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On the cover: an 18th-century map of
the Holy Land, by Eman. Bowen.

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Editorial

This double issue of the *Bulletin* has been long overdue and my sincere apologies go to the readers and I thank them for their patience. The good news is that the next issue (Volume 21) is already well advanced and will be submitted to the printers very soon.

The present issue contains eight excellent research articles on a very wide variety of subjects. The first by Tali Erickson-Gini and Yigal Israel, of the Israel Antiquities Authority, deals with the excavation of Khirbet Bor, a Roman fort next to a route linking the Nabataean/Early Roman sites of Mampsis and Oboda in southern Israel. The site has an impressive water cistern, hence the name of the site (Hebrew *bor* = cistern). The second article, by Benjamin Saidel, of the W. F. Albright Institute of Archaeological Research in Jerusalem, takes a fresh look at some of the stratigraphical data from the Early Bronze II site of Nabi Salah (Unit A) in southern Sinai, derived from the original excavations there by Itzhak Beit-Arieh in the early 1970s. The third paper is by John Landgraf who is well known to many pottery experts for his groundbreaking study from 1980 of the Byzantine ceramics from Tell Keisan. In the present article, Landgraf examines the historical ceramic tradition of the 'thrown closed base', in the light of his own work with present-day traditional Palestinian potters. The fourth paper, by a frequent contributor to the *Bulletin*, Claudine Dauphin, looks at the historical aspects of the monastic diet in Byzantine Egypt. A follow-up to this article, on the monastic diet in Byzantine Palestine, will appear in a future issue of the *Bulletin*. The fifth article, by Simha Shalom Brooks, deals with the intriguing question of the connections between the *hapiru* and the '*ibrim* in the light of I Samuel. Gideon Hadas is an archaeologist living in Kibbutz Ein Gedi and has spent many years of his life researching its environs, including two water mills which are located at the site, one of Byzantine date and the other Mamluk. These water mills are the subject of Hadas's article. Amos Kloner, a Senior Lecturer at Bar Ilan University, is the author of an important article about Iron Age burial caves in the hinterland of Jerusalem. The final, eighth, offering in this issue by Yizhar Hirschfeld of the Institute of Archaeology of the Hebrew University in Jerusalem, concerns Masada in the Byzantine period.

This issue of the *Bulletin* ends with a review article about Will and Larché's publication of the amazing Late Hellenistic building at Qasr al-Abd (Araq al-Amir) in Jordan, which Stephen Rosenberg, the Honorary Secretary of the AIAS, believes was most likely the projected mausoleum for the Tobiad family. The *Bulletin* concludes with short book reviews, lecture summaries and grant reports. The

Society now has a web site and I should like to invite readers to take a look at it for themselves: *www.aias.org.uk*. Finally, the Editors and the Committee of the Society gratefully acknowledge the very kind donations received from the Sydney and Elizabeth Corob Charitable Trust, Joe and Linda Dwek, The Kessler Foundation and others, toward the cost of producing this issue of the *Bulletin*. I take this opportunity to thank Diana Davis, the new Executive Secretary of the Society, and Ashley Jones for their help in getting this issue ready for publication.

Shimon Gibson

Meṣad Horvat Bor

Y. ISRAEL AND T. ERICKSON-GINI

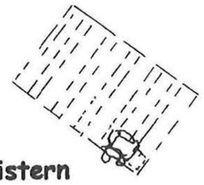
The site of Horvat Bor is located south of modern Dimona on the Dimona-Yeruham highway (Israel map ref. 1485/0506). The Hebrew name of the site (*bor* = cistern) refers to the existence of an intact covered water cistern on the southern edge of the ruins of ancient structures. The Arabic name of the site is Kh. Zuweirita. The site was partially destroyed during the British Mandate period when the modern road (the Dimona–Yeruham highway) was cut through the western side of the ancient structures. The ancient north – south road appears to have been located due east of the site (Fig. 1). The site was again damaged in the early 1990s. Soundings at the site were carried out by Rudolf Cohen on behalf of the Israel Department of Antiquities in 1984 (License No. 1331), the results of which have not been published.

In February 2001 excavations were carried out in several areas of the extant structure by Y. Israel and T. Erickson-Gini on behalf of the Israel Antiquities Authority and funded by the Sede Boqer Field School (License No. A-3380/2001).[1] The labour was provided by members of the Sede Boqer Field School and students from the Environmental High School of Midreshet Sede Boqer and members of the Blossoming Rose Organization.[2]

The site appears to have two phases. The discovery of Nabataean first-century AD coins and Early Roman pottery in the excavation as well as on the surface, indicates that it was probably first occupied by the Nabataeans in the first century AD when the cistern was constructed. However, this phase has not been fully investigated at the site and early structures belonging to this phase may have been destroyed by the modern road works or when the site was reoccupied in the fourth century AD. The excavations provided evidence indicating that the Romans built a military installation at the site in the fourth century AD. Coins found on the surface show that it was visited in the later Byzantine period as well. The cistern is still in use today.

The main structure

Only one or two rows of the fourth-century structure were found intact (Fig. 2). The walls were built over bedrock and constructed from two rows of dressed ashlars, approximately 0.80 m in width. Although part of the structure has been completely destroyed, the remaining area measures 18 × 18 m. The structure appears to have had an inner courtyard (Room 2) measuring approximately 8 × 11 m.



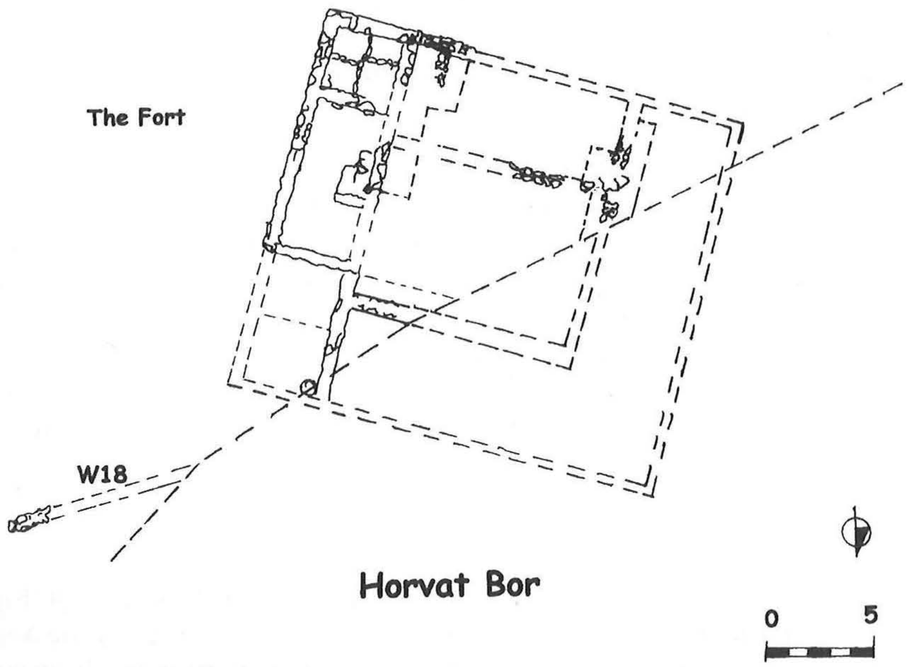


Fig. 1. Horvat Bor: general map of the site.

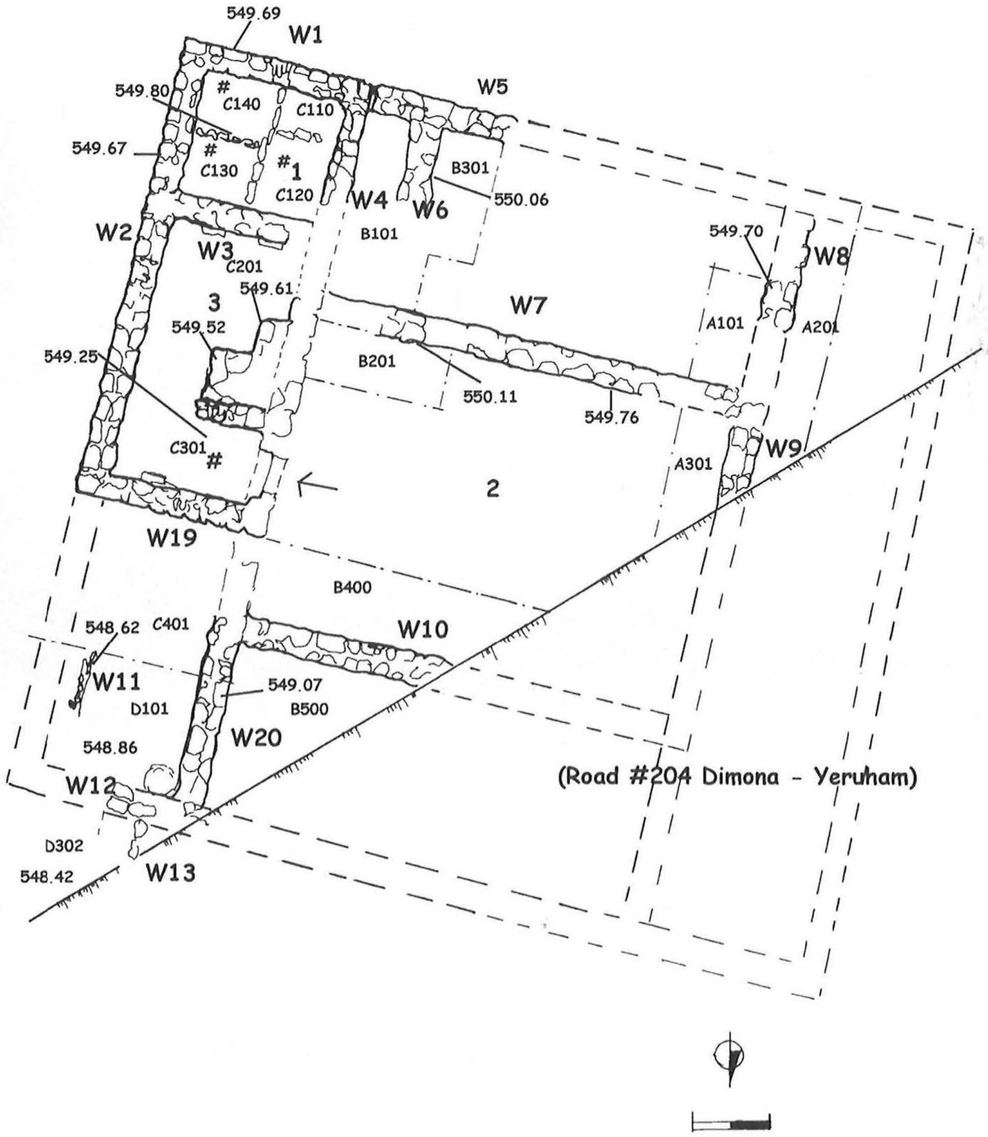


Fig. 2. Horvat Bor: the Late Roman fort.

The remains of a corner tower (Fig. 3) were uncovered in the north-eastern side of the structure measuring 4.5 × 4.7 m. The tower (Room 1) was constructed over bedrock and appears to have been subdivided at a later stage into four compartments with 4 rows of stones placed over the floor (W14–17). A Beit Natif lamp (Fig. 4:1) and a fourth-century coin (Basket 13) were found overlying the bedrock in the south-western corner compartment of the tower. A fragment of a basalt grinding stone was found in an adjoining compartment (Basket 15). A wall, W5, abuts the eastern wall of the tower, W4. Pottery found from a small narrow area adjoining the tower

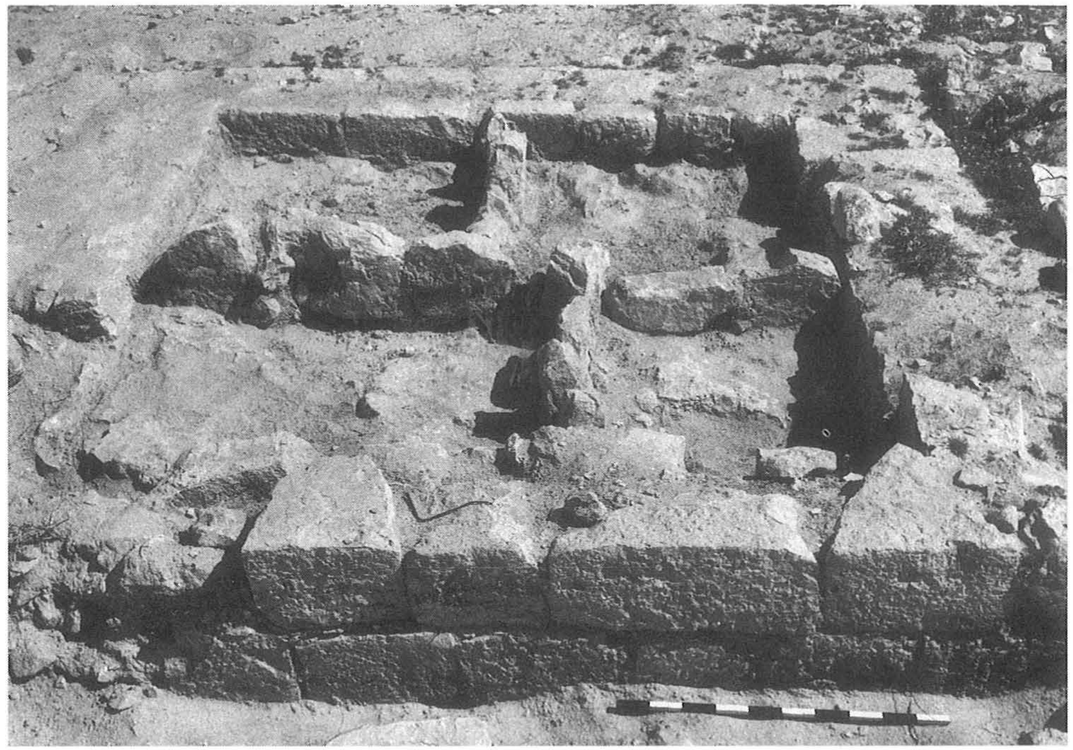


Fig. 3. Horvat Bor: remains of corner tower.

on one side, included a lamp fragment (Fig. 4:2) dated to the fourth century AD and a glass vessel (Fig. 4:3).

A room adjoining the tower (Room 3) on the west and located north of the courtyard (Room 2) was found with arch springers along the eastern and western walls (W3 and W19) and what appears to be the foundation of a staircase along the southern wall (W4), (Fig. 5).[3] This room measures 4.7 × 5 m. At least three limestone voussoirs were found in this area that may have been associated with the springers. An entrance into the courtyard from Room 3 appears to have been located along the western side of W4. A lintel made of stone was found close to this opening in the courtyard. The tops of walls (W10–13, W20) indicate that additional rooms were located west of the courtyard and in the northwest corner of the structure in the area destroyed by the modern road. The area of the northwest corner contained a clay-lined oven (*tabun*) (F1), 0.70 m in diameter. The base of an Eastern *Terra Sigillata* (ETS) jug (Fig. 6:6) dating to the Early Roman period was found in this area and on the surface north of the structure. A wall (W18) extending beyond the structure in this area and northwards may have belonged to an earlier phase of the site but awaits further investigation. In addition, first-century AD Nabataean coins were found on the surface of the site prior to the excavation.

Additional wall lines (W8–9) were also detected on the southern and south-

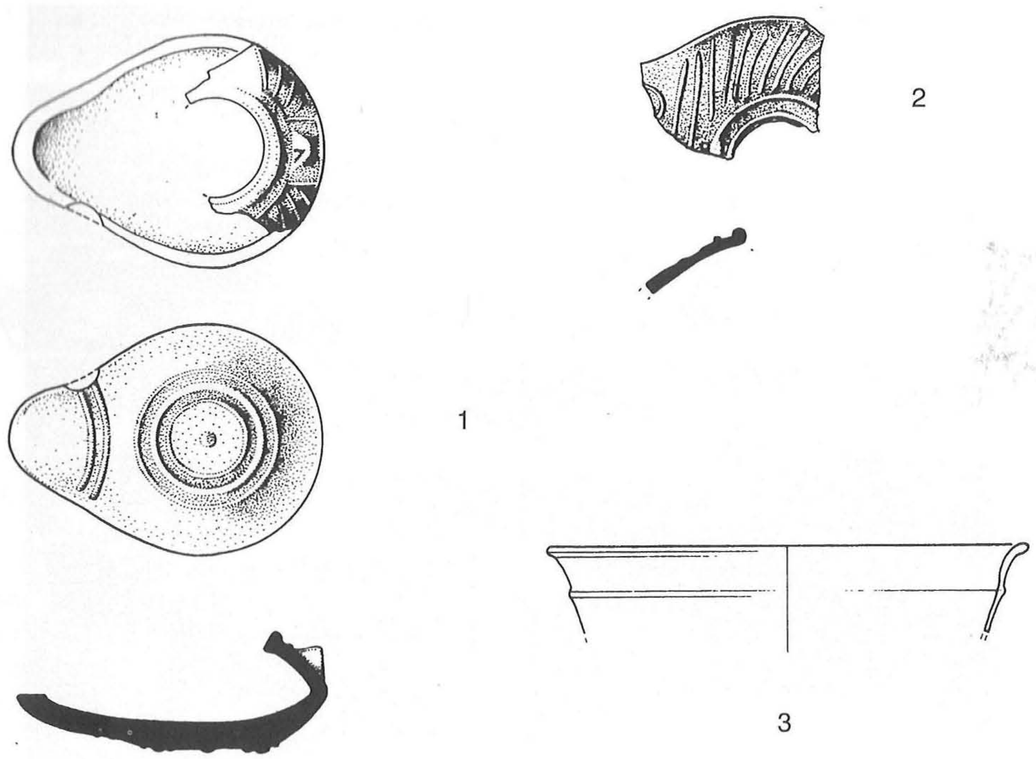


Fig. 4. Horvat Bor: 1) Beit Natif lamp; 2) lamp fragment; 3) glass vessel (scale 1:2).

eastern sides of the courtyard, indicating the presence of rooms in this area. However, this area was not fully investigated.

The finds

The predominate type of ceramic vessel found at the site was that of the Gaza Wine Jar, Majcherek's Form 2, dated to between AD 300 and 450 (Majcherek 1995: 166–168). This jar form was found in every excavated area throughout the structure (Fig. 6:1).

Other vessels found in the excavations include a bowl (Fig. 6:2) and the base and lower body of a bag-shaped juglet (Fig. 6:3) similar to local types dated to the fourth century AD found at Mampis (Erickson-Gini 1999: Fig. 19.1.2,4–6) and Oboda (Erickson-Gini, in preparation). A jug sherd (Fig. 6:4) is similar to types of jug appearing at Oboda in contexts of the third to fifth centuries (Erickson-Gini, in preparation). A cooking pot found in the corner tower (Fig. 6:5) is identical to Late Roman cooking pots found in fourth century AD contexts at Mampsis (Erickson-Gini 1999: Fig. 13.3.5) and in the legionary camp at Lejjun in southern Jordan (Parker 1987: Fig. 100: 82). The Beit Natif lamp (Fig. 4:1) found in the corner tower (Basket 13; Loc.C120) has an ovoid body and a low ring base with a pattern of

Fig. 5. Horvat Bor: foundation of staircase (centre of picture).

concentric circles as well as relief lines on the base beneath the nozzle. This lamp has a pyramid-shaped handle and decoration in the form of raised lines around the filler hole identical to a type published by Rosenthal and Sivan (Rosenthal and Sivan 1978: 407). This type of lamp is dated to the third and fourth centuries by Rosenthal

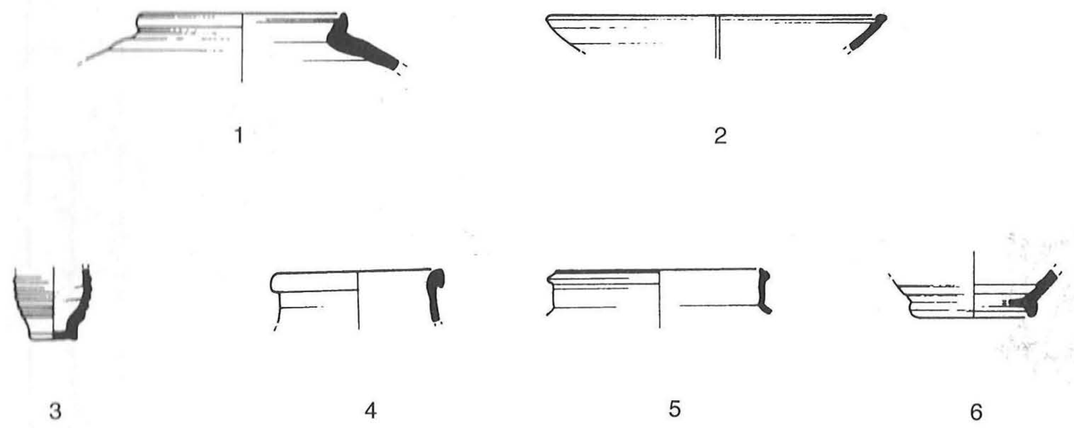


Fig. 6. Horvat Bor: examples of pottery.

and Sivan (Rosenthal and Sivan 1978: 99) and as late as the fifth century AD in Jerusalem by Magness (Magness 1993: 249).[4] A second lamp fragment (Fig. 4:2) found in an area next to the corner tower (Basket 5; Loc.B101) is a type of Late Roman lamp that has been found at other sites in southern Israel, such as at the fort of 'En Hazeva (Cohen and Israel 1996b: 91) and Mampsis (Erickson-Gini 1999: Fig. 22.1.1) in contexts dated by the earthquake of AD 363. It has also been found at Petra where it was dated between AD 363 and 419 (Zanoni 1996: Abb.910). The ETS jug base (Fig. 6:6) found in the extreme north-west corner of the site belongs to Hayes Form 113 (Hayes 1985: Tav.X: 4) dated to the first century AD.

The cistern

The cistern (Figs.7–8) was constructed below ground and is located approximately 50 metres to the south-east of the fourth-century structure. At present it is 6 m deep and measures 5.25 × 7 m. The walls are built of dressed stones and covered with hydraulic plaster. The roof of the structure is constructed of large rectangular slabs of stone held up by 5 rows of arches.[5] The cistern is accessed by two openings: the first is a small opening, 0.70 × 0.70 m, located along the northern wall of the cistern. It appears to have been used to haul up water by means of a rope. The second opening measures 0.50 × 0.50 m and is located in the extreme southwest corner of the cistern. This opening is located directly above stones which protruded from the wall and appear to have been used to climb down into the cistern. A settling pool may have been located at this point. The cistern was in use in recent times as can be seen by the presence of black Gaza ware pottery sherds on the surface, outside the structure.

Although there is still no direct material evidence for the date of the construction of the cistern, it appears to be of the same type as two other cisterns located on the Nabataean – Early Roman road between Moa and Oboda. The first of these is the

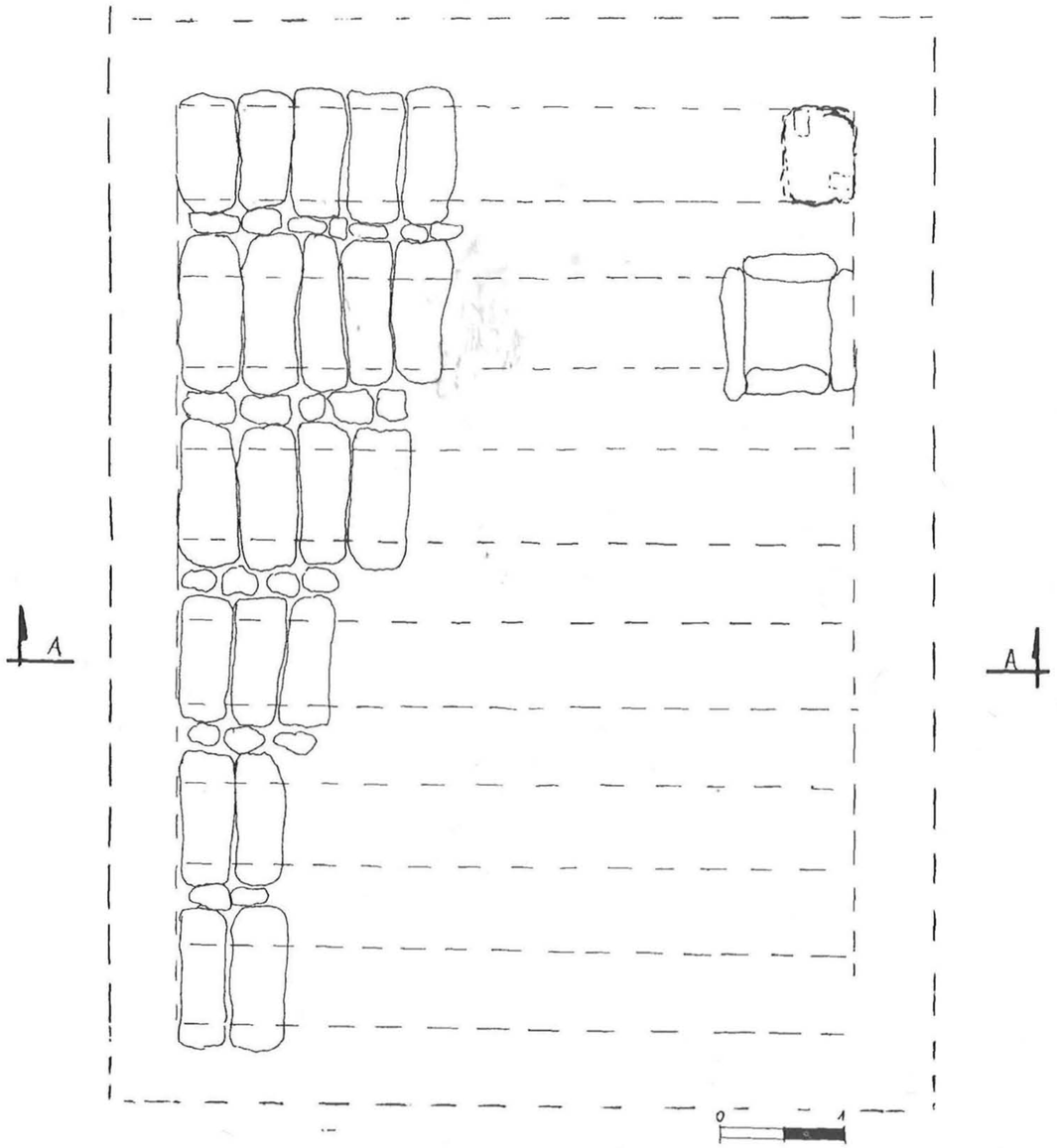


Fig. 7. Horvat Bor: cistern.

cistern at Mesad Nahal Neqarot (Israel map ref. 15094/99794) and the second is the cistern located next to Mesad Ma'ale Mahmal (Israel map ref. 142845/011247) on the rim of the Ramon Crater. Like that of Horvat Bor, the cistern next to Mesad Nahal Neqarot is still standing, although it is no longer in use nor holds water.[6] This cistern is similarly constructed and has 3 arches, but unlike the cistern at Horvat Bor, it is accessed from an opening from the side of the structure. Protruding stones below the entrance lead down into the cistern. It measures 7 × 7 m (Cohen 1982: 55). The cistern next to Mesad Ma'ale Mahmal is in a state of collapse. This

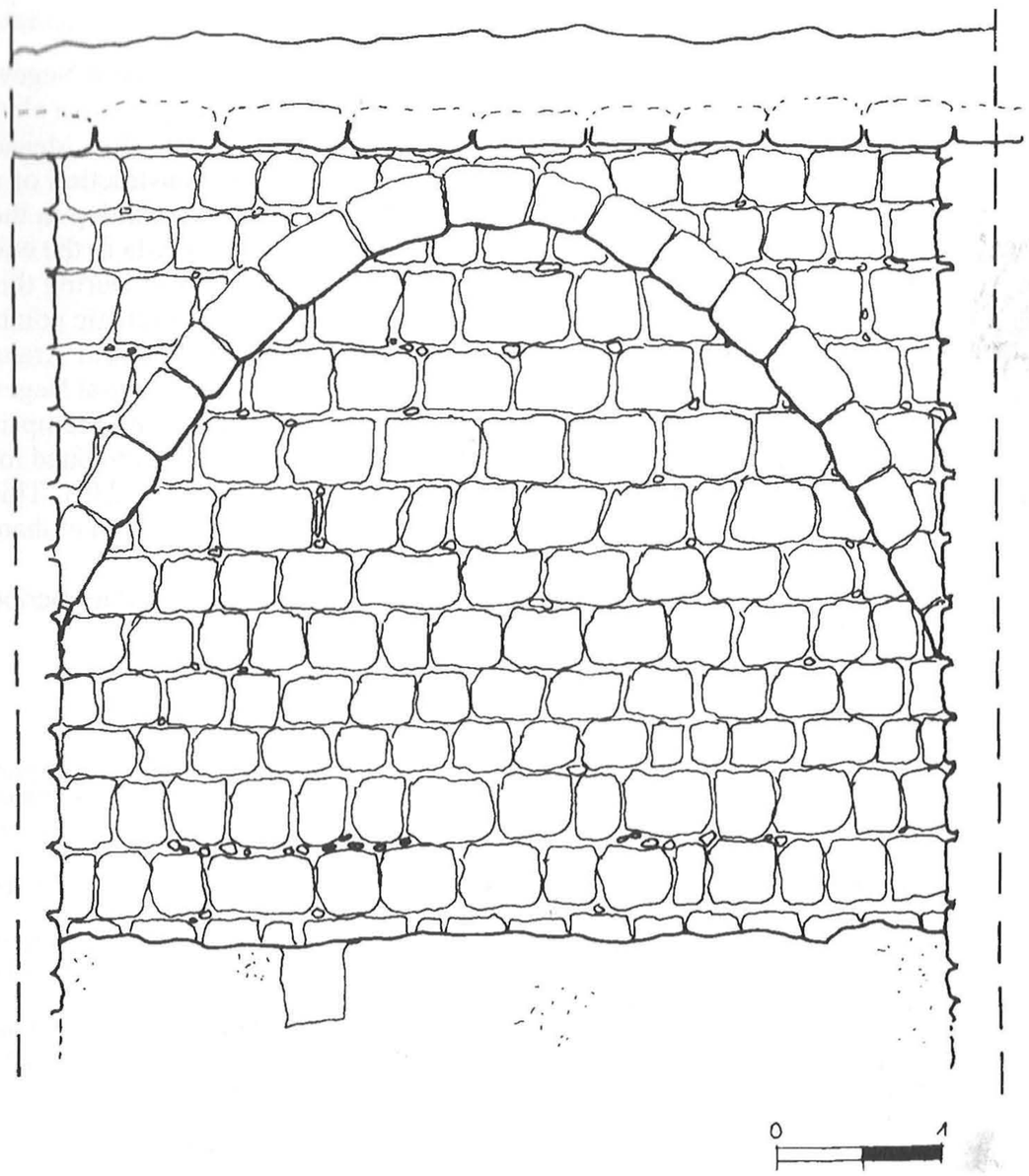


Fig. 8. Horvat Bor: section A-A of cistern.

structure contained 9 arches and measures 8 × 4.75 m (Meshel and Tsafrir 1974: 45–46). Water systems identical to this type have also been found in Nabataean settlements in southern Jordan and particularly at the site of Humayma (ancient Auara) (Oleson 1995: 711–713).[7]

Historical considerations

Mesad Horvat Bor is located on a main road linking the northern and central Negev. In the early first millennium AD this road linked the Nabataean/Early Roman sites of Mampsis with Oboda and the central Negev by way of Horvat Bor, Mesad Yeruham and the Haluqim site (Cohen 1992: 1054–1055). The construction of a fort at the site was probably the result of the Diocletianite military buildup in the area following the transfer of the Tenth Legion from Jerusalem to Aila at the end of the third century AD and the creation of the *Provincia Palaestina*. During this period many sites were reoccupied, particularly the sites located at strategic points along major roads. These include the fort at 'En Hatzeva in the Central Arava (Cohen and Israel 1996a) which was connected with the northern and central Negev by way of a line of forts constructed along the Scorpion's Pass route and Mampsis (Harel 1959: 178; Erickson-Gini 1999: 98–100). Some evidence has been found for the existence of a large military camp in Beersheva (Fabian 1995: 239). This installation may have been connected by way of the Horvat Bor–Mesad Yeruham road with the Roman military camp at Oboda (Erickson-Gini 2000).

Surface finds at the site also indicate a minor reoccupation in the Byzantine period and the cistern was in use until the present time.

Notes

1 Photographs and plans of the cistern were made by Y. Israel and S. Gal. The site plan was surveyed by V. Asman and S. Persky. A. Dudin drew the pottery and D. Ariel examined and dated the numismatic evidence. The analysis and dating of the ceramic evidence and the preparation of this report were carried out by T. Erickson-Gini.

2 We would like to thank all of the participants with a special thanks to E. Doron, the Head of the Sede Boqer Field School, for initiating this project.

3 This type of staircase foundation has been found in other Late Roman military installations in the region such as the fort at En Hazeva and the army camp in Oboda/Avdat (Y. Israel, personal communication) (Erickson-Gini 2002: 113–130).

4 This type of lamp was not found in contexts after the mid fourth century AD in the Late Roman quarter of Oboda or the fort at 'En Hazeva and its survival in the Jerusalem area may have been due to the fact that it was probably produced in that area.

5 The cistern was not excavated during this season. However, the team blocked up some of the open spaces between the roof slabs for safety reasons and to prevent erosion. Piles of dark earth located outside the cistern indicate that it has been cleared out to some extent, probably in recent times.

6 The Neqarot cistern was cleared out under my supervision before conservation of the structure was carried out by an IAA conservation team. No dating evidence was found other than a small limestone horned altar bearing a Nabataean inscription in Greek letters (R. Cohen, personal communication). The altar was found at the bottom of the cistern below 1.5 meters of soil (T.E.G.).

7 Cistern No. 68, Humayma (Oleson 1995: Fig. 5).

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More than Meets the Eye: A Reappraisal of the Occupational History of Unit A at Nabi Salah in Southern Sinai

BENJAMIN ADAM SAIDEL

Itzhak Beit-Arieh's fieldwork in southern Sinai unearthed architecture and artifacts similar to the buildings and pottery found in the Early Bronze Age II strata at Tel Arad in the northern Negev. These parallels led scholars to propose that economic ties related to the copper trade existed between Tel Arad and southern Sinai (e.g., Amiran, Beit-Arieh, and Glass 1973; Beit-Arieh 1983; Stager 1992 I: 34–35; II: 17, Fig. 1). One of the settlements involved in this trade network is Nabi Salah, situated in the high mountainous region of southern Sinai, 15 km north of St. Catherine's Monastery (Beit-Arieh 1974: 144, 154–155; 1981a: 31) (Figs. 1–2). Beit-Arieh conducted excavations at Nabi Salah Unit A in October 1971 and April 1972 and, on the basis of the artifacts and the architectural plan, dated this unit to the EB II (Beit-Arieh 1974: 144, 152, 154–155). I suggest that the results of these excavations, as described by Beit-Arieh (1974), provide evidence that allows for alternative interpretations of the installations, stratigraphy and chronology of Unit A.

