared with the Mesopotamian Early Dynastic world, appeared contemporary with the later phases of Early Dynastic Mesopotamia and with the first years of the dynasty of Akkad. In the third place, the consideration that the paleography of the first texts discovered in 1974 in Palace G was considered contemporary with the first years of the dynasty of Akkad and, in any case, older than the period of Naram-Sin of Akkad. In the fourth place, the data given in inscriptions of Naram-Sin, in which he defines himself as the conqueror of the cities of Armanum and Ebla, and points out that no one except himself succeeded in conquering those cities since the creation of mankind. The attribution of the destruction of the Royal Palace G of Mardikh IIB1 around 2250 BC to the first years of the reign of Naram-Sin of Akkad seemed to be finally confirmed by the presumed mention of the city of Akkad and of a personal name interpreted as a peculiar writing of Sargon's name in the texts of the Archives discovered in 1975: it is now certain that neither Akkad nor Sargon are mentioned in the Archive texts.

In October 1976 G. Pettinato proposed a dating of the Archives around 2500 BC, that, in his opinion, must probably be interpreted as the date of the destruction of the period of Mardikh IIB1, the duration of which should be considered as not exceeding seventy years. The bases of this chronological attribution are as follows: in the first place, the texts of the Archives should be attributed not only to Fara tradition, but to the same period as Fara texts, that is, between the end of Early Dynastic II and the beginning of Early Dynastic III of Mesopotamia; in the second place, this hypothesis would be confirmed by the presumed complete correspondence in the paleography between the texts of Ebla and the texts of Abu Salabikh in southern Mesopotamia, which are dated to Early Dynastic IIIa in Mesopotamian chronology; in the third place, the frequent and positive mention in the texts of Ebla of the city of Kish, together with the presence of the personal name Mesalima, without title and not connected in any way with Kish, which was thought to be proof of the presence of the king of Kish who gave his name to the so-called 'Mesilim Period'; in the fourth place, the absence in the texts of Ebla of mention of the city of Akkad and the single mention of the name of the city of Khamazi, the seat, according to the Sumerian King-List of a dynasty that should have followed the second dynasty of Kish, would lead us to think that the Ebla Archives are contemporary with the passage of political pre-eminence from the second dynasty of Kish to that of Khamazi noted in the King-List.

Against these preliminary considerations about some data of the texts of Ebla, an objective evaluation of the main aspects of the archaeological evidence may be summed up as follows. The antiquarian elements of the wooden carvings—the helmets of the warriors, the fringed shawls of the women's costume—point to a period that should correspond to the first or the second generations of the dynasty of Akkad. The style of these carvings, defined as a severe naturalism, of the composite reliefs with figures of dignitaries and royal frontal figures, and of the heads, of which only the wonderful hairdresses in steatite were left, is an artistic expression that has definite parallels with the latest phases of the analytical naturalism of Early Dynastic IIIb and with the beginning of the synthetic naturalism of the dynasty of Akkad. The cylinder seals of Mardikh IIB1 have compositional elements that may be considered on the same level of development as the cylinders of the Lugalanda style of the end of Early Dynastic IIIb. The pottery of Mardikh IIB1 must be considered parallel with Amuq I and, if chronological and not geographical considerations are to explain the absence at Ebla of the 'Red-Black Burnished Ware', we must conclude that Mardikh IIB1 dates back to the end of Amuq I, usually connected with the end of Early Dynastic III and with the dynasty of Akkad. The comparison with Tell Selenkahiyyah III, from where a cylinder in the Akkadian style comes, points to the same period.

The only evidence found in the texts of the Archives of Ebla, that may be useful in solving the chronological problem, is the mention of king Iblul-Il of Mari, the enemy defeated by Enna-Dagan, general of the king of Ebla Ar-Ennum, in a letter reporting the conquest of Mari. This evidence allows us to fix a synchronism between Ar-Ennum, probably the third among the five kings of Ebla, and Iblul-Il, king of Mari known from some votive inscriptions of his officials, discovered in the excavation of the temples of Ishtarat and Ninni-zaza at Mari. However, the chronological position of Iblul-Il is not certain: this king, attributed by A. Moortgat to the beginning of Early Dynastic IIIa, was dated by P. Amiet and M. Lambert to the period immediately before Sargon of Akkad. We must add that Ebla is apparently never mentioned in the pre-Sargonid texts of Mesopotamia, while Sargon of Akkad notes in an inscription of his that he had received Mari, Tuttul, Yarmuti and Ebla from the god of the West Dagan, and that a little later, Naram-Sin of Akkad boasts of the conquest of Armanum and Ebla. After this quotation, Ebla appears in the peculiar sentence on Statue B of Gudea of Lagash, where it is inscribed that he had obtained precious wood 'from the mountain of Ebla, from the city of Urshu'. This leads us to believe that in the time of Gudea, the land of Ebla was dominated by Urshu.

Although the problem of the absolute chronology of Mardikh IIB1 is a complex problem and quite difficult to evaluate, some basic points which cannot be avoided must be kept in mind for its solution. In the first place, as regards paleography, while waiting for an exhaustive analytical examination, we must not forget, as I. J. Gelb has also rightly said, that the writing system of Ebla descends from the tradition of Kish, and not from that of Nippur. Moreover, it is quite probable that, because of its peripheral position, the chancellery of Ebla kept for a longer period archaic forms that are, therefore, not necessarily the proofs of a high absolute chronology. In the second place, as regards the historical data,

it is most unlikely that the news given by the inscriptions of Sargon and Naram-Sin are lacking any foundation, as would be the case if the destruction of Palace G were to be dated to Early Dynastic IIIa. This is because then there would be no trace of the city subdued by Sargon and conquered by Naram-Sin in the stratigraphy of the western slopes of the Acropolis of Tell Mardikh, covering a wide area. Over the Royal Palace G of Mardikh IIB1 there are only waste deposits of Mardikh IIIA, namely of the Isin and Larsa period. In the third place, the 'argumentum ex silentio' of the absence of the mention of Akkad in the texts of Ebla must be very carefully evaluated, as the geographic horizon of the Archives is more limited than was supposed in a first phase of the reading of the texts. Besides, if Mari is quite frequently mentioned, the most southern Mesopotamian city of Kish is rarely mentioned, and it is certain to-day that the administrative texts only mention cities directly dependent or under the indirect hegemony of Ebla. They do not, for example, mention Byblos, which was certainly an important centre in the age of the Archives of Ebla. In the fourth place, in a general evaluation of the archaeological and epigraphic cultural evidence from the Royal Palace G, only some and perhaps rare innovative elements may be found for the distant and peripheral position of Ebla in comparison with Sumer and Akkad, and therefore they come late in a cultural horizon, most likely archaic when compared with the culture of contemporary Mesopotamia: from a methodological point of view, these are the only elements, that may be used to contribute in defining the absolute chronology, not the archaic and conservative elements of the cultural tradition of Ebla.

Therefore taking into consideration all the evidence, most of which has been assessed before a detailed palaeographic analysis allows well-based judgements, the following chronological interpretation of the Royal Palace G may be given to-day. The period of Mardikh IIB1, which does not perhaps exceed one century, according to the conventional middle chronology, should be dated as ending more probably around 2250 BC during the first years of Naram-Sin, or, less probably, around 2300 BC in the central period of the reign of Sargon of Akkad. In fact, the generic sentence employed by Sargon leads us to think that he obtained only a tribute from Ebla, while Naram-Sin's explicit reference obliges us to think that the latter positively conquered and destroyed the city. If Naram-Sin destroyed Mardikh IIB1 at the beginning of his reign, when Ibbi-Sipish, the last king of Ebla, was already old, Iblul-Il of Mari, contemporary with Ar-Ennum of Ebla, would have lived during the generation before Sargon; if Sargon destroyed Mardikh IIB1, Iblul-Il would have lived between two and three generations before him. Both hypotheses are possible, though the second one is more probable. The name Mesalima does not hint at any relation between the texts of Ebla and the king of Kish; the absence of Akkad in the texts, that are administrative texts and do not concern matters of foreign cities except in a very few cases, does not at all prove that in the time of Mardikh IIB1 Akkad had not been founded; even the rare mention of Kish is only evidence of the cultural and perhaps political importance of that city in the age of Ebla, importance that was still great in the time of the dynasty of Akkad. Moreover, it is sure that Sargon does not seem to have firmly dominated upper Mesopotamia either, while Naram-Sin left notable traces of his presence from Assur to Nineveh, Tell Brak and Pir Hussein.

But if these considerations demonstrate that there are no serious difficulties against a date during the reign of Naram-Sin or Sargon for the end of Mardikh IIB1, a decisive element is the finding in 1977 of the lid of an Egyptian alabaster vase with the cartouche of pharaoh Pepi I (FIG. 22), who reigned forty-nine years. The inscription must date to the first twenty-five years of the reign of this pharaoh, who probably started to reign, according to the current middle chronologies, around 2330 or 2310 BC. Thus a date around 2300 is the *terminus post quem* for the destruction of the Royal Palace G. If in consequence we use a corresponding Mesopotamian chronological system, this indication leads us to consider possibly both the destruction by Sargon and by Naram-Sin. It definitely excludes, on the contrary, a dating before the reign of Sargon. Between the two possibilities there is a difference of forty or fifty years. Neither solution overcomes all the difficulties, but a date early in Naram-Sin's reign seems more probable.

The destruction of Ebla around 2300 or 2250 BC does not break the development of the mature Early Syrian culture of

22. Aleppo, Archaeological Museum: Egyptian lid bearing the hieroglyphic inscription with the name of Pepi I, alabaster, from the Royal Palace G, L. 2913 (c. 2400–2250 BC).



Mardikh IIB1. In fact, it continues with the late Early Syrian culture of Mardikh IIB2, that we conventionally put around 2000 BC. We believe with R. J. Braidwood that this end is somehow related with the end of the culture of the Third Dynasty of Ur in Mesopotamia. There is, in fact, a very clear break between the culture we call late Early Syrian and the culture we call archaic Old Syrian, or if we prefer between Early Bronze IVB and Middle Bronze I. Ebla took a pre-eminent role in upper Syria again in Middle Bronze I, that according to our chronological hypothesis corresponds to the period of Isin and Larsa. After it, in 1800 BC, followed a phase of decadence that must be connected with the rise of Yamkhad in the role of great power of the Syrian area in the age of Hammurabi of Babylon. To this period belong the hypogea of the 'Tomb of the Princess', of the 'Tomb of the Lord of the Goats', and of the 'Tomb of the Cisterns' discovered in 1978 and 1979 below the floors of the Administrative Palace Q. In September 1979 legal documents of Mardikh IIIB were found in this building. They are certainly contemporary with Alalakh VII, as J.-R. Kupper, to whom the study of these texts is entrusted, kindly communicated to me. The important funerary furniture of the three tombs, unfortunately partly violated, that probably belongs to the period between 1825 and 1650 BC, is very important, in particular for the presence of the jewels left by the plunderers. The richest tomb, that of the 'Lord of the Goats', is dated by the discovery of an Egyptian ceremonial mace with the golden hyeroglyphic inscription of Hetepibrēʿ Harnejheryotef, ninth pharaoh of the XIII Dynasty, who reigned around 1770 BC.

The problem of the influence of the mature Early Syrian culture of Mardikh IIB1 on the culture of the so-called Intermediate Early Bronze–Middle Bronze Age of Jordan, that has been recently discussed chiefly by P. Lapp, K. Prag and W. G. Dever, cannot be dealt with by me in a satisfactory way because I do not have any direct experience of the materials, and, most of all, of the pottery of the Jordanian area. But it seems to me necessary to say, as a general point, that in a possible evaluation it is quite important to take into consideration, both the complete cultural picture of northern Syria and of northern and southern Transjordan, and the geographical definition of the limits of each culture. In this sense the archaeological exploration of Mardikh IIB1 gives some preliminary conclusions. These must be the fundaments of a comparative evaluation that will be established in future years. In the first place, the mature Early Syrian culture of Mardikh IIB1 appears to be the local development of an archaic urban culture generated by the influence of the Proto-historical and Early Dynastic cultures of southern Mesopotamia. For this reason it seems opportune to give the name Early Bronze IVA to this phase. The wars in northern Syria of the great kings of Akkad were responsible for the end of this phase. In the second place, the mature Early Syrian culture of Mardikh IIB1 is a high urban culture spreading to the South at least up to Homs with quite uniform ceramic characteristics. In the third place, the succeeding late Early Syrian culture is an urban culture that in every sense continues the preceding tradition though there is, on the one hand, a crisis in some settlements, and, on the other hand, a spreading of urban settlements in northern Syria. For this reason, it seems opportune to give the name Early Bronze IVB to this phase, that should end around 2000 BC.

In conclusion, in very general terms, we want to draw attention to two points. On the one hand, it seems difficult to maintain, as has been done, that the relations of Transjordan during the so-called Intermediate Early Bronze–Middle Bronze Period were concerned more with the centres of Middle Euphrates than with the urban culture of northern Syria. On the other hand, we must take note that the proved continuity of the high urban culture of Early Bronze IVA–B of northern Syria also corresponds in chronology with the period that W. G. Dever lately significantly proposed to define Early Bronze IVA–C of Jordan.

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The Skeletal Biology of an Early Bronze IB Charnel House at Bab edh-Dhra, Jordan

Introduction

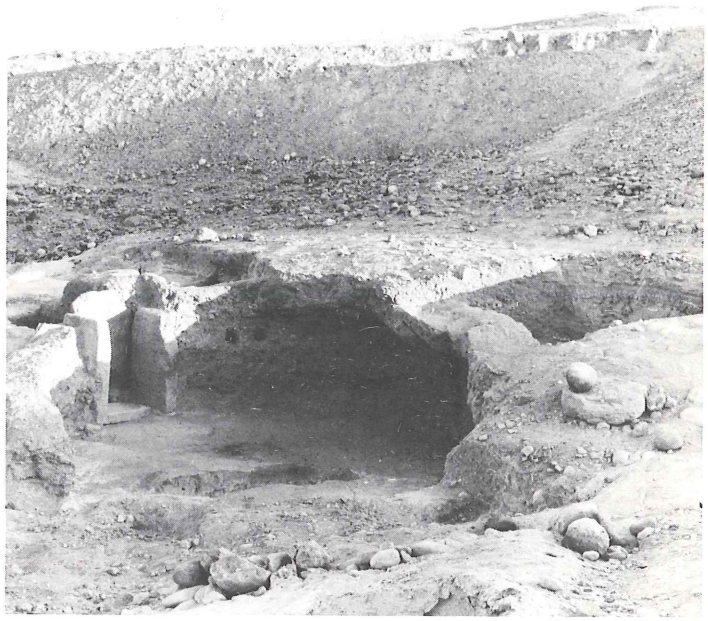
Excavations of the large cemetery area just south of the fortified town site of Bab edh-Dhra, Jordan have exposed burials from virtually the entire Early Bronze Age (Lapp, 1968; Schaub, 1972; Rast and Schaub, 1974). Variation in the burial patterns reflects cultural changes taking place during the Early Bronze Age occupation of the site. These variations in type of burial and tomb architecture may be indicative of biological differences in the people living at Bab edh-Dhra during the subphases of this time period.

During excavations at the site in 1977, skeletal remains were obtained from Early Bronze I shaft tombs, an Early Bronze IB charnel house (G 1), and an Early Bronze II charnel house (A 56). Most of the data obtained in research conducted thus far are from the shaft tomb burials (Ortner, 1979; Ortner, 1981) largely due to the fact that preservation of these burials was better. Recently I have begun to obtain preliminary data from the skeletons excavated from the G 1 charnel house and these data are the basis for the following report.

The G 1 charnel house had been significantly disturbed by non-archaeologically trained individuals in search of antiquities. Thus much of the pottery, sherds and skeletal remains were not in situ and some of the pottery was missing entirely. Most of the specimens which remained were badly broken and scattered making reconstruction a major challenge. However, it is clear that disturbance of the pottery and skeletons occurred in ancient times as well. Apparently earlier burials were disturbed to make room for subsequent burials. In the process pottery was broken along with the skeletal remains and the bones of the earlier burials would be scattered. Some of the disturbance of the charnel house may have been the result of vandalism in antiquity. The presence of multiple charcoal lenses (Schaub, 1981) suggests several episodes in which the roof of the charnel house was burned in antiquity, perhaps by raiding neighbours.

The charnel house itself was circular, approximately 3.7 metres in diameter at the base of the interior (FIG. 1). Mud brick was used in construction with stone used for the entry way. A more comprehensive report on the architecture and pottery is provided by Schaub (1981).

1. General view of the G 1 charnel house at Bab edh-Dhra, Jordan after removal of skeletons and pottery. The mudbrick walls curve inward. Notice the stone orthostats and floor at the entryway seen in the upper left portion of the circular tomb.



Some of the burials appear to have been primary interments as indicated by the presence of some partially articulated burials (Ortner, 1981). Because of the disturbance of the burials the presence of secondary interment cannot be ruled out but primary burial would have been the predominant pattern.

Description of skeletal remains

There are two limiting factors in the analysis of the G 1 skeletal remains. First, the skeletons have been broken and scattered in both recent times and antiquity. This presents formidable problems in reconstructing enough of the specimens to obtain the necessary data. Second, many of the bones have been burned. In some cases the burning has vitrified the bone with minimal distortion, thus preserving the broken

fragments in excellent condition. In other cases the bones have been badly deformed by the heat. Baby (1954) reported that when bones are dry at the time of burning, they may split but do not become deformed. However, if the bones are covered with flesh they tend to develop transverse fractures and marked deformation.

The burned skeletal specimens from G 1 exhibit both types of reaction to burning. The implication of this is that the burning was done in antiquity and almost certainly when people were still living at Bab edh-Dhra.

Because of the fragmentary nature of the bones, a comprehensive analysis of the specimens from G 1 will have to await reconstruction. Thus the data and conclusions presented here should be viewed as tentative. Estimates of the total number of individuals in the tomb may be obtained by counting the number of bones present of a certain type. The bone most frequently present in the analysis conducted thus far is the temporal. A total of 112 left and 97 right temporal bones have been identified in skeletal specimens. Since there are undoubtedly some examples where a left temporal does not have a matching bone from the right side, 112 should be viewed as the minimum number of individuals buried in the tomb. I would estimate that the actual number is probably about 150 individuals.

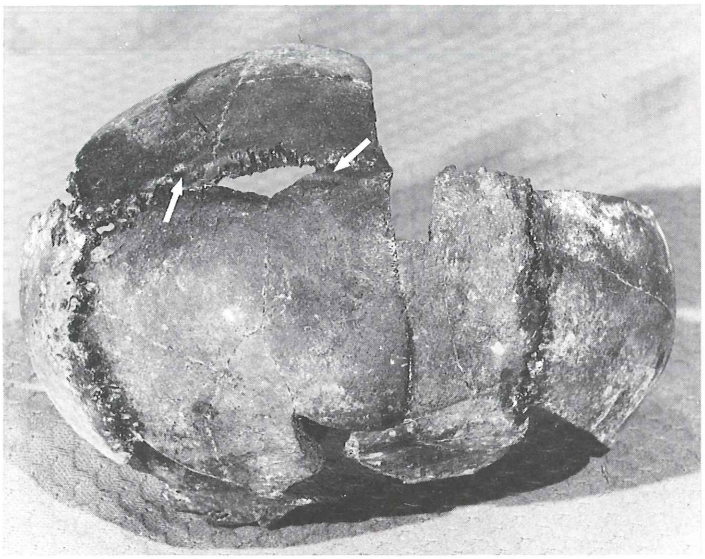
The age distribution cannot be determined as accurately on the temporal bone as on some of the other bones of the skeleton. Thus far I have obtained a crude estimate of the age distribution based on the mandibles (table 1). The minimum number of discrete mandibles is 88. Of these, 34 per cent are subadult specimens (under 18 years of age). Because of the disturbance of the burials I would expect the infant and early childhood age categories to be somewhat under represented since these skeletons are not preserved as well and are more likely to be overlooked during excavation.

Table 1 Age Distribution of the Mandibles from the G 1 Charnel House, Bab edh-Dhra, Jordan

	N	%	
Birth–1 year	5	5.7	
1–6 years	14	15.9	34.1
12–18 years	11	12.5	
18+ years	58		65.9
Total	*88*		

One of the most dramatic findings is the evidence of healed injuries to the skull in the G 1 specimens. Thus far I have identified three cases of what were undoubtedly axe wounds. The remodelling of the bone adjacent to the trauma clearly indicates recovery and long term survival. In two cases the axe had penetrated both tables of the skull and exposed the dura. In one of these (FIG. 2) the injury occurs in the posterior third of an adult male skull just to the right of the midline. This suggests that the blow may have come while the individual was trying to escape. The mark on the skull left by the injury includes a groove extending about 1 cm. on either end of the long axis of the open defect in the skull. Apparently the axe blow removed a portion of the parietal bone where it cut through the bone. The fragment was apparently broken loose from its connection with the left parietal bone at the sagittal suture at the time of the injury. In the bone surrounding the trauma there is evidence of slight healed porosity. This indicates the presence of inflammation probably due to the injury being complicated by a slight infection.

2. Top view of a partially reconstructed adult male skull from the G 1 charnel house. Notice the healed axe wound in the posterior third of the skull. The wound penetrated both tables of the skull and exposed the underlying dura. There is no evidence that the injury was in any way related to the ultimate cause of death. Arrows indicate trauma from the axe which penetrated only the outer table.



The second case is a small fragment of a parietal bone containing part of the defect produced by an axe wound. The trauma had penetrated both tables but not sufficiently to have threatened the brain directly.

The third case is seen in the skull of a young adult, probably but not certainly male. The injury is to the left parietal near the midline but affects only the outer table. The depression measures 3.7 cm. by 1.7 cm. and was probably produced by a glancing blow of the axe. There is no evidence of inflammation and the extensive remodelling of the bone indicates complete healing.

Conclusions

The presence of burned and deformed bones raises the possibility of cremation as part of the funerary practice at Bab edh-Dhra in the Early Bronze Age. The possibility of such a practice is supported by the existence of several charcoal lenses in the G 1 tomb. However, the fact that some of the bones were burned after the soft tissues had decayed indicates that such a practice, if it existed, was not done to all individuals. In my opinion a more plausible explanation for the existence of burned bones is vandalism involving the burning of the charnel houses.

It is possible that some cremations were done away from the tomb with interment in the tomb after cremation. However, the presence of burned undeformed bones and charring of pottery after the pots had been placed in the tomb, supports the conclusion that the combustible portions of the charnel house burned and probably did so on several occasions after repair of the roof. The variation in the reaction of the bones to burning is adequately explained as reflecting varying degrees of skeletonization of bodies in the tomb at the time of burning.

The reasonably conservative estimate of a total of 150 burials in the G 1 tomb suggests burial over an extended period of time. With a diameter of 3.7 metres, the total floorspace available for extended bodies would be 10.75 metres^2. If we allow a space 0.5 metres by 1.6 metres for a body this would permit simultaneous burial of no more than 13 bodies provided that nothing else was placed in the tomb. Clearly with the funerary gifts occupying considerable floorspace it is unlikely that more than five bodies would have been placed in the tomb at a time. However, since the soft tissue would probably have decayed fairly rapidly (within one year), the size of the charnel house would not have been a significant factor limiting the number of burials, in view of the practice of pushing earlier burials to the periphery of the tomb. The size of the G 1 charnel house would certainly be compatible with a family burial tomb.

The age distribution of mandibles is very close to that reported for the Early Bronze I A shaft tombs at Bab edh-Dhra (Ortner, 1979). The infant mortality of the G 1 tomb is probably underestimated. The overall frequency of subadult deaths is slightly higher than reported for the shaft tomb skeletons. If, as seems likely, subadult mortality is underestimated for the G 1 skeletal sample, the frequency of these deaths, in comparison with the Early Bronze shaft tomb sample, is greater. Schaub (1981; also see present volume) suggests that the Early Bronze I B phase marks the beginning of settled occupation in an open village at Bab edh-Dhra. With permanent settlements I would expect to find an increase in subadult mortality, since endemic infectious disease and the problems of infectious contagion increase in permanent communities. The evidence from the G 1 skeletal remains suggests that such an increase in subadult mortality may have occurred.

The evidence of axe wounds of the skull in the G 1 specimens is of interest particularly when compared with the skeletal remains from the Early Bronze I A shaft tombs. I have not found a single example of skull trauma of any kind in the Early Bronze I A shaft tomb specimens studied thus far. The only case of skull trauma from a shaft tomb is found in the north chamber of shaft tomb A 100 (Ortner, 1979). However, this particular tomb chamber is dated to the Early Bronze I B period and is thus contemporaneous with the G 1 skeletons.

Schaub (ibid) suggests that the development of walled towns in Jordan became a significant trend during the initial stages of the Early Bronze II phase. The need for such defensive structures may reflect what appears to be a marked increase in hostilities, as suggested by the axe wounds seen in the Early Bronze I B skeletons from the G 1 tomb. However, this conclusion must remain tentative. An alternative explanation might be that the G 1 charnel house is a family tomb with an unusually high number of members who were warriors.

Up till now the reconstruction of the broken skulls from G 1 has not progressed to the point where careful comparisons with other Near Easterns human populations are justified. I have, however, conducted some preliminary studies on a small sample of skulls from Abydos in Egypt. The Abydos skulls may be somewhat later than the G 1 skeletons but nevertheless are close in time and remarkably similar on the basis of studies conducted thus far. In view of the proximity of Egypt and the likelihood of contact with the people of Bab edh-Dhra such a similarity is not surprising and deserves a more careful evaluation.

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Paleo-Beduin and Transmigrant Urbanism

> 'Walking in the torrent bed at Ma'an my eyes lighted upon, and I took up, moved and astonished, one after another, seven flints, chipped to an edge; we must suppose them of rational, that is an human labour. But what was that old human kindred which inhabited the land so long before the Semitic race?'
>
> DOUGHTY, 1888

The answers came almost a century after Doughty's question: from Beidha nearby (Kirkbride, 1966) and Jericho (Kenyon, 1979), and more recently from Ras en-Naqb (Henry, 1979); and also from the semi-arid lands to the east. No desert has always been empty of mankind, or without relevance to the lands about it. This paper deals with such a region and its neighbours, and with a recognizable pattern as old as those seven flints of Ma'an.

I Paleo-beduin (FIGS 1–7)

During the post-Glacial period man probably lived in the Black Desert of Jordan, Syria and Saudi Arabia—the Basalt Barrier (Baly and Tushingham, 1971)—as early as 10,000 BC, if not before: some flint bladelets were found near caves in wadi Rajil near Jawa and Natufian material was discovered near Der'a in southern Syria (Cauvin, 1973). However, the bulk of physical evidence comes later, though precisely when has remained a mystery until now. The abundance of man-made structures in this 'desert' always implied a once intensive occupation, as noted by Rees in 1929: '. . . it is possible that it (the Black Desert) supported a large permanent population in some past period or periods.' He, among many others, referred to stone hut circles and the 'desert kites' and the only clues available then came from the beduin who said that these things in general belonged to 'olden times . . . the fathers of the fathers of our fathers already found them' (Aharoni, 1946); or, of 'kites', that 'these walls are not of the Arabs, but the Romans . . .' (Poidebard, 1934). Perhaps the best tale comes from Maitland (1927) who first published accounts of the 'kites'. His beduin friends referred to them as the 'Works of the Old Men in Arabia', possibly the pre-Islamic Arabs and folk before even them; in other words, the Paleo-beduin of Arabia.

In function the two structural enigmas, hut circles and 'kites'—the latter star-shaped enclosures with radiating stone walls kilometres long—are complementary, reflecting desert ecology: shelter and food production. It is possible therefore that more intensive study will demonstrate a direct link between them, evincing a highly organized and cohesive subsistence economy. The evidence most recently collected is fragmentary—hence evaluation most preliminary—but already evocative of a kind of prehistory in Jordan's Black Desert hitherto unsuspected (Betts; Helms, 1977a, 1980).

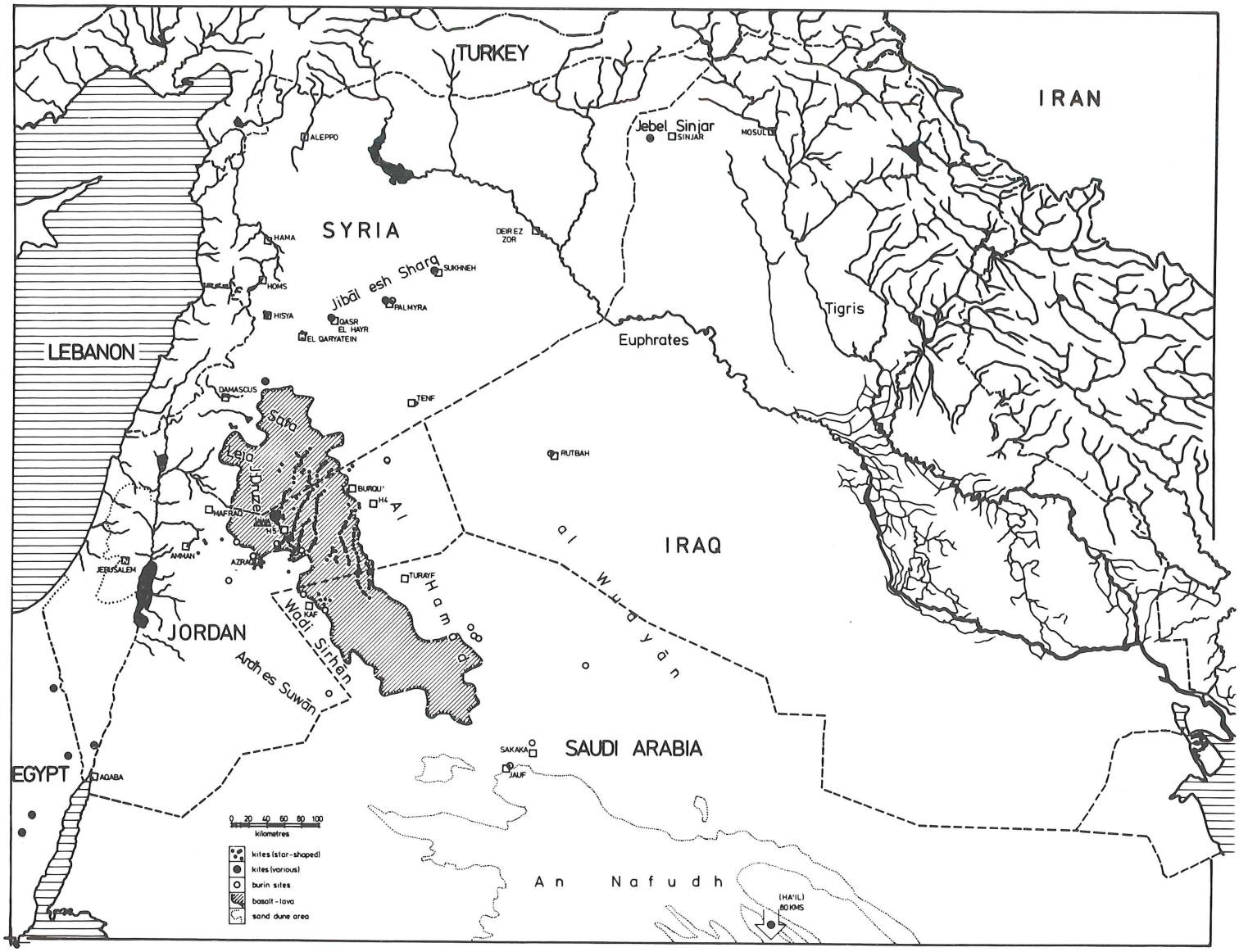
Beduin sites (B) (FIG. 3)
These represent most recent nomadic activity and might be considered as spanning the last thousand years. They divide into three types: camp sites with hearths and lines of stones to hold down the flaps of tents; hut circles and corrals (some very recent, others re-using older structures); and graves with cairns.

Safaitic beduin sites (S) (FIG. 3)
Often over-built by modern beduin sites (B), these are characterized less through artifacts (Roman/Byzantine ribbed wares) than through the profusion of Safaitic inscriptions and drawings about them. In building style they resemble the modern sites.

Hut circles and corrals without flint (C2) (FIG. 3)
Irregular clusters of sub-circular structures, they vary in size and complexity and also location, some lying on the basalt/mudpan margin, some on sheltered slopes and others on the tops of promontories. Their resemblance to site types S and B places them next in this tentative sequence.

'Jellyfish' (C1) (FIGS 3 & 4)
There are now several groups of these strangely formalized sites known in Jordan. They are regularly shaped, 20 to 50 metres across, usually made up of two concentric circles of low stone walling divided into segments by radiating walls.

1. Map: Middle East.



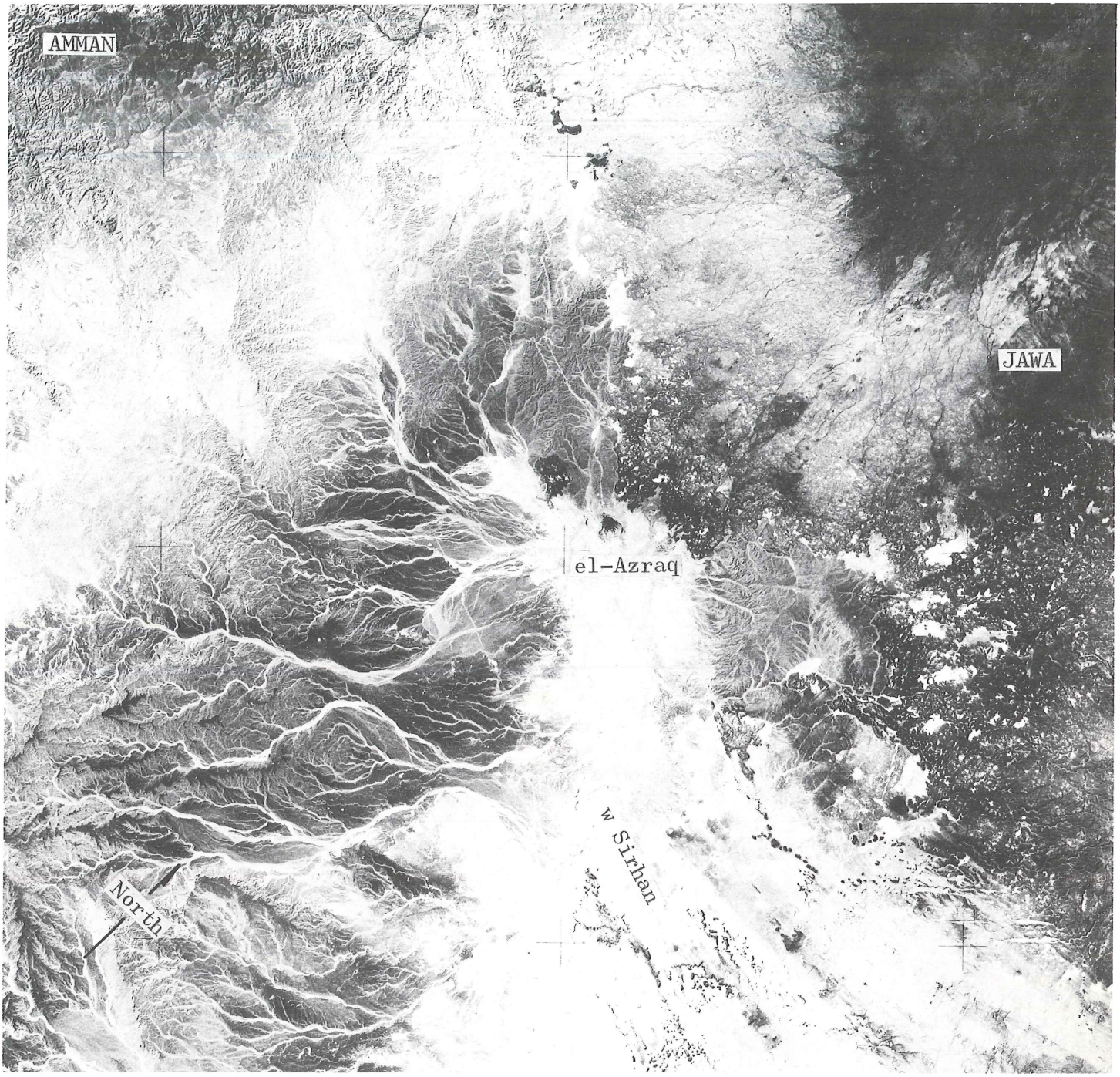
Some have hut circles attached to their outer ring and several have complicated entrances. There is no actual dating evidence available yet, but a very early date is suggested since the walls are low and eroded compared to the sites discussed so far, two examples incorporate 'kite' walls, one site (QMJ 14J) has burins (see below) inside it which would mean that it pre-dates the adjacent burin sites and finally, the 'architecture' resembles that of Munhata 3 (FIG. 4) dated in the Pre-Pottery Neolithic (B) period (PPNB) (Perrot, 1964).

Hut circles with flint (C2) (FIG. 3)
Their shape, layout and distribution is the same as the undated C2 sites noted earlier, but for the first time dating evidence was found. The C2 sites at Qa'a Mejalla (Betts) contain concave truncation burins (FIG. 5: 5–8) together with various types of awls, borers and scrapers of the PPNB period.

At wadi Dhobai (Waechter and Seton-Williams, 1938) identical burins are associated with naviform cores (also PPNB) and projectile points which are basically PPNB in form but with a rather more elaborate retouch (similar to the 'kite' points) which is normally attributed to the Late Neolithic period. In addition, these C2 sites also contain tabular scrapers, including one type said to occur only in the Late Neolithic (Moore, 1973). There are some tentative and rather dubious parallels with some of the Jawa flint assemblage (see below, FIG. 10).

Knapping sites (C3)
These occur mostly on hilltops and include scatters of waste, blanks, roughouts and cores. There is no associated architecture. Diagnostic artifacts consist of naviform cores and tanged points of the PPNB period. The cores are the same

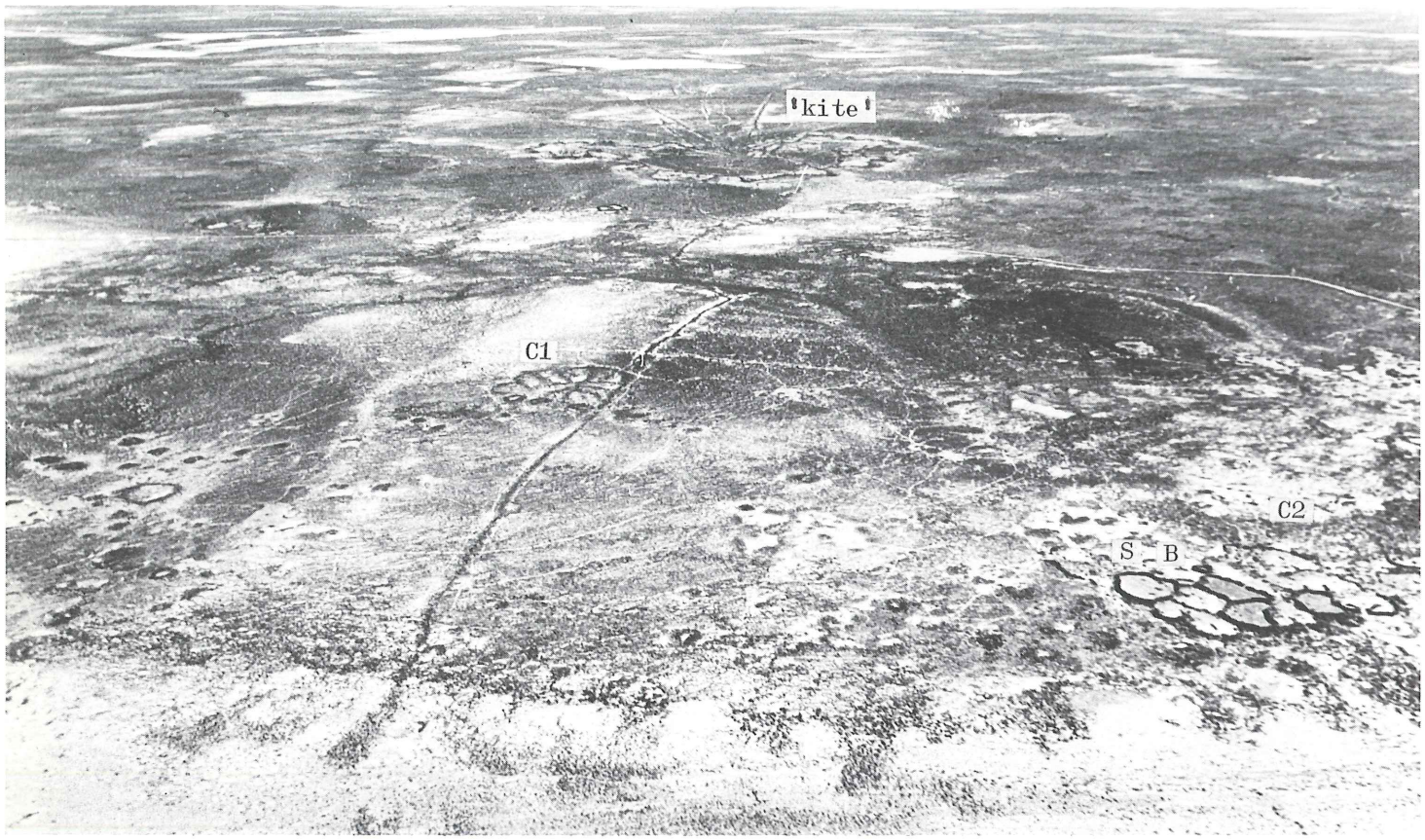
2. Skylab 1: 2, 820, 434 Jordan, Syria, Saudi Arabia.



as those found in wadi Dhobai, but the points—although the same basic type—are shorter in the tang and less carefully worked. They are therefore probably earlier in date.

Desert kites (K) (FIGS 4, 5 & 6)
Whereas the function of the sites noted so far is clear—the Neolithic ones certainly are the shelters and working areas of a semi-nomadic folk—that of the 'kites' has remained obscure throughout the long discourses that followed their discovery after World War I. Two views prevailed: the 'kites' were fortified corrals for domesticated animals (Rees, 1929; Kirkbride, 1946; Harding, 1953, Yadin, 1955, Eissfeldt, 1966; Ward, 1969); or they were gazelle traps of uncertain date (Crawford, 1929; Dussaud, 1929; Field, 1960; Meshel, 1974). Crawford quoted an appropriate ethnographic parallel from Burkhardt's *Notes on the Beduins and Wahabys* (1831) describing the gazelle hunt in the Syrian Desert which entailed leading animals along walls and forcing them to leap through

3. Sites B, S, C2 and C1.



gaps into a ditch. Many similar parallels have since been quoted, all pertaining to the hunt and all of them demonstrating, in general, the true function of the 'kites'. However, detailed application of much later ethnographic parallels can be misleading without field confirmation and in this lay a source of confusion.

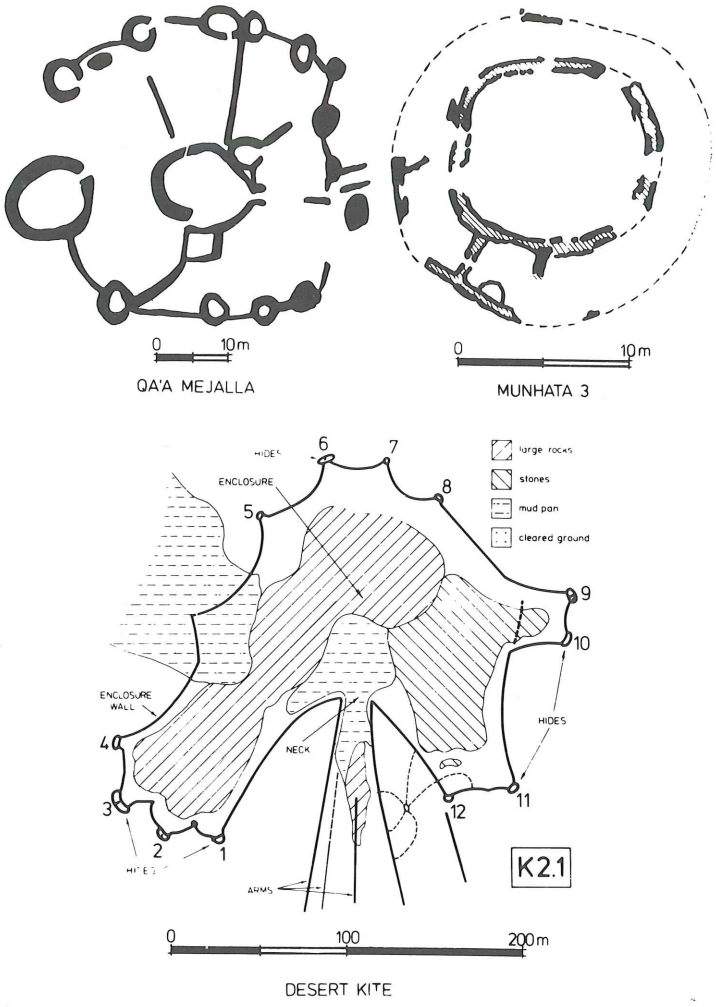
The 'desert kites' divide into two groups, in a very general way: small single-chambered traps, apparently the only type to be found in the Sinai peninsula (Meshel, 1974), but also encountered in Jordan at Jawa (Helms, 1975a) and elsewhere in the Black Desert (air photographs: NRA) thus negating the idea that two separate sub-species of gazelle were exclusive to each region (Meshel, 1974: *gazella dorcas* in Sinai and the Negeb Desert and *gazella subguttorosa* in Jordan); and second, large star-shaped enclosures c. 150 metres across with rounded protrusions and radiating arms often c. 2.5 kilometres long (average). The protrusions of the second group are not 'defensive embrasures' as argued by some, nor are they traps as Meshel has suggested, but simply—and logically—hides for the hunters. This is obvious even now: the hide walls facing the enclosures are higher than any others in these 'kites'. Gazelles would thus never be tempted to jump over them, no matter how intense their fear and panic.

The distribution of 'kites' remains a somewhat open study as does, to some extent, their use throughout time and only the second, larger types can be discussed further now (FIG. 1). There are a number of sub-types—this much is clear from air photographs, even the very early ones (Poidebard, 1934)—but one distinctive type, the star-shaped one, appears in chains according to our surveys. The radiating arms are linked to obstruct the westward migration of gazelles, to allow spotters (on knapping sites?) to predict their course and direct hunters to the relevant enclosures and hides. These chains of 'kites', very roughly, number between 8 and 10 and represent well over 1,000 individual 'kites'—or, roughly, about 4,000 kilometres of stone walls: c. 7 million tons of basalt which is about the weight of Kufu's pyramid at Giza. They span the central area of the Black Desert. Individual 'kites' of this type (at present not associated in chains or dated) reach as far as the Nafudh Desert of Saudi Arabia (Adams and Parr *et al.*, 1977) and as far north and east as Jebel Sinjar via Sukhneh in the Jibal esh-Sharq of Syria (Poidebard, 1934).

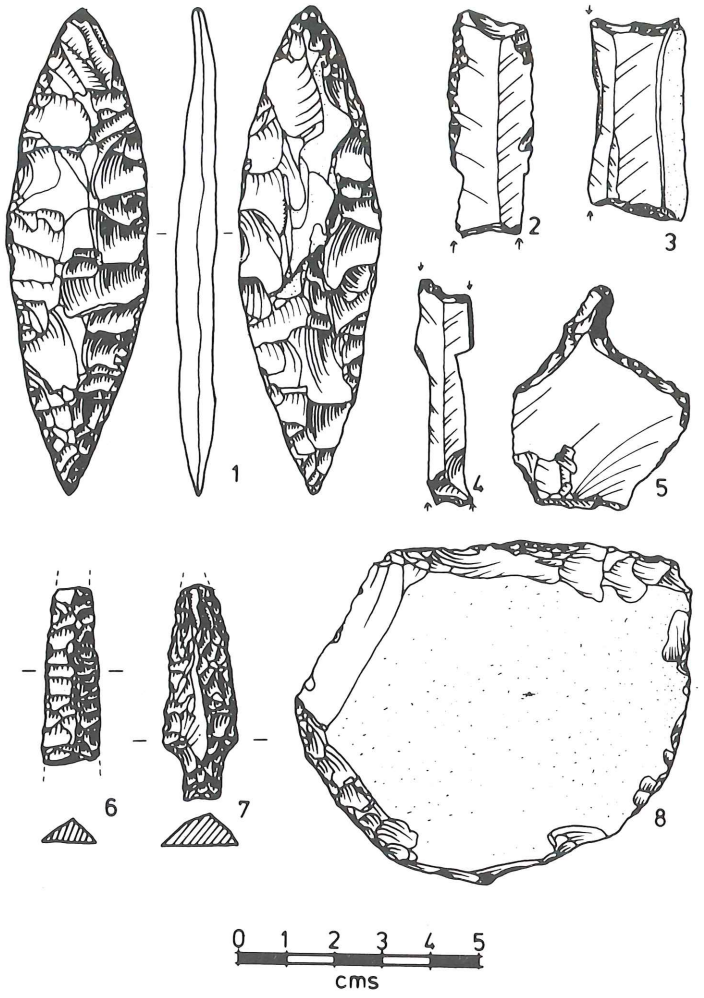
We have now dated some of these chained star-shaped 'kites' and at least qualified the Safaitic date proposed by Harding (1953) and the unsatisfactory interpretation of Yadin (1955) already properly countered by Ward (1969), and introduce a quite new idea of desert life.

A cache of spearheads was found in a 'kite' trap at Qa'a Mejalla (Betts) (FIG. 5: 1). These points are paralleled in the

4. Plans: Site Types C1, Munhata 3 and 'kite' K2.1.



5. Flint: Lance Point, Arrow Heads, Burins, Borer.



late 6th millennium Amuq A period (Braidwood and Braidwood, 1960) but due to the rather crude nature of working they could possibly be late PPNB. Farther north similar chained 'kites' near wadi Rajil produced projectile points from the enclosures where after all one would expect to find them (FIG. 5: 2–4). These show fluted retouch, again usually related to the Late Neolithic period, that is to the early 6th to late 5th millennium. However, they are also identical to points from wadi Dhobai, supposedly there stratified with PPNB burins. A general time span for the floruit of this broadly distributed 'kite' system then must be from the 7th to the 5th millennium.

We have therefore begun to reveal a highly organized system of hunting technology as well as—though as yet not strictly related—relatively dense semi-permanent settlements: a subsistence architecture in this semi-arid region of Jordan which implies a large cohesive paleo-beduin population between the 7th and the 5th millennia. At this time, during the Neolithic period, more permanent settlements based more exclusively on agriculture and perhaps also trade appeared in the verdant hilly flanks of the Taurus and Zagros mountains and at several oases beyond the Black Desert—in the hitherto much more fully documented Fertile Crescent. The almost timeless scene to be was set and remained essentially unchanged up to and well beyond Gertrude Bell's description of the 'Desert and the Sown' in 1907—and the relationship between the two regions is represented by the next chapter of prehistory in the Black Desert.

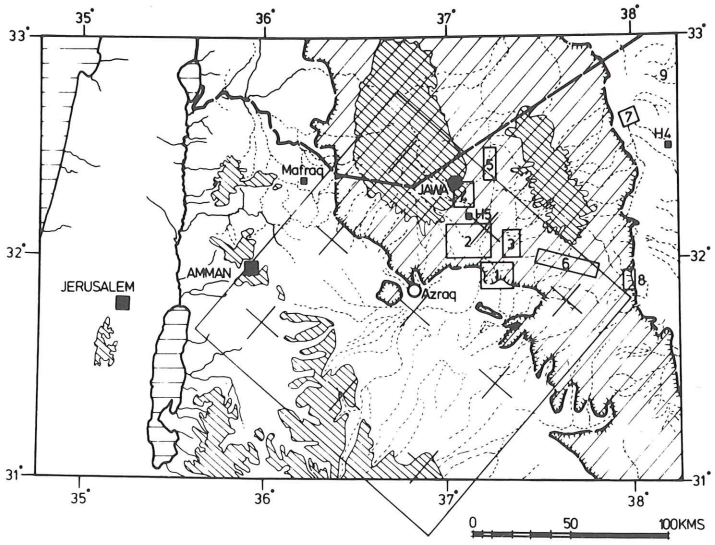
II **Transmigrant urbanism** (FIGS 8–14)

The hypothesis advanced here so far visualizes a large successful beduin population in the Black Desert up to the 5th millennium—that is up to the Late Neolithic period. We have absolutely no artifactual, datable evidence for human occupation from then on until the late 4th millennium. But just as we must accept a human 'continuum' from Safaitic times (AD: 3rd/4th century) to the recent beduin presence here without much tangible evidence, so must we regard the millennium between the floruit of the 'kites' and the advent of Late Chalcolithic/EB I Jawa (Helms, 1975a, 1976b, 1977a, 1980). Hypothetically however, we must also postulate a decline in population and explain this dominantly through the relatively

6. 'Kite'.



7. Map: Transjordan Survey Areas 1974–79.



unstable demographic equilibrium across the Desert/Sown interface: in this case an ever intensifying trend towards urbanism in the verdant regions east, north and west of the Black Desert. Thus by the late 4th millennium, while the first recognizable economic-urban systems had appeared in Mesopotamia/Syria, while a chalcolithic agrarian village culture still flourished in Palestine, the basaltic desert areas were inhabited by the heirs of the 'kite' builders. The paleo-beduin of that time were still living in much the same way: seminomadic, hunting, gathering, herding (perhaps), possibly practising ephemeral agriculture when the rains were good and trading across the Desert/Sown border as a minor part of their desert economy. They may even have taken their flocks into the more verdant areas.

The date of Jawa[1] is given by ceramic and lithic assemblages, the former having affinities with Late Chalcolithic Ghassul (IV), the so-called Proto Urban A and B or EB I tradition of Palestine, early Amuq G and Hama K of Syria (full analysis in preparation). The flint tools of Jawa bear no resemblance to the lithic material presented so far in this paper. They belong to the later stages of Ghassul in general and already include Canaanean blades typical of the Early Bronze Age (Duckworth, 1976)[2]. We are, therefore, dealing with a large and heavily fortified settlement of the late 4th millennium.

According to the essentially ceramic-based interpretation of later prehistory, this period was one of extensive migrations in the Near and Middle East; the first recognizable of many that have been part of the grand demographic pattern of these regions ever since. The causes are varied, but often of two fundamental kinds: natural disasters and man-generated violence based in greed. The former is essentially neutral though often explained mystically as divine retribution; the latter the fruit of developed economies, measurable in refugees (new ceramic typologies, for example)—a negative symbol of an aggressive urban imperialism. Thus the earliest accounts regarding the natural or supernatural causes and those man-made ones have described the pattern in folk tales which millennia later could be invoked successfully as prescriptive justification of yet another turn in the demographic cycle, to create the most recent migrations in the Near East.

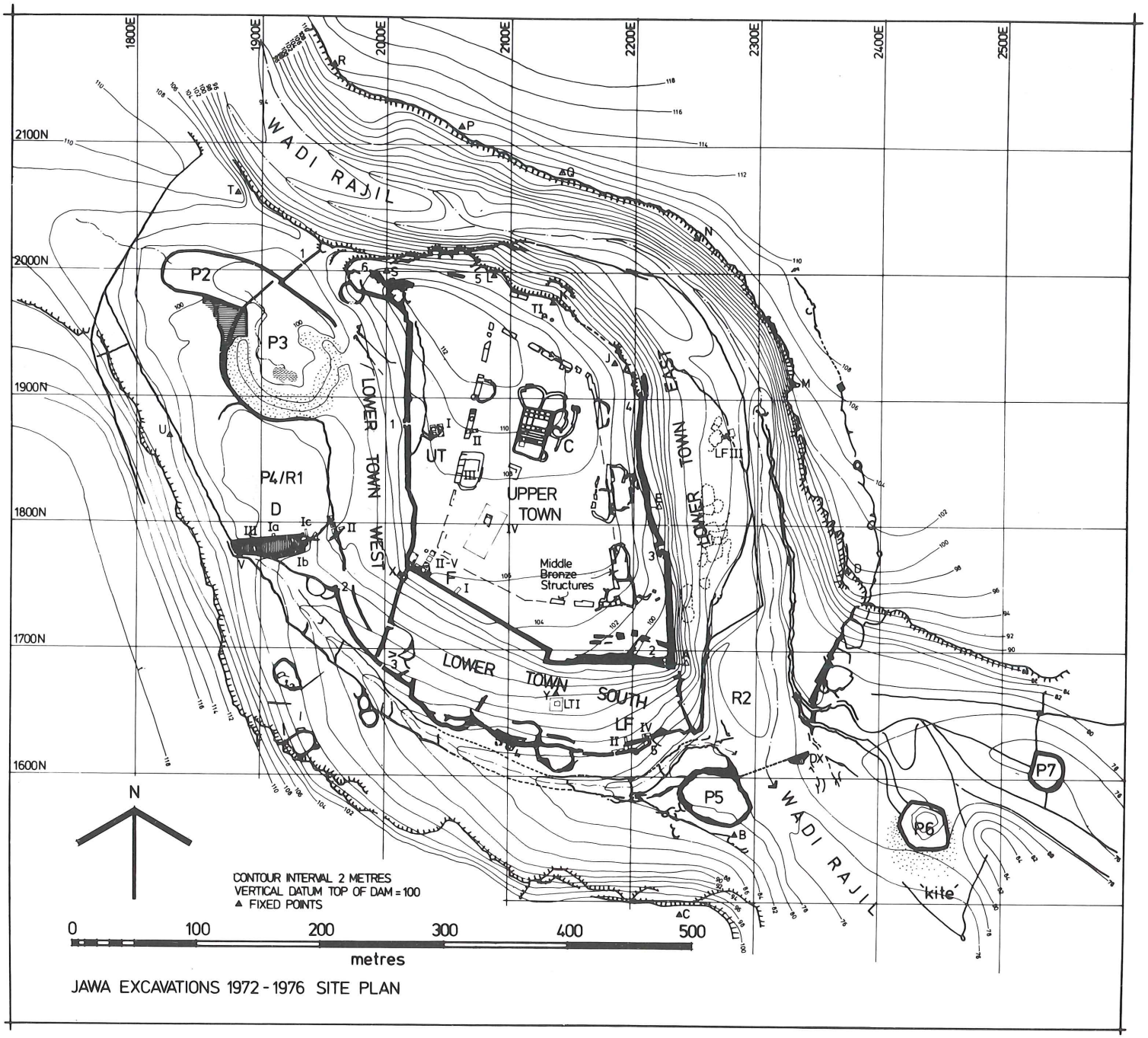
It is in this bleak but realistic light that we should look at Jawa in relation to the Black Desert: as the product of some prehistoric exodus that forced a developed, even civilized people to wander and settle, almost by accident, in a hostile alien land; to impose an urbanism, transplanting a way of life and grafting it onto the basalt region where nothing like it had ever been before and where later on in history all such grafts were the intrusive products of external cultures. Due to the accidental, even paradoxical nature of this large and apparently unique settlement of Jawa, because the people who built the town were themselves migrants of a kind (perhaps refugees) and because they stayed but a few years, we may call this stage of the story transmigrant urbanism.

That Jawa represented something quite new to the remnants of the 'Old Men' in Arabia is clear when we note the scale, scope and design of the heavy stone fortifications (FIGS

[1] The final study of pottery is being prepared and will appear in a second volume, *Excavations at Jawa: Technical Studies* (S. W. Helms, editor). Preliminary work indicates that close parallels exist with north Syrian assemblages such as that from Habuba Kabira (cf. Sürenhagen, D. *Keramikproduktion in Habuba Kabira*, Berlin 1978).

[2] The final analysis of flint tools from Jawa will appear in *Excavations at Jawa: Technical Studies*.

8. Jawa: General Site Plan.



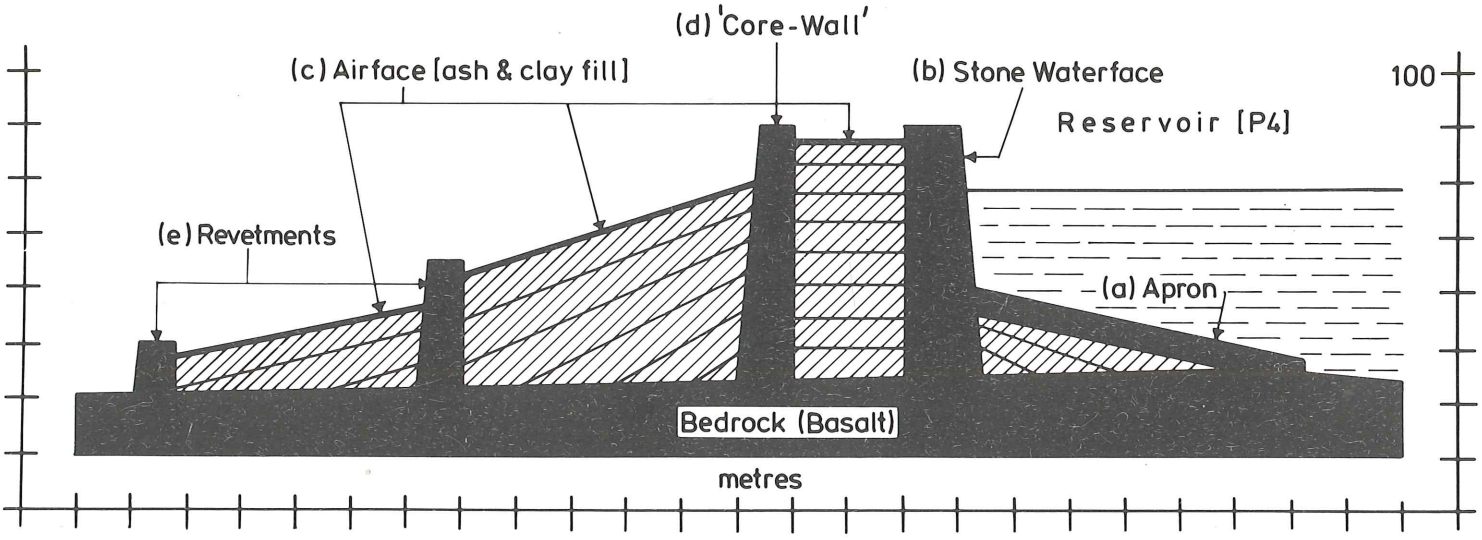
9 & 13). The walls of the upper town—the controlling centre of the founders (Jawaites, for lack of a proper name)—are an average of 4.5 metres wide and once stood at least 6 metres above the ground. Those of the lower three quarters were smaller, but of similar design, enclosing a total area—including the upper town—of about 100,000 square metres which, by Early Bronze Age urban standards of Palestine a few years later, ranks Jawa among the biggest urban establishments known (compare FIGS 17–19). There are, furthermore, over a dozen well designed gates, some of which represent a type of chambered gate not generally used in military architecture until the Middle Bronze Age over a millennium later. But the most fantastic aspect of this early town in Jordan's Black Desert is its water supply which must, according to the hydrological reality of the land, derive from short and fickle winter rains and be stored throughout the long hot summer.

Two catchments were combined at Jawa (FIG. 10) and it is a measure of that town's technological brilliance that both were essential despite the one being vastly larger than the other. Wadi Rajil—the macrocatchment (MC)—originates in

9. Jawa.



10. Jawa: Dam D1 (Schematic Section).



Jebel Druze, covers about 300 square kilometres and today receives an annual precipitation of c. 245 millimetres which amounts to c. 70 million cubic metres of water entering the catchment in an average year. It has been estimated (NRA) that about 2 million cubic metres of water are discharged annually at Jawa. The microcatchments (mc) consist of several deliberately linked areas next to the town site (System I) and two separate areas (Systems II & III) whose dimensions and yields may be summarized as follows for an average annual precipitation of 150 millimetres.

Syst.	(mc)	area (ha)	slope (%)	runoff (m^3/ha)	yields (m^3/yr)	sub-total
	C1	38	2.5	200	7,600	
I	C2	98	2.3	150	14,700	39,550
	C3	115	2.6	150	17,250	
II	C4	16	6.7	220	3,520	
III	C5	143	6.0	160	22,880	
Total					65,950	

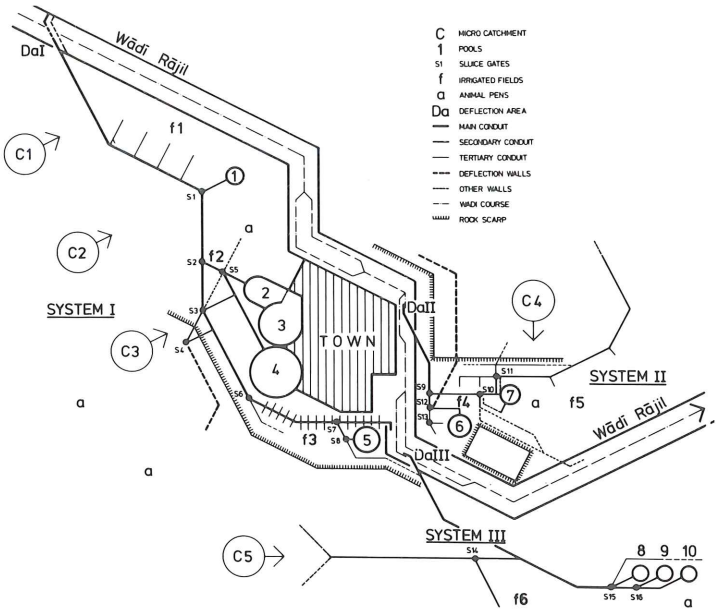
The general principle of the water system of Jawa is shown in FIG. 7. Water from the macrocatchment is deflected by dams from wadi Rajil into three separate systems of gravity canals leading to storage areas. These canals also form the baseline of the various microcatchments, all of which are supplemented by deflection walls along watersheds and cliffs in order to redirect surface runoff. In system I, the largest because it supplies the municipal water storage area (P2, 3, 4), the canal is capable of discharging water into fields as well as into animal watering points: for example, a subsidiary canal leads from sluice gate S1 to an underground cistern formed in a lava-flow cave; a by-pass or spillway leads water past storage area P4 to a second animal watering point at P5. Similarly the canals of system II run via sluice gate S9 to either animal watering point P6 or P7. System III is devoted to irrigating fields below the canal and supplying animal watering points P8, 9, 10.

Jawa not only represents an advanced knowledge of hydrology and hydro-dynamics but also an understanding of water conservation and probably also an appreciation of sanitary science by the careful segregation of human and animal watering points. This is something that stands in some contrast to the later Early Bronze Age Systems, as we shall see.

Stone pens and corrals (a) are sited next to the animal watering points and just below the cistern P1 stands a large rock upon which is carved a herd of cattle. We may (cautiously) relate these illustrations to late fourth millennium Jawa since the faunal remains of the site include a percentage of *bos taurus* (8.5 per cent) which, in terms of dietary importance (relative weight of meat per animal), exceeds even the ubiquitous sheep/goat (Köhler).

The task of storing water through the dry season—up to seven months or more—is a challenge, even in modern times. Obviously the Jawa system functioned, if only for a short

11. Jawa: Schema of Water Systems.



time, and so we must add another feather to the Jawaites' prehistoric technological cap by stating that the dams of the site were amazingly successful and even modern in structure. They consisted of a stone water face above an apron, a stone corewall and earth/ash fill (low terminal infiltration rate) and a stone revetted earth/ash airface (FIG. 10). Storage capacities have been estimated as follows, where V is the absolute capacity, VA the corrected one for animals, VH the corrected one for human beings. Volumes are in cubic metres.

	pool	area (m^2)	V	VA	VA total	sub-VH	VH total	sub-system total
total								
	01	—	500	500		—		
	02	2,300	5,994	—		4,000		
I	03	5,000	21,749	—	4,300	15,500	42,000	46,300
	04	8,400	30,821	—		22,500		
	05	1,660	4,989	3,800		—		
	06	1,250	3,771	2,800		—		
II	07	530	1,325	1,000	3,800	—		3,800
	08	380	950	700		—		
III	09	280	707	500	2,000	—		2,000
	10	430	1,075	800		—		
Totals					10,100		42,000	52,100

So much measurable evidence is available that we may attempt further calculations. We may, for example, estimate a relatively sound population range for the fully developed town based on average dwelling unit area. This gives a figure between 3,000 and 5,000 people. From this, based on analogous data (Evenari *et al.*, 1971), an average monthly consumption rate can be derived (taking the higher population) which is about 1,200 cubic metres. Animal consumption, weighted according to the percentage of species present,

would boost this to a total monthly requirement of 1,800 cubic metres.

Given the data regarding average annual water yield (mc + MC), the storage capacities and consumption rates, could all of this really have worked? It obviously did, for the ruins are there to prove it. But may we reasonably apply modern climatic data (NRA) to a time over five thousand years ago in order to test the systems as we have discovered and partly reconstructed them?

We assume that the Black Desert was then as it is now: that during the last five thousand years fluctuations in climate may have occurred, but no major changes. Certainly the formation of this volcanic land partly supports this (Bender, 1968). If we then do this and test the evidence, the results are as follows, demonstrating one of the first and earliest yet analyses of man's hydro-technology by reconstructing the water balance of ancient Jawa.

The basic water balance equation is: Inflow = Outflow ± Δ Storage which, adapted to Jawa's life support systems becomes:

$$mc_s + mc_i + MC_s + MC_i = E + C + I \pm \Delta St$$

where $-_s$ represents water meant for storage, $-_i$ water for irrigation, mc and MC the micro- and macrocatchments respectively, E losses (mainly evaporation) weighted according to probable monthly totals, C the animal/human consumption rate (1,800 $m.^3$), I the total irrigation requirements and St the end-of-month storage in the various pools and reservoirs.

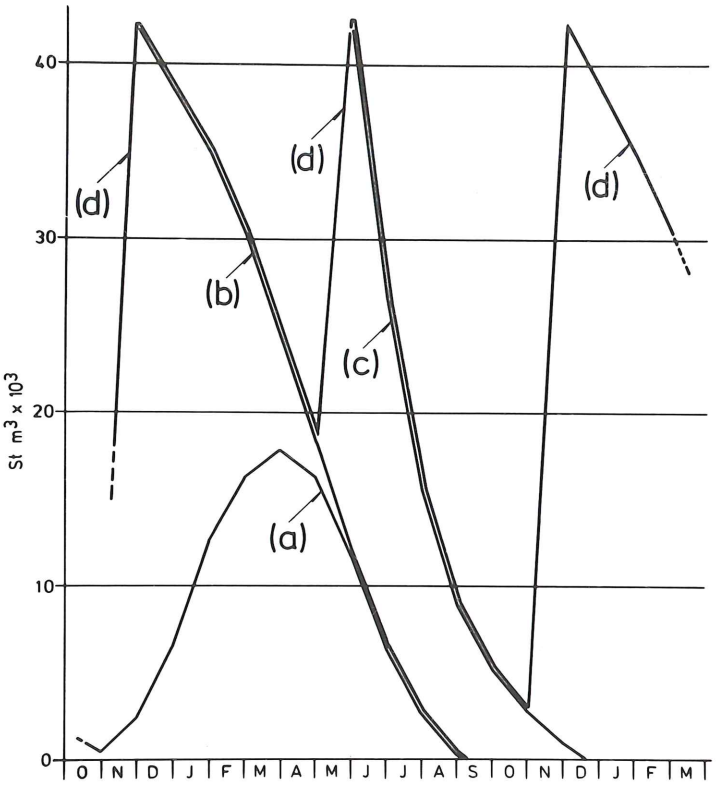
To show the interdependence of the two separate catchments as well as the probable behaviour of discharge at Jawa, four hypothetical situations may be cited:

a) mc − (E + C): water yield from microcatchments alone;
b) MC^{no} − (E + C): water yield from macrocatchment alone, November flood;
c) MC^{my} − (E + C): macrocatchment alone, May flood;
d) $MC^{no} + MC^{my}$ − (E + C): macrocatchment alone, November and May floods.

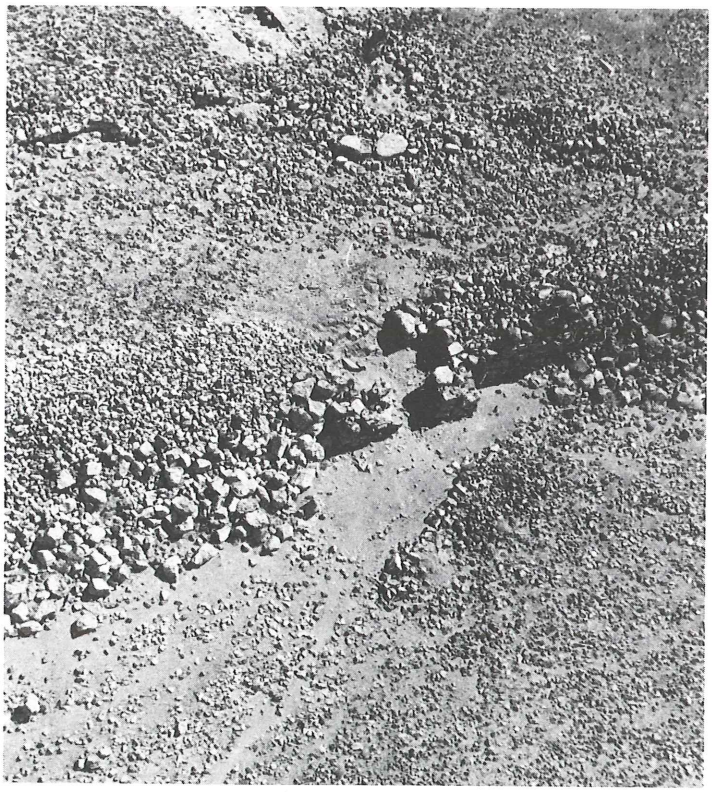
We note that only situation (d) avoids failure (FIG. 12) and that only because of an unnaturally biased distribution of peak floods in wadi Rajil. But when the two catchments are combined and their input as well as losses are weighted according to probable quarterly totals, the following estimate (see table) of Jawa's optimum water balance is achieved regarding system I, the most vital to the ancient town.

The archaeological/structural evidence at Jawa implies that this high and successful level of technology was achieved in a very short time—perhaps no more than two or three years—and that it soon disappeared. Among several proofs of this are two dominant facts. The upper town of Jawa was attacked: walls were breached in the west and south sectors and this was followed by a short period of re-occupation without any marked changes in material culture (FIG. 13). Second, the water systems were 'renovated' to accommodate a larger

12. Jawa: Situations (a) to (d).



13. Jawa Fortifications.



quarter	month	mc totals	INPUT						OUTPUT					±ΔSTORAGE	
			mc_s		mc_i	MC_s		MC_i	E		C		I	St	
			H	A		H	A		H	A	H	A		H	A
I	N D J	18.24	05.81	01.39	11.04	—	—	—	00.85	00.29	03.48	00.75	11.04	03.00	01.15
II	F M A	17.56	09.04	01.80	06.72	44.43	03.82	12.24	19.54	02.20	03.48	00.75	18.96	33.44	03.83
III	M J J	01.42	00.72	00.70	—	—	—	—	22.25	02.86	03.48	00.75	—	08.44	00.91
IV	A S O	02.33	01.06	01.27	—	—	—	—	04.50	00.63	03.48	00.75	—	01.52	00.80
		(39.55)	16.63	05.16	17.76	44.43	03.82	12.24	47.14	05.98	13.92	03.00	30.00		
					100.04						100.04				

(amounts in $m.^3 \times 10^3$)

population but this new scheme failed principally because it departed from what had gone before. Therefore we conclude that a human tragedy occurred at Jawa near the end of the fourth millennium and that quite possibly a second stage of migration ensued for the technocrats of Jawa, leaving their advanced life support systems in the hands of the latter day 'Old Men' in Arabia.

In a very short time indeed—especially for prehistory—part of the great demographic cycle repeated itself on an albeit small scale and, it seems, a 'civilized' people twice dispossessed once more set out to wander in the wilderness, taking their idea of a city with them.

III **The desert** (FIG. 14)

Jawa had no apparent effect on the life style of whatever nomadic folk continued to live in the Black Desert. The life support systems of the site failed and whoever had inherited or conquered Jawa, lost interest and returned to the more normal way of the desert. Thus again the cycle: the Jawaites continuing in search of their lost city; the semi-settled beduin returning to the nomadic life they had known before the transmigrant intrusion.

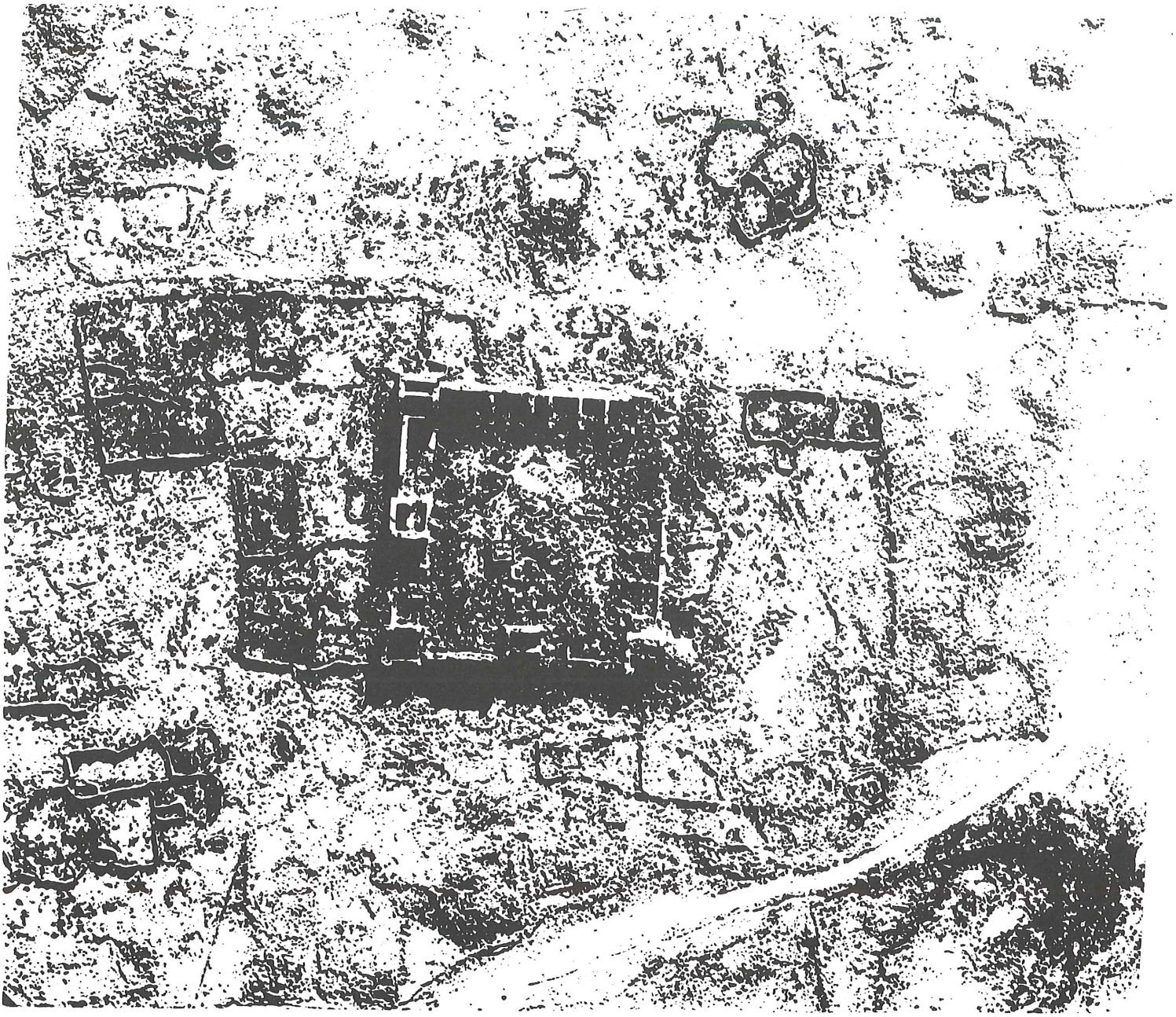
We suggested earlier that the archaeological evidence to hand implied a decrease in human activity during the millennium preceding Jawa. Now, after Jawa and into the third millennium, there is again virtually no recognizable human presence in the Black Desert and yet—as always—we must accept that no semi-arid lands are ever entirely empty. This negative evidence then could be understood as a further population decrease and one very obvious causative factor in this would be the increasing urbanism in the verdant areas of the Near and Middle East. In other words, the equilibrium between the Desert and the Sown was tipped more strongly (and irreversibly?) towards the static, nucleated, agrarian, mercantile style: accommodating and, of its own, generating more people.

In the desert, after Jawa's brief transmigrant urban interlude, the pattern of urban-based intrusions can be seen to continue, Jawa merely being the first of many. Albeit they are few in the early periods and long between, but they also demonstrate a part of the grand scheme.

At Jawa itself we have the ruins of a Middle Bronze Age complex (FIG. 8) made up of a centrally placed two-storeyed 'citadel' with roofed corridors and cells, surrounded by broad-roomed houses with forecourts describing a rough pentagon. This complex was never a town, though urban in origin: it was rather a caravanserai, presumably one of many on the internal desert route from the southern Levant to northern Syria (Dubertret and Dunand, 1954/5). Middle Bronze Age Jawa demonstrates the first known example (in Jordan) of a new kind of urban-based desert activity. Whereas Late Chalcolithic Jawa was an accident of time, water and space, the 'citadel' complex was a planned, deliberate, civilized, almost proto-imperial creation whose subsequent development in the Black Desert led to the Roman/Byzantine limes, Umayyad castles and finally, during the thirties of this century to the creation of Jordan's Arab Legion whose forts, so like the older castra, are still welcome landmarks in the land today.

These limes were defending borders as well as communication routes as much against the independent beduin tribes as against whoever the current international (urban) enemy may have been. The ancestry of the beduin—at least in life style—can now be traced back to the Neolithic 'Old Men' in Arabia as early as the 7th millennium. At that time the nomadic population may still have been greater—in both

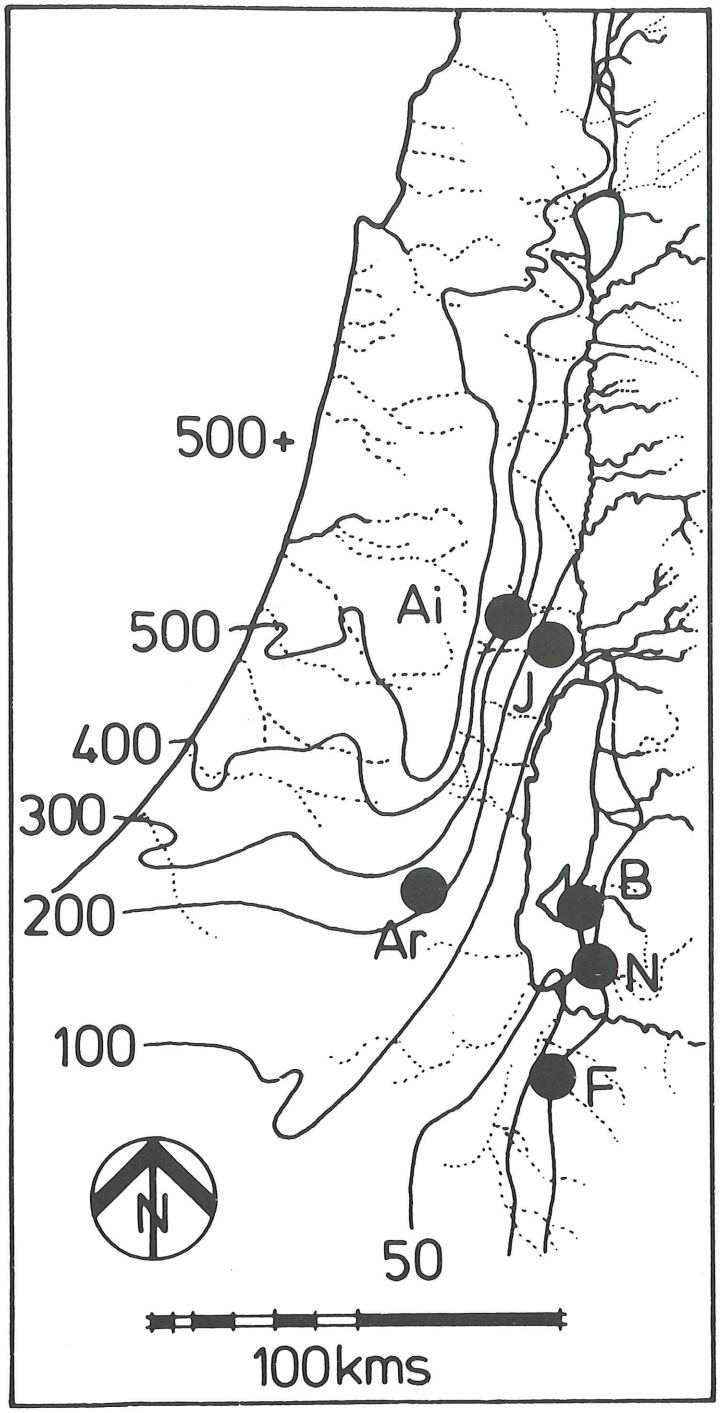
14. Deir el-Kahf (after Poidebard).



semi-arid and verdant regions—than that of the recently established permanent settlements. The continuing presence of beduin after Jawa is not evidenced until the Nabatean/Roman period when the semi-literate Safaitic tribes began to leave their messages on the black basalt boulders (Macdonald). Many of these inscriptions refer to the 'rumi', a generic term beginning as Roman qua Roman but later meaning any of the intrusive urban folk and their soldiers from towns like Bosra, Salkhad and Umm el-Jimal. Such towns, some perhaps going back in date as far as the Iron Age, were the first since Jawa. After over 2,000 years urbanism (not transmigrant but transilient) was encroaching upon the northern, better watered regions of the Black Desert. Over 2,000 years later most of these lands were still in the control of the beduin. Poidebard's photograph of Deir el-Kahf in 1931/2 (FIG. 14) shows hut circles encroaching on the ruined castrum: since then this place has slowly become the nucleus of a village—the modern equivalent of the castrum a few hundred metres away. Deir el-Kahf, like so many similar sites, thus symbolizes the apparent end of the cycle that began as an unstable equilibrium between the mobile and the static forms of life over 10,000 years before.

As a measure of technological progression within this sub-region, let us note briefly modern use of water resources

15. Early Bronze Age Towns and Isohyets.



near Deir el-Kahf (FIGS 2 & 7) and compare this to Jawa, less than fifteen kilometres away in space and over 5,000 years in time. Jawa diverted water from wadi Rajil for storage in reservoirs: beside the source. The wadi Rajil catchment ultimately contributes to the lake in the Azraq basin whence water is now pumped back to Deir el-Kahf, to be stored in water towers for distribution among the recently settled beduin.

IV **The sown** (FIGS 15–19)

Closer again to prehistory, we might finally examine what can be called the technological legacy of Jawa; whether it was a directly transmitted one via that place or not. Jawa represents historical technical precedent in relation to the first general urban stage of Palestine during the Early Bronze Age. The hypothesis here is that the builders of Jawa were but a small group among many that archaeologists suspect entered the Jordan Valley region about the turn of the millennium, and that they represent generally—not specifically—the diffusion of a developed technology already current in Syria/Mesopotamia and presumably Egypt, without prejudice toward any indigenous technical innovations that are the natural products of continued settled life.

Two basic aspects of the new Early Bronze Age towns are relevant here: fortifications, particularly the rampart, and municipal water supply. For the former compare the profile of dam D1 at Jawa (FIG. 11) and EB II ramparts at Tell el-Far'ah (N) (de Vaux, 1961, 1962) and Tell Ta'annek (Lapp, 1964, 1967, 1969). In all cases we are dealing with similar soil mechanics and structural matrices: revetments, corewalls (re-use of previous constructions) and selected soil fill (see also Paar, 1968; Helms, 1977b, 1975b, 1976b).

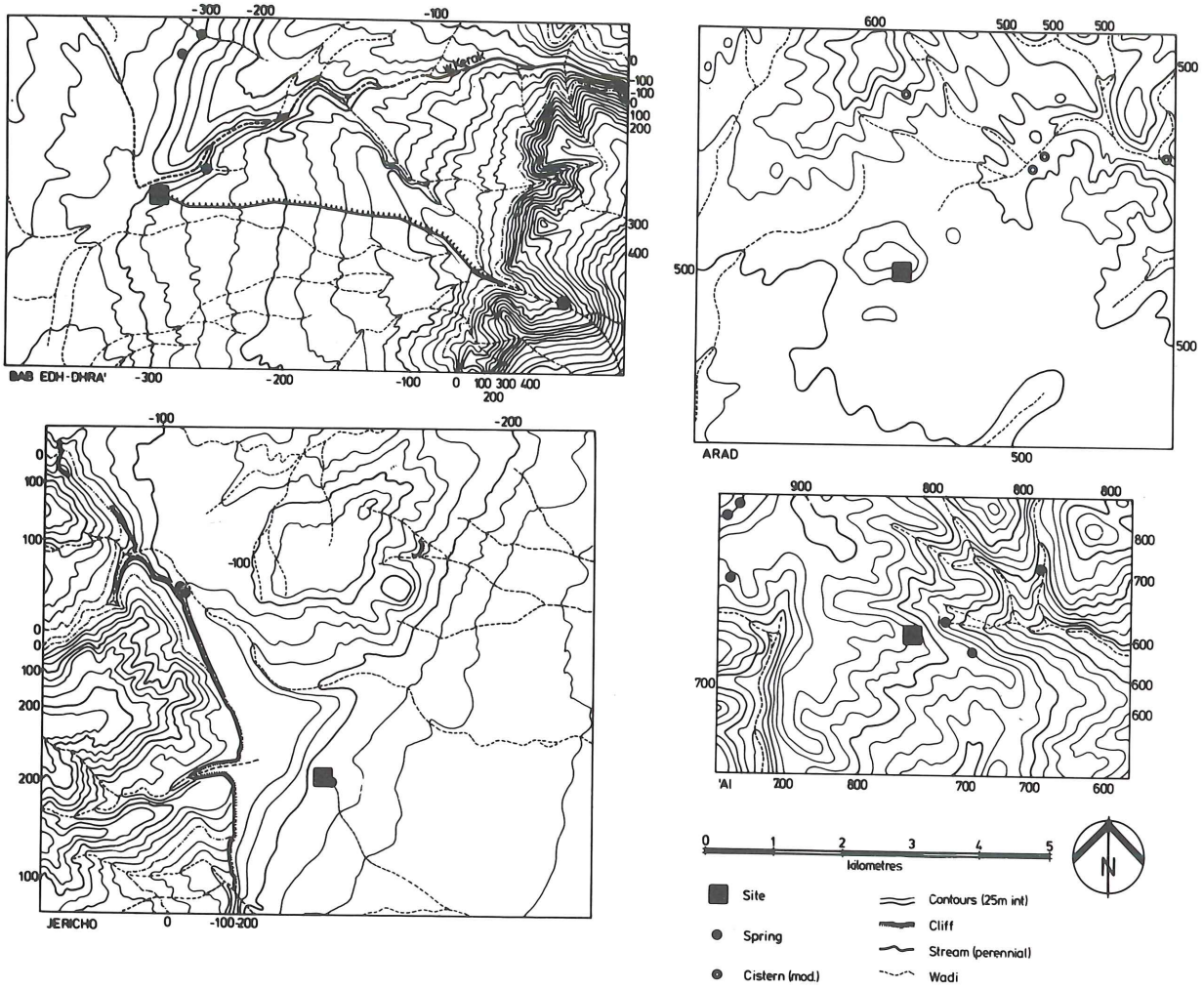
However, the most poignant comparison lies in the Early Bronze Age water systems (FIG. 9) which we can now interpret more fully with the precedent of Jawa whether, as noted, that place and its people had anything directly to do with it or not.

Bab edh-Dhra' (B) (FIG. 16)

The site lies beside the deep wadi Kerak, on Dead Sea marl, in a region of low annual precipitation. The wadi was always an inconvenient water source, especially during siege, because of its steep slopes. Today a spring exists just north of the site and may once have lain higher up, though still well without the fortifications. In other words the water source, as at Jawa, was extramural. Topographically Bab edh-Dhra' allows for some speculation about the internal arrangements of the settlement. This was first suggested to me by Paul Lapp's excavations at the north end of the site (Lapp, 1968) where he noted that the interior of the town was lower than the land to the east and that the fortifications stood on a permeable gravel bed. The notion then was that the site once had man-made reservoirs (Helms, 1976b). This was before the excavations at Jawa. Topography and precedent now combine to make this line of reasoning at least a possibility.

Indications of internal water storage are supported by looking just a little beyond the site. About 6 kilometres east lies the strong spring of Dhra' which drains into wadi Kerak. There is little doubt that this was so during the Early Bronze Age because a small Neolithic site was found just above the stream bed. Today water is diverted from near this point along a concrete gravity canal to fields. An older though still modern version of this canal still flows within less than 1,000 metres of Bab edh-Dhra'. Evoking Jawa: the proposed Early

16. Maps: Bab edh-Dhra', Arad, 'Ai (et-Tell), Jericho.



Bronze Age water system (as early perhaps as the first settlement) would consist of an earth and stone lined gravity canal from the narrow gorge of Dhra' to the town, under the north wall—perhaps as suggested by Lapp—and into one or more reservoirs. The storage areas would lie along the cliff of wadi Kerak, they would be revetted as at Jawa and probably be supplied with a spillway. The principles are the same as Jawa's and essentially simple: deflection—this time of a much more reliable source—into canals and storage behind heavily revetted earth dams. Similar systems may have been used at the other Early Bronze Age sites recently surveyed and excavated to the south (Rast and Schaub, 1974, 1976).

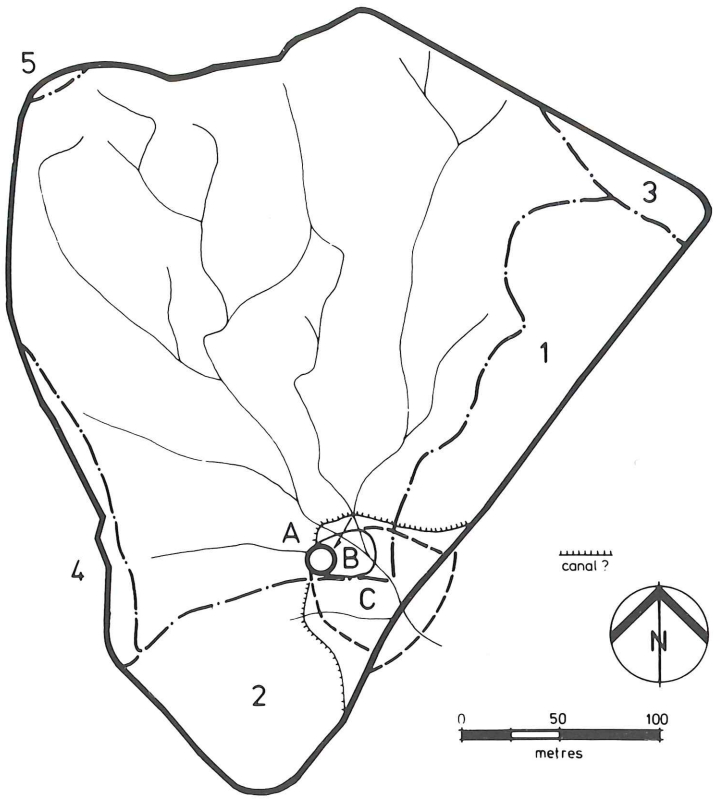
Arad (Ar) (FIGS 16 & 17)

The site, 27 kilometres south of Hebron, lies in a semi-arid zone at the northern edge of the Negeb Desert (c. 200 mm./yr.), on shallow soil overlying chalk whose form not only made it a suitable site for defence but also for water supply. The most recent account of the water system is incomplete and confusing (Amiran, 1979). However, enough information survives to describe the principle involved. Here one must recall another aspect of the Jawa precedent, the use of surface runoff after rain and its storage against the dry season.

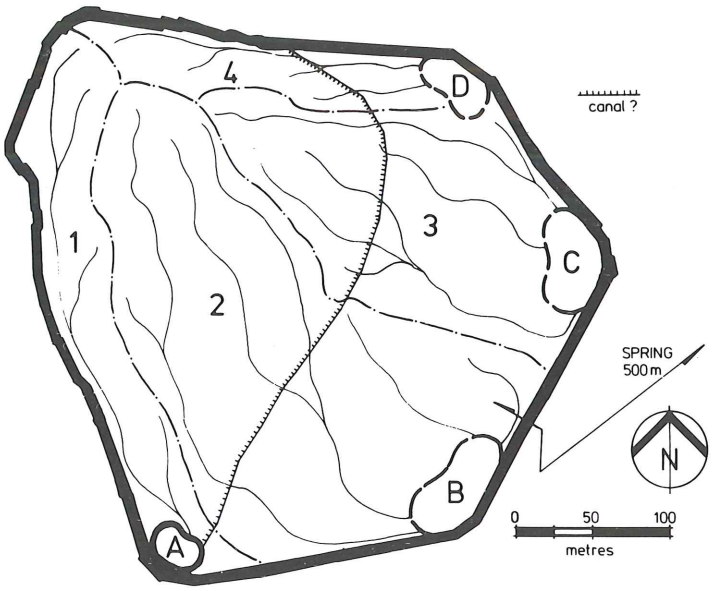
Topographically Arad forms a three sided bowl, a natural catchment or basin with a depression at its lowest point. There the excavators first proposed, now—presumably—found evidence for a reservoir. Measurements published so far are unreliable, as are the attendant calculations. Rosenan (Amiran, 1979) cites an annual runoff yield from the entire basin (area c. 90,000 m.^{2}) of 2,250 cubic metres in a drought year (100 mm./yr.) and considers this to be enough for 2,000 persons (for one year). Several errors include the following:

a) not the entire basin drains into the depression (micro-catchments 1–5) unless canals were built—especially to tap mc1 and mc2;
b) losses due to evaporation are given as 300 m.^{3} from a total input of 2,250 m.^{3}: far too little for this region if water is stored in an open reservoir;
c) even if c. 2,000 m.^{3} of water were available (in a wet year) a simple calculation (i.e. mc – (E + C)) shows that the

17. Plan: Arad.



18. Plan: 'Ai (et-Tell).



end-of-month storage curve reaches zero well before the next rains;

d) no allowances are made for other 'losses': none for animal consumption.

Nevertheless the water system of Arad did apparently rely on surface runoff, but it is not clear whether structural provisions were made to control the direction of flow (canals), whether such provisions were extended to augment runoff rates (open, specially treated catchment areas), whether any sanitary considerations ever entered the planning, or whether we are dealing with interflow as well as surface runoff collecting in a natural depression. In general principle Arad resembles Jawa: but many questions arise regarding the kind of settled life that was possible at the site if runoff was the only water source. Once more reliable data are available it may, for example, be possible to show that either larger reservoirs were built (FIG. 11: B, C) or that the scarcity of water required control and budgeting (as at Jawa)—hence social organization of truly urban proportions—and that a part of the population and their flocks were meant to quit the town in the dry season. Arad might turn out to be an example of urban-based transhumance during EB II.

'Ai (et-Tell) (Ai) (FIGS 15 & 18)

Two aspects of Jawa combined at this Early Bronze Age town north of Jerusalem: runoff exploitation and deliberate storage. Callaway (1975) found part of a stone and earth lined and revetted cistern or reservoir at 'Ai (EB III) which he reported could hold c. 1,800 cubic metres of water and was 'designed to capture rainwater channelled from the upper city'—and, again, this amount is said to be enough for a minimum population of 2,000.

The reservoir (FIG. 18: A) is situated at a curve in the fortifications which, reinforced with stone and clay, served as the dam. We are reminded of the revetted pools and reservoirs at Jawa and conversely have a good parallel for the proposed reservoir(s) at Bab edh-Dhra' discussed above. We note, moreover, that water system and fortifications, both naturally part of military town planning, are structurally combined here at 'Ai.

This valuable new evidence may be taken further simply by analyzing the catchment at 'Ai. Two features emerge. First, the catchment may be divided into four microcatchments (FIG. 18: 1–4) and only mc1 serves the known reservoir at the southwest corner of the town, unless a canal was built, as shown here, to incorporate parts of mc2, mc3 and mc4. Second, the form of the urban fortified container at the known reservoir and point of microcatchment discharge is repeated three times: at the southeast, east and northeast corners. We may thus propose the existence of three similar reservoirs (FIG. 18: B, C, D) of which the first two were probably larger because of the size of the corresponding microcatchments. Therefore a storage potential of well over 8,000 cubic metres is achieved. The Early Bronze Age town of 'Ai was thus a well-watered place for it also had a spring some 500 metres beyond the east trave of fortifications.

What is significant in the sense of military and town planning is that internal water storage was deemed essential—even in a relatively verdant area. At Jawa this was a dire necessity imposed by desert hydrology; at 'Ai it was perhaps more clearly dictated by man's potential agression.

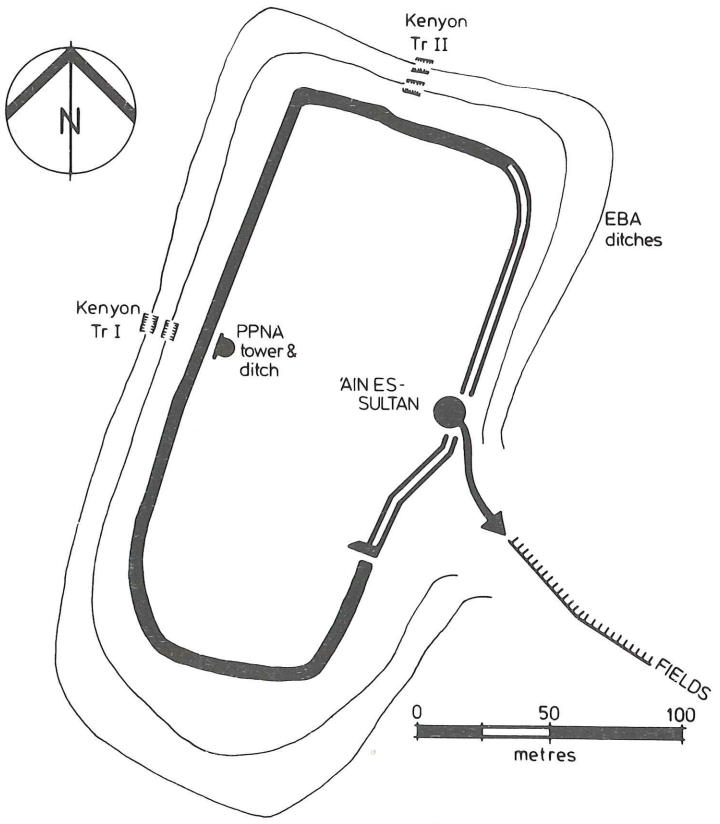
Jericho (J) (FIG. 19)

Until recently the spring of 'Ain es-Sultan was strong and steady, flowing at a maximum rate of 0.37 cumecs after heavy rain in the hills to the west, 0.26 cumecs in the dry season (Dorrell, 1978). This makes Jericho almost a hydrological anomaly in Palestine. The 'uniqueness of Jericho' in a semi-arid zone is due to this and therefore the water system of any settlement at the site remained unchanged in principle ever since the Pre-Pottery Neolithic (A) period (c. 8000 BC).

In terms of Jawa's technological precedent but one aspect is strictly relevant and that is structural: the potential ability, certainly by the third millennium, to build effective dams. It can be shown that the spring lay enticingly close to the built-up areas, ever since the first town or city or mega-village of the PPNA period. The spring lay so close that it seems ludicrous to deny that it remained extramural. For the moment we must leave out discussion of any Neolithic water system—although there may be the implication of a local tradition of hydro-dynamics. We may, however, suggest that the spring was enclosed within the fortifications of the Early Bronze Age town (EB I and certainly thereafter) and cite as 'proof': the precedent of Jawa, the fact of 'Ai and the emerging evidence of an awareness of water conservation and budgeting as a part of town planning—in short, the emergence of specialists, no less than the ancestors of modern civil and military engineers.

If the spring was enclosed, how was this done? Referring more directly to the case reconstructed for Bab edh-Dhra' and the evidence from 'Ai, it is well within Early Bronze Age technology to propose a dam incorporating the eastern trace of Jericho's fortifications that would follow, more or less, the line of the modern cement and stone reservoir. A spillway or conduit would lead overflow under the curtain and into the irrigation canals farther to the south and east.

19. Plan: Jericho.



According to the excavator of Jericho (Kenyon, 1979) that town—and as an extension of the hypothesis to the 'national' level, all of Palestine during the Early Bronze Age—ended in conflagration, rape and pillage, in yet another invasion or incursion, this time of semi-nomadic folk. This was linked even more broadly to disturbances on the 'international' scale: Amorites in the north (Kenyon, 1966) and the First Intermediate Period of Egypt. Other ideas followed as more and more names were given to this next revolution of the demographic cycle: Caliciform, EB—MB (Kenyon, 1966, 1979; Prag, 1974), Intermediate Bronze Age (Lapp, 1966), MB I (Amiran, 1969; and others), EB IV (Dever and Richard, 1977) and so forth, and just what was really happening is still not clear, although as with the end of the previous millennium, we can recognize the grand cyclical pattern that is still with us today—if only through the proliferation of demographic hypotheses.

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Contact Between Egypt and Jordan in the New Kingdom: Some Comments on Sources

Our knowledge of Egyptian relations with Western Asia, when not derived from archaeological excavations of Levantine sites, comes in the main from four major epigraphic sources. They are, in reverse order of importance, 1) incidental references in administrative or private texts (business documents, tax lists, letters, stories etc.), 2) biographical texts and epithets, 3) royal stelae and the like, 4) toponym lists. The first is an amorphous and heterogeneous category, and shall not detain us here, but the remaining three are of prime importance in chronicling and assessing the impact of Egypt on Canaan in the 'Empire Period'.

It is fortunate indeed for modern historians that the Egyptian participants in the Asiatic and Nubian wars of conquests chose to follow the practice of their Middle Kingdom and Second Intermediate Period forebears by sometimes including their military exploits in their biographical statements. The campaigns of Ahmose and Amenophis I into West Asia would scarcely be known at all, were it not for the haply surviving texts of Aḥmose Si-Abina and Aḥmose pa-Nekhbet. It should be borne in mind, however, that these are intensely personal statements, and however formally structured by the author and his favourite scribe, still essentially products of an oral, formulaic tradition. An old soldier will always wish to put himself in the best light; as a veteran he will always remember the engagements he participated in, and ignore others. Moreover, looking back from the vantage point of advanced age, he may well choose to ignore chronological sequence in favour of some other organizing principle. This is not the case with Aḥmose si-Abina, who reminisces about his exploits in unimpeacheable historic sequence; but it is the case with Amenemheb whose biographic statement has been so widely used to amplify Thutmose III's Euphrates campaign. Up to line 12, it is true, as Gardiner has demonstrated[1], Amenemheb is speaking of the 8th, or Euphrates, campaign, in which he made three captures (*ḫfꜥ*) and was once rewarded. The important facts to note about the following section[2] are 1) the formula involving *ḫfꜥ* ('[I] captured . . .') is replaced by one involving *m33* ('[I] witnessed . . .'), and 2) Amenemheb is rewarded no less than three times. In this section Amenemheb is concerned with subordinating his exploits to the mere fact of his presence on the campaign, and his witnessing the mighty deeds of his sovereign. If the number of decorations is a valid indication, we are dealing with three separate campaigns, but on the evidence of the changed format there is no prior necessity to assume they follow in chronological order from the 8th. These are simply campaigns on which the hero distinguished himself less brilliantly than on the glorious 8th[3].

Lines 23ff deal with the elephant hunt in Niya, and the attack on Kadesh. Once again the formula changes[4], and so does the criterion of selection: both these incidents involve *animals*[5].

One does not, therefore, need to read chronological progression into this series of events in order to make sense out of them. Rather, Amenemheb is grouping his military deeds according to another criterion entirely. First come his most cherished memories, when he distinguished himself on the battlefield on the 8th campaign, next those campaigns in which he 'witnessed' the king's victories, followed by two animal exploits[6]. The second of the latter, viz. the release of the mare among the chariots of the enemy[7], leads naturally

[1] *Ancient Egyptian Onomastica* (Oxford, 1947), I, 156*f.

[2] Lines 12–22 (*Urk.* IV, 891: 16–893: 13).

[3] Of the places listed *Sndr* (cf. W. Helck, *Die Beziehungen Ägyptens zu Vorderasien*[2] [Wiesbaden, 1971], 278) occurs in no known campaign (although admittedly nos. 11 and 12 are a blank in our knowledge, and the Nukhashshe towns taken on the 9th and 13th campaigns are un-named). Kadesh is mentioned on the 6th and 17th campaigns (*Urk.* IV, 689: 7, 730: 9), in the latter, however, only as the designation of a district. *Ḥ*[3][ ] (*Urk.* IV, 893: 2) sounds like a remote, little-known district, to judge by the presence of the location *ḫr.tw r.f*, '. . . which they call . . .' (cf. the earliest reference to Mitanni in Egyptian sources: H. Brunner, *MIOF* 4[1956], 323ff; F.-J. Schmitz, *Amenophis* I [Hildesheim, 1978], 184). In the 10th campaign the battle took place at Aryan, far to the north; and the king of Mitanni had assembled people from the *pḫw n t*[3] (*Urk.* IV, 710: 3–7; cf. 1441: 16). Takhsy is nowhere mentioned in the annals, but Minmose declares he was an eyewitness to Thutmose III's capture of 30 towns therein (*Urk.* IV, 1442: 16–20), and in the earliest of Amenophis II's campaigns Takhsy and its seven chieftains were the main target (*Urk.* IV, 1297: 3ff). One wonders, therefore, whether the Takhsy campaign did not come at the end of Thutmose III's reign, and perhaps postdated the end of the Karnak annals (year 42).

[4] To something like *wḥm.[n ḥm.f irt] ky sp*.

[5] As Helck has seen (*Beziehungen*[2], 139f) *Urk.* IV, 894: 16ff is simply an expanded duplicate of the earlier attack on Kadesh (*Urk.* IV, 892: 8ff).

[6] Note how deeds connected with the hunt are all grouped together on the Ermant stela (lines 6–9): *Urk.* IV, 1245f.

[7] *Urk.* IV, 894: 5. On the motif of the mare sent out to cause havoc among the stallion-drawn chariots, cf. Cant. 1, 9: M. H. Pope, *BASOR* 200 (1970), 59.

into the detailed treatment of the seige of Kadesh in the 6th campaign with which it is inseparately linked.

Similarly in the biography of Minmose[8], close reliance cannot be placed on the chronology of the deeds recounted. Rather Minmose groups his accomplishments under three heads: 1) military exploits, 2) civil service, 3) construction works.

Minmose first singles out two representative campaigns, the 8th and a campaign against Nubia. He then describes his function as assessor of taxes in Asia and Nubia respectively. A statement follows on the veracity of these descriptive passages; and then Minmose describes a further exploit, this time one in which he distinguished himself as commander of the Braves, in Takhsy. The progression is interesting: only the first four exploits are in Upper Egypt, and the sequence is south-north. Then follow in order seven temples in Lower Egypt.

A far more important source for contact between Egypt and the Levant are the royal stelae, *wd* a term which applies to any formal heiroglyphic inscription, whether on a wall or free-standing stone[9]. A fairly broad number of *genres* may be subsumed under the *wḏ*, including royal decree (*wḏ-nsw*), the stela of regulations (*wḏ ḥnwt*), the palace directive (*ḏddt m stp-s3*), the boundary stela, the royal speech (in the context of the court appearance: *ḥmst-nsw*, *ḥᶜt-nsw*), the 'song' (*ḥst*), the stela of victories (*wḏ n nḥtw*) etc.[10] The *wḏ* is thus basically a *published* text for public consumption, and we may thus expect a varying degree of propagandistic embellishment. Nevertheless there is good evidence that those stelae which display a specific date (regnal year and callendric) often derive their material from a more reliable source than a tendentious mind; underlying stelae of victory and royal speeches (our major source for Egyptian military expansion in the New Kingdom), is the phenomenon of the *hrwyt*, or 'day-book'.

The *hrwyt* is the official journal of an institution, recording day by day the administrative workings of that institution[11]. We have *hrwyts* of the king's house, of temples, of the treasury, of law-courts, of ships (i.e. logs), of the necropolis, of fortresses, of dockyards, and so on. Each is organized calendrically, and is worded laconically. Common entries include notes on astronomical or meteorological conditions, the arrival and departure of messengers, receipts and disbursements of commodities, verbal declarations, copies of official correspondence, lists of people, the movement of dignitaries and armies. The term *hrwyt* itself seems to have been vernacular. When we are allowed to glimpse the official title of a document of this type, an appelative is used which is derived from the specific contents rather than the format (e.g. 'scroll of corn receipts . . .').

One inscription which is always mentioned as a prime example when the *hrwyt* is under discussion is the so-called annals of Thutmose III at Karnak[12]. This is the single most important document for the creation of Egypt's Asiatic empire. For the form-critical analysis of the annals it is important to note that no source mentioned is in the form **hrwyt nt mšᶜ* or **hrwyt nt ᶜḥ3*; although I take it that some such prototype was in the minds of the German scholars who coined the term 'Kriegstagebuch'[13]. No passage in Thutmose III's annals, that the writer knows of, speaks of a 'war diary'. Sources are, indeed, mentioned three times: in the account of the 7th campaign the reader is referred to 'the day-book of the king's house' for the specific quantities of food with which the coastal garrisons were supplied[14]; the harvest of Syria from the same campaign is said to be kept in a document in the treasury[15]; and for further and specific details of the seige of Megiddo one is sent to a special leather roll deposited in the Temple of Amun[16].

If there is no independent evidence for a war journal, are we justified in postulating the existence of any kind of journal behind the inscribed annals of Thutmose III, Amenophis II and others? The answer is, of course, yes. For example the style of Thutmose's 2nd edition (campaign 6 onwards) and that of the Karnak and Memphite stelae of Amenophis II is markedly similar to that of known day-books[16a]. Now the only day-book mentioned in the annals is the day-book of the king's house. A moment's reflection will suffice to show that, broadly speaking, the content of the Karnak annals is precisely that of known day-books. Bulaq 18 and even the Rollin Papyri are both primarily concerned with receipts and disbursements of commodities. The Karnak annals deal with the same activities, save that now it is the receipt of booty (*ḫ3k*) and benevolences (*ỉnw*), appropriate enough in military contexts, and the disbursement of supplies to garrisons. Bulaq 18 and the Rollin Papyre, as well as the Rhind fragment, also record the whereabouts of the king, his movements from place to place, and upon occasion his activity (which in the well-known example of Bulaq 18, xxx, 2: 13–20[17] is of a

[8] *Urk.* IV, 1441ff; on Minmose see H. Kees, *Das Priestertum im ägyptischen Staat* (Leiden, 1953), 33f; Helck, *Zur Verwaltung des mittleren und neuen Reiches* (Leiden, 1958), 271f.

[9] The latter could also be termed an *ᶜḫᶜ*.

[10] These will be taken up by the author in a forthcoming treatment of literary genres in ancient Egypt.

[11] See the present writer's *King Lists, Annals and Day-books: Historical Tradition in Ancient Egypt* (SSEA, forthcoming), ch. 3.

[12] *Urk.* IV, 647ff; H. Grapow, *Studien zu den Annalen Thutmosis des Drotten*, Berlin, 1949; see the forthcoming *Aspects of the Military Documents of the Ancient Egyptians* (New Haven) by A. Spalinger; provisionally articles by the same author in *MDAIK* 30 (1974), 221ff; *JARCE* 14 (1977), 41ff; *GM* 33 (1979), 47ff.

[13] The word has become a commonplace in Egyptological parlance: cf. A. Alt, *Kleine Schriften zur Geschichte des Volkes Israel* I, (Munich, 1959), 97ff; M. Noth, *ZDPV* 61 (1938), 50, n. 4; *idem*, ZDPV 66 (1943), 156ff; Grapow, *Studien*, 50; E. Otto, in *Handbuch der Orientalistik*, I, 2 (Leiden, 1952), 143; Helck, *Die Einfluss der Militärführer in der 18. ägyptischen Dynastie* (Leipzig, 1939), 14; R. O. Faulkner, *JEA* 28 (1942), 2.

[14] *Urk.* IV, 693: 8–14.

[15] *Urk.* IV, 694: 7–8.

[16] *Urk.* IV, 661f.

[16a] H. Grapow, *Sprachliche und schriftliche Formung ägyptischer Texte* (Glückstadt, 1936), 22f.

[17] Grapow, *Studien*, 51f.

military nature); they are not concerned with the activity of anyone outside the purview of the court. Precisely the same concern informs the Karnak annals. The king's whereabouts, his movements from town to town, and his activity (of necessity in this context almost purely military) are the only interests of the recorder: collateral expeditions of detachments sent off on their own, or activity in the Sudan is of no concern, because the scribe keeping the journal stayed with the king. In short, the daybook from which the Karnak annals were drawn is simply the daybook of the king's house.

Hence there is no reason whatsoever in the Karnak annals to separate records of military activity from booty lists, and to postulate 'zwei Gruppen von Unterlagen', viz. 'Tributlisten und die Kriegstagbucher'[18]. Both types of record occur in the same daybook genre, as the examples cited above plainly prove.

The final source of information on contact between Egypt and Canaan in the New Kingdom is that genre of text known as the toponym list. Personified places, lined up in some sort of order, are known from the Old Kingdom, but from the Middle Kingdom comes our earliest examples of the 'captive oval' surmounted by the appropriately-coiffured foreigner[19]. Early in the 18th Dynasty the older type of personification with the town-name in a crenellated rectangle on the head of a standing male is occasionally still found[20]; but with Thutmose III the format employing ovals achieved dominance.

One problem inherent in the study of toponym lists, perhaps the single most pressing problem, is their proper understanding and interpretation, rather than the identification of specific places. How should the archaeologist use the lists of Thutmose III? Too often, it seems to me, the lists are used as a great reservoir from which to draw confirmation that site so-and-so was indeed destroyed by the Egyptians. It is a comparatively simple inference to make, viz. that the wide-spread destruction levels at the beginning of the Late Bronze are the responsibility of the invading armies of Egypt bent on following up the defeat of the Hyksos. A moment's reflection, however, will show the inference to be wrong. The armies Egypt sent into the field in the 18th Dynasty were notoriously inept at seige warfare, and Middle Bronze fortifications would have posed almost insurmountable problems for them[21]. Avaris took *decades* to reduce, and Sharuhen three years of seige to capture. Megiddo withstood the largest force Egypt could muster for seven months, and when Thutmose III finally took it there is no evidence that he destroyed the city[22]. Thus to construe the toponym lists as a roster of captured and destroyed towns simply flies in the face of a mass of circumstantial evidence, and must be rejected[22a].

This is not to treat the early Late Bronze destruction levels cavalierly: someone must have destroyed these cities, for the ubiquitous ash cannot in every case have been the product of *accidental* firing. The correct construction, however, to put on these destruction strata is demolition *from within* as it were, either in anticipation of an invasion or at the behest of a successful conqueror. A priceless passage in the later stela of Piankhy enables us to appreciate the logic behind this sort of move[23]: 'He (Namlot, king of Hermopolis) tore down the fortified wall of Nefrusy—he demolished his city himself!—through fear of him who might take it from him'. Namlot is afraid of returning from battle one day only to find someone holding his own town against him: a fortified city can be used as a military strong point, but a demolished one cannot. We must seriously reckon with the possibility that the widespread destruction of early Late Bronze sites has to do with the directives of the Egyptian court to the conquered *after* the conquest, and not with the battle itself[23a].

A second hypothesis about the origin of toponym lists would have us believe that they are the recorded stopping-places of Egyptian expeditionary forces, extracted from the day-book and transmitted into a list of 'conquered' cities[24].

[18] *Ibid.*, 50; Noth, *ZDPV* 66 (1943), 156ff.

[19] Breasted, *Ancient Records* I, sec. 510; A. J. Arkell, *A History of the Sudan to 1821* (London, 1961), 59f; B. Porter, R. Moss, *A Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings* VII (Oxford, 1951), 129ff. The oval is in origin a *wnt* (*wnṯt*), denoting a sort of walled enclosure usually outside Egypt: H. G. Fischer, *JNES* 18 (1959), 260ff; Helck, *Beziehungen*^{2}, 16f, and n. 42. Even in the Old Kingdom we find foreign toponyms inscribed within the *wnt*-oval: Fischer, *op. cit.*, pl. 8; Leclant, *Orientalia* 23 (1954), 73; W. M. F. Petrie, *Deshasheh* (London, 1898), pl. 4; cf. W. S. Smith, *Interconnections in the Ancient Near East* (New Haven, London, 1965), FIG. 14 (the town is in the form of a *wnt*); cf. also H. Goedicke, *JEA* 43 (1957), 81; for the *wnt*, among other Asiatic fortress shapes, see PT 1837a–b; occasionally it is used of Egyptian fortifications: G. Goyon, *BIFAO* 69 (1971), 13f.; cf. also M. Görg, *Biblische Notizen* 7 (1978), 16f.

[20] Redford, 'A Gate Inscription from Karnak . . .,' *JAOS* (forthcoming).

[21] Cf. the author's observation in *Bib. Or.* 30 (1973), 224f. Our remarks apply particularly to the 18th Dyn. It is quite true that in the Old Kingdom, to judge by the evidence (cf. the scenes from the tombs of Anty at Deshasheh and Ka-em-ḥeset at Sakkara: W. S. Smith, *Interconnections in the Ancient Near East* [N. H. & London, 1965] FIG. 14–15; cf. also Y. Yadin, *IEJ* 22 (1972), 89ff.), the Egyptians were in command of very effective assault tactics including sapping, the use of seige ladders and demolition of (mud-brick?) walls by means of axes. Again, after the campaigns of Thutmose III (sapping techniques are once attested: *Urk.* IV, 894–5), Amenophis II and Thutmose IV, Egypt's northern front was quiescent: if the Asiatic empire had been won without the extensive use of seige tactics, there was no immediate need to develop them. Beginning, however, with the reign of Tutankhamun, campaigns began once more to be mounted in Asia on a scale requiring the assault on cities; and a relief duly attests the education of the Egyptian armed forces in assault tactics (cf. Smith, *Interconnections*, FIG. 210). By Ramesses II's reign the Egyptians had reached the most advanced stage they were to attain in seige warfare until the 25th Dyn. Such cities as Ashkelon (P–M II^2, 133[493], and Dapur (PM II^2, 438[18, III]) were taken by a combination of archer fire, sapping and assault ladders (cf. the classic scene of the taking of Tunip by Ramesses III at Medineh Habu: PM II^2 520[190–1]), and were undoubtedly destroyed in the process. In general, see A. R. Schulman, *Natural History* 73, no. 3 (March, 1964), 13ff.

[22] Cf. W. Shea, *IEJ* 29 (1979), 1ff.

[22a] Cf. the remarks of W. G. East, *The Destruction of Cities in the Mediterranean Lands* (Oxford, 1971), 15: '. . . it was not the common fate of fallen cities to meet their end . . . by *complete* destruction at the hands of their conqueror'.

[23] Piankhy stela, 7: *Urk.* III, 6.

[23a] The epigraphic evidence from the Old Kingdom would seem to support the contention that the demolition of enemy cities followed their capture and was a methodical act, rather than the accidence of the battle itself. The verb *b*^{3}, 'to demolish' (extensively used of cities: cf. *Urk.* I, 103f) is written with a combination of the *b*^{3}-bird (Gardiner G29) and the hoe (Gardiner U7), the latter being the significant element. The hoe is an implement of peaceful agriculture, and its attested use in the demolition of city walls (cf. the 'City' palette: J. Vandier, *Manuel d'archeologie egyptienne* I [Paris, 1952], 590; Tomb of Ka-em-heset: W. S. Smith, *A History of Egyptian Sculpture and Painting in the Old Kingdom* [Boston, 1946], 212 FIG. 85) suggests a period after the battle is over.

[24] See the present author, *JSSEA* 12 (1981), 57ff.

The evidence does not favour such an hypothesis. First, one would have to admit at the outset that the presence of Kadesh and Megiddo at the head of Thutmose III's lists introduces a criterion of organization wholly different from geographic distribution, viz. political posture vis-a-vis Egypt. Second, the sequence of sites, when they can be plotted on a map, produces such a meandering line that one can only wonder whether the Egyptian army was permanently lost. Escape from this embarrassment has been sought in the expedient of divided forces, and the postulate of raiding bands or 'flying columns' operating simultaneously with the main force. But this is a stop-gap solution. There is no proof whatsoever that Egyptian expeditionary forces were in the *habit* of fragmenting themselves into raiding parties which would operate independently of the main force to the extent that this theory would require[25]. In any case, the examples of extant day-books demonstrate that it is only the date of departure and *return* of person(s) sent off from the headquarters that is noted; no record was apparently kept of their itinerary while absent[26].

Finally, in the one known route march recorded in the day-book and thence reflected in the annals, viz. that from the Egyptian frontier to Megiddo on the First Campaign[27], the corresponding section in the topographical list (nos. 57 to 71) does not agree at all. Sile and Gaza, which certainly did figure in the daybook account[28], are nowhere to be seen in this section of the list, while Aruna occurs[29] not here but earlier, as no. 27. On the other hand this part of the list contains places the Egyptians never saw on the First Campaign, e.g. the Negeb (no. 57). One can only conclude that a simple combing of the daybook for toponyms was not the method used in compiling the topographical list.

The real explanation of the lists, or rather those of Thutmose III which established a genre to be imitated[30], is given partly by the superscription to the lists on pylons 6 and 7[31]. This states that the list comprises a 'collection of the lands of Upper Retenu which his majesty shut up in the town of vile Megiddo', that is to say, each land represented by its headman and contingent lent to Kadesh's coalition. Now it is quite clear that there are *many* more names in this list than could possibly have been represented in the great anti-Egyptian coalition at Megiddo; but the superscription does correctly reflect that it was the list of the allies, enfeoffed by the Egyptian crown at the time of Megiddo's fall, that provided the basic inspiration for the list. Additional names came from the roster of those 'chiefs of Retenu' who, from then on, presented themselves year by year at the camp of the expeditionary force on its campaign in Syria to present tribute.

The names were, however, not grouped haphazardly in the list, but were arranged on the basis of accepted itineraries. Routes of travel across Western Asia and Northeastern Africa had been established and known from time immemorial. Since the early Old Kingdom Egyptian messengers had been frequenting the towns and cities of the Levant both by ship and on foot; and by the 15th century BC the roads and stopping places of Palestine and Syria, and even Mesopotamia, must have been very well known. Papyrus Anastasi I proves that an intimate knowledge of the best routes and the cities scattered along them was considered a *sine qua non* in the education of an Egyptian military scribe and courier[32]; while the Old Babylonian itinerary to the Euphrates[33] strongly suggests such routes were committed to writing. It seems at least a possibility worth looking into that underyling the topographical list of Thutmose III is a series of written itineraries of Western Asia, known to and used by Egyptian couriers of the day, and kept in the government archives.

If this explanation is correct the topographical lists will yield both the regions subverted to the pharaonic government and the routes through those regions. Interestingly in the case of the territory beyond the Jordan, the area in the north of Gilead, along the Yarmuk, in the valley of the Jordan, and the route leading south from Edre^{c}i through Gilead and Moab.

This latter route (the kernel of which is Thutmose III's list nos. 89–100)[34] exemplifies some of the problems besetting attempts at specific identification. When one has several candidates for a single Egyptian transcription, what will decide the case[35]? In the present section the identification of

[25] It has been inferred from the biography of Amenemheb that he operated with a small force in the south, and later joined up with the army in Syria: Gardiner, *Onomastica* I, 156*; M. Görg, *JNES* 38 (1979), 199f and n. 10. The *ne^{c}arin* at Kadesh have been considered to be a detached unit of the Egyptian army: R. O. Faulkner, *MDAIK* 16 (1959), 98; O. Zuhdi, *SSEA Journal* 8 (1978), 141f. While these remain in the realm of debate, it must be admitted that the Kamose stela does depict Kamose's auxiliaries ranging far over the desert, independent of the main force: L. Habachi, *The Second Stela of Kamose and His Sturggle against the Hyksos Ruler and his Capital* (Glückstadt, 1972), line 29, p. 41.

[26] A most significant example is that of lines 9ff of the Bubastite fragment, usually ascribed to Amenophis III (but more likely coming from the reign of Thutmose IV, his predecessor): E. Naville, *Bubastis* (London, 1891), PL. 34; *Urk.* IV, 1734f. Here the entry (a slightly embellished excerpt from the day-book) states: 'His Majesty ordered the despatch of 124 men of the army on foray (*m prt*) to the well which is above [. . .].' But when the text resumes after the short break, the recording scribe is not following this group, but rather describes 'the sailing southward (scil. by the main part of the expedition) to see the height of Hu^{c}a, and reconnoitre the route of sailing.'

[27] Noth, *op. cit.*, 26ff; Edel, *ZDPV* 69, 154; Helck, *Beziehungen*^{2}, 122ff.

[28] *Urk.* IV, 647: 12 and 648: 11 respectively. The style is clearly that of the day-book.

[29] *Urk.* IV, 652: 14; again the language is that of the day-book. The identification of no. 27 with *Ḫalunni* of EA 197, 14 (so Helck, *Beziehungen*^{2}, 129) seems unnecessarily arbitrary.

[30] While some kings, like Amenophis III or Ramesses II, do seem to reproduce first-hand material *de novo*, there is a good deal of imitation and outright copying: cf. R. Giveon, in *Fragen an die alt-ägyptische Literatur* (Wiesbaden, 1977), 180ff.

[31] *Urk.* IV, 780. Giveon's observation that 'the Egyptians included in the lists cities and enemies they would like to conquer—in the hope that "sacrificing" them in a temple would exert a magic influence on reality' (*The Impact of Egypt on Canaan* [Orbis Biblicus et Orientalis, 20; Göttingen, 1978], 104) may well be correct as far as it goes; but it contributes nothing to the solution of the problem of structure and content.

[32] Cf. 20, 7ff (A. H. Gardiner, *The Papyrus Anastasi I and the Papyrus Koller Together with the Parallel Texts* [Leipzig, 1911], 64). This is an itinerary along the coast (in reverse order, i.e. applicable to a homeward journey) from Byblos to Shechem.

[33] A. Goetze, *JCS* 7 (1953), 51ff; cf. also W. H. Hallo, *JCS* (1964).

[34] J. Simons, *Handbook for the Study of Egyptian Topographical Lists relating to Western Asia* (Leiden, 1937), *ad loc.*

[35] Cf. A. F. Rainey, *IDB Supplementary Volume* (Nashville, 1976), 826f.

two names, viz. *'U-t-r-ᶜa* (no. 91) and *Ti-pu-neᵉ* (no. 98) with Edreᶜi and Dibon respectively early led to a localization of the whole in Jordan[36]. Within the last two decades, however, attempts have been made to transfer this part of Thutmose III's list to a Galilean locale[37], or, on the assumption that it reflects entries in the army journal of the First Campaign, to the far reaches of Golan and Bashan[38]. In fact two considerations may well decide the issue. The first is the postulate of formal itineraries, as argued above, as the immediate source of the toponym lists: if this be accepted, specific sections of the lists must show an orderly progression. The second is the correct understanding of the term *'U-ba-r/l*, which occurs three times in the section under discussion (nos. 90, 92, 99). This means quite simply, as the variant in the Onomasticon of Amenemope proves[39], 'water-course', and refers to a major stream over which one must cross[40]. Now it is a significant fact that in most itineraries which have come down to us from antiquity, streams and rivers are given an importance equal to that of cities, and are found interspersed at the appropriate points among sequences of town-names[41]. The itineraries reflected in *Anastasi* I, mastery of which was necessary for the military scribes of Ramesside times, suggest that pharaonic route maps were no different[42].

Once this understanding of *'U-ba-l* is accepted, it seems to me that nos. 89–100 cannot help but fall into a Jordanian locale; for the three occurrences of the term correspond to the passage (from north to south) over the Yarmuq, the Zerqa, and the Wady Mūjib. The following is the sequence which emerges: 89. *Hy-k-ra-y-m*, Assyrian *Hukkurina*, north of the Yarmuq[43]; 90. *'U-ba-l*, the Yarmuq; 91. *'U-t-r-ᶜa*, Edreᶜi; 92. *'U-ba-l*, Nahr es-Zerqa[44]; 93. *K-n-t-'u-t*, ?[45]; 94. *{M}(?)-ᶜ(?)-q-r-pu* (from גרחט ?)[46]; 95. *ᶜa-y-n*, ᶜAin Musa; 96. *Kᵉ-ra-me-n*, Abel Keramim (Naᶜur)[47]; 97. *Bi-t-ya*, ?[47a]; 98. *Ti-pu-neᵉ*, Dibon; 99. *'U-ba-l*, Wady Mujib; 100. *Ya-ru-tu*, Yarut.

The sequence thus appears indeed to be the route leading due south from Damascus, via Edreᶜi to the region of Moab and Edom. It further supports the contention, not only that the 18th Dyn. Egyptians were familiar with the land east of the Jordan Valley (their avowed concern with the Shasu would have led to that conclusion in any case)[48], but also that they knew of a place called Dibon therein[49].

[36] The equation of Edreᶜi with no. 91 has achieved widest acceptance: cf. W. M. Müller, *Die Palästinaliste Thutmosis III* (MVAG 12; 1907), 25; F.-M. Abel, *Géographie de la Palestine* (Paris, 1938), II, 9 and n. 4; M. Noth, *ZDPV* 61 (1938), 56; Helck, *Beziehungen*², 127; E. Edel, *Die Ortsnamenlisten aus dem Totentempel Amenophis III* (Bonn, 1966), 11; W. Boree, *Die alten Ortsnamen Palästinas* (Hildesheim, 1968), sec. 17.1; M. Görg, *Untersuchungen zur hieroglyphischen Wiedergabe palästinischer Ortsnamen* (Bonn, 1974), 11ff; Aharoni, on the other hand, opts for a location in Galilee (cf. Nos. 19, 37): *The Land of the Bible, a Historical Geography* (London, 1967), 150.

[37] Cf. Aharoni, *ibid.*, 144ff; S. Ahituv, *IEJ* 22 (1972), 141f; Kaplan suggested the Yabneh region: *BIES* 21 (1957), 206.

[38] Helck, *Beziehungen*², 125ff.

[39] Gardiner, *Onomastica* I, 9*(41).

[40] Albright, *The Vocalization of Egyptian Syllabic Orthography* (New Haven, 1934), 39; cf. Heb. יו·בל (Jer. 17, 8), or אובל (Dan. 8, 2, 3, 6); it is not אבל (cf. L. Köhler, *ZDPV* 60 [1937], 135ff; Noth, *ZDPV* 61 (1938), 53, and n. 3; nor is there any reason to combine two entires, thus 92 and 96, or 90 and 91: Abel, *Géographie* II, 37; A. Jirku, *Die ägyptischen Listen palästinensischer und syrischer Ortsnamen* (Leipzig, 1937), 14, n. 9.

[41] Cf. Herodotus iv, 18ff, 47–58 (Scythian itinerary); vii, 29ff (itinerary of Zerxes' army); in the itinerary of Cyprus and the Greeks to the Euphrates, rivers are always carefully noted: Xenophon *Anab.* i, 1–5; the itinerary underlying Strabo's trip down the Levantine coast may be extracted from his account, and runs as follows: Arvad-Orthosia-river (Eleutheros)-Byblos-river(Adonis)-Palaeobyblos-river(Lycus)-Beyrut-Sidon-Tyre-river-Palaeotyre, etc. (Strabo XVI, 2.14–25).

[42] The word used is the generic *hd*, 'flowing stream'; cf. 18, 8–19, 1; 19, 7; 20, 8–21, 1; 21, 7; 22, 8–23, 1.

[43] The region a day's journey south of Damascus: *ANET*, 299 (Ashurbanipal); Abel, *Géographie* II, 10.

[44] It is not surprising that between Edreᶜi and the Zerqa no towns should be listed, in the light of the paucity if not total absence of Late Bronze sites there: cf. S. Mittmann, *Beiträge zur Siedlungs- und Territorialgeschichte des nördlichen Ostjordanlandes* (Wiesbaden, 1970), map; only Ṣaḥra (185: *ibid.*, 75f) and Rihāb (311: *ibid.*, 120) show LB I occupation, but they are not on the route.

[45] Müller's * גתות, 'the "Presses"': *Palästinaliste*, 25.

[46] Görg, *Untersuchungen*, 156ff.

[47] Abel, *Géographie* II, 37; Gorg, *JEA* 63 (1977), 180, n.1.

[47a] Identified as *Bēt-Lōt: Gorg, *GM* 19 (1976), 31ff.

[48] For the Shasu in Jordan, see R. Giveon, *Les Bedouins Shosu* des documents egyptiens (Leiden, 1971), 235ff; Gorg's remarks (*JNES* 38, 19ff) are salutary, but I do not think they alter the overall picture of the distribution of Shasu.

[49] Reaction to the identification of no. 98 with Dibon has been mixed: Müller was wary (*Palästinaliste*, 27), Abel confident (*Géographie* II, 38). Albright rejected it (*Vacalization*, 63: 'this equation is phonetically precarious') in favour of Tell Dibbin, 30 km. north of the Sea of Galilee (*AASOR* VI [New Haven, 1926], 19, n. 15), and in this was followed by Jirku (*Listen*, 15, n. 5). Though Helck rejected it (*Beziehungen*², 128) he still declined identification with Dibon. Aharoni located no. 98 in Galilee (*Land of the Bible*, 151) and was supported in this by Ahituv (*IEJ* 22, 141f). The discovery by Kitchen of a *Tnwnw* in a Moabite context in a relief of Ramesses II at Luxor (*JEA* 50 [1964], 55; *Ramesside Inscriptions* II, 181) has re-opened the subject, and lent strong support to the traditional identification of no. 98 with Dibon: cf. Görg, *Untersuchungen*, 162f; *idem*, *Biblische Notizen* 7 (1978), 12f; Kitchen, *Oriens Antiquus* 15 (1976), 313f.

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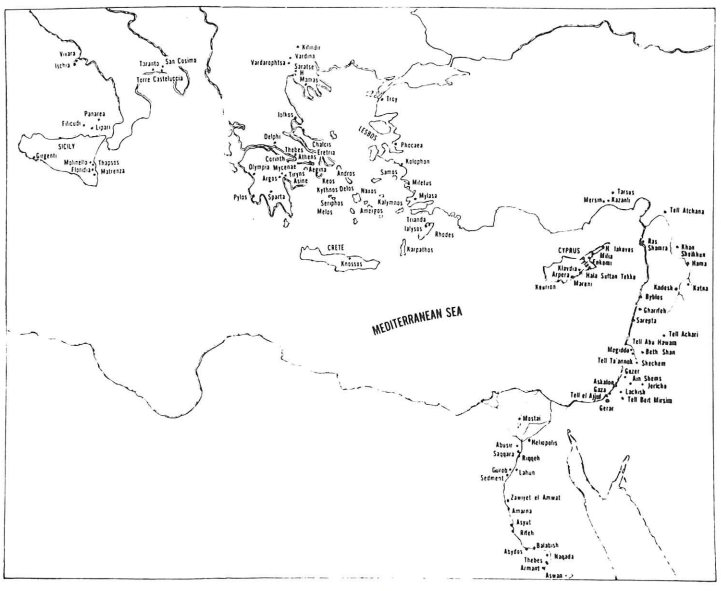
The Mycenaeans in the East

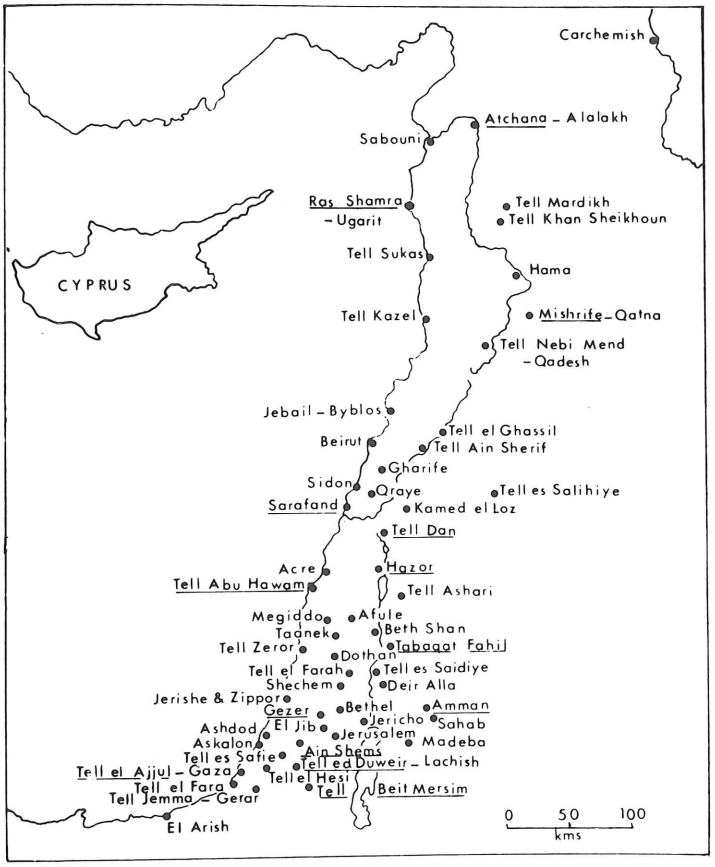
The subject is not at all new, for it has been treated in the past by many scholars and in particular during the International Archaeological Symposium—The Mycenaeans in the Eastern Mediterranean, held in Nicosia in 1972[1]. Therefore what I propose to do here is to deal with certain aspects only, such as the conditions prevailing in the Levantine countries at the time of the arrival of the Mycenaeans, what made them expand there, why they failed to colonize them, and why they had to withdraw altogether. I shall try to give an answer to these questions, yet I fear that, due to our present state of knowledge, more problems will be raised than solved.

By East I mean Syria, Palestine, and the hinterland which includes Jordan, and Egypt. The islands of Rhodes and Cyprus should be considered separately because conditions there were different and because these two islands were used by the Mycenaeans as a stepping stone for carrying on their Levantine trade. As for time, I have in mind the Late Bronze Age or roughly the second half of the second millennium BC.

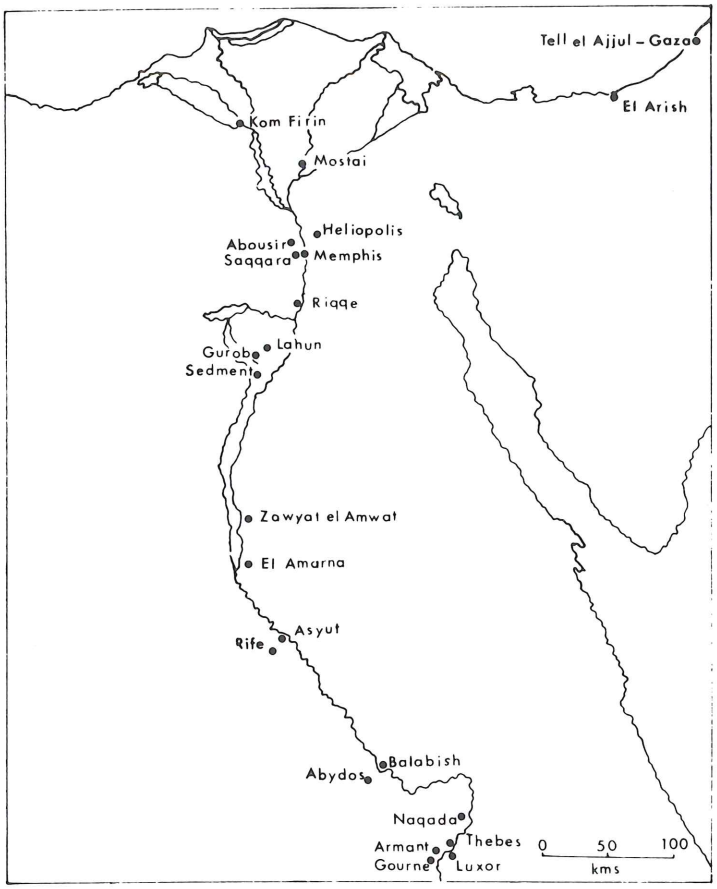
1. Map showing the distribution of Mycenaean Pottery before 1200 BC.


MEDITERRANEAN SEA
CRETE
Knossos
CYPRUS
Enkomi
Hala Sultan Tekke
Kition
Amathus
Tarsus
Tell Atchana
Ras Shamra
Khan Shekhun
Hama
Ugarit
Byblos
Sarepta
Tell Abu Hawam
Megiddo
Beth Shan
Shechem
Gezer
Jericho
Lachish
Tell Beit Mirsim
Tell el Ajjul
Gerar
Ashkelon
Gaza
Mycenae
Pylos
Sparta
Thebes
Delphi
Athens
Argos
Tiryns
Dendra
Midea
Orchomenos
Iolkos
Volos
Dimini
Sesklo
Lefkandi
Eretria
Chalcis
Aulis
Thorikos
Brauron
Vari
Phaleron
Aegina
Troezen
Asine
Nauplia
Prosymna
Kalkani
Kazarma
Berbati
Ayia Irini
Kea
Gla
Orchomenos
Kynos
Skyros
Halos
Pteleon
Lianokladi
Kalapodi
Naupaktos
Medeon
Kirrha
Amphissa
Krisa
Itea
Molykreion
Antirrhion
Rhion
Patras
Dyme
Olympia
Mycenae
Tiryns

2. Levantine sites yielding Mycenaean pottery.



3. Egyptian site yielding Mycenaean pottery.



of them are not on the coast but in the hinterland. In fact out of 57 sites shown on this map, only 17 are strictly speaking on the coast; the remaining 40 are situated inland, some nearer, others further than the coast, and a few, such as Amman, beyond the river Jordan. In Egypt the sites lie along the Nile (FIG. 3), but again they spread over a considerable distance from Firin in the north to Gourne in the south, a distance of about 600 km.

The discovery of a Late Bronze Age temple at Amman (FIG. 4)[2] in 1955, yielding rich finds, among which a great amount of Mycenaean pottery of IIA (FIG 5A), IIB/IIIA (FIG. 6B), IIIA (FIG. 5B & C) and IIIB (FIG. 6A) style, as well as Cypriote ware and other objects, is remarkable in that they were found in an area east of the Jordan, generally believed to be uninhabited. Vronwy Hankey, who published the finds, is of the opinion that the area was not empty as it appears but that the temple may have been furnished as a result of raids on a city west of the Jordan, where such valuables were to be found[3]. I wonder, however, whether these finds were not curios purchased by nomads travelling west, before placing them in the temple as offerings.

Mycenaean pottery occurs in both settlements and cemeteries, and as we have seen in sanctuaries. It is indeed interesting that it has reached Jordan, and another explanation for the spreading of Mycenaean goods in the hinderland of Syria and Palestine may be the demand by nomads for luxury products and their content. It is not known how they reached those remote areas and there is nothing to indicate that the traders were Mycenaeans. In fact they may have been bought by the nomads themselves, who travelled to the big trading centres on the coast for business. It is possible, of course, that some Mycenaean traders may have ventured to travel inland, but probably there was not a safe way of regular trading through the desert.

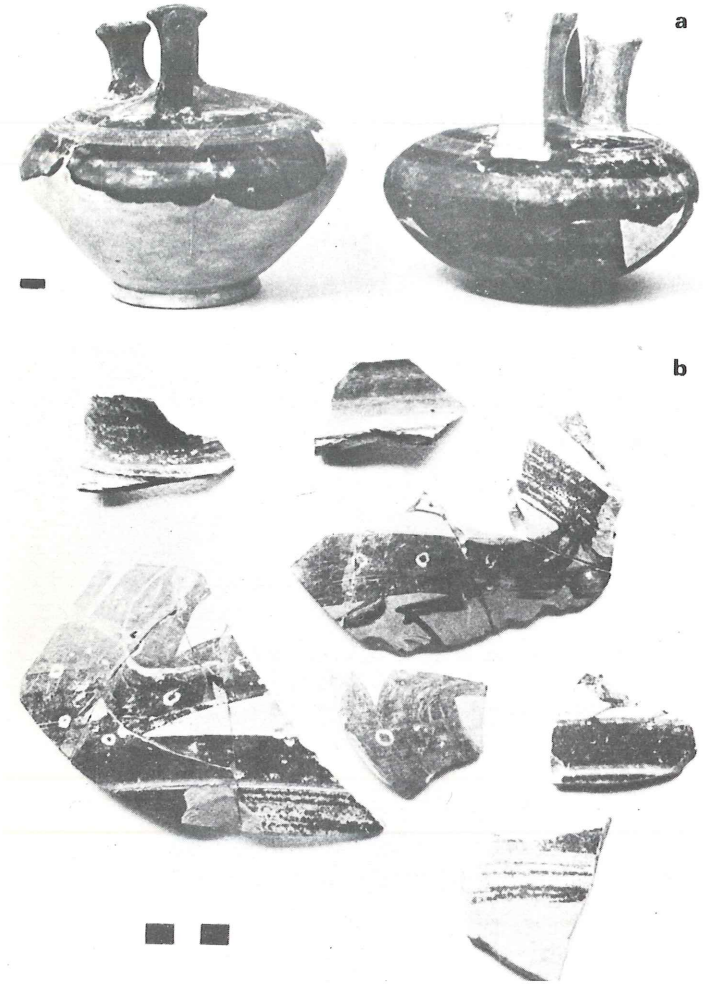
The mainland character of almost all the Aegean pottery found in the Levant is a factor of the utmost importance in connection with the foreign relations of Greece at this time. It indicates that the mainland was already in direct contact with the East. Although in comparison with the enormous amount of LH III pottery found in the East, the LH I and II series is a small one, it leaves no doubt that direct connections between the mainland and the East started at an early date.

What then made the Mycenaeans turn to the East? The answer may be adventure, commercial enterprise, and a desire

[2] Hankey, Vronwy, 'A Late Bronze Age Temple at Amman', *Levant* VI (1974), 131–178; Hennessy, J. B., 'Excavations of a Late Bronze Age Temple at Amman', *Palestine Exploration Quarterly* 1966, 155–162; Harding, G. L., *ADAJ* III (1956), 80 and *PEQ* (1958), 10–12. Here, I wish to express my thanks to Vronwy Hankey for discussing with me at length the problem of the Mycenaeans in the East and for permission to reproduce FIGS 2, 3, 4, and Plates I, II, III. Figure 1 has been reproduced from Mycenaean Trade and Colonization by Sara A. Immerwater in *Archaeology*, Spring 1960, p. 3.

[3] Hankey, V., *op. cit.* 143.

6. Further Mycenaean pottery examples.



7. Further Mycenaean pottery examples.



community, to judge by the discovery there of a number of clay tablets bearing the Cypro-Minoan script[8].

The island of Rhodes is well placed for trade with the East. During the 15th century BC Mycenaean traders settled at Ialysos and displaced the earlier Minoan colony. From this time onwards, the Mycenaeans dominated Rhodes. The original importance of the island may have been its strategic position in a bid to outflank the Cretans, but once the Cretan supremacy was broken, Rhodes continued to be of importance for the eastward traffic. At about the same time the Mycenaean commercial outposts shifted further east to Cyprus, Syria, Palestine and Egypt.

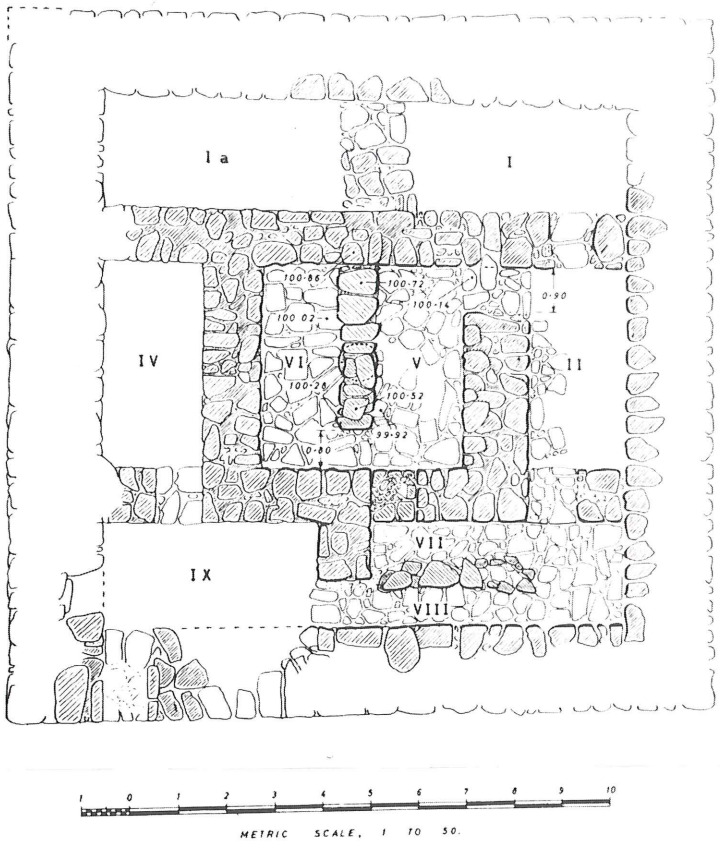
When we turn to Cyprus we have a somewhat similar situation to that of Rhodes: the arrival of traders at first, followed by settlers. The wealth of Cyprus in copper was undoubtedly the reason why the Mycenaeans organised expeditions to the island, but they soon also realized its strategic and commercial position in relation to the Near Eastern countries.

Like Rhodes and Cyprus relations between the Levant and the West go back at least to Middle Minoan times, which was the great age for Cretan expansion. The distribution of MM II objects is a clear indication of Minoan relations with Syria, Palestine and Egypt[9]. Ugarit, on the Syrian coast, may be

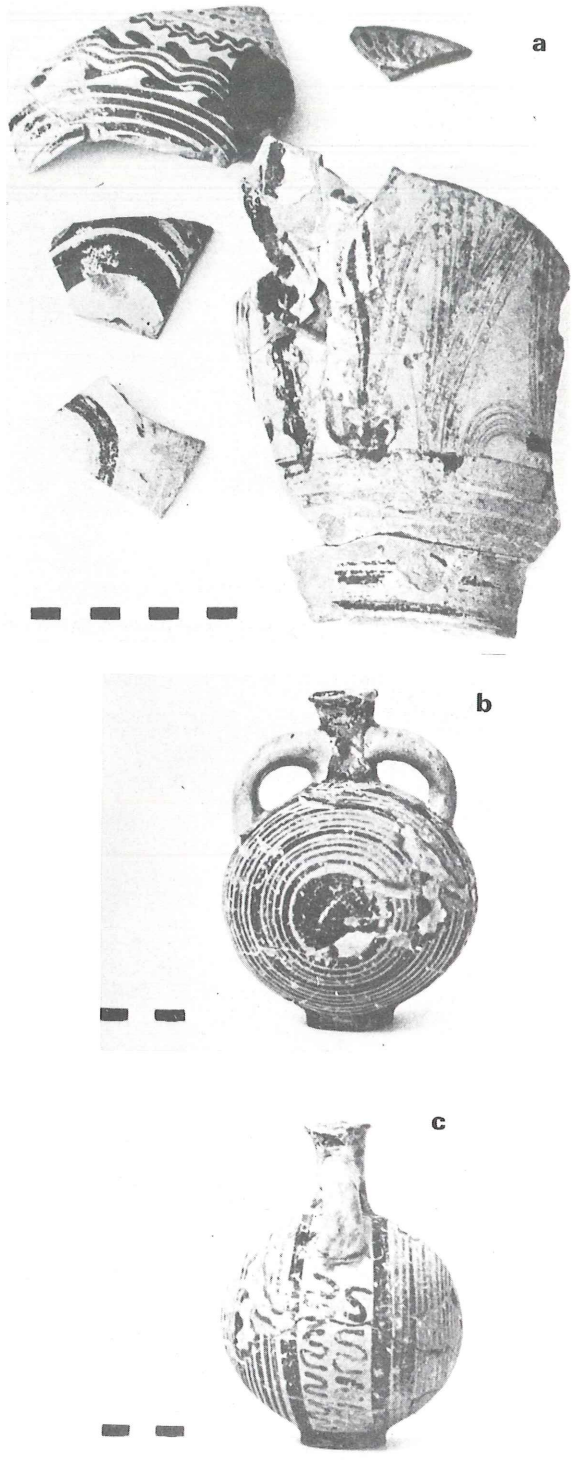
[8] Merrillees, R. S., *The Cypriote Bronze Age Pottery found in Egypt-SIMA* XVIII, 187; *Ugaritica* III, 227 ff.

[9] Stubbings, F. H., *Mycenaean Pottery from the Levant*, Cambridge 1951, 108 ff.

4. Plan of the late bronze age temple at Amman.



5. Mycenaean pottery examples.



to acquire new land. The Hittites, Babylonia and Egypt built up their wealth from natural resources with which they were endowed but Greece had to export or die because she was a poor country. So the Greeks used all their ingenuity and industry towards commercial activities abroad, as in historical times, when they founded colonies all over the Mediterranean and the Black Sea. We may assume that the first Mycenaeans to reach the East were mainland traders, who established themselves in the large commercial centres along the Levantine coast. It is hardly to be assumed that the Mycenaeans sailed directly to the Levant and it looks more likely that they stopped first at Rhodes and Cyprus and that it is from these islands that they carried on their international trade.

At most sites from the mouth of the Orontes to and including Egypt, the imported Aegean pottery is far outnumbered by Cypriote, especially Base Ring II and White Slip II pottery. At Tell El Ajjul[4] the ratio is 1:20. The Aegean pottery at Tell El Amarna outnumbers the Cypriote[5] and Mycenaean ware from the tomb at Sarafend, in south Lebanon, makes up 50 per cent of the total[6] but these are exceptions. The Cypriote ware is occasionally the only imported pottery at a site but as a rule it is the constant companion of Mycenaean ware[7]. This indicates the presence also of Cypriote traders all along the Levant and at Ras Shamra there was in all probability a Cypriote colony or at least an important trading

[4] Hankey, V., 'The Aegean Deposit at El Amarna', *Acts*, 130.

[5] *Ibid.*, 130.

[6] Baramki, D. C., 'The Impact of the Mycenaeans on Ancient Phoenicia', *Acts*, 193.

[7] Hankey, V., 'Mycenaean Pottery in the Middle East', *BSA* 62 (1967), 146.

considered as the principal trading port of Minoan Crete as it was also for the Mycenaean Greeks.

When the Greeks sailed to the East they touched the ports of powers that were among the mightiest of all antiquity, the Hittites and Egypt. During most of the Late Bronze Age, the Levant was in the hands of either the Egyptians or the Hittites or confronting each other and many a battle was fought among them for the possession of this land.

While the two empires struggled, the Greeks remained on the fringes of the great events. They had no stake in the East in the 16th century, when Thutmosis III was extending Egyptian power over Syria or when Mycenaean traders replaced the Cretans about 1400 BC. It was of little consequence to the Greeks whether Hittites or Egyptians controlled the ports of Syria or Palestine. The kings of Greece, far removed from the centre of conflict, were secure in their own cities. Their kingdoms were very different from the empires of the East, where vast territories were united under the rule of one all-powerful king. Greece seems to have been broken up—as in historical times—into a number of kingdoms, each powerful but separate and independent of others.

In the 14th and 13th centuries the Greeks had still no direct interest in the eastern territories and continued to remain aloof from the struggle for control of the Levant. They were interested only in remaining on good terms with the powers in control of the ports to which they wanted access.

The small Greek mainland and island kingdoms made up in aggregate a third power, who left their records not in treaties or on the walls of tombs but in the goods which they brought to ports all over the Mediterranean. Their royal families dealt with the eastern potentates on an equal basis but they were not interested in the lands for which so many Egyptians and Hittites lost their lives. They were primarily interested in the sea, which they dominated for almost two centuries.

Under these conditions and although the Levantine people or the powers in control of those lands were not hostile, it was not possible for the Mycenaeans to establish colonies, as for instance in Rhodes and Cyprus, where the climate was different; eventually they disappeared from the Levantine scene altogether, whereas they stayed on in those two islands.

From Rhodian and Cypriote trading ports the Mycenaeans sailed further east and the first Mycenaean goods to reach Egypt probably came indirectly through the great ports along the Syro-Palestinian coast. As we have seen, the Mycenaeans began to reach the eastern coast of the Mediterranean during the 15th century BC. However, very few vases earlier than 1400 have been found, an indication that the trade at this period was still scanty.

With the turn of the century Greek commerce with the Levant grew rapidly. Mycenaean III A pottery is found in large numbers in most parts of this area. Although much of it differs a little from the common types of the Peloponnese, its similarity to the types of Rhodes and Cyprus indicates that the bulk of the trade with the Levantine countries was carried on from Mycenaean centres on these islands. Mycenaean III B pottery is even more frequent than Mycenaean III A, and again much of it suggests Cypriote origin rather than Greek or even Rhodian.

Relations with Egypt were also active and we know that the Cretans were bringing gifts to the coast of Pharaoh. It is interesting to find that the Mycenaeans penetrated Egypt pretty early, for a number of Mycenaean I and II pottery have been found in tombs here. Mycenaean III A and III B have been found in greater quantities. Much pottery of the III A:2 and III B:1 type comes from Tell El Amarna[10]. The general character of the Mycenaean III A imports in Egypt is similar to that of Syria and Palestine. It seems reasonable therefore to infer that the Amarna pottery comes from the same manufacturing centres as the III A:2 and III B:1 pottery imports in Syria and Palestine, which is mainly Rhodes and Cyprus.

For the III B material a Cypriote origin is suggested by certain features of decoration. These features are more frequent, and types peculiar to Rhodes are no longer in evidence. The paucity of the pot types shows that it was not the pottery that mattered so much but the content (perhaps olive oil), which interested the Egyptians. Consequently they obtained their supplies from the nearest market, which is Cyprus[11].

I have made an attempt to give a general picture of the arrival of the Mycenaeans in the East, of their commercial activities and of the conditions prevailing at the time in those countries. I will now say a word as to their recession.

The Mycenaean world came to an end towards the end of the 13th century BC. Archaeology fails to explain the recession of the Mycenaeans but at least, as far as the East is concerned, some hints may be obtained from the historical records of the Egyptians and the Hittites.

In the fifth year of Merneptah (1236–23 BC), Egypt successfully repelled an attack by the people of Libya, who were supported by a number of allies from overseas, among which were the Akawasha, who have been equated with the Achaeans or Mycenaean Greeks[12]. If the Akawasha were Mycenaeans there is no evidence where they came from; perhaps they were a band of mercenaries or adventurers.

The attacks recurred in the reign of Ramses III. This time Egypt had to face not only the Lybians but also a combined land and sea invasion by a number of other people, including Denyen, who have been identified with the Danaoi[13]. If so the Mycenaean Greeks were once more involved against Egypt. In these circumstances, it is not surprising that the Mycenaeans were no longer wanted in Egypt and that all their commercial activities came to an end at that time.

It is the same with the Hittites. There is evidence that some of these marauders were of maritime origin and that they had been operating against the Hittite land of Arzawa and against

[10] Hankey, V., 'The Aegean Deposit at El Amarna', *Acts*, 128–136.

[11] Stubbings, F. H., *op. cit.* 101.

[12] Stubbings, F. H., 'The Recession of Mycynaean Civilization', *CAH* II, 2, 339.

[13] *Ibid.*, 339–340.

Alashiya before they joined other forces in Syria. Thence these allies made their way south destroying many cities, including Ugarit. These people, known in the Egyptian records as the Sea Peoples, were finally defeated by Ramses III on the borders of Egypt in 1191 BC[14].

Early in the 13th century BC, Millawanda (Miletus) had been under the control of Ahhiyawa (Achaeans) but later in the century the city appears as vassal to the Hittites. It seems that the Mycenaean—Hittite relations, which used to be friendly, now became hostile and in the text of a treaty made between the Hittite Tudkhaliyah IV (*c.* 1265–40) and the king of Amurru in northern Syria, the name of the king of Ahhiyawa is found to be deliberately deleted from a list of kings, reckoned of equal rank to the Hittite emperor. The same text, if correctly restored, shows it was Hittite policy to prevent ships of Ahhiyawa trafficking with Syria[15].

The Mycenaeans were in trouble not only externally but internally as well. At the time of the Sea Peoples and probably for the same reasons, the Mycenaean centres, such as Pylos, Mycenae and others, were afflicted by disaster. In fact this disaster hit the entire Mycenaean world, both at home and overseas. As a result of this a considerable diaspora of the mainland population took place. The main sources of evidence are archaeological, consisting of the abrupt appearance of Mycenaean materials of types hitherto unknown; this is the Mycenaean III C:1 pottery. This pottery appears to originate in the Argolid. In Cyprus the Mycenaean III B period was also brought to an end at the time of the general unrest but the appearance soon after of large quantities of Mycenaean III C pottery, indicates the arrival of many Mycenaean refugees fleeing the Argolid.

In the same situation were found the Mycenaeans in the East, when the Mycenaean imports cease with the end of III B. Exceptions, such as Tarsus, where a number of Mycenaean III C pottery has been found, do not change the picture. But here the similarity ends. The hostility of the Egyptians and of the Hittites at first and the general destruction in the Levant caused by the Sea Peoples, in which even Ugarit never recovered, forced the Mycenaeans or what may be called by this time the Cypro-Mycenaeans in the East to interrupt all activities and abandon their centuries old trading posts altogether. In all probability they went to Cyprus, where they could feel safe at home. So that the Mycenaean refugees from the Argolid were now joined in Cyprus by fugitives fleeing the Levant. Apparently it fell to Cyrus to shelter the remains of Mycenaean civilization from both East and West.

It is claimed that, following the destruction of Enkomi, about 1190 BC, there are signs of considerable contacts with the Levantine coast and that Levantine refugees arrived in Cyprus introducing with them certain oriental elements in the culture of the island[16]. Archaeological evidence, however, indicates that the influence was stronger from the Argolid[17]. There is possibly little doubt that refugees arrived from both East and West but it is my belief that the refugees from the East were Mycenaeans or Cypro-Mycenaeans. There is no evidence to show that among these refugees were Levantines, who had no reason to abandon their homes, whereas the Cypro-Mycenaeans were foreigners and had to go. Therefore there is nothing surprising in the presence in Cyprus of objects of Syro-Palestinian origin or influence. The Cypro-Mycenaeans, who had been trading in the East for generations, could not avoid being influenced by oriental culture and not unnaturally brought back home some at least of their belongings, including minor works of art, as for instance bronze figurines, ivories and seals.

One last question: Were all the traders in the Levant mainland Mycenaeans and did they ever establish any trading posts there? I suppose that there were originally mainland Mycenaeans, who did establish trading posts along the coast. We have seen that the Mycenaean goods are usually accompanied by Cypriote goods. This indicates that there were also Cypriote traders and we have seen that there was at least one considerable Cypriote community at Ugarit. But then we also know that Mycenaean III B and III C pottery was produced in Cyprus, probably by Mycenaean settlers or by Mycenaeanized Cypriotes. Therefore, at least for the later period, the traders in the East may have been what we may call Cypro-Mycenaeans.

[14] *Ibid.*, 340.

[15] *Ibid.*, 340; Goetze, A., 'The Hittites and Syria' (1300–1200 BC), *CAH* II 2, 262.

[16] Catling, H. W., 'Cyprus in the Bronze Age', *CAH* II 2, 210; Schaeffer, C. F. A., *Acts*, 289.

[17] Dikaios, P., *Enkomi* II, Mainz 1971, 523 ff.

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Contacts between North West Arabia and Jordan in the Late Bronze and Iron Ages

A serious hindrance to an understanding of the archaeology of East Jordan is the way in which that country has so often been viewed only from a western direction, as a kind of appendage to Palestine. Now it is of course true that the Jordan river is not much of a barrier, and that the regions on either side of it have, for most of their history, been closely linked, to form a single cultural province. Yet even a casual glance at a map of the area is enough to show that the most important natural route through East Jordan is that which runs along the edge of the plateau, linking North West Arabia and the Aqaba Gulf on the one hand with southern Syria on the other; and it can therefore hardly be doubted that throughout its history Jordan must have been influenced by, and had an influence on, the cultures of the countries immediately to its north and south. That these northern and southern links have not yet been demonstrated archaeologically—except (and then still most inadequately) for the Nabataean period—is the result of the lack of appropriate research in these directions. Southern Syria remains to all intents and purposes unexplored archaeologically, except for the Roman and Byzantine periods, having not yet benefited from the revolution in archaeological activity and knowledge which is affecting the rest of that country[1]. As for Arabia, for long the *terra incognita* of Near Eastern archaeology, the changes which are taking place there, set in motion by the Danish excavations in the Gulf States in the mid-1950s and culminating now in full programmes of activities by university departments, national antiquities authorities, and foreign expeditions,[2] have only very recently begun to affect the North West of the Peninsula. Most significant of these activities for our present purpose has been the Comprehensive Archaeological Survey of Saudi Arabia initiated in 1976 by the Department of Antiquities in Riyadh. This, in its first two seasons, investigated, amongst other regions, those of the Wadi Sirhan and al-Jawf[3], and more recently has operated in the northern Hegaz. Not all of the results of the work are yet published[4]; but from the Wadi Sirhan there is already available a large corpus of archaeological material which, as might be expected, has many close analogies with that from Eastern Jordan. The bulk of this material from the Sirhan seems to belong to the Neolithic and Chalcolithic periods (when moister climatic conditions almost certainly prevailed)[5], and will now have to be taken into account when considering questions of, for example, population growth and urbanisation in Palestine at the end of the 4th millennium. This must be left for a future occasion, however. Our purpose here is to look at another period—the Late Bronze and Iron Ages—and to consider some implications arising from the discovery, in the N.W. Hegaz, of two different groups of painted pottery, one known best from the site of Qurayyah (N.W. of Tabuk), the other from al-ʿUla. This pottery was first recognised during the course of reconnaissances carried out in this region prior to the Comprehensive Survey mentioned above, though much additional material has since been found. In 1962 Drs F. V. Winnett and W. L. Reed conducted what was primarily an epigraphic survey of the region and included in their report a brief description of sherds picked up at al-ʿUla and Tayma.[6] Six years later the present author, in collaboration with the late G. Lankester Harding and J. E. Dayton, made a rapid archaeological tour of much the same area, though including sites not visited by Winnett and Reed and concentrating more on the ceramic evidence. In the published account of that journey[7] a description of the two main sites involved—al-ʿUla

[1] A good short account of the history of archaeological research in Syria is given in the first chapter of Paolo Mathiae, *Ebla: An Empire Rediscovered*, London, 1980.