The stratigraphy

Unit A is constructed around a central open space identified as Courtyard A, which measures 17 m in diameter (Beit-Arieh 1974: 147) (Fig. 3). The western side of Unit A is enclosed by 'sunken' broad-room structures approximately 5 m in length and 3.5 m in width. These rooms were 0.20–0.40 m below the surface level of the courtyard (Beit-Arieh 1974: 147, 149–150). The presence of stone monoliths in Rooms 7, 8, and 9 indicate that the roof was supported by wooden columns (Beit-Arieh 1974: 149). The excavations exposed a 'thick layer of ash' lying on top of a 'granite-gravel floor' in these rooms (Beit-Arieh 1974: 151). In a narrow trench extending from the edge of Room 10 to the base of the circular tumulus (Locus 23), a layer of ash was unearthed that might have extended across the courtyard (Beit-Arieh 1974: 154).

Courtyard A was enclosed on its eastern side by a series of small installations paved with 'stone slabs', which rose above the surface level of the courtyard (Beit-Arieh 1974: 147). Attached to the southern end of Unit A was another courtyard,

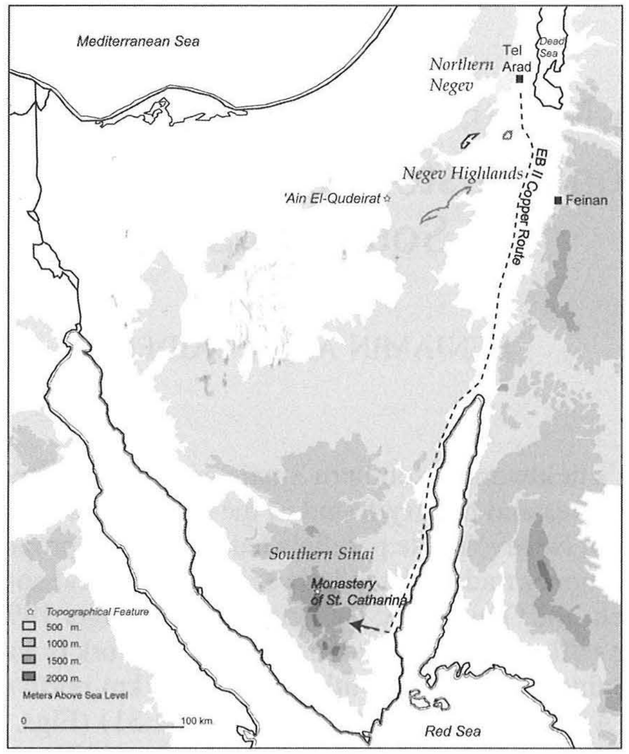

Fig. 1. Map of the Negev and Sinai illustrating the locations of Tel Arad, Feinan and the Monastery of St. Catherine. The following sites are located in the vicinity of the Monastery of St. Catherine: Feiran 1, Nabi Salah, Sheikh Awad and Sheikh Muhsen. Redrawn by B.A. Saidel after the map of Israel-south (1:250,000) with the direction of the copper route based on Stager (1992 II:17, Fig. 1).

Courtyard B, and a broad-room structure identified as Room 50 (see Beit-Arieh 1974: 149, Fig. 4).

Alternative interpretations

It is evident from Beit-Arieh's preliminary excavation report on Unit A that the broad-room structures were cut 0.20–0.40 m into the sediments and that the ash layers in these structures represented an accumulation of debris (Beit-Arieh 1974: 150, 151). I disagree with his interpretation of the stratigraphic sequence in this part of Nabi Salah. From the data provided in the report, it is evident that ash layers are present throughout Unit A – for example, ash deposits were found in Rooms 7, 8, 9, Installation 12, and in Locus 23 in the courtyard.

In addition, Beit-Arieh maintains that there are two construction phases in Room 7 and in Installation 12 (1974: Pl. 27: 3). I disagree, and suggest instead that his description actually portrays a single phase. In Room 7, for instance, the latest phase is represented by a raised floor level and the construction of a 'wide bench to the left of the doorway.' The raised floor and the bench rested on top of an ash layer

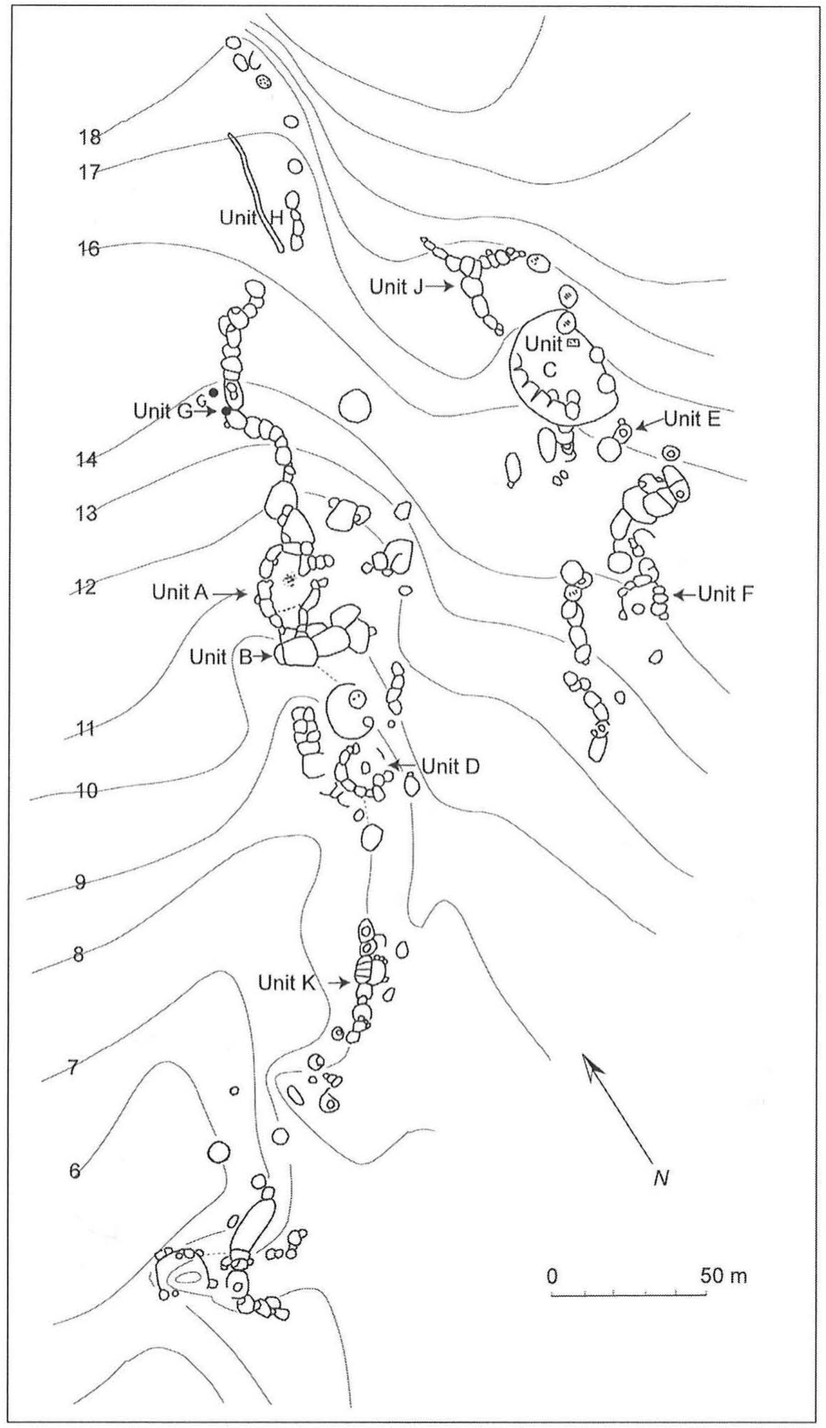

Fig.2. Architectural units at Nabi Salah in southern Sinai as recorded by Beit-Arieh (1974: 148, Fig. 3), redrawn by B.A. Saidel.

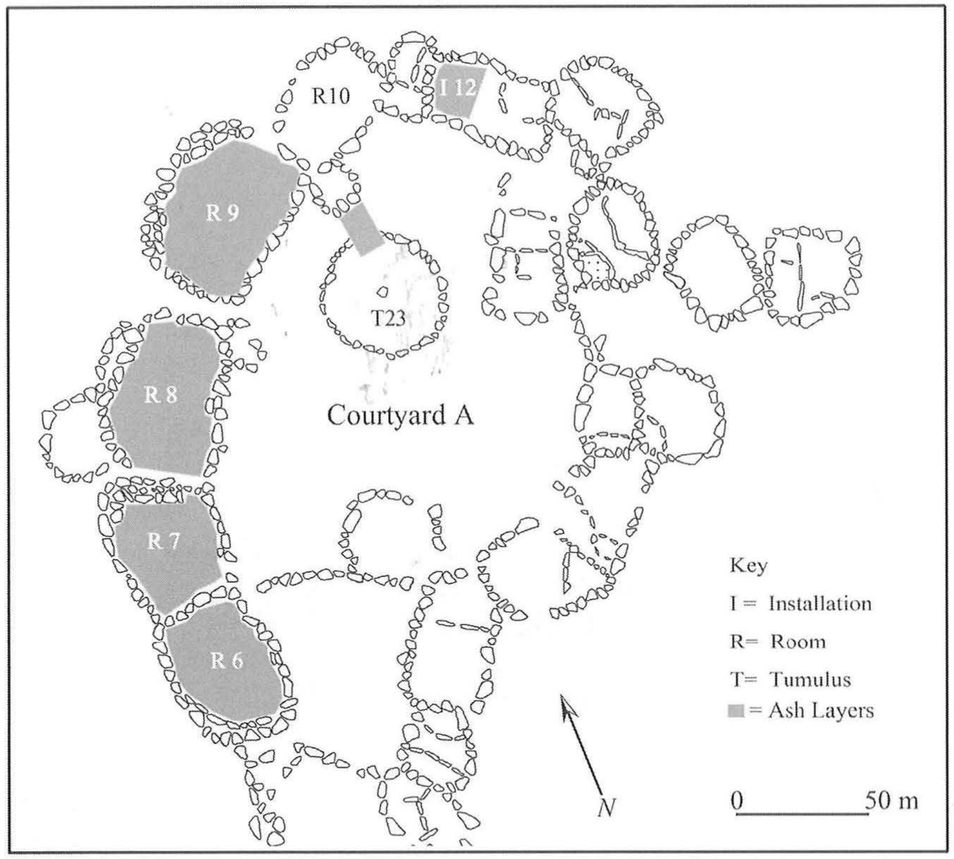

Fig. 3. Unit A at Nabi Salah. Only the loci mentioned in the text are illustrated on this plan; Courtyard B and Room 50 of Architectural Unit B, which are included in Beit-Arieh's plan of Unit A, are omitted (the plan is based on Beit-Arieh 1974: 149, Fig. 4, redrawn and modified by B.A. Saidel for this publication).

that covered the entire floor of Room 7. The stratigraphic relationships between the bench, the ash layer, and the western wall of Room 7 are clearly seen in the publication (Beit-Arieh 1974: Pl. 27.2). In Installation 12, the latest phase of construction is represented by a floor of 'medium sized' granite slabs extending across the entire structure. The removal of part of this surface revealed an earlier construction phase:

> In the second season the third part of the paving was removed. Rectangular granite stones, standing on their narrow end, were found at a depth of about 60 cm below the pavement . . . The spaces betwen [sic] the stones were filled with loess mixed with granite gravel and ash. A holemouth cook-pot (with a potter's mark) commonly found at the site, was discovered between two stones in the southern part of the room . . . (Beit-Arieh 1974: 150–151).

From Beit-Arieh's description and photograph, it is apparent that the granite floor is supported by the granite stones underneath it, which served as pillars. The pillars are stabilized by a gravel and ash fill placed between them. My interpretation is illustrated by the photograph in Beit-Arieh's publication (1974: Pl. 27.3), which shows that the granite floor (to the left) appears to rest on top of the suggested 'earlier stage.'

I propose that these supposedly later architectural phases actually represent the construction of Unit A on top of a pre-existing ash midden. In my opinion, the physical extent of the ash layers in Rooms 7, 8, 9, Installation 12, and in Courtyard A, are evidence of a midden that extended underneath most of Unit A; it would be rather odd that ash midden deposits would accumulate independently in these portions of the site. Beit-Arieh (1974: 154), himself, has even suggested that this courtyard was covered with a layer of ash. When the location of the ash layers on the site plan of Unit A are viewed as a whole, it seems clear that the architecture was built on top of a midden deposit (Fig. 3). Based on the site report and plan of Unit A, a conservative estimate of the area of the midden is approximately 274 sq. m (Beit-Arieh 1974: 147, 149, Fig. 4).

Although it is speculative, the 'ash' deposits identified by Beit-Arieh are also open to an alternative interpretation, namely, that these ash sediments could represent intentionally burned dung deposits from animal pens. Until the advent of modern veterinary medicine, burning dung was one method of preventing the spread of disease among livestock (e.g., Brochier, Villa, and Giacomarra 1992: 63). Geo-archaeological research on the identification of animal dung at pastoral campsites had not yet begun at the time of Beit-Arieh's fieldwork and is a relatively new line of study (e.g., Shahack-Gross 2002: 29).

The dating of Unit A is also open to alternative interpretations. One of the reasons that led Beit-Arieh to date Unit A to EB II was the presence in Installation 12 of a diagnostic sherd that belonged to a holemouth vessel, with a potter's mark – a cross – below the rim (1974: 151–152) (Fig. 4). Scholars have also used this sherd to demonstrate connections between Nabi Salah and Tel Arad (Amiran, Beit-Arieh and Glass 1973: 194, Pl. 50: A-C; Beit-Arieh 1983). Six examples of holemouth vessels bearing the same potter's mark were found in Strata I-IV at Tel Arad (Amiran 1978: Pls. 8: 24, 19: 4, 6, 12, 45: 17, 51: 8, 54: 31).

Beit-Arieh, however, did not take into consideration the context of this sherd in his dating of Unit A. The artifact was found in the gravel and ash matrix underneath the granite floor in Installation 12, thus providing an EB II *terminus ante quem* for this matrix. This could be interpreted as evidence either of at least two phases of occupation in the EB II or that the architecture in Unit A actually dates to EB III. The former is more likely than the latter.

Beit-Arieh suggested that the granite-paved installations on the eastern side of Unit A were used as storage 'silos', even though 'no material evidence has been found within them' (1974: 147). I disagree, and suggest that these small compartments functioned as stables for young sheep and/or goats. The granite surface would be easy to keep clean and the gravel and ash matrix underneath the

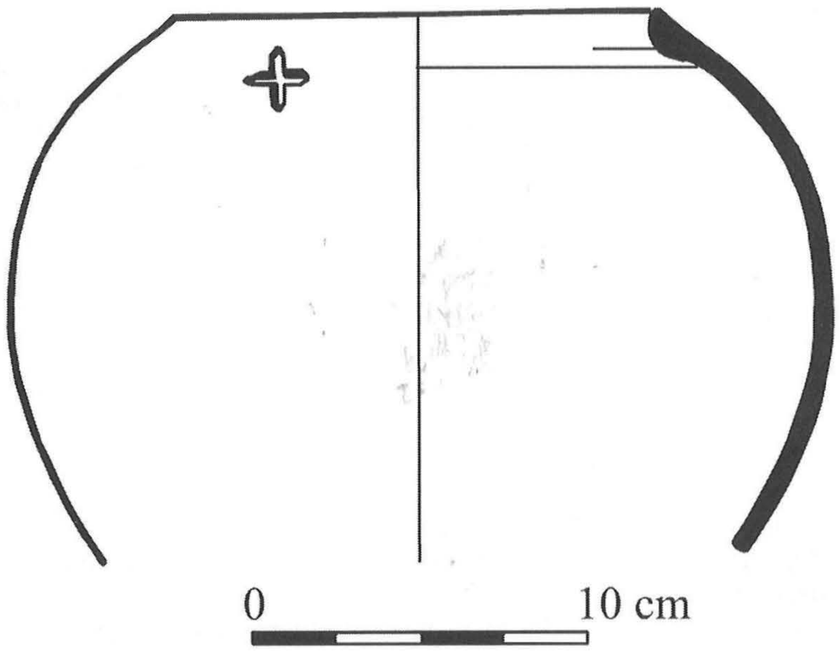

Fig. 4. Holemouth vessel with a potter's mark below the rim found underneath the pavement of Installation12 in Unit A (redrawn after Beit-Arieh 1974: 155, Fig. 9.4). Parallels for this container and potter's mark are present at Tel Arad (Amiran 1978: Pls. 8:24, 19:4, 6, 12, 45:17, 51:8, 54:31).

floor would facilitate the drainage of urine. A parallel situation is represented by Stager's interpretation of the ground plan of Iron I four-room houses in the central highlands of Judaea and Samaria (Stager 1985: 12–15). Ethno-archaeological research has demonstrated that animal pens vary in size depending upon their function (e.g., Banning and Köhler-Rollefson 1986: 162–163; 1992: 191, Fig. 7, 195; Haiman 2002). In particular, Haiman's ethno-archaeological research among Bedouin shepherds demonstrates that the size of animal pens for sheep vary in order to accommodate the needs of the herd for pastoral production.

Discussion

I suggest that two occupational phenomena are represented at Nabi Salah: first, that this area served as a focal point for those involved in exchange with Tel Arad. Based on the archaeological record in the area of St. Catherine's Monastery, it is generally believed that this region was the terminus of a polar exchange with Tel Arad (Amiran, Beit-Arieh and Glass 1973; Beit-Arieh 1981a; 1983; 1986; Stager 1992: I: 34–35, II: 17, Fig. 1; Saidel 2002a). I maintain that the density of architectural units at Nabi Salah and the construction of Unit A represent indirect evidence of strong economic exchange with Tel Arad, that is, that the inhabitants of the Nabi Salah sites were drawn to reside in the area of St. Catherine's Monastery because

of exchange relationships with Tel Arad. Regarding occupational density, the number of architectural units at Nabi Salah exceeds those recorded at Sheikh Muhsen (Beit-Arieh 1986, 31, Fig. 4) and Sheikh Awad (Beit-Arieh 1981b: 97, Fig. 2) in southern Sinai.

Second, the density of architectural units at Nabi Salah most likely represents episodic habitations, presumably on a seasonal basis. Additional evidence supporting this suggestion is represented by the construction and occupation of Unit A, which I interpret as indicating shifting residential patterns within the site of Nabi Salah. That is, when one architectural unit became unsuitable for human occupation, it was abandoned and a new residential unit was constructed not far away. This behaviour is exhibited among a number of pastoral groups in the Near East and East Africa (e.g., Banning and Köhler-Rollefson 1992: 187; Cribb 1991: 206, Figs. 10.7, 10.8; Shahack-Gross 2002: 52). Associated with this pattern of behaviour is the formation of middens. I suggest that the proposed midden underneath Unit A at Nabi Salah is a result of the inhabitants discarding their rubbish in discrete locations. This may explain in part why excavations within structures at many arid zone sites have yielded so few artifacts (e.g., Beit-Arieh 1986: 27). Excavations outside EB II structures in the Negev, however, have identified activity areas and discard zones outside these architectural units (e.g., Rosen 1994–95; 1997; 2001: 115–117). Alternatively, as mentioned above, the 'ash' deposit underneath Unit A may be a layer of burned animal dung, providing evidence of the stabling of sheep and goats prior to the construction of Unit A. This could explain why such a large area of Unit A was covered with ash. That the ash deposits resulted from the use of hearths is highly unlikely given the small and ephemeral nature of many hearths dating to EB II (e.g., Beit-Arieh 1981b: 99, 104); it is hard to imagine that hearths would have generated such a large amount of ashes.

The presence of ash deposits in Unit A is not unique and are known at comparable EB II settlements in southern Sinai, such as those at the Feiran Oasis and Sheikh Awad. Ash deposits were found on the floors in a number of rooms Nos. 1, 5, 6, and 8 at the Feiran Oasis (Beit-Arieh 1982: 148–151). At Sheikh Awad Unit A, ash layers were unearthed in Rooms 1, 3, and 17, while in Unit C, a 'thick layer of ash' was exposed in a test trench in Room 90 (Beit-Arieh 1981b: 99, 103). Ascertaining whether the phenomenon at Nabi Salah parallels that at Sheikh Awad and at the Feiran Oasis is not possible, as Beit-Arieh's fieldwork focused on excavating dwellings and installations, and courtyards were not sampled. Thus, the physical extent of these deposits cannot be determined.

In contrast to the settlements in southern Sinai, ash layers are not present in the structures and courtyards of most EB II settlements in the Negev Highlands and Biq'at Uvda (e.g., Amiran, Arnon, and Avner 1979: 256; Reich 1990: 2*-3*; Haiman 1991: 177*-178*; 1994: 24–26; S.A. Rosen, personal communication). A layer of ash was found, however, in Locus 5 of Unit 2 at Rekhes Nafha 396 in the Negev Highlands, but this material had been discarded from a hearth in the adjacent Locus 6 (Saidel 2002b: 42–43, 45, 46, Fig. 9). The absence of ash deposits both in structures and courtyards at EB II settlements in the Negev Highlands may reflect

a functional and/or seasonal difference vis-à-vis contemporary settlements in southern Sinai. For example, that the activities carried out at sites in the Negev Highlands did not require the use of fire or that they were occupied at a time of year when fires were not needed for warmth. Alternatively, it may be the result of taphonomic processes in the Negev Highlands (B. Pittman, personal communication). For instance, in Locus 1 of Unit 1 at Rekhes Nafha 396, a micromorphological study of the sediments determined that ash was discarded in this locus, even though it was not visible during the excavations.

Conclusions

To sum up, the alternative interpretation of the ash layers present in Unit A at Nabi Salah has a number of implications. The proposed presence of a midden represents potential evidence that the inhabitants of Nabi Salah discarded their material culture in discrete locations. The construction and occupation of Unit A is an indication of shifting residential patterns at the site, and the density of architectural units indicates that the inhabitants were most likely drawn to this location because of exchange relationships with Tel Arad. The presence of extensive ash layers in Unit A at Nabi Salah, in contrast to their absence at contemporary Negev Highlands settlements may be attributed to taphonomic factors or, conversely, the dearth of ash layers at habitation sites in the Negev Highlands may reflect differences in function, seasonal occupation, or patterns of discard.

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The Thrown Closed Base[1]

JOHN E. LANDGRAF

In 1980 I published a study entitled, 'Keisan's Byzantine Pottery',[2] part of which was a discussion of how this sixth/seventh-century AD pottery was constructed. There I described a rather peculiar method of constructing the base of a pot, which I called the 'thrown closed base.'[3] The present discussion attempts to trace the historical origins of this ceramic tradition.

The traditional Palestinian male potters of the present day, after centring a solid cylinder of clay (*c.* 20 cm in diameter and 50 cm high) on the wheel, thrust their fists into the top of the clay and push down perhaps two-thirds of its length, opening the upper part of the cylinder. Then with one hand on the outside and the other on the inside, they draw up and thin out the lower walls of the vessel. Gradually they draw the walls in to such an extent that an inverted funnel is formed, which is the diameter of the potter's forefinger. Withdrawing his finger while the wheel still rotates, he pinches together this small, funnel-like projection. At this point the small projection of clay on the exterior may be left as it is, i.e., as a small projecting nipple, or the potter may press the centre of the nipple down, flattening it. This is the thrown closed base (in Arabic, *tijlīs*). Additionally, if desired, a ring base may be quickly formed by pinching together the wet clay of the base with thumb and forefinger while the wheel is rotating. A third finger is often used to flatten the bottom of the ring base.

This thin-walled, closed sphere, which still has a considerable mass of clay at the base, is cut off from the wheel head with a string. Before setting the pot aside to dry, the potter punches his forefinger through the thicker clay at the base into the hollow clay cylinder, making a hole. This allows the otherwise hollow closed sphere to shrink as it dries without a buildup of air pressure inside, which would crack it. The first stage on the wheel, the forming of the thrown closed base, is now complete. The second stage will commence when the thinner thrown walls of the vessel have dried sufficiently.

After the thinner-walled base has dried enough to support it, the pot is turned upside down on the wheel, held in place with a cloth-covered, concave clay 'chuck', into which the base fits. While the wheel rotates, the potter proceeds to push into the excess soft clay at the top, drawing up and forming the upper part of the vessel. When the walls are sufficiently dry, any handles, spouts, or other attachments are added.

It should be noted that the potter can start by making the base first, as has just

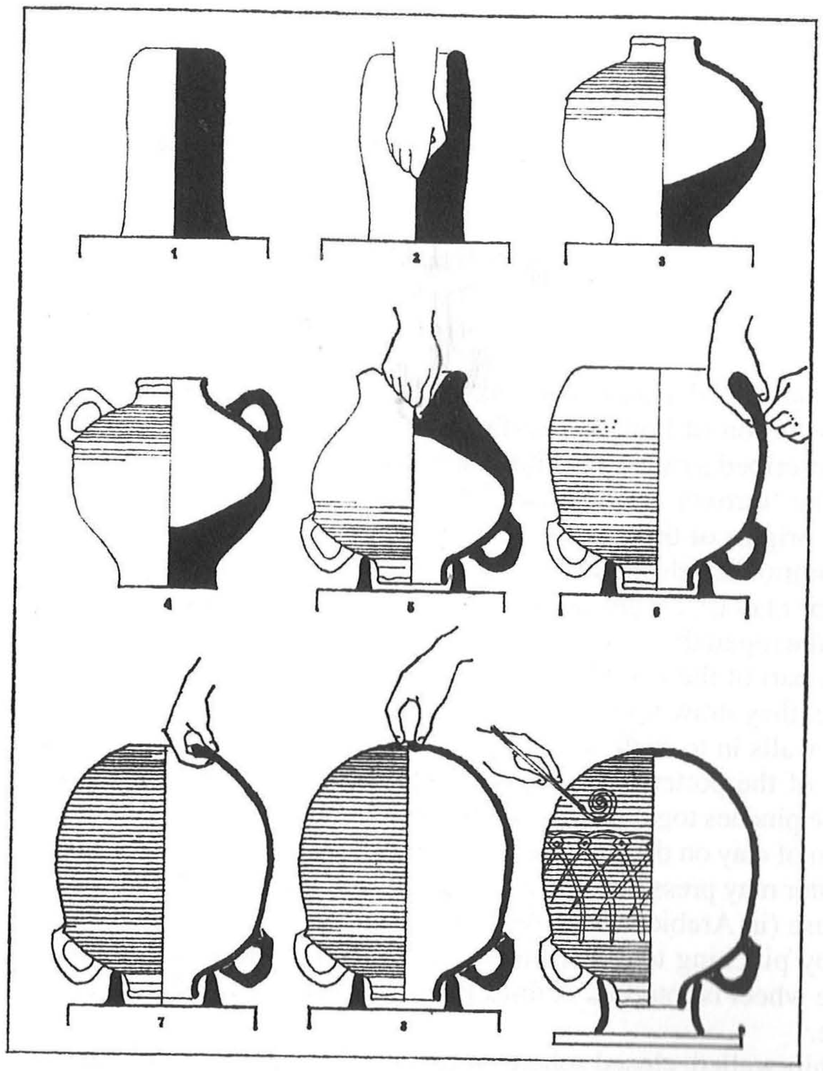

Fig. 1. Pottery-making procedures.

been described, or he can begin by throwing the upper part of the pot first and, after the thinner, drawn-up walls and rim have dried, turning the pot upside down, placing it on the wheel and, from the remaining thicker mass of clay (which is still wet), throwing the base (Fig. 1). For example, a long, narrow amphora with a pointed base might not easily be held on the wheel while the top is being thrown. For bowls it is easiest to throw the base first and then draw out the walls.

The advantage of a thrown closed base is the rapidity and ease with which it can be formed; the dry scraping of excess clay can be entirely avoided (Fig. 2). The thickness of the walls of the pot is more easily controlled with this method, and

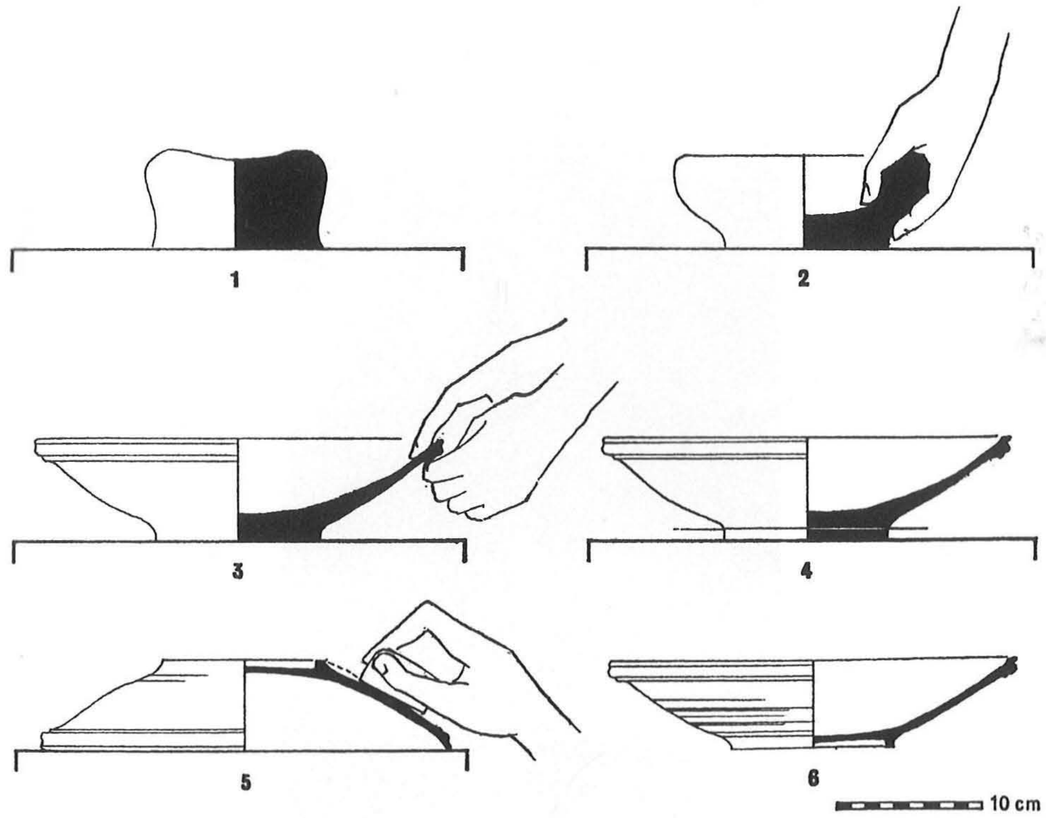

Fig. 2. Pottery-making procedures.

great differences in wall thickness, which can lead to thermal stress and breakage during firing, are avoided. Given the advantages of the thrown closed base, it seems almost incredible that this method of making pottery is so completely unknown to potters east of the Fertile Crescent, in Africa below the Sahara, and in the Western world (Europe and the Americas).[4]

We now have a description of how pottery vessels are made with thrown closed bases. What evidence for this technique is found on fired ceramics? The first and most distinctive marks are those left at the centre of the interior of the base. When the potter pinches the small, inverted clay funnel as the wheel is rotating, the clay swirls together, leaving swirling marks of clay, 'the vortex' (Fig. 3), on the interior surface at the centre, where the potter closes the vessel.[5] These interior swirling marks vary, depending on whether the bottom of the pot is either flat or V-shaped.

The evidence for this interior swirl of clay can easily be obliterated on open pottery forms, for example, bowls, craters, cooking pots and so on. If slip or wash is applied, or the pot is wheel- or hand-burnished on the inside, the evidence for a thrown closed base is lost. On open forms with or without a slip or burnishing, the evidence of a vortex is almost always smoothed over by the potter's hands or a rib.

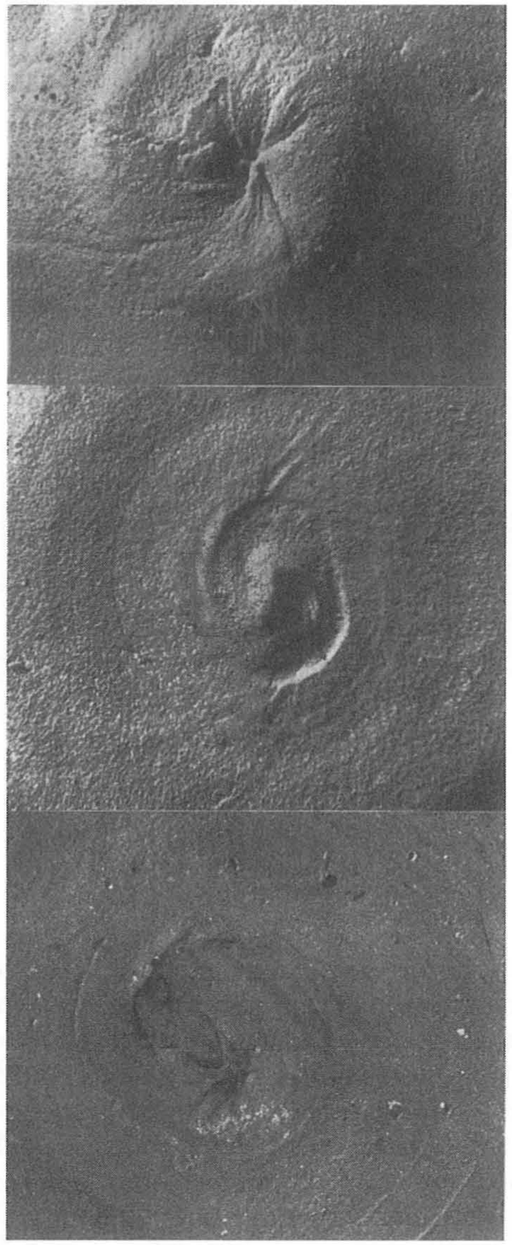

Fig. 3. Swirling marks of clay ('the vortex') on thrown closed bases.

This is not the case for more closed forms such as storage jars, decanters, flasks, or jugs, where the evidence is preserved, for the potter is simply unable to reach into the container's narrow opening. Moreover, sometimes on the exterior a nipple or more often a flattened nipple can be detected. A third piece of evidence for thrown closed bases is on the interior. When a potter does make a base on a revolving wheel

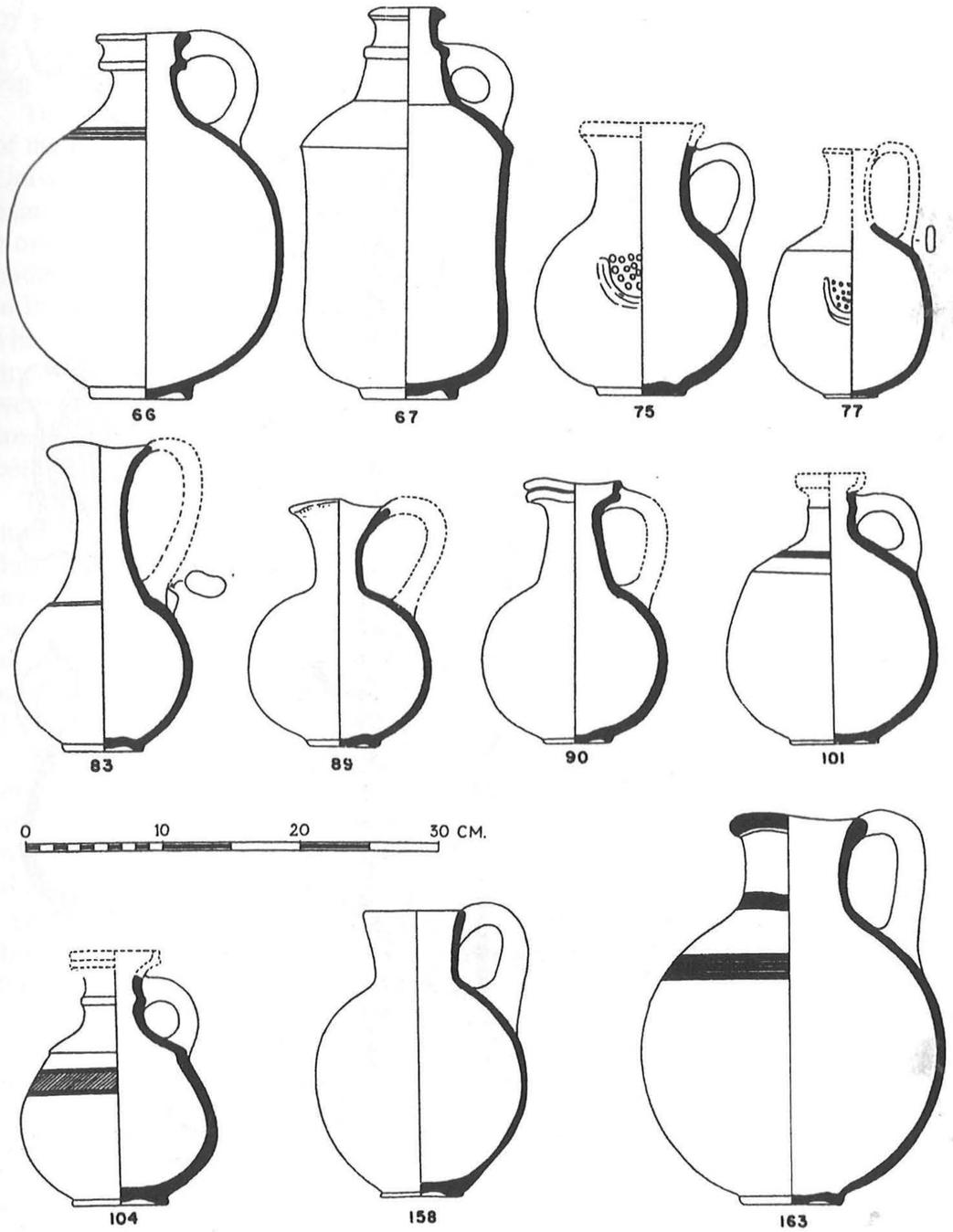

Fig. 4. Pottery from Megiddo.

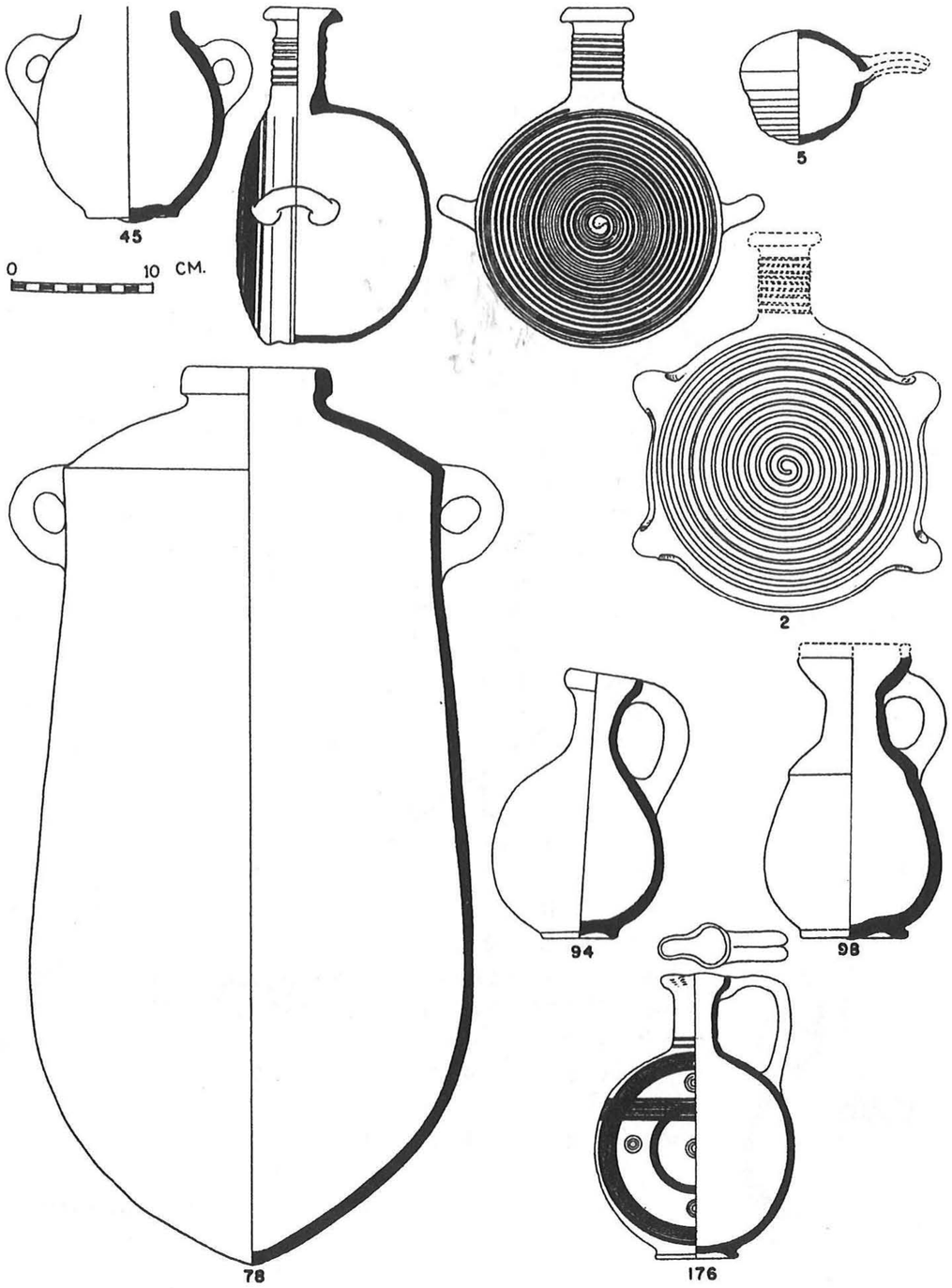

Fig. 5. Pottery from Megiddo.

by pinching together the wet clay on the inside opposite the exterior ring base, a V-shaped groove is sometimes formed (see Fig. 4: 75, 83, 89, 163; and Fig. 5: 45).

The University of Chicago excavated Megiddo from 1925 to 1934, and a portion of the material published in the Megiddo volumes is stored at the museum of the University's Oriental Institute. Through the kindness of Ray Tindel, I was able to examine the pottery shown in Figures 4 and 5 of this article for evidence of thrown closed bases, that is, the clay swirl (or vortex) on the inside of relatively closed pottery forms: jugs, flasks, and jars.[6] Of the fourteen jugs examined, eleven (those in Fig 4) had clear signs of the vortex at the centre of the base inside the vessels. The evidence on the other three jugs (those in Fig. 5) was not as clear. The Cypriot import no. 176 had no internal or external base markings, whereas jugs 94 and 98 were probably thrown closed bases but with only faint indications thereof. The smaller two-handled jar (Fig. 2: 45) and the larger, sausage-shaped jar (Fig. 2: 78) both had signs of clay swirling at the interior center of their bases.

The three Megiddo pilgrim flasks (Fig. 2: 1, 2, and 5) offer examples of two thrown closed bases on the same vessel. The interior centers of both halves of these flasks have vortexes, and their exteriors exhibit small nipples. On the inside there is no sign of two pieces of pottery having been joined together, so these are clearly cases of both sides having been thrown, first the flatter side and then the hemispherical side, from the same piece of clay. Thus one side was thrown closed and set aside to dry. The hole between the two sides, where later the neck of the flask was attached, was then perforated; otherwise pressure due to shrinkage of the closed form would have cracked it.[7] When firm, it was turned upside down, placed on a 'chuck' on the wheel, after which the opposite, hemispherical side was thrown from the excess soft clay. These three pilgrim flasks are assigned by the chief excavators of the site to strata I-IV, all within the Iron II period.[8] Franken found pilgrim flasks thrown closed on the side in the Late Bronze sanctuary at Deir 'Allāh,[9] which indicates that this form may be dated prior to the Iron Age. Pilgrim flasks are also found in Late Bronze strata at Beth Shean, and W. D. Glanzmann and S. J. Fleming make both macroscopic and zeroradiographic observations on pilgrim flask construction,[10] suggesting that not only at Beth Shen but also at Deir 'Allāh and undoubtedly other Palestinian sites too, pilgrim flasks have always been made in this way.

The manufacture of pilgrim flasks is discussed by Ericksson in the context of observations on red lustrous wheel-made ware from Late Bronze Age Cyprus.[11] The Cypriot flasks were made similarly to the Palestinian examples from the Late Bronze and Iron II periods. Thus the thrown-closed method of manufacturing bases was not exclusively Palestinian and may have originated outside of Palestine. Because of the advantages of the thrown closed base, it would seem likely that other forms of the red lustrous wheel-made ware were made according to the same method. (The evidence for this hypothesis should be present in examples of closed forms.) Thus since at least 900 BC in Palestine and other areas where this method was used, potters would have created most of their vessels with thrown closed bases,

especially bowls, craters, cooking pots, and other open forms in which the evidence is usually destroyed. If clear signs of dry scraping are present on bowls and craters, that signifies that the base was not thrown closed. But if no evidence of dry scraping on open pots is present, it would be safe to assume that they too were formed with thrown closed bases, as are the bowls made by present-day Palestinian men potters These twentieth-century potters form all their bowls by first throwing the base and, after the base of the bowl is firm, turning the vessel upside down, drawing the walls out, and forming the rim from the excess clay.

At the present time we have yet to discover the full extent of the geographical area where the thrown closed base has been manufactured in different time periods; we are also ignorant of where the practice originated. Another question to be answered is whether the lentil-shaped pilgrim flask was the first vessel to incorporate the thrown closed base.

Notes

1 This paper came to fruition in large part thanks to the encouragment of Claudine and Liza. I would also like to acknowledge with gratitude my teachers Henk Franken and Jan Kalsbeek, as well as the traditional male potters of Palestine, especially those working in Hebron and Gaza, who today are suffering so much.

2 Pages 51, 99, and especially 69–74 in Briend and Humbert (eds.), 1980.

3 H. J. Franken and J. Kalsbeek were the first to apply this term to several different vessels from different time periods; Franken and Kalsbeek, 1975: 36ff., 71–73, 76, 78, 83; Figs. 10–13, 15, 17; see also 9th–7th-century BC thrown-closed juglets in Franken and M. L. Steiner, 1990: 93–94, Figs. 5–8 (1–7); and Late Bronze Age thrown-closed pilgrim flasks in Franken, 1992: 151, 154–155, *A11.

4 Thus Gisela Richter (1924) describes the making of Athenian pottery with reference to how English potters of the twentieth century would produce such forms.

5 Shown in photograph 1, from top to bottom, are a decanter base vortex, a cooking pot vortex, and a black 'Beisan' amphora vortex; these three vortexes can also be seen in Briend and Humbert (eds.), 1980. Plate 141: 10–12; Franken, 1992: Plate XIII, type 2b, 2c, pinched, and interlocking.; and Francis and McGovern (eds.), 1993: 2, Plate 19.

6 Megiddo I (Lamon and Shipton, 1939):

[Fig. 4] Number	Megiddo Plate	OIM Registration No.	Stratum/a	Period (Iron)	[Fig. 5] Number	Megiddo Plate	OIM Registration No.	Stratum/a	Period (Iron)
66	2	A28316	II	II	45	10	A28308	III	II
67	2	A28527	II	II	78	15	A28573	IV-III	II
75	3	A28307	IV-III	II	1	36	A28471	III-I	II
77	3	A28388	IV-III	II	2	36	A28529	IV-III	II
83	3	A28363	IV-II	II	5	36	A28313	II	II
89	3	A28366	IV-II	II	94	4	A28481	III-I	II
90	3	A28375	IV-III	II	98	4	A28355	III	II
101	4	A28526	II	II	176	8	A13506	V	I
104	4	A28354	III	II					
158	6	A28456	V	I					
163	7	A28479	V	I					

7 This supposition differs from Franken's speculation (1992: 155: 4).

8 Lamon and Shipton (1939: Plate 36).

9 See the pilgrim flasks in Franken (1992), Fig. 3–7: 11, p. 29; Fig. 4–24: 9–10, p. 68; Fig. 5: 18, p. 99; Fig. 5–19: 14, p. 100; Fig. 7–6: 15, pp. 121, 124.

10 See Glanzmann and Fleming in Francis and McGovern (eds.), 1993: 1: 94–102 and 2: plates 18–19; idem, 1986: 588–95.

11 Ericksson, 1993; and see especially, *idem*, 1988: Part 1, pp. 177–180.

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The Diet of the Desert Fathers in Late Antique Egypt

CLAUDINE DAUPHIN

The Birth of Monasticism

Monasticism arose in Egypt in the third century AD. In a Late Antique world that was crumbling, it was the response to a call to detach oneself from human contact and material things (hence the Greek word *anachoresis*, 'going away from settled life') and lead a solitary life in the desert in a quest for God, hence *monachos* – monk, derived from *monos* – alone.[1] Although its cradle was the Nile Valley whose magnetism resides in its unique capacity to provide water both for drinking and for irrigation, Egyptian monasticism blossomed in the desert. The latter's aridity, even at a short distance from the Nile, 'imposed on monastic life the character of a struggle for survival' (Binns 1996: 99).

Paul of Thebes, Anthony the Great and Pachomius: the Birth of Monasticism in Egypt

The First Christian Hermit: Paul of Thebes

The first Christian hermit was Paul of Thebes (Luxor-Karnak in Upper Egypt) who died around AD 341. According to his *Life* written in 374–379 by the Church Father St Jerome, after the death of his wealthy parents and the marriage of his sister, at the age of fifteen, Paul sold his inheritance, made a vow of poverty and went into the desert (Jer. *Vita S. Pauli*; *PL* 23: 17–28). After several days' walk eastward, Paul reached Mount Qolzum which overlooks the Red Sea and found a cave with a palm tree and a spring nearby, which for the next sixty-five years provided him with food, clothing and water (Fig. 1). Each day, a crow flew in with half a loaf of bread (or a whole bread when Paul had a visitor).

The Founder of 'Semi-Solitary' Monasticism: Anthony the Great

The founder of the monastic movement, however, was Anthony. According to his *Life*, written in 356–366 in Greek by Bishop Athanasius of Alexandria (*Vita S. Antonii*; *PG* 26: 835–975), Anthony was born in 251 at Qimn al-Arus (ancient Heracleia) in the Upper Nile Valley. As an orphaned lad of twenty, Anthony heard

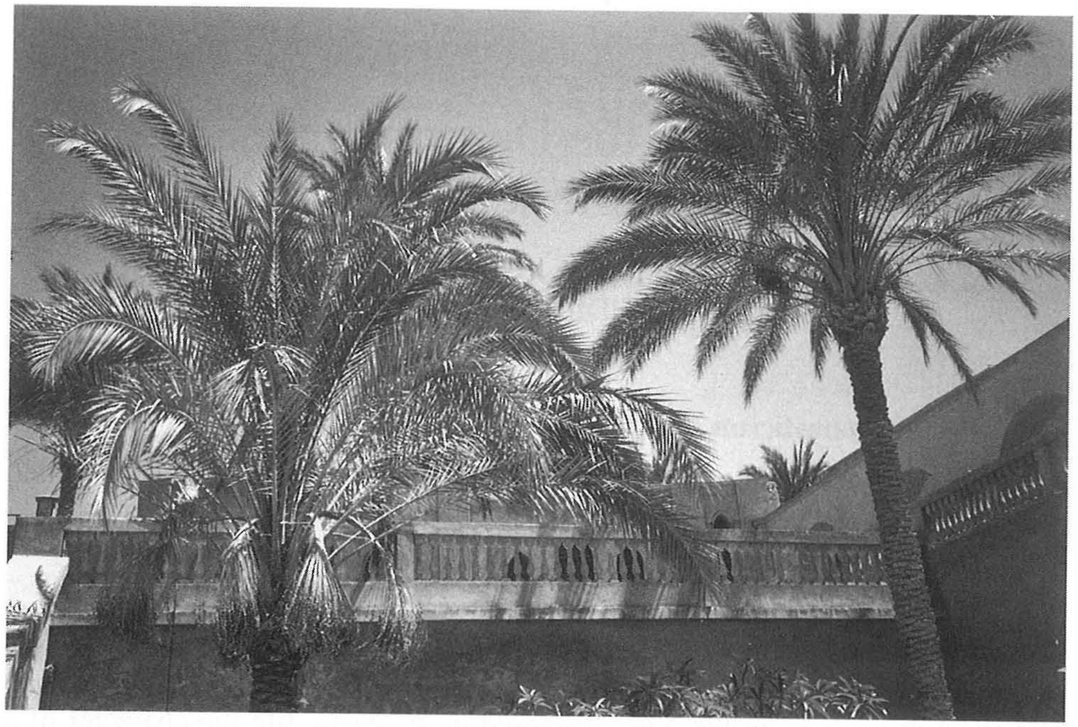

Fig. 1. Providers of shade, dates and palm leaves for weaving baskets and mats: palm trees in the Monastery of St Macarius (Deir Abu Makar) in Wadi Natrun – Skete (Photo C. Dauphin).

the Call during a Sunday sermon in his village chapel. Following Matthew 19: 21, a voice murmured to him: 'If thou wilt be perfect, go and sell all that thou hast and give to the poor, and come and follow Me'. Having disposed of his belongings and entrusted his sister to a community of virgins, he joined an old man who had led a solitary, ascetic life in a pigsty or cowshed on the edge of the village. Regrets, guilt, temptations: to ward these off, Anthony secluded himself on his own further away in a burial-chamber with, as sole nourishment daily in the evening some bread (which was intermittently brought to him by a friend), salt and water. These were to constitute the core-diet of early Egyptian monasticism (Athanas. *Vit. Ant. 7*; *PG* 26: 851–854). After several months of fasting, sleepless nights and fighting demons, at the age of thirty-five, Anthony set off eastward across the desert and shut himself in an abandoned Roman fort overlooking the Nile near Pispir (modern Deir al-Maimoun). He had brought with him bread for six months (the bakers of Thebes/Luxor were known to bake bread which, when dry, could be soaked in water and was edible for up to a year). For twenty years, Anthony lived in total isolation, seeing no-one, sleeping two to three hours a night, drinking only water, and eating only bread (which was brought to him twice a year and was handed to him over the wall of the fort). The Coptic *Synaxary* gives a different version of Anthony's diet: twice a year he kneaded dough and left it to 'bake' in the sunshine (Lacarrière 1975: 70).

Although he had never had any intention to teach or train disciples, numerous visitors congregated around his fortress. When he felt that he had vanquished temptations and demons, and had reached tranquillity of spirit and temper, he came out of seclusion and, in AD 306, established in the vicinity of his fort a community of ascetics who spent the week on their own, each in his hermitage, but came together on Sunday for a communal Eucharist. The Antonine system was devoid of strict rules or established routine, and new recruits were trained individually by their spiritual fathers.

Anthony's fame for healing the sick and casting out demons spread, the Pispir community drew crowds, and at the age of sixty, Anthony fled in search of peace. Following some Beduins deep into the 'inner desert', he reached Mount Qolzum and chose a cave on its summit as his final abode. At the foot of the mountain was a very clear spring whose water was good and extremely cool. Below was a plaine and a few wild palm trees. Anthony lived off dates from these and bread brought to him by Beduins. Such a diet did not seem to have any ill-effects: Anthony died in 356 at the ripe old age of one hundred and five. Until the end he was full of vigour, and the Coptic *Synaxary* adds: 'Not one of his teeth had fallen' (Lacarrière 1975: 70)!

The Founder of Cenobitic Monasticism: Pachomius

Anthony's entire life had been devoted to a quest for God through solitude (*anachoresis*). A completely different approach to monasticism was developed by Pachomius, born in Esna in Upper Egypt in 286. Brought up as a pagan, he nevertheless subconsciously rejected paganism: he repeatedly vomited sacrificial wine and his stomach refused to digest food brought as an offering to the deities but of which the donors also partook. At the age of twenty he was forcefully enrolled in the Roman army and whilst being garrisoned at Antinoë, frequented Christians and decided to devote his life to their sole God. Upon being released from the army two or three years later, he returned south and chose to live in the small temple of Psampisarapis ('place of Sarapis'), near Shenesêt (Khenoboskion), a quasi-deserted village on the banks of the Nile. He grew some vegetables and palm trees for his food as well as that of the village poor and travellers. After his baptism, having heard that an 'ancient ascetic', apa Palamon, led a solitary life on an uninhabited hillock near Diospolis Parva, Pachomius begged Palamon to take him as a disciple. Palamon attempted to put him off by describing his regimen: 'In the Summer, I fast every day, and in Winter I eat every other day. I take only water, bread and salt, and I sleep but rarely'. The harshness of such a programme appeared to egg on Pachomius who, having finally been accepted by Palamon, remained with him for seven years, sleeping as little as possible sitting uncomfortably on a low stool, drinking water, eating bread, salt and cooked herbs, to which he added 'a little ash in order to give them a nasty taste'. One day, walking in the desert, he crossed a dense acacia forest and reached Tabennesi, a deserted village near Denderah on the western bank of the Nile. As he entered it, he fell to praying and heard a voice coming from Heaven which ordered him to settle in the village and predicted that

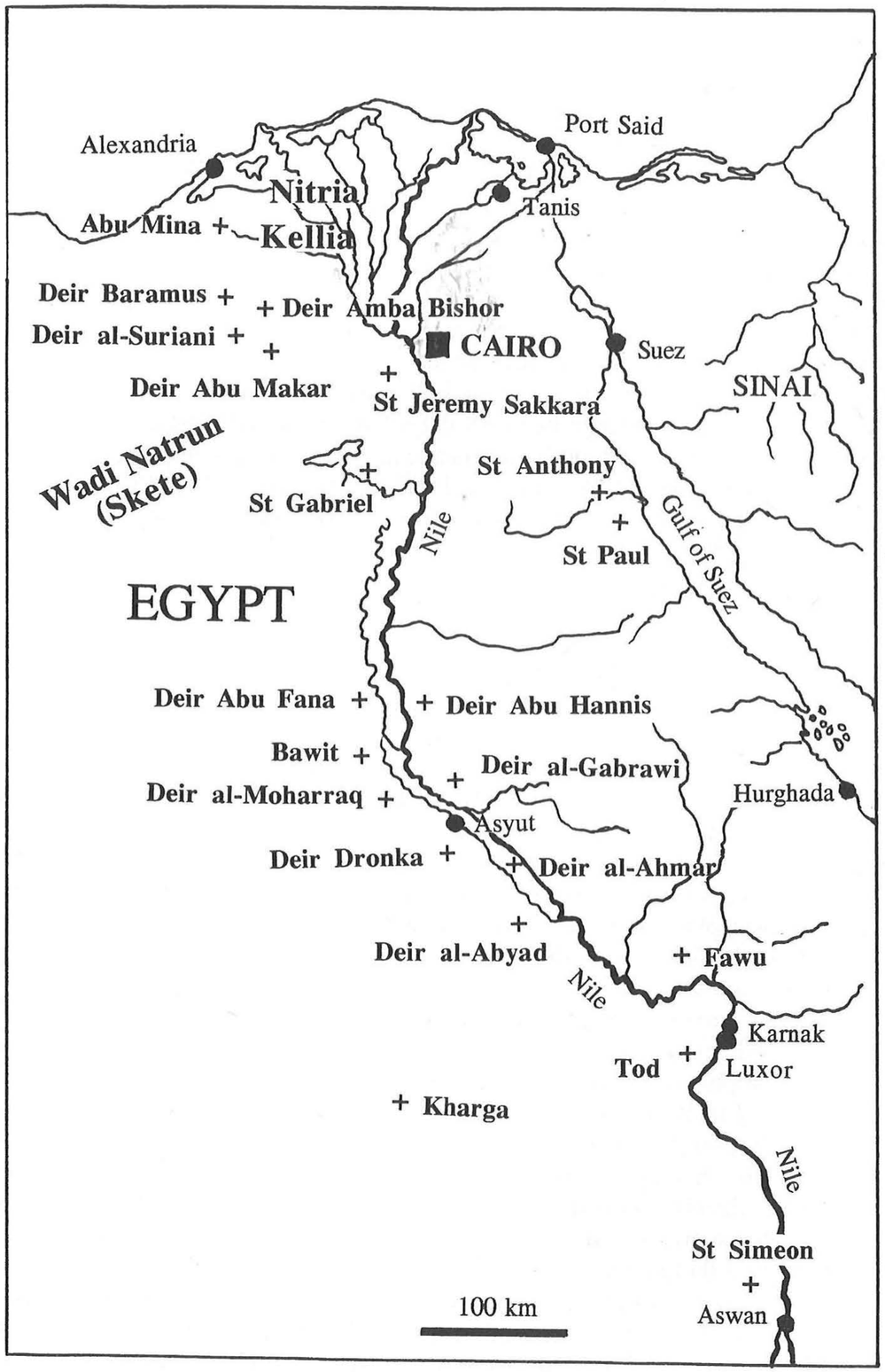

Fig. 2. Map of the Monasteries (+) of the Egyptian Deserts (Drawing C. Dauphin)

he would attract a crowd of male followers (*S. Pachom. Vit. Graeca.*; Halkin 1932 ed.). In later versions of Pachomius' *Life* written in the early fifth century in various dialects of Coptic,[2] an angel appeared before Pachomius, gave him instructions and handed him the Rule of his future monasteries which was translated into Latin at the end of the fourth century by St Jerome (*Transl. Lat. Reg. S. Pachom.*; *PL* 23: 61–85)[3]. Adapted to Western monastic communities, it developed into the Benedictine Rule (*Benedict. Reg.*; Hanslik 1960 ed.).The originality of Pachomius' Revelation was that, contrary to the ideals of solitary ascetism, salvation could be reached collectively. By the time of his death in a plague in 348, Pachomius had founded nine monasteries (including two for women), all of them between Thebes/Luxor in the south and Akhmin in the north, with a cluster around Khenoboskion and Tebennesi, totalling some 8,000 souls (Fig. 2).

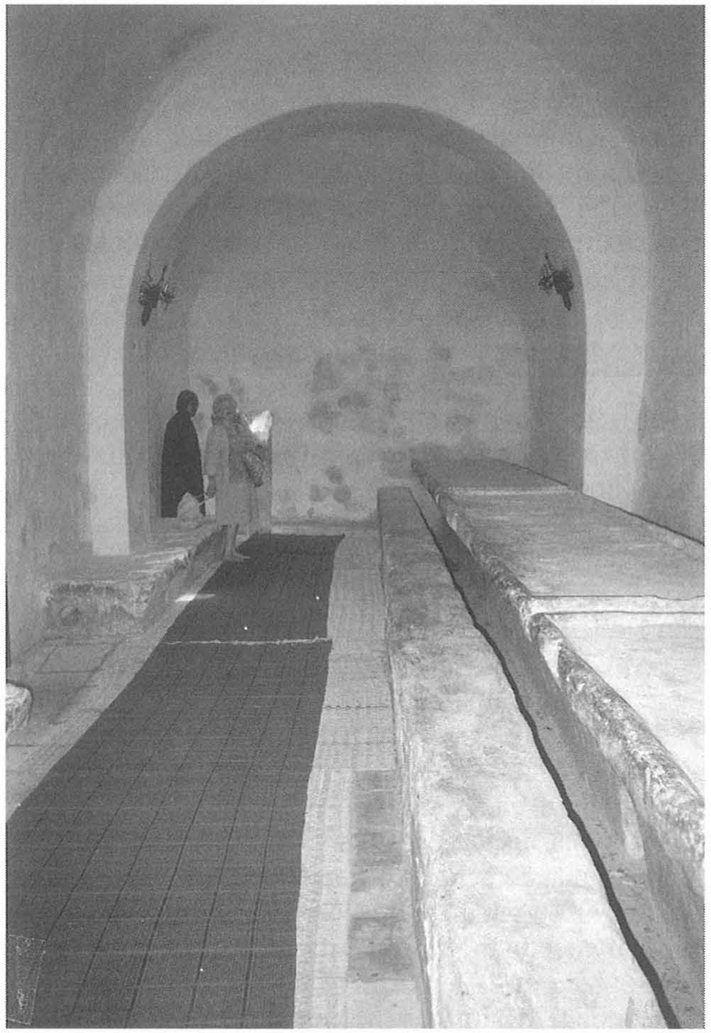

Fig. 3. Deir Baramus in Wadi Natrun – Skete: the common table and bench in the Refectory (Photo C. Dauphin).

The greatest danger threatening solitary ascetic life in the desert was pride, equated with the attempt to dominate one's body more than necessary (and weakening it to the extent of rendering it useless for manual labour). Thus, the elders advised the novices not to fast exceedingly and not to think that they were free from the demands of their bodies, but to eat if only minimally. In Pachomian communities, monks were open to another danger, that of ostentation in fasting and mortifying oneself not for one's own sake but to show off in front of others. Meals were taken once a day at the ninth hour (3pm) in a refectory where the monks were served cheese, cooked fine herbs, olives, fruit, bread and a sweet, and drank water. Meat and wine were given on request only to sick monks. Weekly fasting took place on Fridays and Wednesdays, and throughout Lent (Alcock 1996: 33). If a monk wished to fast at other than these fixed times, he could only do so in the refectory (Fig. 3). Thus, frequently, monks got up from a meal without having touched the food laid before them. Such an attitude triggered guilt from those who had eaten, to the extent that no-one dared eat. Consequently, Pachomius ruled that monks should wear hoods wide enough to cover their plates which would enable them to eat (or not) without being seen and singled out, and without prying into their neighbours' behaviour (Pallad., *Hist. Laus.* 32: 6; Mohrmann, Bartelink and Barchiesi 1974 eds: 154–157). In general, Pachomius distrusted fasting which was too frequent or too extreme. Thus, he ruled that each monk eat at each meal 'four or five mouthfuls of bread in order to prevent vanity'.

Antonine Monasticism

'And so henceforth ... the desert was made a city by monks coming out from their own and enrolling themselves in the heavenly citizenship' (Athanas. *Vit. Ant.* 14: 27–28; *PG* 26: 865–866).

Skete, Nitria and the Kellia

Halfway between Hellenized Alexandria and the Coptic city of Babylon of Egypt (which preceded Moslem and modern Cairo), stretched the desert of Wadi al-Natrun, Herodotus' and Strabo's *Nitria*, and the Romans' *Scythiace Regio*. Rising in the Winter and Spring, the waters of a dozen lakes as they ebb in March-May deposit along their banks nitre or saltpetre (sodium carbonate) which the Ancient Egyptians used for mummification, and salt (sodium chlorate). In this parched, white, sterile desert, Macarius the Great had withdrawn in 325–330, thus laying the foundations for the monastic centre of Skete of semi-solitary Antonine tradition (El-Meskeen 2001: 27–30) which is still perpetuated by four walled monasteries (with hermits disseminated in the wasteland, and bread and water being distributed to them once a week by jeep): Deir Abu Makar (Fig. 4), Deir al-Suriani (Fig. 5), Deir Amba Bishor and Deir Baramus (Meinardus 2000: 98–100).

In the southwestern part of the Nile Delta, about fifty kilometres to the southeast of Alexandria, on the edge of the Western or Libyan Desert, the monastic centre of

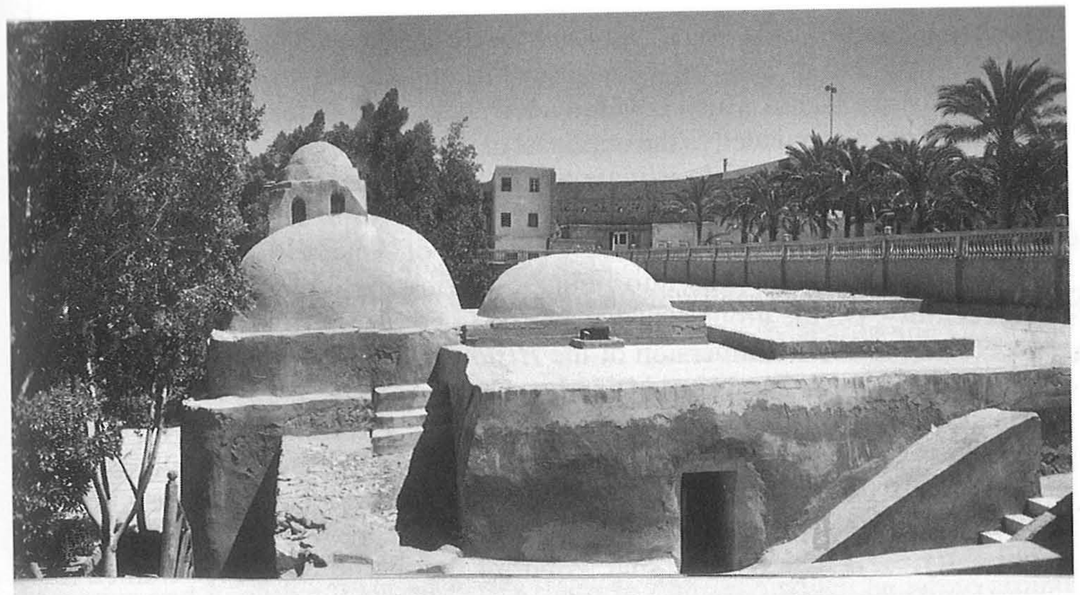

Fig. 4. Deir Abu Makar: within the walled enclosure. In the foreground, the church of the Forty-Nine Martyrs (Photo C. Dauphin).