[2] For a brief review of 'The Present State of Archaeological Research in the Arabian Peninsula', see the paper by the present author, read at the Second International Symposium on Studies in the History of Arabia, held at Riyad in 1978, to be published in the *Proceedings* of that Symposium in 1981.

[3] R. McC. Adams, P. J. Parr, et al., 'Preliminary Report on the First Phase of the Comprehensive Archaeological Survey Program', *Atlal* 1 (1397/1977), 21–40; P. J. Parr, J. Zarins, et al., 'Preliminary Report on the Second Phase of the Northern Province Survey', *Atlal* 2 (1398/1978), 29–50.

[4] A report on one aspect of the work can be found in 'Khief El-Zahrah and the Nature of the Dedanite Hegemony in the Al-'Ula Oasis', by Garth Bawden, *Atlal* 3 (1399/1979), 63–71.

[5] See discussion and references in *Atlal* 2, 29–30.

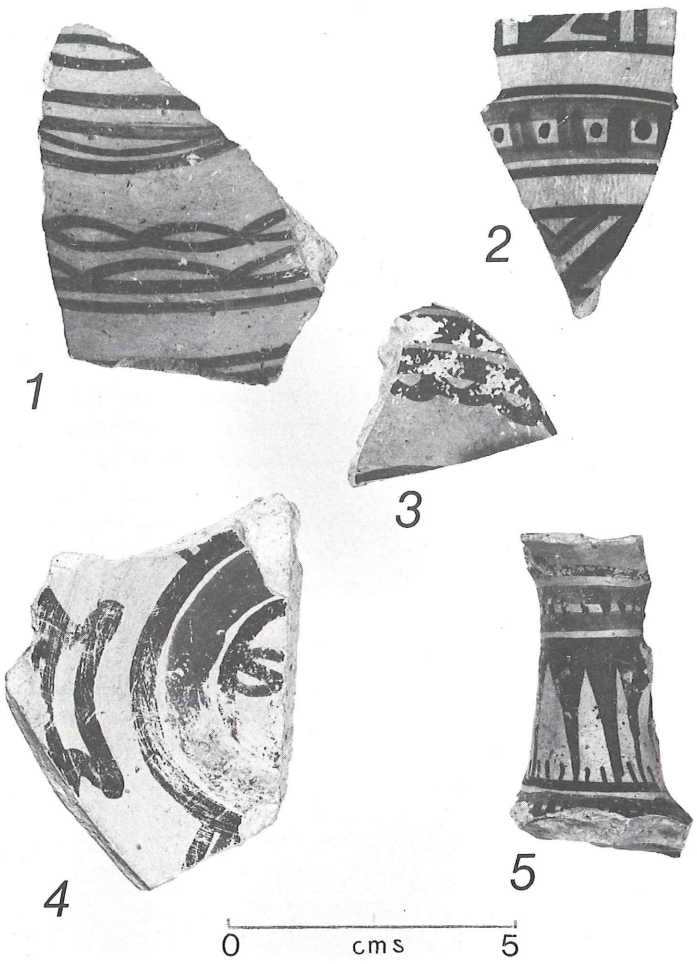
[6] F. V. Winnett and W. C. Reed, *Ancient Records from North Arabia*, Toronto, 1970.

[7] P. J. Parr et al., 'Preliminary Survey in N.W. Arabia 1968' *Bulletin of Institute of Archaeology, London University* 8–9 (1970), 193–242. (Henceforth cited as 'Preliminary Survey . . .')

and Qurayyah—and of the pottery was presented, and will not be repeated here. A summary of the main points will suffice as an introduction to a discussion of the possible significance of the pottery, in the light of more recent work and of new hypotheses; and we may begin with the site and pottery of Qurayyah.

The main features of Qurayyah—some 70 kms. N.W. of Tabuk—are its fortified citadel, its walled village and its extensive irrigated field systems. These were described in our original report, as was the pottery which was found on the surface, and until the results of more recent investigation have been published there is little more to be said about the site. Concerning the pottery, however, two points need to be emphasised. In the first place, it must be stressed that although it is the distinctive painted pottery (to which the name 'Midianite' was given, perhaps unwisely) which received most attention in that report, and which has figured most prominently in discussions since, this ware only forms a proportion—how large or small cannot be said, given the non-quantitative sampling techniques employed at the time—of the total pottery recovered, and there is a significant corpus of unpainted pottery which has not yet been studied, and which, when it is, can be expected to throw more light on the question of 'Midianite' origins and cultural contacts. Secondly, even within the painted ware, the diversity of fabric needs to be noted. It is true that the original report stressed the homogeneity of the painted pottery[8], and this still seems to the writer to be essentially correct, with regard to the simplicity of the range of forms (mostly bowls) and the decorative technique and motifs. However, in the note accompanying the descriptions of the sherds published[9], the pottery (decorated and plain) was classified under eighteen different ware types, of which seven occurred within the painted category; and although this was based on only a rough and ready field assessment and should not be taken as too reliable, the fact is that there is a considerable variation in the quality of the painted pottery, with some very fine fabrics as well as the more usual coarser gritty ones. This observation is important, if only because some of the parallels to the Qurayyah sherds cited in the original report as coming from Tell Fara in southern Palestine[10] are in a very fine cream ware closely comparable to Ware E of the intitial Qurayyah report (FIG 1). The presence of a number of different fabrics within the painted 'Midianite' pottery of Qurayyah might perhaps suggest that not all of it is locally made (though some certainly is, on the evidence of the ruined kiln found at the

1. Painted sherds from Tell Fara in collections of London Institute of Archaeology.
1) *Beth Pelet* II, plate LXIII, no. 56.
2) *Beth Pelet* II, plate LXIII, no. 53.
3) *Beth Pelet* II, plate LXIII, no. 42.
4) Unpublished.
5) *Beth Pelet* II, plate LXIII, no. 52.



site)[11], and/or that it covers a somewhat wider chronological range than was originally thought. However, nothing published or discovered since 1970 seems to indicate that the dating proposed then for the painted ware is seriously wrong. The main dating evidence—as has been noted many times since—is the presence of identical pottery from the Hathor temple and copper workings at Timna, in the Wadi Arabah, where Dr Rothenberg's excavations seem to have established without doubt a 13th–12th century date. Other analogous material recently reported[12] would generally support this. At Khirbat Meshash (Tell Masos) near Beersheba, a few comparable sherds are published from Stratum IIb, with other pottery for which the best parallels come from Megiddo

[8] *Ibid.*, p. 238.

[9] *Ibid.*, p. 231.

[10] E. Macdonald, et al., *Beth-Pelet II: The Cemetery* (1932), p. 29, and Plate LXIII, nos. 52–55. Attention should be drawn to an even more striking parallel between the Qurayyah and Fara sherds. An apparently hitherto unpublished sherd from Fara, marked F.ZZA 362′ 10″, now in the collection of the Institute of Archaeology, London, bears an amost identical design to the sherd published by Parr, Harding ahd Dayton, 'Preliminary Survey . . .', figure 16, no. 8 (see here, Plate 1, no. 4). Both are of fine buff-white ware.

[11] 'Preliminary Survey . . .', p. 240 and plate 39.

[12] See the list in J. Kalsbeek and G. London, 'A Late 2nd Millennium BC Potting Puzzle', *BASOR* 232 (1978), 47–56.

VIa[13]. This might suggest the possibility of a rather later date for the painted ware, since some authorities date Stratum VIa to the 11th century[14]; but Megiddo is hardly the best peg on which to hang a chronology. From a tomb at Tel Jdur near Hebron several 'Midianite' (or related) sherds are mentioned by S. Ben-Arieh[15], together with Cypriot LB vessels. The only site which still seriously conflicts with this evidence for a late LB—early Iron Age attribution is Tell el-Kheleifeh, where, according to Glueck, this type of pottery occurs in Level IV, dated by him to the 8th–6th centuries. The excavations at Kheleifeh have never inspired confidence, however, and in any case remain essentially unpublished; the site would well repay re-excavation. Although it is perhaps theoretically not impossible for the 'Midianite' painted ware to have had a life span of five or six hundred years, the date originally proposed in the 13th–12th centuries, with a possible extension into the 11th, still seems the most likely, in the absence of more reliable contradictory evidence.

More important than the dating evidence provided by the recent discoveries of 'Midianite' sherds outside North West Arabia is their distribution pattern and frequency. A map of the relevant sites has been published by Kalsbeek and London[16], and shows that, apart from a group of sites in the southern Arabah (Timna, Yotava, Kheleifeh and Jazirat Faraun) and Qurayyah itself, they cluster in the south of Palestine (Lachish, Jdur, Tell Fara and Tel Masos), with a distant outlier at Amman. It is important to note that, outside the Timna-Qurayyah region (the 'Midianite heartland') the sherds are only reported in very small quantities, even when (as at Masos, Fara, or Amman) the bulk of excavated material is very large. In other words, the Midianite sherds are here clearly foreign intrusions, and their rarity indicates that we are dealing at these sites not (as presumably we are at Timna) with the special pottery favoured by a sizeable group of 'foreigners', nor with articles deliberately and methodically traded (as in the case of Mycenaean pottery in LB Palestine and Syria, for example), but with isolated vessels brought and used (or perhaps simply admired) by their owners, who may have been either individual North West Arabians ('Midianites') resident in Eastern Jordan or in Southern Palestine, or (conceivably) Canaanites who had visited N.W. Arabia or Timna and who had acquired them as souvenirs.

This distribution pattern is very similar, *mutatis mutandis*, to that of the later Nabataean pottery, in that it shows a very distinctive ceramic type almost entirely confined to a rather restricted geographical region, despite the lack of any obvious physical barriers between that region and the neighbouring countries. The apparent absence of the 'Midianite' painted ware from Sinai is particularly striking, in view of the Egyptian contacts with Timna. Whether this fact justifies the use of the ethnic determinative in connection with this pottery; whether it can tell us something of the political situation in N.W. Arabia and Southern Palestine/Jordan at the end of the 2nd millennium; whether it can, indeed, throw light on what may be called the 'national ethos' of the inhabitants of N.W. Arabia at this time; all these are questions (discussed by the writer elsewhere in connection with Nabataean pottery)[17] which will not be investigated here.

The chief problem concerning the Midianite painted pottery remains that of its immediate stylistic origin. That its decoration is related to that (often in a bi-chrome technique, as are some of the 'Midianite' pieces) common throughout the Levant in the Late Bronze Age and the beginning of the Iron Age, has never been doubted, while the ultimate Aegean inspiration of many of the motifs, demonstrated by Dayton[18], is also clear. The close resemblance of some of the Midianite motifs, especially the representations of birds and bulls, to similar designs on LBI wheel-made Bichrome ware, has also been noted[19], though the chronological gap of some 200 years between the two wares seems to argue against any direct connection. However, it remains as true today as it did ten years ago that 'comparative study reveals few close analogies to include shape, decoration and ware'[20], and the 'Midianite' pottery can best be classed as a hybrid, developed in N.W. Arabia not in direct and slavish imitation of Levantine wares (as are, for example, the well-known Levantine imitations of Mycenaean or Cypriot pottery), but as a more imaginative and individual expression of the artistic talents of the potters, inspired by a heterogeneous collection of ideas borrowed from their neighbours. Once again we may note the parallelism with the Nabataean painted ware. Where the borrowing took place is problematic. If the ideas behind the 'Midianite' ware were derived from contemporary Levantine pottery, then it is certain that they were not borrowed in Arabia itself, since no examples of such Levantine painted pottery have been found there. We must assume, then, that the North West Arabians were reproducing designs seen by them on pottery elsewhere, presumably in Palestine rather than in Egypt since, although bichrome painted pottery was known in Egypt during the early 18th Dynasty, later Egyptian pottery seems to bear little resemblance to the 'Midianite'[21]. However, it is not exclusively to pottery that we must look for analogies to the 'Midianite' designs; many Egyptian faience vessels have been found in Timna and in Sinai[22], and a cursory glance at the publications indicate a number of possible comparisons. In view of the known presence of Egyptians at the copper mines

[13] V. Fritz, 'Tel Masos', *Tel Aviv* 2 (1975), 109 and plate 23.

[14] Kenyon dates the end of VIa to c. 1100, Aharoni to c. 1050, and Wright to c. 1000.

[15] *Qadmoniot* XI (1978), 60–61.

[16] *BASOR* 232 (1978), 48.

[17] P. J. Parr, 'Pottery, People and Politics'. In, P. R. S. Moorey and P. J. Parr, *Archaeology in the Levant. Essays for Kathleen Kenyon*, Warminster (1978), 203–209.

[18] J. E. Dayton, *Proceedings of the Fifth Seminar for Arabian Studies*, London (1972), 25–37.

[19] *Ibid.*, 31.

[20] 'Preliminary Survey . . .', 238.

[21] I am indebted to Mr Colin Hope for discussing Egyptian New Kingdom pottery with me.

[22] For example, B. Rothenberg, *Timna*, London (1972), FIG. 52; W. M. Flinders Petrie, *Researches in Sinai*, London (1906), plates 156, 158.

in the Arabah, and of the possibility, if not probability, that the Egyptians were already involved in Arabia at this time in connection with the trade in aromatics[23], a predominantly Egyptian inspiration for the Midianite ware remains, in the opinion of this writer, the most attractive of a number of alternatives.

We may now turn to a different set of problems raised by the discovery of another category of painted pottery at al-'Ula. This site occupies one of the most fertile oases in the northern Hegaz, on the main route which linked South Arabia with the countries of the Eastern Mediterranean. Its identification—or rather, the identification of the ruins at Khuraybah, at the north end of the oasis—with ancient Dedan has never been challenged since it was first proposed by Glaser in 1890. The site with its rock-cut tombs and its inscriptions in the Dedanite, Lihyanite, Minaean and Thamudic varieties of the South Arabic script, has been described by a number of travellers, most recently by Bawden[24]; and its history has been summarised by Albright and Winnett[25]. Biblical references suggest that Dedan was a flourishing trading centre at least as early as the 6th century BC, but according to Winnett there is no proof that any of the inscriptions are as early as this. Winnett argues for a short-lived Dedanite kingdom, probably in the mid-5th century BC, followed at the end of that century by a Lihyanite dynasty which lasted for two hundred years or so. At the beginning of the Lihyanite period a colony of South Arabian Minaean merchants seems to have been established at the oasis, though for how long is unclear. There is little evidence for a Nabataean occupation of the site, and it seems fair to assume that it was more or less deserted at the end of the Lihyanite period, perhaps in the 2nd or early 1st century BC.

In the report of the 1968 survey it was argued, on the evidence of three statue bases found by Jaussen and Savignac just below the surface of the ruins and dated by Albright and Winnett to the late 4th or early 3rd century BC, that the final major building phase at the site should probably date to about this time; and Bawden has suggested[26] that Dedan was in fact abandoned in the 3rd century, to be replaced by a new settlement, discovered by him south of the oasis and characterised by 'Hellenistic-Nabataean' pottery. The force of this suggestion cannot be assessed, however, until the relevant pottery is published.

The pottery which lies on the surface of Khuraybah includes a significant quantity of painted sherds, and it is on these that our discussion will be focused. The same painted ware has been found by Bawden in soundings dug at the northern end of the ruins, and he has been able to confirm the impression gained in 1968 that the ceramic inventory from the entire site is stylistically and technologically homogeneous and essentially of a single period[27]. The duration of that period and its absolute dates cannot at present be stated with any precision, though it is reasonably clear that it must lie within the range of the 6th-1st centuries BC which, as we have seen, are the probable chronological limits of the site. It may be remarked that none of Bawden's soundings produced evidence for more than one phase of building construction, though this is not necessarily also true of the main Khuraybah site. In our previous report we suggested that the bulk of the surface pottery was most likely to belong to the last major occupation of the site: probably, therefore, to the 4th–3rd centuries BC (see above), and this still seems the safest assumption. However, the difficulties and dangers of interpreting surface material are well known, and the possibilities of its being earlier or later (or both) cannot be ruled out.

Little need, or can, be added to the description of the Khuraybah pottery given in our report of the 1968 survey. The sherds all relate to a fairly limited range of vessels, mostly bowls and jars, though there is a wide variety of rim forms, especially in the material published from Bawden's soundings. All the pottery (with the exception of a few sherds from large jars) is wheelmade, and is typically hard, gritty and of a reddish or purplish hue, though grey and brown fabrics are also present. The majority of the vessels seem to have been well and evenly fired. The surfaces of both plain and painted sherds are usually covered with a light brown, cream, pink or red slip, and are often smoothed. The simple painted decoration is applied in black or (less commonly) red or purple; occasionally a bichrome effect is achieved. It occurs on the upper parts of the vessels, on the inside of the open bowls and the outside of the closed jars, as might be expected. Designs are simple and of limited repertoire: horizontal bands, ladder patterns and cross hatching are common, wavy lines and loops much less so.

Ten years ago it was considered unproductive and unwise to search for analogies for the Khuraybah painted pottery, but much has happened since then in both Arabian and Jordanian archaeology to encourage us now to take a less timorous approach, and to cite evidence which may have a bearing upon it. The evidence is of both a negative and positive kind, and we shall begin with the former.

Apart from the possibility of a few sherds from the site of Tayma[28], it can be stated quite categorically that nowhere in Arabia outside the N. Hejaz has there been found to date any painted pottery, of approximately comparable date, which bears any real resemblance to that from Khuraybah, despite the fact that surface surveys have by now been carried out in most parts of the Peninsula. A glance at the illustrations accompanying recent reports in *Atlal*, and *The Journal of Oman Studies*, or in such publications as Van Beek's *Hajar*

[23] Abdel-Aziz Saleh, 'An Open Question on Intermediaries in the Incense Trade during Pharaonic Times', *Orientalia* 42 (1973), 370 ff.

[24] Garth Bawden, 'Kheif el-Zahrah and the Nature of the Dedanite Hegemony in the Al-'Ula Oasis', *Atlal* 3 (1979), 63–72.

[25] W. F. Albright, 'Dedan', in *Geschichte und Altes Testament (Alt Festschrift)*, Tübingen, 1953; F. V. Winnett and W. L. Reed, *Ancient Records from North Arabia*, Toronto (1970), 113–120.

[26] *Atlal* 3 (1979), 71.

[27] *Ibid.*, 68.

[28] For example, that illustrated in FIG. 84, no. 4, of Winnett and Reed, *Ancient Records from North Arabia*.

Bin Humeid[29] or Harding's *Archaeology in the Aden Protectorates*[30], is enough to confirm this. Painted pottery of any kind seems, indeed, to have been very rare in Arabia (with, of course, the notable exception of the 'Midianite' ware discussed above) between the Umm en-Nar period in the Gulf (3rd millennium BC) and Islamic times. Particularly significant, in view of the undoubted presence of South Arabians (Minaeans) at Dedan, is the rarity of painted decoration at Hajar Bin Humeid, where Van Beek records it on only 3 per cent of the total sherds[31]. One published example[32] has a lattice design similar to a common Khuraybah motif, but the shape of the vessel has no parallel at the latter site, while the ware is of the normal chaff-tempered Hajar Bin Humeid type unknown at Khuraybah. Two sherds published by Harding from the site of Raibun in the Hadhramaut also have simple linear painted designs, but the ware is also coarse and chaff-tempered[33]. These few decorative analogies in the south are surely coincidental.

Leaving aside for the moment the 'Midianite' painted pottery, it is only when we look further north that we find decorated pottery which possibly has, in our view, more than a fortuitous resemblance to the Khuraybah painted ware. We refer to the so-called Edomite pottery, first discovered by Glueck during his surveys of Eastern Palestine, and more recently excavated at Tawilan and Buseirah by Mrs Crystal Bennett[34]. The suggestion of a relationship between these two groups of pottery is put forward tentatively since, at first glance, the resemblances do not seem close. The Edomite pottery encompasses a greater range of shapes, including graceful carinated bowls and vessels with high ring or pedestal bases, all of which have good Palestinian Iron Age parallels. A certain sophistication is also apparent in the bar-handles and 'notched' bands. The Edomite decoration is also obviously more elaborate than that of Khuraybah, particularly in the use of red slip, sometimes with reserved bands and sometimes burnished. Yet despite all these differences, actual physical comparison of some of the less elaborate Edomite sherds with those of Khuraybah reveals some remarkable similarities in appearance and 'feel'[35]. To the naked eye the technique of manufacture of each group, as well as some of the fabrics represented, are very similar, and this latter point seems to be at least provisionally confirmed by the preliminary results of petrographic analysis of a few specimens from Tawilan and Khuraybah by Miss Lea Jones[36]. As for the painted decoration, many of the individual design elements in each group are identical—the ladder pattern and lattice especially—while the overall effect of both decorative styles is remarkably similar. Despite the differences between the two pottery groups, therefore, it is our belief that they have more than a fortuitous resemblance, and that some kind of relationship exists between them.

The question is, what kind? To attempt an answer to that, we must look again at the chronology. Mrs Bennett has demonstrated that the main period of occupation at Buseirah, with which the Edomite painted pottery is associated, belongs to the 7th century BC[37], although whether the pottery also occurs earlier and later than this—in the 8th and 6th centuries—when Buseirah was also apparently occupied, can only be known when the excavations are fully published. At Khuraybah we have suggested—though, as we have seen, it is little more than a guess—that the *floruit* of the painted pottery there falls most likely in the 4th and 3rd centuries. If this is so then there is an apparent chronological gap between the two pottery groups, which certainly creates a difficulty in our argument that they are related. However, it must be remembered that the earliest occupation of Dedan dates to the 5th or even the 6th centuries BC, on the evidence of the Dedanite inscriptions and of the Biblical references, and there is, strictly speaking, nothing to prove that the origin of the painted pottery does not go back as early as this, or even earlier (since the earliest settlement at Dedan might well pre-date the first mention of the site in the Old Testament). Despite our previous argument, therefore, that the bulk of the surface pottery at Khuraybah dates from the 4th–3rd centuries—an argument which still seems the most logical—the possibility that the painted style is earlier than this in origin, and could even be to some degree contemporary with the Edomite style, cannot be discounted. Unclear though the chronological situation is, it is perhaps not entirely unproductive—in view of what seem to the writer to be definite stylistic and technological links between the Buseirah/Tawilan and Khuraybah pottery groups—to explore some possible reasons for the relationship, recognising that any suggestions can only be highly speculative.

There are a number of possibilities. If—as seems to us most likely—the Khuraybah pottery is later than what might be termed 'standard' Edomite ware, it could be viewed stylistically as a late derivative, exhibiting that degeneration and simplification of form and decoration which is often found in such cases. Historically it may be interpreted as demonstrating the appearance of Edomite cultural influence in the al-'Ula oasis in the 6th and 5th centuries BC. Such an interpretation might fit quite well with what is known of the historical situation at this time. That situation has been thoroughly reviewed by Bartlett[38], who is inclined to accept Lindsay's[39]

[29] G. Van Beek, *Hajar bin Humeid*, Baltimore (1969).

[30] G. Lankester Harding, *Archaeology in the Aden Protectorates*, London (1964).

[31] G. Van Beek, *op. cit.*, 98.

[32] *Ibid.*, FIG. 50, no. H 2064.

[33] Harding, *op. cit.*, plate XX, nos, 10 and 11.

[34] See especially her reports on Buseirah in *Levant* VI (1974), FIGS 15 and 16; *Levant* VII (1975), FIGS 5–8.

[35] I am indebted to Mrs Bennett for donating a selection of sherds from Tawilan to the Institute of Archaeology, thus making this comparison possible.

[36] I am grateful to Miss Jones for undertaking this research, and making her initial results available. A more extensive programme of petrographic and neutron activation analysis is planned.

[37] *Levant* IX (1977), 9.

[38] J. R. Bartlett, 'The Rise and Fall of the Kingdom of Edom', *PEQ* 1972, 26–37; 'From Edomites to Nabataeans', *PEQ* 1979, 53–66.

[39] John Lindsay, 'The Babylonian Kings and Edom, 605–550 BC', *PEQ* 1976, 23–39.

conclusion that it was Nabonidus, at the time of his Arabian campaign in 552 BC, rather than Nebuchadnezzar, thirty years earlier, who was responsible for the downfall of Edom. Bartlett's suggestion that it was only the Edomite monarchy that collapsed at this time and that there was no wholesale depopulation of the region, may well be true, though his arguments in favour of uninterrupted sedentary occupation throughout the Persian period until the coming of the Nabataeans is rather forced, in the absence of secure archaeological evidence, especially for the later 6th to early 4th centuries. Be that as it may, Nabonidus' military intervention in southern Jordan must surely have resulted in a certain amount of population upheaval, and it is not inconceivable that a group of Edomite refugees moved south to Dedan (where they surely already had commercial contacts), taking with them the memory of a style of painted pottery which was to influence the local potters. There are, inevitably, some serious weaknesses in this argument: for example, why should the postulated Edomite refugees flee south towards a region (N.W. Arabia) where Nabonidus had campaigned with apparently equal severity (Dedan being specifically mentioned in the Harran inscription as one of the places visited by the Babylonian forces)[40]? However, the Edomite dispersal south may not have occurred immediately following the Babylonian attack, and could perhaps have been delayed until the 5th century, when (as we have seen) Dedan was again flourishing and conditions in N.W. Arabia presumably more settled. This hypothesis might perhaps be supported if it could be shown that the Khuraybah painted pottery had its closest parallels with the latest pottery from the Edomite sites, i.e. from the 6th century deposits which Mrs Bennett reports from Buseirah[41]; but the evidence bearing on this is not yet available.

There is, secondly, the possibility that the Khuraybah pottery is, in origin at least, contemporary with the Edomite ware. In this case—always assuming we accept that there is a stylistic relationship—we can best view the Arabian style as a provincial derivative of the more elaborate 'metropolitan' style of Buseirah and Tawilan. This type of stylistic relationship is well known from other places and periods, of course; for example, between imported Mycenaean ware and its local Canaanite imitations, where a similar element of simplification can often be seen in the designs on the local vessels. This is an attractive thesis in terms of historical reconstruction, since it would provide archaeological evidence to supplement the literary evidence for commercial links between Edom and Dedan in the 6th century (prior to the Babylonian attack) and possibly earlier, and would indicate that those links were strong enough to have affected the material culture of Dedan. One might even wonder whether the pottery evidence did not support the view, argued by Lindsay, that N.W. Arabia was an integral part—the southern part, Teman[42]—of 'greater Edom'. Alternatively, we may think in terms of a colony of Edomite merchants settled in Dedan, using a variety—albeit a provincial one—of the pottery they were familiar with at home further north. However, in either of these cases it has to be admitted that the suggestions would be stronger, archaeologically speaking, had even a few examples of 'standard' Edomite ware been found in N.W. Arabia; and such is not the case.

There is a final idea which has to be mooted. We have already remarked on the rarity—indeed almost total absence—of painted pottery in Arabia between the 3rd millennium BC and the Islamic period. The presence of two groups, the 'Midianite' and the pottery found at Khuraybah, in the Late Bronze and Iron Ages in the North West of the Peninsula stands out as all the more remarkable, therefore, and must raise the question of whether these two groups are themselves related. The relationship may simply be that the decoration on both is (as we have proposed above) ultimately derived from decorative styles of the Levant and the Eastern Mediterranean, where painted pottery is common at this time. However, the possibility that there is a more direct link between the 'Midianite' and Khuraybah pottery needs considering; though we must stress again that the necessary typological analysis has not yet been carried out, particularly with regard to shape, to make a full discussion possible. But, with regard to the decoration, it can already be said that although the designs on the 'Midianite' ware are generally speaking much more elaborate than those on the Khuraybah vessels, and include a significant number of animal motifs which never occur at Khuraybah, there are undoubted similarities between the simpler decorative elements, especially the ladder and trellis patterns. These, of course, are universal motifs, which can occur anywhere, and may be no more than coincidental; and it needs to be emphasised that the overall effect of the 'Midianite' ware, as well as its technical aspects, mark it off, in the writer's opinion, as something very different from the Khuraybah pottery. There is also the chronological evidence which, uncertain though it is, makes it difficult to avoid the conclusion that a period of several centuries, perhaps as much as half a millennium, separates the two groups. And yet . . . if the links we have proposed between the Khuraybah and Edomite pottery did not exist, or if the chronological gap between the 'Midianite' and Khuraybah pottery could be closed, it would be a not unreasonable temptation to see the Khuraybah style as a late manifestation of a tradition in painted pottery first introduced into N.W. Arabia in the Late Bronze Age.

We could even go further (if only we could show that the Khuraybah style of pottery originated several centuries earlier than the presently available evidence indicates) and suggest that this ware was not only the descendent of the 'Midianite' style, but also stood in some sort of ancestral relationship to the Edomite pottery. The attraction of this theory is that it

[40] C. J. Gadd, 'The Harran Inscriptions of Nabonidus', *Anatolian Studies* VIII (1958).

[41] *Levant* IX (1977), 9.

[42] R. de Vaux, 'Teman, Ville ou Région d'Edom?', *Revue Biblique* (1969), 379–385; Lindsay, *PEQ* (1979).

would not only help to fill the otherwise rather strange gap in the archaeological record of N.W. Arabia that seems at present to exist between the period of the flourishing of Qurayyah and that of Dedan, but might also help to explain the popularity of painted pottery in Edom at a time when, elsewhere in Palestine and Transjordan, painted wares are the exception rather than the rule. Edomite pottery would thus be seen as an amalgamation of Palestinian shapes and certain decorative elements (red burnishing and reserved-slip), with a N.W. Arabian tradition of painting. However, at this point speculation has certainly gone too far. The various hypotheses suggested in this paper can only be tested by field work in both southern Jordan and in Arabia, and if they stimulate activity in this direction they will have been worthwhile.

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The Beginning of the Iron Age in Transjordan

At the present time it is impossible to reconstruct the history or to clearly define the cultural heritages and material assemblages of the peoples of the Transjordan at the beginning of the Iron Age. Though surface surveys are producing increasingly more precise information on the geographical concentration and type of settlements which existed at that time, the amount of material recovered from systematic excavation, as well as in tomb deposits, is still very limited. Only the excavations at Deir ʿAlla (Franken, 1969) have provided a continuous sequence of layers covering this period and most of the pertinent layers have been published. Reference has been made to occupation levels at Tell es-Saʿidiyeh (Pritchard, 1964: 5) and tombs were excavated at Tell es-Saʿidiyeh (Pritchard, 1964: 6–9 and 1968: 99–122) and Tabaqat Fahel (Yassine, 1975: 60) but only one of these is published. All of these sites are within a twenty mile stretch on the eastern side of the Jordan Valley and the northernmost site is but twelve kilometers southwest of Beth Shan on the opposite side of the Jordan.

No complete published sequence exists east of the valley but pottery and other artifacts have been excavated at Amman, Sahab, Khirbet el Hajjar, Heshbon, Dhiban, Aroʿer and Baluʿa. Tombs have been excavated in the Amman area, Sahab, Madeba, Mafraq and Irbed. With our evidence so limited, and much still in the process of publication, the number of comparisons we are able to make between the artifacts found in the Jordan Valley, Palestine and the various districts of the Transjordan is still very restricted. It seems that it will be possible in the future to define cultural variations between many of the districts of the Transjordan, as a manifestation of the political realities of antiquity, but we have many years of work ahead of us before we shall have amassed a large enough body of evidence to substantiate properly such distinctions. For the time being, we must block out the distinctive features of each period and phase as they exist throughout the Transjordan. When we move from the consideration of detailed analyses of ceramic peculiarities, artistic styles, etc. to broader theoretical considerations, we must be careful not to bias our discussions by attaching our evidence to accepted theories and postulations which may mislead us and require radical corrections in the future. In other words, I would rather see us concentrate on the details and problems of the Transjordan first, build our theoretical framework on that basis (as the evidence becomes available) and then compare this new theoretical design with current designs for the surrounding areas. If this is not done, we run the risk of seeing the Transjordan not for itself but rather as it seems to appear on the basis of evidence gathered west of the Jordan.

What is the implication of 'Philistine' pottery at Deir ʿAlla or 'Philistine' coffins at Amman and Sahab or the 'Israelite' house types at Sahab and Saʿidiyeh or 'Midianite' pottery in northeastern Arabia, the Arabah and the Negev, if all of these indeed exist? Recent evidence has created problems for most of these and other ethnic designations which have become associated with specific features. Evidence bearing on two important matters will have a profound effect on our interpretation of the beginning of the Iron Age in the Transjordan: 1) A clear understanding of the Middle and Late Bronze Age assemblages wherever they can be found in the Transjordan and 2) the precise impact of Egyptian influence in Palestine and the Transjordan in the thirteenth and twelfth centuries BC.

Many of the tomb groups from Amman, Sahab, Madeba and Irbed present a mixture of Late Bronze Age and Iron I ceramics and artifacts, as a result of re-use or continued use of these tombs. Other tombs at the same sites, though overlapping in many features, contain none of the earlier materials. These tomb groups, which are published in sufficient detail to allow study and comparison, document a Transjordanian assemblage which can be paralleled in basic details with material from Tell Beit Mirsim, Beth Shemesh, Ai, Shiloh, Beth Shan, Taʿanach, Hazor and many other sites in Palestine, but particularly with the hill country sites. The evidence from Deir ʿAlla and the other sites with excavated materials, helps to fill in the basic ceramic assemblage and provides a limited amount of related artifacts. We have characterized this assemblage as basically parochial with limited external contacts. The imported Cypriote, Mycenaean and Egyptian vessels of the later part of the Late Bronze Age are no longer

present and there are clear changes in the pottery repertoire. But how can studies of ceramic sequences and changes of pottery assemblages be made to relate to historical records and events? We have indicated above that we would like, for the time being, to limit the scope of such discussions, but a few basic observations are in order to highlight specific major questions which will require detailed examination in the future.

In the past two decades, there has been a review of Egyptian-Transjordanian contacts (Kitchen, 1964; Ward and Martin, 1964: 18–22; Giveon, 1971; and Ward, 1972) including a survey of inscriptional evidence found from the Golan Heights in the north to Timna in the south (Rothenberg, 1972: 163–172). It now seems that the power of the Egyptian pharaohs was felt in the Transjordan at least between the reigns of Seti I and Ramses III and at times outright Egyptian control of certain areas was established. A final surge of Egyptian domination in Palestine in the first half of the twelfth century BC is now also well documented (Ward, 1971). Consequently, it is clear that the beginning of the Iron Age in the Transjordan cannot be understood without a proper emphasis on this Egyptian role. The recent publication of the finds at Deir el-Balah (Dothan, T., 1979, 1973 and 1972) and a tomb at Tell es-Saʿidiyeh (Pritchard, 1968) appear compatible with Oren's interpretation in his publication of the thirteenth to eleventh century tombs at Beth Shan: 'The conclusions arrived at in the foregoing pages that the coffin burials of Beth Shan actually represent a garrison group of Egyptian and a few troops of Aegean origin detailed by the pharaohs of the XIXth and XXth Dynasties sometime between the late 13th and 11th centuries, is well attested by the discoveries made on the tell' (Oren, 1973: 101–150). What we do not know at this point is the effect of these practices on the local population. Did any of the Canaanites of the Jordan Valley or the sea coast adopt the use of anthropoid coffins in their burial practices? Stiebing and Loffreda have indicated that the tombs at Tell el Farʿah south, which have been interpreted as influenced by Aegean models (Waldbaum, 1966), can be explained as a continuation and development of a local tomb type (Stiebing, 1970 and Loffreda, 1968). The presence of the naturalistic type of anthropoid coffin lids at Amman (Yassine, 1975), Sahab (Albright, 1932) and Pella (Yassine, 1975: 62), the late version of this coffin type at Dhiban (Winnett and Reed, 1964: 59–60, PLS. 96 and 97) and the existence of anthropoid coffins in Iron I as far north as the Euphrates River in Syria, indicates that this distinctive feature of burial practice was adopted by the local populations and occurs over a wide geographical area.

Study of the sculpture and figurines of Iron II shows that Egyptian stylistic features were incorporated into a local artistic style which is different in essential features from what is found in Phoenicia and elsewhere (Dornemann, 1970: 392–399, 403–405, 415–416). It seems, though we do not have the evidence to trace this tradition back in detail into the Late Bronze Age, that the adoption of Egyptian artistic features took place at this time and that these features were maintained as an integral part of the local art style.

In Iron Age II, pottery types with a variety of painted decoration form a significant portion of the ceramic assemblage. Though much evidence is still needed to trace the origins of the specific motifs, many can be found in earlier Bronze Age painted traditions, for example the recently defined 'Midianite' sherds from Qurayyah (Dayton, 1972: 27–37), Timna (Rothenberg, 1972: 153–163) and Tell Massos (Aharoni, Fritz and Kempinski, 1975: 116–117). At present, early Iron I painted pottery from the Transjordan is extremely limited and adds little to the consideration of the problems associated with the origins of the 'Midianite' and 'Philistine' painted pottery traditions. Caution must be exercised in designating as 'Philistine' the bichrome painted sherds of levels A–D at Deir ʿAlla (Franken, 1969: 172, 245). With a growing body of late thirteenth to eleventh century painted pottery available in Palestine, Lebanon, Syria and Turkey, the matter is becoming more complex. In addition to the rich painted pottery traditions in north Cilicia (Goldman, 1956: 205–209, PLS. 336, 337, 391) and the Amuq, contemporary materials are now available from Ras Ibn Hani (Bounni, Lagarce, E. and J., Saliby, 1978: 280–282) near Ras Shamra in Syria, and Tyre (Bikai, 1978: 65, 66, PLS. XXXIV–XXXVI) and Sarepta (Pritchard, 1978: 77–82) in Lebanon. The corpus of 'Philistine' and related pottery has recently been augmented by published examples from Ashdod (Dothan, M. and Freedman, 1967: 114–125, PL. XVI and Dothan, M., 1971: 156–157, 180–187) and other sites. Though tempting, it is not possible to go into detail here. We should, however, be careful in attributing ethnic labels to pottery traditions until the time span for each can be clearly defined and until general features which are widespread in occurrence over great geographical distances can be separated from specific features which are confined to restricted localities. We do not yet know to what extent the Sea Peoples were responsible for the introduction of specific pottery forms, decoration types and specific motifs, much less all of the features which can specifically be defined as 'Philistine' rather than distinctive of some other related group, unless of course the term 'Philistine' is given a very broad definition. In the Amuq, Cilicia, Hama and on the Palestinian coast, it is not yet clear what features of the local painted styles have their roots in foreign or local styles of the Late Bronze Age (Dornemann, 1970: 195–215). Strong localized pottery traditions develop with marked dependence on long-established native traditions but at the same time a range of general decorative motifs and vessel shapes provide a common denominator over a very wide geographical area. The Deir ʿAlla painted pottery should be viewed in this context. The specific complex of ceramic features which define the typical 'Philistine' pottery of the Esdraelon Valley and southern Palestinian coastal plain is not fully articulated until well after the A–D phases at Deir ʿAlla, while at nearby Beth Shan, painted pottery which could be designated as 'Philistine' is extremely rare (James, 1966: 150). The inter-

pretation of 'Midianite' wares poses a similar problem. These wares have been found in a stretch in the south from Northwestern Arabia (Dayton, 1972; Kalsbeek and London, 1978) to the coast at Tell Farʿah (south), Gaza and Tell el-Ajjul (see references cited in Aharoni, Fritz and Kempinski, 1975: 16 and 17). When one examines, as we have done at greater length elsewhere, the many decorative motifs found on Iron Age pottery, the forms on which this decoration occurs and the treatment afforded decorated bands, metopes, etc. and isolated motifs, one is struck by many basic and underlying similarities which have long (though often interrupted) histories in many areas. Such a study urges us to exercise caution in defining the significance of new innovations, the time of their introduction and their existence as intrusive or native elements.

Similar to the problems indicated in the ethnic identification of painted pottery styles of the Iron I period are the problems associated with the interpretation of the metal working traditions of the eastern Jordan Valley. We have no new evidence to add to the discussion here, but again can only inject a word of caution. In our historical reconstruction, it is imperative that we balance possible intrusive influences of a short-lived nature, with peculiarities which re-occur in the history of a given area. Why should the established metal working traditions be associated with an intrusive element, namely knowledge introduced by the Sea Peoples or with an itinerant group of smiths? The Late Bronze Age II–Iron Age bronzes excavated by Pritchard (Pritchard, 1968: 102–109) and the metal working furnaces found by Franken (Franken, 1969: 36–40) seem to confirm the Solomonic tradition of metal working in this area. But how much knowledge and experience had been built up and passed on by the local inhabitants of the Jordan Valley from the time of Chalcolithic–Early Bronze Age finds summarized by Hennessy (Hennessy, 1967: 33, 86; and also Rothenberg, 1972: 24–52) to the Late Bronze Age–Iron I metal working operations at Timna (Rothenberg, 1972: 63–124)? In both cases, Egypt seemed to be heavily involved in the exploitation of copper mining and production but, was this a foreign impetus to crafts developed by the local population or were Egyptians themselves the miners and artisans? Economic, political and technological factors determined whether or not known deposits of useable metal ores were exploited. We must, however, seek ample evidence before we can successfully define the role played by local and foreign individuals in these activities.

Drastic changes are evident in the ceramic repertoire of the Transjordan between the beginning and the end of Iron I. Our evidence currently indicates that the limited painted decoration evident in the Jebel Nuzha tomb in Amman becomes even more limited in the next tombs, if our typological comparisons with the published Madeba tomb A are representative (Dornemann, 1970: 88–92). The most elaborate painting continues on flasks and the remaining painted decoration is on jugs and imitation Mycenaean pixides. Other features like sharply carinated kraters, specific jug types and ring bases continue to be common in the twelfth century BC, but then disappear. Franken and Kalsbeek have shown that at Deir ʿAlla the manufacturing system was changing and that an earlier tradition of decorative painting could no longer be used on the new products (Franken, 1969: 172–174). The abandonment of the use of the fast wheel, a technique which had been in decline for centuries, and the development of alternative means of producing satisfactory utilitarian pottery were major factors in determining the kinds of vessels which were produced (Franken, 1969: 92–94, 97–99).

When the pottery forms of the Madeba tomb, just mentioned, and contemporary materials from other tombs are compared with earlier products, a new simplicity of forms and specific features is clear. This decline is noted through levels A–D at Deir ʿAlla but by phase G new features begin to appear which seem to be the beginning of a development leading up to the repertoire of forms present in the material from our 1969 Jebel Qalaʿ sounding in Amman. The phase which should, by descriptions given so far, be contemporary with or just slightly earlier than the earliest of our Amman 1969 materials, is phase M. Zayadine has excavated contemporary materials on the second plateau of the Amman Citadel (Zayadine, 1973: 30) and recent materials from Sahab should be contemporary also but are not yet available in published form for comparison (Ibrahim, 1978). Whether any of the Dhiban, Heshbon or Aroʿer pottery continues this late in Iron I is not yet clear, but contemporary sherds have been collected at Tell Jalul (Ibach, 1978: 218–222) and Tell Safut.

With the material so limited we can now only try to define the ceramic assemblage. Many of the new features which Franken notes at Deir ʿAlla in phases G–L seem to be foreign to that part of the Jordan Valley and some of these features seem to have their origin farther east (Franken, 1969: 246–247). Whether, however, the direction is from the north or southeast is not yet clear nor is even a basic articulation of the assemblage from which they originate. Three tombs at Irbed (Dajani, 1966b) must be positioned between tomb A at Madeba and the Amman citadel 1969 sounding materials. We have discussed the details elsewhere and cannot repeat them here. Several new and distinctive jug, juglet and krater forms are present and most have good parallels at Deir ʿAlla in phases J–L. The most important new feature to be found in the Irbed tombs is the use of red-burnished surface finish on various pottery forms. Unlike other areas of the Near East where red-burnished forms begin with a dark red shade and with many brown to dark red-brown variants, the red-burnished surface treatment at Irbed is most often in fairly light red shades.

Working jointly with Jordan University and the Department of Antiquities of Jordan, the American Center in Amman conducted a small scale excavation at the northwest corner of Jebel Qalaʿ in 1969 (Dornemann, 1970: 222–268). We excavated a series of layers associated with two phases of building activity which spanned most of the tenth century BC

with additional late tenth century to early ninth century BC materials in overlying fills associated with a much later Islamic wall. Since the undisturbed area was so limited, interpretation of the architectural remains is difficult. The location and elevations of the segments of walls on this portion of the citadel and the cuts in bedrock where the foundation stones had disappeared, indicated that we have excavated a portion of the Iron Age defense wall. In the southwestern portion of the area this wall ran under the later Hellenistic–Byzantine defense walls.

Once again we have little more to discuss than the pottery since few other small finds were excavated. The material is quite important at this point since there is currently very little contemporary evidence. The sherds from both periods I and II continue the tradition of simple forms, without complicated profiles, as has been common throughout Iron I. Only in the overlying layers are there more pronounced carinations, thickenings or angling of rims, out-flarings and the like in bowl, jar and other forms. For the most part, the forms were already present in periods I and II of the sounding but the elaboration of these forms seems to be a consistent development toward the elaborate, sophisticated, and technically well-produced vessels that characterize the end of Iron II. The simple bowls with curved sides and rounded or flat bases continue the earlier tradition, but most have a medium-red slip and are well hand-burnished. The surface preservation of many of these sherds is such that it is difficult to detect the burnishing in all cases. Small rounded or vertical oval lug handles are common on bowls. A variety of the round-sided bowls, particularly one with a short side or slight carination, is a form which becomes more common and which is a basic form from which numerous variants develop. Fairly heavy platter rims with squared off ends seem to begin in phase two. They are usually hand-burnished or polished and have a dark red or dark red-brown slip, sometimes inside and out but usually inside and over the rim. This form is characteristic for the beginning of the red-burnished Iron Age tradition and can be found as far away as the Amuq to the northwest of Syria.

Globular bowls with short, vertical rims and platter bowls with slightly angled, nearly horizontal sides and wide, flat, horizontal rims, begin in phase I. Both types have long histories in the Transjordan and a series of variations were derived from these early forms. The sharply inturned ledge rims on various small and large vessel forms seem to begin in phase I. The larger versions are folded over or so made as to leave a steep step on the outside below the rim. One variety with grooves on the horizontal surface of the rim occurs after phase II. A triangular rim which is normally well burnished or polished also occurs after phase II and is usually decorated with painted bands, slashes, or other designs in a variety of paints—red, white, black, purple and brown. The unpainted rims develop into the class of cylindrical jar rims common at the end of Iron II and other related wider rims seem to be derived from these early, undecorated inturned-ledge rims. In period II of our sounding, these inturned-ledge rims occurred predominantly on small forms which were red-burnished and quite often bore, on the upper surface of their rims, incised marks—conical holes, slashes, multiple slashes, and marks resembling Vs, Ws, Xs and #s.

Few cooking pot rims were found and the number of large vessel rims was limited. We have time to mention only one of these rim types here. The collar-rim, which is considered characteristic of Iron I in Palestine and which Albright (Albright, 1934 and Ibrahim, 1978: 117) and others have considered to be a hallmark of Israelite presence, is not found in phase I but good examples exist in phase II and post-phase II layers. All of our examples are of the low, heavy rim types which, though late in the typological development of this form, have good contemporary parallels in the tenth century BC (Dornemann, 1970: FIGS. 53: 10, 11, 33; 54: 5, 6, 35; 67: 1–3, 6, 7, 11–13). The Iron I tombs did not contain such large storage jars and only one good example of the early type of collar-rim jar was found at Deir ʿAlla in level A. Ibrahim has found many collar-rim jars in his Iron I levels at Sahab and in a recent study he stresses the difficulties in assigning the manufacture or use of these vessels to a specific ethnic group (Ibrahim, 1978). Collar-rim sherds at Jalul, Safut, Dhiban, the evidence from the Amman sounding and the sherds collected on the surface of the Amman Citadel indicate an established, continuing use of this type of storage vessel.

Finally, a surprisingly large number of sherds excavated in this sounding bore painted decoration. The majority were simple bands of various colours but the variety of combinations is instructive in that they illustrate the continuation of old styles and the beginning of new ones. None of the simple concentric circles on the interior of bowls, as found earlier in the Jebel Nuzha tomb, are present but the use of bichrome, usually red and black on a light background of primarily grey, tan or buff, is quite possibly a continuation or development of the earlier Late Bronze Age tradition. Several bichrome patterns on white slips appear on forms which are atypical for vessels bearing 'Philistine' decoration. In one case the use of a series of thin black lines bordered by two heavy bands is found on a jug sherd which resembles the decoration frequently found later on locally produced Cypriote-looking jugs and jars (Dajani, 1966a: PLS. V: 122–125; VI: 77, 83, 87; VII: 81, 86; and VIII: 125–127). Most of the decoration is on sherds with a red surface colour. Simple parallel black lines are most common. Quite a number of sherds have alternating black and white lines or black lines framing a white line or band, a common decoration on red-burnished vessels until the end of the Iron Age and which at present seems to be more common in the Transjordan than elsewhere. As stated above, we are dealing with a small selection of sherds but, one which provides clear evidence for a rich, diverse and lively painted Iron Age pottery tradition in the Transjordan.

In conclusion, we have tried to give a survey of the Iron I period in the Transjordan by reviewing the limited evidence that exists. We have, of necessity, had to concentrate primarily on a somewhat pedantic and less than exciting discussion of

pottery forms and decoration. However, in the ceramic evidence one can trace broad changes in the decline of the Late Bronze Age tradition and the establishment of a new ceramic assemblage by the end of the twelfth century BC. This assemblage does not remain static in the following century but innovations occur to such an extent that by the mid-tenth century BC a radical transformation has taken place. The ceramic tradition of the succeeding Iron II period, then, develops out of the assemblage established in the tenth century BC.

Additional evidence is a prerequisite to going beyond very general statements and to understanding the import of some of the shreds of evidence we now possess. Clearly, there was an abrupt change effecting the civilization of the Transjordan in the twelfth century BC. A seemingly introverted, parochial culture developed for a time but did the power and influence of the nineteenth and twentieth Egyptian dynasties have any lasting effect on the culture of the Transjordan? Did any of the Sea Peoples have a lasting effect on this culture? What local traditions, experience or technology provided a continuity between the earlier cultures of the second millenium and what was to follow in the first? Is the absence of the typical red-burnished decoration at Aroʿer somehow connected with this problem (Olavarri, 1965: 83)? How distinctive are the painted pottery repertoires from different parts of the Transjordan, what development exists over the course of six or seven centuries, and what basic features are common throughout that can define a Transjordanian style? What was the role of trade and foreign entanglements in the formation of this cultural fabric?

These are specific questions more oriented to our past scholarly traditions which were interested in specific local histories and the identification of specific national groups. We will also have to ask the currently relevant questions of the placement of distinct assemblages in their environmental, regional, geographical, ecological and technological settings. We should, with a number of strategic and select excavations, be able to create a secure progression of ceramic forms based on what currently is at hand. It is to be hoped that then many of the associated artifacts and their architectural settings will also become available to provide a better insight into the material culture of this period. It will still be a long time, however, before we shall satisfactorily be able to answer even a percentage of the basic questions posed above.

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A Technological Study of Iron Age I Pottery from Tell Deir ʿAllā

In the Institute of Pottery Technology at Leiden technological studies of ancient pottery concentrate on a reconstruction of pottery making techniques. It has become clear that this type of pottery analysis can reveal a great deal about the potters and the people who used their products. The traditional archaeological approach to pottery studies requires some rethinking on both aspects; technology and human activity.

Questions of pottery typology arose in the technical studies of the pottery excavated at tell Deir ʿAllā. In the publication of the Iron Age I pottery from Deir ʿAllā, I modified the traditional way of publishing pottery from an excavation (Franken, 1969). The surveys of the pottery shapes found in each phase of the stratigraphic sequence were no longer accompanied by notes on colour, hardness, etc. These features were summarized as being part of the type description. Also I tried to interpret the idea of type by taking larger units than is often done, and to define these types in technical terms. Not only grit, hardness, temper or colour were considered to be part of such a description, but also shape and shape variety. In the plates showing drawings of the pottery according to the phases, this variety in shape is shown. Although this also could have been summarized, I wanted to leave to the readers the possibility of detecting any slow developments of shape through the phases.

However, the main principle for classification of this pottery was the technical construction of the pottery. In theory there must be a causal relationship between construction methods and pottery shapes. There is nothing new in this statement, but the impact on archaeological pottery studies has by no means been made clear as yet. A description of observed features ought to be followed by an explanation—at least to a certain extent. Shape by itself does not necessarily reveal the construction method. Often pots are so well finished that the technical background can only be reconstructed hypothetically. Sometimes one and the same shape may even be obtained with different techniques. Not only the features which are used in traditional pottery descriptions have to be explained; other features which never get any attention in pottery description have to be taken into consideration as well. A simple example is the description of the base. Very often the round bases, which are made while the pot is in an upside-down position on the wheel, are not mentioned. Yet this is important for the classification of pottery.

With the exception of some extensively studied classes of pottery, like the classical Greek pottery or Roman Terra Sigillata, pottery classifications lack the support of shape explanation. These classifications are largely based on shape variation and to a much lesser extent on observations of features such as colour. Binford has pointed out that an analysis of observed features only serves to clarify information that is already available; it cannot increase our knowledge (Binford 1972, p. 79ff.). Explaining pottery shape by making an analysis of the manufacturing techniques is an attempt to add new information to what is known already. But it is more. It is also a step toward the elimination of a subjective element in a pottery type series or pottery classification. It is to be regretted that there still are archaeologists who do not feel the need for a yard-stick to eliminate (or at least reduce) subjective elements in pottery classification. Without such a yard-stick every classification is as good as its presumptions, and may not even clarify information that is already available. We may trust an authority in the field to make reliable classifications, or mistrust the man who claims to be an authority; the fact remains that we cannot know whether they are valid or not. The argument that a certain classification of pottery shapes 'fits beautifully' is not very convincing. The traditional pottery descriptions can only help the reader to visualize shapes and colours which are known already, because one important aspect has been neglected: the selection of attributes. Why, for instance, should colour be a significant attribute for classification? So the fact remains that many pottery classifications consist of so many shapes or types, that 'type' loses its meaning completely.

I may quote Binford again: 'The yardstick of measurement is the degree to which propositions about the past can be confirmed or refuted through hypothesis testing—not by passing judgement on the personal qualifications of the person putting forth the propositions' (Ibid. p. 90). If pottery classification is the proposition, then what is the yard-stick?

The yard-stick has to be found by constructing a theory of typology. The word typology was taken from theology and introduced into archaeology by the Swedish antiquarians Montelius and Hildebrand about a century ago. This may explain why it is used in archaeology in so many different ways. However, it ought to indicate the theory of classification. This is not to be confused with the technique of classification or taxonomy. It seems to me that typology should give us the yard-stick for hypothesis testing, and the first step to arriving at typology is a technical analysis of pottery. A technical analysis aims at a better understanding of pottery in general, and of groups of pottery submitted to this study in particular. Often elements of construction are found which influence or modify the existing classification. With a growing understanding of the structure of pottery we also get into a better position to judge what can be used to measure time or to define culture. Typology demands explanation of shape before we can rely on shape analysis. Similarly, an explanation of colour will show whether colour description is useful or not, or whether our colour descriptions should be modified.

I shall not go into details of the technical analysis of Iron Age I pottery in Jordan. Instead I make four propositions about the manufacture of pottery which will bring the human aspect into focus. These propositions I shall use in discussing some of the new perspectives that come from technical analysis. They refer to situations and conditions such as we may expect to have existed in the Iron Age in Jordan.

1) A potter, working under circumstances that are normal for his trade, will not attempt to change pottery shapes nor make new ones. A potter does not change his production unless he is forced to do so.
2) Under normal circumstances, shapes may undergo slight changes over longer periods. Such changes are caused by alterations of the clay composition used by the potter, or by a slow process of deterioration of certain details of the manufacturing methods. Improvement of such methods will seldom be found.
3) If a new ceramic element appears in the archaeological record, it has to be explained by reference to influences from outside the ordinary potter's trade.
4) When demonstrating the presence of a new ceramic element in the archaeological record it is not sufficient to refer to the comparative shape analysis. The technical characteristics have to be taken into consideration as well.

In order to show how a technical analysis leads to formulating new questions, I will now turn to the Iron Age I pottery from tell Deir ʿAllā. I shall no longer use the word 'type' to indicate a pottery shape, as it was done in the publication of 1969. One type of pottery designates a group of pottery shapes, like bowls and jars, which can be described in one technical formula. One type may contain several classes of pottery. This I have described in a study of medieval pottery (Franken-Kalsbeek 1975). At Deir ʿAllā we find mainly four types of pottery in Iron Age I. These four types belong to the regular repertoire of the site. There are reasons to suppose that one type was locally made. It contains most of the pottery in daily use; small and large bowls, small and large jars. It is a very simple type of pottery, but it does not have the characteristics of family-made pottery. Instead it was made in a potters workshop, and fired in potters' kilns. When re-fired to a temperature of 1,000°C it has a uniform colour. The temper in all investigated sherds is the same: coarse mixed sand. Larger pieces are coil built, and the pottery is made on a turning base. The cooking pot is represented by two types. The earlier one is made in a pottery mould, the temper is pounded calcite, the maximum firing temperature is about 800°C. When fired to 825°C the coarse calcite grains will decompose. The calcium carbonate ($CaCO_3$) will turn into calcia (CaO) or quicklime and carbon dioxide (CO_2) will escape as a gas. After cooling the calcia will absorb water and expand in this process. In a very short time this will reduce the pot to dust. It is very likely that this cooking pot was not locally made, but obtained through trade. In Palestine the pot is known as the Iron Age I cooking pot.

Some time during the 12th century BC this pot was already replaced by a cooking pot which is known in Palestine in Iron Age II. The difference with the first cooking pot is the construction of the rim. There is, however, no question of a slow development from the first to the second type. For details I refer to the publication.

The fourth type is the so-called mensif bowl with two classes. It was probably made in a basket mould. At 1,000°C it fires to a slightly different colour from type 1. We assume that it was made in the East Ghor, and not at Deir ʿAllā. Apparently it dates from the Iron Age, unlike the other three types which date from the Late Bronze Age. It is not found in Palestine.

The main body of the Deir ʿAllā pottery is thus divided into four types, according to four different manufacturing processes. When looking for parallels I must deal with them separately. It would not be surprising to find type one elsewhere without the types two, three or four. Such a situation would strengthen the supposition that the latter types were not made by the potters who made type one. The area of distribution of types two to four could possibly be established by surface exploration, because each of them is represented by one or two classes only.

The idea of a type requires comparison including all the classes comprised in the type. I have already said that in this concept type may contain a number of pottery classes. These classes can be described in one formula. The clays used have the same properties, the temper is similar, the pots are all made in the same way, and the finishing treatments are the same, as is the technique of firing the pots. I have called this a tradition of potmaking. In the example from tell Deir ʿAllā, the cooking pot type 2 reveals a completely different manu-

have been stopped by tribes fighting over the sources. Yet another possibility is that in the course of time the technical execution deteriorated and some of the required knowledge was lost. In tell Deir ʿAllā Vol. I (Franken, 1969) it is shown that potters eventually found a solution for the technical defect of the cracks in the bases of bowls and jars: a well known feature of 13th century pottery.

It is very well possible that the rise of Iron Age pottery has to be explained from developments in Jordan. It is equally possible that both the Iron Age I and the Iron Age II cooking pots have their origin in Jordan. The question why the Iron Age II cooking pot became popular in Palestine is not so difficult to answer. In contrast to the Iron Age I cooking pot this one developed into a pot with a much narrower opening and with handles. The first one seemed unfit for such developments and died out.

In my view the end of the Iron Age pottery is marked by foreign influence. The beginning of this end is to be dated in the 7th century BC. Probably under the influence of the Assyrian occupation a new technique of potmaking was introduced. For the first time since the Hyksos period wheel-thrown pottery appears; a new technique which is described in my book about the Jericho potters (Franken, 1974). One of the most striking innovations is the small grain size of the tempers used in pottery, whereas coarse limestone as a temper is avoided. As a result of the introduction of wheel-thrown pottery small workshops were pushed out of business. There is no sense in introducing techniques resulting in large pottery production unless the products can be sold over a large area. This process can be compared with a small industrial revolution, as long as the Marxist definition of what is to be called an industry is not applied. About the labour conditions in this new type of workshop and the relation between owners and labourers nothing is known. For us it is important to see that from that moment on a synchronous pottery development in large areas has become more likely. In Jordan the breakdown of this system comes when in the early Islamic period families start making their own pottery for daily use again.

This is the so-called Mamluk pottery: a rather misleading name. The final blow to wheel-made pottery came when the Turkish administration put taxes on the use of the kick-wheel. All these aspects of the craft of potmaking should be studied from the analysis of the craft itself.

Analysis of the manufacturing processes of pottery brings the ancient potters into focus. It is an archaeological research technique with a strongly discriminating factor. It shows the archaeologist which classes belong to one type of pottery, and enables him to study patterns of pottery distribution. It provides a logic framework for parallel quoting and reveals the limitations of this activity. It provides the archaeologist with many reasons for re-thinking the problems of the relationship between pottery and time, between pottery and culture, and between pottery and ethnic groups. It does not make the interpretation of the archaeological record easier. It rather shows that things are far more complicated than is suggested by the traditional shape typology.

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facturing process from type 1; it is distinguished from type 1 by a different formula. This clearly has consequences for the activity of parallel quoting. Instead of looking for individual classes that can be taken as parallels, one starts looking for sites where potters are working in the same tradition. These potters must have a common origin from where they settled in different parts of the country. Over a long period of time they may have modified their production. Such modifications, however, may happen at certain places but not at others. One reason for a modification may be that the clays found at their site demand a different treatment, as is suggested in propositions 1 and 2. But we should not rule out the possibility that potters transported clays that were suitable for their purpose over long distances. A study of pottery techniques enables us to write a history of potmaking which can explain many aspects. This is not possible in a system where only classes or individual shapes are quoted as parallels.

All this questioning of our traditional procedures of quoting parallels and drawing conclusions, serves the purpose of analysing historical processes which are ill understood. This is especially so in connection with the Iron Age. (For later periods I will mention a situation which seems to justify the existing practice of parallel quoting.)

In the Iron Age there must have been many small potteries in the country, and if they followed some development in shape this does not necessarily mean that it happened at the same time (Peacock 1977). This leads to the question of the origins of Iron Age pottery. At Deir ʿAllā we have found a clear situation. Pottery made at the end of the 13th century BC is technically still related to the Late Bronze Age pottery. After an earthquake which occurred just at the turn of the century we find pottery of types one and two which cannot have been derived from the Late Bronze pottery found at the site. There are no signs of any development taking place in the 12th century BC. Although there are several possible explanations for this situation, there is little doubt that this early Iron Age I pottery was produced elsewhere before it came into production at Deir ʿAllā. Where did it come from?

It is associated with the period of metal workers, phases A–D at Deir ʿAllā. How long were the Deir ʿAllā potters associated with these metal workers? That metal workers occupied a site which was completely ruined by earthquake does not indicate a migration. They may have been working in the East Ghor for hundreds of years; if in those years the pottery was associated already, it may have existed for a long time side by side with the Late Bronze Age pottery. In that case it will not be found on sites like Deir ʿAllā, but probably on camp sites. If this pottery is derived from Late Bronze Age pottery, this process must have taken place long before Iron Age I, or the origin may be found outside the country. It is clear that this pottery cannot be dated by reference to tell Deir ʿAllā only. The association with metal workers outside Deir ʿAllā is hypothetical. It is so at the site, but what if these metal workers went to a market to buy pottery or to exchange it for products of their own industry? In that case the origin is still not explained. The fact remains that this pottery already existed during the Late Bronze Age.

It has often been assumed that the Deir ʿAllā Iron Age I pottery is somehow related to Iron Age pottery from Palestine. What happened in Palestine at the end of the Bronze Age is by no means clear. The current hypothesis about the origin of Iron Age pottery is based on an ethnic interpretation. This pottery is said to have been developed by early Hebrew potters from the Late Bronze tradition (Amiran, 1970). It is supposed that there were no Hebrew potters before the end of the 13th century BC. It is also supposed that they learned the art of potmaking from the Canaanite potters. One has to assume then that the Canaanite potters disappeared from the scene. But if so, what happened in the cities that remained Canaanite in the beginning of the Iron Age, like Jerusalem? One would expect that in those cities the Canaanite potters went on making Late Bronze pottery, or pottery shapes that were developed from it according to its own possibilities. In this hypothesis too much is unexplained.

My third proposition was that if a new ceramic element appears in the archaeological record, it has to be explained by reference to influences from outside the ordinary potter's trade. In the accepted explanation, however, the early Hebrews are not supposed to have brought any knowledge about potmaking into the country. As far as I know there is no technical study of the transitional stages which are supposed to have existed between Late Bronze pottery and Iron Age pottery from Palestine. It is not even clear that there were any technical innovations. What seem to be changes may be developments of certain elements that were present for a long time in the Late Bronze tradition. It has not been demonstrated that early Hebrew potters took over the production from the Canaanites. I am not arguing that early Hebrew tribes in Palestine did not make their own pottery. It is not known, however, when and where they learned the craft of potmaking. At the present stage of our knowledge pottery cannot be used to demonstrate the presence of Hebrew tribes in the country. Moreover, there is no reason to assume a relation between these tribes and Iron Age I pottery in Jordan. The technological history of this pottery is too complicated to be revealed by information derived from the historical texts of the Old Testament. Not only the question of the origin of Iron Age pottery is involved, but also the extinction of Late Bronze pottery.

According to my fourth proposition, an analysis of shape alone is not sufficient to reveal new elements in the potter's craft. Late Bronze Age pottery may have developed into Iron Age pottery over a long period of time in certain parts of the country and not in other parts. For instance, the population of the towns may have preferred the decorated Late Bronze pottery, whereas the countryside had a preference for the simpler forms that became general fashion in the Iron Age. Or Late Bronze pottery lost its decoration because the sources of white-firing slips, which were needed for decoration, were no longer accessible. The trade in such white coloured slips may

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Ceramic Ethno-techniculture

The use of ethnographic analogy in the interpretation of excavated material culture in Palestine has been limited and random, whether consciously or unconsciously in the mind of the archaeologist. Until there is a critical evaluation of ethno-archaeology as a technique for reconstructing past behaviour patterns, casual use of analogy is dangerous (Freeman, 1968: 262), though some see only a methodological difference between ethnology and archaeology (Chang, 1967: 233 f). One of the aims of this paper is to begin to provide a conceptual framework for ethno-archaeology in Palestine and to report on our recent attempts to correlate ceramic ethnography, that is, a study of traditional potters at work in the West Bank and Gaza, with our efforts to publish ceramic evidence in such a way that it effectively reflects and interprets the evidence for a history of ceramic techniculture in Palestine. This is admittedly a small step out of the camp of traditional Middle Eastern archaeology. When, however, we deal with the theoretical aspects of ethno-archaeology it will be evident that further steps remain. Before we enter that discussion it may be useful to examine briefly the progress of ethno-archaeology in Palestine.

The original aims of the Palestine Exploration Fund in 1865 included the following statement of purpose:

> . . . describe in a systematic and exhaustive order with clear and exact minuteness the manners, habits, rites, and languages of the present inhabitants . . . Many of the ancient and peculiar customs of Palestine are fast vanishing before the increasing tide of Western manners, and in a short time the exact meaning of many things . . . will have perished. (Besant, 1895: 23)

The report of *The Survey of Western Palestine*, published in 1881, included in Section C at the end of the catalogue for each sheet, only the names of tribes in each area but no further ethnographic information. Conder's personal narrative of the Survey records in three chapters general ethnographic notes about fellahin and bedawin, but very little attention is given to material culture beyond general comments about village houses (Conder, 1879, II: 209–92). The Fund unfortunately exhausted its resources on the topographic and archaeological survey and did not have the energy to pursue its ethnographic objectives with the same skill. The desire to do for Palestine what E. W. Lane's *An Account of the Manners and Customs of the Modern Egyptians* (1835, first edition) did for Egypt was never fulfilled.

Indeed, excavators have never systematically and rarely consciously or seriously employed ethnographic analogy to interpret the archaeological record, though most students of the Ancient Near East have assumed a strong continuity between past and present life in the land. An instructive exception is the work of R. A. S. Macalister. That his publication (1912) of his excavation of Gezer (1902–9) is organized with the aim of systematically reconstructing the form of life in ancient Gezer is evident from the titles and sequence of the major sections in his report, viz., Peoples, Dwellings, Burials, Daily Life, Warfare and Religion. When he attempts to interpret the plans of ancient houses, Macalister finds a 'source of illumination' in 'the dwellings of the modern fellahin which seem to reproduce, with tolerable exactness, the main peculiarities of their ancient predecessors'. After a brief description of a typical house in Abu Shusheh he continues, 'If we now apply this modern analogy to the plans of houses that remain . . . we shall have little difficulty in getting an idea of the description of the normal Gezerite house' (Macalister, 1912, I: 167). In general Macalister seeks to interpret the archaeological record within a socio-economic context, filling in the gaps 'by reference to contemporary monuments . . . or by comparison with modern customs, which so often offer valuable illustration of ancient practises' (Macalister, 1912, I: viii). Pottery is presented as the work of potters with due attention given to technical process and ware. He does not, however, seek out a traditional potter to observe his technique or source of materials. He himself was aware that to do so would 'swell the book unduly' (I: viii).

Missionaries, pilgrims and Bible students produced extensive reports on the land including customs and living conditions of the inhabitants, largely to illustrate the biblical narrative. Gustav Dalman's *Arbeit und Sitte in Palästina*, in

seven volumes (Dalman, 1928–42) is the richest collection of ethnographic material useful to students of material culture tradition in Palestine. But, for a variety of reasons we cannot examine here, archaeologists rarely resorted to overt use of ethnographic parallels to interpret the archaeological record. To be sure, there are scattered references in excavation reports to local tradition as grounds for various interpretations of uncovered architecture and artifacts. (e.g., Bliss, 1898: 95; Bliss and Macalister, 1902: 187; Franken, 1975: 146f; Grant, 1931: 72f; Kyle, 1934: 68; McCown, 1947: 250f; Smith, 1973: 243; Tufnell, 1958: 292). Entirely lacking is the systematic approach of Macalister. His perception of the archaeological task was not comprehended. In the post-World War I period the major effort of scholars was biblical-historical and therefore chronology was often at the centre. Archaeology was not being interpreted by a conscious use of ethnographic analogy.

The clearest evidence of this state of affairs is that only two persons have ever published descriptions of traditional potters in Palestine. These brief studies were limited to the handwork of women potters in Ramallah, Kafr al Labad and Ya'bad. Of Gaza, Hebron and pre-1948 Ramleh, all known to be pottery production centres, there is no report. A brief account of what has been published is therefore in order. The first study deals with Ramallah potters and was written by Mrs Lydia Einsler, daughter of Conrad Schick, who for almost 40 years reported to the Palestine Exploration Fund on numerous archaeological discoveries in Jerusalem. Mrs Einsler's interest is entirely ethnographic. Hers is the earliest and only detailed account we have. In May and June each year the women potters of Ramallah collected clay and fuel which they used in July and August while the men were at the threshing floor. Good clay was found at nearby al-Bira and Kafr 'Aqab. Bad clay resulted in many wasters and a weakness of fired vessels generally. Non-plastic material was grog, sherds found on ancient sites, pulverized when added to the clay. Fuel was cow and sheep dung gathered sometimes with great effort at a distance from Ramallah. Preparation of the clay required about one week. The mixture was two-thirds *khamra* and one-third *trabe*. The paste was properly prepared when it could be formed into a coil which would not break on suspension. For five kinds of coarser forms straw was mixed into the clay: an oven (*ṭabun*), a chicken house (*qunn*), small bowl (*qu'od*), cooking stove (*ṭabbakh*), and a grain bin (*khabiyeh*). As an example of construction techniques Mrs Einsler describes in some detail the forming of a *zir* or *hishshiyeh*, a large water or oil jar. On a damaged straw mat ca 45 cm. in diameter a thin layer of ash is spread. Two handfuls of clay mixed with straw form the flat round base on the edge of which successive coils build up the wall, kept smooth by wet hands applying pressure from both inside and outside. The lower half is allowed to dry an hour before the upper half is completed and four handles added. The vessel is then allowed to dry several days before it is decorated with a red ochre paint. The firing takes place outside the village. Over the bottom of a newly excavated depression a thin cover of dung ash serves to absorb moisture. Around and between the thirty pots in the shallow cut is stuffed dung, straw, mats, baskets and everything is saturated with oil. In two or three hours after lighting the pots have cooled. Some require additional firing before they are 'ripe'. In a year the average household requires two *hishshiyeh* (storage jars), three *'asliyeh* (medium jugs), five *zibdiyeh* (bowls), ten *mughṭas* (small jugs), six *ghaṭat ṭudshara* (cooking pot lids), and six *ṭabun* (baking ovens). Some women potters of Ramallah and Silwad travel to villages and make pots. They provide only the skilled labour. Others are required to provide the materials. Such vessels are not to be found in shops where only those made in Gaza and Hebron are sold. Otherwise the handmade vessels reach other villages as gifts or by exchange (Einsler, 1914: 249–60).

The only published ethnographic observations growing out of an archaeological context are the work of Grace Crowfoot during the excavations of Sabastya (1931–35) by her husband, J. W. Crowfoot. Here she recorded the system of a woman potter recently removed from Kafr al Labad (Crowfoot, 1932: 183–86; Franken, 1971: 237 note). It was not only the likeness of a 9th-century BC 'foot bath' (*waḍu'*) to a vessel of similar form from Sinjil and Nahhalin but also parallels between medieval cooking pots excavated from a room on the west side of the Church of St John the Baptist at Sebastya and similar vessels from late occupation in monasteries at Rumeileh and Khan al Ahmar (St Euthymius) which encouraged her ethnographic researches. The cooking pots were distinguished by two types of handles. The horizontal loop handles were still being made at Kafr al Labad while the heavier perforated ear-handles from the other two sites were still being attached to cooking pots made in al-Jib. The resemblances in form were reinforced by similarities in fabric. These observations led to brief studies of women potters in both villages. The clay used by the potters of Kafr al Labad was brought from Burka, 8 kms. east, while the calcite came from Kafr Qaddum, 8 kms. south. For a cooking pot the mixture was one-third calcite to two-thirds clay. After the two elements had been well mixed the paste was allowed to 'rest' for one to three days. The potter began the forming process by punching her fist into the middle of a hump of clay, hollowing and smoothing the interior (cf. Hampe and Winter, 1962: 3, FIG. 1, PL. 25). The pot was begun in the afternoon, allowed to dry overnight, and finished the next morning when the handles were applied and the rim completed with a coil thinned by hand. After a drying period of two or three days the pot was turned with a knife and the flat base was rounded. Burnishing a slipped surface with a cockle shell required most of the day. Before firing, pots were placed in a corner of the *ṭabun* for drying. For firing the pots were stacked in an open kiln with their mouths facing windward. The fuel was prickly pear branches for a fire that lasted about an hour. This form, the cooking pot (*qidri*), was also made at al-Jib with minor differences in technique apart from the heavier handle. The

major differences were less polishing and more decoration in the form of puncture patterns on the shoulder.

Again, in search for parallels to mat impressions on pot bases found in Jericho VIII, as well as Ghassul III and Sites D, E, and O in the Wadi Ghazzeh, Grace Crowfoot discovered women potters fashioning vessels on coiled straw mats at Ramallah, Awarta, Sinjil and Ya'bad (Crowfoot, 1938). It is in this context that she briefly describes what she regarded as a very 'archaic' pottery industry at Ya'bad in 1935. Again, a woman potter was working by hand with a *huwwar* paste having a high calcium carbonate content. This marl was mixed with grog except that for cooking pots calcite was the usual non-plastic. The vessel, in this case a *wadu'* (footbath), was punched and pinched from a lump of clay centred on a coiled mat. The finished bowl dried on the mat. After being covered with a red slip, the surface was burnished with a cockle shell. The pots were fired in a dung-fed open kiln. The Ya'bad repertoire included the cooking pot (*qidri*), brazier (*kanun*), sieve (*qasriya*), water jar (*zir*) and washbowl (*sifl*). Mrs Crowfoot wants us to believe that Chalcolithic mat impressions on the bottom of vessels resulted from much the same process as that she witnessed at Ya'bad. This inference, based on an ethnographic analogy, is sound as a hypothesis for various reasons, but she has not proved the connection and until there is direct historical stratigraphic continuity, the line transmitting technical tradition is broken. The major gap is the Ottoman period. Archaeologists have not bothered to publish well-excavated, stratified Ottoman deposits in all of Palestine.

The archaeologist needs a conceptual framework to help develop tests and models that correlate the more complete ethnographic record with the fragmented and decomposed archaeological remains without sacrificing the uniqueness or integrity of either cultural assemblage. The validity of cultural parallels increases if the archaeological and ethnographic sources have one or all of the following similarities: 1) the same subsistence level, assuming that the archaeological evidence available is used to gain an understanding of this aspect of the past; 2) ecological conditions are approximately the same; 3) the two have the same general level of technological development; 4) and, finally, where an uninterrupted continuity of environmental manipulation and settlement in a restricted region can be demonstrated, ethnography is likely to contribute much relevant data to archaeological interpretation (Ascher, 1961: 320; Allchin, 1978: 1f; Anderson, 1969). Since these boundaries are generally accepted by New and Old World archaeologists, the ethnography of pre-industrial villages in Palestine would seem to be a vital source for testing archaeological interpretation. Unfortunately, apart from the work of Gustav Dalman (Dalman, 1928–42) and two essays by Dr T. Canaan (Canaan, 1932–33), very little ethnography has been systematically collected that the archaeologist can use. It therefore is of the utmost importance that a major effort be made now to collect, record and interpret those aspects of material culture that tend to be preserved, such as various forms of architecture, tools, and ceramics.

It is necessary, however briefly, to consider the problem of analogical thinking if we are to systematically exploit the usefulness of ethnographic data. It is usual to assume that the number and importance of agreement in formal traits establishes the basis for an analogy. Yet it is also the nature of the relationship between the analogous data and the archaeological evidence that must be demonstrated. Since in a holistic approach to the social sciences the sum is viewed as greater than the parts, it may be assumed that a mathematical correspondence is not what is meant by analogy when applied to archaeological interpretation (Gjessing, 1975: 323f). Rather, 'it is an inferential argument based on implied relationships between demonstrable similar entities' (Binford, 1967: 3; 1972). To argue from what is present to what is absent is to infer. Since we are dealing with data that is present but from two different sources, the task of inference is to demonstrate the relationship not only of the physical objects but also of their process and function. In other words, the purpose of probing the connection of objects from two different sources is to study the similarities and dissimilarities of elements in a cultural continuum that ultimately permits the segregation of distinctive culture types which may not be chronologically bound, that is, stratigraphically limited. To probe the relationship, a trait list may be established which is designed to correlate important determinants. A list of features may be chosen with a particular objective, e.g. process of construction. Our source of information is architecture or artifacts, in some way reflections of the mental images or templates of an artisan in a particular craft tradition. It is therefore inevitable that the first valid inferences must be based on a trait list seeking to produce technological process statements. The artifact type that emerges thus becomes the basis of a sub-culture definition, one important goal in archaeological reconstruction. Beyond the reconstruction of the manufacturing process the functional dimension of cultural systems is increasingly capable of analysis (Gjessing, 1975). Archaeological evidence has its own internal structure as well as external location in the debris. Both sources of information can provide meaning independent of ethnographic analogy (Binford in Chang, 1967: 234f; Yellen, 1977). Such independent models of interpretation are particularly important for Pleistocene assemblages (Freeman, 1968). However, the function of the ethnographic source is to facilitate testing hypotheses and provide a model for social structures reflected in the archaeological record. Within such a conceptual framework we may turn to the specific problem of reconstructing a ceramic techniculture.

It is now generally clear to everyone that information lies deep inside ceramic material which can, properly observed and recorded, illumine not only the technological understandings and capabilities of an ancient community but also distinctive craft traditions. Ceramic technology frees the archaeologist

from the exclusive grip of the typology of external traits so that, in a word, we begin to move from the profile of the pot to the profile of the potter as a representative of a unique cultural tradition. In the history of the study of Palestinian ceramics two teams of researchers have made notable contributions, viz., Kelso and Thorley (1943) and more recently Franken and Kalsbeek (1969, 1974, 1975), as well as Hammond (1971). The first work was done in Pittsburgh, Pennsylvania, USA and the second in Leiden, The Netherlands. Neither team has included ceramic ethnography as a component in its investigation. Both Thorley and Kalsbeek are superior potters whose hands and eyes are skilled and observant. Yet the absence of the ethnographic factor, so often advocated by F. Matson (Matson, 1972: 211–23), has left these important contributions deficient at important points. They would doubtless be the first to admit these defects. They are pioneers. However, it is no longer true that they need merely feel their way. Much relevant work has been done in other parts of the world that may serve as guides (e.g., Thompson, 1958; Shepard, 1956: 49–94; J. G. D. Clark, 1951: 49–65; Matson, 1974). Even for the professional potter, as Thorley and Kalsbeek, an ethnographic experience would 'sharpen (his) awareness of critical data which now go unrecognized' (Foster, 1960: 213). Statements are made in these reports which are in reality assumptions or hypotheses which must be tested. Inferences from surface indications of ancient ceramics need to be tested. Kalsbeek certainly and Thorley probably tested their views by replication. Unless one has the ethnographic facts, however, one is not sensitive to the cultural conditions of Palestine.

In the absence of a usable body of ethnographic lore about traditional potters in Palestine it would, however, be gratuitous to criticize past and present ceramic technology teams for not taking such information into account. With the enlarged horizons of modern archaeology, however, it may be useful to illustrate the potential contribution of ceramic ethnography not merely toward improved statements about ancient technology but also toward increased awareness of use and function of pottery in an ancient social setting. Beyond technology as a manufacturing process to the use and meaning of objects is techniculture (Osgood, 1951: 212). The following notes on the wheel, fuel, use and ceramic ecology are intended to move from technology as an end in itself to techniculture as a living system in a social context. While the data may not allow the reconstruction of entire systems they can be pushed far with appropriate questions (Trigger, 1971: 329–32).

It is not entirely clear how descriptions of the wheel in ethnographic literature will facilitate our understanding of ceramic techniculture. While there are no details published for Palestine, Hankey's helpful study of the unique Beit Shebab potters in Lebanon describes a wheel (Hankey, 1968: 28, PLS 7, 8, 13) very different from the tournette used at Kornos and Phini in Cyprus (Hampe and Winter, 1962: PLS 24–28, 30–35; Johnston, 1974: 132–39). These ethnographic data would perhaps not essentially alter the insights of Kelso and Thorley (1943: 97–9) or Franken and Kalsbeek (1969: 92) but it would make possible testing their assumptions about the presence or absence of a wheel by forcing a more precise definition of wheel. A wide variety of rotary systems have been and are being used by traditional potters (Foster, 1956: 395f, PL. 1; Childe, 1954: 195–204). Socketed stone pairs sometimes turn up in excavations. These are not proper wheels but served as the pivot for a turntable (e.g., Amiran, 1978: 57, PL. 77: 5–8). Ethnographic study would also add a refined sensitivity for local creativity as well as a diachronic perspective. Fuel is another factor that can be better studied with ethnographic data available. Matson has suggested that one of the earliest technological uses of fire was to bake pottery (Matson, 1966: 149). Indeed, '. . . a knowledge of current practices will at least give one some notion of the great variety of materials used' (Matson, 1966: 151f) as fuel. Understandably in early studies the fuel problem is merely mentioned (Kelso and Thorley, 1943: 112) or discussed generally (Franken, 1969: 96; 1975: 57f). It is still possible to measure the heat levels of various dung fuels in either open or kiln fires where the few traditional potters still work.

Whether or not the fact that 'terms for ceramics in English tend to describe form rather than use' (Fontana, 1972: 10) is in part responsible for the absence of serious consideration of use as important to the cultural meaning of pottery requires further study. Unfortunately ceramic technology usually stops short of a consideration of use. Thorley's interesting volumetric calculations seem to him chiefly a 'clue to the refinements of pottery technique' (Kelso and Thorley, 1943: 122f) with not a word about use where size and volume would seem to play an important role. Shape, wear, surface treatment and porosity also offer clues to use (Matson, 1965: 204–09). Franken offers many important technical comments in his discussion of sugar pots (Franken, 1975: 143–47) with no attention to use. His perspective is that of the potter and not the consumer. The history of ceramic techniculture begins with a study of the function of pottery in the ethnographic present to both potter and consumer as test and control for proposals of earlier uses (Crowfoot, 1932; Solheim, 1965).

In yet a fourth way ceramic technology can become more useful as a tool in archaeological interpretation. If pottery production and use is viewed as an adaptive sub-system in a cultural tradition, the knowledge of the unique factors of the ecological context will contribute to the interpretation of the results of technological analysis. F. Matson, who is as responsible as anyone for introducing archaeologists of the Middle East to the values of technological studies of ancient ceramics, formally introduced this perspective fifteen years ago (Matson, 1965). Though still very commonly ignored by archaeologists (Arnold, 1975b), pottery production certainly and use possibly can best be understood within a climatic and resource ecological niche. An open-ecology approach seems best adapted to the study of ceramic techniculture where the system includes cultural as well as natural factors (Trigger,

1971: 329). One can hypothesize that the diverse climates and geomorphology of Palestine should in a discernible way have an impact as great as cultural factors on pottery production. Most archaeological reports seem to assume that pottery found in the tell, if not obviously imported, was made on the site. Little study has yet been attempted to deal with production and trade of pottery in Palestine (Amiran, Beit-Arieh, Glass, 1973). To pursue this problem requires not only research into the ecosphere of separate regions but use of a production and trade model based on ethnographic facts. Where there is reason to presume continuity of cultural traditions such a model should serve at least to stimulate further hypotheses about older systems.

With the foregoing historical and conceptual background it may now be appropriate to report briefly on my search for a system for presenting the Bronze Age pottery of Tell Ta'annek that will not only advance our understanding of the sequence of ceramic horizons but also contribute to a reconstruction of the craft tradition and the social function of the pottery products. By early 1973 I was convinced that a ceramic technologist was the key to what we were intending. It was our good fortune that Owen Rye, then with the Smithsonian Institute and now with the Australian National University, was available. As a potter, trained as a ceramic technologist, with several years' fieldwork as an ethnographer in Pakistan (Rye, 1976), he combined the skills and experience needed. On three occasions (1973, 1975, 1977) he has made detailed studies of traditional potters at work in the West Bank and Gaza, as well as careful analyses of the surface features of the pottery from Tell Ta'annek. In 1975 John Landgraf began to assist in the ethnographic aspect of the project by concentrating on women potters when Rye was not in the country. When published, these two efforts will make accessible more reliable information on the traditional potters and pottery of Palestine than has been available heretofore. The aim of the ethnographic research is not merely to assist the archaeologist but also to put together a body of material that will provide clues leading to a more adequate appreciation of the total history of the ceramic craft in Palestine. Unfortunately the end of an 8,000-year tradition seems to be in sight.

My own effort has been to develop systems for identifying, clustering and classifying significant information relevant to reconstructing types of raw material, technological process and use (Glock, 1975). The presentation of pottery in drawn form has now been developed to where many of the forming features on both surfaces are recorded. For the first time a realistic schematic of the cut section will provide clues to both materials and process. Rye has provided an illustrated synthesis for systematically identifying the several steps in a reconstruction of ceramic technology in archaeological materials from Tell Ta'annek. The elements of an encoding system have been developed. It is of course not possible to research every question. Our basic aim is to develop a system that is practical for general archaeological reporting and yet considerably more sensitive and revealing regarding the ceramic process. Both the ethnographic and the archaeological materials will be presented in a report that focuses on a set of common technical and functional problems (Binford, 1968: 270f).

In the history of archaeological interpretation there are many debts to ethnographic analogy (Orme, 1973). What life was breathed into the ancient ruins of Palestine, however, was less a consequence of a considered study of traditional life ways surviving in the land than the correlation with biblical and other literary sources which presumably reported events not merely in the region but at the precise location of the excavation (e.g. Kyle, 1934). The consequence has been not only an optimistic view of the historical probabilities of the biblical record but also a prolonged delay in the felt need to develop a rigorous system of analysis that attempts to say no more or no less than the physical evidence warrants. A systematics for the use of the Bible in archaeological interpretation remains to be developed (Glock, n.d.). On the other hand, ethnographic analogy has been demonstrated to be capable of controlled illumination of otherwise mute archaeological evidence. While the average excavation is not rich in museum pieces it does contain ample clues of the system of a once-living community. Pottery is one category of that debris that contains evidence which analytic instruments and ethnographic facts together with a rigorously and creatively applied system of analogy may help reconstruct elements of an extinct techniculture.

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Remarks on the History of Settlement in Southern Jordan during the Early Iron Age

In the opinion of Nelson Glueck, the history of the Edomites as a settled population begins in the 13th century BC[1]. He based his proposition firstly on the evidence of written sources, in particular, the Bible, and secondly on the results of his archaeological survey in the region between Wādī l-Ḥasā in the north and the landmark of Rās en-Naqb, or the northern end of the Gulf of el-ʿAqaba, to the south. This is the region which is traditionally, and probably on the whole also correctly, regarded as the homeland of the ancient Edomites[2]. As far as the Bible is concerned, Numbers 20: 14–21 and Deuteronomy 2: 1–8 recount, in passages by no means free from contradictions, how, during their passage from Egypt into Canaan, the Israelites confronted the Edomites who were already established in the region to the east of Wādī l-ʿAraba. This episode is traditionally dated to the 13th century. From the reference to a 'King of Edom' in Numbers 20: 14 and a list of 'the kings who ruled in the land of Edom before the Israelites had any king' in Genesis 36: 31–39, other scholars, such as Frants Buhl[3], had already inferred that the Edomites had, by this time, developed a centralized state under a monarch. On the evidence of Numbers 20, this state seemed, moreover, to have been strong enough to deny access to the migrating Israelites. Glueck combined the testimony of the texts with the presence of some sixty-five ancient settlement sites in Edomite territory, which he felt free to date to Early Iron Age I/II on the basis of his survey[4]. In this fashion the textual and archaeological evidence appeared to be in agreement and the assumption that the Edomites were not only sedentary but had also developed the institutions of a state right at the beginning of Iron Age I was widely accepted[5].

All the more surprising then, when the results of the first modern excavations of Iron Age settlements in the area south of Wādī l-Ḥasā which Mrs Crystal M. Bennett undertook for the British School of Archaeology in Jerusalem failed to fit into this framework. Indeed, it rapidly became clear that the three settlements concerned—Umm el-Biyāra[6] and Ṭawīlān[7] in the region of Petra/Wādī Mūsā and Buṣēra[8], south of eṭ-Ṭafīle—were devoid of any Iron Age I occupation at all. To ignore the later periods for the present, all three sites flourished exclusively during the Iron Age II C: Ṭawīlān from the 9th or rather the 8th to the 6th centuries, Buṣēra in the 7th–6th centuries and probably continuing into the 5th/4th centuries, Umm el-Biyāra relatively briefly in the 7th/6th centuries. This state of affairs is not at all in agreement with the current hypotheses concerning the process of Iron Age settlement on either side of the Rift Valley[9], although in the case of the ephemeral settlement of Umm el-Biyāra, its relatively unfavourable situation might be offered in explanation. It stands on an almost inaccessible rock plateau, high above Wādī Mūsā, which, though defensible against virtually any assailant, must have imposed considerable constraints on the everyday activities of the inhabitants. Here, the natural situation was by no means conducive to stable, flourishing communities on the plateau. This is, however, by no means the case for either Ṭawīlān or Buṣēra, which must have occupied a much more favourable environment. Furthermore, Buṣēra may, with some justification, be identified as the Biblical Bozrah, which was the capital of Edom in Neo-

[1] See, e.g., Glueck, 1935: 138; Glueck, 1940: 125, 128, 145–147. In his latest statements, Glueck partially revised his earlier views; thus the date of the beginning of Iron Age settlements in the Transjordan is lowered to the 12th century BC, and the references to the existence of a strong Edomite kingdom at the eve of the Exodus are deleted. See Glueck, 1970: 179–181 (on p. 157, however, the original 13th century date is retained).

[2] The possible extension of the Edomite territory to the west of Wādī l-ʿAraba does not concern us here.

[3] Buhl, 1893: 46f., 54f.

[4] See the lists of Iron Age settlements south of Wādī l-Ḥasā in Gold, 1951: 26–36; Weippert, 1971a: 396f. and map 1 I–III.

[5] See, e.g., Irvine, 1958: 76–81, 213–217 (sedentary culture in Edom began in the 13th century, although the population remained partially nomadic until the 12th); Cresson, 1963: 25–28 (follows Glueck); Weippert, 1967: 129 fn. 3 = Weippert, 1971b: 133 fn. 17 (early consolidation of Edom explained by relatively undisturbed development in a marginal area; statement based on an evaluation of 'Edomite' [=Ḥeǧāz] pottery now proved wrong); Moon, 1971: 34f., 125–153 (settlement during the 13th century resulting in the establishment of an 'amphictyony'; emergence of the Edomite kingdom during the 12th century); Bennett, 1971b: 36; cp. Bartlett, 1972: 26 with fn. 1.

[6] Preliminary reports: Bennett, 1964, 1966a, 1966b, 1966c, 1967.

[7] Preliminary reports: Bennett, 1967/68, 1969, 1970, 1971a.

[8] Preliminary reports: Bennett, 1973, 1974, 1975, 1977; Puech, 1977.

[9] The historical model usually referred to in this context is the settlement of the Israelites in Canaan (Palestine). See for this e.g., Weipper, 1976; Miller, 1977 (both with references to earlier literature). The alternative views of G. E. Mendenhall and N. K. Gottwald (see now Gottwald, 1979) must await discussion at another time.

Babylonian times at least and which would, therefore, seem to have been a settlement of some importance. The remains of public buildings from about this period, which Mrs Bennett excavated in Buṣēra[10] may, without stretching the evidence unduly, be regarded as archaeological confirmation of this importance. Ṭawīlān, on the other hand, was a rural community without defensive walls. It probably owed its existence to the abundant and readily available water from ʿAin Mūsā which allowed the inhabitants of the ancient town to irrigate their terraced gardens and fields just as the people of el-Ǧī/Wādī Mūsā continue to do today. This, no doubt, stimulated the growth of a large community which Glueck considered to be 'one of the centers of the Edomite kingdom' on account of the quantity of Iron Age sherds on the surface of the site. He went on to identify it—although most certainly incorrectly—with Biblical Theman[11]. Considering Glueck's descriptions, traces of earlier phases of the Iron Age would have been expected in Buṣēra and Ṭawīlān at the very least.

The observations made at the three sites excavated by Mrs Bennett[12] are by no means as isolated as they may first appear. For a correct evaluation, it is necessary to examine the entire region which Glueck regarded, on the whole correctly, as the area of Iron Age settlement south of Wādī l-Ḥasā. A study of sherd collections from more than fifty sites in this region with Iron Age pottery suggests that permanent settlement reached its maximum extent during the first millennium BC in Edomite territory in Iron Age II C, the 8th–6th centuries.

If the ceramic analyses are correct, a very gradual increase in settlement density is to be discerned previous to this. However, it is at present impossible to be more specific on the course of events in detail, due to the scarsity of relevant material and to the uncertainties in dating. This much at any rate is clear enough: if the geographical and chronological distribution of pottery found in a regional surface survey is indeed capable of reflecting, approximately at least, social—and hence also historical—developments, then the picture of a well-organized and powerful Edomite kingdom already functioning at the end of the Late Bronze Age is in need of revision.

In fact, such a revision does not present undue difficulties as far as the texts are concerned. Indeed, the historical studies by J. R. Bartlett and others have long pointed the way in this direction[13]. Nevertheless, the impression which remains is that the generally accepted interpretation of the history of the area could only have been formulated in this fashion because the survey results were interpreted within this historical framework provided by the Biblical texts already referred to. As often in Palestinian archaeology, the two categories of historical evidence—textual and archaeological—were not clearly differentiated. The one was uncritically interpreted in terms of the other, and texts were accepted at face value as historical documents without previously subjecting them to a rigid analysis of their literary character and the amount of ideology and reality they contain[14]. The conflicting statements of Numbers 20: 14–21 and Deuteronomy 2: 1–8 might have been reason enough to suspect that as far as the literary and historical value of the texts is concerned not all is as it should be. Numbers 20 records that the Edomites—ruled by a king in verse 21—denied passage across their lands to the Israelites coming out of Egypt, or rather, from the Sinai desert (et-Tīh). They furthermore manned their frontier with troops to give military emphasis to their refusal. In Deuteronomy 2: 1–8, however, there is no trace of such animosity. That the Israelites were able to pass through Edomite territory without hindrance goes without saying. What matters here is that they were not to assail the Edomites—who had been given Seir as their homeland by the Lord. In literary terms, the passage is not a homogenous record. At its basis stand a few laconic remarks concerning the route which the Israelites were to take from the northern end of the Red Sea into the territory of the Moabites. To this framework were added the injunctions concerning relations with the Edomites, which find their ideological background in a relatively late period in the first millennium when the concept of a 'brotherhood' between the Israelites and their Transjordanian neighbours, the Ammonites, Moabites, and Edomites emerged[15]. Consequently, the Israelites are forbidden to harass their 'brothers' or to drive them from their lands or to destroy them—in clear distinction to the other inhabitants of the Promised Land, such as the Amorites or Canaanites. Accordingly, Deuteronomy 2: 1–8 does not preserve an ancient tradition which could be used to unravel events in the 13th century BC; it is rather a secondary construction[16], possibly 'correcting' the tradition of Numbers 20: 14–21.

When the passage, Numbers 20: 14–21, is subjected to literary analysis, it also proves to be an editorial composition. The events recounted have been copied and adapted from the report preserved in Numbers 21: 21–25 concerning the clash between the Israelites and King Sihon of Heshbon, while the historical summary of the events which had befallen the Israelites in Egypt is a précis of a closely similar passage in Deuteronomy 26: 5–8[17].

Thus neither of the texts can be said to reflect the existence of an Edomite state at the transition from the Late Bronze Age to the Iron Age. Indeed, this is no more than is to be expected as the account of the passage of the Israelites through the

[10] Bennett, 1977: 1–6 (area A).

[11] Glueck, 1935: 82f. The identification of Ṭawīlān with Theman has been disproved by de Vaux, 1969.

[12] I refrain from discussing the results of Glueck's excavations at Tell el-Ḫlēfe to the west of el-ʿAqaba since nothing has been published so far pertaining to the earliest occupation levels at this site. Literature on Tell el-Ḫlēfe in Vogel, 1971: 85f.

[13] See the bibliography *sub* Bartlett, J. R.

[14] For the questions of method involved, see Alt, 1932: 175; Noth, 1938 = Noth, 1971: 3–16; Noth, 1957 = Noth, 1971: 17–33; Noth, 1960 = Noth, 1971: 34–51; Weippert, 1967: 124–138 = Weippert, 1971b: 128–143; Lapp, 1969: 94f.; Franken, 1970a, 1970b; de Vaux, 1970.

[15] See Bartlett, 1969, 1977; Fishbane, 1970.

[16] See Mittmann, 1975: 64–66, 72–77.

[17] See Mittmann, 1973; Mittmann, 1975: 73–75.

1. Ḫirbet Abū Banna, looking West.



Transjordan is the product of two originally distinct traditions which have been combined into one continuous narrative of events. On the one hand stands the account of the wanderings in the desert south of Palestine, on the other the stories about the conquest of Canaan from out of the lower Jordan valley. Naturally, when it came to filling in the gaps, it was the contemporary situation which was reflected in the presumed route now taken by the Israelites through the territories of the Edomites and Moabites. Some account of the relations with these peoples therefore became unavoidable.

Unlike the passages from Numbers and Deuteronomy which I have just discussed, the Edomite king-list in Genesis 36: 31–39 is most probably based on an ancient document which can, to a certain extent, be reconstructed from the wording of the passage. As we have it, the list names a series of eight kings who seem to have reigned consecutively over Edom before the inception of kingship in Israel. Their reigns, then, would span the whole of the 11th century and probably also part of the 12th. It is worth noting, however, that none of the kings was the son of his predecessor, and that to each is attributed a different city, presumably his place of residence. Moreover, these rulers are introduced (verse 31) not, as might be expected, as 'kings of Edom' but as 'the kings who reigned *in* the land of Edom, before any king reigned over the Israelites'. It is probably correct to conclude from this observation that the succession scheme in the text as it is transmitted is secondary, and that the original document was an enumeration of local rulers, with no indication of their chronological relationship. The rulers may well have been partially or even wholly contemporary[18]—in which case the list may no longer be used to date the beginnings of an unified Edomite kingdom to the early 11th or even 12th centuries. Yet it must be conceded that the text in its original form could go back to the 11th century; it could therefore imply the presence of 'cities' or, at any rate, certain permanent settlements, in Edom at this period. But this as far as its evidence goes.

Of relevance here is the observation that the Egyptians continued to refer to the land of Seir—the Biblical home of the Edomites—as a land of the Shasu (i.e. nomads) in the second half of the 12th century, towards the end of the reign of Ramses III[19] as they had done in the 13th century, under Ramses II[20]. Moreover, the earliest reference to Edom specifi-

[18] For Genesis 36: 31–39, see Bartlett, 1965; Weippert, 1971a: 473–475. The evidence for Bartlett's view that three of the kings actually reigned in Moab, not in Edom, is, in my opinion, not decisive.

[19] Papyrus Harris I 76: 9–11 (Erichsen, 1933: 93) describes a campaign of Ramses III directed against 'Seir among the Shasu tribes'; see Breasted, 1906: 201, § 404; Giveon, 1971: 134–137, doc. 38; Weippert, 1974: 277.

[20] The 'Shasu country of Seir' is mentioned in an enumeration of six 'Shasu countries' incorporated into the 'topographical' list of Ramses II in his temple at 'Amāra West; see Giveon, 1971: 74–77, doc. 16a, no. 1, and cp. Weippert, 1971a: 31f., no. N 93; Weippert, 1974: 270f.; Görg, 1976: 12 and fn. 34. The text probably was copied from an earlier one of Amenophis III which also had served as *Vorlage* for the latter king's own 'topographical' lists at Soleb. However, since Ramses II is known to have campaigned in 'Shasu country' and to have plundered Mt Seir (Montet and Goyon, 1935–37: PL. III; Weippert, 1971a: 34, text 2), it is likely that the mention of the 'Shasu country of Seir' in 'Amāra West was still grounded on the real situation.

2. Ḫirbet Abū Banna, looking East.



cally, which dates to the 8th year of the Pharaoh Merenptah (1216 BC) mentions 'nomadic tribes' or 'families from Edom' who, with their flocks, sought refuge on the eastern frontiers of Egypt[21]. But the text does not state where they came from, nor how they made their way to Egypt. Thus it would seem somewhat hasty to locate their homeland without more ado in the territories belonging to the Edomites in the first millennium.

As the literary sources are clearly deficient, we are left only the archaeological evidence with which to trace the development of settlement in the region to the south of Wādī l-Ḥasā and east of Wādī l-ʿAraba at the close of the Late Bronze Age and the beginning of the Iron Age. I have already mentioned the gradual increase in settlement density, observable well before the florescence in Iron Age II C (8th–6th centuries BC). Of significance is that this development is not only signalled in Iron Age II—thus the 10th century at the earliest—but, indeed, as early as Iron Age I, as will be shown, in what follows, by two sites in the north of this region, Ḫirbet Abū Banna and Ḫirbet Mašmīl.

Abū Banna is the first settlement to be reached by travelling south down the modern highway from el-Kerak to eṭ-Ṭafīle, after crossing Wādī l-Ḥasā and ascending across the west bank of Wādī Laʿabān to the rolling plateau called on the maps Ǧibāl Safra and Ṣalāḫid more to the southwest. The countryside is intensively cultivated, especially with cereal crops. The village of Abū Banna seems to be of more recent origin; its ancient forerunner lies about a kilometre to the south and is called Ḫirbet Abū Banna[22]. This is an area of extensive limestone ruins (FIGS 1 & 2) under which stone foundations and possibly even the remains of an enclosing wall may be discerned. The site is partially under cultivation.

A few hundred metres further on, a road branches off in a north westerly direction, leading through gently rolling grain fields. After a good 2½ km. Ḫirbet Mašmīl[23] comes into sight on a spur on the other side of Wādī l-Muwēlī (FIG. 3). A mule-track, from which R. E. Brünnow and A. v. Domaszewski and A. Musil observed the ruins, passes along its western side. Brünnow and von Domaszewski regarded the track as the successor of the Roman road leading to Garandal (Arindela), though this is, in my opinion, by no means certain. The 1912 Baedeker recommends the track for the journey from el-Kerak to Petra, and Ḫirbet Mašmīl is mentioned as a result of the description by Brünnow and von Domaszewski[24]. The ḫirbe itself measures some 50 × 100 metres. The foundations of a small building of about 3 × 5 metres are visible in the southern part (FIG. 4), while in the middle there is an ancient wall, running East–West. In addition there are a number of modern enclosures, apparently animal pens, some caves which have been turned into stables and a couple of cisterns. The caves may also have been cisterns originally. The ruins of Ruǧm Karaka[25], which Glueck considers to date to the Iron Age, are visible a good kilometre to the north of the site. This probably served to guard the descent into Wādī l-Ḥasā, which begins further to the north. It is a landmark visible far and wide and for this reason functions as a triangulation point today.

On Ḫirbet Mašmīl, Glueck registered 'a few pieces of Nabataean and Roman pottery and several sherds which belong unmistakenly to the Bronze Age period extending approximately 2200–1800 BC'[26]. Although I have previously

[21] See the model letter in Papyrus Anastasi VI 51–61 (Gardiner, 1937: 76f.), translated, e.g., by E. Edel in Galling, 1968: 40f., no. 16; J. A. Wilson in Pritchard, 1969: 259; Giveon, 1971: 131–134, doc. 37. For the date of the model letter, see Weippert, 1979a: 27, fn. 45.

[22] Glueck, 1934: 14; Glueck, 1935: 107. Grid reference (Palestine grid): approx. 2154.0219. Revisited on September 3, 1974, and August 10, 1978.

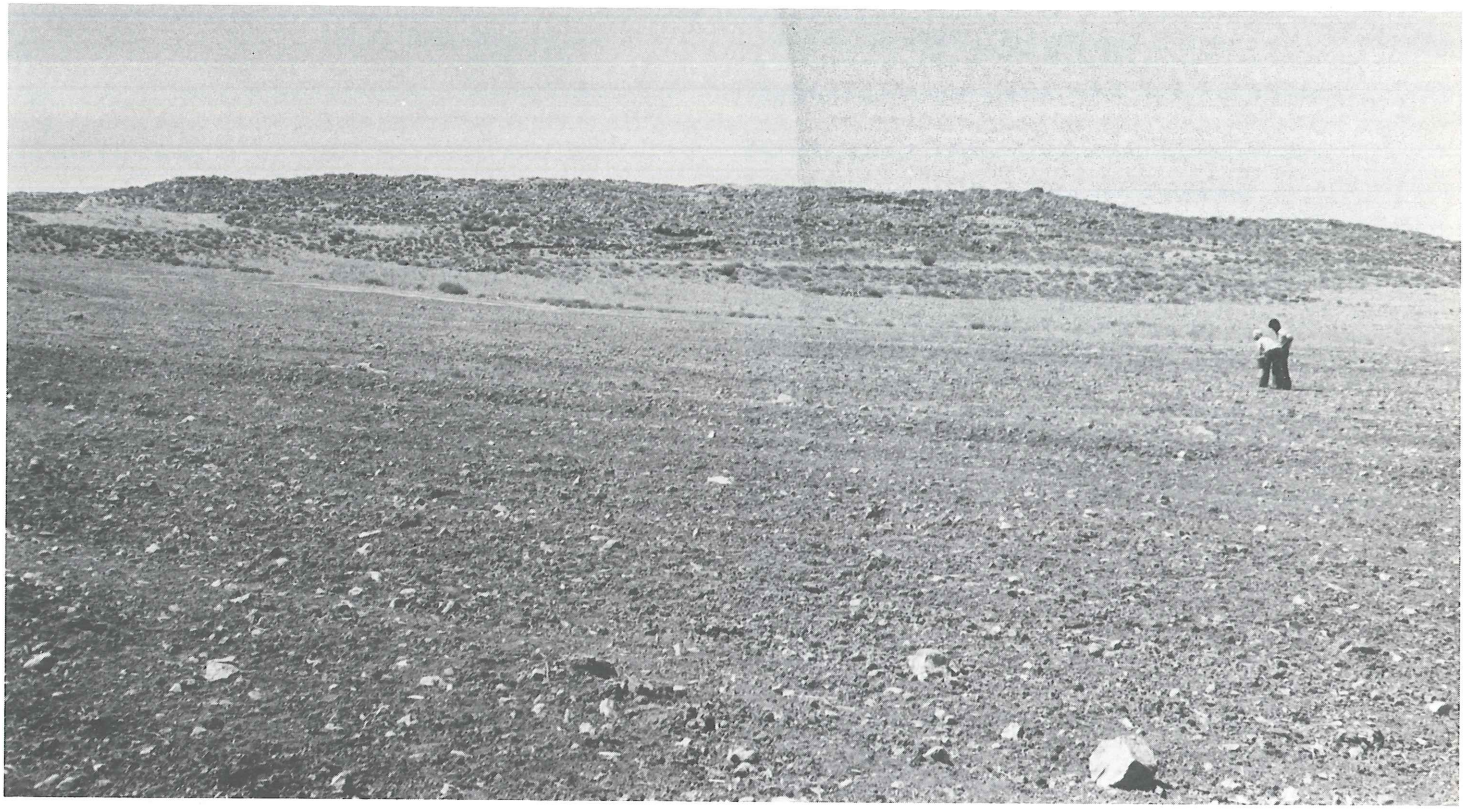
[23] Brünnow and v. Domaszewski, 1904: 109 ('el-Mišmâl', corrected in Brünnow and v. Domaszewski, 1905: 328 to 'Ḫ. Mašmîl' after Musil); Musil, 1907: 301; Musil, 1908: 242; Glueck, 1935: 107f. Grid ref.: 2131.0333. On the maps the site is called Ḫirbet el-Mušimmīn (see Weippert, 1979a: 26, fn. 38). Revisited on September 3, 1974, and August 10, 1978.

[24] Baedeker, 1912: 174.

[25] Brünnow and v. Domaszewski, 1904: 108; Brünnow and v. Domaszewski, 1905: 328; Musil, 1908: 242; Braslavski, 1934: 93; Glueck, 1934: 14; Glueck, 1935: 108 and FIG. 40.

[26] Glueck, 1935: 108.

3. Ḫirbet Mašmīl from Wādī l-Muwēlī, looking North-West.



criticized Glueck's dating of the pottery from Ḫirbet Mašmīl[27], renewed investigation of the site shows that, as far as his statements go, Glueck was correct. There is indeed Nabataean and Roman pottery[28], with material from the Early Bronze IV/Middle Bronze I[29] and, in addition, the ubiquitous medieval (Ayyubid-Mamluk) sherds. But in the present context, it is the occurrence of fragments of Iron Age I bowls and jugs which require emphasis[30]. These possess good parallels in the pottery repertory in the Transjordan and southern Palestine during the 12th/11th centuries BC. The evidence for the Iron Age II is still very sparse at Ḫirbet Mašmīl[31].

Sherds of this period are, however, present at Ḫirbet Abū Banna, along with pottery from Iron Age I, the Roman, perhaps also the Byzantine, and the medieval (Ayyubid-Mamluk) periods[32].

It is apparent that after the Bronze Age hiatus, re-occupation of both settlements began as early as Iron Age I. But with the exception of these two sites, finds from this period are very scarse to the south of Wādī l-Ḥasā. My own investigations have also located material of the period at el-Qūsa el-Ḥamrā, et-Tuwāna and Ḫirbet es-Sabʿa in the environs of eṭ-Ṭafīle, together with Ḫirbet Umm Rās in the region south of eṣ-Ṣadaqa[33]. Then there is Ruǧm Ḫanazīr from the survey by W. E. Rast and R. Th. Schaub in the northern part of Wādī l-ʿAraba[34]. Altogether only seven sites can be listed. Thus it is impossible at present to draw conclusions about the history of settlement on the basis of the geographical distribution. That sites with Iron Age I pottery are known almost exclusively from the north need not necessarily mean that the early Iron Age occupation of the country south of Wādī l-Ḥasā began from the north, and extended further south from there. It might well be simple

[27] Weippert, 1979a: 26, where 'MB I and IIA sherds' should read 'MB I sherds'.

[28] See FIG. 1: 10–16.

[29] See FIG. 1: 1–9. Leaving aside the finds from the Stone Age (for which see Stockton, 1969, especially the distribution map, p. 101, FIG. 1), material attributed to pre-Iron Age periods has so far been observed only occasionally in the area south of Wādī l-Ḥasā; the statements in Glueck, 1935: 138, § II, which seem to point to the contrary, are misleading. From Glueck's surveys, the following sites in the area are known to have yielded Bronze Age pottery: Ḫirbet Mašmīl (see fn. 26 above), Ḫirbet ʿĀbil (near eṭ-Ṭafile, grid ref.: approx. 2091.0252; one sherd, EB IV/MB I, unpublished), ʿAin Neǧel (grid ref.: 2018.9924; one ledge-handle, EB IV/MB I, Glueck, 1935: 53f.), Fēnān (in Wādī l-ʿAraba, grid ref.: 1972.0041; Glueck, 1935: 33). From other surveys, this list can be supplemented by Ruwāṯ (grid ref.: 2110.0140; EB IV A, Graf, 1979), Hirbet el-Basṭa (grid ref.: 2018.9601; CL, EB, Kirkbride, 1959: 52; Glueck, 1935: 74 records only Nabataean and modern pottery, but El II and Hellenistic sherds are also found at the site), el-Mutrāb (east of Maʿān; CL, Parker, 1976: 24, no. 34), Wādī l-Fēfe (grid ref.: approx. 1933.0285; EB I–III, Rast and Schaub, 1974: 11f., 17f., 41–53).

[30] See FIG. 2: 1–7. The Iron Age bowl or jar base FIG. 2:8 cannot be dated exactly, but may likewise be attributed to El I.

[31] See, however, FIG. 2:9.

[32] See FIGS 3: 2–11; 4. FIG. 3: 1 may be an Early Bronze Age I sherd.

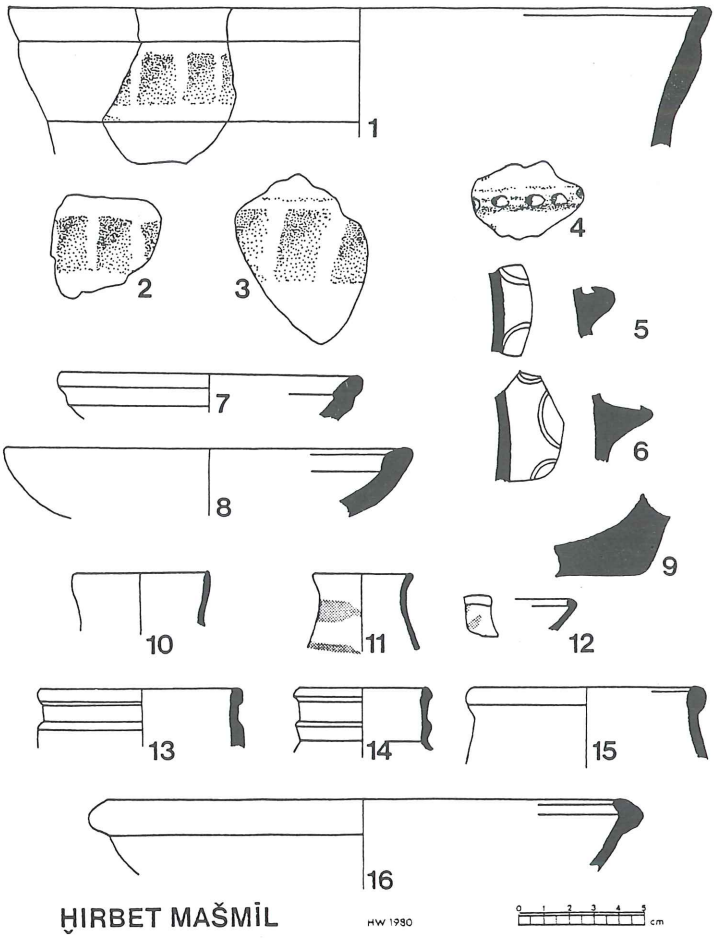
[33] Weippert, 1979a: 30 and fn. 57 (implicitly corrected here); for Ḫirbet Umm Rās (grid ref.: 1965.9476) see Musil, 1908: 231; Glueck, 1935: 70.

[34] Rast and Schaub, 1974: 12f., 50–53; cp. Frank, 1934: 212.

4. Ḫirbet Mašmīl, looking South.



5. Pottery from Hirbet Mašmīl.



coincidence. It is the task of future investigations to eliminate such coincidences[35].

Description of the pottery[36]

Ḫirbet Mašmīl (FIG. 5)

1 Reg. no. 6.25
Deep bowl. *Section:* pink; light yellowish gray core; some small and large grits (l/c). *Surfaces:* Exterior: pink slip; some large grits (l/c) seen; impressed raised moulding below rim. Interior: pink; some large grits (l/c) seen. *Date:* EB IV/MB I.

2 Reg. no. 6.24
Body sherd, presumably of deep bowl or jar. *Section:* light brown; many small to large grits (l/c/o). *Surfaces:* Exterior: cream slip; many small to large grits (l/c) seen; impressed raised moulding. Interior: light brown; many medium to large grits (l) seen. *Date:* EB IV/MB I.

3 Reg. no. 6.49
Body sherd, presumably of jar. *Section:* red; pink core; some small to large grits (l/c). *Surfaces:* Exterior: pink; some small to medium grits (l/c) seen; impressed raised moulding; combed on body. Interior: red; some small to large grits (l/c) seen. *Date:* EB IV/MB I.

4 Reg. no. 6.37
Body sherd, presumably of jar. *Section:* outside light brown, inside gray; many small to large grits (l/c). *Surfaces:* Exterior: light brown slip; some small to large grits (c) seen; impressed raised moulding. Interior: gray; some medium to large grits (l/c) seen.

5 Reg. no. 6.85
Folded ledge-handle attached to body sherd. *Section:* light brown; some small to large grits (l/c/p). *Surfaces:* Exterior: light brown slip; on upper side of ledge-handle red slip. Interior: red slip; some grits (l/c) seen. *Date:* EB IV/MB I.

6 Reg. no. 6.65
Folded ledge-handle attached to body sherd. *Section:* red; many small to large grits (l/c). *Surfaces:* Exterior: pink slip; many small to large grits (l/c) seen. Interior: red; grits as exterior. *Date:* EB IV/MB I.

7 Reg. no. 6.22
Small shallow bowl. *Section:* red; orange core; a few large grits (c).

[35] Translation from the German by Mrs C. van Driel-Murray (Leiden).

[36] The pottery descriptions in general follow the scheme employed in Weippert, 1979b: 95–103 (see *ibid.*, 95, fn. 17). For identifying additional material (temper, 'grits') the following conventions have been used: *Frequency:* 'a few' means < 15%, 'some' 15–30%, 'many' > 30% (estimated). *Size:* 'small' means < 0.5 mm., 'medium' 0'5–1 mm., 'large' > 1 mm. *Type:* s = 'sand', l = 'lime(stone)', c = 'crystal' or 'quartz', p = 'pottery' (ceramic particles), o = 'organic matter' (or traces left by decomposed straw particles in the fabric). This classification is strictly descriptive and does not intend to imply anything about the 'true' (chemical) nature of the materials in question. See in general, A. E. Glock in Rast, 1978: 63; J. D. Seger in Dever and Lance, 1978: 118, 134f. The descriptions of Hirbet Abū Banna and Hirbet Mašmīl should now be compared to those by B. MacDonald, 'The Wadi El Hasa survey 1979: A Preliminary Report', *Annual of the Department of Antiquities, The Hashemite Kingdom of Jordan*, 24 (1980), p. 175, no. 212, and p. 179, no. 23; PL. CVII 1.

Surfaces: Exterior: red slip; a few small to medium grits (l/c) seen. Interior: red; a few medium to large grits (l/c) seen. *Date:* EB IV/MB I.

8 Reg. no. 6.78
Small shallow bowl. *Section:* orange; light to medium gray core; a few small to large grits (l/c/o). *Surfaces:* Exterior: red, gray, irregularly fired; some small to large grits (l/c) seen. Interior: pink; many medium to large grits (l/c) seen. *Date:* EB IV/MB I.

9 Reg. no. 6.68
Flat base of jar. *Section:* light brown; many small to large grits (l/c/p). *Surfaces:* Exterior: cream slip; a few large grits (c) seen. Interior: light brown; many medium to large grits (l/c/p) seen. *Date:* EB IV/MB I.

10 Reg. no. 6.60
Juglet. *Section:* red; a few small grits (l). *Surfaces:* Exterior: cream slip; traces of red painted bands below rim. Interior: red; a few small grits (l) seen. *Date:* Nab./Roman.

11 Reg. no. 6.50
Juglet. *Section:* red; medium gray core; a few small to large grits (l/c). *Surfaces:* Exterior: red; some small to medium grits (l) seen; black painted leaf ornaments. *Date:* Nab.

12 Reg. no. 6.82
Small shallow bowl. *Section:* red; a few small grits (l). *Surfaces:* Exterior: red slip. Interior: red; polished; purplish brown painted leaf ornaments. *Date:* Nab.

13 Reg. no. 6.42
Cup? *Section:* light brown; a few small grits (l/c). *Surfaces:* Exterior: buff slip. Interior: light brown. *Date:* Nab./Roman.

14 Reg. no. 6.75
Bottle? *Section:* red; a few small grits (l/c). *Surfaces:* Exterior: red; a few small grits (l) seen. Interior: red. *Date:* Nab./Roman.

15 Reg. no. 6.41
Jug. *Section:* pink; gray core; a few small to large grits (l/c/p). *Surfaces:* Exterior: pink; a few small to medium grits (l) seen. Interior: brown; a few small grits (l) seen. *Date:* Nab./Roman.

16 Reg. no. 6.199
Shallow bowl (platter). *Section:* red; some small grits (l/c). *Surfaces:* Exterior: purplish brown slip. Interior: red. *Date:* Nab./Roman.

Ḫirbet Mašmīl (FIG. 6)
1 Reg. no. 6.107
Carinated bowl. *Section:* light brown; medium gray core; many small to medium grits (l/p). *Surfaces:* Exterior: light brown slip; some large grits (l) seen. Interior: as exterior. *Date:* EI I.

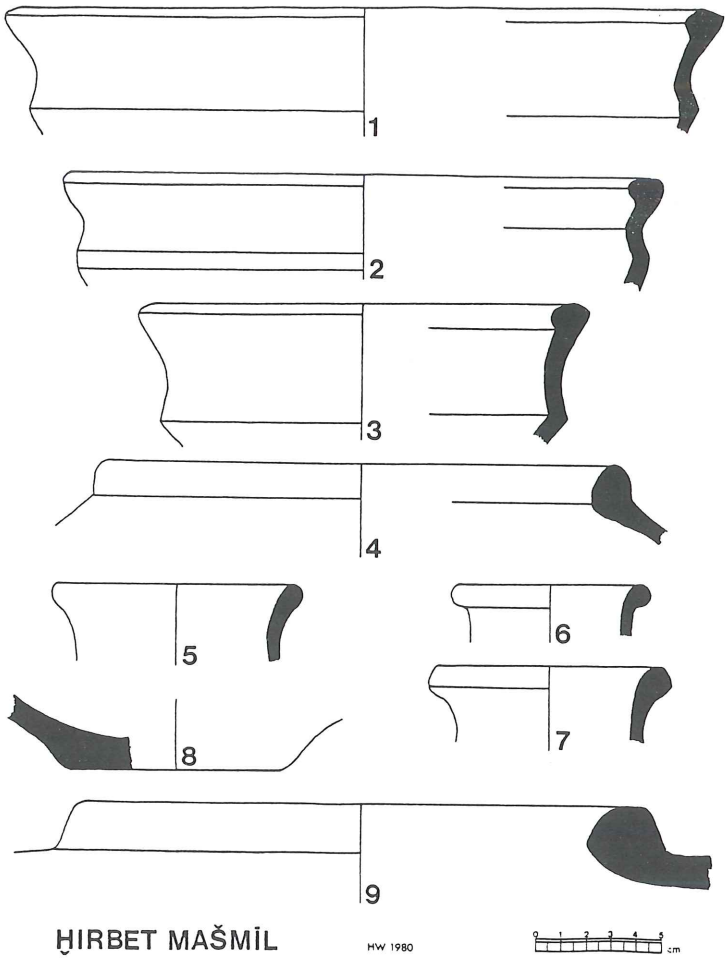
2 Reg. no. 6.108
Carinated bowl. *Section:* brown; medium gray core; many small to large grits (l/p). *Surfaces:* Exterior: cream slip; a few large grits (l) seen. Interior: light brown slip; some grits (l/p) seen. *Date:* EI I.

3 Reg. no. 6.114
Carinated bowl. *Section:* brown; medium gray core; many small to large grits (l/c/p). *Surfaces:* Exterior: pink slip; some medium to large grits (l/c/p) seen. Interior: red; grits as exterior. *Date:* EI I.

4 Reg. no. 6.14
Jar. *Section:* red; light gray core; many medium to large grits (l/c/p). *Surfaces:* Exterior: pink slip; many large grits (l/c/p) seen. Interior: red; grits as exterior. *Date:* EI I.

5 Reg. no. 6.92
Jug. *Section:* red; light gray core; some small and large grits (l/c). *Surfaces:* Exterior: pink slip; a few large grits (c) seen. Interior: brown slip; grits as exterior. *Date:* EI I.

6. Pottery from Hirbet Mašmīl.



6 Reg. no. 6.118
Jug. *Section:* light brown; some small to large grits (l/c/p). *Surfaces:* Exterior: light brown; some medium to large grits (l/c/p) seen. Interior: as exterior. *Date:* EI I.

7 Reg. no. 6.66
Jug. *Section:* pink; light gray core; some small to large grits (l/c/p). *Surfaces:* Exterior: pink; a few small to large grits (l/c/p) seen. Interior: light brown; a few small to large grits (l/c) seen. *Date:* EI I.

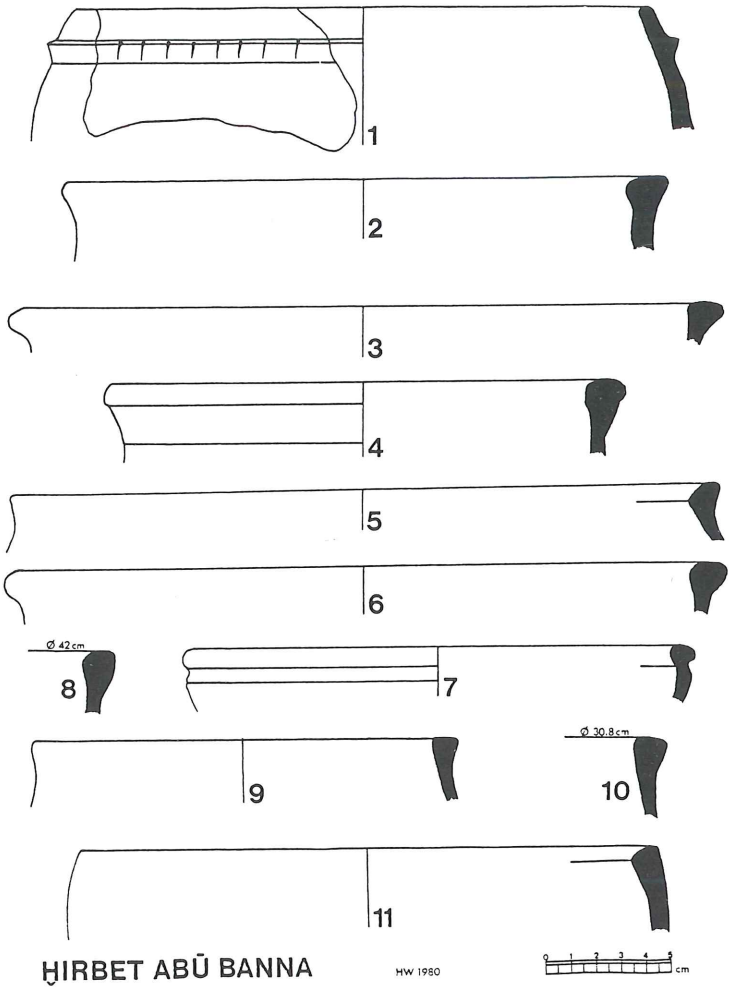
8 Reg. no. 6.122
Disc base of bowl or jar. *Section:* red; light reddish gray core; many small to large grits (l/c/p). *Surfaces:* Exterior: red slip; many medium to large grits (l/c/p) seen. Interior: red; grits as exterior. *Date:* EI I.

9 Reg. no. 6.31
Pithos. *Section:* red; medium reddish gray core; many small and large grits (s/l/c). *Surfaces:* Exterior: red slip; many medium to large grits (l/c) seen; traces of strings impressed on shoulder below rim. Interior: red slip; grits as exterior. *Date:* EI IIC.

Ḫirbet Abū Banna (FIG. 7)
1 Reg. no. 1.100
Holemouth jar. *Section:* red; reddish gray core; many small to large grits (l/c). *Surfaces:* Exterior: light brown slip, wet smoothed, irregularly fired; incised raised moulding below rim. Interior: brown slip. *Date:* EB I(?).

2 Reg. no. 1.98
Deep bowl. *Section:* red; medium gray core; many large grits (l/c).

7. Pottery from Hirbet Abū Banna.



Surfaces: Exterior: cream slip; some medium to large grits (l/c/p) seen. Interior: red slip (traces); some medium to large grits (l/c) seen. *Date:* EI I.

3 Reg. no. 1.113
Deep bowl. *Section:* light brown; medium gray core; some medium to large grits (l/c). *Surfaces:* Exterior: light brown slip; some large grits (l) seen. Interior: light brown; grits as exterior. *Date:* EI I.

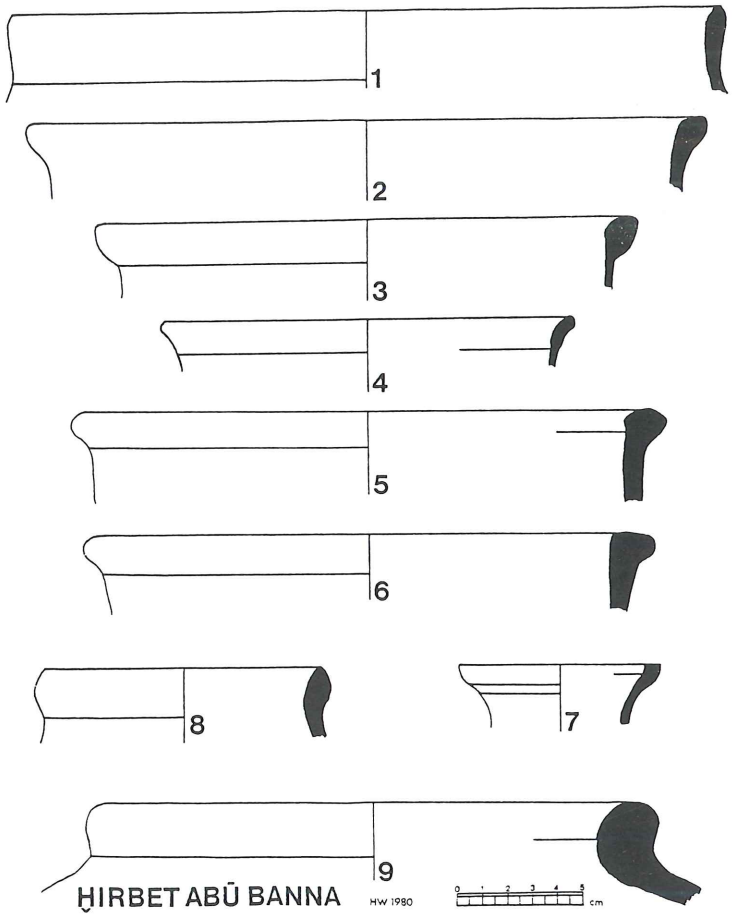
4 Reg. no. 1.74
Deep bowl. *Section:* medium gray; some small to large grits (l/c). *Surfaces:* Exterior: brown; some medium to large grits (l/c/p) seen. Interior: as exterior. *Date:* EI I.

5 Reg. no. 1.64
Crater or jar. *Section:* red; orange core; some small to large grits (l/c). *Surfaces:* Exterior: pink slip; some small to large grits (l/c) seen. Interior: red; grits as exterior. *Date:* EI I.

6 Reg. no. 1.180
Deep bowl. *Section:* medium yellowish gray; some small to large grits (l/c). *Surfaces:* Exterior: pink; some medium to large grits (l/c) seen; traces of whitish paint on upper side of rim. Interior: red; some small to large grits (l/c) seen. *Date:* EI I.

7 Reg. no. 1.9
Deep bowl. *Section:* red; light gray core; many medium to large grits (l/c/p). *Surfaces:* Exterior: cream slip; groove below rim. Interior: cream slip. *Date:* EI I.

8. Pottery from Hirbet Abū Banna.



8 Reg. no. 1.138
Large deep bowl. *Section:* light gray; some medium to large grits (l/c). *Surfaces:* Exterior: pink slip; some medium to large grits (l/c) seen. Interior: red slip; some medium to large grits (c/p) seen. *Date:* EI II.

9 Reg. no. 1.168
Deep bowl. *Section:* light brown; many medium to large grits (l/c/p). *Surfaces:* Exterior: light brown slip; some medium to large grits (l) seen. Interior: light brown; some medium to large grits (l/c) seen. *Date:* EI II.

10 Reg. no. 1.94
Large deep bowl. *Section:* brown; light brownish gray core; many small to large grits (l/c). *Surfaces:* Exterior: buff slip; some medium to large grits (l) seen. Interior: brown; many small to large grits (l/c/p) seen. *Other features:* ancient mending hole. *Date:* EI II.

11 Reg. no. 1.92
Crater or deep bowl. *Section:* pink; light gray core; many small to large grits (l/c). *Surfaces:* Exterior: pink; many small to large grits (l/c) seen; traces of red paint on rim. Interior: pink; many small to large grits (l). *Date:* EI II.

Ḫirbet Abū Banna (FIG. 8)
1 Reg. no. 1.93
Deep bowl or crater. *Section:* light brown; light gray core; a few medium to large grits (l/c). *Surfaces:* Exterior: light brown slip; many small to large grits (l/c/p) seen. Interior: light brown; grits as exterior. *Date:* EI II.

2 Reg. no. 1.91
Deep bowl. *Section:* light red; light gray core; many small to large grits (l/c/p). *Surfaces:* Exterior: light red; many small to large grits (l/c/p) seen. Interior: light red slip (traces only); grits as exterior. *Date:* EI II.

3 Reg. no. 1.11
Deep bowl or jug. *Section:* brown; medium gray core; a few small to medium grits (l/c). *Surfaces:* Exterior: light brown slip; many small to large grits (l/c) seen. Interior: brown; some small to medium grits (l/c) seen. *Date:* EI II.

4 Reg. no. 1.66
Small bowl or jug. *Section:* light brown; light gray core; a few small to medium grits (l/c). *Surfaces:* Exterior: light brown slip; a few small to medium grits (l) seen. Interior: light brown; some small to large grits (l/c/p) seen. *Date:* EI II.

5 Reg. no. 1.169
Deep bowl. *Section:* pink; light gray core; some small to large grits (l/c/p). *Surfaces:* Exterior: cream slip; some medium to large grits (l/c/p) seen. Interior: pink; many small to large grits (l/c/p) seen. *Date:* EI (I or) II.

6 Reg. no. 1.26
Deep bowl. *Section:* pink; many small to large grits (l/c/p). *Surfaces:* Exterior: cream slip; a few medium to large grits (l/c/p) seen. Interior: as exterior. *Date:* EI (I or) II.

7 Reg. no. 1.5
Juglet. *Section:* light brown; many small to large grits (l/c). *Surfaces:* Exterior: light brown slip; some medium to large grits (l/c/o) seen. Interior: cream slip; some small to large grits (l/c) seen. *Remarks:* brittle. *Date:* EI.

8 Reg. no. 1.31
Jug. *Section:* pink; many small to large grits (l/c/p). *Surfaces:* Exterior: pink slip; many small to large grits (l/c/p) seen. Interior: pink; grits as exterior. *Date:* EI (I or) II.

9 Reg. no. 1.1
Pithos. *Section:* pink; light to medium gray core; many small to large grits (l/c/p). *Surfaces:* Exterior: pink; many small to large grits (l/c/p) seen. Interior: as exterior. *Date:* EI IIC.

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The Political Situation in the East of Jordan during the Time of King Mesha'

The history of the region east of the Jordan valley during the 9th century BC is characterized on one hand by the struggle for entering into the heritage of the disintegrated Davidian Empire, and on the other hand, by the beginning of Assyrian expeditions into Syria, which not yet reached but strongly affected the Jordan region and thus determined the policies of the Syrian and Palestinian states.

The facts in particular are not easy to elucidate. The source material available is rather poor. Beside the instructive inscription of king Mesha' of Moab, the Old Testament remains the main source for the history of Transjordan during the Iron Age. Unfortunately, the value of the information provided by the Old Testament is diminished by the fact that it has largely taken on the form of anecdotic narrative. There are obvious exaggerations, obscurities and contradictions. Also, some of it cannot be reconciled with reliable information from other sources. For this sort of reason, the whole complex of the reports, however detailed and vivid, about military conflicts between the kings Ahab (871–852) and Joram (851–845) of Samaria and contemporary Aramaic rulers of Damascus (I Kings xx, xxii, II Kings vi.8–viii.15) is unhistoric. It can only be related to events occurring after 845 BC and thus must have been linked up with Ahab and Joram by later redaction[1]. The same applies to the narrative recounting the campaign of the kings of Israel, Judah and Edom against a king of Moab in II Kings iii.4–27. In all probability, this narrative is historically based on a military enterprise to be dated about the year 800 BC and has only secondarily been connected with King Mesha' of Moab and antedated to his days[2]. These confusing instances of misarrangement are easily explained. All those traditions are texts originating from a collection of popular tales about the political activities of prophets. The attention is focussed on these men, their prophetic teachings and deeds, rather than historical events. This enabled redactors to arrange the narratives within the chronological scheme of the Book of Kings in an arbitrary manner.

The episode of David's empire did not effect any deep changes in the region east of the Jordan river. It was just a loose linkage of existing bigger and smaller polities, or even individual cities, into an empire centred upon King David's person. In particular, David used quite different methods. The small estates, ruled by Aramean upper classes, on the northern East Bank and east of the 'Adshlun mountains were connected to David's kingdom by installing governors. Already during his former reign in Hebron, David had linked the Aramean kingdom of Geshur (east of Lake Genezareth) to himself by establishing a family relationship. Maacha, the daughter of King Thalmai of Geshur, was one of his wives (II Sam. iii.3). As a matter of course, David's father-in-law kept his position as monarch (II Sam. xiii.3 sqq.). Of the ancient Canaanite cities in the Bashan region, only those south of Yarmouk (Sheri'at el-manadire) are likely to have fallen into closer dependence. The wooded region of 'Adshlun, hard to control, was already dominated at that time by the few settlements of groups from Ephraim and Manasse that had come over from the West Bank[3]. A similar situation may be supposed for the mountainous region further to the south down to the north corner of the Dead Sea.

It was only by armed force, however, that David was able to annex the three relatively well-developed territorial kingdoms of Ammon, Moab and Edom in southern East Jordan. King Hanun of Ammon, with the help of Aramean mercenaries, seems to have resisted most fiercely. There is a report in II Sam. xii.31 about recruiting Ammonites for compulsory labour on a large scale, i.e., pretty rigorous measures. But the territory of Ammon was left untouched within its own borders. David incorporated it in his empire by simply crowning himself King of Ammon in place of the defeated King Hanun. After David's arrival at Mahanaim when he was fleeing Abshalom, remarkably enough, it was among others Sobi, a brother of the dethroned Hanun, who came running with commodities from Rabba, the Ammonite capital (II Sam.

[1] Cf. A. Jepsen, Israel und Damaskus, AfO XIX, 1942, pp. 153–172.

[2] Cf. K.-H. Bernhardt, Der Feldzug der drei Könige. In: Festschrift A. Jepsen, Berlin/Stuttgart, 1971, pp. 11–22.

[3] Also personal relations seem to have existed here since the time of David's connection to Saul's family. He was granted refuge in Mahanaim, the main place of the region, when he was fleeing Abshalom (II Sam. xvii.27–29), just as Saul's son Ishbaal had set up his short-lived kingdom in succession to Saul from Mahanaim (II Sam. ii.8–10).

xvii.27–29). From this, in contrast to the record of measures taken after the conquest, we may conclude the maintenance of relatively good relations with the Ammonite royal family, perhaps even their participation under David's supremacy in the administration of the country.

Little is known about the conquest of Moab. At any rate, her territorial integrity remains untouched. The King of Moab kept his throne as a vassal tributary to David. There had been old ties with David also in the case of Moab. Ruth, a Moabite woman, is named among his pedigree. Furthermore, David is said to have taken refuge with the King of Moab and left his parents in his custody when he was persecuted by Saul (I Sam. xxii.3 sq.). In striking contradiction to this tradition and the treatment of the King of Moab, it is recounted that two thirds of the Moabite army were cruelly executed (II Sam. viii.2). Should this be reliable, there must have been particularly hard conflicts during the conquest of Moab. Edom, on the contrary, was not granted any form of self-government but administered by David's governor.

The administrative situation in East Jordan was paralleled by that on the West Bank. On the whole, David's imperial creation was composed structurally of rather different elements, without recognizable traces of a uniform administration. The essential political tie was David's person and his experienced mercenary troops. Under these circumstances, the attempt made by his successor Solomon, to forge a uniform state out of the territorial acquisitions and conquests that had made up into an empire within a few years, held from the outset but little promise for effective and lasting success. Of the East Jordan parts of the empire, interestingly enough, only a strip of 20–45 km. between the Yarmouk and the north corner of the Dead Sea was included among the new provinces created by Solomon. It may be doubted that Solomon maintained the personal union as King of Ammon. There is some indication that the domestic dynasty resumed power over Ammon. Then, like Moab, the country would have been subservient to Solomon mainly in terms of regular tributes. Solomon's efforts to tie the two satellite states more closely to his supremacy did not go further than establishing dynastic relations and taking action in cultic policy. Naama, the mother of his eldest son and successor to the throne Rehoboam, was of Ammonite descent (I Kings xiv.21). The indigenous gods of Moab and Ammon, Kamosch and Milkom, were conceded places of worship in Jerusalem (I Kings xi.1 sqq.).

There was indeed a great deal of reason for a careful treatment of the two dependent states in southern East Jordan, since the international situation of the Davidian Empire rapidly worsened in Solomon's time. The pharaohs, after some longer interruption, again came to play an active political part in Palestine and Syria. After an apparent Egyptian campaign into the Palestinian coastal plain as early as 960 BC (I Kings ix.16), those political forces struggling to get rid of Solomon's rule were increasingly supported by Egypt. This is evident in the case of the Edomite prince Hadad and of Jeroboam, the leader of the Israelites who strived for autonomy (I Kings xi.14–22). Hadad obviously already succeeded in coming to the throne of Edom in Solomon's lifetime (I Kings xi.25b), whereas Israel was not able to leave the federation until Solomon's death (926 BC). After the central region of David's Empire had been split up into two antagonistic kingdoms, i.e. Israel and Judah, there was no longer any risk for Shishak I of Egypt even in intervening military in 922 BC. His Palestinian expedition, which led him as far as Byblos at least, was primarily designed to demonstrate political power. Thus it was made clear to all parties involved that the episode of an empire in Palestine which could have been dangerous to Egyptian interests had come to an end. Palestine and her neighbouring countries fell back to the level of small rival states.

As to the situation in East Jordan, however, another process was of far greater impact. An empire similar in its structure to that of David's began to be formed around Damascus. Its prospect in terms of stability and durability was a better one because it was based on a homogeneous ethnic layer, the Arameans. Its founder was a certain Rezon ben Eljada who, similar to David, had first become renowned as a commander of mercenaries (I Kings xi.23–25a)[4]. Within a short time he installed Damascus in the place of the kingdom of Zobah as the predominant power in Aram[5]. Probably even in Solomon's lifetime, the small states north of the Yarmouk river which had been subjugated by David may have fallen gradually under the supremacy of Damascus[6].

The disintegration of the Davidian Empire after Solomon's death gave rise to a new situation for Ammon and Moab too. On the basis of II Kings i.1 it is usually assumed that Moab remained in the vassalage forced upon her by David up to and beyond the time of Ahab's death (852 BC). But recently objections to this view have been advanced with some good reason[7].

The king of Moab was a tributory vassal to David and the dynasty he had founded. The disintegration of the empire did not alter his legal position, but did change the political situation that was prerequisite for the vassalage to be effective. Being confined to the state of Judah after 926 BC, the Davidian dynasty was unable to maintain effective control over Moab. Judah and Moab were separated by the Dead Sea. Thus there was an opportunity for the King of Moab to get rid of his bondage to the house of David, the more so since their rulers were persistently engaged in fighting Israel.

[4] The vast range of Damascene supremacy only a few decades after Solomon's death is signified by the votive stela of Barhadad, the grandson of Hezyon, which was found in Brēdsch near Aleppo. It is not certain, however, whether the find was also the place where it was originally set up.

[5] For an identification of this Rezon with the Hezyon of I Kings xv.18, the father of Tabrimmon (=Tub-Rammân) and grandfather of Benhadad (=Barhadad) of Damascus, see M. F. Unger, Israel and the Arameans of Damascus, London, 1957, pp. 56 sq.

[6] Probably it is this process what lies behind the rather general statement made in I Kings xi.25a, that Rezon/Hezyon was 'an adversary to Israel all the days of Solomon.'

[7] Cf. J. Liver, The Wars of Mesha, King of Moab, PEQ CXIX, 1967, pp. 14–31; J. M. Miller, The Moabite Stone as a Memorial Stela, PEQ CVI, 1974, pp. 9–18.

Both the Old Testament and the Mesha' inscription, however, presuppose the dependence of Moab on the state of Israel founded in 926 BC. Hence Moab must have fallen under the supremacy of the kings of Israel at some time earlier or later after her detachment from the Davidian dynasty. Fortunately, we are definitely informed about the time of Moab's subjugation in King Mesha's inscription. After some introductory phrases, Mesha' says, 'Omri was king of Israel, and he suppressed Moab for a long time . . .' This allows for no other interpretation than that it was Omri (882–871) who imposed on Moab some sort of dependence which cannot be more precisely defined, which obviously included the tribute payments mentioned in the Old Testament (II Kings iii.4). Mesha' does not mention these payments but speaks about the territorial changes enforced by Omri: He 'took possession of the entire country of Mahdeba.' The extent of the country of Mahdeba can be approximately assessed from the mention, made in the same context, of the cities of Ba'al Me'on (mā'īn) and Kirjathon (el-Ḳurēje). With the city territories of Nebo and Heshbon as its northern border, the country of Mahdeba may well have extended as far as the system of Wādi Zerḳā Mā'īn/Wādi el-Habīs to the south and east, the central area of the southern Belkā. Mesha's wording makes it clear that the land of Mahdeba had been an old Moabite property. Unfortunately he offers no comment about the reasons of Omri's expansive policy towards Moab. But we may obtain, or at least infer with a high degree of probability, some information from the Old Testament.

The situation of the Kingdom of Israel, both in internal and foreign affairs, had worsened increasingly after the death of its first king Jeroboam. His son Nadab who succeeded him on the throne was assassinated by a conspirator, Baasha by name, after a two year reign (907–906). While in power for a longer period (906–883) Baasha carried on a rather unlucky war against Judah. His son Ela had kept the throne for two years (883–882) when he was killed by Simri, the commander of the chariotry. Meanwhile the army had elected their commander-in-chief, Omri, King of Israel. Simri committed suicide after a reign of seven days. Omri, probably a professional soldier of Arab descent[8], had to fight for his absolute monarchy for another four years.

Under such circumstances Omri had to assign priority to taking action for the domestic stability of his government. Carrying on the futile military conflicts with Judah and the Philistines was out of the question. It is a safe assumption that after the civil war (882–878) Omri set to restoring public order in the country. Then, in 876 BC, he founded Samaria as his new capital, situated on his own land acquired by purchase, which was a very important step towards founding an internally independent dynasty. As another effective measure to stabilize his dynasty, he established relationship by marriage to the neighbouring royal families of Tyre and Jerusalem.

[8] Cf. M. Noth, Die israelitischen Personennamen, BWANT III, 10, Gütersloh 1928, p. 63.

The occupation of Mahdeba would have been one of Omri's first steps towards restoring order and stability in his country. It should be taken into account that the region north-east of the Dead Sea between Wādi Nimrīn and Wādi 'Ajuñ Mūsā—as an inroad area to the Jordan plain, used especially by nomadic groups—was of great strategic importance. One may assume that during the period of her instability and weakness Israel had lost all control over this region. The Jordan valley was open to any raids, in particular by nomads from the east. It is possible that sometimes groups of Moabites took part in such operations, as Moabite raids occasionally are mentioned in the Old Testament[9]. It is not surprising, therefore, that it was a matter of consequence for Omri to lay hands on the region between the Jordan valley and the border of Ammon and furthermore on the adjoining territory of Medeba, thus securing faster the frontier to the south and the east. Certainly, there were other reasons connected with Omri's pressure on Moab. The domination of Transjordanian caravan routes and the exaction of a considerable annual tribute must have enriched the revenues of the Omri dynasty. In addition to that, Omri's efforts to secure the southern frontier of his kingdom—by military operations as in the case of little Moab or by matrimonial alliance as in the case of the much more imposing Kingdom of Judah—may have had another motivation, which was no less important. In 877 BC, the second year of Omri's unlimited monarchy, Asshurnasirpal II of Assyria had undertaken a first campaign into Syria, ranging southward along the Phoenician coast perhaps as far as the northern frontier of Israel. This westward expansion of Assyria which might swoop down on Omri's kingdom by a repeated campaign at any moment, forced Omri to take precautions. One of the steps to meet this constant threat of Assyrian invasion was to secure Israel's retreat. An attack in the rear simultaneously with military aggression from the north could be a mortal danger to the existence of Omri's state.

The king of Damascus was in a similar situation. He was obliged to consolidate and to improve his relations with the neighbours round about, and he was doing so. In particular, we can extract some—as it seems—authentic information referring to this from the biblical narrative concerning the conflict between Baasha of Israel and Asa of Judah, which occurred in one of the last years of Baasha (I Kings xv.16–22). We learn from this tradition that there was a system of treaties of confederation between the King of Damascus on the one hand and the Kings of Israel and Judah on the other hand. Referring to his and his father's treaty with Barhadad of Damascus and his forerunner, Asa sent gold and silver to Barhadad begging him to break his treaty with Baasha and to come to his aid against Baasha, who had seized and begun to fortify the town of Ramah (er-Rām) which was situated

[9] Cf. II Kings xiii.20–599. I Chron. iv.21, II Chron. xx.1. The original elements in the narrative of Ehud and King Eglon of Moab (Jud. iii.12–30) describes such an incident. C. the reconstruction by E. Täubler, Biblische Studien, Tübingen, 1958, pp. 21–42.

only about 8 km. north of Jerusalem in a position of high strategic value. At once Barhadad sent an army to threaten the northern provinces of Israel, thereby forcing Baasha to withdraw from the south and abandon Ramah.

This event shows us the King of Damascus in a dominating position, able to control the balance of power on the West Bank, and intervention in the conflict between Asa and Baasha might have strengthened this position. The Kings of Damascus as the rulers of the strongest state in Western Asia during that time had become virtually the overlords in this region. Their overlordship seems to have been much more characterized by attempts to establish friendly relations with their neighbours east and west of the Jordan river than by brutal suppression. In accordance to such policy we find no traces of territorial expansion by annexation. Barhadad did not take possession of the northern provinces of Israel, which his army temporarily had entered and controlled. On the contrary, it is possible and perhaps probable that Barhadad supported the exertions of Omri to build up a new dynasty in Samaria, a dynasty which would not fight for any exclusiveness but would be open to cultural and religious influences from outside[10]. It is a certain indication of the good relations between Damascus and Samaria as well as the unquestioned leadership of the King of Damascus that the Omrides has been faithful partners in the coalition of Hadadezer (Adad-Idri) of Damascus against Shalmaneser III of Assyria in the years 853, 849, 848 and 845 BC[11].

During the period of the 'entente' between Damascus and Samaria the region east of the Jordan river enjoyed the comfort of a 'pax aramaica'. According to Shalmaneser's Monolith Inscription, King Ba'sa ben Ruhubi of Ammon had himself become a member of the anti-Assyrian coalition, and as far as the northern part of Transjordan is concerned, we have no sure signs of any military confrontation in the area traditionally contested between Arameans and Israelites[12]. Moab, however, had derived no advantage from the 'pax aramaica'. The Mesha' Inscription mentions new measures of the Omrides increasing the pressure on Moab. Arranged in geographical order, the inscription in its second part (10–20) gives insight into the history of the Land Atharoth. Thereby Mesha' states that the 'King of Israel' has 'built' the towns of Atharoth ('Aṭārūs) and Jahaz (Khirbet Iskander) in this region, and that the King of Israel had dwelt in Jahaz 'while he was fighting against me'. The best way to understand that report is to assume military operations by one of the successors of Omri to widen the controlled area of Moab in a southerly direction down to the natural border of Sel Hēdān/Wādi el-Wāle. At this frontier the sites of 'Aṭārūs and Khirbet Iskander are places of great strategic importance[13]. We do not know whether there was an unsuccessful attempt by Mesha' to free the occupied parts of his country, the cause of the measures taken by the King of Israel. At any rate, these measures may have taken place during the last years of Moab's suppression.

The year 845 BC was a turning point in the history of Western Asia, which radically changed the political situation. Simultaneously the hitherto reigning dynasties of Damascus and Samaria were brought to their end by usurpation, revolt or revolution. There are some reasons to ask if there is any deeper connection between both events. In the biblical narratives of the Book of Kings we find two traditions giving an interesting answer to this question. The short anecdote in I Kings xix.15–17 lets us know that the prophet Elijah had anointed Hazael, as well as Jehu, kings by divine order of Yahweh. II Kings viii.7–15 gives us a detailed account about Elisha's prophetic activities in connexion with the usurpation of the throne of Damascus by Hazael. Elisha, however, had been the leader of the opposition to the house of Omri, anointing the army officer Jehu king of Israel.

It is very difficult to decide to what degree those reports might have historical value. At any rate, the political programme both of Hazael and Jehu evidently has been similar. The beginning of their reign was the end of the anti-Assyrian coalition and of the 'pax aramaica'. They both took the dangerous course of a nationalistic policy. The result was a long-lasting time of wars and devastations, until the Assyrian kings, as the real winners in the conflict, eliminated the poor remains that nationalistic policy had left of Aram and Israel.

Transjordan was the place of the first military confrontation between the former confederates. A campaign of Joram of Israel and Ahasja of Judah against the usurper Hazael is mentioned in II Kings viii.28–29. This must have taken place in the short interval between Hazael's accession to the throne and the murder of Joram and Ahasja by Jehu, and seems likely to have been an unhappy attempt to restore the policy of the anti-Assyrian coalition by removing the usurper from Adad-Idri's throne.

Jehu could hold his position in northern Transjordan for some years, as long as Hazael was tied down in fighting against Shalmaneser's invading armies (845, 841 and 838 BC) which, in their last campaign, pushed southward as far as the Hauran region. When, after 838 BC, Hazael was on the way towards the realization of a Syrian-Palestinian Empire, Jehu was not able to offer resistance in an effective manner. Soon he lost all his territory in the area east of the Jordan (II Kings viii.11 sq.). At this time or some years before, Moab re-

[10] For this position of the Omrides cf. H. Donner, in: J. H. Hayes/J. M. Miller, Israelite and Judaean History, London, 1977, pp. 399 sqq.

[11] Though the participants in the anti-Assyrian coalition were mentioned by name only in Shalmaneser's report on his first invasion into Syria, there can be no doubt about Israel's participation in the following campaigns. C. one of Shalmaneser's smaller inscriptions (ANET^2, p. 281): 'Hadadezer . . , together with 12 kings of Hatti-Land, rose against me. For the fourth time I fought with them . . .' This report points clearly enough to the unchanged identity of the member of the coalition.

[12] The narrative I Kings xxii is certainly of a later date. C. above, p. 1.

[13] Remarkably, Mesha' made a differentiation between the ancient settlement of the Israel tribe Gad in this area and the towns built up (and, of course, fortified) by the 'King of Israel'.

[14] For further details, cf. K.-H. Bernhardt, Beobachtungen zur Identifizierung moabitischer Ortslagen, ZDPV LXXVI, 1960, pp. 138–158.

covered her independence and the Lands of Atharoth and Medeba, probably by a sudden attack[13]. Moreover, Mesha' and his successors were able to guard their independence during the long reign of the great Conqueror Hazael as suggested by the biblical narrative of the campaign of the kings of Judah, Edom and Israel against Moab. Unfortunately, we have no certain knowledge about Ammon's situation at that time. As a former ally of the Barhadad dynasty of Damascus her relation to Hazael might have been not much better than that of the states on the West Bank. The main part of Transjordan, however, from the utmost north to the Dead Sea, was now under Hazael's sway, and essentially remained—although not undisturbed—in Damascene control later on.

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Recent Archaeological Developments Relevant to Ancient Moab

Emory University, in association with the American Center for Oriental Research and the Department of Antiquities of Jordan, currently is engaged in an archaeological survey of the plateau between Wadi Mūjib and Wadi Ḥesa. Thus far we have covered the northern half of the plateau proper—between Wadi Mūjib and the Kerak-Qaṭrana road, approximately 350 square kilometers. My comments in this paper will have to do specifically with this northern half of the plateau, which I will be referring to as central Moab[1]*. The paper has three parts:* 1) *a brief review of previous archaeological explorations in central Moab;* 2) *an equally brief account of our project; and* 3) *some tentative observations regarding the implications of our findings for understanding Moabite history and toponymy.*

Previous archaeological explorations in Central Moab

During the nineteenth century, when other parts of Palestine were being mapped and explored systematically for archaeological remains, the plateau between Wadi Mūjib and Wadi Ḥesa tended to be by-passed. It was somewhat isolated—cut off by the two wadis, the Dead Sea and the desert. Also it was dominated by local sheiks who apprehended travellers entering their territory, forced them to pay ransom, and sent them hurrying away. Among the travellers who did penetrate central Moab during the nineteenth century, the following deserve special mention.

To my knowledge, Ulrich Seetzen[2] was the first European to pass through this territory after Saladin expelled the Crusaders. Seetzen crossed the Mūjib in March of 1805, and as he climbed out of the wadi onto the plateau he was waylaid and robbed. Ludwig Burckhardt[3] passed through in 1812 following, as did Seetzen, the route of the old Roman road from north to south. Burckhardt reached Kerak without difficulty, making careful notes regarding the lay of the land and ancient ruins which he observed along the way; but then he was held in Kerak for approximately a month before being allowed to continue. Charles Irby and James Mangles[4] were able to avoid any such difficulties when they passed through central Moab in 1818, following the Roman road from south to north. Commanders of the British navy, they were well armed and travelled with a small troop of bodyguards. Also, as an extra precaution against harassment from the local sheikhs, they claimed to be mercenary soldiers of Mohammed Ali. Louis de Sauley[5] was less fortunate in 1851. Approaching Moab from around the southern end of the Dead Sea, he ascended the plateau along the northern slopes of Wadi Ibn Hammād and cut across to Qaṣr. From Qaṣr he turned south; but then his party was intercepted at approximately Rabba, taken to Kerak, and held there until appropriate ransom was paid. De Sauley made very detailed and useful notes on the archaeological ruins which he encountered during the first part of his journey through Moab, i.e. before he reached Qaṣr. It was during this first leg of his journey, for example, that he discovered the so-called Shīḥān Stela. Understandably, his notes become less detailed after Qaṣr.

F. A. Klein's discovery of the Mesha Inscription at Dhibān in 1868 created quite a stir, and inspired two follow-up expeditions into central Moab. Both were sponsored by the Palestine Exploration Fund; both were undertaken in hopes of finding more inscriptions; and, of course, neither was successful in this regard. The first of these follow-up expeditions occurred during the summer of 1870, when E. H. Palmer and C. F. T. Drake cut across the northwestern corner of the plateau on their return from a more extensive expedition into Sinai[6]. Then, in 1872, Klein and H. B. Tristram[7]

[1] This plateau has been occupied throughout the long sweep of human history, and we are concerned in our survey with the archaeological sites from all periods. It is appropriate to refer to the area directly east of the Dead Sea as 'Moab' however, since it is called by that name when it first appears in our earliest available written records (from the Iron Age). Northern Moab would be the area north of Wadi Mūjib to approximately Ḥesban; southern Moab would be from approximately the Kerak-Qaṭrana road to Wadi Ḥesa.

[2] U. J. Seetzen, *Reisen durch Syrien, Palästina, Phönicien, die Transjordan-Länder, Arabia Patraea und Unter-Aegypten*, ed., Fr. Kruse *et al.* (Berlin: G. Reimer, 1854–55).

[3] J. Burckhardt, *Travels in Syria and the Holy Land*, ed., William Martin Leake for the Association for Promoting the Discovery of the Interior Parts of Africa (London: John Murray, 1822).

[4] C. L. Irby and J. Mangles, *Travels in Egypt and Nubia, Syria, and the Holy Land, Including a Journey Round the Dead Sea, and through the Country East of the Jordan* (London: John Murray, 1844).

[5] F. De Saulcy, *Narrative of a Journey round the Dead Sea and in the Bible Lands*, Trans., Edward de Warren (London: Bentley, 1853–54).

[6] E. H. Palmer, 'The Desert of the Tîh and the Country of Moab', *PEFQS* (1871) 3–73.

[7] H. B. Tristram, *The Land of Moab: Travels and Discoveries on the East Side of the Dead Sea and the Jordan* (New York: Harper, 1873).

undertook an expedition which focussed specifically on central Moab. This Klein-Tristram expedition seemed doomed to failure from the beginning. Having approached Kerak from the Lissan, they were retained there until an unusually high ransom was paid. In the meantime Klein had received news of the sudden illness of his son and decided to withdraw from the expedition. Tristram set out northward and eventually crossed Wadi Mūjib at approximately the point where the modern road crosses today; but he was plagued by heavy rainstorms and seems to have got his travel notes hopelessly garbled. The place names which he recorded do not correlate with the route which he seems to have followed, and the map which he provided only increases the confusion.

Other travellers passed through the Moabite plateau during the latter quarter of the nineteenth century, including Charles Doughty[8] and Grey Hill[9]. As the century drew to a close, however, the topography of this territory, to say nothing of the archaeological remains, still was largely unknown and in some respects misunderstood[10]. This is perhaps best illustrated by the *PEFQS* map published in 1890[11]. Then, in 1894, the Turks conquered Kerak and placed there a military governor with garrison. Suddenly the situation changed. As it turned out, this governor was himself curious about the antiquities of his district and welcomed travellers who came to investigate them. There followed a flurry of exploration in the area which lasted approximately a decade, from 1894 to 1904.

F. J. Bliss[12] began this new phase with an excursion around the desert side of the plateau in March of 1895, at which time he was able to clarify the considerable confusion which still existed regarding the relative positions of the upper branches of Wadi Mūjib. His conclusions in this regard were confirmed by Rudolf Brünnow who, in the course of three expeditions (1895, 1897, 1898), made a systematic study of the Roman road system and associated fortifications. Assisted by Alfred von Domaszewski, who participated in the second and third expeditions, Brünnow published the results of his investigations in a major three volume work[13] which included plans of the more prominent Nabataean and Roman ruins (e.g. Mehaṭṭet el-Hājj, Qaṣr, Rabba, Lejjūn and Fityān), some of the earliest photographs of these sites, and sketch maps.

Alois Musil had access to Brünnow's notes, made several excursions of his own in 1896–1902, and devoted the first volume of his *Arabia Petraea*[14] to the area east of the Dead Sea. He also prepared a 1 : 300,000 scale map which, although it still included some distortions, indicated the approximate locations of some seventy or eighty ancient ruins in central Moab. Many other travellers passed through this area during the decade which followed 1894 and reported their observations—Vincent[15], Wilson[16], Hornstein[17], Gautier[18], Libby and Hoskins[19]. George Adam Smith, for example, journeyed from Kerak to Madeba along the route of the old Roman road in April of 1904. Before he published his report in *PEFQS* later that same year[20], he had occasion to study the first volume of Brünnow's *Provincia Arabia* and a preliminary report on Musil's work. In a sense, then, Smith's report represents a concluding statement to this brief but exceedingly fruitful phase of exploration.

The antiquities of Moab were to receive little focussed attention for the next 30 years. W. F. Albright's brief expedition in 1924[21] deserves mention, especially in view of the fact that he employed the new technique of surface sherding. Albright concentrated on the Ghor and Kerak at that time, however, making only a two-day excursion into the plateau north of Kerak. Then, in 1930, Reginald Head of the Department of Antiquities discovered the famous Bālūʿ stela. This created renewed interest in the plateau itself, especially in the impressive ruins at Bālūʿ. Horsfield and Vincent published a sketch plan of Bālūʿ in 1932[22]. The next year Crowfoot and Albright made soundings at Bālūʿ and Adir respectively[23]. The results indicated that both sites had long histories of occupation and suggested that more extensive excavations would produce interesting results. There was no follow-up at either site, however, largely because of their relative inaccessibility. Crowfoot returned to Sebasṭīyeh where he had excavations already underway; and Albright began his excavation at Beitin the following year.

Nelson Glueck covered the area east of the Dead Sea in connection with his survey of the Transjordan; and as it turned out he worked central Moab the same year that

[8] C. M. Doughty, *Travels in Arabia Deserta* (Cambridge: University Press, 1888).

[9] Grey Hill, *With the Beduins* (London: T. Fisher Unwin, 1891) and 'A Journey East of Jordan and the Dead Sea, 1895', *PEFQS* (1896) 24–46.

[10] For example, Jebel Shīḥān is a prominent hill which dominates the northern part of the plateau, and Arīḥā is an ancient site (resettled since 1950) approximately 5 kilometers further to the northeast. But the contexts in which Burckhardt mentions these two places in his journal seems to imply that he passed Jebel Shīḥān on his right some distance before reaching Arīḥā. In other words, Arīḥā would be southeast of Jebel Shīḥān rather than northeast, and that is where it appears consistently on the early maps.

[11] *Palestine. From the Surveys Conducted for the Committee of the Palestine Exploration Fund and Other Sources.* Compiled by G. Armstrong, Revised by C. W. Wilson and C. R. Conder, 1890.

[12] F. J. Bliss, 'Narrative of an Expedition to Moab and Gilead in March 1895', *PEFQS* (1895) 203–234.

[13] R. E. Brünnow and A. von Domaszewski, *Die Provincia Arabia. auf Grund zweier in den Jahren 1897 und 1898 unternommenen Reisen und der Berichte früherer Reisender* (Strassburg: Karl J. Trübner, 1904–1909).

[14] A. Musil, *Arabia Petraea.* Kaiserliche Akademie der Wissenschaften (Vienna: Alfred Hölder, 1907–1908).

[15] H. Vincent, 'Notes de voyage', *RB* 7 (1898) 424–451.

[16] C. W. Wilson, 'Address Delivered at the Annual Meeting of the Fund', *PEFQS* (1899) 304–316.

[17] A. Hornstein, 'A Visit to Kerak and Petra', *PEFQS* (1898) 94–103.

[18] L. Gautier, *Au delà du Jourdain. Souvenirs d'une Excursion faite en Mars 1894* (Geneva: Rey et Malavallon, 1895).

[19] W. Libbey and F. E. Hoskins, *The Jordan Valley and Petra* (New York: G. P. Putnams' Sons, 1905).

[20] G. A. Smith, 'The Roman Road between Kerak and Madeba', *PEFQS* (1904–5) 39–48.

[21] W. F. Albright, 'The Archaeological Results of an Expedition to Moab and the Dead Sea', *BASOR* 14 (1924) 1–12.

[22] G. Horsfield and G. H. Vincent, 'Chronique: une Stèle Égypto-Moabite au Balouʿa', *RB* 41 (1932) 417–444.

[23] W. F. Albright, 'Soundings at Ader, a Bronze Age City in Moab', *BASOR* 53 (1934) 13–18; J. W. Crowfoot, 'An Expedition to Baluʿah', *PEFQS* (1934) 76–84.

Crowfoot and Albright made their soundings at Bālūʿ and Adir, 1933[24]. In all, he devoted approximately one week to this area and recorded 34 sites on the plateau proper. He spent most of a full day at each of three sites—Bālūʿ, Lejjūn and el-Medeiyineh near Lejjūn. Otherwise he averaged six or seven sites a day, some of which he seems to have recorded without actually visiting.

Almost a half century has passed now since Glueck's survey. For all practical purposes, however, his report still represented the last word on the archaeology of central Moab where we began our survey in 1978. Four other developments had occurred in the meantime: 1) The Department of Antiquities has done some clearing in the temple area at Rabba; 2) Olavárri made a sounding at Khirbet el-Medeiyineh in 1976; 3) Accurate maps, prepared from aerial photography, are now available for this part of Jordan; 4) There have been some important excavations in the surrounding areas—Dhibān, ʿAroʿer and Ḥesban north of the Mūjib; Buseirah south of the Ḥesa; and Bab edh-Dhra down in the Ghor.