Nitria, founded by Amoun in 325–330, has disappeared since the sixth century AD. A third centre, the *Kellia* (or 'Cells' in Greek) was founded in 338 by Amoun with the advice of Anthony the Great, as an annexe of Nitria, eighteen kilometres to the south on the unmarked desert track which joined Nitria to Skete, a further forty kilometres away. In the course of ten years, monastic population had grown fast, no extension was possible owing to the proximity of the settled and sown land, and,

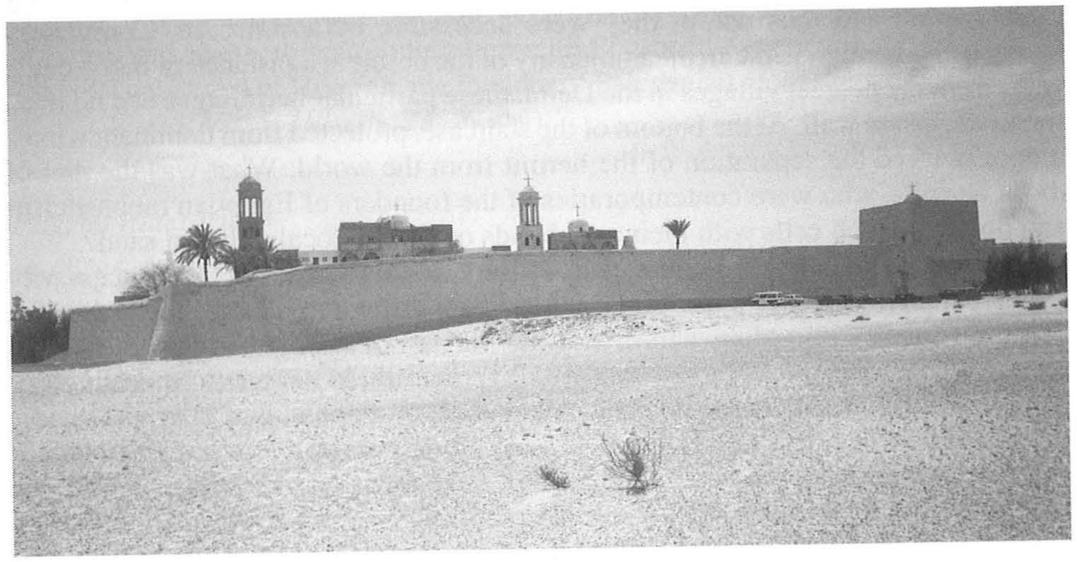

Fig. 5. Deir al-Suriani, Wadi Natrun – Skete (Photo C. Dauphin).

in their quest for solitude, some monks wished to build cells further away. Located by A. Guillaumont in 1964 on the basis of the textual sources (Guillaumont 1964; 1979b: 151), the Kellia which covered a territory some sixteen square kilometres, had already been amputated to the northeast of a large area by the Egyptian Agrarian Reform Plan which aimed to irrigate the desert and increase arable land. Rescue surveys and excavations were conducted by the Institut français d'archéologie orientale in Cairo (1964–1969) and the University of Geneva (from 1981) just ahead of bulldozers which levelled into fields mudbrick hermitages abandoned in the eighth century. On the ground, nowadays, no trace of the Kellia remains.

According to the Latin version of the *Historia Monachorum* (Ruf. Aquil. *Hist. Monach.* 20: 21; *PL* 21: 442–444) and to Cassian (*Coll.* 3: 1; *PL* 49: 558–559), Nitria consisted of some six hundred hermitages forming however but one 'community', whereas the Kellia 'owe their name to a multitude of cells dispersed in the desert',[4] far enough for no-one to be recognized, nor be easily seen, nor hear another anchorite's voice (Ruf. Aquil. *Hist. Monach.* 12; *PL* 21: 444–445). More importantly, 'it is here [Kellia] that withdraw those who have been trained there [Nitria] and who, progressing beyond the first rudiments, wish to lead thereafter a more solitary life.' Thus, in the eyes of contemporaries, Nitria appeared to be a sort of giant *coenobium*, and the Kellia a constellation of hermitages in its vicinity. Contrarily to the personal approach of the founders of Egyptian monasticism, monks were first initiated to religious life within a social context, and later proceeded to solitary ascetic life whose programme was much more demanding.

Each monk inhabited a mudbrick 'cell' which was in fact a two-roomed brick-vaulted hermitage of which one room served as an oratory (Guillaumont 1993: 33). Enclosed by a low parapet wall, these were frequently preceded by a courtyard with a well which provided water for the monk and the few vegetables which he grew. Only two early cells have been excavated (Bridel 1993: 202). Crudely built partly underground and thus damp, they were accessible by a staircase. Completely isolated and barely visible in the immensity of the desert at a distance of half a day's walk from the nearest villages in the Delta, these particular hermitages had no need for an enclosure wall. At the bottom of the staircase, protected from dominant winds, a door marked the separation of the hermit from the world. What was the diet of those hermits, who were contemporaries of the founders of Egyptian monasticism and had built such cells with their own hands out of the local, alluvial sand?

Solitude breeds individualism: the solitary, lonely quest for God necessarily entailed a multiplicity of approaches. Patterns are difficult to define, contradictions abound (notably regarding wine), and the variety of examples appears to defy coherence. Furthermore, rather than fossilize over three centuries, monastic life changed and evolved, as did the monastic diet.

The Sources

Hagiographies, Histories, Pilgrim Itineraries, Regulations and Sayings

The Lives of the Holy Monks of Egypt

Biographies of the holy founders of monasticism are the main source of information regarding the history of the spread of monasticism and the different forms it took. The birth of the movement in the first half of the fourth century is described in the *Lives* of Paul of Thebes, Anthony the Great, Pachomius, Macarius the Great and Amoun.[5]

Histories

A Galatian Greek, Palladius travelled to Egypt in 388–390 and for twelve years lived in the monastic desert of Nitria, and later in that of the Kellia as a disciple of Macarius and Evagrius Ponticus.[6] The *Historia Lausiaca* which he wrote around AD 420 and dedicated to Lausus, a chamberlain at the court of Emperor Theodosius II (408–450), relates the lives, ascetic prowess, miracles, temptations and sayings of noteworthy individual monks in Egypt, Jerusalem and the Lower Jordan Valley (Butler 1898–1904 ed.; Mohrmann, Bartelink and Barchiesi 1974 eds).

Around 371, the priest Rufinus of Aquileia accompanied to Egypt an aristocratic Roman lady, Melania the Elder, and lived for six years amongst the monks of Nitria and Skete. His translation from Greek into Latin of the *History of the Monks of Egypt* attributed to the Alexandrian archdeacon Timotheus, partly doubles up with Palladius' work, but also substantially diverges from it (Ruf. Aquil. *Hist. Monach.*; *PL* 21: 387–462). St Jerome, with whom Rufinus violently clashed regarding Origen,[7] travelled to Egypt himself in 385 and spent some time in the ascetic centres of Nitria and Skete, this providing him with first-hand experience for his *Lives* of Paul of Thebes and of Hilarion, the founder of Palestinian monasticism (*Vit.S. Pauli*, *PL* 23: 17–28; *Vit. S. Hil.*, *PL* 23: 29–54).

Pilgrim Itineraries

Having produced the model of the 'holy ascetic' and developed on the banks of the Nile 'artificial societies' in the form of Pachomian monasteries, Egypt became from the second half of the fourth century a 'second Holy Land' to which flocked pilgrims high and low, some out of curiosity, others in order to follow the teachings of the great holy men and become their disciples. Thus, the aristocratic Paula, a close friend of St Jerome, went round the cells of Nitria (Hunt 1982: 172), and Egeria, the abbess of a monastery in Galicia (Spain), described her visit to monastic Egypt in the late fourth century in her *Peregrinatio ad sancta loca* (Pétré, 1948 ed.; Wilkinson 1971). From his trip to Egypt in the fifth century, Postumianus, a Roman aristocrat, brought back numerous anecdotes which were incorporated by Sulpicius

Severus in his *Dialogues* (Sulp. Sever. *Dialog*. I-III; Halm 1866 ed.: 152–216) and in his *Life of St Martin* (Sulp. Sever. *Vit. S. Mart.*; Halm 1866 ed.: 109–137; and, Fontaine 1967–1969 ed.).

Regulations

The last of the travellers to have written down his experiences was Cassian, who from his youth spent over ten years amongst the monks of Egypt. After training further in Constantinople and Rome, he became Bishop of Marseilles, founding in about 415 two monasteries, one of men, the other of women. His *Monastic Institutions* and *Conversations with the Fathers* are replete with concrete details on the life of the monks and hermits of Egypt, but are far from being historically reliable (*De Coenob. Instit.*, *PL* 49: 53–477; *Coll.*, *PL* 49: 477–1328).[8]

Sayings and Anecdotes

The *Apophtegmata* (or sayings) of the Egyptian Desert Fathers (various versions of which have been handed down through the centuries in Coptic, Ethiopian, Armenian, Syriac and Latin) are a precious guide towards an understanding of monastic mentality and daily life.[9]

Fact or Fiction?

Providential Food

Providential food is a staple theme of monastic desert literature. John of Lycopolis who 'did not plant anything in the earth, did not look after himself, did not demand of vegetables nor of greenery that they should satisfy his body's needs, did not hunt neither bird nor any other animal, but overflowing with faith in God, from the day that he left the inhabited places for the desert ignored everything', miraculously found bread on the table in his cave-cell two or three times a week on fixed days (Ruf. Aquil. *Hist. Monach.* 1 [*De Sancto Joanne*]; *PL* 21: 391–405). After three weeks of fasting, Helle discovered a spring and vegetables which had suddenly materialized in the desert sands. On another day, he found beside him hot bread, honey and a variety of fruit (Ruf. Aquil. *Hist. Monach.* 12 [*De Elia*]; *PL* 21: 432). Prayer was Abba Apollo's sole activity during Lent in the 'inner desert': God fed him miraculously through the good offices of an angel (Ruf. Aquil. *Hist. Monach.* 7 [*De Apollonio*]; *PL* 21: 410–420). On God's order, Apollo welcomed five fellow monks to share his cave-cell at the foot of a mountain. At Easter, since only a few dry loaves and pickled lettuces were available, Apollo said to the brothers: 'If we have faith, children, let each of us ask God what he desires.' The brothers requested Apollo to pray on their behalf. No sooner had he pronounced the word 'Amen', than complete strangers appeared at the cave entrance, coming they said from afar and sent by a great and wealthy man. They brought a range of food that the monks

had never even heard of and which were not native to Egypt: exotic fruit, grapes, pomegranates, figs, nuts, all of them out of season, honeycombs, a jug of fresh milk, enormous dates, and white bread still hot from the oven. The messengers hurried away after depositing this food which lasted the brothers until Pentecost (Ruf. Aquil. *Hist. Monach.* 7; *PL* 21: 416).

Ascetism rewarded

Some monks were sustained solely by the Eucharist brought to them by an unknown priest or an angel. Thus, Anuph (Ruf. Aquil. *Hist. Monach.* 10, *PL* 21: 428–29), or Heron whose sole nourishment it was during three months (Pallad. *Hist. Laus.* 26: 2; Butler 1898–1904 ed., II: 81–82; Mohrmann, Bartelink and Barchiesi 1974 eds: 138–41). Such a reward, however, was not given to every monk. Only the most virtuous were thus blessed by God, with the additional gift of special powers. The conversion to ascetic life in the wastes of the Lower Jordan Valley in the sixth century of an Alexandrian prostitute, Mary the Egyptian, is described by Patriarch Sophronius of Jerusalem from the narrative of a monk and priest, Zosimus, who had chanced upon Mary in the desert during Lent (Sophr.*Vita Mariae Aegyptiacae*, *PG* 87[3]: 3697–3726; Arnauld d'Andilly 1644 ed.: Lacarrière 1985). For the first seventeen years after she had plunged into the wilderness, she had lived off the two and a half loaves remaining out of the three which she had bought from a baker's as she had left Jerusalem where her trade had led her. These had soon become stone-hard and she ate them as crumbs little by little. For the next thirty years, she fed on desert grasses and drank water from the Jordan River. Even when Zosimus brought her the Eucharist in a small chalice and a wicker basket containing a few figs, dates and lentils soaked in water, Mary ate only three lentils, not only because she had deliberately crushed any craving for food, but also because her stomach must have shrunk – a physiological fact recognized by the Desert Fathers. Eulogius had advised his disciple: 'Exert yourself to shrink your stomach by fasting. For in the same way that a water-skin when stretched becomes thinner, likewise the stomach when it receives a lot of food. If on the contrary it receives little [food], it shrinks and demands increasingly less' (*Arm.* 4: 54). Consumed by religious trance and prayer, and growing increasingly lighter from ascetism (and lack of food), no wonder that Mary could walk over the waters of the River Jordan and levitate (Sophr. *Vit. Mariae. Aegypt.* 4; *PG* 87[3]: 3721; Arnauld d'Andilly 1644 ed. – Lacarrière 1985 reed.: 55). These astonishing feats were the physical manifestations of the spiritual perfection and ethereal, quasi-angelic state which she had reached, symbolized by her detaching herself bodily from the earth, rising above it and thus being nearer God on High. In striving towards perfection, lack of food played a crucial role.

All the textual sources available partake to a greater or lesser degree of aretology, a literary genre much in fashion in pagan Antiquity, whose aim was not to present a historical and objective description of a person's life, but to edify the reader whilst providing him/her with an ideal behavioural model. The historian's difficult task is

to pick out the grains of truth from the myth in the making in order to separate fact from fiction.

The Early Monastic Diet (IVth–Vth centuries)

Fasting

Long fasts were exceptional. Forty-day fasts were performed during Lent or by monks in dire need of overcoming violent temptations. Tormented by the 'demon of impurity' (a euphemism for sexual desire), James secretly secluded himself in a cave where he remained forty days without any food. By the time he was discovered, he was half-dead (*A.* 927). Assailed by similar temptations, Moses neither ate nor drank during forty-two days spent in the depth of the desert, thus gaining forever release from such temptations (*Eth.* 14: 26). Palladius describes the Lenten Fast of Macarius of Alexandria which he had spent incognito in the Pachomian monastery of Tabbenesi. During forty days, he absorbed neither bread nor water, and only chewed a few cabbage leaves on Sundays 'solely to give the impression that he had eaten' (Pallad. *Hist. Laus.* 18: 14; Butler 1898–1904 ed., II: 47–58; Mohrmann, Bartelink and Marchiesi 1974 eds: 86–7).

Although Lent was a particularly appropriate time for fasting, most monks did not abstain from eating during forty days. Conversely, others behaved during the entire year – and even their whole life – like others during Lent. One day, in the Desert of Skete, soon after the date of the beginning of Lent had been announced, a younger brother visited an older monk with the intention of passing this news on to him. The elder remarked: 'For fifty years I have been unaware of when the fasts which you mention begin or end. My entire life is a Fast' (Regnault 1990: 77).

Fasting for several days, but not necessarily continuously, was quite frequent. Abba Elias, when a young monk, ate only once a week, three weeks running (Ruf. Aquil. *Hist. Monach.* 7: 3; *PL* 21: 413). Hor and Apollo often did not eat for six days, but not every week (Ruf. Aquil. *Hist. Monach.* 2 [De Hor], *PL* 21: 405–407; and, 7, *PL* 21: 410–420). Pityrion ate his ration of broth on Thursdays and Sundays (Ruf. Aquil. *Hist. Monach.* 13 [*De Pithyrione*]; *PL* 21: 432–433). The diet of an anchorite could vary according to his age, his health or other circumstances. Cassian describes an elder who ate on weekdays only if he had a visitor. On Saturdays and Sundays, he would always manage to bring a brother-monk back to his cell and thus ate with him (*Inst.* 5: 26; *PL* 49: 245). An *Apophtegmon* summarizes the variety of practices: 'Amongst the monks of Skete, one ate every other day, another every four days, another every seven days...' (*N.* 467).

Frequency of meals

The usual practice was to abstain from food altogether every other day (*A.* 736, 763, 835). Experience taught the Desert Fathers that it was better to eat a little every day than to eat more every two days. In his youth, Poemen had fasted two, three,

four days and even a whole week, but later he admitted that it was preferable to eat a little every day (*A.* 102 and 605; *Eth.* 14: 63). Echoing the Fathers, Cassian noted: *Melior est rationabilis cum moderatione quotidiana refectio, quam per intervalla arduum longumque jejunium* – 'better a reasonable and measured meal every day, than a strict fast over several days' (*Inst.* 5: 9; *PL* 49: 224–25).

By the end of the fourth century, both in Antonine and Pachomian monasteries, one meal a day (usually at the ninth hour) had become general habit. An elder declared: 'If a man eats once a day, he is a monk; if he eats twice a day, he is a carnal man; and if he eats three times a day, it is a beast' (*Eth.* 14: 1).

Range of Foods

Bread

Bread was the main (and often sole) item of the monastic diet, of wheat, and exceptionally of barley or lentils (*A.* 191). Chick-peas could also be ground into flour (*A.* 274). Traditionally in Egypt, it was (and still is) in the form of small, circular (12 cm in diameter), thick loaves weighing six ounces or 170 grams, as described by Palladius (*Hist. Laus.* 22: 6; Butler 1898–1904 ed., II: 69–74; Mohrmann, Bartelink and Barchiesi 1974 eds: 122–23). Two of these were the daily ration of most anchorites (Pallad. *Hist. Laus.* 19: 6, Butler 1898–1904 ed., II: 58–62;

Fig. 6. Deir Abu Makar: mats of palm leaves woven by the monks and tied together to create fences between agricultural fields (Photo C. Dauphin).

Fig. 7. Deir Abu Makar: monastic cells (Photo C. Dauphin).

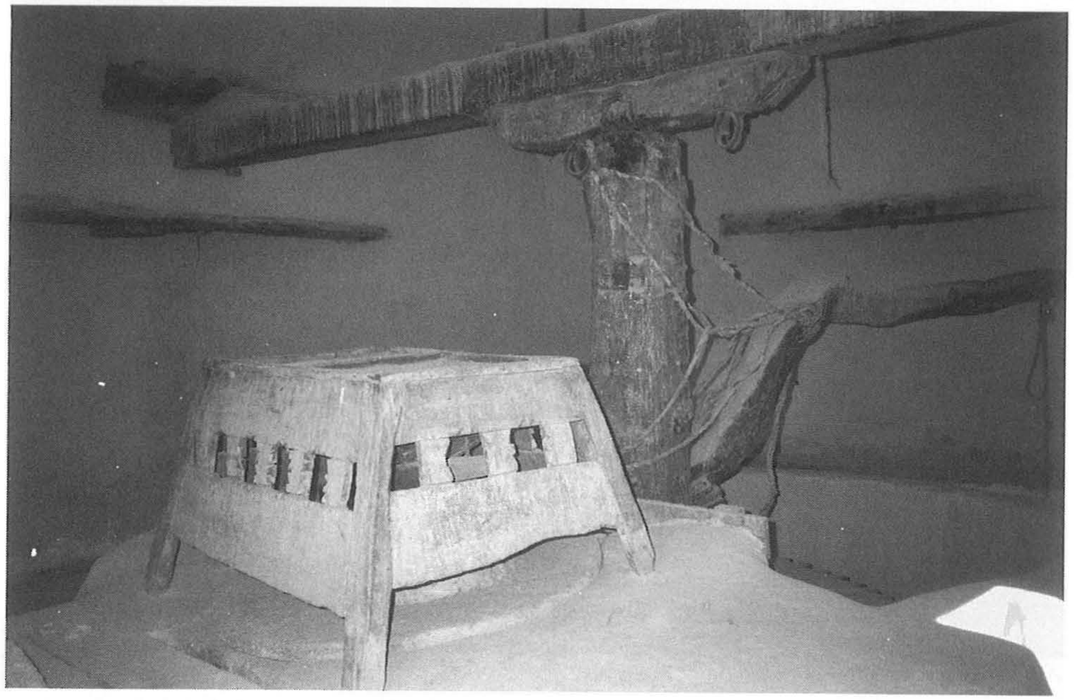

Fig. 8. Deir al-Surani: flour mill (Photo C. Dauphin).

Mohrmann, Bartelink and Barchiesi 1974 eds: 98–101; Cassian, *Coll.* 12: 15, *PL* 49: 896–897). They ate one at the ninth hour and kept the other aside in case they had a visitor. Monks who had not had any visitors, ate their second loaf in the evening. Some monks, however, limited themselves to one loaf per day, and ate two only if they had not eaten at all on the previous day (Cass. *Coll.* 2: 26; *PL* 49: 556). Megethius reduced his diet to one loaf every other day (*A.* 536).

Some hermits exchanged in the villages of the Delta the palm-leaf baskets[10] and mats (Fig. 6) which they had woven against bread. This each monk kept in his cell (Fig. 7) in a bread-bin or basket (*N.* 281; *Ch.* 256), some of which were uncovered in the excavations of Kellia cells, together with a box for salt and a water jug. Arsenius the Roman, like Anthony, had a provision of bread for several months – up to a year (A. 55; *Vit. Ant.* 8, *PL* 26: 853–56, and *Vit. Ant.* 59; *PG* 26: 913–917). When the number of monks increased dramatically at Nitria and Skete, bakeries were built where each monk could bake his own bread (Fig. 8). In the early fifth century, on Saturdays, each anchorite put into a basket his weekly ration of food, that is fourteen loaves, so that if he lost track of days, when the basket was empty, he would know that Sunday had come and that it was time to attend the weekly assembly of brothers (Cassian, *Coll.* 19: 4; *PL* 49: 1130–1131). Abba John was so frequently absorbed in God that come the evening, he often did not know whether he had eaten or not (Cass. *Coll.* 2: 23; *PL* 49: 554–555).

Salt

Both at Skete and in Pachomian monasteries, salt was added to bread (*A.* 143, 226, 344, 486; *Ch.* 248; *Ch.* 254). For example, Theodore of Pherme soaked two loaves in water with a little salt each morning, and ate this 'soup' with a spoon in the evening (*Eth.* 14: 48).

Vegetables and Fruit

Besides bread, the common diet in Egypt included lentils and chick-peas. Anchorites who like Anthony kept a kitchen-garden, grew vegetables and fruit (*Vit. Ant.* 50; *PG* 26: 915–916). The sources distinguish between green vegetables and husked vegetables (Fig. 9). Green vegetables (lettuce and various herbs) were eaten raw, generally fresh or preserved in vinegar, with a little salt (Cass. *Inst.* 4: 11; *PL* 49: 164). Husked vegetables (peas, lentils and broad-beans) were ordinarily cooked or grilled, but often they were simply soaked in water (*N.* 149 and 150). Some anchorites – such as Dorotheus – combined six ounces of bread, a portion of vegetables and a little water (Pallad. *Hist. Laus.* 2: 2; Butler 1898–1904 ed., II: 16–18; Mohrmann, Bartelink and Barchiesi 1974 eds: 22–23). In his old age, Elias ate each evening the tiniest amounts of bread and olives (Ruf. Aquil. *Hist. Monach.* 12; *PL* 21: 431). Arsenius ate daily two plums and one fig with a little bread.

Most of those who ate vegetables or fruit, however, abstained completely from bread. Thus, Hor, Theon, Apollo, Patermutios and other heroes of the *Historia Monachorum* were content with grasses and wild plants.[11] In Upper Egypt, Onuphrius ate lolium and the leaves of trees, and Aphou, who lived amongst a herd of buffaloes,

Fig. 9. Deir al-Suriani: communal vegetable garden (Photo C. Dauphin).

fed on grass like them (Lacarrière 1975: 105). At Nitria, many anchorites ate neither bread, nor fruit, but only bitter chicoree. One hermit ate solely soaked chick-peas (*N.* 257), another only six dried figs per day (Sulp. Sev. *Dialog.* 1: 20; Halm 1866 ed.: 172–173), and John of Lycopolis spent fifty years secluded in a hut in a cave on the mountain of Asyut in Middle Egypt on a diet (like a bird) of seeds and water which were brought to him (Ruf. Aquil. *Hist. Monach.* 1; *PL* 21: 391–405).

Oil

Oil was completely absent from the diet of the first desert hermits. It was only when Anthony had grown very old that his disciples dared bring him each month olives, vegetables and oil (*Vit. Ant.* 51:1; *PL* 26: 917–18). However, the oil which anchorites sometimes added to their food, was usually the same that they put into the oil-lamps lighting their cells: castor-oil which exhales a pungent smell,[12] linseed oil (*N.* 151) and horseradish oil (*A.* 168) which both had a nasty taste. Contrarily to Pachomian usage, cheese was not on the menu of the Fathers of Skete, Nitria and Kellia (Veilleux 1984: 335).

Wine and Water

According to an axiom of Poemen quoted by St Benedict in his *Rule*, 'wine does not suit monks' (*A.* 593). Anthony never drank wine (*Vit. Ant.* 7:6, *PG* 26: 853; *A.* 22). Wine , however, is mentioned some fifty times in the *Apophtegmata*, bearing

witness to the fact that wine was drunk in the desert, although not systematically and not by everyone. Alone in their cells, anchorites did not drink wine, but they stored some wine for visitors with whom they had a little drink (*A.* 217).

The *agape* or common meal which preceded or followed the Saturday and Sunday Eucharist and during which a cooked meal of vegetables (but never meat) was served, was the main occasion on which wine was drunk. It was considered that it was both an expression of charity and humility to do like everyone else and drink it, but not in excess of three glasses (*A.* 805). Some monks, however, refused to drink wine: Isaac the Theban fled to his cell immediately after Mass, deliberately skipping the wine-drinking session (*A.* 423). On being offered a glass of wine, a Skete elder refused, saying: 'Take away from me this deathly poison' (*N.* 144). The founders of Egyptian Desert monasticism had advised to either abstain completely from wine, or to drink only a little (*N.* 130; *Bu.* II: 379; *Am.* 22: 14). Even when old or sick, many elders were reluctant to drink wine (*A.* 523 and 799) which was supposed to give them some energy. A sick elder started to cry when he saw a glass of wine being brought to him and exclaimed: 'I never thought that before my death I would have to drink wine' (*N.* 157). On the contrary, Piammon who had been twenty-five years without drinking wine, took without any hesitation the glass of wine being offered to him (Cass., *Coll.* 17: 24; *PL* 49: 1075–1076). These various anecdotes demonstrate that it was up to each monk to decide to abstain or not.

Moderation rather than abstinence was the rule, even in drinking water. Anthony had advised monks no more to gorge themselves on water than on wine (*N.* 490/1). The reason was twofold. According to Evagrius and Cassian who followed Hippocrates' teaching (*De natura hominum* II-IV and VI-VII; Jones 1953 ed.: 5–13 and 15–23), too much water brought about emissions of sperm and nocturnal phantasms (Cass. *Coll.* 12: 11; *PL* 49: 890–91). Moreover, demons were known to frequent sources of water, ready to enter the souls of monks who approached to fetch it (Festugière 1961: 31; Regnault 1990: 91). In the desert heat, drinking parcimoniously was a great mortification. Paul spent Lent with a pre-determined ration of 3–4 litres of water (*A.* 796), while Cheremon would drink as much in a normal week (*A.* 932).

Mitigations for the Sick and for Visitors

The austerity of the early monastic diet was sometimes deliberately increased for the sake of ascetism: Isaac mixed ash from his incense-burner with his bread (*A.* 377). It was, however, mitigated for the sick and visitors. After a fourteen-year daily diet at Kellia of one pound of bread and a little oil 'without even touching a lettuce or any other green vegetable, nor fruit, nor grape, nor meat...', Evagrius, whose stomach had been destroyed by such a diet, was compelled to give up bread and thereafter only ate cooked vegetables and drank barley or broad bean tea (Pallad. *Hist. Laus.* 38: 10–13; Butler 1898–1904 ed., II: 116–123; Mohrmann, Bartelink and Barchiesi 1974 eds: 198–203).

Only the sick and visitors were allowed cooked food, either vegetables or a broth, often of lentils. Nevertheless, the original rigorous diet of the Egyptian Desert Fathers could not be maintained for long. Sisoes had said to a brother: 'Eat your bread with salt and let it not be necessary to cook anything' (*PA* 1: 1). However, as early as the fourth century, the texts reveal the increasing frequency of cooked food. The heat of the sun (Postumianus describes a meal of vegetables 'cooked under the sun' which a holy monk had prepared for him – Sulp. Sev. *Dial.* I: 13; Halm 1866 ed.: 166–167) and 'firestones' were soon replaced by kitchens equipped with ovens, chimneys and bread ovens (Bridel 1993; 234, Fig. 125; 236–237, Figs 127–128), storerooms and a greater range of pots, pans and crockery.

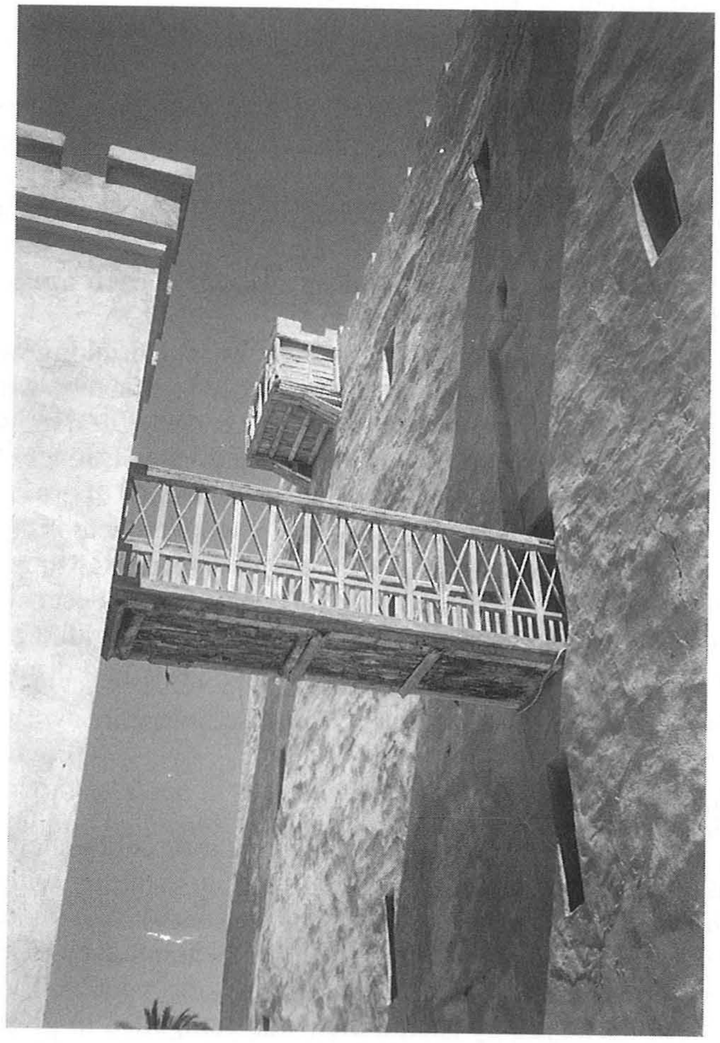

Fig. 10. Deir Abu Makar: Drawbridge enabling access from belfry on left to tower (Photo C. Dauphin).

The Later Monastic Diet (VIth–VIIth centuries)

Most of the hermitages excavated at Kellia date to the sixth and seventh centuries. Although simple hermitages continued to be built until the site was abandoned, others developed with the addition of rooms extending the original building to the south, or of new wings generally along the northern wall of the enclosure. Pisé architecture enabled numerous internal transformations and new room-groupings. Some hermitages could accommodate some twelve monks who lived in individual cells, but cooked and ate communally, sought refuge together from beduin raids in a tower entered on the first storey by a drawbridge (Fig. 10), and prayed together in churches (Fig. 11) which were part of the hermitage complex. Equipped with an altar and ambo, these churches allowed for the celebration of the Eucharist by a resident or travelling priest. Thus, monks were no longer compelled to trudge each week across the desert to one of the two ecclesiastical centres of the Kellia (Bridel 1993: 206–214).

Under the belated influence of the architecture of the cenobitic Pachomian monasteries of Middle and Upper Egypt, a new and more communal type of monastic life evolved in the Kellia. Resident monks and those from neighbouring complexes came together for communal meals in vast double halls flanked by a kitchen in selected hermitages. The floor of these halls was frequently decorated with a carpet painted on the very mortar, indicating the location of the common

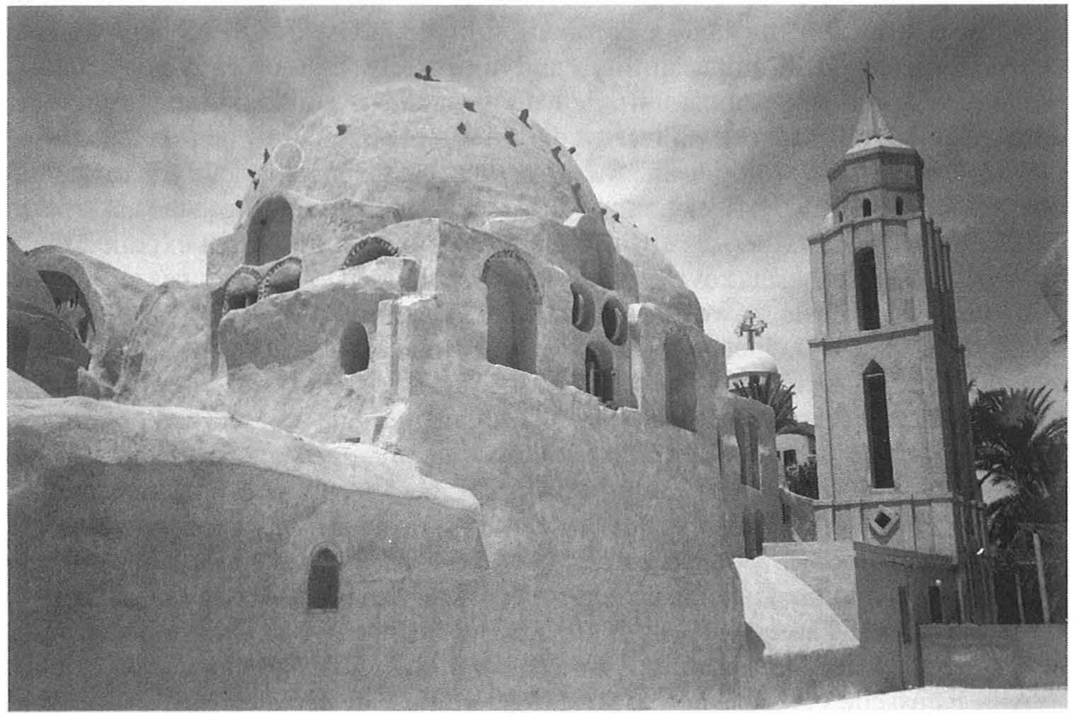

Fig. 11 Deir Baramus: main monastic church (Photo C. Dauphin)

table, or in the case of some hermitages, of three tables evidenced by three painted carpets in three aisles. Monastic life became communal to the extent that hermitages were grouped together forming hamlets barely ten metres apart from each other.

Concomitant with these changes, the variety of foods increased. Already in the fifth century, Cassian had listed 'the stems of leeks, cured bacon which had been fried, olives and small fish in brine' (*Inst.* 4: 22; *PL* 49: 182–83). The early anchorites had allowed themselves a drop of oil in their food. By the time of Cassian's sojourn in the Egyptian Desert, Egyptian cheese was copiously sprayed with oil (*Coll.* 19: 6; *PL* 49: 1137). Analysis of food retrieved in the Kellia excavations, confirmed by depictions on walls and pottery which was found in kitchens, storerooms and rubbish dumps, indicates six types of sweetwater fish,[13] bivalve shellfish, a few sea-urchins, gallinaceous birds and ovocaprines (eggshells of hens, ostriches and pigeons; sparrows, doves, ducks, cockerels, goats and gazelles), various fruits and vegetables (pomegranates, peaches, plums, dates, bananas, grapes and melons).[14] Moreover, thanks to dew, rain and irrigation, several edible bulbs – wild geranium, cabri horn, gazelle onions and several types of mushrooms prospered in that area then as now, as well as palm trees, pomegranate and vine.

Food and Sex

More importantly, attitude of mind towards food had also changed. The aim of desert ascetism was, through a domination of the senses, to reach the state of *apatheia* or physical impassibility, and ultimately that of *hesychia*, mental impassibility described as 'total silence of the heart and thoughts'. Foremost amongst the bodily senses (thirst, tiredness, sleep) that had to be repressed, was sexual desire. If, according to the theory of humours, sperm (notably in nocturnal emissions) was due to an over-abundance of humours resulting from the absorption of an excess of food, then ascetism required a drying-out diet that expelled these humours. Thus, Oribasius advised to eat lentils, salted olives, figs, grapes and prunes that loosen the bowels, as well as salt, particularly grilled (*sal frictum*) and used for salting fish, brine and vinegar which supposedly increased sweating. The only green vegetable recommended by Cassian (*Inst.* 4: 22; *PL* 49: 183) – leek – was thought by the doctors of Antiquity to induce desiccation. To this diet it was important to associate lack of sleep, for according to Oribasius (*Synopsis* 6: 4; Bussemaker and Daremberg, 1876 eds: 97–98), sleep wets. Thus, hermits prayed all night, seated or standing, and rested without ever lying down. Moreover, these desiccating foods had to be absorbed raw/cold in order to cool down innate heat. Thus, all foods deemed to bring on heat (such as wine and meat) were banned from the diet of the Egyptian Desert Fathers – a perfect example of the Levi-Straussian opposition between raw/cooked and nature/culture (Levi-Strauss 1965: 19–29).

Alix Rousselle (1983) who has investigated the link between abstinence from food and abstinence from sex in the second-fourth century period, has calculated the daily calorie intake of the desert hermits on the basis of Cassian's description

of a festive meal partaken of by two hermits meeting: for each, two loaves weighing together 327 gr, one drop of oil, five grilled chick-peas, three olives, two plums and one dry fig, totalling 1069 calories each (Rousselle 1983: 223). Against this she set the medium daily calory intake in pre-1957 Africa (1800 calories) and India (1850 calories).

In order for the denial of desire to be effective, the deliberate selection of certain foods was linked with the constant reduction of quantities ingested. Thus, after being sent for his schooling to Egypt and spending a few months with Anthony the Great, Hilarion (who was to introduce monasticism to Palestine) returned as a boy of fifteen to his native Gazan region and embarked on a solitary life of twenty-two years on the Egyptian model between sea and marshes. He ate after sunset only fifteen dry figs a day, and revived his weakened spirit with the juice of grass. Between the age of twenty-one and twenty-six, he lived on half a pint of lentils per day soaked in cold water, reducing his diet for the second half of that period to dry bread with salt and water. From the age of twenty-seven to thirty, he kept alive on wild herbs and raw roots of shrubs, and from thirty-one to thirty-five, on six ounces of barley bread and slightly cooked green vegetables without oil. His eyes weakened, a scabby eruption and kind of mange covered his skin. So, he added olive oil to his diet and maintained this rigid degree of abstinence devoid of fruit or vegetables until he was sixty-three. From sixty-four to eighty, he abstained from bread which he replaced by a mixture of meat and crushed vegetables. His food and drink together weighed scarcely five ounces. He never ate before sunset, not even on feast days or when he was seriously ill (Jer. *Vit. Hil.* 4–5 and 11; *PL* 23: 29–32; Liguori Ewald 1952 ed.: 248–249 and 251).

Over the centuries, the experience of the Desert Fathers taught them to deny their bodily senses more subtly. The Golden Rule was: whatever the frequency of meals, the quantity and quality of the food absorbed, it was necessary to 'take what was needed to sustain the body, but not enough to satiate it' (Cass. *Inst.* 5: 5–8; *PL* 49: 214–215).

Food and Faith

The austerity of the Egyptian monastic diet, however, must be viewed within the general context of the practices of monks whose paramount aim was to associate themselves with Christ's passion: 'Much labour is necessary; without labour, one cannot reach one's God, for *he* was crucified for us' (*A.* 265 and 438). A sixth century *apophtegmon* (*A.* 949) emphasizes the gulf separating early from late monasticism: 'On a Saturday Feast Day, the brothers ate in the church at Kellia. A dish of pulped vegetables [thus hot] was served and Helladios the monk started to cry. James asked him: 'Why do you cry, Father?'. He replied: 'Because the joy of the soul, that is of fasting, is over, replaced by the contentment of the body'.

Acknowledgements

This article is based on a paper given at the meeting on 'The Diet of Groups' on 11 May 2002 at Somerville College, University of Oxford, of the British Diet Group of which we are a member. Several comments of our colleagues of the Diet Group (for instance, *infra*, n.12) have been incorporated in our study of monastic diet in Late Antique Egypt which will be followed for comparative purposes by a presentation of the diet of the monks of Byzantine Palestine in a forthcoming issue of the *BAIAS*. Heartfelt thanks are due to the *hegumenoi* and monks of Deir Baramus and Deir al-Suriani in Wadi Natrun which we visited in April 1994 during Coptic Lent, and of Deir Abu Makar which exceptionally opened its gates to us in June 2002, for their warm welcome and the permission granted to us, a woman, to explore and photograph freely. We are grateful to the Principal and Fellows of Somerville College, Oxford, for their hospitality in July 2003 which enabled us to spend many happy and peaceful hours in the Lower Room of the Bodleian Library poring over the ancient sources.

Notes

1 On the influence of Greek philosophy, in particular Epictetus' view that only celibacy provides the freedom to devote one's mind entirely to the quest of the divine, Guillaumont 1979a: 59–60 and 66.

2 For the *Life of St Pachomius* in Coptic, Crum 1907, and 1913: 86–161, 183–88; Hoehne 1915; Munier 1920; and, Veilleux 1984. In Bohaïric, *S. Pachom. Vit. boh. script.* In Arabic, Crum, 1913: 171–93.

3 Also, Jer. *Monita S. Pachomii*; *PL* 23: 85–86.

4 Up to 1600 cells.

5 For Paul of Thebes, Jer. *Vit. S. Pauli*; *PL* 23: 17–28; for Anthony, Athanas. *Vit. S. Ant.*, *PG* 26: 835–975; for Pachomius, *S. Pachom. Vit. Graec.*; Halkin 1932 ed.; *supra*, n. 2. For Macarius the Great, Ruf. Aquil. *Hist. Monach.* 28; *PL* 21: 449–452 (*De Duobus Macariis, et Primo de Macario Aegyptio, seu seniore*). For Amoun, Ruf. Aquil. *Hist. Monach.* 30; *PL* 21: 455–457 (*De Ammone, Primo Nitriae Monacho*).

6 On Evagrius Ponticus (346–399), Festugière,1961: 24; Guillaumont 1979c. At the age of thirty-six, Evagrius interrupted a successful career as a preacher in Constantinople to nurture his soul in Nitria where he became a master in spiritual doctrine.

7 See Dauphin 1998, I: 251.

8 On John Cassian, see Chadwick 1924.

9 Following Regnault 1990: 261–262, the *Apophtegmata* are referred to as follows: *A.* = *SP (Les Sentences des Pères du Désert)*, collection alphabétique, Solesmes, 1981; *Am.* = *Apophtegmata* translated from the Coptic, in *SP*, 3e recueil, Solesmes, 1976: 139–94; *Arm.* = *Apophtegmata* translated from the Armenian, in *SP*, nouveau recueil, Solesmes, 1970: 253–74; *Bu.* = *Apophtegmata* translated from the Syriac, in *SP*, nouveau recueil, Solesmes, 1970: 219–51; *Ch.* = *Apophtegmata* translated from the Coptic, in *SP*, 3e recueil, Solesmes, 1986: 277–85; *Eth.* = *Apophtegmata* translated from the Ethiopian, in *SP*, nouveau recueil, Solesmes, 1970: 287–331; *N.* = *SP*, Série des anonymes, Solesmes-Bellefontaine, 1985; *PA* = *Apophtegmata* translated from the Latin, in *SP*, 3e recueil, Solesmes, 1970: 125–28.

10 Rutschowscaya and Bénazeth 2000: 205, Fig. 245 (cat. entry by C. Nauerth).

11 On Hor, Ruf. Aquil. *Hist. Monach.* 2, *PL* 21: 405–07; Theon, *Hist. Monach.* 6, *PL* 21: 409–10; Apollo, *Hist. Monach.* 7, *PL* 21: 410–20; Patermutius, *Hist. Monach.* 9, *PL* 21: 422–27.

12 Castor-oil, moreover, is toxic. If ingested, the acid produced by phytotoxins in castor seeds bites into the stomach lining which it ulcerates and ultimately perforates (Frémy and Frémy 1989 eds: 210c).

13 Identified by J. Draget of the Muséum d'Histoire Naturelle in Paris, these were predominantly *Alestes*, *Tilapia* and *Mugil* (Rassart-Debergh 1993: 104).

14 The range of ovocaprines, birds, fish, vegetables and fruit depicted on wall frescoes and pottery is discussed by Rassart-Debergh (1993: 104–05) who has provided illustrations for various examples: *Ovocaprines*: cross flanked by two rams. Wall painting. Kellia. Qouçoûr Hegeila 39/40, Room 2 (p. 157, Fig. 75); gazelle grazing. Wall painting. Kellia. Qouçoûr el-Izeila 19/20, vestibule 2. Coptic Museum, Cairo. Seventh century (p. 176, Fig. 86). *Hare*: leaping in field. Wall painting. Kellia. Qouçoûr er-Roubâiyat, kôm 233, Room 2. Coptic Museum, Cairo. Second half of seventh century (p. 174, Fig. 85) *Fish* and *tortoises*: seventh-century bowl, Kellia (p. 93, Fig. 37). *Fowl: crux gemmata* flanked by two yellow and crimson partridges. Wall painting. Kellia. Qouçoûr er-Roubaîyât, kôm 306, vestibule. Late seventh century (p. 61, Fig. 146); cross flanked by two ducks. Wall painting. Kellia. Qouçoûr el-Izeila, kôm 19/20, Room 2. Late sixth century (pp. 152–54, Figs 70/71–72). *Birds*: dove painted on sherd. Kellia (p. 127, Fig. 57). *Date-palm*: Wall painting. Kellia. Qouçoûr el-Izeila 19/20, vestibule 2 (p. 123, Fig. 52). *Pomegranates*: hanging from cross/Tree of Life. Wall painting. Kellia. Qouçoûr er-Roubâiyat, kôm 233, arch over vestibule. Second half of seventh century (p. 150, Fig. 67); hanging from cross: wall painting. Kellia. Qouçoûr er-Roubâiyat, kôm 306, Room 5. Coptic Museum, Cairo, Inv. No. 12558 (p. 150, Fig. 68), and Qoucoûr el-Izeila 19/20, oratory (p. 158, Fig. 76). *Vine*: leaf painted on sherd. Kellia. Qoucoûr el-Izeila (p. 116, Fig. 44); *cantharus and grapevine*. Wall painting on arch. Kellia. Qouçoûr er-Roubâiyat, kôm 306, Room 2,3 (p. 112, Fig. 53), and on floor, Qouçoûr el-Izeila 45, Room 4 (p. 126, Fig. 55). *Pomegranates and vine*: triumphant *crux gemmata* from which spring pomegranates, with vine trellis as background.Tiny crocodile, lion and hippopotamus – evil creatures – bow before the power of the cross. Kellia. Qouçoûr el-Izeila 90, Room 3. Coptic Museum, Cairo. Inv. No. 12550. Late seventh century (p. 170, Fig. 81).

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The *Habiru/ 'Apiru* and '*ibrim* and the Connection with I Samuel

SIMCHA SHALOM BROOKS

The issue of the identification of the 'Hebrews' with the *Habiru* is a complex subject and it has been discussed for over a century, ever since the discovery of that expression in the Amarna Letters. These letters provide rich evidence for the social and political history of Syria and Palestine in the fourteenth century BC. It is my intention in this article to propose a new perspective on the *Habiru* question in the light of I Samuel and to discuss the implications that this might have for early Iron Age society and the form of its development.

The Amarna letters were written by Abdi-Hepa, King of Jerusalem, around 1375 BC and they describe the *Habiru* forcing their way into Canaan. As a result of the similarities between the name *Habiru* and Hebrews, some scholars suggested that these were in fact the Israelite tribes in the process of conquest. But this suggestion was soon rejected because these *Habiru* were only mentioned in the correspondence from the King of Jerusalem and this contradicted the biblical passage in II Samuel 5:6–9 stating that David conquered Jerusalem early on in his reign, that is in about 1000 BC.

However, the *Habiru* also appear in additional ancient Near Eastern documents as a specific social component, that is as a people who were forced to flee their homeland or hometown through desperate circumstances, such as famine, heavy taxation, raids and prolonged wars, to seek their livelihood elsewhere. These new discoveries, therefore, led some scholars to reject any connection whatsoever between the *Habiru* and the Israelites. The *Habiru* appear in over 200 written documents covering much of the second millennium BC. The oldest document comes from Kaneš, the Assyrian trading centre in Anatolia in the nineteenth century BC, and the latest comes from an Egyptian source from the reign of Rameses IV round about 1166 to 1160 BC. Their geographical distribution covered most of the Near East. However, as a general Western Asiatic phenomenon they ceased to exist historically speaking by the end of the second millennium BC.

The Semitic root on which this expression is based may either be 'br (ע-ב-ר) or '*pr* (ע-פ-ר) depending on the correct reading of the consonant. If we decide to read it as *Habiru*, then it must be a derivation from the verb '*br* (ע ב ר) = meaning to pass or to trespass (for example, a border). This meaning would enforce the idea that *Habiru* means 'fugitive' or 'immigrant'. If we read it as in Akkadian '*piru*, then

it derives from the noun '*pr* (ע פ ר) = meaning dust. In that case '*piru* may have the meaning of 'low (social) standing'. It is also quite possible that the *Habiru*/ immigrants were regarded as being of low standing and this would explain the variation as it appears in the ancient documents.

It has been suggested that the *Habiru* came from a sedentary population and not from a nomadic background. Hence, they originated from two major sectors in ancient Near Eastern society: urban and tribal. There were, of course, individuals who fled from their homeland to neighbouring states, but the majority of them moved in small bands, often under the leadership of one man. However, regardless of whether they moved as individuals or in bands, they did form an intermediate social group between the tribal and the urban groups and as such may have been regarded as people of low standing, as suggested above.

The *Habiru* had neither tribal territory nor fields or herds, and so often they posed a threat to sedentary society. Documents from Mari and from other places in Babylonia, indicate that on occasion, during the course of the nineteenth to eighteenth centuries BC, the *Habiru* served as mercenaries in the armies of the various established kingdoms. Sometimes they served in the public or private sectors, which gave them the opportunity to re-integrate back into sedentary society.

It would seem, therefore, that the *Habiru* groups appeared in various places throughout the Western Asiatic region, though they had nothing necessarily in common with each other, except for their social status. Thus, it may be concluded that the *Habiru* phenomenon is to be explained as a process during which people were forced to flee from their own society and had to adapt to a new situation, as foreigners or immigrants, and that eventually they became re-integrated. It should be emphasized that once their status had been recognised, they were not apparently persecuted or extradited, but allowed to stay and assimilate into their new environment.

At this point I should like to turn to the main purpose of this paper, which is to understand the connection between the *Habiru* and the 'Hebrews' ('*ibrim*) in the First Book of Samuel. The term '*ibrim* appears seven times in I Samuel. Scholars have previously noted that I Samuel 14:21–22 is significant for the proper understanding of that expression. It reads as follows:

> As for the Hebrews ('*ibrim*) who had sided previously with the Philistines and gone up into their camp, they too turned to be with Israel under Saul and Jonathan; and when all the Israelites (*ish-yisrael*) who had been hiding in the hill country of Ephraim heard that the Philistines had fled, they too pursued them in the fighting.

Nadav Na'aman (1986:279) has claimed that this passage relates to two separate groups who joined the battle on the side of the victor; the Hebrews who served in the camp of the Philistines and the Israelites who hid themselves in Mount Ephraim (I Samuel 13:6). In that story two groups (Hebrews and Israelites) are clearly distinguished, making it clear that the difference was not merely a literary device in the text.

In other references the name 'Hebrews' is used by the Philistines, that is in I Samuel 4:6 and 9; 13:3 and 19; 14 :11; 29:3. The text deliberately emphasized the contempt that the Philistines had for the uprooted Hebrews who were in their service and they were clearly looked down upon as an inferior group. In any case, in five of the cases where this term was applied, the reference was directed towards the Israelites who were the rivals of the Philistines.

In considering the discussion of the *Habiru* so far, the application of the term to the Israelites may now be explained. In I Samuel 29: 3, David and his band are described by the Philistines as 'Hebrews'. Indeed Na'aman correctly claimed that the story of David and his band represents the best example in all the other ancient texts in regard to the detailed description of the whole *Habiru* process: how David rose to power, first serving in Saul's army, marrying the king's daughter and then later forced to flee from Saul when he sought to kill him. As a result, David became a fugitive until after Saul's death, when he was anointed by the people of Hebron and became re-integrated into Israelite society.

Although Na'aman's explanation is convincing there is still one issue which has been overlooked. We know about the story of David, but what about the identity of the Hebrews under David's leadership (as in I Samuel 29:3) and the Hebrews mentioned in the account of the battle of Michmash? In order to answer this question, we now need to set aside the textual sources, and turn to the more recent archaeological data from the Highlands of Palestine, where the Israelites settled in Pre-Monarchic times, data which has not been considered before in this specific context and which does shed much light on the socio-economic situation of the Israelites at that time.

First, I refer to a survey published by Finklestein (1989:43–74), though for the purpose of this paper I shall focus on only one aspect – that of the population in the central hill country during the Iron I Period (about 1200–1000 BC). The population is estimated to have been about 20,000 individuals at that time, whereas by the end of the eleventh century the population is estimated to have been about 55,000 individuals as a result of natural growth. Both figures refer to sedentary populations only. It is interesting that similar surveys have been carried out in other highland regions such as for example, Manasseh and Benjamin, and these have produced similar demographic patterns.

The apparent demographic growth brought about an intensification of agricultural productivity and this played a vital role in the transformation of the Israelite social structure. But there are also additional factors that should be taken into consideration, namely that character of the family house as remarkably portrayed in the archaeological data as discussed by Lawrence Stager (1985:1–35). Hence, the interior of a farm house built in the highlands was actually quite small (averaging at 50 square meters), and a house in the steppe region was larger but never more than 75 square meters. In both examples the group occupying the space could not have been larger than a nuclear family. The most interesting houses are the cluster of dwellings discovered at Raddana, 'Ai and Mashash, consisting of multi-family compounds, made up of two or three individual houses in each case. The component

houses were either completely independent or linked to one another by a number of common walls. However, each house had a separate entrance which was accessed through a shared courtyard. The dwellings themselves are sometimes separated one from the other by streets, paths or stone enclosures. It has been demonstrated that this residential pattern denotes the presence of the patriarchal family, that is a situation where descent and inheritance was determined according to patrilineal principle and patrilocal residence. Such a family set-up could have been used for three or more generations. Sometimes married brothers and their families continued to live in a single household, with the older brother becoming the head of the household following the father's death.

In ancient Israel the rule was that only sons were entitled to inheritance and the eldest son held the privileged position. He received a double share of the father's inheritance. The same appears in documents from various parts of Mesopotamia, for example in southern Babylonia (S. Dalley: personal communication). Except for the fact that 'the first born is the beginning of his father's strength' in Mesopotamia, the eldest son was also expected to be responsible for carrying out the funerary rites for the deceased father and for his ancestors. Not only would the eldest son have to pay for the expense of the funeral, but he would also be required to make offerings of food and drink. Therefore, if the eldest was to inherit an equal share (like his brothers), in effect he would have received less than them because of his extra funerary expenses. Hence, it is possible, therefore, that only movable chattels were shared amongst the sons, while ancestral land holdings were not divided up but given in their entirety to the eldest son. At the same time, one should remember, that the multi-family household did continue to grow, as it went through the various phases of the domestic cycle, and gradually became overcrowded.

What is apparent from this discussion is that because heads of household and their lineage members exercised complete rights over inheritance in landholdings, inequalities within the various groups in Israel would inevitably have developed long before the Monarchy. Hence, in this new economic situation, there was an unequal distribution of land and an unequal accumulation of property. Therefore, the sub-units of the group could no longer depend merely upon farming for their livelihood, but had to adapt to a bartering system in order to supply themselves with the necessities of life.

With the further growth of population, survival in the highlands probably became even more difficult. There was no chance to acquire land any longer and this may in itself have led ultimately to the growth of agricultural terracing in marginal lands – a hunger for land which reached its zenith by Monarchic times (Gibson 2001:113–146). In the early Iron Age the prime agricultural areas in the valleys and in the highlands were utilised to their fullest. Consequently the situation may have become so desperate that there was no alternative for many young unmarried males but to leave their homes and to look for opportunities elsewhere.

This overflow of desperate young men in search of new opportunities reminds us of the *Habiru* and might explain how so many Hebrews came to join the Philistine

army, as well as to explain where members of David's band came from, since it was stated: 'Everyone who was in distress and everyone who was in debt and everyone who was discontented gathered to him and he became captain over them...' (I Samuel 22: 2). It must be taken into consideration, however, that David himself having suffered misfortune came from a similar background; after all he was Jesse's eighth son (I Samuel 16: 10–11). Being the youngest in a family of eight, David had no hope of any inheritance of any significance (Shalom Brooks 1998).

This socio-economic situation might be considered as one of the prime reasons for the eventual emergence of the centralised rule, that of the Monarchy in ancient Israel. The new institution of the Monarchy offered a solution for the so many dispossessed young men who were recruited for the military (I Samuel 14: 52), and then ultimately into government and the priesthood. It is quite possible that these men were also rewarded with plots of land and vineyards following a period of good service, thus enabling them to become re-integrated once again into Israelite society. In a similar fashion David himself may have begun his career in Saul's army.

Later, when Saul realised that David had set his eye on the throne, he pursued him as a traitor, thus transforming David yet again into a fugitive/ Hebrew again. He subsequently joined the Philistines' army as a mercenary, as indicated in I Samuel 29:3. Na'aman claims (and I agree with him) that the Hebrews originated within Israelite society, just like all the other *Habiru* in the neighbouring societies of the Near East in the second millennium BC. While the other *Habiru* became integrated into new societies, the *Habiru* of the Israelite society managed to re-integrate back into the society from whence they came.

This in effect forged a form of ethnic link between the 'Israelites' on the one hand and the 'Hebrews' on the other.

Acknowledgements

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Ein Gedi Water Mills

GIDEON HADAS

Two ancient water mills are known from the oasis of Ein Gedi, on the western shore of the Dead Sea, at the eastern fringe of the Judean Desert. They were both powered by the water from the Ein Gedi spring. One is a free-standing structure and is visible next to the Ein Gedi spring and can be seen from afar by every tourist or explorer reaching the site. It was excavated and dated to the Mamluk period. The second mill was recently excavated and it has been dated to the Byzantine period. These excavations were part of an overall study of the ancient irrigation agriculture at the oasis of Ein Gedi, conducted by the author under the auspices of the Ein Gedi Archaeological Expedition of the Hebrew University of Jerusalem, led by Professor Yizhar Hirschfeld.

The Byzantine water mill

In January 1998 a water mill was investigated two-thirds of the way up the slope from Tel Goren to the spring of Ein Gedi. This mill is clearly of an earlier date than the Mamluk one, which stands close to the Ein Gedi spring (see below).The mill was first exposed when a dirt road was built in the area in the 1950s. It was marked on a map by Mazar as a 'Byzantine building' (Mazar *et al.*, 1966: 14, Fig. 2). Mazar partly excavated the structure, and Porath suggested it was a grave (Porath 1985:99, the 'Mausoleum'). In 1998 we undertook excavations within the building, clearing two rooms of debris, excavating beneath the floors and exposing parts of the water channel that fed the mill.

The mill is a square two-storied building (5 × 5 m), of which only the two rooms of the ground floor have survived, with walls preserved to a height of 2.5 m and with one opening leading to the south room. The main water channel passes next to the southern wall of the mill, with a sloping branch bringing the water into the mill (Fig. 1). The mill was built in two stages. The surrounding walls were built on a foundation layer made of small fieldstones that protrude between 0.10 – 0.20 m. Above it, the exterior walls of the mill were built of ashlars (Fig. 2), while the interior walls were built of fieldstones or rough-hewn stones. Subsequently the building was filled with soil and gravel as a foundation with a floor that was made of crushed travertine. During the second stage the western wall (W 602) was thickened with ashlar stones and a thin wall made of fieldstones (W 605) was built, cutting the building into two trapezoid rooms (Loci. 7307, 7316). There was no

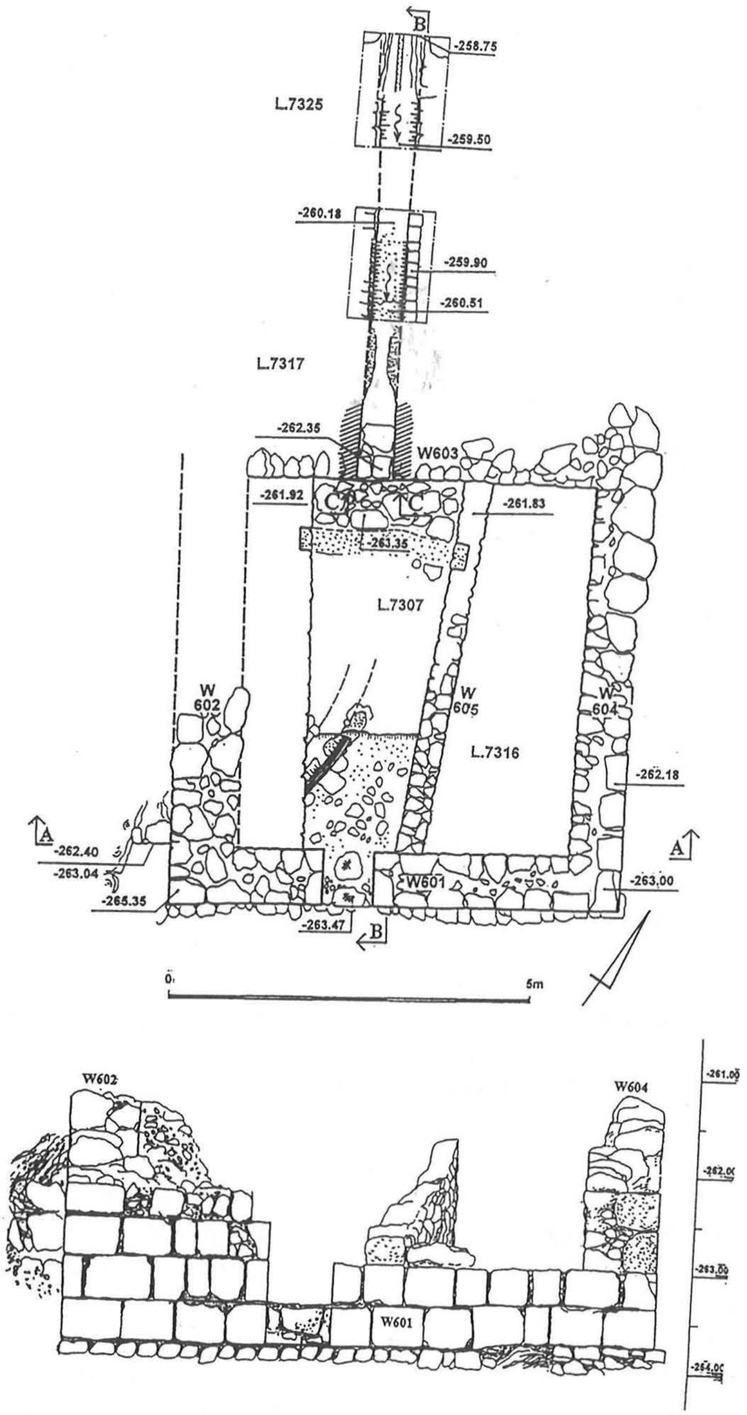


Fig. 1. The Byzantine mill: plan and the façade wall (W601).

Fig. 2. The Byzantine mill: general view from the east.

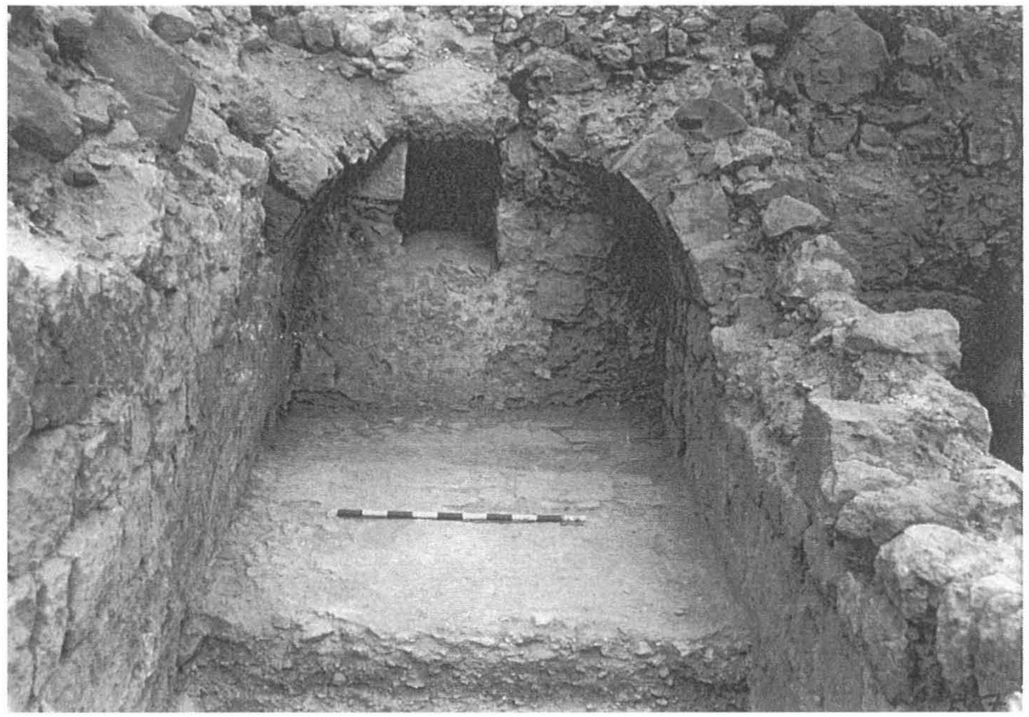
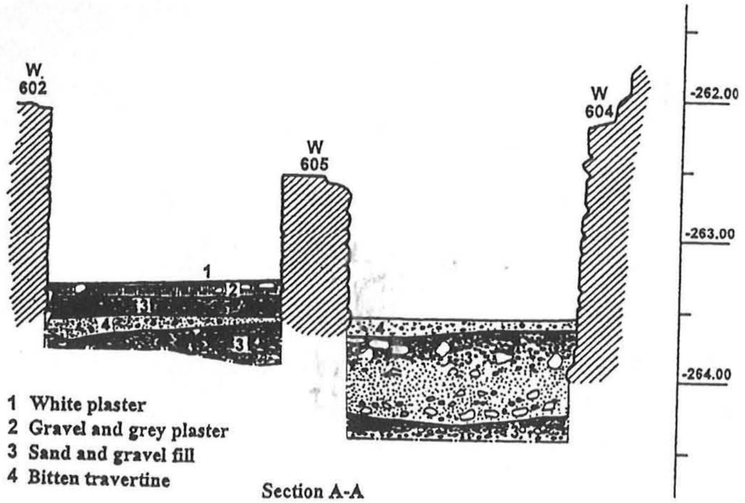


Fig. 3. The Byzantine mill: southern room (vault), 'window', and floor.



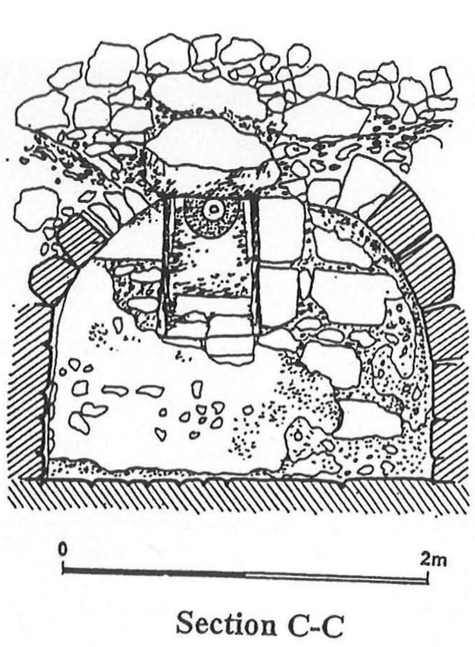


Fig. 4. The Byzantine mill: Sections A-A and C-C.

doorway into the northern room (7316). Its western wall is 1.40 m long, and at its top, 1.70 m above the floor, there is a ledge 0.10 m wide, that probably supported a wooden ceiling. Above it was the upper storey and the entrance to the northern room was probably by using a ladder. An opening 0.70 m wide is visible in the eastern wall. The remains of a vault may be seen above the tops of the southern and northern walls. Above the vault was the floor of the grinding room. Only a small part of the vault has survived (2 m long). Its height was 1.6 m above the floor and its diameter was about 1.7–1.9 m (Fig. 3). Beneath the vault, a 'window' was built into the western wall (0.60 × 0.70 m; Fig 4:C-C). It was also built of ashlar stones. The 'window' sill is off-centre in the wall and is located 0.70 m above the floor of the room. The plastered floor slopes to the east for 0.20 m towards the opening, which is 5 m distant from the 'window.' A shallow and wide depression

Fig. 5. The Byzantine mill: a groove and recess under the vault.