The present survey

The present survey has been undertaken with three main goals in mind. Our first is to develop an accumulative and comprehensive gazetteer of archaeological sites on the plateau between Wadi Mūjib and Wadi Ḥesa with their precise locations established and correlated with the most recent maps. Given the broad range of territory which Glueck attempted to cover, his survey was necessarily superficial. Moreover, at least with regard to central Moab, his report is not accumulative in that it takes into account archaeological data which had been reported by others before him. True, Glueck makes occasional references to earlier travellers' reports in the footnotes. It is altogether apparent from his own observations, however, that he was essentially unfamiliar with their findings[25]. This is unfortunate; Musil alone had already reported virtually all of the sites which Glueck recorded in central Moab, and at least twice that many more.

Since these earlier travellers, including Glueck, did not have accurate maps, they could only estimate the locations of the ancient sites which they encountered. Once we have sifted through their travel accounts and catalogued the references to ancient ruins, therefore, it remains to re-locate these ruins in the field and establish their map co-ordinates. At the same time we are making our own systematic coverage of the plateau in order to catch any sites which those before us may have missed. With this procedure we have dealt with more than 250 sites now in the same area where Glueck recorded 34.

Our second goal is to prepare a brief description of each site, with photographs and sketch plans where appropriate. Some of the sites urgently need more attention than we are giving them—particularly in those cases where modern villages are emerging on or near ancient ruins. We have decided to keep moving, however, until we get a better survey of the plateau as a whole. For recording purposes we are classifying the sites according to six broad categories, ranging from 'Full Settlements' (places where villages or cities have stood in times past) to a miscellaneous category for cave dwellings, dams, old roadways, etc.

Finally, we are making a rather intensive collection of the surface pottery at each site and processing it in the following manner. Nondescript body sherds are counted and discarded on the site. Those which seem to have some potential for dating purposes are brought to camp, washed, read and assigned whenever possible to their respective periods. Those which cannot be assigned to a particular period with confidence are assigned to either of two further categories: UD (unidentified) or UDE (unidentified, but apparently pre-Roman). With the exception of some additional discards—poorer examples where there is an abundance of sherds of a particular type—the sherds are then registered.

Naturally our readings of the pottery must be considered tentative, if for no other reason that the only stratigraphic controls come from sites outside this rather isolated plateau. In view of this tentativeness, and in order to make the raw data from our survey immediately available to other specialists, the following items have been placed at the Kerak Museum;

1) A copy of the survey log book which lists all of the sites treated thus far with their names, Palestinian Grid co-ordinates and the field numbers which we assigned them.
2) A 1:25,000 scale map which locates each site and indicates its classification according to the six categories mentioned above.
3) The pottery itself, bagged and clearly tagged according to field number.

We hope to resume the survey during the summer of 1982, moving south of the Kerak-Qaṭrana road this time in the direction of Wadi Ḥesa.

Some implications for understanding Moabite history and toponymy

Although we have surveyed only the northern part of the plateau, it is apparent already that our findings will demand reconsideration of several widely held views regarding the history and toponymy of ancient Moab. Three examples, all representing occasions where our findings and Glueck's differ, now follow.

1) One of Glueck's well known conclusions was that the whole area east of the Dead Sea and south to Aqaba was essentially devoid of sedentary occupation throughout the Middle and Late Bronze Ages. In his opinion this occupational gap was concluded by a resurgence of village life during the

[24] N. Glueck, *Explorations in Eastern Palestine I, AASOR XIV* (Cambridge, MA: American Schools of Oriental Research, 1934) 1–113.

[25] Compare, for example, Glueck's description of Sejerah (his site #134, p. 62) with Musil's description of Beit Lejja in volume I, page 87.

thirteenth century and he associated this resurgence with the rise of the kingdoms of Edom and Moab. Since the biblical account of the Israelite exodus from Egypt has the Israelites encountering Edomite and Moabite kingdoms along the way, it was argued further that the Exodus must have occurred at least as late as the thirteenth century[26]. This line of argument gained wide acceptance to the extent that the thirteenth century date for the rise of the Edomite and Moabite kingdoms and the Israelite Exodus has become a standard element in history books, atlases and encyclopaedias.

There are problems with this line of argument quite apart from whether Glueck interpreted the ceramic evidence correctly, and I have attempted to point out some of these problems in other contexts[27]. The ceramic evidence is the most crucial aspect of the argument, however, and it is precisely this aspect which has met with increasing resistance during recent years. On the one hand, occasional Late Bronze Age remains have turned up in southern Jordan since Glueck's survey e.g. the LB tomb at Hesban reported by Lankester Harding in 1953[28]. On the other hand, subsequent excavations in Edom and Moab (Umm el-Biyarah, Tawilan, Buseirah, Dhibān, ʿAroʿer, Ḥesban) seem to suggest that the post-LB resurgence of sedentary occupation occurred much later than the thirteenth century, perhaps as late as the ninth or eighth century. G. E. Mendenhall summed up the situation as follows in 1976.

> Meanwhile, things have been happening in archaeological and historical research. Paul Lapp told me in 1965 that Nelson Glueck had dated those 'Edomite border fortresses' at least two centuries too early, and they therefore had nothing to do with events during the lifetime of Moses. In fact, the three most competent specialists in Transjordan have assured me that at present we have not a single Early Iron Age sherd between Wadi Mojib (=River Arnon) and Qurayya in the land of Midian, now in Saudi Arabia[29].

Naturally this is one of the problem areas which we had in mind when we began our survey. Would a more thorough coverage of the Moabite plateau combined with more systematic sherding procedures confirm Glueck's gap hypothesis? If so, did the post-LB resurgence of sedentary occupation begin during the thirteenth century or later?

As it turns out, we too have found the Middle Bronze Age to be surprisingly elusive. Specifically, we have found occasional sherds at approximately twenty sites which could pass for MB, but few if any absolute certainties and never in significant concentration. For the Late Bronze Age, on the other hand, we can point to some seven or eight sites with fairly good representation, and twice that many more with less compelling evidence. Iron Age pottery has turned up at some forty sites, with both Early and Late Iron Ages well represented. In short, while our findings agree with Glueck's findings in that we also notice a sudden decline in the abundance of surface pottery representing the Middle Bronze Age, ours do not confirm his conclusion that there was a virtually complete occupational gap which extended throughout the Late Bronze Age and ended specifically during the thirteenth century. There is the prior question, of course, as to whether the relative abundance of surface pottery from a given period is a safe indicator of its degree of sedentary occupation. To the extent that it is, our findings seem to indicate at least a scattering of settlements even during the Middle Bronze Age which gradually increased in number during the Late Bronze and Iron Ages. Certainly there is nothing here that will provide us with a precise date for the emergence of the Moabite kingdom or for the Israelite Exodus from Egypt.

2) Irby and Mangles, passing through central Moab in 1818, suggested Rabba as the site of ancient Rabbath-Moab, later called Areopolis[30]. The name Rabbath-Moab does not actually appear in the Old Testament, our main source of information about Moabite place names. The Old Testament does know of an ʿAr Moab, however, which seems to have been a name of an area bordered by the Arnon River (Wadi Mūjib) and perhaps the name also of a city situated within that area. Musil observed the similarity of sound between ʿAr and Areopolis, speculating that the former may have suggested the latter and that the memory of both may be preserved in Marma el-ʿEir, the Arabic name of a low-lying knoll just south of Rabba[31]. In short, Musil suggested that ʿAr Moab, Rabbath-Moab, Areopolis and present-day Rabba are all essentially the same place.

This equation of place names was generally accepted until Glueck's survey, from which he reports the following:

> At er-Rabbah, generally associated with Rabbah-Moab, an extensive search was undertaken for Early Iron Age pottery. Not a sherd was found which could be identified as belonging to the Early Iron Age or earlier[32].

Actually Glueck did not report any Iron Age pottery at all from Rabba, which does not create a serious problem for the Rabbath-Moab/Rabba part of the equation since Rabbath-Moab appears first in Josephus. This did seem to disqualify

[26] N. Glueck, *The Other Side of the Jordan* (New Haven, Conn.: American Schools of Oriental Research, 1940), p. 146.

[27] J. M. Miller, 'The Israelite Occupation of Canaan', *Israelite and Judaean History*, ed., J. H. Hayes and J. M. Miller (London: SCM Press, 1977) pp. 213–284; 'Archaeology and the Israelite Conquest of Canaan: Some Methodological Observations', *PEQ* (1977) 87–93.

[28] G. L. Harding *et al.*, *Four Tomb Groups from Jordan*, *APEF* VI (London: Palestine Exploration Fund, 1953) 27–41.

[29] G. E. Mendenhall, 'Migration Theories vs. Culture Change as an Explanation for Early Israel', *Society of Biblical Literature 1976 Seminar Papers* (Missoula Mo.: Scholars Press, 1976) 135–143, esp. p. 140.

[30] Irby and Mangles, p. 141.

[31] Musil, I, pp. 369–70; p. 381, n. 4, 5.

[32] *AASOR* XIV, p. 67.

Rabba as the site of ʿAr Moab, however, so the latter has been sought elsewhere. Some have associated ʿAr with el-Miṣna[33], a site approximately two kilometers northeast of Rabba where Glueck did report some Iron Age pottery; others have opted for Kirbet el-Medeiyineh[34], which overlooks an upper branch of Wadi Mūjib.

We did find Early Iron pottery at Rabba, and occasional Late Bronze Age sherds as well. This does not confirm the ʿAr Moab/Rabbath Moab/Areopolis/Rabba equation, of course, but it does remove one serious objection to it. Also we can clarify now some of the confusion which has arisen from the fact that at least five different sites within the territorial realm of ancient Moab are called by the same name, Khirbet el-Medeiyineh. Musil reported three of these: Medeiyineh on Wadi eth-Themed, Medeiyineh on Wadi Saliya and Medeiyineh on Wadi Lejjūn. Glueck reported these same three again (assigning them field numbers 68, 93 and 141 respectively) and reported a fourth Medeiyineh on Wadi Ḥesa (field number 222). Unfortunately Glueck confused the Medeiyineh on Wadi Themed with the Medeiyineh on Wadi Lejjūn in a crucial footnote in the first volume of his report[35], which throws the reader off from that point on. Van Zyl then, in his history of the Moabites, treated the Medeiyineh on Wadi Lejjūn and the Medeiyineh on Wadi Saliya as if they were one and the same and proposed this composite site as the real ʿAr Moab[36]. Finally, in 1976, Olavárri made a sounding at a Khirbet el-Medeiyineh which overlooks Wadi Lejjūn[37] and which I for one assumed to be the same site which Musil and Glueck had reported in that vicinity. As it turns out, this is another Medeiyineh altogether, the fifth Medeiyineh in the realm of ancient Moab. In other words, there are two Medeiyinehs overlooking Wadi Lejjūn no more than four or five kilometers apart. They are strikingly similar, and the ceramic remains from both seem to date primarily from the Early Iron Age.

3) The biblical account of the Israelite exodus from Egypt refers at two points to a road or roads called *derek hammelek*. The first instance is Numbers 20:17, where the Israelites make the following request to the king of Edom:

> Now let us pass through your land. We will not pass through field or vineyards, neither will we drink water from a well; we will go along *derek hammelek*, we will not turn aside to the right hand or to the left, until we have passed through your territory.

[33] A. H. Van Zyl, *The Moabites, Pretoria Oriental Series III* (Leiden: E. J. Brill, 1960), p. 72.

[34] *Ibid.*, pp. 72–73.

[35] *AASOR* XIV, p. 63, n. 60a.

[36] Van Zyl, pp. 72–73.

[37] J. A. Sauer, 'Iron I Pillared House in Moab', *BA* 42 (1979) 9. Report by Olavárri forthcoming in ADAJ.

The second reference is in the following chapter, Numbers 21:22, where the same request is made in almost the same words to king Sihon of Heshbon.

Now it is not at all clear whether this term *derek hammelek* should be translated as a proper name or as an appellative. In the former case it would be translated 'the King's Highway' and refer to a particular road (such as 'the Blue Ridge Parkway' or 'the Great North Road'). In the latter case it would be translated something like 'the royal road' (we might say 'the freeway' or 'Hauptstrasse') and one could suppose that there might be various royal roads in different parts of the country. Earlier commentators generally understood *derek hammelek* in the appellative sense[38], and in fact the two passages mentioned above seem to presuppose two unrelated roads. Specifically, the context of Numbers 20:17 seems to require that the *derek hammelek* to which it refers led eastward from Kedesh-Barnea (somewhere in northeastern Sinai), while Numbers 21:22 clearly has to do with a *derek hammelek* which passed in the vicinity of Heshbon.

To my knowledge, the idea that *derek hammelek* in these two passages was the proper name for a single major highway which led north-south through Moab and Edom originated with Glueck. The only really new evidence which he offered in support of this interpretation was that he found numerous Iron Age sites along the route of the Roman road:

> What is this 'King's Highway' which cut through central Transjordan as early as the time of Moses? Where did this 'royal road' lead to? As must already be apparent to the reader, it is nothing more and nothing less than the very same highway, or the line of that highway which in due course of time became Trajan's Road, and which today has become Emir Abdullah's road. It is called in the modern Arabic vernacular, *et-Tariq es-Sultani*, the Sultan's Road. The King's Highway led from Aqabah to Syria. Along its length, and marking its character as clearly as if there had been Roman milestones with Latin inscriptions or modern Transjordanian sign-posts with Arabic letters, have been found numerous sites, which can be dated by pottery finds between the 13th and 6th centuries BC[39].

Thus far in our survey we have not noticed any such pattern of Iron Age sites. But even if such a pattern does emerge; if it can be confirmed that the old Roman road through Moab and Edom was preceded by a major Iron Age road; the question will remain open as to whether this was one of various major routes which were known as 'royal roads' or whether it is the one and only 'King's Highway.'

[38] E.g., G. B. Gray, *Numbers, The International Critical Commentary* (New York: Charles Scribner's Sons, 1903) p. 267.

[39] Glueck, *The Other Side of Jordan*, p. 15.

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The Ascent of Luhith*

The western mountain descent of Moab between Wādī al-Ḥasā and Wādī al-Karak and the shore region of the Dead Sea below (FIG. 1) are one of the few areas in Transjordan where the historical topography is relatively well known, at least as far as the transmitted toponyms are concerned. Sources of the most varied types and dating, such as inscriptions, literary texts, legal documents, and lists, spanning over 2,000 years, mention many localities in this outpost of Eastern Palestine; but they also present a number of problems. At present, only a very few of the names have been identified. This is partly due to the sources and partly to a lack of familiarity with the country and its cultural history.

I travelled to this area in October of 1979 and spent six days (8–13) becoming more familiar with it[1]. Such a brief survey, of course, can only provide a very general synopsis; the findings must be supplemented later by a comprehensive investigation. Certain conclusions, however, can already be drawn, particularly with respect to the historical topography. I would like to illustrate this with the site Luhith and the ascent of the same name.

I

As is often the case, Eusebius' Onomastikon provides decisive information on the location. Eusebius, referring to the key-word Λουείθ (the grecized form of the Old Testament name 'Luhith' in the Septuagint), writes[2]: καὶ ἔστι μεταξὺ Ἀρεωπόλεως καὶ Ζοορῶν κώμη νῦν καλουμένη Λουεθά 'And between Areopolis and Zoora, there is a village which is now called Luetha'. Areopolis and Zoora, the two orientation points, are well known. Areopolis or Rabat-Moab, now called er-Rabba, controlled the centre of the Moabite plateau south of Arnon; Zoora (the former Zoar), on the other hand, was located far below in the ʿAraba rift, slightly southeast of the Dead Sea, on Ḫirbat aš-Šēḫ ʿĪsā in Ġōr aṣ-Ṣāfī[3]. Why does Eusebius refer to these two sites which are so far apart, as the crow flies, more than 37 km.? Certainly not just because of their size and importance. It would have been just as logical to have mentioned Χαράχμωβα (al-Karak), 10 km. south south-west of Areopolis, since it was closer to Zoora. Another factor plays a decisive role here. When Eusebius states that a village was located 'between' (μεταξύ, occasionally ἀναμέσον) two presumed known fixed points, he usually means located on or in the vicinity of a Roman road or other road connection between two orientation points[4]. Apparently, this is also what he means in the text cited above. The Tabula Peutingeriana, a road map of the Late Roman Empire, shows a stretch of road running west from Raba to Thamaro, the former Thamar, next to ʿAin al-ʿArūs on the western border of the northern ʿAraba[5]. This road of necessity passes by Zoora. We will deal later with the course of this road, which has been known for some time. This knowledge, however, does not much improve our understanding of Eusebius' statement. The use of the vague word μεταξύ, 'between', does not tell us where Luhith

* For the translation I duly thank Margaret Clarkson (text) and G. R. H. Wright (notes).

[1] The visit was financed by the research project responsible for producing the Tübingen Atlas of the Middle East, and the results will be included in the atlas. I would like again to thank the Department of Antiquities of the Hashemite Kingdom of Jordan and particularly the Director Dr. Adnan Hadidi for the generous co-operation and assistance. Thanks are also due to the Department Inspector in al-Karak, Sami Rabadi who willingly accompanied and energetically supported me in my investigations.

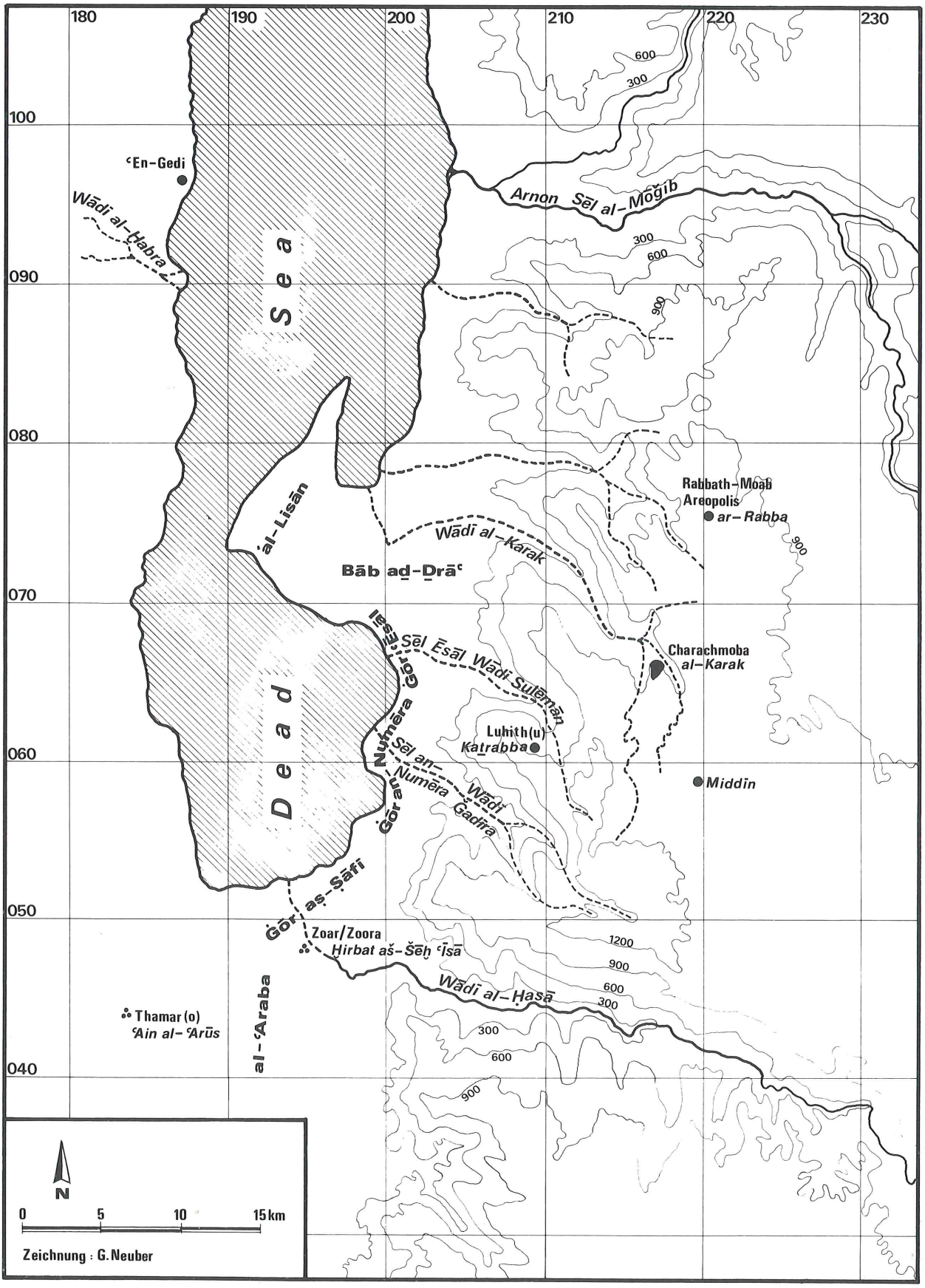
[2] Eusebius, Das Onomastikon der biblischen Ortsnamen, *ed.* E. Klostermann (Leipzig 1904; Reprint Hildesheim 1966), 122, 28f.

[3] According to Josephus, Bellum Judaicum, IV, 8, 4 (§ 482) and the Madeba Map there can be little doubt concerning the site of late antique Zoora lying in Ġōr aṣ-Ṣāfī nor of its identification with Ḫirbat aš-Šēḫ ʿĪsā. The only question is whether Old Testament Zoar also stood here. Researches carried out by W. F. Albright in 1924 (BASOR 14 [1924], 4; AASOR 6 [1926], 57) brought nothing to light concerning an Iron Age settlement. A sounding at the centre of the extensive ruins penetrated the Byzantine levels to reach virgin soil at a depth of 3 m. However, it is very much at issue whether these findings alone are sufficient to deny the existence of an Iron Age settlement on the site. Biblical Zoar was doubtless smaller than its Byzantine-Arab successor and its remains, possibly only a low knoll, could be at the edge of the present ruin field, so that Albright's sounding missed them. Moreover W. E. Rast and R. Th. Schaub (Survey of the Southeastern Plain of the Dead Sea, 1973, ADAJ 19 [1974], [5–53, PL. I–XI] 15f., PL. IV) discovered several Middle Iron Age sherds on the nearest hill, 200–300 m. ESE of Hirbat aš-Šēh ʿĪsā above Ṭawāḥīn as-Sukkar. This provenance clearly does not itself indicate that it is the main site but suggests a larger settlement in the immedjate vicinity—which agrees with my own observation. This supposition is an obvious one since until now no other possible identification has presented itself and in no other region of the Gōr aṣ-Ṣafī are water supplies so favourable as near Ḫirbat aš-Šēh ʿĪsā. Rast and Schaub (o.c., 9f.) have already rightly rejected Albright's hasty hypothesis that Old Testament Zoar lies beneath the present water level of the Dead Sea.

[4] Cf. M. Noth, Die topographischen Angaben im Onomastikon des Eusebius, ZDPV 66 (1943), [32–63] 61–63 = Aufsätze zur biblischen Landes- und Altertumskunde, 1 (Neukirchen-Vluyn 1971), [309–331], 329–331.

[5] For the site of Thamary(o) and the route in question as given in the Tabula Peutingeriana cf. S. Mittmann, Ri. 1, 16f. und das Siedlungsgebiet der kenitischen Sippe Hobab, ZDPV 93 (1977), [213–235] 228–232.

1. Southern Dead Sea Region.



may have been located in the area of this long stretch of road between Areopolis/Raba and Zoora. Nor does the term tell us whether the village was located on or some distance off the road[6].

Additional information is provided by the Old Testament, namely Isaiah 15: 5b, the verse to which Eusebius also referred. Vs. 5b is the first part of a three-part lament which extends through vs. 8. This text has been consistently interpreted incorrectly in light of the preceding verses, and, because of this false premise, it has been amazingly misinterpreted. A warlike devastation of the Moabite towns north of Arnon is lamented in the preceding section (vss. 1–5a) which concludes with 'My heart cries out for Moab, whose fugitives (have fled) as far as Zoar!'. The generally accepted theory is that vss. 5b–8 describe the flight of the fugitives from the Moabite highlands to the southern end of the Dead Sea in more detail[7]. This interpretation, however, contradicts the clear wording and the unambiguous meaning of the text. Vs. 5b unmistakably speaks of a flight in the opposite direction: 'On the ascent of Luhith men go up weeping; on the road to Horonaim there are cries of destruction'. The reason for the lamentation and the direction from which the lamenters came are mentioned in the second part (vs. 7): 'The waters of Nimrim became desolations. The grass is parched; the herbage is exhausted, not a green thing is left'. The cry of lament describes a disastrous drought and not warlike desolation. The text clearly indicates that the lamenters did not come down, but rather went up from the Dead Sea. Certainly, the dried up 'waters of Nimrim' refer to Sēl an-Numēra, a strong stream flowing through a canyonlike gorge at the foot of the Transjordanian mountains and into Ġōr an-Numēra, the region of land above the Dead Sea which protrudes into the southern basin. The third part of the text (vss. 7–8) refers again to the flight and the wailing brought about by the drought. Three places are mentioned that could be important in locating the ascent of Luhith. These places and Horonaim mentioned in vs. 5b, however, have not as yet been satisfactorily identified and therefore cannot be included in our considerations[8]. In any case, the remaining verses contain the essential information about Luhith, particularly the expression 'ascent of Luhith'. According to this, Luhith must have been located in the slopes of the Transjordanian mountains on a route ascending from the Dead Sea to the Moabite plateau, namely from the area around Sēl an-Numēra. Luhith, the village which gave the ascent its name, was undoubtably the most important settlement on the ascent. This compliments and substantiates the information found in Eusebius, who, in turn, supports and corroborates the Old Testament information. By combining the two sources, we can see that: 1) If Eusebius, as we have shown, oriented himself on the Roman road connecting Areopolis and Zoora when localising Luhith, the ascent of Luhith most certainly must have been a part of the Roman route. 2) Like Moabite Luhith, the succeeding Byzantine settlement Λουειθά was, of course, also located on the road and not off it.

A Nabatean inscription from Madeba, dated in the 46th year of the reign of King Aretas IV, that is in 37 AD, provides special information about Luhith[9]. The text was inscribed twice on a tomb in which two men named 'ytybl, a grandfather and his grandson, were buried. According to the inscription, 'ytybl the Younger was the 'Commander of the military camp located in/by Luhithu and Abarta'; but Madeba, the burial place, was the residence of this officer, whose title was rb msryt' in Nabatean and ρτρατοπεδάρχης in Greek. Thus the inscription tells us that, during the Nabatean period, troops were stationed in a permanent military camp in or around Luhith, the strategic function of which apparently was to protect the ascent of Luhith. This information also is important with regard to the localization of Luhith: if this camp were to be discovered on the road in question, it would be an excellent indication for the location of Luhith.

We are also directed to the region around the southern basin of the Dead Sea by a Hebrew contract from the time of Bar Kochba, which, along with many other similar documents formulated in Nabatean, Aramaic, Hebrew, and Greek, was found in the desert mountains beyond the Dead Sea, in a cave of Wādī al-Ḫabra, the so-called Cave of the Letters[10]. This document describes the distribution of land leased by four men from Simeon ben Kosiba's administrator in ʿEn-Gedi. All

[6] Only in two instances is the place relatively far removed. Keparadagon (Ḫirbet Dağün), according to On. 50, 16 between Diospolis (Ludd) and Iamneia (Yabnā) was some 9 km. West of Diospolis and thus at least c. 5 km. away from the direct Diospolis-Iamneia route. A similar case is Akkaron (ʿĀqir) which, according to On. 22, 9f., was between Azotos (Isdūd) and Iamnia (Yebnā) but actually was 7 km. east of Iamnia. The distant location is here expressly noted by the addition 'in the eastern region' ἐν τοῖ 'ανατολικοῖ. According to On. 156, 4 the locality Sior is between Ailia (al-Quds) and Eleutheropolis (Bēt Ǧibrīn). Noth (o.c., 62 = 330) equates it with Saʿīr, ca 7 km. NE of Hebron and thereby imputes a gross inaccuracy to Eusebius. In fact, as already proposed by P. Thomsen (Loca sancta [Halle 1907; Reprint Hildesheim 1966], 106) Eusebius' Sior should be the same as Ḫirbat as-Sūrā, 5 km. NNE of Bēt Ǧibrīn on the Roman road from Eleutheropolis to Ailia. When Eusebius (On. 32, 18f.) places Abila (Sūq Wādī Barada) between Damascus and Paneas (Banyās), he obviously does not have the direct Damascus-Paneas route in mind, but a road which leads westward from Damascus, through the Barada valley over the Antilibanos into the Biqāʿ and then through the Wādī at-Tēm into the Jordan valley. For the curious case of the two Astaroth Karnaein which according to On. 6, 55f. are between Adara (Darʿā) and Abile (Tall Ābil/Tell Umm al-ʿAmad) cf. D. Kellermann, ʿAštārōt-ʿAštarōt Qarnayim-Qarnayim. Historisch-geographische Erwägungen zu Orten im nördlichen Ostjordanland, ZDPV 96 (1980), [45–61] 56–61.

[7] Cf. W. Schottroff, Horonaim, Nimrin, Luhith und der Westrand des 'Landes Ataroth', ZDPV 82 (1966), [163–208] 180–184 (lit.); H. Wildberger, Jesaja (Biblischer Kommentar Altes Testament, X/2; Neukirchen-Vluyn 1978), 588.600.615–618. Vs. 9 is an insertion, as is 'the third Eglat' in vs. 5a; cf. W. Schottroff, o.c., 183 n. 95 (lit.) and H. Wildberger, o.c., 591.

[8] Vss. 7–8 state: (7) Therefore the people carry off across the Stream of Poplars their hard-earned wealth and all their savings. (8) The cry for help goes round the borders of Moab; as far as Eglaim is their howling, and (as far as) Beer-Elim. . . .'. This part refers again to the flight, described in the beginning of the lament. Here also the flight leads up to the Moabite plateau. The Poplar Stream should be either Wādī el-Ḥasā or Sēl ʿĒsāl depending on whether the refugees come from Zoar or the northern regions of the Lisān peninsula. Their cry extended from here to the borders of central Moab. This is indicated by the mention of Eglaim which, wherever it may have been precisely situated, certainly is to be identified with the Aigalleim attested by Eusebius, On. 36, 19–21 as 8 Roman miles (= 12 km.) south of Areopolis (ar-Rabba), and thus must be in the region E or SE of al-Karak (cf. e.g. G. Donner-H. Cüppers, Die Restauration und Konservierung de Mosaikkarte von Madeba, ZDPV 83 [1967], [1–33] 24f.).

[9] Text, translation, commentary on the historical geography and literature *v.* W. Schottroff, *op. cit.*, 197–199.

[10] Cf. Y. Yadin, Expedition D—The Cave of the Letters, IEJ 12 (1962), 227–257 (the contract mentioned is treated pp. 249–255); H. J. Polotsky, The Greek Papyri from the Cave of the Letters, *ib.*, 258–262.

the tenants lived in ʿEn-Gedi; two, however, were originally 'from ha-Luhith' 'which (lies) by Maḥoz-ʿAgaltain' (mḥz ʿgltyn). Maḥoz-ʿAgaltain or simply Maḥoza (mḥwz'; Greek, Μαώζα) also plays a role elsewhere in the documents. The Greek documents refer to it as κώμη or a 'village' in the district of Zoar. The name Maḥoza or 'port'[11] reflects the area of the district in which the village was located. This port was most probably located in the northern bay of the al-Lisān peninsula[12]. The determinative word ʿAgaltain most probably is a regional name referring to the northern part of the peninsula[13]. Luhith therefore must have been located in this area if, as the additional phrase states, it was situated close to Maḥoz-ʿAgaltain. What is the significance of this reference in a document from ʿEn-Gedi where, according to some of the other documents, there were many close relationships of long-standing with Maḥoz, and where, therefore, everyone was familiar with the location of Luhith, the more so because the region of Luhith was within sight of ʿEn-Gedi? The additional phrase only makes sense if it distinguishes this Luhith from a second Luhith, namely a settlement with the same name located within the closer geographical horizon of the contract partners. Even though no other literary evidence is available which would indicate the existence of another Luhith, it is entirely possible that a twin settlement with this name may have existed. Just as 'Upper' and 'Lower' Beth-Horon were and are situated on the ascent of Beth-Horon (today Bēt ʿŪr), Upper and Lower Luhith could have existed as a primary and a secondary settlement on the ascent in question.

This then is the extent of the information found in the literary sources; if we want to gain further insight, we must take a look at the countryside itself.

II

How does the literary evidence correspond with the countryside and its settlement history? What sort of archaeological artefacts have been found there that could have a direct or indirect relation to the literary witnesses?

First of all, the road conditions should be studied and the ascent of Luhith localized, because the identification of the village or of both settlements depends essentially on the solution of this problem, and here we should obtain the most reliable findings.

The geographic possibilities of communication for the ascent and descent are extremely limited on the flank of the Transjordanian mountains between Wādī al-Ḥasā and Wādī al-Karak. Between the valleys mentioned, the valley systems of Wādī Ǧadīra/Sēl an-Numēra and of Wādī Sulēmān/Sēl ʿĒsāl have widely and deeply eroded the mountains. In the lower parts of the flank, dropping in steep steps and slopes toward the Dead Sea, these valleys increasingly narrow until they form impassable canyons. Three relatively narrow ridges, which fan out broadly only at the deeper ends, extend westward between the valleys; an old path runs over the crests and flanks of each of these mountain ranges. The southern path leads down to Ġōr aṣ-Ṣāfī; the middle, to Ġōr ʿĒsāl; and the northern, to Bāb aḏ-Ḏrāʿ. From Alois Musil's unfortunately brief description of these three paths which he travelled at the turn of the century, the middle route appears to have been the most easily passable[14]. It was also the most widely used route. A Roman road was built on this route (FIG. 2), which Musil had already discovered. Apparently, the road served as a pilgrim route up until modern times, for it is still referred to as darb al-ḥaǧǧ.

Somewhere around Middīn, approximately 8 km. south southeast of al-Karak, the Roman road branched off, presumably from the *via Trajana*, the north–south communication axis of *provincia Arabiae*[15], and ran from the border of the Moabite table at the northern slope of the middle mountain ridge, on the route of the modern road down to Kaṯrabba. Today its further course is a comfortable path on the level; after more than a 3-km. stretch of road, one arrives at the steep drop of the main fault in the mountain flank. From there the road drops down more than 500 m. in narrow serpentine windings to a rocky summit plateau of sandstone, which slopes 200 m. in flat steps extending over a distance of 3 km. to the west as far as the edge of the precipice over the Gōr. The way down to the Gōr, a difference in level of more than 400 metres, runs over a ridge which at points is only slightly wider than the road.

I walked this path, starting at Kaṯrabba, with a local guide, an older resident of the village, on a hot October day in 1979 and was well rewarded for my efforts. Certainly, nowhere in Palestine has a Roman road been so well preserved as on the long untouched rocky sandstone plateau. Looking down from above, the whole length of the road stands out like a double line[16]. Observed close to, these parallel lines can be identified as lateral boundary walls. These walls, carefully laid in double rows, were 60 cm. wide and up to 55 cm. high; they are made of large sandstone slabs or blocks which vary considerably and, here and there, are still covered on top with flat stones. The wall is occasionally broken by a narrow space. The spaces may have been constructed to assist the drainage of rainwater. At one point where the road crosses over a gully, winter torrents can flow through an aperture unimpeded, with-

[11] Not '(coastal) district' as translated by Y. Yadin, *op. cit.*, 250f. E. Y. Kutscher has already taken it otherwise (cf. Lešonenu 34 [1969–70], 8f. [hebr.]). The topographical context of the sources concerned encourages the choice of the elsewhere well attested meaning 'harbour'.

[12] Until recent times it served as a harbour-bay. Cf. A. Musil, Arabia Petraea, I. Moab (Wien 1907), 168: 'Lisân streckt den nordwestlichen rötlichen Arm wie eine Nadel in das tiefe Blau des Meeres hinaus und bildet mit dem Ostufer einen schönen bogenförmigen Hafen, in dem al-Baladijje als Hafenstadt liegt.'

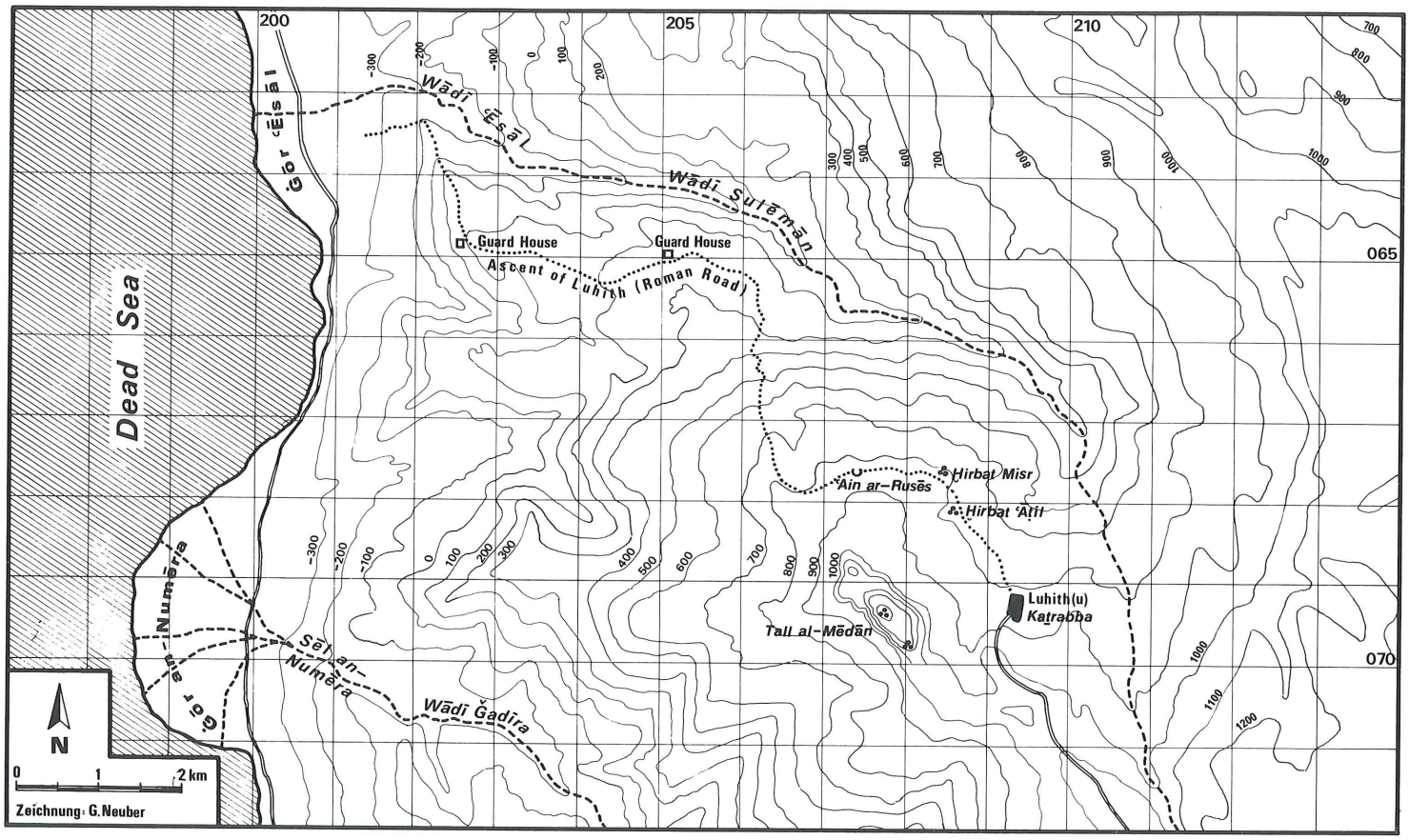
[13] 'Agaltain is thus definitely not to be separated from ʿEn-ʿEglaim which in Ez. 47, 10 is mentioned as opposite ʿEn-Gedi. Cf. W. Zimmerli, Ezechiel (Biblischer Kommentar XIII/2; Neukirchen-Vluyn ²1979), 1197f.

[14] Cf. A. Musil. *op. cit.*, 167f. (middle route); 70–72 (southern Route); 63–67 (northern route).

[15] Cf. in this connection and also for the further course of the road, A. Alt, Zum römischen Straßennetz in der Moabitis, ZDPV 60 (1937), 240–244.

[16] N. Glueck observed and photographed this part of the road from the air; cf. An Aerial Reconnaissance in Southern Transjordan, BASOR 67 (1937), 19f.; Explorations in Eastern Palestine, III, AASOR 18–19 (1939), 148 FIG. 49.

2. The Ascent of Luhith.



out backing up and eventually breaching the wall. The inner width of the road was 5.70 m. The road was apparently unpaved. Evidently just exposing and smoothing the rocky bed under the thin layer of earth was adequate here for a road. On the slopes, the route was cut in and through the rock were necessary, and stones were laid at the edges of the steps. In the centre of the plateau and at the beginning of the ascent into the Gōr, we find the ruins of a small guard house on the road. Milestones were nowhere to be seen; if they had been present, they could not have been overlooked. This, however, does not challenge the dating of the road to the Roman-Byzantine period[17].

There is no doubt that this is the road referred to in the Tabula Peutingeriana as the stretch of road from Raba to Thamaro and which I think Eusebius had in mind when he referred to the location of Luhith. With this road, we have then also found the 'ascent of Luhith'. But where was Luhith (or where were both Luhiths of the Bar Kochba period) located, providing we have correctly interpreted the document from the 'Cave of the Letters'?

It must be presumed that the Luhith of the Old Testament was an Iron Age settlement and, at the same time, a settlement important enough to lend its name to the long ascent. Considering the modern conditions, this problem could quickly be solved, for there is only one settlement on the whole stretch of road, namely the village of Kaṭrabba. The problem is similar for the older periods, at least for the Iron Age. As far as I could ascertain, no remnants of an Iron Age settlement were present at Gōr ʿĒsāl at the foot of the ascent, and to the best of my knowledge no Iron Age finds have been reported in the environs. Such finds first appear in the near neighbourhood of Kaṭrabba. Approximately between 1.5 and 1 km. before the bounds of Kaṭrabba, the path passes by two small ruins where some later pottery and also Iron Age ware was found, but only in very small amounts. According to other indications, there cannot have been more than one or two houses here, and that is not enough for Luhith[18]. What is Kaṭrabba itself like? Kaṭrabba today is a medium-sized village in the uppermost region of Wādī Sulēmān. The old centre of the village forms a thick builtover terrace, the flanks of which drop rapidly, protruding approximately 150 m. to the north and narrowing to about 90 m. at the peak. A large spring

[17] The same state of affairs also occurs e.g. in Western Palestine south of Hebron; cf. M. Noth, *op. cit.*, 318f.

[18] In question are Ḫirbat ʿĀṭīl and Ḫirbat Miṣr (*v.* the sketch map FIG. 2). An exact description of the ruins and the pottery will be given elsewhere. Through lack of time I could not investigate Ḫirbat ar-Rusēs which, according to A. Musil, *op. cit.*, 168, must be south of the ar-Rusēs spring (c. 2.5 km. NW of Katrabba as the crow flies) but was not visited by him. Should there be an Iron Age site there it can hardly be of more importance than the above-mentioned settlements because of its exposed setting in an apparently unproductive region.

arises a short distance away from the eastern point of the terrace. Thick layers of debris from the Turkish and Arab periods cover the summit and extend quite a way down the slopes. Under these conditions, the surface sherds are only of limited value. The pottery which I found goes back to the Byzantine era. The site, however, was most certainly already occupied in the Nabatean period. A Nabatean horned capital of basalt, together with a column drum and base also made of basalt found in a courtyard at the east border of the terrace, is evidence of this. The Nabateans were also hardly likely to have been the first ones here. The living and settlement conditions made possible through the spring, the ascent, and the cultivatable terrace landscape of the surroundings, had undoubtedly also been utilized in the Iron Age. Is it therefore not possible that Moabite Luhith was located here? The question becomes even more urgent, since no ruins are to be found further up in the region of the ascent and, due to the increasing narrowness and steepness of the valley of ascent, also cannot be expected there.

There is no doubt that Kaṯrabba is the Nabatean Luhith. This assertion is based not only on the Nabatean column in Kaṯrabba, but also particularly on the archaeological fact that a Nabatean military camp existed in the immediate vicinity of the village. West of the site, on the other side of a small gorge, the ridge of the dominating range rises steeply to a peak, Tall al-Mēdān. From this point, there is a commanding view into the valley system of Wādī Sulēmān and Wādī Ǧadīra. The summit, approximately 250 m. higher than Kaṯrabba, is a narrow plateau, about 500 m. long, extending from the northwest to the southeast, slightly crosswise towards the main direction of the ridge. The ruins of an Iron Age fort have been found at the south end. This fort, a square approximately 60 × 60 m., encloses a round tower attached to the south wall. Nelson Glueck discovered this small fort and described it correctly in most respects. However he completely misinterpreted the ruins at the north end of the plateau when he refers to the 'foundation walls of a considerable number of houses' of a Nabatean site[19]. In reality this is a fort: a closed rectangle of approximately 80 × 50 m. with an east–west longitudinal orientation. The entrance was on the narrow eastern side. The walls, with a continuous series of rooms at the western and northern sides, enclose a courtyard with a tower-like construction in the eastern half. The relatively dense distribution of sherds is a clear-cut indication of the Nabatean origin of this fort. In addition the Nabateans also used the Iron Age construction and may even have enlarged it, for here as well there is a lot of Nabatean pottery. The Nabateans therefore were able to control both valleys at the same time. On the basis of the preceding considerations, there is almost no doubt that this strategic high point with its military buildings is the 'military camp by Luhithu'; and then there can no longer be any question but that Luhithu itself was the nearest settlement, namely modern Kaṯrabba. The location of Nabatean Luhithu, however, was certainly also that of Moabite Luhith and Byzantine Λουειθά.

Finally, let us raise the question of the second Luhith 'by Maḥoz-ʿAgaltain'. The mountain village of Luhith was in no case located by the port of Maḥoz on the Dead Sea. It is entirely possible that a part of the Ġōr, especially Ġōr ʿĒsāl at the foot of the ascent of Luhith, belonged to Luhith, just as villages and families of the ʿAǧlūn mountains today own parts of the middle Jordan Valley. For this or some other reason, one or other of the families from Luhith may have preferred to settle in the Ġōr without severing all connections with the 'mother' village. Natural limitations prohibited a larger emigration; the stone-strewn ground of Ġōr ʿEsāl did not provide the economic basis for more extensive settlement. It therefore is all the more conceivable that the few individual settlers continued to refer to themselves by the name of the village from which they came and on whose village land they lived.

[19] Explorations III (s. note 16), 95.

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Neo-assyrian influence in Transjordan

Inevitably economics play the most important role in influencing the policies and fortunes of a country. One of the outstanding examples of this is the resurgence of the neo-Assyrian empire under Tiglath Pileser III, King of Assyria from 744–727 BC. From early times, the countries from the north (Syria, Mesopotamia, etc.) and from the south (primarily Egypt), had fought each other for the possession of the vast resources of untapped wealth in the land which lay between them and for control of the very lucrative trade routes.

When a ruler combines extraordinary political judgement, with brilliant business acumen and tremendous gifts as an organizer, then a Tiglath Pileser III is born. During his reign, a short-lived but excellently administered politico-economic organization came into being, its underlying concept being divide and rule, which meant at the same time deportation and exportation—a concept which was followed by subsequent empire builders. Tiglath Pileser III split his empire up into provinces, which were the areas conquered by the generals, who, if not of suitable blood, were then replaced by royally appointed neo-Assyrian governors. This is well documented in the Assyrian Annals[1] and in the Bible[2].

Tiglath-Pileser III's campaigns into Palestine between the years 734–732 BC were almost the culmination of his policy to control the economic resources between the Tigris, Euphrates and the Nile. by 722, Aram-Damascus, Hazor, Megiddo and the Northern Kingdom with its capital at Samaria had succumbed to the might of the neo-Assyrians. It is possible that the whole of the north, Qarnini (Qarnaim), Haurina (Hauran) and Galaʿza (Gilead), the latter with Ramoth-Gilead as its capital, became typical Assyrian provinces, of which Samaria was a prime example[3]. At the latter, Tiglath-Pileser III's policy of deportation and importation was fully implemented. The important members of a defeated people, and these undoubtedly included craftsmen, particularly skilled metal workers and perhaps potters, were deported either to the conqueror's capital or to another province and were replaced by other defeated ethnic groups or veteran soldiers. It seems most unlikely that the lives of ordinary people were affected.

The north, however, seems to have been treated differently from the states east of the River Jordan. In dealing with neo-Assyrian influence in Transjordan, one should remember that further south, the states of Ammon, Moab and Edom had existed for some time and from what evidence is available both in the Bible and the Assyrian Annals, had already made treaty agreements with the Assyrians prior to Tiglath-Pileser III's campaigns. On a stone slab found at Calah (Nimrud), which records Adad-Nirari III's (810–785 BC) expedition to Palestine, reference is made to the countries including Edom, which he intimidated and on which he imposed tribute[4]. With Tiglath-Pileser III, however, the actual names of the Kings of the various states are mentioned. Thus we read of him receiving tribute from Sanipu of Bit-Ammon, Salamanu of Moab and Kaush-Malaku of Edom. It seems that after Tiglath-Pileser III's reign, later kings exacted more than monetary tribute from these vassal states[5]. For example, under Esarhaddon (680–669 BC), subjects of Qaus Gabr, King of Edom, Musari, King of Bit-Amman, together with nineteen other kings were employed on transporting various materials to Nineveh for the building of palaces. In Assurbanipal's reign (668–627 BC), they went one step further and pressed the subject peoples into military service, although some may have volunteered. Qaus Gabr of Edom, Musuri of Moab and Amminabdi of Bit-Ammon are listed among twenty-two kings who helped in Assurbanipal's wars against Egypt. They also helped in his campaigns against the Arabian King Uate[6].

As all empire builders throughout the ages have realised, rapid communication is an essential factor, both for military control of the conquered provinces and for economic prosperity, particularly in the latter case, where economic considera-

[1] See references in H. Tadmor: 'The Southern Border of Aram', *IEJ*, 12, 1962, pp. 114–122.

[2] See references in B. Oded: 'Observations on Methods of Assyrian Rule in Transjordan', *JNES*, 29: 1970, p. 177 note 2.

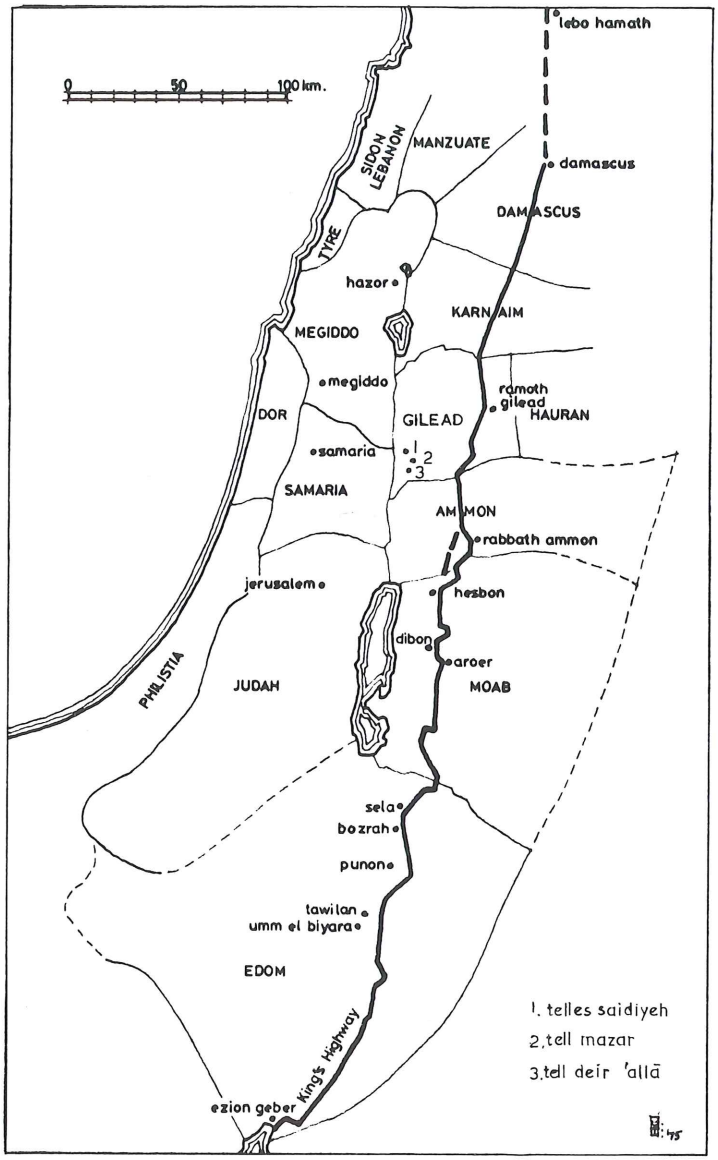
[3] Oded, *op. cit.*, p. 179.

[4] J. B. Pritchard (ed): *Ancient Near Eastern Texts, relating to the Old Testament*, 3rd edition, col. 281.

[5] *ibid.* col. 291.

[6] *ibid.* cols. 297–300.

1. Map showing the location of places mentioned in the text.



tions sparked off the military campaign and the conquering power relied on the products of the conquered or of the vassal states. The map (FIG. 1) shows not only the various provinces, states and towns mentioned in this paper, but also one very important road marked as the King's Highway, running north from the Gulf of Aqaba, through Transjordan and on to Hamath in Syria. This linked up at strategic points with arteries running to the west and east. It would be inconceivable that there would not have been a whole network of posting houses, lookout posts and signal stations positioned at important points along these roads. It is probably in this sphere that we should look for the most visible traces of military neo-Assyrian influence.

In his monumental survey of Eastern Palestine[7], Glueck constantly drew attention to the existence of strong fortresses along the frontiers of the Transjordanian states and dated them as early as Iron I. From the pottery published, the writer queries such an early assignment and would prefer to bring it down to the beginning of the 8th century BC at the very earliest. This would apply particularly to the eastern frontier. We know from the account of Assurbanipal's war against the Arabs[8], that the Assyrians stationed garrison forces along the edge of the desert as a bulwark against the ever present threat of Arab nomadic incursions. On the other hand, on the evidence of the Bible, such as in 2 Samuel 8:13f., J. R. Bartlett[9] supports Glueck's dating and has suggested a Davidic date for their beginning.

The evidence from the north is different from that from the south as is the evidence between east and west. All the writer can say is that the signal stations or fortresses which she has visited within the environs of Buseirah (Biblical Bozra) have yielded no sherds earlier than those found in the excavations at Tawilan[10] (Teman?) and Buseirah, that is the 8th–7th century BC[11]. In recent years, greater interest has been shown in the later Biblical periods, partly due to our increased knowledge of Assyrian texts, and, with the greater number of excavations in Transjordan, more information has become available. In this paper, reference is made to some of the sites marked on FIG. 1, which might have relevance to our subject. From north to south they are: Ramoth-Gilead (Tell er Rumeith), Tabaqat Fahʿl, Tell es Saidiyeh, Tell Mazar and Deir ʿAllā in the Jordan Valley; Rabath-Amon (Ammon); Hesbon (Hesban), Dibon (Dhiban) and ʿArôʿer in Moab; and Bozra (Buseirah), Teman? (Tawilan), Umm el Biyara and Ezion Geber (Tell el Kheleifeh) in Edom.

As was said earlier, the pattern in northern Jordan is different from that further south. At Tell er Rumeith[12,13], it appears that there was a violent destruction at the end of Stratum V, which was probably due to Tiglath-Pileser III, followed by a short re-use of houses with brick floors. Unfortunately, no house plans are available and the ceramic finds have not yet been published. Dr Sauer, who has been working on the material and who has seen the writer's material from her three sites in Edom, found very little similarity between the pottery from the two regions and he had no neo-Assyrian imported or type pottery. But there were affinities between the Tell er Rumeith pottery and that from Samaria, Megiddo and Hazor, which suggests a separate cultural tradition for the north and which may have stemmed from the neo-Assyrians' different treatment of the people under their control.

[7] N. Glueck: 'Survey of Eastern Palestine' (*AASOR*, Vols xiv, xv, xxviii and xxix: 1933–5 and 1951).

[8] Ancient Near Eastern Texts, cols 297–300 (The Rassam Cylinder of Ashurbanipal).

[9] J. R. Bartlett: 'The Rise and Fall of Edom', *PEQ* (1972), p. 29 f.

[10] C.-M. Bennett. 'A Brief Note on Excavations at Tawilan, Jordan 1968–70', *Levant* III (1971), pp. V–VII.

[11] C.-M. Bennett: Preliminary Reports in *Levant* V (1973), VI (1974), VII (1975) and IX (1977).

[12] P. W. Lapp: *Revue Biblique,* Vol. 70 (1963), pp. 406–411, Vol. 75 (1968), pp. 98–105.

[13] N. Lapp (ed.): 'The Tale of the Tell', pp. 111–119.

During the excavations conducted by Dr Fawzi Zayadine on the Citadel in Amman[14], in the small area uncovered, plaster floors, which were such an outstanding feature in the neo-Assyrian levels at Buseirah (see below) were found. The pottery associated with these plaster floors accords well with that from Buseirah. Dr Zayadine has dated his Stratum V on the basis of the pottery, epigraphical material and the double faced heads (see below) to the 7th century BC.

Also found on the Citadel, was the all-important Tomb of Adoni-Nur with a splendid collection of pottery and seals, including one in a silver mount of Adoni-Nur, servant of Ammi-Nadab (King of Ammon). There was also one with the name Shub-El. The style of all the seals showed a dominant Assyrian influence. Whether the three large pottery coffins found in this tomb also represent Assyrian influence is open to doubt, but it is possible. Another 7th century tomb was found in the environs of the Citadel and this contained pottery similar to that found in Adoni-Nur's tomb. An example of Assyrian influence was also found in the chalcedony and cylinder seals found in the Muqabalain tomb. As in the second tomb mentioned, there were pottery horses and riders, but in this case the rider's head was intact and he was wearing a high pointed hat. The Muqabalain tomb also had imports from the west—two fine multi-coloured glass perfume flasks. This tomb typifies only too well the difficulties of trying to relate objects categorically to a specific culture. One can compare the problem of assigning the engraved tridacna squamosa shells, which belong essentially to the neo-Assyrian period and which have been attributed variously to Cypro-Phoenician, Greek and neo-Assyrian craftsmen[15].

The painted pottery, which is such a feature of the neo-Assyrian period in Ammon, Moab and Edom, but not in the north which we have already decided had a different relationship with Assyria, does not seem to be present in the sites being excavated in the Jordan Valley, except for Deir ʿAllā, where, in Stratum VI, the band painting is present on the pointed base bottles[16]. These relate closely in shape to those found in the Amman tombs mentioned above.

The pottery from Tell Mazar[17], north of Deir ʿAllā has some affinities with attested 8th/7th century BC pottery, but generally looks much later, perhaps neo-Babylonian or even Persian. The plans of the buildings, however, are similar to some of those from Buseirah and a detailed study and comparison would be helpful.

It is unfortunate that no plates of the pottery found in the burning which everywhere covered the floors of the 8th century houses at Tell es Saidiyeh (ADAJ 8/9, 1964 and BA 1965, No. 1) have been published. Dr Pritchard said that the pottery pointed to a date within the 8th century BC for the destruction of the city, which could well be the neo-Assyrian campaigns. There was also the foundation of a city wall built over the paving in the courtyard of one of the houses. Was this built by the neo-Assyrians?

It is too early to comment on the Iron Age levels at Tabaqat Fahʿl as these have only just been reached, but from the pottery the writer has been shown kindly by Dr Hennessy, there is certainly 8th and 7th century BC occupation there, but, so far, neither the architecture nor the pottery shows a neo-Assyrian influence. It will be very surprising if it does not exist.

One of the writer's theories is that the neo-Assyrians not only secured their eastern frontier, but also the eastern bank of the River Jordan. There would have been little point in subduing the whole of the coast down to Egypt without having a strong line of defence on the eastern borders of Israel and Judah.

From the references to Heshban (Hesbon) in the Bible, it would have been natural to have expected a long sequence of occupation from the time of Sihon, King of the Amorites, throughout the subsequent Biblical periods, No buildings have been published which could be assigned definitely to a neo-Assyrian period or could reflect neo-Assyrian influence. According to Dr J. Sauer[18], the pottery covers a time span of 200 years (700–500 BC) and confirms definitely the ceramic tradition of the Adoni-Nur tomb. His terminus post quem is 650 BC, which means that there should also be affinities ceramically with Umm el Biyara, where the pottery is dated very securely by a seal impression of the then king of Edom, Qaus Gabr, who is mentioned twice in the Assyrian Annals as paying tribute to the neo-Assyrian kings, Esarhaddon and Assurbanipal.

A most interesting site for this period is Dhiban (Biblical Dibon), and provenance of the famous Mesha stele. Dhiban is to be found between the Wadis Wala and Mojib (see FIG. 1). No other site in Jordan resembles Buseirah so closely in terms of difficult excavation, because successive occupiers of the site re-used their predecessors' stone walls as foundations for their own, thus most successfully destroying the contemporary stratigraphy. Like Buseirah, and as Tushingham has pointed out[19] there was no evidence of violent destruction anywhere in the area at Dhiban so one might assume, therefore, that the town suffered nothing at neo-Assyrian hands. On the contrary, Moab benefitted from the successful campaigns of Tiglath Pileser III and his successors, because it meant the end of the power and threat of a long-time enemy, and the consequent end of Israel.

ʿArôʿer, a fortress protecting Dhiban, shows no neo-Assyrian influence either in architecture or pottery in the areas excavated, but according to the excavator[20] ʿArôʿer

[14] F. Zayadine: 'Recent Excavations on the Citadel of Amman', *ADAJ* XVIII (1973), pp. 17–35.

[15] C.-M. Bennett: *Antiquity*, XLI (1967), 197–201.

[16] Written communication from the excavator Dr H. Franken to whom my thanks are due for permission to publish the photograph in FIG. 2.

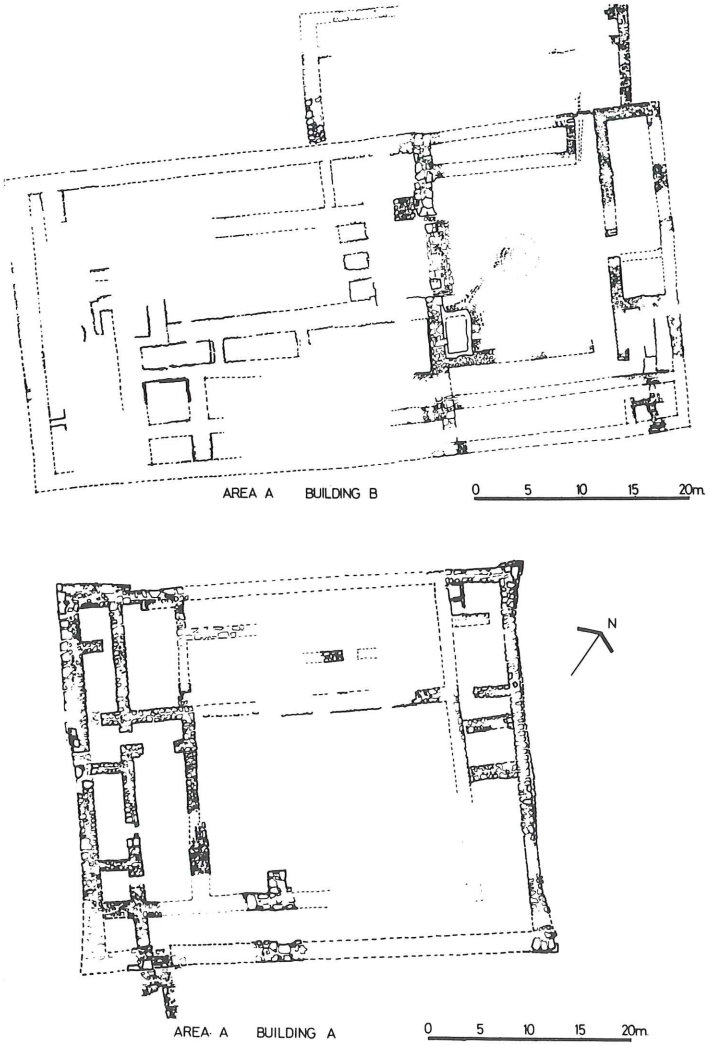
[17] I am grateful to Dr Kheir Yassin for showing me his plans of and pottery from Tell Mazar.

[18] E. N. Lugenbeal and J. A. Sauer: 'Pottery from Heshbon', AUSS, X (1972).

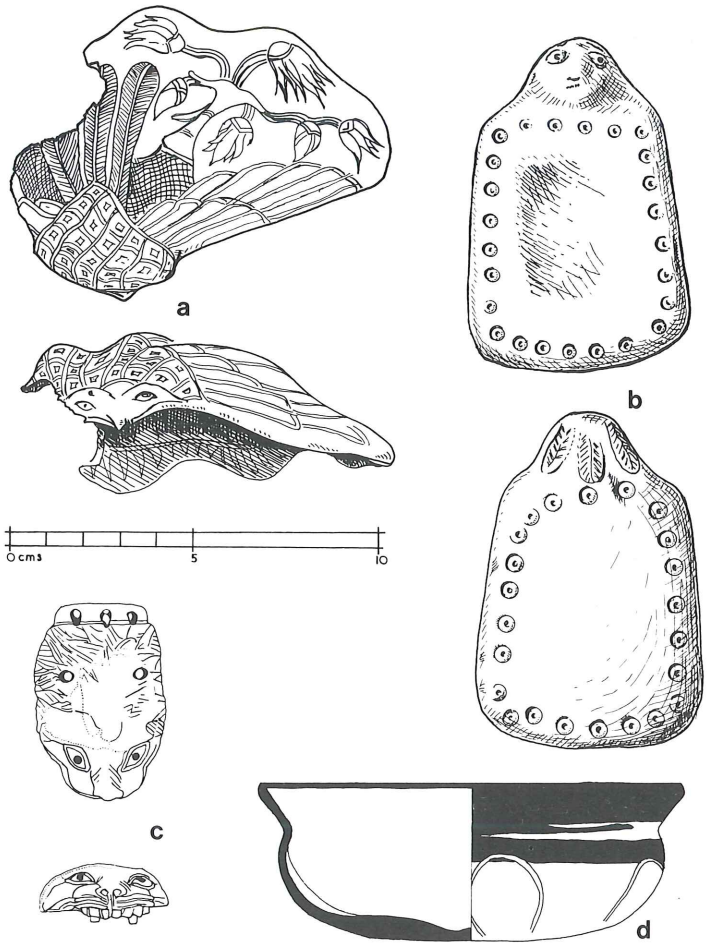
[19] A. D. Tushingham: 'Excavations at Dibon (Dhiban) in Moab', *AASOR*, XL, 1972).

[20] E. Olavarri: 'Sondages à ʿArôʿer', *Revue Biblique*, LXII (1965), 77–94.

2. Buseirah, 1974: plans of the two major building periods on Area A, the so-called 'Acropolis'. Building A is the 'winged' building.



3. a) A bird of prey engraved on a Tridacna Squamosa shell; b) A cosmetic palette; c) Beast's head in ivory; d) Dimpled bowl.



ended at the same time as the fall of Samaria (which suggests a change in the neo-Assyrian attitude to Moab).

In Edom, four sites in the past forty years have been excavated—Buseirah, Tawilan, Umm el Biyara[21] and Tell el Kheleifeh[22]. No comment can be made on the architecture of the latter as the plans for the buildings assigned by Glueck to the 8th/7th century BC have not yet been published. There is no doubt, however, that this period (Glueck's Period IV) belongs ceramically to the neo-Assyrian period as the pottery is identical in many instances with that found at the other three sites mentioned above.

Architecturally, neo-Assyrian influence is not apparent in the very small Edomite settlement on the top of Umm el Biyara, which is what one would expect as we have already suggested that the lives of ordinary people were unaffected by a neo-Assyrian presence. The same comment applied to the much larger settlement at Tawilan. Even though the houses there were built to a larger pattern and were more sophisticated, they do not compare in size with the buildings at Buseirah, which in some areas were either palaces or temples.

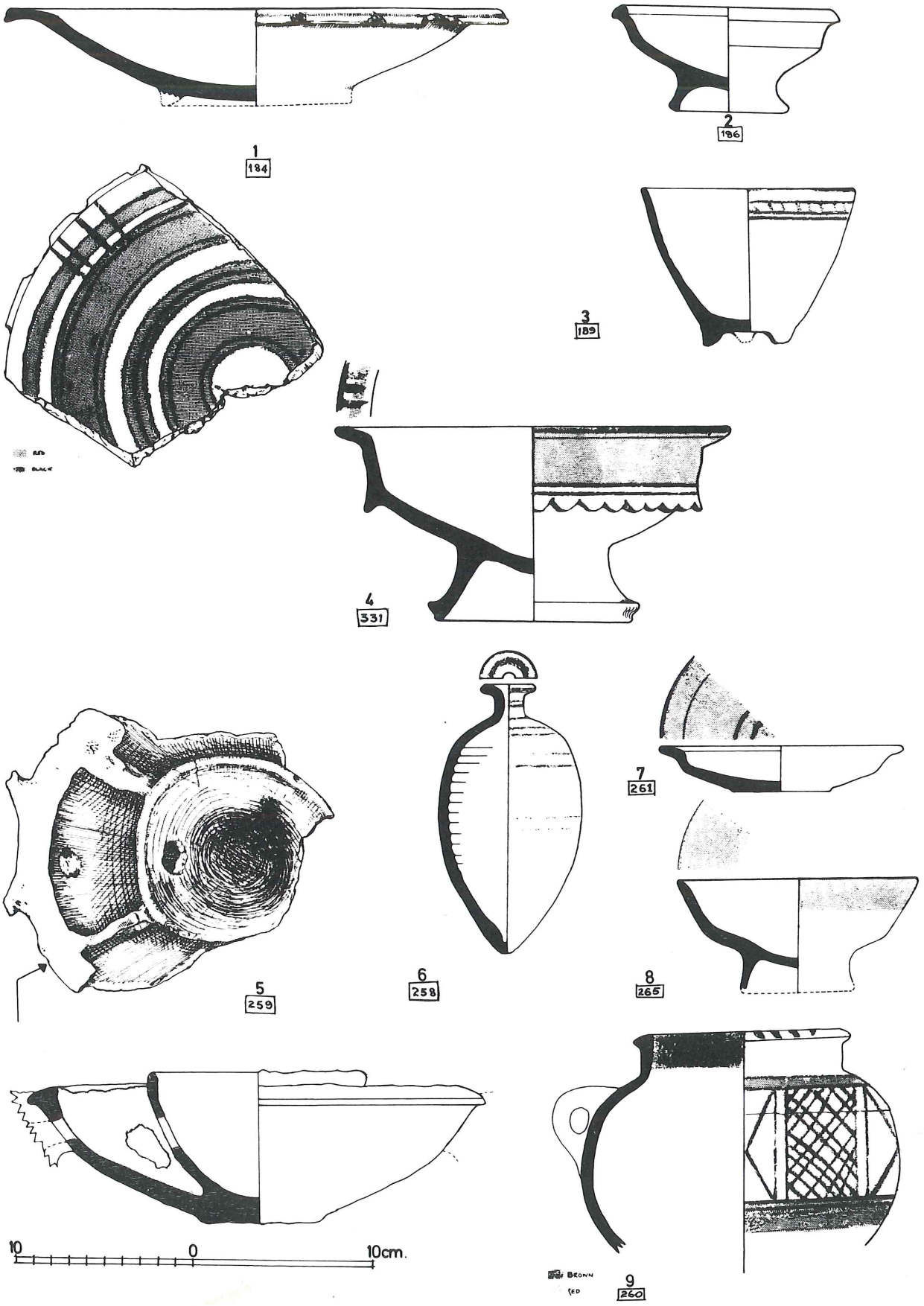
The pottery, however, and the small finds from both Umm el Biyara and Tawilan reflect the finds from the Tomb of Adoni-Nur; and, in certain cases, perhaps a very strong neo-Assyrian influence, such as in a scaraboid (Levant III (1971), PL. IIb) which has been commented on fully by Mlle A. Spycket in the Revue Biblique (1973), pp. 384–395.

It is at Buseirah, on Area A (see FIG. 2), (the so-called 'Acropolis'), and on the little Tell to the south, Area C, that a foreign architectural influence becomes apparent. There are monumental buildings, on foundations sometimes reaching a depth of three metres, and, judging from the extent of the mud brick debris, with very extensive superstructures in mud brick. As can be seen in the Preliminary Report in Levant VI (1974), on Area A, there are two major building complexes, one overlying the other, plans of which are illustrated in FIG. 3, the latter being the 'winged' building. It is worth noting

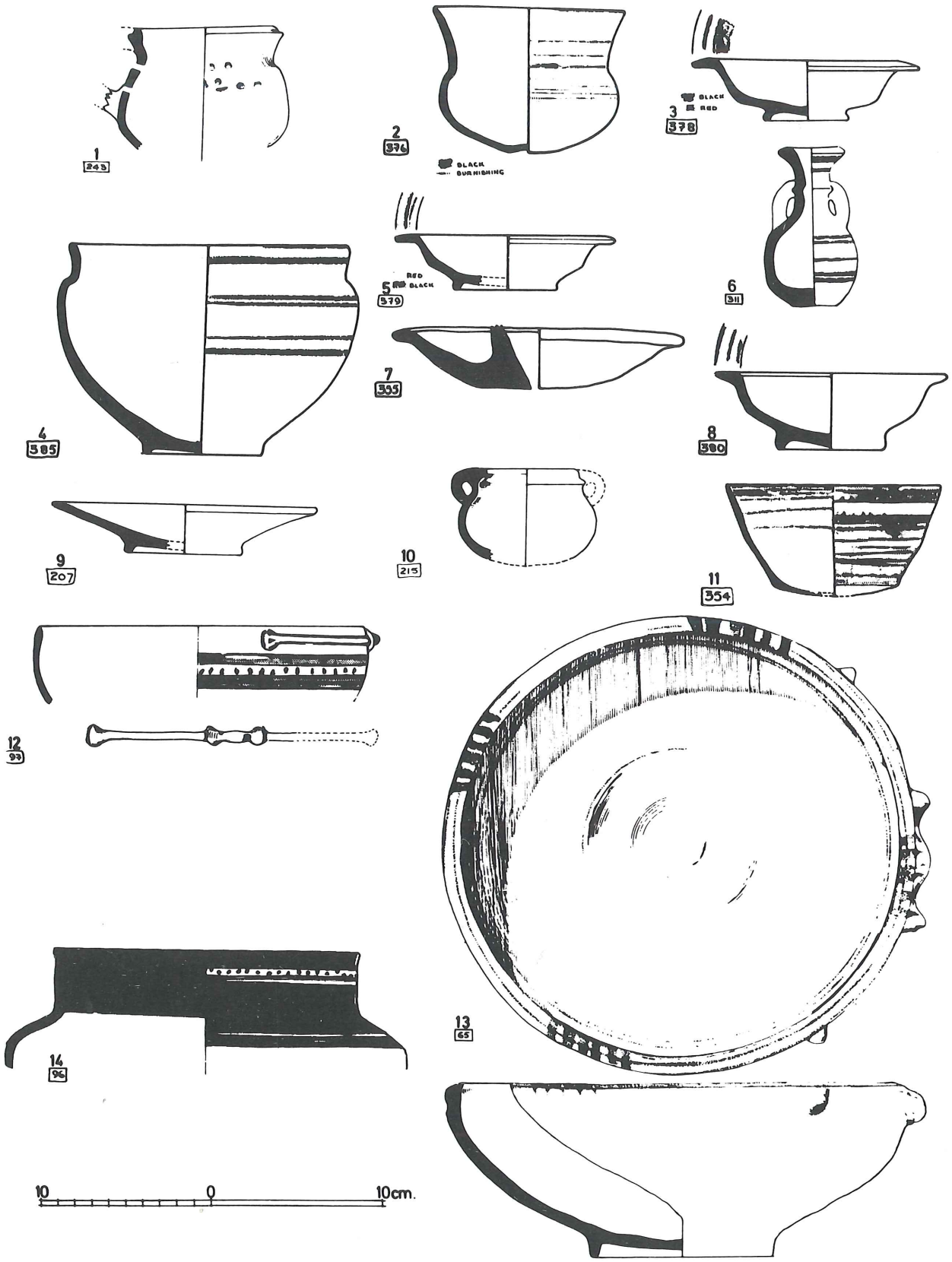
[21] C.-M. Bennett: 'Fouilles d'Umm el Biyara: Rapport Préliminaire', *Revue Biblique*, 73 (1966), pp. 372–403.

[22] Tell el Kheleifeh (Ezion Geber): for a complete bibliography see E. Vogel: 'Bibliography of Holy Land Sites', *HUCA*, XLII (1971), 85–86.

4. Painted pottery from Buseirah, for which there are parallels on sites in Moab and Ammon (7th century BC).



5. Painted and plain pottery from Buseirah for which there are parallels on sites in Moab and Ammon (7th century BC).



that on Site C (for its location, see Levant VI (1974) FIG. 1), where there are several periods of buildings, which are in process of being excavated, a type of building very similar to the earlier one on the 'Acropolis' was found but with a lavatory and bathroom. According to Turner[23,24], bathrooms first appeared in Assyria in the larger Sargonid palaces at Khorsobad and in Sennacherib's palace at Nineveh. In the earlier building on the 'Acropolis', we have steps leading up to an inner sanctum with column bases on either side, which were perhaps for statues, reminding us of Assyrian temples with stands for deity statues.

Architectural evidence, however, for direct Assyrian influence is tenuous, even for the more grandiose buildings erected to house the governor, high priest or vassal king, and it might well be that when the plans of the many buildings overlying each other are finally elucidated, some of the structures may have more in common with the Bit Hilani of Syria.

We are left basically, therefore, with an assessment of the extent of Assyrian imports or of locally made pottery showing Assyrian influence. The tomb of Adoni-Nur is the touch-stone for this period, particularly as a conical carnelian seal showing a deity standing in a crescent, wearing a long garment and with the typical Assyrian heavy beard was one of the finds. The ware of the pottery from this tomb was of very high quality and could be compared with similar groups from Samaria, Tawilan and Buseirah. A close study of the pottery from these two latter sites shows that there is very little pottery that can be said categorically to be an Assyrian import. A most interesting find, however, at Buseirah was two sherds from different vessels bearing the impressed stamp of a cow and calf motif, which is well known in Assyrian art. The ware was of very high quality and almost certainly was one of the few imported. A drawing of them appeared in Levant VII, p. 14, FIGS 8, 9 and 10.

A distinctive characteristic of neo-Assyrian household ware is a thumb impressed or dimpled effect on utensils, particularly on bowls. This type has been found both at Buseirah and at Tawilan and an example is shown in FIG. 3(d). Bowls with rounded bases are also a common Assyrian type and compare with bowls from Period VII at Samaria, which followed the destruction there in 722 BC. Similar bowls have been found at Umm el Biyara, Tawilan and Buseirah (FIGS 4 & 5). The bi-chrome and band painted pottery, which occurs on so many sites in Ammon, Moab and Edom and is to be found occasionally in the Jordan Valley, seems to be indigenous, though it is important to point out that at Buseirah this pottery only occurs in the neo-Assyrian period, a fact which has just come to light in the most recent excavations.

Small finds, other than pottery, have been surprisingly few on the three sites excavated by the writer, but three should be mentioned. On Umm el Biyara a cosmetic palette[25] (FIG. 3b) was found in a stratified level of the 7th century BC. Other examples have been found in Transjordan. The claim for an Assyrian origin is based on two facts: the presence of some Assyrian decorative details and, above all, on the number of these objects found in Mesopotamia.

From Tawilan, in a very burnt pit within an Iron Age II (7th century BC) room came an ivory animal (FIG. 3C), probably used as a top for a box and similar to other representations of such a beast elsewhere in the neo-Assyrian empire.

The third object, illustrated in FIG. 3a, was found on a beaten earth floor in one of the simple houses which covered the terrace between the casemate town wall and the monumental buildings on the 'Acropolis' at Buseirah. It is a winged bird of prey carved from the upper part of a Tridacna Squamosa. The use of these shells for decorative purposes is known in many places in the Near East in the 7th century BC. Whether they are of Egyptian, Syro- or Cypro-Phoenician or Greek workmanship is not pertinent. Like the double faced sculptured heads found in a drain on the Citadel in Amman[26], which have similarities in Nimrud, particularly with the famous lady at the window[27], their importance is that they are often to be found on sites where the neo-Assyrians were in direct control, or exercised authority either through vassal kings or treaty arrangements.

As is obvious from this short survey, the extant evidence for a direct and definite neo-Assyrian influence on the territory east of the River Jordan is hardly overwhelming: there is some in the monumental architecture, in the establishment of defensive posts against incursions by thrusting nomadic Eastern Arab tribes or uprisings from conquered peoples to the west and in the making of pottery. The excellence of some of the finer wares could well be the result of potters being imported from elsewhere, and it is in this sphere that the neo-Assyrians made their greatest contribution to the culture of Transjordan.

[23] G. Turner: *The State Apartments of Late Assyrian Palaces: Iraq*, XXXII, Pt 2 (1970), 177–214.

[24] G. Turner: *The Palace and Bâtiment aux Ivoires at Arslan Tash: Iraq*, XXX, Pt 1 (1968), 62–69.

[25] C.-M. Bennett: *op. cit. Antiquity.*

[26] See note 14 and P. Bordreuil 'Inscriptions des Têtes à Double Face' in the same volume.

[27] M. E. L. Mallowan: *Nimrud and its Remains*, II, p. 513, 429 ND 316 (B).

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Ammonite Seals from Tell El-Mazar

A number of seals came from two excavated areas of Tell el-Mazar. The first group were uncovered from the Cemetery area, the second group came from the different square levels of the excavated mound.

The cemetery of Tell el-Mazar is located 400 metres to the north-west of the Tell. During the investigation around the Tell proper and from the exposed section of the covering layers of a small rise, human bones and pottery indicated the existence of burials on this small mound (a little beyond 1,220 sq. metres and 1 metre high).

Since the owner of the land intended to level it with the surrounding land, it was decided to plot this rise into grids (5 × 5 metres), and to start excavating it.

During the three seasons of excavation in the Spring of 1977, 1978 and 1979, seventy-eight burials were uncovered. It is clear, that the ground has been re-worked and re-levelled since the cemetry was established, as well as partly denuded through the action of rain. All of the graves, with the exception of the cist, appeared to be mere holes dug to various depths in the ground. Some were lined with mud bricks, others were lined on one side only with rough stones. The relative proximity and the disposition of some of the burials suggested family graves.

The dead appear to have been buried in their clothes, as is shown by the fibula, and seals in several graves. Male bodies were in extended position whilst female bodies were contracted. Only some of the graves contained seals (stamp and cylinder) of which the first group of seals are discussed hereunder.

The seals were placed on the chest of the deceased, or hung from his belt (possibly by a string).

The value of the seals found in the cemetery give us important information; since they were found in situ they are of great significance in the identification of the deceased (possibly his name, or identifying his associates), and too, from the iconographical motif, they place the skeletal remains in their exact stratigraphical context.

The second group of seals came from the Tell proper. Some were found in a well-stratified locus, others were not. However, they seemed to belong to the occupants of a very solid structure, possibly a fort, built during the 8th Century BC, and which was subjected to two major destruction and rebuilding periods. The last destruction took place during the end of the Persian Period and the beginning of the Hellinestic. Even though the seal iconographical themes have Neo-Babylonian-Persian affinity, the local Ammonite elements are very clear.

The Kingdom of Ammon emerged in Jordan in the second half of the second millennium BC, in the area between the Zarka River to the north, the Hesban River to the south, the Jordan Valley to the west, and the desert to the east.

Ammon's fortunes depended on the ability of its rulers to exploit the fluctuations in the relative military strength of Assyria, Aram, Judah and Israel. After Ammon's subjection by Tiglath-Pileser III (732 BC), it became a vassal of Assyria and had to pay tribute, but in return, it was allowed a measure of autonomy. Assyrian annals of the year 701 BC, mention Pad'ilu King of Ammon, who swore loyalty to Sennacherib when he set out on his campaign against Judah. Amminadab I, King of the Ammonites, is mentioned in the account of the first campaign of Ashurbanipal, in 667 BC. Assyrian records of the 8th century BC, tell of the growing pressure by the desert tribes on the states along the border, among them Ammon and Moab. Assyria, mindful to its international trade, fortified the desert frontier and thus protected the caravan routes. At the beginning of the 6th century BC, in the reign of Nebuchadnezzer, Ammon became a Babylonian province.

The end of the Ammonite Kingdom came about the middle of the 6th century BC, with the fall of the Babylonian empire and the domination of the Persians and their penetration into Syria, Jordan, Palestine and even into Egypt. From the new evidence of the gliptics and other cultural material of Tell el-Mazar (forthcoming publication), Ammon seems to have been allowed a measure of autonomy in the Persian Period.

Two inscribed seals bearing Ammonite names were uncovered from the cemetery. The transcription, vocalization and translation will be discussed separately in this paper under the title 'Deux Cachets Ouest Semitiques Inscrits Decoverts A Tell el-Mazar'. I have been assisted in their description by Pierre Bordreuil also of the Department of Archaeology at the

University of Jordan. (The scale of reproduction used is approximately 2:1.)

No. 201
Area A square D6 Locus Burial 6
Diameter at base: 17 mm.
Height: 21 mm.
Material: Brown, pink marble.
Shape: Conical, perforated, concave at base.
Subject: It has the foreparts of a winged bull, winged mountain goat, and winged lion, disposed as in a wheel, about a circle with a dot in the centre. The motif first appeared in seal impressions from Nippur, late in the reign of Artaxerxes I (465/4–425/4 BC), and was especially frequent in the reign of Darius II (424–404 BC)[1].

A seal impression on a tablet in the Louvre shows the same motif with three bulls heads[2]. It is likely that the seal under discussion was made under the influence of the designs so far documented first in Babylonia, in the Achaemenid periods. Earlier in the first half of the second millennium BC, the motif of protomes of griffins arranged about a circle with a dot in the centre was produced at Acemhüyük in Anatolia[3], and goat heads similarly arranged appeared at the same time on seals in Bahrein[4]. Intermediary stages of this distinctive design may yet be found. This seal may be of importance, because, whilst it is obviously made during the period of the Archaemenid style, it does not show the typical Archaemenid motif, monsters, in Persian costume: perhaps this gives some indication for non-Persian people buried in the graves.

No. 202
Area A square E6 Locus Burial 1
Diameter at base: 15 mm.
Height: 22 mm.
Material: Agate
Shape: Conical with rounded top, perforated concave base.
Subject: The base shows criss-cross lines. They make no sense, nor represent any such known motif. The criss-cross design is also found executed on a duck shaped amulet; privately owned[5]. It is also found on stamp seals, scaraboid and cylinder seals from Babylon[6].

The seal was found on the chest of Burial No. 1, side by side with a small glass bottle dated to the middle 5th century BC. The design might indicate the attempt of a local engraver to produce a motif, which failed. However, his attempt produced a satisfactory mark, used by the holder.

No. 203
Area A Square D6/S2 Locus Burial 7
Length: 25 mm
Width: 12 mm.
Height: 18 mm.
Material: Agate
Shape: Duck-shaped amulet, modelled at the base.
Subject: A bird executed in a stylistic way. The duck shape is one traditionally used for weights, but usually the pattern is on the base and on other similar pieces is paralleled to stamps of conoid or scaraboid shape[7].

The seal with a Neo-Babylonian feature in its shape is rather different in its representation. On the base it represents a bird executed in a stylistic way, instead of the nude winged female or winged male figure, or heavenly bodies[8], or criss-cross line[9].

This might indicate that the design of the bird was added elsewhere, although it was probably produced by mechanical tools which were in use in Babylonia as well as elsewhere at that time. There is a duck-shaped seal of unknown provenance divided in two registers by a double line bearing the Ammonite name 'A Mar'el son of Yenah m instead of the bird design, dated to the 7th century, BC[10].

No. 204
Area A Square E6 Locus Burial 7
Length: 26 mm.
Diameter: 15 mm.
Material: Translucent chalcedony, milky blue.
Shape: Cylinder seal with copper pendent ring going through the middle hole riveted into a copper disc at the other end.
Subject: It shows a rider on a galloping horse aiming his bow to shoot a gazelle whose foreleg is being bitten by a dog. The riders headgear and criss-crossed trousers correspond to the attire of two Scythians on a cylinder seal (now lost) reproduced by W. H. Ward[11].

In Ward's lost cylinder seal the Scythian defends himself with the typical weapon of his tribes, a pointed axe, but he is being slain by a Persian. The person is characterized by his costume as belonging to a group fought by the Persians and shown here as a huntsman of the scene—a dominant role which implies that the personage is meant to be shown as a leader.

In its free composition the natural form of human and animal figures, the cylinder corresponds to the Archaemenid style of the 5th century BC, but there are some differences: the Persian hunter usually threatens his prey with a spear; if he uses a bow, it is a larger one than the one held by the rider in the present cylinder. Furthermore the horse has a curious horn. This horn reminds us of the stag antlers placed on the heads of horses graves in the Altai[12]. In addition there is a criss-cross pattern drawn over the head and neck of the horse, which suggests horse armour, unparalleled in other representations. The goat is rendered very stiffly and the dog biting its foreleg is unparalleled in Archaemenid Seals.

It is obvious then that the cylinder was not carved by a craftsman trained to produce the current Persian theme. Instead, it appears that the cylinder, which seems so specific in the attire of the mounted hunter was especially made for the seal owner who is likely to have had himself represented as

that hunter. One may be reminded here of the representation hunts in a tomb of the slightly later period on the Black Sea coast[13].

No. 205
Area A Square D6 Locus Burial 7
Length: 18 mm.
Width: 13 mm.
Height: 22 mm.
Material: Translucent agate, milky blue.
Shape: Cone-like on top with flat sides with bevelled edges, octagonal concave base.
Subject: It shows a Neo-Babylonian worshipper before a symbol: the lamp of Nusku on a stand with bulls' feet, shaft decorated by bulls, separating at the top into three prongs which support a horizontal plaque over which the lamp is placed on still another—probably vertical—support. Along both sides of the human and the shaft, the seal is inscribed (for the transcription: Vocalization, and translation of No. 205 and 206, see Deux Cachets Ouest Semitiques Inscrits Decoverts A Tell el-Mazar below).

More detailed representations of the same subject are seen on Neo-Babylonian stamp seals in the Bibliàtheque Nationale[14]. The earliest dated example of a stamp seal with such a lamp stand is in an impression on a tablet dated Year 16 of Darius I[15]. It is more than likely, however, that such stamp seals had been made throughout the 6th century BC, in Babylonia. The Ammonite inscription on the Neo-Babylonian stamp was probably secondary though there seems to have been more space behind the worshipper than is often seen on stamps of this type which tended to have a more slender shape. A close resemblance to this seal was found in Amman Citadel, with minor differences. Instead of the Ammonite script, this seal has two cuneiform letters of a Neo-Babylonian characters[16].

No. 206
Area A Square D6 Locus Burial 33
Length: 15.6 mm.
Width: 9.6 × 12.3 mm.
Material: Lapis Lazali.
Shape: Scaraboid, perforated, hung on a silver band.
Subject: Icongraphical motif separating the upper inscribed line from the lower one. (For inscription, see below.) The motif is a design of a representation of two eyes, and in between, a nose. This representation seems to be a local one, nothing like it has been found outside Jordan and Palestine. A similar one was found in Palestine and came from Arad[17].

Second Group:

No. 301
Area G Square F7 Locus 5
Length: 25 mm.
Material: Brown marble
Shape: Cone with flat sides with bevelled edges and square base, perforated.
Subject: A cult scene showing two worshippers, and in between a stylus and spade. The right worshipper has a beard, he raises his open palms upward. The left worshipper does not have a beard, whilst his palms are raised open downward, following the Mesopotamian custom. It looked as if the right worshipper is asking for a blessing, whilst the left one is giving it. Above the worshippers there is a star, a crescent and a winged sundisk. The principal subject of the modelled-style stamp, a worshipper before an altar supporting symbols, also occurs in a coarse drilled technique, and all of these were executed in a Neo-Babylonian style[18]. A few seals of this type have been found in Ammon and Moab, some bearing Ammonite and Moabite names. One from Moab dated to the 8th–7th centuries BC was found[19]; in addition there is an Ammonite seal of unknown provenance, with two worshippers on either side of an altar. The worshippers raised their arms in prayer. The seal is inscribed as belonging to Ezra[20]. For other seals (similar, but not exact) we can recall the Moabite seal of Amos the Scribe[21], the seal of HKs), Seal No. K1830 in the Bibliotheque National[22] and also that of MS NSPR[23]. Even though these seals can be related to the Neo-Babylonian stamp seals, where the subject had been executed with careful modelling dated to the 6th and 5th centuries BC, it is possible that these ones were made in Jordan, especially many which were inscribed with Moabite, Ammonite names.

No. 302
Area G Square F7 Locus 1
Height: 20 mm.
Diameter: 22 mm.
Material: Brown pink marble
Shape: Conical, concaved at base, perforated.
Subject: Two animals flanking a hero with two other minor motifs, a leafy branch and a lotus flower. The human (hero) figure has a long beard, wearing a short kilt above the knee. A similar seal was found in Joffa[24].

The leafy branch in front of a longhorn stag found on a stamp seal from Rabbath-Moab made Kenna suggest that it represents a woody area[25]. We see in this seal the Mesopotamian tradition in its rigidly symmetrical and centralized composition. This one can be classified as Archaemenian because of its motif—two animals flanking a hero—[26]. However, the Archaemenian hero wears a long dress. In this case the middle figure could represent the local (King) grasping two animals.

No. 303
Area L Square E1 Locus 4
Length: 22 mm.
Diameter: 12 mm.
Material: Jasper
Shape: Cylinder Seal, perforated.

Subject: A scene showing two falcon headed solar deities in human form and in between a stylistic tree. Behind each falcon there is a lotus flower. Each falcon is wearing a tunic, and holding a sword pointed downwards. A star is executed under the right arm of the right falcon, and a group of dots were drilled under the left arm of the left falcon.

The scene is symmetrical except for the star and the dots.

A similar cylinder seal was found in Tell es-Safi in Palestine, dated to the XVIIth Dyn[27]. The Egyptian influence is clear in the lotus tree and the mythical figure of the falcons.

No. 304
Area L Square F2 Locus 2b
Length: 23 mm.
Diameter: 12 mm.
Material: Green Jasper.
Shape: Cylinder seal, perforated.
Subject: (Ankh) sign between long-legged winged griffins. There is a sun disc motif above the griffins. The griffins wear aprons. The motif is executed in a linear style. The cylinder seems to be of a Neo-Assyrian style; the subject most frequently encountered in the contest scenes of Linear-style seals[28]. The Egyptian influence is obvious in the griffin wearing an apron[29]. Winged griffin motifs were also shown on Phoenician seals[30]. Cylinder seals of mixed style, showing Egyptian elements with Neo-Assyrian style, have been characterized by Frankfor as Palestinian cylinders[31].

The importance of this seal is that it was found inside a mud brick wall (Area L, Square F2, Locus 2b), belonging to a major structure of the Neo-Assyrian, Neo-Babylonian Period, destroyed in the Persian Period. Apparently the seal anti-dates the structure. The question is, did the seal fall whilst the wall was being made, or was it put there on purpose as an act of dedication?

No. 305
Area Q Square B1 Locus 20
Length: 20 mm.
Width: 15 mm.
Height: 25 mm.
Material: Limestone
Shape: Pyramidical, perforated, stamp seal, crudely made.
Subject: Conventional tree, above which is a seth-like animal with wings. This type of stamp seal is found in Palestine dated to the XXth Dyn[32]. The tree motif was used in the Late Bronze Period of the Mitanni common style in Amman[33]. The tree depiction on seals goes back to a much earlier date in Syria and Palestine. On a seal impressions found in northern Jordan by Mittman, a stylized tree is a common motif[34]. While some comparative material may be cited from Syria and Palestine, most of it to be found in the world of Mesopotamian and Elamite glyptic art[35]. This seal (305) was found in a silo of mixed pottery, but stratigraphically the silo dates back to the end of the Iron Age I. It is possible that the stylized tree came in use in the Iron Age I in Palestine and Jordan. Similar stamp seals bearing the same stylized tree were found in Shiqmona in the Iron Age I, level[36].

No. 306
Area L Square G3 Locus 1
Length: Limestone
Shape: Pyramidical, deeply incised.
Subject: Animal figure and possibly bird on its back in archaic style. This subject is known in Palestine, where a representation of a lion jumping on an ibix, dates to the XX dynasty of Egypt[37]. Stamps of similar theme were discovered in Beitin[38] and ones from Beth-Belet (P1 xxx Nos. 256, 257 Tomb No. 800) dated to the XIX–XXIst Dyn[39].

Some show a bull with a scorpion above[40].

No. 307
From surface of the eastern slope.
Length: 14 mm.
Width: (in the middle of the scarab) 12 mm.
Height: 8 mm.
Material: Hard limestone
Shape: Scaraboid.
Subject: Two walking bovine animals in two registers corresponds, in the stylization of the animals, to seals excavated in Palestine belonging to the 7th–5th centuries BC[41]. The small disk in the crescent in the upper field looks distinctly Phoenician. The Ammonites had used this motif in their scaraboid seals, side by side with their inscribed names. There is an example of one scaraboid seal divided into three registers by two double lines. In the middle register a running bull framed by a Lotus flower. The owner was shu'al son of Elisha[42]. The use of the iconographical theme and the Ammonite name, would possibly indicate that the people were Ammonite, as it was found out in Seal No. 205 and 206.

Deux cachets ouest semitiques inscrits decouverts a Tell Mazar (further notes)
by Khair Yassine & Pierre Bordreuil

1) Tell Mazar 77, Area A, square E 6, Grave 7, no. 205
Conoide octogonal en calcédoine, mesurant 22, 1 × 18, 1 × 13.5 mm. II est percé d'un trou, et sa face inscrite est légèrement bombée.

1hml
štt ou d/rd/ry (?)

Un personnage, en station debout, barbu et portant une coiffure est représenté de profil. Les bras dressés vers l'avant, paumes à l'intérieur et à hauteur du visage Devant lui, une sorte d'autel à base tripode, dont le sommet rappelle une fleur de lotus: et un croissant de lune[43].

L'inscription a été gravée de part et d'autre du personnage et de l'autel. Le nom du propriétaire, identifiable par le *1*

d'appartenance, est gravé derrière le personnage, et le patronyme se lit derrière l'autel.

La gravure de ce sceau pourrait avoir été exécutée en deux temps: d'abord le personnage, ensuite mise en place des noms propres dans le peu de place disponible. Cela expliquerait la confusion de la base du premier *t* avec la seconde et la troisième barre horizontales de l'autel qui en compte cinq au total.

Le nom propre *hml* est inconnu jusqu'à présent. Le patronyme est difficile à interpréter à cause des difficultés de lecture que présente chaque lettre. Une lecture *ddy* serait possible, on connait en effet plusierus anthroponymes araméens composés de *dd*[44], ainsi que *dd'lh* sur un cachet araméen[45], *brgdd* sur un cylindre arameo-perse[46] et *kr'dd* sur un sceau araméen[47]. Pourtant, cette lecture n'est probablement pas à retenir, car elle contraint à interpréter la dernière lettre du nom propre comme un *y* de forme tout à fait inhabituelle.

La solution la plus vraisemblable paraît être de lire le patronyme non pas au dessous du premier nom, mais à la suite de ce dernier. On aurait alors *štt*, qui n'est pas connu jusqu'à présent[48].

L'iconographie de ce sceau est déjà connue aux époques neo-assyrienne et neo-babylonienne[49], mais le contexte archéologique de la tombe, ainsi que l'écriture[50], sont en faveur d'une datation dans la première moitié du cinquieme siècle.

II) Tell Mazar 77, Area A, Square D 6, Grave 33, no. 206
Scaraboide de lapis lazuli, mesurant 15, 6 12, 3 9, 6 mm. Pans verticaux hauts de 5,7 mm. Il est serti dans une gaine métallique terminée par une sorte de manche[51].

lhmyws
bt smt

Au milieu du champ, deux yeux stylisés symétriques par rapport à un élément central circulaire[52] divisent la face inscrite en deux parties. La partie supérieure est occupée par le nom du propriétaire du sceau, et la partie inférieure est occupée par le patronyme.

Dans le nom propre féminin *hmyws*, on trouve d'abord l'élément *hmy* qui est difficile à expliquer[53], mais qui est connu par le nom *hamital*, attesté dans la Bible (2 Rois 23: 31 etc. . . .), par les noms *hmy dn* et *hmy hl*, attestés par deux sceaux récemment publiés[54]. On remarque que ces trois noms sont féminins, comme *hmyws*, fille de *smt* que nous étudions ici.

L'élément *ws* peut être expliqué par l'arab????, aider, attesté comme nom propre en safaïtique[55]. Ce nom signifierait donc '*hmy* a aidé', ce qui indiquerait que *hmy* est un théophore.

Le patronyme *smt* n'est pas connu ailleurs; on peut signaler un toponyme sabéen du nom de *smtnhn*[56].

Il est à remarquer qu'on connaît déjà plusieurs sceaux féminins d'origine transjordanienne. Ce sont celui de *lšgb bt'lsm* celui de *'hyhy ht ynhm* 'celui de *'nmwt 'emt dbibs* et celui *de'lyh 'mt hnn'l*[58].

L'écriture donne quelques indications chronologiques: le *m* de la première ligne et le *w* pourraient trouver des parallèles au 7e siècle[58], tandis que les *s*, le *b*, le *t*, le second *m* et le *ṭ* sont plausibles au be siècle[59] et au 5e siècle.

La dcouverte de ce sceau féminin dans une tombe contenant un seul squelette qui est indubitablement masculin pose un problème. On pourrait supposer que ce sceau a été conservé par l'occupant de la tombe comme un souvenir d'un de ses ascendants féminins. Il pourrait par conséquent appartenir à une période un peu plus ancienne que celle du contexte archéologique de cette tombe qui se situe dans la première partie du 5e siècle[60].

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* Three campaigns have been conducted at Tell el-Mazar in 1977, 1978 and 1979. The site is located 7 km. north of Deir 'Alla in the Jordan Valley. The expedition is sponsored by the University of Jordan and the Department of Antiquities. The author of Jordan served both as Field Director and Photographer. Archaeology students of the University of Jordan and other students from American and European Universities, as well as volunteers from various countries had participated in the excavations.

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60 Voir l'étude archéologique de Kh. Yassine dans ce volume.

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Quelques Aspects de la Religion des Nabatéens

Au témoignage des inscriptions, le panthéon nabatéen paraît assez simple: un grand dieu, Dusharâ, c. à d. 'Celui de la Sharâ', Dousarês en grec; une grande déesse, appelée tantôt 'Allat' (al-llat, 'la déesse'), tantôt al-ʿOzzâ ('la très forte'); quelques autres divinités arabes: ainsi al-Kutbâ, le dieu de 'l'Etriture', d'après l'étymologie; Shay' al-quam, 'le Compagnon de la tribu'; Hobalu, 'l'Ancien', qu'on retrouvera à la Mecque préislamique, de même que Manawatû, la déesse du 'Sort'. Ajoutons la mention de Ba'alshamîn, 'le Maître des cieux', et d'Atargatis, la grande déesse syrienne; de Qôs, le dieu édomite, et d'Isis, venue d'Alexandrie. C'est peu, comparé à 'la poussière de noms divins' (J. Wellhausen) de l'Arabie préislamique ou au panthéon si touffu de Palmyre, qui fleurissait à peu près à la même époque que Pétra (Ier siècle av. J.-C., Ier au 3 ème siècle ap. J.-C.).

Cette simplicité est encore plus frappante si l'on se reporte au 5ème siècle av. J.-C., à l'époque où les Nabatéens, venus du Sud, sont arrivés en Jordanie, en Syrie méridionale et au Negev. Ils font partie des Arabes qu'Hérodote mentionne aux confins de l'Egypte et qui 'ne reconnaissent comme dieux que Dionysos et Ourania ... qu'ils appellent respectivement Orotal et Alilat' (*Hist.*, III, 8). Orotal est le même nom divin que le 'RQRŠP de la statue de Hadad de Senjirli, ligne 11 (8e siècle), le Ruldaiu des chroniques assyriennes, le Ruḍâ des graffites safaïtiques, l'Arṣû des inscriptions palmyréniennes, c. à d. 'le Bienveillant'. J'ai essayé de montrer que c'est lui qui se cache sous l'appellation anonyme de 'Celui de la Sharâ' (*Supplément au Dict. de la Bible*, VII, c. 991 et 995). Pour Dionysos, l'homologue grec d'Orotal, nous avons l'équivalence donnée par Isidore de Charax au tournant de l'ère: 'Dousarès, c'est Dionysos chez les Nabatéens', équivalence confirmée par l'iconographie. Quant à Aphrodite-Ourania, elle est explicitement assimilée à al-ʿOzzâ par une bilingue de Cos de 9 ap. J.-C. (cf. F. Rosenthal, Die aramaïstische Forschung, p. 91, n. 4). A l'origine, ce dernier nom divin n'aura été qu'une qualification d'Alilat, devenue 'Allat' par syncope.

La langue des inscriptions nabatéennes est un dialecte araméen, mais l'onomastique est presqu'entièrement arabe, et avant de s'instaler dans ce qui sera la Nabatène, les Nabatéens parlaient donc un dialecte arabe. Les anthroponymes composés avec le mot Dieu, sous les formes 'l (El), 'lh (Ilah) et 'lhy (Ilahay ou Ilahî) sont de beaucoup les plus nombreux, et ce fait se constate aussi chez les peuplades contemporaines qui utilisent l'alphabet dit sud-arabique, les Lihyanites de Dedân, les Thamoudéens et les Safaïtes, et au Yemen, les Minéens, Sabéens, etc (G. L. Harding, *An index and concordance of Pre-islamic names and inscriptions*, p. 907). Il me paraît peu probable que dans ces noms théophores, le mot 'dieu' désigne un dieu particulier, comme Dousarês ou al-Kutbâ. Un anthroponyme comme Nṭr'l (Natarêlos en transcription grecque) est donc à comprendre: 'Dieu a gardé'. Mais alors, comment expliquer qu'El,Ilah ou Allah (= al-Ilah) ne soit nommé par presque aucune inscription nabatéenne? L'onomastique prolonge certes un état très ancien de la religion, mais vu l'abondance et la transparence de ces noms théophores, la notion de Dieu n'a pas dû disparaître entièrement. D'ailleurs les nomades voisins, comme les Thamoudéens et les Safaïtes, invoquent encore Ilah (ou Lah) à côté d'Ilat (ou Lat) ou de Ruḍâ, et Ilaha apparaît dans une dédicace de Rawwafah, rédigée en nabatéen par la tribu thamoudéenne de Robatu (J. T. Milik, dans *Preliminary Survey in N.W. Arabia*, 1978, par J. Parr, G. L. Harding and J. E. Dayton, Londres 1972, p. 57s.).

Plutôt que de polythéisme, il s'agit d'associationisme, au sens coranique du mot: à Ilah ou Allah, on juxtapose les idoles, quelqu'illogique que puisse être ce confusionnisme religieux. On retrouve cette attitude à Palmyre, et déjà à Ugarit, où El, le dieu suprême, apparaît oisif à côté de Baʿal ou de ʿAnat, Quelques siècles auparavant, à Mari, le texte de fondation du temple de Shamash fait allusion aux 'jours lointains où Dieu avait bâti Mari' (G. Dossin, *Syria*, 32, 1955, p. 13 et 25: i-lu-um: 'la forme accadisée du nom amorrhéen El'). Nous sommes à l'époque d'Abraham, qui restitue à El(ou Elohîm) son caractère unique face aux 'dieux étrangers'. Ce n'est pas le lieu de discuter ici le problème d'un monothéisme primitif, deux millions d'années nous séparant des premiers hominidés. Rappelons simplement que les anthroponymes en El sont prépondérants dans les couches onomastiques les plus anciennes des diverses langues sémitiques, ainsi dans les textes présargoniques.

Revenons aux Nabatéens de l'époque gréco-romaine. Nous avons mentionné l'équation Dionysos—Dousarês. Pour le chef du panthéon, on s'attendrait à une identification à Zeus, et de fait, elle est maintenant attestée par au moins trois inscriptions, en partie inédites. Je verrais volontiers un Zeus-Dousarês dans le dieu 'au chaperon' qu'encadrent Athêna

(Allat) et Aphrodite-Ourania (al-ʿOzzâ) sur un linteau de Soueida qui fait pendant à celui du jugement de Pâris, maintenant au Louvre (M. Dunand, *Le Musée de Soueïda*, PL. V et IV, p. 11–14). L'aigle tourné vers lui le désigne comme dieu suprême et les deux parèdres illustrent le déboublement de la grande déesse arabe. Mais le visage juvénile du dieu trahit peut-être l'aspect dionysiaque de Dousarês, en particulier à Soueida, la Dionysias de l'Auranitide (D. Sourdel, *Les cultes du Hauran à l'époque romaine*, p. 63).

La personnalité de Dousarès pose d'autres problèmes, dont celui de son origine. Son nom, Dusharâ, dhu-l-Sharâ en arabe, n'est pas décisif à cet égard, car le toponyme sharâ a des sens variés et peut désigner l'ensemble de la chaîne côtière qui borde à l'est la ʿArabah et la mer Rouge aussi bien que sa portion jordanienne au sud de la Gabalène (Jebâl). Une précision importante, Dusharâ est qualifié de 'dieu de Gaia', l'actuel Wâdi Mûsa, qui domine Pétra à l'est. Ce site, abondamment irrigué par la 'Source de Moïse', a retenu les Nabatéens avant leur installation dans l'aride Pétra, mais on ignore si ils y ont trouvé Dusharâ comme dieu local, ou au contraire si ce sont eux qui y ont apporté leur bétyle. Je penche pour cette seconde hypothèse, car outre le rapport établi à haute époque entre Orotal et le dieu suprême des Arabes, j'ai cru devoir en reconnaître un entre Orotal-Arṣû et le dieu planétaire Mercure-Nébo, dieu de l'Ecriture dont le culte s'est répandu en Arabie lors de l'enigmatique séjour de Nabonide à Teimâ, Dedân, Khaibar et Médine. C'est à Dedân qu'on constate d'abord le culte de Kutbâ (ou Aktab), qui est l'aspect arabe de Nébo, et de là, les Nabatéens l'auront importé à Pétra. Je base l'identification Arsû-Mercure sur le fameux texte de Julien, qui donne Monimos et Azizos comme parèdres à Hélios et assimile Monimos à Hermês-Mercure. Or Monimos (Munʿim, le Favorable) n'est qu'une autre dénomination d'Arṣû, le Bienveillant, qui fait couple à Palmyre avec ʿAzizû, dieu masculin de la planète Vénus, al-ʿOzza chez les Nabatéens.

On a contesté cette série d'équations, mais réflexion faite, je la maintiens, tout en soulignant qu'elles se réalisent à des moments et en des régions différentes. Parmi les arguments avancés (cf. *Suppl. au Dict. de la Bible*, VII, c. 993–996), j'en rappelle deux, qui suggèrent qu'à l'époque hellénistique au moins, al-Kutbâ et Dusharâ étaient la même divinité: l'inscription no. 17 du Jebel Ram (l' ancienne Iram) mentionne Kutbâ 'qui est à Gaia' en même temps qu'al-ʿOzzâ, et le no 4 désigne al-ʿOzzâ et 'le Maître de la Maison' (mr-byt'), *op. cit.*, c. 995. Or ce couple se retrouve à Pétra, et on considère à juste titre que le Maître de la Maison ne pouvait être que Dusharâ. Cette Maison n'est autre que le Temple, comme le confirme l'usage parallèble de l'expression Dame du Temple (mrt-byt') pour Allat à Palmyre (M. Gawlikowski, *Recueil d'inscriptions palyréniennes*, no. 132 et 143). On a proposé de comprendre mr-byt' comme le Maître de la Maison royale, Dusharâ étant qualifié de dieu d'Arétas et surtout de Rabbel, généralement Rabbel II. En fait, une inscription récemment mise au jour prouve que Dusharâ n'était pas le seul dieu dynastique, et on laissera donc à byt' son sens bien attesté de 'temple'.

L'idée de famille divine n'apparaît pas dans le panthéon arabe, et al-ʿOzzâ, la parèdre de Dusharâ, n'est pas désignée comme son épouse. Il semble que son temple ait été retrouvé par Ph. C. Hammond, sur un palier de la pente qui domine au nord l'arc monumental de Pétra. C'est sûrement elle qui est figurée sur le bétyle anonyme retrouvé dans ce sanctuaire, comme elle l'est par deux fois sur les bétyles du Jebel Ram. A Pétra, elle est mentionnée par plusieurs inscriptions, dont une est inédite, tandis que le nom d'Allat est jusqu'à présent absent de la capitale nabatéenne. Est-ce un autre signe de la répugnance chez les Nabatéens à juxtaposer des entités divines trop voisines? Il est vrai que cette sobriété n'empêche pas les commandes officielles de sculptures à la mode grecque, comme en témoigne la série de bustes divins retrouvés pêle-mêle dans un bâtiment adjacent à l'arc monumental (cf. provisoirement G. R. H. Wright, *Syria*, 45, 1968, p. 27 et 66, PL. IV). Il reste que la religion autochtone visait à la simplicité, et les inombrables bétyles aniconiques de Pétra témoignent, à mon avis, d'un même sens du sacré.

La culte d'Allat était particulièrement florissant à Boṣrâ et dans le village voisin de Ṣalkhad, où la tribu arabe de Rawaḥû érigea un temple dès le mileu du Ier siècle av. J.-C. (J. T. Milik, *Syria*, 35, 1958, p. 227–231). On sait que Rabbel II résida à Boṣrâ, et c'est lui qui développa, sinon instaura le culte de la déesse arabe à Iram, où il lui bâtit un sanctuaire important. On honorait au Jebel Ram Allat 'qui est à Boṣrâ' aussi bien qu'Allat 'qui est à Iram'. Elle est naturellement invoquée plus au sud, à Ḥegrâ.

Achevons ce rappel du culte d'Allat en Nabatène par un trait curieux. L'un des pyrées retrouvés à Ṣalkhad est offert 'à Allat Dame d'al-Atar' (*op.cit.*p. 229s). J. T. Milik préfère, à la traduction banale d'al-Atar par 'du lieu', l'indication d'un toponyme, Atar ou Atad, inconnu par ailleurs. Le mot 'atar' fait également difficulté dans un texte ou deux de Palmyre: ainsi une dédicace de 108 ap. J.-C. mentionne l'érection à Vologésiade 'd'un pyréthée (ḥmn') tout entier, lui et son "atar" ('trh)'. La traduction de 'trh par 'son lieu' est plate et j'ai proposé dans un article sur Allat (sous presse) d'y voir le mot iranien 'atar', feu, pyrée, comme dans l'inscription trilingue de Sapor Ier a Naqsh i-Rustam (M. Back, *Acta Iranica* 18, 1978, p. 330–335, cf. p. 20 et 193), où le mot parthe 'trw est traduit par 'pureion'. Le mot ḥmn', tantôt pyrée, tantôt pyréthée, revient dans plusieurs inscriptions nabatéennes du Hauran ou palmyréniennes, en particulier pour désigner un état ancien du temple d'Allat à Palmyre. Je traduis en conséquence l'expression 'd't 'l 'tr' du pyrée de Ṣalkhad par 'Celle du Feu', c. à d. 'Dame du pyrée'. On le voit, le caractère très arabe du panthéon nabatéen n'exclut pas des influences aussi lointaines que celles venues de l'Iran. Cependant elles ne semblent pas avoir pénétré à Pétra. Le panthéon nabatéen manque d'homogénété: il y a Ḥégra, Pétra, Edom à Tannur, et le Hauran, sans compter le désert des Nomades et le presqu'île du Sinaï, qui pose un problème à part (cf. *Le Monde de la Bible*, no. 10, 1979, p. 37–41).

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Un Monument Hellénistique de Jordanie: Le Qasr el 'abd d''Iraq al Amir

A une vingtaine de kilomètres d'Amman, en descendant la verdoyante vallée du Wadi Sir en direction générale de la Mer Morte, on rencontre le site d' ʿIraq al Amir délimité par un cirque de falaises tourné vers le sud et dont l'élément le plus spectaculaire est la ruine d'un grand monument, le qasr el ʿabd. Jeté à terre par un ou plusieurs tremblements de terre, il garde encore fière allure. Redécouvert au début du 19° siècle, ce monument singulier fut d'abord étudié par les Français de Saulcy et de Vogüé vers 1860 et puis, cinquante ans après, par l'Américain C. Butler dont les travaux ont été repris en 1963 par un autre Américain, P. Lapp.

Les conclusions de ces diverses recherches n'étaient ni certaines ni satisfaisantes et l'étude de ce monument très évidemment hors série devait être reprise. J'ai pu le faire depuis 1976 grâce au concours bienveillant des autorités jordaniennes et à l'amicale assistance du Dr Fawzi Zayadine. La direction des travaux sur place et la réalisation des relevés est assurée depuis la même date par l'architecte F. Larché à qui revient une place de premier plan dans la réussite de cette entreprise. Un pas de plus a pu être franchi depuis la fin de 1976: le remontage partiel du rez-de-chaussée pour les longs côtés est et ouest, remontage qui pouvait se justifier par le fait que pratiquement tous les blocs étaient conservés et gisaient au pied des murs dont ils provenaient. La Jordanie retrouvera ainsi, sous une forme rénovée et plus proche de son image première, un monument unique de son espèce.

Par une chance exceptionnelle, l'identification du site et du monument, son auteur et sa date nous sont livrés par l'exposé que nous en a fait Fl. Josèphe dans ses Antiquités (XII, 4. 1).Il nous est dit à cette place que le Tobiade Hyrcan—les Tobiades sont attestés à Amman depuis le 5° siècle—s'était réfugié dans ce qui était sans doute une propriété de famille appelée Tyros en grec, qu'il s'y était retranché et y avait fait des travaux divers dont la construction d'une *baris*, d'une sorte de petit palais richement décoré et entouré d'un lac artificiel. Mais Hyrcan vit ses rêves s'écrouler et dut se donner la mort à Tyros. Le Séleucide Antiochos IV confisqua le domaine qui sort définitivement de l'histoire. La date de cette fin se place en 175 av. J.C.

Le monument se présente comme un bloc de plan rectangulaire de 37.50 × 18.75 m., ce qui correspond sans doute à 120 × 60 pieds antiques; la hauteur primitive dépassait légèrement 12 m. On abordait le monument en venant de l'est, mais il est orienté nord-sud et la façade nord constituait l'entrée à laquelle correspondait une façade sud symétrique mais dépourvue de passage.

La restitution que C. Butler a donnée de la façade a été largement diffusée; elle est inexacte dans l'ensemble et dans le détail. La différence la plus marquante entre la vieille image et la nouvelle consiste dans le fait que l'édifice comportait deux étages de hauteur à peu près identique et non un étage supérieur réduit à une sorte d'attique. La séparation entre les deux étages est soulignée par une corniche uniforme qui fait le tour de tout l'édifice. La façade est articulée selon un rythme tripartite; deux massifs angulaires encadrent la partie centrale. L'entrée consiste en un large porche à deux colonnes entre antes—antes de forme particulière, en demi-colonnes. Aux angles de l'édifice deux pilastres devaient répondre à ces colonnes et un entablement unique coiffé par la corniche déjà mentionnée domine tout l'étage. L'ordre est corinthien. Ce qui obscurcit l'image, c'est l'inachèvement de la mouluration et de son décor; les bases des colonnes, les pilastres d'angle avec leurs chapiteaux, la frise sont restés en bosse, à l'inverse des chapiteaux des colonnes et de la corniche à denticules.

Cette image se répétait à l'étage, mais avec des modifications importantes et significatives. Au porche à deux colonnes correspond une loggia de même structure, mais cette loggia est à ciel ouvert. Du côté interne, sur les faces ouest et est, des demi-colonnes reprennent les colonnes de la façade et, au sud, vers l'intérieur du bâtiment, l'articulation de la façade est reprise. L'ordre est corinthien là encore et toujours laissé en bosse, comme on le voit surtout aux bases et aux chapiteaux; mais—variante bien hellénistique—l'entablement est dorique à métopes et à triglyphes. Le sol de la loggia, ou si l'on veut la couverture du vestibule, était formé de cinq énormes dalles pesant chacune environ 25 tonnes, dalles qui constituaient une sorte de podium haut de près d'un mètre sous les colonnes.

Mais c'est l'agencement des deux massifs angulaires qui offre des surprises. On savait depuis toujours que ces deux

massifs comportaient à leur départ de grandes dalles décorées de figures de lions. Ce dispositif est aujourd'hui parfaitement clair et sûr. En façade, chaque massif est orné de deux félins divergents, l'un tourné vers la loggia, l'autre vers l'angle, où sa tête est commune au félin correspondant sur le long côté; le système se retournait en effet sur les longs côtés. On note enfin que dans cette frise les mâles alternent avec les femelles flanquées de leurs petits. Du côté de la loggia, cette frise de lions butait simplement contre les demi-colonnes formant ante.

Cette frise est immédiatement surmontée, de part et d'autre, d'un système de baies ajourées: trois baies chaque fois séparées par des meneaux ornés de demi-colonnettes. Un entablement complet couronne le tout, mais—fait étonnant—et d'ailleurs irrégulier, si l'on s'en tient aux normes d'une bonne architecture grecque, cet entablement rejoint l'angle du bâtiment et se retourne sur les longs côtés pour couvrir d'autres baies du même type.

Ce n'est pas tout dans l'ordre de l'imprévu. Des pilastres avec leurs chapiteaux étaient prévus aux angles; leur image a été presque totalement obscurcie et il n'en subsiste plus que le sommet des chapiteaux. Ce sont en effet de grandes figures d'aigles aux ailes éployées qui formaient les angles de l'étage dans sa partie supérieure: seules les crosses des chapiteaux corinthiens émergent au-dessus de leurs têtes.

L'entablement terminal était du même type à la loggia et aux massifs angulaires, c'est-à-dire qu'il comportait une frise dorique à métopes et triglyphes, avec une différence cependant: au-dessus de la loggia, les triglyphes n'ont pas été creusés de leurs canaux, à l'inverse de ce qui est le cas aux massifs angulaires et, d'ailleurs, les dimensions ne sont pas parfaitement identiques. Ce sont ces différences qui avaient fait envisager au départ l'existence de tours d'angle.

L'image de la façade nord se retrouve au sud, du moins dans les grandes lignes: à la base, un porche à deux colonnes ouvrant sur une sorte de faux vestibule, de fait une sorte de grande exèdre fermée, à la manière de l'opisthodome d'un temple grec. A l'étage, cette fois, non plus loggia largement ouverte, mais très probablement un système de petites baies analogues à celles percées dans les massifs d'angle.

La restitution des longs côtés offre la même part de certitudes et d'incertitudes. Au niveau du sol, entre les deux massifs nord et sud, sept grandes baies (hautes de 2 et larges de 1m. environ et séparées par des orthostates larges de 2m.) faisaient ou plus exactement font encore, ou de nouveau, brèche dans la muraille; trois baies semblables ouvraient au sud vers le faux vestibule. A l'étage, comme il a déjà été dit, la structure des massifs d'angle reproduit celle des façades aux dimensions près. Dans la partie intermédiaire, une succession de petites baies séparées par des meneaux décorés articulaient le mur et éclairaient l'intérieur. C'est actuellement, pour ce qui est des faces externes, la partie la moins bien connue de l'édifice et qu'il sera peut-être toujours difficile de restituer dans le détail.

Dans l'ensemble cependant, comme on le voit, l'image de ce bâtiment resurgit sous nos yeux avec une exactitude suffisante et c'est une image insolite qui ne suggère immédiatement rien de semblable. Un monument unique dans son genre et c'est la constatation que nous sommes encore amenés à faire quand nous abordons l'intérieur de l'édifice.

L'étude de l'intérieur a été rendue difficile et le reste toujours, en raison de l'existence de niveaux tardifs qui l'occupent dans sa totalité. Sans doute la situation est-elle simple pour les massifs nord et sud. Au nord, le porche mène à un vestibule compris entre la cage d'escalier, à l'est, et une pièce, dans laquelle on peut reconnaître un corps de garde, à l'ouest. Au sud, une porte comprise entre deux fenêtres donnait accès à l'intérieur; ces ouvertures possèdent un décor architectural, au moins ébauché, tout comme les autres portes et fenêtres du vestibule. Le dispositif est symétrique au sud, pour ce qui est du faux vestibule, à cela près qu'il ne possède pas de communication avec le reste du bâtiment. Rappelons seulement que son mur nord était percé de trois grandes baies contribuant à éclairer l' intérieur.

Pour le reste, pour toute la partie comprise entre les massifs angulaires, on se trouve en présence d'un réseau de murs délimitant une série de pièces, dont l'interprétation apparaît de prime abord comme difficile. Au surplus, l'état primitif a été complètement oblitéré par les niveaux tardifs. Il y a là un état byzantin ou, si l'on préfère, tardo-romain, très encombrant; il vaut mieux même parler d'une série d'états successifs et qu'il est difficile de distinguer dans le détail. De toute manière, on ne saurait guère préciser l'usage ou les usages successifs faits de cet ensemble tardif. Tout ce que l'on peut dire pour cette période, c'est qu'à un état monumental premier en succède un autre du type habitation. Le tremblement de terre qui fit écrouler les deux porches nord et sud imposa aussi à un certain moment le déplacement de l'entrée du nord sur le côté est.

Le fait le plus important est que ces installations tardives se situent à un niveau plus élevé que celui du vestibule nord offrant le point O. On constate de façon tout à fait évidente qu'à une certaine date l'intérieur fut remblayé méthodiquement à peu près au niveau 1.70, un peu au-dessous des baies. En même temps, les murs internes plus anciens furent arasés à un niveau uniforme.

Constatation surprenante, mais certaine: les murs tardifs les plus importants sont implantés à l'aplomb de ces murs antérieurs, sans jamais reposer directement sur eux, mais séparés d'eux par un espace de ± 0.20 rempli de petites dalles, de pierres et de terre. On peut ainsi affirmer—et c'est un point sur lequel on a beaucoup hésité et sur lequel les conclusions de P. Lapp étaient diamétralement opposées—que les murs enfouis dans le remblai byzantin sont plus anciens et donc de fait hellénistiques; leurs fondations descendent au reste très bas.

Au reste, tout dans leur structure les oppose aux murs externes: ici, un appareillage de gros blocs de calcaire dur posés à joints secs et destinés à être ravalés; là, une maçonnerie de blocs irréguliers liés au mortier de sable et appelant un enduit ou un revêtement. Mais tels quels, ils sont de la

même date les uns et les autres. Quant au niveau hellénistique interne, j'ai pu en déterminer la place exacte grâce à des sondages pratiqués sur le côté est. On voit là que le mur externe est garni jusque sous les baies, du côté interne, d'un revêtement de petit appareil reposant sur une fondation en saillie. Cette fondation devait être surmontée d'un dallage: elle se trouve au niveau + 0.70; en restituant un dallage, on arrive au niveau + 0.90 pour le sol hellénistique interne. Cette différence de niveau avec le sol externe peut être considérée comme normale.

Que les murs internes aient fait partie d'un plan primitif hellénistique est démontré aussi par leur insertion dans une trame régulière dont les éléments se définissent toujours par un nombre entier de pieds. On restitue ainsi au sol le plan de façon certaine: il s'agit d'un dessin régulier, encore que de destination énigmatique. On peut seulement retracer une cheminement. Du vestibule nord on entrait dans une pièce qu'on peut appeler vestibule interne selon un dispositif bien connu, pièce qui était doublée par une autre de mêmes dimensions (nº 1). Un des points obscurs dans ce contexte est le passage entre le vestibule interne et cette deuxième pièce: on ne relève nulle trace d'un passage net. De la pièce nº 1, on accédait, par une porte aménagée à chaque extrémité, dans une sorte de couloir illuminé par les baies des longs côtés et qui faisait le tour de tout le corps central, aussi sur le côté sud, lui aussi illuminé par des baies. Le corps central comprenait, lui encore trois pièces, deux parallèles nord-sud et une tranversale est-ouest (nº 2, 3 et 4). Ces pièces sont à peu près de dimensions égales et accessibles seulement par une porte unique. Enfin le couloir permettait d'accéder aux pièces d'angle sud-est et sud-ouest légèrement surélevées.

Il convient d'ajouter que le vestibule interne était compris entre deux pièces carrées qui devaient être des bassins. Cette destination est pratiquement assurée par les panthères sculptées sur les faces externes des longs côtés est et ouest, panthères dont la gueule ouverte servait de déversoir, de fait de trop plein au bassin situé de l'autre côté du mur. Le bassin est communique aussi par une porte avec l'escalier.

Voilà donc les caractères descriptifs de cet extraordinaire monument. Mais comment l'interpréter?

Sur ce point encore, le restitution la plus diffusée est celle de C. Butler. Elle consiste à tracer le plan d'un grand espace central interne conçu dans une des solutions présentées comme une salle basilicale: les colonnades internes présumées avaient leurs correspondants dans des demi-colonnes engagées dans les baies des longs côtés. C'est, avec des variantes, l'image que P. Lapp a reprise dans l'Encyclopédie archéologique de la Terre Sainte. Mais la description que nous venons de fournir montre que cette restitution est contraire aux données matérielles de la ruine: la réalité première était toute différente de cette image arbitraire.

Ce que nous pouvons dire de la fonction du bâtiment peut-il nous servir à en concevoir l' agencement interne?

L'idée de la salle basilicale se rencontrait avec l'identification d'un temple, identification proposée d'abord par de Saulcy et qui avait aussi les faveurs de C. Butler et de P. Lapp. Mais une telle interprétation est contredite par le seul texte dont nous disposions, la description fournie par Fl. Josèphe. Ce dernier, qui n'a pas vu le monument, mais qui disposait d'une bonne source, le désigne par le terme de *baris*: ce n'est malheureusement pas un terme grec, ni même, semble-t-il, sémitique. On le retrouve assez souvent à la même époque et plusieurs fois chez l'auteur cité: c'est la désignation employée pour la forteresse Antonia à Jérusalem, c'est-à-dire la résidence du gouverneur romain, à la fois chateau fort et résidence. La résidence d'Hyrcan, le seigneur de Tyros, c'est bien ce que le monument peut avoir été, une résidence monumentale, richement décorée, protégée et agrémentée à la fois par le lac-dont il formait le centre. C'est bien la manifestation du goût de luxe et d'ostentation qui a dû caractériser un personnage de l'importance d'Hyrcan. Tenons-nous en donc au témoignage de Fl. Josèphe, qu'il n'existe aucune bonne raison de contester.

Ce retour au texte ne nous fournit cependant pas la clef pour l'interprétation de détail des locaux et malheureusement les termes de comparaison sont rares et d'ailleurs d'un genre tout différent. Les palais hellénistiques connus s'insèrent sans peine dans la tradition du palais grec ou oriental, dont l'élément de base est la cour entourée de pièces diverses sur ses côtés. Le qasr, lui, se présente, bien au contraire, comme un bloc avec entrée unique, comparable malgré tout *mutatis mutandis* avec un château médiéval. Le rez-de-chaussée, sur lequel nous pouvons seul nous livrer à quelques spéculations, offre une particularité remarquable: c'est en quelque sorte l'image inverse de celle que nous venons de rappeler pour les palais grecs et orientaux fermés vers l'extérieur et organisés autour d'un espace central à ciel ouvert. Le qasr comprend un noyau central fait de pièces fermées, et apparemment aveugles, entourées d'un long couloir bien éclairé. Une des interprétations possibles est celle d'une sorte de grand magasin, magasin d'armes et de provisions, avec des facilités pour la manipulation offertes par le couloir aux grandes baies.

Mais dira-t-on: la résidence? les pièces d'habitation? Ce bâtiment ne vient-il pas d'être défini comme un petit palais?

Le réponse est évidente: il y a l'étage. L'étage avec son système développé de loggias et de fenêtres pouvait précisément répondre aux nécessités d'une habitation. On retrouverait de la sorte une spécialisation propre à l'Orient entre le rez-de-chaussée, de fait ouvert, et un étage—un harem—séparé et d'accès plus difficile: un escalier unique y montait.

De cet étage que savons-nous? Trop peu de chose encore en ce moment. Les parties que l'on peut restituer à peu près—je l'ai déjà fait—sont les deux massifs nord et sud. Pour le reste, rien de bien sûr, des éléments d'architecture dispersés et malaisés à insérer dans une image d'ensemble.

C'est là que nous recontrons une difficulté supplémentaire: le problème de l'achèvement ou plus exactement de l'inachèvement du bâtiment.

La question est débattue depuis longtemps. Elle a été soulevée d'abord à propos des moulures et de leur décor

souvent restés en bosse, les unes comme l'autre. L'édifice en offre de surprenants exemples, ainsi les chapiteaux de la loggia nord, dans lequels de Saulcy crut pouvoir reconnaître des chapiteaux persans à têtes de cheval et qui ne sont en réalité que l'ébauche de chapiteaux corinthiens. Mais ce sont là des détails qui ne permettent pas de conclure. Beaucoup de monuments antiques n'ont jamais vu leur décor achevé.

Je crois, en ce qui me concerne, que la construction resta inachevée. Le destin même de son auteur, Hyrcan, qui connut à'Iraq al Amir la fin brutale de sa carrière et de sa vie offre à cela une explication suffisante.

Quand, en effet, on examine la ruine dans le détail, on est amené à conclure que le bâtiment fut abandonné, ouvert à tous les vents. On ne relève nulle part la trace de l'insertion des fenêtres ou des portes. De façon caractéristique, au porche nord, la porte du vestibule interne est munie d'une cavité de crapaudine à son linteau: mais la cavité correspondante au seuil fait défaut. Pas de plafonds conservés—ou presque. Ceux qui ont subsisté sont les absurdes plafonds mégalithiques des porches nord et sud. Nulle part enfin de trace pour un dallage, ou d'un sol autre qu'un sol de marche. Ces données s'accordent bien avec l'image de l'apparent inachèvement des murs internes, tous arrêtés à un même niveau, ou avec celui des deux bassins dans lesquels on ne relève nulle trace de l'enduit indispensable pour retenir l'eau.

Si l'on suppose—ce que l'on peut sans absurdité—que le bâtiment abandonné après Hyrcan fut à une date quelconque vidé complètement de tout ce qu'il y avait d'intéressant, notamment des dalles et des colonnes qui pouvaient s'y trouver, le résultat est pour nous le même: nous ne disposons plus des éléments nécessaires pour restituer l'image de l'aménagement interne primitif. Les blocs qu'on n'arrive pas à insérer dans les restitutions élaborées jusqu'à présent peuvent provenir de cet aménagement interne. Mais il peut s'agir aussi bien de résidus—dans le cas du démontage hypothétique—ou de blocs préparés et non mis en place, dans le cas de l'inachèvement.

C'est sur ce point précisément que l'absence de points de comparaison bien évidents constitue une gêne presque définitive. Il est pourtant pratiquement hors de doute que des édifices du même genre ont dû exister à l'époque hellénistique, et aussi bien plus anciennement que plus tardivement, dans l'aire culturelle à laquelle appartient 'Iraq al Amir. L'insuffisance des fouilles dans cette même aire est responsable de cette situation; mais on peut espérer que le développement des fouilles apportera une solution.

Cette impossibilité—qui n'est pas encore définitive—ne saurait nous empêcher de mettre en lumière les caractères principaux de cet édifice insolite. En un mot, il s'agit bien d'une construction d'époque hellénistique et plus précisément, au point de vue du style, d'un monument gréco-oriental.

P. Lapp avait cru nécessaire de pratiquer des sondages stratigraphiques pour préciser la date à l'aide de la céramique recueillie; il ne trouva que des tessons byzantins, témoins de l'occupation tardive du monument et guère de tessons plus anciens; nos sondages ont confirmé ce constat décévant, mais qu'on pouvait prévoir. Bien avant P. Lapp, C. Watzinger avait pu justifier la date hellénistique—celle fournie par Fl. Josèphe—par l'analyse des chapiteaux corinthiens qui sont prévitruviens de toute évidence. Le bâtiment bénéficie en effet d'un décor architectural grec. Les caractères hellénistiques en sont, outre les chapiteaux, les calices d'acanthe enveloppant les bases des colonnes et demi-colonnes, ou encore l'association des ordres doriques et corinthiens: association impossible plus anciennement et impossible de nouveau par la suite. Propre à l'architecture hellénistique aussi est la place donnée aux loggias et aux baies. Mais par ailleurs, nous l'avons déjà vu et souligné, la conception du plan et l'aménagement de l'intérieur n'ont rien d'hellénique, mais sont certainement de tradition orientale.

Le caractère gréco-oriental de l'édifice est sensible ailleurs. Ainsi dans la technique. A la base, une tradition orientale, très certainement syro-phénicienne, celle de l'appareil mégalithique associé aux blocs posés de chant; l'absence de lits parfaitement horizontaux d'un bout à l'autre du bâtiment accentue encore ce caractère. L'intervention d'équipes locales est évidente; elle devait être doublée par l'action d'autres équipes, de formation grecque celles-là, auxquelles était abandonnée l'exécution du décor architectural, de la mouluration et des colonnes: là plus rien d'oriental. Même les fameux merlons semblent avoir fait défaut.

Le dosage est inverse quand nous examinons la frise aux lions. Le principe même d'une frise de ce genre placée à la base d'un étage remonte à une lointaine tradition orientale; il en va de même du thème des fauves qui exécutent une ronde protectrice autour du monument. Mais en voici aussi l'interprétation grecque: les animaux ne se suivent pas dans une file uniforme et sans fin et les lions alternent avec les lionnes associées à leurs petits: c'est là un détail dans le goût pittoresque propre à l'époque hellénistique. Quant au style, il révèle des mains grecques, sans aucun doute possible, avec des traits d'époque très nets: la saillie générale du relief, très forte, le rendu de la musculature et des veines, entre autres. On a là d'excellents exemples de sculpture hellénistique et pour une fois bien datés. Et les mêmes réflexions s'imposent à la vue de la magnifique panthère sculptée à la base du long côté est: la pierre, qui n'est pas d'un coloris uniforme, suggère l'image d'une panthère tachetée—autre manifestation du goût pittoresque de l'époque.

Il n'existe pas dans l'aire de la Syrie et de la Palestine antiques de monument d'époque hellénistique de la même originalité. Sa redécouverte par la fouille et le travail de l'architecte s'imposait; sa restauration fait honneur à la Jordanie.

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Iraq el Amir: Excavations at the Monumental Gateway

Introduction

Since 1976, the Qasr el Abd has been the object of an extensive investigation by E. Will, with a view to a definitive publication. It is the most complete and most spectacular building of the Iraq el Amir site[1]. However, the entire site, with its original lay-out including the arrangement of caves, the construction of a dam and of an irrigation system, the establishment of agricultural terraces, as well as several monumental remains, is of exceptional interest, as the XIXth century travellers already noted. These installations, which appear to be the coherent components of a palatial estate, had already been enumerated by Flavius Josephus (*Ant. J.*, XII, 229–236) who turns out to be a remarkable help to our reading of the ancient landscape.

A general study of the site could not be undertaken without a certain number of soundings and limited excavations as, except for the Qasr, all remains are ruined and for the most part buried. This enterprise began with the excavations conducted by P. W. Lapp in 1961/62 in the area of the village and of the 'square building'. The monumental gateway situated at about 150 metres to the east–north east of the Qasr el Abd, was selected as the first objective. Its interest lies in its small dimensions and its state of preservation (four courses permanently remained visible) which permitted significant comparisons with the building techniques of the Qasr. It also offered the prospect that this less disturbed zone would help to furnish a more precise stratigraphically based chronology and to bring more light on the circumstances in which this building, clearly related to the Qasr el Abd, had been constructed. Finally because of its place and its function, this gateway could give a clue to the understanding of the relation between the area of the Qasr and the rest of the site.

Two digging campaigns in 1977 and 1978 provided sufficient information for a publication of the building[2], thanks to the generous help and to the warm co-operation of the Department of Antiquities of Jordan which, in particular, provided us with machines strong enough to allow the handling of several big blocks.

We shall limit our report to a few conclusions which these excavations have provided in the fields of architecture, stratigraphy and chronology, and the relationship between the gateway and the whole estate.

Architecture

Plan

The two campaigns have provided all the evidence necessary to construct the gateway up to a height of more than 9 metres. On the ground, the building appears as a monumental set of two piers of 3.26 × 3.35 metres flanking an opening 3.70 metres wide, the height of which can be reconstructed at 6.35 metres. These piers were separated by a passage, a rectangular space of 3.35 × 4.40 metres, narrowed in the angles by the projection of the four doorposts. The resulting recess in the two piers was meant to receive each of the doors when opened. The piers were connected by a single façade at the level of the lintel and the courses above, and also by a series of flagstones covering the doorway. These were set lengthwise and, leaning on the lintels, were partly inserted into the rear of the blocks of the ionic cornice.

Techniques

In this building we can recognize the use of two noticeably different techniques:

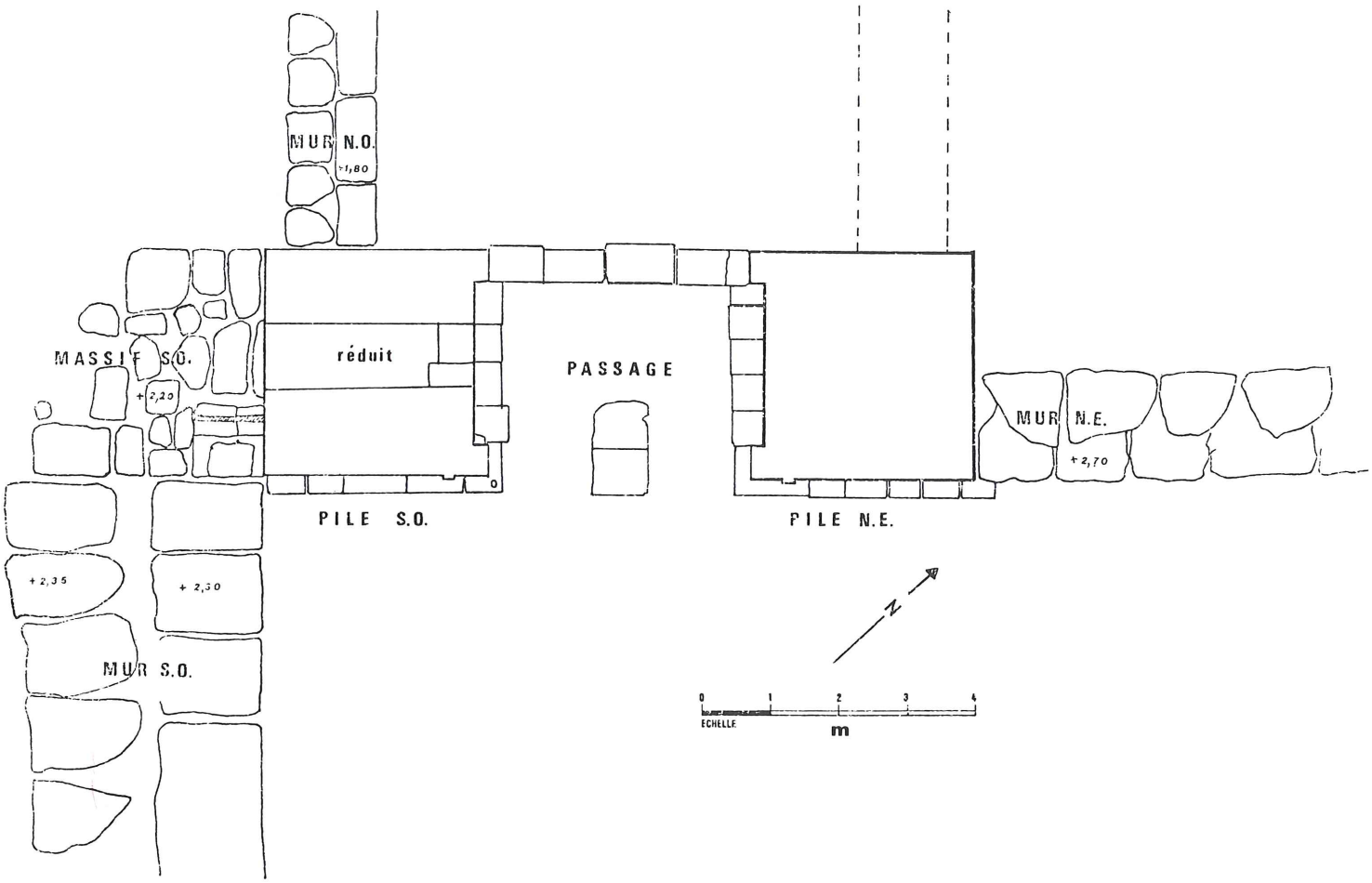
—the most spectacular one is megalithic and is used for the façade[3]. It is characterized not only by the dimensions of the blocks (up to 3.20 metres long), but also by their being set on

[1] See above p. 197.

[2] Cf. *Annual of the Department of Antiquities Jordan*, XXII, 1977/78, p. 102–107, PL. 63–64; XXVI, 1982(in the press). The final report will soon give all the references and full particulars about the questions summarized here. This gateway has been mentioned by: M. de Saulcy, *Mémoires sur les monuments d'Aârâq el Emyr*, Mémoires de l'Institut de France, Académie des Inscriptions et Belles-Lettres, 26, 1870, p. 87, 103, 196, pl. V; C. R. Conder, *The Survey of Eastern Palestine*, Londres, I, 1889, figure p. 84; H. C. Butler, *Publication Princeton University Archaeological Expedition to Syria*, Div. II, sect. A, part I, p. 19–20, fig. 9; J.-M. Etchemendy, *Le site d'Araq el Emir en Transjordanie*, Jerusalem, 1960 (Mémoire dactylographié à l'Institut de France, Académie des Inscriptions et Belles-Lettres), p. 75–76.

[3] Cf. E. Will, *Du trilithon de Baalbek et d'autres appareils colossaux*, Mélanges K. Michalowski, Varsovie, 1966, p. 725–729; L. H. Vincent, P. Steve, *Jérusalem de l'Ancien Testament*, Paris, 1954–56, p. 456; G. Contenau, *Civilisation phénicienne*, p. 163, 170; M. Dunand, in *The Role of the Phoenicians in the Interaction of Mediterranean Civilisation* (W. Ward), Beyrouth, 1966, p. 43; Bull. Mus. Beyrouth, 22, 1969, p. 103–107; A. von Gerkan, *Corolla L. Curtius*, p. 55–59.

1. Plan of the monumental gateway, Iraq el Amir



the edge, an arrangement which makes the greatest impression although it is eventually detrimental to the security of the building. The archaic way of bonding the courses, with tenons and mortises carved in the stones themselves is used for the façade only. The regular alternation of high courses (blocks set on edge) and of low courses (blocks set flat as dug from their quarry bed and stuck deeply in the pier), makes it different from the Qasrs bond. It corresponds to the alternating header/stretcher on edge known in Greek architecture, where its most characteristic forms seem to exist in the zones which are influenced by oriental building methods[4]. Here this typical laying must probably be interpreted as a sign of Phoenician influence.

—the techniques used in the rest of the building consist of courses of lesser height (no more than 0.58 metres). The alternation of blocks laid flat and on edge is also used here but the limited height of the stretchers makes it less unstable. The blocks are always assembled with sharp joints and without metallic sealings.

For these two different techniques, two different materials are used:

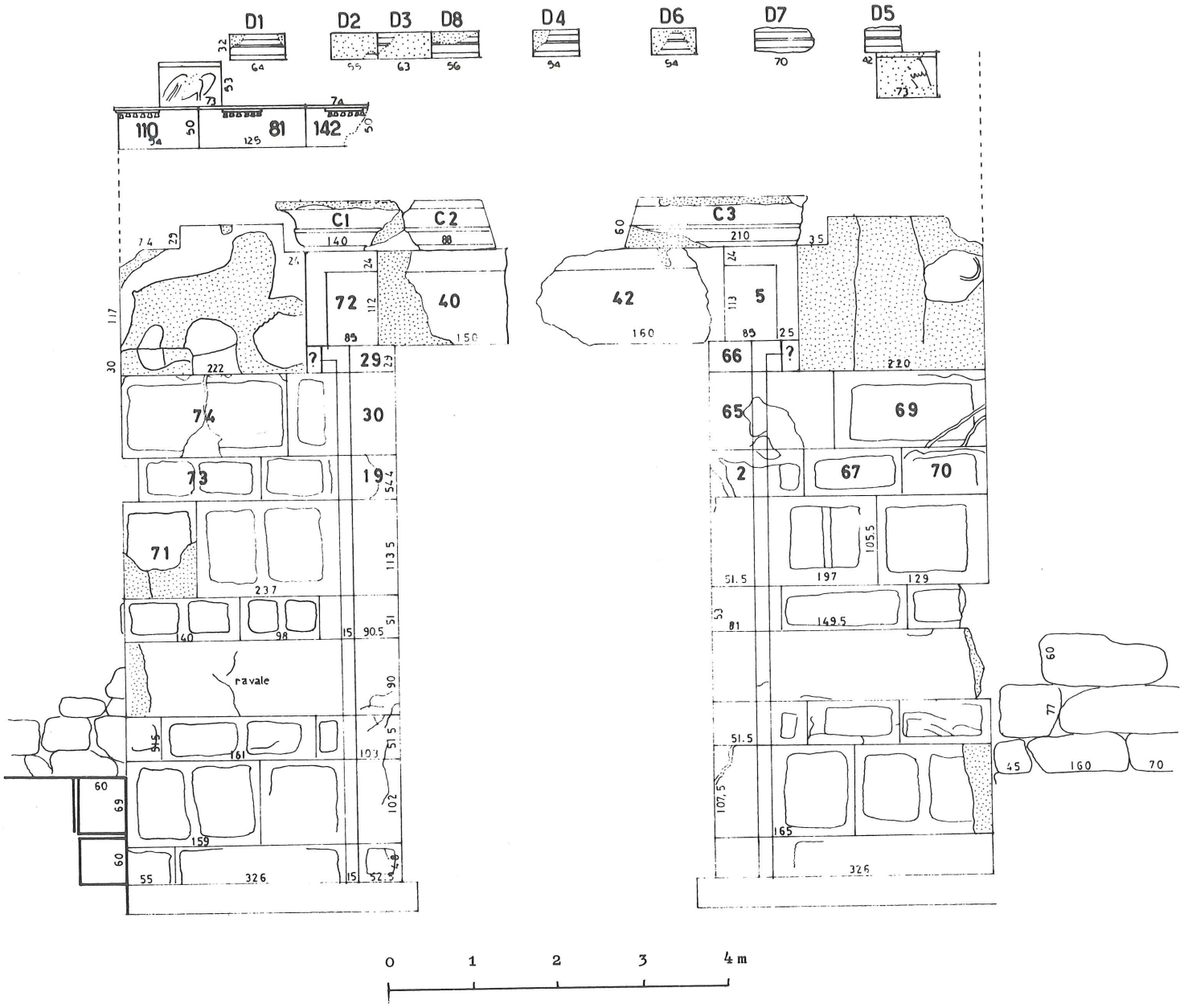
1) dolomite, hard and quite white, looking very much like marble (cf. ἐκ λίθου λευκοῦ, Fl. Josephus, XII, 230) is used mainly for the façade, in the rest of the building, it is used only for a few elements requiring a special resistance, such as the lintel of the hollow space in the south-west pier; 2) the other blocks being of soft, chalky and greyish limestone. This difference in the materials leads to different techniques of carving. The finishing of the dolomite blocks is achieved by very acute pegging, whereas the blocks of soft limestone bear curved oblique incisions which seem to reveal bush hammering (a method of obtaining an even rough texture).

Elevation

Courses 1 to 6 are *in situ* and remained partly visible above the ground. The style of the building—alternation of the courses, slight differences in size between the two door-posts, presence of a fascia underlining the opening—makes it possible without any hesitation to position most of the blocks scattered near the walls and to restore the whole elevation up to the level of the top of the ionic cornice which surmounted the lintel. All the blocks necessary to the restoration of 8 courses have been found and, since there were no other

[4] R. Martin, *Manuel d'architecture grecque*, I, Paris, 1965, p. 406–409.

2. Elevation of the monumental gateway, Iraq el Amir



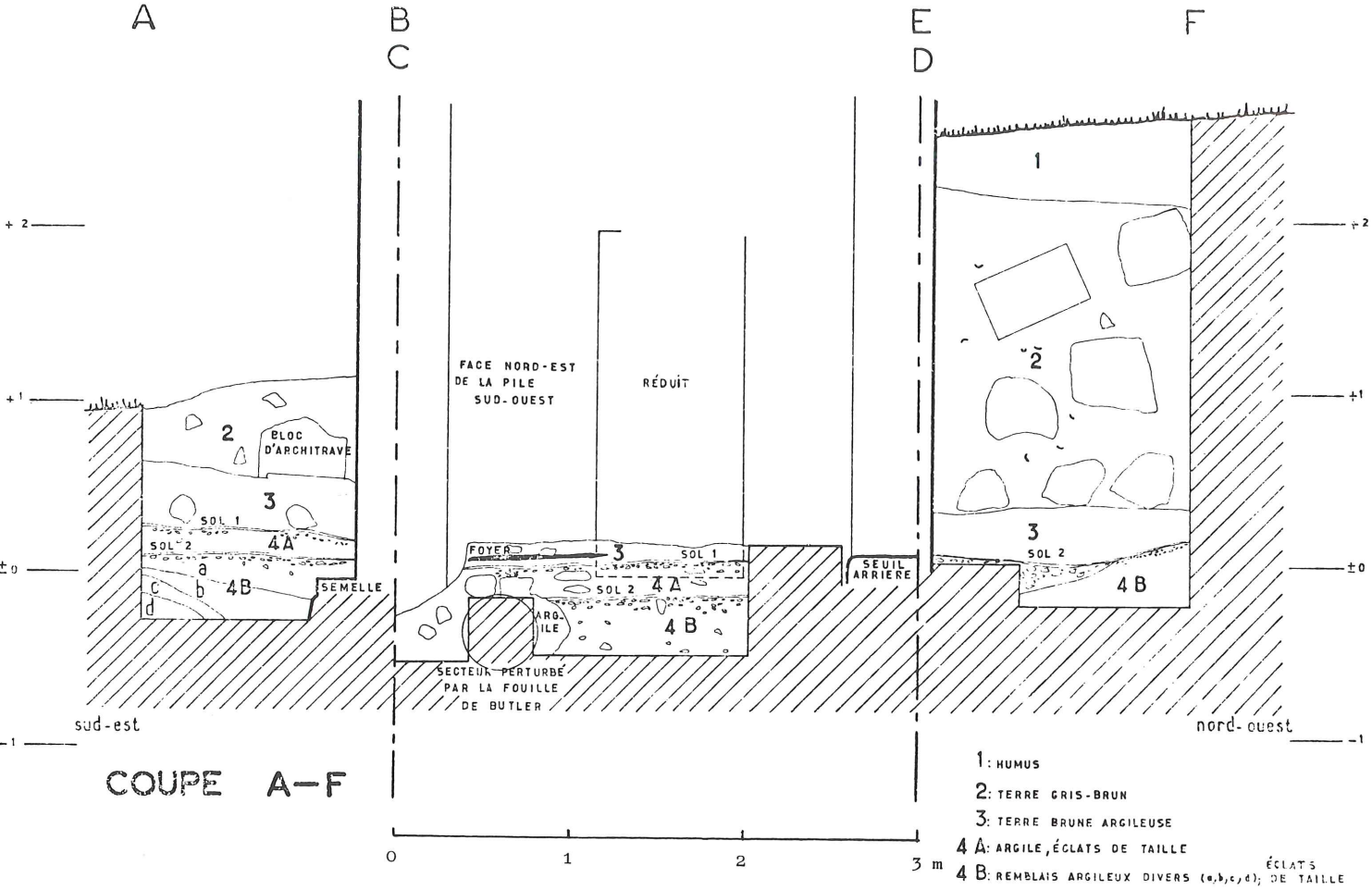
similar blocks, we can limit to this figure the number of the standard courses. On top of the upper courses, above the door-posts, two smaller blocks (29 and 66) were set, on which the fascia turns at a straight angle towards the outer side of the gateway. We can thus recognize the frame of a doric gate where the underlining of the jambs turns away so as to frame the lintel. Several pieces of the lintel (in three elements) have been found (72, 40, 42, 5). The course of the lintel is completed at each end by a block in which we can guess the shape of a feline. The notch made at the higher right angle of the block was probably to receive the block carrying the left end of the ionic cornice (C 1).

A series of blocks of a noticeably smaller size has also been found, belonging to a doric entablature: architrave blocks with *regulae* and *guttae* and cornice blocks with mutules. Two blocks decorated with an eagle could have been used as metopes. On the other hand, no triglyph has been found. Whereas there is no doubt this coherent group was set above the ionic cornice, we can wonder if it lay directly on the course with the cornice or if it was separated from it by one or several standard courses.

Decoration

The discovery of a rich architectural decoration, comparable to the Qasr decoration, was the unexpected event of the first campaign in 1977. Beyond the doric frame of the gateway

3. Stratigraphy of the monumental gateway, Iraq el Amir



crowned with an ionic cornice, a doric entablature has been found. This combination of orders we also see in the Qasr, where a block on a staircase door is carved with a doric frame joined to a cornice with palmettes. It is well attested in the Hellenistic period, for example on the façades of the rock cut tombs in Petra and in Jerusalem. C. Watzinger, who might be tempted to see in this combination the influence of Alexandrine art, more precisely compares the style of the palmettes alternating with araceae stems on the ionic cornice with the style of a sima block in the *Hieron* of Samothrace (around the beginning of the 2nd century BC)[5].

Stratigraphy and chronology

Stratigraphy

(See section a, SE/NW oriented, and section b at the back of the gateway, SW–NE oriented.)

Six stratigraphic soundings which were finally all connected together, make it possible to understand how the site was occupied and what the architectural plans were. In the following exposé, the levels are given in reference to a level O which coincides with the footing of the SW pier's south eastern face, which must be considered as the probable Hellenistic basic level, where the threshold of this gate should have been, if there had been one.

Like the Qasr el Abd, the gateway, i.e. the passage and the surroundings of the piers, was buried before the excavations in a mass of architectural blocks, stones and rather powdery earth which resulted from the earthquake that destroyed both monuments. The level, before digging was +1.50 to 2.70 metres high.

At the back of the gateway the stratum of humus (stratum 1) was particularly thick (40 cm.) because of a lemon tree plantation. *Stratum 2* consisting of collapsed elements and typically composed of many blocks of the gateway thrown down by the earthquake and of mixed pottery (Hellenistic to late Byzantine) was unevenly thick: more than 1.50 metres behind and in the passage, only 1 metre in front of the piers. One may note that the room in the SW pier was almost completely filled up with this stratum (only the big blocks were missing).

The first blocks that fell from the gateway, i.e. the elements

[5] *Denkmäler Palästinas*, II, Leipzig, 1935, p. 15–16; cf. P. W. Lehmann, *Excavations at Samothrace, , The Hieron*, I, 1969, p. 77, 178, 224; fig. 55, 131, 172.

of the crowning, came down on a level situated at +0.30/0.40 metres in most of the sectors. This level was not a floor.

Stratum 3 appears below this one. Generally less than 0.30 metres thick, its aspect varying from place to place, a brown compact clayed earth throughout, but more or less stony. Essentially this stratum shows a phase of abandonment preliminary to the earthquake. In the passage the lower part of this stratum is characterized by clear traces of burning, also visible in the lower part of the small room. So far we hesitate to date precisely the corresponding temporary occupation, the best clue being the edge of a cooking pot which seems to be of an early Roman period.

We shall now study the levels related to the gateway structure. An important point is the fact that there are two superimposed floors, both Hellenistic, neither of which is the actual floor that the builders intended for this gateway; when the work was suddenly stopped, neither the flagstone pavement meant to be related to the sole running at the foot of the piers in the passage, nor the front threshold symmetrical with the back threshold brought to light by the digging, had been laid. What is left consists only of levels of hasty work or utilization, not quite even and trodden earth characterized by rather fragmentary but well dated material and by numerous chips resulting from the stone cutting.

The upper floor (floor 1) is dated by seven coins (M 1–7) of which the six identifiable ones are from the reign of Antiochus III. Thus the last years of the third century BC are a *terminus post quem* for this floor. Due to the lack of later material on this floor and in the subsequent stratum it does not seem too audacious to adopt the chronology of Josephus (§228–236) and to consider that the building works of the gateway, as well as of the Qasr, took place at the end of the reign of Seleucus IV (187–175) and were interrupted in 175 BC.

This floor does not correspond to the visible architectural levels of the gateway: for example, it is too high, considering the footing underlining the base of the pier's SW façade. On the other hand it is associated with a hasty fixture allowing the closing of the gateway in its unfinished state: small slabs with metallic sockets set against the groove of the gateway on the soles of the piers and a block with a rabbet possibly used horizontally as an abutment and as a fastening for the scanty gateway doors. This is most probably the block that Butler (PPUAES, II A 1, p. 19), with a quite surprising hastiness, mistook for a threshold. In addition, it has somewhat disturbed the stratigraphy of the passage entrance and it has become impossible to know if the hasty closing and floor 1 correspond to the last phase of the construction or to a re-utilization shortly after 175 BC.

Under floor 1, we found Hellenistic strata contemporary to the building of the gateway. This contemporaneity is better established by the nature of these strata, especially of stratum 4A (chips of stone, greenish to brown clayish fill and even, behind the rear threshold, an architectural block left because it was spoilt and submerged in the clayish ground) than by the very fragmentary material finds. Floor 2 which is unquestionably a work floor (whereas floor 1 may be a very neglected utilization level) reveals definite Hellenistic material, but only in the shape of debris; only a very common cooking pot could be restored.

Below this stratum 4 B, a clayish filling of the foundation trenches, was almost without any material. The absence of floor 1 and of stratum 4 A at the rear of the gateway, behind the SW pier should be noted. It seems to be a proof in favour of the interpretation of floor 1 as a utilization level only laid at the front and in the passage.

On the whole the stratigraphy shows that this gateway has been only briefly used after the interruption of its construction. Neither was it really used later, except for the evidence of the ashy layer of stratum 3. There was no Byzantine re-occupation here as there was in the Qasr. The gateway area may, however, have been used at that time as an extensive dump, which explains the presence of pottery in stratum resulting from a collapse.

Concerning the date of the building itself, the lack of Byzantine disturbance and the lucky discovery of Antiochos III coins, added to a small amount of Hellenistic sherds, *in situ* and at the level of the fall, confirm the testimony of Josephus both for the date and for the existence of events in 175 BC important enough to cause the incompletion of this gateway lacking as it does a threshold and a pavement, and simply provided with a derisively weak closing.

Coins

Christian Augé who kindly agreed to examine the coins found in the excavation suggests the following:

A few clues are given by the 13 coins brought to light in the digging of the gateway, although wear and corrosion make 3 of them unreadable, a coin and a fragment found under the sole of the small slab with a socket (78/M 8 and 9, see above, floor no. 1) and one of the seven small coins found together (see above, *ibid.*). The other coins could be recognized: we note a chance find coin 78/M 10, Roman of the Constantinian period, struck at Antioch. Stratum 1 in the passage has yielded two very worn out bronze coins, one of Agrippa I (77/M 2), the other of the Maccabean period (77 M 3) and also a corroded Seleucid 2nd century coin. We must mention in particular the homogeneous series of six small bronze coins (78/M 1–6). These *halves*, comparatively little worn and quite distinct, must be attributed to the Antioch mint during the reign of Antiochos III; one of them (78/M 2) has on the reverse an elephant, the five others Apollo standing. They all belong to the series III of Newell, a little before the year 200 BC.

This distribution confirms what is already known about the money in circulation in the Iraq el Amir area during the Hellenistic and Roman periods: lacking silver coins, it gives us an idea of the small bronze coins in use, which were coming, depending on the period, from the Palestinian or North Syrian mints. The Lagid bronzes, sporadically attested up to Ptolemy

III, are replaced by numerous Seleucid small bronzes (4 samples examined), chiefly units or half units of Antiochus III, all produced at Antioch around the year 200 BC (11 pieces), then a few small coins of the 2nd century, such as one of Demetrios II. Afterwards Maccabaean coins appear (1 of Alexander Jannaeus).

After a long interruption during the Idumean dynasty, the use of Nabataean bronze coins, is attested in the 1st century BC (under Aretas IV), then episodically some coins of the Jewish revolt occur (one example of the year 67/68 AD). The later coins consist only of a few Roman *folles* of the 4th century struck at Antioch, coins very common all over the Near East; previously the neighbouring territories of Transjordan used, from the end of the 1st century until about the middle of the 3rd century, the bronze coins of several cities of the Decapolis or of the Provincia Arabia.

In contrast to the rarity and the sporadic repetition of these various coins, we must emphasize, among the local discoveries, the number of small Seleucid coins of Antiochus III, hardly worn and only about twenty years older than the settlement of Hyrcan.

The gateway and the estate

Function of the gateway and the walls

Thanks to P. Gentelle who has undertaken a study of ancient landscape and of its agricultural management, the campaign of 1978 has made it possible to clarify the relation between the monumental ensemble at the centre of which stands the Qasr, and to which the gateway belong, and the rest of the site. The gateway opens on to an enclosure, its walls forming on the outer side a right angled bend. A first wall, oriented south-east/north-west, abuts against the south angle of the SW pier, whereas a second wall extends the façade of the north-east pier towards the NE. The orientation of the gateway has nothing to do with the orientation of the Qasr, nor with the road relating the Qasr to the area of the caves, but it corresponds to the axis of a road, rectilinear for about a hundred metres, following down the dike which contained an artificial lake around the Qasr. Therefore the gateway was a part of the settlement programme that entirely remodelled this area, its climax being the construction of the Qasr. This programme can thus be dated about 175 BC and imputed to Hyrcan.

The southwest wall set into a notch made at the south angle of the pier did not stand higher than the upper bed of course 4. The angular blocks of courses 5 and 6 reveal an embossment of the same type as those of the façade on their southwest side which, therefore, must have been visible. The three blocks, however, which were set on edge behind the stretcher of course 4 are roughly squared and were probably to remain hidden. This very thick (nearly 3 metres) and not very high (2.91 metres) wall had a limited defensive efficiency, considering the height of the gateway. It was essentially not used as a rampart, but as a supporting wall. The difference in the thickness of the southwest and of the northeast walls can be explained by the fact that the latter is only a supporting wall, whereas the former is at the same time used as a dike in a zone where the embankments seem to have been considerably thicker. A sounding made in the back of the southwest pier revealed another supporting wall, oriented NW/SE along the road running on the axis of the gateway up to the road joining the Qasr to the caves area. A symmetrical wall abutting against the northeast pier can be restored. The architectural ensemble of the gateway was thus leaning from southwest to northeast on a heap of earth, the surface of which was more or less on the level of the top of course 4. The road probably ran through it between two supporting walls. The same conclusion can be drawn when we study the gateway structure. In the Middle East, a very skilful military architecture is known to have developed since the Bronze Age, in which there are numerous devices for protecting the approaches of the gates or for trapping assailants in the passage. It is surprising not to see any special process for reinforcing the protection of this main entrance. Even the piers are not projecting from the walls. We must emphasize the fact that Hyrcan had to settle in caves as shelter when he was threatened by his brothers' supporters. De Saulcy and his companion Captain Gélis were struck by the mediocre strategic efficiency of the Iraq-el-Amir site which is situated in a hollow[6]. The conclusions of De Saulcy that the Qasr could only have been a sanctuary were, however, overhasty.

The agricultural estate

In fact a careful examination of the site shows the predominant importance not of defence works, but of agricultural installations like terraces, supporting and enclosing walls, and trenches for irrigation. The choice of the site must be explained by the value and the attractiveness of a perennial stream, the Wadi Sîr, in a zone where relatively level spaces could be used at the foot of cliffs with a vertical front of 20 to 25 metres. The designation of the site has always been related to the river whose name undoubtedly derives from the ancient name of the site, *Tyros*. We must redefine our site and its surroundings as an agricultural estate intensively cultivated, probably more with gardens than with fields.

P. Gentelle has studied the installation and the functioning of a coherent farming system covering more than 200 hectares. Inclined slopes and terraces supported by dry stone walls were provided with water by small irrigation drains of which some sections were cut in laid out limestone blocks. Two main canals tap the water upstream in the bed of the Wadi Sîr. The present orchards and cultivation are evidence of the richness of the site in antiquity. A man like Hyrcan, whom Josephus shows as particularly greedy for gain, should have been interested in the economical value of this site. Such a richness had to be protected and we can consider the walls and the monumental gateway as the means for a limited protection. Their efficiency, naturally unsatisfactory against

[6] loc. cit. note 1, p. 95.

organized numerous troops well equipped for a regular siege, as were the Hellenistic royal armies, could be adequate against robbers or nomads threatening the fields and the gardens with their cattle.

The princely residence

These installations cannot however be completely explained by a mere agricultural exploitation. The Josephus insists more on their attractiveness and their luxury. We can establish that the megalithic techniques and the choice of the materials of the gate prove the intention of adding a monumental appearance to the façade. Its dimensions cannot be really justified by strategic reasons: they were chiefly meant to give a high impression of the estate owner's power, borrowing some architectural forms and decoration from an oriental tradition which is found as often in sanctuaries as in royal palaces. The only figures of decoration are eagles and wild beasts which also occupy a predominant place on the Qasr walls. The felines were symmetrically set and turned towards the opening. From the silhouette of the left feline we can guess that its head was facing inwards. This detail puts the emphasis on their apotropaïc role for protecting the passage. Even if the lion and the eagles are often represented in sanctuaries, they basically belong to the royal bestiary. They symbolize the human or divine royal power that shows its strength by destroying its antagonists.

Moreover the Iraq el Amir estate can be compared with a more specific form of oriental royal residence, the Iranian *paradeisos* which combines the luxurious buildings with the arrrangement of natural surroundings as gardens and parks[7]. On a papyrus from the archives of Zenon we can see a letter sent by a certain Toubias to Apollonios, dioiketes of Ptolemy II, dated from the 29th year of the latter's reign[8]. It says that Toubias will send several animals as a gift to Ptolemy. Beside horses, camels and dogs, there are offsprings of hemionager and onager. The letter emphasizes that all these animals have been tamed. From the presence of animals reproduced in captivity by expert cross-breeding we can conclude that a real animal breeding centre did exist.