(0.02 × 0.20 m) in the floor, extends for one metre from the 'window' across the entire width of the room. It ends with a recess cut into the bottom of each wall (0.10 × 0.10 × 0.35 m). Above each recess there is a vertical groove built between the stones of the vault (0.10 m wide; Fig. 5).

The chute

Splitting off from the main Ein Gedi channel, a sloping channel extends towards the mill. This chute, (Hebrew: *miglash*) entered the mill through the so-called 'window'. Only two sections of it were revealed. It was a built and plastered open channel, U-shape in section (0.40 m wide) and six metres long (Fig. 6). The chute has a gradient of sixty degrees, with the upper part a gradient of forty five degrees. The height of the water column is 4.5 m above the floor. The chute was plastered

Fig. 6. The Byzantine mill: the chute.

with a hard gray hydraulic plaster which had a coat of travertine (1 mm thick). The plaster at the bottom is very hard and has a width of 25 mm. It contains many limestone grits, gravel inclusions (of about 5 mm in diameter) and also small flecks of charcoal (1–2 mm in diameter). The plaster was laid onto a foundation of small flat pebbles and stones. At a distance of about 1.8 m from the building, the chute was covered over with ashlar slabs with a gradient of 45 degrees, while at the 'window' sill there is a gradient of 26 degrees. Inside the 'window' (1.5 m) the chute was blocked by a 'cork'-like feature made of gray hydraulic plaster. It is 0.50 m long and has a conical orifice in its centre (0.20-0.30 m in diameter).

Dating

During the excavations we opened two squares, one within each room (1 m deep 2 m long). We found that the southern room had a double floor. The upper one was made of a thin white layer of white plaster (1–2 cm wide) above a lower gray hard plaster floor made of fist-size pebbles (5–7 cm). This gray layer also included limestone chips (1 × 1 cm) and flecks of charcoal (0.5 × 1 cm). The same gray plaster is seen in the interstices of the wall foundations beneath the floor and at the opening sill. Below the gray floor was a white sub-floor fill made of crushed travertine. At a depth of 0.50 m were the remains of an earlier channel crossing the room diagonally and passing under the southern wall (W602). This earlier channel was partly ruined and blocked by layers of travertine. Its width is 0.50 m and the eastern side of it has a length of 1.30 m (Figs. 4 and 7).

Only a few worn potsherds were found in the probes. Some of the charcoal from the gray plaster floor was sent for radiocarbon dating and yielded a date of 530-680 AD (Karmi and Segal 1999: RT 3044). Hence, the mill was apparently built at the end of the Byzantine period. This dating parallels the finds from the excavations in the Byzantine village of Ein Gedi.

A suggested reconstruction

The mill originally had two levels. The upper level, which is not extant, had a floor of wooden planks resting on the small ledge in the northern room, and a stone floor existed above the vault of the southern room and on it the grinding stones stood. It seems that the entrance to the mill was from the opening in the northern wall (W604).

The southern room served as the 'engine' room of the mill. A horizontal wheel located here was propelled by water that streamed through the seven metre long chute, connecting the main channel to the wheel. The water poured down the chute (0.40 m wide) to the conical-perforated 'cork', which served to increase the water power. From the 'cork' to the wheel the water probably flowed in a pipe which has not survived. The diameter of the wheel was about 0.90 m and it turned in an anti-clockwise direction, since the 'window' is located to the south of the centre of the western wall (Fig. 4).

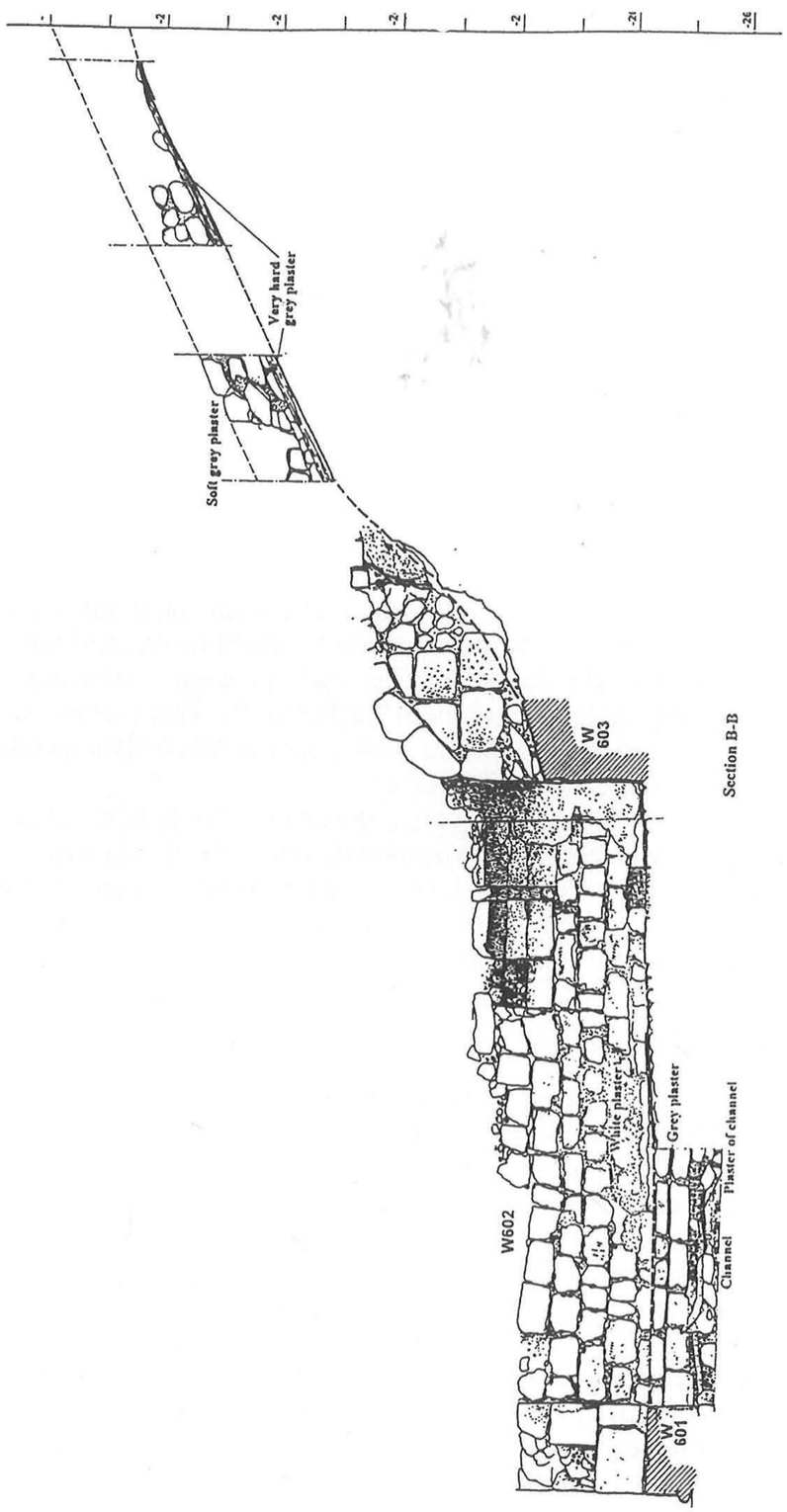


Fig. 7. The Byzantine mill: side view of section B-B.

The wheel was placed horizontally above two wooden beams. From its centre, a vertical shaft passed through an opening in the vaulted ceiling and was connected to the bottom of the upper stone (the runner), (Avitsur 1960, Plate ii:16). The lower end of the shaft was supported by the upper wooden beam. These beams were placed one above the other, while the lower one was laid in the shallow depression on the floor and anchored to the recesses in the sidewalls (Figs 1 and 7). Two long poles that passed through the vault grooves were attached to the upper beam. The poles were used to adjust the size of the grain and the clutch of the engine. By raising it, the riding-stone drew away from the lower one. By raising it even higher, the wheel moved away from the water jet and it would then stop turning.

From the wheel, the water continued to flow on the floor of the room, through the opening and out of the mill, where it re-joined the main water channel passing close to the southern wall (W602).

Discussion

Only two pieces of the basalt grinding stones were found: a small fragment among the debris in the southern room, and the second, larger fragment, 50 metres away downslope and below the mill. The second fragment was a part of the lower stone: oblong, with a curved side, and having an estimated diameter of 0.90 m. Grinding stones of water mills usually did not have a diameter over 0.92 m in the Roman Period (Williams-Thorpe 1988: 263).

The building was used as a chute mill. (Hebrew: *tahanat miglash*), and differs from the later type (Hebrew: *tahanat aruba*) or penstock mill (Avitsur 1960:27), which was distinguished by its chimney-like tower, as was the case with the Mamluk mill near the Ein Gedi spring (see below). It has been suggested that the earliest chute mills in the country are those known at Nahal Taninim, dated to the second half of the fourth century (Schiøler 1989: 138). However, recently the Taninim site was re-excavated and mills with vertical wheels were found there of Byzantine date (pers. comm: Sa'aid). Some chute mills have been investigated in Wadi Qelt and near Fatzael (Porath 1985: 39,82). The best preserved example is located close to the large bridge of 'Ein Qelt's water channel (Meshel and Amit 1985: III: 21) and it has been dated to the Early Islamic Period (Porath 1985: 81,86). While visiting there myself in May 2000, I noted the following differences: (1) The chute section is 0.25 × 0.25 m, which is smaller than that at Ein Gedi (=EG) (0.40 × 0.60 m); (2) The plaster here is reddish and contains crushed pottery, whereas at EG the plaster is only gray; (3) The distance here between the wooden beam and the wall is 0.80 m whereas at EG it is 1 m. Although the water column here is higher than at EG, its output must have been smaller because of the smaller size of the chute and the diameter of the grinding stone. In the case of the Ein Gedi mill, the gray and white plaster, the absence of red plaster mixed with crushed pottery, the diameter of the grinding stones and the results of the radiocarbon dating, all indicate that it is a Byzantine-period mill. However, it would appear that the building was

also used for a different purpose at a later date, since the grooves in the vault were blocked intentionally.

The Mamluk water mill

The mill is located at the upper end of the Ein Gedi oasis and is clearly visible from almost every direction. Built on top of a slope, it has the appearance of an oblong building with an attached tower; two corners of the building were erected on top of two large boulders. The building was constructed out of hewn stones, and most of it, including part of the roof, has survived. It contains an oblong room with only one entrance in the north-eastern wall, and the remains of a water-feeding channel attached to the top of the tower. The mill is of the *aruba* type with a horizontal wheel (Avitsur 1960: 32), a wheel cell, and a water channel that led the water out of the mill (Fig. 8).

De Saulcy (1851) depicted it on his map as the ruins of an Arab mill. The PEF explorers Conder and Kitchener (1875: 387), in the memoirs of the *Survey of Western Palestine*, wrote: 'At the spring [is] a modern ruined mill.' Porath excavated part of the mill fifteen years ago, reporting that the building was difficult to date and that it was probably only used for a short time in the sixteenth to seventeenth centuries and then was abandoned in the Ottoman period (seventeenth-eighteenth

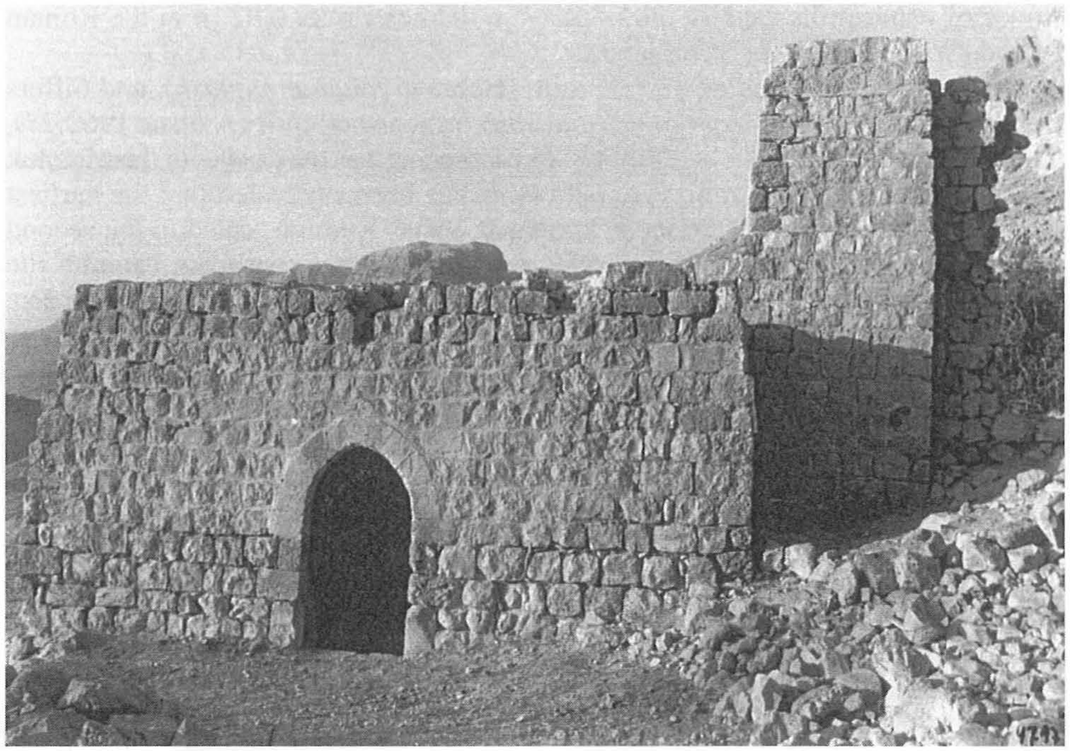
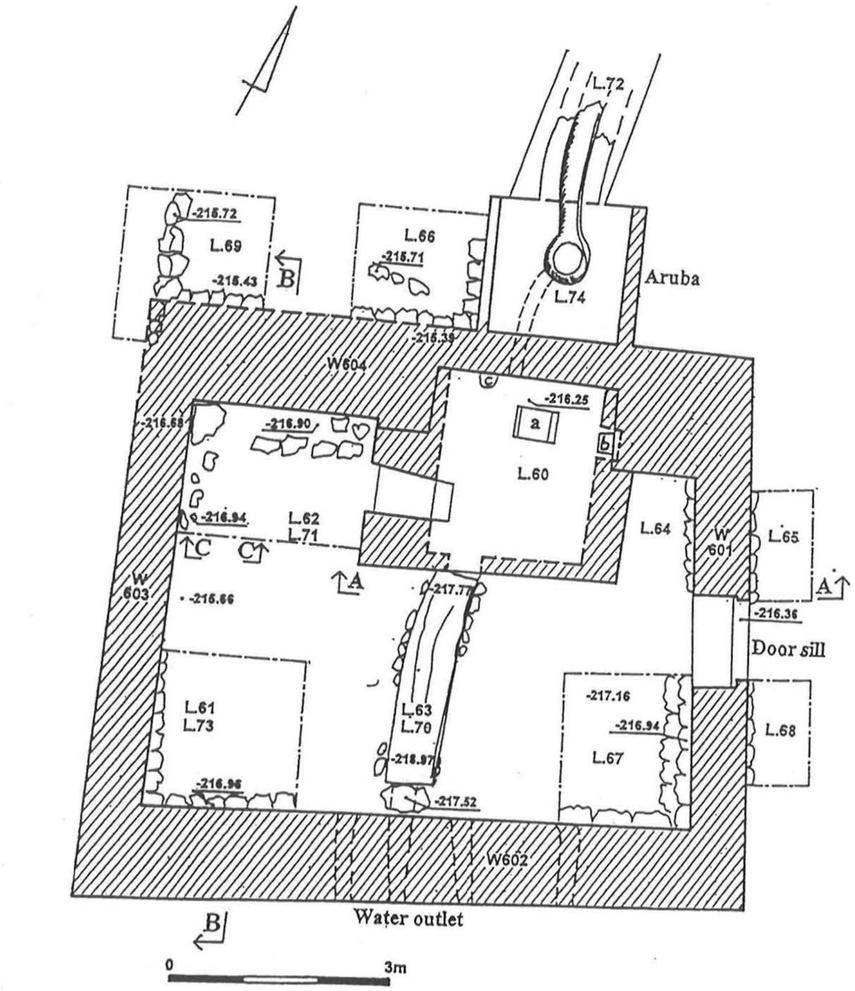


Fig. 8. The Mamluk mill: the northern façade, entrance and the *Aruba*.



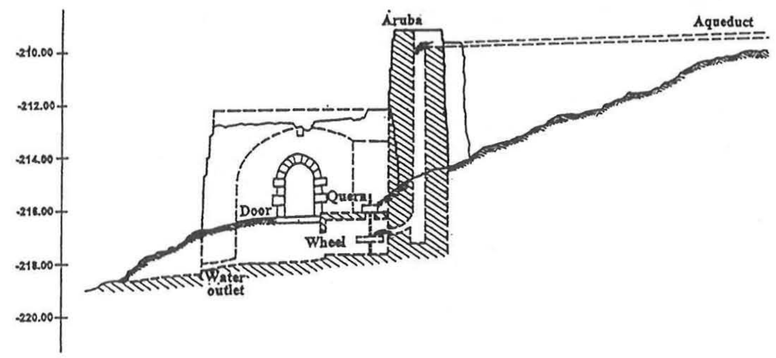


Fig. 9. The Mamluk mill: plan and reconstructed section.

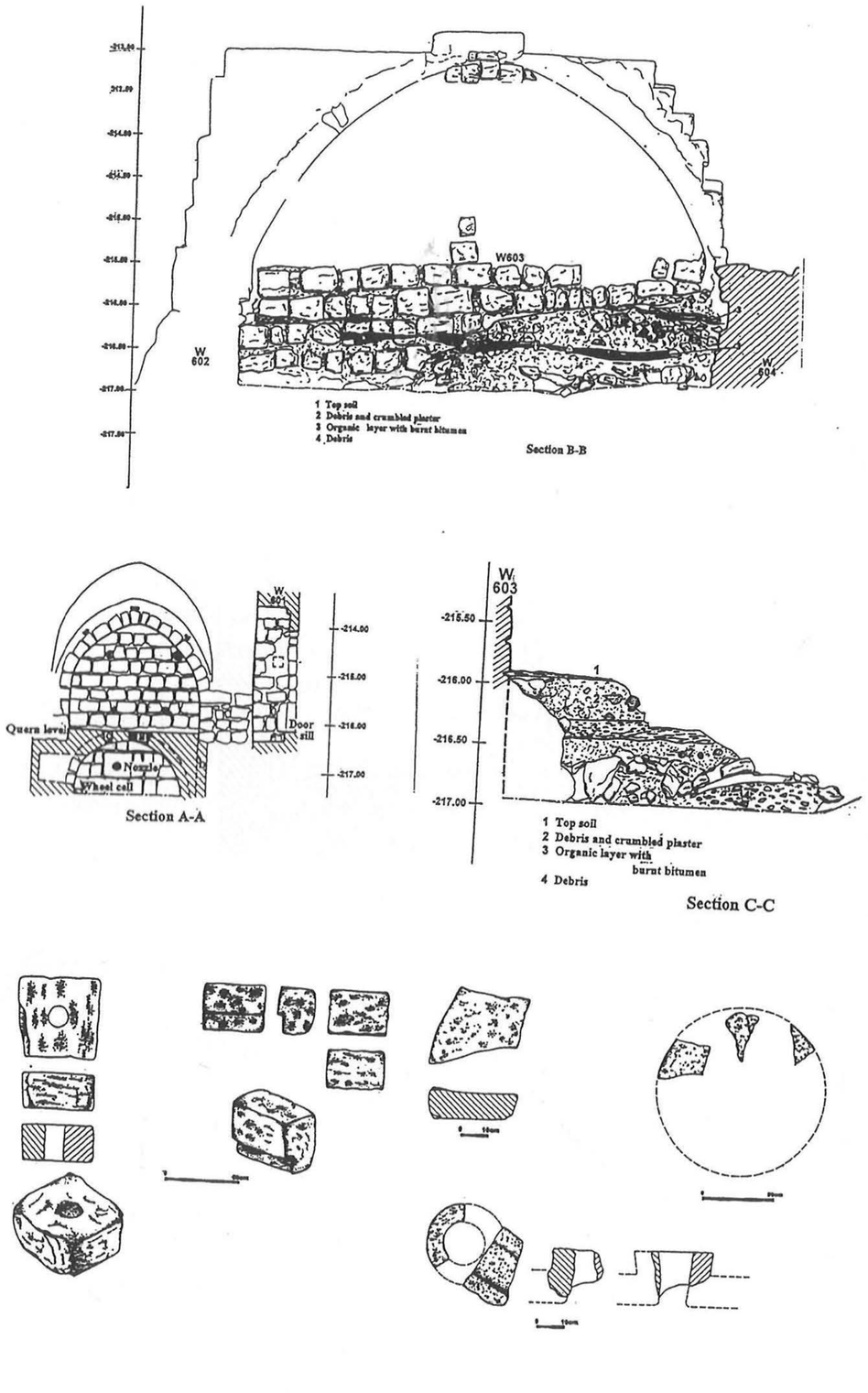


Fig. 10. The Mamluk mill: sections, building stones and parts of the grinding stones.

centuries). Above the original gravel and dirt floor, he found a level (10 cm thick) containing organic materials and a few Ottoman finds. He also mentioned the discovery of a few Turkish smoking pipes and burnt bitumen (Porath 1982: 87).

During the new excavations, we cleared the entire room, including the debris located in the southwestern corner (Loci 62/71). The two levels in the room were distinguished by ash, organic material and burnt bitumen. Between the levels were many pieces of plaster that had fallen from the ceiling and adjacent walls; no building stones were found (Figs 9 and 10).

We excavated squares (0.50 m beneath the surface) in each of the four corners of the room (Loci 64, 67, 71 and 73) and two squares outside the building, on either side of the entrance (Loci 65 and 68). Another two squares were opened between the *aruba* tower and the northwestern corner (Loci 66 and 69). The fills were all sieved.

The Building

The mill has three levels: the upper level contains the feeding channel that conveyed the spring water to the top of the *aruba* tower; the middle level contains one large room; and the lower level houses the wheel cell and the outlet channel. The building is fairly well preserved, especially the *aruba* tower and the wheel cell. The north-eastern and south-western walls (W601 and W603) rise up to form a pointed barrel-vaulted ceiling, half of which has collapsed. The room has three openings: an entrance door and two small openings, or skylights, on each side of the vault. A new opening was recently created as a result of the collapse of parts of the vault and the north-western wall. The room is trapezoidal (5.50 × 7 m) without right-angled corners. Its floor is cut in the centre by the outlet channel, running from the wheel cell to the south-eastern wall (W602). It is here that all the mill's activities were concentrated: the grinding area above the wheel cell, and the entrance door through which client farmers could bring their sacks of grain to be converted into flour. It seems that the miller lived in the back of this room. The frame of the door with its pointed arch, is 2.05 m high and 1.1 m wide. It was made of hewn blocks of soft stone that were larger in appearance than those used in the rest of the walls. The door was opened from the inside and was secured by a horizontal beam held within 0.10 × 0.10 m sockets in the walls.

The two skylights at the top of the vault are oblong and lie on their narrow sides. The exterior measurements are: 0.30 × 0.20 m and the interior measurements are: 0.30 × 0.40 m. The south-eastern face of the *aruba* tower is the inner face of W604, where the ceiling forms an arch with the façade of the tower. The arch (2.50 m in diameter and 1.5 m deep) was built above the wheel cell, creating an empty space by forming a cross vault with the main vault. This was the place where the grinding stones and hopper (the grain container) were kept and the miller lived. The hopper hung from above, on wooden beams inserted into the wall. This is corroborated by the four plastered holes measuring 0.15–0.10 m in diameter and 0.75–1.5 m deep (Fig. 10: Section A–A).

Part of the room's floor, made of stones and lime plaster, forms the roof of the wheel cell. The other part of the floor, toward W602, was made of wood. This floor, situated above the open-outlet channel, rested on three long wooden beams that lay on one side of the wheel cell ceiling. On its other side, the beams were inserted into three round plastered holes in the second stone layer of W602. These holes passed through the wall, to its exterior, probably holding beams that bore the load of a shed leaning on the outside of W602 and over the channel outlet.

The plan of the *aruba* tower is oblong (2.3 × 3.0 m), having the appearance of a very steep, narrow pyramid with a flat top. The spring water reached the top of the tower via the feeding channel and flowed through the *aruba*'s mouth. The collapsed mouth was built of hewn stones forming a circle (0.65 m in diameter). The *aruba* was thickly coated with pink lime plaster containing crushed potter inclusioned. At a later time, the level of the *aruba*'s mouth was raised by 0.35 m and its diameter was narrowed to 0.43 m at the feeding channel.

The wheel cell is small (2.5 × 2.8 m) and was built of soft, hewn stones. The entrance on the west side of the cell is 0.57 m wide and has only one step, measuring 0.30 m high. The north-western wall of the cell is the south-eastern face of the tower. A round hole in the wall is located 0.90 m above the floor; its diameter is 0.12–0.13 m and its depth is 0.53 m. This round hole is the *aruba*'s nozzle, from which a six metre head of water erupted and activated the wheel by hitting its vanes. After turning the wheel, the water continued to issue forth through the outlet channel of the mill, through an opening in W602. The cell has a vaulted ceiling with a maximal height of 1.24 m above the well-plastered floor. The floor slopes at an angle of 0.30 m toward the outlet channel opening. The roof, which is partly covered with flat stones mixed with lime cement, is the floor of the room which contained the quern. The ceiling has three openings. The largest (a) (0.43 × 0.42 m) is situated 0.50 m away from the face of the tower and 1.03 m from the spring of the right arch (Fig. 9). The second opening (b) (0.35 × 0.41 m) is positioned mostly in the ceiling and partly inside the spring of the arch. It continues down to floor of the cell, creating a long groove in the north-eastern wall. The third opening (c) (0.2 × 0.3 m) is attached to the tower's face. These openings connected the wheel cell (the engine room) with the machine room of the mill (the quern). Through the first opening (a), a vertical shaft passed from the turbine to the upper stone, called the runner (Hebrew: *rekhev*; Arabic: *hajar*). The second opening (b) served as a passageway for the flour's size regulator and clutch rod. The rod could raise and lower the runner on and off the lower grinding stone, the bedstone (Hebrew: *shekhev*; Arabic: *farsh*). The last opening (c) functioned as a passageway for the wheel stopper, a long rod that could be moved sideways to shut off or to move the water jet from the wheel. Total stoppage was achieved by blocking the feeding channel and by diverting the water away from it.

The source of the spring is located about 70 metres uphill from the mill. The last part of the feeding channel that was attached to the tower has survived for a length of 1.25 m. Remains of the foundation levels of the wall that carried the load of the channel exist further up the slope, about 14 metres from the tower to the large

boulders that are above it. The channel was built on top of a wall and was constructed of flat, oblong, and well-plastered, hewn stones lying on their narrow sides. The inner channel width is 0.22 m at the bottom and 0.25 m near the top and close to the mouth of the *aruba*, and 0.31 m wide about a metre upstream. The channel depth near that mouth is 0.70 m. While clearing these remains, we found many fragments of lime plaster as well as of a pink plaster with crushed pottery. The channel had two pink plaster levels in it. The wall at ground level was 1.70 m wide, but only 1 m wide at its top, at a height of 3 m above the ground level. It would appear that the wall which bore the weight of the channel had an opening resembling a bridge.

The outlet channel conveyed the water from an opening in the wheel cell wall (0.50 m wide, 0.67 m high) through the centre of the room and beneath its wooden floor. The channel is 3.3 m long and 0.50 m wide, and was built of fieldstones. The bottom two metres of the channel has a 0.20 × 0.20 m groove which was hewn for 0.10 m into the rock which forms the top of another boulder beneath it. The channel continues for a length of 0.60 m. and eventually descends for 0.80 m, terminating outside W602 as a pink-plastered trapezoidal opening. The outlet opening is 0.30 m high, its width at the top is 0.25 m, but it is only 0.2 m wide at the bottom.

Methods of Construction

It is very clear that the mill was built in two stages. In the first, the builders created a flat level whilst laying the foundation walls of W602 and W603 that connect up to large boulders. These walls were made of layers of large, roughly hewn stones. The area was subsequently levelled with gravel and covered with a yellowish clay taken from a nearby quarry. In some places, the builders created a floor made of mud plaster and fieldstones. The foundation walls are thicker than the superstructural walls, and protrude on the interior and exterior of the wall by 0.60 m. The upper courses of the walls were made of hewn stones, while those parts that were covered up are of uneven fieldstones. In some walls, foundations protruded by 0.15 m (Loci 66 and 69). The *aruba* tower was then eventually built in tapered fashion: every three to four courses of stones were set back by a few centimetres, thereby saving building materials and increasing the strength and stability of the tower. Only the side of the tower facing the feeding channel, and the lower part of the tower facing the interior of the room and the wheel cell, were completely flat. The same method was used when building the south-eastern wall (W602), which was built on the very edge of the steep slope.

The next stage was the construction of the wheel cell, which was built of larger hewn stones. Following this an oblong frame made of four courses of small hewn stones was built. This is the ground plan of the mill. Subsequently the short sidewalls (W601 and W603) with skylights were erected on top of each side; these windows housed the main beam of the scaffolding on which the vault was built. The vault was built with arches along walls W602 and W604; these were constructed of oblong hewn stones laid on their long sides. The spaces between them were filled

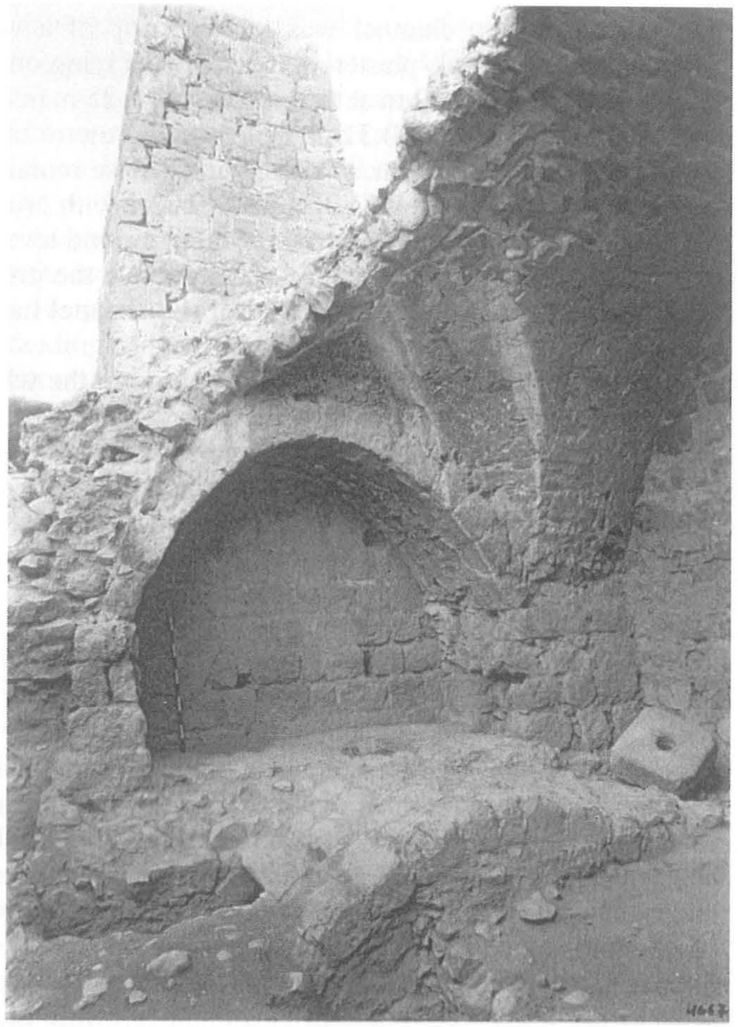


Fig. 11. The Mamluk mill: inside the mill, the grinding place and the *Aruba*.

with fieldstones, also resting on their narrow sides, and with large quantities of lime plaster. A cross vault was built above the quern (Fig. 11). This type of building differs in constructional details from the traditional Palestinian dwelling built in the last century (Hirschfeld 1995: 126–130).

Two types of stone were used in the construction of the walls: hewn stones and fieldstones. The hewn ones were made of a soft local limestone that could easily be cut and was quarried nearby. The hard stones were of a dolomite limestone, which is hard to cut, and were used for facing the outer walls of the mill, the tower and the feeding channel. Stones that had to be cut with precision, such as those used in the door-frame and for the wheel cell, were made of a soft travertine rock, which was also used at the end of each stone course in the outer face of the mill's walls.

The core of the wall consisted of a fill of small fieldstones and mud mortar. A geological analysis of the soft building stone shows that it consists of local breccia fragments composed primarily of limestone with some dolomite and an autogenic calcite matrix (Hodas 2002: 135: Ills. 95: 4–6). This rock is similar to the rock outcrops at Ein Feshkha (Mor 1987: 50–54). While clearing the mill, we found two hewn stones that did not seem to belong to any nearby structure: one had a slot for a door-frame, and the other was perforated like the one used as a nozzle in the wheel cell (Fig. 10). This stone (0.54 × 0.54 × 0.24 m, 0.12 m orifice diameter) could also fit the opening on top of the wheel cell.

The fill in one crevice of W603 was composed of mud plaster, ashes and very small pieces of charcoal, but, in between the cracks of the door's bar socket, the fill consisted of lime and mud cement. Strong lime and mud plaster was used on the outer faces of the walls; ash and mud cement was also used on the interior walls to prevent humidity. It would appear that the mill began to deteriorate only once rainwater began penetrating the walls, with the disintegration of the mud core seeping through the interstices in the lower courses of the exterior walls. Lime and mud plaster is still evident between the rest of the stone courses.