On another papyrus which records the sale of a young girl slave to Zenon, the same Toubias appears, a native chief who held a military command in the Birta of Ammanitis, which is generally identified with the Iraq el Amir zone[9]. Therefore the Toubias breeding centre must be placed here. It corresponds to one of the most characteristic functions of a Persian *paradeisos* and Josephus (§233) precisely uses the word *paradeisos* to name the Tyros gardens.

From the above papyrus we can suppose that the Iraq el Emir site had already been partially laid out for agricultural exploitation around 265 BC, long before the Hyrcan period. The Greeks mentioned as witnesses were soldiers settled on the site. They were probably given pieces of agricultural ground. The inscription Ṭwbyh engraved on the entrance of two caves could be dated from the 4th–3rd century BC according to paleographic evidence[10].

The discovery of sherds of Iron Age II pottery on the site could indicate not only a previous occupation, but also very probably the beginning of an exploitation involving the Wadi Sîr's water. By pursuing the archaeological study of the site based on the systematic collection of ceramics and on soundings, we should be able to fix the chronology of these settlements. However, we can already conclude that in the first quarter of the 2nd century BC a new impulse was given to the arrangement of the site, especially in the Qasr area, coherently remodelled according to Josephus' statement (a new system of terraces and dike walls with a re-organization of the access roads, creation of the pool and the construction of the Qasr and of the monumental gateway). This work can be attributed to Hyrcan who most probably also completed the caves' installation. The fact that the installation and the equipment are incomplete seem to be due, as in the Qasr, to historical circumstances quoted by Plavius Josephus, to the short time Hyrcan was there and to his premature end by suicide.

We will not dwell here upon the traits which are borrowed from Hellenism. These are more decorative or technical than structural. Even if the lord of the estate depended on the more or less remote authority of a Hellenistic, Lagid or Seleucid king, his point of reference is the oriental dynast. Hyrcan tried to impose political authority and probably a tribute on his neighbours (Josephus, *Ant. J.* XII, 229, 236). The expression of this power very probably tried to conform to a Persian model, the ideal of the Great King or the Satrap. Note that Hyrcan had an Iranian name. It is not necessary to suppose that the influence came directly from Persia: the Satrap resident at Sidon, where a *paradeisos* is known to have existed, could have been a model nearer to home.

[7] K. G. Galling, s.v. *Paradeisos*, RE, 18, 3, c. 1131–1134; I. Kleemann, *Der Satrapensarkophag aus Sidon*, Berlin, 1958, p. 154, 160.

[8] C. C. Edgar, *Ann. Serv. Ant. Egypte*, 18, 1919, p. 231, no. 13; L. H. Vincent, *Rev. Bibl.* 29, 1920, p. 186 sq.

[9] C. C. Edgar, *Ann. Serv. Ant. Egypte*, 18, 1919, p. 164, no. 3; Vincent (*cit.* note 3, p. 465; L. H. Vincent, *Rev. Bibl.*, 29, 1920, p. 182 sq.

[10]. M. Cross, *Essays in Honor of W. F. Albright*, New York, 1961 p. 191, no. 13; 195, no. 75.

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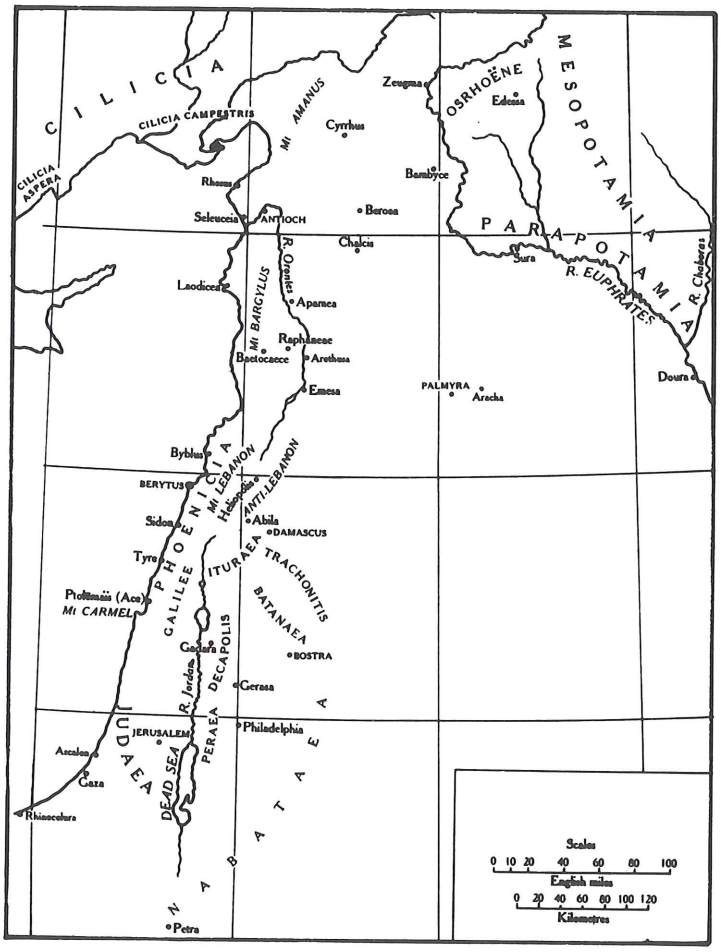
Urbanization of Palestine and Jordan in Hellenistic and Roman Times

This study consists of two main parts, both necessary for any inquiry into the problem of urbanization of Greater Syria in general, and for urban arrangements in Palestine and Jordan in particular, during the Hellenistic and Roman times. Part 1 bears on the character of urban forms of the Ptolemies, the Seleucids and the Romans in the area, in an attempt to contrast urban arrangements in Palestine and Jordan during the days of Ptolemaic control with the situation during the Seleucid and the succeeding Roman domination. Part 2 is on the urban arrangement of the city of Gerasa, modern Jerash, as it provides a valuable surviving example of an urban center in Palestine and Jordan belonging to the Hellenistic-Roman period. Our aim, therefore, is to present new material on the urbanization of this region during that period, as derived from the new evidence on the urban form of Gerasa, revealed through the result of three seasons of excavations at the site during the years 1975, '76 and '78; incorporated with our personal observations and notes on its general layout. The new evidence offers an opportunity for a re-evaluation of conclusions maintained on the problem, as well as to perceive, fairly local modifications to the schemes which were introduced into the area; and the way in which they were applied and adapted according to native concepts and cultural aspects. We hope that we have helped throw more light on such matter in an important era of the long history of this territory, and by so doing that we have furthered the study of classical archaeology of the Near East in, at least, one of its significant aspects.

Part 1

The study of classical town planning has produced various illuminating discussions which are expressive testimonies that this matter has been and still is controversial and important. Yet the towns in Palestine and Jordan belonging to Hellenistic and Roman times have received little attention. Furthermore, there has been a tendency to regard the architectural activity and town arrangement in this territory as part of the same architectural and urban development in the rest of the Graeca-Roman world, and was simply a phenomenon introduced into the area along with other classical institutions.

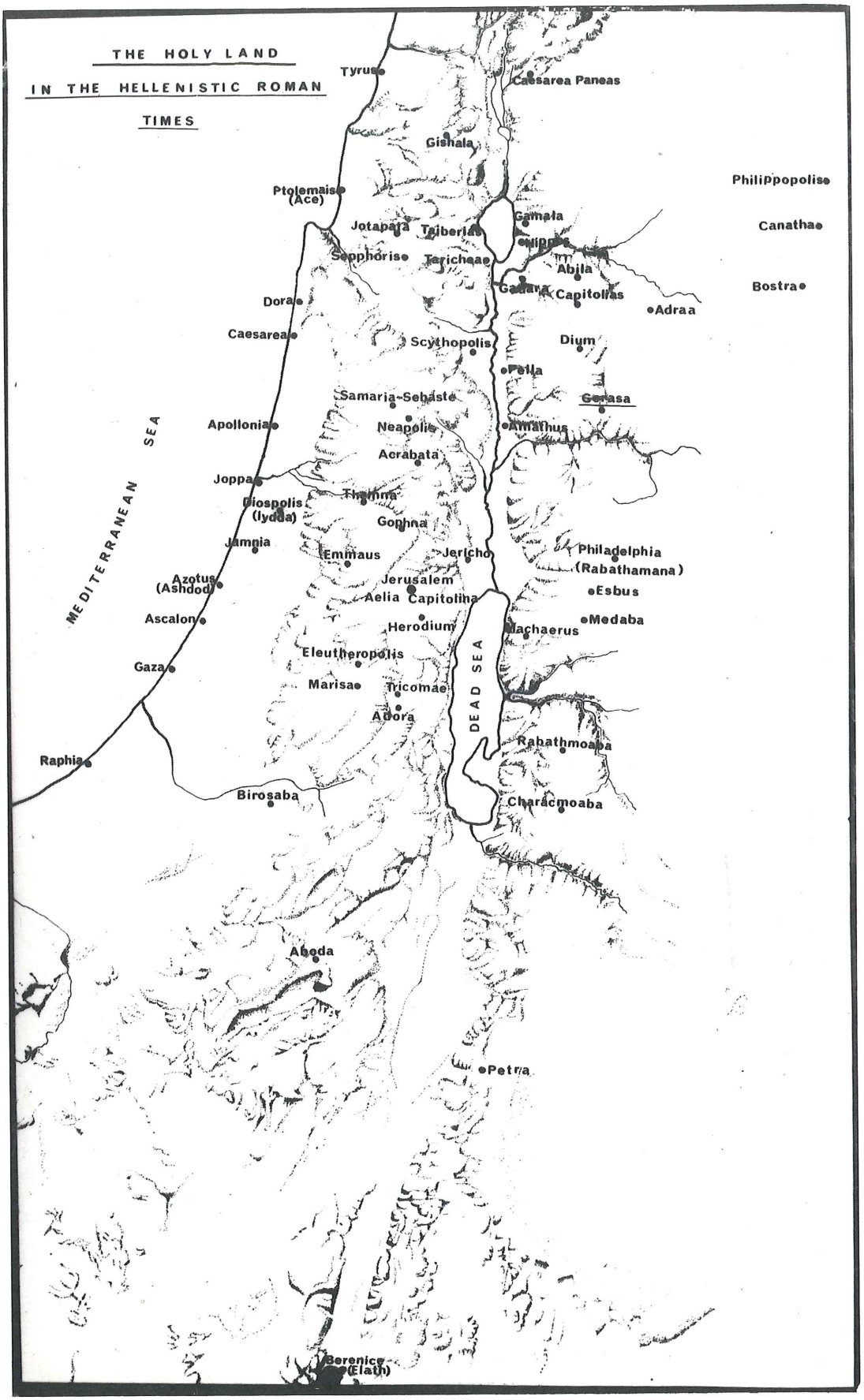
1.



This biased view overlooks the relative influence and importance of traditional and native tendencies on the total design (for the history, geography and the people, see Smith 1932; Avi-Yonah 1966; Aharoni 1967; Jones 1971).

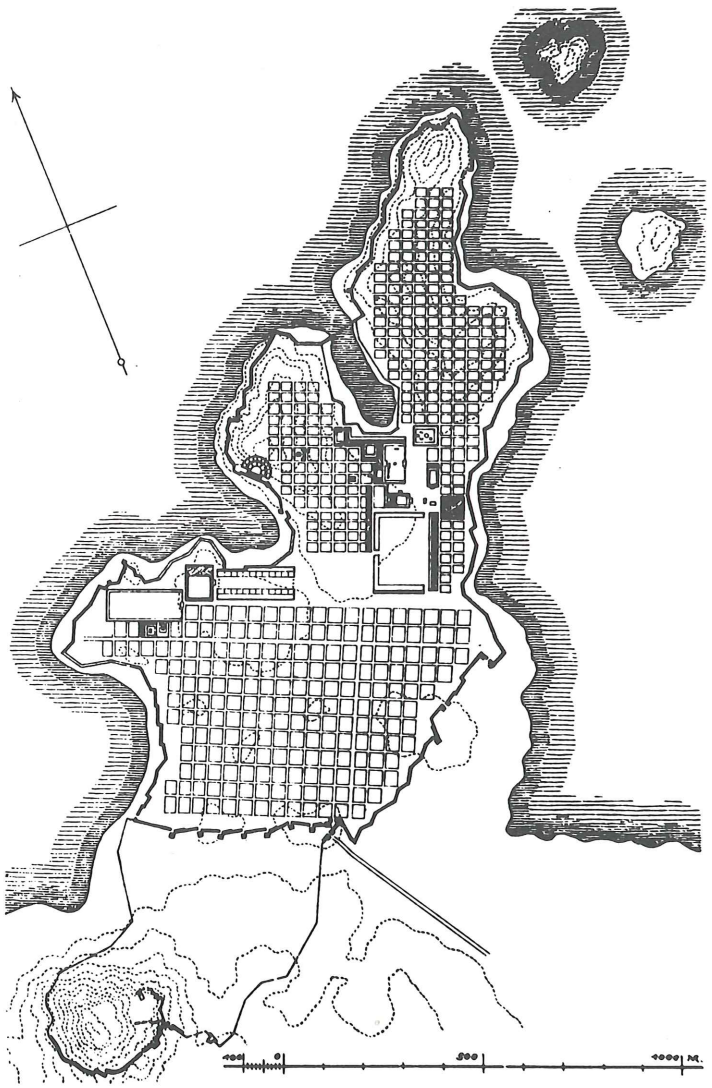
To a degree this is understandable. No doubt, Alexander's invasion of the Orient in 332 BC, did bring the Near East and the Mediterranean West into direct contact. The advent of the Greeks marks the entrance of a new cultural phenomenon

2. The Holy Land in the Hellenistic Roman Times.

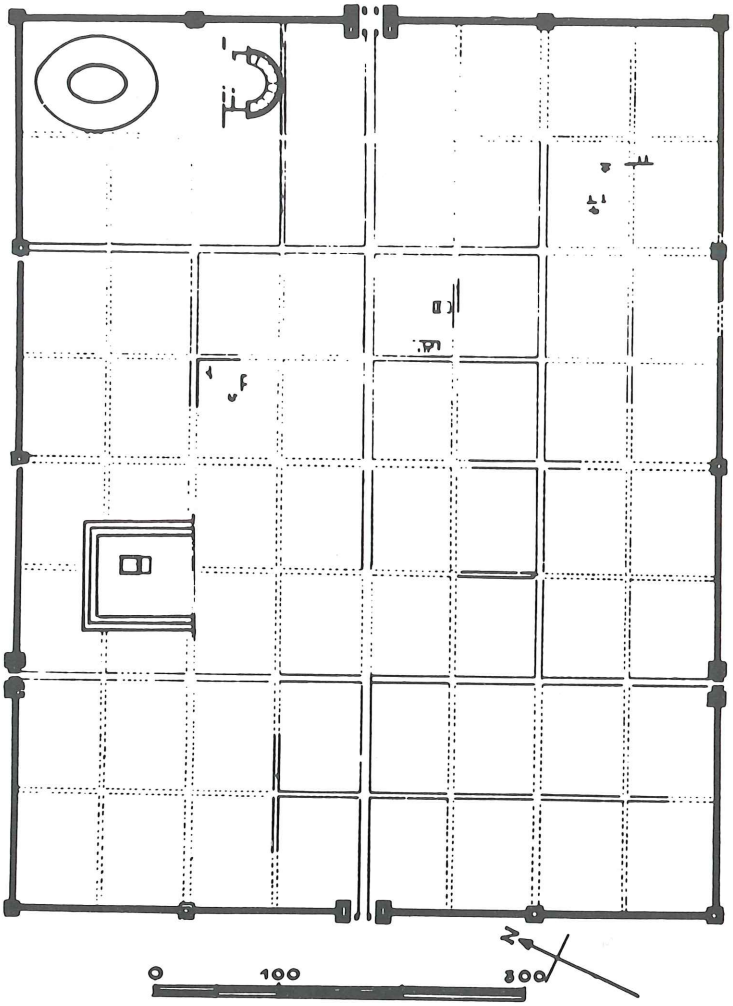


that had a stimulating and significant effect upon the cultural development of both East and West. The transformation of Greater Syria which took place around the turn of the fourth century BC, was not limited to political, social and economic changes; a profound change in its urban forms occured as well. Cities built or rebuilt (FIGS 1 and 2) from that time until the end of the Roman period (AD 324) in this territory (for discussion and listing of new or rebuilt cities in the Near East see: Jones 1940: 27–50, 1971: 236–56; Lauffrey 1958: 7–26), were organized in whole or in part in response to contemporary patterns and architectural aspects, while by that time systematic planning was recognized as a 'New Fashion' (Aristotle, Politics: 7.10.4. For discussion on the development of regular planning, see in particular: Haverfield 1913; von GerKan 1924; Lavedan 1926; Sauvaget 1941; Boëthius 1948, 1960, 1970; Martin 1951, 1956; Wycherley 1962; Kriesis 1965; Ward-Perkins 1974; Castagnoli 1971). But the nature and character of these cities was, in fact, a multiform rather than a uniform development, with two definable sources behind it. The *one* source is Western Mediterranean, the *other* is Eastern Oriental, as well as the distinctive indigenous local cultural concepts. Contemporary patterns were adapted to those aspects which were inspired by traditional characteristics, and required by local necessities and utiliterian concepts. Outwardly, its physical aspect corresponds to the general principles developed in the Mediterranean West, but its essence and nature are Oriental. Urban arrangements in Syria during that period exhibit in many ways the interaction of the various elements of which the new culture was composed and show the development of the tradition which was shaped by these elements. Consequently, any consideration of urban arrangements in Syria has to be looked upon as part of the major development of Hellenistic culture, a Hellenistic harvest, in its varied aspects. Therefore, the point is not the 'ready-made' patterns (FIGS 3a and 3b) introduced to the area, rather it is the way in which they were

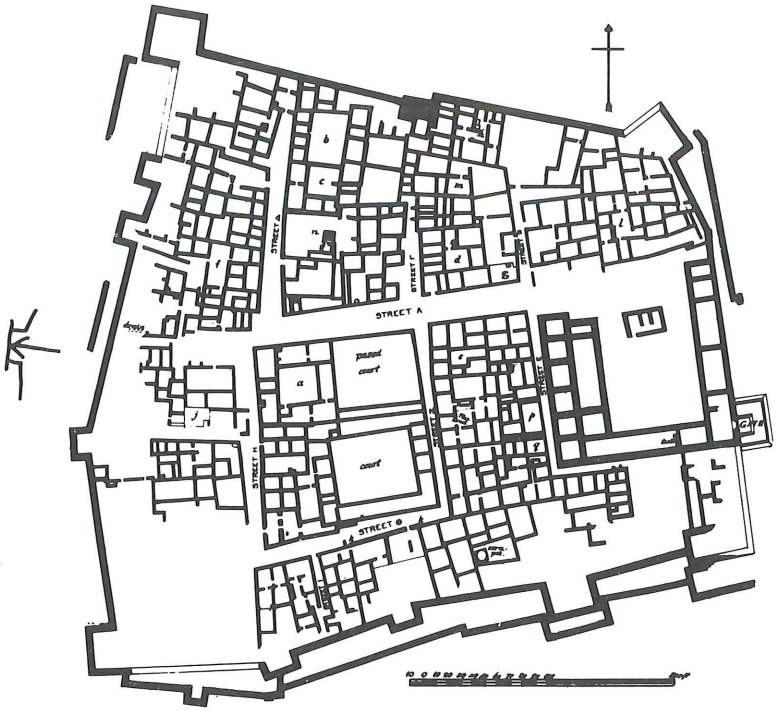
3a.



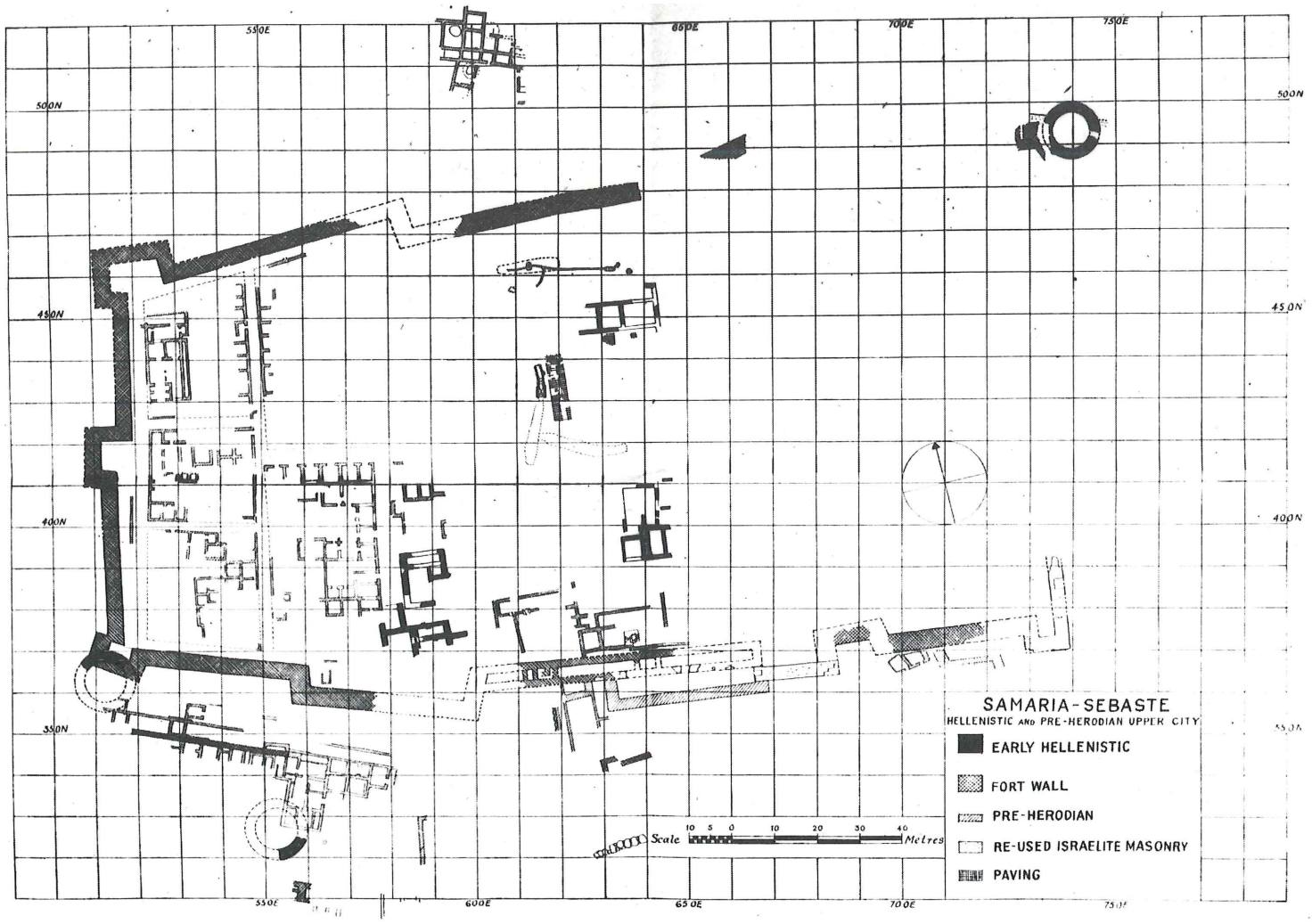
3b.



4a.


STREET A
STREET B
STREET H
passed court
court
GATE

4b.


550E
600E
650E
700E
750E
500N
450N
400N
350N
SAMARIA-SEBASTE
HELLENISTIC AND PRE-HERODIAN UPPER CITY
EARLY HELLENISTIC
FORT WALL
PRE-HERODIAN
RE-USED ISRAELITE MASONRY
PAVING
Scale
10 5 0 10 20 30 40
Metres

applied and adapted according to the traditional and characteristic elements of the Syrian town, and the disposition of structural elements in the scheme. From this concept, within the regular form—as a unifying element—of the Syrian city there were contrasting tendencies with Graeco-Roman typical arrangements. Here it is enough to state the fact that religious tendencies, manifest in all Oriental material culture from its beginning, reveal themselves in sharp contrast to the principles of the Graeco-Roman life. These tendencies guided the way in which foreign cultural aspects were accepted in Syria, giving the whole a distinctive and varied style. This contrast becomes apparent when comparing, for instance, Syrian temples related to the Graeco-Roman period with those of any other Graeco-Roman temples outside the region (Nelson 1944: 44–53; Oppenheim 1944: 54–63; Filson 1944: 77–88; Wright, G. E. 1944: 66–88; Wright, G. R. 1959: 8–16). Leo A. Oppenheim emphasizes the importance of the religious concept in the orient, in contrast to the Greeks pointing out that it was possible for them to replace their oldest sanctuaries in the acropolis by new temples in the lower city, while: 'This was not possible in the ancient Near East where the numinous presence of the deity is so precisely located that the sanctuaries cling forever to the same spot,' (1965: 131).

After the battle of Ipsus in 301 BC, the establishment of the Seleucid and Ptolemaic Kingdoms in Syria and Egypt brought significant changes upon the urban development of Greater Syria. But the processes of such development were not equally shared in its different parts. The Ptolemies controlled the great commercial harbours of the eastern Mediterranean at the Egyptian and Syrian coasts. All major commercial arteries from the Persian Gulf and the Arabian Peninsula passing through central and southern Syria, headed towards these centres. In order to retain complete monopoly over maritime commerce, it was necessary for the Ptolemies to keep control of the inland caravan trade routes (for discussion, see Bowresock 1971: 219–42, also Rostovtezeff 1932; Seyrig 1968: 57–63). Apparently, therefore, these were the decisive factors that shaped urban life in Palestine and Jordan during Ptolemaic control rather than any policy of urbanization carried out by the Seleucids in whose empire Syria, north and south, formed an integral part. These were the factors that characterized Ptolemaic existence in Syria and promoted the policy of establishing fortresses and garrison posts in Palestine and Jordan (for the different Seleucid and Ptolemaic policies and institutions, see: Bevan 1902; Bikerman 1938; Jones 1971: 240ff.; Hadas 1972: 24–28). Thus the Ptolemies were less active than were the Seleucids in carrying out an urbanizing policy.

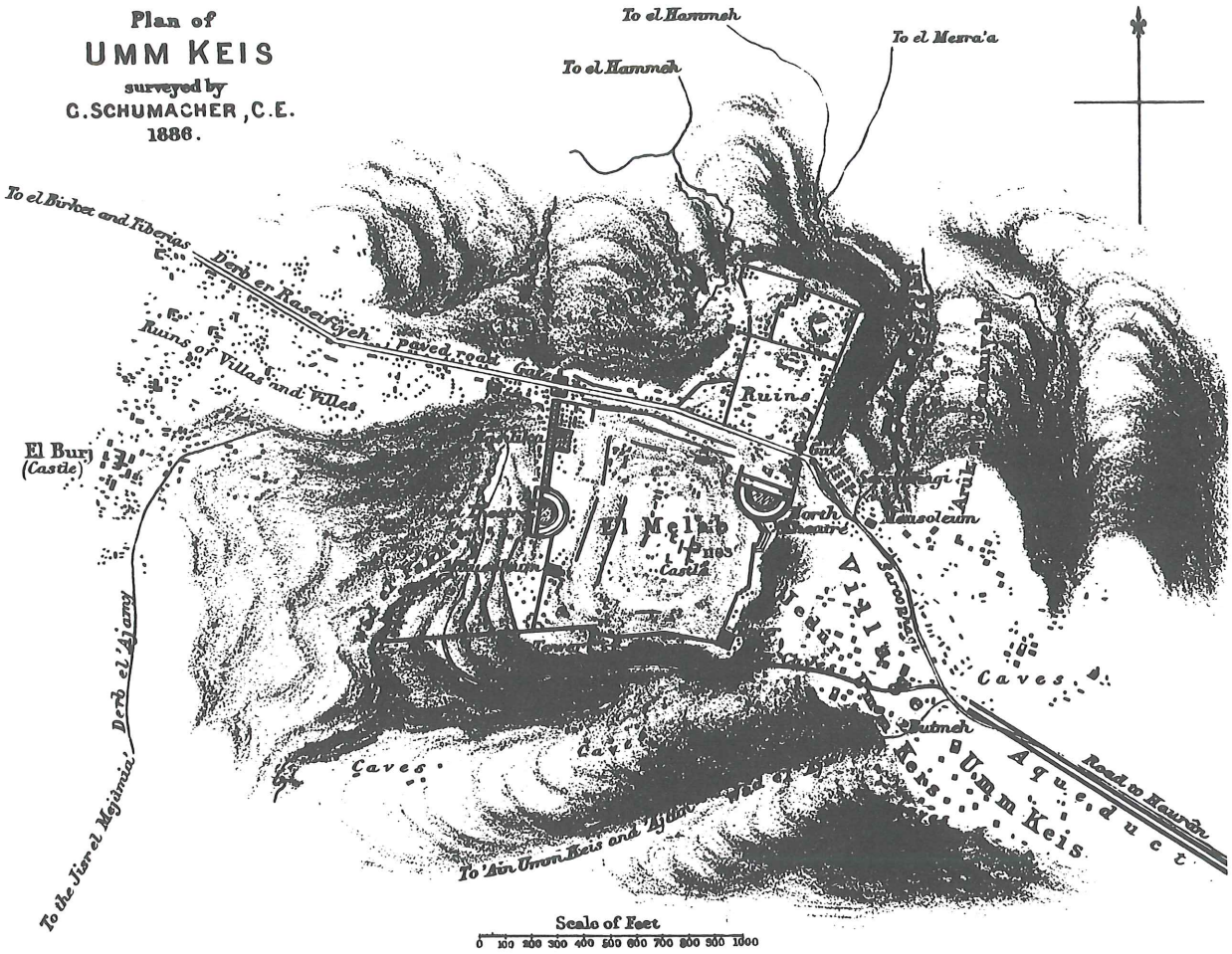
Ptolemaic urban forms in their part of Syria constitute characteristic features of their own, distinguishing themselves from those of the Seleucids (compare FIG. 4 with FIGS 4–6). A thorough study of the various Hellenistic plans of sites and architectural remains in Palestine and Jordan, which initially belonged to the Ptolemaic period, would bring to view common characteristic features which are in contrast with those of the Seleucid urban forms. (Among these sites are: Marisa, Samaria, Scythopolis, the Acropolis at Philadelphia, Rabbath Moab, Gerasa, Gadara, Hippum, Capitolias and Abila. Among the Seleucid sites are: Antioch, Laodicea, Apamea, Beroea, Dura-Europus, Damascus.) These features, as listed below, no doubt reflect natural military fortresses and garrison posts rather than the types of organized urban centres.

1) Urban arrangement is often confined to a limited area—acropolis or citadel—generally holding full command of the surroundings and communicating roads.
2) The scheme consists of a simple street system dominated by a main street bisecting the area and a limited number of minor streets on either side, at no corresponding points or at right angles, subdividing the area into a number of elongated strips. A few minor streets roughly parallel to the main axis are, sometimes, provided to divide some blocks as needed. In other words, a formal system of major and minor streets with corresponding blocks of strict symmetry or regularity is completely absent.
3) The absence of squares of agorai within the enclosure. Transverse walls are sometimes employed to seclude certain areas.
4) The fortifications form geometrical lines running around the summit with meander-like towers which are generally few and limited to the corners. A major structure usually forms part of the fortification system. Stretches of retaining or double walls are usually employed on the exterior. As a rule, it seems only one gate gives admission into the enclosure and this usually consists of a small passage-like entrance.
5) A striking aspect is the use of paving in the streets and lanes, as well as the careful attention to drainage, channeling and water reservoirs.

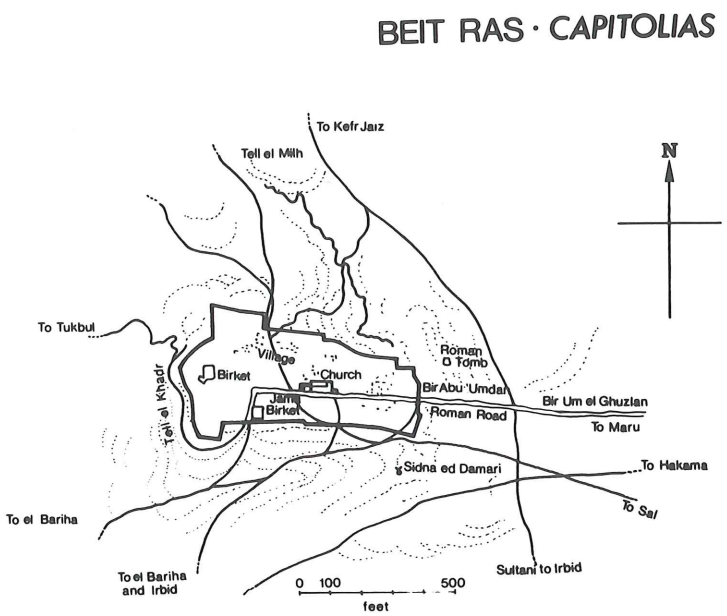
On the other hand, a glance at the plans of Seleucid urban forms (FIG. 7a and b) clearly reflects characteristic features of their own. At the outset of the period, urban development in the Seleucid part of Syria—i.e. north Syria—was the result of a succession of decisions undertaken by members of the Seleucid dynasty following a preconceived policy (Sauvaget 1941: 34–36), and within general specifications which sought to create organized urban centres, or to reorganize native towns for the same purpose. Those preconceived forms were practiced to achieve certain functional and practical efficiencies in the urban centres. The resulting forms provided for some functions similar to those of almost any Greek city, as well as those of the native town. The schemes of those centres integrate complex functional interrelationships of inherited local concepts and imposed foreign ones.

Further more, the layout of the Sleucid scheme is characterized by tendencies distinguishing it from contemporary patterns outside the region. These tendencies showing in the total design which is patterned by a central axis or several

5a.


Plan of
UMM KEIS
surveyed by
G. SCHUMACHER, C.E.
1886.
To el Hammeh
To el Hammeh
To el Mezra'a
To el Birket and Tiberias
Derb er Raseifiyeh
paved road
Ruins of Villas and Villes
Ruins
El Burj
(Castle)
El Melab
Castle
Mausoleum
Caves
Caves
Caves
Aqueduct
Road to Hauran
Umm Keis
To the Jisr el Mejâmia'
Derb el 'Ajamy
To 'Ain Umm Keis and 'Ajlun
Scale of Feet
0 100 200 300 400 500 600 700 800 900 1000

5b.


BEIT RAS · CAPITOLIAS
To Kefr Jaiz
Tell el Milh
N
To Tukbul
Village
Birket
Church
Roman Tomb
Bir Abu 'Umdar
Bir Um el Ghuzlan
Roman Road
To Maru
Tell el Khadr
Jama Birket
Sidna ed Damari
To Hakama
To Sal
To el Bariha
To el Bariha and Irbid
Sultani to Irbid
0 100 500
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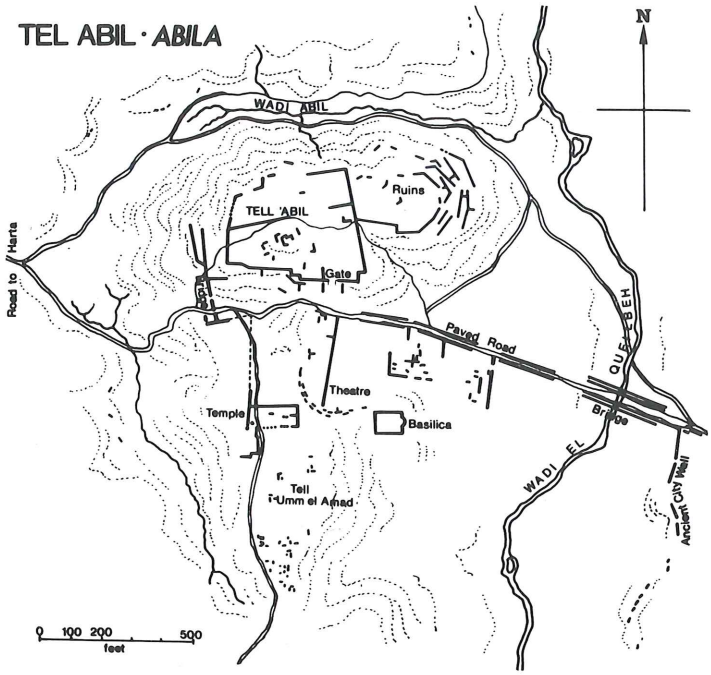
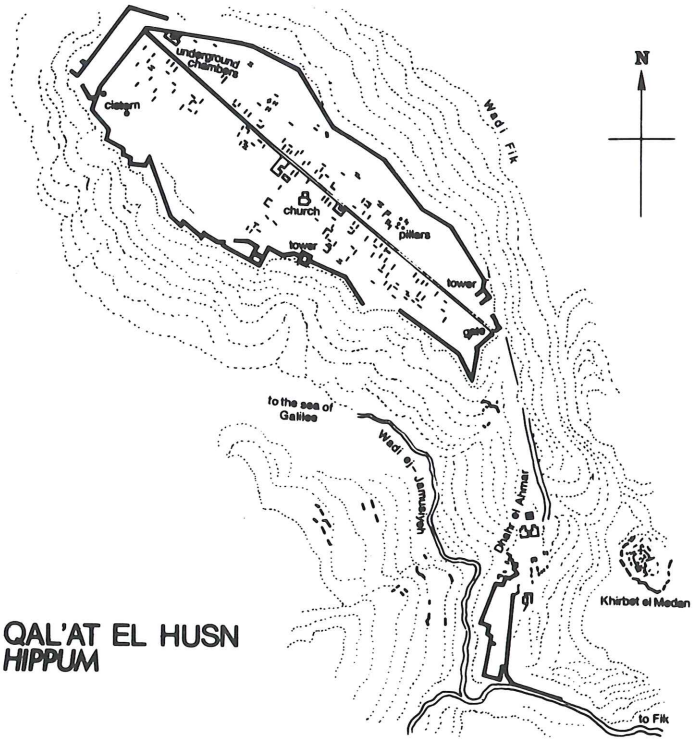
6a.



6b.

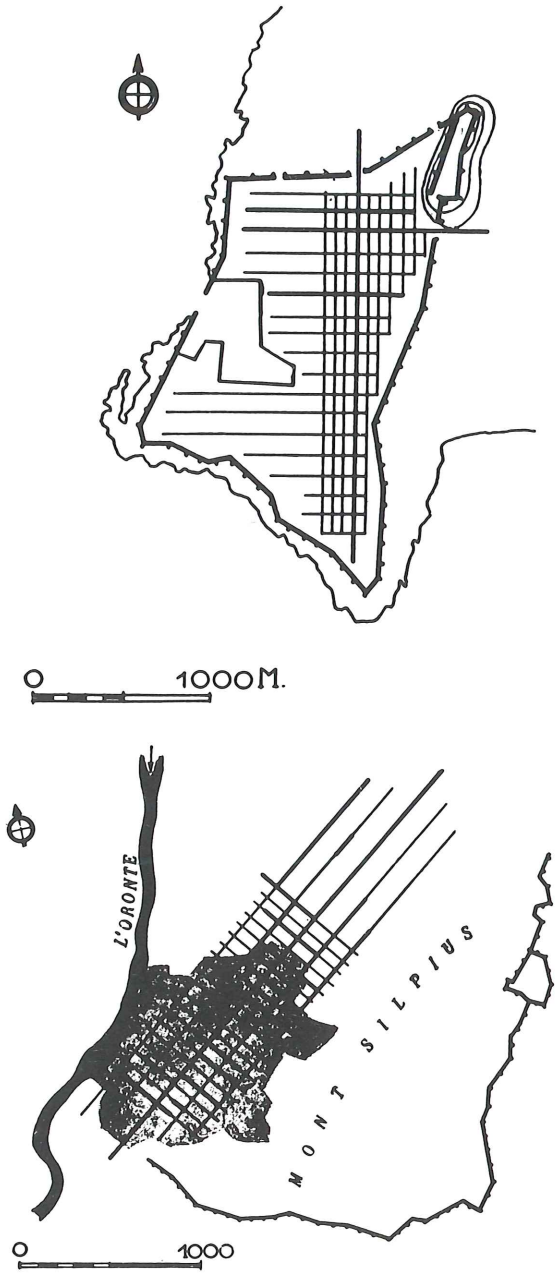


parallel axes usually running east–west, or nearly so, crossed by a number of north–south streets, a few of which are wider than the others. The resulting pattern is characterized by elongated blocks with their short sides generally along the major east–west axis or axes. In other words, the lengthwise axis, which is usually more continuous and wider, establishes longitudinal strips which are then subdivided into blocks.

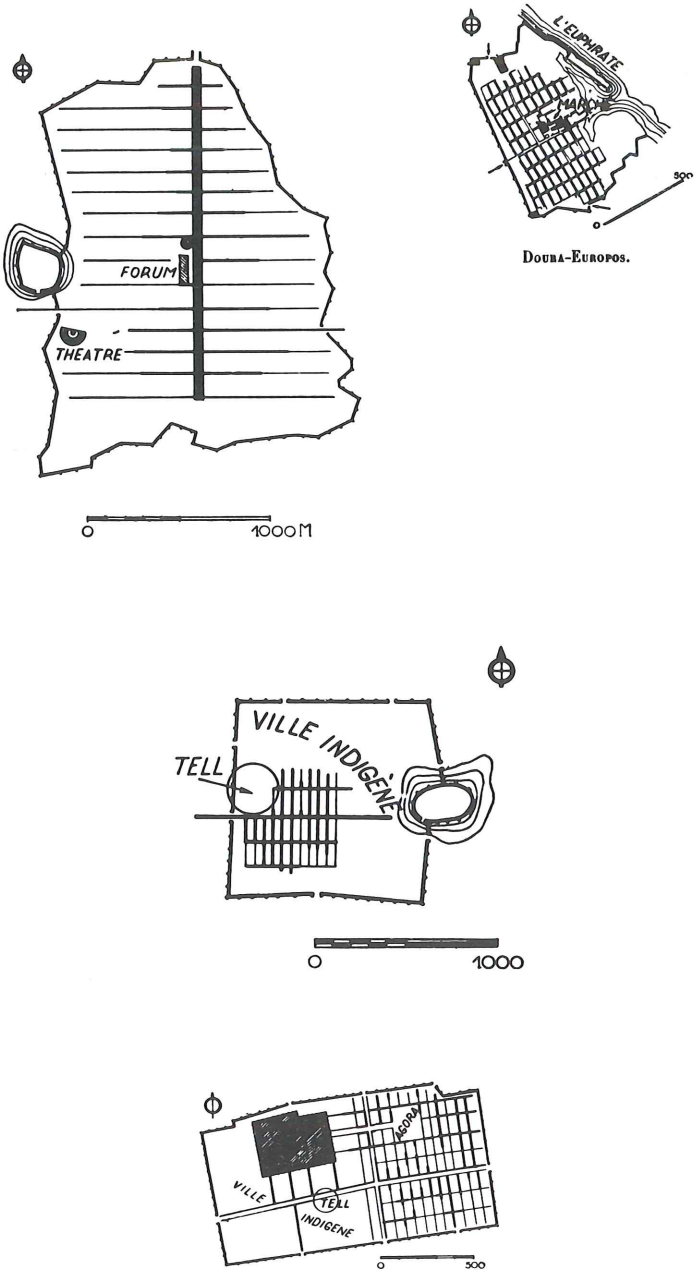
However, the Seleucid scheme is based on a distinction between major and minor thoroughfares. This pattern, in fact, is a successful combination of the axial system, which has an oriental legacy behind it (Boethius 1948: 4–5), and the grid pattern. Therefore, the idea of a main street—a processional way—as the base element in the urban arrangement within the regular pattern, forms a distinctive feature in the design of the Seleucid planning. This special emphasis on a main street, which is largely in the oriental tradition, is exhibited in the arrangements of Syrian towns throughout the Graeco-Roman period. At any rate, the general characteristics of the Seleucid urban form, as listed below, reveal themselves in sharp contrast to those of the Ptolemies.

1) The scheme emphasizes the concept of a master plan that controls future expansion without a focus to the plan. It is based on a thoroughfare, generally running east–west or nearly so, forming the major axis of the plan. Parallel to it, on either side, one or more major arteries and a number of ordinary streets of equal width and at equal distances divide the area into longitudinal east–west strips. Those are intersected at right angles by a number of north–south streets, some of which may be wider than the others but are not prominent in comparison with the major east–west axes. F. Castagnoli (1971: 32–34) recognizes such a scheme as patterned by avenues (Plataea), intersected by a number of narrow streets (Stenopoi).
2) The resulting blocks are usually rectangular of equal dimensions throughout the city, giving a standardized length to width ratio of 2 to 1. As a rule the short axes of the blocks are parallel to the main east–west axes. Such block subdivision and orientation has been referred to by Catagnoli as *per strigas* 'Analgous to the system known to Roman surveyors', (1971: 14; cf. Boethius 1960: 46–47).
3) There is no central focal street intersection. Squares and public buildings are related to the blocks as part of the grid rather than the streets.
4) The formal element of geometric regularity is dominant and, though the agora is generally near the centre, it is not dominant in the sense that other things are formally related to it as subordinates.
5) The street system has no relation to the fortification walls although both are one predetermined concept. The main gates always open onto the major east–west axis which generally stresses the natural flow of the traffic, suggesting a lateral relation.
6) The fortification walls follow the strategic contours of the terrain. They surround the city very loosely without any relation to the street system. Usually more than one gate give access to the enclosure. As a rule, towers are numerous and set at equal distances in the wall.
7) A citadel or acropolis usually holds a dominant spot in the fortification system.

7a.



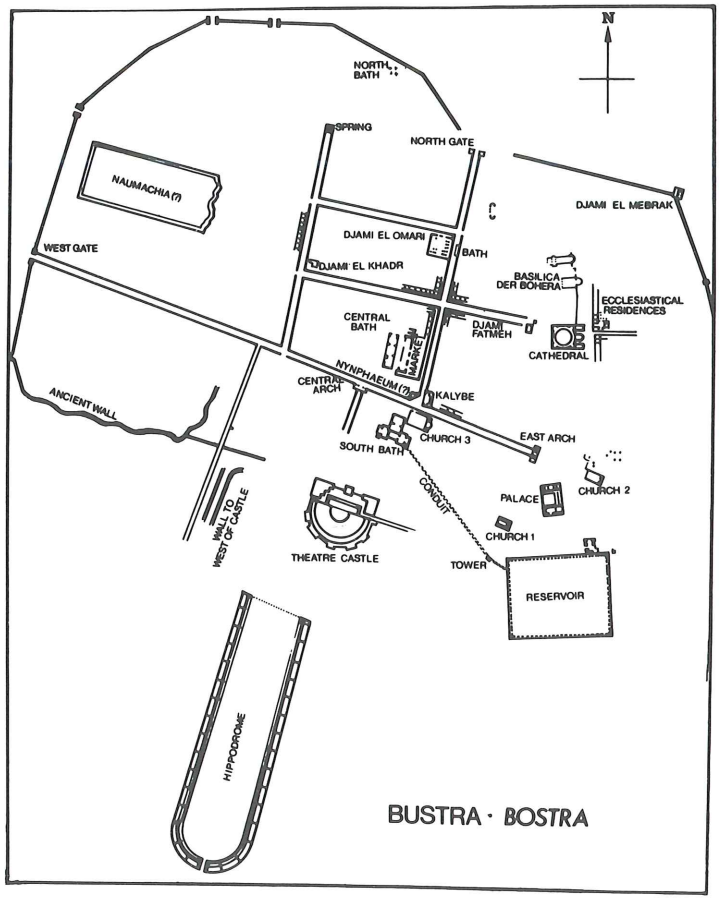
7b.



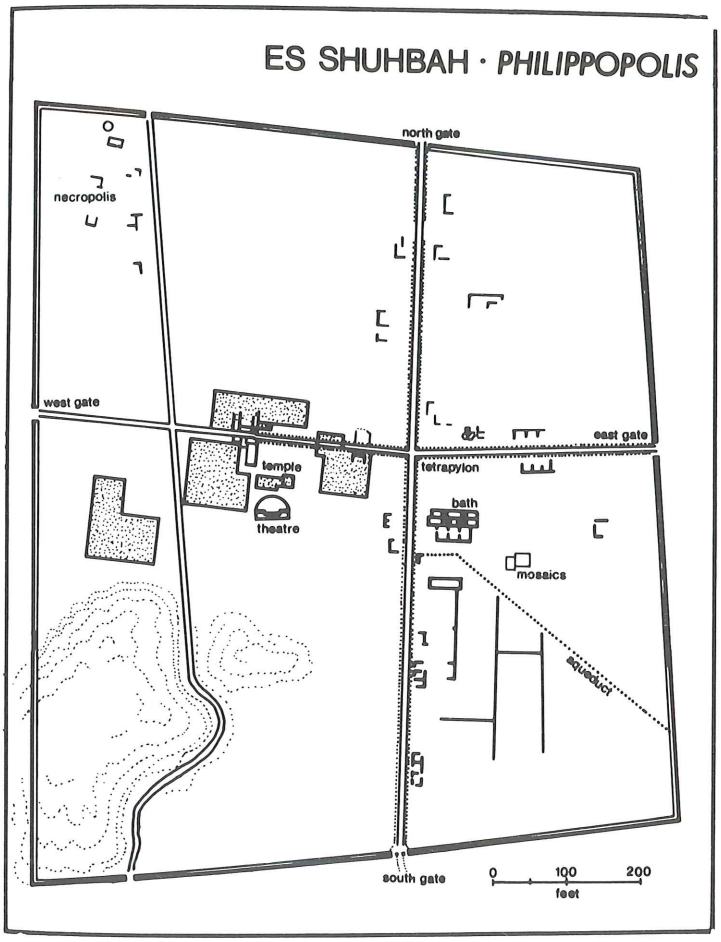
Political changes, however, that followed the battle of Panium (220 BC), had an important impact upon Palestine and Jordan. The most obvious evidence of this is the introduction of the Seleucid urbanization policy into this territory, and by the turn of the second century BC, local kings and dependencies had adopted the trend. Hence, a distinctive Hellenistic sub-type or form emerged. This sub-type is best illustrated in the enlarged or reorganized earlier plans like those of Antioch, and in the forms of the newly arranged urban centres of local kings and dependencies as at Philadelphia, Petra, Gerasa, Samaria and Palmyra. It is important to point out that the basic Hellenistic forms of the urbanized centres in Syria persisted through the subsequent period, however, they were modified later by the Romans (Sauvaget 1934: 81–82, 107, 112; Castagnoli 1971: 90; Ward-Perkins 1974: 31). This is illustrated in the plans of Antioch, Damascus, Gerasa, Samaria, Philadelphia and others where there are no traces of the Roman 'insulae' with their shops on the ground floor as we see them in new Roman foundations such as Bostra and Philippopolis (FIG. 8a and b). In other words, the Syrian system lacks the insulae 'which is a typical aspect of Roman street arrangement' (Wycherley 1951: 232–33; cf. Boethins 1948: 9–10, 15–17).

At the beginning of the Roman period the transformation

8a.



8b.

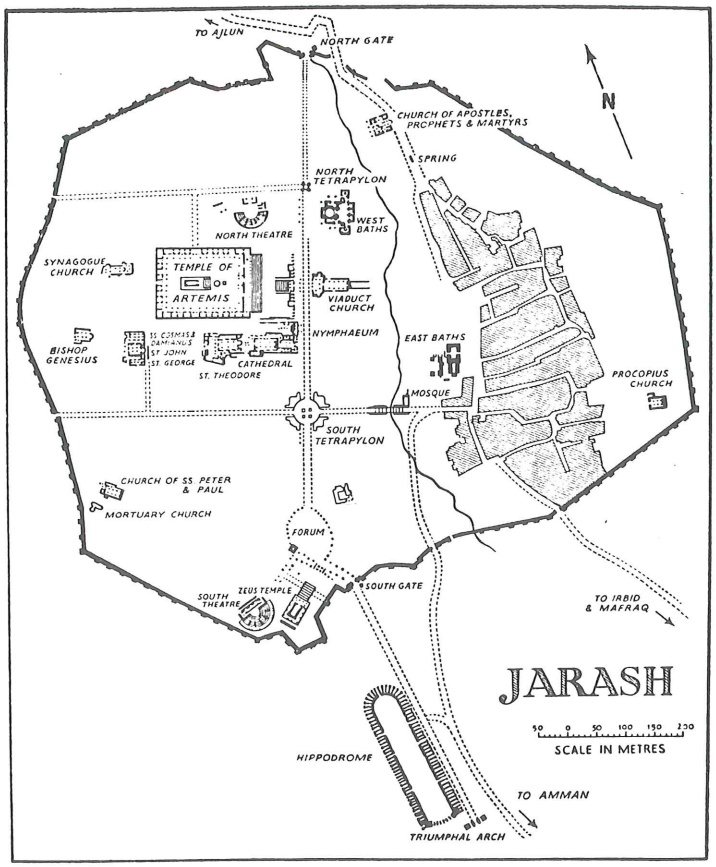


of the Hellenistic Seleucid pattern to a distinctive Syrian type has been accomplished. The character of the new type is neither simply the Greek geometrical nor the typically Roman axial. It is based on an axis or axes with rectangular subdivision but the major axis is often broken and is treated monumentally—colonnades, arches and tetrapylae—and related primarily to religious centres which themselves assumed monumental settings.

In the Roman period, Syrian city arrangement was, in fact, little influenced by the Roman concepts, and exhibits a differentiated local style. Native planners retained Hellenistic Seleucid principles of planning even until the second and third centuries AD. Axial intersection of crossing major streets—cardo and decumanus—which was introduced by the Romans, was employed here but in a fashion more in keeping with the Hellenistic and Oriental principles as seen in the plan of Gerasa (FIGS 9 and 10). (For contrasting tendencies between Greek and Roman urban schemes, and for the development of axiality in Roman planning, see: von Gerkan 1924: 144–146, 148, 159–160; Boethius 1948: 5–6, 9–10, 15–17, 1960; Wycherley 1951: 232–233, 1962: 32; Brown 1951: 108; Castagnoli 1971: 81.) Thus, the use of colonnades and porticoes with shops behind them reflect a Hellenistic Greek tradition, namely the *stoai*, coming to the East before it was established in Italy and before Roman intrusion into the area. These colonnaded streets became a distinctive Syrian style, and were the actual centres of civic life and commercial activity rather than 'agorai' or 'fora'. The separation between residential and commercial quarters is in agreement with the Hellenistic Greek and Oriental concepts. One can perceive such a concept in the later oriental concept of the 'Suq' or 'Bazar'. This relationship, in fact, is obviously indicated in the development of the agora at Dura-Europos (Brown 1944). Furthermore, the breaking of the course of long avenues by a slight bend or closing vistas by arches or tetrapla are further characteristic aspects of Syrian towns.

Thus, Roman influence seems to appear as a secondary intrusion, chiefly effective in monumental structures and technique. With the expansion of Roman imperial influence towards the East, by the turn of the first century BC, during the Pax Romana, an era of building began. Hence, city arrangement in Syria is characterized by the importance of the practical informal consideration. Apart from the use of a consistant system based on the concept of avenues 'plataea' and streets 'stenopoi', which we saw in Hellenistic arrangements, there were contrasting tendencies with a formal rigid

9. Jarash



practice. These tendencies are apparent in the axiality and the preference for architectural units symmetrically arranged along a central axis. This aspect is in agreement with Roman concept rather than with the Greeks who avoided symmetrical and monumental architecture (von Gerkan 1924: 144–146, 159–160). This tendency is clearly illustrated in the plan and disposition of architectural elements of Gerasa, Philadelphia, Petra, Palmyra, Bostra, as well as in the modified Hellenistic plans of Antioch, Damascus, Apamea and others.

In this period, the sacrifice of geometrical rigidity was paralleled with a definite adaptation to the natural flow of the site contours, achieving naturalistic and scenographic effects. Wide axial streets crossing at right angles, or nearly so, bubdivided by minor streets without any rigid application of the grid. This decrease in the emphasis of the grid itself is substituted by more interest in the orientation towards a focus, mainly temples which is, in fact, a revival if a typically oriental aspect. Here, the religious centres took on monumental settings and constituted an important element in the urban scheme, where major thoroughfares oriented with traffic towards them. Water channeling supplies and sewage disposal systems constituted further important elements in Syrian city planning.

Part 2

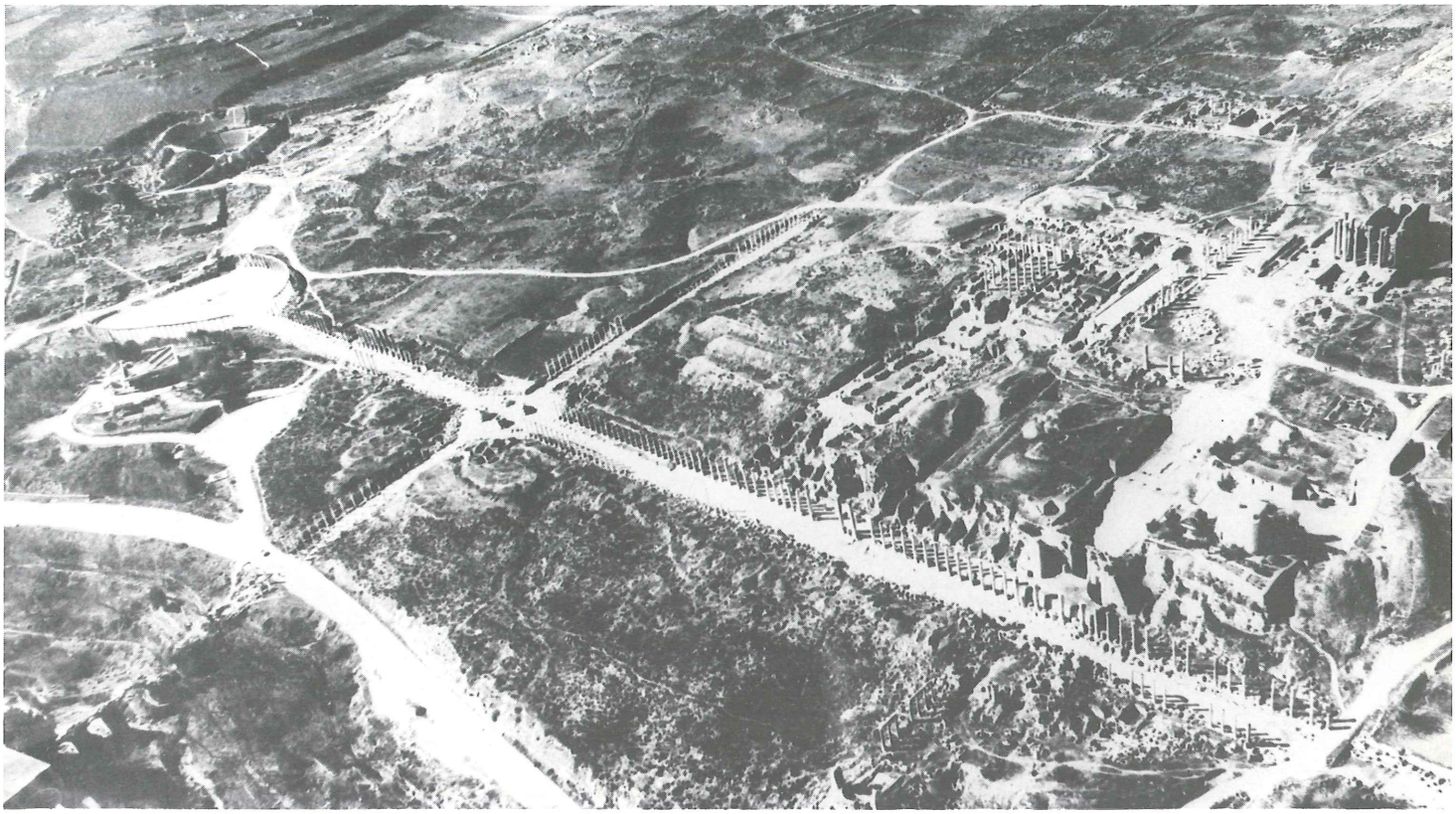
In terms of our objectives to clarify urban forms in Palestine and Jordan during the Hellenistic and Roman times, Gerasa seemed to exhibit extraordinary potentials that help us perceive the situation clearly. The topography of the city, certainly, presents a remarkably picturesque landscape that one would not think suitable for regular planning (FIG. 8). Yet the planners of Gerasa were able to employ a regular scheme for the layout of the city on the one hand, and exploited the natural features of the site on the other, maintaining the basic characteristics of the patterns common in Hellenistic Syria, but with less formality and in a more natural way. The prominent feature in the plan of Gerasa (FIGS 9 and 10), is a colonnaded avenue more than 800 metres long, and about 12 metres wide running along the major north east–south west axis from the North Gate to an oval shaped colonnaded plaza ('Forum?') a short distance within the South Gate. This minor thoroughfare is intersected, almost at right angles, by two colonnaded avenues of lesser width, 8 metres, and about 400 metres apart. This is what was generally known about the scheme of Gerasa.

Systematic archaeological investigations at Gerasa, initiated by the American School of Oriental Research during the years 1928–34 (Kraeling 1938), were primarily centred on architectural features of public and religious significance. Although the Kraeling Expedition was able to identify a few side streets measuring about 6 metres in width, none of them have been explored (Kraeling 1938: 15 'As a matter of fact it is only the cardo of which we have a clear conception'). With such partiality, none of the city blocks have been excavated and not a plan of a single dwelling has been revealed. Thus the plan of Gerasa drawn up by the Kraeling expedition displays only a partial aspect of its general layout and the disposition of various elements in its scheme. Therefore, little can be said about the layout of the city and less of its domestic and civil structures, and nothing about the private life of the town. Consequently, a detailed plan of Gerasa is lacking; meanwhile, its occupational history has remained rather obscure.

The work of the three seasons at Gerasa was part of a long-term joint project of the Department of Antiquities of Jordan and the Department of Archaeology at the University of Jordan aimed to achieve two main purposes. The first, is to trace the urban arrangement of Gerasa through all phases of its history, and second, to determine the statigraphic history of the town. Accordingly, the expedition conceived its primary efforts should be directed upon the south-west sector of the city (FIGS 9 and 11). This sector is fairly well defined by two major arteries—cardo and decumanus—religious and public structures—the Zeus temple and South theatre—and colonnaded oval plaza-Forum? The topography of this area makes its choice for a large residential sector evident. Its architectural features reflect no monumental significance. The area is strewn with well dressed and roughly shaped stones. Remains of walls which are still visible in the area would seem to agree with all the physical aspects and architectural concepts of domestic structures of a large residential quarter.

Because of the large size of the determined area of excava-

10.



tions, it was decided to centre our work upon three major spots: Areas A, B, C (FIG. 12). The general distribution of these areas was determined by taking into consideration certain important features, observations and finds made during the initial study of the site, which seemed to conform with our objectives. The exact location of Area A was based on features that postulated a side street intersecting the decuminus. Areas B and C are almost contiguous. The reason for their division is that each is located at two corresponding points in the western colonnade of the colonnaded oval plaza where they were given wider intercolumniation than the rest of the columns which were equally spaced. This exception at these points was also emphasized by a slight rise in the height of the architraves. This feature probably marked the places where side streets, coming down from the west entered the plaza. Area D was also determined by important features that postulate the existence of an important structure bounded by two side streets. Here there are four colossal columns with the first and fourth having a bracket at three-fourths of their heights. At either side of these columns are six smaller ones. Therefore, investigation at this spot has been in an effort to determine the nature of the area behind these columns as well as to excavate a small portion along the carda to demonstrate the function of this main avenue as a commercial centre by revealing the row of shops or other structures of commercial or public significance bounding it. In the third season our attention was drawn to Area E, between the colonnaded oval plaza and the South Gate in an effort to determine the nature of this area and how the plaza was approached from the South Gate.

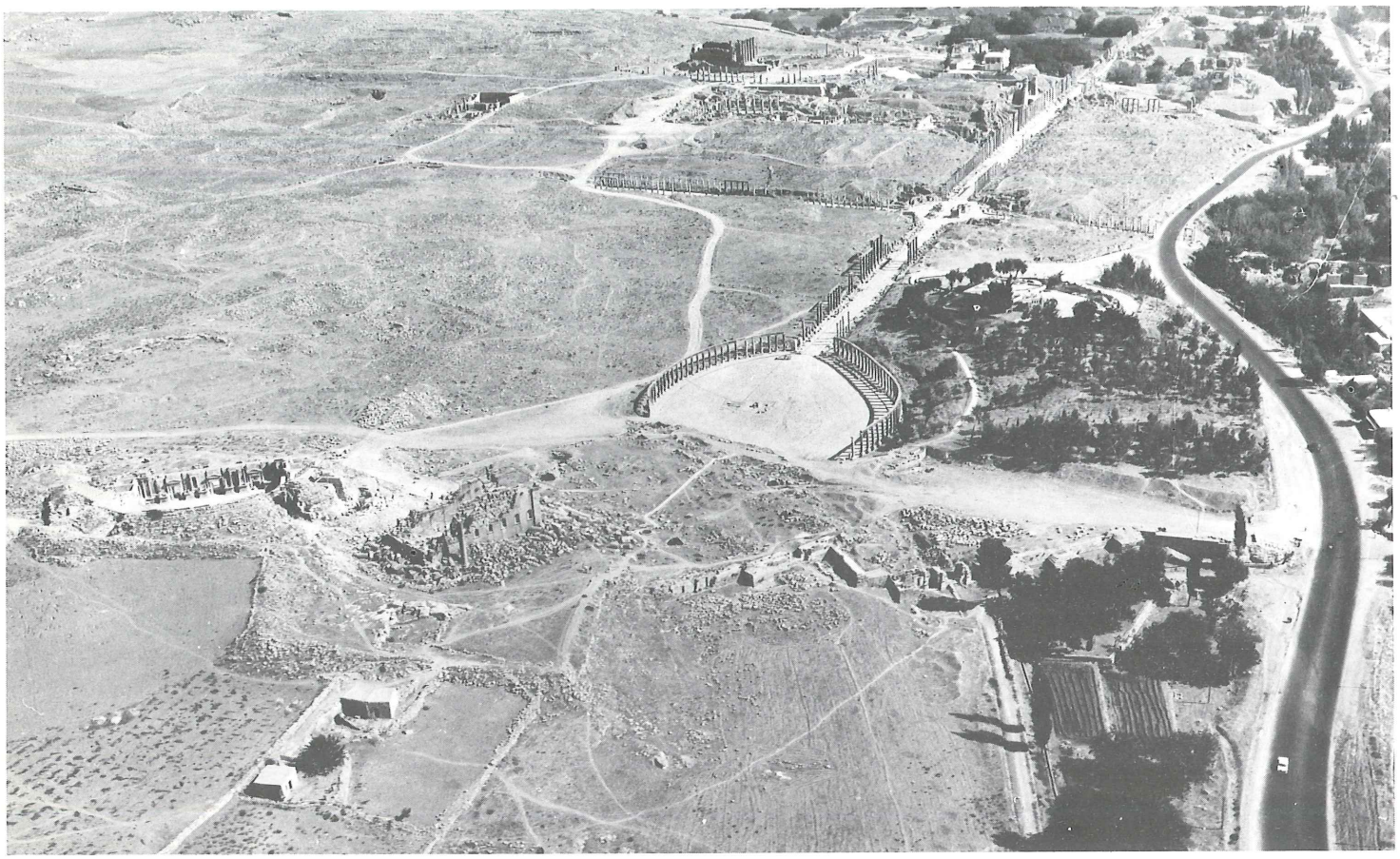
During the three seasons 22 trenches, measuring 5×7 metres, were opened in areas A, B, C and D (4 in A, 6 in B, 4 in C and 8 in D) only one long trench measuring 30×5 metres was opened in Area E. Stratified deposits which have been removed vary from area to area, but in general they vary from 3–5 metres. Bedrock was reached in two areas: A: 1, 2, 3 and D.2. The result in all areas have in some respects exceeded expectations, and it will be sometime before thorough study of much of the evidence and the material collected can be completed. Accordingly we shall not attempt to give a detailed account of the result of the excavations, rather it is our intention to give an account of the architectural evidence that bears on the objectives of our study reached by the end of the third season. The result of the investigations in question may be most conveniently described in terms of the several areas of study.

Area A

Excavations in this area were carried out in two seasons only, 1975–6. Four trenches, measuring 7×5 metres, were opened and bedrock was reached in portions of three of them (A: 1, 2, 3). This was in an attempt to establish the sequence of habitation in this part of the city to bedrock.

In terms of the occupational history, four strata (Hellenis-

11.



tic, Roman, Byzantine and Umayyad) were distinguished in the three squares that were excavated to bedrock (FIG. 13). The result showed that this area had been occupied from the second century BC until the end of the Umayyad period (end of the eighth century AD).

This conclusion was indicated by ceramic and coins readings, as well as other domestic objects. The earliest evidence of occupation in this area so far collected dates back to the second century BC. This date is suggested by two pieces of coins belonging to John Hercanus (135–104 BC), and of second century BC Hellenistic pottery sherds. If this be the correct interpretation, the fact that the coins came to light in stratified layers in this area, may indicate that Hellenistic occupation included this area and was not concentrated only in the 'Forum' area as suggested by Kraeling (1938: 27–28, 30; idem: 1941: 11).

In terms of the architectural history in this area, it very quickly became evident from the beginning of the work, that the architectural remains uncovered formed parts of private structures bounding a side street (FIG. 14a and b). By the end of the second season, however, it appeared that this area was related to two city blocks of well aligned series of structures bounding a side street of about 6.35 metres wide, each with a doorway opening onto the street. Although none of these structures has been fully excavated and their nature must remain tentative until further excavation, yet the limited evidence of architectural remains discovered, as well as a substantial number of coins, objects and tools does make it possible to suggest that these structures were used for habitation during a good part of the city's occupation. The foundations of the exterior walls of these structures along the street were reached in three trenches (A: 1, 2 3). The ruins of these walls showed evidences of reconstructions, additions and repairs reflecting a history of long duration and severe destruction. In spite of this fact, the orientation of their lines—axes—were almost exactly the same from the time they were first built until the final abandonment of Gerasa at the end of the Umayyad period. The evidence from the ruins of the exterior walls of these structures reflected at least two destructions before a final one. This result (Area A.1) suggests that three main building phases can be distinguished in the ruins of these buildings (FIG. 12b and c). These phases as attested by domestic remains can roughly be assigned to: Roman, Byzantine and Umayyad.

It appeared that a hard concrete paved floor, varying from 0.20–0.30 metres thick stretches over the entire width and length of the whole area (FIG. 11a and b) bounded by the parallel walls of buildings. To determine the nature and full

extent of this pavement, a trial trench, measuring 5 × 2 metres, was made at the line of the decumanus, distance of about 9 metres to the north from our trenches. Here, it appeared that this pavement continued in a gentle slope to meet the line of the decumanus. This result strengthened the suggestion that Area A presents a portion of a side street of concrete pavement intersecting at almost right angles the course of the south decumanus.

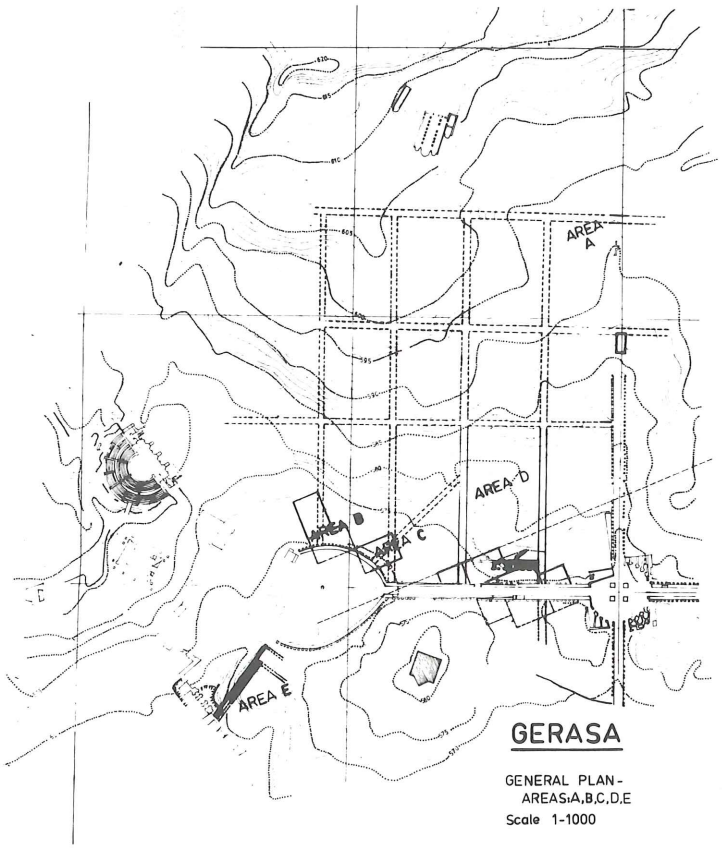
A cut through this concrete pavement revealed no less than four paved levels of the same nature, varying from 0.10–0.15 metres thick. These pavements were separated by occupation debris and varied from 0.05–0.10 metres thick. Ceramic and numismatic readings for deposits that covered the upper one and between the lower ones down to bedrock attested that they all uniformly belong successively to: Islamic Umayyad, Byzantine, Roman and late Hellenistic periods. This result, however, indicated that the original side street followed this line from late Hellenistic until Umayyad times.

Information concerning the use of drainage of waste water has been gained from this area. Excavations have shown that the structures bounding the street were provided with a network of sewage systems connected with a main drain in the middle of the street (FIG. 14a and b), which is in turn connected with the main network of the town's sewage which runs in the decumanus.

Areas B and C

In terms of the occupational levels revealed in these two Areas it appeared that they were basically the same as those distinguished in Area A. In other words they uniformly belong successively to Umayyad, Byzantine, Roman and Hellenistic habitations and as far as the architectural remains are concerned, though their nature is basically the same as in Area A, their character is somewhat different. In squares B.1–4 excavations revealed two structures of a domestic nature opening onto a street separated by a small trapizoidal shaped alley (FIG. 15a and b) about 2.5 metres wide at the street side and 1.8 metres at the end. The evidence showed repairs and additions reflecting a long history of occupation. This was also attested by occupational debris. Within the area in front of these structures there was a network of water and drainage channels. Pottery water pipes were also found in this area. Significant discoveries were brought to light in this area (B.5, 6) that bear on the architectural history of the colonnaded oval plaza, and the way in which the South Theatre was approached (FIG. 16a and b). Behind the columns of the west portico and at a level of about 0.20 metre below its stone pavement a floor level was revealed of the same nature found in the street in Area A. Patches of irregular stone pavement were also found. About 0.30 metre below this concrete pavement a part of a staircase was discovered of which four steps still exist (FIG. 16b). This staircase took a south west orientation rather than a western direction. Furthermore, the lower steps were used in the construction of a well built sewage line running from the west to the east toward the main drainage system in the oval plaza. Just before it entered the plaza, below the stone pavement of the portico, it joined

12.



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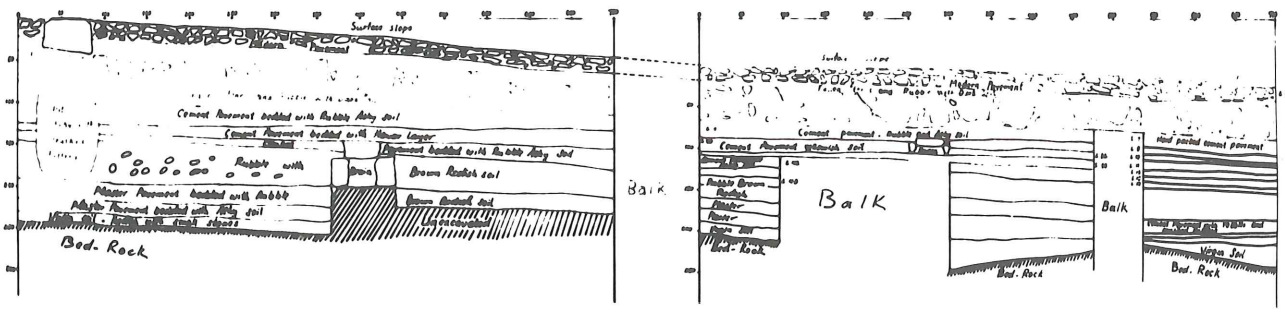
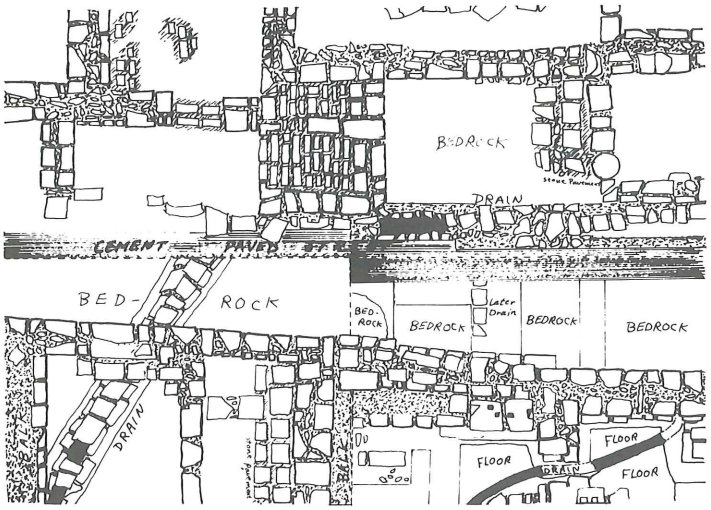


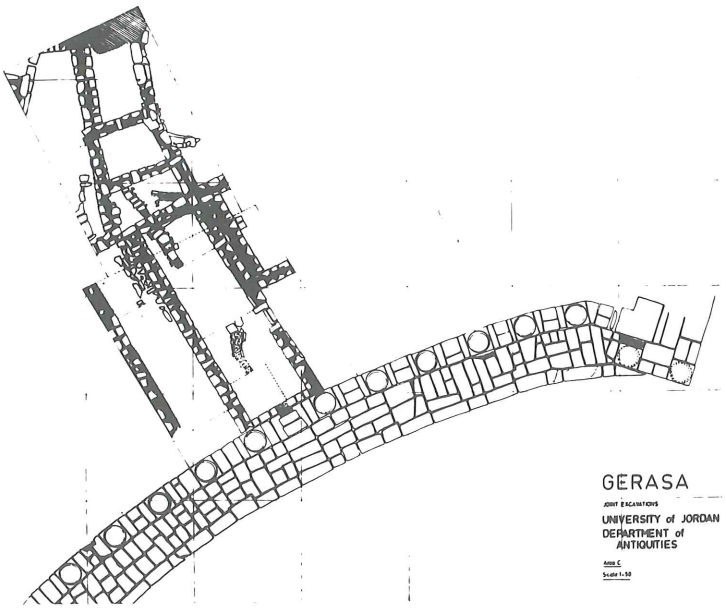
14a.



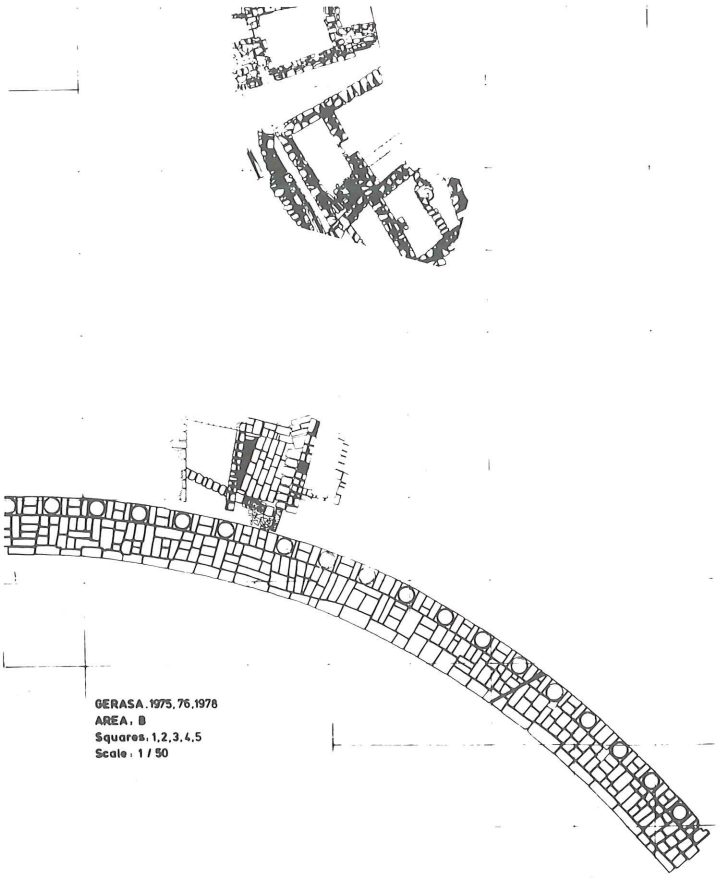
14b.



15a.



15b.



another sewage line which ran from southwest to northeast. The construction of this second line destroyed the eastern side of the staircase. Pottery sherds found in the soil layer above the staircase form a deposit that is homogeneously late Hellenistic-Early Roman (first century BC). The result, however showed that this staircase antedates the construction of the plaza by a considerable period of time (Knaeling 1938: 157, 'belongs to the first century AD').

Excavations in Area C provided similar information on the occupational and architectural history of the site. Here too, were found both concrete pavement and drainage system, coins, artifacts and good groups of pottery sherds ranging from late Hellenistic to Umayyad periods. The nature and character of the complex of walls which were discovered in this area are still unclear, needing further excavations to obtain more evidence to permit a definite interpretation. The

16a.



16b.



ruins of walls, however, show evidence of reconstructions and additions which indicate a long duration (FIG. 17a and b).

Excavations in Areas B, C, however, have shown, quite clearly, that wider intercolumniations at the two corresponding points in the western colonnade of the oval plaza marked places where side streets coming down the hill from the west, entered the plaza.

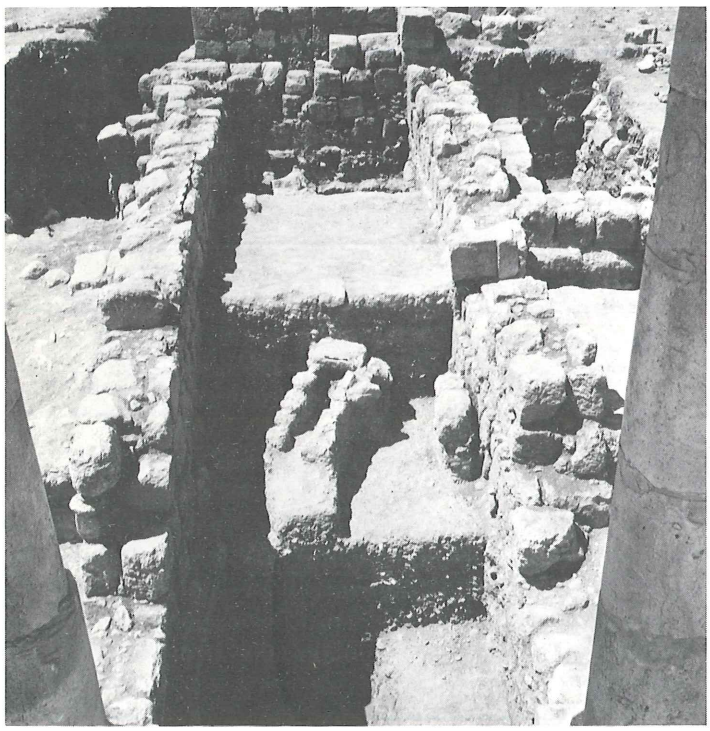
Area D

The most important discovery in all areas was unearthed here in Area D. Excavations revealed at a distance of 7.50 metres west of the columns of the cardo and parallel to it half of the facade of a huge complex. The structure (FIG. 18a and b) seemed to stretch along the whole width of a city block, measuring about 50 metres in width. It also appeared that this complex bounded from the north and south by side streets, of about 5 metres in width, intersected the cardo at right angles. Preliminary investigation at the other side of the cardo, opposite the line of the north side street revealed a portion of its eastern course. This portion of the facade comprised four shop-openings, in total a length of about 19.50 metres, and a central monumental triple-gate about 10.50 metres wide and recessed 5 metres deep from the line of the facade. Two

17a.



17b.



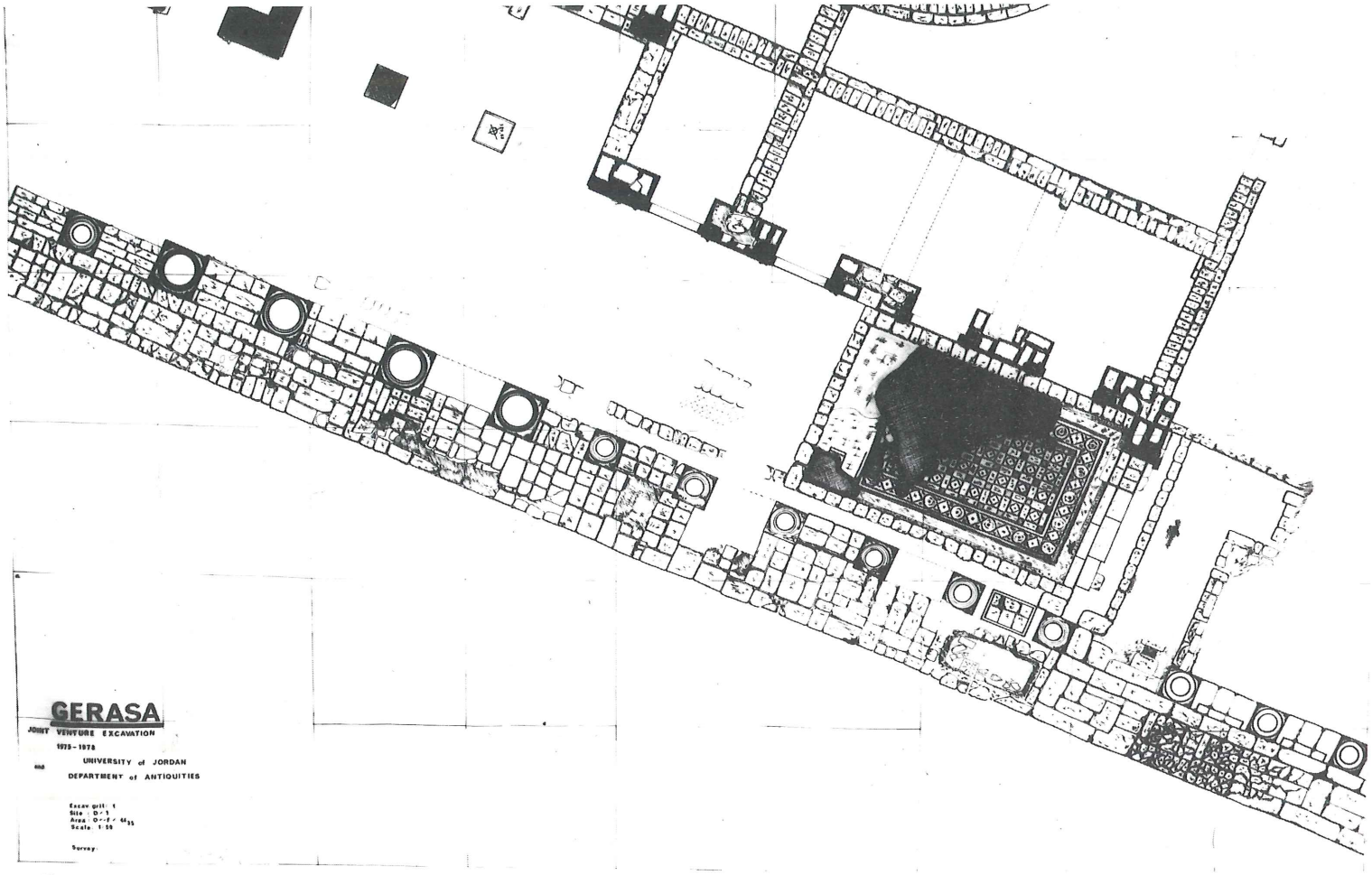
columns 4 metres apart, were set on the line of the facade corresponding to the door-jambs of the central opening of the gate. The ruins of the facade are preserved almost up to the door lintels (FIGS 18, 19b and 20). The paved stone floor of the building was reached at a depth averaging between 4 to 5 metres below the original ground surface at the beginning of work. Below the stone pavement of the side opening of the central gate a drain ran down below eastward toward the main drainage system in the cardo (FIG. 19). This fact indicates a large open area inside the building. Furthermore, a segment (8 metres long) of a curved wall inside the building was discovered. This evidence suggests a large curved side wall, an oval shape or circular space within the structure (FIGS 18a, 18b and 20a). The approach of this complex from behind the portico of the cardo was through a stone pavement and a short flight of steps. The area between the two northern shops and the columns of the cardo was paved with mosaics forming geometrical designs (FIG. 18a and b). Within the middle of the street which bounds the building from the north, ran a drain towards the east to connect with the main drain in the cardo (FIG. 18a).

In search of the occupational and architectural history of the areas, a trial trench, 2 × 1.50 metres, was made in square D.2 between the facade of the building and the columns of the cardo. Digging was carried out to bedrock. It revealed a striking occupational history, not only in this particular area but in the whole enclosure of Gerasa. Here some Iron Age I and II (*c.* 1200–550 BC) debris, i.e. pottery sherds, directly over bedrock is followed by construction of a Hellenistic stone wall (*c.* Late second early first century BC) running parallel to the line of the cardo, north–south. This date was indicated by pottery readings and construction technique. The ruins of the wall consists of four courses varying in height between 0.35–0.40 metres. Each course consists of two rows of stones, *c.* 0.30–0.40 metres thick joined together with mud and small stones. This was entirely disturbed by the first century AD overall planning of the city. The evidence thus obtained made it possible, for the first time, to postulate Iron Age occupation within the walled area of Gerasa.

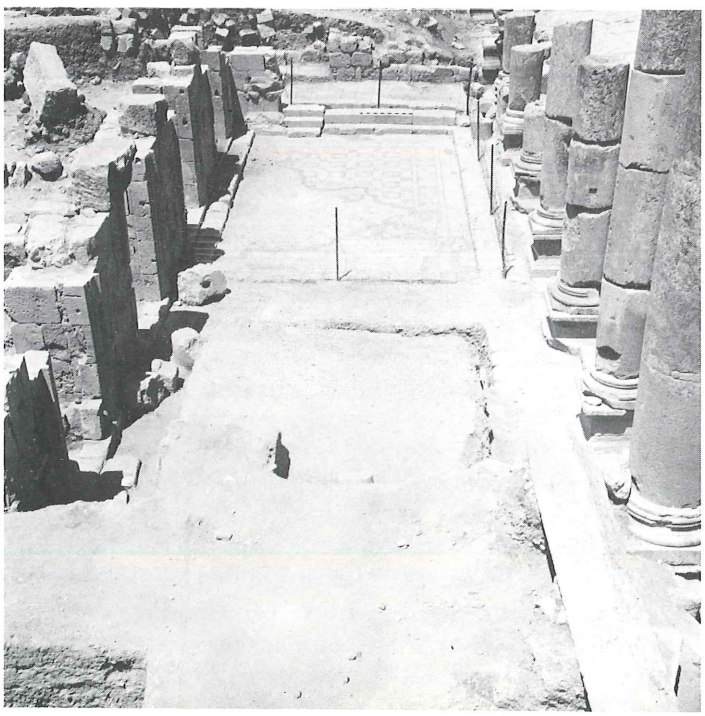
Since this complex is symmetrical, the exposure of the facade permits a tentative reconstruction of the whole building front elevation. Preliminary investigation along the axis line of the facade strengthened this attempt. Investigations showed that the facade of the building extended the south side of the central triple-gate of the complex in equal length to its extension to the north (19.50 metres), with four shop-openings piercing it too. In other words, the whole facade of this huge complex measures about 49 metres long with a monumental triple-gate bounded on each side by four shops. The interior of this complex is still obscured by the limits of the third season excavation. Meanwhile it was possible to secure a complete vertical view of the stratigraphy of the area.

No firm evidence has yet been revealed for the dating of this building. But the architectural affinities and technique of its facade as well as its monumental entrance and the Oriental-ized Corinthian order involved along with other monumental structures in the city, reflect precisely the period seen at the Artemis temple and other contemporary buildings in the town, i.e. of the first century AD. This tentative dating does

18a.



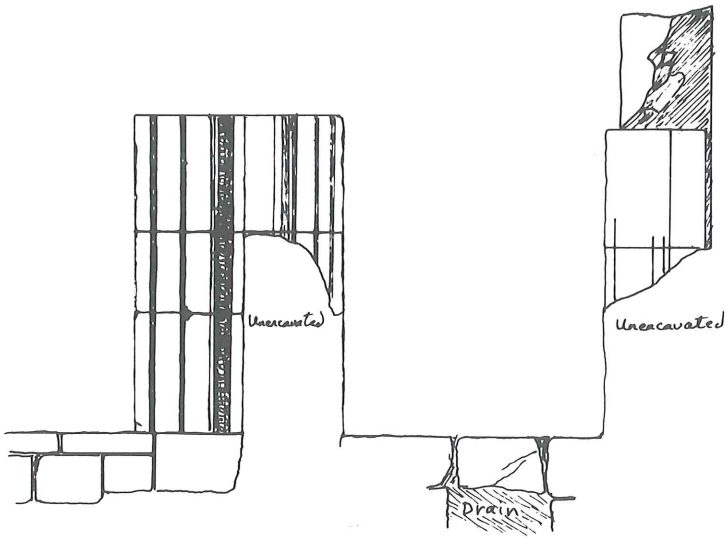
18b.



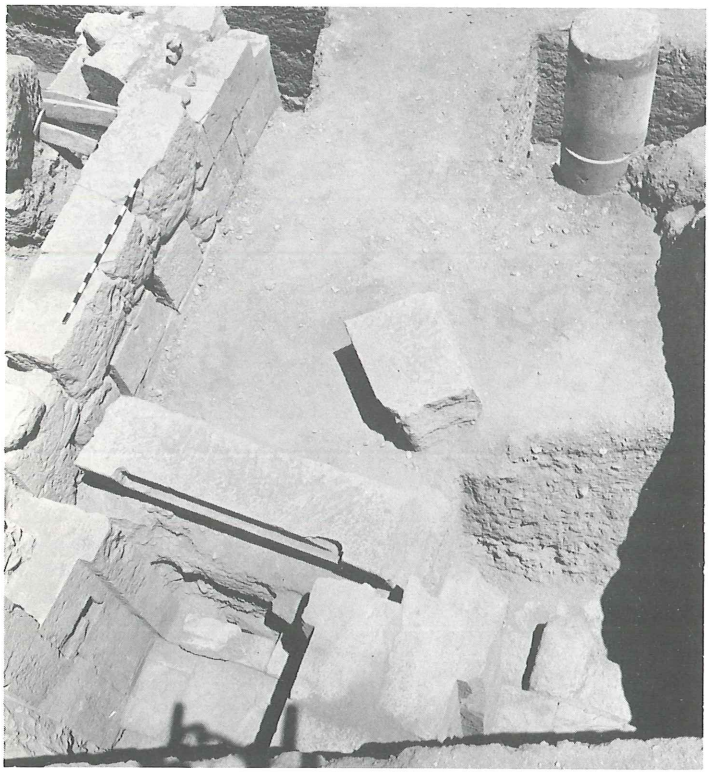
not conflict with the stratigraphic or architectural data thus far collected. However, the discussion of the history of this complex is better withheld until the excavations can be presented as a whole in connection with further investigations of the area.

In terms of specific occupation of the structure, the conclusion is that it represents a public building, i.e. Forum, Basilica or council house likewise tentative. The plan and its location in particular permits such a conclusion. Its public nature is also indicated by the nature of the objects and artifacts thus far collected. The most interesting material was a large quantity of iron lumps and cores, metal objects, i.e. hammers, sickles, knives, hooks, chains, nails etc., as well as a considerable amount of coins dating from Roman times to the Umayyad period. The presence of these remains and other objects indicate the suggestion of a definite industrial and commercial use of the area. This suggestion is strengthened by the fact that three of the cardo columns in front of the building were inscribed with phrases refering 'to potters and retail dealers', and 'They may indicate the person or body who plied their trade under the columns' (Jones 1928: 191). Furthermore, the continuing use of the structure and the area particularly in Late Byzantine and Umayyad period, as indi-

19a.



19b.



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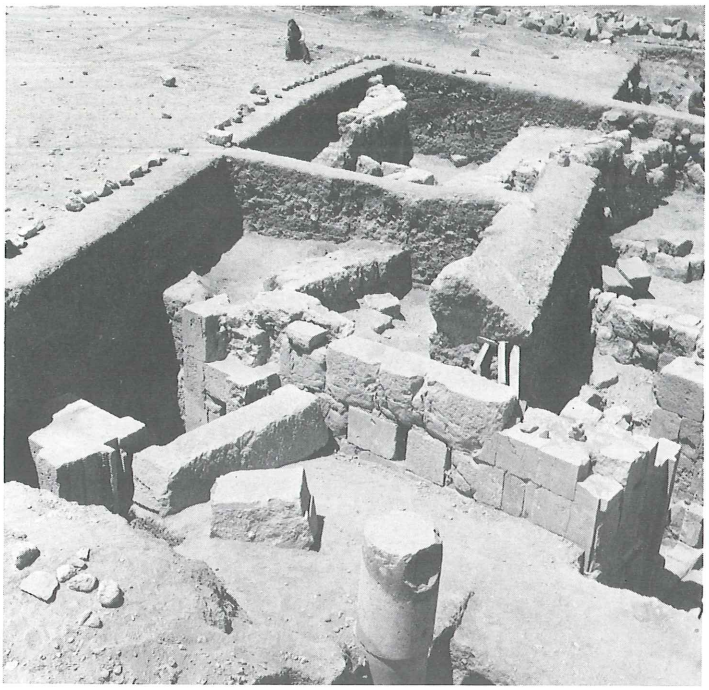


cated by data collected from the thick layers of ashes which were separated by howar layers, would reflect traces of its original function that made the Byzantine and Umayyads consider it a place fit for business and as an industrial area.

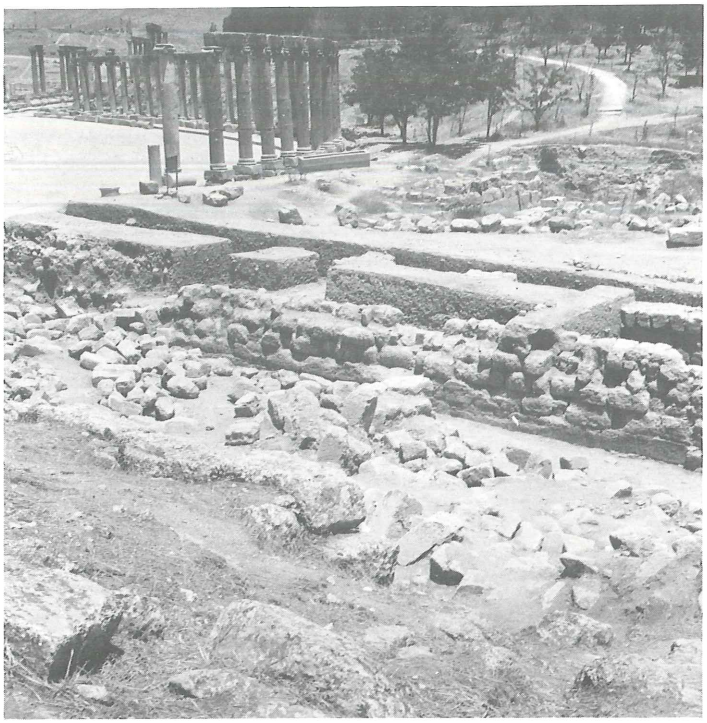
The evidence of a sizable drain (FIG. 19a and b), *c.* 0.60 metres wide and 0.90 metres deep, running out of the structure towards the main drain in the cardo, no doubt indicates the existence of a spacious open inner court within the structure. The worn-out thresholds of the shops and the central gate of the complex reflects heavy traffic and a use of long duration. These elements incorporated with the above mentioned evidence indicate a structure of special public and commercial function. Therefore, we may not be going too far in suggesting that we may have been revealing the real Forum of Gerasa.

Area E

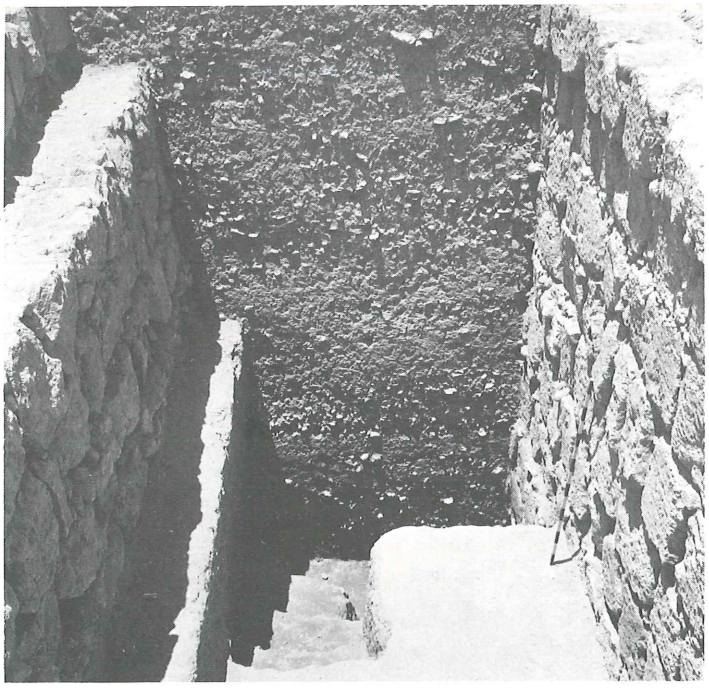
Excavations in this area revealed two sets of north–south walls (FIG. 22), 3 metres apart. The nature of the eastern inner wall is still obscure, while the western wall which evidence showed went through more than two constructional phases, bound the eastern limits of the approach between the South Gate and the Colonnaded Plaza.

The evidence revealed in this area, however, indicated the suggestion that the approach to the Plaza from the South Gate was through a wide platformed staircase. This is bounded at the west by the lower vault of the temenos of Zeus Temple and by a parallel wall at the east running from the city wall, a little distance from the east minor entrance of the Southgate, to the Plaza. Traces of the stone pavement of the staircase are still in situ bonded with the eastern boundary wall. The evidence of platforms for grading the sloped approach is evident in the courses of the eastern wall. This evidence, however, would seem to support the idea that the approach from the South Gate to the Plaza was of two natures. The one for pedestrians was by a staircase corresponding with the central and minor eastern entrances of the Gate; the other for vehicles was by a sloped paved road through the minor western entrance. This idea is strengthened by the fact that

21a



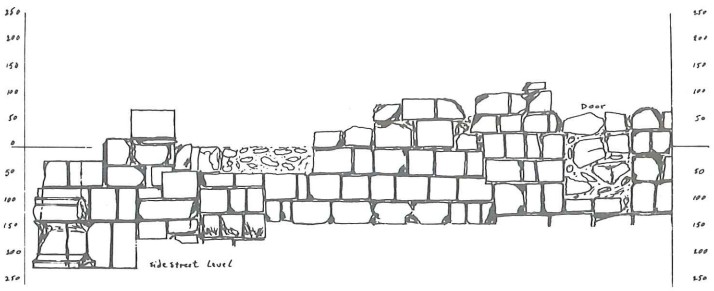
21b.



wheel marks are visible on the threshold of that minor western entrance only.

In terms of the stratigraphic history of the area, excavations revealed just below the surface level stratified layers of Early Roman and Hellenistic remains. Digging in this area reached a depth of 5 metres without reaching bedrock. Lower levels

22.



produced pottery sherds and pottery lamps of typical Hellenistic second century and first century date. The good collection of pottery sherds and lamps from this area present, for the first time, the occupational history of Gerasa fairly well back to the second century BC.

It seems to be time now to sum up our new evidence. Results of considerable importance, which bear on the plan of Gerasa, stemmed from two main discoveries. First, the exposure of private dwellings (Areas: A, B, C) bounding side streets of 5 to 6 metres in width and second, what appears to be a free-standing structure of public and commercial nature covering the width and, presumably, the length of one city block (Area D). The two side streets which bound the structure measure about 5 metres wide. Through our investigation in the site we were able to identify a few other minor streets 5 metres wide, opening on to the South Decumanus. This evidence shows a fixed gauge for the street width existed in the plan of Gerasa. Some other streets were given extra width and this is only used where those minor streets are skirting a major area as that between the Artemis Temple and the Nymphaeum.

As a result of this information we seem to be able to recognize in the plan of Gerasa that side streets, though varying slightly in width, connect and intersect at right angles with each other and with main streets, or open on to an open space. We are also able to recognize in the plan of Gerasa the measurements of the blocks. The results have made it almost certain that the connection and intersection of side streets with each other and with the main avenue formed rectangular blocks measuring about 120×50 metres, a length to width ratio of 2 to 1. The short axes along the longitudinal major axis is in conformity with the per-strigas pattern. Accordingly a tentative partial reconstruction of the city plan is suggested as shown in FIG. 9. Excavations have shown great interest in drainage and sewage provisions as well as water supply and channeling. Houses, public buildings, major and minor streets were all provided with a careful and ingenious network of water and drainage systems.

Here we come to the crucial question of our inquiry. How does the plan of Gerasa show itself to be different from other Hellenistic-Roman urban centres? In some ways Gerasa

merely provides further illustration of methods of planning and building known from other Hellenistic-Roman Syrian sites, but in others it is different or even unique. The answer, as we see it, lies in a rational analysis of the total design.

At Gerasa we can see particularly well how the planners did not impose anything violently on the site, rather turning the natural features to account. The line of the city walls and gates do not constitute a decisive element in the layout. The form of the wall is not a frame of fixed shape, but a girdle loosely flung around. The regular arrangement of the layout of the city is carried out uniformly for the most part, but not with uncompromising rigidity. The size of the blocks varied by concessions which were made to the contours. The main streets and public buildings were laid out on the western side of the stream. The two hills which dominate this area were chosen as sites for the principal religious centres. From the north and south, the approach to the centre of the city via the main street points directly towards these centres. Thus these religious structures were visible along the greater part of the main thoroughfare. The oblique position of Zeus temple facing the northeast is a genuine effect as it brings the two sides of its peristyle into view. This in itself reflects a superior skill of the designers. On the other hill stood the Temple of Artemis, the patron goddess of Gerasa. It is surrounded by a spacious double colonnaded court and approached by a monumental staircase through a great propylaea. The whole complex is approached from below, east of the stream by a colonnaded processional way. This emphasis on religious centres, which presents an obvious departure from normal Hellenistic or Roman schemes is also indicated by the layout of the two cross streets—north and south decumani—. A glance at the plan of the city clearly shows that those two main cross streets intended to define a religious sector and to emphasize focal points. This has been accomplished in a different way than the axial system. Here, the basic characteristics of intersecting major arteries were adapted to the layout of the city with a threefold function. Apart from defining an area of basic importance and providing a direct approach to it and to other focal points in the town, they on the one hand orient an organized scheme and on the other reflect and serve traffic and commercial routes bisecting to the north and west. Besides more obvious departure from the normal Hellenistic or Roman schemes one might mention that the north decumanus was made slightly oblique to skirt the colonnaded plaza in front of the north Theatre.

Convenience and common-sense prevailed in the layout of Gerasa rather than academic principles. The planners were ingenious in their use of space. This is apparent in the north decumanus which was not carried out beyond the Western Baths. This was substituted by the processional approach to the Artemis Temple and by the south decumanus which they carried down, across the stream, to the eastern part of the city. Furthermore, side streets seemed to be economized. This economy was naturally substituted by making them rather slightly wider, averaging between 5–6.50 metres. Major arteries were also made wider simply to achieve subtle architectural effect and as wide as were needed, for the simple reason that they were busier streets, leading to commercial highways.

Something is still lacking in our conception of the disposition of major structural elements in the plan of Gerasa if we are still unable to determine the place of the civic centre. Concerning the interpretation advanced for the use of the colonnaded oval plaza, the Forum (Burckhardt 1822: 256; cf. Kraeling 1938: 153–158), one, in fact, would hesitate to conceive the idea of placing such a public centre in this restricted spot. Perhaps it is more conceivable being taken as related to the whole complex of the Zeus Temple temenos. Therefore, one has to look elsewhere for a more adequate centre, more proportional to the needs of the expanded and commercially flourished town, and more conveniently placed. The Graeco-Roman practice of providing a town with a market place was simply to leave a number of city blocks or a space in a suitable place. The area was usually tangential to one of the main streets without completely shutting it. In fact such a space seems to have been appropriated in Gerasa, along the west side of the Cardo between the South Tetrapylon and the Colonnaded Plaza. This area was suitable in size, shape and position for a public centre. Our preliminary results, as noted above, proved that this area has received a kind of a monumental architectural treatment. The site was not inconveniently distant from other areas or gates. The line of the principal avenue of the city runs tangentially down the eastern side of the area. On this account the building of which the remains of its facade have been revealed may have been the market place of Gerasa. If we are to trust our evidence, we certainly are locating the Forum of the city. Accordingly our conception of the plan of Gerasa becomes more clear.

By the new evidence, incorporated with our observations and analysis of the plan of Gerasa, it becomes fairly clear how highly distinguished the city was. It illustrates an interesting regional variation of the type of a city. It is different from most Hellenistic or Roman cities in that it is not an entirely Hellenistic scheme neither Roman, but a new type. We believe as Antioch set the fashion for the Seleucid and later Roman north Syrian town, Gerasa set the fashion in the region of south Syria in which the plans of all urban centres in the region are unmistakable products.

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The Excavations at Petra, 1974: Cultural Aspects of Nabataean Architecture, Religion, Art and Influence

Sir Leonard Wooley, in the James Bryce Memorial Lecture, at Oxford University in 1949, stressed the individuality of the great classical civilizations[1] of the Middle East. Yet, he said:

> . . . the measure of a nation's culture is its capacity to borrow and so to assimilate its borrowings that its individuality is enhanced by them.

Therefore, he stressed the need, in terms of intercultural study in the Middle East, of moving beyond more intensive research concerning the *major* cultures. Rather, he suggested seeking the answers to intercultural borrowings within the petty kingdoms and city-states who paid lip service to their greater neighbours, but who, essentially, remained independent[2].

Likewise, he pointed out that the study of a culture must begin with *what* it was—and then turn to *how* it came to be.

Some thirty years have passed since Sir Leonard's address and world archaeology has begun to take heed. Under the influence of anthropological and other social science disciplines, archaeology has passed through the culture-descriptive stage to the study of culture-history, to the study of culture-reconstruction, and, today, to the study of the processes by which a culture achieves its individuality.

Yet in the study of the process of culture, it is still essential to begin with a clear recognition of what that culture was and what constituted its individual characteristics. The problem is, therefore, to establish the *cultural identity* of a people as the initial stage of its study. Somewhere within the fabric of its material remains and documentary allusions to it must be found the cultural isolates which constitute its individuality.

Once the culture, as an individual entity, becomes known and has been reconstructed as a whole, it is then possible to study *process*—the reactions which were the cultural responses to basic needs and which may be observed by analysis of the recovered remains. Whether those responses extended beyond the culture boundaries to the adoption of 'foreign' influences, or adapted within their own system, can then be determined. Here, a functionalist approach is necessary and the form of a cultural attribute must be seen in the light of what it *does* for the culture, in order to ascertain the process by which that attribute came into being[3]. Culture, when developing, imposes specific determination upon behaviour, and upon the process, whether aspects are adopted from outside or adapted from within.

Nabataean studies, since George Horsfield[4] first recognized their basic non-documentary site marker, the fine thin painted ceramics, have proceeded along the traditional descriptive lines of numismatics, art history, comparative religion, epigraphy, linguistics, and the scattered documentary references in Diodorus Siculus, Strabo, Josephus and later historians[5].

Those lines, however, are cultural *traits*, not cultural *identity*, since all or almost all of the material evidences of them were, or could have been, borrowed. The problem today is, therefore, to attempt to separate the borrowings from the indigenous elements and examine the Nabataeans *as* Nabataeans, *strictu sensu*. Each cultural isolate which can be established must therefore be considered from those dual aspects. Still further, 'foreign influences', so blithe a term in traditional Middle East archaeology, must also be considered in terms of directness of appropriation, with their concomitant cultural implications, or in terms of indirect or mediated routes, which may have cultural implications far different from those seen in the direct borrowing of any element. If *exact* parallels to traits within Nabataean culture can be found, a case can then be made for direct adoption of those traits. If the parallels are not exact, then either visual remembrance, documentary reference, or even verbal communication of the trait becomes possible—as does local

[1] Wooley, Sir Leonard, *Middle East Archaeology*, Oxford, 1949: 8.

[2] *Idem.*, 9ff.

[3] Radcliffe-Brown, A. R., *Structure and Function in Primitive Society*, Free Press, 1952: 180; Malinowski, Bronislaw, *A Scientific Theory of Culture and Other Essays*, Oxford, 1960: 39, 158, 160; Carneiro, R. L., 'The Culture Process', in *Essays in the Science of Culture* . . ., 1960: 146.

[4] Horsfield, G. and Conway, A., 'A Historical and Topographical Account of the First Excavations at Petra', *Geographical Journal*, 76 (1930), 369–390 and *cf.* also Horsfield, G. and A., 'Sela-Petra . . .', *QDAP*, IX, 2/4 (1941): 105ff.

[5] Diodorus Siculus, XIX, 96 and *passim*; Josephus, *Antiq.*, XIII, *passim*, *Wars*, I, *passim*; II *Macc.*, 12: *passim*.

development of the trait as an adaptive response ('congruence').

It is with such an anthropological outlook that the work of the American Expedition to Petra has been conducted at the site since 1974. Our research design has aimed toward:

1) the reconstruction of the culture-history at Petra, and its culture changes, through time
2) the isolation of Nabataean cultural identity through recognition of its specific attributes
3) the processes which brought about that identity, along with the mechanisms by which those processes worked.

Following the traditional, necessary pattern of the culture historians, reconstruction of the culture-history of the site and of the people is being sought via the recovered material remains from excavation, with an emphasis upon methodology as a prerequisite of valid interpretation. Following the traditional pattern of the ethnographic schools, culture identity is being sought by trait/factor analysis, but in terms of the culture *system* and its holistic context. Finally, following the concepts developed by processual archaeology today, culture process and process-mechanisms are being sought through technological and other sub-system analyses. This final step is the attempt to go beyond deductive description of culture and investigate, inductively, how it came to be what it was. Involved in that step is also the investigation of the *means* by which the process took place (i.e. the mechanisms employed).

If the excavation methodology is sufficiently accurate, the data so produced will be able to be correctly ordered, the material remains properly identified, interpretation manifestly based upon valid evidence, and culture reconstruction can be achieved.

If the key and essential attributes[6] present in the data, Nabataean and otherwise, can be sufficiently isolated, the cultural identity of the Nabataeans can be established.

Finally, if proper systems analyses are conducted upon the data by archaeometric, statistical, and other means, the processes and their mechanisms can be understood.

The history of our present excavations at Petra began in 1973, with an electronically-instrumented sub-surface site survey[7]. Four proton-magnetometers and two soil resistivity instruments were employed to survey seventy-one 30 metres × 30 metres grids, with a total of some 69,900 m.^{2} covered. Some 15,975 individual stations were read at 2 metre intervals. A permanent survey markers was also established, by plane survey, at UTMG 735,160 metres East and 3,385,000 metres North, tying Petra survey data to the world grid. Thirty-eight grids were identified as high anomaly areas, potentially proftable for investigation. Of those, two were chosen for the beginning of excavations in 1974 (hereinafter: Area I, including Sites 5 *passim*, Area II, including Sites 6, 5, 2, 3, 7, 9 *passim*; Area VI was added to excavation in 1978). Area I, to the east, was excavated during the 1974–1977 seasons, with the resulting 859 stratigraphic units identified tentatively phased into twenty phases. Areas II and VI, in the grid to the West, have thus far produced 716 individual stratigraphic units, tentatively phased into nineteen phases. On the basis of the stratigraphy of Area I sites, occupation (domestic) on the north side of Wadi Musa, in the city centre, extended from the 1st Century AD through the (terminal) use of the area as a necropolis post mid-6th century AD. Early occupation floors beneath the public structure in Area II, prior to the building of that edifice, would appear to correlate with the Area I occupational range.

As a consequence of further analysis of a recently published Syriac document[8], it has been possible to date Area I, Phase X, and Area II, Phase X (the major destruction phases of both), along with a re-dating of the major destruction of the Main Theatre[9], precisely to 19 May AD 363, 'at the third and again at the ninth hour of the night'. Rarely has such a precise chronological marker been afforded for archaeology.

Preliminary phasing

Area I: Domestic sequences[10]

Phase I: Modern Surface
II: Necropolis
III: Disuse/dumping (?)
IV: Disuse/silting
V: Casual transient occupation
VI: Destruction phase
'Later House' destroyed AD 551/554 (citing Theophanes, *et alia*)
VII: Remodelling phase
'Later House' modified
VIII: Building phase
'Later House' constructed
IX: Occupation phase
shift in sector
X: Destruction phase
'Middle House' destroyed AD 363 earthquake cf. Area II, Phase X
XI: Remodelling phase
'Middle House' modified
XII: Building phase
'Middle House' constructed, cutting into parts of 'Early House' of Phase XV/XVI/XVII
XIII: Occupation
shift to western sector
XIV: Disuse/silting

[6] Clarke, D., *Analytical Archaeology*, 1968: 71ff.

[7] Hammond, Philip C., 'Survey and Excavation at Petra', *ADAJ*, XX, 1975: 5–6, and *passim*; 'Excavations at Petra, 1975–1977', *ADAJ*, XXII, 1977–1978: 81–101.

[8] Brock, S. P., 'The Rebuilding of the Temple Under Julian: A New Source', *PEQ*, 108 (1976): 103–107; Brock, S. P., 'A Letter Attributed to Cyril . . .', *BSOAS*, 40 (1977), #2: 267–86; Hammond, P. C., 'New Evidence for the Fourth Century AD Destruction of Petra', *BASOR, 238, 1980: 65–67.*

[9] Hammond, Philip C., The Excavation of the Main Theatre at Petra, 1961–1962, *Quaritch*, 1965: 65.

[10] Russell, K. and Hammond, P. C., 1979; Hammond, 1977–78: 84.

XV:	Destruction phase 'Early House' destroyed
XVI:	Remodelling phase 'Early House' modified
XVII:	Building phase 'Early House' constructed
XIX:	Occupation
XX:	Non-occupation sterile sand on bed-rock.

Area II: Temple complex[11]

Phase I:	Modern surface
II:	Non-occupation
III:	Casual transient occupation
IV:	Localized dumping and robbing
V:	Casual transient occupation/burial
VI:	Disuse/silting
VII:	Destruction phase all remaining ruins destroyed AD 551/554, cf. Area I, Phase VI (also evidenced in Area VI)
VIII:	Casual transient occupation
IX:	Disuse/silting durative
X:	Destruction phase major destruction of structure AD 363 cf. Area I, Phase X
XI:	Disuse/silting structure not in use
XII:	Disuse/silting structure not in use
XIII:	Disuse/silting structure not in use
XIV:	Disuse/silting structure not in use
XV:	Casual transient occupation structure not in use
XVI:	Disuse/silting structure not in use interior and roof fall debris
XVII:	Partial destruction probably limited to partial or complete burning of roof retrieval robbing
XVIII:	Remodelling phase replastering of decoration; no architectural changes 'Painters' Workshop' hoard Malichus II (?)
XIX:	Main building phase original construction and decoration of temple Aretas IV (?)
—	(Sub-structural occupational phases to bed-rock in process of phasing.)

[11] Hammond, Philip C., 1975; 1977–78: 84–92.

Plan

The temple structure is roughly square (17.42 metres × 17.42 metres), oriented north-south. The entry was probably closed by a double or folding door spanning the 4.36 metres wide portal. External walls were generally header-stretcher built, dressed on the exterior, 72–75 cm. thick, in the Greek manner (*emplecton*) noted by Vitruvius for rapid building. The rear corners were treated in an inset/outset fashion, as is also seen at the 'Palace of Justice' tomb. The front (south) exterior walls show plug holes for *crustae* and were presumably so treated. Interior faces were only roughly dressed for finishing, with *crustae* base mouldings, affixed by copper strips, as at the Main Theatre. All surfaces above the base mouldings were plaster-finished.

The *cella* was paved with local stone slabs, set on sandstone slab under-flooring. It was divided into side bays, set off by free-standing columns. An altar platform, axial, but set back from centre, dominated the *cella* area. The side walls of the cella were decorated with deep niches, set off by semi-columns which formed part of the actual wall build. Corners were treated by the use of two quarter semi-columns to achieve symmetry on the north–south lines of the free-standing bay columns.

Columns were drum built and rose approximately 3.62–3.65 cm. in the bays. They show no entasis and were left plain, with diagonally-dressed plastering surfaces being finished with fluting to conform to Vitruvius' Ionic style[12]. The foliated capitals, Nabataeanized–Corinthian, were extremely ornate and further decorated by the insertion of moulded plaster floral affixes. Base treatment was by the use of affixed marble rings. Numerous columns showed levis holes on their flat faces, with occasional ones also appearing on side faces.

The altar platform rose 1.31 metres above the *cella* floor level and was paved in white and black marble, set off by tesselation. Semi-columns were used along the sides and rear, forming part of the platform build, but becoming free-standing above the level of the platform floor. The capitals of the altar platform columns were likewise Nabataeanized-Corinthian, but distinguished from those of the bay columns by couchant winged felines replacing corner floral volutes[13]. At the rear of the altar platform was a crypt, with three slab shelves, closed by a door. The floor of the platform was reached by three steps on each side, closed by iron gates, on the front face. The presence of lead ties in the recovered materials suggests that the open bays between the free-standing columns of the platform may have been curtained.

Interior decoration was completely in plaster and was lavishly executed. At least three cornice levels are probable. The side niches were moulding-framed, with the central panel of each niche decorated, at least in some cases, with classical

[12] Vitruvius, *De Architectura*, III, v, iff.

[13] Hammond, 1977–78: 96; 'Capitals from the Temple of the Winged Lions, Petra', *BASOR*, 266, 1977.

'ritual' scenes, with traces of a bust appearing on the single extant panel flanking the entry on the south-west side.

The width and depth of the niche shelves, along with the recovery locations of certain artifacts, would suggest that votive statuary and other objects were displayed in the niches. Carrier blocks, in specialized shapes, were used to support the plaster cornice mouldings.

The roof was probably timber-beamed the ceiling treatment consisting of tied bundles of reeds, as noted by Vitruvius[14], covered with *tegulae*, and drained by circular pipes.

The front (south) face of the temple had an entry portico, *in antis*, extending 9.58 metres from that face, carried by a series of east–west arches. The single recovered column of the portico had drums measuring 1.35 metres in diameter, but drum heights were extremely short, which indicates the mechanical limitations of Nabataean building. The capital of this single column has not yet been recovered for identification of style. Access to the temple interior appears to have been via side stairways from the East and West sides of the portico (cf. the 'Palace of Justice' tomb).

Beyond the portico were lower cross-walls at 2.2 metres and 9.58 metres, joining a colonnaded wall on each side down the slope to the edge of Wadi Musa, a distance of about 85 metres. This double colonnaded-wall system formed the monumental entry to the temple complex and was carried by a bridge (covered?) across the *wadi*, giving access from the Paved Street. Recovered materials would suggest that the decoration of the monumental entry and bridge equalled the lavishness of the temple interior.

A marble faced and treaded stairway paralleled the colonnade on the West side of the temple proper, giving additional access to the temple area.

On the west side of the temple, the outer *cella* wall served as the east interior wall of two chambers, the upper one carried by the vaulted roof of the lower one. Entry to these chambers was by means of doorways below the portico level of the South face of the temple.

To the rear of the temple a complex of small rooms has been uncovered which are contemporary with the temple and apparently served as residences or other purposes during its period of use. Some of these rooms were later used for domestic purposes during the Late Roman (Byzantine) period.

Cultic materials

Recovered cultic materials from the temple include: a moulded 'goddess' figurine fragment; a copper/bronze lamp (?) chain fragment[15]; a bronze miniature feline head; a fragment of an Egyptian funerary statue, inscribed from Athribis in the Nile Delta region and presumably placed in the temple as a votive object because of the preserved figure of Osiris standing between the legs of the dedicant; an uninscribed, rather crude, 'eye-idol' slab; a well-executed 'eye-idol' slab, inscribed '. . . the goddess of X the son of Y' ('LHT . ḤYN . BR . NYBT); a warrior (?) bust; a carnelian ring seal showing a crowned nude goddess riding a dolphin; a pair of copper tweezers[16] (for incense?); sea shells pierced for hanging (chimes?)[17]; a pair of cymbols (?); bell fragments (*tintinabulae*); the toe of a larger-than-life local marble statue (cf. the Hercules statue from the Main Theatre); along with cultic decorative fragments. Among the latter were the feline capitals from the altar platform; fresco fragments; numerous plaster affixes, both 'tragic mask' types and naturalistic human heads (possibly dedicatory?); along the floral affixes noted earlier and frieze decoration with dolphins and urns.

Painting/plastering/techniques

Decorative paint included blue, green, black, white, orange, red, brown and fuchsia, with some gilding of decorative members. The 'Painters' Workshop' hoard has also contributed considerable technological data regarding painting/fresco technique, as well as cultural data.

Plaster cornice and moulding elements were built on the carrier blocks noted earlier and plastering was keyed using large iron nails for base coats and small copper tack for finishing coats. Some indication of mass-production of decorative elements, via multiple moulding of parts, also seems evident.

Attribution

Attribution of the temple to Al-Uzza/Atargatis has been made upon the basis of geographical location, the inscribed 'eye-idol' slab, the feline capital decorations, the feline head, the ring seal, the dolphin frieze treatment, and the markedly floral treatment of capitals, in general.

Although not verifiable, the orientation of the structure to the south may have significance in reference to the orientation of the Dushares temple (Qasr Bint Faroun), or be relative to the original Nabataean migration route into Petra, or may simply be fortuitous as a result of urban planning.

Approach to interpretation

On the basis of the material remains recovered thus far, those anticipated to be recovered from continuing excavation, and the analyses to be conducted, it is felt that our excavations at Petra are fulfilling the descriptive culture-historical demands of traditional Middle East archaeology.

Still further, the body of that data, to date, is already felt to be suggestive of probable adequacy for the more anthropologically-oriented reconstruction of culture and the observance of culture-change.

However, it is also felt that those time-honoured approaches have, as Renfrew[18] has put it, now fallen beneath

[14] Vitruvius, VII, III, iff.

[15] Identified by F. Xaiz, Recorder, 1974ff.

[16] Identified by F. Xaiz, Recorder, 1974ff.

[17] Speciated by F. Xaiz, Recorder, 1974ff. and noted as associated with the worship of Venus.

[18] Cf. Renfrew, C., *Before Civilization*, 1973.

the theoretical advances, the 'new paradigm' of the so-called 'new archaeology' developed in European and American circles during the last two decades.

As a consequence, we feel that the *processual approach* must follow completion of the traditional handling of the recovered, and yet to be recovered, data. Hence, our work to date is construed only as data *collection*, to become the basis for processual interpretation through the formulation and testing of hypotheses concerning the sub-systems of Nabataean culture. Additionally, we also stress the archaeometric aspects, as an extension of the content of primary data and the theoretical paradigms of the processual approach, and fundamentally necessary to both.

Our methodological approach to the classification of the material remains will be emic, on the basis of both theoretical inclination and the results of previous work[19]. Our framework here is polythetic, the traditional classifications in terms of Form/Material/Decoration/Function, plus the data to be recovered archaeometrically together forming the basis for typological subdivisions by attribute analysis.

Thus we hope to combine the traditional inferential outlook with the deductive, hypothesis-testing of the new schools of archaeology. By this means we feel that we shall avoid the all-to-common pitfall of the 'new' theorists of forming hypotheses concerning the obvious and the cul-de-sac of the traditional school of untested inference. We seek a non-nomothetic view of the processes of *Nabataean* cultural sub-systems, not a generic, universalistic model.

We feel that there are a number of sub-systems which will be fruitful for the application of our approach design. Obviously some of them go beyond the limits, or the evidential possibilities, of our own material and other remains alone, and will be dependent upon the work of others as well. At this point, a number of the sub-systems appear to be logical candidates for the approach we are suggesting:

1) *Cultural adoption and adaptation*

a) Direct inter-cultural adoptions within Nabataean culture: as illustrated by the temple plan, the employment of Pompeian I and II styles in decoration, the basic adherence to the Vitruvian canons, etc.

b) Direct, but re-interpreted, inter-cultural adoptions: of which the so-called 'Columbarium' has long been a prime example, but now to which may be added the dedicatory and representational use of the 'eye-idol' block, as well as the obviously female concept of it at the temple and in the recently uncovered example (in company with the Dushares block motif) in the Siq, along with the adoption of the feline and dolphin surrogates/symbols, the 'ritual' scenes of the temple frescos, the use of the *tintinabulae*, the cultically-specific sea-shell 'chimes', and the dedicatory re-use of the Egyptian funerary fragment.

c) Mediated or direct, but adaptive, adoptions: as seen in the use of the reed-bundle variation of standard (Vitruvian) roofing techniques, the sandstone slab subflooring solution to the (Vitruvian) timber-laid requirement[20], the feline replacements for capital volutes, and the non-classical substitution and choices seen in the capital motifs in general.

d) Further reinforcement of the view that Nabataean culture was far more adaptive than adoptive, as was previously demonstrated by the excavations at the Main Theatre. This reinforcement may be seen also at the Qasr and elsewhere, in terms of canonical adjustments, utilization of materials, site modification, motifs and other factors.

2) *Socio-political, economic, and demographic sub-systems*

a) Socio-political climate changes may well be reflected in the fact of the remodelling of the temple (Phase XVIII), as a reflection of anti-foreign (i.e. Roman) feeling during the reign of Malichus II, since no modification was made architecturally, but the classical 'ritual' scenes on the niche panels and the fluting on columns were unnecessarily removed.

b) Direct socio-economic and demographic data, chronologically fixed, are seen in the domestic complex repertory of household ceramic vessels, the presence and implications of imported wares, the building and rebuildings of the domestic structures, as well as in the presence of the necropolis at the end of the domestic site sequence and the casual occupation phases in Area II after the destruction of the temple, all of which point to the continuation and in varying degrees, continued vitality of occupation of the urban centre, after AD 106.

c) Economic evaluations are possible on the basis of the indications of the paucity of timber seen in the roofing and sub-flooring devices noted above, in the probability that Phase XVII of the temple reflects depressed inability to maintain monumental public buildings, in the retrieval robbery of architectural materials in that same Phase, and in the evidences of living standards displayed in the domestic sequences of Area I, along with the conspicuous sumptuousness of the temple complex taken as a whole.

d) Definition of the actual extent, routes, and type of Nabataean commerce by non-epigraphic means has been advanced, at least to some degree, by the recovery of the Athribis fragment, the presence of Pompeian Ist Style decoration and other indicators.

e) Although there already were indications of the rather high level of the female role in Nabataean social structure from epigraphic and numismatic evidences—and the nature of the economic base of the society might also

[19] Hammond, Philip C., 'A Classification of Nabataean Fine Ware', *AJA*, 66, 1966: 169ff; Hammond, Philip C., 'Another Corpus of Nabataean Pottery from Petra', *PEQ*, 1973.

[20] Vitruvius, VII, I, iff.

support that view—little other data have been available. On the basis of the recovered material remains from the domestic structures of Site I, the feminine aspect of the occupations has been obvious. This suggests the continued eminence of the role of the female population in the urban setting at Petra in later periods also. This latter aspect may be relevant to Nabataean trade patterns in the later periods. In company with epigraphic evidence, particularly from Egypt, there is the strong indication that there was little real diminuation of this pattern in the Nabataean period, *strictu sensu*, in the later periods, regardless of political considerations.

f) Diodorus and Strabo both[21] give evidence of various stages of social stratification at Petra, but there has been little attention paid to the investigation of this area, generally because of lack of archaeological evidence, even though the fact of social stratification is obvious in funerary practice. The domestic area of our excavations does provide evidence, however, which may assist the evaluation of such stratification. The geographical location, both in position and elevation, and the nature of the material remains permits examination of social stratification below the monarchial/nobility levels and above those seen from the work of Murray and Ellis and others[22]. This would have been expected, inspite of the egalitarianism suggested by the informant of Strabo (which is probably a Roman misunderstanding of Middle East customs, in any event)[23] on the basis of theoretical scaling[24] possible from data concerning other Middle East social groups, which method may now be the most feasible for approaching the problem.

3) *Habitation patterns, domestic life and urbanization*

a) Considerable detail concerning habitation patterns and general domestic life over a period of time has been recovered from the Area I domestic sequences. Included among them are house plans, space useage, household tasks, domestic equipment, furnishings, and standards of private life.

b) At the present time, we are inclined to characterize Nabataean social organization as 'organic'. That is, it arose via bedouin sedentarization, in response to the development of an economic, rather than an ideational or military system. However, further study of the process of Nabataean urbanization, best illustrated at Petra, may clarify the nature of the organizational system as well. As the earliest documentary references to the culture[25] note the absence of the able-bodied males of the settlement at a trading fair in sufficient numbers to successfully ambush and defeat the military contingent of Antigonus, while also suggesting a residual population of some size left at Petra, it would seem probable that urbanization must have proceeded via the co-development of both agricultural technology and the economic pattern adopted. That is, the adoption of a caravan-oriented economic base would, as Diodorus states, necessitate the periodic absence of a varyingly large proportion of the male population. Hence, agricultural technology would have had to advance sufficiently, probably assisted by or assisting the development of hydraulic technology, to the point where the absence of able-bodied males did not affect the subsistence base production of the residual population and was broad enough also to support the periodic enlargement of the population resulting from the return of the varying numbers of males from commercial expeditions. We would agree with the American theorists Willey and Phillips[26] that agriculture can no longer be seen as the 'indispensible' agent for sedentarization (in the Middle East, as well as elsewhere), but neither was trade, *per se*, the *sole* substitution of 'another subsistence economy of comparable effectiveness' required. Rather, we would see the movement from nomadic/semi-nomadic life of the Nabataeans as being the result of multivariant co-development of agricultural adoption and commercial enterprise along with geographical setting, previous history, potentially arable land, hydraulic ingenuity, the historical context, and other factors causal to the development of their urban and state stage. As our present excavations reveal only that period of Nabataean culture which may be described, following Willey and Phillips, as the 'Classic' and 'Post-Classic' stages[27], the rise to that point has not been further illuminated. However, following the descriptive 'stage-development' views of those same theorists along with the application of the subsistence development theories of others to this later period, much can be done in terms of formulating preliminary hypotheses to be tested elsewhere at Petra[28]. Likewise, the descriptive stage-developmental approach, freed from the chronological impediments of Middle East Research periods of the past, seems an extremely applicable one for Nabataean research[29]. The description applied by Willey and Phillips to the New World 'Classic' stage, for example, would seem to fit well with the results of our present excavations namely, a point of stage development characterized by strong central

[21] Diodorus, II, V, III, 42ff., XIX; Strabo, XVIII; Hammond, P. C., *The Nabataeans . . .*, 1973: 106ff.

[22] Murray, M. and Ellis, *A Street in Petra*, London, 1940. Horsfield, G. and A., 'Sela-Petra, The Rock of Edom and Nabatene', Ch. II, Houses, *QDAP*, VII, 1938: 15–42; Parr, Peter J., 'Excavations at Petra, 1958–1959', *PEQ*, 1960; etc.

[23] Strabo, XVIII.

[24] Carneiro, R. L., 'Scale Analysis as an Instrument for the Study of Cultural Evolution', *SWJA*, 1962: 149ff; and see bibliography of method.

[25] Diodorus, *loc. cit.*

[26] Willey, G. R. and Phillips, P., *Method and Theory in American Archaeology*, Chicago, 1958: 146.

[27] *Idem.*, 182ff.

[28] *Idem.*, 61–78.

[29] *Idem.*

government, religious thrust, a high degree of craft specialization, strong economic bases, individual (and among the Nabataeans, individualized) script, monumental and highly developed art, social stratification, and class ranking[30]. Still further, the domestic sequences of our Area I excavations and the pre-temple occupational strata of Area II would seem to provide a chronological marker for the urbanization of the city centre at Petra as do the later Area II and post-temple strata for a 'Post-Classic' stage, after Roman occupation.

4) *Ideology, religion and cult, private and public expressions*

a) Obviously the temple complex has contributed a considerable amount of material remains and other data concerning Nabataean religion and cult. However, the domestic sequences of Area I have contributed in those aspects as well and significantly, in regard to the religious life of the private citizens. Analysis and interpretation of both sets of data will, it is expected, broaden knowledge concerning Nabataean belief systems, cultic practice, and the relation between the official cult and the religion actually practiced by individuals.

b) Religious implications are most particularly visible in the absence of any Christian iconography in the domestic sequences during the Late Roman ('Byzantine') period and the presence of Nabataean cultic materials 'eye-idol' blocks, a horned altar, a miniature incense burner, and a cultic box fragment, among others—showing the continuity of the Nabataean cult through the later phases.

c) Although there is clear evidence of both a monarchial government and strong religious commitment at Petra, little evidence aside from the formal recognition of religion by the government has turned up concerning the extent of the degree of any co-relationship. The presence of obviously domestic occupation below the temple complex indicates the usurpation of that choice location for public (religious) use, assuming political involvement in the erection of monumental public buildings. Hence, a marked degree of religio-political authority may be postulated to account for the usurpation of land useage. Still further, the situation subsequent to the partial destruction of the temple (Phase XVII) may also have implications relating to the fact of the apparent withdrawal of the royal seat to Bosra at that time.

5) *Technological areas*

a) A great deal of direct and indirect data are now available in regard to Nabataean technological matters, especially in the area of architectural technology. Among these may be noted the employment of specialized metal devices, the use of specialized stonework, the fabrication and application of decorative elements, mechanics, basic construction, raw-material utilization, tool, artist-artisan relationships, and architect-builder procedures. Very specific, of course, are the data recovered in the 'Painters' Workshop' hoard and the subsequent investigation of fresco application made possible from them.

b) The temple complex has also provided examples of the Nabataean solution to certain architectural problems. These may also furnish a cross-chronological clue to the dating of the 'Palace of Justice' tomb, in that both buildings exhibit the same solution to portico support and entry access, along with both exhibiting the same revetted header-stretcher solution for build-strengthening.

c) The temple complex has also been a further reinforcement of the fact of Nabataean technological competence in the construction of monumental public buildings, as was previously demonstrated by the excavation of the Main Theatre and was evidently also the case in regard to the construction of the Qasr.

d) The temple complex has also provided a number of specifics in regard to craft specialization. These may be seen in terms of architect-builder communication, carving variations of identical motifs of mouldings, affixes, and carvings, and again in the materials from the 'Painters' Workshop' hoard. At the level of the labourer, *per se*, the grafitto on one of the column drums suggests division of labour as a recognized labour practice. The almost total decoration of the temple interior also raises the question of the relationships among the craft-group responsible for Petra's tomb-facade carving, the craft-group responsible for the interior stone trim carving of the temple, and the craft-group responsible for the architectural plastering operation(s).

e) Probabilities are now seen to exist relating to influential cultural *continua*. Technologically, they may be seen in the temple for Nabataean architectural, decorative and other craft specializations, and in the domestic *post*-Nabataean sequences, in regard to ceramic technology. These are of considerable importance if the details of the temple complex are admitted as Nabataean, *s.s.*, and the occupation of the domestic area is seen as culturally uninterrupted through the succeeding periods. If those premises are correct, then the conclusion must be reached that craftsmen and concepts persisted into the Late Roman period and hence that Nabataean influence is demonstrated throughout the later periods, probably to the onset of the Early Islamic period and, therefore very possibly *upon* it in certain elements.

Conclusion

We therefore feel that the results of our excavations at Petra thus far—and anticipated in the future—through the control of excavation in terms of stratigraphic method, the rigidity of recording procedures, and the application of appropriate

[30] *Idem.*

archaeometric analyses, will permit our utilization of new theoretical approaches to the sub-systems of the culture and hence will permit our identification of Nabataean cultural isolates.

From such research we hope also further[31] to disprove the idea of the Nabataeans as *simply* middlemen, both in commerce and in the eclectic adoption of borrowed culture, to assist them to emerge culturally in their own identity and to probe the processes by which that identity was achieved.

[31] Hammond, Philip C., *The Nabataeans—Their History Culture and Archaeology*, Astroms, *SIMA*, XXXVII, 1973: 51–52, 62–63, 74, 80, 109–110; Hammond, Philip C., 1965: 55–59, 62–63.

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Exploration à Khirbet Es-Samra: Une Question pour l'Histoire de la Jordanie

Ce sont les résultats d'une prospection que nous présentons. Son intérêt réside dans le fait que Samra est une ville du *Limes Arabicus* et la seule ville à laquelle soit associé un cimetière qui a fourni des inscriptions dans une écriture très peu attestée: le syro-palestinien.

Khirbet es-Samra est aujourd'hui un modeste village des Beni Hasan en voie de sédentarisation. Située sur une des croupes les plus septentrionales des coulées basaltiques du Hauran, la ville ancienne avait été construite en pierres noires, d'où son nom 'la ruine sombre'.

Les explorations

Tout au début du siècle, Samra a été visité à plueieurs reprises par ceux qui cherchaient à établir le tracé de la voie romaine entre Philadelphia et Bosra.

1. R. Lees en 1894 est le premier à décrire les vestiges de basalte et à mentionner les birkeh.
2. Il revient à M. Germer-Durand en 1903 le mérite d'avoir inventorié les bornes milliaires et proposé le premier une reconstitution de la partie nord de la *Via Nova*.
3. R. Brünnow et A. v. Domaszewski en 1904 ne font que reprendre le travail de Germer-Durand, en contestant l'identification des sites.
4. H. C. Butler et Klotz (1904–5) décrivent minutieusement la voie et les sites: Samra a été soigneusement parcouru et les ruins interprétées. Butler propose d'y voir, à cause d'un mur épais qui semble entourer les ruines, une des forteresses du Limes Arabicus; l'appellation Qal'at Samra qu'on donne parfois au site, va dans son sens. C'est peut-être la Notitia Dignitatum qui l'encourage à placer Gadda à Samra.
5. Entre 1905 et 1911, Schumacher dresse le carte de la région.
6. R. Savignac, en 1924, découvre accidentellement un cimetière et des inscriptions funéraires que personne n'avait mentionnés.
7. En 1925, D. Steuernagel croit discerner entre autres monuments, une église dont il fournit même le plan.
8. C. C. McCown en 1930 fait une description précise, précieuse aujourd'hui pour comprendre que les dégâts causés à la ruine ont encore repris après cette date.
9. L'Ecole Biblique, en 1978, s'intéressant aux inscriptions découvertes par Savignac, éprouve le besoin d'étoffer le contexte archéologique et accomplit une exploration de huit jours. Le plan du site et des environs a été relevé et la voie romaine correctement située, passant résolument à l'est de la ville. A l'endroit où la voie romaine accède au sommet du plateau, nous avons remarqué les ruines d'un fortin carré de 20 m. de côté environ, et, tout à fait au sommet, une tour pouvait observer la voie très loin, tant vers le sud que vers le nord. Nous avons repéré les restes du système de recueillement et du stockage des eaux de pluies: les villageois ont réutilisé d'anciennes citernes et drainent le plateau avec un ingénieux réseau de caniveaux concentriques. Ces différentes adductions sont particulièrement soignées parce que la zone est désertique avec ses moins de 100 mm d'eau par an. Un birkeh situé dans la ville a été en usage il y a encore peu de temps; mentionnons aussi à un km en aval, dans le lit du wadi, un autre grand birkeh de presque 100 m de côté, qui était alimenté par le cours d'eau. Quant au cimetière repéré par Savignac, il n'en reste rien qui puisse être observé: en 1924, selon ses dires, toutes les tombes ont été fouillées par des pillards. Le mur d'enclos dont il parle a été complètement démantelé par les bédouins pour édifier des parcs à moutons.

Les inscriptions

Ce qui nous a donc poussés à effectuer cette exploration de Khirbet es-Samra, c'est notre intérêt pour les inscriptions syro-palestiniennes découvertes en 1924: nous voulions examiner leur contexte archéologique et, éventuellement, en trouver d'autres, puisque Savignac n'avait pas eu le temps de faire des recherches approfondies sur le terrain. Voici, brièvement, ce que nous pouvons dire de l'épigraphie de Samra.

Savignac avait trouvé 15 inscriptions grecques et 24 inscriptions syro-palestiniennes; nous avons trouvé 7 nouvelles inscriptions grecques et 15 nouvelles inscriptions syro-palestiniennes.

Ce sont toutes des stèles funéraires assez grossières, la

plupart en basalte, qui est le matériau natif du lieu; quelques-unes sont en calcaire blanc.

Les inscriptions grecques se trouvent sur de gros blocs grossièrement équarrils maintenant remployés dans des constructions récentes. Par exemple:

φος (pour φως)
αιαθη fils de σιχμαλλος

est une nom connu de l'onomastique de cette époque, comme Mme Canova l'a montré. Il ne semble pas déraisonnable de dater ces inscriptions grecques du Ve siècle.

Mais quelques inscriptions grecques se trouvent également sur de gros galets sur celui-ci, on lit facilement στεφανος. Deux inscriptions sont des motifs formés de la croix et de lettres. Ces galets se trouvaient dans un lieu un peu à l'écart de la ruine, parmi ces pierres entassées en forme de murets que les bédouins ont construits (si l'on peut dire) pour servir d'enclos à petit bétail. Ces murs ont été faits par l'accumulation de pierres éparpillées à cet endroit; parmi elles, les stèles funéraires gravées provenant du cimetière assez important.

Les stèles ne sont pas taillées: ces gros galets sont utilisés tels quels. Une centaine porte une croix seule. Les croix sont de formes variées; voici un résumé de la typologie que nous présentons, avec une terminologie que nous voudrions précise: croix simples, potencées, patées, ancrées, à godrons, à motifs chantournés, tridentées, ansées, inscrites dans un cercle, lobées, ornementées, symbole du calvaire, sur support. Savignac n'avait rien ramassé (sauf une pierre, n° 38 dans son article, qu'il n'a pu litre et qui sera publiée dans ADAJ); tout ce que nous avons trouvé, nous l'avons rassemblé, photographié et estampé; les pierres sont maintenant au musée de 'Amman.

Les inscriptions syro-palestiniennes consistent simplement en noms propres, ceux des défunts portés sur ces humbles stèles. Certaines sont rapidement gravées, grafittes difficilement lisibles d'autres beaucoup plus soignées. Voici quelques-unes des nouvelles inscriptions que nous avons trouvées:

— 'ubaydu est un nom propre attesté en nabatéen et en palymyrénien
— yuhannes, avec une orthographe teès répandue dans les manuscrits syro-palestiniens; forme évidemment transcrite du grec.
— david, forme palestinienne du nom
— qayamu, nom propre bien attesté en palmyrénien au Ve s. et en nabatéen dans le Hauran et le Sinaï.
— 'abdion dont la racine est évidemment très claire et dont la forme avec *nun* final est typiquement syro-palestinienne.
— soqut n'est pas encore connu comme nom propre. Il peut se comprendre par l'arabe.
— maqay, nom très connu en palmyrénien
— zharqoly, nom composé que l'on peut lire d'après l'arabe.
— enfin, une inscription semble être une très brève épitaphe: shabat défunt.

Si l'on regarde l'ensemble des inscriptions trouvées par Savignac et par nous, on peut les situer paléographiquement entre le VIème et le VIIIe s., c'est-à-dire qu'elles semblent s'échelonner sur toute cette période.

Du point de vue de l'onomastique, toutes les inscriptions, tant grecques que syro-palestiniennes, indiquent une certaine cohérence; à côté de noms purement grecs ou latins, en petit nombre, l'essentiel est constitué de noms sémitiques. Un nombre non négligeable de ceux-ci sont repérés dans l'onomastique de la Syrie et notamment du Hauran, à la limite duquel Samra se trouve. La comparaison avec les onomastiques palmyrénienne et nabatéenne surtout, mais aussi safaïtique et thamoudéenne, montre une parenté qui n'étonnera pas dans cette région. Cependant, déjà, commence à se faire sentir une présence de l'arabe. Nous sommes bien à Samra en présence de traces de cette passionnante époque, commencement d'un nouveau monde.

Quelle a pu être cette bourgade dont la céramique, l'onomastique, l'écriture sont de très humbles témoignages, durant les périodes romaine, byzantine et omeyyade?

Kh. es-Samra, pièce du système du Limes Arabicus

En 106, lorsque le royaume nabatéen est incorporé comme Province à l'Empire, Bosra est choisie comme ville administrative et devient *caput viae* de la Voie Romaine décidée par Trajan, et construite rapidement entre 111 et 114. De 5,90 m de largeur, la voie est partagée par un axe médian; elle est pavée de galets de basalte.

Au sud de Philadelphia, les Romains fortifieront les anciennes places de la défense nabatéenne; mais dans la partie nord, si les Nabatéens avaient tracé la route, elle ne semble pas avoir été fortifiée. Les Romains établirent donc des forteresses et cette section nord devint une pièce maîtresse du Limes Arabicus, lequel pendant 500 ans assurera la sécurité aux confins orientaux de l'empire. Rien d'étonnant alors que des villes se soient développées comme étapes commerciales le long de cette voie, et Samra a été probablement la première grande étape, correspondant à la journée caravanière de Philadelphia vers Bosra. La Notitia Dignitatum, au cours du IVe s., mentionne les forces romaines stationnées dans les villes de la Via Nova. Cependant, la plus dense occupation repérée sur ces sites de la portion nord, et l'examen de la céramique recueillie à Samra le confirme, se situe au cours de la période Omeyyade (640–750). La céramique que nous avons recueillie est celle en grande partie de la surface; donc, par définition, celle de la dernière occupation du site, aux VIIe-VIIIe s. Mais quelques tessons, Late Roman C Ware, datent des Ve-VIe s. Et un déblai ancien, coupé par la construction du chemin de fer a fourni des tessons du IIème a. Il n'y a pas de tessons nabatéens. Or, la période omayyade, c'est précisément le temps que nous avons assigné au cimetière chrétien. On parlera dans un instant des questions que posent justement la présence de cette communauté chrétienne à cet endroit-là et à cette époque-là.

Palestine et en Transjordanie dès le début du ve s.; elles adoptèrent un dialecte local, voisin du Galiléen, en conservant leur écriture, mais en la modifiant, sous l'influence de l'écriture araméenne, pensons-nous. Chalcédonniennes, ces populations le resteront, jusqu'aux melkites d'aujourd'hui.

Si la formation de communautés monastiques se comprend facilement à partir de là (Laure de Saint Firmin dans le wadi Suweinit, Castellion de Khirbet Mird, Communauté dans le cadre de Sainte-Catherine du Sinaï), il est évidemment impossible de dire aujourd'hui la place de Samra dans cette histoire: installation dès le début du ve siècle, ou nouvelle implantation à partir de Jérusalem? Le fait que les inscriptions grecques et syro-palestiniennes trouvées jusqu'à présent à Samra ne semblent pas antérieures au VIe s. fait pencher pour le seconde hypothèse. Quoi qu'il en soit, cette implantation se fait en un endroit dont on peut soupçonner l'importance militaire et commerciale: étape sur la route Bosra-Philadelphia, point défensif sur le Limes Arabicus, installation en bordure de la zone semi-désertique, Samra existait à l'époque romaine, sans doute dès la construction de la Via Trajana. Puis la bourgade s'est développée à l'époque byzantine; ce développement ne serait-il pas dû à l'arrivée du groupe syro-palestinien? Il serait intéressant d'en connaître toutes les traces archéologiques. Vient alors la période arabe; du moins sommes-nous autorisés à la nommer ainsi grâce à l'abondance de la céramique. Car la persistance de l'écriture syro-palestinienne donne à penser que la pénétration arabe ne s'est pas faite très tôt, en tout cas certainement pas à l'époque omeyyade. Les quelques traces arabes perceptibles dans l'onomastique laissent entrevoir que l'influence va commencer à se faire sentir, mais timidement.

Ce qu'il en est à Samra est donc semblable à ce qui s'est passé pour l'ensemble des groupes syro-palestiniens: gardant une forte identité culturelle dont l'apogée semble repérable aux VIIe–VIIIe s., ils ne connaissent de véritable pénétration de la culture arabe qu'assez tardivement.

Finalement, l'état actuel de la documentation concernant les syro-palestiniens, s'il fait apparaître beaucoup de problèmes, donne peu de solutions; il nous invite à considérer en tout cas que ces populations sont une question dans l'histoire de la Jordanie.

Nous retiendrons en résumé trois interrogations:

1. Pourquoi des communautés parlant un dialecte proche du galiléen ont-elles été amenées à s'implanter en Transjordanie, et ce, dans des lieux non dénués d'importance? Près de Philadelphia, à Samra et à Jarash (Il y a beaucoup de chances pour que l'évangéliaire du Vatican provienne de Jarash- début XIe s.)? Cela s'est-il produit brusquement au VIe siècle?
2. Ces communautés ont-elles contribué par un apport original à une évolution de la culture locale? Dans quelle mesure ont-elles assimilé des éléments locaux? Quelles furent exactement leurs relations avec des éléments provenant de Syrie? Quel rôle a joué la Via Trajana lorsque le Limes n'existait plus?
3. Ces communautés en Transjordanie étaient-elles isolées ou ont-elles été reliées aux grands évêchés de la côte et de Jérusalem? Comment ont-elles pu rester durablement imperméables à la pénétration de la culture islamique, et ce, sur une voie de circulation aussi importante que la Via Trajana? Leur culture et leur vie religieuse ont-elles duré à cet endroit aussi longtemps que dans le monastère protégé qu'est Sainte-Catherine, à savoir jusqu'au XIIe siècle?

L'identification de Kh. es-Samra

Le P. Germer-Durand, dès 1903, met au jour une vingtaine de bornes milliaires inscrites aux chiffres des milles romains qui jalonnent la Via Nova. Elles lui permettent de dresser une carte précise du tracé de la route avec de précieuses indications de distances. Par ailleurs, la Table de Peutinger mentionne précisément sur ce tronçon cinq villes avec les distances qui les séparent: Philadelphia-Gadda: XIII, Gadda-Hatita: XI, Hatita-Tantia IX, Tantia-Bosra: XXIV. Les explorateurs tentèrent de concilier ces deux différents registres d'informations dans leurs efforts d'identifier les sites repérés le long de la voie. Germer-Durand et Miller placent à Khirbet es-Samra: Hatita; tandis que Butler (1919 et 1921), suivi par Abel (1938) y situent Gadda. Il semble bien que ces derniers ont été gênés parce qu'ils ont vu dans el-Haddid (près de Qal'at Zarqa) une transposition toponymique du nom de l'ancienne Hatita (ou Adita). Il faut dire que, récemment, G. W. Bowersock (1971) propose de mettre Tantia à Kh. es-Samra. Quant à R. Brünnow, suivi par G. Beyer (1935), il refuse tout simplement de considérer Kh. es-Samra comme une des places fortes du Limes. Il n'en reste pas moins que si l'on tient pour assurées les données chiffrées de la Table de Peutinger, c'est de loin Hatita qu'il convient le mieux de situer à Kh. es-Samra.

Une question pour l'histoire de la Jordanie

Nous avons essayé de montrer l'intérêt archéologique de Kh. es-Samra. Dans l'histoire de la Jordanie, Samra occupe une place qui mérite d'être examinée. C'est en effet la seule communauté syro-palestinienne où nous ayons quelque chance de retrouver des traces sur un site dans son ensemble et pour une période d'occupation suffisamment longue. En effet, jusqu'à présent, les restes de ces communautés ne nous apparaissent plus que sous forme de quelques vestiges d'une part (mosaïque *in situ* et inscriptions sur pierres hors contextes), d'un ensembles de manuscrits d'autre part.

Géographiquement, ces communautés sont groupées dans des régions précises: trois sites sur la côte Galiléenne, trois sites autour de Jérusalem, un site en Samarie, le monastère Sainte-Catherine au Sinaï, et trois sites en Transjordanie: el-Quwaismeh, tout près de 'Amman (au sud), Jarash et Khirbet es-Samra. (Le cas de Tell Yunis, sur la côte palestinienne, est représenté par un tesson trouvé hors contexte et qui ne fournit pas d'indication substantielle; il témoigne peut-être de relations agricoles, mais c'est un tesson isolé . . .)

Les documents écrits qui proviennent de ces lieux concernent avant tout des communautés monastiques. Khirbet es-Samra, par contre, est une bourgade, avec son système d'adduction d'eau, une céramique abondante et son cimetière. Evidemment, la faible quantité d'inscriptions, le fait que nous ne possédions encore que du matériel récolté par simple exploration ne permettent pas de tirer des conclusions décisives. Nous remarquons simplement que, déjà, ces quelques inscriptions témoignent d'une bonne variété dans l'onomastique; nous avons vu aussi combien cette onomastique était ancrée dans l'environnement ethnique de cette région, à savoir la bordure sud du Hauran; que les points de contacts avec l'onomastique palmyrénienne sont loin d'être négligeables; nous notons aussi l'absence de titulature ecclésiastique. Enfin, des documents de Samra, nous pouvons rapprocher les deux inscriptions sur tesson qui proviennent de Jarash dont Samra n'est pas très éloigné et avec lequel il existait une grande voie de communication. Incontestablement, nous avons là une série d'indices significatifs: des groupes syro-palestiniens ont vécu dans cette région et y ont connu une histoire qui s'insère dans un cadre plus large que celui d'un seul village et sur une période durable puisque nous pensons, actuellement, qu'elle s'étend au moins sur quatre siècles à Samra-Hatita. Il est dommage que la pauvreté des connaissances de la céramique byzantine et arabe de cette région empêche de voir dans quelle mesure celle de Samra s'insère dans une typologie et si elle présente des caractéristiques originales. Quoi qu'il en soit, nous pouvons commencer au moins à poser quelques questions qui intéressent l'histoire de la Jordanie.

Dans l'état actuel des recherches, on peut dire d'abord que les communautés syro-palestiniennes se trouvaient en Palestine et en Transjordanie entre le Ve et le XIIe siècle.

En effet, la première trace écrite est celle d'une mosaïque de Galilée, dans un dispositif ecclésiastique assez important; elle est datable, avec une probabilité raisonnable, en 415[1]. Le dernier document connu est un manuscrit, l'Horologion de Black, daté de 1187 et provenant du Sinaï. La langue est un dialecte araméen occidental dont on a démontré qu'il possède ses caractéristiques propres, son lexique et sa grammaire et qu'il n'est nullement un genre de syriaque déformé. La littérature comprend des textes bibliques, des textes hagiographiques, des fragments patristiques et des textes liturgiques. Selon les praticiens de la critique textuelle néo-testamentaire, ce qu'on appelle la version syro-palestinienne appartiendrait à la tradition dite occidentale, ou bien serait un témoin du texte dit césaréen; pour d'autres encore, elle dépendrait notablement du diatessaron; pour d'autres enfin, elle est très composite; pour l'instant, il semble prudent de dire qu'il existe non pas une, mais plusieurs versions syro-palestiniennes. Les textes hagiographiques sont tous connus en grec. Les fragments patristiques sont peu nombreux; ils comprennent notamment des textes de Saint-Ephrem, d'Athanase et de Cyrille de Jérusalem. Il y a aussi quelques apocryphes du NT. Quant aux textes liturgiques, ils appartiennent à la tradition melkite; ils apparaissent, dès le début de XIe siècle, très fortement marqués par l'emprise du grec et de l'arabe.

D'après les critères paléographiques, il apparaît que l'écriture, que l'on a souvent confondue avec celle du syriaque, est spécifique; elle est certes empruntée à l'estranghelo, mais elle est structurée différemment et évoluera de façon totalement différente. Nous proposons d'y voir l'écriture de populations d'origine syriaque de Mésopotamie, venues s'installer en

[1] Nous devons cette datation à M. Y. Blomme que nous remercions vivement de nous avoir communiqué les renseignements qu'il a tirés de l'examen des mosaïques et des inscriptions grecques.

H. Kalayan

The Symmetry and Harmonic Proportions of the Temples of Artemis and Zeus at Jerash; and The Origin of Numerals as used in the Enlargement of the South Theatre in Jerash

The symmetry in classical architecture

Vitruvius in Book III, chapter I, states: 'the planning of temples depends upon symmetry, and the method of this architects must diligently apprehend. It arises from proportion (which in Greek is called **analogia**). Proportion consists in taking a fixed module in each case, both from the parts of a building and for the whole, by which the method of symmetry is put into practice. For without symmetry and proportion no temple can have a regular plan; (that is it must have an exact proportion worked out after the fashion of the members of a finely shaped human body)'.

The Greek word **analogia** translated as 'proportion' does not convey the real sense of the Greek word; Nicomachus of Gerasa, in his *Introduction to Arithmetic*, Book II, chapter XXI, 2 defines analogia as in the proper sense, the combination of two or more ratios and it applies only to geometrical proportions. Hence analogia is the combination of symmetry and ratios. At times they are called marriage numbers, as a ratio of 7/50 can be expressed as $49/50 \times 1/7$, thus 49/50 is a marriage symmetry to bring the proportion to 1/7.

In Book I, chapter III, 2, it was pointed out that 'a building should have strength due to its foundation, utility due to its internal arrangements, and "grace" when the appearance of the work shall be pleasing and elegant, the scale of the constituent parts is justly calculated for symmetry'. Thus symmetry must be present in all details of the constituents elements of a building to make it graceful.

The same relation is expressed in Book I, chapter III, 3–4; 'proportion implies a graceful semblance; the suitable display of details in their context. This is attained when the detail of the work are of a height suitable to their breadth and of a breadth suitable to their length; in a word, when everything has symmetrical correspondence'.

'Symmetry also is the appropriate harmony arising out of the details of work itself; the correspondence of each given detail among the separate details to the form of the design of the design as a whole'.

In the chapter 'On the training of the architects' Vitruvius warns that 'the difficult problems of symmetry are solved by geometrical rules and methods', so the architect should study well the rules of geometry.

Thus symmetry combined with proportion was the harmony of a building. Each temple had its proper symmetry. Symmetry is a geometrical concept in its difficult forms. Thus when the relation of dimensions of the parts of a building is found, this relation is an analogia, a combination of symmetry and the proportion applied for the parts in question.

Chapter X in Euclid's *Elements* deals with symmetry. Symmetry is considered as the ratio between two unequal lines, if the given magnitudes have a common measure (whatever the measure may be). Thus, two lines one of five measures and the other of six measures, have a symmetry of 5/6, whatever the measure is.

The definitions preceding chapter X in Euclid's *Elements* define two kinds of symmetry. Symmetry is translated there by Sir T. L. Heath as commensurability. I prefer to use the word symmetry when quoting.

1 'those magnitudes are said to be symmetrical which are measured by the same measure, and those asymmetric which cannot have any common measure'.
2 'Straight lines are symmetrical in square when the squares on them are measured by the same area, and asymmetric in square when the squares on them cannot possibly have any area as a common measure'.

The above expressed definitions reveal the fact that Euclid had in mind application of a geometric series. For example, if A and B are two magnitudes with a common measure, hence symmetrical, then the mean term between A and B is $\sqrt{A \times B}$, and the ratio of

$$\frac{A}{\sqrt{A \times B}} = \frac{\sqrt{A}}{\sqrt{B}}.$$

Thus square roots of A and B are considered symmetrical in square, because, in square it gives A and B, and they were assumed to be symmetrical. This is attributed to Theaetetus by Plato in the book dedicated to him, although the same relations are found in Egyptian monuments, showing that the

idea of symmetry had a common use in Egypt and probably later was taken over by the Greeks[1].

A second mean proportional between A and $\sqrt{A \times B}$ will lead to a symmetry of $A^{\frac{1}{4}}/B^{\frac{1}{4}}$.

Thus they are symmetrical in biquadratic form. That is why mathematically, Sir T. L. Heath reached the following consideration concerning chapter X; '. . . Book X formed a repository of results to which could be referred problems which depended on the solution of certain types of equations, quadratic and biquadratic but reducible to quadratics'. This conclusion is taken from the point of view of a mathematician, and is correct mathematically, but from the point of view of applied geometry, chapter X is to instruct the architect about the lines he is using, whether they have a common measure or not.

Definitions 3 and 4 deal with rational and irrational lines and Euclid proposes that any line can be considered rational, and irrationality will be with respect to the measure assumed. The example given by Pappus[2] in the commentary on Book X of Euclid (p. 72) expresses the point mentioned above, 'for example, if there be taken, on the one hand, a square whose measure is eighteen square feet, and on the other hand, another square whose measure is eight square feet', the relation is $\sqrt{8}$ to $\sqrt{18}$. This relation can be expressed

$$\frac{\sqrt{8}}{\sqrt{9}} \times \frac{1}{\sqrt{2}} = \frac{2}{3};$$

in this form the common measure is $\sqrt{2}$ feet[3], the $\sqrt{8}/\sqrt{9}$ is the symmetry and $1/\sqrt{2}$ is the proportion, this relation is known as side and diagonals, given by Theon of Smyrna, affirming that these relations harmonize the cofigurations (J. Depuis, p. 71).

Theon of Smyrna, in his introduction to Music, states that all harmony is numerical, and harmonic relations are in consecutive numbers; the same is asserted by Nicomachus of Gerasa in Book I, chapter VI; 'It must needs be, then, that scientific number, being set over such things as these, should be harmoniously constituted, in accordance with itself; not by any other but by itself . . . for the most fundamental species in it are two, embracing the essence of quantity (the monad and dyad, the sameness and otherness, the fundamental cosmic force) . . . odd and even, and they are reciprocally woven into harmony with each other, inseparably and uniformly, by a wonderful and divine Nature . . .'.

Thus the symmetry to be harmonious had to be in the form N into $N \pm 1$, connected with a proportion in harmonic intervals, superparticular or superpartient numbers. Thus the form of the temple will be partaking sameness and otherness by odd and even numbers of its symmetry.

In Book IV, chapter IV, Vitruvius states that 'the length of the temple is so arranged that the breadth is half the length', but it is not specified, if it will be half the length in square or in linear forms. It can be stated that 1 and 2 correspond to lower and upper notes, while $\sqrt{2}$ is the note mean proportional in between. In the classical period it was assumed that both ear and eye act in the same way for harmony, that is, in numerical relations forming a geometric proportion. The above assumption can be verified in music by the interval of a lima, 243 and 256 vibrations, as an interval detectable by human ear.

$$\frac{243}{256} = \frac{\sqrt{9}}{\sqrt{10}}, \quad 242.86$$

hence 243 is a mean proportional between 230 and 256. Thus the ear is acting in geometric proportions for the differentiation of notes.

The division of intercolumnal spacings in the Vitruvian form of temples are the same for the side and the front except for the middle spacing in the front for a corinthian temple, and side spacing for a doric (or at times for Ionic temples). For this reason the symmetry of any classical monument can be found from the frontal distribution of its columnal intervals, or pilasters with columnal intervals, distances being taken from axis to axis.

[1] 'All Problems about Pyramids' published in *The Rhind Mathematical Papyrus*, Vol. I (Oberlin, 1927, pp. 96–99) (revolve around the SEKED) the name given for the symmetry of Vitruvius, e.g. Problem 56, If a pyramid is 250 cubits high and the side of its base 360 cubits long, what is its SEKED?.

The process is to take $\frac{1}{2}$ of 360; 180, and find the ratio of 250/180 in units of cubit. Thus the author is eliminating the factor of $\frac{1}{2}$ in the formula

$$\frac{N \pm 1}{N} \times \frac{1}{2}$$

and getting directly the symmetry.

Problem 59, If a pyramid is 8 cubits high and the side of its base 12 cubits long what is its Seked?

He advises finding the ratio of

$$\frac{8}{6} = \frac{4}{3};$$

our way is

$$\frac{8}{12} = \frac{4}{3} \times \frac{1}{2}.$$

[2] The commentary of Pappus on Book X of Euclid's *Elements*, William Thomson, Cambridge Harvard University Press, 1930, has survived in Arabic only, showing that the symmetry was present in early arabic constructions, as a dome is never built on a square, but on a rectangle, whose sides must reveal the symmetry applied.

The small altar of the Temple of Jupiter in Baalbek, reconstructed with its original blocks in the courtyard in front of the temple, has the following dimensions, measurements taken from centre of pilaster to centre of pilaster for the horizontal dimension; the height is the elevation above the podium; breadth 659, length 732, height 695,

$$\frac{659}{732} = \frac{9}{10}, \frac{659}{695} = \frac{\sqrt{9}}{\sqrt{10}}, \frac{695}{720} = \frac{\sqrt{9}}{\sqrt{10}}.$$

The so-called Monumental Altar, published by P. Collart, and P. Coupel, is a higher altar, added later inside the rectangular courtyard of the temple, to the east of the above mentioned small altar. It has the same relation of symmetry for its dimensions as above. 'Not analysed in the publication.). Length 1,642, breadth 1,553, height 1,590,

$$\frac{1{,}553}{1{,}642} = \frac{\sqrt{9}}{\sqrt{10}}, \quad 1{,}557.7, \quad \frac{1{,}590}{1{,}642} = \left(\frac{9}{10}\right)^{\frac{1}{4}}, \quad 1{,}599.3.$$

[3] Siegler has published a drawing of a stone with squares of 42 mm. on page 49 in *Architecture of Kalabsha*.

Ten of 42 mm. is 42 cm. $42/\sqrt{2} = 29.698$ cm., which is the dimension of an ancient foot measurement in the Middle East.

The Peribole of Kalabsha and some of the elevations are planned with the symmetry of $50/49 = 5\sqrt{2}/7$, so if one dimension is 7 ft. the other will be 50 divisions of the 42 mm. line.

1.1. The Temple of Artemis (Front View).



For example, the front six columns of the peristyle of the temple of Artemis are placed on two sides of a middle interval of 456 cm., and two of 373 cm. apart—the total breadth B = 1,948 cm. If all spaces were of 373 cms. then the breadth would have been 1,865 cms. Hence the ratio of 1,865 to 1,948 is the symmetry used for the temple of Artemis.

$$\frac{1{,}865}{1{,}948} = \frac{\sqrt{11}}{\sqrt{12}},\ 1{,}947.92 \text{ or } \frac{373}{1{,}948} = \frac{\sqrt{11}}{\sqrt{12}} \times \frac{1}{5}$$

(FIG. 1, 1)

The same symmetry should govern the length to breadth, the length L is $10 \times 373 = 3{,}730$ cms.

$$\frac{1{,}948}{3{,}730} = \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{2}.$$

(FIG. 1, 2)

Vitruvian and non Vitruvian peristyle temples

The temples with peristyle columns having 2N-1 columns on the side, N being the number of columns in front, have their proportion 1/2, while non Vitruvian temples have $\sqrt{1/2}$ ratio. Thus the intercolumnal number of spaces will indicate the form of the factor 1/2. This is correct if the temple is not enlarged to include another chamber as the case of the Parthenon.

If the Artemis temple had been of Doric form, the axial distances would have been

$$1{,}948 \times \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{5} = 406.9,$$

while the two extreme intercolumnal distances would be 363.6 each. It is the symmetry formula which decides the spacing of columns in Doric and at times in Ionic form temples, for the side contracted spacings.

A fine example is the so-called Temple of the Athenians' at Delos. It is an emphyprostyle temple with six columns in front and at the back. The breadth of the podium is 1,106 and the length is 1,885 cm.

$$\frac{1{,}106}{1{,}885} = \frac{\sqrt{11}}{\sqrt{12}} \times \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{\sqrt{4}},\ 1{,}105.17$$

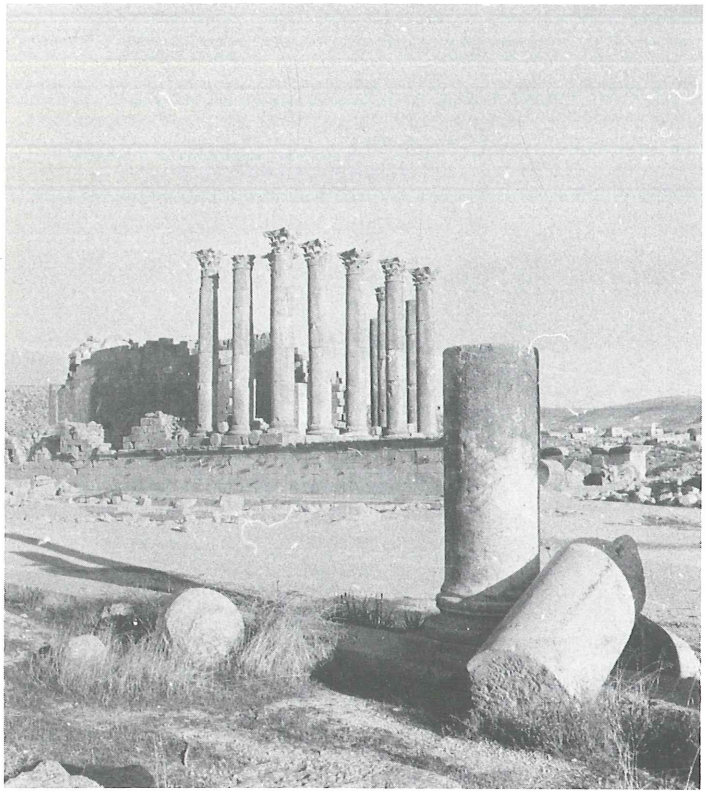
For the temple proper B is 879, L is 1,611.8 cm.

$$\frac{879}{1{,}611.8} = \frac{12}{11} \times \frac{1}{2},\ 879.16$$

Thus the mathematical evidence shows that the temple was for Athena or Artemis, because the symmetry is 12/11.

The frontal distribution of columns are 183.2 for the three

1.2. The Temple of Artemis (South View).



middle spaces, while the two side spaces are 164.7 cm. total 879 cm.

$$879 \times \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{5} = 183.6$$

instead of 183.2 cm.—an error of 0.4 cm.

It is difficult to ascertain whether the error is due to the architect reconstructing on paper or to the original planning, but both have done an admirable work of precision.

The same fact is true for the Parthenon, with this difference that in doric architecture, the middle intervals are uniform while the two last intervals are contracted, as in the example above.

The front peristyle intercolumnal distribution is: $5 \times 429.9 + 2 \times 365.5 = 2{,}880.5$. If all were of 429.9 it would have been $7 \times 429.9 = 3{,}009.3$; the ratio of these two numbers is the symmetry of the temple

$$\frac{2{,}880.5}{3{,}009.5} = \frac{\sqrt{11}}{\sqrt{12}}, \quad 2{,}881.18$$

hence

$$2{,}881.18 \times \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{7} = 429.9.$$

The error in lay out, accounts for the differences found above, especially for some authors for whom the last spaces are 363.5.

The same symmetry should be for the breadth and the length; $14 \times 429.9 + 2 \times 265.5 = 6{,}749.6$.

$$\frac{B}{L} = \frac{2{,}880.5}{6{,}749.6} = \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{3}},$$

$$2{,}878.0 \text{ or } 6{,}755.37.$$

To have a longer cella, with an adjoining chamber for treasury, the usual formula is multiplied by $1/\sqrt{3}$. All through, the symmetry of 11/12 is a factor in the relation of the parts to each other as well as to the whole.

For both cases, the Artemis and the Parthenon, it can be stated quite safely that the length was assumed as a whole number of feet; for Artemis the length will be 127 feet of 29.37 cm. each and such a measure is marked on the south side of the podium on a horizontal line; for the Parthenon the length is 228 feet of 29.59 cm.

The geometric method would be to describe a semicircle of 127 ft. diameter for Artemis and erect a perpendicular on the third division of the diameter of 127 ft. divided into 11 parts. The point found on the semi-circle joint to the end of diameter gives the B. In the case of the Parthenon, the diameter of 228 feet is divided into 11 parts and the perpendicular is from the second division.

$$\text{Artemis } B = \frac{127}{11} \times \sqrt{33} \quad \text{Parthenon } B = \frac{228}{11} \times \sqrt{22}$$

Such a method is well designed in the courtyard in front of the temple of Zeus in Jerash. It is assumed, from the inscription on the pediment that the temple of Zeus was completed in AD 163, the temple was to be placed on the high rocky ground to the south of the existing courtyard dated to c. AD 50, with its altar-like temple on its west side, with a small altar in front of it. This altar has been displaced, to give a full view to the stairs leading up to the temple of Zeus. This courtyard is surrounded with a vaulted corridor. The walls on the courtyard side have engaged columns with Ionic capitals at 300 cm. intervals; in between the columns there are alternating blind and open arches communicating with the corridor surrounding the courtyard. The diameter of the engaged columns is about 79 cm. and the opening of arches 143 cm. The symmetry of spacing to the diameter of the column is:

$$\frac{79}{300} = \frac{\sqrt{10}}{\sqrt{9}} \times \frac{1}{4} = 79.0 \qquad \text{(FIG. 2, 1\&2)}$$

Thus the spacing is four diameters, and the symmetry is 9/10. Hence the former temple was dedicated to a god equivalent to Zeus. The opening of arches are 2 diameters:

$$\frac{79}{143} = \frac{10}{9} \times \frac{1}{2} = 79.4.$$

The relation of the opening of arches to intercolumnal spacing is 2 as above:

$$\frac{143}{300} = \frac{\sqrt{9}}{\sqrt{10}} \times \frac{1}{2} = 142.3.$$

In this courtyard there are four concentric chiselled circles,

2.1. The Courtyard of the Temple of Zeus: the foundation of the displaced altar (centre); the inscription (slightly right of altar) and the chiselled circles on the courtyard slabs.



2.2. After restoration, the engaged columns with blind and open arches surrounding the courtyard of Zeus, with inscriptions AD 50.



the outermost one has a radius of $1{,}990 \pm 10$ cms. This dimension is a little over one half of the length of the temple of Zeus. On the east side of the temple the axis of the bases are marked with a cross, and the two intercolumnal distances is 714 cm. Hence the Length of the temple is $357 \times 11 = 3{,}927$ cm. This is the diameter of the second inner circle. The breadth of the temple is $2{,}640 \pm 5$ cms.

$$\frac{B}{L} = \frac{2{,}640}{3{,}927} = \frac{\sqrt{9}}{\sqrt{10}} \times \frac{1}{\sqrt{2}} = 2{,}634.3 \text{ cm.}$$

The temple is non-Vitruvian, with its 8 columns in front and 12 columns on the sides; thus the planning is done according to side and diagonal numbers as indicated by Theon of Smyrna.

One of the base stones of the displaced altar has an inscription in the form

IIIIINIIIII
IIIIINIIIII

which most probably indicates a measure of 120. The outer circle's diameter is 135 ft.; thus the measure used is one and one eighth of a foot (PL. 2, 1).

The statement by Vitruvius that the planning of temples depends on symmetry (and he is not stating what is the symmetry used) indicates that each god had its own symmetry. For houses Vitruvius gives three analogia with symmetries; (Bk. VI, Ch. V.III, 3),

$$\frac{6}{5} \times \frac{1}{2}, \quad \frac{4}{3} \times \frac{1}{2}, \quad \frac{\sqrt{2}}{1} \times \frac{1}{2}$$

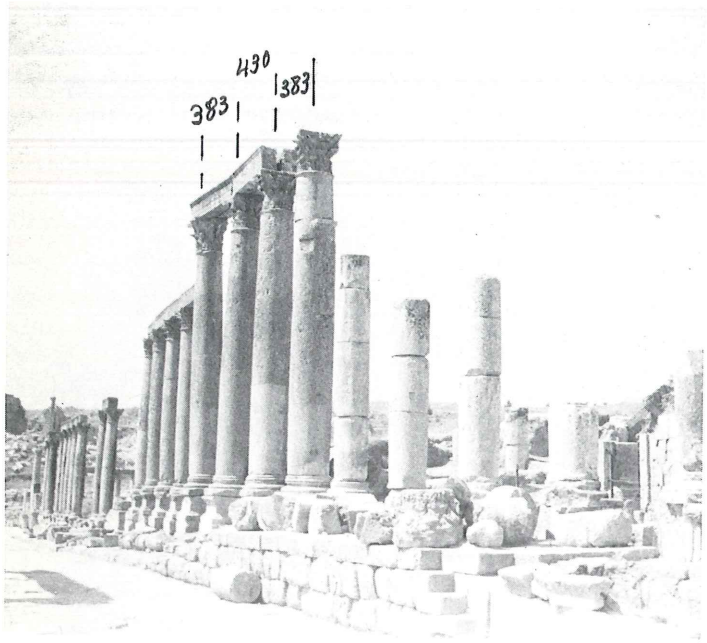
and advises in the same chapter at 11; 'In buildings of this kind, all the rules of symmetry must be followed, which are allowed by the site, and the windows will be easily arranged, unless they are darkened by high walls opposite. But if they are obstructed by the narrowness of the street or by other inconveniences, skill and resource must alter the proportions by decreasing or adding, so that an elegance may be attained in harmony with the proper proportions'. Thus the advice is to keep the symmetry but change the proportion to have more light in case of obstruction of windows.

Having in mind that the numbers of symmetry give information about the function of buildings, and that on the Cardo of Jerash the presence of four columns with larger diameters in a compound, reveals the existence of an important building, these buildings were measured with the following results.

The building opposite to the parking ground in front of the present rest house, has four high columns spaced 383 cm., 430 cm. and 383 cm.; total 1,196 cm. This building is being excavated under the supervision of the Archeology Department of the Jordan University.

$$\frac{383}{1{,}196} = \frac{\sqrt{12}}{\sqrt{13}} \times \frac{1}{3} = 383.0 \qquad \text{(FIG. 3, 1)}$$

3.1. The building west of the Cardo, in front of the Rest House.



3.2. All that remains of the building which was on the parking ground.



This kind of symmetry is found in the temple of Bel in Palmyra. It might be called a symmetry of tolerance. On the outside of the entrance into the peribolus of the Temple of Bel, there are nine interpilasteral spaces on one side and ten on the other side, announcing a symmetry of 9/10. Immediately inside the peribolus, the portico columnade spacing on one side of a larger opening is 18 intercolumnal spaces, while on the other side it is 20 axial spacing, again a symmetry of 9/10. On the north and the south side of the courtyard the ratio of intercolumnal spacing numbers is $5/4 \times 1/2$; thus the symmetry is 5/4. While on the east side of the courtyard the ratio is 12/13. Thus the courtyard in its planning announces the presence of several gods with differing symmetries. All transformations in both thalamos were executed to bring the symmetries in line with the occupying god from the symmetry of 12/13 of the original planning of the temple. The stairs leading up to the temple were transformed into a podium by lowering the courtyard, to bring the symmetry into 9/10, because Bel was declared a Zeus or Jupiter. Thus the statement of Nonus addressed to the god of Tyre, that the gods are the same but their names are different, was a fact of symmetry attributed to gods long before the time of Nonus. It was a monotheism in polytheism.

The same symmetry is present at the main in antis entrance to the circular hall of the same building mentioned above. The distances are 346, 390, 346 total 1,082 cm.

$$\frac{346}{1{,}082} = \frac{\sqrt{12}}{\sqrt{13}} \times \frac{1}{3}, \; 346.5.$$

The building which was on the parking ground, of which only 4 high front columns are standing, has the following spaces; 328, 422, 328; total 1,078 cm.

$$\frac{328}{1{,}078} = \frac{\sqrt{5}}{\sqrt{6}} \times \frac{1}{3}, \; 328.0 \qquad \text{(FIG. 3, 2)}$$

According to the symmetries assigned to the non religious dwelling by Vitruvius, this building was either a residence or a Public building.

The next building on the west side of the Cardo, just before the entrance into the Cathedral, has 4 columns with intervals 351, 486, 351, total 1,188 cm.

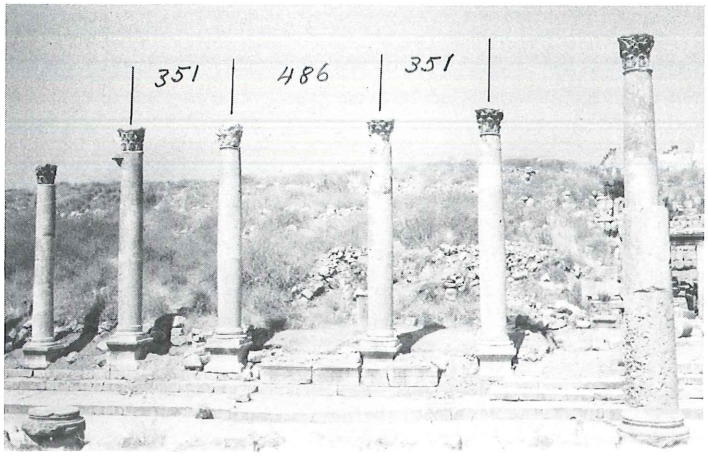
$$\frac{351}{1{,}188} = \frac{8}{9} \times \frac{1}{3}, \; 351.99.$$

The 8/9 symmetry is found in Baalbek on an altar of pre-Roman construction when Baal of Baalbek was not a Jupiter Maximus, so this might be the temple of the Arabian god, to whom a dedication has been found (FIG. 4, 1).

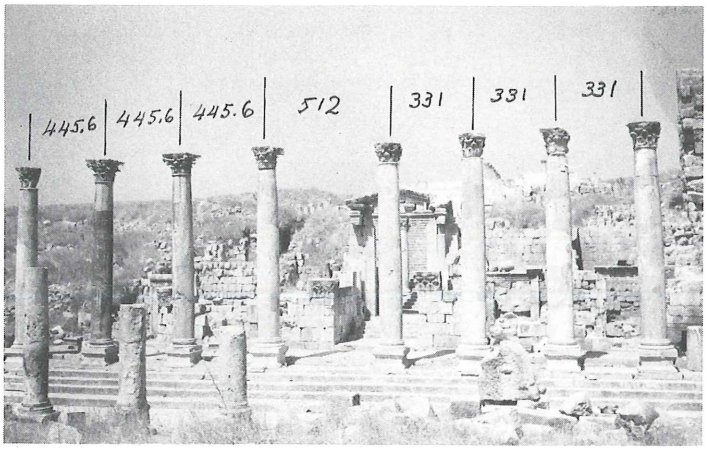
The entrance to the Cathedral has been left as it was in the pagan period, so its symmetry may reveal the gods worshipped in it. The columns have been restored on the bases as they were, but the pilasters in the background are in their respective positions. At present, the intercolumnal distances are, starting from the south; 412, 418, 397, 522, 331, 330, 334. The two pilasters flanking the entrance are 512 cm. apart. The distance from the southern pilaster to the pilaster on the south side of the door is 1,337 cm. so the distances of the southern intercolumnal spacing were 1,337/3 = 445.6 cm. On the northern side, the last column is displaced, the distances are 331 cm., totalling 993 cm., so the symmetry of the two sides is not the same. The symmetry of the southern side is (PL. 4, 2):

$$\frac{3{,}119.6}{3{,}186} = \frac{2 \times 1{,}337 + 445.6}{2 \times 1{,}337 + 512} = \frac{48}{49}, \; 3{,}120.9$$

4.1. The four columns in front of the entrance to the Cathedral. (Temple of the Arabian God?)



4.2. Entrance to the Cathedral.



This is the symmetry of Bacchus, after the so-called temple of Bacchus in Baalbek (*Bulletin du Musée de Beyrouth*, T. XXIV, page 58, note 1). The presence of Bacchus was already inferred due to the presence of a historic miraculous fountain flowing wine on the day of Epiphany. Recent excavation in front of St Theodore, revealed the existence of a double water reservoir, connected with a lead pipe to the two fountains in front of St. Theodore's atrium. Most probably, the functioning of the smaller reservoir inside the larger one made the miracle possible.

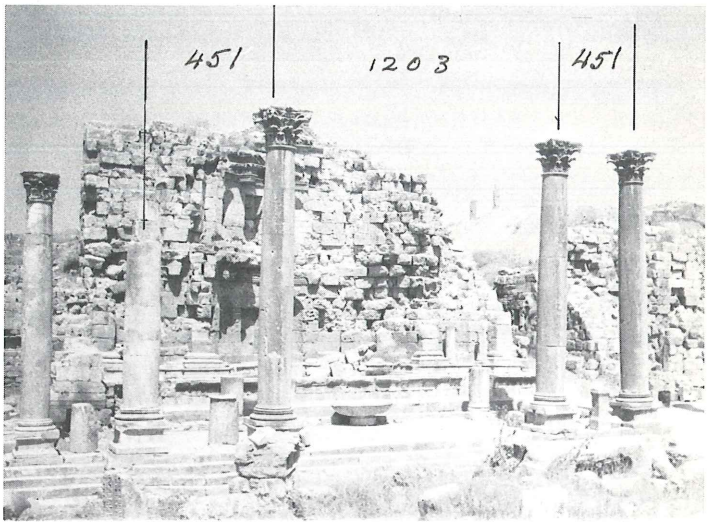
The symmetry of the northern part is

$$\frac{2 \times 993 + 331}{2 \times 993 + 512} = \frac{12}{13}, \qquad \text{(FIG. 4, 2)}$$

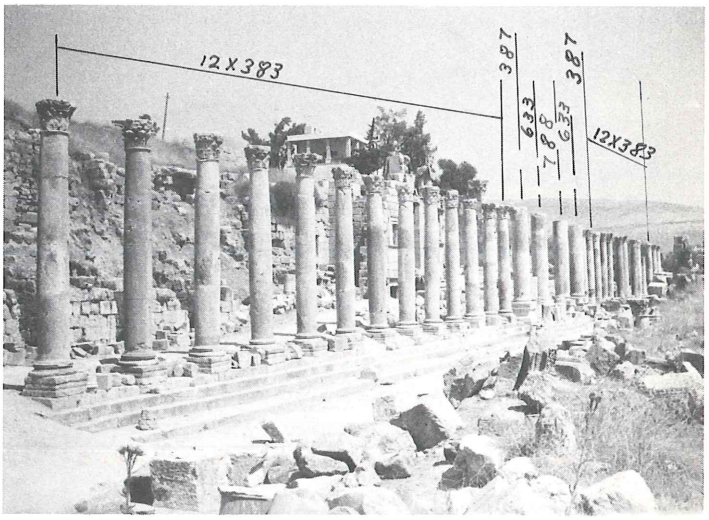
Thus on the north side it has a tolerance symmetry, to allow for other gods being worshipped in the same precinct. At present there is the Cathedral and a monument to the Virgin Mary, and a passage towards the Temple of Artemis, known as the Sarapion passage, with an inscription on the lintel (no. 49) dated AD 65.

It is an ingenious design, having the same central opening

5.1. Nymphaeum.



5.2. Entrance from the Cardo to the Artemis compound.



for two different symmetries. The next building is the Nymphaeum with four columns; the distances are 451, 1,203, 451; total 2,105 cm.

$$\frac{451}{2{,}105} = \frac{\sqrt{5}}{\sqrt{6}} \times \frac{1}{\sqrt{2}} \times \frac{1}{3} = 452.9 \qquad \text{(FIG. 5, 1)}$$

This being the only example with 5/6 it is difficult to define the symmetry of the Nymphaeum. In the Lebanon, in Temnin el Fọqa the symmetry is 50/49.

The next building is the compound of Artemis, which has 29 intervals of columns; 12 on each side with 383 cm. spacing, next one of 387 cm. spacing, then 3 intervals with larger diameter of columns 633 cm., 788 cm., 633 cm. The sum of intervals is 12,020 cm. If all intervals were 383 cm., it would have been $29 \times 383 = 11{,}107$ cm.

$$\frac{11{,}107}{12{,}020} = \frac{12}{13}, \; 11{,}095 \qquad \text{(FIG. 5, 2)}$$

(The sum of the three middle larger spacing is 5 cm. less according to the wall pilasters opposing them.) The distribution of spacing of the columns has been mathematically as follows;

$$12{,}020 \times \frac{12}{13} \times \frac{1}{29} = 382.6 \qquad \text{(FIG. 4, 2)}$$

this has been for 12 intervals on each side, next two adjacent intervals

$$383 \times \frac{\sqrt{50}}{\sqrt{49}} = 386.88;$$

then the remaining space of 2,054 cm. is redistributed as;

$$2{,}054 \times \frac{12}{13} \times \frac{1}{3} = 632.$$

Thus, the outside boundary of the Artemis compound entrance was planned with a tolerance symmetry of 12/13 to include the statues of other gods on the cardo premises. At present there is evidence of three small chapels for statues.

The four free standing columns linked to the wall of the entrance doors, are spaced as 471 cm., 770 cm. and 479 cm. total 1,720 cm.

$$\frac{1{,}720}{2{,}054} = \frac{\sqrt{7}}{\sqrt{10}} = \left(\frac{49}{50} \times \frac{1}{2}\right)^{\frac{1}{4}}, 1{,}718.5;$$

the middle spacing is a function of front spacing 788 × 49/50 = 772.2 the remaining space (1,720 − 772.2) is divided into two parts to make the spacing of columns on the side.

The three entrance doors on the Cardo, have the following measurements (the two side ones with slight differences), outside 267 by 418, inside 307 by 435, the middle one on the Cardo 505 by 925 cm.

The ratio of dimensions on two sides is:

$$\frac{267}{418} = \frac{\sqrt{11}}{\sqrt{12}} \times \frac{2}{3}, 266.8$$

$$\frac{307}{435} = \frac{11}{12} \times \frac{20}{31} \left(\frac{20}{31} = \frac{30}{31}\right) \times \frac{2}{3}$$

$$\frac{505}{925} = \frac{12}{11} \times \frac{1}{2}, 504.5.$$

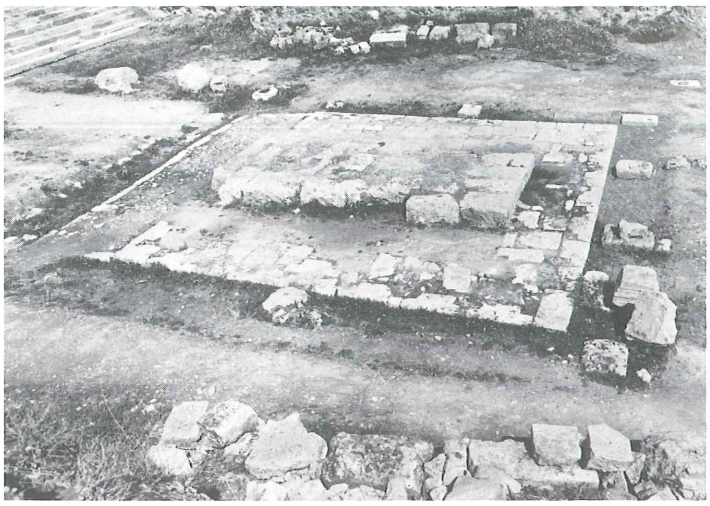
Thus the door closes the tolerance symmetry, and all statues inside the door should be of Artemis or her equivalent goddess.

The flight of 7 times 7 steps with plus one might well announce the end of the 49/50 marriage symmetry. On top of these steps there are foundations of an enlarged altar, the dimensions being 752 by 784 cm.

$$\frac{752}{784} = \frac{\sqrt{11}}{\sqrt{12}}, 750.2.$$

The height of this altar must be in linear symmetry with the short dimension and in square with the long dimension. Thus the height of the altar was, assuming 784 is correct, 750.6 × 12/11 = 818.8 (FIG. 6, 1).

6.1. The Altar foundation in the Lower Court of the Temple of Artemis.



6.2. The Artemis Cella, the recess for the Statue and the segmented Arch.



This same relation is correct for both Altars in the courtyard of the Temple of Jupiter in Baalbek, the so-called Monumental Altar, and the small altar[4]. This fact is stated by Nicomachus of Gerassa and Theon of Smyrna. 'Solid figures in which the dimensions are everywhere unequal one to another . . . call the same numbers altars using their own metaphor, for altars of ancient style, particularly the Ionic, do not have the breadth equal to the depth, nor either of these equal to the length'. Theon of Smyrna calls small altars the cubes whose sides are not equal to each other.

The dimension of the courtyard's portico columnade, from centre to centre of engaged columns, is 9,150 by 12,385 cm.

$$\frac{9{,}150}{12{,}385} = \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{\sqrt{2}}, 9{,}147.7.$$

In Kraeling, Fisher notes that the altar of the higher court, under the kiln, 'was not set on the axis of the temple but lay to the north of it, overlapping the axis by 80 cm.'. The stairs leading up to the Temple of Artemis are 1,720 cm.: the axis of the altar divides it into sections of 820 by 900 cm.

$$\frac{820}{900} = \frac{11}{12}$$

825 instead of 820, thus instead of 80 it should be 77 cm.

The lengths of the cella of the Temple, from centre of pilaster to centre of pilaster, are 2,624 by 1,206 cm.

$$\frac{1{,}206}{2{,}624} = \frac{11}{12} \times \frac{1}{2},\ 1{,}206.6.$$

The interior dimension of the Temple of Artemis at Epheseus is given as 71 ft. by 155 ft.

$$\frac{71}{155} = \frac{11}{12} \times \frac{1}{2},\ 71.04 \text{ ft.}$$

The interior dimension of the cella of the Temple of Artemis in Jerash is 1,100 by 1,816 cm.

$$\frac{1{,}100}{1{,}816} = \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{\sqrt{3}},\ 1{,}095.$$

The recess for the statue of Artemis is a rectangle of 395 by 430,

$$\frac{395}{430} = \frac{11}{12}.$$

This recess is covered by a segmented arch of 130 cm. high at the middle.

$$\frac{130}{395} = \frac{\sqrt{12}}{\sqrt{11}} \times \frac{1}{\sqrt{10}},\ 130.5. \qquad \text{(FIG. 4, 2)}$$

Thus all details of the temple had to obey the symmetry proper to the god. The question arises as to when and which international congress made these numerical decisions, and what did the numbers represent from a religious point of view.

During the pre-Christian periods all temples were planned according to the symmetry of the god concerned. All peristyle temples, having the number of side columns twice the number of the front columns minus one, are planned with the formula

$$\frac{\sqrt{N \pm 1}}{\sqrt{N}} \times \frac{1}{2}.$$

This fact is mentioned by Vitruvius, so they may be called Vitruvian temples. All other temples are planned with side and diagonal numbers, and they have one of the following forms

$$\frac{N \pm 1}{N} \times \frac{1}{2} \quad \left(\frac{N}{N \pm 1} \times \frac{1}{2}\right)^{\frac{1}{2}}$$
$$\left(\frac{N \pm 1}{N} \times \frac{1}{2}\right)^{\frac{1}{4}} \text{ or } \frac{N \pm 1}{N} \times \frac{1}{\sqrt{2}},$$

All these forms are consistent with each other on the supposition that $N \pm 1$ and N are two terms of a geometric series, as stated above.

When $N \pm 1$ and N are 10 and 9, the temple belongs to Jupiter or Zeus or an equivalent deity; when 12 and 11 it is Athena, Artemis, Atargatis, Cybele, perhaps Anahit or the equivalents; when 49 and 48 it is Bacchus Dusares or the equivalents; when 50 and 49 it is a human deity as Apollon, Hercules or deified Emperors.

Where there was a tolerance symmetry of 13 and 12 in a temple, *all* gods could be lodged, on condition that each lodge was arranged with the god's proper symmetry, the best example being the Temple of Bel in Palmyra.

In the Middle East 9 and 8 were attributed to gods who became later Jupiter Optimus Maximus, and took over the symmetry of 10 and 9, as at Baalbek. The reason for the change might have been that 9 and 8 in the form of side and diagonal have rational roots; as

$$\frac{\sqrt{9}}{\sqrt{8}} \times \frac{1}{\sqrt{2}} = \frac{3}{4} \text{ or } \frac{\sqrt{8}}{\sqrt{9}} \times \frac{1}{\sqrt{2}} = \frac{2}{3}.$$

Side and diagonal numbers with rational roots were cycles of the human race, as will be discussed below.

The Christian and Moslem periods

There is evidence, that the symmetry with its age-old allegiance to numbers has continued during the past Christian, Moslem and so-called pagan periods. One can state that the intrinsic attributes of the numbers transcended all religions.

There is one record of symmetry in Christian literature quoted by Crowfoot in Kraeling (Gerassa, p. 175) stating that 'the fore court (of the Baptistery) let it have . . . with its length 21 cubits for a type of total number of the prophets, and its breadth 12 cubits for a type of those who were appointed to preach the Gospel; one entry; three exits'. The ratio of 12 and 21 is

$$\frac{B}{L} = \frac{12}{21} = \frac{4}{7} = \frac{8}{7} \times \frac{1}{2},$$

that is why all baptisteries of later periods were planned in octagonal form, to emphasize the 8.

The church of St. John in Jerash measures 2,950 cm. by 2,380 according to Crowfoot;

$$\frac{2{,}380}{2{,}950} = \frac{8}{7} \times \frac{1}{\sqrt{2}},\ 2{,}383.9$$

error of 3.9 cm.

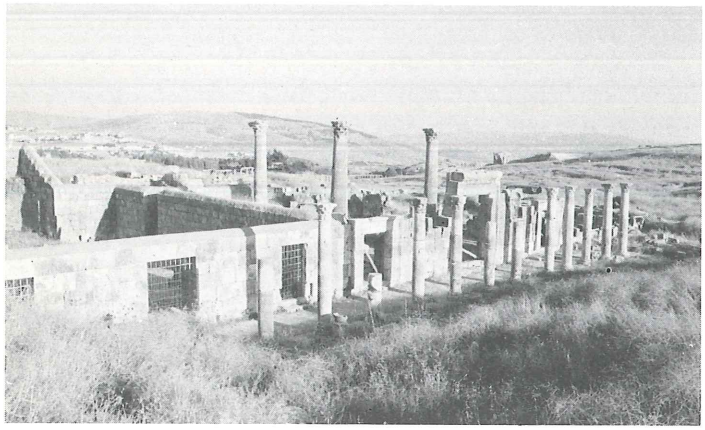
One example, with the same symmetry, but of pagan period is the chapel of Osiris (published in the Architecture volume of Kalabsha by Siegler), with dimensions 179 cm. by 334 cm.

$$\frac{179}{334} = \frac{\sqrt{8}}{\sqrt{7}} \times \frac{1}{2},\ 178.5$$

error 0.5 cm.

Other examples of earlier periods are the Pyramids, with

7.1. The restored entrance to the Church of St John.



7.2. Central entrance.



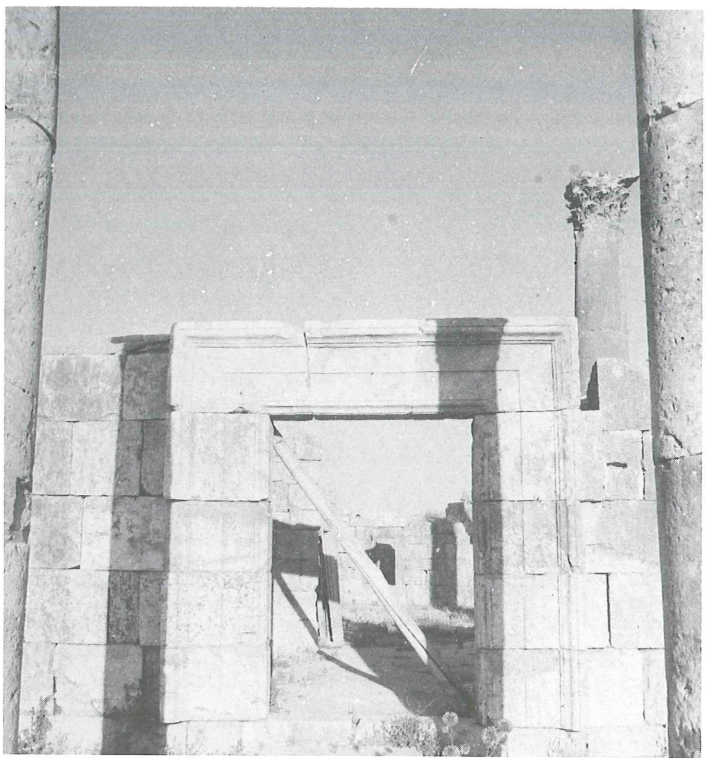
the assumption that these might have been, relative to dimensions involved, slight errors in approximations or extrapolations. (Dimensions are from I. E. S. Edwards[3].)

Zose-Ti pyramid base 395 ft. height probably 230 ft.

$$\frac{230}{395} = \frac{8}{7} \times \frac{1}{2}, \; 225.7$$

error 4.3 ft.

7.3. North entrance.



7.4. South entrance.



Bent pyramid, approximately 620 ft. at the base, height 336 ft.

$$\frac{336}{620} = \frac{\sqrt{8}}{\sqrt{7}} \times \frac{1}{2}$$

331.4 or 628.59 ft.

All these examples with 8 and 7 symmetry have a common denominator, that is heaven. St John and Osiris were sent from heaven, and the Pyramids were a communication channel with heaven. Thus persons or places related with heaven

should have their monuments with a symmetry of 8 and 7 properly planned. The Church of the Resurrection and the Dome of the Rock in Jerusalem, due to their connections with heaven, had to be on an octagonal plan, with a symmetry of 8 and 7 and indeed they have been planned that way. (An article on this has been submitted for publication.)

The doors of the church of St John at Jerash were restored recently with the elements found on site. There are three doors (FIG. 7). The north door, opposite to the entrance into the baptistery, is 175 cm. wide and 253 cm. high.

$$\frac{175}{253} = \frac{\sqrt{49}}{\sqrt{50}} \times \frac{1}{\sqrt{2}} = \frac{7}{10},$$

177.1 error 2.1 cm.

With the side decorations (architraves) the outside dimension is 334 by 338

$$\frac{334}{338} = \frac{\sqrt{49}}{\sqrt{50}}, \quad 334.6.$$

The central door is 273 cm. by 414 cm. with architraves it is 431 by 495 cm.

$$\frac{273}{414} = \frac{\sqrt{7}}{\sqrt{8}} \times \frac{1}{\sqrt{2}}, \quad 273.8 \quad \frac{431}{495} = \frac{7}{8}, \quad 492.5.$$

The central door is constructed with elements taken from the temple of Zeus, such as the door jamb of the cella, with a symmetry of 10 and 9, and has been re-arranged to have the symmetry of 8 and 7.

The south door is 165 cm. by 263 cm.; with architraves the outside dimension is 324 by 330.

$$\frac{165}{263} = \frac{7}{8} \times \frac{1}{\sqrt{2}}, \quad 162.7 \quad \frac{324}{330} = \frac{49}{50}, \quad 323.4.$$

The human cycle

The reference to the human cycle (symmetry) is in Plato's *Republic* vili 546 B-D (translation, Ivor Thomas, *Greek Mathematics*, Vol. I, p. 399) 'The divine race has a cycle comprehended by perfect number [*probably with no roots*] but the number of the human race's cycle is the first in which root and square increases, forming three intervals and four terms of elements that make like and unlike and wax and wane, show all things agreeable and rational towards one another. The base of these things, the four-three joined with five, when thrice increased furnishes two harmonies, the one a square, so many times a hundred, the other a rectangle, one of its sides being a hundred of the numbers from the rational diameters of five, each diminished by one (or a hundred of the numbers from the irrational diameters of five, each diminished by two, the other side being a hundred of the cubes of three'.

The base is four-three by five.

$$\frac{\sqrt{8}}{\sqrt{9}} \times \frac{1}{\sqrt{2}} = \frac{2}{3} \text{ added } 5 \qquad \frac{\sqrt{9}}{\sqrt{8}} \times \frac{1}{\sqrt{2}} = \frac{3}{4} \text{ added } 7$$

$$\frac{\sqrt{50}}{\sqrt{49}} \times \frac{1}{\sqrt{2}} = \frac{5}{7} \text{ added } 12 \qquad \frac{\sqrt{49}}{\sqrt{50}} \times \frac{1}{\sqrt{2}} = \frac{7}{10} \text{ added } 17$$

1st increase

$$\frac{\sqrt{288}}{\sqrt{289}} \times \frac{1}{\sqrt{2}} = \frac{12}{17} \text{ added } 29 \qquad \frac{\sqrt{289}}{\sqrt{288}} \times \frac{1}{\sqrt{2}} = \frac{17}{24} \text{ added } 41$$

2nd increase

$$\frac{\sqrt{1{,}682}}{\sqrt{1{,}681}} \times \frac{1}{\sqrt{2}} = \frac{29}{41} \text{ added } 70 \qquad \frac{\sqrt{1{,}681}}{\sqrt{1{,}682}} \times \frac{1}{\sqrt{2}} = \frac{41}{58} \text{ added } 99$$

Third increase

$$\frac{\sqrt{9{,}800}}{\sqrt{9{,}801}} \times \frac{1}{\sqrt{2}} = \frac{70}{99}$$

Thus the four 'term elements' are

$$\frac{5}{7} \quad \frac{12}{17} \quad \frac{29}{41} \quad \frac{70}{99}$$

with three intervals in between which are the years in which the human character is transformed. Cycle elements 5 to 7, and 12 to 17, are critical periods of formation; the same can be said for 29 to 41. Thus the formation of the roots with two numbers differing by one was considered as predestined for the human race.

Thus, for the human races the symmetry 50 and 49 was attributed and since this gave as roots 5 and 7 or 7 and 10 which could be used as well as the square roots of 5/7, this lead into the fourth root of 50/49 times 1/2.

The last section of Plato explains the square of 70 times 2 and the square of 99.

The mathematical analysis of the 'Eglise de Village de la Syrie du Nord', published by the Institut Francais d'Archeologie du Proche Orient (Paris 1979) gave the following symmetries for church construction.

The churches of Brad, Sergible, Kfeir are planned with $\sqrt{5}/\sqrt{4} \times 1/2$, Burg Heidar, Batuta, Kalota, Kafr Hawar, Qirqbize, Gerade with $\sqrt{7}/\sqrt{8} \times 1/\sqrt{2}$, Bafetin $\sqrt{8}/\sqrt{7} \times 1/\sqrt{2}$, Farfetin, Qalbloze, Kimar, Seih Sleiman $7/8 \times 1/2$, Betir $7/8 \times 1/\sqrt{2}$. These are all 8 and 7 symmetry so they must have been dedicated to Christ, St John, the Virgin Mary, the Redeemer or any heavenly dedication.

The churches of Kfeir Dartazze, Babisqa, Darqita, are planned with $6/5 \times 1/2$, Kala'at Kolata $\sqrt{5}/\sqrt{6} \times 1/\sqrt{2}$. 5 and 6 was the symmetry of the houses as stated by Vitruvius, so these churches were probably dedicated to local saints, groups of Apostles, or groups of saints.

The churches of Baqirha $\sqrt{6}/\sqrt{7} \times 1/\sqrt{2}$, Behyo $6/7 \times 1/\sqrt{2}$, Ruweiha South $6/7 \times 1/2$, are dedicated to an Apostle.

For human dedication we have St George of Bosra, the

rectangle, 49/50, Sinhar, Harab Sams, $\sqrt{50}/\sqrt{49} \times 1/2$, Sugane, Gubelle, Kfellusin, Baduda, Dehes 7/10, Kafr Nabo $50/49 \times 1/2$, Bizzos $49/50 \times 1/2$

$$\text{Zebed} = \frac{\sqrt{7}}{\sqrt{5}} \times \frac{1}{2} = \left(\frac{49}{50} \times \frac{1}{2}\right)^{\frac{1}{4}} \times \frac{1}{\sqrt{2}}.$$

The symmetry of each church governs both its longitudinal section of aisles and naves, and the transverse section for the distances of the apse, and of the Bema, the proportion of Bema, as well as the vertical divisions of the facade elevation and the height.

This system of symmetry continued throughout the Gothic period and was lost with the Renaissance[4].

[4] Some examples from the Armenian churches covering the period from the IV to XI century.

Ererouk IV c. $\frac{2,363}{3,585} = \frac{\sqrt{7}}{\sqrt{8}} \times \frac{1}{\sqrt{2}}$, 2,371.2

EARLY Echmiatsin (estimated dimensions) $\frac{2,302}{2,450} = \frac{\sqrt{7}}{\sqrt{8}}$, 2,291.6

Ashtarak V–VI c. $\frac{1,165}{2,264} = \frac{50}{49} \times \frac{1}{2}$, 1,155.

Hripsime VII c. $\frac{1,769}{2,287} = \frac{\sqrt{6}}{\sqrt{5}} \times \frac{1}{\sqrt{2}}$, 1,771.5

Mren VII c. $\frac{2,000}{2,995} = \frac{\sqrt{7}}{\sqrt{8}} \times \frac{1}{\sqrt{2}}$, 1,981

Talish VII c. $\frac{1,878}{3,639} = \frac{50}{49} \times \frac{1}{2}$, 1,856 or 3,680

Marmashen IX c. $\frac{1,225}{1,950} = \frac{7}{8} \times \frac{1}{\sqrt{2}}$, 1,206.5 or 1,979.8

Horomos X c. $\frac{822}{1,515} = \frac{\sqrt{7}}{\sqrt{6}} \times \frac{1}{2}$, 818.19 or 1,522.

Ani Cathedral X c. $\frac{2,187}{3,429} = \frac{\sqrt{4}}{\sqrt{5}} \times \frac{1}{\sqrt{2}}$, 2,168 or 3,457.

Ani Apostles XI c. $\frac{1,953}{2,142} = \frac{\sqrt{5}}{\sqrt{6}}$, 1,955.3.

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The Architectural Significance of the Sanctuary of Artemis at Gerasa

The Italian expedition in Jerash was undertaken with the intention of clarifying the architectural significance of the Sanctuary of Artemis, perceived as fundamental to the knowledge of the architecture of Roman times.

Our work carried on over the last three years, together with a thorough going record of the visible structures, brought up a number of questions concerning the city layout as a whole and about the fabric of the Sanctuary itself.

This account is therefore a brief outline of some of the tasks that lie ahead.

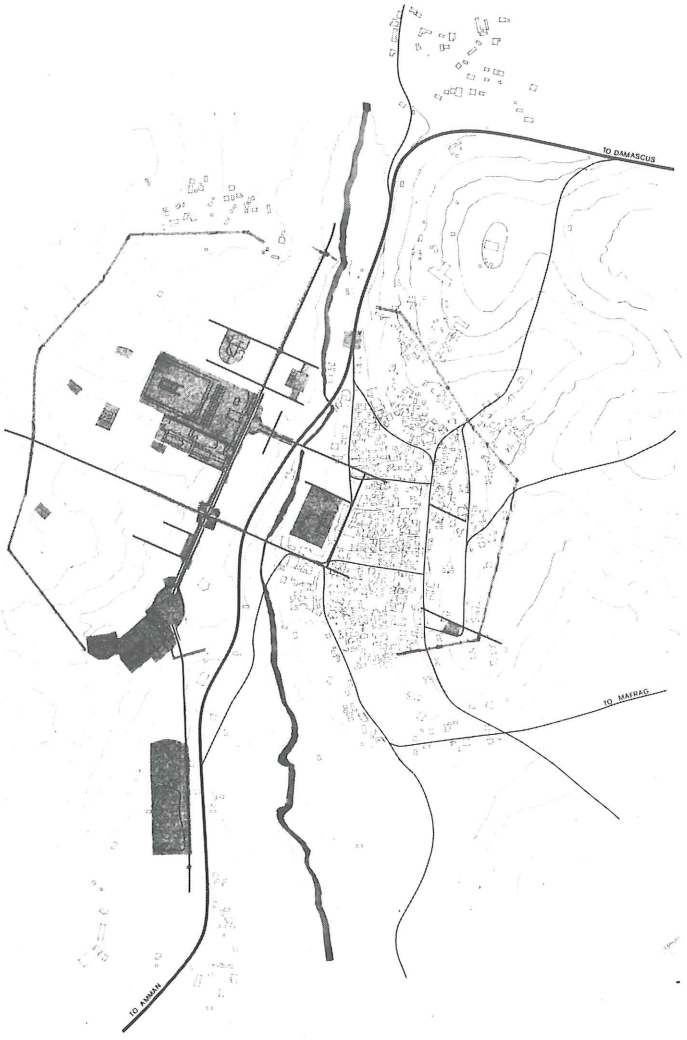
At first sight the location of the Sanctuary seems out of keeping with the street network known up to this time. From the layout of the few identified streets, however, one can deduce a precise town planning which is even possible to trace back to the Hellenistic period when the city is believed to have been founded (see FIGS 1 & 2).

Taking into consideration the very possible changes in the evolution of the urban fabric, two side street entrances west of the Cardo, south of the south Tetrapylon, show regular spaces of 51.60 metres about (175 pedes) from street to street. (The two streets above mentioned were elucidated by Dr Baargghouti who conducted the excavation in that area on behalf of the University of Jordan.) A third street on the same side of the Cardo reveals a space of 103.30 metres to the north of the Tetrapylon. Yet further north, at again about 51.60 metres distance, another streets marks the south side of the ground covered by the Sanctuary of Artemis.

If such a street network were to be found elsewhere, we might assume an original land subdivision spaced, on the Cardo, at 175 pedes.

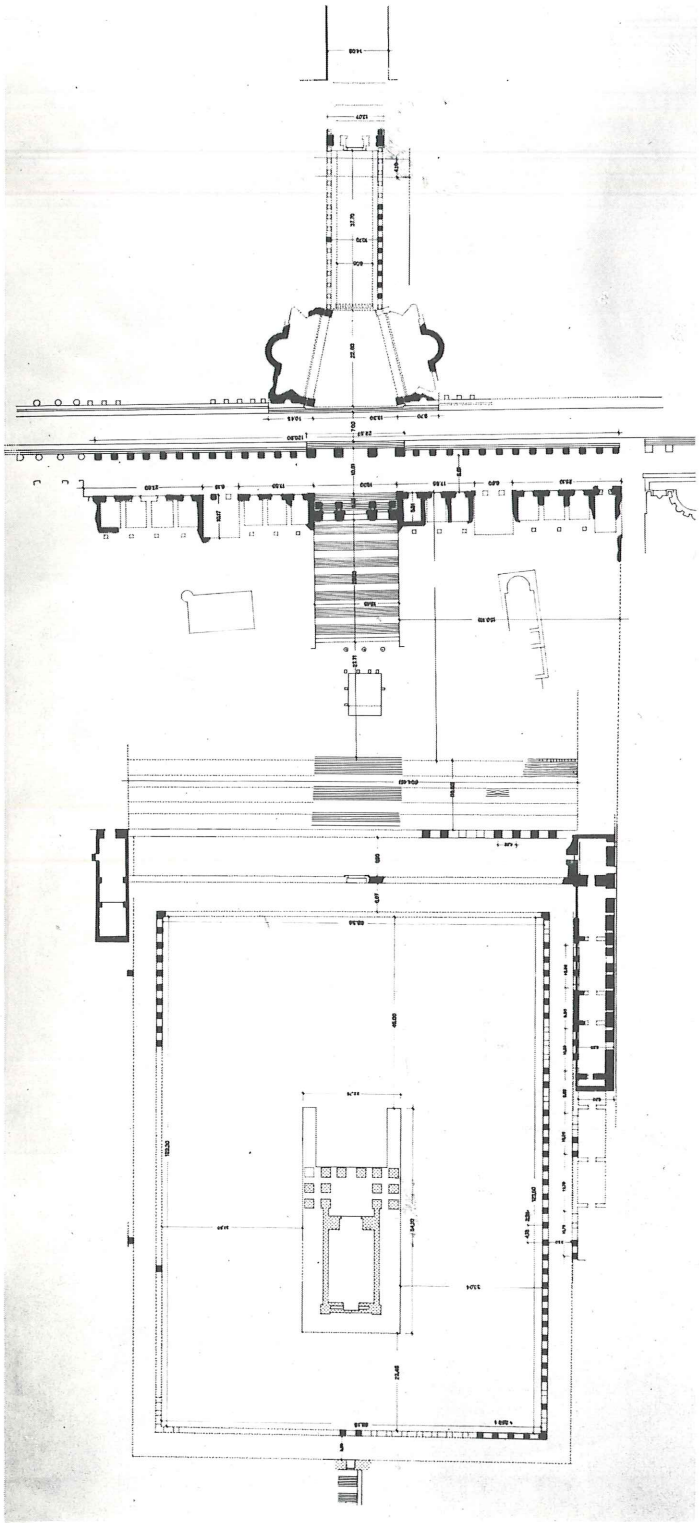
The main frontage of the Sanctuary onto the west side of the Cardo does not, however, fit the same land vision as the streets described above, being about 122 metres wide. The entire complex, in fact, may have been superimposed on a previous street layout. The northernmost bridge, still recognizable, connected the east side of the city to a Sacred Way which led up to the temple. What remains of it is only the west abuttment but there is enough to relate it to the same planning phase as the Sanctuary complex. Its positioning slightly off the main axis may be explained by the need to connect a pre-existing street on the east side of the wadi.

1.



Clearly this fact makes us question the second century AD land division to which the construction of the Sanctuary decidedly contributed and to which a large part of the visible monuments belong. Further we must question the land divi-

2.



sion of an earlier age as we know practically nothing about the Hellenistic or first century B.C. city from excavation.

The fabric of the Sanctuary seems, therefore, to belong to a comprehensive programme which at the same time must imply the reorganization of an area of a much larger scale than the one directly related to the Sanctuary itself.

Apart from the knowledge of an older temple of Artemis which in all probability can be localized not far from the present one, we lack further data about other possible prior structures in the area. Yet it is possible, assuming a certainly much more modest earlier Sanctuary, that the urban alteration was directed towards an entire reorganization of that area.

If this could be archaeologically verified the political implication is extremely interesting: it shows the clear intention of a programme aimed at the maximum utilization of the ground but at the same time allowing the expression of grandeur and propaganda. Land and properties are turned into structures and facilities intended for public utility, trade and worship.

The spatial interpretation of the entire complex of buildings is even more interesting: it shows a total organic mind where each element of the whole affirms its own spatial autonomy but at the same time each of the elements is linked together by a logical sequence of intentions.

The monumental complex develops along a main axis at right angles to and astride the Cardo with successive vistas from the changing levels, each framed along the ascending approach (see FIGS. 5a,b,c,d).

The temple is built on a rock platform on the brow of a hill which rises up from the Chrysorhoas and is reached by a range of terraces (see FIGS 3, 4).

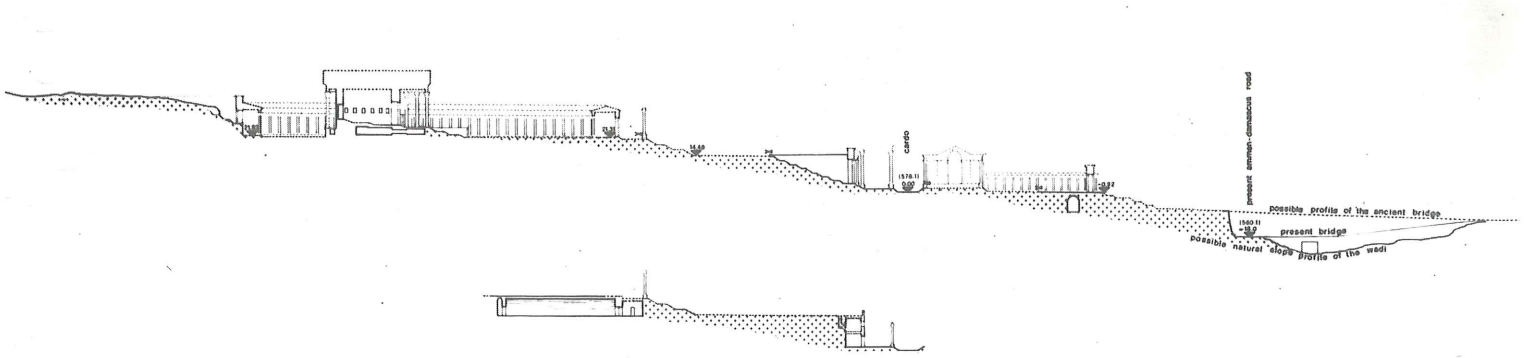
The Sacred Way started at its east end with a propylaea giving access to a large street, or rather a long square, gently inclined, flanked by colonnades (the street is 8.10 metres wide while the Cardo is 7.00 metres) (see FIG 6). This bridges a street parallel to the Cardo and at the same time the unusual bridge-like solution emphasizes the intention of making a specialized route.

The colonnades end against the sides of two structures for fountains which form a second square beyond. This is raised up, reached by a short flight of steps and forms a trapezium shape plan. The fountain structures open, in fact, westwards to the Cardo creating a dynamic expanding space able to visually overcome the gap created by the Cardo which separates the square from the propylaea opposite. Conveniently the pavements of both the square and the propylaea are at the same level (see FIGS 7, 8).

The longer base of the trapezium matches exactly this second propylaea which stands behind four gigantic columns of the colonnade along the Cardo.

This is set in a recess of a double storey parade of shops which forms the bearing structures of the retaining wall of a terrace about 14 metres above the Cardo (see FIGS 9, 10). The terrace which is reached by a long staircase (seven flights of seven steps) rising through the backfill, was probably framed by porticoes and formed a square as wide as the entire ground of the Sanctuary. This was articulated in two major spaces at the sides of the cavity of the staircase. The west side

3.



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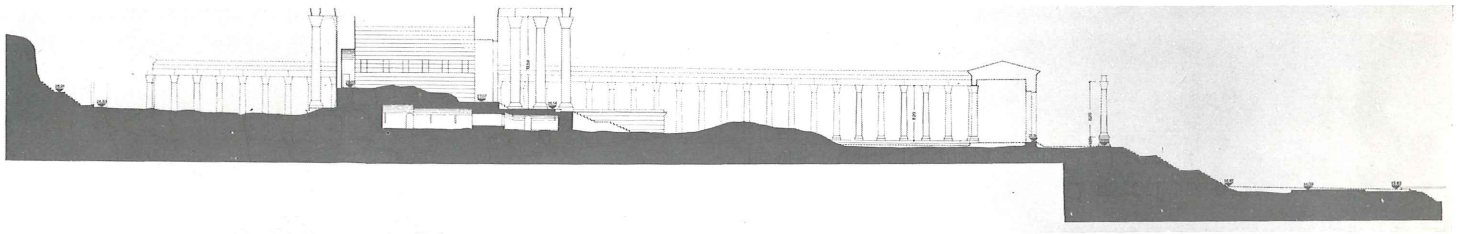
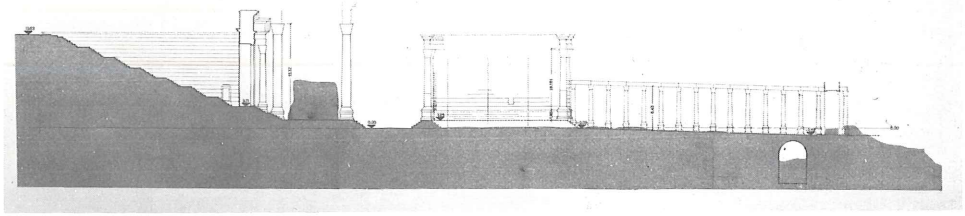




of the terrace was finished by a second flight of stairs (three flights of nine steps) which reached the temenos level about 7 metres higher up. At the top stood a row of columns. Like the colonnade along the Cardo, the significance of which has to be interpreted as an allusive piece of urban design rather than providing the structure of an improbable portico, the row of columns at the top of the staircase, mentioned above, had the purpose of suggesting the image of an upper colonnaded street parallel to the Cardo. This had to foresee, as for the colonnades along the Cardo, an interruption of vertical and horizontal rhythms qualified in accordance with the buildings behind.

It is very probable, in fact, that the axis of the ascending approach to the uppermost temple was marked by a pediment on a portal of higher columns.

This fact is definitely unusual since it shows how flexible the use of columns had become: from a solid volume generating architectural space to that of defining urban space through the adoption of formal codes.

Beyond the colonnade at the top of the staircase stood the temenos of the temple. This, roughly rectangular, was framed by porticoes on all four sides. The wall of the south portico was deepened by alternating exedras and rooms supported at the eastern end by vaulted structures accessible from the street which bound that side of the Sanctuary. Most probably the north side of the enclosure, not visible at present, was similar. The west enclosing wall was a retaining structure for the hill behind; a staircase in the backfill on the main axis started from a level 4.65 metres above the portico pavement.

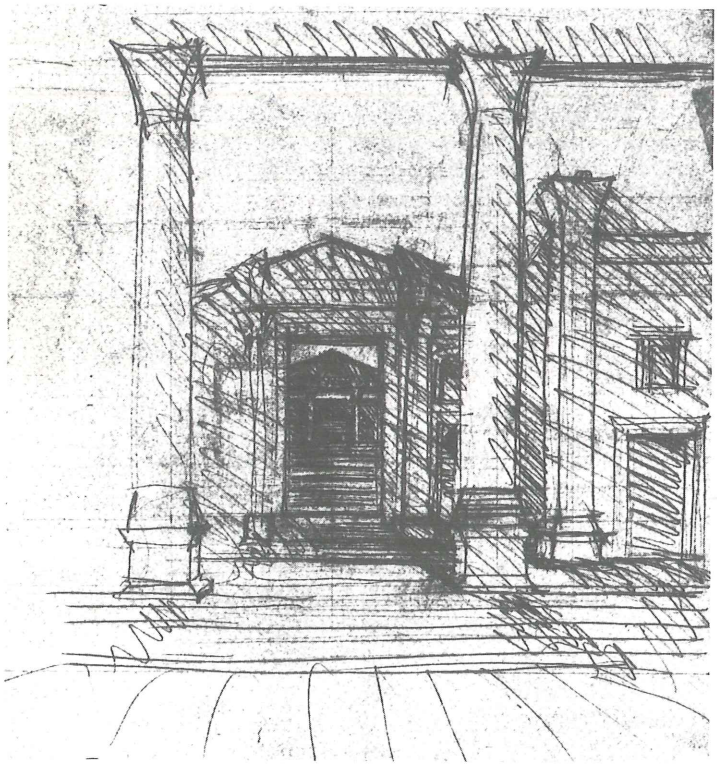
The temple, in the middle of the courtyard but slightly nearer to the west side, was raised on a high podium supported by vaulted rooms reached from the temple cella.

Most exciting is the hypothesis that such a remarkably organic urban achievement, documented in Gerasa as early as

5a.



b.



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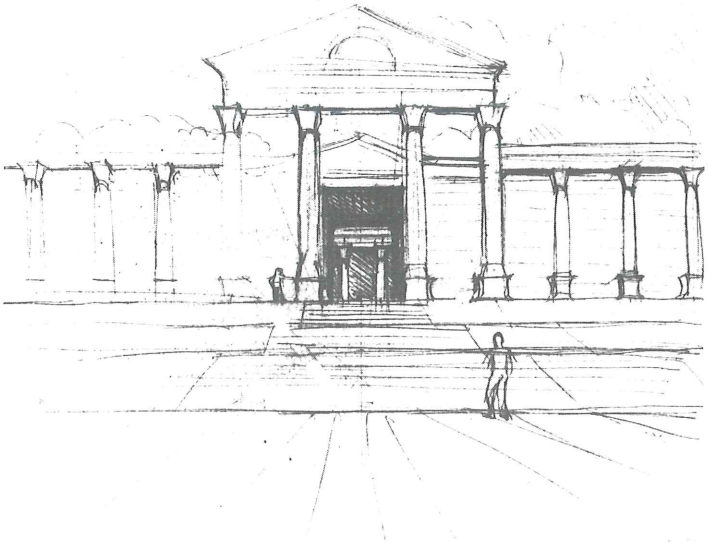

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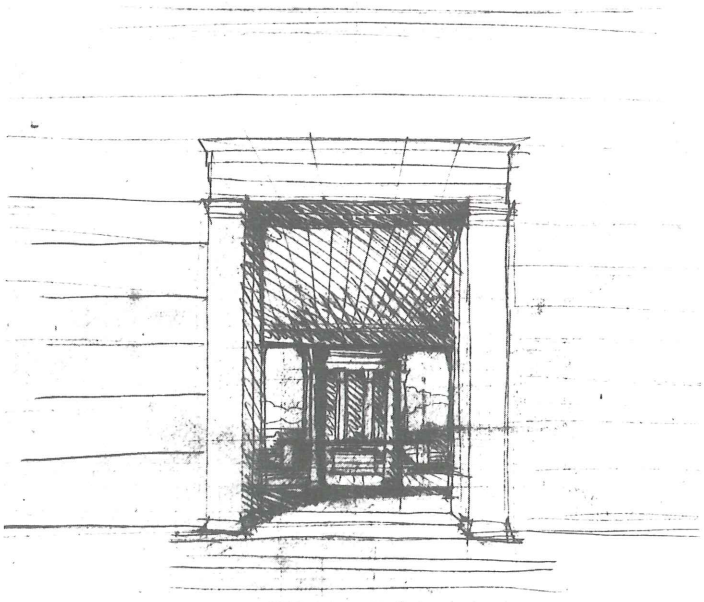

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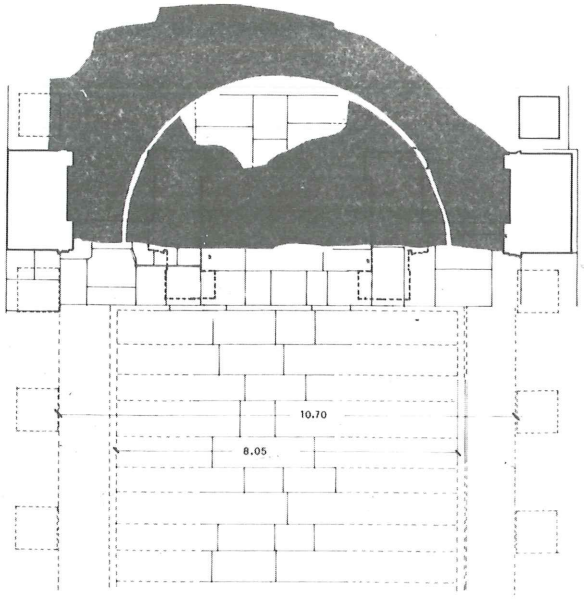

the second century AD, belongs to and is the expression of a new eastern architectural school, to which we are indebted for the last inventions of the ancient world. Apollodorus from Damascus, among other works, planned the Forum and the Markets of Trajan complex in Rome which represented the only urban intervention able to connect the Campus Martius to the Colosseum by a continuous public space. This subject is of such an importance that it demands, of course, the most careful verification. In the absence of any useful architectural evidence from Antioch, leader of the eastern culture, Gerasa can be considered the centre best qualified to improve our knowledge of the achievements of architecture and town planning of Roman times.

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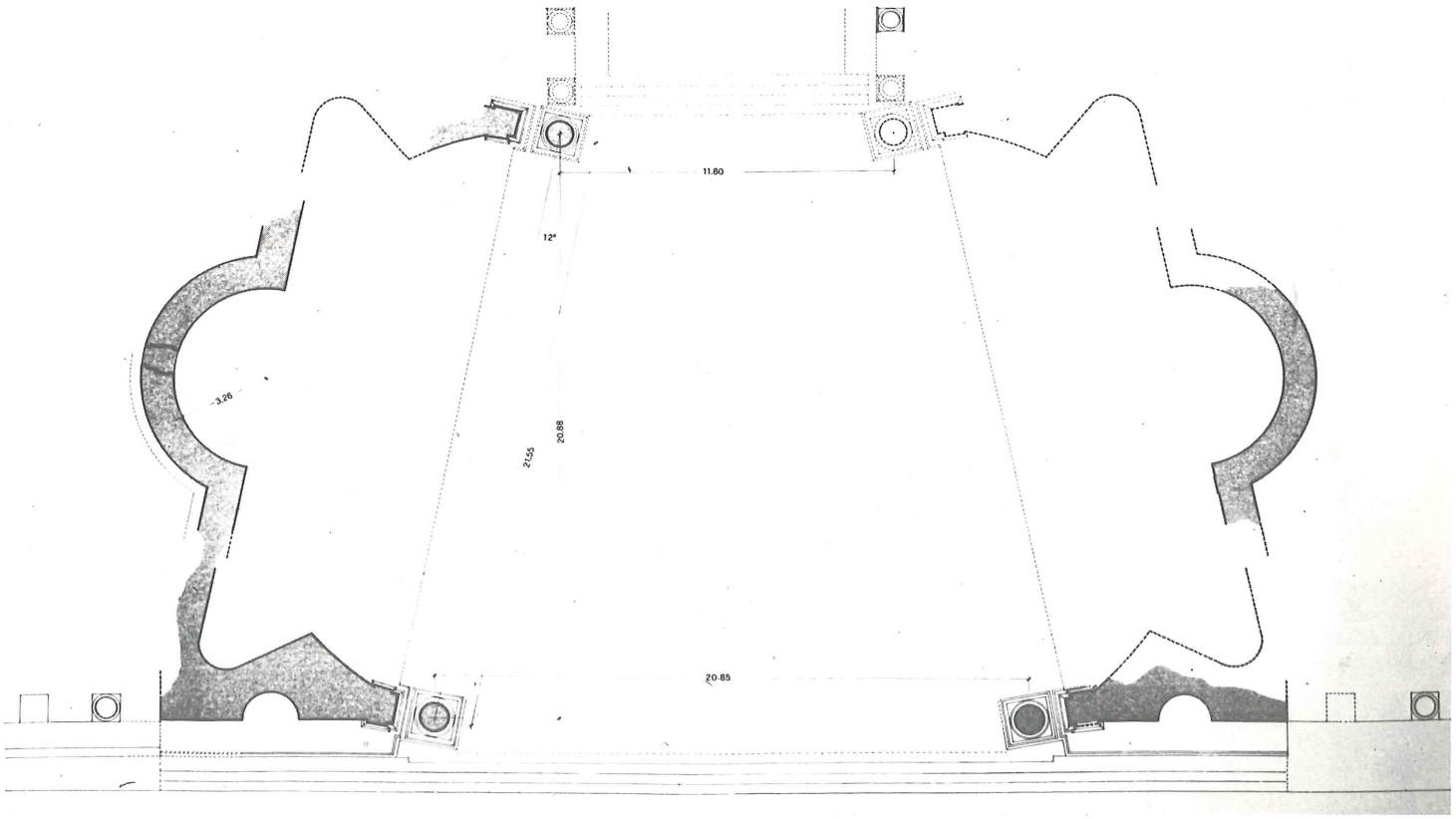

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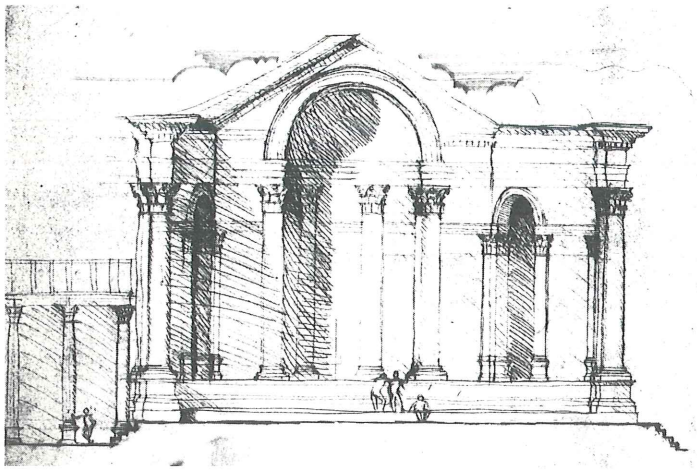

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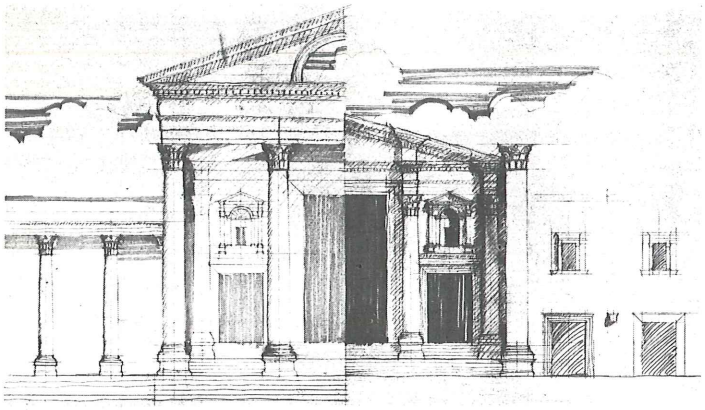

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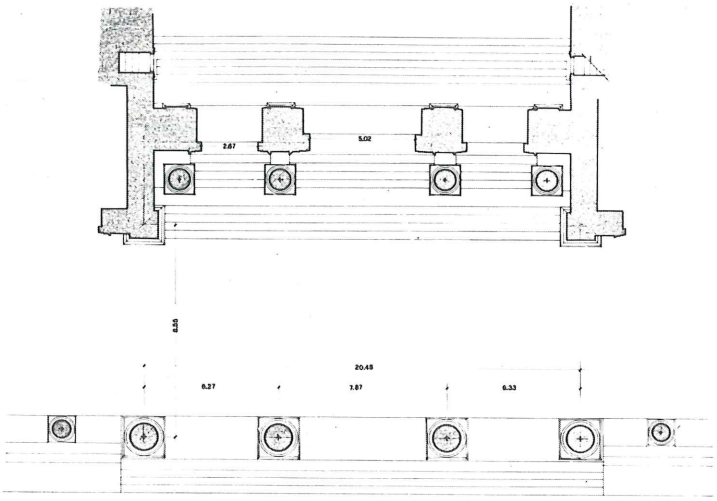

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Origines des Nabatéens

Je ne touche, dans cette conférence, qu'à des problèmes de l'origine linguistique et de l'origine ethno-géographique de cette nation importante de l'antiquité. Ailleurs, je me pencherai sur des concepts primordiaux de leur religion, fort originale.

1. Langue maternelle des Nabatéens

Amorcée par l'explosion migratoire en toutes directions aux environs de l'an 1200, une nouvelle carte linguistique du Proche Orient s'eétablira lentement mais solidement. Pour le premier millénaire avant l'ère chrétienne, on a l'habitude de distinguer les groupements suivants:

1) langues cananéennes: dialectes phéniciens des villes méditerranéennes, des parlers employés en des petits états territoriaux aussi bien en Palestine, tels la Judée et la Samarie—l'hébreu samaritain étant très proche du phénicien; p. ex. št, 'an', dans les deux, contre šnh de l'hébreu de Jérusalem—, qu'en Transjordanie, ainsi ʿAmmân, Moab, Edom.
2) famille araméenne qui se développait en premier lieu dans le chapelet de petits royaumes dispersés le long de l'Euphrate, puis éparpillés dans la Syrie septentrionale et centrale, l'expression en araméen destinée enfin à assurer les relations internationales, directes et écrites, des empires successifs: assyrien, néobabylonien, surtout le perse, et encore au début de deux grands états territoriaux hellénistiques, le lagide et le séleucide.
3) enfin une multitude d'idiomes épigraphiques, d'une part massés en un vague bloc nord-arabique (safaïtique, thamoudéen, liḥyanite, ḥaséen, . . .), et d'autre part, pour l'Arabie méridionale, réunis en groupe compact de quatre langues bien connues, que Beeston propose d'étiqueter 'langues saihadiques'.

Hélas, cette répartition souffre chroniquement d'une confusion regrettable entre les critères purement structurels du langage et des indices puisés aux alphabets et écritures. Si l'on ne retient qu'un seul trait morphologique primordial, notamment l'absence ou la présence de l'article morphématique défini, puis, en second cas, sa position et sa forme phonétique, on aboutit à une division trinaire qui se réduit en fait au double schème binaire suivant:

Nord → Sud: A2—B—A1
(lettres—synchronie, chiffres—diachronie).

Ainsi dans les zones marginales, aux extrémités de l'axe Nord-Sud, où la périphérie nord déborde largement sur le centre, nous retrouvons, vers le 6e siècle par exemple, l'article affixé, postfixé, -â de l'Araméen, et -ân du Sud-arabe. L'énorme étendue qui reste, depuis les emporia de la Méditerranée jusqu'aux oasis du Golfe Persique, et de l'Irak méridional, par la Jordanie et la presqu'île d'Arabie, jusqu'aux confins du Saiḥad, se gonflait en une vaste marée de groupes ethniques parlant chacun une langue différente, mais possédant le même article préposé han-, dont la consonne dentale s'assimilait normalement à l'amorce consonnantique du nom, donc haCC, la double majuscule exprimant une consonne longue plutôt que double. La consonne liquide restait intacte devant les laryngales en certains dialectes: p. ex. han-ʾIlat, nom de désse dans le qédarite de l'une des inscriptions araméennes de Tell el-Mašḥûṭa en Egypte, 5e siècle; -han'ilat, dans des noms propres du haséen sur la côte ouest du Golfe; han-ʾAktab, nom de dieu en lihyanite de l'oasis de Dédan.

Les envahisseurs han- submergèrent aussi des contrées largement peuplées du Yémen, productrices d'encens et de myrrhe, échelles du trafic intercontinental. Ils adoptèrent bientôt les langues locales, archaïques (au même niveau que l'accadien, une sibilante fournissant le suffixe pronominal de la 3e personne et le préfixe verbal causatif), tout en gardant, bien respectueusement, leur anthroponymie d'origine, dans laquelle le causatif était ha-.

En termes de biologie, l'affirmation linguistique de l'identité ethnique des Nabatéens pourrait bien être désignée comme une mutation. Cette identité, la prise de conscience d'être tout à fait différent, s'opéra au prime abord au sein d'une large famille; nous autres nous aimons suivre l'histoire d'un peuple en parlant de clans, de tribus, d'ethnies, de la nation. Les Sémites de l'époque et de la région qui nous concernent, si l'on en juge par l'épigraphie safaïtique, n'étaient sensibles

qu'au binôme: ʾahl, 'famile', à sept générations, et ʾal, 'tribu', à partir du huitième descendant; le zéro lexical exprimait en principe un grand peuplement où les liens du sang ne valaient que pour le sommet de la pyramide sociale. Dans le cas qui nous concerne, l'historien restituera ʾahl Nabâṭ et ʾal Nabâṭ, et essayera de décrire la nation des Nabâṭ.

L'article mutant de la ʾahl Nabâṭ mutante était ʾal-. Celui-ci, dans le cadre grammatical fondamentalement identique, s'épanouira, douze cents ans plus tard, en tant qu'une langue internationale, créatrice des deux grandes littératures, islamique et chrétienne.

La premier témoin du parler nabatéen arabe est, bien entendu, Hérodote d'Halicarnasse qui rencontra un guide arabe assez érudit dans le Delta d'Egypte vers l'an 447 av. J.-C. D'après son cicerone, la déesse suprême des Arabes s'appelait Alilat (Histoires, III 8), donc ʾal-ʾIlat, 'la Déesse'; plus précisément pour le 5e siècle: ʾal'ilatu, mais la desinance du nominatif, étant une voyelle très brève, ne fut pas perçue par l'oreille du Grec qui inscrivait ce nom divin exotique sur son carnet, un petit rouleau. Par ailleurs, l'accent tonique frappait l'avant-dernière syllabe, et devenu expiratoire provoquait des changements de prononciation:

ʾal'ilatu > ʾal'ilat > ʾal'lat > ʾallat.

Sans entrer dans le détail, que je réserve pour une autre occasion, je maintiens fermement que lorsque le père de l'historiographie européenne parle, au défini, des 'Arabes', il se réfère presque toujours aux Nabatéens; je pense même d'avoir trouvé chez lui le nom sémitique ancien du ʿAin Wâdi Mûsa.

Quoi qu'il en soit d'un passage ou de l'autre des maigres Arabika du Ionien, et sans s'arrêter sur des anthroponymes des deux groupes de graffites 'thaymanites' (celui de Winnett et celui de Harding) qui me semblent pertinents, il nous faudra attendre: 1) l'époque hellénistique avancée pour recontrer les noms des divinités nabatéennes, essentiellement ʾAllat et ʾAllâh < ʾal-ʾilâh, (ce couple nabatéen remplaçant le proto-sémitique El et Elat), dans l'onomastique safaïtique selon le calcul généalogique; 2) les environs de l'an 100 avant notre ère, pour épingler dans la montagne du Liban, au-dessus de Byblos, le plus ancien sanctuaire consacré à Allat (dédicace araméenne ituréenne, de proche publication), et pour répérer, dans l'île de Délos, un riche Gerrhéen qui se nommait Thêmallatos, Têm-ʾAllat, 'Serviteur d'Allat'; et ainsi de suite.

J'aimerais, cependant, souligner que l'arabe nabatéen n'était guère le même que l'arabe classique bi-confessionnel, ce qui est d'ailleurs tout naturel: chaque langue évolue à travers des grilles du temps et de l'espace, sinon de la pensée. Ici encore, Hérodote nous fournit une transcription utile. Quand il séjournait à Babylone, on lui avait dit qu'une même déesse s'appelle pour les Assyriens Mulitta, pour les Arabes Alitta; Hist., I 131. Le premier nom a été très exactement transcrit en caractères grecs: le babylonien mullît signifie 'celle qui rehausse, exalte', le féminin singulier du participe causatif actif, et l'épithète, occasionnelle, d'Ishtar. L'arabe Alitta n'est pas du tout une coquille manuscrite de Alilat déjà citée, comme on le prétend constamment, mais de toute évidence le participe simple du même verbe 'être haut', ʿly; à retranscrire ʿAlît(a), '(déesse) Haute'. Qu'on veuille remarquer l'affixe féminisant strictement consonantique, -t, le même qu'utilisaient fréquemment les Phéniciens et les Juifs du Royaume du Nord, par opposition à -at, > ah > a, des langues araméennes, de l'hébreu biblique, de l'arabe classique. Plus tard nous retrouverons une autre déesse arabe, celle du Destin, Némésis; en nabatéen son nom se féminisait morphématiquement, livrant la forme Manaw-t (opposer le féminin interne en safaïtique: manay, provenant de manaw), qu'on prononçait d'abord manawt, puis manaut, enfin manôt, et écrivait, indifféremment à la période postérieure, mnwt et -mnt. L'arabe classique Manât provient, en revanche, par contraction, de Manawat, pluriel Manawât.

Epiphane de Constantia, qui habita longtemps en Palestine pendant la deuxième moitié du 4e siècle, rapporte qu' en son temps, durant la fête d'hiver analogue à l'Epiphanie chrétienne du 6 janvier, dans le temple principal de Pétra, eidôleion, on chantait des hymnes en arabe, Arabisti, en l'honneur de la Vierge qui s'appelait en arabe Chaamou; Panarion, II 51.22. Cet écrivain polyhistor était suffisamment érudit pour savoir reconnaître le parler proprement arabe et ne pas le confondre avec l'araméen, qu'il saurait pertinemment désigné par un adverbe: Suristi, Chaldaisti, ou un autre. Nous sommes donc fixés, de manière absolument certaine, qu'à cette époque, et sans doute jusque vers 450 (la 'Vie de Barsaumâ' syriaque, sur le paganisme à Pétra), se perpétuait l'usage de la langue arabe nabatéenne en tant que Parole religieuse et liturgique. Précisons en passant, que le terme arab qu' Epiphane transcrit n'a rien à voir avec la Kaʿba de la Mecque; légèrement corrigé (supprimer la barre dans le deuxième alpha majuscule), chalmou n'est autre que le nom abstrait ġalmû, 'virginité'. Le dieu Dousarès était, par conséquent, célébré à l'occasion anniversaire de sa nativité, comme l'enfant de la vierge: le 'fils', la 'descendance', le 'fruit', vel sim., 'de virginité'. Noter enfin qu'à l'époque byzantine on préserve toujours le consonantisme sémitique enrichi, la lettre grecque chi transcrivant ici le son ġ et non pas ʿ; pour cette dernière consonne cf. un autre dérivé nominal de la même racine, l'araméen nabatéen ʿlym', 'garçon', ce qui d'ailleurs n'est qu'une graphie, ne reflétant pas forcément une prononciation donnée.

Il suffit de parcourir le dictionnaire de Cantineau pour s'apercevoir du nombre de noms propres nabatéens munis de l'article ʾal. Dans le lot d'environ 900 inscriptions et graffites que j'ai tous vus et revus, recopiés et copiés, à Pétra et dans ses parages, il n'y a que deux anthroponymes préfixés de l'article ha-: seulement deux Thamoudéens ou Safaïtes, reconnaissables explicitement, qui obtinrent le privilège bien envié de pouvoir entrer dans la ville et la permission de l'inscription de leurs noms en écriture nabatéenne araméenne. L'onomastique seule, nous venons de le voir pour l'Arabie méridionale, n'implique pas automatiquement l'emploi de la langue ʾal

dans la vie quotidienne. Néanmoins je suis persuadé que les Nabatéens parlaient bel et bien arabe dans leur vie familiale, tribale, nationale, qu'ils fussent circonscrits aux territoires villageois et citadins, résidants, habitants saisonniers, ou itinérants, et cela jusqu'au Bas Empire au moins. L'aramaïsation massive de la Transjordanie et du Sud de la Palestine n'advint qu'à la période byzantine, cet araméen, effectivement parlé donnant à son tour naissance à la langue littéraire christo-palestinienne.

Les inscriptions nabatéennes araméennes, en langue et écriture (tout au moins la seconde) spécifiques, nationales, à partir du milieu du 3e siècle avant J.-C., dérivent toutes les deux de l'araméen impérial perso-hellénistique, mais elles sont trop stéréotypées, ou bien trop coulées dans le formulaire juridique tout fait (ainsi les grands textes de fondation funéraire à Hégra, les actes consignés dans les papyrus du Wâdi Ḫabra), pour qu'on arrive à y détecter sans hésiter une population arabophone sous-jacente. Force nous est de chercher des textes moins formels, plus spontanés dans leur expression des préoccupations du moment. Il n'y en a pas beaucoup à l'heure actuelle. Voici un joli graffite, copié par Savignac à Medâin Sâleh au début du siècle; Sav 109, p. 229 (cf. CIS II 298):

l' šlm ʿwt'l br tymw
dy nḥt lšrʾ nsʿ xv
w'bd wml bslʿn C ḥrty.

Je traduis: 'Que soit bien sain et sauf Ǵôṯ'el fils de Têm(û), lequel est descendu au Šarâ avec 15 caravanes et s'est enrichi progressivement jusqu' (à la somme de) 100 tétradrachmes d'(étalon) arétien'. Je paraphrase: . . . sain et sauf physiquement et spirituellement . . ., qui faisait navette entre Hégra et Pétra, plutôt qu'entre le port de Hégra[1] et la capitale, l'énorme entrepôt d'une économie-monde (terme de Braudel), à titre de conducteur chamelier, en gagnant environ 28 dèniers nabatéens par voyage aller-retour, ce qui fait un bon salaire.

Sous le règne de Rabbel, vers la fin du premier siècle de notre ère, une belle propriété coûtait 400 tétradrachmes[2]. Je présume qu'à son 30e tour notre bon Ǵôṯ'el n'écrivait plus sur les rochers d'une ville marchande, il se prélassait dans son propre jardin. Vers l'an 250 avant J.-C. une entrée des archives de Zénon enregistre: 'Partant de Sidon à Gaza (188 miles), à vide, pour une charge de briques ils ont perçu de Zênodôros 10 drachmes'; pap. Col. 2, lignes 2–5. Entretemps intervenait évidemment la dévaluation, car le graffite de Medâin Ṣâleḥ date des années 1–70, plus ou moins.

Ce qui nous intéresse plus directement ici c'est l'empreinte arabe de cette courte relation; de l'arabe proviennent indiscutablement le pluriel brisé de nsʿ(t), 'déplacement', et les deux verbes de la dernière ligne, dont le premier, 'abad(a), 'durer', modifie syntactiquement le sens du second, mâl(a), 'être riche'.

Parfois c'est une circonstance institutionnelle qui force l'expression arabe à percer la surface rigide d'un texte araméen. Désormais célèbre, l'épitaphe de Pétraios au Bâb es-Sîq, éditée par Starcky et revue par moi-même[3], laissait mon subconscient en éveil. Quelque chose y clochait, même si l'on voulait accepter mes suggestions, en particulier l'aspect hellénique de l'adoption, relevant du droit de la polis de Gerasa. Récemment, ayant décelé dans les inscriptions safaïtiques quelques témoignages sur des donations immobilières accordées par des rois nabatéens à des tribus sud-syriennes (snt whb hmlk . . .), j'ai finalement trouvé le join. Dans l'inscription funéraire en question il faut couper dy hwhb rqmw, et non pas dy hwh brqmw; traduire en conséquence: 'qui (lui) fut accordé en donation par la (municipalité de) Pétra'. L'intérêt grammatical qui résulte de cette coupe égale bien l'aspect institutionnel; le premier échantillon, incontestable à mon avis, du causatif arabe nabatéen à préfixe ha- (donc pas l'archaïsme ou le dialectisme araméens en des cas analogues), contre le 'a- de l'araméen plus récent, des langues nord-arabiques, de l'arabe classique.

II. Cultes ancestraux et patries des Nabatéens

Rappelons d'abord les données épigraphiques à ce sujet, déjà présentées en 'Dédicaces . . .', pp. 211s.73s.95–101, et en ARNA, pp. 157s.

Une dédicace en écriture palmyrénienne tardive, gravée sur un cippe de 21 × 35 cm. (que le Père Jaussen trouva remployé dans le cimetière de l'oasis de Palmyre), se lit comme suit:

ʿbd whblt br 'bmrt l'lh ṣʿb[w] 4 dy mqrʾ gd 'nbṭ ʿl ḥywhy [wḥy]y brh [. . .]; cf. CIS II 3991.

Donc un Wahballat ('Cadeau de 'Allat'), fils de Abammart[4], laisse dans un sanctuaire de Palmyre l'ex-voto dédié à son dieu ancestral, la Fortune des 'Anbâṭ, qui s'appelle

[1] L'actuel site côtier d'el-Wagh, à 180 km. d'env. de Medâin Ṣâleḥ. 'Le long du golfe Elanite intérieur', Ptolémée cite le 'mont Hippos' à 66° 50′ 37° 20′ et le 'Hippos village' à 66° 50′ 27° 20′; VI 6.2. Ce toponyme n'a évidemment rien à voir avec le grec 'Cheval'. J'y détecte la forme araméenne récente 'Ippê, < 'Inpê, provenant de la forme plus ancienne 'Anpê, qu'on complétera par ('Anpê) Ḥegrâ, donc la 'Face de Hégra', donnant sur la mer, le port de cet emporium situé à l'intérieur des terres. En Phénicie un promontoire portait en grec le nom de Theouprosôpon ou Lithouprosôpon, en arabe Wagh al-Ḥagar. Aujourd'hui ce nom se conserve dans le vocable 'Enfê, qui est le nom d'un bourg important entre Tripoli et Batroun. Le toponyme libanais est donc l'araméen 'Face', identique, à l'assimilation de la liquide près, à celui du cartographe ancien, étant entendu que l'araméen christo-libanais succéda au phénicien païen Fanê-'El, > Fnê(-'El/Rocher) > 'Efnê. Ce nom moderne Enfé/Anfi reste 'unklar' à S. Wild, Libanesische Ortsnamen, Beirut 1973, p. 175.

[2] J. Starcky, RB LXI 1954, pp. 161–181; fragment C, ligne 2: [. . . sl] ʿyn 'rbʿ m'h; pl. IIIa.

[3] Starcky, ADAJ X 1965, pp. 44–46, et RB LXXII 1965, pp. 95–97; Milik, ADAJ XXI 1976, p. 150 note 15 et p. 151 note 16. Maintenant, je traduis cette inscription comme suit: 'Ceci est le monument funéraire de Pétraios fils adoptif et bien-aimé (mot à mot: 'fils de l'adoption et de l'estime'), qui avait été cédé gracieusement par Pétra; lequel mourut à Giraš et a été enterré là-bas; (le monument) que lui a fait faire Taimû son père nourricier'. L'acte d'adoption fut enregistré aux archives de Gerasa, rédigé en termes de droit local, hellénique; ceci explique la formule br trpṭs, le terme grec de cette construction génitivale étant à considérer comme un nom abstrait, indéclinable, qui signifie: 'statu d'enfant adopté dans une polis'.

[4] Je préfère actuellement l'étymologie persane de ce nom, apânmart, proposée par Chabot dans le Corpus, à la mienne, sémitique, que je cite dans 'Dédicaces', p. 329. En effet, dans la région dont nous allons parler le mélange ethnique et culturel des Indo-ariens, des 'Chaldéens' que des écrivains anciens y logent, des Arabes han- et 'al-, est bien naturel au terme de la géographie humaine. Sur des Chaldéens, Strabon XVI 1.6: 'There is also a tribe of the Chaldaeans, and a territory inhabited by them, in the neighbourhood of the Arabians and of the Persian Sea, as it is called'; Jones, VII, p. 203.

aussi le Dieu de Ṣ'b. Remarquez que l'auteur de ce texte utilise la graphie phonétique, populaire, de l'ethnonyme (qui recoupe Anabataioi d'un papyrus Zénon et une variante de 'Nabatéens' dans le Périple de la mer Rouge), à l'encontre de l'orthographe historique et officielle du Royaume nabatéen: nbṭw et, en transcription, Nabataioi, Nabataei, p. ex. dans la bilingue latino-grecque des plus officielles qui se dressait au Capitole, ce nombril de l'empire romain.

Sur le territoire des rois des Nabatéens ne subsiste que le culte topique du 'Elâh de Ṣ'b. Ainsi son temple pétréen a été reconstruit entre la 11e et la 17e année du dernier Rabbel par une famille arabe nabatéenne de Sôday, la ville grecque de Dionysias. Ce sanctuaire fut consacré 'à 'Elâh Ṣ'b qui réside [à] la Racine[5] de Ḥubtâ', l'lh ṣ'bw dy [b]'ṣl ḥbt'. Au Gebel Etlîb jouxtant la petite plaine de Medâin Ṣâleḥ, une niche a été creusée et désignée comme l'objet et le lieu de culte, msgd'; elle fut destinée au ['lh]ṣ'bw 'lh[' dy b . . .]. J'ajoute maintenant qu'elle est à dater du règne soit du dernier Obodas ('bdt de la ligne 5) soit de son père Mankû[6], l'un et l'autre dans la deuxième moitié du premier siècle ar. J.-C.

Le vocable ṣ'bw dénomme à ne pas en douter la région où avaient vécu les Nabatéens avant leur migration vers la Syrie du Sud, la Transjordanie, l'Arabie du Nord et du centre. En partant, ils transportèrent dans leurs bagages spirituels le culte du protecteur divin de la patrie primitive dont l'image s'estompait sur l'horizon. Mais ils ne pouvaient point y inclure la vénération de la Fortune ancestrale, restée intimément liée au lieu de la sépulture de leurs premiers ancêtres, le tombeau qu'ils laissaient derrière eux, en principe à tout jamais.

Au moment de publier les 'Dédicaces', en 1972, je ne suis pas arrivé à localiser le toponyme Ṣ'b, étymologiquement '(terrain) difficile, où il est dur de vivre', sur les cartes modernes ni chez les géographes anciens. Vers une partie du Proche Orient qu'il conviendra d'examiner de plus près nous oriente la patrie d'un autre peuplement nabatéen, venu plus tard dans l'Ouest. Cette grande tribu, dont le centre cultuel se situait à Ṣalḫâd du Hauran, et dont l'un des ressortissants se qualifiait nbṭy' rwḥy', 'de la (nation) nabatéenne, de la (tribu de) Rawwâḥ', dans une inscription palmyrénienne, vénérait Allat comme 'leur Déesse' ancestrale, ce qui est plutôt exceptionnel à l'encontre des innombrables 'elâhîn-theoi tribaux. Or, les Rawwâḥiens invoquaient leur Allat sous l'épiclèse de d't 'l'td/r, forcément une appelation topique: 'Celle de',—ou plus exactement 'Maîtresse'—, 'de (la contrée nommée) 'al-'tr/d. Afin d'identifier ce territoire, essayons, à l'aventure, le répertoire géographique de Claude Ptolémée du 2e siècle de notre ère. Dans le coin nord-est de l'Arabie Déserte il épingle, par les coordonnées 76° 25′ le sommet du mont Zamês, puis il écrit: 'près du mont Zamês, à l'ouest de lui, (vivent, ou: vivaient) les Apataioi et les Athritai'; VI 6. 20 et 21.

Les Athr-ites du savant alexandrin s'identifient aisément avec les habitants du pays de 'al-'Atr (ou plutôt 'al-'Aṯr) dont parle la dédicace nabatéenne araméenne de l'autel ṣalhâdien que nous venons de citer. Leurs voisins et aînés ne peuvent être que les Nabatéens: Apataioi < Appataioi < Abbataioi, (pour p × b, cf., en note 4, Apân-mart × 'bmrt), < 'Anbâṭ- du même texte dédicatoire. Rapportées sur la carte actuelle de l'Arabie Saoudite, les coordonnées de Ptolémée nous mènent vers la zone de Mutair[7] â l'E-SE de Quweit, qui est un petit haut-plateau dépassant mille mètres. Un habitat permanent dans les parages de cette montagne est difficilement concevable; tout comme aujourd'hui, n'y pouvaient transiter que des nomades en transhumance saisonnière. Rappelons néanmoins, à titre d'analogie, ce que dit la Bible sur les origines ethno-géographiques d'Abraham. Tout d'abord on énonce les origines quasi légendaires de sa famille en la déclarant provenir de la très lointaine Our des Chaldéens. Mais les rédacteurs de la Genèse se montrent circonspects, cette tradition relevant davantage des récits mythiques et de la poésie liturgique chantant les gestes des patriarches nomades. Ensuite, on donne la deuxième patrie d'Abraham, cette fois-ci bien historique: la région de Ḥarrân dans le Nord-Ouest de la Mésopotamie, avec laquelle Abraham et ses descendants maintiendront des relations endodémiques plusieurs fois rapportées dans le récit.

En poursuivant l'analyse de données fournies par l'oeuvre de Ptolémée, on arrive à la conclusion qu'en bon ethnologue qu'il était, il a dû recueillir sur les Nabatéens des renseignements assez suivis:

1) Les Nabatéens et leurs cadets Athrites, nomades, provenaient de la région située à l'ouest du mont Zamês;
2) ils s'établirent en sédentaires sur la côte occidentale de la 'mer Supérieure';
3) une partie d'entre eux émigra en Syrie et en Arabie Heureuse;
4) plus tard, une partie des Athrites fut installée par les rois arabes dans le Hauran.

Il est tout aussi évident qu'au moment de constituer son atlas, Ptolémée cartographe a dû forcément trier ses fiches de documentation. Ainsi il sauta les renseignements que nous venons d'énumérer aux 2 et 4. J'en déduis donc que le pays d'origine historique des Nabatéens est à chercher dans la plaine côtière de, riche par endroits, l'Arabie wahhabite et des Emirats, avec ses îles, ses ports, ses villages et villes des oasis, dont la plus renommée était Gerrha, à placer dans l'actuelle el-Hufûf selon toute vraisemblance.

Les Nabatéens occidentaux ont vécu intensément la grande histoire pendant sept longs siècles, durée exceptionnelle pour

[5] J'écris ce terme arabe en majuscule, car la Ḥubta, la montagne orientale de Raqm-Pétra, symbolisait sans doute la Montagne cosmique du soleil levant dont la Racine pénétrait loin dans le monde Inférieur.

[6] Le premier si 'bdt, mis en vedette, occupait tout seul la ligne 5 (suivi naturellement de son titre), le second si l'on restitue aux lignes 4–5 la nomenclature de mnkw, fils de 'bdt vainqueur du Séleucide.

[7] Ce nom venant de l'ethnonyme d'une grande tribu saudienne, Mṭêr, qui y jouit de droits de pâturage, comme me l'a expliqué un savant saudien lors de 'The First Conference'.

un peuple bâtisseur d'un grand état. Puis ils s'éclipsèrent, sans toutefois disparaître complètement, après la date fatidique de l'an 106 ap. J.-C.; ils seront encore signalés en Arabie centrale à l'avènement du Prophète. Les Anbatéens orientaux sont restés sur place, en tant que cultivateurs surtout, menant somme toute l'existence paisible d'une ethnie sans histoire pendant un laps de temps interminable; les auteurs musulmans du Moyen Age les retrouveront toujours là, végétant près des marécages du Delta des deux Fleuves[8].

A peu près en même moment que cinq ou six hommes faisaient inscrire leurs noms sous le masgadâ de 'Elâh de Ṣ'b dans la montagne de Hégra, un philosophe grec, du nom d'Athénodore, séjournait à Pétra. A son compagnon et ami, Strabon d'Amasée dans le Pont, il relatait, émerveillé, des scènes de la vie dans la capitale nabatéenne. Strabon en inséra un bref résumé au livre XVI, 4.21, de sa Géographie. Mais les deux premières phrases de ce paragraphe sonnent faux dans les éditions et traductions modernes: 'The first people above Syria who dwell in Arabia Felix are the Nabataeans and the Sabaeans. They often overran Syria before they became subject to the Romans; but at present both they and Syrians are subject to the Romans' (trad. Jones). Passons sur le flou qui entoure le statut politique des Nabatéens et l'inévitable simplisme en ce qui concerne leurs rapports avec l'oikoumène syrienne! Mais, par contre, c'est une contre-vérité si l'on dit que les Sabéens d'une part razziaient la Syrie et d'autre part devinrent sujets de l'Empire. Seul Nöldeke s'en est rendu compte, et il proposait d'émender Sabaioi en Salamaioi, en partant de l'association des nbṯw et des šlmw dans les épigraphes hégréennes[9]. Mais consultons d'abord les manuscrits conservés de l'ouvrage de Strabon, provisoirement à travers les éditions, bien qu'elles soient agaçantes par leurs apparats sélectifs. Les publications de A. Koraês 1815–1818, de A. Meineke 1852, de C. Müller et F. Dübner 1853–1901, de H. L. Jones 1930, glissent sur les Nabataioi kai Sabaioi. Seul E. Kramer, III 1852, signale consciencieusement une variante, Saaiboi, dans trois manuscrits grecs: Vaticanus 1329, Parisinus 1309, Venetus 379. Nous voilà en présence de la transcription de notre toponyme ṣ'bw, qu'on vocalisera donc Ṣa'eb (ṣa'ib ou ṣâ'ib) d'après l'originel Saeboi qu'un copiste moyenâgeux récrivit, en variante orthographique, Saaiboi. Le scribe de l'archétype commun aux copies existentes a dû commettre une omission des deux lettres par saut du même au même: Nabataioi (hoi) kai Saeboi, 'les Nabatéens qui s'appelaient aussi les Ṣa'eb'.

Athénodore fut l'un de ces voyageurs rarissimes qui comprennent, ou presque, un peuple étranger en se laissant pénétrer par sa vie; Strabon, plus théoricien qu'empirique, résuma somme toute assez correctement les récits du prémier. Une pareille 'rara avis' était aussi Pline l' Ancien dont les renseignements sur le Proche Orient, ceux qu'il cueillait personnellement chez les Orientaux fraîchement débarqués à Rome, sont d'une grande précision.

En conclusion, voici comment je répartis dans l'espace et le temps les foyers des Nabatéens:

—la patrie mythique des Nabâṭ nomades dans la zone du Ṣa'eb;

—la patrie historique, composée des bandes de territoire qu'on précisera peut-être un jour, sur la côte ouest du Golfe Persique, pays de résidence permanente de l'ethnie homonyme 'Anbâṭ qui n'a jamais bougé, à un voyage à Palmyre près, p. ex.

—Dans l'Ouest, un premier foyer, civil et religieux, dans l'oasis de 'Ain Wâdi Mûsa: hag-Gai' des Edomites et Nord-arabes, 'al-Gai' des Nabatéens, Gai'â des araméophones, et un second, dès environ 250 av. J.-C., situé dans la banlieue et le quartier commercial du premier: Raqm 'al-Gai', Petra d'Arabie, Reqem d^{e}Gê'â. Cette double capitale était flanquée de deux autres chef-lieux:

—au Nord, Bosra construite au 3e siècle (Buṣray, 'Plus-fortifiée', sous-entendu, que la ville grecque du territoire voisin) à l'emplacement d'un campement résidentiel et marchand existant dès avant l'arrivée à el-Gî;

—au Sud, la Mecque avec une dynastie cousine: un Arétas, le parent d'Obodas, y régnait lors du passage de l'expédition d'Aelius Gallus. Le nom Makkat provient de Mankat; comparer, dans l'onomastique safaïtique et thamoudéenne, des noms composites comportant les éléments -mk et -mkt; ce sont les noms des rois nabatéens Mank et Mankat, orthographiés en nabatéen araméen mnkw et mnktw. J'en conclus que la ville de Makkat fut fondation d'un roi des Nabatéens qui portait le nom de Mank, ce qui est la prononciation nabatéenne arabe de malik, 'roi', en tant qu'anthroponyme. A une prochaine occasion je citerai d'autres villes et bourgades fondées par des rois nabatéens. Ptolémée mentionne cette ville très importante de l'Arabie centrale sous la dénomination de Makoraba; VI 6.32, à 73°20'22". J'y vois un toponyme composite et je coupe en conséquence: Makkâ Rabbâ, 'Mecque la Grande'. Sur le -a long passant à -ô, cf. p. ex. l'ancien Môtô égal au moderne Mauta en Jordanie.

[8] Sur les Nabatéens chez les auteurs arabes voir l'article de S. Hamarneh dans ce volume.

[9] Note de Nöldeke chez J. Euting, Nabatäische Inschriften aus Arabien, Berlin 1885, pp. 28s.

Suleiman al Megdad

Le Rôle de la Ville de Bosra dans L'histoire de la Jordanie aux Époques Nabatéenne et Romaine

Parler de Pétra, c'est prolonger la longue histoire de Bosra qui n'a pas encore révélé ses secrets archéologiques et historiques, cette histoire commune des deux pays arabes de la Syrie et de la Jordanie.

L'aperçu que je présente ici n'est qu'un sommaire d'un ensemble beaucoup plus vaste qui est encore en préparation et qui traite des rapports entre Bosra, capitale du Nord Nabatéen et Petra, capitale du Sud Nabatéen. Comme vous le savez bien, Bosra est sans aucune doute celle qui attire et retient le plus l'attention de l'archéologue parmi les cités antiques du Nord Nabatatéen. Pour cette raison elle a été l'objet de quelques sondages et fouilles archéologiques, commencés depuis vingt-cinq ans. Car cette ville ne semblait plus bénéficier de l'attention du monde savant alors que la région avait reçu des savants et des archéologues depuis le début du 19ème siecle, et, que je sache, on doit à Burckhardt, découvreur de Petra, d'avoir signalé pour la première fois, aprés son voyage en 1810–11, les monuments antiques de Bosra, et il a fallu attendre les études de Waddington en 1861–62 et celles de M. de Vogüé en 1865 et les travaux de Clermont Ganneau en 1888 pour attirer l'attention sur l'importance de cette ville. Les résultats obtenus à cette époque ont été enrichis par les oeuvres de René Dussaud et Frédéric Macler et les deux expéditions de l'Université de Princeton et de Brünnow, au début de notre siècle. Vers 1925 M. Maurice Dunand a poursuivi le travail, mais l'éminent savant n'avait pas à sa disposition les moyens suffisants pour réaliser ses projets scientifiques et pour commencer une exploration méthodique et approfondie à Bosra, car aucune fouille, voire aucun dégagement, ne fut alors exécuté.

C'est après l'indépendence de la Syrie, pour être plus précis en 1946, que l'Emir Djaafar Abd el-Kadr, fondateur du Musée de Damas, m'a confié la tâche de commencer la première fouille archéologique dans le Théâtre de Bosra.

Depuis un demi-siècle, cependant, la ville s'est agrandie dans les domaines sociaux et économiques et la population de la ville a augmenté dans des proportions étonnantes. Aux derniers recensements, ceux de 1979, Bosra comptait 12901 habitants, dont 10000 vivent en permanence sur place.

C'est pourquoi on s'est demandé quelle conséquence cela pouvait avoir pour les travaux archéologiques, car il était évident qu'au cours d'un siècle, c'est-à-dire depuis le passage de de Vogüé, la ville avait été bouleversée de fond en comble: les 14 maisons qui étaient habitées à cette époque sont devenues un grand village prospère dont les maisons recouvrent la quasi-totalité des ruines; pour leur construction on a remployé une partie des matériaux antiques avant que l'actuelle organisation du Service des Antiquités fût mise sur pied.

Un premier résumé concernant les problèmes de conservation et de mise en valeur des monuments de cette ville a été présenté au Président Hafez Assad, Président de la République Arabe Syrienne, qui a approuvé qu'on commence une fouille complète du site, bien que cela entraîne la démolition de toutes les habitations modernes et la reconstruction de la ville ailleurs.

C'est alors qu'un groupe de travaux archéologiques a été formé et c'est à partir de 1972 qu'il a commencé sa tâche à Bosra.

Il est à noter que Bosra est aussi l'objet d'une activité de l'Institut Français d'Archéologie du Proche-Orient, dirigé jusqu'en 1980 par M. Ernest Will, ainsi que de celle de plusieurs savants, notamment M. Dominique Sourdel qui a fait des recherches sur les cultes du Hauran, M. Maurice Sartre, qui vient d'achever son travail sur les inscriptions grecques de Bosra d'Arabie, Mme Jaqueline Dentzer sur le décor architectural en Syrie méridionale à l'époque hellénistique et romaine, Mlle Solange Ory sur les inscriptions Musulmanes de la ville. J'ajoute que M. le Professeur Jean-Marie Dentzer, Directeur de la Mission Archéologique Française en Syrie méridionale et en Jordanie, a fourni une contribution scientifique importante et très efficace aux travaux de fouille qui sont actuellement en cours à Bosra. Dans le cadre de l'étude scientifique du site à l'époque nabatéenne une mission Syro-jordanienne sera formée sous le haut patronage du Dr Afif Bahnassi, Directeur Général des Antiquités de Syrie, et du Dr Adnan Hadidi, Directeur des Antiquités de Jordanie. Ce projet pionnier qui renforce la coopération entre les deux pays sera réalisé prochainement et c'est ce qui m'a amené à parler devant vous de Bosra, deuxième capitale nabatéenne.

Le site

La ville de Bosra est située au sud-est du Mohafazat de Deraa dans la République Arabe Syrienne. La nature y offre des spectacles variés. Le sol est composé de reliefs à pierres noires volcaniques (basaltes). Ces terrains s'étendent sur une surface de 4000 km.^{2} à partir des collines situées au sud de Damas. Ils atteignent à l'est Soueïda et à l'ouest le Golan. Le sol, qui se compose d'une matière volcanique noire dissoluble et d'argilé rouge, est riche en substances très nutritives pour les plantes et garde longtemps son humidité. Les terrains sont en grande partie couverts de rochers. On peut voir toutes sortes de plantes et d'herbes. Sur les deux côtés de la vallée au printemps on trouve des cours d'eau et des canaux.

Nous pouvons diviser ces terrains en deux régions principales separées par la route Damas-Amman. La région est est peu fertile et l'on n'y trouve que peu de sources, tandis que dans la région ouest abondent les sources et les rivières. Au printemps les prairies sont couvertes de fleurs sauvages de toutes sortes et de toutes couleurs. On dirait un tableau.

Quoique le climat de Bosra soit instable, il est sain. En hiver il neige au moins une fois; quant à la pluie, il n'y en a plus à partir du début de mai jusqu'à la fin de septembre. Comme la ville de Bosra est située à l'ouest au pied de Djabal al-'Arab elle est exposée au vent à cause de l'abaissement relatif des collines de Samarie et de Galilée; cela contribue d'ailleurs à assurer l'humidité.

L'ancienneté du site

La base géographique de la ville de Bosra est une source. Elle se trouve dans le coin du mur d'enceinte nord-ouest de la ville. Cette source a fait de Bosra un lieu naturel de repos entre le désert et le Hauran et une station pour les caravanes venant du sud de la Péninsule arabique et du nord du pays; de plus elle a favorisé la croissance des arbres et des plantes, et par conséquent la croissance du peuplement.

Il est probable que les premières habitations humaines dans cette région datent du 2ème millénaire av. J.C. Mais la plupart des monuments historiques qui existent encore à Bosra et qui s'étendent sur une surface de plus de 15 km.^{2}, sont des vestiges qui remontent environ au 3ème siècle av. J.C. Mais à une date antérieure de 2000 ans, deux tablettes amorites mentionnent Bosra sous le nom de 'Basrouna'. Au 2ème siècle av. J.C. les voies commerciales des Nabatéens se sont détournées vers le nord—ce qui causa l'essor et l'extension de la ville de Bosra—, et elles firent de Bosra un important centre commercial et culturel venant au second rang après Pétra.

Le nom de Bosra provient du mot BSR qui signifie 'forteresse'. Il est cité sur les tablettes de Tell el-Amarna en Egypte. Le Prof. Sartre estime que le plus ancien signe de la présence des Nabatéens à Bosra doit être situé en 84 av. J.C. Une inscription nabatéenne que nous avons trouvée dans les débris du Temple de Bosra, et qui a été étudiée par M. l'Abbé Jean Stárcky, nous donne le nom de Abdo fils de Salem, pèlerin venant de la ville de Slem en l'an 130 apr. J.C., ce qui témoigne de l'importance du Temple et de la continuation des cultes nabatéens dans la ville alors devenue capitale de la Province Romaine d'Arabie. C'est de Pétra que le culte de Dusarès a pénétré à Bosra. Une inscription nabatéenne trouvée à Imtan est consacrée 'A Douchara Aara dieu de notre maitre, dieu qui habite à Bosra, en l'année 23 de Rabbel roi de Nabatène', c'est-à-dire en 93 ap. J.C. Deux dédicaces ont été relevées à Bosra même: l'une faite en l'honneur de Douchara Aara datée de 148, l'autre mentionnant une construction érigée 'par Douchara et Sharait les dieux de Bosra'. La déesse Allat, vénérée de l''Arabie méridionale jusqu'à Palmyre, fut également la déesse de Bosra où son culte fut largement répandu à l'époque nabatéenne et plus tard à l'époque romaine. Une seule dédicace nabatéenne mentionne Al-Uzza comme la déesse de Bosra. On peut toujours se demander si cette divinité, qu'elle fût nommée Allat ou Al-Uzza, ne fut pas la même déesse de Bosra.

A l'époque du roi Rabbel Ier ou Ri'bal, tel que les philologues l'ont appelé, les Nabatéens ont fait de la ville de Bosra une base militaire servant de point de départ pour la ville de Imtan, située à 20 km. à l'est de Bosra, afin de pouvoir attaquer l'armée du roi Seleucide Antiochos XIII qu'ils battirent dans une victoire définitive. Cette victoire a renforcé la situation commerciale des Nabatéens dans tous les pays que parcouraient leurs caravanes aussi bien à l'est qu'à l'ouest. Du temps du roi Al-Hareth III (87–62 av. J.C.) la ville de Bosra s'est élargie, son commerce a prospéré, son industrie s'est dévoloppée et elle est devenue l'axe des relations entre Damas, Pétra et la ville de Anjar dans la Béka'. Son architecture était inspirée par l'art de l'architecture hellénistique réduite conformément aux traditions et rites pratiqués à cette époque. Il est probable que l'adoration de Allat et Dusarès, ainsi que d'autres rites que les Arabes de Djeziré et de Pétra pratiquaient, étaient répandus chez les habitants.

Le grand savant Clermont Ganneau affirme que ce sont des Arabes Nabatéens qui ont bâti les murs d'enceinte de la ville dont la hauteur est de 10 à 15 mètres et dont la largeur est de 4 mètres. Ces murs étaient construits avec de grandes pierres dont le volume est compris entre 3 et 5 m.^{2}. Près d'un de ces murs on a découvert une épigraphe en caractères nabatéens dont le texte est le suivant: 'Ce mur en entier . . . ainsi que . . . et le bassin, ont été construits par Taimu Fils de Nassijo pour le dieu Dusarès'. Bien que la plupart des monuments de la ville soient tombés en ruine, il existe toujours des indices des procédés de construction à l'époque nabatéenne, qu'on peut trouver à une hauteur qui varie entre 3 et 5 mètres,—malgré le fait que la plupart de ces restes sont encore enfouis sous l'entassement des ruines—, surtout dans le quartier proche de la source principale où sont apparues des parties du mur de la ville qui nous rappelle les murs de Tell Hamad, Tell Chihab, Si', et autres villes et sites où les Nabatéens se sont installés et ont bâti des maisons et des temples.

Vu les premiers résultats des campagnes de fouilles il est probable que le quartier ouest fût celui des commerçants et des riches. On y puisait l'eau dans un réservoir mesurant 114

m. sur 112 m. et qui avait une profondeur de 6 m. Ses murs, de 3 m. d'épaisseur, sont construits en pierres taillées et ornées et s'appuient sur des contreforts saillants qui se trouvent à intervalles égaux l'un de l'autre tout au long des 4 murs du réservoir. Des inscriptions nabatéennes, qu'on peut encore trouver sur la plupart des pierres, nous montrent que la construction du réservoir remonte au début de l'apparition de Nabatéens. L'eau de ce réservoir se distribuait dans les maisons et dans les abreuvoirs à l'aide de canalisations faites en brique et en plomb. Ces installations existent encore et viennent au jour à mesure que les travaux de fouilles avancent.

Les monuments nabatéens de Bosra se distinguent par le fait que la pierre est l'élément principal de la construction. Car les Nabatéens se servaient très peu d'autres éléments tels que la bois, la terre cuite et le fer. La pierre de basalte, qui abonde dans cette région, était le matériau principal et essentiel pour toutes les constructions et ornementations qui s'accomodaient avec leur civilisation bien avancée. Ils taillaient et sculptaient habilement la pierre pour en faire des chapiteaux et des corniches corinthiens, des portes, des fenétres, des sièges et des armoires, ainsi que des arcs en pierre. En améliorant la construction de ceux-ci, ils ont pu en faire l'élément essentiel pour unir deux bases distantes. La construction de ces arcs à des distances parallèles facilita également le placement du toit qui était formé de longues 'poutres en pierre' qui semblaient être faites en bois sculpté soigneusement.

Les Nabatéens ont sans aucun doute atteint le plus haut degré de perfection dans ce genre de constructions. Il en est de méme des réservoirs et des réseaux de distribution de l'eau. D'une étude plus approfondie des vestiges nabatéens dans les lieux proches de Bosra, tels que Si', Deir Machqouq, Om al-Djimal, Om al-Qoutain, Om al-Sarab, Samaj, Al-Khouraib et Samaqiat au sud, on peut conclure que les Nabatéens ont habité Bosra et ses environs bien avant le règne du roi Rabal II et qu'ils ont creusé les canaux qui relient les vallées, qu'ils ont construit les puits et les réservoirs. Ils ont aussi réalisé des projets d'agriculture et d'irrigation en Jordanie et au Hauran, ainsi qu'en Beka' et au Golan. Ils ont aussi élargi les plantations d'arbres, d'olives et de vignes qui étaient tellement importants qu'ils en devenaient sacrés. Les statues des dieux Allat et Dusarès, entourés de vignes et de raisins, surtout sur les façades des maisons et des chapiteaux, en témoignent.

Lorsqu'au début de 1978 j'ai entrepris des travaux dans le quartier central et le quartier est de la ville pour déblayer les maisons modernes, j'ai trouvé, sous les fondations de ces maisons construites au début du 19ème siècle, des vestiges de l'existence de plusieurs sanctuaires de l'époque nabatéenne. Des éléments architecturaux du sanctuaire du centre ont été réutilisés dans la construction du temple, du 3ème siècle, connu sous le nom de Kalybé, et dans la construction de la basilique du 4ème siècle et de la cathédrale de l'année 512. Les mêmes travaux exécutés en 1979 dans le quartier situé à l'est de l'arc nabatéen ont permi de trouver l'emplacement d'un sanctuaire composé d'un vaste ensemble monumental encore enfoui sous les décombres. Les éléments qu'on a trouvés sous les maisons modernes nous permettent de donner les mesures du premier temple: elles sont de 50 m. de l'est à l'ouest et de 40 m. du nord au sud. Dans l'espace vide situé entre la porte et le mur est du sanctuaire quelques dalles en basalte de 1.25 × 1.25 m. nous indiquent que le sanctuaire a été bâti sur une élévation plus haute que le niveau de la porte de 4 m. et demi.

Des bases de colonnes, une inscription nabatéenne, un fragment d'inscription grecque et des morceaux d'entablement de linteaux et de moulures, portent des traces d'une empreinte hellénistique; on en a aussi conservé quelques témoignages au palais construit au sud-est du sanctuaire. Deux piédestals et deux colonnes corinthiennes de 7.90 m. de hauteur et deux demi-colonnes nabatéennes de 6.80 m. de hauteur ont été bien conservées sur les lieux et nous font penser à l'existence d'une influence régionale dans l'architecture du Bosra hellénistique.

Outre les études onomastiques du Prof. Sartre qui ont confirmé la prépondérance des noms nabatéens, les fragments de céramique nabatéenne fine à décor rouge peint sur fond orangé, trouvés pendant nos travaux de fouilles à Bosra, confirment, eux aussi, l'importance de Bosra, deuxième capitale du royaume nabatéen.

Dans le centre de la ville antique—là où, au 19ème siècle, la maison du Cheikh du village et ses annexes (cours, étables, dépôts etc.) ont été construits—on devine encore le plan d'un sanctuaire qu'actuellement on peut difficilement reconnaître à cause des bâtiments modernes. Ces bâtiments ont été achetés par l'Etat, et pendant la deuxième moitié de 1979 on a commencé à exproprier les habitants. C'est dans la cour est de la maison qu'a été trouvé l'autel qui porte une invocation adressée à Zeus Safatenos. Le texte en a été publiée par M. Dominique Sourdel. On y a trouvé aussi des fragments de pierre moulurées, des chapitaux, des ornementations portant les dernières traces d'une empreinte hellénistique. Ce genre de fragments a été retrouvé aussi dans la partie inférieure de la porte nord de la ville. Cette porte a été construite probablement au 1er siècle av. J.C. Le Mausolée, en forme rectangulaire, a été trouvé en 1978 dans le Tell Assouad, situé à 200 m. au sud-ouest du théâtre, au milieu d'une nécropole, sans aucun doute nabatéenne. On peut voir les mêmes empreintes sur le bâtiment à 3 étages connu sous le nom de Palais. On y trouve un bain somptueux de l'époque romaine adossé au mur ouest du bâtiment.

C'est le 22 mars de l'année 105 ou 106 apr. J.C., que le gouverneur de la Syrie, Cornelius Palma, fut chargé par l'empereur Trajan d'annexer le royaume nabatéen, sans aucun doute à l'occasion de la mort de Rabel II, roi de Bosra. Dès cette date une nouvelle province venait agrandir l'Empire et Bosra en fut la capitale. Cette province englobe, dès le début, la totalité du Hauran, de la Transjordanie, du Negev et aussi du nord du Hadjaz.

La IIIème légion cyrénaïque fut chargée de la garde du pays. Dans le courant du 2ème siècle Bosra revêt l'aspect d'une belle

cité provinciale d'Orient avec ses rues à colonnades et ses monuments. La ville est entourée d'une enceinte approximativement ovale et le grand axe, dont le tracé est sans doute préromain, est orienté est-ouest. Le décumanus, bordé d'une colonnade ionique, conduit de la porte ouest de la ville (bien conservée) à l'arc nabatéen. Le cardo, bordé de portiques, rencontrait le décumanus à peu près au centre de la ville. On a récemment découvert un tétrapyle, érigé sur une place ovale qui enjambait les deux voies principales. A l'est du cardo une rue conduisant au théâtre était ornée d'une colonnade de calcaire blanc, tranchant sur le basalte qu'on a employé pour la construction de tout le reste de la ville. Un arc monumental bien conservé pour sa moitié nord enjambe cette rue à l'endroit où elle rejoint le décumanus. Plus à l'est une rue à colonnade et portiques débouche sur le décumanus entre le Nymphée et la Kalybé.

Un forum fut sans doute aménagé en même temps que fut tracé le réseau des rues. Limité à l'ouest par le cardo et au nord par une rue avec portique, il était adossé au décumanus au sud. Le dénivellement entre la rue et la place fut mis à profit pour construire un vaste cryptoportique presque intégralement conservé. L'édifice, adossé au décumanus, sur lequel donnent une série de soupiraux, communiquait avec le forum par trois larges portes dont l'une est située au centre de la façade nord et les deux autres sont situées dans les deux coins. Sur le côté est du forum des entrepôts ou des boutiques étaient abrités sous une voûte dont les restes sont encore nettement visibles. Des sanctuaires se dressent encore face au carrefour de la rue nord-sud et du décumanus. Quatre colonnes corinthiennes, coupant l'angle nord-ouest du carrefour, appartiendraient à un nymphée selon les voyageurs qui, au siècle dernier, ont vu encore des restes plus importants que ceux que l'on peut voir aujourd'hui. De l'autre côté de la rue, deux colonnes qui se trouvent à une distance d'à peu près 25 m. l'une de l'autre et dont l'une est reliée au mur extérieur par un entablement richement décoré, sont les seuls restes de la Kalybé, édifice religieux typiquement hauranais.

Dés le IIème siècle des thermes importants sont édifiés au coeur de la nouvelle ville, dont les différentes parties sont pour la plupart bien conservées. Ces thermes sont peu à peu dégagés des maisons qu'on y avait installées en profitant des murs et des voûtes solides et bon marché. En dehors de certains édifices chrétiens on ne trouve dans le vieux quartier de la ville qu'un seul édifice qui est sûrement romain: 'le palais de Trajan', qui est en réalité une somptueuse demeure à étages. Aujourd'hui une équipe de restaurateurs commence à consolider les murs de ses salles supérieures.

L'examen des monuments chrétiens à Bosra en est encore à son début et peu d'églises ont été dégagées. Des premiers travaux de fouilles archéologiques menés par la Direction Générale des Antiquités et des Musées et par l'Université de Bologne en Italie et dirigés par Madame Fariolli et S. Mougdad, ont été entrepris à un moment exceptionnel, pour dégager la Cathédrale. Celle-ci fut construite sur un plan carré en 512–13, ainsi que nous l'apprend l'inscription dédicatoire.

L'église de Bahira, située à quelques dizaines de mètres du nord de la Cathédrale, est en réalité une basilique du IIIème ou du IVème siècle. La légende qui s'y rattache rapporte que ce fut là que le moine nestorien Bahira aurait rencontré le Prophète Mahomet. Ce n'est pas là la seule légende relative à un séjour du Prophète Mahomet à Bosra. On conserve en effet, dans la salle de la Mosquée de Mabraq, située à l'angle nord-est de la ville, l'empreinte de genou de la chamelle qui aurait porté Mahomet lors de ce voyage. Il semble qu'à cette époque Bosra fût un grand marché où les caravanes arabes venaient s'approvisionner. Lorsque le Calife Omar vint en Syrie pour organiser le pays, c'est au Hauran, plein de souvenirs arabes ghassanides, qu'il s'installa.

A l'époque des Croisades la région de Bosra fut le théâtre de plusieurs combats. La forteresse construite autour du théâtre rendait la ville de Bosra imprenable. En 1147, Baudoin III essaie en vain de prendre cette ville et une deuxième tentative en 1151 ne réussit pas non plus. Lors de l'invasion des Mongols en 1261, la forteresse de Bosra est très abimée. Baybars ordonna la restauration des parties abimées de la forteresse.

Ville administrative, ville de garnison, ville de commerce et noeud de communications, Bosra devait offrir à sa population, permanente et de passage, les commodités et les plaisirs qui sont les symboles du nouveau genre de vie introduit par la civilisation hellénistique. Dès le premier siècle le goût de la population pour le théâtre, pour les jeux de naumachie, pour les courses de chevaux, se manifeste à Bosra.

Trois monuments formant un ensemble particulièrement imposant en témoignent. Ces lieux de spectacle sont d'une richesse unique; ceci vaut aussi bien pour les éléments de construction que pour l'ornementation extérieure et le décor intérieur de ces monuments colossaux.

Le théâtre

Parmi les monuments destinés aux spectacles, l'édifice le plus important à Bosra est sans aucun doute le théâtre.

Ce théâtre unit la richesse de l'art raffiné de l'époque hellénistique à la grandeur et la solidité de l'architecture romaine. Il offre en outre certains traits originaux. C'est certainement le théâtre le mieux conservé de l'époque romaine dans le monde antique. Le sens de l'équilibre a présidé à la construction dans les différentes parties du monument: proportions, mesure et ornementations de tous les côtés, de manière à ce que le visiteur de là où il se trouve ne voie que l'harmonie, la sobriété et la délicatesse, aussi bien dans l'ensemble que dans les détails. C'est un des rares monuments de la région qui a captivé les archéologues au 19ème siècle, à partir de 1854. G. Rey et, plus tard, le Comte de Vogüé décrivent le théâtre et le dernier en parle en ces termes:

'Construit à l'époque romaine, sans doute au 2ème siècle de notre ère, de dimensions colossales, ce monument est d'une admirable conservation, et, s'il pouvait être débarrassé des batisses modernes qui l'encombrent, il vous rendrait, mieux qu'aucune des ruines encore existantes soit en Orient soit en

Occident, la physionomie intérieure d'un théâtre antique. Les gradins, en belle pierre de taille, sont presque tous en place, la scène est complète avec proscenium, postscenia et dépendances; elle est décorée de niches, de portes monumentales ornées de moulures, un portique régnait tout autour de la cartea, au sommet des gradins, et formait une galerie couverte qui couronnait tout l'édifice. Cette disposition se rencontrait dans tous les amphithéâtres romains, mais elle a partout disparu; la galerie supérieure, ou promenoir couvert, était la seule partie de la salle qui fût ouverte aux femmes; dans les théâtres, elle était moins nécessaire. Je ne crois pas qu'il en existe ailleurs qu'à Bosra un exemple conservé. Ici plusieurs colonnes sont encore debout avec leur architrave. Elles sont d'ordre dorique romain; la ligne qui formait cette colonnade se continuait sur le mur de la scène par une série de demi-colonnes engagées. Une des précinctions de la salle est encore visible; elle se confond avec le sol actuel; on voit au centre de notre dessin l'entrée d'un vomitoire et le double escalier qui mettaient le précinction en communication soit avec le dehors soit avec les gradins supérieurs.'

Il fallut exécuter plusieurs sondages archéologiques dans les différentes parties du théâtre avant de commencer des fouilles systématiques. Grâce à ces travaux commencés en 1947, les parties du monument jusqu'alors enfouies sont désormais visibles. Pour les démonstrations artistiques et la présentation des spectacles, le théâtre fut prêt des avant la fin des travaux en 1976. Orienté plein nord, ce théâtre appartient au type du théâtre de plaine. La cavea n'est adossée à aucune pente naturelle mais s'appuie complètement sur des substructions dont la façade est percée de nombreuses arcades au centre, ce qui facilite l'accès et la sortie des spectateurs.

Le monument peut contenir presque 18000 spectateurs. Il est divisé en trois parties séparées les unes des autres par de larges galeries (précinctions) s'avançant vers la scène jusqu'au dos des sièges, alors que vers l'extérieur s'ouvrent les portes de sortie (vomitoires). Un portique couronnait la plus haute galerie (summa cavea) dont plusieurs colonnes de style dorique sont restées en place du côté est. La ligne qui forme cette colonnade se continuait sur le mur de la scène par une série de demi-colonnes reliées au-dessus desquelles se succèdent de nombreuses niches. L'étage supérieur de la cavea se compose de 5 gradins, celui du centre de 18, et l'étage inférieur de 14.

Le mur du fond de la scène est percé de trois grandes portes situées chacune au fond d'une grande abside rectangulaire. La scène mesure à l'intérieur 45.50 m., à l'extérieur 54.35 m. Le diamètre du monument est d'environ 102 m. Derrière les portes de la scène est aménagée une longue galerie correspondant aux coulisses, où les acteurs attendaient leur tour pour passer à la scène.

Comme à cette époque l'on ne possédait pas d'instruments pour amplifier la voix, les architectes ont résolu ingénieusement le problème acoustique en donnant à l'ensemble du bâtiment la forme nécessaire, et à la scène une profondeur bien mesurée. L'ornementation du mur de la scène contribuait également à renvoyer la voix des acteurs.

Sur chaque côté de l'extrémité de la scène se trouvent quatre loges superposées reservées aux personnes de marque.

Le mur de la scène était recouvert entièrement de marbre. Des vestiges en subsistent dans la partie centrale et à l'est du mur. Le décor intérieur des loges et des passages pourrait avoir été composé de stuc. L'ensemble du théâtre était recouvert d'une tenture (Velum) de protection alors que le toit de la scène était recouvert en bois.

Il est connu qu'on faisait évaporer de l'eau parfumée. Les vapeurs arrêtées par la tenture retombaient en goutelettes fines (sparsiones) sur les spectacteurs.

Les Ghassanides et l'epoque byzantine

Après la formation de la Province d'Arabie, les Romains cherchèrent à gagner la sympathie des habitants arabes et se rapprochèrent d'eux par des accords mutuels. Les premiers Arabes à se mettre d'accord avec eux furent de la tribu Tamukh de Quda'a dont les textes arabes ont cité trois des rois: Al Nou'man Ben 'Amro, Ben Al-Nou'man et al-Hawari Ben Amr. Plus tard, la tribu al-Daja'ima, qui est l'une des branches de Salik-al-Adnaniya, attaqua les Tamukh et prit leur place. Les Romains ont alors reconnu la souveraineté de cette tribu jusqu'à l'arrivée des Ghassanides dont la date de migration en Hauran et à l'est de la Jordanie est encore incertaine. Certains textes racontent une histoire peu vraisemblable sur l'arrivée des Ghassanides, mais nous la citons quand même telle qu'elle fut racontée:

"Quand certaines tribus furent inquiétées de la destruction de la digue Ma'reb au Yemen, leur chef leur dit: 'Ceux d'entre vòus qui veulent le vin et le levain, la souveraineté et la suzeraineté et revêtir le drap rouge et la soie, qu'ils rejoignent Bosra et le Khafir'. Ceux qui en profitèrent furent les Ghassanides."

Quand ils furent bien installés à Balqa' et au Hauran, les Daja'ima leur ont réclamé, selon leur coutume, des impôts sur le revenu. Les Ghassanides refusèrent. Ils se sont alors battus avec les Daja'ima. Ces derniers les ont vaincus et les Ghassanides ont été obligés de payer jusqu'à ce que Sabit al Daj'ami fût chargé de percevoir les impôts, à partir desquel moment ils ont de nouveau refusé de payer. Alors Sabit est venu voir leur chef Tha'laba et lui dit: 'ou bien vous payez l'impôt, ou bien je prendrai vos parents comme otages'. Mais Tha'laba, un homme patient, lui répondit posément: 'Si vous voulez quelqu'un pour vous donner l'impôt, il n'y a que mon frère Jaza' Ben Amro'. Ce dernier était un homme féroce et coléreux. Sabit alla le voir et lui demanda un dinar. Amro lui demanda un délai. Sabit refusa d'attendre. On raconte que Ben Amro se leva précipitamment et lui tendit une épée en lui disant: 'Prenez cette épée comme gage jusqu'à ce que je finisse de vous percevoir les impôts'. Sabit accepta et dès qu'il eut pris l'épée entre ses mains, Ben 'Amro tira la lame et le tua. Dès lors le proverbe suivant se répandit: 'Prenez de Jaza' Ben Amro ce qu'il vous donne'. Et depuis, les Ghassanides refusèrent de payer les impôts.

Le savant allemand Nöldeke est d'avis qu'il n'y a aucun

signe qui prouve que les Ghassanides s'approprièrent Al-Sham. Al-Waqidi nous raconte que le roi 'Amro al-Ghassani a tué le messager du Prophète envoyé à Bosra. Nöldeke affirme aussi que ce roi n'était que le chef de Bosra, reprise juste auparavant par les Romains. Cette contradiction de divers récits a abouti à des incertitudes au sujet de cette tribu arabe, émigrée du Yemen à la suite d'un effondrement de la digue de Ma'reb. On dit aussi que le fondateur de leur dynastie fut Jafné Ibn 'Amro Moziqia'. En vérité l'histoire de Bani Jafné reste obscure et le nombre de leurs rois, entre 11 et 32, incertain. Quant aux récits byzantins ils ne nous éclairent que leur relation avec Constantinople.

En 1933, l'orientaliste François Nau a publié une recherche sur les Arabes chrétiens en Iraq et en Syrie aux 7ème et 8ème siècles apr. J.C. Il se base dans son étude sur des textes, jusqu'alors très brièvement mentionnés par les historiens. Ces textes, autrefois laissés de côté, remontent à des origines syriaques et n'avaient d'ailleurs pas pu conduire Nöldeke à des conclusions tangibles.

Selon l'étude de François Nau nous constatons que la plupart des habitants de Bosra se sont christianisés avant d'être islamisés. Ils connaissaient la prière, faisaient l'aumône, aidaient les gens pauvres et jeûnaient chez eux et dans leurs ermitages. Ces habitants utilisaient l'écriture nabatéenne mais lisaient en syriaque les prières et les rites. On retrouvait aussi le syriaque dans les correspondances religieuses autour des discussions qui se sont répandues après la parution des nouveaux cultes: 'Les Naturalistes' en face de la croyance en 'la seule nature en Jésus-Christ'.

Les habitants de Bosra et de la Province arabe croyaient au 2ème culte et se sont donnés le nom de 'Jacobites'. Ils enregistraient les actes des discussions avec leurs rivaux les Chalcédoniens et les accusaient de toutes sortes d'infamies. Ils ont aussi enregistré dans leur histoire les actes d'oppression religieuse subies de l'empereur. Jean l'Asiatique a vécu ces évènements et les a décrits avec verve dans ses Mémoires. Probablement Jean l'Asiatique était-il Arabe mais il écrivait en syríaque. Il a mentionné toutes les étapes des oppressions et divisions dans l'histoire de l'Eglise. Il a parlé aussi des Ghassanides et de leurs rois Al-Hareth Ben Jabala et Nouman Ben Moun Mouzer.

Le premier de ces rois, Hareth Ben Jabala (529–69 apr. J.C.), fit la guerre à Al Mouzer III al-Lakhmi, roi de Hira, et le battit; le titre de phylarque ou chef de tribu lui fut alors accordé par l'Empereur Justinien. Les Ghassanides traduisent ce titre comme roi. Ce roi se lia aux Byzantins, et combattit les Perses et leurs alliés, les Lakhmides arabes.

Al-Mouzer succèda à son père (569–81 apr. J.C.) et continua les guerres contre les Lakhmides; la capitale al-Hira fut incendiée à cette époque. Mais il se montra plus hostile que son père aux Byzantins dont il contesta le pouvoir, et s'opposa à eux et attaqua leurs doctrines en se présentant comme disciple fervant de l'Eglise Monophysite; il s'opposa aussi à l'idéologie officielle de l'Etat, ce qui entraîna son arrestation avec sa famille et son bannissement en Sicile en l'an 582.

Ceci entraîna des querelles entre les Arabes et les protectorats byzantins se trouvant dans les villes. Selon Jean d'Ephèse, les Arabes ont alors obligé plusieurs de ces protectorats à abandonner leurs munitions de guerre.

Les quatre fils de al-Mouzer attaquèrent le camp byzantin à Bosra et avec l'aide des habitants arabes purent recupérer l'argent et les biens de leur père qui y avaient été confisqués. Ces conquêtes se sont poursuivies avec al-Nou'man, fils de al-Mounzer, jusqu'au désert de Damas où al-Nou'man fut arrêté par les Byzantins qui l'emmenérent à Constantinople; une grande partie des Ghassanides fut ainsi refoulée et se tourna vers les Lakhmides et les Perses qui avaient envahi la Syrie depuis 610 apr. J.C.

Après que Damas fut tombée aux mains des Perses (613), Bosra connut les plus rudes destructions de la période de son occupation. A la suite des guerres d'Héraclius avec les Perses (622–29), et la défaite de ces derniers en Syrie, les Ghassanides regagnèrent leur influence et renouèrent leurs relations avec les Byzantins. Au moment où les troupes musulmanes se préparaient à libérer la région, Héraclius nommait Jabala Ben al-Ayham roi des Ghassanides. Jabala mena une vie de luxe dans un palais pourvu de tout le confort, de richesse et d'objets d'art, attirant ainsi les poètes espérant sa faveur. Parmi ces poètes citons Ihsan ben Thabet qui l'a comblé de louanges dans ses poésies dont les recueils (al-Aghani) nous montrent une partie de la vie des rois Ghassanides et où on peut lire: 'J'ai vu dix danseuses, cinq grecques chanter en grec et cinq autres chanter des chansons d'el-Hira. Il recevait de la Mecque et d'ailleurs des chanteurs arabes, et quand il commençait à boire à ses pieds se répandaient le jasmin et les jacinthes et toutes sortes de fleurs; le musc et l'ambre lui étaient offerts sur des plateaux en or et en argent ainsi que les poissons au complet; j'avoue que chaque fois que je le visitais il me donnait les vêtements que, ce jour-là, il portait'.

Hauran, le Golan et l'est de la Jordanie étaient habités par les Ghassanides. La population s'établit et s'étendit, du temps de al-Hareth, jusqu'à englober tout le territoire du désert situé au nord-est et au sud de la *Strata diocletiana* qui lie Damas à Palmyre et jusqu'à l'Euphrate, comprenant Qasr al-Hir, Dmair, Joullaq, Kesweh ou Tell al-Jabieh du temps de Hareth al-Mounzer. Il Semble que Joullaq était le camp principal des forces du royaume.

Bien que Bosra fût la capitale de la Province habitée par les Ghassanides, la présence d'un camp étranger fit partir ses habitants qui ne voulaient pas être à la merci des forces byzantines, vu que leurs relations avec les dirigeants byzantins n'étaient pas bonnes à la suite des combats et guerres continus. Ils préféraient donc vivre dans les camps fortifiés où ils pouvaient s'adonner à leur penchant pour la cavalerie et où ils pouvaient profiter de la nature. Sans aucun doute, les Ghassanides se sont avérés une grande force pouvant décider du sort de la Syrie entre 528 et 582 apr. J.C. En même temps Bosra devenait un archevêché des pays arabes, le troisième, et occupait une position religieuse importante. Beaucoup de ses évêques et archevêques ont été renommés pour leur contribu-

tion aux conciles d'Antioche, de Constantinople, d'Ephèse et de Chalcédoine, et entretenaient, en même temps, des contacts avec Rome.

Les anciens manuscrits nous apprennent que le christianisme s'est répandu peu à peu à Bosra et dans la Province Arabe. Au début du 4ème siècle apr. J.C., la majorité des habitants de Bosra pratiquaient les rites païens. Si l'Empereur Philippe s'est peut-être christianisme, cela n'a pas empêché que les rites païens restent très courants dans son pays. Au début du 5ème siècle apr. J.C. les rites païens étaient encore très en vogue parmi les habitants de Bosra, ce qui amena l'Empereur Justinien à demander au gouverneur de la Province Arabe de contrôler les célébrations païennes dans la ville et d'y ordonner la discipline durant les fêtes païennes.

D'après les textes byzantins al-Hareth al-Ghassani demanda à l'Empereur Théodore, durant sa visite à Constantinople en 543, son intervention pour nommer un archevêque arabe dans la ville de Bosra après la destitution des archevêques de la province à cause de leur croyance au monophysisme. Ceci eut pour résultat la nomination d'un archevêque arabe qui porta le nom de Théodore, et fut chargé des églises des Jacobites et résida à Bosra.

Au début de l'Islam, les habitants de Bosra se racontaient les nouvelles, qu'apportaient les caravanes venant du Héjaz, sur la révélation du Prophète Mahomet et sa résistance aux païens. Ils croyaient en lui et le considéraient comme le messager divin envoyé pour les délivrer des Romains. L'apparition du Coran causa un bouleversement total dans les idées, et une révolution dans les pensées chez les habitants, qui voyaient les Arabes de la Peninsule comme leurs frères; par conséquent, le Coran et l'Islam furent accueillis comme la religion naturelle.

Nabil Khairy

Fine Nabataean Ware with Impressed and Rouletted Decorations

The primary aim of this short study is to illustrate the different types of impressed and rouletted decoration on fine Nabataean ware found at Petra, so that they may be recognised elsewhere and particularly on sites where the typical Nabataean painted ware is not present. This is not the place to discuss the history of the Nabataeans or their contribution to civilisation during the last two centuries before and the first two after Christ. Suffice to say that for the latter period, one of their greatest legacies was in the field of ceramics. Nowhere is this better illustrated than in the various excavations which have taken place at Petra[1], which was one of the major centres of the Nabataeans, particularly prior to its annexation by Rome in AD 106.

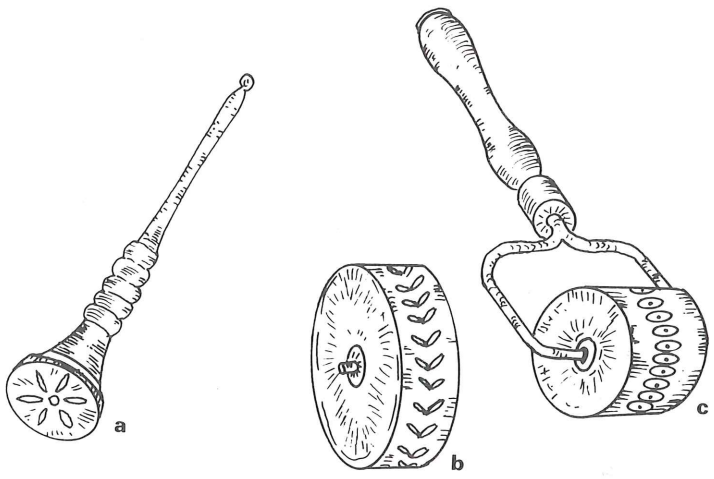
The pottery from the excavations in Petra presents a very homogeneous picture and slowly we are assembling an accurate picture of the chronology of Nabataean pottery, though there seems to be some controversy about the evolution and sequence of the painted designs. Most people associate Nabataean ceramics with the beautiful painted ware of egg-shell thin-ness, forgetting that much of it is unpainted and can be of equal thin-ness. On the whole, however, the unpainted, both plain, and decorated, (impressed or rouletted) is of greater thickness than the painted ware.

The fine rouletted and impressed wares illustrated in this paper all come from Mr Parr's excavations at Petra during the years 1958–64. An attempt has been made to establish a chronological sequence, but precise stratigraphical evidence is not yet available for this material. By fine ware the virtual absence of grits is meant. In the examples studied, very fine grits, not more than 0.1 mm. in size are nearly always present. This very fine clay enabled the potters to make exceptionally thin ware, especially on a fast wheel.

The abundance of Nabataean pottery to be found at Petra suggests that here might not only have been a distribution centre but also a place of manufacture, though it should be borne in mind that no actual kilns have been found[2]. A clay belt runs right across the Edomite site at Tawilan, which lies at the foot of the Jebel Heidan, a high hill overlooking from the east the present-day modern village of Elji (popularly known as Wadi Musa). Treatment of the clay in order to make a small statuette, produced a ware very similar to that used for the Nabataean pottery[3].

In FIG. 1a–c inclusive are shown typical examples of the tools used to give either an impressed or rouletted decoration. For the former, a flat seal stamp, bearing an incised pattern is used. The handle enables the decorator to control the strength of the impression. As the stamp is lifted from the clay with each impression, there is no continuity in or running on of the pattern. The roulette, FIG. 1b and c, on the other hand, gives a continuous line of successive impressions where the motif is often repeated. In essence, the roulette, as its name suggests, is a small wheel with handle or spindle for control and guidance

1a Tool for stamping.
b Rouletting tool.
c Rouletting tool with handle.



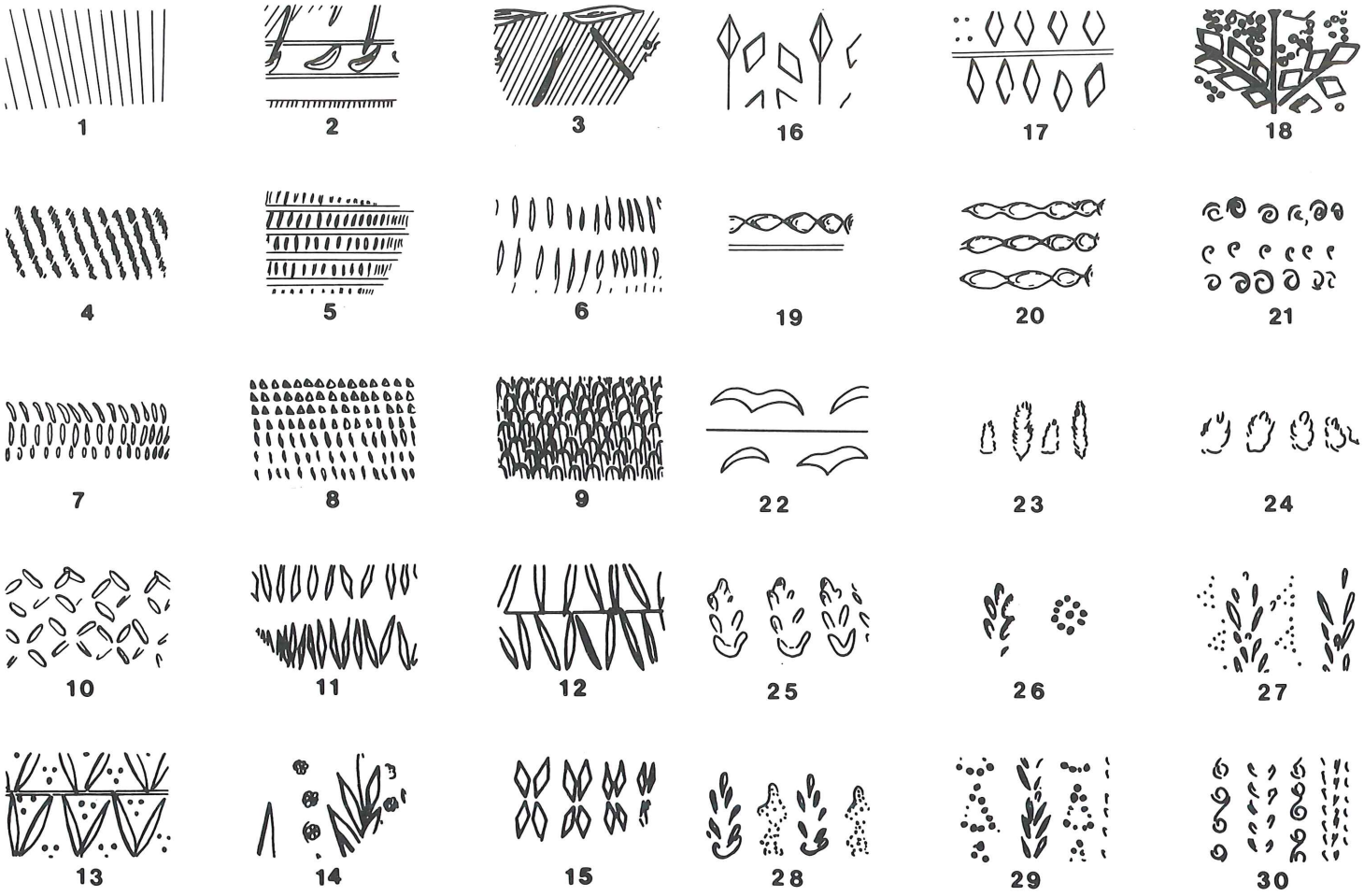
[1] For published reports on excavations at Petra see the appended bibliography.

[2] Since this paper was written, kilns have been found on the outskirts of Petra at Umm Sahun, north and west of the modern village of Elji, where a new village is being constructed to house the B'dul from Petra. So far as the writer is aware, the associated pottery is late, that is of the 3rd and 4th Centuries AD, though some earlier pottery was found in 'wash' levels.

[3] I am indebted to Mrs Crystal-M. Bennett for this information given verbally, and also for giving me advice regarding this paper.

2 15 types of rouletting or stamping decoration.

3 Another 15 different types.



and is rolled around the vessel. These tools were made easily from stone, bone or pottery.

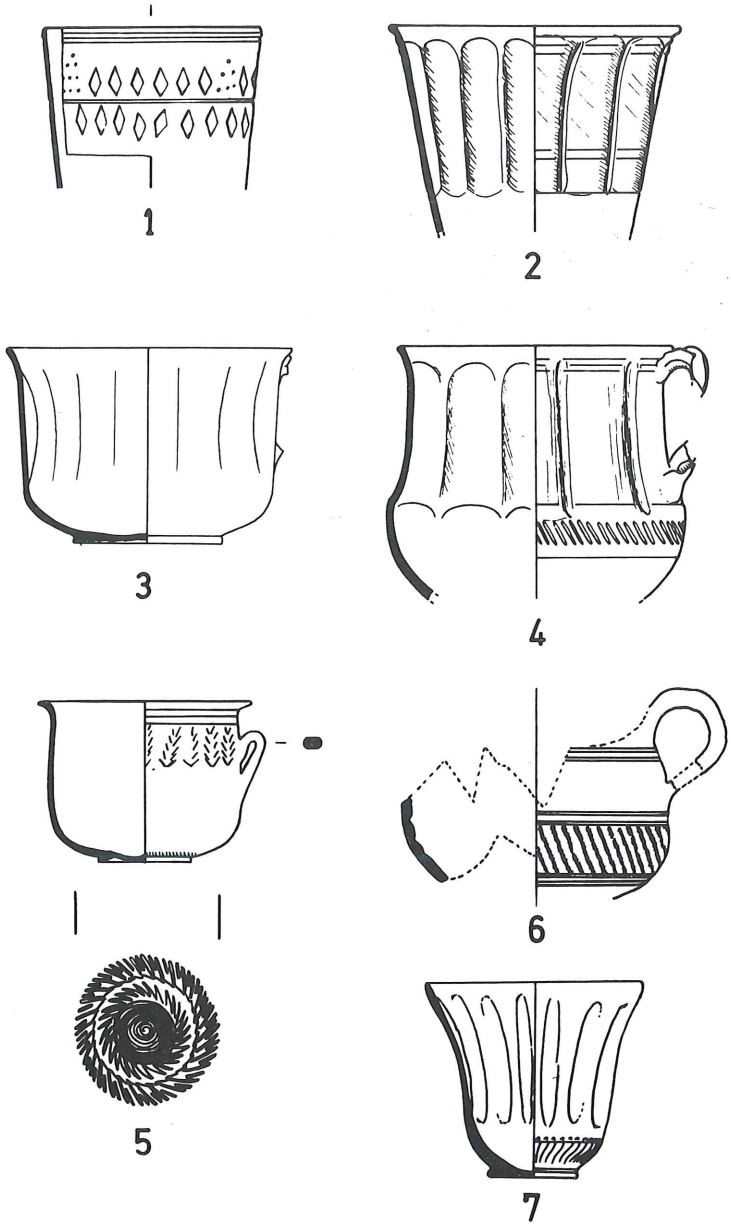
The same decorative implements could be used on both globular or straight-sided vessels before the clay was completely dry, the potter's wheel turning more slowly when a stamp was being used. As these decorative elements, both impressed and rouletted, were almost always applied to delicate ware of a general thickness of 0.9 mm. to 2.22 mm. and were confined to external surfaces, some kind of support would have had to be given to the inside walls. The different designs in the stamped and rouletted decorations are illustrated in FIGS 2 and 3, Nos. 1–30 inclusive.

There is a basic uniformity in the Nabataean ware from Petra. Some 90% of the excavated fine ware with impressed or rouletted decoration is of pinkish red clay. The best ware belongs to the time of Aretas IV (9 BC–AD 40), but the most prolific period belongs to the second half of the first century AD and the first half of the second century. The fine ware from Mr Parr's excavations have been broken down into five main classes: cups; beakers; shallow and deep bowls; globular bowls and juglets. These are illustrated on FIGS 4 to 14 inclusive.

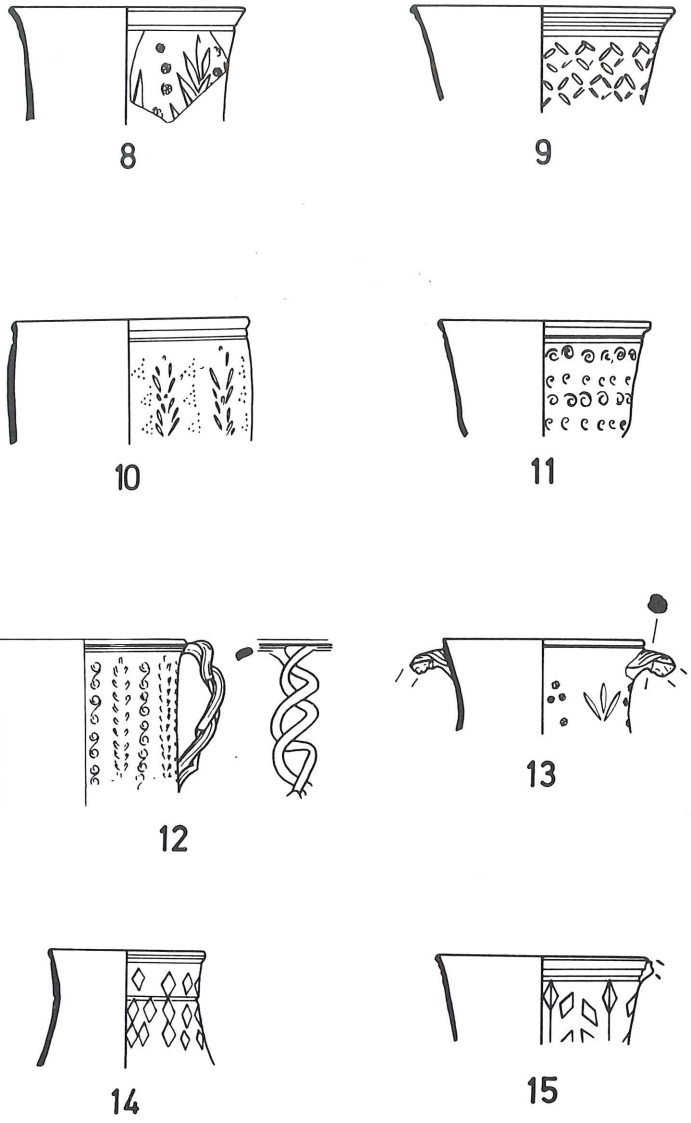
Inevitably, the origins of the impressed and rouletted decorations have been discussed. Horsfield says that the technique of embellishing thin delicate ware with stamped and rouletted decorations was adopted from metal prototypes and Moevs comments that the progressive loss of interest in the vase as a painted surface which followed the end of the classical period brought in new ways of decoration and first of all those connected with metal technique. Crowfoot suggests that the rouletted plain pottery found on Nabataean sites has its parentage in Terra Sigillata, being either a local imitation, an extension or a provincial variant of red gloss Terra Sigillata. For a discussion of Terra Sigillata, both imported and what is known as Eastern Sigillata, the dating of which is in line with the introduction of this type of ware in the Nabataean period, the reader should refer to A. Negev, *The Nabataean Potter's Workshop at Oboda*, pp. 34–35 and to K. M. Kenyon in *Samaria-Sebaste,* Vol. III pp. 281–8.

Rouletting itself came into fashion in the second half of the fourth century BC and was Attic in origin. The designs were based on palmettes, rosettae, and rouletted circle motifs. Some of the earliest designs are of stars and rosettae. As time

4 Designs on Cups.



5 Designs on Beakers.



progressed, the stars get smaller and finally disappear. Later, there is the addition of ivy leaves with berries and more often ovules and palmettes. The latter, of course, came from the impressed decorations on black glazed ware. The designs become very stereotyped and on the 1st century BC sigillata stamped ware, the design has become 2 concentric groups of 2 to 4 rouletted circles. Between these groups may be 5 palmettes or Isis symbols and possibly a rosetta in the centre. The Isis symbol was a very important feature in decoration. (For a discussion of palmettes and Isis symbols see *Samaria-Sebaste* Vol. III, pp. 316–324.)

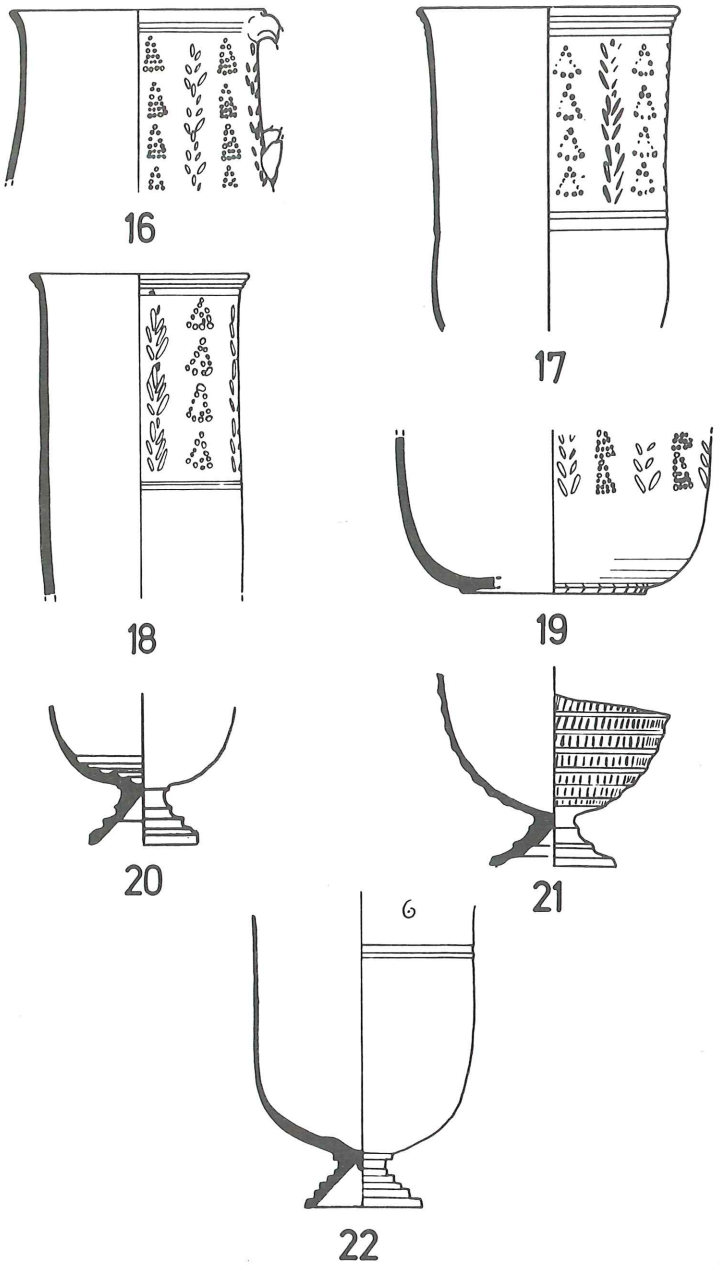
It is also possible that this decorated ware may have had its beginnings in West Slope Ware, which originated in Athens perhaps at the end of the fourth century BC, and whose descendants were common in this part of the world during the period covered by the floruit of Nabataean ceramics.

While the rouletting technique is fairly evident in the 1st century AD, it becomes much more common on red gloss late Roman pottery during the second and third centuries AD though this does not apply to the truly indigenous fine Nabataean ware.

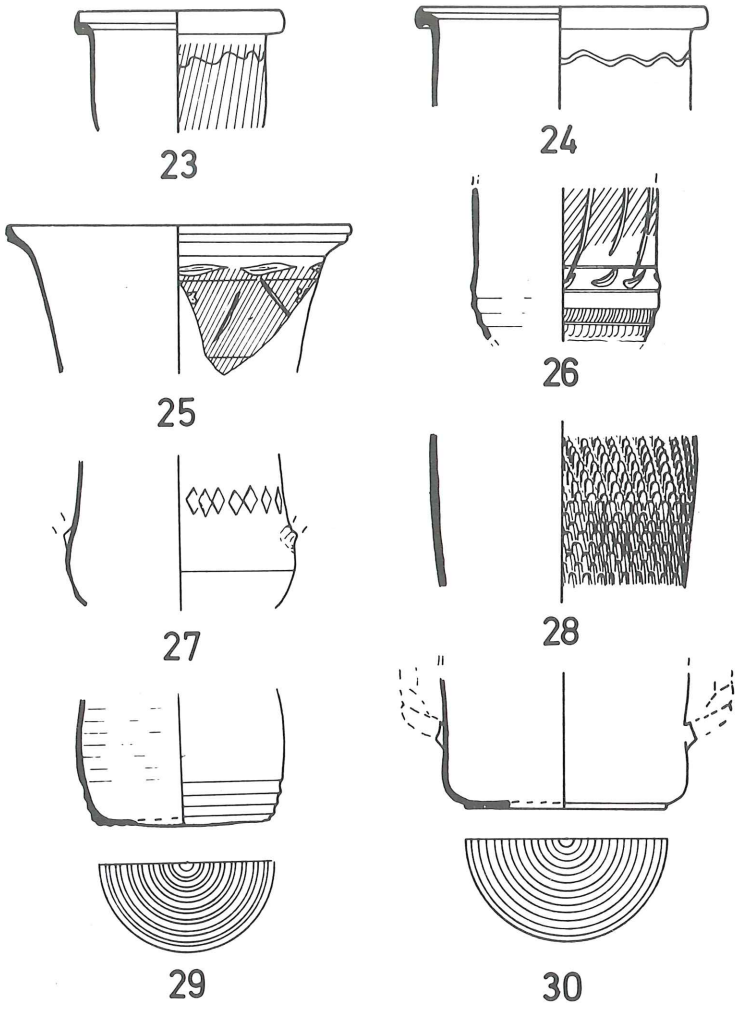
From the parallels quoted below, it is clear that the different types of the Petra fine ware with their impressed and rouletted decorations are not commonly found outside Nabataean sites. Occasionally, the body forms of the examples studied bear a strong resemblance to their parallels, but there seems to be a striking difference in the quality of the ware and decoration, the ware of the parallel examples being thicker than that of the pottery from the Nabataean sites.

The elegant decorations which are carefully impressed or rouletted on the Petra examples are almost entirely restricted

6 Designs on Beakers.



7 Designs on Beakers.



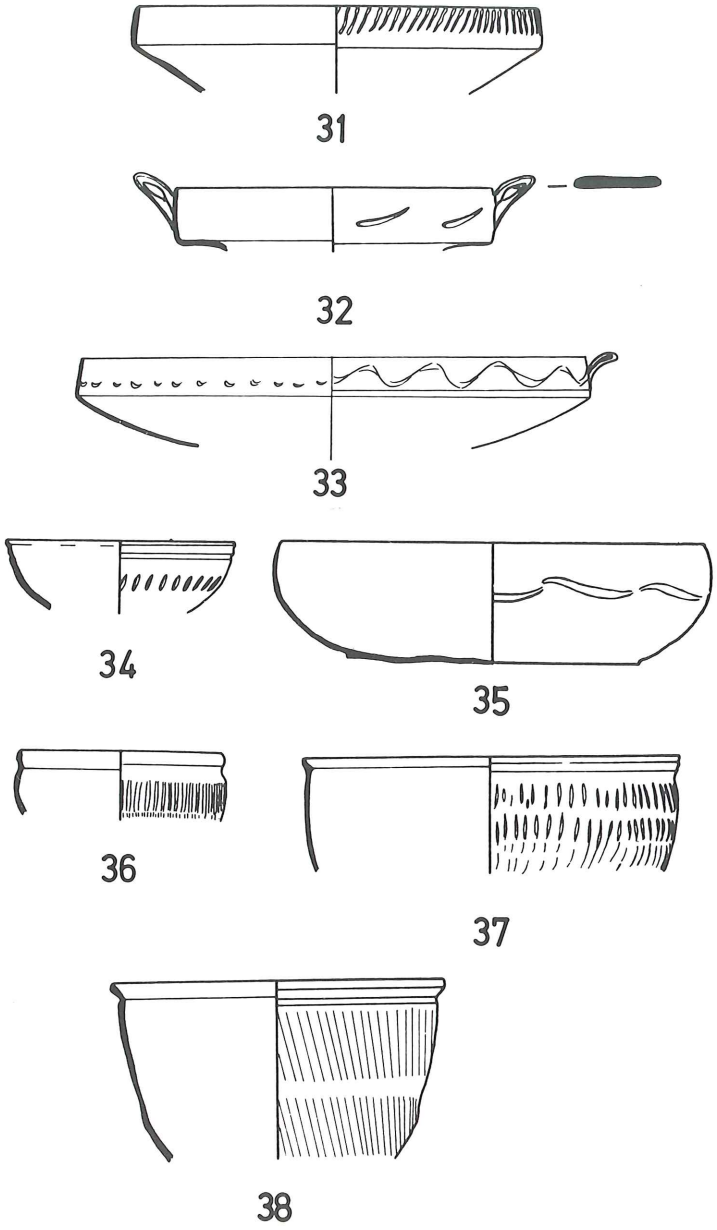
to the Nabataean sites and from the quoted parallels it would seem that the richest period for the Petra fine unpainted ware was from about the second half of the first century BC until shortly after the Roman annexation in AD 106, though the traditions continue on in debased forms until and into the third century AD.

Appendix I: The decorative motifs which occur on fine Nabataean ware

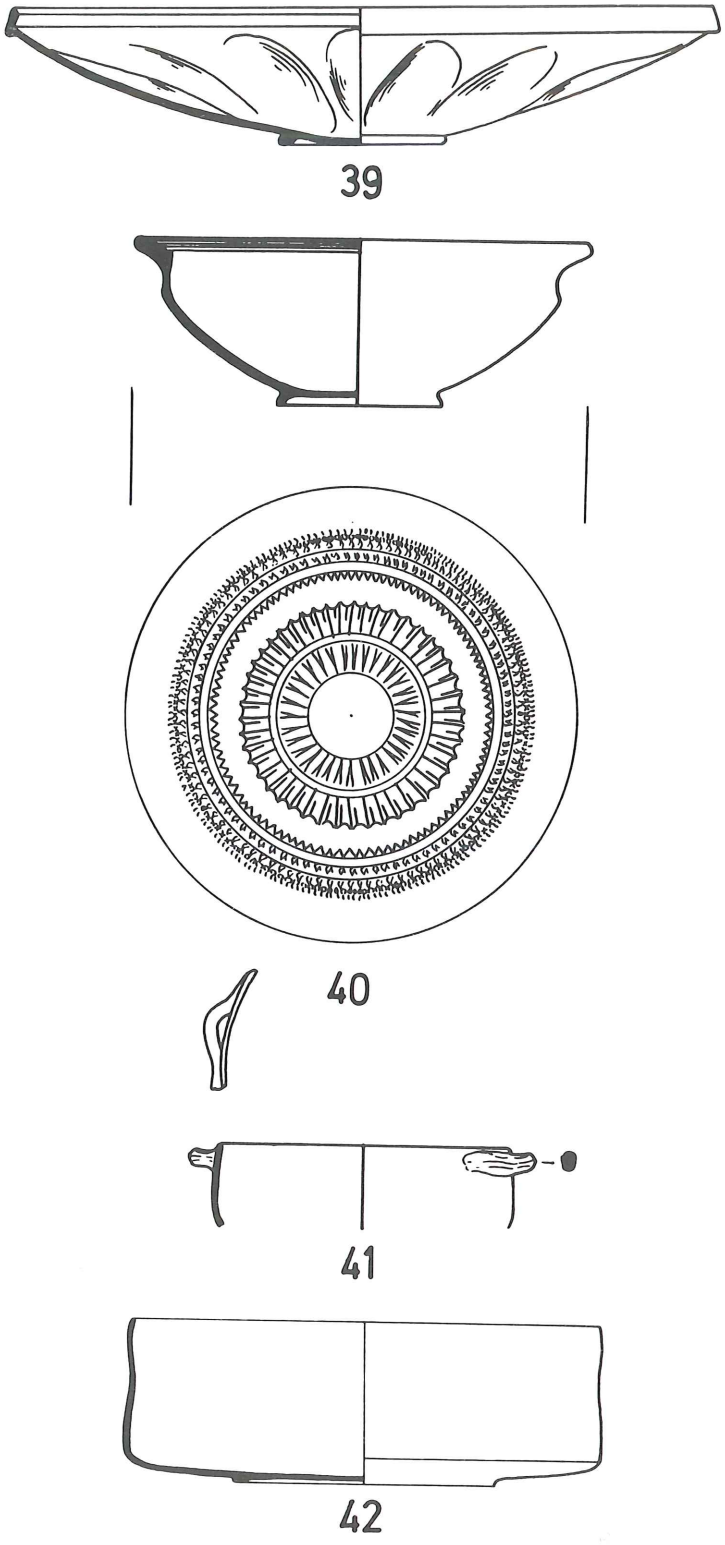
FIGS 4–14 inclusive are all from P. J. Parr's *Excavations at Petra*. Unfortunately scales have been omitted inadvertently on all the figures.