The Finds

The quern: Five fragments of grinding stones were found made of imported black basalt. Among them was a piece of bedstone (height: 0.12 m) with a curved outer rim, a smooth upper face and an uneven bottom. Judging by these pieces, it is estimated that the quern's diameter was about 1.2 m (Fig. 10). Another piece of the

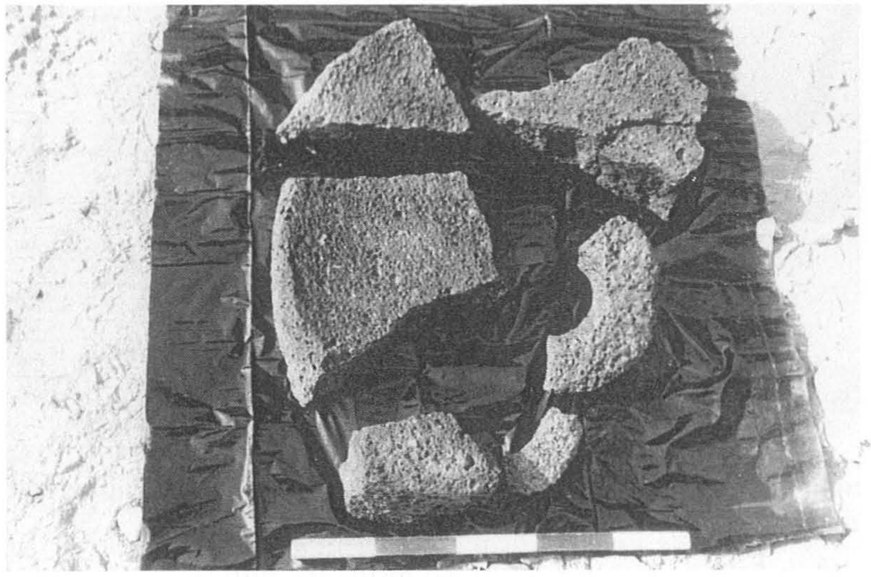


Fig. 12. The Mamluk mill: broken parts of grinding stones.

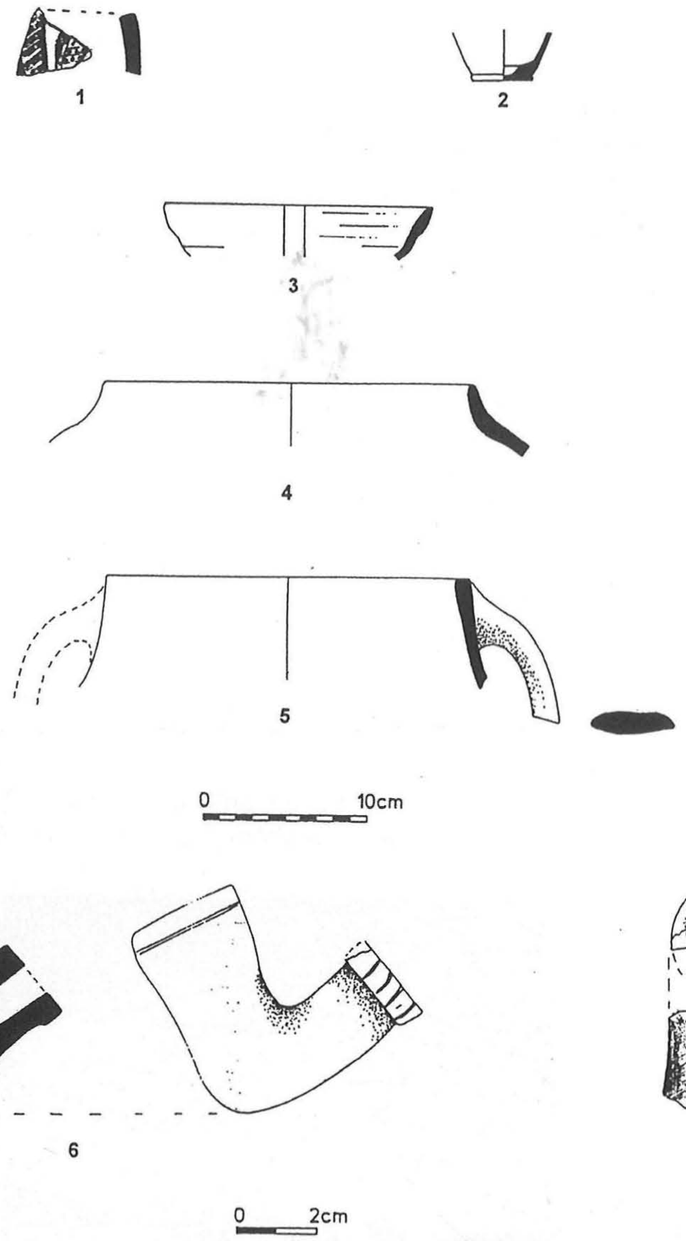


Fig. 13. The Mamluk mill: the finds.

same height and part of a rim with a diameter of about 0.12 m survived from one of the runners (Fig.12).

Pottery: Very few potsherds were found inside the mill (Loci 61, 62, and in the probe squares – Loci 65, 68, 64, 67, 71, 73, 66 and 69). It was only in Locus 62, on top of the lower ash level, that some Mamluk sherds were found (Fig. 13: 4–5). The

pottery was found on a bench made of large fieldstones located parallel to W604 and about 0.50 m above the occupational level. A sterile, homogeneous layer of yellowish clay filled with gravel covered the bench. Below, in Locus 71, a small fragment of a green Mamluk water jug was also found (Fig. 13:1 in Tushingham 1985: Fig. 43:7). A few potsherds, such as the rim of an Iron Age plate (Locus 62, Fig. 13:3) and part of a Fine Byzantine Ware juglet (Locus 65, Fig. 13:2) were found in the other squares. The rest consisted of weathered sherds from the Roman and Byzantine periods.

Bitumen: The outlet channel was found half full of burnt bitumen (pure asphalt from the nearby Dead Sea). We could also discern the burnt line of bitumen, that was mentioned by Porath, along walls of the room and inside the wheel cell. We removed at least 50 litres of asphalt from the channel. This is solid material: only the upper parts were burnt, and the rest was only slightly melted. It contained carbonized plants, wood and reeds (Fig. 14). A radiocarbon test unfortunately proved unreliable because the material had been contaminated.

Smoking pipe: A complete smoking pipe made of stone was found on the burnt layer of the bitumen (Fig. 13:6). Porath dated the mill according to the Turkish pipes

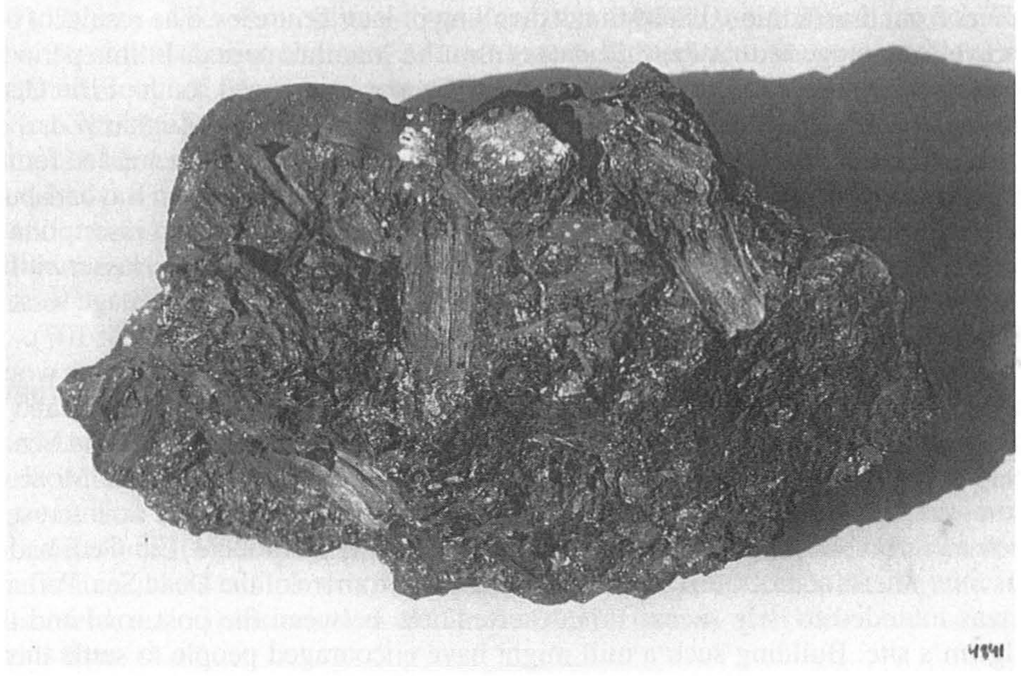


Fig. 14. The Mamluk mill: plant imprints in the bitumen.

which he found on the floor of the mill (pers. comm.: Porath). Outside the mill, part of a well-levigated clay pipe with a brown gloss was found (Fig. 13:7).

Discussion

It has been conjectured that this was a sugarcane mill, similar to the ones known from Jericho and el-Safi. This mill, however, which was powered by water, was only built for grinding grain. This is quite clear from the archaeological finds, as well as from what was not found: not a single potsherd of the typical sugar-mould pot was found, nor were there large pounding stones or a single building with pools in which sugar production could have taken place (Biran and Shoham 1986: 199–207). It would appear that the mill did not function for very long. At some point in time it was even used to store asphalt. When a fire erupted, the asphalt was burnt, and melted asphalt also flowed into the lower parts of the building, to the wheel cell and even outside through the opening of the outlet channel in W602. Imprints of canes in the soft asphalt testify that, at the time of the fire, cane was growing outside the mill. The line of burnt asphalt on the mill's walls marks the occupational level from that time. The absence of any building stones amongst the debris, suggests that the building was later used for other purposes.

Dating

The shape of the building and its methods of construction suggest that this structure differs from the traditional Palestinian dwelling of later centuries. The results of our excavations suggests that the mill dates from the Mamluk period. In this period a branch of the post road leading from Cairo to Damascus, passed south of Ein Gedi, running from Gaza to al-Kerak (via Halil [Hebron], Zuweira, and Zughar [Zoar, el-Safi]) (Poper 1955: Fig. 13; Thorau 1987: 136). This was probably the reason for the building of the Lower Zohar fort. At the end of the thirteenth century, Baybars built Makam Nebi Musa in the northern Judean Desert, as is clear from an inscription at the site (Mayer 1933: 27–33). In 1306 (AH706), 'Abed al-Malik al-Nasser built a water mill in the Artas village (Yadin 1964: 103). In Bani Na'aim, a village west of Ein Gedi, Barquq rebuilt Makam Nebi Lut in 1410 (AH813; Yadin 1964: 107).

Why would someone build a mill in such a small village as Ein Gedi? This would indeed be a very expensive investment (Rogan 1995: 753), and the landscape of Ein Gedi is not at all like the grain plateau of Moab, to the east of the Dead Sea. It is unlikely that grain would have been sent to this mill from Hebron or Moab. It seems that only the central government at that time would have had an interest in such an installation and the means to erect it. The only advantage Ein Gedi had at this time was its source of fresh water, on the western shore of the Dead Sea. Perhaps it was intended to help secure this deserted area between the post road and the pilgrim's site. Building such a mill might have encouraged people to settle there. While excavating close to the synagogue in the ancient village of Ein Gedi, a disturbed Mamluk level was discovered above the Byzantine one, containing a good

deal of pottery and some coins from the fourteenth century (Hadas, in preparation). In the current excavations in the village by Hirschfeld (1996: 202), most of the Mamluk coins also date to this century.

The region is known to have flourished in the Ayyubid-Mamluk period, as well as to the east of the Jordan River. Surveys in the Kufringa region, west of 'Ajlun, in TransJordan, brought to light twenty water mills; two of them were built in tapered fashion. The surveyor states that he found nothing inside or outside the mills that would help him to date these structures, but, nevertheless, he does suggest that they are of Mamluk date (Greene 1995: 761). Twenty-nine *aruba* mills were also counted near al-Salt, and most of them were connected with large ancient irrigation systems. The ancient mill towers were built of hewn stones, while those from the nineteenth century were of fieldstones (Rogan 1995: 755). One may conclude that the Mamluk Empire instigated the construction of these mills, not private citizens. The Mamluk sultans, called *Burjee*, had a great need to secure grain for their military operations as well as to earn money from the prosperous sugar industry (Rogan 1995: 756). Grain supply was essential for any army. Hence, water mills of the Roman army were situated near Hadrian's Wall in England, and in Germany as well (Hill 1984: 193). Six water mills were surveyed in Wadi al-Arab, west of Irbid. One of them has the same plan as the mill at Ein Gedi, with a hall attached to a tower (Gardiner and McQuitty 1987: 25, Fig. 1). As the travertine sediment there had reached two metres in height, it was suggested that the mill there was built only 200 years ago (Gardiner and McQuitty 1987: 28). The Wadi Hisban mills, by comparison to those in Oman, have been dated to the ninth century (McQuitty 1995: 750). Twenty-two water mills are distributed over the Deh Luran plains in southwest Iran. The mills there are known as a 'drop tower', similar to the *aruba*. They are scattered along a 6.5 km canal and are dated from the Sassanian to the Early Islamic periods AD 226–800) (Neely 1974: 33). Some mills have been found in Oman next to the 30 km length canal of the city of Sohar. The system was dated by the pottery found in the mills to the ninth–tenth centuries AD (Costa and Wilkinson 1987: 55–56). Avitsur (1960, 189–190) wrote, in his survey of mills, that the Ein Gedi mill had to post-date the Byzantine period, and is most likely from the Crusader period.

Summary

The Mamluk water mill at Ein Gedi is of the *aruba*-type, with a horizontal wheel. Many mills of this type exist in the country and probably date to the Mamluk period. It seems that the mill was built in the fourteenth century based on the following considerations: (1) the pottery found in the mill and the coins found at the oasis of Ein Gedi; (2) the Mamluk strata in the village, currently being excavated by Yizhar Hirschfeld; and (3) historical evidence about government activities in the country at this time.

The production of traditional water mills in Israel of the first half of the twentieth century, was about 5–7.5 kg. per 1 hp/hour with chute mills while *aruba* mills

produced 7–11 kg per hp/hour (Avitsur 1960: 51–52), and one mill can serve one village. Hand mills were common in Palestine and needed much effort, every night, for 3–5 working hours (*ibid*: 58).

Hydrocarbonates from cereal grains are the main 'fuel' in our food when it is turned into glucose (Moritz 1958: xix). The best way to consume it is by grinding it to flour to make bread. Grinding stones have been known since early times and were powered by human hands. In the Byzantine village of Ein Gedi, a chute mill was built, probably by the community or by a rich individual, since grinding by waterpower was known in the Roman Period (Vitruvius x: v: 2). But the Mamluk ruler built a more technically advanced *aruba* mill which doubled the production capability.

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Iron Age Burial Caves in Jerusalem and its Vicinity

AMOS KLONER

During the course of modern development and construction work in Jerusalem and its vicinity, a number of burial caves dating from the late Iron Age were discovered. These burial caves were rock-cut in the usual manner of this period, with a single rectangular chamber which was most probably used for family interment. The layout of these burial places and their features help to shed light on the burial practices that were prevalent in the Jerusalem region during the eighth to sixth centuries BC.[1]

Burial Cave North of Jerusalem, in the Ma'alot Dafnah Neighborhood, (Karl Netter St. near Shim'on HaZadiq St. (Map Ref. 13355: 17135).[2]

The cave consists of a single room (measuring 2.8 × 2.7 m) with the entrance in the southern wall (Fig. 1). The sealing stone was found *in situ* in the square entrance: 0.56 m high and 0.55 m wide (Fig. 2). In the centre of the room is a sunken standing pit (1.2 × 1 m) which was to enable persons entering the cave to stand upright. From the entrance three steps led down to the standing pit. Each step has a width of 0.26–0.30 m; the lower and upper steps are 0.40 m high, whereas the middle step is 0.20 m high (Fig. 3). Along the three walls of the chamber there are bench-like burial spaces that encompass the standing pit on its sides. The western bench has a length of 1.8 m and has a width of about 0.80 m in the centre. The bench along the northern wall measures 2.1 m × 0.84 m, and the eastern one 2.05 m × 0.80 m. The benches are located between 0.90 m to 1.04 m above the floor of the standing pit. Although the general plan of the room is square, none of the walls are actually straight. The southern wall has a length of 2.2 m, while the eastern, northern and western walls each measure 2.5 m. The northeastern corner of the chamber was rounded, not squared and the ceiling is located 0.88 m above the level of the benches and 1.78 m above the bottom of the standing pit.

In the northwestern corner of the chamber where two of the benches meet, there is a rock-cut repository pit of triangular shape (0.30 m deep) which was used for bones removed from the benches (Figs. 4–5). Repository pits cut into the tops of benches are a common feature of burial caves dating from the Iron Age (Eshel, 1987: 1–17). The burial process during this period entailed two stages: the deceased was laid out on the bench, and, after the flesh had decomposed, the bones were

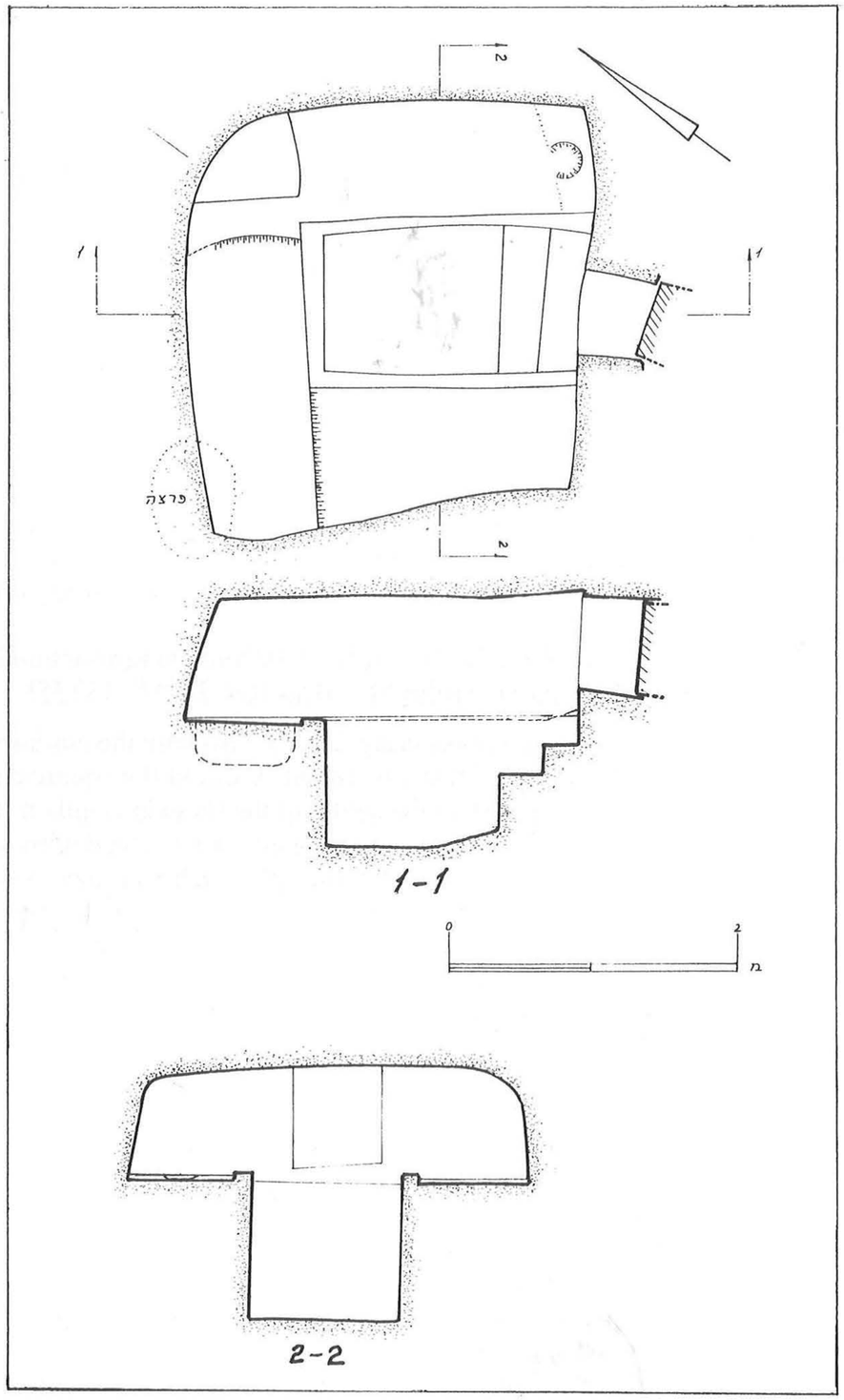

Fig. 1. Plan and sections of the burial cave.

Fig. 2. Blocking stone of cave still *in situ*.

subsequently removed to a repository pit (Eshel, 1987: 1–17) either located beneath the benches (Barkay *et al*, 1994: 119–127; Barkay and Kloner, 1986: 22–39; Barkay, 1986: 23–27; Kloner, 1985: 9–15), or alternatively placed in a pile on the floor of the cave (Kloner and Davis 1994: 107–110). The removal of the bones was apparently carried out by family members when making room for newly deceased relatives. It would appear that in the Iron Age the human bones were collected well in advance so as to allow room for additional burials, markedly different from the twelve months' practice allowed during Second Temple times.

A low, rock-cut edging (6–10 cm wide and 4–5 cm high) was left along the outer sides of the benches surrounding the standing pit, and served to keep bones and funerary objects from falling off. Raised parapets of this sort are typical of burial caves dating from the eighth and seventh centuries BC in Jerusalem and at several other places in the Judean Hills (Eshel and Kloner, 1991: n.7; Barkay *et al.*, 1975:

Fig. 3. Steps leading into the burial cave.

71–76; Barkay and Kloner, 1986: 22–39; Kloner, 1985: 9–15). On the eastern bench, at the narrow end close to the entrance to the tomb chamber, is a stone 'cushion' with a recess for the head of the deceased. Headrests of this sort are also characteristic of Iron Age burial caves from Jerusalem and its vicinity (Eshel and Kloner, 1991). There are no other headrests in the cave. The rounded recess is 0.24 m across and 5 cm deep, and the surface is elevated to a height of 1 cm on either side. This 'step' marked the outline of the shoulders of the corpse when the head was placed in the recess. From the evidence of the skeletal remains found in the cave, burial appears to have been as follows: parts of skulls facing the entrance were found on the two parallel benches. On the third bench, opposite the entrance, the remains of a skull were located at the western end. The two skeletons found on the benches, abutting the repository in the corner, were placed with their feet towards the repository. In the cave there were the partial remains of six individuals:

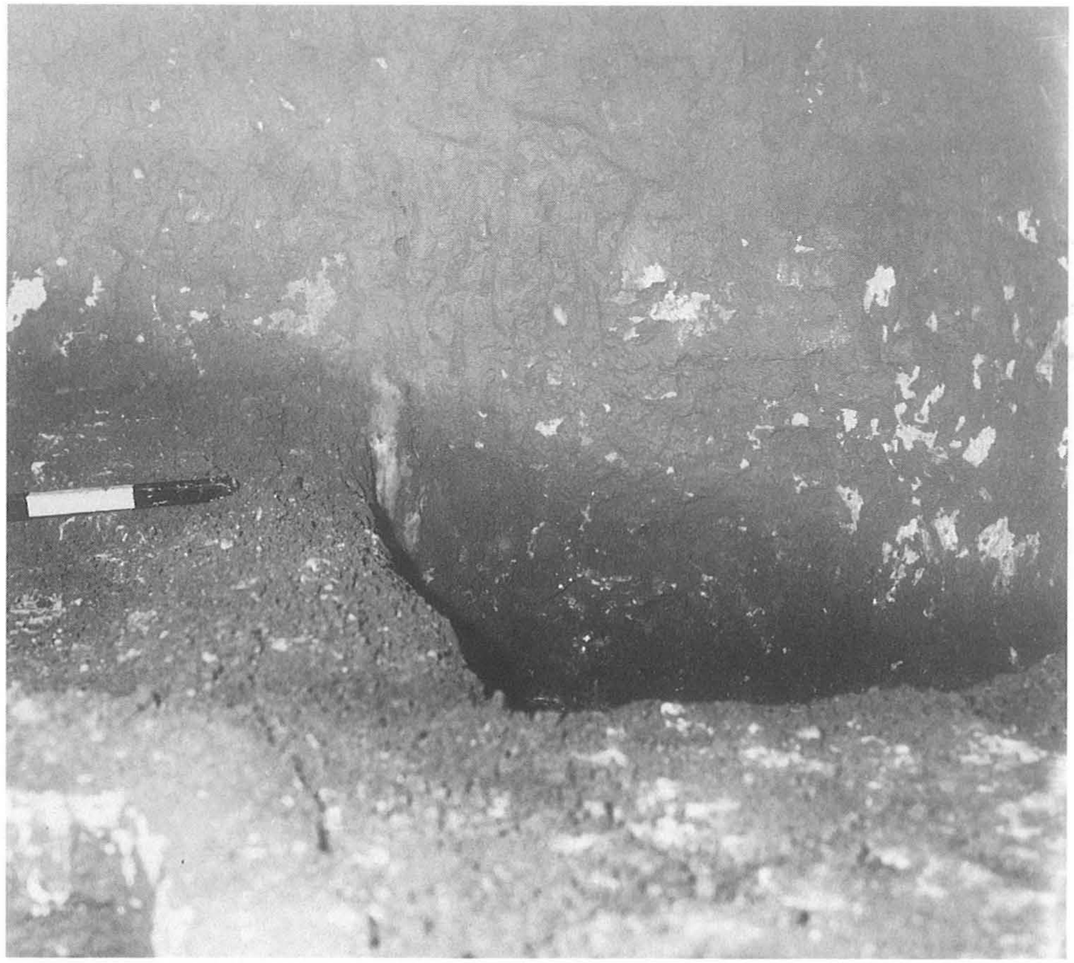

Fig. 4. Repository pit and (lower left) the edging for the two benches.

three adults (a male, a female, and one person of indeterminate sex), a youth of sixteen to nineteen years old, a child of four to five years, and an infant of one to two years.[3] The bones were in a state of advanced deterioration: the skull on the western bench crumbled when being removed. Three of the skeletal remains came from the benches and three from the repository pit. The burials had been damaged by persons who had preceded the arrival of archaeologists at the site.

Only six potsherds were found in the cave and these proved difficult to date. They may not have belonged to the original burial and were perhaps left there by the people who entered the tomb at a later period. However, the cave had not been robbed and the crumbling bone material was still found *in situ*. Although artefacts to date the burial cave were lacking, its appearance and its features point to a date in the late Iron Age.

Fig. 5. The eastern bench and a step leading into the standing pit.

Burial Cave at Giv'at Ram, in the President's Garden (at the western limit of the pine trees in the Sacher Park, 30 m to the North-east of the north-eastern fence of the Knesset Grounds: Map Refs. 16955: 13182).[4]

The cave comprises a burial chamber and a side cell on its northern side, with the entrance on the east side in a straight and vertically hewn scarp (Fig. 6). The length of the burial chamber, from east to west, is 3.16–3.4 m; and the width, from north to south is 2.8–3.25 m. The corners do not form right angles and there is a slight curvature along the sides. Three benches (0.80 m to 1.2 m wide) are situated around the standing pit. The ceiling is located about 0.80–0.90 m above the tops of the bench. Since the standing pit was found partially filled with accumulated soil, its exact depth could not be ascertained; we may assume that the bottom is

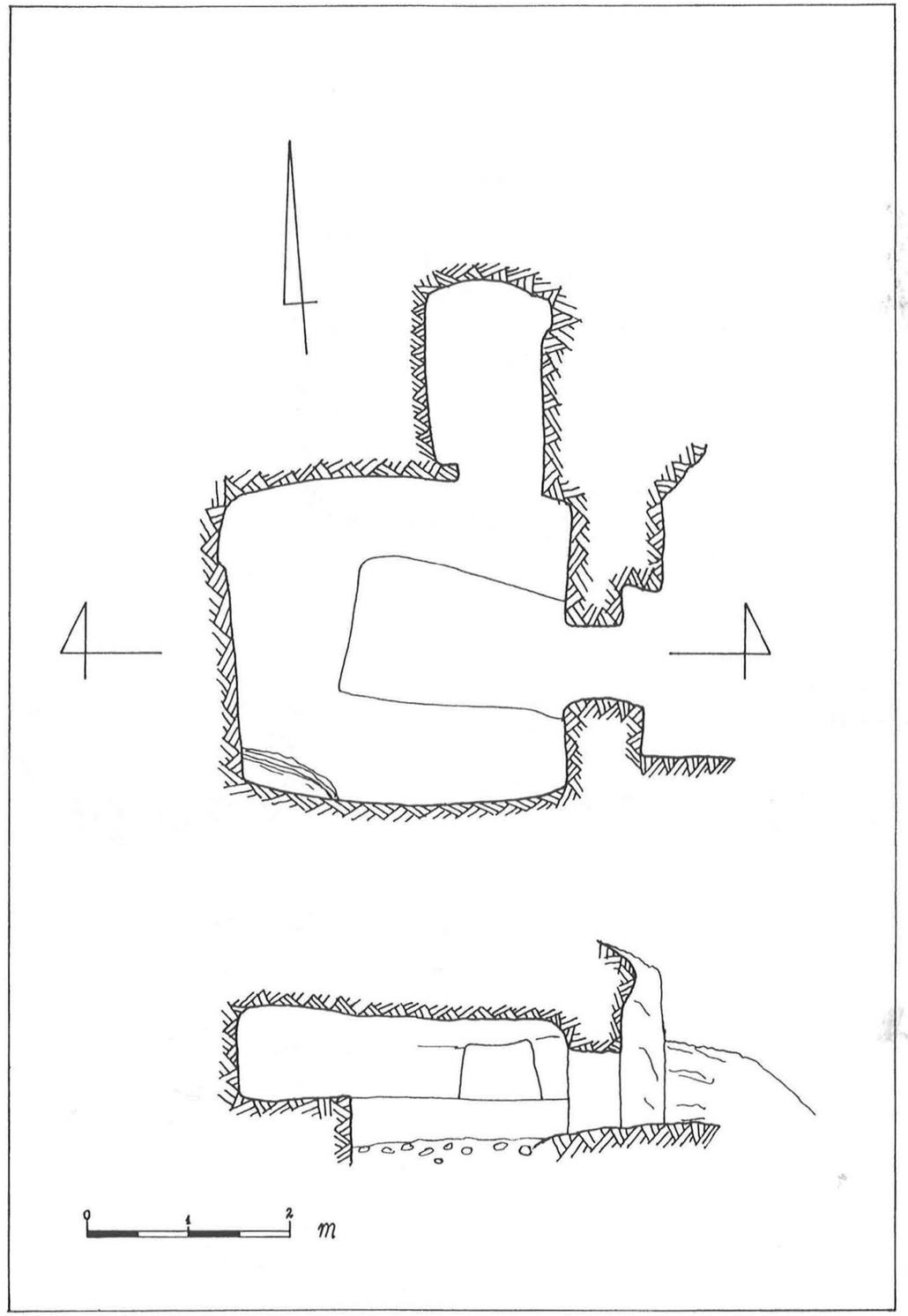

Fig. 6. Plan and section of burial cave.

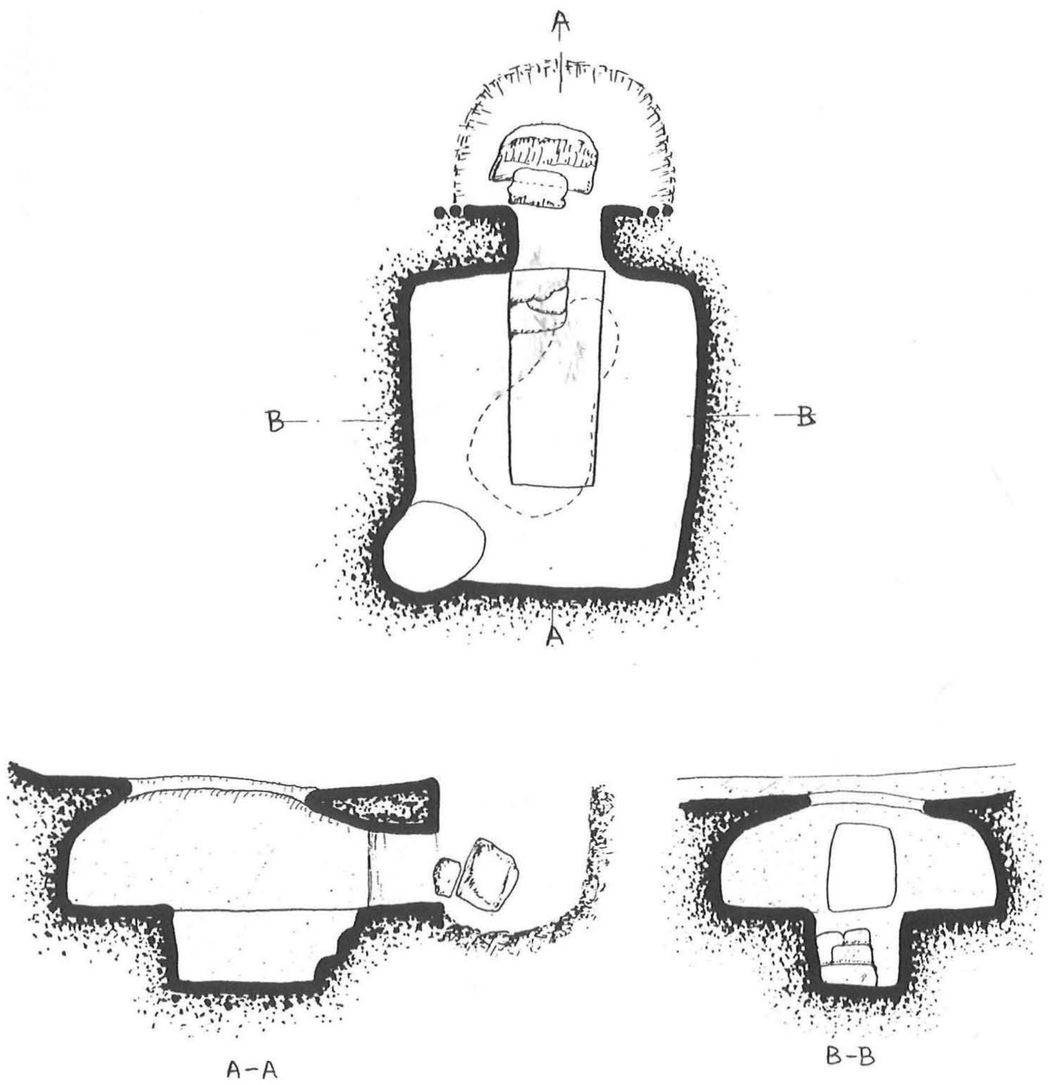

Fig. 7. Plan and sections of burial cave.

approximately 0.80 m below the level of the benches. The bench surfaces are slightly raised along the edges close to the standing pit.