1. Parallel lines of shallow, long, oblique rouletting, often covering the entire body outside from below rim to just above the base (FIG. 7: 23).
2. Horizontal bands of stabbed patterns accompanied with parallel lines of shallow, long, oblique rouletting (FIG. 7: 26).
3. Assymetrical stabbed patterns accompanied with parallel lines of shallow, long oblique rouletting (FIG. 7: 25).
4. Diagonal columns of shallow small rouletting arranged in a horizontal band around the lower part of the body, e.g. (FIG. 4: 6).
5. Narrow horizontal bands of dotted astragal-shaped motifs, deeply rouletted; each line is separated from the other by a groove. This decorative motif covers the whole body outside, e.g. (FIG. 6: 21).
6. Horizontal bands of vertical needle-like rouletting. Such decoration covers the whole body outside, e.g. (FIG. 8: 37).
7. Horizontal band of irregular, short, deep rouletting, around the lower part of globular bowls, e.g. (FIG. 12: 63).
8. Horizontal bands of triangular rouletted indentations, around the widest part of globular bowls, e.g. (FIG. 11: 60).
9. Overlapped feather-like rouletting covering the entire body of beaker, e.g. (FIG. 7: 28).
10. Impressed rosettae, each consists of four petals in simple outlines, without circle at centre. Such elaborate decoration covers the whole body of beaker, e.g. (FIG. 5:9).

8 Designs on Shallow and Deep Bowls.

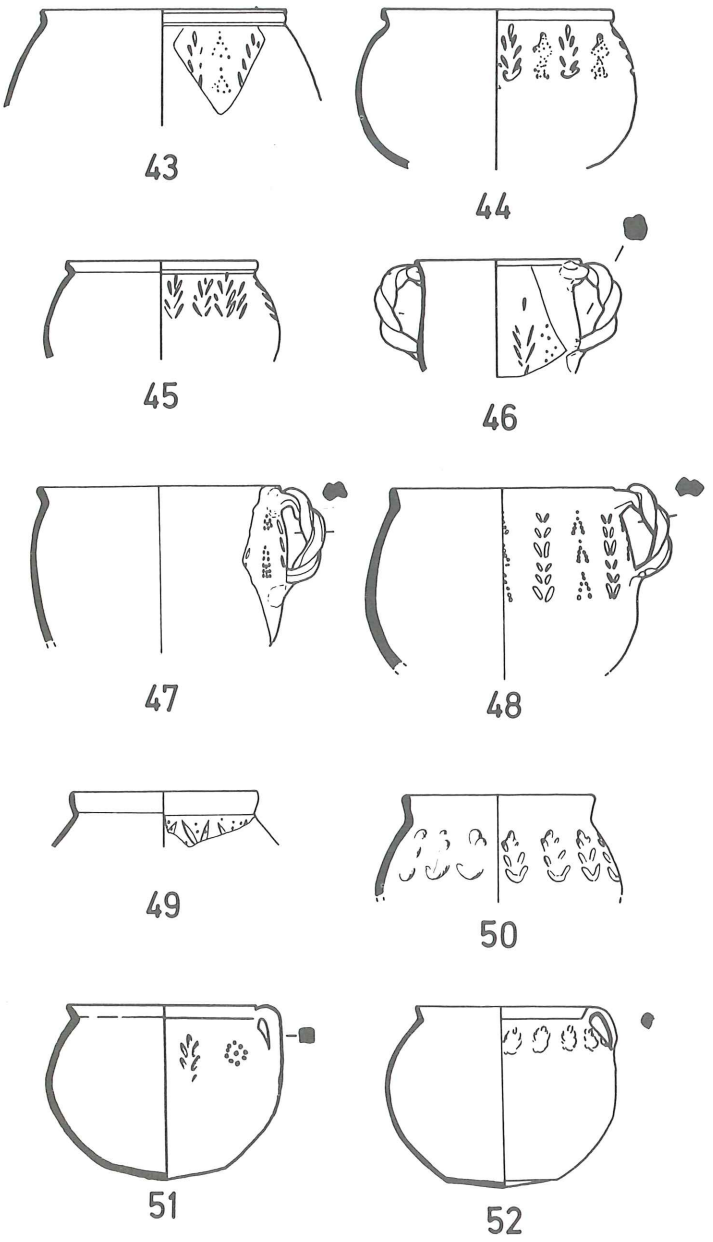


9 Designs on Shallow and Deep Bowls.

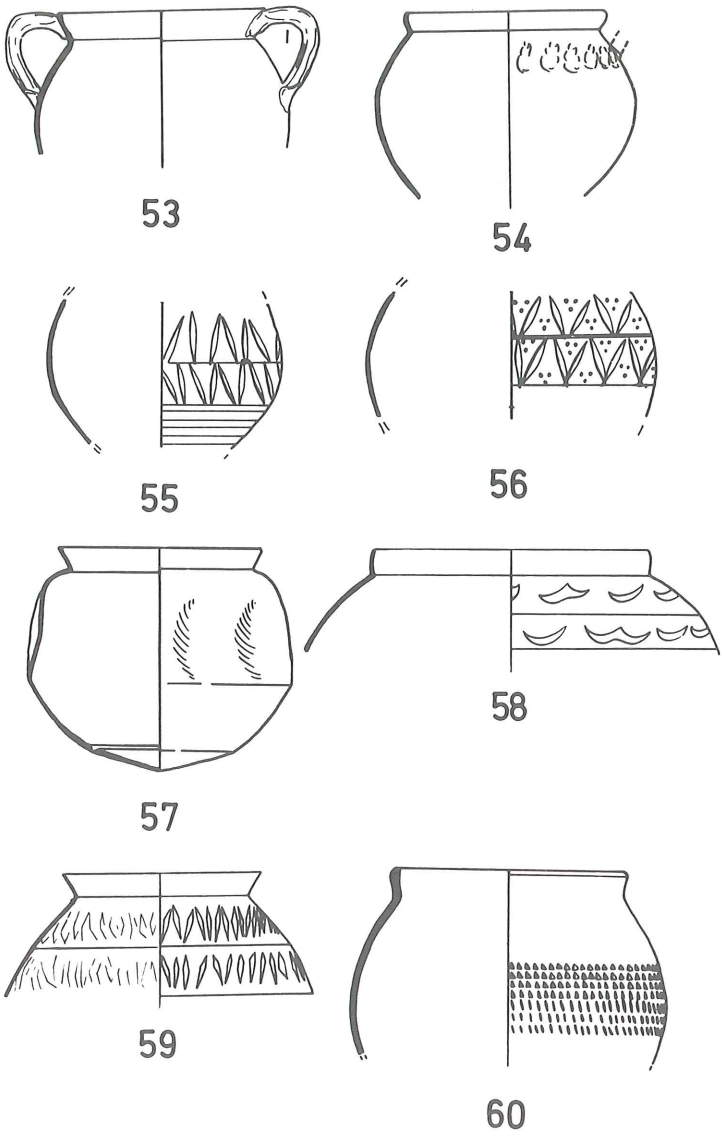


11. Horizontal bands of impressed narrow lozenges, which represent floral leaves. These motifs cover the body of globular bowls (FIG. 11: 59).
12. Horizontal bands of impressed narrow, long lozenges, similar to those of No. 11, separated by a horizontal incised line, covering the widest part of globular bowls, e.g. (FIG. 11: 55).
13. Horizontal bands of impressed narrow lozenges; each two lozenges represent a double (bifid) leaf, which alternates with three impressed dots, covering the upper half of globular bowls, e.g. (FIG. 11: 56).
14. Vertical bands of impressed narrow lozenges, arranged in branch-like patterns, each alternating with small six-petalled rosettae, mainly occurring on fine beakers, e.g. (FIG. 5: 8).
15. Horizontal bands of impressed wide, short lozenges, forming four petalled rosettae without circle at centre, around the neck of globular bowls, e.g. (FIG. 12: 65).
16. Impressed lozenges representing leaves with or without stems, most common on fine beakers, e.g. (FIG. 5: 15).
17. Horizontal bands of impressed lozenges: each two bands are separated by a shallow groove, mainly occurring on the upper part of fine cups or beakers, e.g. (FIG. 4: 1).

10 Designs on Globular Bowls.

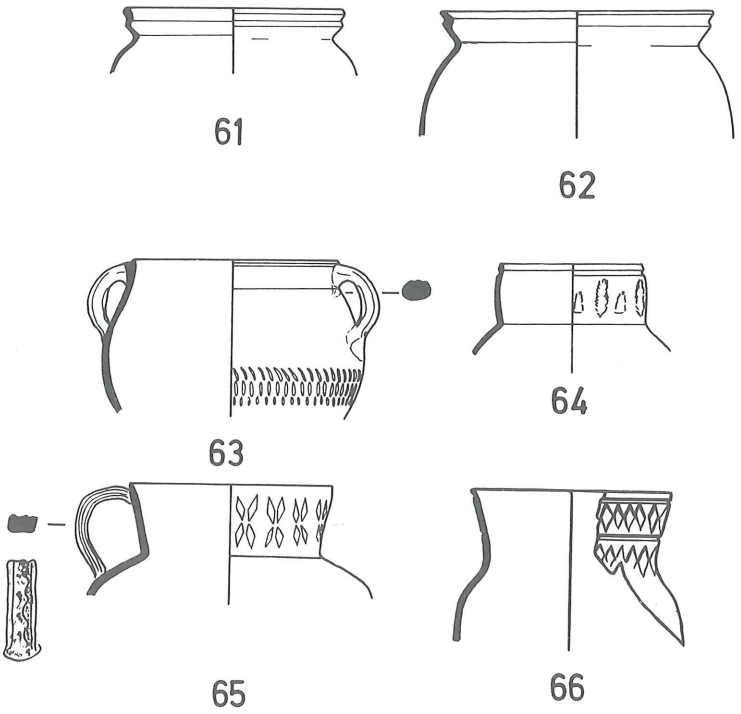


11 Designs on Globular Bowls.

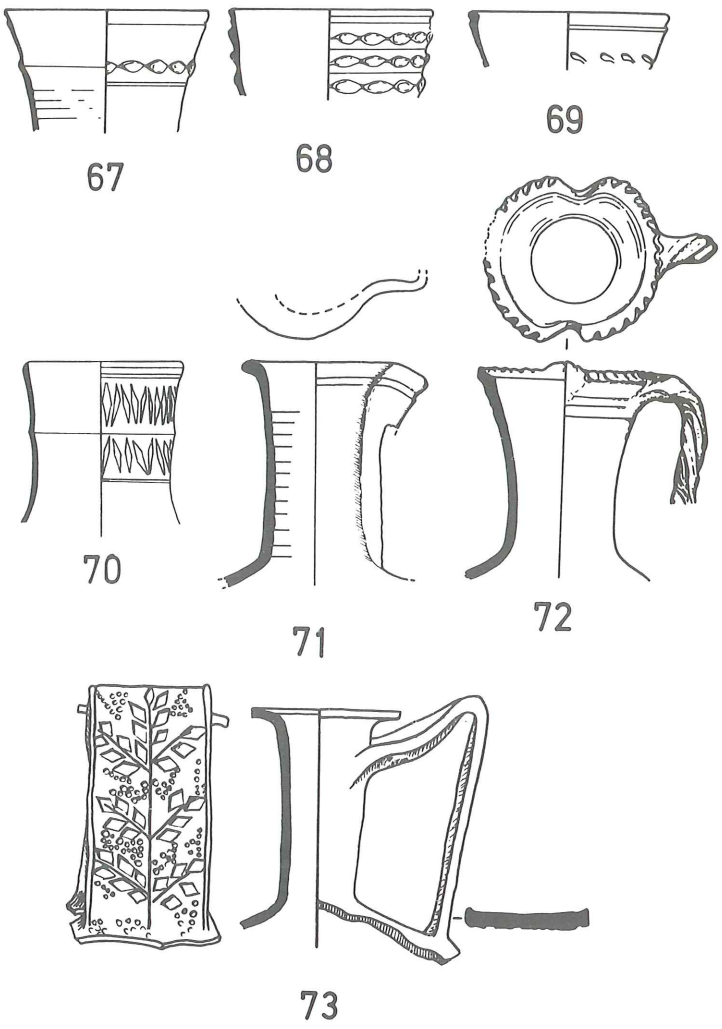


18. Impressed lozenges and small circles, arranged in fruited tree-like patterns. Such motifs cover the flattened handle of fine jug, (FIG. 13: 73).
19. A horizontal band of relief cable-pattern with a shallow horizontal groove below, which is furnished below the rim of fine jug, e.g. (FIG. 13: 67).
20. Three horizontal bands of relief cable-pattern, very similar to those of No. 19. These motifs are below rim of fine jug, e.g. (FIG. 13: 68).
21. Horizontal bands of impressed loop tendrils or winding scrolls, which cover the body of the fine cups, e.g. (FIG. 5: 11).
22. Two horizontal bands of stabbed bird-like patterns, separated by a very shallow horizontal groove, occurring around the shoulders of fine globular bowls, e.g. (FIG. 11: 58).
23. A horizontal band consisting of impressed palm fronds in vertical position; every small frond alternating with a bigger one. Such decorations mainly cover the necks of globular bowls, e.g. (FIG. 12: 64).
24. A horizontal band of impressed palm fronds, in askew position, wider than those of No. 23. This band usually occurs on the shoulders of globular bowls, e.g. (FIG. 10: 52).
25. A horizontal band of impressed palm fronds, in askew position; every frond consists of seven leaves but without central stem. This band usually occurs around the shoulders of globular bowls, e.g. (FIG. 10: 50).
26. A horizontal band of impressed palm fronds, each frond alternating with a nine-beaded rosette. This band usually covers the shoulders of globular bowls, e.g. (FIG. 10: 51).
27. Vertical bands of impressed palm fronds, alternating with triangles of dots which probably represent grape clusters, similar to the motif used on the painted bowls (FIG. 10: 43, 48).
28. Impressed decorations are very similar to those of No. 27, but the patterns here are clearer and more elegant. Th bunches of grapes always lack vine leaves. Such decorative elements usually occur on the upper part of many of the Petra fine globular bowls, e.g. (FIG. 10: 44).

12 Designs on Globular Bowls.



13 Designs on Juglets.



29. Another variant of impressed palm fronds and triangles of dots, similar to the motif shown in No. 28. Such motifs mainly occur on fine beakers, e.g. (FIG. 6: 16–19).
30. Vertical bands of impressed bifid leaves, each alternating with a vertical band of impressed double spiral scrolls. Such elegant decorations are usually found on fine beakers, e.g. (FIG. 5: 12).

Appendix II: Parallel examples

I Fine Cups:

Cup No. 1 has no parallels, but its decoration appeared on a globular pot (Murray and Ellis, 1940: 14, PL. XI: 14). Cup No. 4 has very close parallels from Petra (Bennett, 1973: 131–133, FIG. 1: 1) 'the early post-Augustan period'. From the non-Nabataean sites Cup No. 4 may also be compared with those vessels which have a metallic glaze ware of Augustan times (Moevs, 1973: 132, PL. 22: 215–216). Another example comes from the Ticino necropolis of Minusio (Simonett, 1941: 142, No. 4, FIG. 122: 4, PL. 15: 1), which is dated to 5–20 AD. Further parallels come from the Athens Agora (Robinson, 1959: 27, PL. 4: G43, G79), from Layer II, which is dated to the 'first half of first century AD'. The latter examples are furnished with two handles. Petra offers the only published parallel to Cup No. 5 (Murray and Ellis, 1940: 14, PL. XI: 1), undated.

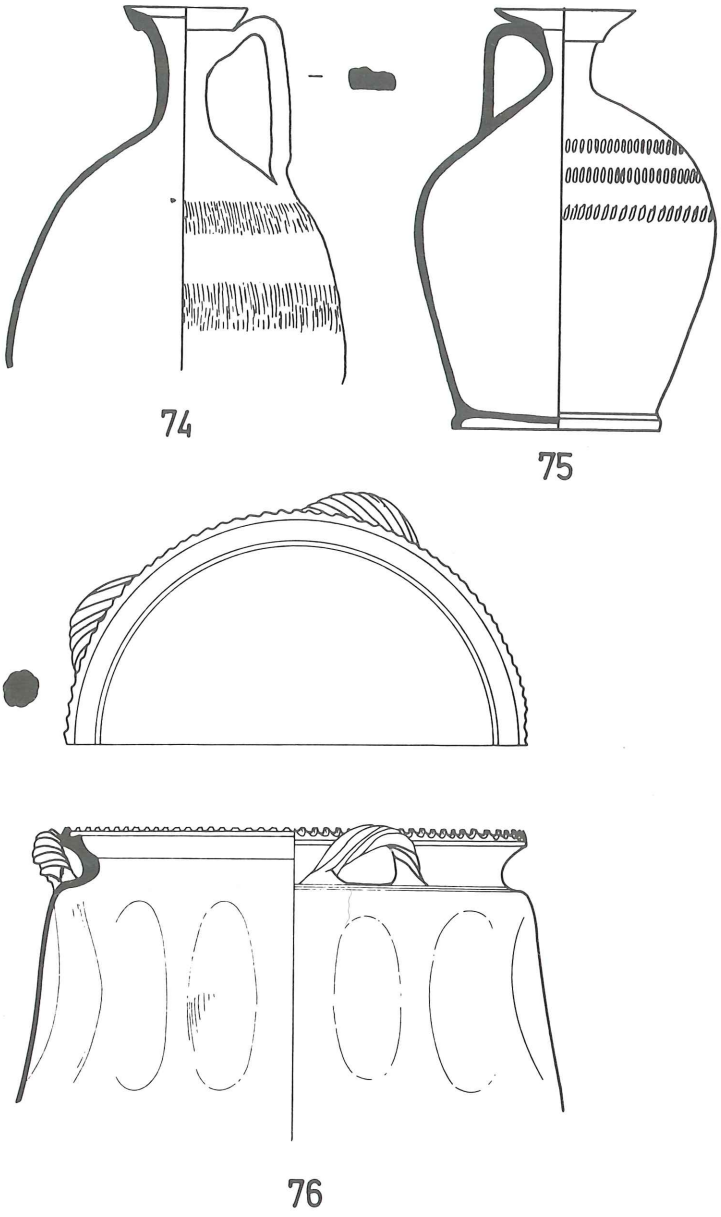
II Fine Beakers:

Fine beaker No. 8 finds a possibly comparable form in Schmitt-Korte (1970: 41–47, PL. 29: C67). This example has a tubular body with a low ring base and a simple loop handle on the middle of the body outside. The seven beaded, or petalled rosetta was very common and used by most Trajanic potters, with only slight variations in size (Detsicas, 1963: 29, FIG. 2: 5). The decoration of fine beaker No. 9 appeared on globular bowl in Murray and Ellis (1940: 14, PL. XI: 13). Fine beaker No. 12 is exactly paralleled by Horsfield (1942: 138, PL. XIX: 135), '1st cent. BC–AD'. The double spiral decoration could be compared to a similar design of a stucco cornice in the Cosa di Lucrezia Frontone, Pompeii (Van Buren, 1924: PLS. XX–XXI). Fine beakers similar to No. 14 have only occurred on Nabataean sites and are exemplified by Murray and Ellis (1940: 22, PL. XXXIII: 145), undated; and by Negev (1970: 48–51, PL. 33: 3), 'first half of first century AD'. Fine beaker No. 17 is closely related to Murray and Ellis (1940: 22, PL. XXXIII: 146), undated. Pedestal bases Nos. 20–22 find parallels in Colin-Baly (1962: PL. 19: 22–25); Kenyon in Crowfoot *et al.* (1957: 343–344, FIG. 83: 7) 'Late Augustan period'; Robinson (1959: 6, PL. 63, G45) 'first half of first century AD'; and in Murray and Ellis (1940: 14, PL. XI: 21), 'Nabataean'. The best parallel for fine beakers Nos. 23–24 would seem to be Schmitt-Korte (1970: 41–47, PL. 29, C70). The latter example is broken and mended but complete, and is furnished with a flat base. No. 28 has fairly published parallel examples in Horsfield (1942: 155, PL. XXVII: 212); Robinson (1959: 13, PL. I: F.20–22), 'last three quarters of 1st century BC'; Carettoni (1957: 180, No. 162 h), which is dated to the 'Republican-early Augustan period'. A flat base marked by concentric grooves such as Nos. 29–30 was known on a similar example from Cosa (Moevs, 1973: 106, PL. 18: 183), which is dated to 'the early Imperial period'.

III Fine shallow and deep bowls:

The best parallels for the fine bowl No. 31 would seem to be Winnett and Reed (1964: 73, PL. 68.5), which is identified as 'Nabataean-

14 Designs on Juglets.



Roman'; and Murray and Ellis (1940: 18, PL. XXXI: 114–116). The above-mentioned parallel examples are not furnished with rouletted decoration.

Fine bowl No. 34 can be compared with Kraeling (1938: 569, FIGS. 45: 65, 46: 37) from Tombs 11 and 12 respectively; and Hamilton (1942: 45, 51, FIG. 20: 10), 'first half of the first century AD'.

Petra provides close parallels to fine bowl No. 36 in Murray and Ellis (1940: 18, PL. XXXI: 114–115).

Parallels for the particular hemispherical bowl with the rim bevelled internally of the Petra fine bowl No. 37 are Robinson (1959: 13, PL. 1F.22), 'the last three quarters of first century BC'; and Thompson (1934: 467, FIG. 121: C73–C75), 'Hellenistic'.

A fragment of rim and shoulder of similar form and surface treatment to fine bowl No. 38, comes from Cosa (Moevs, 1973: 106, PL. 17: 179). This example has very fine clay, delicate body, and decorated with parallel bands of very shallow rouletting which presumably covered the entire surface of the vessel and is dated to 'the Augustan period'.

Fine bowl No. 39 is of a type well documented at Nabataean sites and is exemplified in Crowfoot (1936: 20, PL. IV: 6), 'Nabataean'; Murray and Ellis (1940: 21, PL. XXVII: 6), undated; Horsfield (1942: 142, PL. XX: 152), 'Nabataean, first century BC'; Cleveland (1960: 70, FIG. 7.5), 'first or second century AD'; Colin-Baly (1962, PL. 8, Group 32A1a); Hammond (1962: 167–177, Types 12(b).4, 13(b).1, 4), 'Nabataean'; Hammond (1973: 46, Nos. 83–84), 'Nabataean'; Winnett and Reed (1964: 73, PLS. 68.3, 70.11), 'Nabataean'; and Tushingham (1972: 126, FIG. 3.7), 'Nabataean'. The above-mentioned parallels are similar in form and ware to fine bowl No. 39, but do not have fluted bodies.

The form (not ware and decoration) of fine bowl No. 40 would seem to be paralleled in De Vaux (1956: 558–559, FIG. 4: 11), which belongs to Period II 'AD 50–68'. This example from Qumran is classified by P. Lapp as Corpus 45. 2C (Lapp, 1961: 170). Other parallels for the fine bowl No. 40 are from Jerash (Kraeling, 1938: 567, FIG. 45.6), from Tomb 11, undated; Jericho (Kelso and Baramki, 1955: 24, PL. 22.A469; Bennett, 1965: 525–526, FIG. 267: 8). The latter example is dated to 'the late first century AD'.

A fairly close parallel to fine bowl No. 42 comes from Petra (Hammond, 1962: 178, Type 112 (c).5), 'Nabataean'.

IV Globular Bowls:

The Petra globular bowls Nos. 43–44 are exactly paralleled by those published by Murray and Ellis (1940: 14, PL. XI: 15); Horsfield (1942: 150, PL. XXV: 1184), 'Nabataean'; and Negev (1970: 48–51, PL. 33: 2). The latter example is dated to the 'first half of first century AD'.

Fine globular bowls Nos. 45–52 have fairly close parallels in Murray and Ellis (1940: 14, 18–19, PLS. X: 21, XI: 1, XXVIII: 72, XXXIX: 97), 'undated'; and Colin-Baly (1962: PL. 10, Group 69).

Fine bowl No. 53 finds possibly comparable forms (but not in ware) in Kelso and Baramki (1955: 25, PL. 23, x76, x108), 'Roman'; and De Vaux (1954: 222–223, FIG. 4: 16), from Period II, 'AD 50–68'. Other comparable examples could be Horsfield (1942: 138–139, PL. XIX: 132, 136), 'Nabataean'.

Petra offers a similar profile for the fine globular bowl No. 57 in Murray and Ellis (1940: 13–14, PL. IX: 9), the latter example has two loop handles and a ring base. Murray and Ellis (1940: 13) think that 'such vertical depressions on the sides are characteristic of the Roman period and it was an imported piece and not of Nabataean origin' (Bennett, 1973: 132).

On the other hand, bowl No. 57 is well documented at non-Nabataean sites and is exemplified in Loeschcke (1909: 222–223, PLS. XI, XXI: 4); Maiuri 1933: 361, Nos. 25–26, FIG. 140); Ettlinger and Simonett (1952: 67, No. 320), which is dated to 'the second half of the first century AD'. Further parallels could be Hayes (1972: 180, Form 135.5, PL. IIIC); Holwerda (1936: No. 677, FIG. 19), 'end first to early second century AD'; and Moevs (1973: 86, PL. 12: 132). Published parallels that could be cited for No. 60 are Horsfield (1942: 155, PL. XXVII: 214) '2nd century AD'; and Moevs (1973: 204, PL. 42: 390).

V Fine Juglets:

Fine juglet No. 74 is of a type known at other sites, and could be compared with Kraeling (1938: 561–571, FIG. 47: x69, x70) from Tomb 12; Murray and Ellis (1940: 21–22, PLS. IX: 45, XXXII: 139); Horsfield (1942: 150, PL. XXV: 181), 'Nabataean, first century AD'; and Schmitt-Korte (1970: 41–47, PL. 28, C35).

Fine Juglet No. 75 is frequently attested in the literature and is exemplified by Reisner *et al.* (1924: FIG. 185: 14a), from Vault Cistern 2, 'Late Hellenistic, 75–25 BC'; Crowfoot (1936: 22, PL. IV: 4); Horsfield (1942: 136, PLS. XVIII: 122, XXVIII: 224), which are

classified as 'Nabataean'; Kraeling (1938: 568–571, FIG. 47: 101); Goldman *et al.*, (1950: No. 296, FIG. 189.A), from 'the Hellenistic-Roman Unit'; Harding (1951: 30–33, FIG. 1: 50). The context of the Amman Roman tomb is well dated by coins of Hadrian, Antoninus Pius and Marcus Aurelius to 'the late second century AD'; Kenyon in Crowfoot *et al.* (1957: 340, FIG. 82: 1–2, From 25). Kenyon deduces that 'these examples are probably of the same date as the jug from Vault Cistern 2, Pre 30 BC'; Winnett and Reed (1964: 72–75, PL. 69: 10–11), Dhiban two examples are identified as 'Nabataean-Roman'; and Thompson (1934: 377, D.30), 'first century BC–AD'.

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Premières Fouilles Belges en Jordanie*

Une mission archéologique belge a commencé en 1978 des fouilles à LEHUN situé au 31° 28′ 03″ latitude nord et au 35° 51′ 12″ longitude est, sur le plateau qui domine la vallée encaissée du Wadi Mojib, l'Arnon de la Bible.

Ce site se trouve sur une piste à l'est de l'ancienne route Madaba-Kerak à 8 km de Dhiban, capitale du roi Mesha, souverain de Moab (v. 850), où fut découverte en 1868 la stèle de Mesha, conservée au Musée du Louvre, gravée d'une des plus importantes inscriptions moabites. A 3 km. à l'ouest de Lehun se trouve le lieu biblique Aro'er (actuellement Ara'ir). Lors d'une prospection en 1977[1], le site de Lehun a été sélectionné, parmi une trentaine d'autres, pour diverses raisons: sa situation géographique près de la capitale moabite; sa position stratégique indéniable, non loin de l'antique "route royale"; sa superficie moyenne (1,100 m. × 600 m.); la variété de ses restes archéologiques et architecturaux, s'échelonnant du Bronze ancien (3e millénaire av. J.-C.) jusqu'au début de l'époque islamique; le fait qu'aucune fouille n'y avait été entreprise.

Le site avait été signalé par N. Glueck[2], qui le visita le 3 juin 1933. Il en publia un plan global sommaire et reconnut la plupart des périodes représentées grâce à la céramique abondante, glanée en surface. Lehun a été répertorié depuis lors sous le no 223 dans *l'Archaeological Heritage of Jordan, The Archaeological Periodes and Sites*, Part I, Amman, 1973.

Une Mission topographique fut entreprise en 1978 et en 1979[3]. L'équipe se composait de Mme D. Homès et P. Naster, co-directeurs, et du Professeur Fr. Depuydt, topographe, ainsi que de deux représentants du Département des Antiquités de Jordanie.

Ce travail topographique s'imposait en vue de la préparation des fouilles proprement dites: le terrain présente effectivement un relief accidenté et vallonné, avec des différences de niveau de près de 50 m.; il est coupé par le Wadi Lehun, tributaire septentrional du Wadi Mojib et par quelques autres cours d'eau.

Un réseau de base comprenant 15 points de triangulation (niveau 748 à 714) a été mesuré et calculé en coordonnées sur le site et développé par des points topographiques complémentaires. Une carte topographique à l'échelle de 1/5.000 a été dessinée (FIG. 1).

Le réseau de quadrillage, indispensable pour toute fouille archéologique, a été établi par carrés de 100 m. suivant les axes des coordonnées X et Y et les points d'intersection ont été matérialisés en béton sur le terrain; l'axe Y a été dirigé vers le nord géographique. Les vestiges architecturaux les plus visibles au sol ont pu être reportés dès maintenant sur le plan du site à 1/500.

La fouille proprement dite a débuté en automne 1979: l'ingénieur-architecte L. Moelants avait été joint à l'équipe précédente à cet effet. Le travail topographique s'est poursuivi parallèlement aux recherches archéologiques.

Les fouilles débutèrent à l'endroit d'un petit édifice, vestige architectural le mieux conservé, que l'on supposait être d'époque nabatéenne ou romaine (FIG. 2).

Ce bâtiment, provisoirement appelé «α», est situé dans la partie N.E. du site, à l'est du Wadi Lehun. Il présente un plan carré très régulier de 6.25 m. × 6.25 m.; la salle intérieure mesure 4 m. × 4 m., l'entrée est dirigée vers l'O.-S.-O. (FIG. 3).

Ce plan correspond à un type de temple nabatéen à cella carrée, qui diffère de l'architecture religieuse nabatéenne à adyton à trois pièces. Il est d'origine orientale et se retrouve à l'époque nabatéenne dans le Hauran, à Lejja, et en Jordanie ainsi que dans des centres mésopotamiens ou iraniens contemporains (e.a. Hatra).

Le plan à base carrée, employé à Lehun est pourtant plus simple que ceux des temples de Baalshamîn ou de Dushara à Si' dans le Hauran ou que les sanctuaires retrouvés à Khirbet Tannur et Wadi Rum en Jordanie. Les murs affleurants

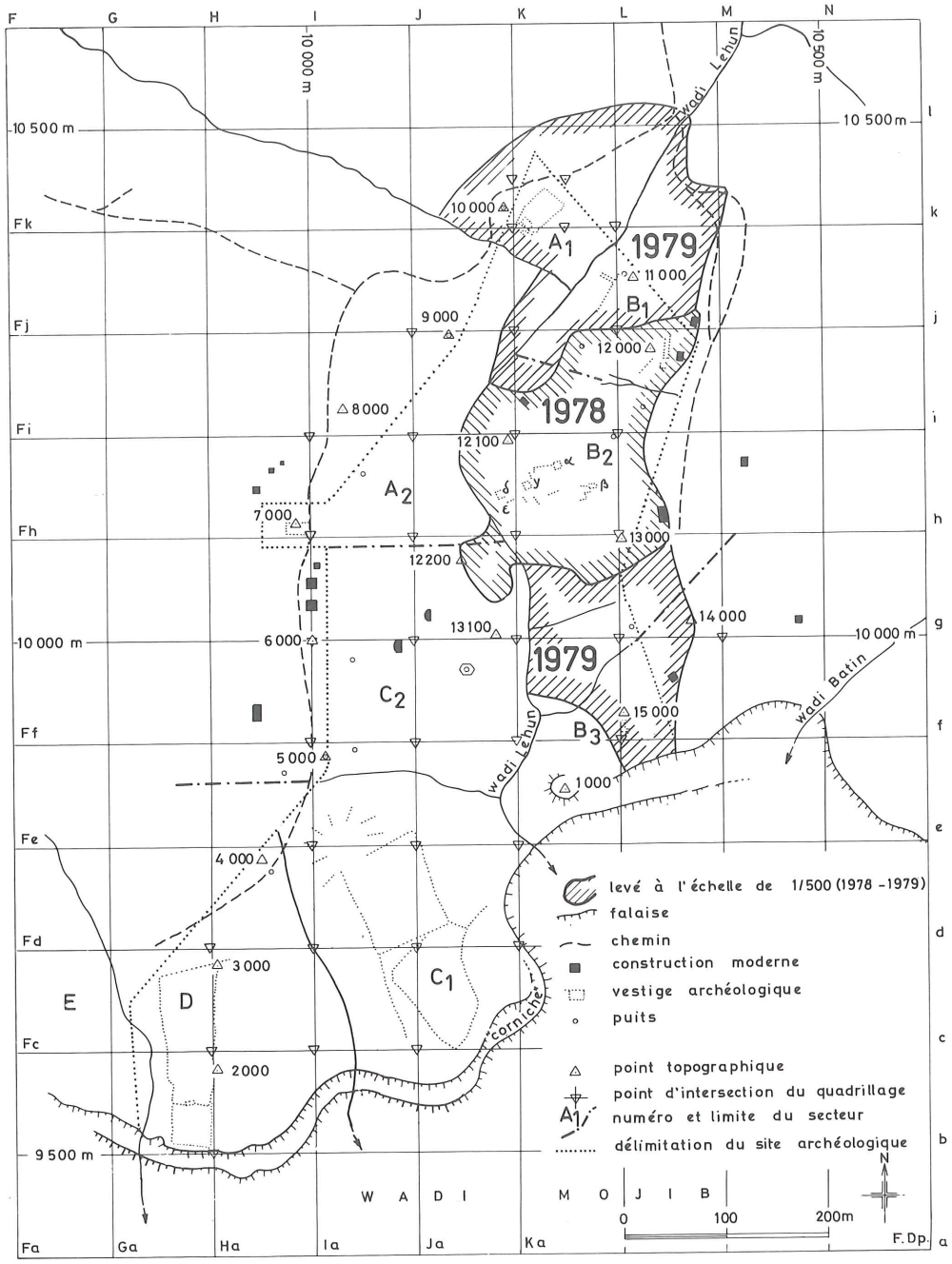
* Le texte reprend en grande partie un chapitre du catalogue 'Inoubliable Petra', qui se tenait à Bruxelles, aux Musées Royaux d'Art et d'Histoire, pendant qu'avai lieu Oxford la première conférence sur l'archéologie de Jordanie.
'Inoubliable Petra, le royaume nabatéen aux confins du désert', Bruxelles, 1980, 176 p., 214 fig., 54 pl—Publié sous la direction scientifique de D. Homès-Fredericq, avec la collaboration de J. Starcky, F. Baratte, A. Caubet, J. et J-M. Dentzer, M. Gory, P. Hottier, M. M. A. Khadjia, N. Koning, J. T. Milik, S. Mougdad, P. Naster et F. Zayadine.

[1] D. Homès-Fredericq, *Prospection archéologique en Moab*, paraîtra dans les *Acta de la XVIe Journée des orientalistes belges*, Bruxelles, 23 p., 2 cartes.

[2] N. Glueck, *Exploration in Eastern Palestine*, Baltimore, 1934 (= *AASOR* XIV), p. 48–49 (no. 99), PL. 10; ID., *Deities*, p. 62 et p. 574, no. 72; ID., *The other Side of the Jordan*, Cambridge, Mass., 1970, p. 147; Ph.C. Hammond, *The Nabataeans*, p. 121.

[3] P. Naster-D. Homes-Frederico, *Recherches archéologiques à Lehun*, *ADAJ* XXIII (1979), p. 51–56, 1 fig.

1. Lehun, Plan du site.



immédiatement à l'ouest et au sud du petit temple de Lehun faisaient sans doute partie, avec lui, d'un plus grand complexe, qu'il faudra encore dégager.

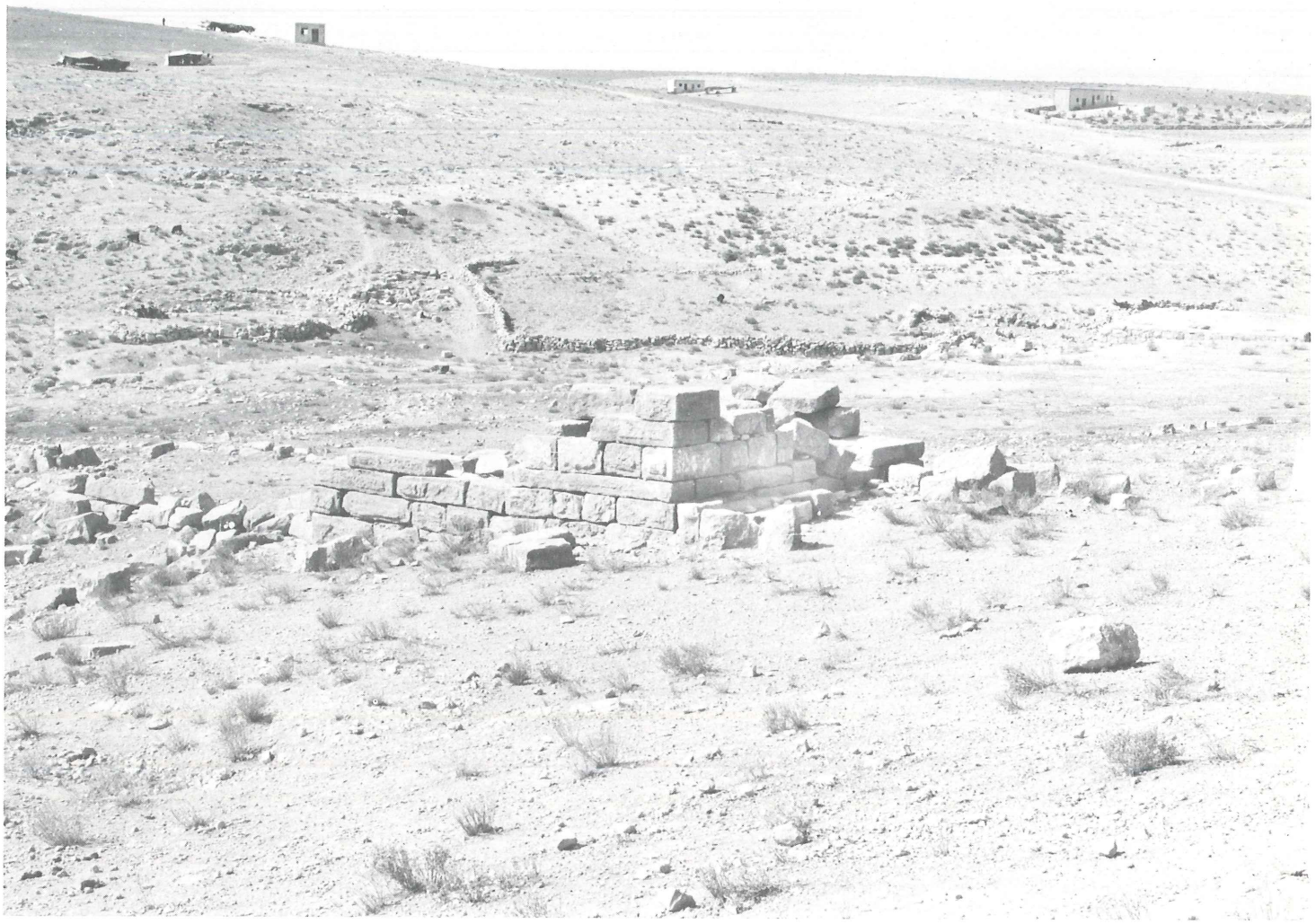
Le but premier de la fouille était d'identifier cette construction «α»: il fallait déblayer l'intérieur de l'édifice de la terre et des gros blocs calcaires tombés du mur et dégager la face extérieure des murs jusqu'aux fondations.

Les murs sont constitués de moellons et de blocs, en pierre calcaire claire, à dureté et texture variables (parfois même avec des fossiles de coquillages). Ils ont une épaisseur de 1.10 m. à 1.15 m. avec un remplissage de terre et de fragments de pierre entre les parements intérieur et extérieur.

Les assises sont relativement régulières et mesurent de 25 à 50 cm. de haut. La longueur des blocs varie entre 40 cm. et 2.70 m.

Certains blocs sont disposés en parpaing. Le parement extérieur présente souvent un bossage d'après une technique de décoration introduite en Palestine au premier millénaire av. J.-C. Le bossage est en saillie de 1 à 3 cm. d'après le soin apporté à la taille et l'état d'érosion de la pierre: la taille laisse

2. Lehun, Temple nabatéen: vue du S.E. avant la fouille.



parfois à désirer et la bordure qui encadre le bossage n'est pas marquée de manière très nette.

Avant la fouille, le mur nord s'élevait encore de 6 assises au-dessus du sol actuel, le mur sud, le mieux conservé, de 8 assises visibles.

En vue de découvrir *les fondations* de l'édifice, deux tranchées ont été creusées: la première, le long de la façade nord, en incorporant l'angle N.-O., la seconde a été tracée le long de murs à l'angle N.-E. (FIG. 4).

Le terrain est actuellement incliné d'est en ouest: tout comme le roc sur lequel il repose, il suit la pente descendant vers le Wadi Lehun. Dans les parties dégagées, les foundations reposent sur ce roc, plus incliné que la surface actuelle du terrain: ceci explique que dans l'angle nord-est seules deux assises ont dû être dégagées, tandis qu'à l'angle nord-ouest, en dessous de ces assises, un soubassement de 3 assises reposant sur une semelle de fragments de pierre irréguliers (1.70 m. de haut au total) a été mis à jour avant d'atteindre le roc.

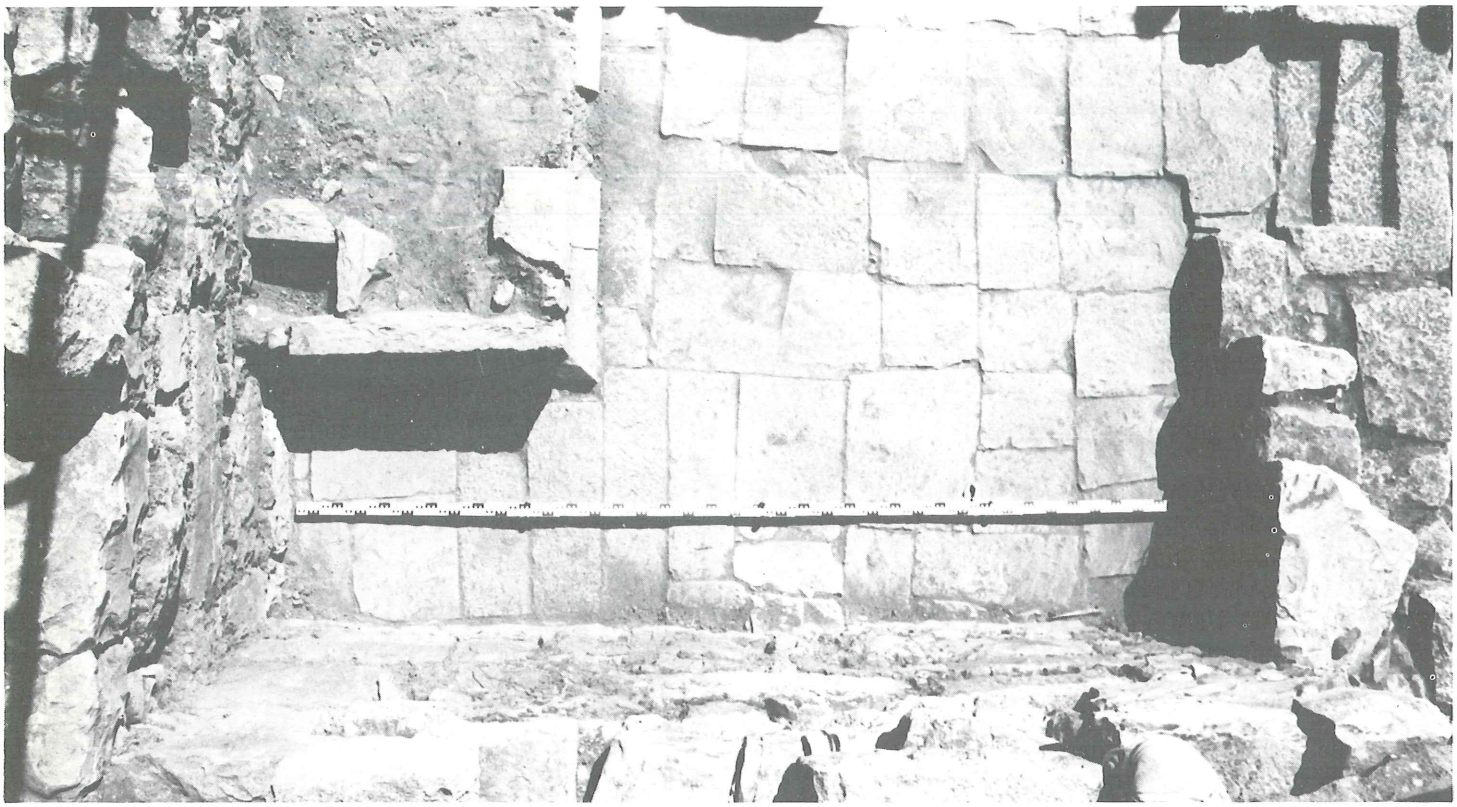
Les rangées supérieures à bossage sont régulières, légèrement en retrait de 2 à 3 cm. par rapport aux fondations. Celles-ci sont dans un appareil moins régulier, par endroits médiocre et de petites dimensions.

L'empattement des pierres de fondations marque vraisemblablement le niveau du sol à l'époque d'utilisation de la construction.

Avant même de commencer le dégagement de la pièce centrale, on constata que les blocs employés à l'intérieur de l'édifice étaient moins bien équarris que ceux du parement extérieur, qu'ils ne présentaient pas de bossage (ce qui est normal pour toute architecture dite rustique) et que leur disposition était si irrégulière que l'on pouvait supposer qu'un placage de dalles ou de stuc devait recouvrir et cacher ces imperfections dans la construction. Pourtant aucune trace de placage ou de stucage n'a été retrouvée pas plus que sur les murs extérieurs.

Le *dégagement de la salle*, tout comme le creusement des tranchées, a nécessité le déplacement délicat et difficile de gros blocs, pesant plusieurs centaines de kilos. Ils avaient de toute

3. Lehun, Temple nabatéen: intérieur, vue plongeante.



évidence fait partie des murs du bâtiment et ont été répertoriés, numérotés, photographiés, dessinés, puis rangés à quelque distance de l'édifice auquel ils avaient appartenu.

Le sol était caché par une épaisse couche de terre mêlée à des morceaux de pierres de formats variés, et des tessons de céramique sur une hauteur de 1.70 m. du côté est, et sur quelques dizaines de cm. seulement du côté ouest, car la surface des décombres suivait la pente du terrain.

Successivement apparurent le seuil, le dallage du sol, la face interne des murs et un autel adossé au mur est.

Le seuil se compose d'un bloc monolithe, long de 1.35 m. sur 70 cm., rigoureusement dans l'alignement du bâtiment, mais légèrement décalé vers le sud par rapport à l'axe de la façade ouest. Le bloc est creusé d'un degré droit rentrant, comportant deux marches descendantes de 87 cm. sur 27 cm., avec une contremarche de 7 cm. seulement.

La première marche a son giron creusé, du côté sud, d'une crapaudine profonde de 4 cm. et de 8 cm. de diamètre. Une ornière d'un peu plus de 30 cm. de long, entaillée en oblique dans la marche, permettait de glisser le vantail de la porte jusqu'à la crapaudine où le gond se calait dans la cupule. La porte venait battre contre la contremarche supérieure du seuil et ne pouvait donc pivoter que vers l'intérieur. La surface de la marche inférieure est au niveau du dallage.

Le sol est assez plan, suivant à peine la dénivellation du terrain avec une différence de 9 cm.: le pavement est complet et composé de dalles relativement régulières, généralement rectangulaires mais de format très divers: certaines mesurent près de 1 m. sur 30 cm., d'autres 75 cm. sur 65 ou Herv. 50 sur 30 cm. Il y a rarement un décrochement, sauf pour une dalle près du seuil.

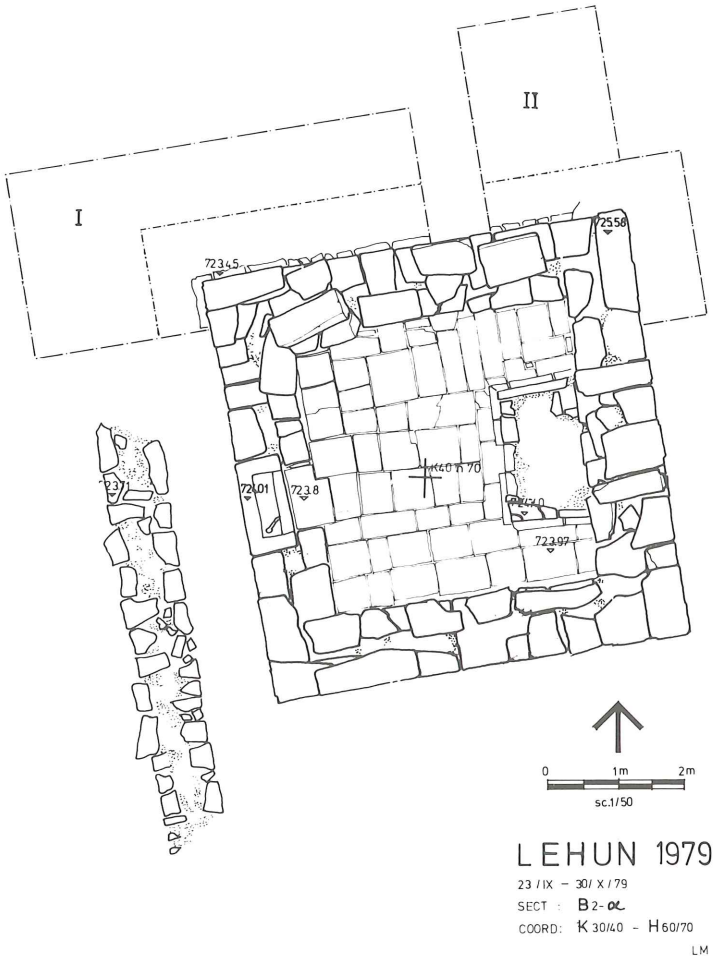
En face de l'entrée, *un autel* est adossé au mur est: il a 2 m. de long sur 1.25 m. de large et est conservé sur une hauteur de 50 cm. La base est formée d'une plinthe à biseau de 20 cm. de haut, tandis que le parement en plaques calcaires a été retrouvé par endroits sur une hauteur de 30 cm. L'arrière de ces diverses plaques présentait encore des traces obliques des outils des tailleurs.

Autour de l'autel, d'autres blocs à biseau dont deux pierres d'angle, ont été découverts; ils devaient lui servir de couronnement; 4/5 de la longueur totale de ce couronnement ont été retrouvés. Aucune dalle de recouvrement n'a pourtant été découverte lors du dégagement: peut-être ont-elles été réemployées.

L'intérieur de l'autel a été fouillé: seuls de la terre, des fragements de pierre et quelques tessons de céramique grossière nabatéenne en ont été extraits. La surface du dallage ne s'étend pas sous l'autel, montrant que celui-ci avait bien été conçu dès l'origine.

Dans l'angle nord-est de l'autel, un espace rectangulaire de 30 × 20 cm. a été aménagé: il est délimité par deux plaques dressées perpendiculairement au mur est de l'édifice et á la paroi nord de l'autel. Le fond, à une profondeur de 40 cm. environ, est formé d'une dalle en pierre taillée du même type

4. Lehun: Temple nabatéen: plan.



que celles qui constituent les parois de l'autel. Ce petit compartiment, qui semble fait de plaques de remploi, est sans doute un dispositif non prévu à l'origine et sensiblement postérieur.

Tout le *matériel archéologique* découvert dans la salle est homogène et appartenait à la même couche stratigraphique: un grand nombre de tessons sont sortis, pour la plupart correspondant à la céramique lisse ou annelée, du type de la poterie nabatéenne grossière. Quelques rares fragments, très petits malheureusement, appartenaient par contre à la belle céramique peinte, à parois en coquille d'oeuf et à décor brun foncé sur fond rose saumon.

Tous ces tessons ont été examinés par le Dr Jim Sauer, Directeur de l'American Center of Oriental Research à Amman (Jordanie) et spécialiste de la céramique jordanienne et palestinienne: 90% des restes sont nabatéens (deuxième moitié du 1er siècle ap. J.-C.), les autres étant plus tardifs, romains ou byzantins, rarement ommeyyades ou ottomans.

A considérer toutes ces données, il semble que l'on puisse conclure que l'édifice est un petit temple, avec autel du côté est, en face de l'entrée et qu'il remonte à l'époque nabatéenne.

Un ensemble de restes architecturaux s'étend vers l'ouest et le sud, dans lesquels s'intègre probablement ce petit édifice fouillé. La manière dont il s'y incorpore devra faire l'objet de recherches minutieuses.

Déjà, en vue de découvrir l'accès de la pierre de seuil, le sol a été quelque peu déblayé devant la façade ouest. La partie supérieure d'un mur est apparue longue de 6 m., large de 73 cm.; ce mur est construit à deux parements de petit appareil irrégulier, parallèlement à la façade et distant d'elle de 97 cm. Il peut avoir fait partie d'une terrasse s'étendant devant l'édifice. Le problème de l'accès ne s'en trouve pas encore résolu et fera l'objet de recherches ultérieures.

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Forty Years of Archaeological Work at Mount Nebo-Siyagha in Late Roman-Byzantine Jordan

It is unfortunate that literary sources referring to Jordan in the Late Roman-Byzantine epoch are limited to generic geographic descriptions and to a few historical allusions in authors such as Eusebius, Jerome, Stephen the Byzantine, Hierokles and George the Cypriot[1]. Apart from the succinct and generic list of cities and villages that can be gleaned from the above-mentioned authors and from a few other works, e.g. the Notitia Dignitatum and the Tabula Peutingeriana[2], we can add the names of some bishops of the most important cities who participated from time to time in ecclesiastical councils and thus signed the promulgated documents[3].

In the light of such texts, we are able therefore to sketch only the broadest outline of the political, religious and administrative organization of this frontier region of the Roman-Byzantine Empire[4].

Politically and administratively the Transjordanian territory, which for the most part had been unified by Trajan into the Provincia Arabia, was in the 4th century AD subdivided into four parts:

1) The Provincia Arabia, with Bostra as its capital, which extended as far as the Wadi Mojib and included the mountain region of Ajlun, Ammonitide and northern Moab.
2) The southern region (Moab and Idumea) which included Petra and was part of Palestine III or Salutaris.
3) The southern part of the Jordan Valley and the region which faces it, which were united to Palestine I, with Cesarea as its metropolis.
4) The northern region of the Jordan Valley which was united to Palestine II, whose capital was at Beit Shean-Nysa Scythopolis.

As regards religion, we find from the 4th century on, an already well-organized church with an autonomous hierarchy in the entire transjordanian area[5].

In the Palestine III or Salutaris region, we find bishops in Petra, Aila, Zoara and Augustopolis.

In Moab there are two bishoprics, viz. Areopolis-Rabbat Moab and Charach Moab, while in Ammonitide, we find bishops at Madeba, Esbus, Philadelphia-Amman and Gerasa.

In the area dependent upon Palestine II, there are bishops at Abila, Gadara, Capitolias and Pella. While in the area dependent upon Palestine I, there are bishops at Livias, Gadora and Amathus and Bacatha.

Therefore the bishoprics in the area number 19, under metropolitan bishops who resided at Bosra, Cesarea or Jerusalem, at Beit Shean Nysa Scythopolis and Petra[6].

Of the Christianity of that period, however, we can trace the history and beginnings only with considerable difficulty and with large lacunae.

The evangelists write that Jesus himself, carrying on the mission of John the Baptist, preached 'across the Jordan' and that many in this region believed in him (Matt. 4, 25; 19, 1–2; John 10, 40–42). The historian Egesippus informs us that the first Christian community of Jerusalem found refuge in the territory of Pella of the Decapolis during the anti-Roman Jewish revolt of 66–70 AD[7]. Another text tells us that some Christians originating from the region of Madaba and Ziza were put to death in Amman during the Diocletian persecution[8], while with reference to the same period, Epiphanius mentions several Christian sects located in the villages of Transjordan[9].

[1] Cf. Brünnow-Domaszewski, *Die Provincia Arabia*, vol. III, pp. 249–360 'Überblick über die Geschichte der Provinz Arabia'.

[2] *Notitia Dignitatum*, ed. O. Seek, Berolini 1876. K. Miller, *Itineraria Romana. Römische Reisewege an der Hand der Tabula Peutingeriana*, Stuttgart 1916. E. Weber, *Tabula Peutingeriana*, Codex Vindobonensis, 324, Graz 1976.

[3] Mansi, *Conciliorum Collectio*, Florentiae-Venetiis 1759–1798. Cf. Devreesse, Le Patriarcat d'Antioche depuis la paix de l'Eglise jusqu'à la conquète Arabe, Paris 1945, pp. 124–141.

[4] F. M. Abel, *Géographie de la Palestine*, II, pp. 168–191. For the political and administrative development in the area in the year 295, 358 and 399 AD, cf. F. M. Abel, *Histoire de la Palestine*, II, pp. 243–245, 294–296, 318–321.

[5] Devreesse, *Patriarcat*, pp. 208–224. *Idem*, "Les Anciens Évêchés de Palestine", *Mémorial Lagrange*, Paris 1940, 217–227. N. Edelby, 'La Transjordanie chrétienne des origines aux Croisades' in *Proche-Orient Chrétien*, 1955, pp. 97–117.

[6] Even if we discount a note by the historian Sozomen to the effect that in Provincia Arabia some villages were likewise furnished with bishops (*Historia Ecclesiastica*, VII, 19; *PG* LXVII, 1476).

[7] 'When the people of the church in Jerusalem were instructed by an oracular revelation delivered to worthy men there to move away from the city and to live in a city of Peraea called Pella, the believers in Christ migrated from Jerusalem to that place' (Eusebii *Historia Ecclesiastica*, III, 5, 3–4(75); *PG* XX, 222).

[8] J. T. Milik, 'Notes d'Epigraphie et de Topographie Jordaniennes' in *Liber Annuus* X (1960), 161–184.

[9] 'This Nazoraean heresy is found in the vicinity of Beraea in Coele-Syria, in the

In the first half of the 4th century Eusebius, in a messianic commentary on Psalm 59, 10, 'Mine is Gilead and mine Manasse . . . Moab is my wash-basin, on Idumea I will rest my sandals . . .', gets carried away in his enthusiasm and writes: 'The fulfilment of this can be verified by those who cross into the Arab region, when they see the Moabites and the Ammonites (converted in great numbers) to the point of filling the church of God (and they can verify it) who go into Idumea, because they see there the multitude of the church of God'[10]. In the light of the contemporary literary sources we may even accept as probable the assertion of the bishop of Ceasarea who says that towards the first half of the 4th century Christianity was fairly widespread in the cities of Transjordan, making ever deeper inroads in the succeeding years.

The historical contribution of archaeological research

If we ask what sort of contribution archaeological research makes to our knowledge of the history of Jordan in the Late Roman-Byzantine period, we note first of all with satisfaction and appreciation the impressive quantity of new data placed by archaeology at the disposal of scholars, from the preliminary explorations of the 19th century up to contemporary systematic excavations[11]. Monuments, mosaics and inscriptions which have been studied in almost every corner of the region compensate in a determinative manner for the paucity of literary data left to us by antiquity.

From an examination of these data we can draw some historical and cultural conclusions of primary importance.

The first evidence that we gain is of a socio-political character. The overwhelming majority of the dated inscriptions, which come moreover from religious edifices and in particular from mosaic floors, date from the 6th century[12]. We know that Justinian, in his military and civil reform of the empire, well realised the strategic importance of this southern province. Hence he decided to entrust it to a functionary equivalent in rank to a duke who should interest himself in maintaining order and peace, and in particular defending the borders of the empire[13]. From archaeological evidence we are led to conclude that the interests and reform of Justinian had positive repercussions on the security of the region, which then achieved a period of economic well-being as well as a cultural and artistic re-awakening such as can be paralleled only by the Nabatean and Roman epochs[14].

In the religious sphere the construction of churches or their restoration and embellishment all over the region is a proof of the above-mentioned spread of Christianity, not only in the cities but likewise among the rural populace in and around the villages.

The names of the persons which are to be found in the inscriptions, e.g. bishops, clergymen, functionaries and simple benefactors, are in the great majority of cases not Greek but of local origin[15]. Thus names are the best evidence for an autonomous Christian church in the region even though Greek was used as a foreign liturgical language. The names of bishops, priests, deacons, deaconesses and other cult officials, throw new light on the hierarchical religious organization of such a community. With these names we are able to complete for the 6th century the lists of bishops known from the literary sources[16]. Likewise, the inscriptions enlighten us on the faith of this local Christianity, its saints, its devotional practices, its belief in the after-life, and so on[17].

We have only to remember the historical value of the Madaba Map 'which is the only extant cartographical representation of ancient Palestine', and the mosaic floor discovered at Ma'in which depicts some bishop-seats in Jordan[18].

Of particular interest is the care and artistic taste with which the local people decorated their churches. For this the highest expression is to be found in the mosaic floors discovered everywhere in the region. In this same context, the art of mosaics within the late Roman-Byzantine period, we can make mention of a school operating in Jordan which we customarily call the 'school of Madaba'[19]. It is important to

Decapolis in the vicinity of Pella, and in Basanitis . . .' (Epiphanii *Adversus Haereses*, XXIX, 7, 7–8 (123); *PG* XLI, 402). Cf. B. Bagatti, *The Church from the Circumcision*, Jerusalem 1971, pp. 24–26.

[10] Eusebi *Commentaria in Psalmos*, 59, 10; *PG* XXIII, 567–570.

[11] Cf. S. Saller-B. Bagatti, *The Town of Nebo* (Khirbet el-Mekhayyat) With a Brief Survey of Other Ancient Christian Monuments in Trans-Jordan, Jerusalem 1949, pp. 221–235. R. Canova, *Iscrizioni e Monumenti Protocristiani del Paese di Moab*, Roma 1954. Department of Antiquities, *The Archaeological Heritage of Jordan*, Amman 1973, pp. 3–5, 41–43. S. Mittmann, *Beiträge zur Siedlungs-und Territorialgeschichte des Nördlichen Ostjordanlandes*, Wiesbaden 1970. A. Augustinovic-B. Bagatti, 'Escursioni nei dintorni di 'Ajlun', in *Liber Annuus* II (1951), pp. 227–314. M. Piccirillo, *Chiese e Mosaici della Giozdania Settentrionale*, Jerusalem 1981.

[12] Although we have to mention the so-called 'Church of Julianus' at Umm el-Jimal dated by the American explorers to 345 AD (*AAES* II, A, 173) on the basis of a tomb lintel found in the building (*AAES* III, A, 151f), and the church dedicated to the Prophets, Apostles and Martyrs in Jerash, dated to 464–65 on the evidence of an inscription written 'on two lintel(?) blocks . . . seen only by Wetzstein' (C. H. Kraeling, *Gerasa, City of the Decapolis*, New Haven 1938, p. 476). The first mosaic floors in Jerash are dated to the period 526–534 AD in the Churches of St John the Baptist, St George and SS Cosmas and Damianus (Kraeling, *Gerasa*, pp. 479, 481, 482). Contemporary with these is the work of Soelos, Kaiomos and Elias in the diaconicon of the Memorial of Moses on Mount Nebo.

[13] Devreesse, *Patriarcat*, p. 216, fn. 2.

[14] Abel, *Histoire de la Palestine*, II, pp. 355–388. A. Grabar, *L'Age d'or de Justinien*, Paris 1966.

[15] Canova, *Iscrizioni . . . protocristiane . . . di Moab*, p. LXXXI–XC. Edelby, '*La* Transjordanie Chrétienne', pp. 102–109. M. Noth, 'Prosopographie des Bistums Medaba in spätbyzantinischer Zeit', in ZDPV 84 (1968), 143–158.

[16] For Gerasa, cf. Kraeling, *Gerasa*, p. 66, fn. 222; for Bostra, M. AviYonah, 'Greek Christian Inscriptions from Rihab', in QDAP XIII (1947), p. 71 and fn. 1; A. Alt, 'Das Territorium von Bostra', in ZDPV 68 (1951), pp. 235–245; for Madaba, cf. M. Piccirillo, 'Campagna archeologica nella basilica di Mosé Profeta sul monte Nebo-Siyagha', in *Liber Annuus* XXVI (1976), p. 306. Mittmann, *Beiträge*, pp. 190–194. Saller, 'The works of Bishop John of Madaba in the light of recent discoveries', in *Liber Annuus*, XIX (1969), pp. 145–167. Useful is the work of Y. Meimaris, *Saints, Martyrs, and church officials* in the Greek Inscriptions pertaining to the Christian Church of Palestine, Jerusalem 1976 (Hebrew University).

[17] Devreesse, *Patriarcat*, pp. 219–224. Saller-Bagatti, *The Town of Nebo*, 193–199 'The Sanctity and Cult of Lot'. F. Halkin, 'Inscription Grecques relatives à l'hagiographie' in *Analecta Bollandiana* LXVII (1949), 87–108; LXIX (1951), 67–76.

[18] M. Avi-Yonah, *The Madaba Mosaic Map*, Jerusalem 1954. H. Donner-H. Cüppers, *Die Mosaikkarte von Madeba*, I, Tafel Band, Wiesbaden 1977. Saller-Bagatti, *The Town of Nebo*, p. 80, fn. 3. R. De Vaux, 'Une Mosaïque byzantine à Ma'in (Transjordanie)', in *Revue Biblique*, 1938, pp. 227–258.

[19] Saller-Bagatti, *The Town of Nebo*, pp. 80–137, 'Iconographic, Technical Researches'. Grabar, L'*Age d'or de Justinien*, 112f.

1. Mount Nebo-Siyagha seen from the East.



note that thanks to the inscriptions found on mosaic floors we know the names of several artist-artisans of the Madaba school, as for example Soelos, Kaiomos and Elias, whose signature we find in the baptistry at Mount Nebo and who ended their artistic task in 531, being thus contemporaries of the great masters of Ravenna and Constantinople[20].

The singular importance of the memorial of Moses on Mount Nebo

Basing ourselves on literary sources, we can thus trace the broad outline of the spread and organization of the Christian community in the cities of Transjordan during the 4th and first half of the 5th century, while archaeological data expose to us the zenith of the artistic and cultural development of a community which, by the 6th century, is identified with the political and religious life of the region. However, so far neither the literary sources nor archaeological data have been able to fill all the gaps in an uninterrupted historical reconstruction of the Christian presence in Jordan from its beginnings to its flowering in the pre-Islamic epoch.

The systematic study of the basilica and monastery built by the Christians of the region on Mount Nebo in memory of Moses, prophet and man of God, constitutes a first effort at tracing, with the help of archaeological evidence, the evolution throughout the centuries of a monument from its primitive nucleus, through its highest development in the first years of the 7th century to its decline and dereliction in the succeeding centuries.

[20] Piccirillo, 'Campagna', *Liber Annuus* XXVI (1976), p. 314, fn. 94.

The monument in itself, on account of the treasures which it houses, remains a necessary point of reference for the study of the late Roman-Byzantine civilization in Jordan.

Exploration and identification of the site (FIG. 1)

The exploration of Siyagha is a relatively recent undertaking. Only in 1864 do we have a first description of the ruins in a travel report written by the Duke of Luynes. Subsequently, other explorers took an interest in this site overlooking the Jordan Valley, suggesting various biblical identifications[21].

Merrill, a member of the American Palestine Exploration Society and an expert in extra-biblical literature, had noted that the Pseudo-Jonathan Targum in three biblical passages had substituted for the word *Nebo* the paraphrase, 'place of Moses' burial'. A precisely identical substitution occurs in Numb. 32, 3 at the hand of the Targum Onkelos. As a result of diligent research among the beduins of the area it became known that the mountain was also called Jebal Nebo or Jebal Mousa in homonymy to Wadi and 'Ayoun Mousa located on the western slope of the mountain. Thus the idea developed that Khirbet Siyagha, on the eastern peak of the isolated mountain, was somehow linked with the last events of the life of Moses (as narrated in Deut. 34, 1–4).

The discovery in Arezzo (Italy) of the Egeria memoirs, published by Gamurrini in 1884[22], and the subsequent dis-

[21] S. Saller, *The Memorial of Moses on Mount Nebo*, I, Jerusalem 1941, pp. 1–22 'The Site and its Surroundings—The Exploration of the Site'.

[22] I. F. Gamurrini, *S. Silviae Aquitanae Peregrinatio ad Loca Sacta*, Romae 1884. J. Wilkinson, *Egeria's Travels*, London 1971. Saller, *Memorial*, 333–340.

covery of the biography of Peter the Iberian in 1895[23] were decisive in orienting scholars in this direction. The Roman pilgrim and the bishop Peter, relate in great detail their visits to the Memorial of Moses on Mount Nebo in Arabia. The pilgrim, after having crossed the Jordan river on her way from Jerusalem, had stayed at Livia (tell er-Rameh) and then taken the road to Esbus. At the sixth mile she took a deviation to the springs of Moses and from there climbed to the summit of Mount Nebo[24]. The bishop took the road which came from Madaba[25]. Monks living there showed both pilgrims the memorial tomb of Moses in a church.

Between the Byzantine pilgrims and the modern explorers we find only two possible references, one in the Crusader pilgrim, Thitmar and the other in the notes of a Portuguese Franciscan monk who visited the region in 1564[26].

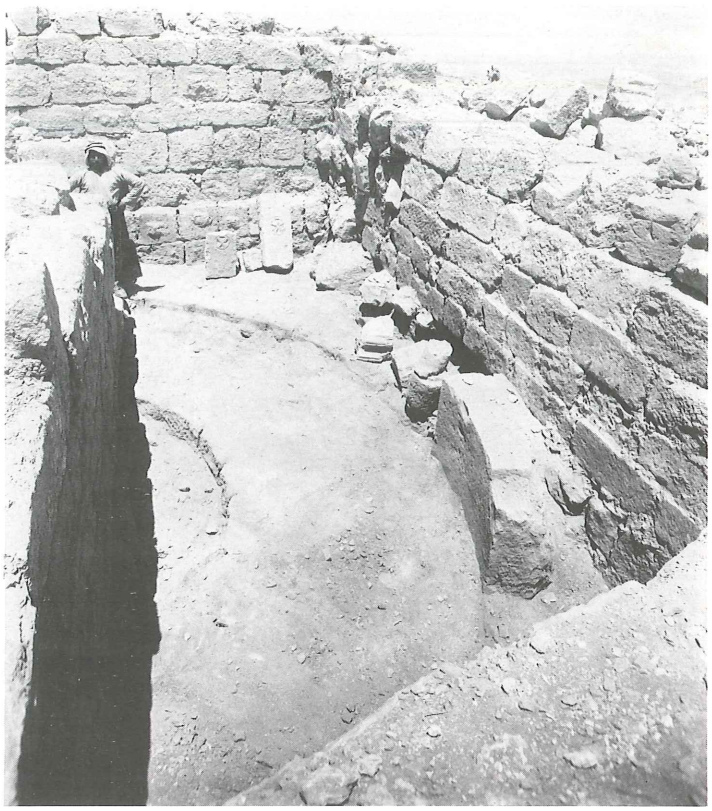
In 1933 the archaeologists of the Franciscan Biblical Institute in Jerusalem began the archaeological exploration of the site.

The first excavation campaigns 1933–7[27]

In the first series of three excavation campaigns (July 13 to September 22, 1933; July 15 to October 22, 1935; July 3 to October 16, 1937) the Franciscan archaeologists were under the direction of Fr Sylvester Saller (1895–1976) who was aided during the second and third campaign by Fr Bellarmino Bagatti. These excavations brought to light one of the most extensive Byzantine monastic complexes in the Middle East. The vast monastery had developed around a sanctuary constructed on the highest point of the eastern summit of Siyagha. It was on this sanctuary in particular that the Franciscan archaeologists focused their attention in a research which continues to this day so as to gain a more comprehensive view of its history.

The external wall of the apsidal area, the three apses in the interior of the presbytery and various architectural elements scattered among the ruins of the monastery or re-used in walls

2. The southern apse during the excavation (1933).



of later epochs, are crucial for a definition of the nature of the building at its beginnings (FIGS 2–3).

Fr Saller identified it with the 'little church' visited by Egeria at the end of the 4th century or beginning of the 5th century in the shape of the funeral mausoleums of the classical period (the *cella trichora*). On the evidence of the wall-foundation found under the mosaic floor of the central nave of the basilica at the height of the second row of columns in front of the presbytery, he located the facade of this early church. Later, in the 5th century, the facade was destroyed and the body of the basilica was added in which Peter the Iberian saw the Memorial of Moses. At yet a further stage of development the sanctuary was destroyed by some as yet unknown cause. When it was reconstructed in the course of the 6th century, with chapels on the southern and northern sides, the ruined *cella trichora* served as a foundation for the presbytery of the basilica.

A typological analysis and a patient, as well as laborious, juxtaposition of the anomalous architectural elements led Fr Bagatti to pre-date more accurately the *cella trichora* to the 2nd to 3rd century AD. The original nucleus of the sanctuary must have been a monumental funeral-edifice, some examples of which it is still possible to see in the district surrounding Amman[28]. The presence of Late Roman sherds and a few

[23] R. Raabe, *Petrus der Iberer*, Leipzig 1895. Saller, *Memorial*, 341–347. J. Wilkinson, *Jerusalem Pilgrims Before the Crusades*, Jerusalem 1977, pp. 57–58.

[24] 'Then, impelled by God, I conceived the desire to go once more into Arabia, to Mount Nebo . . . After crossing the river we came to the city of Livias . . . As we travelled along, the local presbyter from Livias . . . asked us, "Would you like to see the water that flows from the rock . . .? You can if you have the energy to turn off the road at about the sixth milestone" . . . We turned off the road at once, the presbyter led the way, and we followed him . . . Then we set off for the mountain . . . So we set out and came to the foot of Mount Nebo; it was very high, but mostly possible to ascend on the donkeys, though there were some steeper part we had to dismount, and it was hard going. On reaching the mountain-top we came to a church, not a very big one, right on the summit of Mount Nebo, and inside, in the position of the pulpit, I saw a slightly raised place about the size of a normal tomb. I asked about it, and the holy men replied, "Holy Moses was buried here . . ."' (*Wilkinson, Egeria's Travels*, pp. 103–108).

[25] 'On the following day we set off towards Medeba. When we were half way there we reached the holy Mountain of Moses called Abarim or Pisgah, which is where the Lord said to him, "Go up and die". A venerable and very lofty church is there, built in the name of the Prophet, and it is surrounded by a number of monasteries'. (Wilkinson, *Jerusalem Pilgrims*, p. 57.

[26] T. Tobler, *Magistri Thetmari Iter ad Terram Sanctam Anno 1217*, 1851, p. 30. A. Baiao, *Itinerario de Terra Sancta e suas particularidades* composto por Fr Panataleo de Aveiro, VII edicao, Coimbra 1927, p. 392f.

[27] S. Saller, *The Memorial of Moses on Mount Nebo*, Part I, The Text; Part II, The Plates, Jerusalem 1941; Part III, The Pottery, by H. Schneider, Jerusalem 1950.

[28] B. Bagatti, 'Edifici Cristiani nella regione del Nebo', in *Rivista di Archeologia Cristiana* XIII (1936), pp. 4–13. See also 'Phasga (ou Mont Nebo)' in *Dict. Bibl. Souppl.* VIII, p. 1122ff.

3. The presbytery during the work of restoration.



bronze objects foreign (FIG. 4) to monastic life are probably further evidence for this hypothesis[29].

Apart from these areas of conjecture, the excavations thoroughly clarified the last period of the sanctuary as well as of the monastery[30]. The inscriptions of the mosaic floors which still remained in the presbytery and in the side chapels (FIGS 5–6) constituted a source of primary importance for the history of the Madaba bishopric and of the Madaba School of Mosaics[31] (FIGS 5/6). Likewise, the pottery found in the monastery proved particularly useful for the knowledge of Byzantine pottery in Jordan[32].

Near the pulpit, on the eastern end of the southern aisle, a platform was found which was identified as being part of the memorial of Moses seen by the pilgrims[33].

Restoration works 1963–7[34]

New data on the history of the sanctuary were added during the 60's when the Superiors of the Custody of the Holy Land decided to cover the ruins of the basilica in order to begin the restoration of the mosaic floors. Once Fr Virgilio Corbo, who was charged with the project, had removed the mosaics of the presbytery (FIG. 7, Area I), southern aisle (Area II), baptistry (Area III) and Theotokos chapel (Area IV), he was able to excavate and examine the area down to bedrock. Of this the most important result was that he could now trace the continuation of the foundation wall which Fr Saller had exposed in the central nave and which ended in the southern aisle with a room decorated with a big mosaic cross (Area II). Beneath the ground level of the baptistry two other mosaic floors were brought to light, the lower being connected with a tomb. The funeral chapel, as an inscription indicated, was built at the time of the abbot Alexius, a priest whose name was already mentioned in an inscription of the presbytery. This coincidence confirmed Fr Saller's conclusion that the presbytery mosaic had been the oldest mosaic inside the basilica (late 4th century AD).

Excavations beneath the mosaic in the Theotokos chapel (Area IV) revealed three different rooms of the monastery destroyed in the construction of the chapel.

New contributions 1976–8[35]

After the 1967 Arab–Israeli conflict Mount Nebo was declared a military area. This forced a suspension of the work

[29] A bronze figurine (Saller, *Memorial*, p. 311, no. 229, PL. 139, 1) and a lamp (*ibi*, p. 309, no. 177; PL. 138, 1), with some marble fragments (*ibidem*, p. 294, no. 75).

[30] Saller, *Memorial*, pp. 108–208 'The Monasteries'.

[31] *Ibi*, pp. 209–277 'The Mosaics' and 'The Inscriptions'.

[32] Saller, *Memorial*, III, *The Pottery*, by H. Schneider, Jerusalem 1950.

[33] Saller, *Memorial*, I, pp. 67–69 and V. Corbo, 'Nuovi Scavi archeologici nella cappella del Batiistero della Basilica del Nebo (Siyagha) in *Liber Annuus*, XVII (1967), p. 283.

[34] See Corbo, 'Nuovi Scavi', *Liber Annuus*, XVII (1967), 241–258 and *Idem*, 'Scavi archeologici sotto i mosaici della Basilica del Monte Nebo (Siyagha)', in *Liber Annuus* XX (1970), 273–298.

[35] Cf. M. Piccirillo, 'Campagna Archaeologica nella Basilica di Mosé Profeta sul Monte Nebo-Siyagha', in *Liber Annuus*, XXVI (1976), 281–318; PLS 49–80.

4. A bronze figurine found at Siyagha.



5. The basilica at the end of the excavation (1933).



and we were able to resume only in 1976. The removal of the mosaics in the northern aisle then brought to light a second mosaic room (Area v) corresponding to the room with the cross in the opposite aisle (Area ii). Beneath it we were able to excavate a tomb built between the wall of the *cella trichora* and the rock of the mountain.

Beneath the mosaic floor of the northern hall (Area vi) we unearthed a funeral chapel at its eastern end, connected by a door with the room previously excavated in the northern aisle (Area v), and a roughly mosaiced once-arched room on the western side (Area viii), linked to the atrium of the basilica (Area ix). Three quarters of the northern hall (FIG. 8) were occupied by the ancient diaconicon of the sanctuary (FIG. 9), which served also as the baptistry (Area vii). From the five-line dedicatory inscription in front of the basin we learnt that at the time of Elias, bishop of Madaba, under the Roman consuls Lampadius and Orestes, in the month of August of the year 425 of the Province (Arabia) i.e. 531 AD, by the good offices of Elias, abbott of the monastery, the holy diaconicon of God was rebuilt and adorned with the basin of regeneration that it contains and with the splendid kiborion. Another two-line inscription west of the central mosaic body which is decorated with scenes of hunting and stock-raising, gives the names of the three mosaicists who worked at the beautifying of the diaconicon: Soelos, Kaiomus and Elias.

A new attempt at a synthesis of the history of the sacred place[36]

At the conclusion of this archaeological research in the basilica we can now attempt an historical synthesis of the history of the monument. The main historical-archaeological problems are related to the dating of the *cella trichora* and to the setting of the three-nave basilica.

A. The dating of the cella trichora

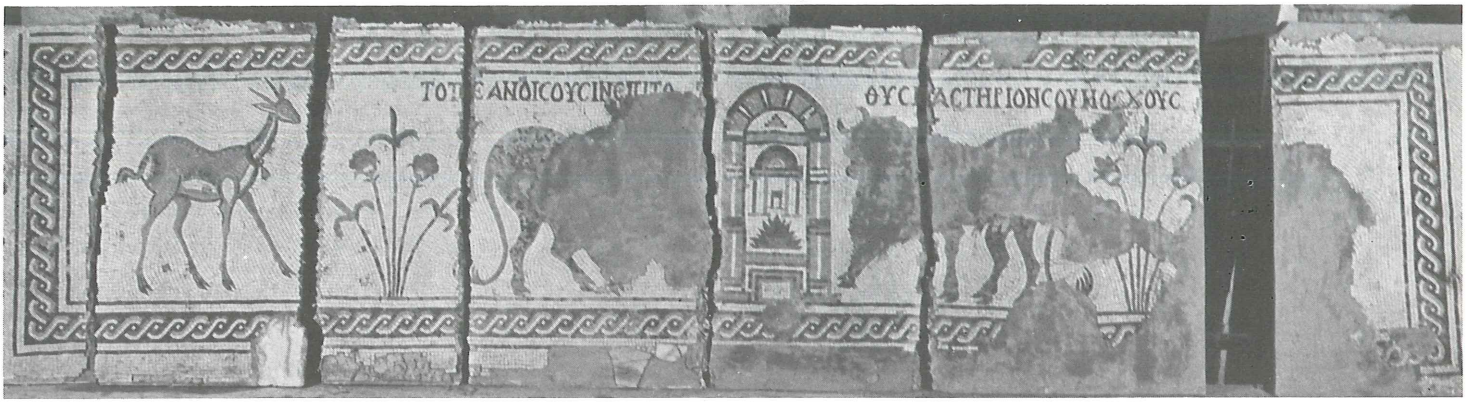
From the name of the abbot Alexios found in the mosaic inscription in the presbytery and on the third-level mosaic floor in the baptistry chapel on the southern wall of the basilica (Area i and Area iii), dated to the end of the 4th century AD[37], we can accept Fr Saller's dating of the mosaic floor of the presbytery to the same period.

Two thresholds still *in situ* connect the mosaic-floor rooms found in front of the chancel (Area ii and v) with the two funeral chapels on the southern and northern sides (Area iii and iv). This means that the whole setting in front of the *cella trichora*, in which we can recognize the atrium of the first church, is contemporary with it. Furthermore six tombs were found beneath those mosaics, tombs which were built on the bedrock, four in the atrium, two in the area of the presbytery, of which one is in the middle of it, while the second one cuts across a wall at the entrance of the earlier three-apse building, in which we can see the foundation-setting of the main entrance to the original building (Mausoleum). This means that the area of the *cella trichora*, which seems to have been

[36] A first attempt was made by the author in *Revue Biblique* 1977, pp. 248–249.

[37] On the evidence of a bronze coin found beneath the inscription (see Corbo, 'Nuovi Scavi', *Liber Annuus*, xvii (1967), p. 258.

6. Mosaics from the Theotokos Chapel (beginning of the 7th century).



7. The interior of the basilica seen from the central apse.

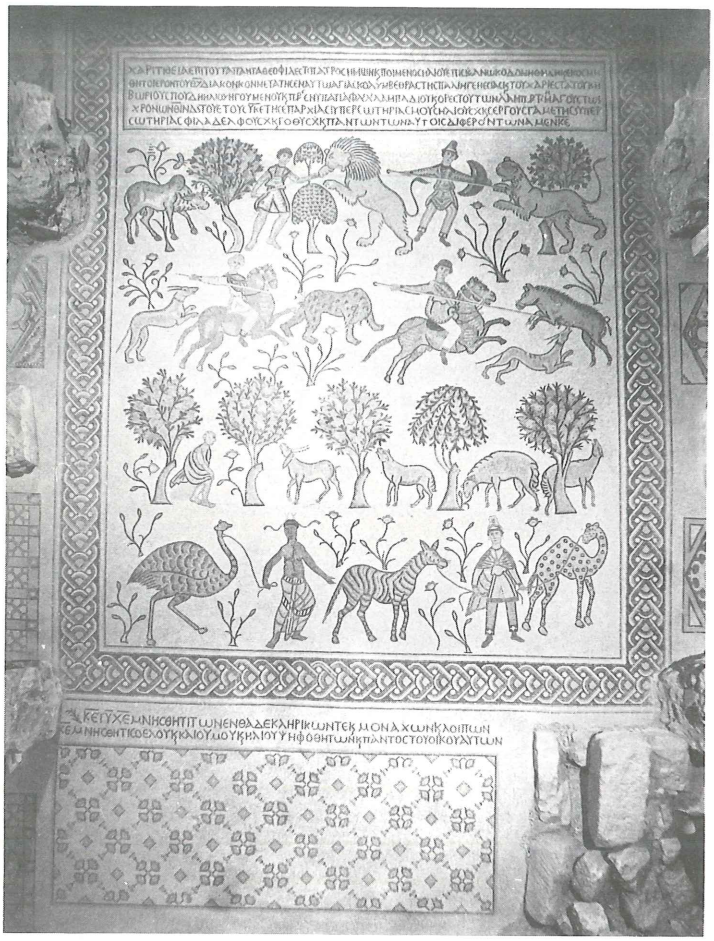


8. The northern hall of the 6th century basilica.



changed by monks into a church only when the mosaic floor was laid, was used for funeral purposes. From lack of other evidence we can accept Fr Bagatti's hypothesis, based on stylistic reasons, that the first building is to be defined as a classical mausoleum of the 2nd to 3rd century AD. Only later, in the 4th century, did the monks, aided by the Christians of

9. The old diaconicon of the basilica (August 531).



the region[38], change the ruined mausoleum which until then has been used for funeral purposes, into a church.

B. The setting of the three-nave basilica

The second problem is constituted by the relation between the basilica and the new diaconicon found under the mosaic floor of the northern hall. If we note that the steps leading to the diaconicon were sealed by the northern wall of the basilica, which itself rests on the southern plastered wall of the diaconicon, we are obliged to say, against the view of Fr Saller, that before 531 (the date of the restoration of the diaconicon given by the dedicatory inscription), no 'fifth century basilica' existed at Siyagha. The archaeological evidence is for the 4th century church with atrium and two side funeral-chapels at the end of an open courtyard on the highest spot of the mountain. Later the diaconicon-baptistry on the northern terrace was added one metre lower than the courtyard level. Only after 531, possibly years after, during which the diaconicon was in use, was the three-nave basilica built there, preceded by the destruction of the atrium and facade of the 4th century church. The destruction of the two side chapels, of the diaconicon and of some rooms of the monastery with the filling-up of the area occupied by them in order to raise the floor to the same level as that of the basilica, gave space for the building of the elongated hall on the northern side and of the new baptistry chapel on the southern side whose mosaic floor was finished in 597 AD. On its western wall was later added the Theotokos chapel whose mosaic floor was completed at the beginning of the 7th century.

C. Attempt to summarize the new data

To sum up in a chronological synthesis the various phases of the history of the monument at Siyagha, we reach the following order of events:

PHASE I

On the highest spot of the mountain, towards the 2nd to 3rd century AD, a three-apsidal monument, the *cella trichora* (possibly a mausoleum) was built, which was used for funeral purposes, if not originally, at least at a later time, perhaps after its violent destruction.

PHASE II

Christian monks re-adapted the *cella trichora* into a church with adjoining synthronon in the central apse, while re-using the two lateral apses as sacristies. A coloured mosaic was laid in the church at the time of the abbot Alexios covering the tombs of the preceding epoch. To this reconstruction are to be connected the atrium on the west, with its white large mosaic cubes, and the two funeral chapels on either side. It was in this church that the monks showed the 'Memorial of Moses' to Egeria. It is likewise probable that Peter the Iberian visited this same monument which he called a 'great church'—no exaggeration if he was comparing it to the poor monks' cells in the midst of which the edifice stood. It should be stressed that it is from the memoirs of the two pilgrims that we know that the church was dedicated to the memory of Moses, the prophet and man of God, by the Christians of the area.

A roofless courtyard, flanked to the south and north by a few monastic structures, was also part of the primitive sanctuary.

PHASE IIA

On the northern slope of the mountain was added later on a diaconicon-baptistry. In August 531 there took place the restoration and beautification of the diaconicon, the mosaic floor of which was laid by Soelos, Kaiomos and Elias. On the southern slope, the funeral chapel was changed into a new room probably of a sacred nature and itself decorated with a new mosaic floor of floral and geometric designs.

PHASE III

From the middle of the 6th century to the first years of the 7th, the sanctuary underwent complete reconstruction. The

[38] 'The people living in that region hurried to bring there all the materials for a building, and a church was erected in the name of the great prophet and lawgiver (i.e. Moses)' writes John Rufus in *The Life of Peter the Iberian* (cf. Wilkinson, *Jerusalem Pilgrims*, p. 57).

10. The baptistry chapel on the southern wall.



atrium of the 4th century church was destroyed and the new three-nave basilica was built with its atrium extending toward the west.

Subsequently the rooms and chapels to the north and south were dismantled and their floor raised to the floor level of the basilica. A lengthy and spacious diaconicon was erected to the north, while to the south a baptistry chapel (FIGS 10–12) and a Theotokos chapel were the last features added to the basilica (FIG. 13).

Conclusion

Thanks to the archaeological evidence and to the witness of the pilgrims, we have in the sanctuary of Mount Nebo-Siyagha, a continuous sequence of monumental and artistic activity from the 2nd–3rd century to the 7th century, with evidence even of the iconoclastic period which did not spare the Memorial of Moses.

We are editing a volume, the fourth in the series dedicated to the sanctuary, which will encompass all of the discoveries which have come to light from 1967 to 1978 beneath the surface mosaics. Of particular historical-archaeological importance will be the publication, entrusted to Fr Bagatti, of the pottery sherds found in the sealed levels.

At the same time, thanks to the generous and friendly collaboration of the Officials of the Department of Antiquities, we are working on a new project, a volume dedicated to the mosaics of Jordan, thus completing a comprehensive view of the pertinent discoveries of Siyagha and el-Moukhayyet on Mount Nebo. This will be a corpus volume intended to be a synthesis of the archaeological work begun

11–12. The two inscriptions from the mosaic floor of the baptistry dated to 597 AD.



13. The Greek inscription in the Theotokos Chapel (beginning of the 7th century AD).



over forty years ago by the Franciscan Biblical Institute and other scientific institutions in co-operation with the Jordanian Department of Antiquities.

This corpus volume will give scholars the possibility of embracing in a unified vision the social and artistic achievements of the people of Jordan during a golden period of their history which, thanks to the work of archaeologists, has now been brought back to light.

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The Sacred Space in Ancient Arab Religions

It is common knowledge among students of ancient Semitic religions, at least since Julius Wellhausen and his famous book, *Reste arabischen Heidentums* (1897), that pagan cults of the Arabian peninsula were often provided with large precincts, called *ḥīma* or *ḥaram* and regarded as the sacred land on which cultivation of soil, hunting game, cutting trees, etc. were strictly forbidden[1]. Some of these reserves came to be respected by Muhammad himself, when their cult was abolished, and their traditional exemptions were confirmed, as happened with the *ḥīma* of Allat in Ta'if. The most outstanding example of a *ḥaram* remains, of course, the holy enclosure of Mecca.

These facts were often used for purposes of comparative religion, but much still remains to be done with regard to the cults of the neighbouring lands. The importance of Arab migrations to the area of the so-called Fertile Crescent in antiquity is well recognised, but not so, however, the importation of beliefs and rituals which should be expected as a corollary. Usually, the religions of such strongly arabised places as Palmyra, Hatra, and even the plainly Arabic Nabataean kingdom, are treated as so many separate developments, though parallel to each other and to the cults of the Peninsula. Only ten years ago, Jean Starcky remarked, in an evaluation of the state of Nabataean studies[2], that it is still not clear to what extent laws and customs of the Nabataeans had remained nomadic. He called then for a new evaluation of available sources, literary (e.g. Strabo) as well as archaeological (high places and baetyls). I am convinced that the civilisation of Jordan in the Nabataean period should be seen in the larger perspective of the Peninsula on the one hand, and of Syria and even Northern Mesopotamia on the other.

As it is well known, the notion of *ḥaram* in the pre-Islamic tradition implies a tract of land delimited by visible landmarks (*anṣāb*) and secluded from any profane use. Such sacred ground may have belonged to a divinity who usually had a temple of some kind in the midst of it, but could as well have been attached to a tomb. Many passages of old Arab poetry, as quoted for instance by H. Lammens[3], illustrate this particular form of respect toward the deceased, but do not necessarily prove the existence of a real ancestor cult.

Manifold, and apparently wide ranging meanings of the root *ḥrm*, 'sacred', 'impure', 'illicit', etc., can be gathered from several Semitic idioms, from Moabite to Syriac[4]. In the Mesha inscription and in Biblical Hebrew, the notion of *ḥerem* is related to the 'sacred war' giving no quarter either to people, animals or property. In Palmyrene, the word *mḥrmn* is translated as *anathemata*, and understood as 'religious offerings' of some kind. In Syriac, it also means 'anathema' in the Christian sense. The general meaning is that of something forbidden, exempt from ordinary use for ritual reasons, a taboo. In Nabataean inscriptions *mḥrmt'*, found in texts from Bosra and from the oasis of Dumat[5], probably describes a sanctuary, an enclosed space directly comparable to *ḥīma* or *ḥaram* of Classical Arabic sources.

However, several other terms, with the general meaning of 'enclosure', could have described the same reality: when such place names as Hegra, Hatra, and possibly Hamat, meant etymologically just that[6], the reference could possibly have been made simply to their walls, but a relation to sanctuaries cannot be excluded, and is even probable in the case of Hatra. On the other hand, there is a term *dayrâ*, known in Hatra with reference to the great temple complex of this city[7], and in Palmyra, where it stands for the temple of Bel, for an archaic

[1] Cf. J. Wellhausen, *Reste arabischen Heidentums*, Berlin 1897, p. 102 sq.; W. Robertson Smith, *The Religion of the Semites*, 1889 (reprint New York, 1972), p. 142 sq; H. Lammens, *L'Arabie Occidentale Avant l'Hégire*, Beyrouth 1928, p. 126, 141, 162; J. Chelhod, *Les Structures du Sacré Chez les Arabes*, Paris 1964, p. 209 sq., 331 sq.

[2] J. Starcky, 'La Civilisation Nabatéenne: État des Questions', *AAAS* 21, 1971 (= *Actes IX Congrès International d'Archéologie Classique*), p. 81.

[3] H. Lammens, op. cit., pp. 167–168.

[4] Cf. F. Jean—H. Hoftijzer, *DISO*, s.v., and other common dictionaries for Syriac and Hebrew.

[5] CIS II 158, RES 2093, 2094 (?); J. Starcky, *RB 64*, 1957, p. 199. In CIS II 158 (= E. Littmann, *PAES IVA*, 1914, no 72) it is certainly not a reserved seat in the Bosra theatre.

[6] Cf. DISO, s.v. *ḥgr'*, *ḥmt*; for etymology of Hamat, cf. W. Robertson Smith, op. cit., p. 150; for *ḥgr'*, cf. B. Aggoula, *Semitica 27*, 1977, p. 122; for *ḥtr'*, cf. M. Gawlikowski, *Syria 51*, 1974, p. 96.

[7] Hatra no 35. Cf. B. Aggoula, *Berytus 18*, 1969, p. 92–93, *MUSJ 47*, 1972, p. 44 (translated as 'communauté'), and J. T. Milik, *Dédicaces Faites par des Dieux*, Paris 1972, p. 353 ('maisonnée'); cf. further M. Gawlikowski, *Le Temple Palmyrénien*, Varsovie 1973, p. 57 (*dwr' dy yrḥbwl*, 'enclosure of Yarḥibôl'). The local sense seems advisable in all these cases.

enclosure of Yarḥibôl, and once probably for a precinct in a village out in the steppe[8].

Another term, recently discussed by B. Aggoula, occurs in a Palmyrene text he has published[9], seen in Northern Lebanon but coming probably from the Palmyrene region; the word *ḥugbâ* denotes there a place where an idol (*maṣṣebâ*) had been placed in 182 AD. Aggoula translates 'oratory', meaning that it was a building where the cult object was hidden, according to the Classical Arabic *ḥiğab*, 'veil' or 'barrier'. Instances from the Syriac, the Qur'an, and from the Arabic poetry he is quoting make it clear that the *ḥugbâ* was a secluded, sacred space, but not necessarily a closed building; on the contrary, in the Syriac translation of Paralipomena[10], this term renders the Hebrew *bamôt*, that is, open air sanctuaries, 'high places'. Another, as yet unpublished instance of the use of the word *ḥugbâ* occurs in Palmyra itself, where the temenos of Allat is meant: the text calls a blessing of the goddess on anybody who shall refrain from spilling blood 'on the *ḥugbâ*', and is inscribed on a paw of a monumental lion guarding the courtyard of the sanctuary. From Mecca, through Palmyra, and up to Edessa, the same term was used, apparently describing sacred enclosures, just as the other terms I have mentioned of similar meaning in the same regions, do.

This is not a proof of the specific notions of an Arabic *ḥaram* being equally present in all the lands reached by the nomadic tribes from the Peninsula. Indeed, the name of *ḥaram*, when relative to the sacred space, appears only in Nabataean and in the Peninsular traditions several centuries later, but not among the settled populations further north. However, a survival of the customs related to it cannot be excluded in Syria. It is perhaps enough to recall what we learn from Lukianos on the practices of the great sanctuary of Mabbug[11]; the sacred enclosure formed there a kind of reserve of wild animals which it was forbidden to kill. Exactly the same habit prevailing some centuries later in Ta'if provides an interesting parallel. On the other hand, the sacrificial ritual of Hierapolis, precluding bloodshed (the animals were instead hanged on trees and then burned, or else thrown from the stairs of the temple), reminds us of the recommendation in the Allat sanctuary in Palmyra already alluded to.

The notion of *ḥaram* was, in the Arabic traditions, attached to both sanctuaries and burials. In both cases, these places could serve as an asylum and were considered sacred; the same name was also used to describe their character. Some time ago I tried to show that the funerary monuments in the lands subject to Arab migrations in the Hellenistic period display some characteristic features that can be traced back to the beliefs of the nomads[12]. The stelae called *nefesh*, representing deceased individuals placed usually but not necessarily on their tombs, have been identified, as is commonly accepted, with the souls of the dead who inhabited them, in the same way as a divinity inhabited a baetyl. Instances of such monuments, and texts explaining their meaning, can be found not only in Nabataean territory (Petra, Madaba, Umm el-Djimal, etc.)[13], but also in Palmyra, in the Ituraean domains in Lebanon, and in the region of Edessa, in fact wherever the migrating tribes settled.

Later on, among the sedentaries, the primitive sense of such monuments was gradually lost, and *nefesh* became just one name among others for a funerary monument. Originally, however, the *nefesh* was always individual and related to a particular conception of the after-life.

One of the best documented sites is, in this respect, Petra. A number of stelae, often explicitly called *nefesh*, are engraved there on the rock, sometimes inside tombs, but in many cases without apparent relation to any tomb in the neighbourhood[14]. A burial was one thing, and the monument, a receptacle of the soul, another. Monuments of this kind, published and discussed by J. Starcky and F. Zayadine, leave no place for doubt about this distinction. The last named author is quite right, in my opinion, to place on the same footing the small pyramidal stelae in relief, the pyramids of the so-called Obelisk tomb, and figurative sculptures on some other tombs (e.g. 'Soldier's tomb'), and further to compare them with such a structure as the pyramidal monument in Hermel in Lebanon, a cenotaph or memorial upon a grave. To the same category belonged the *nefesh* of Hamrat in Sueida (Hauran), now destroyed without trace but recorded by a 19th century engraving[15].

F. Zayadine suggests that the origin of the architectural form is to be looked for in Alexandria, which is indeed very possible. The underlying concepts and beliefs, however, need not be a tributary of the Egyptian practice. They seem, on the contrary, well in line with what is known about the customs of Arabia. They belong, in my opinion, to the religion of the nomadic tribes which migrated, during the Hellenistic period, northwards: the Nabaṭu and the Shalamu, founders of the Nabataean kingdom, the Ituraeans, and other groups who went as far as Palmyra and beyond the Euphrates. These people brought their beliefs with them and are responsible for the spread of a particular type of tomb monument, the *nefesh*, in their respective areas of settlement. The *nefesh* monuments are not mentioned in the Bible or other contemporary sources, and appear only in the Hellenistic period. Older populations have sometimes adopted the term *nefesh*, but not the notion

[8] CIS II 4501; J. Starcky, *Semitica 22*, 1972, p. 60 and 64–65 (translated as 'communauté du village'); M. Gawlikowski, *Syria 48*, 1971, p. 417 (the word is partly restored).

[9] *Semitica 27*, 1977, p. 117 sq.

[10] 2 *Chron.* 33, 19.

[11] De Dea Syria, 41.

[12] *Berytus 21*, 1972, p. 5 sq.

[13] Cf. M. Gawlikowski, *Monuments Funéraires de Palmyre*, Varsovie 1970, pp. 22–43; *Berytus 21*, 1972, p. 7, note 15.

[14] F. Zayadine, *A New Commemorative Stele at Petra, Essays in Memory of Paul W. Lapp*, Pittsburgh 1971, p. 57 sq.; J. Starcky, *RB 72*, 1965, pp. 95–97, *ADAJ 10*, 1965, p. 44; cf. already R. Dussaud, *La Pénétration des Arabes en Syrie avant l'Islam*, Paris 1955, p. 32.

[15] R. E. Brünnow—A. von Domaszewski, *Die Provincia Arabia III*, Strasburg 1909, p. 98–100, FIG. 992–995; M. de Vogüé, *Syrie Centrale I*, Paris 1865, p. 29, PL. I.

of the soul incorporated in it; instances can be quoted of family tombs thus called in Palestine, Palmyra, and elsewhere.

Several foundation inscriptions from Hegra put it quite clearly that the family rock-cut tombs there were considered *ḥaram*, according to the ways of *ḥaram* of what is consecrated to Dushara among the Nabaṭu and the Shalamu'[16]. They were thus the inalienable property of gods, for the exclusive use of the founder and his family. In the same way, sacred grounds inside their enclosures were inalienable property of a divinity.

Therefore, sanctuaries and burial places, different as they were from each other, both shared the characteristics of things forbidden and protected by religious sanctions. The double meaning of the word *ḥaram* (parallel to the Latin *sacer*), applying to anything excluded from everyday life, either by sanctity or impurity, is well illustrated by this situation.

There is every reason to believe that the rock-cut tombs of Petra did not differ in character from those of Hegra. Both groups should be, and are, considered together when their architectural forms are being analysed; they should also be considered together in regard to their meaning. Besides, the foundation inscription of the Qabr et-Turkman in Petra, which is the only one on this site except the late epigraph of Sextius Florentinus, irrelevant for our purpose, is written in exactly the same terms as the Hegra inscriptions, with one notable difference: there are no names except divine[17]. That is why I have insisted in the recent past that this strange anonymity of Petraean funerary monuments must have a profound reason behind it. It is far from obvious or self-explanatory[18].

It was recently stated that this apparent mystery can be easily explained when one considers some fragmentary epitaphs mentioning the names of the queen Shaqilat and her 'brother' 'Uneishu, found in tomb no 813[19]. These finds, isolated in one tomb, do not prove a common use of epitaphs inside the rock-cut chambers (it is enough to recall the abundance of funerary inscriptions in Palmyra, where many tombs were also exposed through the centuries), but above all they do not explain the lack of foundation texts on the outside façades of the tombs, where large spaces invited such commemoration on the Hegra example. An epitaph inside could not possibly help to identify the monument, as the interior was inaccessible to anyone except the family. If these tombs are anonymous, they were made so intentionally.

In my quoted paper, I have expressed the supposition that there was an interdiction of religious character, barring the founders of tombs in Petra from putting their names on their monuments. The fact that the only inscription engraved on a façade there carefully omits these names, but not the mention of consecration to Dushara and other gods, seems to prove the point.

The reasons for such an unusual interdiction can only be guessed at. I have tentatively compared a passage from Diodorus where this author from the beginning of the Hellenistic period states that the Nabataeans were forbidden under the death penalty to build houses[20]. This statement, if not fanciful, cannot reflect a general custom, and I have suggested that it was limited to the site of Petra alone, originally a *ḥaram*. The probable reason for the anonymity of the tombs could be this old interdiction.

Admittedly, nothing here can be proved, so it is perhaps enough to state the problem; although remaining open, it is a real one.

The great 'temple tombs', generally considered now as royal since their chronology is fixed, by keeping as they do strict anonymity, press the point even further. It was recently remarked by F. Zayadine that at least one of them, the Deir, was actually a temple of the deified king Obodas, with a baetyl in relief representing him on the back wall of the chamber[21]. Outwardly, however, there are no relevant differences between this façade and for instance el-Khazneh, certainly a tomb. Besides, certain triclinia, or rock-cut chambers serving for the ritual of sacred meals, often display the same kind of façades as do the funerary monuments. The distinction between the funerary and some of the cultual monuments is accordingly not always clear from the architectural point of view. In all likelihood, both kinds of monuments were placed under a similar religious protection, both were *ḥaram* 'according to the custom of consecration of the Nabaṭu'. This custom can be detected, as applied to sacred grounds and tombs alike, in pre-Islamic Arabia. When both categories cannot be considered the same, for that reason, they are both consecrated to gods according to one rule. This rule had very wide application indeed: from land to buildings and movable property, any of which could have been consecrated to gods and exempted by that means from transfer or profane use. It can be detected wherever the nomadic traditions of the Syro-Arabian desert survived: from the Biblical *ḥerem*, implying a wholesale slaughter of the enemy, to the consecration acts of the Nabataeans and the customs of pagan Arabia. Some ways of the settled populations in Syria, such as the keeping of protected animals in Hierapolis, might also reflect the same origin.

[16] CIS II 197, 199, 206, 209.

[17] CIS II 350; cf. J. T. Milik, *RB 66*, 1959, p. 555.

[18] *Berytus 24*, 1975/76, p. 35 sq.

[19] F. Zayadine, in *Petra et la Nabatène*, Museum de Lyon 1978, p. 68; *ADAJ 18*, 1973, p. 81.

[20] *Hist. XIX*, 94, 2–5.

[21] Cf. G. Dalman, *Neue Petra-Forschungen*, 1912, p. 92, no 73; F. Zayadine, *ADAJ 21*, 1976, p. 139 and *Petra et la Nabatène*, p. 70.

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A New Umayyad Palace at the Citadel of Amman

During November of 1974 the Spanish Archaeological Mission in Jordan, while proceeding with its restoration of Qusayr Amra[1], began a preliminary documentation of the area known as the Umayyad Palace, on the citadel of Amman. This important task was offered to the Spanish Mission by the late Dr Yacoub Aweis who was then the Director of the Department of Antiquities. He is remembered by all of us with gratitude and appreciation. Dr Adnan Hadidi, who is now the Director of Antiquities, has offered us enthusiastic help and every encouragement.

The Umayyad Palace, as it is called, is the best preserved structure to be found on the citadel. It is located directly next to a great mass of ruins excavated by an Italian mission beginning in 1927. This effort was directed by Giacomo Guidi and later by Renato Bartoccini[2].

Our mission's first objective was to document the visible remains in the most precise manner possible, beginning with the Qasr which was the most significant and interesting element. Any other course of action would not have been possible at that time in fact, because the entire area we wished to study was occupied by the Jordanian Army. Once we had begun to work they gradually withdrew from the site.

For all documentation work on the citadel the technique of photogrametry was used to ensure speed and precision. For this effort the Spanish Mission relied upon the valuable collaboration of the Servicio de Fotogrametría of the Polytechnic University of Madrid[3].

Using this documentary basis, the excavation of the eastern side of the building was begun in 1978. The eastern side was the only area which had not been excavated previously. Dr Emilio Olavarri was in charge of the excavation, undertaken with the co-operation of the Jordanian Department of Antiquities. Further test pits were made inside the monument in order to complete the body of data on its construction. As we shall see, the digging has enabled us to document rather faithfully the building itself as well as the complex of structures of which it is a part.

During the final phases of the digging campaign, the co-operation of the Spanish Air Force made it possible to photograph from the air of the entire citadel (FIG. 1), especially the area being studied by the Mission, which was recorded in detail (FIG. 2). The result of this project was a precise plan of the area which greatly facilitated our work in the northern sector. Concurrently, we photogrametrically drew elevations of the walls, yielding information to be discussed later on.

In 1979 excavations were carried out in two different areas. First a new trench was opened on the south west side of the building in order to connect with the area excavated under the direction of Dr Fawzi Zayadin of the Department of Antiquities[4].

A second area of excavation was begun on the extreme northern side of the citadel where obviously important architectural remains were visible, giving rise to the idea that an important nucleus of the construction complex of the northern area of the citadel existed there.

In close collaboration with the Department of Antiquities, and even as the digging was going on, the consolidation and restoration of the whole complex was initiated.

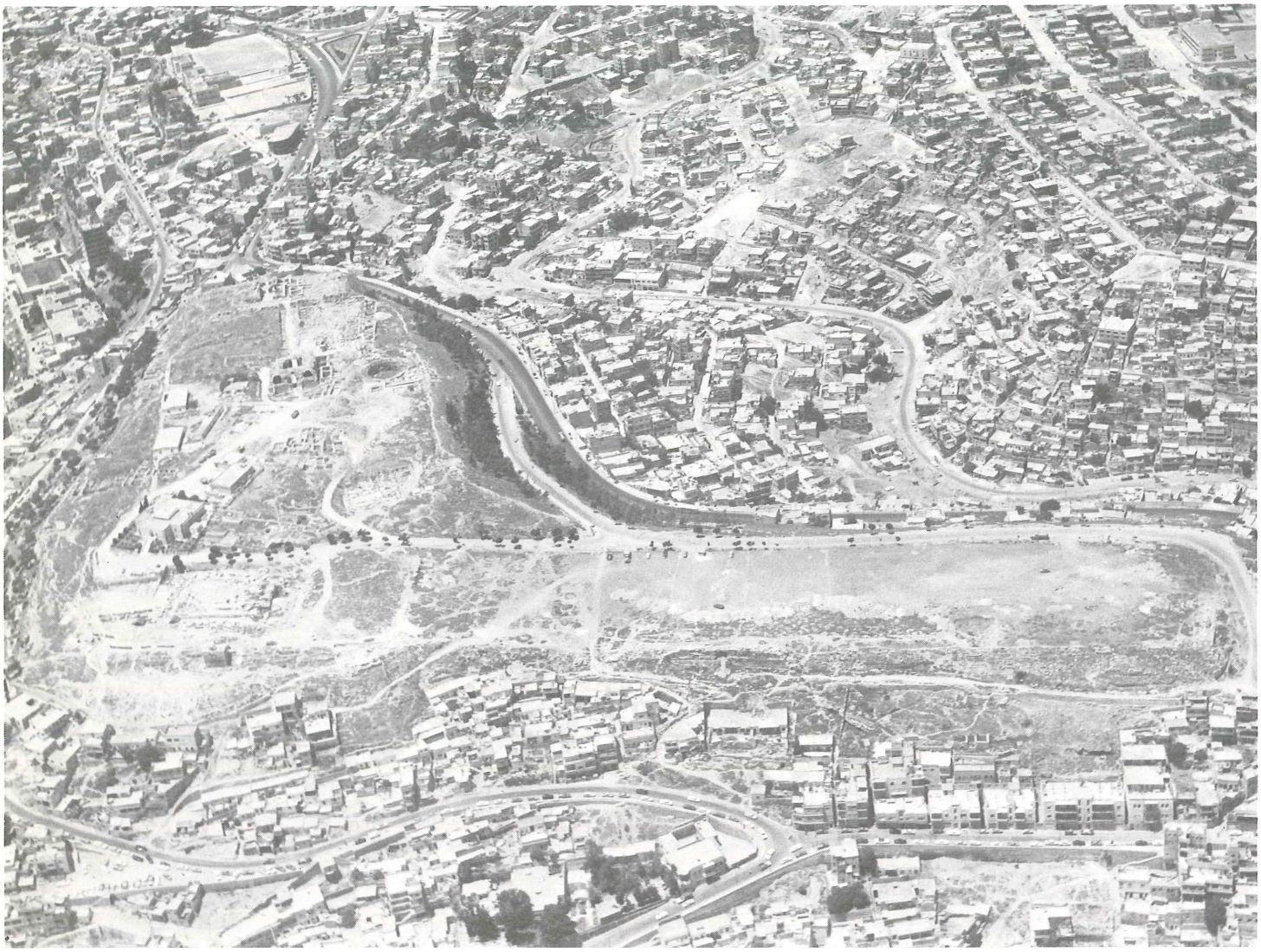
At this point in our ongoing study we have been able to establish some preliminary conclusions which, because of their special interest, we wish to make known here.

Certainly we are dealing with a splendid architectural complex of the Umayyad period which corresponds with the idea of an integrated city palace or 'Dar-al-Imara'. This complex, which was surely both the residence of an emir or governor and the seat of administration, was constructed by taking advantage of a number of pre-existing buildings. This reliance upon earlier structures determined, to a great extent, the form of the new complex although the function and prior aspect of those structures were radically transformed.

The new palace was placed at the extreme north of the citadel or Qala' on a largely artificial platform which was supported by large buttressing walls, especially on the northern and western sides. The complex has a trapezoidal form with its main side facing south, where the main entrance must have been (FIG. 3).

Within it, it is possible to distinguish three parts, perfectly outlined by the pre-existing temenos or agora dating to the Roman period which occupies a central panel extending east to west and amounting to approximately half the ground area

1. Aerial view of the citadel of Amman from the south.



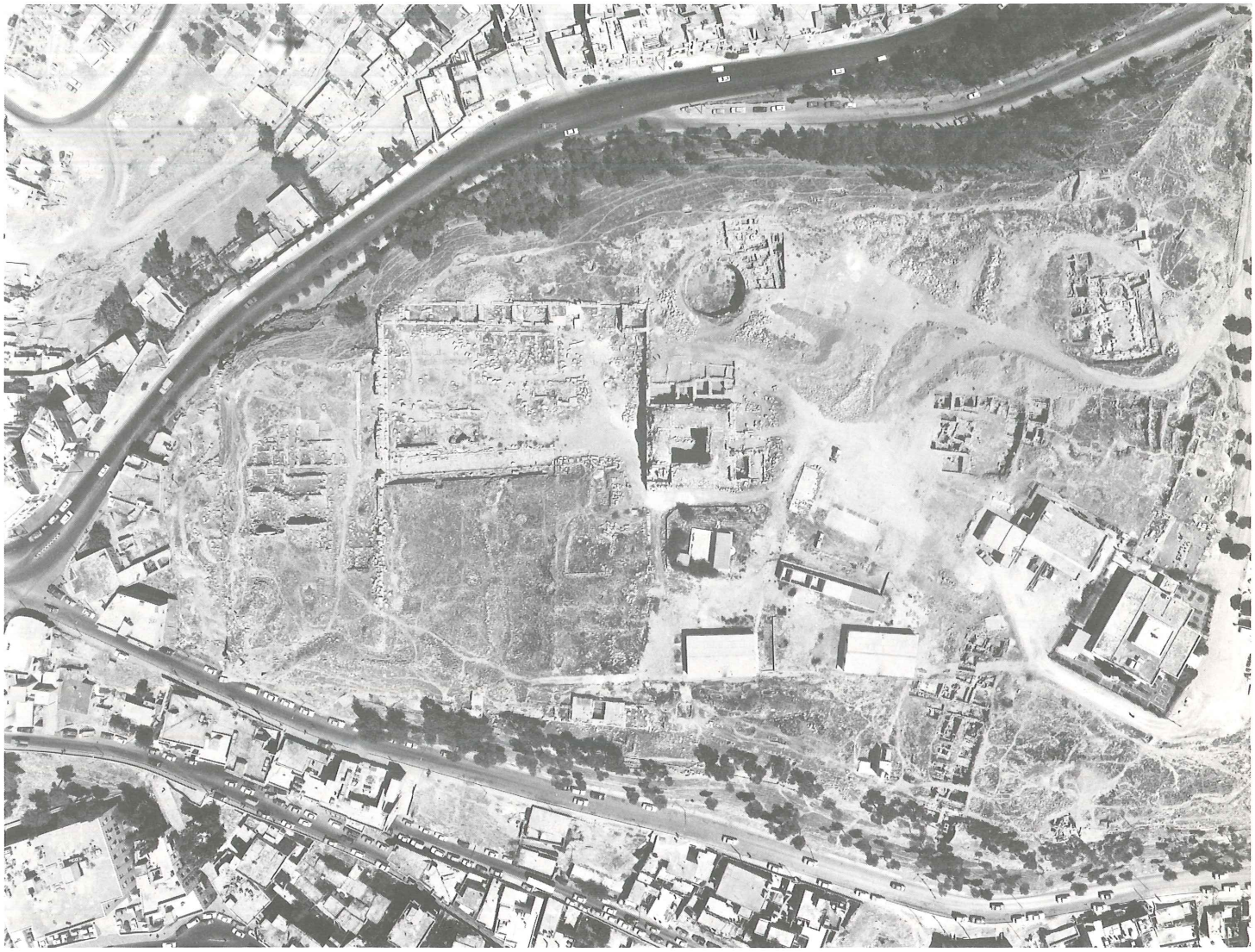
of the palace. At both the north and south ends two narrower areas remain; the northern one being narrower and the southern rather wider. In the centre of this latter area stands the building heretofore known as the Umayyad Palace or 'Qasr'. In the light of our current findings it is possible to ascertain that the very well preserved building is probably a great vestibule or waiting room where people would wait to be received in audience. It is also possible that it was, in fact, a reception room. It is almost certain that there was a courtyard in front of this vestibule which communicated with the door of the main entrance.

The remains of the palace are well defined on its northern, eastern and western sides. This is not the case on the southern side, where further excavation will be required in order to know its outline completely. The northern side is enclosed with a huge buttressing wall, which even today is to be seen preserved to a height of ten metres. In the corners of this wall are small towers. The wall continues on the western side, but with a diminishing level of preservation. Near the south-west corner a door opens between two fortified towers. These towers and the rest of the perimeter walls in that vicinity are to be dated to the Roman period. It corresponds to the extreme area of the southwest corner of the temenos; the south wall of which appears as though it was intended to connect with the tower on the north side of the gate.

A large portion of the eastern side of the citadel wall is buried in ancient deposits as well as fill from the Italian excavation. On this side the wall forms three parts, corresponding to the northern area. In this last part the wall is preserved, practically buried except for a small part exposed by Dr Zayadine's digging.

On the south side the boundary of the Palace is in doubt as

2. Aerial metric photography of the palace area.



there has been very little excavation in that area. In the section excavated by Dr Zayadine there is a wall of great width, (1 m. 10 cm.) of very solid construction with its foundations in virigin soil.

In our opinion, it was used as an enclosing wall for the Umayyad compound. We hope that the next programme of excavation will clear up questions on this point and also locate the main door of the Palace.

We offer the hypothesis that between this door and the vestibule there was a courtyard or some other uncovered space which permitted a view of the building's façade.

The vestibule

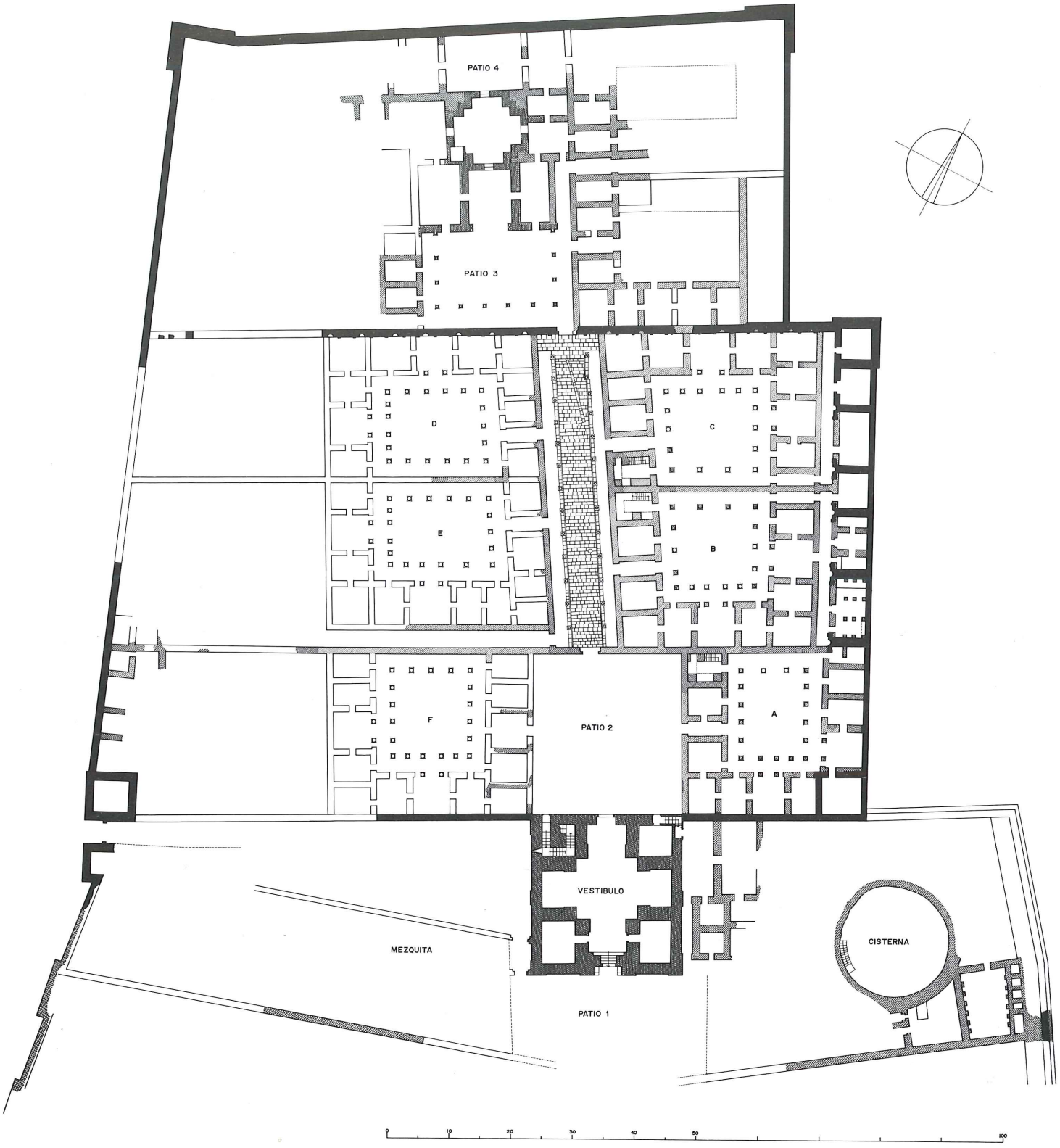
The building, although simple, was not lacking in grandeur (FIG. 4).

The door of this building, which I refer to as the vestibule opens at the back of a niche which probably was spanned with a great arch (FIG. 5). This combination is often found in Early Islamic architecture. The façade presents only some slight protruberances bordering the niche of the door and the corners. The upper part, judging by the remains we found in the immediate area, must have had a cornice comprised of rolling brackets and crow feet.

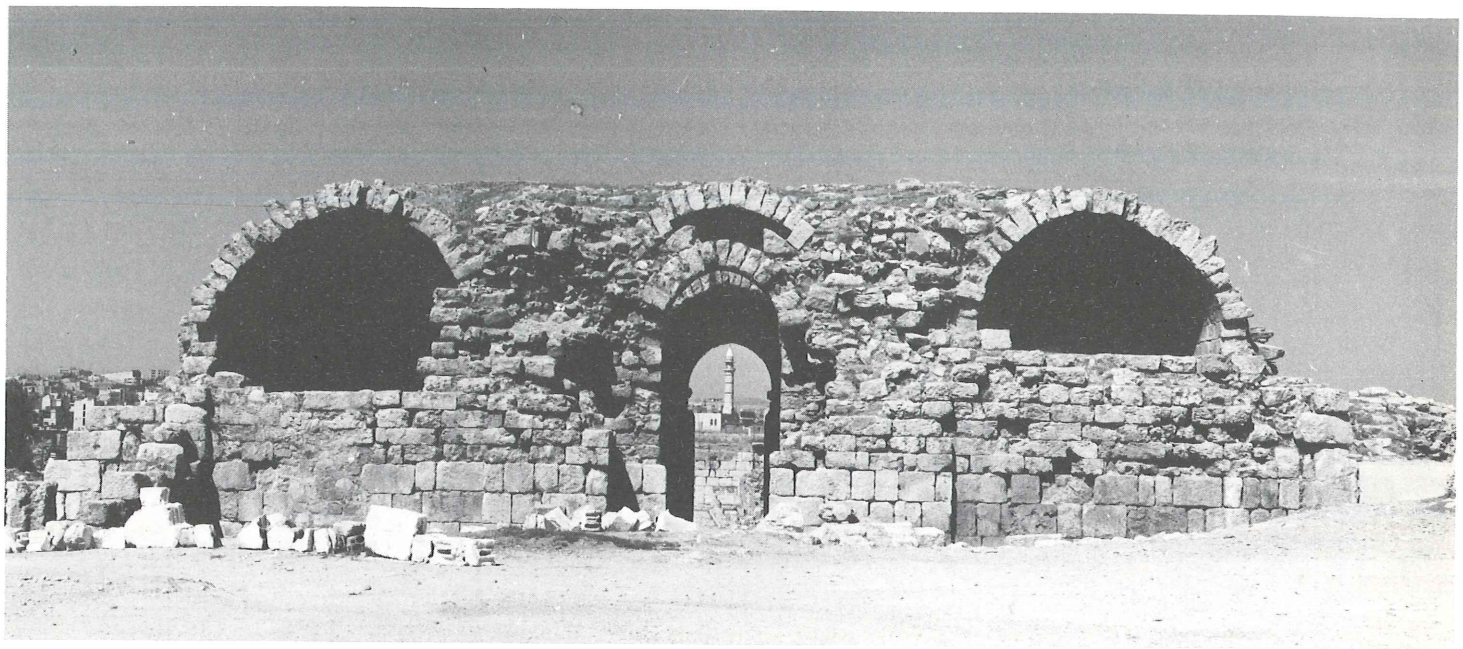
At the extreme western end of the façade a door opened which we believe may have communicated with a corridor or a street which led from the western door of the enclosure mentioned earlier, to the first courtyard. A second door, which is situated obliquely in the western façade of the vestibule must have increased the control of access to the courtyard and the Palace.

On the eastern side of the vestibule there are a series of dwellings excavated by the Spanish Mission. Their most

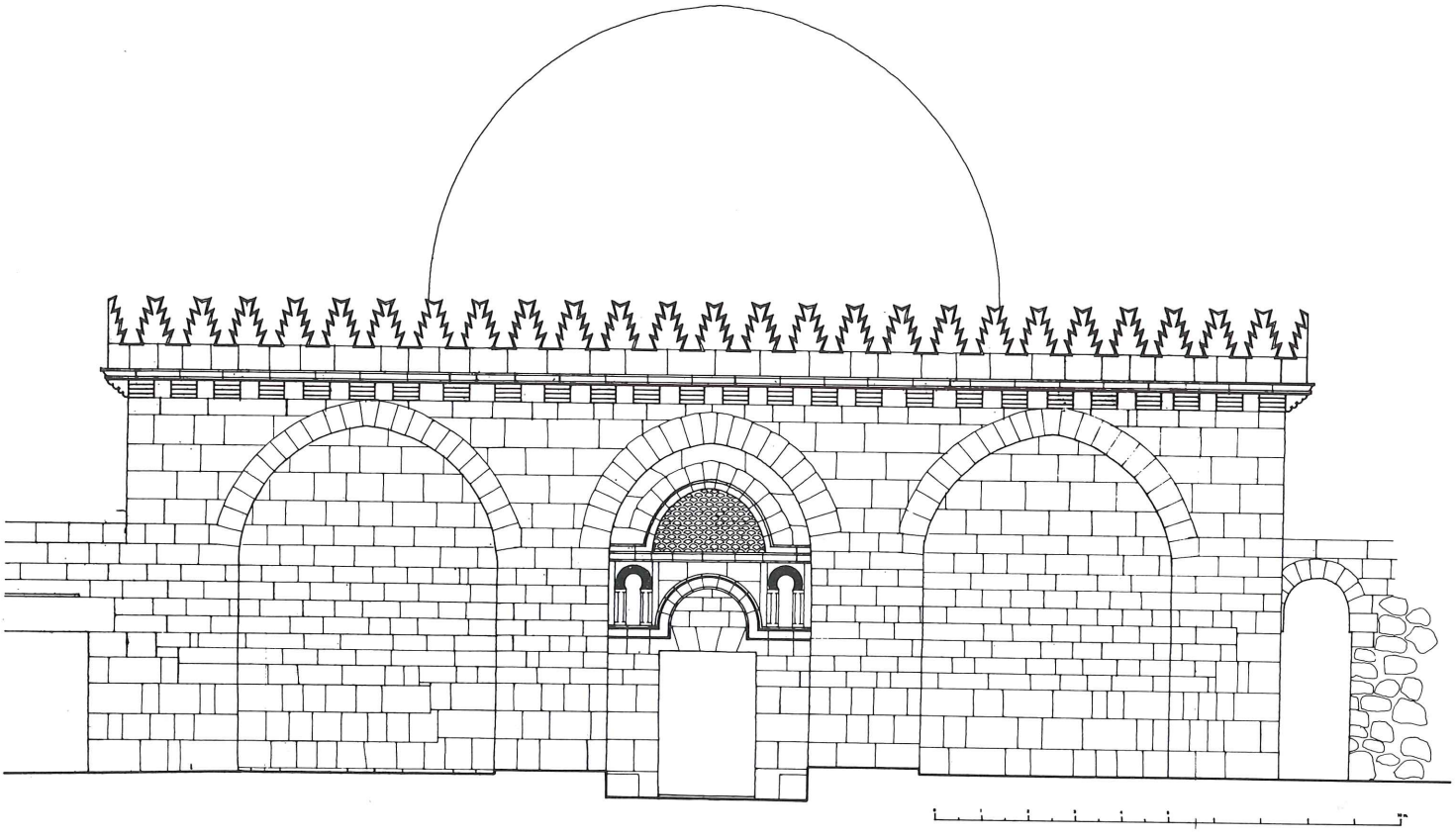
3. Reconstruction plan of the Umayyad Palace of Amman.



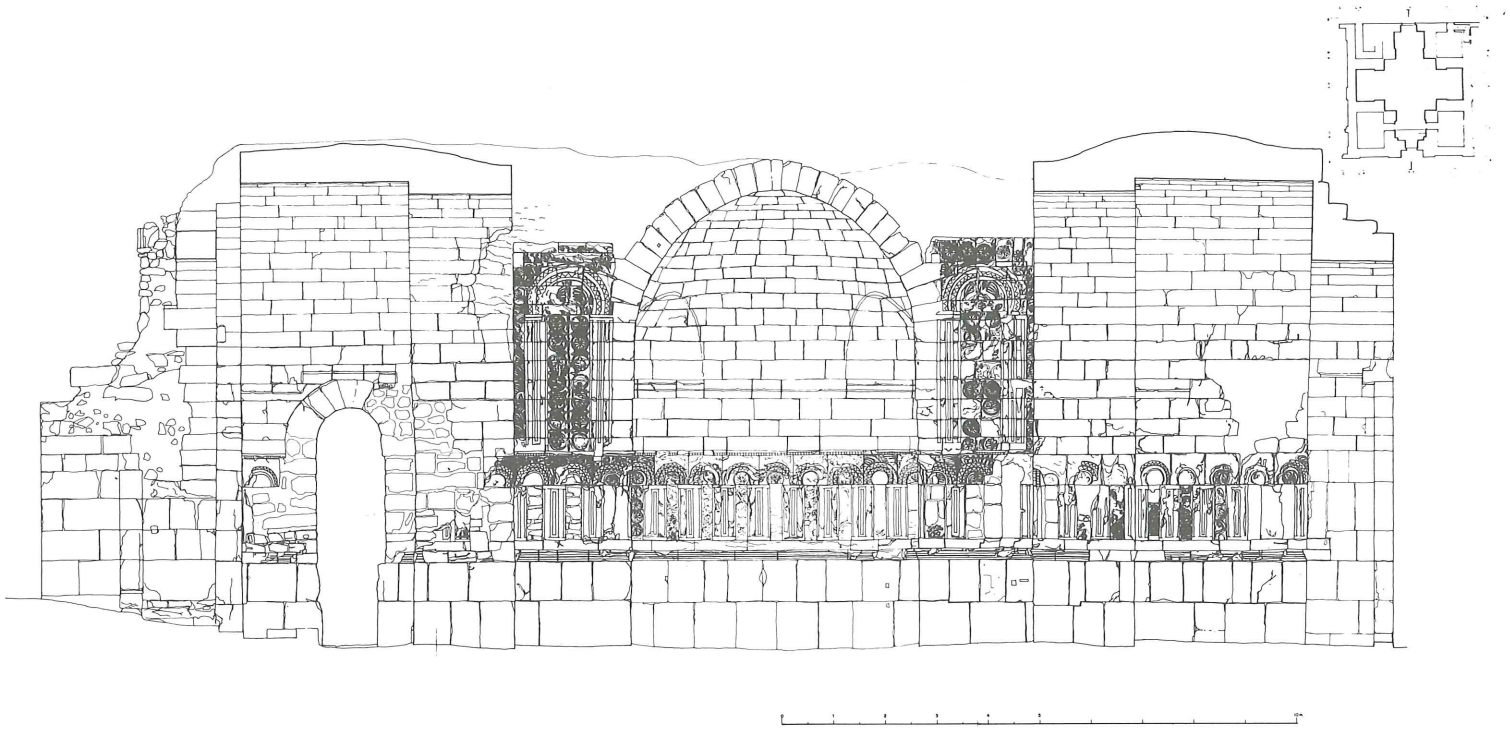
4. The south façade of the Vestibule.



5. Hypothetical reconstruction of the Vestibule façade.



6. Interior section of the Vestibule.



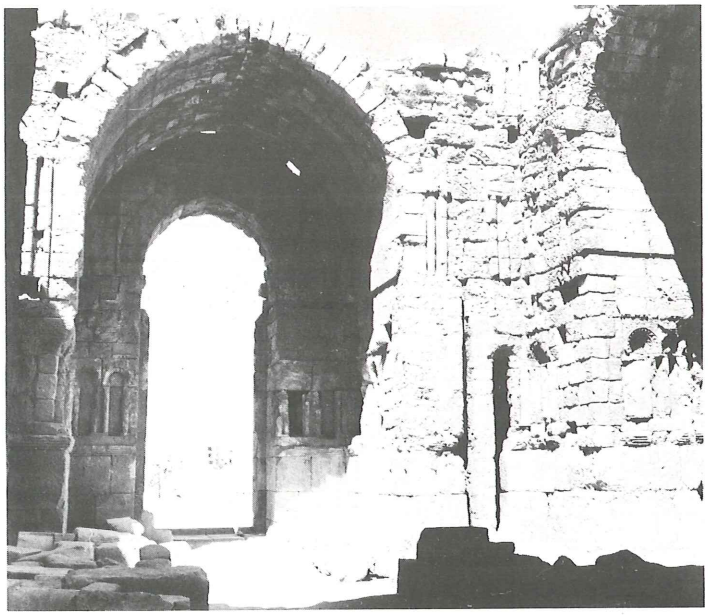
outstanding feature is a corridor, close to the façade, which permits access between the first courtyard and a second one, opening immediately beyond thus dispensing with the necessity of crossing through the vestibule. The interior of the vestibule (FIG. 6) is in the form of a Greek Cross which leaves four satellite circuits between the arms. The cross is formed by a central square with four radiating arms. All the arms are similar to each other, but they are not identical. The main difference between them is the way in which they are covered. The arm through which access is gained is a little deeper than the others because of an arch which is attached at the back of it.

The floor level of the vestibule is about 90 cms. lower than the original ground level of the first courtyard. There used to be a stairway connecting them, of which some steps are preserved. Several of these are earlier than the present structure, while others are contemporary.

The arm which gives access, as well as the one opposite it, through which one passed to the second courtyard, are covered by a barrel vault (FIGS 7 & 8), slightly sharpened by the lapsing of the centre of the curve by a ratio of 1:10 off dead centre. The two other arms are covered by semi-domes. Two unusual squinches fit the rounded vaults to the square room plan. In all cases the vaults mark their beginning with a double prominence.

Four great main arches define the central space. How this central space was covered, if in fact it was covered, is impossible to determine. Perhaps it was left open in the same manner as was the courtyard with which the four arms of the

7. The interior of the Vestibule or Audience Hall from the south entrance.



cross formed four Iwans. Although we favour the former suggestion, that it was covered, we wish to mention both possibilities. In the first case, we believe that the most logical form of covering it would have been a dome of stone, supported over four pseudo-squinches similar to those found on the lateral arms (FIG. 9). Possibly the base of the dome

8. The interior of the Vestibule from the north door.



would have had windows for the illumination of the interior. Another likely solution would be to imagine a cupola or covering of wood, in the Syrian tradition of roofing large spaces and used by the Umayyads in the Dome of the Rock. Notwithstanding the enormous size of the dome we consider the building to have been strong enough to have supported it.

The main interior walls are decorated with a line of small blind arches supported by small double half columns. They rest upon a basic moulding above a plain flat belt. The small columns have no base or capitel, but only a simple plinthos that serves as both a base and capitel for both columns. The small arches are of horse-shoe form decorated with 'wolves teeth'. A small moulding formed by a thin line of 'wolves teeth' decorates the edge[5].

To the west side of the vestibule nothing has been excavated. We think that the mosque may have been located there because the palace certainly had one, as did many other such examples of early Islamic architecture.

The central area of the palace

The second courtyard is situated within the area of the former forum or 'temenos' of the Roman period. Judging from what is visible today it must have been a big square of about 78 metres by more than 90 metres north to south and east to west, respectively. It had rooms or shops on the east side at least, as well as niches and temples on the north. The south wall seems to have been plain and the vestibule abutted it at a later date. Its interior was occupied in the Umayyad period by a number of structures which today are only partly in evidence in the eastern area. We say 'partly in evidence' because this area was excavated in the 1920's and 30's by the Italian Mission who, in their interest in uncovering Roman remains, demolished most of the Umayyad walls which marred the view of the earlier space (FIG. 10). For this reason much of our description is based upon antique photographs published by Bartocinni. These pictures enabled us to reconstruct the original plan of this area[6].

The second courtyard was simply a wide square space, at the northern end of which an arched street commences that leads to the northern area (FIGS 11 & 12). This street was placed facing directly towards the door of the vestibule, which had an early door from the 'temenos', found displaced some five metres to the west of the entrance. Because of this the access door of the second courtyard to the street was displaced equidistantly to the axis of the vestibule.

The street is nine metres 90 cm. wide with two porticoed sidewalks which left an overhead area of five metres uncovered. Each portico had 13 columns and 14 arches resting upon them, while the last rested upon the wall, as shown by the springers of the arches in the extreme northern area.

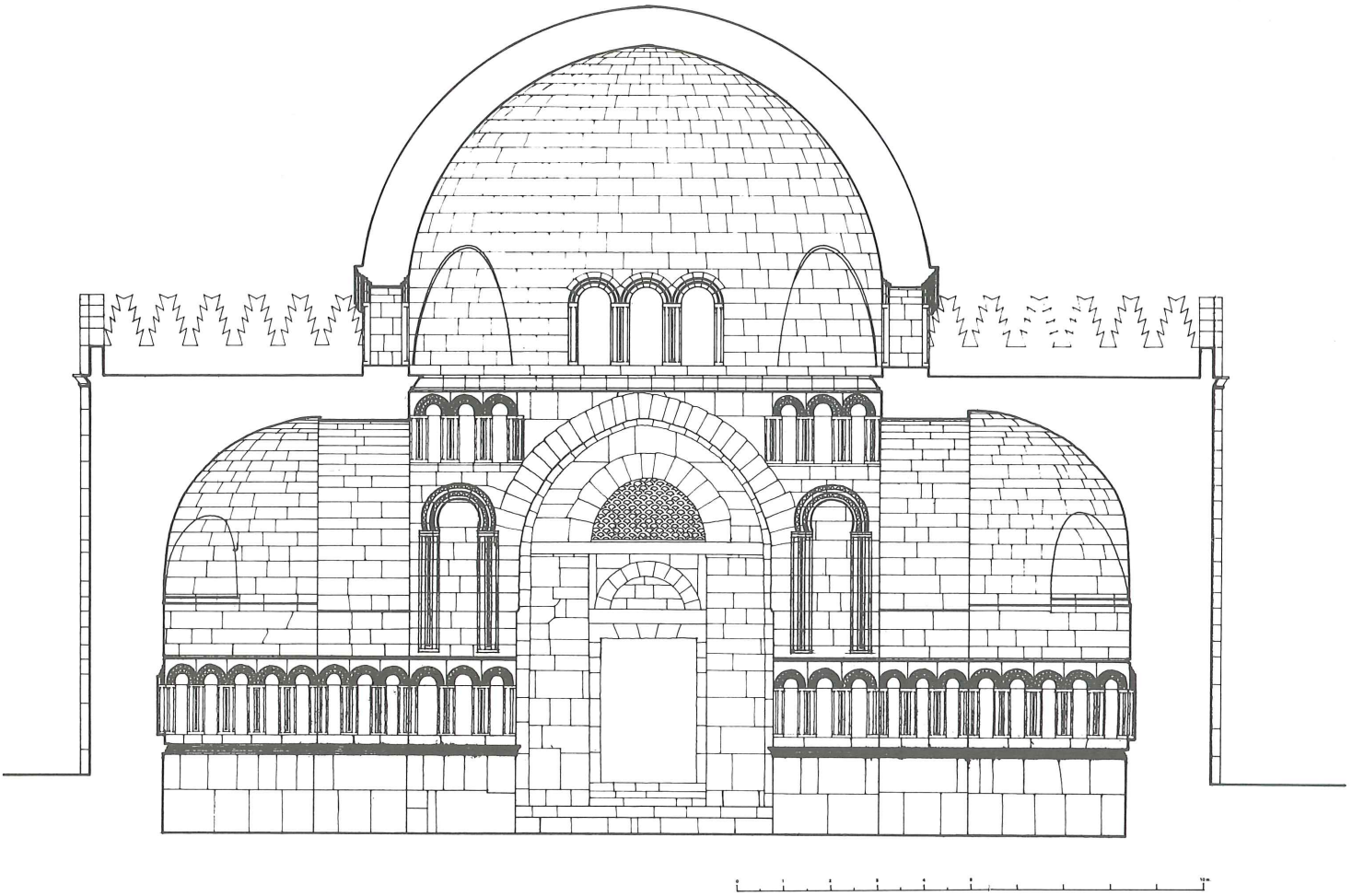
To the east of this street and of the second courtyard are the barely visible ruins of three buildings (FIG. 3). The first had a door opening on to the courtyard, while the other two had doors into the street.

The three buildings have a very similar structure around central courtyards. Those courtyards seem to have had porticos supported by columns on three sides. The only entrance is always placed on the western side. Around this patio groups of rooms are situated in Bayt patterns.

The two preserved buildings have a large room on the east side which opens on to the courtyard by offering passage between two columns. The individual doors from the surrounding rooms also open directly on to the courtyard. On the south side in both buildings are two additional large rooms that appear to have originally opened directly on to the courtyard, like Iwans. The one found in the central building gives the impression that at some later date it was closed with masonry that left only one usable access door.

On the northern side of the courtyards there were no rooms. In the central building, behind the large room of the east side, and the connecting rooms, there is a hallway that permits access to the old tabernae of the 'agora' or 'temenos' that were incorporated into the building. It appears that the case was the same with the building to the north, but its poor state of preservation made it difficult to reconstruct. It appears to have had no rooms on the south side, though there were rooms on the north. We do not believe that there were

9. Reconstruction of the interior of the Vestibule or Audience Hall.



any great structural differences between the two buildings. The only item left to be cleared up was whether the first door of the 'temenos' or forum, that had been in the north side, permitted access between this building and the northern part of the palace or if the door had been blocked off in Umayyad times.

There is practically nothing excavated of the temenos area on the western side of the porticoed street. We assume that the structure is identical to the eastern side.

The street leads to a door of the former temenos. Passing through this door and ascending steps gives access to the northern sector and the residential palace. The entrance opens on a third courtyard, which lies at a south-east angle to it. On each side of the door there were two benches which have been carved out of the pedestals of two Roman shrines.

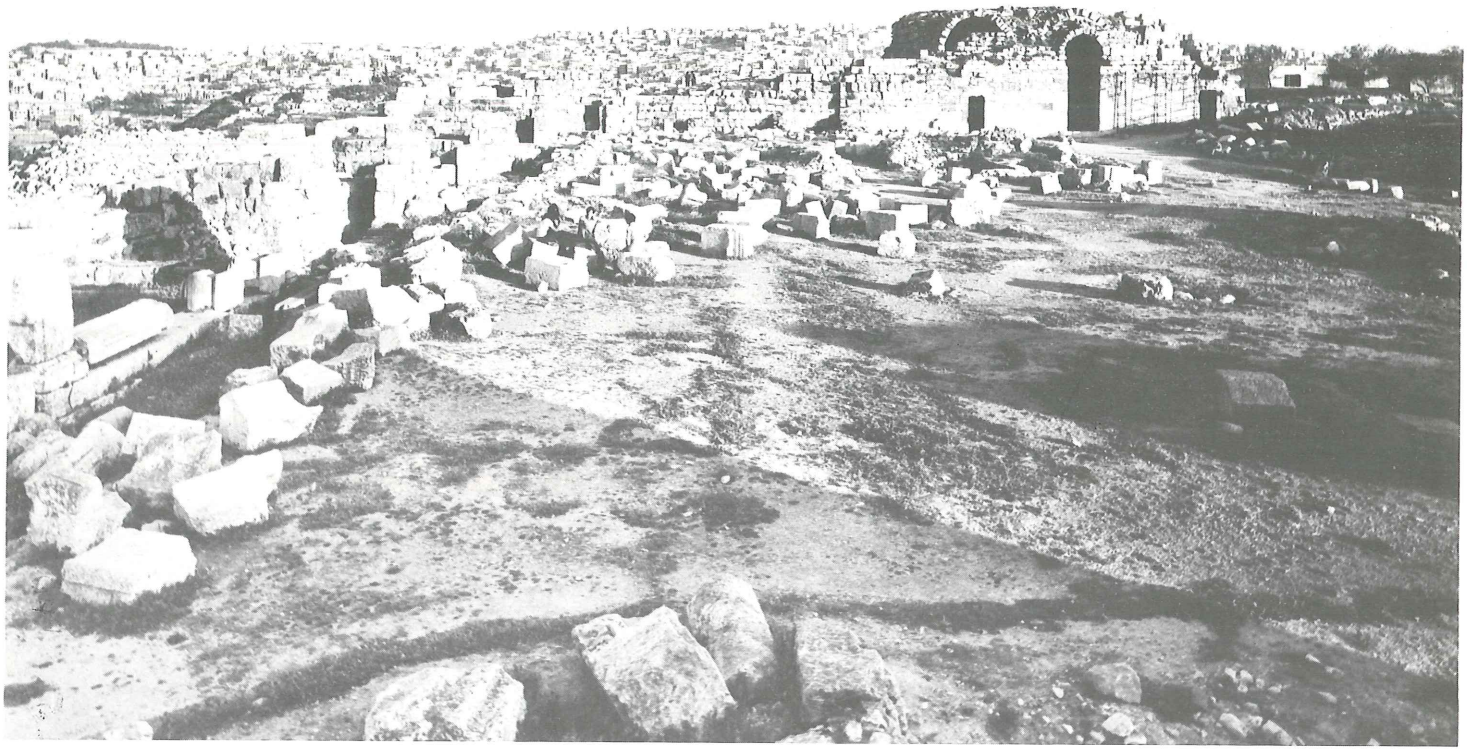
The North Area

The third courtyard seems to have had porticoes on three sides; the south, east and west. On the north the façade was open to view (FIG. 13). The eastern wall of this patio at one time abutted against the temenos within the door frame, which would indicate that this door was made smaller during the Umayyad period. On the north face can be seen a large hall, in the form of an Iwan with two side doors. In the most eastern part of this side, within the porticoed area, there is a doorway connecting it to a corridor.

The main hall (Iwan), is a large rectangular room with a door set in the centre of each of its three walls (FIGS 14 & 15). The walls are made of ashler masonry and were covered with a barrel vault, traces of which can be seen on its western elevation (FIG. 16). A large buttressing arch makes up the border of the vault toward the courtyard. On its jambs there were attached two double half-columns made of stucco, resting upon plinths rather than bases. They are similar to the half columns in the hall of Harrana.

The southern façade of the palace, in the lower courses, is plain. Judging from the debris of the upper courses we may confidently assume that the upper courses were decorated. Possibly the floor of the Iwan was paved with a mosaic set upon a foundation of cobbles. Going through the far door one enters a room with a Greek cruciform floor plan. Doors of equal size open from the end of each of the arms of the cross (FIG. 17).

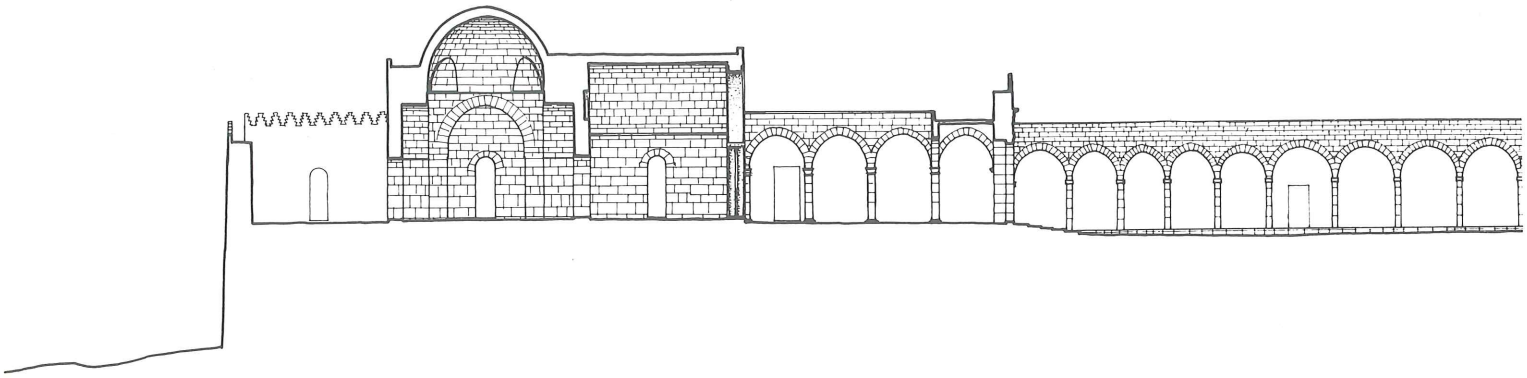
10. The temenos area with the Vestibule from the north.



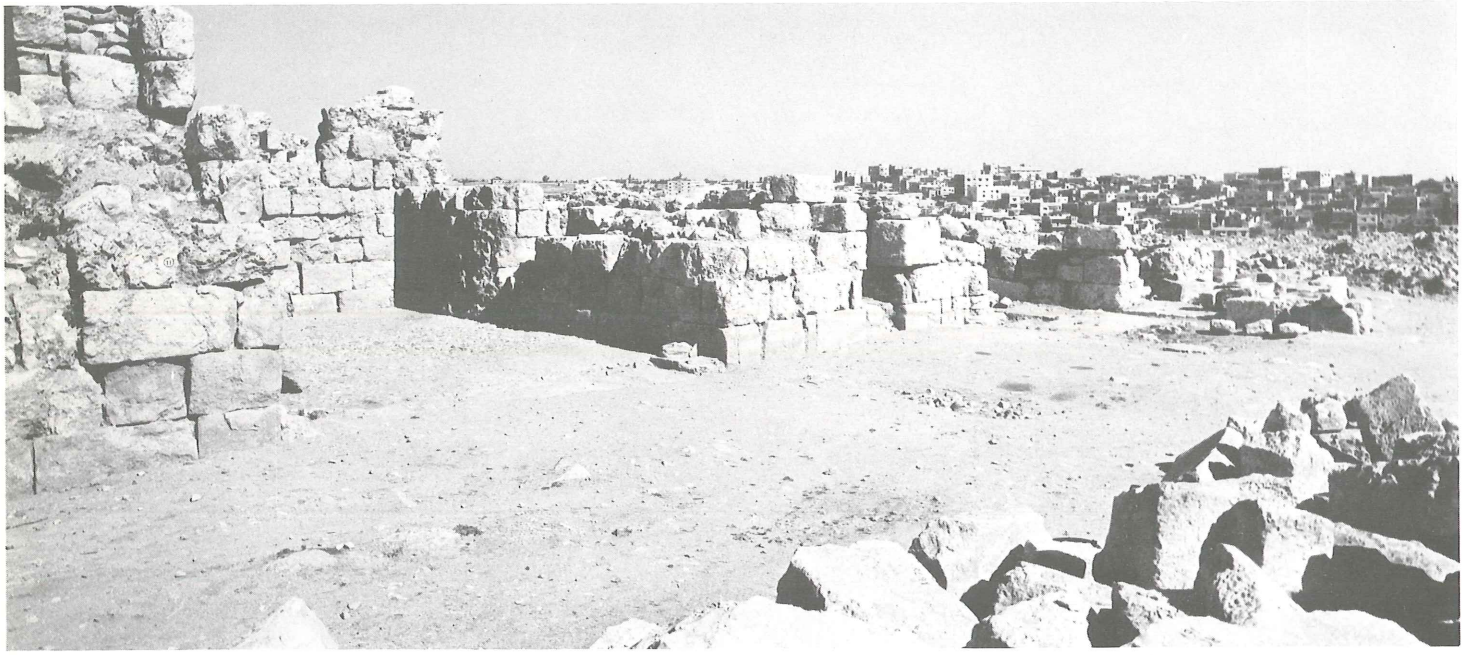
11. The temenos area and the porticoed street from the Vestibule terrace.



12. Reconstructed section of the Palace.



13. The third patio and the iwan in the north area.



On the western side the wall is preserved to a height sufficient to support the arch of the door, much like the Iwan.

The walls of this room are plain, without indications of arches or decoration of any type. We believe that the room was covered by a dome supported by either pendantives or squinches, like in the vestibule.

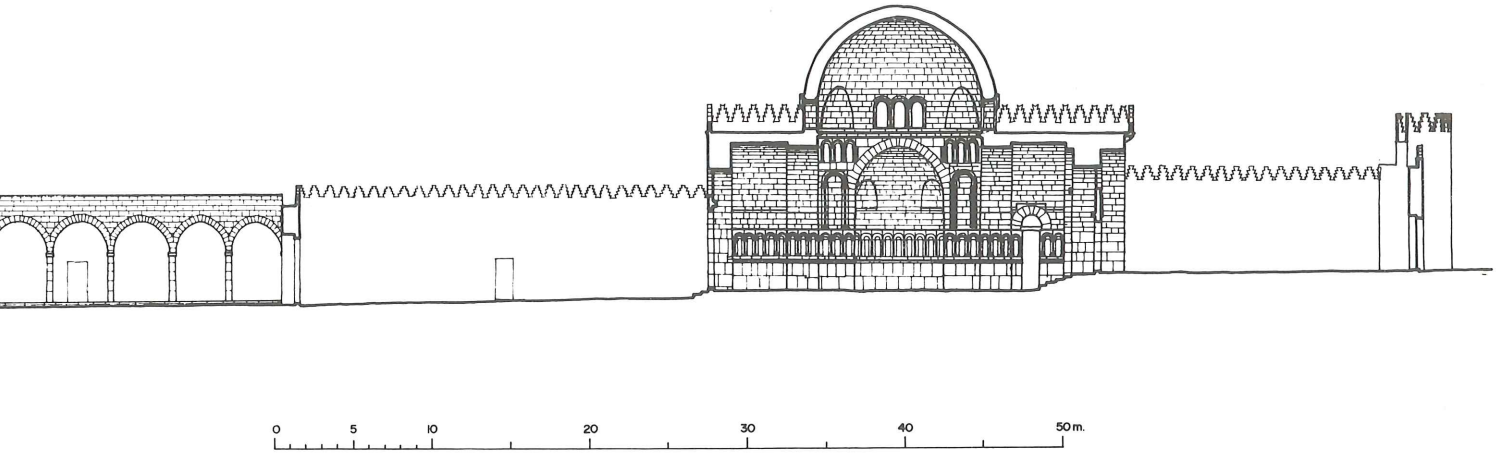
In the south west corner of this structure, is a small square room covered with a barrel vault. The purpose to which this room was put is unknown.

This cruciform-planned room, we believe, is a Diwan in the Sasanid tradition which had a mosaic pavement with geometric designs. Traces of this mosaic have been found along the bases of the walls.

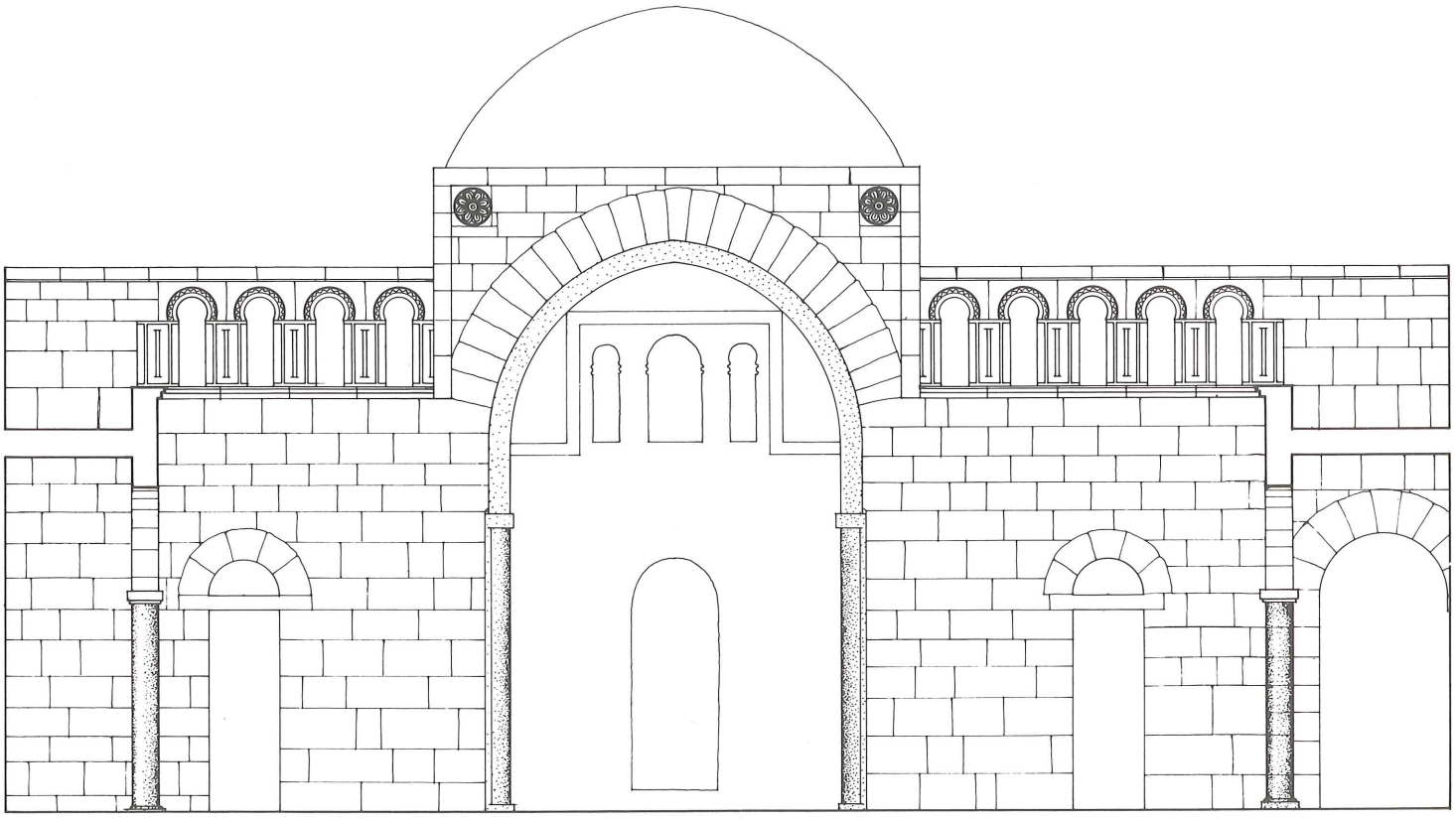
The enclosure to the north of this Diwan reaches the large Roman buttressing wall on the north side of the Palace (FIG. 18).

To the west of the Iwan and the cross plan room, there has been practically no excavation, and it is therefore impossible to define the outline of this side of the building. One can visualize a continuation of the Iwan with a rectangular room which probably also communicated with a courtyard and with the cross plan room as well. To the west of the courtyard there are three rooms and what appears to have been a corridor next to the enclosure wall of the Temenos.

The east side of this northern section of the palace is completely excavated but badly deteriorated. Directly next to the Iwan is a long room with doors connecting it to the Iwan as well as to the courtyard. There are also doors to a room



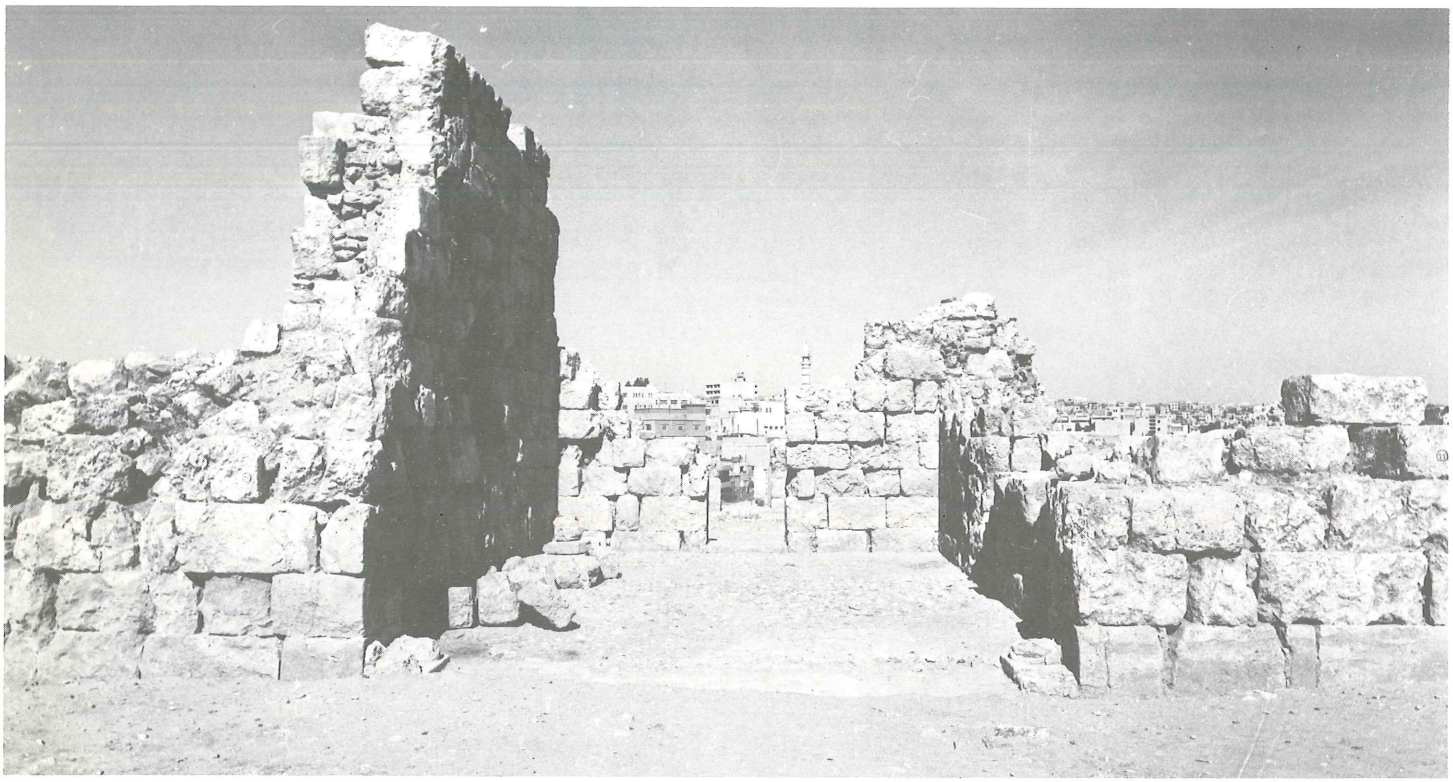
14. The façade of the iwan in the north complex.



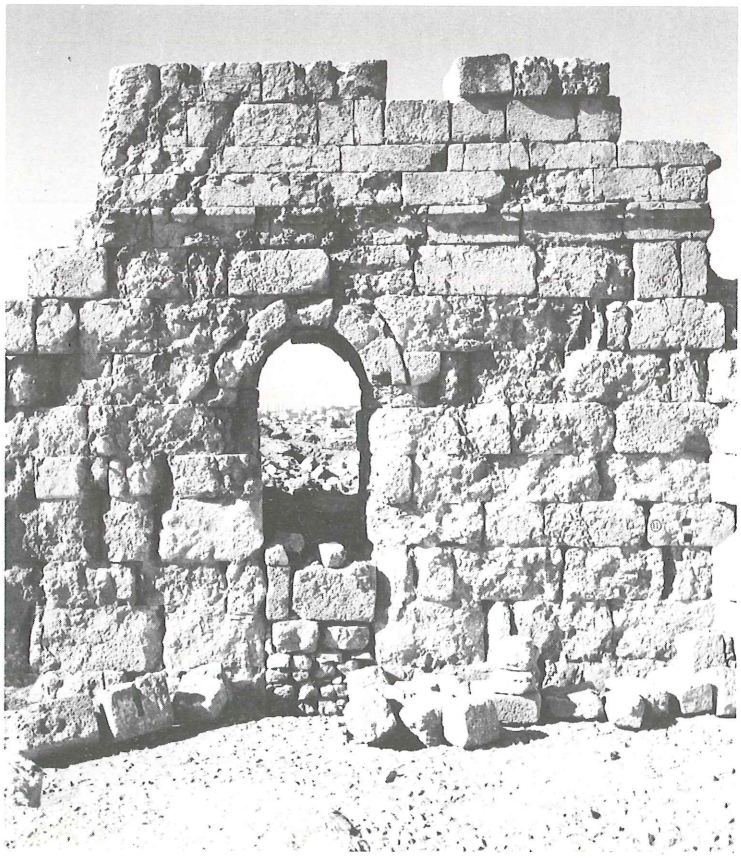
adjacent to the Iwan. Somewhat to the north there are two other rooms which extend as far as the large Roman wall. All those rooms adjacent to the Iwan and Diwan had vaults. It seems probable that these served as areas of administration or protocol.

The east wall of the patio continues northward and delimits a group of buildings which appear to have been independent and which could have been entered by two doorways. The first one opens directly upon the courtyard and seems to have communicated with yet another courtyard and surrounding rooms. Through a corridor starting from the north east corner of the third courtyard entrance was gained to this group of structures in which we again found the pattern of courtyards surrounded by rooms. Unfortunately this entire area was razed and it is impossible to say with certainty what its original form was. It seems likely that around these side courtyards structures similar to the three buildings of the temenos once existed.

15. The iwan of the north complex.



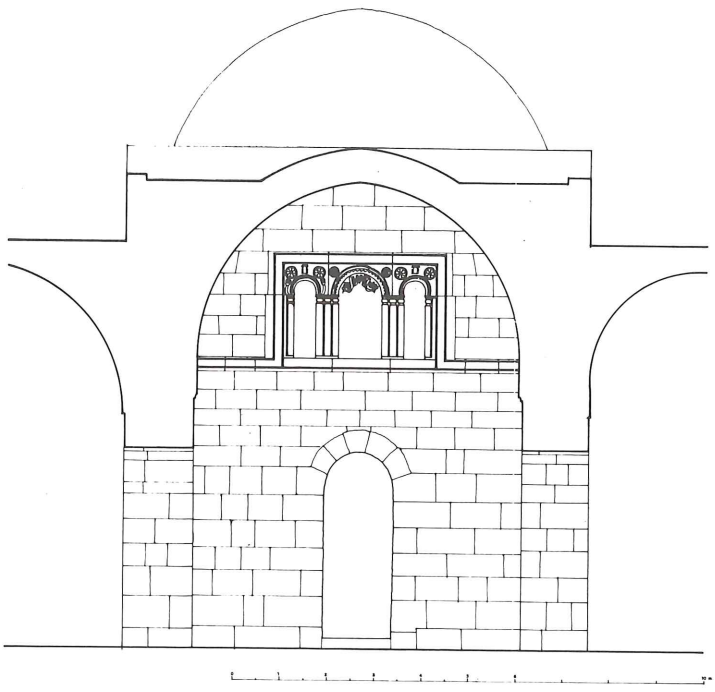
16. The west wall of the iwan.



17. The cross-plan room from the north.



18. The north end wall of the iwan.



In addition to a mosque, the palace presumably had a baths complex which were standard in this type of structure. The mosque is thought to have been to the west of the vestibule, an area easily accessible from the palace. The baths, on the other hand, were probably in the western part of the northern enclosure, close to the residential area and the throne room of the Emir or Governor.

Conclusion

To complete this architectural description we wish to say that the structures on the citadel of Amman constitute a palacial complex in which three separate areas can clearly be distinguished. To the south lies a large vestibule or waiting room, which could perhaps also be interpreted as a large public reception hall. We assume that the mosque was close to it, as well as servants' quarters, the guards' residence, cistern, warehouses, etc.

In the second area, which lies around a porticoed walk-way and courtyard, a group of buildings of residential type were to be found. These we believe were the housing areas for dignitaries or might even have had some administrative function.

Lastly, in the northern area, a residence of some size and importance is found, interpreted as the residence of the Emir or Governor, since entry was restricted, making it more private.

From this description it is possible to trace parallels between this palace and other similar complexes of the Umayyad and Abbasid periods of the 8th century. One of the most striking features is the three-fold division we observe in the compound. This reminds us of similar schemes to be found in Mushatta and Minya[7]. The disposition of the vestibule, the throne room and Bayts which surrounded it and the peripheral rooms at Musha'tta express the same composite theme. From this point of view Ujaidir represents an equally significant parallel; most of all, especially if we compare such details as the Iwan and the throne room which seem to follow a Sasanid scheme more directly than does that of Mushatta, though without doubt it is more developed. Yet other parallels are found at the Dar al Imara of Kufa[8], especially in the Iwan open to the courtyard and in the Greek cruciform room covered with a dome.

If we move from parallels of structural groupings to more singular elements we can appreciate the great similarities between the buildings that occupied the temenos area at Amman and the Medina of Qasr-el-Hair-al Sarqui[9]. There are a great many parallels of detail. For example, the vestibule door in the small shrine reminds us of the scheme of the doors at Minya, Jirbet el Mafyar, Ujaidir, Harrana, etc.

From the plan of the vestibule, faithfully corresponding to a Byzantine pattern, we derive a number of additional parallels. The Greek Cross plan, more or less elaborated, is a well known architectural feature of the Byzantine period in this area. From the praetorium of Al Mundir in Rusafa[10], through the praetorium at Umm al Jimal, closer to Amman, there is a clear typology of audience rooms along these lines. In the immediate vicinity of Amman the funerary monument of Nuweijis, of the late Roman Period, is an example of the long and strong tradition of this form in the Syrian region.

The closest parallel is doubtless that of Harranah, which we believe to be contemporary with the palace at Amman[11]. The arches and little columns which decorate the first floor of the former are very similar to those of the latter. Also, the supporting columns and arches of Harranah are very similar to those at the Iwan of Amman. This includes the decorative motif of rosetas, to be found in both structures.

The motif of small blind arches was also found in the Jebal Sais area in the south of Syria; in the two castles of Qasr-el-Hair and even at Ujaidir and is surely of a Sasanian origin.

More singular decorative elements are the rolling brackets very often used in Islamic and post-Islamic architecture in Spain, and which origin was unknown until now.

There are abundant parallels for the crow steps in much oriental architecture, especially during the Umayyad Period. They appear at Mafyar, Qasr-el-Hair al Garbi, Samarra, etc. and their survival is apparent in Western Islam. The crow steps of Amman are original. They are not in horizontal steps as elsewhere, but have steps set at an angle close to being a fish spine form.

The decorative motives in Amman had been influenced by both Byzantine and Sasanid architecture.

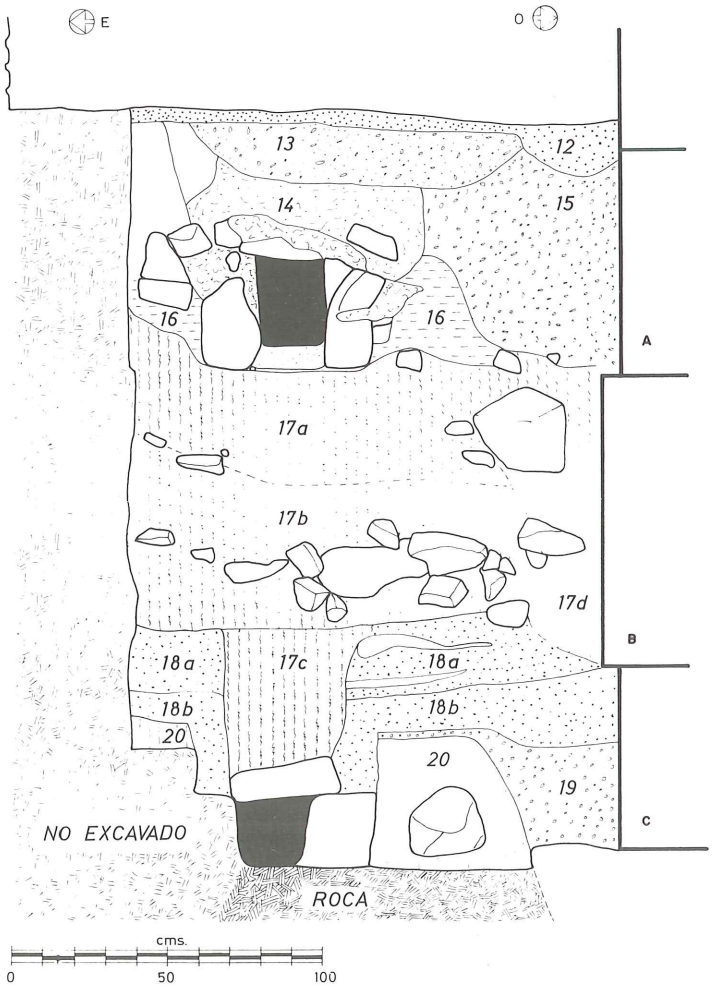
19. General view of the area excavated adjacent to the eastern façade of the Vestibule.



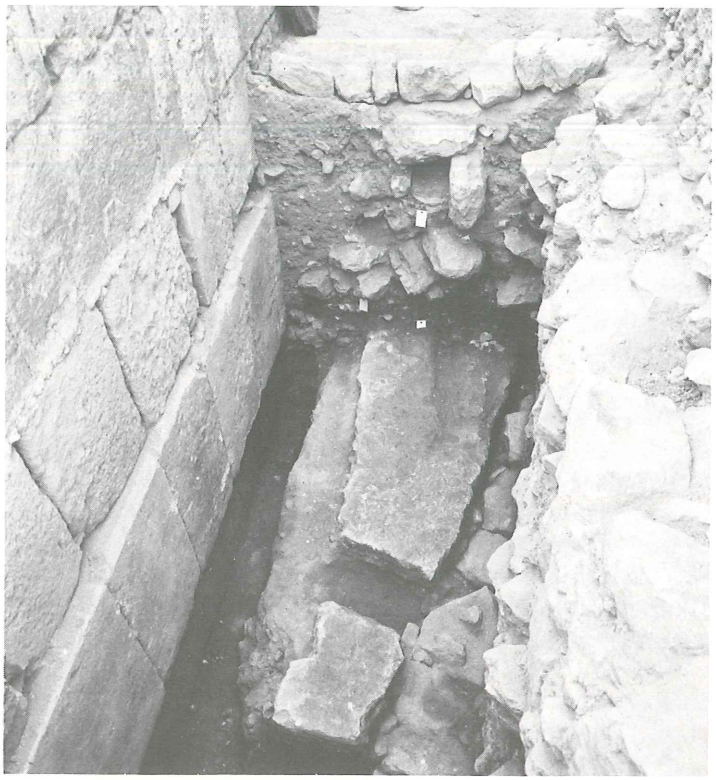
The excavation and date of the Umayyad Palace

When the Spanish Archaeological Mission in Jordan agreed to consolidate and restore the Palace situated in the Citadel of Amman, it was first considered necessary to solve the problem of the dating of the structures by archaeological soundings. Scientist have dated the vestibule to different periods. At the end of the past century, Conder[12] thought that it was built in the Abbaside era by the Calif Mamun, just before his death in 833 AD. On the other hand Creswell[13] and before him Brünnow[13 bis] dated it in the 'ghassanide' period (end of the 6th century) claiming the likeness of its design and decoration to de Pretorio in Rusafa in northern Syria built by King Ghassanid Al-Mundir[14]. Recently J. Warren[15] attributed its construction to the Persians during their short time in political control of Palestine and Jordan (from 611 to 629 AD). H. Gaube[16] has written that he came to the conclusion after comparing the structure and decoration of the vestibule with certain other Umayyad structures, that this building of the Citadel of Amman as well as the castles of Qastal and Harranah, are certainly the work of the last Umayyad Califs of Damascus.

20. South section of the trench open in the passage close to the east wall of the Vestibule.



21. View of the trench open in the passage close to the east wall of the Vestibule.



In the summer of 1978 we opened three trenches adjacent to the wall of the Eastern façade of the vestibule (FIG. 19), the only area not touched by the Italian Mission. We have been able to verify stratigraphically three periods of occupation with their corresponding structures.

1 Early Byzantine Period

During our excavation, when we reached the exterior contemporary ground-level of the present palace, we opened two small trenches next to the East wall to verify and study the foundation trench, one in the passage close to the East wall and the other in the north-east angle of the building.

In the section drawn (FIGS 20, 21 & 22) of the South sector made in the passage, one can observe three foundation trenches:

—The one on Level 19 that goes with the interior of wall C which is an unidentified late Roman structure, and whose existence we have only been able to verify in this south-eastern angle of the Palace.

—The one on Level 17, that goes with wall B, foundation trench excavated on Level 18 or exterior ground level of the previous building.

—The one on Level 15 that belongs to wall A which is the lower edge of the present building.

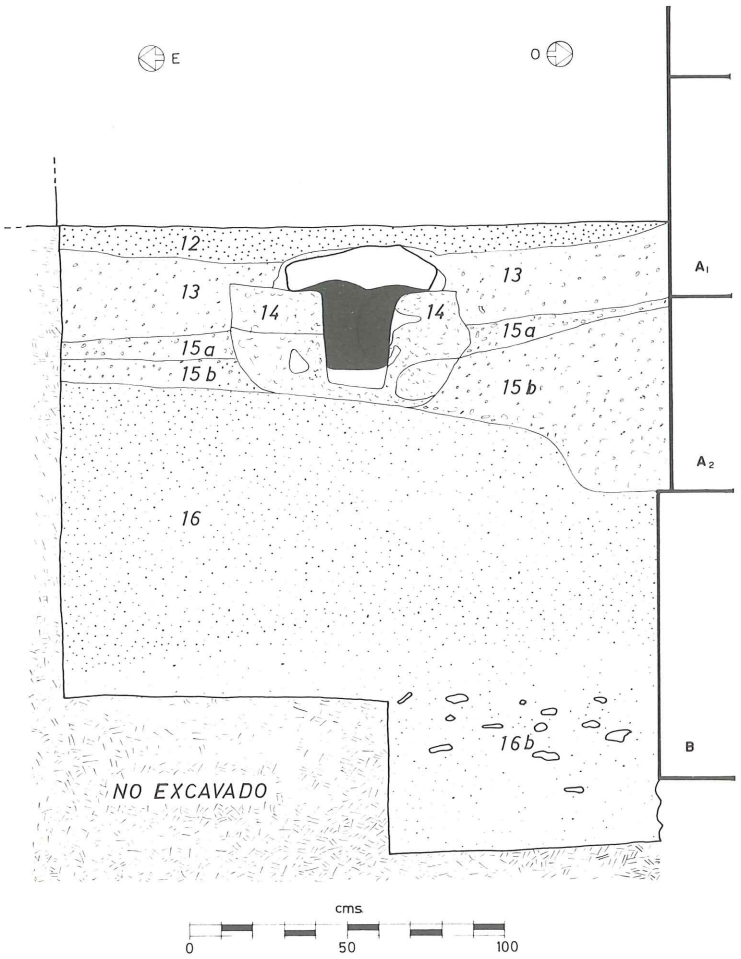
Wall B is the foundation of a square structure, 24 by 26 metres, whose perimeter coincides with the present vestibule.

We found the exterior ground level of this building at Level

22. The south side of the trench in the east passage.



23. South section of the trench open in the north-east angle of the Vestibule.



16. We have been able to verify wall B in two other sites: on the Southern façade of the vestibule, in a trench made by the Italian Mission and on the testing of angle NE of the building (FIG. 23). The coins and ceramics that give the date to this building come from Levels 16 and 17, and belong without doubt to the late Roman and old Byzantine eras. It is in fact, a monumental gate built in the second half of the 4th century or first half of the 5th century AD following the structural pattern of the late Roman castles so amply attested to in Transjordan in the 'limes' of Diocletian. To this building belong the three steps of the staircase that we have left visible in the South door of the vestibule.

II The Umayyad Period

As can be observed in the sections (FIGS 20 & 23), the Byzantine Level 16 has been cut by Level 15, in order to excavate a foundation trench, or better still was robbed to place the first row of the present visible building (Wall A). Levels 15 and 13 (small stones with calcium) are the filling on which the exterior ground level of the Vestibule, Level 12, is built. In the final phase of construction of the building a new trench was opened, at Level 14, for the construction of a canal which collects the water off the roof of the vestibule and pours it into the great cistern situated some 20 metres to the east. The discoveries that date the present building come, obviously, from Levels 15 and 13. In the ditch at Level 15, very close to wall A in absolutely undisturbed stratigraphic context, we have found a 'post-reform' Umayyad coin that certainly gives us the date of the Palace. Therefore, its construction took place between 720 and 750 AD. This date was later confirmed while consolidating the staircase of the north-west angle of the vestibule, when we analysed the ceramic fragments utilized in the cement of the building and found that all of it is Unmayyad, except some sherds which are Byzantine and Roman.

III Post-Umayyad Period

During the Abbaside (750–969) and Fatimid (969–1071) periods the Palace deteriorated progressively and some of the fallen stones of the vestibule were used in remodelling the exterior rooms where very poor living conditions prevailed. In the untouched filling of these places, plenty of Umayyad, Abbaside and Fatimid ceramic has appeared. The Umayyad ceramic is all of the late era (740–750).

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Early Islamic Architecture in Jordan

Throughout history, as a province or as a state, Jordan has played an important role in Arab–Islamic politics. Jordan's strategic location within the Arabian Peninsula, bordering Syria, Iraq, Palestine and Egypt, ensured many advantages to the new Islamic state. In the past, prior to the spread of Islam, Jordan acted as a crossroad for international trade. As a result, social activities were enriched and exchanged[1].

Midway on the Arab international trade route, Mecca, as an Arab town, witnessed a serious historical event which affected the Arabian Peninsula and the whole of the Middle East as well. Islam was accepted by the Arabs and immediately came to be considered as a blessing[2]. The trade route extended from Oman and Yemen in the Southern corners of the Arabian Peninsula, towards the coast of the Mediterranean in the North. Arabs penetrated from the peninsula to settle in the prosperous land of Syria. Migration from one place to another depended on their knowledge of maps. They were the earliest traders within Southeast Asia, the Gulf Coast, Yemen and Syria. Consequently Arab traders travelled with great experience in international affairs based on a wide spread of cultures[3]. The Arabs' social relations and their business administration reflected their personal qualities. They were a free-minded, intelligent, active, generous, honest and patient people. Their civilization in the Arabian Peninsula expressed many aspects of their activities. In the north, activities were more aesthetically attractive and bold. The Nabatean civilization is one of their greatest achievements[4].

The plateau extending from Petra to Damascus has witnessed many important changes throughout the history of the Arabs, from the fourth century BC up to the seventh century AD. The first activities of Islam were demonstrated in the north, in Syria. Accordingly, Jordan was the link between the Arabian Peninsula, Syria, Palestine and Iraq. Those who brought the message of the Prophet Mohammad to Heraclius failed in their mission. That incident led to the liberation of Syria from Christian Roman rule after the Yarmouk battle, in 638 AD[5]. The importance of Jordan was well acknowledged by the citizens of Jordan and their relatives in the Arabian Peninsula. Jordan was the master key for the Arabs, and eventually liberated their brother Arabs through Islam.

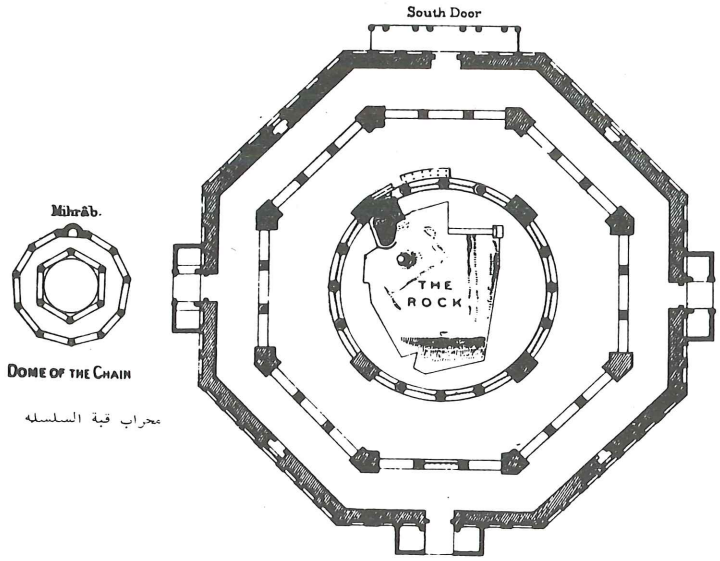
When the first Islamic State established its headquarters in Damascus in 661 AD, the local architectural skills were put to the service of the new faith[6]. Most of the architects, masons, craftsmen, artists etc. were Arab Christian Syrians, or Byzantine Arab Syrians. They extended their services to the Islamic court. Their classical and hellenistic methods in architecture were transformed to fit the new plans and the new philosophy.

In the early eighth century AD, Jordan's plateau witnessed the earliest experience of Islamic architecture. There were a great number of buildings, which presented different styles. The shape of buildings, as a whole, were relatively new although some of the design elements were carefully selected from local architectural examples. The superior ability of the Arabs of Jordan are shown in the cities of Petra, Amman, Jerash and Um-al-Jimal.

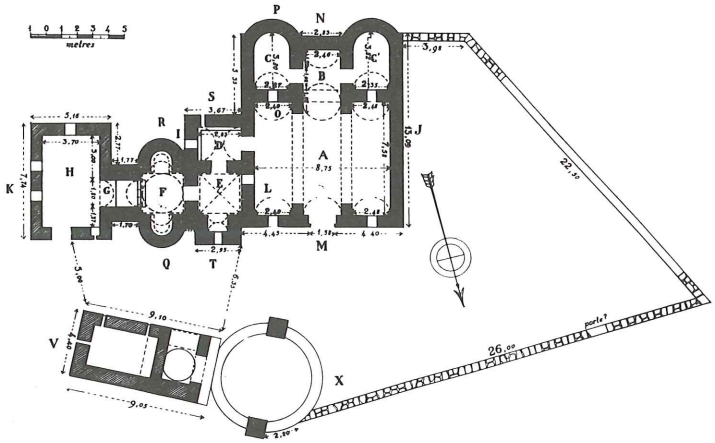
From an early stage Moslems avoided several aspects of their inherited architecture. They moderated their style to accommodate the new faith. For example, brick was used more than stone and buildings of simple outlines were preferred to the more complicated structures. Mosaics, painting, stucco, inscriptions and tiles were used more than stone carving, which was more attractive to Arabs prior to Islam. It is still unclear whether Arabs in Syria disassociated themselves from their heritage immediately, or gradually, after they had adopted Islam. We can trace many traditional elements which survived in the early Moslem architecture. The Dome of the Rock in Jerusalem, Mashatta Palace in the south of Amman, Qusayr Amra, Qasr Tuba and Khirbat al-Mafjar near Jericho in Palestine, all belong to this transitional period of architecture.

The earliest Islamic monument in the world is the Dome of the Rock. This building was designed to play a political and a religious role. It was established by Abd al-Malik ibn Marwan, the Umayyad Caliph in 691 AD. The plan consists of two octagons and the circle in the centre (Tawaf) ensured circumambulating around the Rock, like that usually practiced around the Ka'ba[7]. The monument has four gates facing the four points of the compass (FIG. 1a). The exterior walls were built by using massive stones. The building's interior propor-

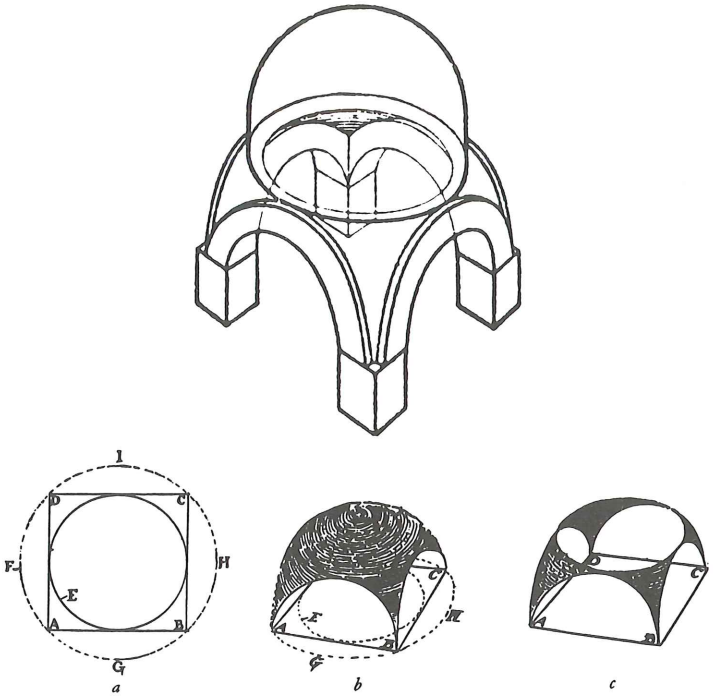
1a. Plan of the Dome of the Rock, Jerusalem, 691 AD.



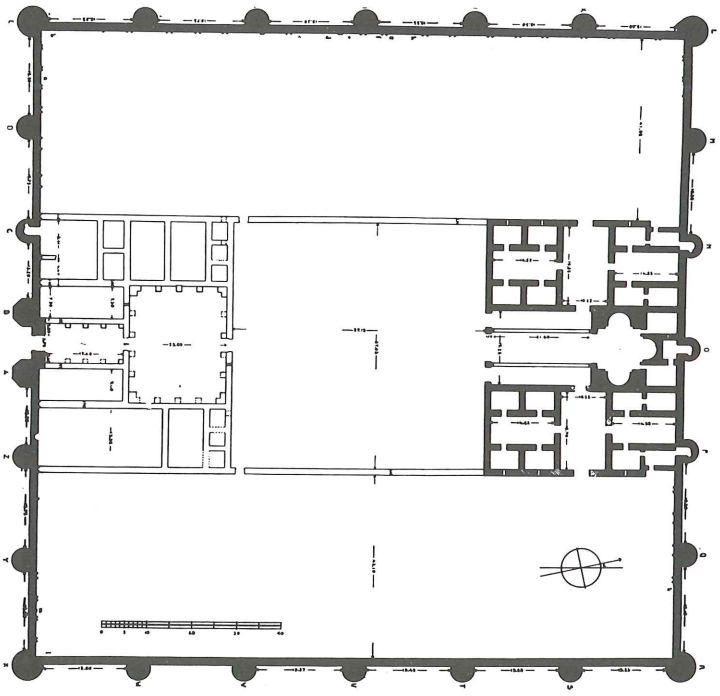
1b. Plan of Qusayr Amra, East of Amman, Jordan, 711 AD.



1c. The Pendentive Dome.



1d. Plan of the Mashatta Palace, Southern Amman, Jordan, 743 AD.



tions and distances are very accurate. We deduce that the masons were very skilful and very well trained. The doubled dome appeared here before any dome elsewhere in architecture. The system of plan and masonry in the Dome of the Rock resembles the Church of the Holy Sepulchre, which is located west of the Haram-es-Serif.

The interior mosaics of the Dome of the Rock undertaken by a skilful artist, displayed a new form of subject matter. Moslem art was much more involved with floral and geometrical designs, and fully ignored the pictorial types which had dominated before Islam. 'Arabesque' is the term given by western art historians to refer to Arab decoration (floral and geometrical) through the Islamic period[8]. This type of decoration, which depended on geometry and floral designs, was evident in many Arab Syrian churches, but was not dominant. In the Islamic tradition 'Arabesque' became the special style of Islamic decoration everywhere and on almost every object.

Another building of stone masonry is Qusayr Amra. The building is a small palace or a family sized chateau, which was built by Caliph al-Walid I about 711 AD. The palace is located about 75 km. to the east of Amman (FIG. 1b)[9]. The building is divided into two major parts: an audience hall of the Caliph, and his sophisticated bathroom. Three different styles for the ceiling were adopted: tunnel-vaulted, cross-vaulted and the pendentive dome (FIG. 1c). The most complicated pendentive

dome system was created in Jordan. The Western Baths (Thermae) at Jerash had one pendentive dome. Prof. Krautheimer attributed it to the second century AD, making it the earliest dome of its kind in architecture[10]. Another pendentive dome was also discovered in Petra[11]. It represents a similar model and fits the first or second century AD. This example, again, reflects the tradition or Arab architecture in Jordan which flourished in the first century and lasted until the eighth century AD.

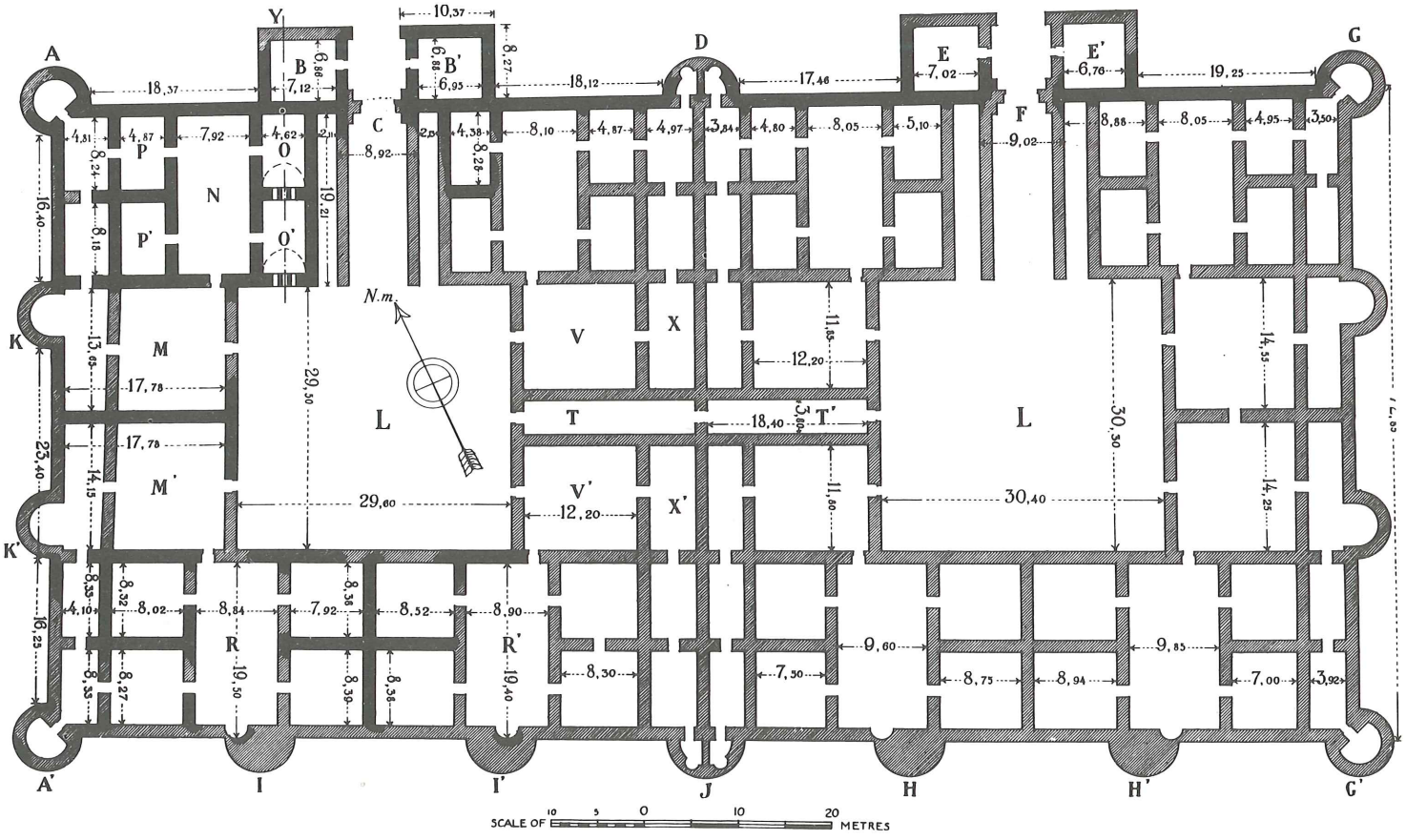
Frescos covered most of the interior walls of Caliph al-Walid's palace. The subjects and style of the paintings remind us of early Arab work from the Greek and Roman era. We can imagine how Moslem Arabs had selected some mythological views in this Moslem palace. The Goddesses of Wisdom, Poetry and other allegoric items were among the subjects painted. Winged angels, naked ladies and zodiacal scenes were also found in Arabian art through Pagan and Christian epochs[12]. In Islamic Imperial art, the same attitudes existed as they did in Imperial Byzantine art which influenced the early Christian style[13].

The Umayyad Mashatta Palace is another example of early Islamic architecture in Jordan. It is famous for its interior brick structure and its exterior sculpture. The open-courtyard here is the earliest example in Jordan's Islamic architecture (FIG. 1d). This style of building increased gradually in the Islamic world. The central open-courtyard plan became common in Jordan in the Umayyad architecture as we witness in the plan of Qasr al-Tuba c. 742 AD (FIG. 2a), Khirbat al-Mafjar c. 724 AD (FIG. 2b) and Qasr Kharana c. 711 AD. Many examples were found in Syria and Palestine, such as Qasr al-Hair 728 AD (FIG. 2c), and Qasr al-Minya c. 705 AD (FIG. 3a). We have several examples of the open-courtyard plan in medieval Islamic architecture. The open-courtyard plan was also practiced in far eastern Islamic states such as Mesjid-i Jami of Isfahan in Iran, 1080 AD[14] (FIG. 4a). The open-courtyard was used again in the middle of the Islamic Empire, such as at the mosque of Ibn Tulun in Cairo[15], dated 876 AD (FIG. 3b). Again, in the far western corner of the Islamic world, we witness the open-courtyard plan in North Africa and Spain. The most famous example is the mosque of Cordoba, which was built in 785 AD by the Umayyad Caliph, Abd al-Rahman I (FIG. 4b)[16].

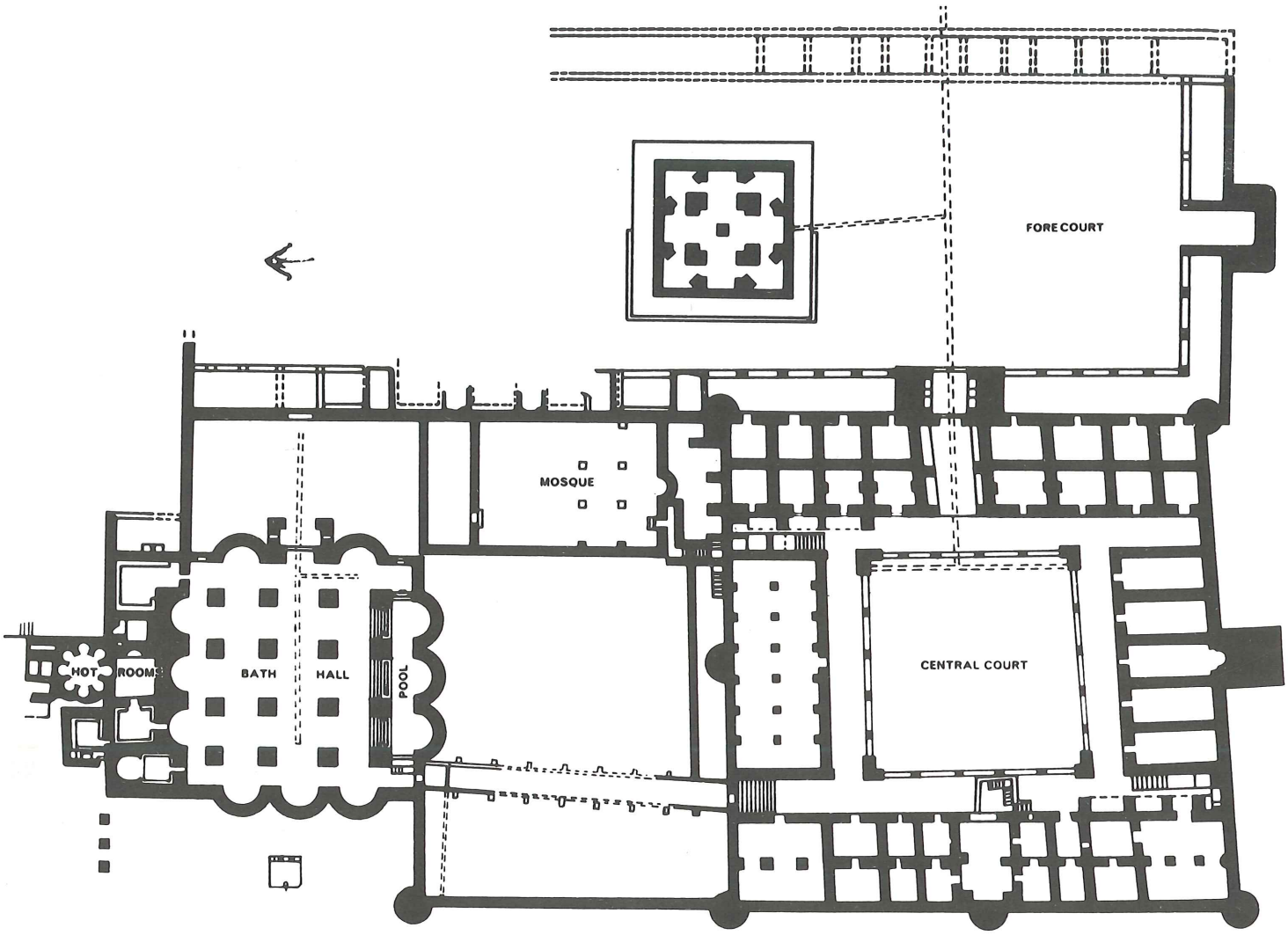
The courtyards mentioned above have been centralized in the middle or at one side of a building complex for several reasons. Arcades and columns were used to surround the court. Light and air could enter all the parts equally.

The Mashatta Palace was the outstanding example of Islamic, secular or religious, architecture. There are further architectural elements in the building, such as the triple-apsed hall. This type of structure was first employed as the throne hall in Bosra, Syria. It is found in the Christian Arab Cathedral of the early sixth century AD. It was clear to

2a. Plan of Qasr al-Tuba, Jordan, 742 AD.



2b. Plan of Khirbat al-Mafjar Palace, near Jericho, 724 AD.



Creswell that the custom of using a triple-apsed plan for a throne room took place in Bosra, which is a few miles north of the Jordan border with Syria[17].

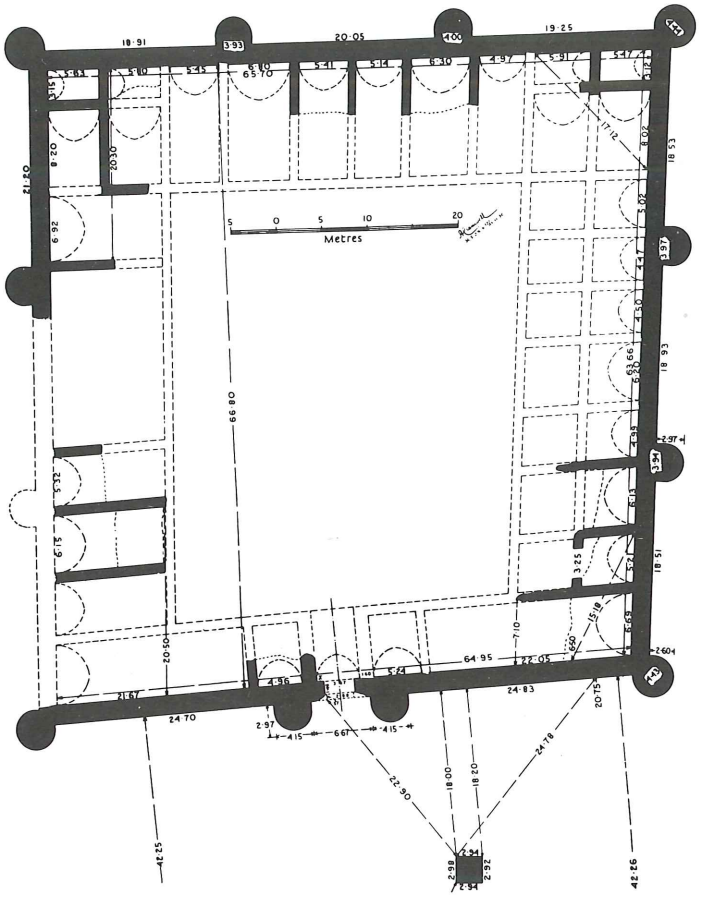
Most early Moslem architecture used bricks in the interior sections. This material was used in Syria and Mesopotamia from the earliest epochs of history. The use of brick in Arab building still needs a great deal of serious research.

The walls of the Mashatta Palace were 1.70 metres thick and supported by 21 stone towers. The towers were arranged in a symmetrical manner, mainly half-cylindrical in shape. The walls present the most attractive stone carving in the world of Islam. They remind us of miniature decoration or of the stucco mouldings which became popular in later Islamic periods; geometrical and floral motifs, framing animals and birds. The magnificent stone carving of the Mashatta Palace represented an innovative method of sculpture which continued throughout the history of Islamic decoration. The decorated facade of the walls was donated to Germany by the Ottoman Sultan Abdul-Hamid in 1903. Since then it has been kept in the East Berlin Museum.

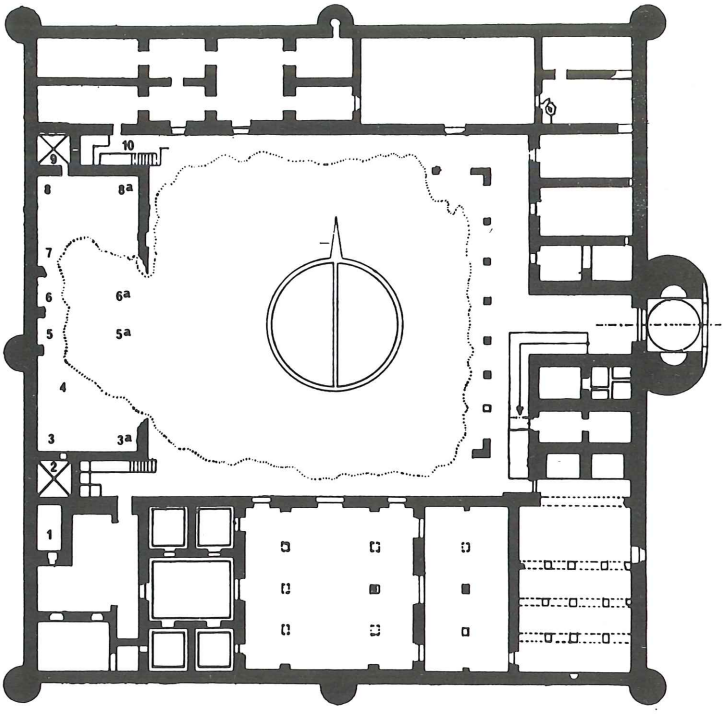
Arabesque design was dominant in mosaics, frescos, wood carvings, stucco and on metal works. The idea of this style may have been encouraged by the bareness of the Arabian desert which resulted in a need to create an atmosphere contrasting to their own[18]. In addition, Arabs sought an independent art form by avoiding the pictorial scenes that were common during pre-Islamic times. The symmetrical aspect of the arabesque design, I believe, stems from the traditions of Arabic verse and the rhythm of harmonic poetry.

The construction of buildings in the early Islamic period in Jordan enjoyed both solid workmanship and an excellent choice of materials. Whichever architectural formula was selected depended upon a precise symmetrical plan. The architectural styles which were adopted in early Moslem Jordan contributed many new techniques to Islamic architecture. Design and environmental problems were solved

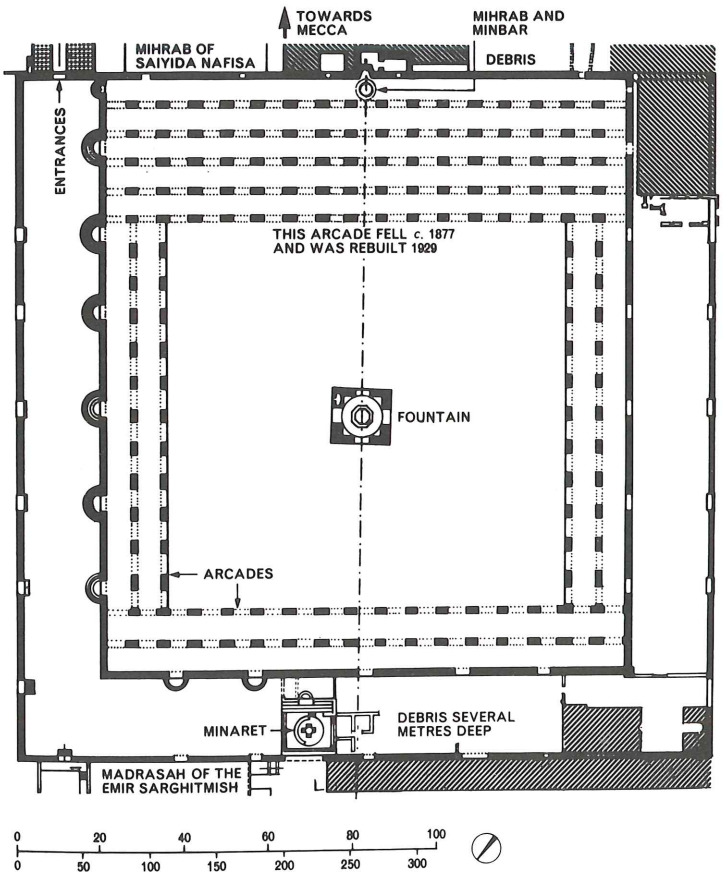
2c. Plan of Qasr al-Hair, Syria, 728 AD.



3a. Plan of the Minya Palace, Palestine, 715 AD.



3b. Plan of the Mosque of Ibn Tulun, Cairo, Egypt, 879 AD.

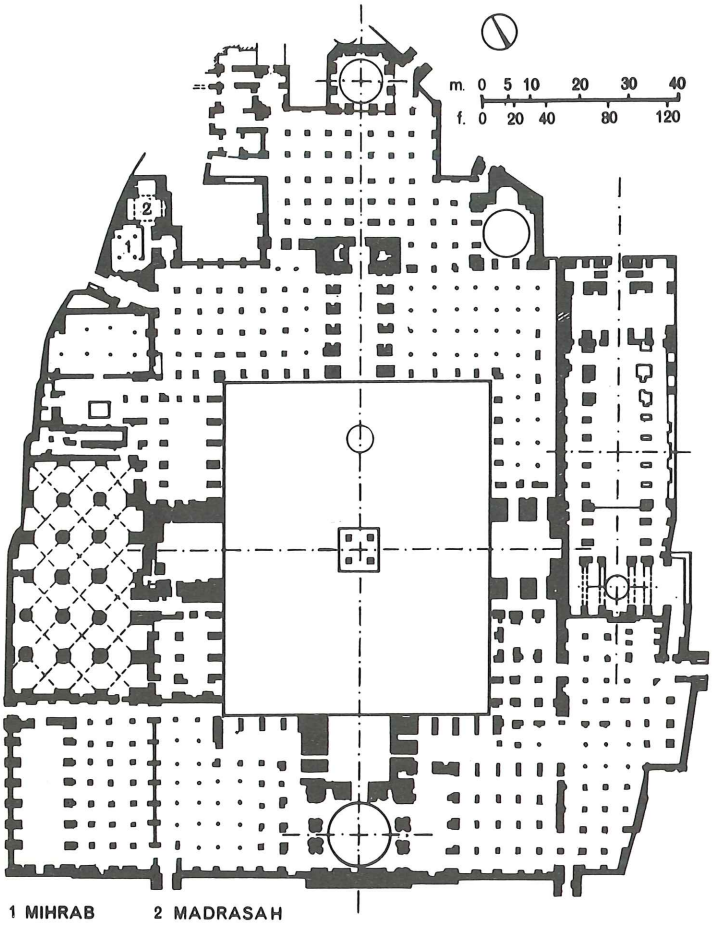


successfully in the structure of the Umayyad desert palaces through the following architectural elements:

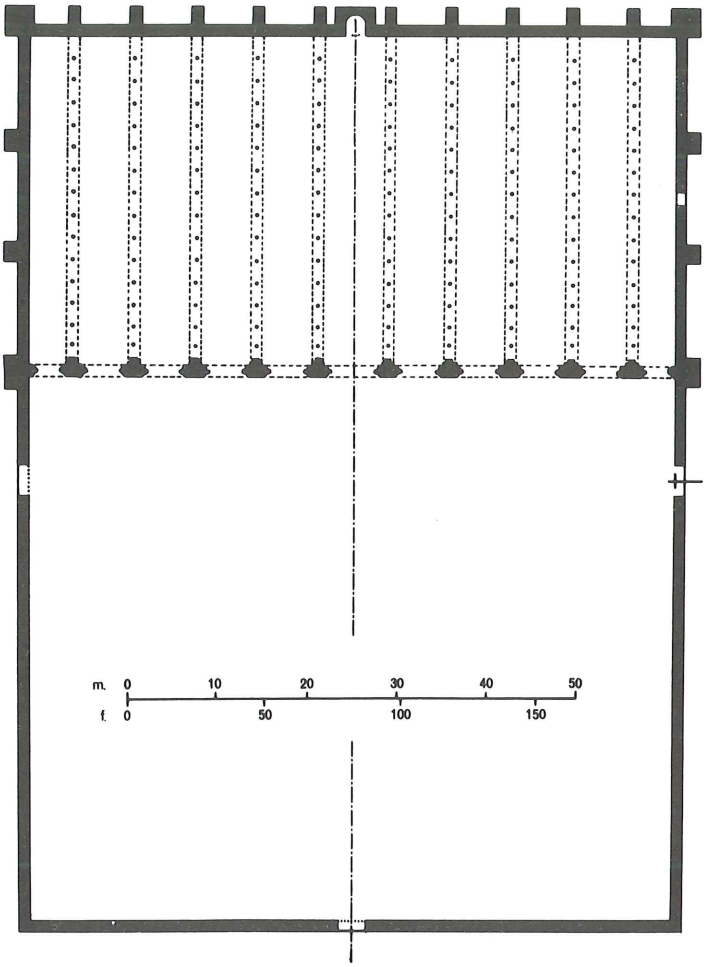
1 Stone used for the exterior walls and bricks for interior sections.
2 Illuminating the interior sections by central open-courtyards.
3 One major gate for secular buildings and several for religious ones.
4 Ceiling: flat wooden roof, brick tunnel-vaulted and brick cross-vaulted systems.
5 Brick pendentive domes.
6 Arcades and chains of arches.
7 Audience halls: niches or triple-apsed halls; half circle apses in mosques.
8 Massive half circular stone towers projected from external walls, and round towers at the corners.
9 Inscriptions (Kufic) by mosaic or stone carving.
10 Wall and floor mosaics; Arabesque stone, marble or glass tesserae mosaics, gold and polychrome coloured mosaics, fresco, stucco and stone carving.

These early buildings helped the Islamic State in Damascus and later on in Baghdad towards a flourishing Islamic civilization. After studying such examples of early Jordan

4a. Plan of the Masjid-i Jami, Isfahan, 1072 AD.



4b. Plan of the Great Mosque of Cordoba, Spain, 785 AD.



architecture, I have come to the conclusion that Jordan initiated the basic elements and was the most important source of Islamic architecture.

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The Pottery of Jordan in the Early Islamic Periods

Introduction

Recent archaeological excavations in Jordan have produced a basic ceramic sequence for the Early Islamic periods, especially the Umayyad (*c.* AD 661–750), Abbasid (*c.* AD 750–969), and Early Fatimid (*c.* AD 969–1071) periods. This ceramic sequence is not usually characterized by many striking complete vessels of museum quality, but rather by sherds and pots of everyday use, as found during excavations. Finer complete vessels are more common in Syria, Iraq, and Egypt, where the cultural influences originated that are reflected in the Umayyad, Abbasid, and Early Fatimid periods in Jordan. But in these countries, and in nearby Palestine and Arabia as well, it has not been possible to date Early Islamic pottery very reliably, largely because of a lack of stratigraphically excavated sites. The Early Islamic periods were also neglected and misunderstood in Jordan until about ten years ago, but now, due to several excavations, they are much better known. However, there is still much to be learned about these periods, and future refinements and additional subdivisions of the periods can certainly be expected.

Here we shall present briefly the evidence for the basic ceramic sequence in Jordan for the Umayyad (AD 661–750), Abbasid (AD 750–969), and Early Fatimid (AD 969–1071) periods. As background, we shall begin with the Late Byzantine (*c.* AD 491–640) period, and in conclusion we shall describe the Ayyubid-Mamluk (*c.* AD 1174–1516) period.

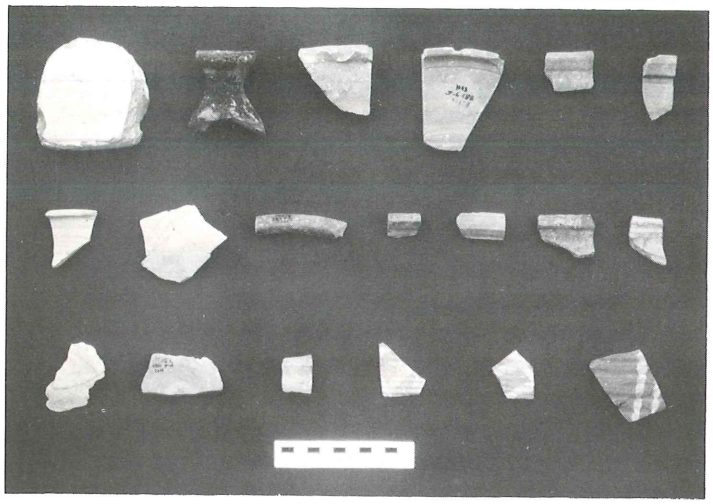
Late Byzantine (*c.* AD 491–640)

Many classical (Roman-Byzantine) sites in Jordan continued to flourish during the Late Byzantine (*c.* AD 491–640) period. Important sites that could be mentioned here are Jerash (Crowfoot, 1931: 1–48; Fisher, 1931: 131–69; Fisher and McCown, 1931: 1–59; Kraeling, 1938: 1–616), Umm el-Jimal (Butler, 1913: 149–213; Glueck, 1951: 3–18; De Vries, 1979: 49–55), Beit Ras (Schumacher, 1890: 154–68; Glueck, 1951: 115–17), Quweilbeh (Schumacher, 1889: 22–47; Ma'ayeh, 1960: 116), Umm Qeis (Schumacher, 1890: 46–82; Lux, 1966: 64–70; Wagner-Lux *et al.*, 1978: 135–44), Pella (Funk and Richardson, 1958: 82–96; Smith, 1973: 217–29; Sauer, 1974: 170–72), Tell Sherhabil (Ibrahim; Sauer; Yassine, 1976: 59–61), 'Amman Citadel (Bagatti, 1973: 261–85; Zavadine 1977–78: 20–27; Bennett, 1975: 131–42; Bennett and Northedge, 1977–78: 177–8; Bennett, 1978: 1–9; Bennett, 1979a: 155–7; Bennett, 1979b: 163–6), Swafiyeh (Van Elderen, 1971: 1–2), Tell Hesban (Boraas and Horn, 1969: 97–222; Boraas and Horn, 1973: 1–125; Sauer, 1973b: 29–39; Boraas and Horn, 1975: 111–215; Boraas and Geraty, 1976: 12–140; Boraas and Geraty, 1978: 15–199; Lawlor, 1979: 1–8), Masuh (Van Elderen, 1971: 2–4), Madeba (Gold, 1958: 50–71; Lux, 1967: 165–82; Lux, 1968: 106–29; Van Elderen, 1972: 77–80; Van Elderen, 1973: 83; Donner and Cüppers, 1977: 1–169), Mt. Nebo (Saller, 1941: 1–353; Schneider, 1950: 1–135; Piccirillo, 1976: 281–318), Mekhayyat (Saller and Bagatti, 1949: 1–217), Ma'in (Vaux, 1938: 227–58; Van Elderen, 1973: 83; Piccirillo and Russan, 1976: 61–70), Dhiban (Winnett and Reed, 1964: 24–29, 56; Tushingham, 1972: 59–76; Sauer, 1975: 106–7), Umm er-Risas (Brünnow and von Domaszewski, 1905: 63–72; Glueck, 1939: 227; Glueck, 1970: 164–65), and Lisan (unpublished). Byzantine and Late Byzantine remains were very well attested during several recent regional surveys in the Jordan Valley (Ibrahim; Sauer; Yassine, 1976: 59–61, 64), in Central Moab (Miller, 1979: 79–90), and along the Wadi Hesa (MacDonald, unpublished). The Early Byzantine (*c* AD 324–491) period was very well represented along the *Limes Arabicus*, while the Late Byzantine period was present but not as common (Parker, 1976: 19–31).

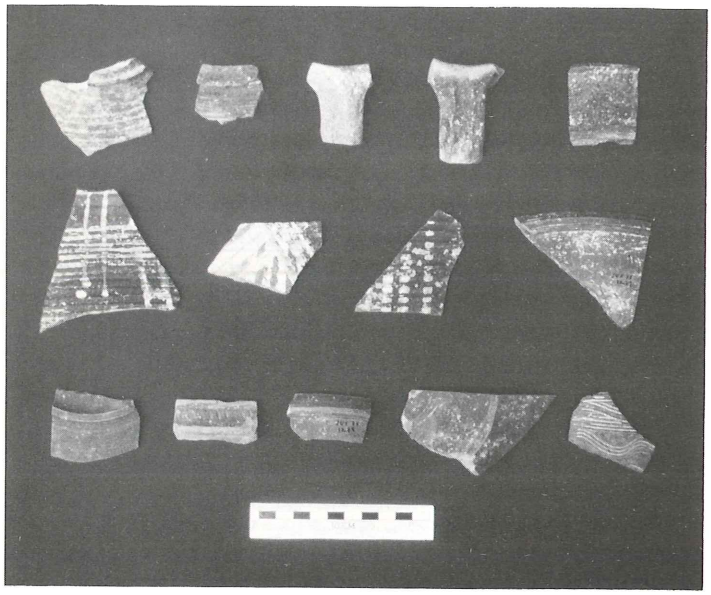
It is clear from the evidence of these excavations and surveys that the Late Byzantine period was a very strong occupational period in Jordan. All of the major classical cities continued to be occupied, and Greek remained the dominant language in these areas. Numerous churches with mosaic floors were constructed, sometimes on top of former Roman temples (e.g., Tell Hesban), evidence of the victory of Christianity over Roman 'paganism' during the Byzantine period.

From the uppermost layers at these sites, especially Pella (Smith, 1973: 217–29; Sauer, 1974: 170–72), Tell Sherhabil (Ibrahim; Sauer; Yassine, 1976: 59–61), Tell Hesban (Sauer, unpublished), Mt. Nebo (Saller, 1941: 1–353; Schneider, 1950: 1–135; Sauer, 1973b: 36–39), Dhiban (Tushingham,

1. Late Byzantine Sherds from Tell Hesban.



2. Late Byzantine Sherds from Tell Sherhabil.



1972: 59–76; Sauer, 1975: 106–7), and Lisan (unpublished), came distinctive types of pottery. This pottery is especially clear at Tell Sherhabil (Ibrahim; Sauer; Yassine, 1976: FIG. 22), and Lisan (unpublished), because these sites were abandoned at the end of the Late Byzantine period, and were never reoccupied. The AD 614–29 Persian conquest is not yet documented clearly at any of these sites. The fact that Tell Sherhabil is named after an Islamic leader who died there during the AD 630–40 Arab conquest would suggest that the Late Byzantine pottery from Tell Sherhabil continues to that time. Late Byzantine coinage, minted during and after the reign of Anastasius I (AD 491ff.), is well attested at the various Late Byzantine sites.

Late Byzantine pottery represents a continuation of the classical Hellenistic, Roman, and Early Byzantine tradition. Most of the pottery is wheelmade, although large forms such as pithoi are made by hand, and lamps are mouldmade. Late Byzantine pottery is made of well prepared clay, but grey cores are often revealed in sherd sections, which means that the pottery was not as evenly fired as Umayyad pottery. Late Byzantine pottery is thin (*c.* 0.3–1.2 cm.), and after firing it is coloured red, orange, white, grey, and black, with red-orange and black predominating in most regions (although white seems to be common in the far south). In surface treatment, Late Byzantine pottery attests white paint on large ribbed jars, incised band combing, single wavy line incising on bowls, 'nicking' on jugs and juglets, thumb impressing, and moulded decorations on lamps. Smooth red-painted pottery is rarely found in the Late Byzantine period, and instead most of the Late Byzantine pottery is ribbed. While there is no glazing in the Late Byzantine period, there is the distinctive polished, stamped, and rouletted 'red ware', which does not appear in the Umayyad period. In form, Late Byzantine pottery attests plates, platters, and bowls of 'red ware', with distinctive thickened rims and low ring bases; cups of unribbed metallic ware which are sometimes horizontally combed, with thin flared rims and flat or omphalos bases; bowls of dark metallic ware which often have single wavy line incising, with simple rims and low ring bases; kraters and large bowls of red-orange or black ware, with rounded or angular thickened rims and sharp, angular shoulders; cooking casseroles of thin ribbed ware, with flat-cut rims, flattened bases, and horizontal loop handles; frying pans of black ware, with distinctive looped 'wishbone' handles; cooking pots of red-orange or grey-black ribbed ware, with sharply everted and angular rims, rounded or angular bodies with flattened bases, and long vertically ridged loop handles; pithoi of heavy unribbed ware which are sometimes wavy incised, with folded back rims, pointed or knobbed bases, and vertically ribbed loop handles; large jars of dark ribbed ware which are often white painted, with rounded or grooved rims, ridged necks, ridged shoulders, and rounded bases; small jars and jugs of dark ribbed ware, with low omphalos bases; jugs and juglets of light unribbed ware which are usually nicked; and candlestick lamps with three splayed lines on either side of the nozzles.

Pre-Umayyad, Umayyad (*c.* AD 630–750)

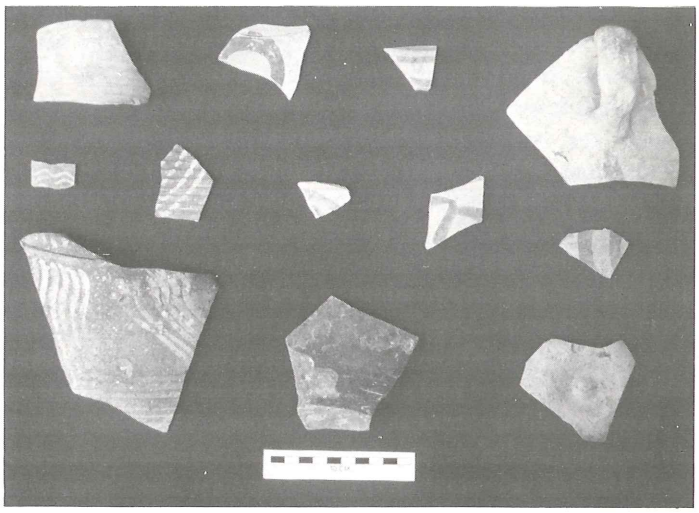
Although some Late Byzantine sites, such as Tell Sherhabil (Ibrahim; Sauer; Yassine, 1976: 59–61), and Lisan (unpublished), were abandoned at the end of the Byzantine period, most sites continued to be occupied into and through the Umayyad period. Sites which continued to be occupied include Jerash (Fisher, 1931: 131–69; Fisher and McCown, 1931: 1–59; Kraeling, 1938: 68–9, 503), Umm el-Jimal (De Vries, 1979: 49–55), Quweilbeh (Schumacher, 1889: 22–47; Maʿayeh, 1960: 116), Umm Qeis (Wagner-Lux *et al.*, 1978: 135–44), Pella (Smith, 1973: 229–36; Sauer, 1974: 172), ʿAmman Citadel (Harding, 1951: 7–16; Bennett, 1975: 131–42; Bennett and Northedge, 1977–78: 173–77; Northedge, 1977–78: 5–13; Zayadine, 1977–78: 20; Bennett, 1978: 1–9; Bennett, 1979a: 155–57; Bennett, 1979b: 161–3; Olá-

varri, unpublished), Tell Hesban (Boraas and Horn, 1973: 8–125; Sauer, 1973b: 39–49; Boraas and Horn, 1975: 113–215; Boraas and Geraty, 1976: 13–117; Boraas and Geraty, 1978: 15–199; Lawlor, 1979: 1–8), Madeba (Van Elderen, 1972: 77–80; Van Elderen, 1973: 83), Mt. Nebo (Saller, 1941: 1–353; Schneider, 1950: 1–135; Sauer, 1973b: 36–39), Ma'in (Van Elderen, 1973: 83; Piccirillo and Russan, 1976: 61–70), Dhiban (Winnett and Reed, 1964: 24–29, 56; Tushingham, 1972: 74–83; Sauer, 1975: 107), and Umm er-Risas (Glueck, 1939: 227; Glueck, 1970: 164–65). Some new sites were founded during the Umayyad period, especially in the Jordan Valley and in the eastern desert. In the Jordan Valley, 'Araq Abu ez-Zeit (Ibrahim; Sauer; Yassine, 1976: 61–2), and Tell Abu Qa'dan (Franken and Kalsbeek, 1975: 1–7, 67–105; Sauer, 1976: 93) seem to represent new agricultural settlements. In the desert, impressive Umayyad installations are to be found at such sites as Hammam es-Sarakh (Butler, 1909: 77–80; Creswell, 1932: 273–84; Ibrahim, 1974: 18), Qasr el-Hallabat Mosque (Butler, 1909: 70–77; Creswell, 1932: 284–88; Bisheh, unpublished), Qasr el-Kharaneh (Musil, 1907a: 290–97; Musil, 1907c: 97–101; Jaussen and Savignac, 1922: 51–77; Creswell, 1932: 283–84; Gaube, 1977: 52–86; Urice, unpublished), and Quseir 'Amrah (Musil, 1907c; Creswell, 1932: 253–72; Almagro *et al.*, 1975: 11–196). Umayyad pottery has also been published from several smaller sites in Jordan, such as Tell Siran (Thompson, 1973: 5–14; Hadidi, 1973: 23–38; Sauer, 1973a: 15–16), el-Bassa (Safar, 1974: 5–10), and Khirbet el-'Al (Reed, 1972: FIG. 4). Umayyad pottery was quite well represented during the East Jordan Valley Survey (Ibrahim; Sauer; Yassine, 1976: 61, 64). It was only occasionally attested during the Central Moab Survey (Miller, 1979: 79–90), and it was hardly found at all during the Wadi Hesa Survey (MacDonald, unpublished). And very little was found along the *Limes Arabicus* (Parker, 1976: 19–31).

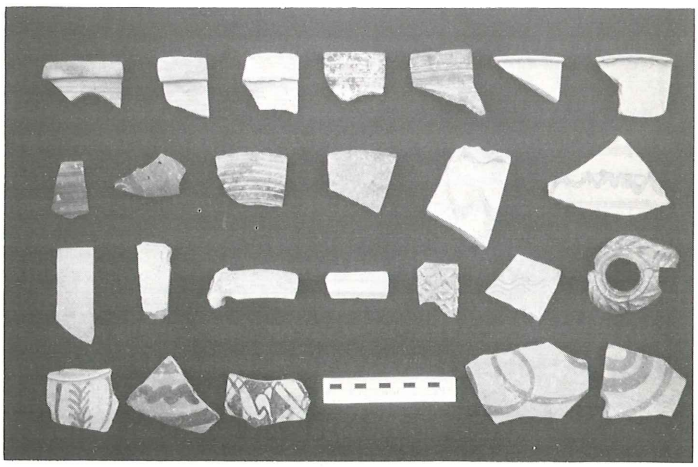
After Jordan fell to Islam between AD 630 and AD 636, there was a brief period of Arab rule prior to the establishment of the Umayyad dynasty in Damascus in AD 661. During the Umayyad period (AD 661–750), Jordan was close to the centre of power, and was also positioned on the pilgrimage route to Arabia, so Jordan continued to prosper. Although some Late Byzantine sites were abandoned at the end of the period, most of the major city sites continued to be occupied into and through the Umayyad period. During the Umayyad period, however, most of the churches went out of use as religious buildings, and they were converted into domestic occupation areas (e.g., Tell Hesban, Dhiban, Pella). Umayyad mosques are somewhat rare (especially by comparison with the preceding Byzantine churches), but they do exist at some of the sites (e.g., Qasr el-Hallabat). The system of military forts and camps along the desert was no longer used during the Umayyad period, because the desert was now fully a part of the Umayyad world. The new Umayyad installations in the desert functioned largely as retreats, caravanserais, and agricultural stations. The coins of the period pass through a transitional stage, when they imitate Byzantine coins, to a reformed coinage, when Islamic Arabic is all that is depicted. Arabic inscriptions replace Greek inscriptions, even on the pottery. At the end of the Umayyad period, Jordan was rocked by a major earthquake in AD 747. When the Umayyad dynasty was overthrown by the Abbasids of Iraq in AD 750, and the centre of power shifted ultimately to Baghdad, Jordan rapidly declined.

Stratigraphically, the Umayyad remains were found immediately above the Late Byzantine remains at Pella (Smith, 1973: 229–36; Sauer, 1974: 172), 'Amman Citadel (Olávarri, unpublished), Tell Hesban (Sauer, 1973b: 39–49; Sauer, unpublished), Mt. Nebo (Saller, 1941: 1–353; Schneider, 1950: 1–135; Sauer, 1973b: 36–39), and Dhiban (Tushingham, 1972: 74–83; Sauer, 1975: 107). At several sites, especially Umm el-Jimal (De Vries, 1979: 49–55), Pella (Smith, 1973: 229–36; Sauer, 1974: 172), 'Amman Citadel (Olávarri, unpublished), Tell Hesban (Sauer, 1973b: 39–49; Lawlor, 1979: 1–8), and Tell Abu Qa'dan (Franken and Kalsbeek, 1975: 1–7; Sauer, 1976: 93), several phases of

3. Umayyad Sherds from 'Araq Abu ez-Zeit.



4. Umayyad Sherds from Tell Hesban.



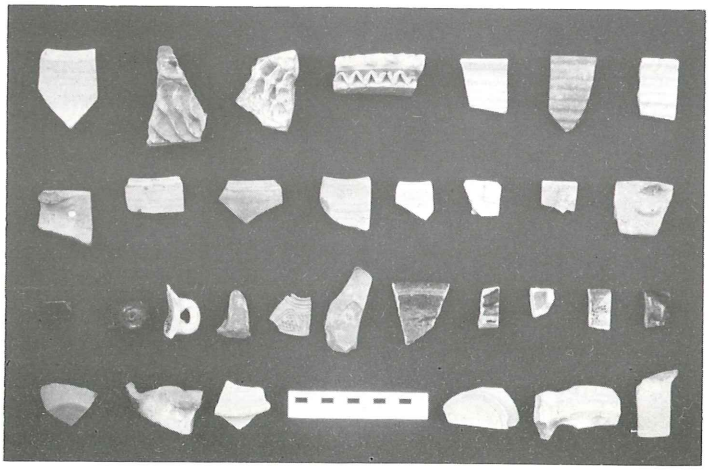
Umayyad occupation are attested. Relatively pure Umayyad pottery came from the recent excavations at Hammam es-Sarakh (Ibrahim, 1974: 18), Qasr el-Hallabat Mosque (Bisheh, unpublished), and Qasr el-Kharaneh (Urice, unpublished). This was also true of the older excavations at Usais, in southern Syria (Brisch, 1963: 165–82; Brisch, 1965: 159–72). Many of the Umayyad sites were abandoned at the end of the period, and at several of these sites there is evidence of earthquake collapse or destruction (probably AD 747). Jerash, Umm Qeis, Pella, and Tell Abu Qa'dan attest such evidence. The Umayyad pottery that is described here belongs largely to the second half of the period, or the Late Umayyad period *c.* AD 696–750.

Umayyad pottery is clearly distinct both from the preceding Late Byzantine pottery, and from the succeeding Abbasid pottery, but of course there are features which carry through and develop from period to period. As in the Late Byzantine period, most Umayyad pottery is made on the wheel. Some forms are made by hand, such as the small 'cut-ware' bowls, the basins, and the pithoi; and lamps are again mouldmade. Umayyad pottery is made of well-prepared clay, and it is well fired. Cut sections of sherds reveal that in general only very small mineral inclusions are present in the clay, which accounts for why the pottery is fairly smooth to the touch. Few black or grey cores are present in the pottery, which means that it was usually fired evenly throughout. This is true despite the fact that Umayyad pottery is fairly thick (*c.* 0.4–1.5 cm.). After firing, many forms are light coloured (buff, pink, grey, white), while some other forms are dark coloured (black, grey-black, brown). In addition, some of the plates and cups are made of a distinctive thin, hard metallic ware, which is dark coloured (dark orange, grey-red). In surface treatment, Umayyad pottery attests some ribbing, but most of the Umayyad pottery is smooth and unribbed. The smooth buff or pink ware, which is sometimes white-slipped, is often painted in red, purple, or brown paint, in loops, spirals, wavy lines, floral, and geometrical patterns. Some white paint is also attested. Incising is a common surface treatment, especially wavy band combing on unribbed basins, pithoi, and large jars. Thumb impressing often appears with the incising on basins. A distinctive type of Umayyad decoration is the delicate 'cut-ware', which consists of knife-cut squares and crosses on the exteriors of small handmade bowls. If there is any glazed pottery in the Umayyad period, it is very rare indeed. Lamps are ornately decorated, and they sometimes attest moulded Arabic inscriptions. Arabic inscriptions can also be found painted or incised on other types of Umayyad pottery (e.g., at Pella, Tell Siran, Khirbet el-'Al, Tell Hesban, and Ma'in). In form, Umayyad pottery attests plates and cups of dark metallic ware, with thin tapering rims and flat bases that have deep swirl marks on them; cups and cup-like bowls, often painted, with thin or angular rims and rounded or slightly flattened bases; handmade 'cut-ware' bowls, with simple rims and straight vertical walls; handmade basins, often wavy incised and thumb impressed, with rounded and thickened rims, straight sidewalls, and simple flat bases; black cooking casseroles, with flat-cut rims, slightly up-pushed horizontal handles, and slightly flattened bases; casserole lids with single high central knob handles; closed cooking pots with rounded rims; pithoi with thickened rims, slightly pointed bases, and vertically ribbed loop handles; large jars with high necks, angular-thickened rims, and high 'omphalos' bases; and lamps of candlestick (with four splayed lines on either side of the nozzle), channel nozzle, and the 'Jerash' type.

Abbasid (*c.* AD 750–969)

Most of the major sites that were occupied during the Umayyad period, such as Jerash (Kraeling, 1938: 503), Umm el-Jimal (De Vries, 1979: 49–55), Quweilbeh (Schumacher, 1889: 22–47), Umm Qeis (Wagner-Lux *et al.*, 1978: 135–44), Pella (Smith, 1973: 229–43; Sauer, 1974: 172), and Umm er-Risas (Glueck, 1939: 227), were abandoned or essentially abandoned at the end of the Umayyad period. This is also true of most of the Umayyad 'castles' in the desert, such as Hammam es-Sarakh (Ibrahim, 1974: 18), Qasr el-Hallabat (Bisheh, unpublished), and Qasr el-Kharaneh (Urice, unpublished). Only a few sites in Jordan have produced evidence from the Abbasid period. These include 'Amman Citadel (Olávarri, unpublished; Zayadine, 1973: 20–22; Bennett and Northedge, 1977–78: 172–3; Northedge, 1977–78: 11–12; Bennett, 1979a: 151–7; Bennett, 1979b: 161–3), Tell Hesban (Boraas and Horn, 1975: 113–215; Boraas and Geraty, 1976: 13–117; Boraas and Geraty, 1978: 15–199; Sauer, unpublished), Mt. Nebo (Saller, 1941: 275–85), Dhiban (Winnett and Reed, 1964: 24–29, 56; Tushingham, 1972: 77–83; Sauer, 1975: 107–8), Tell Abu Qa'dan (Franken and Kalsbeek, 1975: 1–7, 107–62; Sauer, 1976: 93), and Mutheleth er-Rameh (unpublished). The Abbasid period was also weakly represented in the various regional surveys (Ibrahim; Sauer; Yassine, 1976: 61, 64; Miller, 1979: 79–90; MacDonald, unpublished; Parker, 1976: 19–31).

5. Abbasid Sherds from Tell Hesban.



It is thus clear that the earthquake of AD 747, and the defeat of the Umayyads by the Abbasids in AD 750, combined to deal a severe blow to Jordan at the end of the Umayyad period. After AD 750, the political centre of Islam shifted to Iraq, and a new pilgrimage route was also established between Iraq and Arabia. Jordan became isolated, and with the exception of the ʿAmman Citadel, most of the major cities were abandoned. Other smaller occupations existed elsewhere in the countryside, especially in the Jordan Valley.

Stratigraphically, the Abbasid remains were found immediately above the Umayyad remains at ʿAmman Citadel (Olávarri, unpublished), Tell Hesban (Sauer, unpublished), and Tell Abu Qaʿdan (Franken and Kalsbeek, 1975: 1–7; Sauer, 1976: 93). Several phases of occupation are again attested at each of these sites, and they may correspond to the Early Abbasid (*c.* 750–878) and the Late Abbasid (*c.* AD 878–969) periods. Due to the scarcity of coins (e.g., Early Abbasid coins at Dhiban), it is not possible to be sure.

Abbasid pottery is again largely wheelmade, but some forms are made by hand ('cut-ware' bowls, pithoi), and lamps are mouldmade. Abbasid pottery is made of such finely prepared clay that mineral inclusions are usually barely detectible with the naked eye. The firing is just as excellent, and there are virtually no grey cores. Abbasid pottery is thinner (*c.* 0.3–1.2 cm.) and smoother than Umayyad pottery, and after firing it is coloured white, yellow-white, tan, and black, with white predominating. The thin metallic ware of the Umayyad period is not attested in the Abbasid period. In surface treatment, Abbasid pottery attests incised band combing, thumb impressing, 'cut-ware', and moulded lamps, but these Abbasid treatments all differ from the Umayyad types. Incised band combing is not as common in the Abbasid period, and it tends to be shallower and finer. It is often accompanied by a new type of incising, that of small separated or interlocking incised circles. Normal thumb impressing continues, but a new type of heavy or deep impressing appears on pithoi. Abbasid 'cut-ware' on handmade bowls is much cruder and deeper than that of the Umayyad period. There is some ribbing in the Abbasid period, especially on cups. Very different from the Umayyad period, there is no painting, either in red or in white. Instead, in the Abbasid period there appears a new polychrome glazing on the interiors of plates, with the glaze colours usually being green, yellow, and purple. In form, Abbasid pottery attests plates of polychrome glazed ware, with simple rims and disk or ring bases; cups of plain ribbed ware, with indented rims and small flat bases; small cup-like bowls of unribbed and undecorated ware, with inturned and offset rims; larger 'cut-ware' bowls of crude and heavy handmade ware, with vertical sidewalls and flat bases; cooking casseroles of thin unribbed ware, the lids of which have gracefully curving sidewalls and single central 'turban' handles; pithoi of very heavy ware which are usually deeply impressed, with rounded or flattened rims; large jars of unribbed and undecorated light ware, with rounded rims, sloping necks, and indented loop handles with deeply pinched body attachments; small jars and jugs of very distinctive yellow-white ware, with thin tapering rims, high necks, neck filters, rounded or angular bodies, disk, ring-with-disk, or flat bases, and high vertical loop handles with single knobs on top; channel-nozzle lamps with pointed nozzles, higher pointed handles, and moulded grapevine or other ornate designs around the central filling hole.

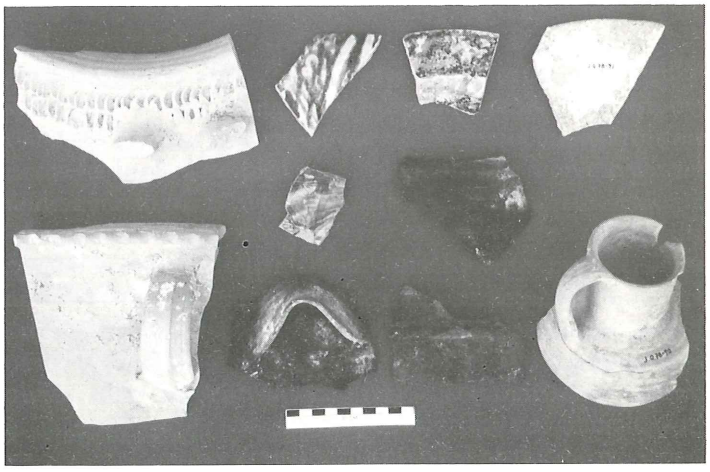
Early Fatimid (*c.* AD 969–1071)

Once again, very few major sites are attested in Jordan for the Early Fatimid (*c.* AD 969–1071) period. Early Fatimid pottery has definitely come from the ʿAmman Citadel (Olávarri; unpublished; Bennett and Northedge, 1977–78: 172–3; Northedge, 1977–78: 11–12; Bennett, 1979a: 151–7; Bennett, 1979b: 161–3), and from Tell Abu Qaʿdan (Franken and Kalsbeek, 1975: 1–7, 107–62; Sauer, 1976: 93). Pottery that may be Early Fatimid has also come from Tell Hesban (Sauer, unpublished), and from Dhiban (Tushingham, 1972: 77–84; Sauer, 1975: 108). Early Fatimid pottery recently came from a site in the northeastern desert of Jordan (Clark, unpublished), and it is also known from sites in the Jordan Valley (Ibrahim; Sauer; Yassine, 1976: 61, 64). Otherwise, it was rarely attested in the other regional surveys (Miller, 1979: 79–90; MacDonald, unpublished).

It is thus clear that the decline of the Abbasid period continued into the Early Fatimid period, when Egypt was the dominant political influence in Jordan. Again, with the exception of the ʿAmman Citadel, the major cities in Jordan remained largely uninhabited. The Early Fatimid occupation seems to have been more rural in character, with smaller villages rather than major cities.

Stratigraphically, the Early Fatimid remains were found immediately above the Abbasid remains at the ʿAmman Citadel (Olávarri, unpublished), and probably at Tell Abu Qaʿdan (Franken and Kalsbeek, 1975: 1–7, 107–62; Sauer, 1976: 93). At these sites, there is no indication of a major break between the Abbasid and the Fatimid remains, and

6. Early Fatimid Sherds from ʿAmman Citadel (Courtesy E. Olávarri).



continuity of occupation would seem to have been the case. A few Early Fatimid coins have come from sites in Jordan, and one Fatimid coin of al-Hakīm (AD 996–1021) came from the recent excavations on the Amman Citadel (Olávarri, unpublished). The end of the period may have been brought about by the arrival of the Seljuq-Zengids in AD 1071, or of the Crusaders in AD 1099. Pottery which is similar to the Early Fatimid pottery of Jordan has come from the immediately pre-Crusader remains at Abu Gosh in Palestine (Vaux and Steve, 1950: 119–32).

Early Fatimid pottery is again largely wheelmade, although basins and pithoi are made by hand, and lamps are mould-made. The pottery is made of well prepared clay, and inclusions are fine. Firing is also very good, and grey cores are rare. Early Fatimid pottery is fairly thin, and also quite smooth. After firing it is usually orange-buff or yellow-orange in colour, although cooking pots are made of dark red ware. In surface treatment, Early Fatimid pottery attests thumb-impressing on the rims of basins; deep pleated impressing on the rims of pithoi; clear-glazing on the dark red cooking pots, which appears purple or brown in colour; polychrome 'splashed' glazing, in yellow, brown, green, and white, on the interiors of plates; and ribbing on some jugs and small forms. In form, Early Fatimid pottery includes glazed bowls, with simple rims and splayed sidewalls, and with widely flanged rims; cooking casseroles of thin red (glazed) ware, with angular thickened rims, horizontal strap handles, and piecrust ledge handles; basins with thickened rims and flat bases; pithoi with flattened and deeply pleated rims, and flat bases; and ribbed jugs with splayed rims, oval-sectioned handles, and string-cut bases.

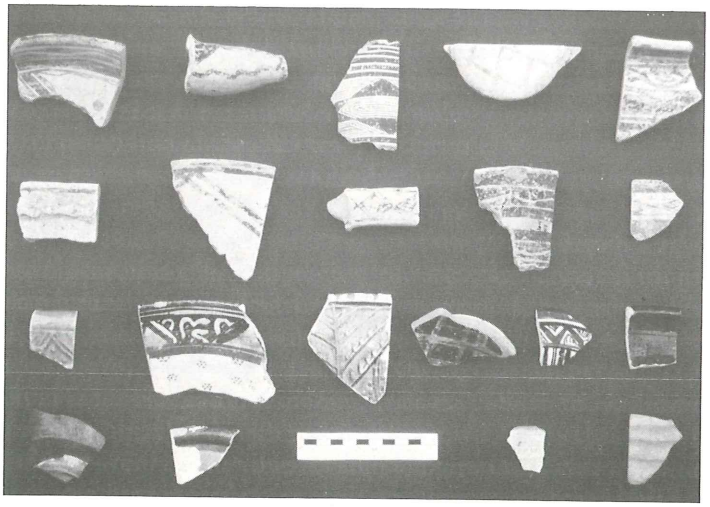
Ayyubid-Mamluk (*c.* AD 1174–1516)

Very little is known in Jordan about the overlapping Late Fatimid (*c.* AD 1071–1171), Seljuq-Zengid (*c.* AD 1071–1174), and Early Crusader (*c.* AD 1099–1187) periods. During most of this century, southern Jordan was in Crusader hands, and the Crusaders constructed their two major castles, one at el-Kerak (Musil, 1907a: 45–64, 359–62; Müller-Wiener, 1966: 47–48), and the other at esh-Shobak (Brünnow and von Domaszewski, 1904: 113–19; Musil, 1907b: 324–27). No systematic excavations have been carried out at either of these sites, and thus the available evidence for the period is very limited.

In the following Ayyubid-Mamluk (*c.* AD 1174–1516) period, however, there are again many sites in Jordan. Qal'at er-Rabad (Johns, 1931: 21–33; Augustinović and Bagatti, 1951–52: 227–314) is the Ayyubid (*c.* AD 1174–1260) castle near 'Ajlun, which was constructed during the time of Saladin to counter the Crusaders. At nearby Mugharet el-Wardeh (Coughenour, 1976: 71–78), Mamluk (*c.* AD 1260–1516) iron mining and smelting activities have been studied. In the Jordan Valley, numerous water-driven sugar mills of the Ayyubid-Mamluk period have been found (Ibrahim; Sauer; Yassine, 1976: 61–63). In the Valley, excavated Ayyubid-Mamluk remains have come from Pella (Smith, 1973: 236–43; Sauer, 1974: 172), and from Tell Abu Qa'dan (Franken and Kalsbeek, 1975: 1–7, 131–223; Sauer, 1976: 94). A fine stratigraphic sequence of Ayyubid-Mamluk pottery came from Tell Hesban (Boraas and Horn, 1969: 99–222; Boraas and Horn, 1973: 8–125; Sauer, 1973b: 50–63; Boraas and Horn, 1975: 114–215; Boraas and Geraty, 1976: 13–117; Boraas and Geraty, 1978: 15–199). The excavations at Dhiban (Winnett and Reed, 1964: 24–29, 56; Tushingham, 1972: 83–84; Sauer, 1975: 108) also encountered very substantial Ayyubid-Mamluk remains. Only limited Ayyubid-Mamluk remains have been found on the 'Amman Citadel (Bennett and Northedge, 1977–78: 172–9; Bennett, 1978: 1–9; Bennett, 1979a: 151–9; Bennett, 1979b: 161–3). Some Ayyubid-Mamluk pottery was published from Khirbet el-'Al (Reed, 1972: FIG. 5), and recent work at 'Ayn el-Basha produced a fine collection (Tell, unpublished). Unexcavated Ayyubid-Mamluk (and earlier?) sugar mills are also present along the southeastern plain of the Dead Sea, as at es-Safi (Albright, 1924: 3–4; Frank, 1934: 202–8; Glueck, 1935: 7–9; Rast and Schaub, 1974: 9–11, 15–17). Ayyubid-Mamluk remains have also been very commonly attested on most of the regional surveys, but especially the East Jordan Valley Survey (Ibrahim; Sauer; Yassine 1976: 63–4), and the Central Moab Survey (Miller, 1979: 79–90).

In 1187, the Ayyubid leader Saladin defeated the Crusaders at the Battle of Hattin, and from that time on Jordan was again in Arab hands. The Crusaders remained in Palestine until AD 1291, when they were expelled completely by the Mamluk Baibars. The defeat of the Crusaders and the uniting of Egypt and Syria under the Ayyubids and Mamluks led to a great revival of occupation in Jordan, because Jordan was now in a vital position between Egypt and Syria. Although many of the old classical sites remained uninhabited (e.g., Jerash, Umm el-Jimal, Quweilbeh, Umm Qeis) the numerous other Ayyubid-Mamluk sites testify to the high level of activity throughout Jordan during this period.

7. Ayyubid-Mamluk Sherds from Tell Hesban.



Stratigraphically, the Ayyubid-Mamluk remains were found above the Umayyad, Abbasid, and Fatimid remains at Pella (Smith, 1973: 236–43; Sauer, 1974: 172), Tell Abu Qa'dan (Franken and Kalsbeek, 1975: 1–7; Sauer, 1976: 94), Tell Hesban (Sauer, 1973b: 50–63), Dhiban (Tushingham, 1972: 83–84; Sauer, 1975: 108), and the 'Amman Citadel (Bennett and Northedge, 1977–78: 172–9; Bennett, 1978: 1–9; Bennett, 1979a: 151–9; Bennett, 1979b: 161–3). Both the Ayyubid (*c.* AD 1174–1260) and the Mamluk (*c.* AD 1260–1516) periods are represented, and continuity of development characterizes the two periods. Numerous Ayyubid and Early Mamluk (*c.* AD 1260–1401) coins are attested from the various excavations, but after AD 1401 they become less common. The invasion of Tamerlane in *c.* AD 1401 was apparently very destructive, and Jordan declined during the Late Mamluk (*c.* AD 1401–1516) period. In AD 1516, the Mamluks were easily defeated by the Ottoman Turks, and Jordan became part of the Ottoman empire.

Ayyubid-Mamluk pottery is very different in character from the Fatimid pottery described above. A large percentage of Ayyubid-Mamluk pottery is handmade, sometimes using pieces of cloth in the production process. Some of the pottery is wheelmade, such as the sugar pots, water jugs, and some bowls. Mould or cast-made pottery is attested in the lamps, in some bowls, and in some flasks. The ware of the handmade pottery is very poor, containing great quantities of grog. The handmade cooking pots, however, are made with large amounts of calcite temper. Firing is medium, and cores are sometimes present, sometimes absent. The glazed wares are made of well prepared clays, and they are evenly fired. In surface treatment, the handmade wares are usually painted in a dark colour, purple, brown, or black, in geometrical designs over much of the surface of the vessel. The handmade cooking pot is often red-slipped and burnished by hand. Bowls are often monochrome glazed in green, yellow, or brown, and moulded designs are often present under the glaze. Underglaze painting and slip-trailing are also found on many glazed bowls. Water pots are frequently puncture-incised to form delicate surface patterns, and sugar pots are often widely ribbed. Typical Ayyubid-Mamluk forms are handmade bowls of all kinds, with squared rims and angled or gradually sloping sidewalls; handmade jars and jugs, with splayed and flattened rims, concave disk bases, flattened loop handles, and occasional spouts; large-eared cooking pots, with splayed rims, rounded bases, and enormous horizontal rising loop handles; glazed bowls and plates, with simple, thickened, incurved, and widely flanged rims, as well as ring bases; wheelmade water pots with bulbous necks, neck filters, double loop handles, and ring bases; sugar pots of elongated and also squat types; and moulded lamps of slipper type.

Conclusion

Ten years ago, none of the above-described pottery periods could have been separated. Umayyad pottery was thought to be Byzantine in date, and Abbasid, Fatimid, and even Ayyubid-Mamluk pottery types were attributed to the Umayyad period, or to some vague 'Medieval' period. Yet, despite the improved situation today, much additional work remains to be done. The final reports of such excavations as Tell Hesban, the 'Amman Citadel, and Pella should produce additional subdivisions within the various periods. The regional surveys that are now underway, and those of the future, should provide important data about occupational patterns for each of the periods. They should also help to document evidence for regional variation of pottery (e.g., the Jordan Valley vs. the hill country; the north vs. the south). It should also be possible to clarify the origins of distinctive pottery types, such as the red-painted Umayyad pottery (related ultimately to Nabataean painted wares?), and the handmade, painted Ayyubid-Mamluk wares. Almost every new fieldwork project is turning up fresh evidence for these once neglected periods, and it is indeed an exciting time to be involved in this effort.

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Pella/Fahl in Jordan during the Early Islamic Period

In 635 AD/AH 13 one of the critical battles in the spread of Islam was fought in the northern Jordan Valley near the Byzantine town of Pella[1]. The Muslims, victorious over a Byzantine army, took control of the city immediately after the battle[2]; in the following year at the Yarmuk River a second decisive victory ensured their control of Palestine and Trans-Jordan.

Although we are reasonably well-informed about the major historical events of this period, we know much less about the material aspects of the society of the time and its economy. What were the results of the Muslim conquest in social terms? What effects did it have materially on the lives of the indigenous inhabitants?[3]

The Sydney-Wooster excavations at Pella in Jordan commenced in 1979[4], and have now uncovered more than 1,000 sq. m. of dwellings and courtyards on the *tell* dating to the seventh and eighth centuries. The following paper deals with the archaeology and finds of the Early Islamic period[5] uncovered during the University of Sydney's sessions in 1979 and 1980[6]. It should be emphasised that the conclusions reached in this paper are tentative, since much work on the material remains to be done.

Firstly, the architecture. Here two distinct divisions can be made in the Early Islamic period. These we have termed provisionally (1) Early Phase, subsequent to the Islamic conquest, and (2) Late Phase, characterized by a low concentration of settlement.

1 Early phase

The advent of Islam does not appear to have been accompanied by widespread destruction at Pella; rather, in two major areas so far tested, there appears to have been uninterrupted use of the pre-existing Byzantine buildings. What does appear to have altered radically in one area at least is the use to which buildings were put, as will be apparent from the description of the principal building so far unearthed.

This large edifice (FIG. 1) stood on the south-east edge of the *tell*, overlooking the Wadi Jirm; its origins may lie as far back as the fifth century, if the large number of pre-Anastasian reform *nummi* that were found in the collapsed *pisé* deposits within the room is anything to go by. Its use in the Byzantine period is attested by a Maltese Cross carved on the keystone of the internal arch of a large room. The building's original extent remains uncertain; Probably its western limits lay outside the area so far excavated. Incompletely uncovered though it is, it was clearly originally a building of considerable grandeur, covering well over 600 sq. metres. On the south side it overlooked the steep terraced and built-over slopes leading down to the springs for which Pella was famous (or, in the report of some, infamous[7]), while outside its north wall ran a pebble paved street. Its extent east and west is not yet known.

The technique of the building's construction was typically Byzantine. Large rough-hewn blocks of stone, sometimes with comb-teeth dressed faces, were laid to form two faces, and the interior of the wall and the interstices of the blocks were packed with mud and small stones (FIG. 2a & b). Above about 2.00–2.50 metres height the walls were built of *terre pisée*, in contrast with the southern slope of the *tell* where dark grey mud bricks (0.33 × 0.33 × 0.09–0.13 metres) have been found. In general the rooms were fairly small internally, e.g.

[1] For the Arab historians' accounts of the Battle of Fahl (=Pella) translated into English, see R. H. Smith *et al. Pella of the Decapolis* (Wooster, 1973), pp. 69–74.

[2] As is recounted by Balādhurī—Smith *op cit.*, pp. 72–73.

[3] Balādhurī (in 2, above) states that the inhabitants of Pella/Fahl surrendered to the Muslims on condition of paying a poll and land tax.

[4] The joint Australian American excavations are being undertaken by teams from the College of Wooster, Ohio (Director: Prof. R. H. Smith) and from the University of Sydney (Directors: Prof. J. B. Hennessy and Dr Anthony McNicoll; Field Director: Alan Walmsley). Each team is undertaking excavations of different areas of the *tell* and environs in separate sessions. The principal contributors in the excavations are as follows: Wooster session: College of Wooster, National Geographic Society of America National Endowment for the Humanities. Sydney session: Australian Research Grants Council, Australian National Gallery, University of Sydney.

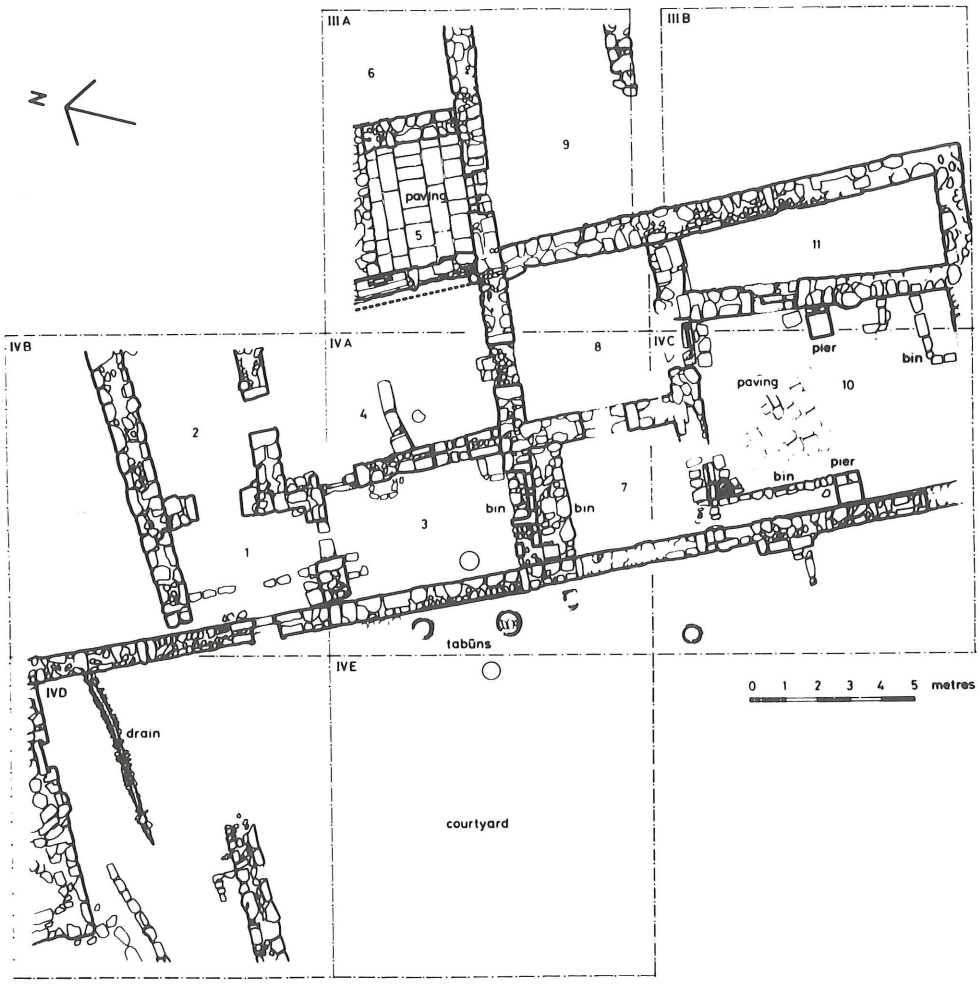
The Department of Antiquities, under the direction of Dr Adnan Hadidi, has helped and encouraged us in ways too numerous to mention. Preliminary reports on the 1979 session will appear in *BASOR* 1980 and *ADAJ* XXIV (1980); a brief notice on the early Islamic Architecture is published in *AARP* (Dec. 1979).

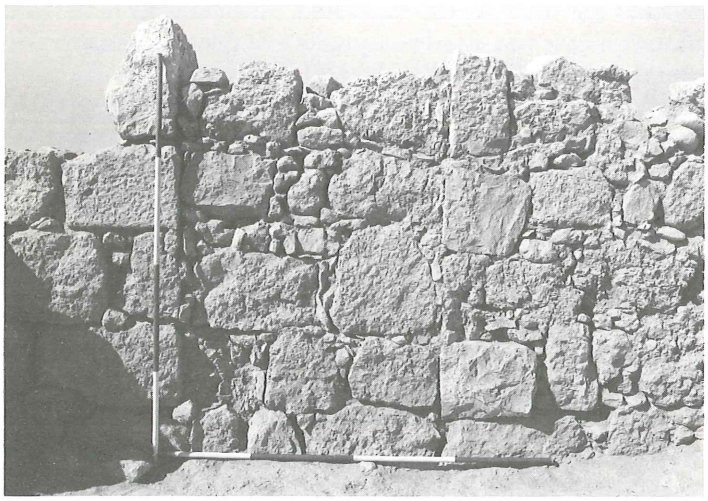
[5] We use the term 'Early Islamic' in this paper to cover both the pre-Umayyad Islamic period and the Umayyad. One of our primary aims at Pella is to distinguish the two periods, architecturally and artifactually, wherever possible.

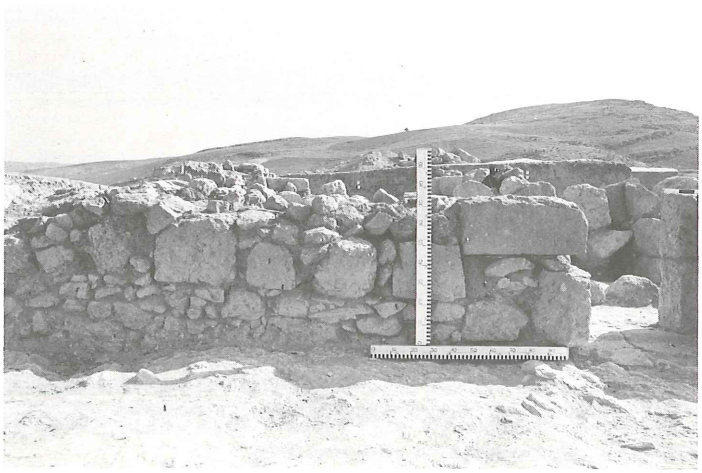
[6] The 1980 session is still in progress at the time of writing.

[7] Pliny *NH* 5.16.74 'Pella rich in water'; Stephanus Byzantinus *Ethnica* 104 'Pella°, the water of which is unhealthy'.

1. Plan of the Early Islamic remains (Early Phase) uncovered in 1979.







2. Construction techniques:
a. Byzantine wall with blocks, snecking and mortar, and doorway blocking of the Early Islamic period.

b. Early Islamic wall. Compare the cruder technique with 2a.

3. Plan of the Early Islamic remains (Early Phase) uncovered in 1980.



20.25 sq. metres, 17.80 sq. metres, and a central courtyard (?), perhaps hypaethral or simply trellissed, 35 sq. metres. Overlooking the south slope was an internally arched room with a ground area of roughly 50 sq. metres, but the arch effectively broke the area to be roofed into two[8]. The roof was flat, carried on beams with a span of 4–5 metres. The technique of construction and the width of the walls (generally 0.75 metres), make an upper storey of any solidity unlikely, although one would expect that the roof was used for sleeping, recreation and so on. Indeed, in a building north of the road excavated during the 1980 season, we found a staircase leading to the roof (FIGS 3 & 4).

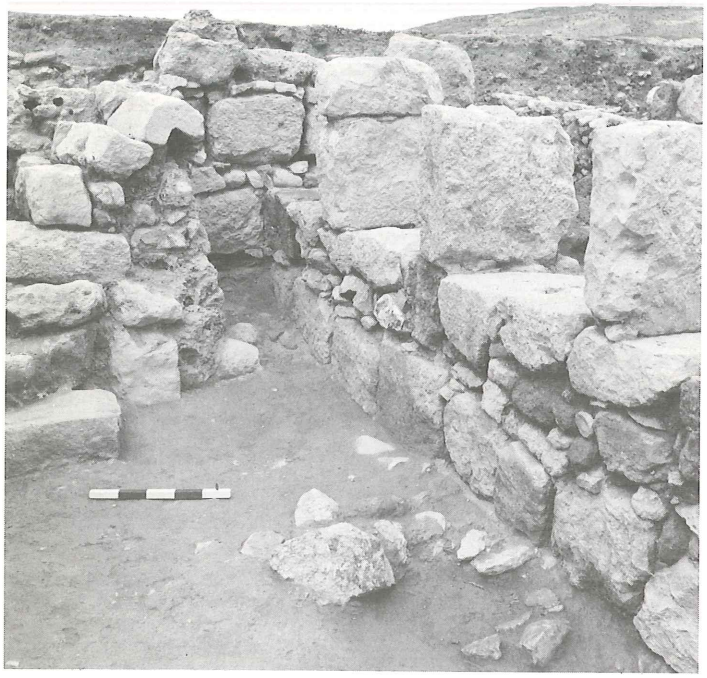
A feature of the building which should be emphasised is the large number of doorways giving access from room to room. Evidently the whole formed a single complex.

The seventh century saw radical changes in the architecture of the building. While unequivocal evidence for the date of these alterations is not yet available, it seems not unreasonable to ascribe them to the period of the Muslim takeover or shortly thereafter. Certainly nothing in the material record contradicts this hypothesis.

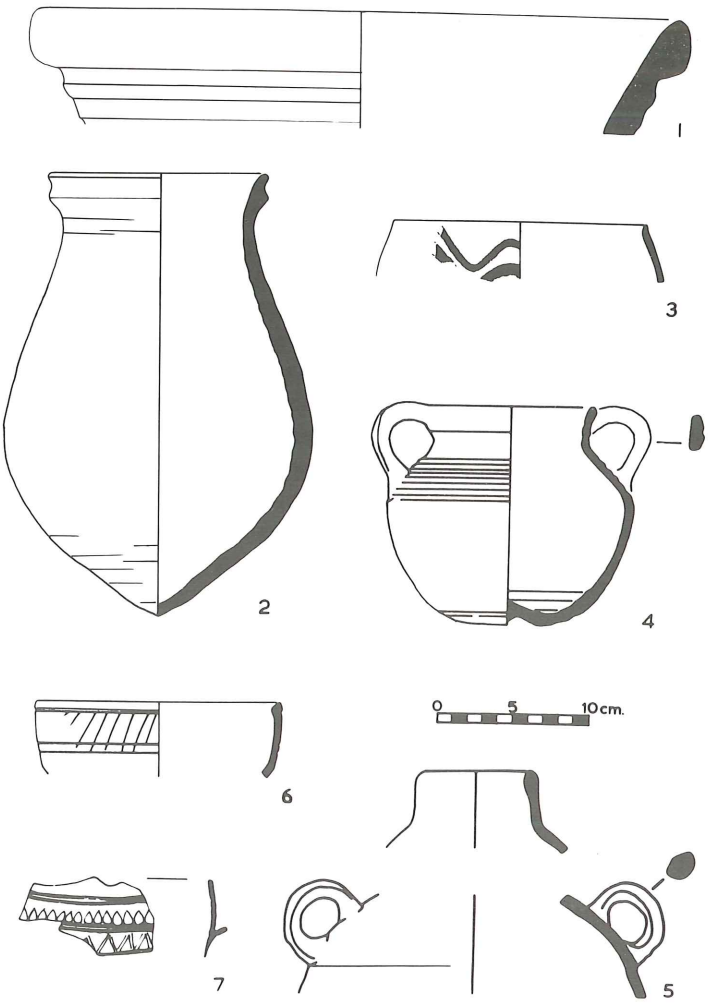
The major changes are simply stated. Firstly, the area of the building was diminished. A new western wall running roughly north–south was constructed to truncate the building and to form a courtyard outside it on the west. Probably contemporaneously with this truncation there occurred a second change: the blocking of doorways, which drastically altered the character and the function of the building. For by closing off access from room to room, the formerly extensive building was subdivided into at least three units. Furthermore, within two units feed-bins of undressed stones were built, providing evidence that beasts were enclosed rather than remaining outside. The presence of animals within the houses was dramatically attested by the recovery of articulated sheep/goat

[8] As is common, for example, at the Byzantine/Umayyad city of Umm al-Jamal; and at the former village of Khirbet Fahl.

4. Orthostat wall and staircase to roof.



5. Pottery from the Early Islamic (Early and Late Phase) ruins: Wares 5–8.



skeletons in the interior courtyard. They were evidently caught in the collapse of the building.

It is of interest to speculate on the nature of the apparently contrasting social groups which occupied this building before and after the modifications. The Byzantine house, roomy and obviously comfortable in both winter (rooms with a southerly aspect) and summer (cool interior courtyard), was probably occupied by a moderately wealthy family with an appreciation of space. Following the alterations, the building could no longer have served its original function but the different requirements of another social group. The economic status of these new inhabitants is suggested by the use to which various of the rooms were put, with both the feed-bins and articulated animal skeletons indicating the stabling of beasts, while the use of potential living space for the accommodation of animals indicates less concentrated human habitation of Pella in the Early Islamic period than in the late Byzantine period. Tentatively then, it can be suggested that the nature of the occupation of the eastern part of the mound in the Byzantine and Early Islamic periods undergoes a radical change with a settled or possibly even semi-sedentary agricultural community occupying the houses earlier given over to more socially 'elevated' families.

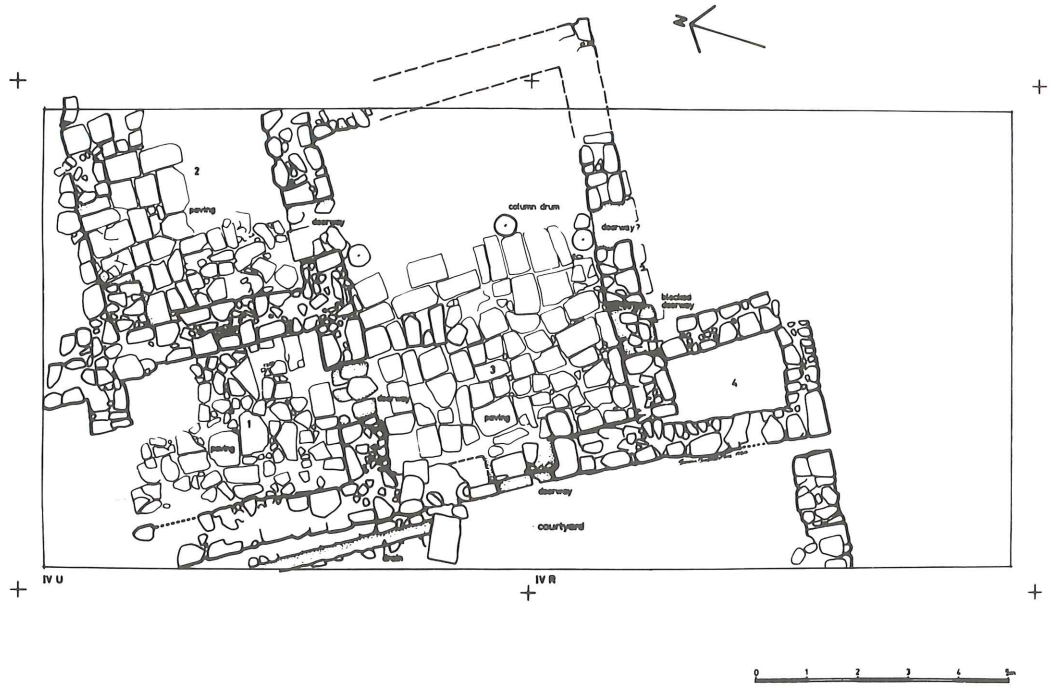
The building partially excavated in the 1980 season (FIG. 3) provides a complementary picture of the extensive use of Byzantine buildings and their modification in the Early Islamic period. Of note is the orthostat block technique used in one of the walls to allow the entry of light and circulation of air (FIG. 4). This is well paralleled at the desert city of Umm al Jamal.

As with the sheep/goat found in the room of the building excavated in 1979, so also crushed articulated animal skeletons were found in 1980. In the courtyard or forecourt of this newly uncovered building articulated skeletons of a mature horse, a young cow and a sheep/goat (?) were found beneath the tumbled masonry. In a neighbouring room a crushed and very decayed human skeleton was found.

2 Late phase (FIG. 6)

It is apparent that during the Early Islamic period a catastrophic event overtook the rural community of Tabaqat Fahl, an event characterized by the widespread collapse of the modified buildings with both people and livestock being crushed under the falling *pisé*, blocks of stone and roofing. The total absence of burning associated with this destruction points to a natural agent—very likely one of the major earthquakes which shook the Jordan Valley in the first half of

6. Plan of the Early Islamic remains (Late Phase) uncovered in 1980.



the eighth century[9]. The economic—and possibly human—loss must have been considerable for the largely agricultural society; certainly the size of the population after the earthquake was insufficient to initiate rebuilding on a large scale over the whole of the area uncovered. It appears that at this time Pella declined to the status of a village. What building took place after the earthquake was sporadic and possibly short-lived.

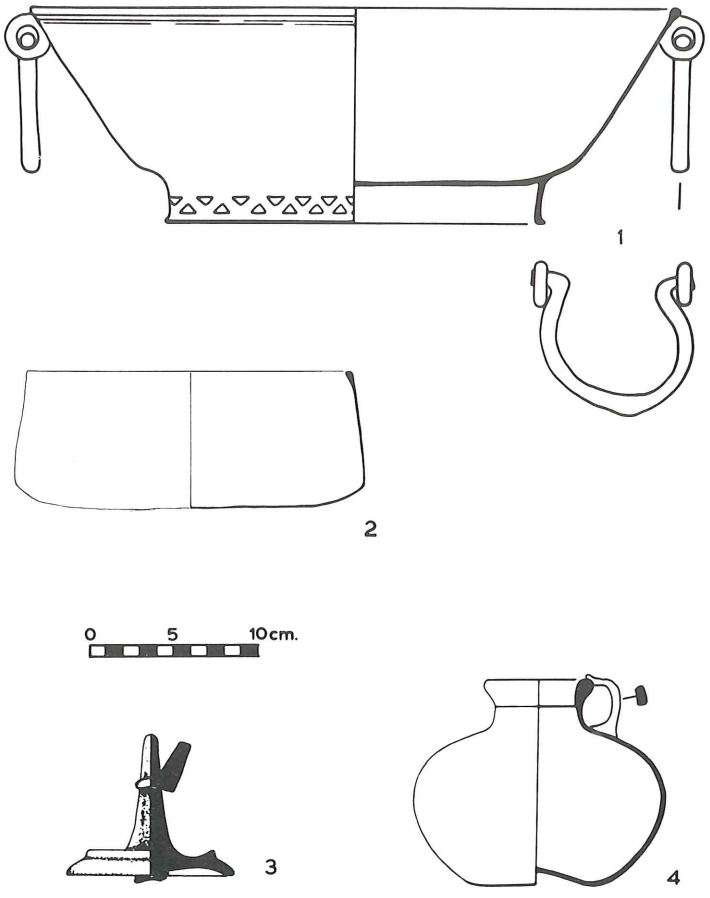
Archaeologically the sequence is plain enough. The remaining population, needing to rebuild, obtained material by robbing out the collapsed Early Phase buildings, as a number of robber trenches testify. Walls were frequently built on existing stubs, or were set in shallow foundation trenches sunk to find a secure footing. Unwanted walls were dismantled, or alternatively the ground level between fallen walls was raised using fill.

Figure 6 shows a Late Phase house consisting of three interconnecting rooms with a fourth, smaller room at the south-west corner. Rooms 1–3 were living rooms, all with mudstone paving. Room 3, the largest, was entered from outside by a doorway on the west side. The southern, blocked doorway perhaps provided access during construction.

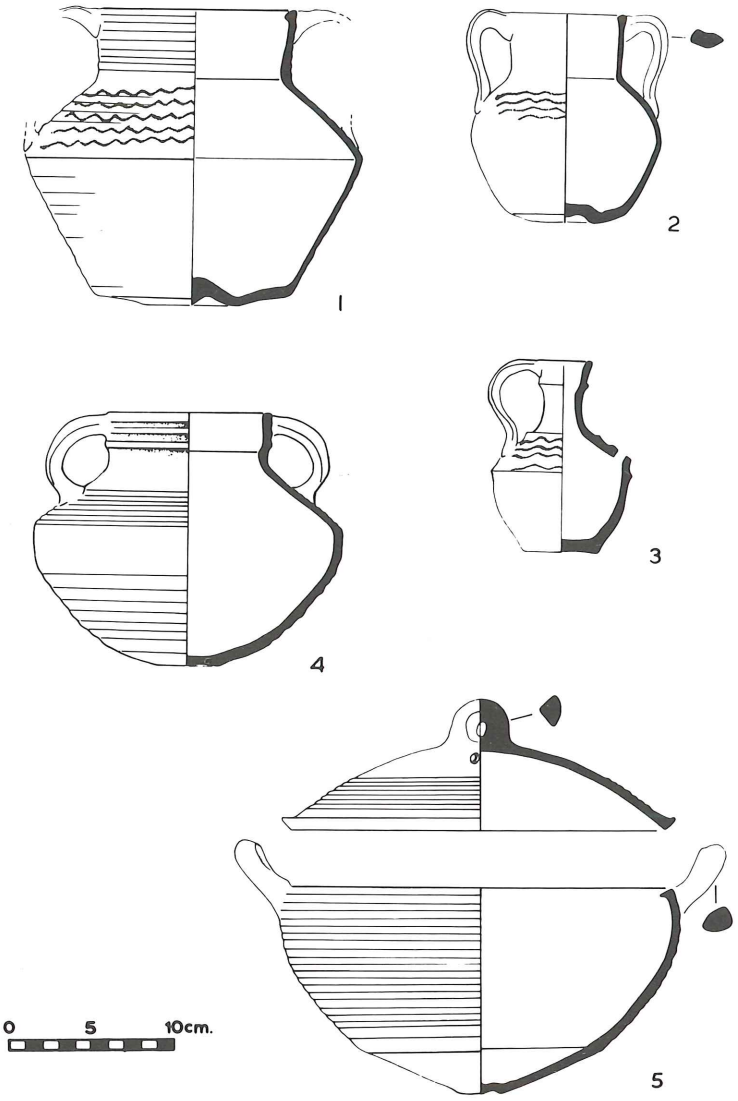
The finds of the more extensive Early Phase constitute an interesting range of artifacts in use in the early eighth century AD. In addition to the splendid intact glass jug (FIG. 7, 4) found in Area IV A Room 4, a few fragmentary glass bowls and juglets were recovered. In an adjoining room 8 two bronze vessels were found, one intact, the other broken (FIG. 7, 1–2).

[9] See Smith *op. cit.* 164–167 for a discussion of the date of the earthquakes which damaged and destroyed the western church.

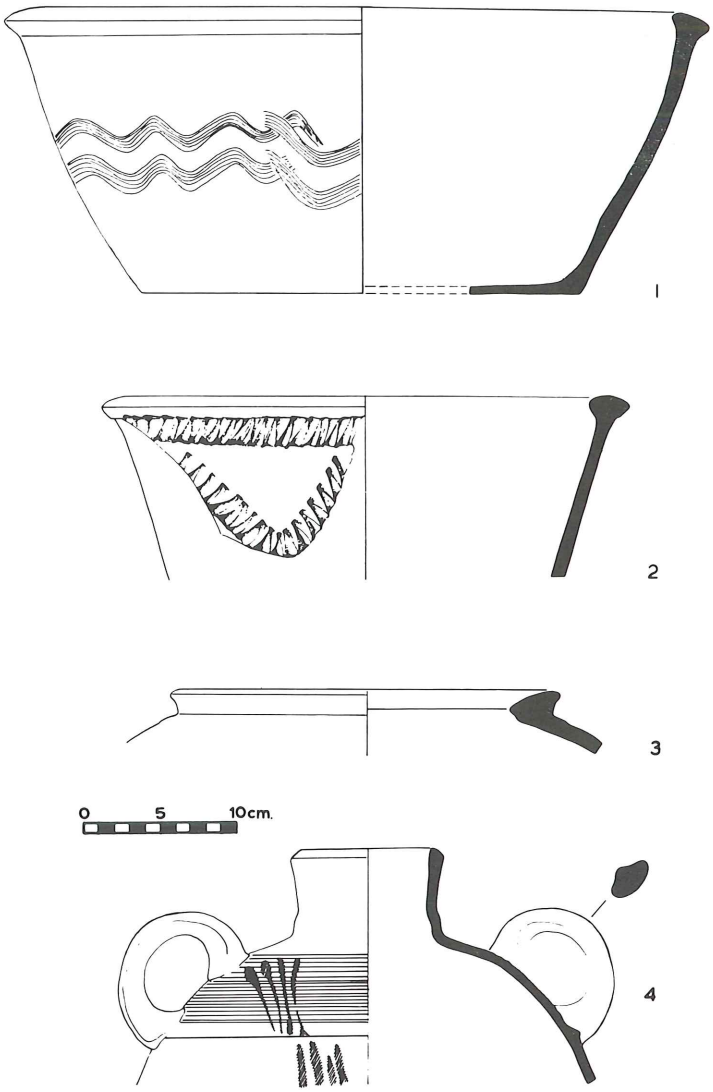
7. Small finds from the Early Islamic (Early Phase) ruins: bronze and glass objects.



8. Pottery from the Early Islamic (Early and Late Phase) ruins: Wares 1 and 2.



9. Pottery from the Early Islamic (Early and Late Phase) ruins: Wares 3 and 4.



It is likely that the vessels all fell from the roof, though, if this is so, the survival of the glass jug must be accounted miraculous!

Amongst the other finds, we may mention numerous large iron nails, usually found close to doorways; fired pottery loom weights, basalt grinding and polishing stones, and a mortar and pestle; and from the arched room (IV C, Room 10) a bronze lamp-holder which hung from the keystone of the arch on a bronze chain; and other bronze objects (FIG. 7, 3).

The ruins of Early Islamic Pella have naturally produced large quantities of pottery. Early Islamic ceramics are a vexed subject: the material has not hitherto seemed amenable to close chronological distinction in the manner of, say, Palestinian, Roman or Hellenistic period pottery. We hope that the site of Pella, with its apparent continuity of occupation in the Byzantine and Early Islamic periods will provide a typology of shapes, and detailed information on wares, which will contribute to an understanding of Byzantine/Islamic ceramics.

The following list (FIGS 5, 8 & 9) sets out the major wares and vessel types of the Early and Late Phases of the Early Islamic occupation; Appendix 1 sets out the results of a sieving experiment conducted in Early Phase deposits of three *loci* in Area IV H during the last weeks of the 1980 season. Further work along these lines will be continued in 1981.

Early Islamic horizon pottery from Tabaqat Fahl

WARE	EXAMPLE OF MUNSELL READINGS	FORMS
1. Gritty terracotta, painted with white wavy-line and swirling patterns.	10 yr 7/6	Small wide-necked jar with two handles and dimple base; spouted juglet with single handle; platter. (FIG. 8, 1–3)

Early Islamic Horizon pottery from Tabaqat Fahl (contd)

WARE	EXAMPLE OF MUNSELL READINGS	FORMS
2. Coarse terracotta ('cooking pot ware'), often fire-blackened on outer surface.	5 yr 6/6	Rounded and ribbed, cooking pot with neck; squat ribbed cooking pot with lid. Both types with handles. (FIG. 8, 4–5)
3. Metallic grey into buff (grey predominant), frequently with combed wavy-line or horizontal patterns or with chiselled patterns.	10 yr 3/1	Large flat-based mixing bowls, with or without handles, large hole-mouth storage jars with handles. (FIG. 9, 1–3)
4. Ware perhaps similar to (1) but fired at a higher temperature, metallic sounding. Brown slipped, painted with white circle and line decoration.	5 yr 7/6 surface slip 5 yr 6/2	Ribbed zīr (water storage jar), with collar-neck and two handles. (FIG. 9, 4)
5. Hard metallic terracotta, similar to (4), but unpainted.	5 yr 7/6	Small hand cup (not illustrated).
6. Coarse red, with chaff temper, sometimes buff.	5 yr 6/6	Heavy ring-based storage vessel; pointed-based jar, large flat-based mixing bowls (same general shape as (3)). (FIG. 5, 1–2)
7. White slipped, painted with bold red or brown patterns.	N.A.	Bowl and possibly others. Only a few fragments have been found so far. (FIG. 5, 3)
8. White slipped on pink, and white-cream to pale green.	10 yr 8/4	Storage vessels, smaller water vessels with rounded base, with or without handles; small bowls, incised. (FIG. 5, 4–7)

Appendix 1

Incidence of ceramic wares of Early Islamic (Early Phase) strata from three loci in area IV H recovered by dry-sieving to 1 cm²

WARE (SEE FIG. 1)	WEIGHTS IN KG. (TO 0.25 KG.) LOCUS 1 LEVEL 1	LOCUS 6 LEVEL 1	LOCUS 5 LEVEL 1
1. Gritty terracotta painted	—	—	—
2. Coarse terracotta	3.00 (22.64%)	14.00 (36.36%)	6.25 (35.71%)
3. Metallic grey	2.00 (15.09%)	1.50 (3.89%)	0.50 (2.85%)
4. Brown slip painted terracotta	3.50 (26.42%)	6.00 (15.58%)	2.50 (14.28%)
5. Metallic terracotta	0.75 (5.66%)	0.75 (1.95%)	0.25 (1.43%)
6. Coarse red	3.00 (22.64%)	13.00 (33.76%)	6.00 (34.28%)
7. White slip painted	—	—	—
8. Whitish	1.00 (7.54%)	3.25 (8.44%)	2.00 (11.43%)

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The Role of the Nabateans in the Islamic Conquests

This paper is concerned with the role the Nabateans played in a period when they are almost forgotten. Many historians tend to ignore the period after their defeat at the hands of the Emperor Trajan at the beginning of the second century AD.

Many studies have been carried out on Nabatean inscriptions and every aspect of their civilization up to the time when Christianity spread, from the third to the fourth century AD. During that time, Petra became the seat of the archbishop, and participated in many Councils of the church[1]. The Nabateans had three main centres: Ḥajr in the south, Petra in the middle, and Buṣrā in the north[2]. Buṣrā remained prosperous even after the fall of Petra; and during the Roman rule, it was the capital of the Province of Arabia. Arabic was the spoken language in all three centres in Bilād ash-Shām; Greek was the official language while Aramaic was the language of liturgy and inscriptions.

Many of their inscriptions were to be found in Sinai, Egypt[3], Horan, Um al-Jumal[4], Petra, Mada'in Ṣāliḥ, and north of Ḥijāz[5]. As far as I know, these inscriptions go back to the fourth century AD. It is also well known that they were the origin, or one of the origins, of the Arabic script.

Our knowledge of the Nabateans during the periods which preceded the coming of the Moslem Arabs, the Islamic conquest of the Prophet and the Caliph ʿUmar is scarce. Nevertheless, we can say that in the fourth century AD, they intermingled with the Arab tribes emigrating to Bilād ash-Shām. These tribes were called Arabised Christians to distinguish them from the Arab tribes of Ḥijāz. The reason for giving them that name was that although they converted to Christianity, they accepted the new religion only superficially[6]. Of these tribes were Juḍhām, ʿUdhrah, Bahrā', and part of Kalb. In the south, there were the tribes of Sulaym, Muzayna, Juhayna and Bali which stayed pagan until the coming of Islam.

Juḍhām, including their cousins (Lakham), was one of the strongest and largest tribes. Judhām was able to stand up to the strongest tribes in Bilād ash-Shām such as Ġhassan, Kalb and Kindah. Their territory stretched from Ḥajr in the south to Syria in the north where they bordered the tribe of Kalb. They were also found in Wādī al-Qurā, Tabūk and Ilah. They built and expanded such cities as ʿAmmān, Ma'an, Idhrah, Mudayn and Ghaza. In addition, they engaged in trade with Egypt, the Arabian Peninsula and Syria[7]. From this we can see that Judhām inhabited the same area that had been inhabited by the Nabateans, although the latter moved further to the north while the former further to the south. What I want to emphasize about Judhām is that the Nabateans, after the disintegration of their state, could have mingled with Judhām whose geographical expansion was similar to that of the Nabateans. It is also possible that both had become allies, fought together after the coming of Islam, then converted along with almost all the Arab tribes of Bilād ash-Shām to the new religion.

In spite of that, we have some sources that specify the role the Nabateans had played especially during the early Islamic conquests. In the book *Al-Maġhāzī*, which is one of the earliest books that dealt with the conquests, Al-Wāqidī wrote about the raid on Tabūk. According to him, before Islam, the Ṣāqita, that is the Nabateans, went to Madīna as traders[8]. After Islam, the only source of news from Bilād ash-Shām also came from them[9].

Al-Wāqidī added that the Nabateans spread the news that the Byzantines were amassing a great army under the leadership of Hercules whose headquarters was in Homs[10]. We can deduce from this that the Nabateans continued trading with Yathrib (Madīna) even after the coming of Islam. There is no doubt, then, that the Arab Nabateans resented the fact that the Romans and later the Byzantines were the ones who destroyed their state and influence. So, they allied themselves with the rising power of Islam and the tribes of the Arabian Peninsula whom they considered as their liberators. As a result of their relation with Yathrib and the Arabs of Ḥijāz, Al-Wāqidī said that in many places they were mistreated and persecuted as in Dumat al-Jandal[11]. As a further evidence, Ibn ʿAsākir confirmed the above mentioned facts in his book[12].

So, we find that the Nabateans wanted to continue trading with Madīna even after the coming of Islam, but this obviously did not please the Byzantines who asked the ruler of Dumat al-Jandal to persecute them. This hypothesis is confirmed to be true in the book *At-Tanbīh wa-l-Ishrāf* by Al-Masʿūdī,

who mentioned that the ruler of al-Jandal who was a Christian and subjugated to Hercules the Byzantine emperor, used to mistreat the Madīna traders of whom many were Nabateans[13]. This incident is also mentioned in Ibn Saʿd's book *At-Ṭabaqāt Al-Kabīr*. He wrote that Hāshim Ibn ʿAbdul-Manāf, the Prophet's grandfather, used to trade in the Nabateans' sūq (market) which was held in Yathrib[14]; so too in Professor Muḥammad Kurd ʿAlī's book *Khiṭaṭ Ash-Shām*[15].

However, of the greatest importance, was the role they played in the great Islamic conquests. Ibn ʿAtham al-Kūfī wrote in his book *Al-Futūḥ* that during the war between the Moslems and the Byzantines in Palestine, ʿAmr Ibn Al-ʿĀṣ, sent a letter to Abū ʿUbbayyda saying that the people of Baalbeck had gathered an army of twenty thousand in support of Hercules. This piece of news was sent to the Moslems by their Nabatean agents, residents of Bilād ash-Shām. He also added that when Abū ʿUbayyda had decided to fight, he sent a Christian Nabatean as messenger to the Caliph ʿUmar. When ʿUmar met the messenger, he admired is intelligence and asked him to convert to Islam. The messenger agreed, was well-treated and was sent back to Abū ʿUbayyda with a letter from the Caliph[16].

A further proof of the above mentioned incident is found in Al-Balādūrī's book *Futūḥ Al-Buldān*. During the Islamic conquest of northern Syria and the Peninsula, the army leader ʿAyyāḍ Ibn Ġhanam asked the Arab inhabitants to work as spies for the Moslem Arabs against the Byzantine enemy, a task they accepted[17].

During the reign of the Caliph ʿUmar and before the conquest of Jerusalem, ʿAbdul-l-Munʿim Al-Ḥimyarī, one of the late historians, wrote in his geo-historic lexicon *Ar-Rawḍ Al-Mi'tār* the following anecdote. He said that the inhabitants of Jerusalem and Abū ʿUbayyda, the leader of the Islamic armies, agreed that the keys of the Holy City would be given to the Caliph ʿUmar in person when he came to Jerusalem. The peace treaty which would later be known as ʿuhdah-l-ʿUmaryyah and which has been kept ever since at the Greek Orthodox Patriarchate in Jerusalem, was handed to the Jerusalem Patriarch Sofronius with some later additions. Later, the Caliph wrote to the Patriarch giving sanctuary to the Christians, their children, women and churches, on condition that they would not allow the Jews to live in the city. Afterwards, when ʿUmar came to Jerusalem, he ordered the Nabateans of Palestine to sweep the place of the Rock, which had become a rubbish dump[18].

From the above text, we can recognize firstly that the Arab Nabateans probably made up a large percentage of the inhabitants of Palestine. Secondly, the people of Jerusalem under the leadership of the Patriarch asked the Moslem Arabs not to let the Jews live in the city. Thus, the Jews were not living in Jerusalem at the time, and its inhabitants did not want them to come back after they were expelled by the Romans at the hands of Titus in 70 AD. This is a very important matter but irrelevant as far as this paper is concerned.

It seems that the Nabateans, who were farmers too, resided in Palestine and southern Bilād ash-Shām. Ibn ʿAsākir wrote that the Caliph ʿUmar asked the Nabateans of Bilād ash-Shām to let the Moslems eat their produce but not to take anything with them[19]. Al-Iṣfahānī, the author of *Al-Aġhānī*, wrote that the Nabateans of Yathrib played an important role in the civil war that led to the assassination of the third Caliph ʿUthmān[20]. The same idea was also mentioned by Al-Balādurī[21]. From all this, we can say that the Nabateans had been in Madīna before and after the coming of Islam. That they also had their own market there is very clearly verified.

There is no doubt, however, that when we discuss the Nabateans, there is the danger of getting confused with the following terms: Nabṭ and Nabateans. Nabṭ is given to villagers and hired workers, while Nabateans to the inhabitants of the city of Petra. It seems to be that later in history either of the two terms referred to both meanings since the Nabateans, who were originally merchants, also became farmers. It is interesting to know that the Aramaeans who lived to the south of Ḥajr were farmers and also used to be called Nabateans[22]. It is true that the word Nabṭ was first given to the Syriacs and the Chaldeans, the inhabitants of Mesopotamia. Those two peoples were Semites despite their obscure origins[23]. However, the mistake lies in the fact that Nabṭ was synonymous with farming. Ibn Al-Qaryā defined the word Nabṭ as the people whose livelihood came from cultivated lands[24], while Ibn Al-Kalbī defined it as anyone who was not a shepherd or a soldier for the Arabs and who lived on cultivated land[25]. Ibn Habīb of *Al-Muhabbir* wrote that the mother of Maslama Ibn Hishām Ibn al-ʿĀṣ from the tribe of Makhzum was a Nabatean from Dūmat al-Jandal; the mother of the sons of ʿUtba Ibn Nawfal Az-Zahrī was a Jewish Nabatean[26]. Thus, it is very difficult to distinguish between Nabṭ and Nabateans in Bilād ash-Shām, but the reader is able to do so from the context.

We have mentioned that the Nabateans intermingled with the tribe of Judhām in Bilād ash-Shām and became farmers in addition to being town and city dwellers. Moreover, we find that during the reign of the Umayyad Caliph ʿAbdu-l-Malik, they also co-existed with the Jarajima from the people of Lukām in northern Syria. Ibn Al-Athīr wrote that ʿAmr Ibn Saʿīd refused to give allegiance to ʿAbdu-l-Malik. Consequently, the leader of the environ of the mountain of Lukām attacked with followers from the Jarajima, the Nabateans and slaves, but ʿAmr was defeated at the hands of ʿAbdu-l-Malik. Later, one of the army leaders of ʿAbdu-l-Malik whose name was Shuḥaym Ibn Al-Muhājir fought them and many Jarajima and Nabateans were killed. The rest were given safe conduct and they withdrew to their villages[27].

At the beginning of his reign, ʿAbdu-l-Malik Ibn Marwān was busy fighting the rival to the Caliphate, ʿAbdu-llah Ibn Al-Zubayr, in Ḥijāz and his brother Musʿab in Iraq. The Byzantine emperor took advantage of this critical situation and tried to acquire the lands of the Moslems. Apparently, with the help of the Jarajima and some Nabateans, he was

able to fight the Moslems. When ʿAbdu-l-Malik defeated the Byzantines, he gave the Nabateans and the Jarajima safe conduct. So, the latter went back to the villages around Ḥoms and Damascus and to their city in Lukām, the former to their villages while the slaves went back to their masters[28].

At a later period during the reign of the Umayyad Caliph Yazīd Ibn ʿAbdu-l-Malik, Al-Kūfī described in his book *Al-Futūḥ* how Yazīd Ibn Muhlab revolted against the Caliph who sent Maslama Ibn ʿAbdu-l-Malik to fight him. Al-Kūfī continued to describe how the Umayyad soldiers were arrogant and fearless of the enemy which included the Nabateans in their ranks[29]. We should, however, disregard Al-Kūfī's hostile bias against the Umayyads because of his Shiʿite's tendencies. On the other hand, we can tell from his story that the Nabateans were soldiers in the army of Bilād ash-Shām ready to fight for their land and lives, in addition to being farmers and landowners.

At the beginning of the Umayyad Caliphate, the Moslem Arabs, mainly the members of the Umayyad dynasty and senior government officials, started to buy lands. To stop this, the Caliph ʿUmar Ibn ʿAbdu-l-ʿAzīz forbade such transactions; whenever a Nabatean sold his land to a Moslem, he used to return it to its former owner, and deposit the money paid for it in the state treasury[30].

Between 140–141 Hijrī, the Caliph Abū Jaʿfar Al-Manṣūr looked into the matter of the tithe lands. He examined the situation and reduced the tithe which was called 'Taʿdīl'.

To summarize, we can say that before Islam the Nabateans established an authentic Arab civilization. During the lifetime of the Prophet and the pre-Umayyad period, they continued their trading with Madīna, and provided information to the Moslems about the enemy manoeuvres. During the period of the great conquests, they were agents for the Moslem armies. In addition, and after the battle of Yarmūk, the Nabateans along with Judhām and the Arabs of Bilād ash-Shām joined the Moslem armies and fought with their Arab brethren. In the Umayyad period, some of them became farmers and villagers, and in due course intermingled with the people of Bilād ash-Shām, and consequently shared with them the same fate.

In the centuries following, we know that they built a castle outside Petra during the Crusader Wars. In the 16th century AD, they gave their name to a complete neighbourhood of Damascus which was exclusively inhabited by them[32]. Finally, Professor Hitti has written that nowadays the tribes of Huwayṭāṭ[33], and probably 'Al-Budul', the people of Petra, are the Nabateans' descendants.

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Bait al-Maqdis in Islam*

This is an attempt to give an idea of the significance of Bait al-Maqdis in Islam, between the 1st (7th) and the 5th (11th) centuries. The sources used are generally from that period.

Traditions and reports need a critical assessment in time, locality, and tendency; they were not just pious utterances, but were related to their background and conditions.

Veneration for B. al-Maqdis began early, in Mecca, with the verse on Isrā' to al-Masjid al-Aqsa (sura XVII, 1) revealed c. 611 AD[1]. Early reports explain that al-Aqsa meant the city or preferably the Haram, and add that the ascension (Mi'rāj) was from there[2]. The Isrā' and Mi'rāj became themes for expanding pious stories.

B. al-Maqdis became the first 'qibla' in Medina for about 17 months, before Muslims were directed towards the Ka'aba (sura II, 144)[3].

Traditions enhanced the sanctity of B. al-Maqdis as the third of the two Noble Sanctuaries, especially one limiting religious visits to the three mosques of Mecca, Medina, and B. al-Maqdis[4]. This tradition comes in more than one form, with slight verbal variations[5].

Other traditions and sayings (āthār) began to circulate early, reflecting socio-political currents. These, and later sayings, give an idea of the veneration for B. al-Maqdis and its development in course of time[6].

Accounts of the conquest of B. al-Maqdis, with Umar's visit to the city, assume special importance in the annals of conquest because of the city's elevated position. Numerous and varied reports, accounts and stories have come about, and many are influenced by local, social, and religious interests[7].

A study of early accounts shows that B. al-Maqdis capitulated to Muslim commanders, as Medinese[7] and Iraqi[8] reports generally show, and that Umar came to Syria to set the lines of its administration, and paid a visit to the city[9]. But Syrian and Christian accounts indicate that the city only surrendered to the Caliph in person[10], thus reflecting local social and religious interests.

The 'ṣulḥ' with B. al-Maqdis assumed special importance, but descriptions of this 'ṣulḥ' vary. Early reports indicate that it was similar to agreements concluded by commanders with other cities in Syria—safety for the people, their property and churches, in return for payment of the Jizya[11]. The texts of the 'ṣulḥ' given by Ya'qubi and Eutychius follow this line[12].

Tabari, quoting Saif b. Umar (180/796) reports that a special 'ṣulḥ'—different from those drawn up for other cities of Palestine—was concluded with Ilya (B.M.), and produces a text with further guarantees for religious freedom and safety of churches and stipulates that no Jew is allowed to live in Ilya[13]. The unusual wording of the text, and the reference to the Jews, not in line with normal practice, arouse doubts. Besides, it finds no support in early Arabic sources[14]. Ibn

* Bait al-Maqdis is a transliteration to the Arabic of 'The Dome of the Rock'.

[1] Baladhuri—*Ansab* I p. 255 puts it one year before the hijra. Another report makes it 18 months before the hijra.

[2] See Ibn Hisham—*Sira* (ed. Saqqa and others) II pp. 36–37, 39, 41, 43. Ibn Ishaq—*Sira* (ed. Hamidullah) p. 275; Baladhuri—*Ansab* I p. 255 adds: it is the mosque of Bait al-Maqdis, see also p. 256; *ibn Sa'ad-Tabaqat* IV p. 153. Tabari refers to various interpretations and then maintains that al-Masjid al-Aqsa means the mosque of B. al-Maqdis, *Tafsir* (Cairo 1328) vol. XV, p. 5, see also pp. 7, 12, 13–14.

[3] See Ibn Ishaq-*Sira* I, p. 277, 299; Ibn Hisham II, p. 198–199; Askari-*Awa'il* I (Damascus), pp. 331, 334; Tabari-*Tafsir* III (ed. M Shakir), pp. 132–136, 138; Ibn Hanbal-*Musnad* IV, p. 283; Bukhari I (Cairo 1304), p. 59; M. F. Abdul Baqi-*Lu'Lu'* I, p. 216.

[4] 'You shall only travel to three mosques, al-Masjid al-Harām (in Mecca), my mosque (in Medina) and the Aqsa mosque', see Wensinck—*Concordance* II, p. 429; Kister 'A Study of an Early Tradition', *le Muséon* LXXXII, 1–2, 1969, pp. 173–196.

[5] See San'āni-*Musannaf* V, nos. 9158–9160, 9162 and 9171; Ibn *Hanbal-musnad* II, p. 238, 278, III, pp. 64, 34, 51–53, 93, IV, pp. 7, 397–398; Muslim-*Sahih* III, pp. 1014–1015, II, nos. 415, 511–513; Nasā'ī–*Sunan* II, pp. 37–38; *Kanz al-Ummal* XIII, p. 233, 1307–1309, 1311, 1318, Bayhaqi-*Sunan* X, p. 87; M. F. Abd al-Baqi—*Lu'lu'* I, p. 97–98.

[6] *Eutychius* II, pp. 17, 18.

[7] Salim b. Abdullah, in *Tabari* I, p. 2403; Khalifa b. Khayyat I p. 125; Ibn Ishaq *in Tabari* I, p. 2360; Laith b. Sa'ad in Abu Ubaid-*Amwal*, pp. 224–225, and Baladhuri-*Futuh*, p. 139.

[8] Saif b. Umar in *Tabari* I, pp. 2397–2402, see also p. 2404–2405, 2408; Ya'qubi-*Tarikh* II, pp. 160–161.

[9] See Ibn Asakir-*Dimaskq* I, pp. 553, 554, 556; Ya'qubi II, pp. 160–161.

[10] See Baladhuri-*Futuh*, pp. 138–139 (from Abu Hafs al-Dimashqi and others) and p. 139 (from Hisham b. Ammar al-Damashqi); *Azdi-Futuh al-Sham*, pp. 24–25, 247–251, 258; see Ibn A'tham I, pp. 289, 291–292, 301; Abu Ubaid-*Amwal*, pp. 245–6; see Ibn Asakir-*Dimashq* I, p. 553; Khalifa I, pp. 124–125.

[11] See Azdi-*Futuh*, p. 250; Baladhuri-*Futuh*, p. 139; Ibn A'tham I, p. 291; Tabari I, p. 2404; Yaqut-*Buldan* V, p. 598–599.

[12] Ya'qubi II, p. 167; Eutychius II, p. 16.

[13] Tabari I, pp. 2405–2406; see *Muthir al-Gharam*, pp. 8–9.

[14] Michael le Syrien—*Chronique* II, p. 425 mentions the prohibition of the Jews and makes the ṣulḥ for all Christian in Syria.

al-Jawzi, however, quoting another report of Saif, gives the text of the 'ṣulḥ', without the additions, and in the usual style[15]. It seems that the text in Tabari reflects later, probably Christian, ideas[16].

The text of this 'ṣulḥ' ('ahd) was developed in time, to be known as the Covenant of Umar[17]. It comes in different versions from the 2nd (8th) century onwards, and was generalized for all Christians of Syria[18]. A study of these texts shows that they have no relevance to the period of the conquest, but reflect the position of Christians, and occasionally their claims, in Muslim society from the time of Umar II onwards. Some texts give a legal framework for later developments[19].

Umar's visit to B. al-Maqdis—his only visit to a city outside Arabia—was on account of its sanctity. The visit accounts for reports and stories by Jews and Christians, as well as Muslims, to establish precedents in their interests[20].

Umar cleared the Haram, uncovered the Rock and prayed south of it. A simple mosque was soon erected there. Al-Azdi 321/933) states that Umar planned there a 'miḥrāb' on the eastern side 'which is the site of his mosque'[21]. Both Muhallabi (4th/10th century) and Maqdisi (Mutahhar b. Tāhir) refer to the erection of a mosque in the time of Umar, while Theophanes, Eutychius and Michael the Syrian state that Umar ordered the erection of this mosque[22]. A later report mentions the minbar (pulpit) of this mosque under Muʿawiya[23], while Bishop Arculf who visited the city c. 670 AD (50 AH), described the mosque[24]. Half a century later, it was rebuilt on a grand scale.

Umar sent a companion (Ubadā b. al-Sāmit) to be judge and teacher, a step reserved only for important provincial Arab centres[25]. This, with the references to many companions and followers (tabiún) who visited B. al-Maqdis or lived there, are indicative of its high place[26]. The pious Abu Dharr—about to be banished—expressed the wish to go to Mecca, or to B. al-Maqdis, while Abu Ubaida b. al-Jarrāh died on his way to it to pray in the Haram[27].

With the Umayyads, B. al-Maqdis received special attention, for politico-religious reasons. The city's sanctity could mean Islamic prestige and support for the Umayyads. If their opponents refer to Medina, not to mention Kufa, *they* have B. al-Maqdis. It was no coincidence that both Muʿawiya in 40 AH (660 AD), before the abdication of al-Hasan[28], and Abd al-Malik, in conflict with Ibn al-Zubair[29]—received the bayʿa (oath) in B. al-Maqdis. Besides, those two and other Umayyad Caliphs—Walid, Sulaiman, Umar II and Yazid II—frequently visited the city, thus showing their veneration for it[30].

The great monuments of B. al-Maqdis were erected by the Umayyads, to emphasize the sanctity of the Haram and to gain more respect and renown among Muslims.

Abd al-Malik built the magnificent Dome of the Rock in 72 AH (691–2 AD)[31]. Ya'qubi's (284 AH/895 AD) report that the Caliph meant to divert the pilgrimage to the Dome, to keep people away from the daʿwa of Ibn al-Zubair[32], can be dismissed on internal and external evidence[33]. It is an isolated report with anti-Umayyad leaning. It makes the Caliph invoke the authority of Zuhri (124 AH/741 AD), who only visited Damascus ten years later (82 AH) and was even then young and unknown. Besides, Abd al-Malik, a Hadith scholar, fighting for his Caliphate, could hardly run against Qurānic injunctions[34]. Later historians reiterated this report[35]; Muhallabi, a geographer (4th century AH/10th AD), and in line with Shiite views attributed the decision to Walid, to prevent people from knowing the virtues of the family of the Prophet[36]. Both Yaʿqubi and Muhallabi report that pilgrim-

[15]See Tabari *I*, p. 2399 ff; Ibn al-Jawzi-*Fada'il al-Quds* (Beirut 1979), pp. 123–124.

[16] al-Himyari gives a summary of the terms and adds: 'They (Christians) stipulated that Jews do not live with them', *al-Rawd al-Miʿtar*, p. 69. See Hamarneh in *Folia Orientalia IX*, 1969, p. 145 ff.

[17] Ibn Aʿtham *I*, p. 196 gives the first reference to this document which Christians in B. al-Maqdis attribute to his days.

[18]Tabari *I*, p. 2405, Ibn Asakir—*Dimashq I*, pp. 563–564, 564–565, 566–567, 567–568, Mujir al-Din-*al-Uns al-Jalil I*, p. 253–254, Ibn Qayyim al-Jawziyya-*al-shurut al-Umariyya*, ed. Subhi al-Salih (Damascus 1961).

[19]See the text published by the patriarchate of al-Quds in 1.1.1952 in Arif al-Arif-*Mufassal fi Tarikh al-Quds*, pp. 49–50. See Tritton, *The Caliphs and Their Non-Muslim Subjects*, pp. 5 ff.

[20]See Azdi-*Futuh*, p. 259; Eutychius *II*, pp. 17–18; Tabari *I*, pp. 2408–2409; Ibn Aʿtham *I*, p. 296; *Encyclopedia Judaica, Art. Jerusalem.* (Christians relate (Eutychius) how Umar respected their churches, especially the Holy Sepulchre, how the Patriarch suggested the neglected Haram area as a site for a mosque, and how he stipulated the barring of Jews from the city. A Jewish account claims that Jews petitioned Umar to allow 200 Jewish families from Egypt to come to the city, but on the objection of the Patriarch Umar agreed to let 70 families come and live south of the Haram. Egypt was conquered some years later. See *Ency. Judaica, Art. (Jerusalem).*

[21]Azdi-*Futuh*, p. 259; pseudo- Waqidi—*Futuh I*, p. 151.

[22]Muhallabi, *in Majallat Maʿhad al-Makhtutat*, 1958, p. 48, p. 45; Maqdisi, *al-Bad' wa'l-Tarikh IV*, p. 87: Eutychius *II*, p. 81; Michael le Syrien, p. 423; Le Strange *Palestine*, p. 140 fn.

[23] See Ibn Firkāh *Bā'ith al-Nufus* (from Khalid b. Safwan), p. 14; Himyari-*Rawd*, p. 69; Qalqashandi, *Subh IV*, p. 101; Ibn Khaldun—*I* (Bulaq), p. 297.

[24]Palestine Pilgrims Texts Society, VII (N.Y. 1971) pp. 4–5.

[25]Ibn Hajar—*Isaba II*, p. 160 and Ibn Abd al-Barr (in Morgin) p. 441.

[26]Ibn Asakir-*Dimashq VI*, p. 370; Wathima-*Bad'al-Khalq*, p. 192; *Muthir al-Garam*, p. 7 ff; Suyuti-*Ithaf* (MSS), fols. 86a–93a.

[27]See Baladhuri-*Ansab VI*, pt. *I* p. 534; Ibn Hajar-*Isaba II*, p. 245; Ibn Asakir-*Dimashq VI*, pp. 316, 317. A later report says that Muʿawiya made a pact of alliance and mutual support with ʿAmr at B. al-Maqdis. *Muthir al-Gharam*, p. 14.

[28]Tabari *II*, p. 15; Maqdisi-*Badʿ IV*, p. 87; Tarikh *al-Khulafa* (Anon.), p. 121; Qalqashandi-*inafa I*, p. 110; Wellhausen (Arabic), p. 96.

[29]In *Ramadan 65 A. H.*, Khalifa *I*, p. 329.

[30]See Ibn Abd Rabbihi—*Iqd IV*, 434, Basawi-*al-Ma'rifa wa'l-Tarikh II*, p. 370. The governors of Palestine were usually from Umayyad princes (like Abd al-Malik and Sulaiman) of distinguished men (like Ibn Bahdal), see Baladhuri-*Ansab IV* (1), p. 160, p. 359. Sulaiman received the bayʿa at the Haram, Munajjid-*Muʿjam Bani Umayya*, p. 67; *Muthir al-Gharam*, p. 45.

[31] Creswell, *Early Muslim Architecture I*, p. 65. See Jahshiyari-*Wuzara*, p. 18; Eutychius *II*, p. 39; *Wasiti-Fadā'il*, p. 81 ff.

[32]*Tarikh II*, p. 311; Eutychius *II*, p. 39. Goldziher, *Muslim Studies II*, p. 44–47 accepted this report, and Creswell *Early Muslim Architecture I*, pp. 65–67 followed.

[33]See Goitein, *Studies in Islamic Civilization*, pp. 135 ff. Grabar, *The Umayyad Dome of the Rock*, pp. 35–36.

[34]See Basawi-*Ma'rifa I*, p. 626–629; Tabari *II*, p. 1085.

[35]See Ibn Taghri Bardi-*Nujum I*, p. 217; Ibn Kathir-*Bidaya VIII*, p. 280; Qalqashandi-*Inafa I*, p. 129.

[36]Muhallabi, op. cit. p. 54; see Eutychius *II*, p. 39.

age from Syria stopped until the end of the Umayyads, contrary to historical evidence[37].

Abd al-Malik probably meant to express the splendour of Islam in architectural terms in a city rich in magnificent churches[38]. It is also more than likely, however, that he wanted to show the sanctity of the Haram and to gain prestige among Muslims. This is implied by the inscriptions in the Dome, which reflect the Islamic-Christian dialogue at the time, state basic Islamic concepts and give a vindication of Islam and its universality as the final revelation[39].

The choice of the site of the Dome is significant. Early reports and accounts, both Syrian and anti-Umayyad, tend to link the site with the 'ascension', and probably with resurrection. Umar's attention to the Rock is specially noted. Thus the Rock is made the focal point of the Haram. Such reports were in circulation at the time in Syria[40].

Thus Abd al-Malik built a monument of Islamic significance and connotations. His descendents noted that with pride[41]. The Abbasid Al-Mahdi confided to his minister that the Dome was one of four great signs to which the Umayyads gave precedence[42]. Al-Walid continued his father's work and built the great Aqsá mosque.

Traditions, sayings and stories, including isrāiliyyát, about the merits of the Holy Land and the Aqsa mosque were related, and some quránic verses were expounded to refer to them, during the Umayyad period[43]. The Umayyads probably encouraged this activity. Statements attributed to Muʿawiya extol the Holy Land—the place of prophets, the land of resurrection, the best of lands for which the best of people were chosen[44]. Abd al-Malik and Walid probably spoke of the merits of B. al-Maqdis—place of resurrection—and of visiting al-Aqsa—place of ascension. Some people—probably Quṣṣāṣ—used to lecture or talk about the virtues of B. al-Maqdis there[46].

Traditions were reported about the merits of visits to, and prayers in the Aqsa mosque, compared to the mosques of Mecca and Medina[47]. Spreading these traditions was not motivated merely by pious considerations; it would have some socio-political connotations, reflecting opposite political opinions.

First there was the famous tradition 'you shall only set out to three mosques'. It is to be expected that Umayyads and Syrians favoured its circulation. It was transmitted mainly through two chains (isnād)—one on the authority of Zuhri 124 AH/741 AD) (Maʿmar b. Rashid, Zuhri, Said b. al-Musayyab, Abu Huraira) who was a frequent visitor to Syria and in contact with more than one Umayyad Caliph[48]. The second was on the authority of Quzaʿa (74 AH/692–3 AD)[49] (Abd al-Malik b. Umair (136 AH), Quzaʿa, Abu Sa'id al-Khudri, or Saʿid b. Abi ʿAruba, Qatada (117 AH)—Quzaʿa, Abu Said al-Khudri) who was a client of the Umayyads (Ziyad b. Abihi or Abd al-Malik)[50].

Secondly there were traditions which limit travel to the two mosques of Mecca and Medina, or give prayers in al-Aqsa less merit than in the mosque of Medina[51], or advise against travel to B. al-Maqdis[52].

Thirdly other traditions simply stress the virtues of B. al-Maqdis, or emphasize the merits of visiting it, or of praying in al-Aqsa[53].

The propagation of these traditions reflects opposite political interests and local loyalties. Circulating traditions which limit travel to the two Harams could indicate an anti-Umayyad line. It is noticeable that their authorities come from a period, between the last third of the 1st (7th) century and the first quarter of the 2nd (8th) century (like Jābir b. Abdallah 78 AH, 'AṬĀ' 115 AH, al-Shaʿbi 105 AH). It was a period of intense political conflict between the Umayyads and opposing political parties.

Traditions which give prayers in the mosque of Medina and in al-Aqsa equal merit, and those which simply extol al-Aqsa, remind us of the political conflict between Damascus and Medina. Some Umayyad supporters, on the other hand, talked of the 'two Houses', 'The House of God' (in Mecca)

[37]See Goitein op cit., p. 135 ff, Baladhuri *V*, p. 355 ff., Tabari *II* pp. 781–783.

[38]See Maqdisi, *Ahsan al-Taqasim*, pp. 159, 168.

[39]See Grabar, op. cit., pp. 53 ff.

[40]See Ya'qubi *II*, p. 311; Muhallabi, op. cit., p. 54 (both anti-Umayyad). See Ibn ʿAbd Rabbihi-Iqd *VI*, p. 265; Abu Ubaid-*Amival*, pp. 225, 226 (both Syrian reported). Ibn Khaldun *I*, p. 297. N. Khusrew in the 5th (11th) century maintains this view, see his *Rihla* (Arabic), pp. 30–31, 21. Wasiti in the 5th (11th) century relates a tradition 'The Holy (Quds) of the Earth is al-Sham, the holy of al-Sham is Palestine, the holy of Palestine is B. al-Maqdis, and the holy of B. al-Maqdis is the Mount (al-Jabal), and the holy of the Mount is the (Aqsa) mosque, and the holy of the Mosque is the Dome' Ibn Asakir-*Dimashq I*, pp. 141–142.

[41]See Sulaiman's statement in *Jahshiyari* (331 AH/942 AD), p. 148.

[42]See *Muthir al-Gharam*, pp. 53–54; Suyuti, *Ithaf*, p. 99.

[43]See for example Wathima, *Bad'al Khalq*, pp. 24, 167–180; Tabari, *Tafsir X*, p. 168; Ibn Asakir-*Dimashq I*, pp. 140–141.

[44]See Baladhuri, *Ansab IV (1)*, p. 23, Mada'ini from Awana; Nasr b. Muzahim, *Siffin* (1382 AH), p. 31; Ibn Asakir-*Dimashq I*, p. 69.

[45]Though both Ya'qubi's *II*, p. 311, and Muhallabi's, (op cit., p. 54) reports are anti-Umayyad, yet they indicate this.

[46]Wasiti' *Fada'il*, p. 165. See Suyuti, *Ithaf*, p. 8a.

[47]See Kister 'You shall only set out for three mosques', in *le Muséon LXXXII*, 1969, pp. 173 ff.

[48]Ibn Hanbal-*Musnad II*, pp. 234, 238, 278; Sanʿāni-*Musannaf V*, nos. 9158, 9159; Muslim-*Sahih II*, nos. 415, 511, 512, Bukhari *I* (ed. Ali Sabih) *II*, p. 73, Nasa'i-*Sunan II*, pp. 37–38, *Kanz al-Ummal XIII*, nos. 955, 966.

[49]Ibn Hanbal *II*, pp. 7, 51–52, 77; see also pp. 93, 54, 231, *II*, p. 51; Bukhari *II*, 74; Muslim *II*, p. 215: Bayhaqi *X*, p. 82; Wasiti, p. 4.

[50]Ibn Hajar—*Tahdhib VIII*, p. 377. See Bukhari *II*, p. 74, and Bayhaqi—*Sunan X*, p. 82, where he is described in the Isnad as a client of Ziyad; *Muthir al-Gharam*, pp. 49–50.

[51]Sanʿāni—*Musannaf V*, nos. 9131, 9132, 9163, 9173, 9135, 9161; Mundhiri—*Targhib* (Beirut 1968) *II*, p. 214; see San'ani-*Musannaf V*, no. 916, see *Kanz al-Ummal XIII*, p. 233 (no. 1306), Ibn Hanbal *II*, p. 239; Mundhiri *II*, p. 214; M. F. Abdul Baqi, *Lu'lu' II*, pp. 97–98 (no. 881).

[52]See San'ani-*Musannaf V*, no. 9164, see also nos. 9166, 9167 (from *Sha'bi*) and pp. 133–134, and no. 9140 (from *Atā'*), Waqidi, *Maghazi*, p. 866.

[53]Traditions which give equal merit to prayers in the mosque of Medina and al-Aqsa: Ibn Hanbal *II*, pp. 275, 278 (from 'ATĀ'). See Mundhiri, *Targhib II*, pp. 215, 218. Traditions that emphasise the merits of B. al-Maqdis and the prayers there: Ibn Hanbal *VI*, p. 432; Ibn Maja-*Sunan* (Cairo 1348) *I*, p. 429; *Kanz al-Ummal XIII*, pp. 246–247, and nos. 1330, 1368 and see nos. 1379, 1380.

and 'The House in Ilya'[54]. Still Abbasid and Alid propaganda tried to make use of the sanctity of B. al-Maqdis for their causes[55]. With the fall of the Umayyads, the tradition of travel to the three mosques attained general recognition.

With the advent of the Abbasids, the political importance of B. al-Maqdis was over, and its Islamic significance and standing were now stressed.

The Abbasids, with their emphasis on the Islamic line, paid much attention to B. al-Maqdis. It was visited by more than one Caliph during their first period[56], while the Aqsa was repaired by Mansur and rebuilt by Mahdi and the Dome of the Rock was repaired and embellished by Ma'mun.

The sanctity of B. al-Maqdis grew with time under the Abbasids. This is seen from canonical Hadith collections (Sihāh), books of malāhim, and the growth of qaṣṣaṣ referring to its merits. Histories of cities (provincial centres) came from the 3rd (9th) and 4th (10th) centuries, one of which by Ishaq b. Bishr (106 AH/820–1 AD) was on B. al-Maqdis[58] and in the 5th/11th century three works were written on B. al-Maqdis[59], the same period as the first book on Damascus[60]. These books differ from normal histories of cities in that they were mainly concerned with their virtues and the sanctity of religious places. They hardly left much to later writings.

Between the 2nd (8th) and 5th (11th) centuries, B. al-Maqdis in Islam was elevated both in tradition and story with the consequence that praying there was said to be like praying in heaven, and further that 'he who prays there will be absolved of all his sins'. 'Praying there is better than a thousand prayers elsewhere'[61]. The city became the place of the second and final hijra. 'The elite of all people shall come to live there one day. On resurrection, the Kaʿaba will come with its pilgrims there'[62].

B. al-Maqdis will have all the faḍā'il (virtues). All Prophets made the Rock their qibla, and the Prophet Muhammad prayed towards it. 'It has been sanctified, then sanctified, and then sanctified, and then sanctified out of seven earths'[63].

Traditions about al-Mahdi link him now with B. al-Maqdis. Significantly, different Muslim sects expect the Mahdi to rise in it or to go there—giving the city a unique Islamic position[64]. It became the bastion of Muslims against the Dajjāl (anti-Christ) who will trample the earth (Mecca and Medina excepted), but will be confronted and beaten there'[65].

Stories, especially of the People of the Book, increased from the 2nd (8th) century onwards, especially those about prophets, and much was relevant to B. al-Maqdis[66]. The growing veneration for the city explains the keenness of Sufis[67] and pious men to visit the city or to live there.

Accounts of geographers like Maqdisi and Ibn al-Faqih, and travellers like Nasir Khusrew and Ibn al-Arabi amply show the great sanctity the city enjoyed in the 4th–5th (10th–11th) centuries.

Maqdisi (387 AH/997 AD) states that B. al-Maqdis combined the merits of this world and the next; that it had all the faḍl (virtue) since both Mecca and Medina—who were elevated by the Kaʿaba and the prophet—will go there. He says that the plain of al-Sāhira, there, is the place of resurrection[68]. Nasir Khusrew (438 AH/1047 AD) confirms this and adds that thousands from the ends of the world go to al-Quds (the Holy, as people called it then) and stay until they die, so that they will be resurrected there. This belief explains, also, why many of the pious come to live in the city, as N. Khusrew implies[69]. In fact some princes and dignitaries ask that they be buried in B. al-Maqdis[70].

Khusrew also reported that people—unable to go on pilgrimage—come to B. al-Maqdis, make their sacrifices and perform the rituals of ʿArafa, and that about 20,000 come there in some years[71]. Qalqashandi indicates that the visit to the Dome of the Rock on the day of ʿArafa started earlier[72]. Late in the 5th (11th) century Tartūshi c. 470 AH (1077 AD) saw crowds from neighbouring districts perform the ʿArafa rituals by the mosque, and refers to their belief that four such visits equal a pilgrimage and condemns this bidʿa (innovation)[73]. He also refers to special prayers in the Aqsa at mid Shaʿban (since 448 AH/1056 AD)) and Rajab (since 480 AH/1087 AD)[74]. These innovations were probably local.

The 5th (11th) century was a period of much cultural

[54]See *Farazdaq, Diwan* II, pp. 32, 72, cf. *Aghani* (Bulaq) XIX, p. 59.

[55]See Wasiti, *Fadā'il*, p. 54 and Ibn Abd Rabbibi, *Iqd* IV, p. 386 (both from Zuhri), cf. Suyuti, *Ithaf*, pp. 506, 496.

[56]Al-Mansur visited twice in 141 AH (718 AD) and 154 AH (771 AD), Tabari III, p. 372; Baladhuri, *Futuh*, p. 233; Azdi-*Tarikh al-Mawsil* II, p. 318; Kindi *Wulat*, p. 218. Mahdi visited in 163 AH (780 AD), Azdi, op. cit. II, p. 243–244, Tabari III, p. 500.

[57]See Maqdisi *'Ahsan al-Taqasim*, p. 168–169; Yaqut, *Buldan* IV, pp. 596, 597; Creswell, op. cit., p. 374; Isr. Exploration Society, *Jerusalem Revealed*, p. 93.

[58]See *Kesf El-Zunun* (Istanbul 1971) II, p. 1240.

[59]*Rabaʿī, Fada'il Dimashq*, ed. Munajjid, Damascus, 1950.

[60]*Wasiti, Fadail al-Bait al-Muqaddas*, ed. A. Hassun, Jerusalem 1979; *Maqdisi, Abu'l-Ma'ali al-Musharraf b. al-Murajja*, Ms. Tubingen 27. Al-Rumaili wrote on the history and Fada'il of B. al-Maqdis, but was killed by the Franks and his work was lost, *al-Uns al-Jalil* I, pp. 298–299, see E. Sivan 'The beginnings of Fadā'il al-Quds Literature', in *Israel Oriental Studies* I, 1971, pp. 263 ff.

[61]*Ibn al-Faqih, Buldan*, pp. 94, 95.

[62]Ibid, p. 94, *Nu'aim b. Hammad, Fitan* (MS), fols. 134a, 135a; *Wasiti*, op. cit., pp. 121–122. See also *Kanz al-Ummal* XIII, nos 1381, 1382.

[63]Wasiti (from Zuhri), p. 51.

[64]*Nu'aim b. Hammād, Fitan*, pp. 49a ff., 56a, 59a, 49b, 57a; *Wathima, Bad'al-Khalq*, pp. 297–298.

[65]Nu'aim b. Hammād, op. cit., folios 44b, 48a.

[66]See for example Wathima *Bad' al-Khalq wa qisas al-Anbiya*, ed. R. G. Khoury, Wiesbaden 1978.

[67]Like Ibrahim b. Adham, Rabia al-Adawiyya, Bishr al-Hafi, Dhu'l-Nun al-Misri, Yazid al-Bistami and al-Sari al-Saqati. See Maqdisi, *Taqasim*, p. 167, N. Khusrew, op. cit., p. 21; *Muthir al-Gharam*, pp. 65–67, Ibn Arabi-*Rihla* (ed. I, Abbas) in *al-Abhath* XXI, 1968, p. 83.

[68]Maqdisi, *Ahsan al-Taqasim*, pp. 166–167, 172.

[69]N. Khusrew, pp. 20, 28.

[70]See Kindi, *Wulat*, p. 296; Ibn Qalanisi, *Dhail Tarikh Dimashq*, p. 79.

[71]*N. Khusrew*, op. cit. pp. 19–20.

[72]*Qalqashandi-ʿinā fa* I, p. 129.

[73]*Tartūshi—Kitāb al-Hawādith* (ed. M. Tālbī) pp. 116–17.

[74]ibid pp. 121–2.

activity in B. al-Maqdis; scholars from Muslim countries, East and West, came to visit it. Great figures like Tartūshi, Ibn al-Arabi and Ghazāli, among others can be mentioned[75].

All this shows that veneration for B. al-Maqdis continued to grow deeper in Muslim thought and convictions.

The Crusades probably added a new dimension to the significance of B. al-Maqdis. But, it was the great sanctity the city attained by the 5th (11th) century that made it the symbol for the Jihad against the invaders.

[75]See *ibn al-'Arabī- Riḥla*, op. cit. pp. 81–83; *Mujīral-Dīn al-'Ulaymī—al Uns al-Jalīl*, I pp. 247–9, 300–302.

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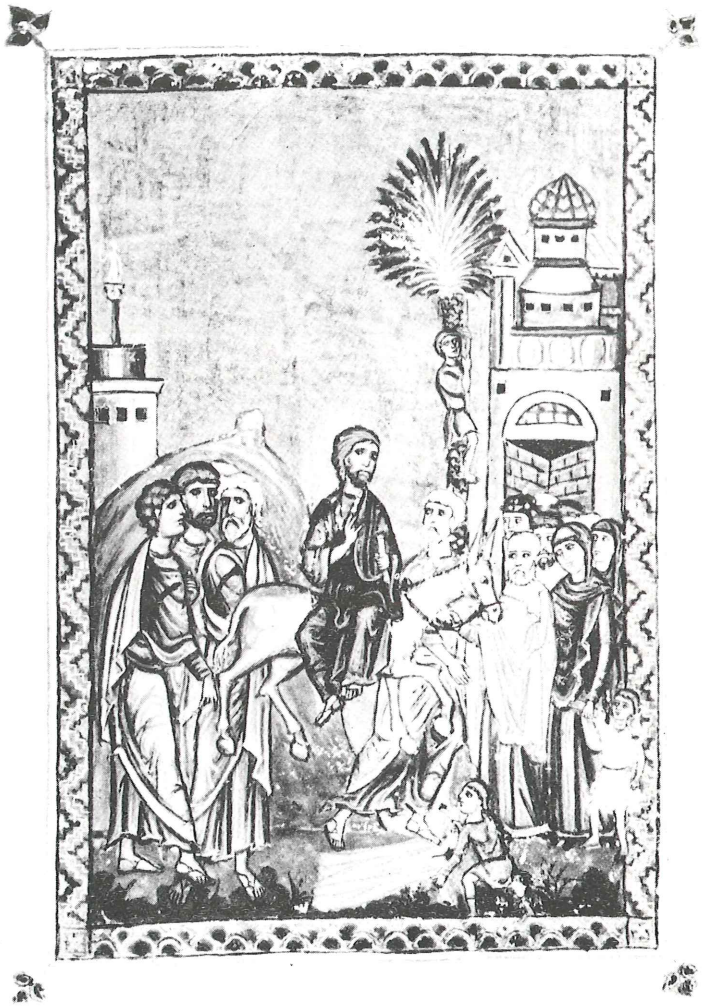
Der 'Felsendom' auf Kreuzfahrerminiaturen

In der christlichen Ikonographie nimmt seit der frühbyzantinischen Kunst der 'Einzug Christi in Jerusalem' einen bedeutenden Plantz ein. Jesus reitet von links auf seinem Esel auf eine befestigte Stadt zu[1]. Die Gebäude der Stadt Jerusalem werden recht unterschiedlich angegeben. So sind im 'Codex Purpuraeüs' des 6. Jahrhunderts, dem Rossano-Evangeliar, hinter der Stadtmauer Häuser mit Satteldach und ein Bau mit flacher Kuppel zu erkennen, eventuell die Grabeskirche[2]. In den Hómilien des Hl. Gregors von Nazianz in Paris[3] von 867/886 ist die Kirche nur mit einer Apsis mit Halbkuppel versehen—eine Kuppel fehlt. Auch in späteren Datstellungen Jerusalems, so auf den Miniaturmosaiken des 14. Jahrhunderts in Florenz[4], kann die Kuppel fehlen.

Im 12. Jahrhundert kommt einen Bildtradition auf, in der ein hoher Kuppelbau schließlich zu einem Turm wird, wie z.B. im Haghbat-Evangeliar (s.u.2). Den Ausgang nimmt diese Entwicklung anscheinend im Scriptorium der Heiligen Grabeskirche in Jerusalem, das bis 1191 tätig war, bis zum Fall Jerusalems. Danach wirkte es in Akko bis in die zweite Hälfte des 13. Jahrhunderts[5] (c. bis 1290). In diesem Scriptorium entstand ein Bildtypus mit einer hochgestellten Stadtanlage, vor der eine Palme steht, auf die ein Mann klettert. Ein charakteristisches Beispiel findet sich im Psalter der Königin Melisende (1131–1143), der Tochter einer Armenierin[6] (Abb. 1). Das hier zur Diskussion stehende Detail findet sich rechts im Bild. Über dem sich öffnenden Stadttor erhebt sich auf einer Plattform der Felsendom, ein zweietagiger Bau unter einer Kuppel. Dahinter wird der Sitz der Templer erkennbar,

1. Einzug Christi in Jerusalem, rechts auf der Terrasse der Felsendom. Psalter der Melisende, Jerusalem, (1131–1143), B. M. Egerton 1139, fol. 5 v.n. Buchthal, 1957 Pl. 5b.



die damals umgebaute al-Aqsa-Moschee. Der Miniaturmaler hat das Wesentlichste—wenn auch in vereinfachter Form—dargestellt—die Terrasse, den hochgelegenen Kuppelbau und den davon getrennten Hallenbau der Moschee.

[1] Die Anordnung ergibt sich aus der europäischen Schriftrichtung. In der islamischen Miniaturmalerei kommt der Reiter in analogen Szenen von rechts, so in den Maqamat des Hariri: 43. Maqama von 1237, von Yahya ibn Mahmud al-Wâsitî (Schefer-Harîrî), Fol 1380. n.R. Ettinghausen, Arabische Malerei, Genf 1962, S. 116.
Auch in armenischen Miniaturen erfolgt gelegentlich eine Umkehrung wie im Haghbat-Evangeliar, von 1211. s.L.A. Durnovo, Armjanskaja Miniatjura. Jerevan 1967, T. 21.

[2] David Talbot Rice, Art Byzantin. Paris-Brüssel 1959, T. III.

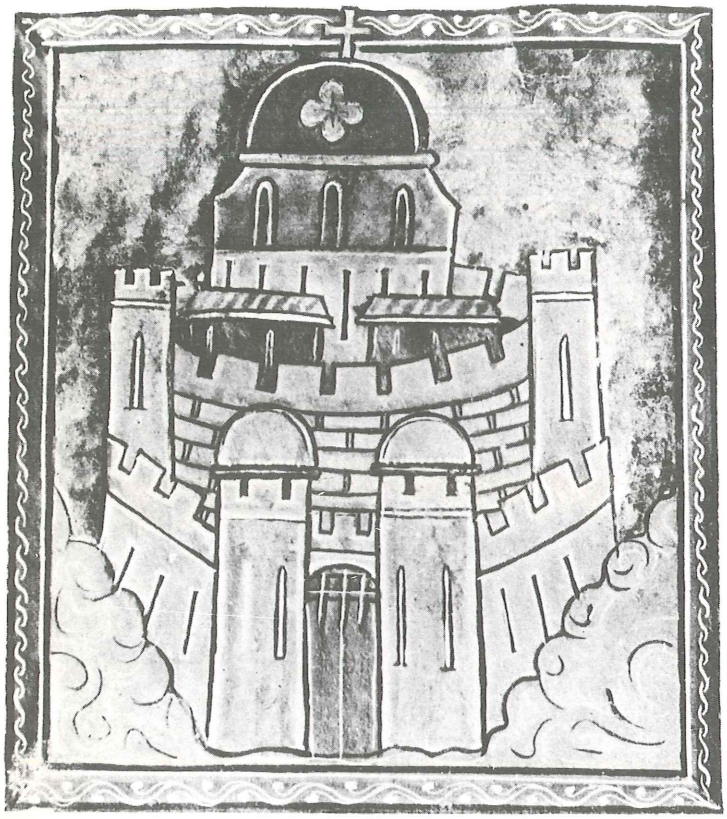
[3] Bibl. nationale Ms. Gr. 510. n. D. T. Rice, 1959, T. II.

[4] Diptychon, Florenz, n. D. T. Rice, 1959, T. XXXVII.

[5] s. Hugo Buchthal, Miniature Painting in the Latin Kingdom of Jerusalem. Oxford 1957 und Jaroslav Folda, Crusader Manuscript Illumination at Saint-Jean d-Acre, 1275–1291. Princeton, New Jersey 1976.

[6] fol. 5, v, s. H. Buchthal, 1957, PL. 5, b.

2. Die Stadt Jerusalem mit dem beherrschenden Felsendom 1290, Florenz, Bibliotheca Medicea-Laurenziana, MS. Plu. LXI, 10, fol. 80 v. n. Folda, 1976, Abb. 147.



Cresswell hat bereits auf diese Darstellung verwiesen[7]. Ihm ist von Smith, Conant und anderen widersprochen worden, die das Gebäude als Grabeskirche deuten[8]. Jedoch dürfte die Form ausschlaggebend sein. Auch die 'Vorweisung im Tempel'[9] geht in dem Melisende-Psalter in einem vergleichbaren Kuppelbau vor sich, und in dieser Szene kann von der Grabeskirche keine Rede sein.

Zeitgenössische Bilder, wie die Mosaiken der Capella Palatina in Palermo[10] zeigen, daß auch deren Verfertiger die Verhältnisse in Jerusalem vertraut waren. Wieder erscheint vor Bauten mit Satteldächern ein runder Kuppelbau. Erst die späteren Maler, wie der des Haghbat-Evangeliars haben aus dem Felsendom auf der Terrasse einen Turm werden lassen.

Noch im spätesten Akko-Manuskript, einer Weltgeschichte vom Ende des 13. Jahrhunderts[11] in der Biblioteca Medicea-Laurenziana in Florenz wird die Stadt Jerusalem mit dem 'Felsendom' auf einer Terrasse hinter der Stadtmauer dargestellt (Abb. 2).

[7] K. A. C. Creswell, Early Muslim Architecture, Vol. I. Oxford 1932, p. 42 ff, FIG. 10.

[8] E. Baldwin Smith, The Dome. Princeton 1950, FIG. 3, P. 16 ff. K. J. Conant, The original buildings of the Holy Sepulchre in Jerusalem. In: Speculum, Bd. XXXI, 1956, PL. VIII, p. 1 ff.

[9] Buchthal, 1957, PL. 3a, fol. 3r.

[10] A. Grabar, La peinture byzantine. Genf 1953, S. 131.

[11] Ms Plu. LXI, 10. Florenz, Bibliotheca Medicea-Laurentiana, fol. 80 v. n. Folda, 1976, Abb. 147.

3. Krönung König Fulkos in Jerusalem, n. der in Akka entstandenen Weltgeschichte, Bibl. Mun. MS 142, fol. 141 r. n. Folda, 1976, Abb. 129.

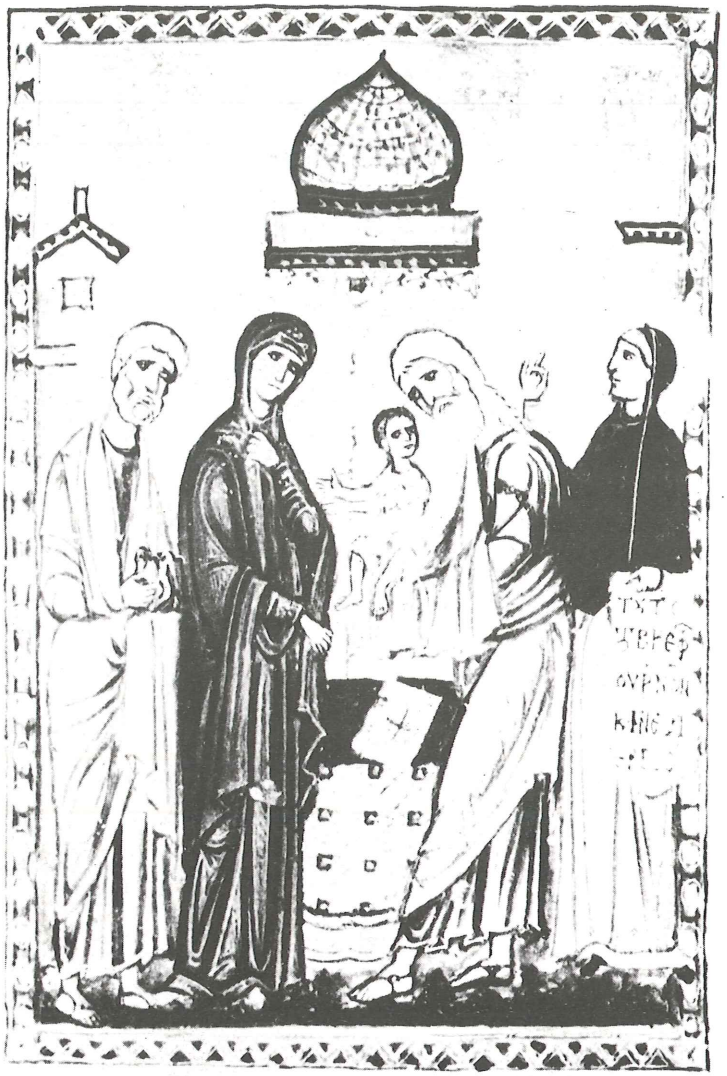


Gleichfalls den 'Felsendom' bietet eine Miniatur aus dem Akkomanuskript in Boulogne sur Mer[12] mit der Krönung Königs Fulko (Abb. 3). Die Krönung der Kreuzfahrerkönige geschah im 'Tempel' von Jerusalem. Nur Balduin I. und Balduin II. ließen sich in Bethlehem krönen. (Nach 1187 war Tyrus Krönungsort). Der Krönung im Felsendom, den man damals für den Salomons-Tempel hielt, entsprach ein entwickelter Kronenkult in diesem Gebäude, dessen Mosaikdekor bereits Kronen zeigt. 'Wenn nämlich der König die Krone in Jerusalem in der Heiligen-Grabes-Kirche getragen hatte, so pflegte er sie nachher zum Tempel zu bringen, wo sie in Erinnerung an die Datstellung Christi als Weigeschenk dargebracht wurde'[13]. Dies erinnert an Kronen als Weihgeschenke der Magier auf den Miniaturen des Etschmiadzin-Evangeliars und den Kronenkult der Sasaniden.

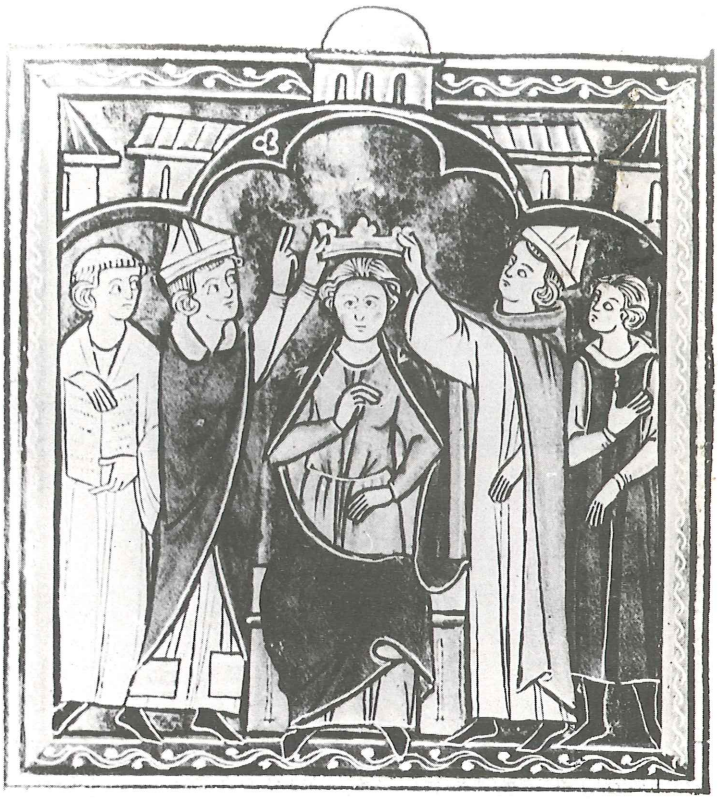
[12] s. Bibl. Mun. Ms. 142, fol. 141 r. Boulogne sur Mer, n. Folda, 1976, Abb. 129.

[13] H. Prínтz, Kulturgeschichte der Kreuzzüge. Berlin 1883, S. 175–176.

4. Vorweisung im Tempel—dem 'Felsendom', Psalter der Melisende, Jerusalem, (1131–1143), BM-Egerton, fol. 3 r. n. Buchthal, 1957, Pl. 3a.



5. Die Krönung Amalrígs in 'Tempel Gottes' aus: History of Outremer, Florence, Bibl. Mediecea-Laurenseana, M 5. Plu. LXI, 10, fol. 219 v [aus J. Folda, Crusader manuscript illumination at Saint Jean d'-Acre, 1275–1291. New Jersey, 1976, nr. 158].



Auch andere Miniaturen der Jerusalem-Akko-Schule bieten identifizierbare Architekturdarstellungen, wie z.B. das Kuppelgrab Jacobs in Hebron[14] u.a. Bauwerke.

Die Miniatur aus dem Melisende-Psalter dürfte die beste und eventuell auch die älteste eindeutige Darstellung des 'Felsendoms' vor dem osmanischen Umbau sein. Ihr kommt daher historische Bedeutung zu.

[14] s. Buchthal, 1957, PL. 101 a in der Handschrift Dijon 562.

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Jordan in Perspective: The Mamluk–Ottoman Period

Classical Moslem historians refer to Jordan in the 7th century as *Jund Al Urdun*. This term was a precise translation of the Greco-military term 'theme' which sometimes appears in Arabic sources as *Al Thumu*. On the order of the prophet Muhammad, two campaigns were waged against this *Jund* which was mostly inhabited by Arab tribes. Although these two campaigns failed to take any part of it, they paved the way for the coming expedition at the time of the first Orthodox Caliph Abū Bakr. This Caliph sent an army under the leadership of Shuraḥbīl b. Ḥasnā who recorded complete success. A student of history may be struck by realising that a good number of the early distinguished Moslem leaders, to mention but a few, Abū ʿUbaydā, Shuraḥbīl b. Ḥasnā, Mūsā b. Nuṣayr, who conquered Spain, and Ja'far b. Abī Tālib, a cousin of the prophet, are buried in Jordan.

Jordan is centrally located between the Arabian Peninsula and Greater Syria, which explains the fact that in Jordan as well as in Palestine, evidence of Arab tribes can be found since time immemorial up to the present day. It may not be too presumptuous to say that the populations of these two countries was an extension of the Arabian Peninsula. They played decisive roles in the political life of the area whether under the ʿUmmayads, the Fatimids, the Ayyubids, the Mamluks or the Ottomans. Had it not been for the Arab tribes in Jordan, the Ummayads would have lost power to their enemies the Zubayris. Was it not politic of the Ummayads to build palaces, citadels and castles in the Jordanian desert to be near the centres of power?

It is not an exaggeration to say that the 13th century was a formative one in the history of Bilad Al-Shām (Greater Syria). After the repulsion of the Mongols who swept from the far East and destroyed the Abbasid caliphate in Baghdad in 1258, the Crusaders were finally wiped out from the Syrian Coast in 1291 by an alien Moslem element known as the Mamluks.

During the Mamluk period (1258–1516) Bilad Al-Shām, administratively speaking, was divided into seven *Mamlakahs* (provinces). One of these was known as Mamlakat Al-Karak, which comprised most of what is usually known as Trans-Jordan, including part of northern Hejaz up to the town of Al-ʿUlā with the town of Al-Karak as its capital; at one time, in 1341 the capital of the whole of the Mamluk Sultanate.

Available historical material points out that most of the administrative departments and government agencies remained in existence during that period, without any serious interruption. This evidently shows that an established administration tradition was known to the people in that province. The Mamluk military administration guaranteed a reasonable degree of stability to the people and particularly to the pilgrimage caravan. This was secured through a number of citadels garrisoned by Mamluk soldiers. The Mamluk Sultanate in Cairo never neglected pools, such as Zīzyā', nor paving the way enroute to Mekka or keeping the bedouins in check.

With regard to the population of this province, they were composed of town or village people and nomads. Banū Ṣakhr was among the tribes whose name is mentioned in the historical literature of the time as well as Banū Uqbah whose tribal 'imarah' (lordship) was acknowledged by the Mamluk Sultanate. Religion-wise, Christians represented a sizeable minority among the population.

During the period contemporary biographical dictionaries supply us with the names of a good number of *Karakis* who distinguished themselves in more than one aspect of learning. The Jacobite physician, therapist and surgeon Abū Al-Faraj Yaʿqūb b. Al-Guff (1233–86) was native of Al-Karak. He travelled to Damascus to learn medicine at the hands of the famous scholar Ibn Abī Usaybi'a. In the circle of that savant he studied with the distinguished physician Ibn Al-Nafis. After graduating from Damascus, Ibn Al-Guff served in ʿAjlūn, where he produced his medical writings. They were many in number but here I refer to the most outstanding one in Islamic medical Literature *Al-ʿUmdah fī Sināât Al-Jirāḥa,* which was published in two volumes in India in 1937. According to the well-established authority, the late Professor George Sarton of Harvard University in his famous work 'Introduction to the history of Sciences', Ibn Al Guff was among the very few medical doctors in the Islamic world who managed to free himself from the Greek medical tradition. He is particularly credited for his practicality in medicine as he always tried to inculcate in his students the empirical method.

His works were characterised by the clarity of his written manuals.

On this occasion may I mention a recent study by a historian of medicine, Dr Sami Hamarneh of the Smithsonian Institute in Washington DC., on the life and works of Ibn Al-Guff?

The Mamluk Sultanate (which was capable of defending the heart of the Islamic world for two centuries and a half) was, by the beginning of the 16th century AD, in a very weak state. A small principality (*imarat Ghuzzah*) had sprung up in Western Anatolia by the end of the 13th century AD. That small principality followed the famous formula of challenge and response propounded by the late Professor Toynbee in his attempt to explain the events of history, and by its peculiar location, succeeded in destroying the great Byzantine Empire. Besides, it succeeded in annexing the lands of many small Turkoman principalities in Anatolia which brought her in direct contact with the Mamluk Sultanate and with a new rising Shīʿi Moslem power in Iran. Both the Ottomans and the Safavids in Iran were striving for the lands of the Mamluks. The Ottomans acted quickly; and on August 24, 1516 the whole of Syria fell into their hands in a short battle. When the Ottomans established themselves in Syria, they divided the country into three major provinces: Aleppo. Tripoli and Damascus. Each province was divided, on its own, into a number of *Sanjaks* or *Liwas*. The Mamlakah of Karak was left intact but changed its name to the 'Sanjak' of Karak-Shawbak.

'Ajlun and its present district was made a separate *Sanjak*. It is safe to say that these two *Sanjaks* comprised almost exactly what is known today as the East Bank of Jordan. The Ottomans did not distinguish themselves as fighting soldiers of first class by the standard of the time, but as administrators they were of high calibre, at least in their taxation system. Unsurpassed by the various Moslem states, they had the habit of making a detailed census of the population, animals, and produce from time to time to the extent that nothing escaped their attention even bee-hives, caves or water-mills. This well preserved, available statistical information which goes back to the 16th century helps us to draw the following observations:

1) Almost all the towns, villages, hamlets, manors, quarters, and tribes of Jordan today were in existence at least since the 16th century.
2) Most of the inhabitants of these two *Sanjaks* were settled in towns or villages or were semi-nomads. Their number exceeded the number of the nomads.
3) Agriculture was their main source of income.
4) Christians constituted a sizeable minority in towns like ʿAjlun, Salt, Karak, and we find them even in villages.
5) The area enjoyed more stability than any time before, due to the fact that it was covered by expanded or restored old fortresses; to name but a few, ʿAjlun, Salt, Karak, Shawbak, Aqaba, Ḥasā, Qatrana, Maām and Dhat *Ḥajj in Northern Hîjaz.*

All these posts were well garrisoned by janissaries with the aim of encouraging agriculture and providing security to the pilgrims and merchants against bedouin attacks. It is worth mentioning here that the government of these two *Sanjaks* was often entrusted to a local family known as the Al-Ghazzāwī family which was reputed for its influence during the latter days of the Mamluks. On visiting Damascus in 1511, the head of the family, Nāṣir Al-Dīn Muḥammad b. Sāʿid Al Ghazzāwī entered the city while Sufis (mystics) were beating their drums as a sign of joy; and when he went to the Umayyad Mosque to perform the Friday prayers, such was his popularity, people gathered everywhere to see him and to beg God to protect him. There was great rejoicing when peace was concluded between Nāṣir and the Mamluks and the safety of the pilgrims was assured. Another member of the family Qānṣūh played a more significant role during the latter part of the 16th century. For more than thirty years, he was entrusted with the governments of ʿAjlūn and Karak-Shawbak. He was so competent that in addition, he was, appointed for many years as *amīr Al-Ḥajj* (commander of the pilgrimage caravan), a noble post indeed at the time. It happened that in 1585 he ran out of favour, was jailed and sent to Istanbul. When he was brought before the sultan, the latter, touched by his dignity ordered his immediate release and confirmed him in his previous posts. Five years later, he was out of favour again and went to Istanbul where the sultan reconfirmed him; but the old gentleman died in Istanbul. In appreciation of the role of this family, his son was appointed by the sultan to replace him. Drawing parallels, the role of this indigenous local powerful family was no less than the Maʿnides in Lebanon.

When reforms were imposed on the Ottoman Empire, this area came to know schools, medical care, modern judicial courts, roads, wide schemes for planting grapes and, above all, a railway connecting it with Medina and Istanbul via Damascus and Aleppo. When the Ottoman Moslem Empire became the victim of the idea of Pan-Touranism and when the young Turks tried to Turkify the Arabs, Sharif Ḥusayn of Mekka, a Hasani descendent of the prophet Muhammad started his Arab Revolt against the Turks. The Arab East intelligensia joined hands with Sharif Ḥusayn and his four sons. The Arabs of Trans-Jordan wasted no time and immediately launched their attacks against the Turks whether stationary or retreating. From the battle of Marj Rahit in 683 to 1947, the people of this country have played a major role in the history of the Middle East.

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القرية في جنوب الشام (الأردن وفلسطين) في العصر المملوكي
في ضوء وقفية قرية أدر

بقلم
الدكتور يوسف درويش غوانمه

تمثل القرية الأردنية الفلسطينية في العصر المملوكي العمود الفقري للبلاد، فقد بنيت على قة تل كي تهيمن على منظر ممتد، أو بجانب نبع ماء، وهذا الموقع اختير لأسباب اقتصادية وأمنية وصحية معا. والدراسات الديموغرافية تعتبر منطقة شمال الأردن والجليل والأغوار، أكثر المناطق كثافة للسكان. وتشير الدراسات الحديثة ان مدن وقرى هذه المنطقة كانت ذات كثافة سكانية عالية، وذلك في القرن السادس الهجري (الثاني عشر الميلادي).[١] واستمرت هذه الكثافة السكانية مزدهرة في العصر المملوكي، بسبب أهميتها الاقتصادية التجارية والزراعية معا.[٢] ولدينا احصائية تشير ان سكان هذه المنطقة بلغت في القرن العاشر الهجري (أوائل القرن السادس عشر الميلادي) ٢٠٦٫٢٩٠ نسمة، أما سكان الأجزاء الشمالية من الأردن (محافظة اربد الحالية) فكان اذ ذاك ٥٠٫٩٤٠ نسمة.[٣]

وتفيد المصادر أن الكثافة السكانية في الأردن وفلسطين كانت عالية في العصر البيزنطي.[٤] وذلك من خلال عدد قراها المرتفع، ففي الجزء الغربي من فلسطين وجد ٢٠٠٠ قرية. ولا شك في أن هذا الانتشار السكاني امتد الى الأردن. ومن دراستنا لأحوال بلاد الشام في العصر الأموي، يبدو لنا أن هذه البلاد، شهدت عمرانا ونشاطا سكانيا واسعا، بوصفها قلب الخلافة، وهكذا حتى أواخر القرن الخامس للهجرة (الحادي عشر للميلاد)، عندما دهم الصليبيون البلاد، وغدت فلسطين والأردن بالذات مسرحا لعدوان صليبي غربي شرس، فهجر البلاد كثير من أهلها، وخربت بعض قراها، مما أثر في الكثافة السكانية للبلاد. يضاف الى ذلك أن أرض فلسطين والأردن شهدت كثيرا من أحداث المنازعات الداخلية بين خلفاء صلاح الدين من بني أيوب. وتعرضت في القرن السابع للهجرة (الثالث عشر للميلاد) لعبث الخوارزمية حينا، والتتار أحيانا. وهذه كلها عوامل تركت أثرا خطيرا في النشاط البشري في البلاد، وهو أمر يبدو أنها لم تفق منه طوال عصر سلاطين المماليك. فقد تدنى عدد القرى في الجزء الغربي من فلسطين فبلغ في العصر المملوكي ما بين ٧٠٠ — ٨٠٠ قرية.[٥] وهذا ما ينطبق أيضا على شرق الأردن، فالمصادر لا تسعفنا عن عدد قراه في العصر البيزنطي، الا أن عدتها في العصر المملوكي:

منطقة الكرك	٤٠٠	قرية
منطقة البلقاء	٣٠٠	قرية
منطقة حوران	١٠٠٠	قرية[٦]

(و يدخل في حوران أجزاء كبيرة من شمال الأردن (محافظة اربد). هذا بخلاف منطقة الأغوار التي وصفت بكثرة قراها ووفرة غلاتها.

وكما أشرنا سابقا فقد شهدت المنطقة تدنيا في كثافتها السكانية في فترة الصراع الصليبي في بلاد الشام، وفي حروب المماليك مع المغول، واجتياح الطاعون للبلاد، الذي ظل يتعاقب عليها سنين عديدة.[٧] بالاضافة الى انعدام الأمن في نهاية دولة المماليك الثانية، وعبث القبائل العربية في البلاد، وخصوصا منطقة شرق الأرن وجنوب فلسطين، فهجرت القرى العديدة، بعد أن أحرق بعضها، حتى أن العديد منها وصف في أوائل العصر العثماني (خراب وخالي).[٨]

(١) Benvenisti, M. The Crusaders in the Holy Land, p. 27.

(٢) ابن قاضي شهبه، الأعلام بتاريخ أهل الاسلام، ج ٢ لوحة ١٤٣، مخطوط، يوسف غوانمه، تاريخ شرقي الأردن في عصر دولة المماليك الأولى، القسم الحضاري، عمان، ١٩٧٩ م، ص ٥٥—٨٠.

Benvenisti, Op. cit. p. 199.

Lapidus, Muslim cities in the Later Middle Ages, 1967 p. 160

(٣) Hutteroth & Abdulfattah, Historical Geography of Palestine, Erlangen, 1977, p. 43.

(٤) Issawi, Area and population of the Arab Empire (Princeton Millet Conference June 1978).

(٥) Benvenisti, op. cit. p. 215.

(٦) ابن شاهين الظاهري، زبدة كشف الممالك، باريس ١٨٩٤ م، ص ٤٦ ٤٧ ابن جبير، رحلة ابن جبير، القاهرة ١٩٥٥ م، ص ٢٧٦.

(٧) المقريزي، السلوك لمعرفة دول الملوك، تحقيق محمد مصطفى زيادة القاهرة، ١٩٣٤ م ج ٢ ص ٧٧٤. ابن بطوطة، الرحلة، القاهرة، ١٩٥٨ م ج ٢ ص ١٧٦. أبو المحاسن، النجوم الزاهرة، القاهرة، ١٩٣٢، ج ١٠ ص ١٩٧، ١٩٨. وانظر.

Nohl, The black death London, 1924, pp. 17- 18.

Lopez, (R) The Commercial Revolution of the middle Ages, U. S. A. 1976, p. 12 - 29.

Kedar, Merchants in Crisis, U. S. A., 1976. p. 14.

John (G), Syria, Lebanon, Jordan, LONDON, 1967, p. 99.

(٨) Hütteroth & Abdulfattah, op. Cit. p. 26.

وهناك اختلاف بين قرية وأخرى في مساحة زمام كل منها، فهي تتروح بين ١٠٠ دونم الى عدة آلاف. فالتقارير تشير الى أن المساحة في منطقة صور كانت تتروح بين ٢٠٠٠ الى ١٢٠٠٠ دونم. أما في منطقة الكرك فمن دراسة وقفية قرية أدر نجد أن مساحة هذه القرية حوالي ٢٥٠٠٠ دونم. وبالمقارنة الى مساحة بعض القرى الفلسطينية نجد أن ما يخص القرية الواحدة في عكا ١١٧٠٠ دونم، وفي منطقة الجليل الأعلى بين ١٠٠٠٠ الى ٢٦٠٠٠ دونم، أما في نابلس فكان ١٦ ٠٠٠ دونم وفي القدس ٢٤٠٠٠ دونم.[٩]

أما مساحة القرية التي خصصت لدورها وملحقاتها، فنراها في قرية أدر ٧٦ دونما، وعدد الدور ٨٣ دارا. وعند تاريخ هذه الوثيقة وهو ٣ جمادى الأولى ٧٧٧ هـ (أكتوبر (تشرين أول) ١٣٧٥م)، كان الصالح منها ٧٣ دارا. ومن المعروف أن الدار الواحدة في العصور الوسطى كان يعيش بها أكثر من عائلة واحدة ولما كان تقديرنا لعدد العائلات في أدر ١٤٠ عائلة، وأن الدراسات الديموغرافية المعاصرة تقدر عدد أفراد العائلة بين ٤ ــ ٥ أشخاص،[١٠] فعدد سكان القرية اذن ٧٠٠ شخص. وبذا فالكثافة السكانية لقرية أدر هي ١٠ أشخاص للدونم الواحد، وهذه الكثافة السكانية متجانسة تقريبا في معظم القرى الأردنية والفلسطينية.

وقد كانت بيوت القرية مكتظة ومتقاربة، ويفصل بينها جدران عالية للحماية تتشارك في أجزاء منه، ومن خلال تلك الجدران وجدت البوابة الرئيسية المؤدية الى فناء الدار. ويتخلل القرية شبكة من الممرات الضيقة المتعرجة، وقد وجدنا أن بعض الدور في وادي الكرك كان من طابقين وهي أشبه بنظام (الفيلا) في الوقت الحاضر. وتتكون الدار من أواوين معقودة بالعقود المتقاطعة،[١١] وكان هذا النمط شائعا في معظم الأبنية الفلسطينية.[١٢] أما المواد المستخدمة في البناء فهي الطين والحجر والشيد، وبعضها استخدم القش والطين.[١٣] وقد كانت الأواوين الواسعة تقوم على قناطر حجرية يتروح عددها بين قنطرتين الى أربع قناطر بسراويل بجنب اتنعشري.[١٤] وقد رأينا استخدام الطوب (الآجر) في بعض الأبنية، وخصوصا في القباب القائمة فوق الأواوين الواسعة.[١٥]

وأقيمت في القرية منشآت ذات نفع عام، يأتي في مقدمتها المسجد الذي كان يقع في وسط القرية، ووجد في البعض برج حصين يقوم بمهمة الدفاع عن القرية، ويلجأ اليه القرويون عند الخطر الداهم. ووجد في معظم القرى الأردنية والفلسطينية معصرة زيتون، وطاحون للدقيق، وبعض هذه المنشآت قديم فأطلق عليه القرويون الرومي اشارة الى أنها ترجع الى أيام الرومان أو الروم قبل الفتح الاسلامي لبلاد الشام. وقد لاحظنا مثل هذه المسميات في قرية أدر (سلسلة رومية، حبلة رومية، معصرة رومية، حائط رومي، سمّار رومي). أما الحجارة المستخدمة في المعاصر والطواحين فكانت من أماكن معروفة في الأردن وفلسطين، مثل المكان الموجود بالقرب من قرية أدر والذي سمته الوثيقة (مقطع حجارة الطواحين).[١٦] ووجد في بعض القرى معصرة للنبيذ، كان يقوم بادارتها المواطنون المسيحيون.[١٧] ومن تلك المنشآت نذكر أيضا الكتاب (المدرسة)، الذي يتعلم به أبناء القرية، وكان يتم ذلك في مكان خاص أعد لهذه الغاية، أو في مسجد القرية.

أما مجتمع القرية فكان مجتمعا بسيط التركيب، فسكان القرية ينتمون الى قبيلة واحدة وأحيانا الى أكثر من ذلك. ويعيش المسلمون منهم والنصارى جنبا الى جنب، ونسبة المسلمين عموما كانت أعلى اذ بلغت من ٧٠٪ الى ٨٠٪، اللهم الا مناطق خاصة كالشوبك والكرك ووادي موسى بلغت نسبة النصارى فيها نسبة عالية،[١٨] واستمرت هذه النسبة عالية حتى أوائل القرن العاشر الهجري (السادس عشر الميلادي).[١٩].

(٩) Benvenisti, op. Cit. p. 214, p. 217.

(١٠) Hutteroth & Abdulfattah, op. Cit. p. 43.
Prawer, The Latin Kingdom of Jerusalem, LONDON, p. 376.

(١١) وقف البستان والحمام بوادي الكرك للسلطان الأشرف شعبان سنة ٧٧٧ هـ من وثيقة حجة وقف السلطان الأشرف شعبان رقم ٤٩، بدار الوثائق القومية في القاهرة «مخطوط».
وانظر نص الوقفية في: يوسف غوانمه، تاريخ شرقي الأردن، القسم الحضاري، ص ٢٤٣ــ٢٤٤.

(١٢) Benvenisti, op. Cit. p. 220.

(١٣) وثيقة وقف بستان وحمام الكرك.
يوسف غوانمه، المرجع السابق، ص ١٠٧.
Prawer, op. Cit. p. 366.

(١٤) وثيقة وقف بستان وحمام الكرك.

(١٥) نفس المصدر.

(١٦) وثيقة وقفية قرية أدر من عمل الكرك المحروس، من حجة وقف السلطان الأشرف شعبان. رقم ٤٩، بدار الوثائق القومية في القاهرة.

(١٧) مجير الدين الحنبلي الأنس الجليل بتاريخ القدس والخليل، المطبعة الحيدرية، بغداد، ١٩٦٨ م، ج ٢، ص ١٤٧.
Benvenisti, op. Cit. p. 220.
Prawer, op. Cit. p. 362.

(١٨) أبو الفداء، تقويم البلدان، مطبعة المثنى، بغداد، ١٨٥٠ م ص ٢٤٧. المقريزي: المصدر السابق، ج ١ ص ٩١٢.
يوسف غوانمه، تاريخ شرقي الأردن، القسم الحضاري، ص ١١٦.

(١٩) Hütteroth, op. Cit. p. 54.

وكان لكل قرية شيخ أو أكثر[٢٠]، والمصادر اللاتينية المعاصرة نعتته باسم (رئيس)[٢١]، وعليه تقع مسؤولية حفظ النظام في القرية، والمسؤولية المباشرة أمام السلطة الحاكمة والمالك الاقطاعي. ومن الجدير بالذكر أن شيخ القرية عرفته القرى الشامية قبل العصر الصليبي،[٢٢] ومن مهامه أيضا فض المنازعات والمشاكل بين أفراد القرية، وهو الناطق الرسمي باسمها أمام السلطات الحاكمة[٢٣]. وتذكر المصادر أن شيوخ القرية كانوا يعرفون مساحتها ومقدار فدنها، والمتحصل من تلك الفدن، و يقومون بجمع الضرائب المترتبة على فلاحي القرية، وتقديمها للأمير المقطع أو استاداره،[٢٤] فشيخ القرية والحالة هذه يمثل السلطة الرسمية في مجتمع القرية المحلي.

وجرت العادة أن يملك شيخ القرية بيتا كبيرا مفروشا جيدا، اذ كانت من مهماته أيضا استقبال الزوار القادمين الى القرية، فيرحب بهم و يكرمهم، و يتم ذلك في بيته أو في مكان خصص لهذه الغاية سمي (المضافة)[٢٥] ولا زلنا نرى هذا التقليد في الريف الأردني والفلسطيني حتى الوقت الحاضر.

وشكلت المرأة عنصرا هاما في مجتمع القرية، فبالاضافة الى أعمال البيت واعداد الطعام، كانت تقوم بصناعة الجبن ونسج الملابس ومساعدة زوجها في أعماله الزراعية. فالمرأة الأردنية والفلسطينية في العصور الوسطى كانت عنصرا منتجا في مجتمع القرية الزراعي.

(٢٠) السبكي تقي الدين علي التمهيد فيما يجب فيه التحديد، تحقيق صلاح الدين المنجد، دمشق، ١٩٥١ م ص ٨.

(٢١) Prawer, op. Cit. p. 367.
Benvenisti, op. Cit. p. 218.
Hourani, The Islamic City in the Light of recent research, (The Islamic city) U. S. A. pp. 18 - 19.
Holt: The Eastern Mediterranean Lands in the period of the Crusades, England, 1977, p. 10.

ووجد هذا الشيخ أو الرئيس في المدن، وأطلق عليه أحيانا (عريف الحارة) كانت مسؤوليات هؤلاء الشيوخ تتمثل بجمع الضرائب والناطق باسم الحي.

أنظر: Lapidus, Urban Society, in the Mamluk Syria, (The. Islamic City) p. 196.

(٢٢) Hourani, op. Cit. p. 18.

(٢٣) Ibid, p. 19.
Lapidus, op. cit. 197.

(٢٤) السبكي تقي الدين علي، المصدر السابق، ص ٨ السبكي تاج الدين عبد الوهاب، معيد النعم ومبيد النقم، تحقيق محمد علي النجار، القاهرة، ١٩٤٨ م، ص ٢٦.
Prawer, op. Cit. p. 367.

(٢٥) Ibid, p. 367.

لقد عانى فلاحو بلاد الشام بشكل عام من الظلم الاجتماعي نتيجة لتعسف أمراء الاقطاع والأجناد.[٢٦] فالقرى كانت موزعة بين الأمراء والأجناد، ونتيجة لهذا الظلم نرى السبكي يقول: «فمن حق الله سبحانه وتعالى عليهم أي الأجناد ــ اللطف بالفلاحين، فلو شاء الله تعالى لقلب الفلاح جنديا والجندي فلاحا... فلا أقل من أن يكفي الفلاح شره وظلمه»[٢٧] وكان الفلاح يلزم بالاقامة في الأرض مدة ثلاث سنوات متوالية، ولا يسمح له بالمغادرة، وان نزح أعيد الى القرية قهرا و يلزم بفلاحة الأرض. وقد ألزم ديوان الجيش في عصر دولة المماليك الفلاحين بذلك، مما دعا السبكي للاحتجاج قائلا:

«والبلاد تعمر بدون ذلك، بل انما تخرب بذلك، لأنهم يضيقون على الناس»[٢٨] وكان اقطاع الأمير تتراوح مساحته بين زمام قرية وعشر قرى موزعة في مناطق مختلفة، أما المملوك السلطاني فيتراوح اقطاعه بين قرية ونصف قرية في حين يبلغ اقطاع جندي الحلقة جزءا من زمام قرية. ولأسباب أمنية أصبح السلطان منذ القرن الثامن الهجري (الرابع عشر الميلادي) يعطي أجزاء أو حصصا من قرى مختلفة ومتباعدة، بدلا من قرية واحدة.[٢٩]

ونتيجة لهذا العسف والظلم الاجتماعي، هاجرت أعداد كبيرة من الفلاحين الى المدن الكبيرة للعمل هناك، ولكنها لم تلق النجاح الذي أرادته، فشكلوا مع الزمن طبقة فقيرة، أطلق عليها اسم الحرافيش، والأوباش، كان منهم الخدم، وعمال المطابخ، ورجال الاسطبلات، واللصوص والمجرمون.[٣٠]

(٢٦) السبكي تاج الدين، المصدر السابق، ص ٢٦، ٥٢.

وانظر: Cohen & Lewis, Population and revenue in the Towns of Palestine, Princeton U. S. A., 1978 p. 24.

(٢٧) السبكي تاج الدين، المصدر السابق، ص ٥٤.

(٢٨) السبكي تاج الدين، نفس المصدر، ص ٣٤.

(٢٩) مفضل بن أبي الفضائل، النهج السديد والدر الفريد فيما بعد تاريخ ابن العميد، باريس، ١٩٢٠ م، ج ١ ص ١٣٩ــ١٤٤.
Poliak, Feudalism in Egypt, Syria, Palestine, and the Lebanon, LONDON, 1939, p. 19.
Cohen & Lewis, op. Cit. p. 25.

(٣٠) Lapidus, op. Cit. p. 196.

ووجد في كل قرية خطيب وفقيه أو مؤدب، يعين من نائب السلطنة في النيابات، كي يعلم أهلها أمور دينهم، و يعلم أبناءهم القراءة والكتابة.[٣١] وكان في كل قرية حارس أو أكثر، يقوم على حراسة القرية وحفظ ممتلكات سكانها، و ينبههم اذا شبت الحرائق وهم نيام.[٣٢] ووجد في القرية من سمو «الطوفية» ومهمتهم تنحصر في حراسة البساتين والمساكن الكائنة خارج القرية.[٣٣]

وقد امتهن أهالي القرى بالاضافة الى مهنة الزراعة، صناعة الأجبان، والنسيج والحياكة، وصناعة البسط الجميلة[٣٤]، وعصر الزيت، وطحن الدقيق، وصناعة الفحم، وصناعة النيل والسكر. فمعاصر الزيت وجدت في معظم القرى الأردنية والفلسطينية، فنبات الزيتون وجد في جميع أنحاء البلاد في الجبال والأودية والسواحل، ولكن زراعته تركزت في جبال نابلس والخليل وجبال عجلون والشراه. وكانت بعض هذه المعاصر يدوية و بعضها يدار بواسطة الحيوان، وهناك نسبة من هذه المعاصر كانت قديمة أطلق عليها اسم (المعاصر الرومية). و يذكر الباحثون أن الصليبيين عندما قدموا الى الأراضي المقدسة وجدوا زراعة الزيتون وصناعة الزيت قد تطورت جيدا.[٣٥]

واستخدم الفلاحون الطواحين (الأرحية) في طحن حبوبهم، فينقل الفلاح حبوبه على دابته، والمدة التي يقضيها في الطاحون منتظرا دوره كانت فرصة كي يلتقي بأصدقائه القريبين والبعيدين، و يتبادل معهم المعلومات، و يستمع الى ما يحدث خارج نطاق عالمه الصغير المحدود[٣٦].

وامتهن الفلاحون في الأردن وفلسطين منذ عصور قديمة صناعة السكر، فالجزء الجنوبي من بلاد الشام ملائمة لزراعة قصب السكر. و بلغت زراعة القصب وصناعة السكر أوجها في العصرين الأيوبي والمملوكي، فأقيمت معاصر السكر أو طواحين السكر في الساحل قرب عكا، وفي غور الأردن، وغور الصافي، وفي الشوبك. ومن العرب نقلت أوروبا زراعة القصب وصناعة السكر، حتى أن الكلمة العربية (معصرة) Ma'asera انتقلت الى اللغات الأوروبية، حيث ذكرت في وثيقة بندقية تعود لسنة ١٢٤٣ م.[٣٧] وصدر سكر الشوبك والكرك الى قبرص[٣٨] وفلورنسا، حيث أشارت وثيقة فلورنسية الى وجوده في أسواقها بين عامي ١٣١٠ و ١٣٤٠ م.[٣٩]

وكانت معاصر القصب هذه تدار بالماء، ومن المعروف أن استخدام القوة المائية في خدمة الانسان كان قد بديء به في منطقة الشرق الأدنى منذ قرون عديدة، لذا كانت هذه المعاصر متقدمة من ناحية تكنية وأكثر تطورا من تلك الموجودة في أوروبا في نفس الفترة[٤٠].

وقد استخدم الفلاحون الفرن أو التنور (الطابون) في صنع الخبز، واستخدموا روث الحيوانات الجافة والقش والحطب في تحميته[٤١]، ووجد في كل بيت طابون خاص به. أما مواردهم المائية فكانت من الينابيع، وان لم يتوفر النبع في القرية كانت تشيد صهاريج لتتجمع فيها مياه الأمطار و يستمد منها الفلاحون ما يلزمهم و يلزم مواشيهم من ماء، وكان عددها متفاوت بين قرية وأخرى، فبلغت في قرية أدر ١٥٧ صهريجا أي بمعدل صهريجين للدار الواحدة. وعملية نقل المياه كانت تتم بواسطة الجرار أو القرب والروايا المصنوعة من جلود الحيوانات.

وتجدر الاشارة هنا الى أن كثيرا من القرى الأردنية والفلسطينية كانت تحتوي على مغاير أو كهوف تنتشر خارج القرية، وأحيانا داخلها. وقد استخدمت هذه المغاير في ايواء الحيوانات وخزن الغلات، وان كنا نجدهم في حالات أخرى يستخدمونها للسكنى، وقد بلغت هذه المغاير في قرية أدر ٢٣ مغارة.

(٣١) السبكي تاج الدين، المصدر السابق، ص ٢٢٠
يوسف غوانمه، المرجع السابق، القسم الحضاري، ص ١٠٧.

(٣٢) السبكي تاج الدين، المصدر السابق، ١٤٥.

(٣٣) السبكي تاج الدين، نفس المصدر، ص ١٤٦.

(٣٤) المقريزي، الخطط، القاهرة، ١٣٢٤ ــ ١٣٢٦ هـ، ج ٣ ص ١٦٢.
ابن الصيرفي، نزهة النفوس والأبدان في تواريخ الزمان، تحقيق حسن حبشي، القاهرة، ١٩٧٠ ــ ١٩٧٤، ج ١ ص ١١٤.
ابن اياس: نسق الأزهار في عجيب الأفكار، لوحة ٤٢ «مخطوط».
ياقوت: معجم البلدان، ج ١ ص ٣١٦.

(٣٥) Prawer, op. Cit. p. 361.

(٣٦) Benvenisti, op. Cit. p. 247.

(٣٧) Ibid, p. 253.

(٣٨) Ibid, p. 253.

(٣٩) Lopez & Rymond,
Medieval trade in the Mediterranean World,
New York, 1955, pp. 109 - 114.

(٤٠) Benvenisti, op. Cit. p. 247.

(٤١) المقدسي، أحسن التقاسيم في معرفة الأقاليم، ط ٢ ليدن، ١٩٠٩ م ص ١٨٣.

Prawer, op. Cit. p. 366.

وثيقة وقف السلطان الأشرف شعبان

رقم الوثيقة : ٤٩
رقم المحفظة : ٨
نوع الوثيقة : خاصـــة
موضوع التصرف : حجـــة وقـــف
المتصرف : السلطان الملك الأشرف شعبان
تاريخ الوثيقة : ٣ جمادى الأولى ٧٧٧ هـ
مكان الوثيقة : دار الوثائق القومية في القاهرة

محتويات الوثيقة :

تحتوي الوثيقة على وقف عدد من القرى والأماكن في بلاد مصر والشام، أما القرى والأماكن الشامية الباقية في الوثيقة فهي:

١ ــ قرية أدر من عمل الكرك المحروس.
٢ ــ قرية ساسكون من حماه المحروسة.
٣ ــ قرية آرميا من عمل معرة النعمان.
٤ ــ قرية قرعنا من عمل نابلس المحروسة.
٥ ــ قرية سح الحديد من مضافات حلب المحروسة.
٦ ــ قرية معر حطاط من عمل معرة النعمان.
٧ ــ قرية كدرين من عمل حلب المحروسة.
٨ ــ قرية جيلان من جبل سمعان.
٩ ــ البستان والحمام بالكرك.

أولا : الدراسة :

شكل الوثيقة :

هذه الوثيقة أصل وليست صورة، وهي مكتوبة من وجه واحد، على درج من الرق طوله حوالي عشرون مترا. فقدت جزأ من أولها وآخرها، وبها تمزق في وسطها. وهامشها الأيمن متآكل في كثير من أجزائه، مما جعلنا نفقد كثيرا من الكلمات، وقد أشرنا الى ذلك بالنقط. والخط مكتوب بالحبر الأسود وبخط ديواني واضح مقروء في معظمه، فيما عدا بعض الكلمات التي أهمل الكاتب تنقيطها. وعلى كل فالوثيقة في حالة جيدة اذا ما قورنت بغيرها من الوثائق المحفوظة في دار الوثائق القومية في القاهرة.

وهذه الوثيقة تشمل على أوقاف وقفها السلطان الأشرف شعبان في ٣ جمادى الأولى ٧٧٧ هـ، تتكون من عدة قرى منتشرة في مصر وبلاد الشام، من ضمنها وقف قرية أدر القريبة من الكرك، وحمام وادي الكرك، وسوف نتناول في هذه الدراسة الجزء الخاص بوقف قرية أدر.

موضوع الوثيقة :

هذه الوثيقة هي قطعة من حجة الوقف، أما موضوع الوقف فلم يذكر، بسبب فقدان الأجزاء الأولى والأخيرة من الحجة. وكما هو مألوف، فان مثل هذه الوقفيات كان يحبس لأعمال البر والخير، وينفق ريعها على المساجد والمدارس والبيمارستانات وغيرها من المشاريع ذات النفع العام.

وقد أوضحت لنا هذه الوثيقة مساحة قرية أدر وحدودها الأربعة بالاضافة الى عدد بيوت القرية وصهاريجها ومغايرها ومسجدها والقطع الموقوفة عليه.

ثانيا : نص الوثيقة :

قرية أدر من عمل الكرك المحروس

وما يعرف ونسب اليه ومن الموقوف جميع القرية المعروفة من عمل الكرك المحروس، وهو كرك الشوبك، يشمل على عامر ودامر وسهل[٤٢]، وهي وهاد[٤٣] وواد وشعاب وجبال وأبنية، وما به من الحرس[٤٤]؟؟ المعدلة ما بين الحر (ين)[٤٥] الذي يزرع بأراضي الناحية المذكورة، وما بها من الصهاريج والآبار العامرة والدامرة وبأراضيها، وعمارة دمنها المعدة

(٤٢) دامر: الأمكنة المدفونة التي درس موضعها وذهب أثرها. (لسان العرب مادة دمر).

(٤٣) وهاد: الوهد والوهدة أي المطمئن من الأرض والمكان المنخفض كأنه حفرة (لسان العرب مادة وهـــد).

(٤٤) في الأصل (الحرس) وقد تكون الحرين أو الحريق.

(٤٥) في الأصل (الحر) وبقية الكلمة محذوف وأرى أنها نفس الكلمة السابقة.

لسكنى فلاحيها.[٤٦] وعدة الدور وهي ثلاثة وثمانون دارا، من ذلك (عا) مر[٤٧] ثلثة وسبعون دارا وخاوى عشرة. ومساحة جميع الدمنة ضربا وتكسيرا لها لقصد (...) كرك، وذرعها سبعة أذرع ونصف ذراع بذراع الحديد[٤٨] (...) أربعة آلاف قصبة[٤٩]، وثمان مائة قصبة ونصف (...)، وما بالقرية من الصهاريج الرومية المتفرقة في القرية المذكورة وأراضيها، وعدتها مائة صهريج وسبعة وخمسون صهريجا. من ذلك عامر ماية صهريج وسبعة وعشرون صهريجا، المعد ذلك لجمع ماء الأسيلة وخرب ثلثون صهريجا، خلا الصهريج المختص بمسجد القرية، وهو في حرم المسجد الذي بها. وما بالقرية وأراضيها من المغاير[٥٠] المعد لانتفاع فلاحيها، وعدتها ثلثة وعشرون مغارة، وتحيط بالقرية المذكورة، وتشتمل عليها وعلى جميع أراضيها. ويحصرها حدود أربعة: الحد الأول وهو القبلي ابتداؤه المحلة الفاصلة بين أرض قرية أدر وأرض قرية القناعة، وتستمر مشرقا على سلسلة رومية فاصلة بين أرض قرية أدر وأرض قرية القناعة، وتستمر على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض قرية القناعة الى أن تصل بحبلة رومية [٥١] فاصلة (...) قرية أدر وأرض قرية القناعة الى أن تتصل (بعص ؟)[٥٢] وصهريج يعرف بصهريج القبيل (...) وتستمر على سمته[٥٣] الى أن تتصل بسلسلة رومية فاصلة (...) حبلة نمر، ينحدر على حبلة رومية فاصلة بين أرض قرية أدر وأرض قرية القناعة الى أن تتصل بشعبين[٥٤] ملتقاهما يلتقيان يعرفان بحلا حبيب. ثم يستمر على حبلة تعرف بأم العامر فاصلة بين أرض قرية أدر وأرض قرية القناعة، ثم يستمر على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض قرية القناعة، الى أن تتصل برجم السطوح.[٥٥] ثم يستمر على شعب يعرف بأرض السطوح فاصل بين أرض قرية أدر وأرض قرية القناعة الى أن يتصل بالدرب سالك السلطاني المعروف بدرب الحاج الشريف. و يستمر مشرقا على مسيل الشعب المذكور أولا، الفاصل بين أرض أدر وأرض قرية القناعة الى أن ينتهي الى درب سالك الى قرية نخل فاصلة بين أرض قرية أدر وأرض السعودية وأرض المصبحة، وهو انتهاء الحد القبلي.

والحد الثاني وهو الشرقي ابتداؤه الدرب السالك الى قرية نخل (...) أرض قرية أدر وأرض السعودية وأرض المصبحة و يأخذ متشاملا الى أن (...) السالك من اللجون الى قرية الثنية[٥٦]، وهو درب الحاج الشريف، و يستمر (...) من أرض قرية أدر وأرض المصبحة الى أن تتصل بالشعب المعروف بالزيادة. ثم يستمر متشاملا على رفاف فاصلة بين أرض قرية أدر وأرض القناعة، الى أن يتصل بحبلة رومية داخله في أرض قرية أدر المذكورة وتستمر على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض القناعة الى أن تتصل الى أسفل الوادي الكبير المعروف بالصناعية. ثم يصعد متشاملا من أسفل الوادي الكبير على مقطع حجارة الطواحين قديما، و يستمر متشاملا على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض الصناعية الى أن يتصل بالدرب السالك من قرية أدر وغيرها الى اللجون وهو انتهاء الحد الشرقي.

والحد الثالث وهو الشمالي ابتداؤه من الدرب السالك من قرية أدر وغيرها الى اللجون الفاصل بين أرض قرية أدر وأرض قمرين، ثم يستمر على الدرب السالك المذكور الى أن يتصل برفاف وعلامات فاصلة بين أرض قرية أدر وأرض (...) ثم ينعطف متشاملا على رفاف فاصل بين قرية أدر وأرض القمرين، ثم (...) رفاف وعلامات الى أن يتصل بشعب فاصل بين قرية أدر (...) القمرين.[٥٧] ثم ينعطف متشاملا على الشعب المذكور، الى أن يتصل بواد يعرف بواد السبع. ثم ينعطف مغربا على الوادي المذكور، دائرا الفاصل بين أرض قرية أدر وأرض القمرين. ثم ينعطف متشاملا على الشعب المذكور الى أن يتصل الى قبالة عراق

(٤٦) وردت هذه العبارة في بعض الوقفيات «خارجا عن دمنها المشتملة على بيوت الفلاحين وما فيها من الأبنية» (السبكي تقي الدين، التهديد فيما يجب فيه التحديد، ص ٢٨).

والدمنة آثار الناس والمكان القريب من الدار (لسان العرب مادة دمن).

(٤٧) (أمر) في الأصل هكذا والصحيح (عامر).

(٤٨) ذكرت المصادر ذراع العمل، كانت تستخدم لقياس الأرضين، وطولها ثلاثة أشبار بشبر رجل معتدل، وهناك الذراع الزيادي ثم الهاشمي وهي أطولها.

(الفراء: ابو يعلى محمد بن الحسين، الأحكام السلطانية، القاهرة، ١٩٣٨ م، ص ١٥٨. القلقشندي، صبح الأعشى، ج ٣ ص ٤٤٢، ٤٤٣).

(٤٩) القصبة وحدة لقياس أرض الزراعة وطولها ستة أذرع بالهاشمي، وكل ٤٠٠ قصبة تساوي فدانا. (الفراء الأحكام السلطانية: ص ١٥٧ القلقشندي، صبح الأعشى، ج ٣ ص ٤٤٢).

(٥٠) المغاير: مفردها مغارة، وهي في الجبل كالغار والكهف، الا أنها أصغر من الكهف (لسان العرب مادة غـور وكهـف).

(٥١) حبلة: الحبلة الكرم، والحبل شجر العنب وفي الحديث (لا تقولوا للعنب الكرم، ولكن قولوا العنب والحبلة بفتح الحاء والباء). (لسان العرب، مادة حبل).

(٥٢) هكذا في الأصل والأصح أنها (بوقف).

(٥٣) سمته: يسمت سمتا ينحو نحوه، والسمت الطريق والقصد (لسان العرب مادة سمت).

(٥٤) شعبين: الشعب، ما انفرج بين جبلين، أو هو مسيل الماء في بطن من الأرض له حرفان مشرفان (لسان العرب، مادة شعب).

(٥٥) رجم: جمعها رجام، وهي الحجارة المجتمعة (لسان العرب، مادة رجم).

(٥٦) الثنية: قرية تقع خارج مدينة الكرك، كان يقيم بها قوافل الحاج الشامي مدة أربعة أيام وتقام لهم فيها سوق هامة. وما زالت هذه القرية موجودة حتى الوقت الحاضر. (يوسف غوانمه، تاريخ شرقي الأردن القسم الحضاري، ص ٦٣).

(٥٧) القمرين: بفتح القاف والميم، قرية الى الشمال من أدر، لا تزال حتى الوقت الحاضر.

القمرين، ثم ينعطف مغربا بالشعب المذكور دايرا، ويجاور الشعب المذكور درب سالك من القمرين الى جحفا[٥٨]، الى أن يتصل بأرض قرية جحفا قبالة الحبلة التي بأرض القمرين. ثم يستمر مغربا بالشعب الفاصل بين أرض قرية أدر وأرض قرية جحفا، و يستمر على رفاف وعلامات الى أن يتصل بحبلة رومية، أو حبلة فاصلة بين أرض قرية أدر وأرض قرية جحفا، ثم يستمر على الحبلة المذكورة مغربا دائرا الى أن يتصل بحبلة تعرف بأم الرتم ثم يستمر على الحبلة المذكورة الى أن يتصل بحبلة تعرف بمشاريق بدرا فيها صخرات ثابتة فاصلة بين أرض قرية أدر وأرض قرية جحفا. ثم ينعطف متشاملا على الحبلة الرومية المعروفة (دايرا؟) من جهة الشمال، ثم ينعطف مغربا على الحبلة المذكورة الى أن تتصل بدرب سالك (...) القمرين، ثم يستمر مغربا على الحبلة المذكورة المجاورة للدرب المذكور الى أن يتصل بحبلة تعرف بالحريق. ثم يأخذ على حبلة شمالي الدرب المذكور الى أن يتصل بسلسلة رومية بخلال جوهرة فاصلة بين أرض قرية أدر وأرض قرية جحفا. ثم ينعطف متشاملا على سلسلة رومية الى أن يتصل برجم حجارة ثابتة، ثم ينعطف من الرجم المذكور مغربا على حبلة و بعض رفاف فاصل بين أرض قرية أدر وأرض قرية جحفا، الى أن تتصل بسلسلة رومية وقف. ثم يستمر مغربا على السلسلة المذكورة الى أن يتصل برجم، و يستمر على السلسلة المذكورة الفاصلة بين أرض قرية أدر وأرض جحفا، ثم يستمر مغربا الى أن يتصل برجم يعرف بصروتا. ثم ينحدر مغربا على رفاف وسلسلة فاصلة بين أرض قرية أدر وأرض قرية جحفا، الى أن يتصل بالدرب السالك من أدر الى الربة[٥٩]، وهو انتهاء الحد الشمالي.

والحد الرابع وهو الغربي ابتداؤه الدرب السالك من قرية أدر الى دبة الربة الفاصلة بين أرض قرية أدر وأرض مقبلا، و يستمر مقبلا على الدرب الى ان (...) رومية فاصلة بين أرض أدر وأرض مقبلا، و يستمر على السلسلة (...) درب سليم الى أن تتصل بصخرات كبار. ثم ينعطف مغربا على سلسلة رومية و ينعطف مقبلا على الحبلة الفاصلة بين أرض قرية أدر وأرض حلا آل اسماعيل فاصلة بين أرض قرية أدر وأرض مقبلا، الى أن يتصل بحبلة وصخرات ثابتة، و يستمر على سلسلة وسط الحبلة المذكورة، الى أن يتصل بمعصرة رومية من جملة حقوق قرية أدر وأرض مقبلا الى أن يتصل برجم مجاورة بقية المعاصر من جهة الغرب، ثم ينعطف مقتبلا على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض مقبلا الى أن يتصل بأرض قرية الكنار.[٦٠] ثم ينعطف مغربا على رفاف وعلامات فاصلة بين أرض قرية أدر وأرض قرية الكنار الى أن يتصل بحبلة ثم ينعطف مقتبلا على حبلة رومية، ثم ينعطف مغربا على الحبلة المذكورة الى أن يتصل بحبلة ثم ينعطف مقتبلا على حبلة رومية ثم ينعطف مغربا على الحبلة المذكورة الى أن يتصل بالشعب الفاصل بين أرض قرية وأرض تعرف بحكر سليمان[٦١] بن صالح بن مكي (...) يستمر مقتبلا بالشعب المذكور الى أن يتصل بأرجام وسلسلة رومية فاصلة من (...) أرض الحكر المذكور. و يستمر مقتبلا على رفاف وعلامات وحبلة رومية الى أن يتصل الى حايط رومي. ثم ينعطف مشرقا الى أن يتصل الى حايط رومي[٦٢]، ثم ينعطف مشرقا على الحايط المذكور الفاصل بين أرض قرية أدر وأرض قرية الكنار الى أن يتصل بصرة[٦٣] هناك من حقوق الكنار. ثم ينعطف مقتبلا على سلسلة رومية فاصلة بين أرض قرية أدر وأرض قرية الكنار، و يستمر على رفاف وعلامات فاصلة من أرض قرية أدر وأرض قرية الكنار الى أن تتصل بالدرب السلطاني السالك من قرية أدر الى مدينة الكرك المحروس. و يستمر مقتبلا على حبلة رومية دائرة فاصلة بين أرض قرية أدر وأرض قرية الكنار، بالحبلة المذكورة رجم يعرف بأم الطلع. ثم يستمر على سلسلة رومية الى أن يتصل بمحلة سالكة من القناعة الى قرية الكنار فاصلة من أرض قرية الكنار وأرض القناعة وهو انتهاء الحد الغربي.

ومما هو داخل في جملة حقوق القرية المذكورة الربع والسدس شائعا[٦٤] من جميع القطع الأرض المعروفة بحكر سليمان بن (صالح) و (مسا) حة؟ جميع القطع المذكورات ستة آلاف قصبة بالقصبة المذكورة بجميع حقوق القرية المذكورة وما يعرف بها ونسب اليها خلا المستثنى[٦٥] الآتي ذكره. وهو المسجد الجامع المعمور بذكر الله تعالى، وهو معقود بالحجر والطين، والمقابر الثلاث المعدة لدفن أموات المسلمين، والطرقات السلطانية التي هي ممر المسلمين وغيرهم. ثم وخلا ما بأراضي القرية المذكورة من

(٥٨) جحفا: وهي موجودة للآن وتعرف باسم جحفه.

(٥٩) الربة: مدينة قديمة، كانت تسمى مآب ولكنها بادت وصارت قرية تسمى الربة (ابن سباهي، أوضح المسالك الى معرفة البلدان والممالك، مخطوط بدار الكتب المصرية رقم ١، جغرافيا، لوحة ٢٣٧).

(٦٠) الكنار: قرية موجودة للآن الى الجنوب الغربي من أدر.

(٦١) حكر: حكر الشيء احتبسه (لسان العرب مادة حكر)، والحكر هنا احتباس شيء من أرض وعقار لأعمال البر والخير.

(٦٢) حايط: الحائط الجدار لأنه يحوط ما فيه. (لسان العرب، مادة: حاط).

(٦٣) صرة: الصرار الأماكن المرتفعة لا يعلوها ماء (لسان العرب، مادة صرر).

(٦٤) الربع والسدس شائعا : يعني أن الوقف يشمل أيضا ما نسبته خمسة من اثني عشر من حكر سليمان بن صالح، ومقداره ستة آلاف قصبة، وهذا الحكر باق على الاشاعة.

(٦٥) هذا المستثنى يذكر دائما في حجج الأوقاف، وشروط الاستثناء هو المعرفة والتمييز، وفي بعض الأحيان يحدد هذا المستثنى، وأحيانا لا يحدد، و يكتفى بذكر ذرعه، والشائع ان المسجد والمقابر والطرقات لا تحدد. (أنظر السبكي تقي الدين، التقييد فيما يجب فيه التحديد، ص ١٣، ١٦، ٢٦).

الفدانين[٦٦] المطلقين الآتي ذكرهما و وصفهما وتحديدهما فيه. من ذلك فدان واحد برسم مصالح المسجد المذكور وجملته تسع قطع، ويحيط بالأولى من القطع المذكورات حدود أربعة: الحد القبلي ينتهي الى الطريق سالكة الى أرض الناحية المذكورة. ومن الشرق، رفاف وعلامات فواصل بينها و بين أرض الناحية المذكورة، ومن الشمال كذلك ومن الغرب كذلك، ويحيط بالقطعة الثانية حدود أربعة الحد القبلي ينتهي الى حبلة رومية، ومن الشرق حايط رومي، ومن الشمال سمّار رومي[٦٧]، ومن الغرب طريق سالكة، والقطعة الثالثة حدها من (الجنوب) حبلة رومية، ومن الشرق سلسلة رومية، ومن الشمال حبلة رومية، ومن الغرب حبلة، والقطعة الرابعة يحيط بها من الجهات الأربع حائط رومي فاصل بين القطعة المذكورة و بين أرض قرية أدر المذكورة. والقطعة الخامسة يحيط بها من الجهات الأربع حايط رومي فاصل بين القطعة المذكورة وأرض قرية أدر. والقطعة السادسة حدها من القبلة حبلة، ومن الشرق طريق سالكة ومن الشمال حبلة ومن الغرب كذلك. والقطعة السابعة حدها من القبلة سلسلة رومية ومن الشرق حبلة، ومن الشمال حكر يعرف بزيد بن طي من حقوق أراضي القرية المذكورة ومن الغرب حكر القاضي معين الدين روالله؟ من أراضي القرية المذكورة. والقطعة الثامنة حدها من القبلة طريق سالك ومن الشرق عراق مانع، ومن الشمال طريق سالكة ومن الغرب كذلك. والقطعة التاسعة حدها من القبلة حبلة ومن الشرق كذلك، ومن الشمال سلسلة رومية ومن الغرب كذلك. ومن ذلك فدان واحد مطلق باسم أحمد ابن داود صياد الغزلان[٦٨]، وهو قطعتان، ويحيط بالقطعة الأولى من القطعية حدود أربعة، حدها من القبلة حايط رومي فاصلة بينها و بين أرض القرية المذكورة ومن الشرق حبلة رومية فاصلة بين الأرض المذكورة و بين أرض القرية المذكورة. ومن الشمال حبلة رومية فاصلة بين الأرض المذكورة وأرض قطع مسجد الناحية المذكورة. ومن الغرب حبلة رومية فاصلة بين الأرض المذكورة وأرض قرية الكبار. والقطعة الثانية وهي شمالية حدها من القبلة سلسلة رومية فاصلة بينها و بين قرية أدر، ومن الشرق كذلك، ومن الشمال حبلة رومية فاصلة بين الأرض المذكورة وأرض قرية جحفا، ومن الغرب حبلة رومية فاصلة بين الأرض المذكورة وأرض قرية أدر الى أن تتصل بدرب سالك من أدر الى قرية الفاخرية وغيرها.

(٦٦) الفدان: هناك الفدان الرومي: وهو مقدار ما يحرثه زوج من الثيران من الأرض في يوم وليلة.

أما الفدان العربي: فهو ما يستطيع أن يحرثه الفدان في يوم كامل. والفدان = ٤٠٠ قصبة مربعة أو ٢٤ قيراطا، فمساحة الفدان في العصور الوسطى تكون ٦٣٨٨ م ٢.

(القلقشندي: صبح الأعشى، ج ٣ ص ٤٤٢) .

والفدان في اللاتينية Carruca وفي الفرنسية Charrués وهي تعني في الوحدات الأوروبية الكمية من الأرض التي يمكن زراعتها بواسطة عجلة محراث في فصل واحد و يساوي ٣٥ هكتارا.

(Prawer, The Latin Kingdom, p. 372) .

(٦٧) سمار رومي: السمر، ضرب من الشجر صغار الورق قصار الشوك، وله برمة صفراء يأكلها الناس. جيد الخشب، يستعمل في سقوف البيوت. (لسان العرب، مادة سمر).

(٦٨) ذكرت بعض الوقفيات استثناء الأراضي التي هي ملك لأربابها، ونرى في هذه الوقفية بعض الأراضي الخاصة.

(السبكي تقي الدين، المصدر السابق، ص ٣٥).

ثالثا : التحقيقات :

السلطان الأشرف شعبان :

هو الملك الأشرف زين الدين شعبان بن الملك الأمجد حسين بن الناصر محمد بن قلاوون، تسلطن سنة ٧٦٤ هـ/١٣٦٣ م وعمره عشر سنوات وفي عهده هاجم الفرنج مدينة الاسكندرية بقيادة بطرس لوزجنان صاحب قبرص واستولوا عليها مدة ثلاثة أيام. وفي سنة ٧٧٨ هـ/١٣٧٧م خرج لأداء فريضة الحج، و بعد وصوله الى مدينة العقبة تعرض فيها الى مؤامرة قام بها المماليك ضده، فهرب عائدا الى القاهرة ولكن أعداءه تمكنوا من القاء القبض عليه وقتلوه في ٦ ذو القعدة ٧٧٨ هـ[٦٩].

الوقـــف :

الوقف لغة الحبس، و يقصد به تلك الأراضي التي يخصصها المسلمون لأغراض دينية أو علمية كالمساجد والمدارس والزوايا والخانقاوات أو أغراض خيرية، كالبيمارستانات والسبل والخانات ومكاتب الأيتام أو لغيرها من المنشآت ذات النفع العام.[٧٠]

وكانت الأوقاف خاصة أو رسمية، فالخاصة يوقفها بعض الأتقياء والأمراء لبعض الأغراض السالفة الذكر. أما الرسمي فيكون من قبل الخليفة أو السلطان أوقفه للصرف على بعض المنشآت الاجتماعية العامة، كالمدارس والمساجد والبيمارستانات والخانقاوات.

وقد كثرت الأوقاف في بلاد الشام منذ زمن السلطان نور الدين زنكي و يذكر السبكي أن الأوقاف كانت قليلة في الشام قبل الدولة النورية، وان ما وصله من أوقاف نور الدين هو سبعة وثلاثون كتابا[٧١] أما

(٦٩) أبو المحاسن: النجوم الزاهرة، ج ١١ ص ٢٤ وما بعدها.

(٧٠) السبكي تقي الدين، المصدر السابق، ص ٩، عبد العزيز الدوري، تاريخ العراق الاقتصادي، ط ٢، بيروت، ١٩٧٤ م، ص ٤٩، محمد عبيد الكبيسي أحكام الوقف في الشريعة الاسلامية، ج ١ مطبعة الارشاد ــ بغداد، ١٩٧٧ م، ص ٥٥.

Hütteroth, op. Cit. p. 100.

(٧١) السبكي تقي الدين، المصدر السابق، ص ١٠، ١٣.

السلاطين الأيوبيون والمماليك فقد أكثروا من هذه الأوقاف، واشتملت أوقافهم على العديد من القرى والضياع موزعة في بلاد مصر والشام[٧٢]. ومن تلك الأوقاف ما وقفه الظاهر بيبرس على خان للسبيل بناه في بيت المقدس ووقف عليه أوقافا في قرية (لفتا) في فلسطين وقيراطا ونصفا في قرية الطرة (شمال الأردن)، وثلث وربع قرية المشيرفة من عمل بصري. وكان هذا الخان يوزع الطعام واصلاح نعل المسافرين المشاة مجانا، وذلك من ريع هذا الوقف. ومن تلك الأوقاف ما وقفه حسام الدين لاجين سنة ٦٧٧ هـ على جامع أحمد بن طولون في القاهرة، وهو ضيعة الأقسا من عمل يافا والرملة[٧٤]. أما ركن الدين بيبرس الجاشنكير فقد بنى خانقاه في القاهرة، ووقف عليها الأوقاف الجليلة، وقرر بها أربعمائة صوفي، وبنى بجانبها رباطا قرر به مئة من الجند وأبناء الناس الذين قعد بهم الوقت. وجعل به مطبخا يوزع في كل يوم على نزلائه الخبز واللحم والحلوى.[٧٥]

وكان الاشراف على تلك الأوقاف لرجال الدين وخصوصا قاضي القضاة، والقضاة، لذا فقد مارس هؤلاء العلماء سلطة اقتصادية واجتماعية من خلال سيطرتهم على تلك الأوقاف، وحظوا بمنزلة خاصة لدى السلاطين.[٧٦]

الحدود الأربعة :

يرى بعض الفقهاء أن لا بد من ذكر الحدود الأربعة للعقار الموقوف وروي عن أبي يوسف أن التعريف يحصل بذكر حدين، وقيل بثلاثة حدود، ولكن زفر قال: ان التعريف لا يحصل الا بذكر الحدود الأربعة[٧٧]. أما الخصاف (ت ٢٦١ هـ) فاعتبر الوقف باطلا عند عدم تحديده، الا اذا كان مشهورا متميزا وفي هذه الحالة يجوز وقفه دون ذكر حدوده. أما اذا لم يكن الموقوف مشهورا معروفا، وجب تحديده بحدوده الأربعة كي تصح الشهادة على الوقف.[٧٨]

أما المستثنى من الوقف فلا يشترط تحديده، فالسبكي يقول: (فاشتراط التحديد، والقول بأن ذلك يحتاج اليه لا يشهد له فقه ولا عرف، ولا دليل له يعضده، ولا عمل عليه)[٧٩]. فان حدد المستثنى اعتبر ذلك جائزا وليس واجبا.

وفي هذه الوثيقة نلاحظ أنها كتبت على أحوط الوجوه، وتحرز فيها الكاتب عن مواضع الخلاف، فذكرت الحدود الأربعة لجميع القطع الأراضي الموقوفة وجملتها احدى عشرة قطعة، كي يكون التعريف حاصلا على جميع الأقوال.

(٧٢) السبكي تقي الدين، نفس المصدر، ص ٢٦، ٢٩، ٣١ـ٣٤.

(٧٣) السبكي تقي الدين: المصدر السابق، ص ٢٦، أبو المحاسن: النجوم الزاهرة، ج ٧ ص ١٢١. مجير الدين الحنبلي، الأنس الجليل بتاريخ القدس والخليل ج ٢ ص ٨٧.

(٧٤) السبكي تقي الدين: نفس المصدر، ص ٣١.

(٧٥) السبكي تقي الدين: نفس المصدر، ص ٣٢.

(٧٦) ابن طولون: قضاة دمشق، ص ١٢٣.

Hourani, The Islamic City, p. 18.

يوسف غوانمه، تاريخ شرقي الأردن، القسم الحضاري، ص ١٠٢.

(٧٧) عبد اللطيف ابراهيم: وثيقة وقف مسرور بن عبد الله الشبلي الجمدار، جامعة القاهرة، ١٩٦٣ م، ص ١٦٣.

(٧٨) محمد عبيد الكبيسي، أحكام الوقف في الشريعة الاسلامية، ج ١ ص ٣٥٤، ٣٥٥.

(٧٩) السبكي تقي الدين، المصدر السابق، ص ١٠.
وانظر نصوص بعض الوقفيات، والمستثنى منها بدون ذكر حدودها في الصفحات ٢٤، ٢٨، ٣٢.

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Ibn Al-Quff's Writings on Hygienic Regulations and the Preservation of Health

In the land of Jordan (Transjordan), from the Greco-Roman period up to modern times, no star in the history of medicine, surgery and hygiene shone brighter than that of Amīn al-Dawlah Abū'l-Faraj (because of deliverance from the Crusaders' domination) b. (for ibn) Muwaffaq al-Dīn Yaʿqūb b. Isḥāq (630–685/1233–1286). He was also known as Ibn al-Quff (in reference to *Tall al-Quff* a mount south of al-Karak; rugged highlands and plateaux with spacious fields, attracting the Arabians to them in bountiful years; the back of something; strawbag; the short, thin man; the withered, dry tree; or the dry, parched land)[1]. We are not sure for which of the above meanings he was thus nicknamed. He was also known as al-Karakī, and that was definitely in reference to the city of his birth, al-Karak (Qīr Moab), which at the time was one of the most fortified cities of the Syrian region and the capital of the Ayyūbid King, al-Nāṣir Dāwūd, son of the King al-Muʿaẓẓam ʿIsá of Damascus[2]. Ibn al-Quff was further called al-Masīḥī al-Malakī since he belonged to the Orthodox faith of the Antiochan Apostolic Church, a Christian denomination that adhered to the Chalcedon Ecumenical Council of AD 451, which still survives with millions of adherents in the Middle East and elsewhere[3].

During the Arabic Golden Age, one country after another, from Transoxiana, Iran and Iraq in the eastern part of the Islamic empire, to Egypt, al-Maghrib and al-Andalus in the West, produced great men in the various fields of learning. But in the small, often overlooked land east of the Jordan river, Ibn al-Quff stands unique. We know of no comparable physician throughout this entire period. He was a genius in

[1] Jamāl al-Dīn b. Manzūr (630–711/1233–1311), *Lisān al-ʿArab*, vol. II, Cairo, Būlāq edition pp. 195–7.

جمال الدين محمد بن مكرم الأنصاري المعروف بابن منظور، **لسان العرب**، طبعة بولاق، ج ١١: ١٩٥–٩٧ والذي ولد بنفس السنة التي ولد فيها ابن القف يعرف كلمة القف أو القفة بأنها الزنبيل من الخوص، أو الذي على هيئة قرعة تجعل فيه المرأة قطنها أو غزلها أو المسافر زاده وثمره، أو هي الشجرة اليابسة البالية أو يبس الأرض وجفافها وتناثر حب وورق بقلها، أو هي صفة الرجل القصير القليل اللحم، والقفة هي الرعدة أو قشعريرة الحمى، وهي ظهر الشيء أو ما ارتفع من الأرض وغلظ، أو هي الاكام أو البلاد العريضة الواسعة مع رياض وقيعان اذا أخصبت ربعت العرب فيها لسعتها وكثرة عشبها. ويتفق هذا مع ما أورده محمد الفيروزبادي (١٣٢٩–١٤١٤)، **القاموس المحيط**، القاهرة، ج ٣: ١٩٢–٩٣؛ **والمنجد في اللغة والأدب والعلوم**، المطبعة الكاثوليكية، طبعة ١٥، ١٩٥٦.

[2] The Crusaders' influence extended to Al-Karak (Le Crac de Montreal or Petra Deserti) to consolidate their gains in Jordan during the reign of King Baldwin I (1100–1118). Its citadel was built by Payen le Bouteiller, Lord of Karak and Monte Reale الشوبك in 1142. Several attempts by Nūr al-Dīn Zinkī and Salāh al-Dīn (Saladin) stopped short from restoring Islamic authority over the region. When the fortress and fief passed in 1177 to Prince Renauld de Châtillon the threat to Muslim security reached its highest pitch. In 1188, however, all of Jordan was recaptured by the Muslim army. Under the Ayyūbid King al-Nāṣir Dāwūd (1229–1249), son of al-Muʿaẓẓam ʿIsá (1218–1227), al-Karak reached its first climax in Arab hands as al-Nāṣir's capital city. See Richard Hartmann, 'Die Herrschaft von al-Karak', *Der Islam*, 2(1911), 129–142; Gerald Lankester Harding, *The Antiquities of Jordan*, rev. ed., New York, F. A. Praeger, 1967, pp. 52–60 and 110–112; and Wolfgang Müller-Wiener, *Burgen der Kreuz Ritter in Heiligenlund*, Munchen-Berlin, 1967, pp. 11–19, 47–59 and 67–69.

[3] The Melkite Rite الملكية, so-called because it had the support of the Byzantine Emperor and the Patriarchs of Constantinople and Antioch. Its roots go back to the first century when the centre of gravity for Christian missionary activity moved from Jerusalem to Antioch of Syria (Acts, 11: 19–26, 13: 1–5, 42–52, and 15: 30–41). Melkites participated in the Nicean and Chalcedon Ecumenical Councils and had a large loyal number of followers in al-Karak under the Islamic rule. This city became in 1263 a seat of a Melkite Bishopric. The name Melkite was later taken over by the Eastern Catholic Rite which, in preserving its original liturgical ceremonies and traditions under the general supremacy of the Pope of Rome, served as a link between eastern and western Christianity. See Harry Luke and Edward Keith-Roach, *The Handbook of Palestine and Transjordan*, 3rd ed., London, MacMillan, pp. 39–50;

ومحي الدين ابن عبد الظاهر، **الروض الزاهر في سيرة الملك الظاهر**، تحقيق فاطمة صادق، جامعة أكسفورد ١٩٥٦ حمص ٣٣–٥٣، محمد عدنان البخيت، **مملكة الكرك في العهد المملوكي**، عمان، ١٩٧٦، ٢١–٢٧، وصالح الحمارنه، «المسيحية في أرض الشام في أوائل الحكم الاسلامي» **المؤتمر الدولي لتاريخ بلاد الشام**، عمان، الجامعة الأردنية، ١٩٧٤: ٥٤٩–٥٥٧.

the teaching and practice of the healing arts. The contributions he made during his short life place him among the greatest Arabic physicians of his time[4].

Academic medicine comes to Al-Karak-Jordan

From the Fātimid dynasty in Egypt (969–1171) on, Jordan played an important role in the political, social and economic life of the region. This coincides with the peak period of the Crusaders' penetration of the area. Its role became even greater during the time of the Ayyūbids and the Mamlūks[5]. As regards the field of health, the thirteenth century (7th AH) witnessed the most commendable performance, particularly in the works of Jordan's loyal son, Ibn al-Quff. The timing was ripe in Jordan for his outstanding accomplishments. This is especially true when we consider how exciting and lively was that era socio-politically and intellectually[6].

The first attempts to encourage and promote the teaching and practice of Arabic medicine at the highest levels were instigated by the Ayyūbid King al-Nāṣir Dāwūd, Ṣāhib al-Karak, after the death of his father, King al-Muʿaẓẓam ʿIsa, in 625/1227. Al-Nāṣir reigned in Damascus first. But, forced by his rival relatives, he relinquished that city and moved the seat of his kingdom to al-Karak, where he reigned from 627–646/1229–1249. Thus al-Karak became for the first time during the Islamic era, the renowned capital of a prosperous kingdom. With him, King al-Nāṣir brought to al-Karak as his court physician the renowned philosopher al-Shaykh Shams al-Dīn ʿAbd al-Hamīd Khusrū-shāhī. The latter thus became the first academically trained physician, historically known to us in Islam to have served the medical field at the highest professional level, in Jordan. Khusrū-shāhī, however, was a native of Khusrūshāh, a town near Tabrīz (Azerbayjān in Iran). He later returned to Damascus and made it his home, where he lived most of his productive life and where he died in 653/1256[7].

Another physician who served the profession for a short interval in al-Karak was ʿImrān b. Ṣadaqah of Damascus. He came only for a season because of the ill health of King al-Nāṣir Dāwūd. He returned to the Syrian capital after the recovery of his patron[8].

The third historical figure in chronological order to serve in Jordan was Sadīd al-Dīn Abū Manṣūr b. Yaʿqūb b. Ṣaqlāb, the son of a famous physician of Jerusalem, Palestine. During the early 1230s, the father arrived at al-Karak to enroll his son for private tutoring in the natural sciences, medicine and logic under Shaykh Khusrū-shāhī. On completion, the son, Sadīd al-Dīn, remained for a season, and as he advanced in his medical knowledge and experience, he succeeded the two above-mentioned practitioners as the court physician[9].

At this time, Abū'l-Faraj ibn al-Quff was born and reared in al-Karak, which became by now a respected capital, not only as a fortified city but also as an intellectual and commercially progressive center. As a teenager, Ibn al-Quff moved with his parents to Syria where he pursued and completed his studies in medicine, philosophy, mathematics and the natural sciences. In addition, he seems to have had a good bedside training at the al-Nūrī al-Kabīr, al-Qaymarī, and other hospitals in the Syrian capital[10].

Medicine comes to ʿAjlūn-Jordan

In 1263 all of Jordan, including the fortified cities of ʿAjlūn and al-Karak, became part of the kingdom of King al-Ẓāhir Baybars (reigned 1260–1277). This Mamlūk period has been adequately covered in the most useful work of Professor

[4] Lucien Leclerc, *Histoire de la Médecine Arabe*, vol. 2, Paris, 1876, pp. 203–4; Carl Brockelmann, *Geschichte der Arabischen Litteratur*, vol. 1, Leiden ed., p. 649 and *Supplement*, 1: 899; E. Wiedemann, 'Beschreiburg von Schlangen bei Ibn Quff', *Sitz. Phys.-Med. Soz. Erlangen*, 48(1918), pp. 61–64; George Sarton, *Introduction to the History of Science*, vol. 2, pp. 1098–1099; Manfred Ullmann, *Die Medizin in Islam*, Leiden, Brill, 1970, pp. 176–177; and S. Hamarneh, 'Ibn al-Quff', *Dictionary of Scientific Biography*, vol. 11, New York, Scribners, 1975, pp. 238–239.

[5]

البخيت، **مملكة الكرك** ص ص ٥ــ٨، جمال الدين أبو المحاسن بن كبرى بردى، **النجوم الزاهرة**، القاهرة، ٧: ١٢١ــ١٨٥، سعيد عاشور، «المجتمع الاسلامي في بلاد الشام في عصر الحروب الصليبية»، **المؤتمر الدولي لتاريخ بلاد الشام**، ١٩٧٤ حمص ٢١٩ــ٢٣، وأبي بكر بن عبد الله بن أيبك الدواداري، **الدرة الزكية في أخبار الدولة التركية**، ج ٨، القاهرة، ١٩٧١ تحقيق أ. هارمان، ص ص ٩٤ــ١٠٣.

[6] N. A. Ziadeh, *Damascus Under the Mamluks*, Norman, Univ. of Oklahoma Press, 1964, pp. 3–30, 54–60;

سعيد عاشور، **الظاهر بيبرس**، أعلام العرب رقم ١٤، القاهرة، ١٩٦٣، ١٠٦ــ١٣١، شمس الدين بن خلكان، **وفيات الأعيان**، تحقيق احسان عباس، ج ٣ بيروت، ١٩٧٠، ٤٩٤ــ٩٦، سبط بن الجوزي، **مرآة الزمان في تاريخ الأعيان**، حيدر آباد، ١٩٥٠، ٢: ٧٩٣.

[7]

أبو محمد شمس الدين عبد الحميد بن عيسى **الخسروشاهي**، (٥٨٠ــ٦٥٢/١١٨٤ــ١٢٥٤). أنظر موفق الدين بن أبي أصيبعة، **عيون الأنباء**، طبعة بولاق، ٢: ٢١٣، ٢١٩، ٢٥٩ــ٧٣، وخير الدين الزركلي، **الأعلام**، طبعة ثالثة، بيروت، ١٩٦٩، ٣: ٤٩، وأيضا ٤: ٥٩.

[8]

أوحد الدين عمران بن صدقة الاسرائيلي ولد بدمشق ١١٦٦/٥٦١ وتوفي بحمص ١٢٣٩/٩٣٧ خدم الملك العادل والناصر داود وأيضا في قلعة دمشق والبيمارستان النوري الكبير مع الشيخ مهذب الدين عبد الرحيم **الدخوار وعليه درس الطيب ابن أبي أصيبعة، عيون الأنباء**، ٢: ٢١٣ــ١٤، ٢٣٩ــ٤٦.

[9]

المرجع السابق، **عيون الأنباء**، ٢: ١٢٣ــ٣٠، ٢١٤ــ١٥.

[10] Ziadeh, Damascus, op.cit. pp. 54–56, 60–65;

البيمارستان القيمري بالصالحية في دمشق بناه الأمير الكردي سيف الدين القيمري وقد أشار اليه ابن جبير في رحلته، طبعة بيروت، دار التراث، ١٩٦٨ ص ص: ٢١٠ــ١٨، ٢٣٠ــ٣٩، ٢٤٥ــ٤٦.

al-Bakhīt of the University of Jordan[11]. In view of the king's concern for the wellbeing of his soldiers a need arose for an academically trained, in-house physician-surgeon to shoulder the medical responsibilities for the Muslim army stationed at the ʿAjlūn (al-Rabaḍ) citadel. Ibn al-Quff was the willing, able, and trustworthy doctor to take charge of such an important post. There, from about 1263, he apparently served with distinction for almost a decade. Here it seems very probable that he wrote his first great encyclopedic medical manual, *K. al-Shāfī fī al-Ṭibb* (completed on the 10th of Shaʿbān, 670/1271). Thereafter, he was promoted and transferred to the Citadel of Damascus where he also taught the healing arts, until his untimely death at the age of 52. His fame drew many students from far and near to attend his lectures and be trained under him.

It was here, at the Syrian capital, that he wrote the rest of his works. Some later ones, however, were inscribed only in a first draft and he died before he actually completed them[12]. Nevertheless, he left behind an impressive medical legacy although a great portion of it has been lost since. The remaining extant writings contain original and penetrating ideas and personal observations of great historical importance[13].

For an adequate coverage of Ibn al-Quff's contribution to Arabic medicine and surgery, this writer conducted a search to collect on microfilm copies of as many available writings of his as possible, but has not yet succeeded in collecting all that are known or reported. In this paper, an attempt will be made to briefly evaluate Ibn al-Quff's contribution to health preservation as the father of hygienology. It will also give an assessment of his concepts of the medical regulations, dietetics, diagnoses, and environmental ecology valued and applied at that time for the promotion of good health. The study will focus on his three earliest writings, especially the third, *Jāmiʿ al-Gharad*, devoted to preventive medicine, insisting that hygiene is a definite and specialized area of the healing arts.

A comprehensive text on the healing art

From internal evidence and documentary citations, it seems very probable that Ibn al-Quff's first major medical work was his *Kitāb al-Shāfī fī al-Ṭibb*. It is an encyclopedia on the theories and practical aspects and applications of the healing arts based on the Greek and other ancients' legacies, with many ramifications and additions by Arabic authors, as well as some theories and ideas introduced by our author himself[14]. Three copies of this work are known, two of which this writer was able to secure on microfilm. One is housed at the Vatican Apostolic Library (Arab. no. 183), containing the first seven treatises out of a total of twelve[15]. A second is housed at the British Library in London (Hamarneh no. 224, Or. 9006). It contains treatises eight to eleven, but defective at the beginning and end with several folios missing[16]. The third is reported in India, which I have not yet been able to obtain[17].

Al-Shāfī is a great accomplishment by itself and ranks among the best classics of Arabic medical encyclopedias—with Rāzī's *al-Manṣūrī*, al-Majūsī's *al-Malakī*, al-Zahrāwī's *al-Taṣrīf* and Ibn Sīnā's *al-Qānūn*[18]. It gives a comprehensive coverage of the major known topics of the healing arts that were taught and debated at that time. Interestingly, it was Ibn al-Quff's first known written work, and was completed when he was only 37 years of age. It needs a separate study to be adequately evaluated since the scope of this short paper will not permit that. A synopsis of its contents only can be given here.

In its introduction, the author praises the medical profession as the foremost among all other professions and sciences. Prophets and eminent sages have agreed as to its utility to the human race, and thus have approved and promoted its teaching and practice. He reiterates: 'I spent so many years of my life in acquiring all that I could learn about its teachings, in its generalities and minute and detailed doctrines, being convinced of its utility as a noble calling and the prudent demands on those that practice it. Therefore I endeavoured to gather all the needed data for the purpose of compiling this compendium. It is, in my judgment, the first of its kind in this field. In it, I focused attention on matters overlooked by my

[11] (C.N.J.), 'Medieval 'Ajlūn', The Quarterly of the Department of Antiquities in Palestine, vol. 1, 1932, pp. 21–33;

البخيت، مملكة الكرك، ٥—٦، وسعيد عاشور، الظاهر بيبرس، ٣٧—٥١، ١٠٦—٧، ١٤٠—٥١.

[12] Hamarneh, The Physician, Therapist and Surgeon Ibn al-Quff, Cairo, Atlas, 1974, pp. 83–149.

[13] Hamarneh, Catalogue of the Arabic mss. at the British Library, 1975, pp. 189–193; and D.S.B., vol. 11 (1975), pp. 238–239;

صلاح الدين المنجد «مصادر جديدة عن تاريخ الطب عند العرب» مجلة المخطوطات العربية، ٥ (١٩٥٩)، ٢٦٦—٧.

[14] The ʿAjlūn Citadel was built by the Ayyūbids under the leadership of Prince ʿIzz Al-Dīn in 1184–1185 for the protection of routes between Syria and Arabia. Here Ibn al-Quff completed al-Shafi in 670/1271, the first known Arabic medical book to be published in Jordan. The title and introduction revealed the author's intentions and satisfaction in his work which fulfilled the need at that time in the teaching and practice of medicine.

مصطفى حاجي خليفة، كشف الظنون، طبعة اسطنبول، ٢: ١٠٢٣؛ وابن شداد، الأعلاق الخطيرة في ذكر أمراء الشام والجزيرة، تحقيق سامي الدهان، بيروت، ١٩٦٣ ص ص ٨٦—٩١.

[15] Bibliotica Apostolica Vaticana Arabo 183. A 14th century copy apparently came from Damascus. It is written in large legible, partly vowelised Naskh script in 259 fols., 19 to 23 lines per page, copied by a certain Christian physician scribe Dāwūd b. Yaʿqūb presumably from the author's autographed copy.

[16] This British Library copy seems to be a continuation of the Vatican 183 because of handwriting similarities. See Hamarneh, *Catalogue of British Library*, pp. 189–193.

[17] Bankipore IV: 88.6 not yet received. Other copies may turn up in libraries in India, Iran, Turkey and North Africa which will make its editing and evaluating easier and more rewarding.

[18] Since the maturing of Arabic-Islamic medicine in the ninth century, several eminent physicians wrote medical encyclopedias, such as Abū Bakr al-Razi (d. 925), ʿAlī b. ʿAbbās al-Majūsī (d. 944), and Ibn Sīnā (Avicenna, d. 1037) in Iran, and Abū'l-Qāsim al-Zahrāwī (d. ca. 1013) in al-Andalus.

predecessors. I explained points that were hidden from and misunderstood by them. I also illucidated ambiguous concepts, uncertainties, and vague statements, and harmonized what appeared to be conflicting recording. I further corrected errors in the best way I could. . . I have called the book *al-Shāfī fī al-Tibb* because it will satisfy the reader to the point that he will need no other manual besides'[19]. Fortunately, this was his gift to readers at large and not to a particular patron as was the custom. He felt that none deserved it more than the avid reader and the industrious student of the healing art.

K. al-Shāfī is divided, like other medical compendiums of the period, into two parts: Theory, consisting of the first four treatises and concerned with what affects the human body, what is or is not appropriate for it, and what it loses under normal and abnormal circumstances; and Practice, concerned with the prevention of diseases, preservation of health and how to cure illness, comprizing the last eight treatises

(الجزء النظري والجزء العملي)

The following is a summary of the table of contents of the twelve treatises:

I General principles and definitions of the healing arts, natural things and phenomena, including elements, temperaments, humours, faculties, spirits, as well as human anatomy and physiology.

II On causes for good or ill health based on the proper or improper use of the six hygienic principles and their qualities, including the air we breathe, diet, work, the use of enemas and vomit-inducing drugs, psychological impulses and tendencies, seasons, living conditions and places, and natural and contranatural changes. Interestingly, he defines causes as the factors monitoring and controlling body conditions in cases of both sickness and good health.

السبب هو الأمر الموجب أو الحافظ بالذات لحالة من أحوال البدن التي هي الصحة أو المرض وما بينهما

III On the body's requirements (اللوازم) for the preservation of good health, including sex, age, bodily constitution and facial appearances, types and classifications of diseases, as well as natural, animal, and psychic responses, reactions and retroactions.

IV On symptoms, diagnoses, indications and signs (الدلائل) concerning sickness and health, including physiognomy, prognostics, urinalysis, pulse indications and crises, especially in fevers.

V On dermatology, with useful discussions of skin diseases, including ulcers, sores, swellings and phlegmonous abscesses.

VI On poisonous products from animal, mineral and vegetable origins, symptoms, pharmacological effects and theories of poisoning, toxicology, treatment of animal bites, including mad dogs and poisonous beasts, the theriacs and antidotes[20]. It ends with a chapter on poisonous animals, and potent drugs that cause soporific, hypnotic, somnificient and depressant effects, and substances which are sedatives, calmatives, tranquilizers and analgesics, or those agents that stupefy and torpify senses (المخدرات). It lists potent drugs affecting the nervous system, including narcotic drugs of botanical origin such as opium[21]; common mandrake (Mandragora officinarium L., family Solanacaea)[22]; يبروح، سراج قطرب أو تفاح المجانين black nightshade (Solanum nigrum L., of the same family); وعنب الثعلب Datura metel L.; جوز ماثل (نوع من البنج) hemlock (Conium Maculatum L., Of the Umbelliferaea fam), and Henbane شوكران [23] as well as camphor and ice water.

VIII On mental and emotional diseases and psychotherapy and epilepsy.

IX On ailments of the thoracic and the respiratory systems.

[19] Ibn al-Quff's assuring statements demonstrated his determination to speak his piece whenever he was persuaded that his observations differed from traditional concepts. He seems to be confident that he has a lot to offer too. A separate and more detailed investigation of this work, in my judgment, appears to be justified.

[20] Toxicology seemed to have developed in view of hostilities against people in high places at the time, as witnessed by the number of treatises written on this subject. Compare with M. Steinschneider, 'Die toxicologischen Schriften der Araber bis Ende XII Jahrhunderts' *Archiv fuer pathologische Anatomie und Physiologie und fuer klinische Med.*, Berlin vol. 52 (1871), 340–375, and 476–503; and the Princeton Garrett 566H entitled

المنقذ من المهلكة في دفع مضار السموم المهلكة للحسين بن أبي ثعلب بن المبارك حوالي سنة ١٠٩١ م.

[21] This brief chapter indicated that the author's knowledge of anesthetics is not beyond the general expectations of his contemporaries. They used mainly plant sedatives with a short duration effect, helpful in minor surgical manipulations. See Hamarneh, 'Pharmacy in the Medieval Islam and the History of Drug Addiction', *Medical History*, 16 (1972) pp. 226–237.

[22] Mandragora, mentioned by Dioscorides, became known in Arabic pharmaceutical literature. It was mentioned by the tenth century al-Tamīmī of Jerusalem. They recognised its similarity to a human figurine with two feet and two hands, and with reddish fruit hard to pick. Because of this they attributed to it magical curative virtues. To pull the shrub out, the tying of a dog to its trunk was used, not only in the East but more so in the West.

ابن البيطار المالقي، **جامع مفردات الأدوية والأغذية**، طبعة بولاق ٣: ١٠—١٢ يذكر العقار تحت اسم **اليبروح**، الوقار وسراج القطرب، شجرة الصنم، في صورة صنم قائم ذي يدين ورجلين، وشجرة سليمان، كان منها تحت فص خاتمه، وبها كان يصنع العجائب، أو الشجرة المباركة نافعة لكل داء، مطلع ورقه وقضيبه فوق الأرض في وسط رأس الصنم، و يزعمون أنه لا يمكن قلعه، فانتشر التقليد حول ربطه في **عنق كلب عند جذبه وقلعه حيث يسقط ميتا «وأما أنا فأرى ذلك محالا و باطلاً».**

[23] السيكران (أو الشوكران أو الشيكران) هو البنج أنظر ابن البيطار، **الجامع**، ١: ١١٧—١١٩، وابن سينا، **القانون في الطب**، ج ١، طبعة بولاق، ١: ٢٧٣.

x On dystrophy and the diseases and treatment of the digestive system, nourishment and dietetics.

xi On diseases and treatment of the sex organs, sexology, gynecology and obstetrics[24].

xii On diseases and treatment of pains of the joints, gout, and sciatica—topics that captured the special attention of Arabic authors from the ninth century on, as seen in the early works of Thābit b. Qurrah and Abū Bakr Muḥ. b. Zak. al-Rāzī[25].

Sharḥ Kullīyāt Al-Qānūn

Ibn al-Quff's second medical manual was his commentary on the *Kullīyāt of al-Qānūn* of al-Shaykh Abū ʿAlī ibn Sīnā (980–1037), completed in Damascus between 1273–74. Until now, I have only been able to secure a microfilm of an incomplete, but rare copy, housed in Damascus (Hamarneh no. 57 T, or General no. 7802)[26] thanks to the directorship of the Zāhirīyah National Library for allowing me a microfilmed copy for this research.

Originally in six volumes, this commentary is the author's largest known work, and seemingly one of the most exciting in view of its comprehensive coverage of medical philosophy, theory, anatomy and physiology[27]. From this and other writings of his, Ibn al-Quff seems definitely to be a great admirer of Ibn Sīnā as a physician-philosopher, probably more so than one would expect. This admiration, however, did not prevent our author from expressing his disagreements and criticism of several of Ibn Sīnā's theories and recorded speculations. He thus tried to correct errors wherever he spotted them, and brought to mind many observations overlooked or undetected by Ibn Sīnā. These valuable, personal theories projected by Ibn al-Quff throughout this Commentary seem important and worthy of future evaluation. The available portion of it, housed at the Ẓāhirīyah (about one seventh of the total), confirms this optimistic assessment concerning the historical significance of this Commentary when the total work is found and studied. For example: his eloquent discussions on meteorology; environmental ecology; the physiology of the optic nerve, and his interpretation of theories of color, vision, and picture formation; certain functions of the nervous system, and the coordination found between the spinal cord with its motor nerves and the brain with its sensory nerves; and, noteworthy definitions of sickness and health[28].

In this Commentary the author goes into further detail to explain other anatomical and physiological matters, among which are the relationship and connection between arteries and veins. This also he did in a later manual, *al-ʿUmdah*, on surgery; as well as the four outlets of blood and pneuma vessels from the left and right chambers of the heart which, it seems, Ibn al-Quff was sure of, but he compromised with Galen and Ibn Sīnā on a third chamber. He further pointed to the four locations of the cordial valves: the aortic, metral, pulmonary and the tricuspid, and the directions of their opening and closing for the flow of blood and pneuma (animal spirit) in and out of the heart. In this presentation he demonstrated what may be considered the first complete and detailed explanation of their function. It surpassed any previous anatomical interpretations, whether by Greek or Arabic authors. Interestingly, Ibn al-Quff mentions blood flow from the heart to the lungs through the pulmonary artery, leading one to sense his grasping of a new physiological truth which was shortly to be taken up by his contemporary, ʿAlāʾ al-Dīn Ibn al-Nafīs (c. 1210–1288)[29].

It must be stated that Ibn al-Quff, like other Arabic authors of the period, adopted Galen's anatomical theories and concepts. This is especially true as regards the direction in which the veins carry the thick blood from the liver to the heart and the entire body, while the arteries carry the pneuma, the quickening spirit, and heat that emanates from the heart penetrating to other parts of the body. Nevertheless, finding inconsistencies in these speculations by the ancients, Ibn al-Quff tried to record and inject his own interpretations and observations with a limited measure of freedom[30].

Hygienology and preventive medicine

On hygienics, Ibn al-Quff excels with new ideas and determination in his third medical work entitled *Jāmiʿ al-Gharad fi Ḥifẓ al-Ṣiḥḥah wa-Dafʿ (Burʾ) al-Maraḍ*, on the preservation of good health and the prevention of diseases. Comprising sixty chapters, it was completed in one condensed compendium about 675/1276. Although written so late, it was

[24] Ibn al-Quff divided his *al-Shāfī* into two parts: theoretical medicine, treatises one to four; and practical medicine, the remaining eight, including causes and treatment of diseases. He added useful information in the field of gynecology and obstetrics. See Hamarneh, 'The physician and the health professions in medieval Islam', *Bulletin of the New York Academy of Medicine*, 47 (1971), pp. 1101–1110; and H. Schipperges, 'Die arabische Medizin als Praxis und als Theorie', *Sudhoffs Archiv*, 43 (1959), pp. 317–328.

[25] Thabit wrote on pains of the joints and gout (one manuscript is known). For al-Razi see Hamarneh, 'Early independent treatise on gout,' *Physis*, vol. 20 (1978), pp. 31–48.

[26] According to I. A. Usaybiʿah, *ʿUyūn al-Anbā*, 2: 273, this commentary comprised six volumes (a total of about 1600 fols.). The Ẓāhirīyah incomplete copy is in 290 fols., 16.5 × 24.5 cm. size, 19 lines per page, in elegant partly vowelised Naskh script, and with marginal notes comparing the original text. It contains discussions not covered in Ibn Sīnā's original text and comprises pp. 48–82 of volume one in the Būlāq edition. See Hamarneh, *Index of Arabic mss. on medicine and pharmacy at the Ẓāhirīyah Library*, Damascus, Arab Academy, 1969, pp. 325–329. Let us hope that other more complete copies come to light to make possible a more adequate evaluation of this important medical commentary.

[27] During the twelfth and thirteenth centuries' revival of medical activities in Arab countries there had been a renewed interest in Ibn Sīnā's writings. It was, however, an objective interest, rational and critical, as evident in the works of Ibn al-Tilmīdh, Ibn Jumayʿ, Ibn al-ʿAyn Zarbī, ʿAbd al-Laṭīf al-Baghdādī and Ibn Zuhr.

[28] In the work of Ibn al-ʿAyn Zarbī and this section of Ibn al-Quff's commentary we find significant continuing progress in interpreting processes and concepts of the central nervous system and mental health. See Hamarneh, 'Ibn al-ʿAyn Zarbī and his definitions of diseases and their diagnoses', *Proceedings of the First International Symposium for the History of Arabic Science*, vol. 2, Aleppo, I.H.A.S., 1979, pp. 313–315.

[29] Ibn al-Quff and his contemporary Ibn al-Nafīs (ca. 1210–1288) seem to have tackled similar medical problems independently. They both wrote commentaries on Ibn Sīnā's first and third books of *al-Qānūn*. Ibn al-Nafīs' discovery of the pulmonary circulation is now acknowledged worldwide. Writings of these authors still deserve further investigation for new findings.

[30] About 680/1281 Ibn al-Quff published his better known work *al-ʿUmdah* on surgery. A year later he published his commentary on the Hippocratic Aphorisms, *al-Uṣūl* الأصول في شرح الفصول In both publications we find added important data on anatomy, physiology and the theories of health and disease.

translated into Latin, and thus had a wide circulation in the West. In it we find our author considering hygiene as a specialist field of the healing arts, giving it its own separate identification and analysis in a manner that no other before him had done. Such innovation indeed entitles him to be considered the father of hygienology and preventive medicine in Islam, as we shall show in this paper[31].

The *Jāmiʿ al-Gharaḍ* was written for the compelling reason and in the best possible manner to help and preserve the good health of the author's patron, Fakhr al-Dīn Muḥammad. Then it was dedicated to the 'prosperous library' of his father, al-Ṣāḥib Bahā' al-Dīn ʿAlī b. Muḥammad b. Ḥinnā of Egypt, the grand Vizier (chancellor) to the Mamlūk Sultan al-Ẓāhir Baybars (reigned 659–676/1261–1277) and his son, King al-Saʿīd. At the time, King al-Ẓāhir had two royal residences: one in the Citadel of Cairo, and the other at Damascus, and he moved between the two capitals freely, especially after the partial defeat of the Crusaders and the Mongols. Significantly, Ibn al-Quff in Damascus dedicated his important book on hygiene to the grand Vizier's library in Cairo, which suggests strongly that he might have visited the Egyptian capital at about that time, hence the repeated reference to Egypt in his writings[32].

This writer examined the two known copies of *Jāmiʿ al-Gharaḍ* housed in London: one at the British Library (see Hamarneh, no. 223, Or. 3690) in 180 folios; and the second at the Wellcome Historical Medical Library (WMS. Or. 116) in 216 folios[33]. It is quite evident, from the introduction to this compendium and elsewhere, that Ibn al-Quff was deeply concerned about the importance of the study of hygienics. Since the statements are brief, precise and explicit, I thought it appropriate to simply make a free translation of the relevant parts of the introduction to give the reader a feeling of the author's enthusiasm and devotion to this most important department of the medical sciences. He writes:

> 'I had convincingly conceived of and envisioned the importance of the rôle played by a healthy body in the worship of God according to the dictates of practiced traditions. These can expeditiously and adequately be observed and realised only when the body is healthy and its physical faculties are sound and well (for it is in being well and wholesome that one can best worship God). This explains why I resolved and promoted the concept that hygienics and preventive medicine are very important for all. Because of their real need, teaching these areas (of the healing arts) becomes a necessary requirement for everyone concerned with protecting, preserving and restoring healthy living. Therefore, despite other pressing demands and time-consuming duties, I worked hard, collecting data from materials I studied or information I observed, examined or experienced, to undertake the task of compiling this brief manual on hygiene and preventive medicine. It is small in size but loaded with very useful medical information and hygienic regulations. Hopefully, it will be sufficient for the study of hygienics, being the first and so far the only available text of its kind which is exclusively devoted to these topics. It will thus serve the need of each practitioner concerned with the healing art. Intentionally the text was brief, since I rejected any unnecessary detail, so that instead of becoming boring it would rather be enjoyable to the reader, the tutor and the listener[34]'.

«رأيت أن حفظ الصحة ضرب لازب لأن ما يوصل الى الواجب الا به فهو واجب. فأحجمت من الخاطر ما أبقته صروف الزمان وجمعت متفرقة بقدر الامكان ووضعت مختصرا في حفظ الصحة، قل حجمه وجل علمه واستقرت قواعده وعمت فوائده يقتصر في علم حفظ الصحة عليه... جعلته في نهاية الايجاز خوف الملالة... وكان الداعي اليه والمحرض عليه شدة الرغبة في حفظ صحة مولانا ملك الوزراء وسيدها فخر الدين محمد ولد المقر العالي المولوي بهاء الدين علي خرق الله العادة في بقائه.... وجعلت ذلك برسم خزانته».

Embryology and life stages

Ibn al-Quff believed that both parents have a part in the genesis of their baby, through their seminal fluid. He explained the function of the male sperm, but was not clear regarding the fact that it is a testicular secretion. He was, like his predecessors, completely unaware of the role of the reproductive cell, the ovum from the mother, and only spoke of a seminal fluid in general terms. However, he was emphatic

[31] Almost ninety years later another Arab author, Lisān al-Dīn b. al-Khaṭīb (1313–1374), wrote a similar text, though shorter, on the preservation of health, four copies of which I examined in Morocco.

الوصول لحفظ الصحة في الفصول أكمله لسان الدين بن الخطيب عام ٧٧١ هـ

[32] Ibn al-Quff was loyal to Bahā' al-Dīn Ibn Ḥinnā of Egypt (d. 677/1278) to whom he dedicated this book.

أنظر الدواداري، **الدرة الزكية**، ج ٨، ١٩٧١ ص ص ٣٢، ٧٠، ١٠٣–١١٥، ١٧١–٧٢، ٢٢٢–٢٤، ابن شاكر **الكتبي، فوات الوفيات**، القاهرة، ٢: ١٥٢–٥٤، ابن اياس، **بدائع الزهور في وقائع الدهور**، القاهرة، ١: ٩٨–٩٩، والمقريزي، **السلوك لمعرفة دول الملوك**، ج ١ قسم ٢: ٤٣٨.

[33] For further description of the first two copies, see A. Z. Iskandar, *Arabic Manuscripts of Medicine and Science*, London, The Wellcome Historical Medical Library, 1967, pp. 113–114, and Hamarneh, *Ibn al-Quff*, 1974, pp. 100–105. The Rabat incomplete copy D783 is in 20 fols. 18.5 × 26 cm., 21 lines per page in fair Maghribī script containing the first fourteen chapters (out of 60). Incipit:

الحمد لله مقدس الصفات والأسماء، مقدر الداء والدواء، محيي الأموات، مميت الأحياء، خالق الأغراض والجواهر، المنزعن الكذب والمظاهر، الذي عم الحيوان برزقه، وخص الانسان بفضيلة نطقه.

[34] Of further interest in these introductory statement which I freely translated, is Ibn al-Quff's invocatory plea beseeching God for supernatural intervention to give his patron a long life. خرق الله العادة في بقائه He lived 74 years.

about the fact that the fluid from the woman could not be considered a semen for reproduction. Yet he recognised that somehow there is a semen that comes from the mother by which she has a definite and equal part in the creation of the new life. No mention whatsoever was made of the monthly release of the female egg. Ibn al-Quff thought that conception simply results from the mixed seminal fluid produced by the two parents. The exact technicalities on how fertilisation and conception take place were not clearly known at the author's time. From this point on, Ibn al-Quff seems to be on surer ground. He writes that 'the formation of tissues which look like faint streaks over the semen resemble the mildew over mouldy bread. In its multiplication this newly forming tissue attaches itself gradually to the gritty layers of the womb (*al-naqr*), forming a cleavage between its wall and the embryo. Like a small disk it turns into oval shape like an egg without a shell hung to the cervix. At about the end of the first week or the beginning of the second, 'the changing power' acts on the 'impregnated mixed semen' to form what may seem to resemble froth or foaming substance which pulls towards the heart. Thereupon it is puffed into two directions with two whiffs—one to the right towards the liver and the other to the top towards the brain. After about fourteen more days it becomes like a clot, a thick coagulated mass (*ʿalqah*). After about thirteen more days this develops into a morsel which looks like a chunk of meat (*maḍghah*). In forty three days, or thereabouts, the various major organs (heart first, being the source and origin of all body's faculties, then head, shoulders and limbs, etc.) begin to appear and can be discerned. It is at this time that the embryo receives the intelligent, living soul which takes care of it[35]'.

وفي مثل هذا الوقت (حوالي ستة أسابيع) يفاض على الجنين النفس الناطقة فتتولى حفظه.

Thereafter, the author goes on to explain in detail the position of the foetus in the womb. It is surrounded by three membranes, the outer being the membrane lining the internal part of the womb through which arteries and veins enter to join their counterparts within the foetus to supply it with food, nourishment and air. The other two are termed the *shifā* and the *sillā* membranes (one surrounding the foetus and the other containing the amniotic fluid). At the end of seven months all organs seem complete, according to our author. At parturition the foetus ruptures these membranes, the head coming out first with hands stretched forward on its thighs in normal birth. In addition he reports a pregnancy in Tripoli (Ṭarāblus al-Shām), a septet (seven foeti), all born alive.

Ibn al-Quff, like other Arabic-Islamic authors before him, divides the span of life after birth into four stages. He gives a detailed description of each and the changes and powers at work in them, especially regarding 'the animal heat, humidities, and the natural soul'. These are:

I The stage of growth (*al-namā'*) involving a life span from birth to 30 years of age, encompassing infancy, childhood, boy and girlhood, teenage and adolescence (*al-ghulāmīyah*), and young adults (*al-futuwwah*).
II Youth (*al-shabāb*), from about 30 to 40 years of age, which involves the meridian of life—full growth and consistent vitality.
III Man or womanhood (*al-kuhūlah*), from about 40 to 60 years—the maturity and adulthood stage.
IV Old age or seniority (*al-shaykhūkhah*) beyond 60 years—time of ripe age to natural death. At this stage the body's humidity and natural heat begin to dry out in preparation for physical life cessation[36].

Six essential hygienic principles

The author mentions certain things relative to the preservation of and the restoration to good health, or that which may lead to sickness, depending on how one behaves towards them. At the same time, considerations are given to age, sex and temperament of each individual, as well as places, season, habits, and general body constitution. These are the essential six principles which had already been referred to. They were first outlined by Galen, then translated, modified and elaborated on by Abū Zayd Ḥuyayn b. Isḥāq al-ʿIbādī, and subsequently copied by later Arabic and European medical authors throughout the Middle Ages and up to the Renaissance[37]. These principles are: the air we breathe; the kinds of foods and drinks we take in; normal work and rest; wakefulness and slumber; vomiting, and the use of enemas; emotional and psychological influences and reactions; other bodily outputs. If undertaken or applied wisely and moderately in quantity and quality at the proper time, and as deemed necessary, health will be kept or restored; if such measures are abused, sickness occurs. Immoderation makes body constitution a target for change and possible 'corruption' from within or without—hence sickness and death.

Here also Ibn al-Quff defines health as the condition of the body in which all its functions are basically sound and wholesome.

الصحة حالة البدن الانساني بها تكون أفعاله سليمة بالذات

Explaining all this, our author moves progressively to launch his already determined efforts in being the first known physician during this period to establish hygiene and preventive medicine as a fully identified and recognised specialty among the healing arts. He precisely states that, 'the profession of hygiene involves preventive and remedial medical

[35] Ibn al-Quff apparently believed in conception, although to him the embryo becomes a living soul medically only at the end of six weeks. As regards abortion rights, most physicans of the time opposed abortion after that period of weeks.

[36] For centuries, in the West as in Islam, life expectancy was compared with the lamp and the wick. See Peter H. Niebyl, 'Old age, fever, and the lamp metaphor', *Journal of the History of Medicine and Allied Sciences*, 26 (1971) pp. 351–368.

[37] E. J. Rather, 'The six things non-natural', *Clio Medica*, 3 (1968), pp. 333–347; Saul Jarcho, 'Galen's six non-naturals: a bibliographic note and translation, *Bull. Hist. Med.* 44 (1970), 372–377; and Hamarneh, 'Some aspects of medical practice and institutions in medieval Islam', *Episteme*, 7 (1973), pp. 15–20.

treatment for protection against the prevalence of such conditions that cause untimely and improper rapid dryness, atrophy and exhaustion of the body's resources and vitality. It also aims at lessening, disposing of and ridding the body of foreign humidities. Thus, if more of the same have already been produced and multiplied, it gets rid of them. Likewise, preventive medicine (prophylaxis and hygienics) warns and guards against all kinds of poisons, chilblains, frostbite, and other incidents that inflict internal or external injuries to the body'.

«فصناعة الصحة صناعة تتضمن اصلاح التدبير المانع من استيلاء الأسباب المعجلة للتخفيف دون الواجب له، وذلك مثل تقليلات الرطوبات الغريبة ودفعها عن البدن أو ما يمنعها عن التوليد و باخراجها من البدن بعد التولد ومثل الاحتراز من أنواع السموم والبرد المجمد».

In defending the need for such a specialisation, the author recounts that, 'these advantages of preventive medicine and hygiene, however, do not prevent causes of inevitable withering away, degeneration and dryness from occurring, or guarantee deliverance from death, nor do they promise unlimited longevity to each individual—for these considerations vary from one to another according to each particular constitution'.

فهذه الفائدة من صناعة حفظ الصحة لا انها تمنع الأسباب الواجبة من التجفيف. ولا انها تتضمن الأمان من الموت، ولا أنها تبلغ كل شخص غاية طول العمر بحسب الانسان مطلقا فان ذلك يختلف باختلاف الأشخاص في تركيبها.

It is a fact of life that decline in old age comes faster than in one's earlier years. The author explains in detail that the body's 'nutritional faculty' could not supply the same vitality to young people as to the old. This is imperative since wasting away, degeneration and deterioration of vigor at old age are of much longer duration, leading eventually to natural death. Thus its effect on the elderly will be so much greater than degeneration in the prime of life. The author, therefore, speaks of two kinds of alimentation and food value: the nourishment in faculty (*al-ghidhā' bi'l-quwah*), which is the taking of food generally; and the real nutrition (*bi' l-Fi'l*), as when that food is completely altered and fully assimilated by the appropriate organs of the body. This is the reason, according to Ibn al-Quff's interpretations, why hot diet is given to patients who shiver from chill or from being cold, and cold diet to those with high temperature and fever[38].

He then concludes that healthy living and well-being can be of two types: ideal good health, which all people aspire to possess and which should be preserved, as emphasized in this entire work; and that which is less than wholesome and needs dietary or remedial treatments to balance and bring it to normality.

والذي أقول في هذا البحث أن الصحة على ما عرفت على نوعين: صحة في الغاية وهي القريبة من المتوهمة، وصحة دون الغاية.

This once more confirms what has been already said of the right usage of the six essential principles for preserving health and preventing body's vitality from deterioration and change for the worse. Nonetheless, Ibn al-Quff wondered, expressing his feelings in statements similar to those recorded and revealed in the Hippocratic Corpus, who and how many will be able to afford such luxury or meet such meticulous requirements and demanding hygienic standards! He lists the five following measures as a means for their implementation:

1) One has to be acquainted with the rules and regulations of the healing art in order to be able to identify the harmful and avoid it, and know the useful and beneficial and apply it.
2) That he be a highly placed official or self-employed individual who can have the time and convenience to comply—for an employed person or one under orders will find it extremely difficult to fulfil and adjust to these regulations.
3) One should have self-control and self-discipline for abstinence, and not be greedy or voracious.
4) One ought to be a wealthy heir, or a well-to-do person, for the poor would not be able to meet these criteria for lack of means and extra financial expenses.
5) One must be generous, munificent and unsparing of his wealth to attain his goal, for the stingy and miserly would not have the willingness to do what he ought for fear of spending more money than he thinks he should. Thus he loses his opportunity to attain a wholesome living. Indeed, how few there are at any time who can meet these standards for maintaining good health. Still fewer are those who can reach or get near to the 120 years of maximum age. Of course, many die unnatural deaths.

These, nonetheless, are the bases for ideal living. In them our author, seemingly, went beyond and projected more than his Greek predecessors ever did, yet very precisely, without philosophical ramifications[39].

Management of mother, child and grownup

The author here appropriately defines and distinguishes true from false pregnancy. He then elaborates on the measures to be taken for securing the necessary care, especially during the mother's last three months of pregnancy. These measures include the regulation of her diet, exercise, cleanliness, sleeping time and association. At parturition, the author recommends the use of the 'delivery chair', and gives detailed instruction to the midwife regarding her function and duties

[38] Ibn al-Quff preferred prevention over cure, and defined hygienology as a specialty. Aware of progressive disease conditions, he projected vague ideas regarding germicides and disease-causing humidities which are foreign to a healthy body.

[39] The *Hippocratic Corpus* debated such issues related to wholesome living and how a healthy man should live in order to remain healthy. See O. and L. Temkin (Editors), *Selected Papers of Ludwig Edelstein*, The Johns Hopkins Press, 1967, pp. 302–306.

during and after delivery. Regarding the care of the new babe, the author gives instruction regarding the preferred breast feeding, two or three times daily; cleanliness; clothing; bed, and sleeping place; and habits[40].

In some children, Ibn al-Quff explains, teeth begin to appear when six or seven months old. Walking should be gradual, aided with an instrument to help it walk, and so should weaning at two years of age or younger. Substitution or supplementation of feeding ought to include soups of rice and poultry, cereals with milk and sugar, and apple syrup. In cases of sleeplessness, adding a little dosage of poppy to milk feeding is recommended. The moral side of the child's life must never be neglected. He should be instructed not to be easily angered, too forward, greedy or selfish. Avoid giving him wine, and teach him to say easy words, adding others as he goes along. At this stage allow him to play with mates whom he chooses, and at the age of six send him to school or to a tutor. Allow enough time for play and fun until twelve years old, then give him normal exercises. Train him according to the trade or profession that he chooses for life vocation, but above all insist on the highest possible moral character[41].

During teenage and youth, music and adequate food is recommended, and a balanced diet, exercise (including bathing), rest and sleep should be observed. As to senior citizens, adequate warm abodes, together with light diet, is recommended, with avoidance of anger, worry, fear and sorrow.

Further, the author considers regulations concerning convalescence, and preservation of health for travellers on land or sea. Considerations are directed also towards clean water supplies (with warning against water and air pollution, and how to purify drinking water by boiling and distillation), and towards care from sun heat or lunar stroke. He also mentions types, colours and makeup of clothing, and the merits of each, and how to keep legs and feet warm, as well as hands and fingers safe. He recommends for the first time possibly in Islam, as reported in medical writings, the use of woollen gloves with fur lining to keep hands warm and free from chilblain. This is followed by instructions of prophylactic rules to prevent sickness and to keep the body as a whole healthy, as well as the head (with its organs, such as eyes and teeth); chest, including lungs; digestive system, and joints[42].

Although the author recommends wines for pleasure and bodily vigour and vitality, according to quantity, age and constitution, nonetheless, he warns against drunkenness and the dangers of alcoholism. No mention is made of any dietary value to alcoholic beverages. Yet he adds that, 'too much drinking will corrupt the mind and dull the senses, quench and drown away real warmth and natural vitality, and may lead to coma, heart-stroke, convulsion, paralysis, abnormal palpitation, chest-spasm, trepidation, tremor, and sudden death'.

For further preventive medical measures he recommends good sleep and moderate exercise. The latter preserves healthy living by helping to dissolve and excrete wastes, revive and empower natural heat, enhance and assist normal digestion, improve general bodily condition, strengthen muscles, sinews and tendons, and give a cheerful and lively outlook. 'Taking heed of these matters makes much drug medication unnecessary'[43].

He philosophises with medical authority on the motives, origins, extension and effects of psychological and emotional reactions as in the case of anger, joy, worry, anxiety, grief and distress. He goes beyond his predecessors in his profound analysis and assessment of emotional reflections, actions and retroactions, both in body and soul. For example, anger is defined as 'a psychological condition accompanied by a sudden, violent movement of the human spirit and an inborn instinctive heat to the external part of the body without. This outside movement seeks revenge from an injurious adversary. The fact that it is sudden is for taking advantage of the available opportunity for revenge before losing it; and that it is violent is for the sake of gaining the upper hand'[44].

The author's chapter on preservation of health by bathing is of interest, giving important medico-technical information. He states that the best bath is that which is housed in a well ventilated and lighted construction that proved its adequacy over the years, supplied with good, fresh water, and visited by fine, socially pleasant customers. It should be heated by burning good wood. He divides baths into two kinds; the wet, which uses only water for bathing; and the dry, which uses steam heat for sweating. Three bath constructions were known in Islam: first, the cool-wet structure that is used in hot summer months, second, the hot-wet used in winter months for a longer stay than those of the summer, third, the hot-dry in which hot air and water are often used to aid in the application of rubbing and massage, after good exercise and sweating. This was applied during the cold seasons.

As for dress: silk and wool in winter; and cotton and linen in summer are recommended. He finally warns against indulgence, excessive use of laxatives and enemas, with consideration as to age and body constitution, as well as moderation in vomit-inducing drugs and blood-letting[45].

[40] The delivery chair and similar processes were described in the *Hippocratic Corpus*. It was mentioned by al-Zahrāwī in *al-Taṣrīf*, treatise 30, the second section.

[41] This coincides in the Wellcome copy with fols. 61–72. See also fols. 106–109.

[42] *Ibid.*, fols. 87–105 and 110–128.

[43] *Ibid.*, fols. 139–164. Compare with Littré, *Hippocrates*, Vol. 6, *De Salubridiaeta*, pp. 72–86.

[44] *Ibid.*, fols. 167–168. Several emotional and psychological reactions are physiologically and philosophically interpreted.

الغضب كيفية كبغية نفسانية تصحبها حركة الروح والحرارة الغريزية الى ظاهر البدن دفعة مع فوران، أما حركتها الى خارج البدن فلأجل انتقام من المؤذي، وأما دفعة فخوفا من الغوث واما مع فوران فطلبا للغلبة.

[45] Greek-Roman, Islamic and western medicine relied extensively on the use of purgatives and vomit-inducing drugs, as well as on bloodletting and cupping for the treatment of various fevers and diseases up to early modern times. Several books and treatises were written on these topics, such as Ibn al-Tilmīdh's treatise on phlebotomy (6/12 th.C.)

Habits, diets, drugs and antidotes

The author believed that it is important to consider individual habits and behaviour insofar as the medical profession is concerned. This is not only of value in the case of hygiene and preventive medicine, but in medical treatment of diseases as well. It is because of habit, therefore, that if one is accustomed to a certain ailment, it will be of less hazard to him even if the attack is worse, than to another who is not accustomed to that kind of disease.

فان من اعتاد مرضا ما كان خطره أقل من خطر المريض غير المعتاد وان كان أردأ منه

In other cases and conditions this may lead the practitioner to diagnose the disease and identify it. It may further lead to differentiating one disease from another which has similar symptoms (الأمراض المتشابهة الأعراض) but which at the beginning are not easily distinguishable from each other; for example, pain of the kidney stone versus colic ailment[46]. Another important point is that of habit-forming as regards matters of eating, drinking, sleeping, waking, bathing, moving and resting. If good habits in these are acquired, they should be encouraged. If not, then a gradual change from worse to better customs seems necessary, for hurt from bad habits inevitably will sooner or later occur.

فالعادة الردية وان لم تضر في العاجل ضرت في الآجل.

This is all too obvious in matters of dieting, exercising, bathing, blood-letting, cupping and vomiting. It is, therefore, incumbent on the prudent and competent physician to inquire about his client's habits as far as his health is concerned so as to know what to recommend or how to treat him.

Following this discussion, Ibn al-Quff deals with those subjects related to dietetics. They include detailed descriptions of meats, their kinds and nutritional values; animal organs, such as kidneys and brains; fishes, dairy products; spices; colouring matter, vinegar and pickles; orange, grape and lemon juices; eggs, which nutritionally are a substitute for meats and represent a very good and balanced nutrient[47]; البيض يقوم مقام اللحم في التغذية وهو مليء بالأغذية الجيدة، honey; cereals; seeds, berries and legumes; fruits, herbages and vegetables; and wines, beverages, and beers.

Since this is a manual on preventive medicine and general hygiene, the author gives only little space to drug therapy. His emphasis is rather on how to keep well through natural, conventional and dietary means—for prevention is by far better than medical treatment[48]. Here he briefly mentions simple and compounded drugs and medications. His contribution to pharmacy and materia medica is little. He appears to be more of a compiler than an observing, experimenting therapist, listing the pharmaceutical forms already known and used in Arabic medicine; the robs, conserves, electuaries, decoctions, syrups, ointments and liniments, and dentifrices. On antidotes and treacle (theriaca), he recounts what was already known in Arabic medical literature since the time of Ḥunayn, if not earlier. He mentions how the famous theriaca, *al-Fārūq* (because it differentiates between body's nature and that of the poisons), came into use, and the stages of revision it passed through as to contents and methods of preparation. According to tradition, the preparing of theriaca started with Andromachus the Elder against poisons and snake bites[49]. The main ingredients were laurel berries, gentian, myrrh and Arabian costus, mixed together in honey. Other ingredients were added later: pepper, cinnamon, cassia, anise and squill, and gradually up to some sixty or more ingredients. The ancient sages who contributed to the formula were: Empedocles, Philagrios, Phiracles, Pythagoras, Marinus, Magnes of Homs, Andromachus the Younger and Galen. Their elaborations and ceremonial connections are associated with many amusing anecdotes. During the Arabic-Islamic period, many tried to perfect it for use in a variety of ailments, among them al-Tamīmī of Jerusalem and Abū'l-Hasan al-Anṣārī of Moorish Spain[50].

After devoting short chapters to perfumes, medicated cosmetics, aromatic plants, hair dyes, medicinal precious stones, and weight-reducing medications, the author concludes his book with a chapter on physiognomy and the determination of human mental and moral character, behaviour, reactions and conducts from countenance and other bodily organs and temperaments. This kind of discussion is comparable to similar ones debated during the period in many other Arabic medical encyclopedias, pandects, or separate texts on the topic.

Concluding remarks

It is only in recent years that special attention has been given to the works of Ibn al-Quff and his contribution to Arabic-Islamic medicine. In 1937 (1356 A.H.) his two-volume

[46] Moslem physicians gave useful exposition and careful diagnoses of diseases, such as the differentiation between colic and pain caused by kidney stones, as evident in the writings of al-Rāzī and Ibn al-ʿAyn Zarbī.

سامي حمارنه «الطبيب العربي ابن العين زربي وأبحاثه في العلل والعلاج» أبحاث الندوة العالمية الأولى لتاريخ العلوم عند العرب، جامعة حلب، ١٩٧٧، ج ١: ٦٥٣—٦٦٩

[47] Wellcome manuscript fols. 244–248. Moslem authors wrote extensively on dietetics and influenced their counterparts in the West.

[48] Numerous compendiums on drugs and therapeutics were written in Arabic. Ibn al-Quff devoted his attention more to surgery and preventive medicine instead.

[49] Original Dioscorides copies as well as Arabic versions (e.g. the Vienna State Library, 13th century, A. F. 10, and the Istanbul copies) depict in miniature form the nine sages who developed the theriaca from Andromachus to Galen. Ḥunayn seems to have translated Galen's two treatises on the theriaca besides adding personal explanations. Their impact on Arabic medical literature was tremendous. See Max Meyerhof, 'Esquisse d'histoire de la pharmacologie et botanique chez les Musulmans d'Espagne', *al-Andalus*, 1935, 3, 1–41.

محمد بن اسحق ابن النديم، **الفهرست**، مطبعة الاستقامة بالقاهرة، ١٩٢٩/١٣٤٨، ص ٤٢٤، وابن أبي أصيبعة، **عيون الأنباء**، ١: ١٩٧ — ٢٠٠، ٢: ٨٧ — ٩٠.

[50] Hamarneh, *Origins of Pharmacy, op. cit.*, pp. 37–64, and 101–115.

manual on surgery العمدة في صناعة الجراحة، was published at Hyderabad, India. This edition made the study and evaluation of such an important work more available and easier to undertake, especially when we consider that it is the second-best known Arabic surgical text written during this entire medieval period[51]. The other extant works of his still await further investigation, and should be encouraged in view of the discoveries made through this and other brief preliminary studies.

Ibn al-Quff gave the first clear and detailed objective description of the locations and functions of the four cordial valves. He also depicted the connection between arteries and veins in the human body, as well as the arteries and veins of the mother in relation to those of the embryo in pregnancy. His attempts to explain blood and pneuma flow between heart and lungs are noteworthy[52]. It was shown further that he appreciated teeth care, orthodontics, prosthetics and general oral hygiene[53]. Along with other Arabic authors, he added new important data to urology in his time[54].

It has been precisely demonstrated that Ibn al-Quff was the first in Islam to call attention to the establishment of a pan-arabian system for regulating, controlling and standardising all units of weights and measures used in the practice of medicine and pharmacy. His objectives were clearly to secure more precise amounts and dosages of prescribed drugs and materia medica supplied by physicians, and more accurate pharmaceutical and remedial preparations for public safeguard, and the wholesome living and well-being of the individual[55].

In this paper it is demonstrated that our author had prepared the ground, as no other Arabic author had ever done before him, for preventive medicine and hygienics as a new specialised health field for teaching and practice. He explained the need, value and urgency of such a specialisation for a happier, longer and more prosperous life. He gave precise and appropriate definitions with methodology and regulations for application by doctors and clients. In pointing to the importance of such a health specialty, he considered his *Jāmiʿ al-Gharad* as a cornerstone text for professional teaching and practice. Translated into Latin, it no doubt influenced similar development in Western medicine.

The Greeks wrote eloquently on the preservation of health, as did many Arabic authors. Specific topics were tackled in the East and West relative to public and community health, and prevention and treatment of plagues, as well as treatises on longevity and similar health problems. To my knowledge, Ibn al-Quff played a pioneering role in defining the scope, objectives and methodology of hygienics and preventive medicine, insisting on its establishment as a fully recognized field among the healing arts. He regulated procedures and implanted precepts, with the declaration that the key to good health is prevention, and not therapy and reliance on drugs, in accordance with the saying, an ounce of prevention is worth a pound of cure.

In addition, Ibn al-Quff here discusses other relevant health issues. In embryology, for example, he interprets conception as resulting from male and female seminal fluids; followed by multiplication of spongy tissue layers to form the embryo. Despite the presence of a cleavage, they are implanted on the gritty layers of the endometrium near the cervix of the uterus. At parturition the foetus ruptures the surrounding membranes on its way out. Then, speaking of life's four stages, he attributes premature death to processes of drying out, degeneration and atrophy. He points to the measure of independent individual resistance to diseases, and the role played as a result of being accustomed to certain habits or conditions.

In describing multiplication and rapid increase of the 'foreign humidities' that threaten a body's safety, he comes close to a vague notion of germ behaviour in certain ailments. This may seem farfetched in view of the difficulty of seeing evidence of microorganisms and viruses, and their pathological effects, with the limited medical technology of the time.

Finally, Ibn al-Quff gives an excellent assessment of the emotional and psychological reactions, and their definitions and influences in the maintenance of a wholesome way of life.

[51] This surgical text comprising twenty treatises is the largest of its kind in Arabic and the most important after al-Zahrāwī's. See George Sobhy, 'Ibn al-Kuff, An Arabian Surgeon', *Journal of the Egyptian Medical Association*, 20 (1937), pp. 349–357, and O. Speis and Hans-Jorgen Thies, 'Die Propaldeutik der arabischen Chirurgie nach Ibn al-Quff', *Sudhoffs Archiv*, 55 (1971), pp. 372–391. The Cairo copy of *al-ʿUmdah* No. 67 Ṭibb, fols. 272–274 contains important biographical information.

[52] Hamarneh, 'Thirteenth-century physician interprets connection between arteries and veins', *Sudhoffs Archiv*, 46 (1962), pp. 17–26; and *Ibn al-Quff, op. cit.*, 1974, pp. 94–100.

[53] Otto Speis, 'Beitraege zur Geschichte der arabischen Zahnheilkunde', *Ibid.*, 46 (1962), pp. 165–176, and Elias Khalifah and Sami Haddad, 'Dental gleanings from Arabian medicine', *Journal of the American Dental Association*, 24 (1937), pp. 944–945.

[54] Speis and H. Mueller-Buetow, 'Drei urologisch Kapitel aus der arabischen Medizin', *Sudhoffs Archiv*, 48 (1964), pp. 248–259.

[55] Hamarneh, 'The first recorded appeal for unification of weights and measure standards in Arabic medicine', *Physis*, 5 (1963), pp. 230–247.

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Jordan: Towards the End of the Ottoman Empire 1841–1918

As far as the Ottoman Empire was concerned, the area of Trans-Jordan was a sort of a buffer zone between the settled area of Palestine and the desert areas of Arabia. Its special role emanated from the fact that, through it, passed the Syrian pilgrimage road (Darb al-Haj) which was traversed by pilgrims twice every year on their way to and from Mecca and Medina.

When the Egyptian army withdrew from geographic Syria in 1841, the Ottoman government again began to establish its military and civil control. Due to the difficulties they encountered, they were obliged to do that gradually, giving first priority to large cities and to heavily populated areas. Trans-Jordan therefore remained for some years without a government to direct its affairs. As a result, public security was negligible and incursions of powerful Bedouin tribes increased. People in cultivated and desert areas resorted to forming alliances among themselves which offered a higher degree of security and facilitated self defence.

Administrative organisation

The northern area of Trans-Jordan (the district of Ajloun) was the first to come under Ottoman administration. In 1851 the government decided to form a *kaza* out of that area, to be part of the Nablus district (*Mutasserrifieh*). A governor was installed in the town of Irbid. One reason for the establishment of the *kaza* of Ajloun was the fact that Bedouin aggression had reached such proportions that the inhabitants of one locality implored the protection of the state with the plea that they would be obliged to abandon their villages if the government did not come to their help. Soon after, the *Wali* of Damascus led a military expedition which, with the co-operation of the villagers, attacked the offending tribe. So many Bedouin were killed that the waters of Wadi al Arab, it was said, became red with blood[1].

The second area to come under government authority was the central district (Belqa) in 1868. It was decreed that it should become a *kaza* under the governor of Nablus. The town of Salt became the seat of the governor.

[1] G. S. Chumacher, *Northern Ajloun*, 1889. F. G. Peake, *History of Trans-Jordan and its Tribes* (in Arabic), Jerusalem, 1934.

The southern area, which included Kerak and Ma'an, was placed under Nablus in name only. It remained without effective government until the autumn of 1893, when it was constituted as a *liwa* (district) under the *Wilayet* of Syria (Damascus). The leaders of Kerak welcomed the *Mutasserrif* who was accompanied by a military force, and requested him to declare a general amnesty for all crimes committed in their district before that date. The *Mutasserrif* agreed and allocated to them monthly stipends on condition that they form a committee to help in securing stability. The district was enlarged to include Ma'an, Salt, Tafileh, Tebuk and Medain Saleh.

These administrative arrangements did not include Aqaba, which remained under Egyptian control till 1892. When the Egyptians withdrew, Aqaba was attached to Medina. This small village became a centre of considerable activity during the time when the Ottoman government was suppressing the revolt in Yemen and Assir.

It should be noted, however, that the boundaries of these districts were not permanent. Ajloun was first attached to Nablus and later (1861) to Hauran. Salt was attached to Nablus and later (1893) to Kerak.

The pilgrims' road

After the Arab conquest of geographic Syria, Moslem pilgrims began to use this route. In earlier days, the road had passed by Kerak along the historical course known as the Kings' Highway. But during the Ottoman period the route moved eastwards to the edge of the desert, leaving the deep *wadis* to the west. This road passed by places which are well known today, such as Dera'a, Mafraq, Zerka, Amman and Ma'an.

The Ottoman Sultans always showed concern for the welfare and security of the pilgrims, as an indication of their sovereignty and authority. To ensure this, they constructed a series of small forts along the road, with one or more cisterns near each, so that pilgrims might rest and replenish their supplies of water.

The pilgrim caravan usually proceeded as one compact unit under the direction of a high official. With the help of a military force, that official—Amir al Haj—was responsible

for the welfare and security of pilgrims. A special budget of about 100,000 gold sovereigns, was allocated annually to cover the expenses of the pilgrimage. A large part of this amount, up to 60,000 sovereigns, would go as stipends to the Sheikhs of the tribes which controlled both sides of the road. A considerable sum was expended as rent for camels hired to carry the *Amir al Haj* and his attendants, both military and civilian.

As an agreed policy, the government would pay stipends to the tribal Sheikhs. This system was warranted by the fact that it had no other means of completely controlling those tribes. The Sheikhs for their part undertook to guarantee public security, protect the pilgrims and ensure as far as possible that the cisterns were filled with rain water. As an additional precaution, small garrisons were installed in some of the forts. On the whole, the Bedouin fulfilled their part of the arrangement, but sometimes it happened that the government failed to pay the usual stipends. The tribes would then react by attacking the pilgrims or preventing their passage. On one occasion the *Amir al-Haj* defaulted, and the tribes responded by blocking the way and preventing the passage of pilgrims. The *Amir al-Haj* had no alternative but to pay the stipends for the two years.

Internal relations

Between 1841–1918 the population was broadly composed of two categories: the villagers who tilled land and raised cattle, and the nomads (Bedouin) who lived in tents, raised camels and frequently changed their place of residence. This division, however should not be applied too rigidly, because there were semi-nomadic tribes and semi-sedentary people. In the *kaza* of Kerak there were only three villages in 1893, and many of the inhabitants working as farmers were living in tents. In contrast, a considerable number of bedouin were not roaming nomads, but moved about with their tents within a certain area and made their living by raising camels and cattle and by farming the land.

The nature of social and economic life in the country inevitably led to antagonism between the Bedouin and villagers. Bedouin were in the first instance brought up as warriors, with the vast deserts as their domain, moving comparatively quickly on their camels nicknamed 'ships of the desert'. On the other hand villagers were essentially farmers, tied to permanent dwellings and land. They raised cattle which moved slowly and were inclined to keep peace in order to preserve their economy. They had little experience in fighting or mounting raids. The Bedouin were organised in tribes, each of which consisted of blood relatives and owed allegiance to one leader (the Sheikh). Thus a Bedouin tribe was similar to a military unit. In contrast, many of the villages consisted of farmers who were not necessarily relatives, who had their factions and who often did not always owe allegiance to one leader. Villagers were, on the whole, better off in matters of property and means of living. As a consequence, strong Bedouin tribes were tempted to raid farmers, in the same spirit as they raided each other. We must take into consideration that in those days tribes considered spoils taken in a raid as lawful and well deserved possessions. Acquiring such spoils was justified by established values and accepted traditions. It is related that the Bedouin leader, Audeh Abu Tayeh, considered such gains insignificant in comparison with the imposition of strong foreign powers on small nations and the consequent pillage of their wealth[2].

Villagers attempted to resist Bedouin raids, but without much success. The Bedouin would appear suddenly, seize the cattle herds of the villagers and drive them some distance into the desert before the villagers could muster their fighting men for pursuit. The Bedouin sometimes set their camels and horses to graze in corn fields as a sort of punishment to those villagers who refused to make terms with them. And what sort of terms? A portion of the grain, a certain amount of money and the right of entertainment. An example of the grasping Bedouin may be found in the habit of approaching a villager tilling his land and declaring to him: I am your partner in this land. The Bedouin would return later to the threshing floor demanding his share of the produce[3].

In the absence of a strong government able to curb Bedouin aggression, villagers were forced to accommodate Bedouin demands. In effect they paid a tax of grain, cattle or money. That tax was given a sugar coated name 'Khaweh', which is derived from the word 'brotherhood'. It was so because the Bedouin considered that that co-existence was of mutual benefit to both parties. Their view was that farmers needed the secuirty and peace which the Bedouins were able to offer. The Bedouin also considered that they had as much right to the land as the farmers. The tribe which obtained the 'Khaweh' from a village, took the responsibility of preventing other tribes from attacking that village and its property. In spite of all these arguments, the villagers considered the 'Khaweh' an unjustified imposition, affecting their sense of dignity and pride. Some villagers resented this tax of forced brotherhood so much that they moved to other areas, or contented themselves with farming a tract of land small enough only for their livelihood. Probably because of this uncertainty, villagers did not care to plant fruit trees which need continuing peaceful conditions.

This sort of uneasy relationship between farmers and Bedouin, existed in one way or another amongst the farmers themselves and also between the Bedouin. Tribes raided each other. The Adwan raided as far as Jerusalem and Jaffa in Palestine, while the Howeitat under Audeh Abu Tayeh raided as far as Hama and the Euphrates basin. An injured tribe bided its time to arm and equip its men and then raid the hostile tribe for revenge. In such warfare, small tribes found no alternative but to ally themselves to a strong tribe. Thus large and powerful alliances were formed. These alliances or federations bound Bedouin tribes as well as villagers together.

[2] Suleiman Mousa, *Portraits of Heroism* (in Arabic), Amman, 1968, p. 57.

[3] *Memoirs of Audeh Qussous* (in manuscript).

An example of this was the large federation of Belqa under the leadership of the Adwan tribe[4], and the federation of Kerak under the Majali family.

One must not, however, imagine that the Bedouin always had the upper hand in all regions and during the entire period in question. The Adwan tribe was the leading ally of the town of Salt and neighbouring villages. That alliance was to the advantage of both, and therefore no 'Khaweh' was extracted. Also the Bedouin could not penetrate the hilly areas of the north where the villagers were united and the rugged country was not suitable for raids. The Christian tribes of Madaba, who had strong family ties and were brought up with Bedouin traditions, defended themselves successfully against the powerful Beni Sakhr tribe. The same was true also of the Circassians who were themselves good warriors and therefore obliged the Bedouin to respect them.

Consideration should also be given to the fact that the Ottoman government endeavoured, by persuasion or threats, to curb Bedouin encroachments on the settled areas. Gradually villagers began to feel more confident. In the north, relations remained tense till 1921, when the villagers fought a battle with the Beni Sakhr and defeated them. It was the end of an epoch.

One must also mention the commercial relationship. The Bedouin sold animals and animal produce (butter, leben, wool, etc.) in the markets of villages and towns, and at the same time bought corn, barley, coffee, cloth, shoes and other commodities. Thus we should not overemphasise the effectiveness of *Khaweh* and Bedouin supremacy.

Relations between the inhabitants and the government

In general the Ottoman government failed to establish relations of mutual confidence with the inhabitants of its empire. That failure characterises the way it performed in Trans-Jordan and other Arab countries (of Asia) during four centuries. The ties of Islam offered a positive foundation, had the government endeavoured to build on them. But the government generally failed to carry out its responsibilities in the way of providing public security and public foundations such as schools, roads, clinics etc. The empire demanded that the inhabitants perform their duties towards it without performing its own duty towards them.

Mention has already been made of the concern of the Ottoman government for the security of pilgrims, and how it concluded agreements with tribal leaders neighbouring the *Haj* road. Those agreements fulfilled their purpose until the construction of the railway, when the officials concerned decided that they no longer needed the goodwill of the Bedouin. When the tribes learnt what was afoot, they protested and threatened to attack the line. In fact some attacks took place against a number of stations, with the Bedouin seizing weapons and ammunition and disappearing in the desert. The government realised then the necessity of continuing to pay the stipends.

The policy of the government towards the tribes was inconsistent. Sometimes, governors used force and hit hard, but at other times they used conciliatory methods and granted the leaders stipends and decorations. Changes of policy often depended on whether the government had sufficient troops to subdue this tribe or that. Governors sometimes resorted to deceit in order to arrest a Sheikh, throw him in prison and then haggle over his release. In certain cases they encouraged dissension among tribes, so that they fought each other and in consequence became more susceptible to government control. Whenever possible governors sought the help of a large tribe to subdue another dissenting tribe. After military garrisons were well established in the main towns (Irbid, Salt and Kerak), governors began to send out expeditions. Those expeditions surprised villages or encampments which were slack in paying taxes, arrested and imprisoned the men and succeeded in casting fear into the hearts of everyone. Thus it came about that a military force always accompanied tax collectors and census officials. This practice continued for some years after the dissolution of the Ottoman Empire.

Some governors did their best to win the loyalty of tribes so that they might help in establishing law and order in their areas. One of the Adwan Sheikhs was granted generous gifts when he sent the heads of two criminals to the governor of Nablus. But the evil methods of others destroyed the element of confidence between the two sides for many years to come. It happened once that a governor of Nablus invited a number of the Adwan Sheikhs to visit him. They accepted the invitation in good faith but were astonished when they were arrested on arrival and thrown into prison at Acre where they spent two years. Their leader's leg was broken in the scuffle.

Taxes were collected from villagers and Bedouin alike. There were frequent complaints that taxes were heavy and unwarranted given the poverty of the inhabitants. People paid taxes unwillingly because they were never convinced of the services rendered in return for them. One of the sorest complaints was the way in which taxes for agricultural produce were collected. This was undertaken by tax farmers who endeavoured to obtain as much as they could and were assisted by troops in carrying out their business. In consequence, farmers directed all their resentment against the government, the tax farmer and the troops, especially during years of drought.

Public security

The Ottoman government failed to establish in Trans-Jordan an adequate level of public security. Travelling on roads far from settled areas was full of danger, with the consequence that people travelled in armed groups. Foreign travellers toured the country under the protection of the Sheikhs of each district they visited. The Sheikh usually detailed one or more of his men to accompany and guide them. Sometimes governors detailed a soldier to do the job.

[4] This federation was virtually broken in Sept. 1923 when the Adwan and their allies attacked Amman, for political reasons, and were beaten back.

Governors worked within the structure of the existing social system. In both settled and desert regions society was composed of discreet units identified by the name of a tribe, a clan, or a family. Each unit contained its own administrative leadership. Members of each unit were guided by established values, traditions and habits. Those social units played a positive and important role in preserving public security, not only within their respective areas, but also with neighbouring tribes or sub-tribal units. Aggression against an individual meant aggression against the unit to which he belonged. Nevertheless people avoided travelling alone, or at night or unarmed. Of course anyone was free to take the risk, as Burkhardt did. Murder without a strong motive was very rare. But the possibility of resorting to arms was never far from a Bedouin's mind with the fear of suddenly meeting individuals from another hostile tribe. Consequently men were well armed, with each social unit prepared for the day when it might be called upon to defend itself.

Sheikhs assumed that they should receive a gift from foreign travellers who visited their part of the country. This arrangement was tacitly accepted by both sides. Sheikhs viewed such a 'present' as their lawful right in return for giving the traveller the protection and security he needed. Sheikhs were responsible for offering entertainment to guests including officials and strangers. Bearing this in mind we understand why the Majali Sheikhs did not permit the British traveller Gray Hill to pass through Kerak in 1887 until he had paid a certain amount of money. When Gray Hill said to Sheikh Saleh that he would complain to the British Consul in Jerusalem, Saleh replied that he did not care whether he complained to the Consul, to the Queen of England or to the Ottoman Sultan, because he alone was the king of Kerak[5]. When Captain Shakespeare travelled early in 1914 from Kuweit toward Trans-Jordan, he and his companions felt insecure until they reached the tents of Audeh Abu Tayeh. Audeh arranged for Shakespeare to proceed to Aqaba, but extracted a tax for protection and transport, considering it a lawful right.

In summing up it may be said that government measures to establish order were not always convincing. It never succeeded in persuading the inhabitants that its rule was to their benefit, or in winning their confidence. To the people it was a ruling structure imposed from above. There was no mutual understanding or trust. The government demanded obedience and loyalty, and protests were met with suppression. The general aim was to impress the inhabitants with the government's authority and power. As far as they were concerned, soldiers were the means of oppression, and they were looked upon as tools of tyranny and terror.

The Hejaz railway

The Hejaz railway was constructed along the pilgrimage road from Damascus to Medina. Work on the line began in Damascus in 1900, reached Amman in 1903, Ma'an in 1904 and Medina in 1908.

Bedouin tribes viewed this project with suspicion, thinking that government and pilgrims would no longer need to buy or hire their camels, and that stipends would no longer be paid to them. Workers were attacked at random. The government had to detail military units to protect workers and to resist Bedouin raids[6].

The railway served various ends: it helped to strengthen the authority of the Ottoman government, and it became important for religious, economic and military purposes. A telegraph line was extended alongside the railway, providing rapid communications between Syria and Arabia. Branch lines were extended to such centres as Irbid, Salt, Kerak and Aqaba.

For Trans-Jordan the railway and telegraph lines provided the first effective contact with Western ideas and technology. Jordanians were able for the first time to travel by mechanical transport, and to use the telegraph as a means of sending urgent messages.

The Suez Canal

The opening of the Suez Canal in 1869 dealt a hard economic blow to the Bedouin. Over-land trade routes between Syria, Iraq and Arabia decreased in importance. Merchandise could now be carried by ship from one port to another. This shift of trade-routes adversely affected the tribes which used camels to carry supplies in large convoys travelling between the main cities in Syria, Iraq, Palestine, Hejaz and Nejd. Each year thousands of camels had been used for this purpose. Over-land camel convoys then decreased annually, until after the First World War when they were superseded by heavy transport vehicles.

The Suez Canal also affected the Darb al-Haj. Pilgrims from Egypt and North Africa now boarded ships destined for Hejaz sea ports instead of travelling by the desert road through Sinai and Aqaba. A considerable number of pilgrims from Turkey went by sea also. This switch brought other changes, such as the suspension of the stipends paid to the Howeitat of Ibn Jad. Formerly tribes gave protection to Egyptian pilgrims passing through their area south-west of Ma'an. In 1898 they rebelled and declared that they wished to join Egypt rather than remain Ottoman citizens. As a result the government resumed the payment of stipends to them and to the Sheikhs of Bir al-Sabi[7].

The revolt of Kerak

There were direct and indirect reasons for the revolt of Kerak, but there is no doubt that the loss of confidence in the Ottoman government was the most important element in causing it.

[5] Gray Hill, *With the Bedouins* (T. Fisher, Unwin), London, 1890.

[6] M. Madi & S. Mousa, *History of Jordan in the 20th Century* (in Arabic), Amman, 1959, p. 14.

[7] Alois Musil, *The Northern Hejaz*, The American Geographical Society, New York, 1926.

In 1905 an incident occurred at Shobek which may be considered a prelude to the revolt of Kerak. The troops stationed in the Crusader castle requested the women of the village to carry water for them from the springs in the deep valley. The villagers protested to no avail. They then attacked the soldiery, drove them away and requested that no garrison be stationed at Shobek. The governor of Kerak, however, despatched a military force which subdued the rebels after killing a number of them.

Neither the government nor the people had learned the necessary lesson, and five years later a large scale clash occurred with considerable damage and loss to both sides.

The first step was taken by the government when it stopped payment of the stipends to the Sheikhs of Kerak. The second came when the *Wali* in Damascus refused to appoint Qadr al-Majali (Sheikh al-Mashayekh) Chief Sheik of Kerak, a member in the Administrative Council, in spite of the fact that he had obtained the majority of votes in the elections.

However, the principal reason which stirred the people of Kerak to revolt was the government announcement that it intended to enforce the law of compulsory military conscription and to collect the fire-arms in people's possession.

In the summer of 1910, the government despatched an expedition to Hauran and Jebel ed Druze which succeeded in subduing the inhabitants who had risen in rebellion against these measures. The commander of the expedition, General Sami al-Farouki, enforced the law of military conscription and soon afterwards despatched a part of his force to Kerak for the same purpose.

The people were very suspicious of government measures which included a census and registration of land and property. They had for years enjoyed internal independence, and it was loathsome to them to have such harsh measures imposed. They also feared that the conscripts (between the age of 20 and 45) would go to far away battlefields never to return.

The idea of revolt began to gain momentum. They found an able leader of considerable charisma in the person of Qadr al-Majali, who encouraged active resistance and took upon himself the responsibility of leading the revolt.

The revolt began on November 21, 1910. The Kerak leaders persuaded the governor to despatch a considerable number of troops to various parts of the district. Attacks were launched against the dispersed units, but the main rebel forces entered Kerak where they occupied the offices of the governor and other officials, burned all their papers and laid siege to the old crusader castle with the bulk of the garrison inside its walls.

The revolt spread throughout the district. Railway stations were attacked and set on fire. Tracks were torn off the line and telegraph wires were cut. Government offices in Ma'an and Tafileh were besieged. Many on both sides were killed and attrocities were committed.

Although the Ottoman authorities were taken by surprise, reinforcements were despatched immediately by train to the nearest station. The relieving column reached Kerak on December 1. Its arrival convinced the rebels that they could not oppose it successfully and they dispersed far away in rugged wadis. The relieving column released the besieged garrison and together they committed ugly acts of revenge and put to death many innocent people.

Military units combed the countryside searching for the rebels. Some time later ten persons were formally executed and the property of many more was confiscated. The Majalis were the main target of revenge, and Qadr al-Majali, who was in hiding, was ordered to pay half the heavy fine imposed on the rebels.

However, next year, after Italy's attack on Tripoli, the government rescinded some of its harsh measures. In 1912 a general amnesty was proclaimed and the government cancelled its previous provision for military conscription and confiscation of arms. Qadr came out from his hiding place, but in 1916 he was invited to visit Damascus where he suddenly died. It was widely believed that he was poisoned.

The Arab Revolt

The suppression of the Kerak revolt with utmost ruthlessness was a hard lesson for everyone in Trans-Jordan. Peace was restored in the country, and the government turned its attention to strengthening its authority. It seemed that the country would be under its control for many years to come.

However, less than four years later, hopes for a long term of peace were thwarted. The First World War started in the summer of 1914 and in November of that year the Ottoman Empire joined in the struggle on the side of Germany. With the war came general mobilisation and men of military age began to enlist in the armed forces. The Kerak district was still excluded. The government took a number of measures to support the war effort, including control of agricultural produce as well as all materials necessary for the army. Another measure taken was the construction of a railway branch line to the forest of Shobek to carry wood for trains instead of coal which was no longer available.

In the summer of 1916, people in Trans-Jordan began to hear the news that an Arab revolt had broken out in the Hejaz. Soon, messengers and disciples began to penetrate the desert announcing the dawn of a new day for the Arabs and calling on the people to rise against the Ottoman yoke.

We are not concerned here with the reasons for the revolt, but suffice it to say that the racial policy of the Committee of the Union and Progress (CUP) coupled with the attrocities committed by Jemal Pasha in Syria, was the direct cause.

Audeh Abu Tayeh, a well-known leader of the Howeitat tribe, was the first to answer the call for the revolt. In April 1917, Audeh went at the head of a number of warriors to the head quarters of the Amir Faisal at Wejh, swore loyalty and took upon himself to raise the standard in Trans-Jordan. Next month a small expedition left Wejh under the command of Sherif Nasir, accompanied by Audeh, Capt. T. E. Lawrence and a number of Syrian leaders. The expedition settled for some time in Wadi al-Sirhan and began to enlist volunteers.

When all was ready the expedition marched westwards early in June, crossed the railway line and defeated an Ottoman battalion to the west of Ma'an. On 6 July, 1917 Aqaba and the overlooking heights were in Arab hands.

Jordanians raised the Arab standard in Jordan. Soon afterwards the forces of the Amir Faisal and his brother the Amir Zaid moved from the Hejaz to Aqaba and from there began an advance northwards. Petra, Shobek and Tafileh were occupied, fierce battles were fought at Ma'an and along the railway from station to station. Jordanians, whether Bedouin or villagers, gathered round the Arab standard. Thousands of them carried arms in the cause of Arab freedom and many gave their lives for that cause. Arab forces played an important role in the final campaign against Ottoman armies in September 1918. The town of Dera'a was freed to be followed by Damascus on the morning of October 1, 1918. Trans-Jordan was a theatre of war for 16 months, during which time Arabs from Iraq, geographic Syria and Arabia fought for the attainment of a common aim. Such an achievement had not been possible for hundreds of years. The revolt as a supreme and united effort gave the Arabs a sense of national pride, which helped them later on to wage their struggle against British and French imperialism.

Epilogue

The connection between Trans-Jordan and the Ottoman state ended by the end of September 1918. There are, however, additional aspects of that relationship which are worth mentioning.

We have no reliable statistics for urban population, but my estimate is that it numbered something between 250,000 and 300,000. Salt was the largest town, with an estimated population of 10,000 in 1905, and 20,000 in 1914. Irbid and Kerak had something between 4,000 and 5,000 each. Amman, whose population now is about one million, was uninhabited until 1879 and had only 1,800 people in 1914.

Jordanian society continued to base its internal and external relationships on values, ideals and traditions emanating from the nature of the tribal structure which had prevailed in the country for thousands of years.

Animal wealth was the principal property of the people. Camels, sheep and other kinds of cattle were numbered in tens of thousands. A census, in reality a rough calculation, of 1919 showed that there were 235,000 sheep in the Kerak *kaza* alone. In 1928, ten years after the end of the Ottoman Empire, Trans-Jordan exported over 115,000 head of camels, sheep, goats and cattle. Travellers who visited the country during that period spoke of seeing thousands of cattle, sheep and goats and of camel herds numbering 10,000 each. A large number of these animals were sold in the markets of Jerusalem, Hebron and the coast towns of Palestine. Many camels were even sold in the markets of Egypt.

Grain came second to animals as the wealth of the country. In spite of the fact that farmers cultivated only 40 per cent of the land suitable for agriculture, considerable quantities of agricultural produce were in most years exported to Syria and Palestine. The districts of Kerak and Belqa supplied the district of Jerusalem with its need of corn and barley. Bedouin caravans came from the depth of the desert and the Hejaz to buy corn from Kerak.

Agriculture was not however confined to the villagers. Bedouin tribes who owned suitable land also engaged in cultivation. In this respect we may give an example of the Beni Sakhr, the Beni Hasan and the Adwan tribes. But because the Bedouin believed that manual work was beneath their social status as warriors, the farming of their lands was done by men who did not own land either in Trans-Jordan or Palestine, in return for one fourth of the produce.

As animals and agriculture were the main basis of the economy trade depended on selling surplus produce and buying coffee, rice, sugar, weapons and cloth. Merchants from Damascus and Palestine came to Bedouin encampments to sell their goods. The Bedouin also bought dates from Iraq and the oases of Arabia.

Beasts of burden were the only means of transport until the construction of the railway. During World War I and for some years before a few boats sailed in the Dead Sea carrying grain from Kerak to supply the Ottoman forces in Jericho and Nablus. When the Circassians came they brought with them carts drawn by oxen, which they used for transport between the villages. These were an innovation in the country.

Education was confined to elementary *Kuttabs* run by *Ulama* in towns and large villages. There were also a number of missionery schools. Later on the government established a few elementary schools. The number of students in the whole country could be estimated at between 2,000 and 3,000 with few females among them. One would not be very far from the truth if the percentage of illiteracy was estimated at 99 per cent.

Last but not least we must emphasize the fact that the inhabitants of the country were racially homogeneous: whether Bedouin or villagers, Moslems or Christians. All of them were Arabs, sharing the same language, values, traditions and ways of life. The country never experienced religious conflict, because at least 90 per cent of the people are Sunni Moslems. Arab Christians, who formed about 10 per cent of the population, have lived for centuries with their Moslem compatriots a life of complete harmony and understanding. Their relations were always 'extremely cordial and close'[8].

Trans-Jordan never experienced any ethnic problems. When the Circassians emigrated to the country in 1878, the ties of Islam united them with the original people and they were gradually assimilated.

There were no medical doctors in the country until the last two decades of the Ottoman period. In the last year of the Great War, there were five medical doctors in the country and that was the highest number that had ever been there before.

[8] Peter Gubser, *Politics and Change in Al-Kerak, Jordan* (Oxford University Press), London, 1973, p. 63.

Cultural awareness was negligible, and as a result valuable antiquities were commonly destroyed. The Ottoman government did not appreciate the historical value of antiquities. For example, the Sultan Abdul Hamid presented to the German Emperor the facade of the Mushatta palace, which was removed in 1904 to Berlin and was placed in the Pergamon Museum.

Trans-Jordan lost a great deal of forestry between 1880–1918. The Circassians cut thousands of trees in the area of Amman, the wood of which was sold in the markets of Jerusalem. During the Great War thousands of trees were cut for use as fuel in trains instead of coal.

This has been a brief description of conditions in Trans-Jordan during the later decades of the Ottoman Empire. The Ottomans contributed what they were able to contribute. When they joined Germany in the War, the fate of their Empire was sealed. The War ended with the victory of the Allies, among whom were the Arabs. For Trans-Jordan a chapter, four centuries old, was closed and a new chapter of history was opened.

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عنق كلب عند جذبه وقلعه حيث يسقط ميتا «وأما أنا فأرى ذلك محالا و باطلاً».

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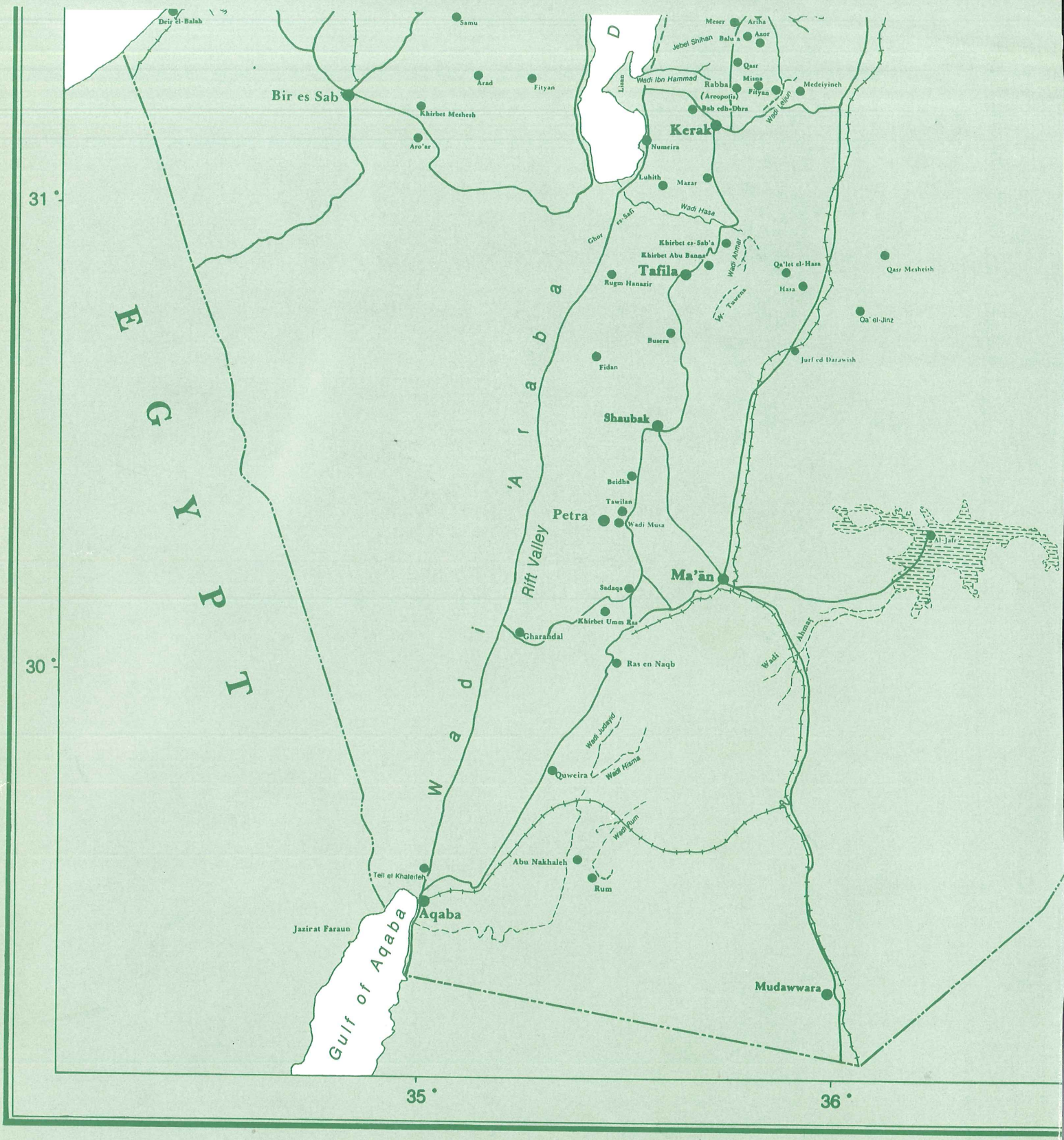

THE HASHEMITE KINGDOM OF JORDAN AND PALESTINE