On the northern side of the burial chamber, close to the north-eastern corner, is a loculus-like cell. Its opening, which is narrowed by a protruding frame, is about 0.80 m wide. The cell is some 2 m in length and has a width of 1.1 m. We may assume that this loculus-like cell was used as a repository for the skeletal material removed from the main burial chamber. Presumably the cell was hewn at the time of the original tomb and it is perpendicular to the wall and to one of the benches.

The occurrence of a cell or room perpendicular to the main burial chamber and

its relative position recalls the plan of a burial cave at Tzova (see Cave 6, below). Although in this cave there was no repository pit at the junction of the two benches, the presence of a side cell for the secondary removal of bones, does support the supposition that this burial cave also dates to the late Iron Age.

Burial Cave Between the Egged Bus Station and Binyanei Ha'Uma (Map Refs. 16915: 13254).[5]

The cave comprises one burial chamber of almost square plan, measuring 3 × 2.5–2.7 m (Fig. 7). In the centre is a standing pit, 2.1 m × 0.80 m and 0.65–0.70 m deep. Three steps, which take up about two-thirds of the width of the standing pit, lead down from the cave opening. Around the three sides of the standing pit there are three benches, each 0.85–0.90 m wide. The walls of the chamber are not straight but curve inwards from the ceiling almost forming an arch. Near the entrance to the cave tomb were two stones which were apparently used as blocking stones. In one corner of the room, at the junction of two benches, was a circular repository-pit sunk into the corner. The pit was somewhat flattened in form, with a diameter of about 0.80 m and a depth of about 0.50 m. As stated previously the vertical pit, cut at the point where two benches meet at the far end opposite the entrance, is a typical feature of burial caves from the time of the Judean monarchy in Jerusalem and in the Judean Hills, as we have seen in Cave 1, as well as in Cave 4 (see below).[6]

Burial Cave at the Military Cemetery on Mount Herzl (located on the northern slope of the hill: Map. Refs. 16707: 13147).[7]

This is a square burial cave (Fig. 8) with three benches and a repository pit (Fig. 9). The entrance to the cave is from the north by way of a small forecourt, of which

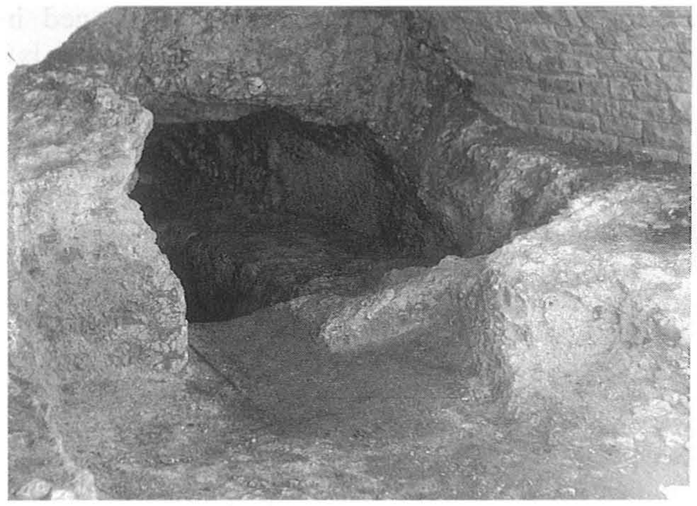

Fig. 8. General view of entrance to burial cave.

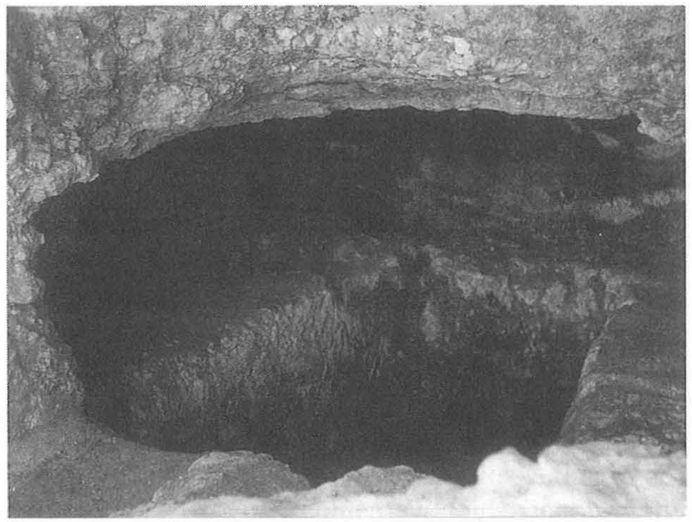

Fig. 9. Interior of burial cave with standing pit.

only a small part of its stone floor has survived at the southern side. The right doorpost of the entrance was destroyed by later quarrying. The original entrance was about 0.55 m high and 0.46 m wide. The dimensions of the chamber are 2.9 × 2.88 m (Fig.10). The corners of the cave are slightly rounded and the ceiling curves down to the tops of the walls, as was the case with Cave 3 above. Three benches surround the central standing pit. Each bench has a width of between 0.85–0.95 m and their tops are located 0.88 m above the floor level of the standing pit. Descent into the standing pit was by means of a step 0.28 m wide and 0.45 m high. In the corner of the chamber, where two of the benches meet, is a vertically-hewn repository-pit. This pit is rounded and somewhat flattened in form, about 0.72–0.86 m across. The depth of this pit from the top of the bench is 0.50 m. Human bones apparently belonging to two individuals were found there in 1945.[8] Inside the cave, at an undefined location, perhaps within the general earth fills, were fragments of three pottery vessels: parts of two cooking pots and a fragment of a vessel with a small, flat base. The two cooking pots were dated at the time of their discovery to the Herodian period.[9] The cave was obviously hewn in the Iron Age, for it exhibits all the typical features of burial caves specific to that period with a vertical repository pit in one corner of the chamber. The later pottery therefore probably represents a later use.

Burial Cave Between Beit Hanina and Nabi Samwil (Map Refs. 1685:1376).[10]

The tomb is cut into the rock on the sloping bank of the wadi east of Khirbet Hazur. Nearby were other tombs, some with *kokhim* (loculi), as well as agricultural

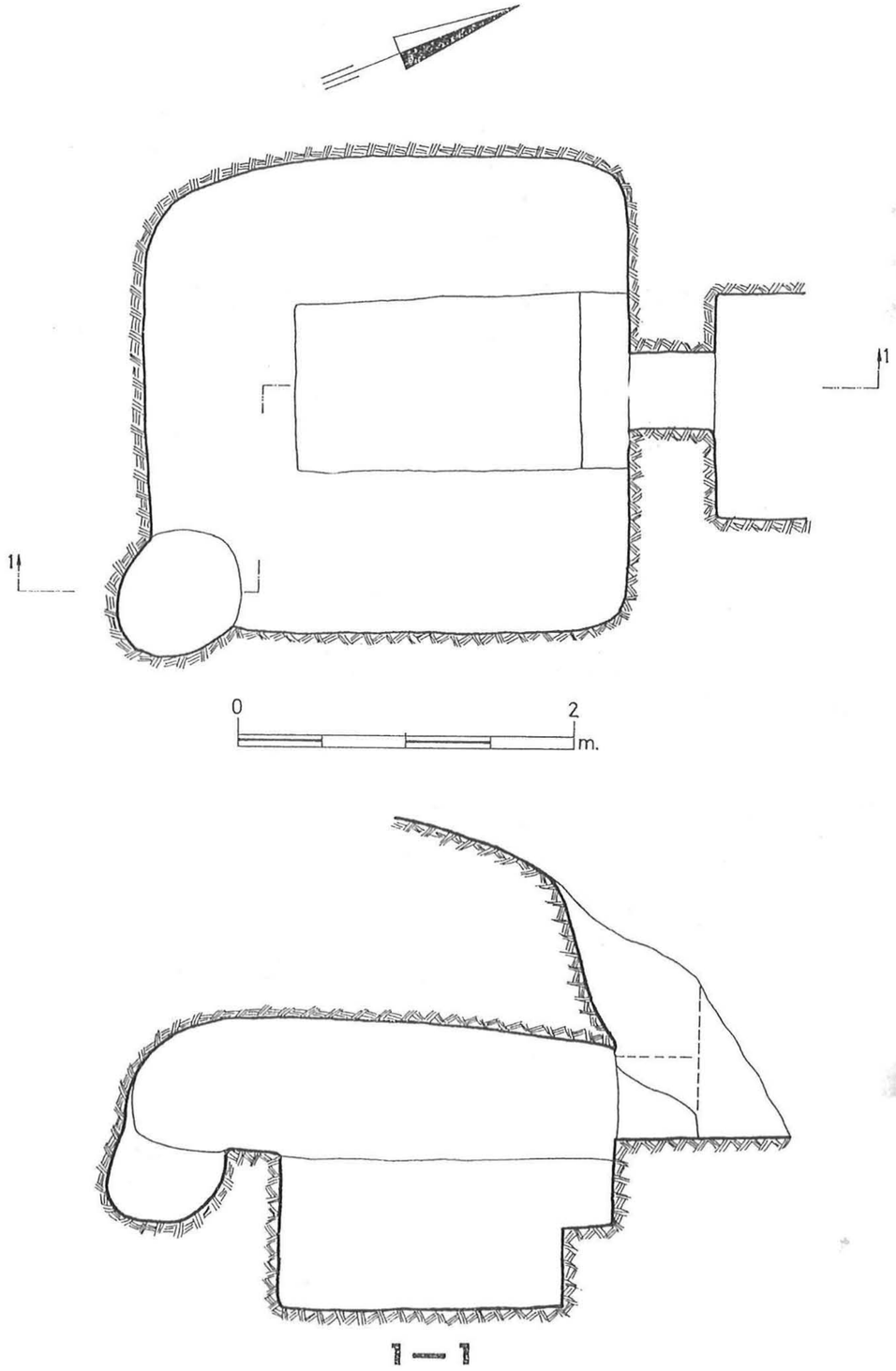

Fig. 10. Plan and section of burial cave.

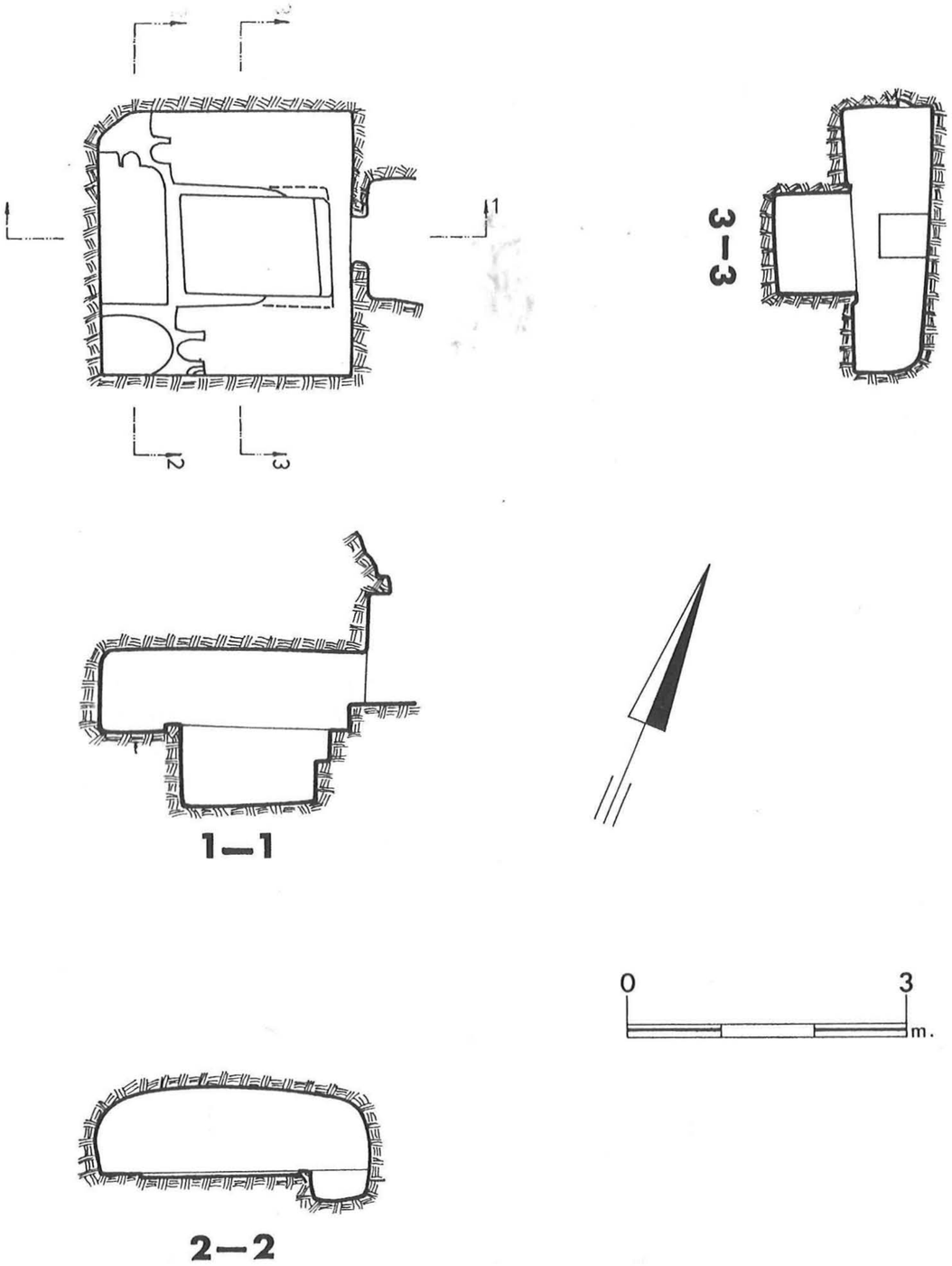

Fig. 11. Plan and sections of burial cave.

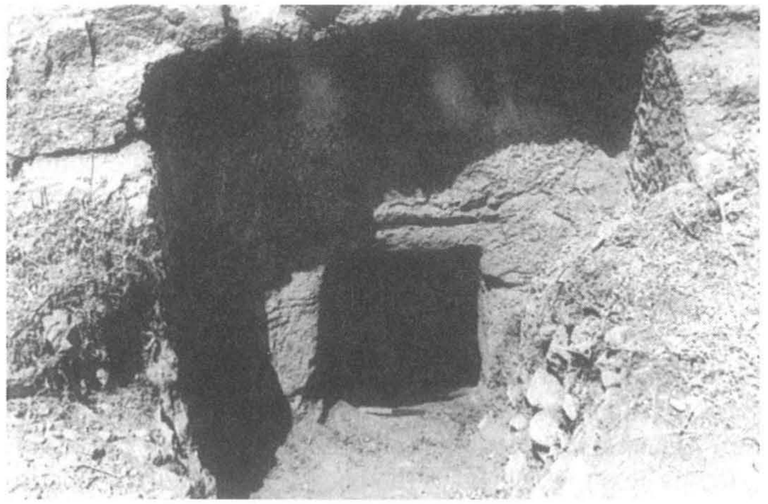

Fig. 12. Façade of tomb.

processing installations including an oil press with rock-cut recesses for beams. To the west of the cave are more water cisterns, pools and quarries. Most of these installations were surveyed by the German expedition conducted by K. Baltzer (Baltzer 1971). Southwest of the cave are three perennial springs: 'Ein 'Amir, 'Ein Jakakh, and 'Ein Tiyula.

The tomb is hewn in the usual manner of late Iron Age burial caves with a square single chamber. In front of the cave opening is a small forecourt. Around the opening a frame was cut in the rock to accommodate a rolling stone arrangement for the sealing of the tomb's entrance. The dimensions of the internal chamber are 2.85 × 2.7 m (Figs. 11–12). Along the three internal walls facing the entrance are benches. Two steps lead down to the central space from the threshold of the entrance. On the left-hand part of the bench, opposite the entrance, a vertical repository was cut into the rock. At the head of each one of the benches is a 'cushion' with a recess which served to receive the heads of corpses.[11] Next to the recesses are slightly raised, smooth rectangular surfaces, measuring 0.30 × 0.25 m on the two side benches, and 0.20 × 0.15 m on the central bench. These surfaces are located to the right of the headrests on the benches nearest to the entrance, but to the left of the other, central bench. This is the first known instance of such smooth surfaces having been found in burial caves of the Iron Age in the Judean Hills.

The deceased were apparently placed on the side benches with their heads facing the interior of the chamber; the head of the body, which was laid on the inner bench, faced to its right.[12] The repository pit is at the left side of this bench, i.e. it would have been located at the foot of the corpse. The right-hand corner of the cave was not used for anything and the workmanship of the stone hewing there was not as good as that in the other corners.[13] A raised edging was left along the outer sides of the three benches. On the side benches this edging has a width of about 0.09 m

and on the far bench 0.15 m. As has already been noted above, this was a feature typical of the more sumptuous late Iron Age type burial caves.[14]

It seems that this cave tomb was hewn according to the standard long cubit of 52.5 cm (Eshel, 1987), for the distance between the two side benches is exactly 1.05 m, i.e., two cubits. The length of the central space from the bottom of the upper step to the bench at the far end of the chamber is 1.57 m, i.e., exactly three cubits. The ceiling of the cave is also 1.57 m from the floor of the central space. Although the other dimensions are not as accurate, the cave was apparently planned to have been 5.5 × 5.5 cubits and 3 cubits high. The heights and widths of the benches are all about 1.5 cubits.

On the right-hand side of the wall of the cave above the bench, is a small rounded niche for a lamp. Similar niches are known from other tombs (e.g. Tel Eitun).

The smooth, raised surfaces next to the headrests were probably intended as places for oil-lamps next to the head of the bodies, as has been found in a tomb from the Iron Age on the western slope of Mount Zion in Jerusalem (Kloner and Davis, 1994). Perhaps this surface was also used for depositing other funerary offerings or personal objects. Some similarity with these smoothed surfaces may be noted in Tomb 16 at Silwan, where a surface existed between two headrests, and in which a rounded recess for a head was carved (Ussishkin 1993).

The Finds

Most of the soil and the bones had been removed from the cave by tomb robbers; what remained was carefully sifted by us. The skulls of the skeletons were found in pieces outside the cave and it was therefore not possible to subject them to anthropological examination.[15] About 300 pottery fragments were retrieved, most of them typical of the late Iron Age, but the fragments of a juglet and a cooking pot of the late Hellenistic period probably attest to its continued use to at least Second Temple times.[16] The sifting also revealed some botanical finds, among them eleven whole and nine half olive pits, three plum stones and one of storax (*Styrax officinalis*). The plum stones also indicate that at least some of these finds must be of Second Temple date.[17]

The architectural character of this cave tomb and the early finds in it date the tomb to the end of the Iron Age and to the Post-Exilic period. The tomb continued in use in Second Temple times as well. Family tombs of the single-room type with headrests are uncommon; two such tombs are known from the burial ground at Giv'on. These apparently attest to the enhanced importance of the Land of Benjamin following the destruction of the First Temple; perhaps the present tomb also confirms this process (Eshel, 1987; Tzaferis, 1982).

Identifying the Site

In 1928 A. Alt proposed identifying Khirbet Hazur, west of Kafr Beit Hanina with the Hazor mentioned in Nehemiah 11: 33 (Alt, 1928). Those who rejected this

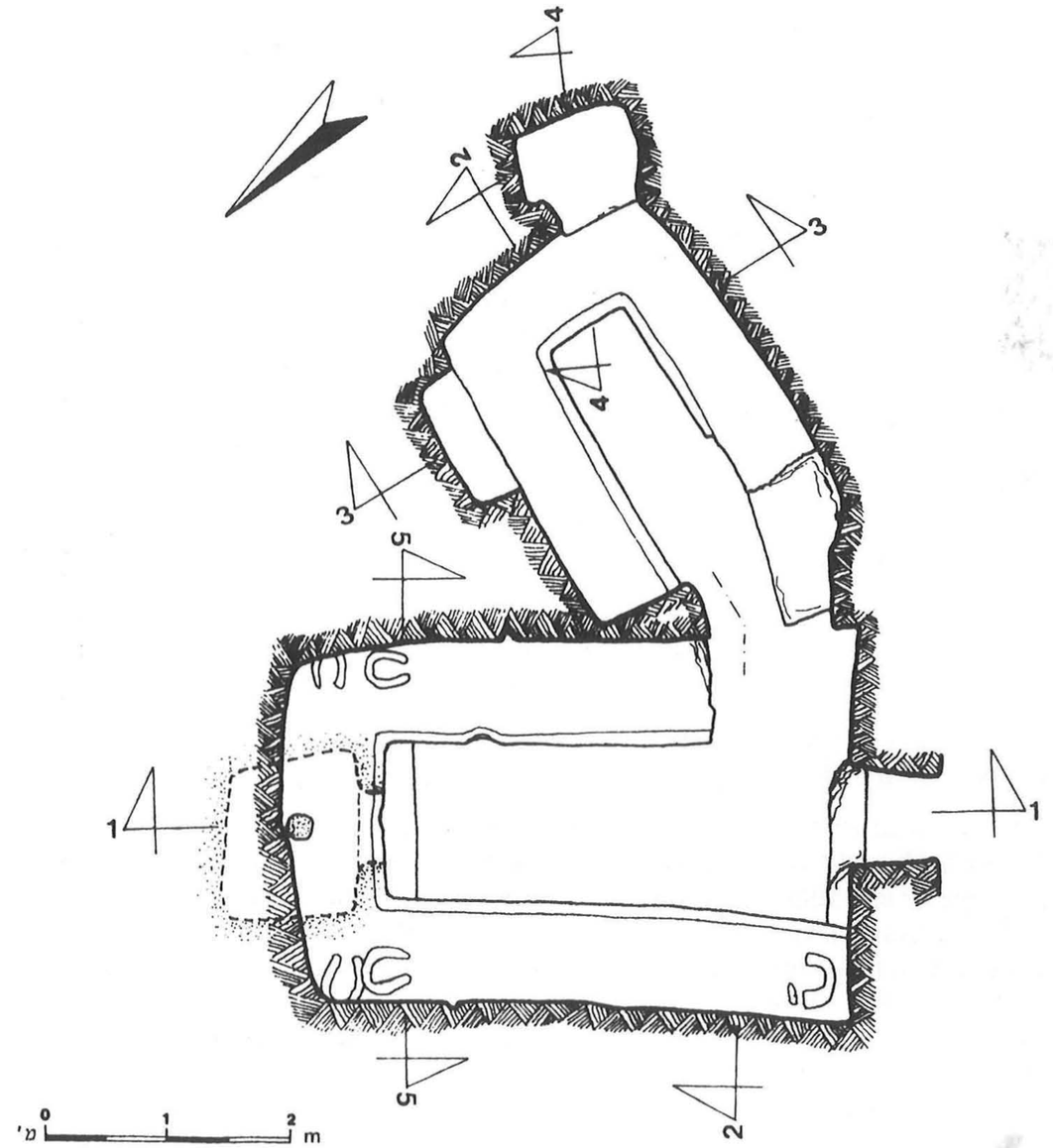

Fig. 13. Plan of burial cave at Suba.

identification claimed that there were no ancient remains at Khirbet Hazur. The results of the survey conducted by the German expedition at the site, and particularly the discovery of a seal impression bearing the word *yhd* (Baltzer *et al.*, 1971) – together with our cave tomb – confirm Alt's original identification with Hazor. Hence it may be assumed that the persons buried in this tomb were the inhabitants of Hazor from the Nehemiah lists (Eshel and Kloner 1991: 39).

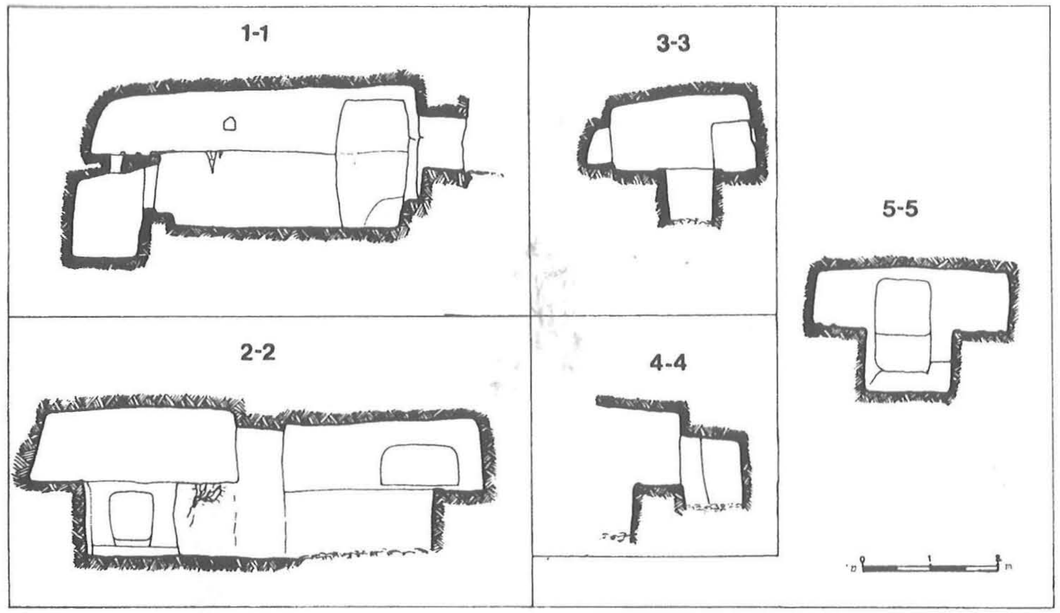

Fig. 14. Sections of burial cave at Suba.

Burial Cave at Suba/Tzova (near a rock platform known as the 'bamah', northwest of Tel Sobah: Map Refs. 1617: 1330).[18]

The entrance to this cave was in a rocky scarp, where there are openings to additional burial caves. The entrance is from the south and there is a descent into a rectangular chamber which leads to a second rectangular chamber (Fig. 13).

The entrance (0.75 × 0.65 m) is positioned midway up the southern wall of the cave, which has a breadth of 0.70 m. The threshold forms the upper step, 0.45 m high. Beneath it is another step: 0.28 m wide and 0.42 m high (Fig. 14: 5–5). The cave entrance was originally sealed with a square stone but the cave had been broken into at some point in the past and the stone is no longer in place.

Chamber A is of rectangular plan, measuring from north to south 4.4–4.5 m,with a width of 2.8–3.08 m from west to east, and with the ceiling located 1.05–1.1 m above the floor. The benches are hewn along the western, northern, and eastern walls, with a raised edging 0.07–0.10 m wide and 0.05–0.08 m high along the inner sides to keep bones and other funerary objects from falling into the central space (Barkay *et al.*, 1994).

On the western bench, which has a length of 4.3 m, are two rounded headrests which were left in the rock as 0.03–0.04 m protruding ridges at the time of the hewing of the benches, so as to accommodate the heads of the deceased who were placed on the benches. On the northern bench, which is 2.75 m long, there are two headrests or 'cushions'. On the eastern bench there is only one headrest at the northern end. This bench was originally complete and, like the western bench, it extended along the entire southern wall. The eastern bench was altered when its

southern end was cut away during the hewing of the second chamber. It seems that here too there had been a headrest at the southern end, at a distance of 3.5 m from the northern headrest. The form of the five headrests in the chamber ranges from a little more than a semicircle to nearly a complete circle, but always with an opening for the neck of the deceased (Broshi *et al.*, 1983). Along the two long western and eastern benches the bodies were placed feet to feet. On the shorter, northern bench the bodies were laid out with their legs in parallel almost to the area of the knees. In the centre of the northern bench there was a hole 0.15 m in diameter which had been bored from the bench platform to the repository pit below it (Barkay *et al.*, 1975; Vincent and Abel, 1914) (Fig. 14: 1–1).

A square cell was cut into the rock beneath the northern bench of Chamber A. It is 1.05 m wide from north to south, 1.2–1.35 m from west to east, and 1.2–1.3 m high. The cell served as a repository for the bones cleared from the bench surfaces when room had to be made for new burials. In the course of the excavation in 1980, the disarticulated remains of more than six individuals were found in the pit. The opening to the repository pit is from the upper side of the bench. It was 0.55 m wide and 0.60 m high. The skeletal material cleared from the benches was introduced through this opening (Barkay *et al.* 1975; Vincent and Abel, 1914; Dever 1970). Pierced holes extending from the bench into the repository also exist in the monumental cave tombs of the First Temple period located in the property of the Dominican Monastery of St. Étienne, north of the Damascus Gate. They probably served to drain fluids.

Chamber B. An opening, 1.82 m high, leading to the second chamber (Chamber B) was cut into the south-eastern wall of Chamber A (Fig. 14). The alignment of the chamber is at an angle of some 25 degrees from the façade of Chamber A; probably this was done in the attempt to distance it from the outer face of the scarp.

The chamber is rectangular in plan: 2.75–3 m long from west to east, 2–2.2 m wide from north to south, and approximately 2 m high. On the three sides facing the opening benches were left along the walls and here too there is a raised edging 0.08 m wide and 0.05–0.08 m high on the outer sides of the bench surfaces (Fig. 14: 3–3). In the northern wall above the bench there is an arcosolium (1.1 m long, 0.38 m deep and 0.57 m high; a similar arcosolium was cut into the wall of the interior room of a burial cave dating to the period of the Judean Monarchy on the western slope of Mount Zion (Kloner and Davis, 1994). In the eastern wall, in the corner of the chamber, is a repository pit whose opening protrudes above the surface of the bench. It is 0.60 m wide and 0.70 m high. The pit is at least one metre deep, but it was not cleared. It too has many parallels in tombs of the Iron Age (Mackenzie 1913; Negbi 1970) (Fig. 14: 4–4).

It is clear that Chamber B was added after Chamber A had first been in use. As mentioned above, in order to create Chamber B, the long eastern bench of Chamber A had to be partially cut into and this inevitably prevented the possibility of laying out two bodies on the bench. The high opening to Chamber B also impaired the symmetry of Chamber A. However, such layouts with adjacent burial chambers, with a high opening between them and with a side chamber connecting with one of

the side walls, are also known in other contemporary burial caves (Kloner and Davis, 1994; Mackenzie, 1913).

The cave had been left open for a long time before it came to be excavated and this resulted in the infiltration of silt which filled its upper part. People and animals had also been inside, creating disturbances. Uncontrolled excavations in the cave had also caused damage, all of which precluded the proper investigation of the cave. It is therefore impossible to determine the exact form of burial practised in the cave. It appears that many objects have been removed from the cave and are apparently no longer accessible to scholars, including three oil-lamps, a small bowl, a jug, fragments of bowls, bottles, and jewellery (mainly rings). In the sifting of the displaced material in the course of the excavations conducted in the cave, about 2,000 pottery fragments of the Iron Age were gathered, as well as fragments of metal objects, beads and semi-precious stones. The pottery finds date the cave to the eighth to seventh centuries BC. Examination of the little broken bone material that has survived, shows that at least 15 individuals were buried in the cave, but these figures must be taken as tentative.

The burial cave at Suba comprises two chambers arranged according to the layout commonly known from contemporary sites in the region of Judah. Placing the deceased on benches was the common method of burial at the time of the Judean monarchy. After the flesh had disintegrated, the bones were gathered into repositories and the benches were cleared ready for the newly deceased.

The features characteristic of the late Iron Age at Suba are: benches with raised edgings on their outer sides, the repository pit, the pierced hole from the bench top to the repository, headrests, transverse loculi in Chamber B, and a high connecting opening between the two adjacent chambers. The finds in the cave were all from the eighth and seventh centuries BC.

Burial Cave at Khirbet el-Khamis (Map Refs. 16874:12558)

A burial cave was discovered close to the ruin of Kh. el-Khamis.[19] The cave (3 × 3 m) consisted of a single chamber, lined with benches on three sides, and a central standing pit (Fig. 15). Hewn into the bench in the southwest corner was a repository. The plan of the cave indicates a date in the Iron Age II. An assemblage of finds – ceramic vessels and an ornamented shell – have been attributed in the past to an Iron Age tomb in the vicinity of Rachel's Tomb (Tubb 1980; Barkay 1999). However, perhaps it should be attributed to the present burial cave at Kh. el-Khamis, or to another nearby.

Burial Caves and Their Distribution Around Jerusalem in the eighth–sixth Centuries BC

In the burial grounds which encompass the Iron Age city of ancient Jerusalem, including Mount Zion and the City of David, and until the time of its destruction in 587/6 BC, we know of at least 138 burial caves. Most of these tombs were located

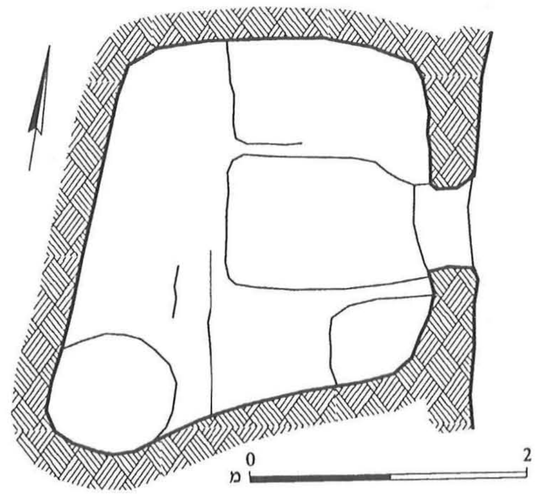

Fig. 15. Plan of burial cave at Kh. el-Khamis.

close to the outer edge of the city walls dating from the First Temple period, among these are the group of tombs in the Silwan village, along the Valley of Hinnom, at the foot of the present western city wall, in the area of Sultan Suleiman Steet, Nablus Road, and to the north of the present Old City. These tombs mark the areas which saw the major expansion of the city in the Iron Age. (Kloner, 1984; Barkay, 1994: 105).

The majority of the caves described above are located to the north and west of Jerusalem, within a range of 1.5 and 4 kilometers away from the fortifications of the late Iron Age city. They do not represent a distinct group but result from sporadic discoveries over a widespread area. These cave tombs served a population living in farmsteads, rural domains, and near small fortresses that dotted the countryside around the city. Jerusalem, as the capital of the Judean kingdom, had an agricultural hinterland within a radius of about 4 kilometers around the city. This agricultural area was apparently subjected to intensive cultivation by several thousand people residing in landed estates, farmsteads and forts rather than in village communities. The belt of cultivated land belonged to Jerusalem, and the people who lived there must be considered therefore as part of the city's population (Broshi and Finkelstein, 1991).

Beyond this area, within a radius of 5–6 kilometers around Jerusalem, was a belt of larger villages situated on mounds or as building clusters, such as at Anatot, Gibeah (Tell el-Ful), Khirbet Beit Kikah, the region of Kfar Sha'ul, Mizpeh Kerem (Khirbet Hamama), Ein Karem, Er-Ras (opposite the Rephaim Valley), Ramat Rahel, and others. Only towards the east was the belt of rural settlements hemmed in close to Jerusalem by the desert conditions, on the eastern slopes of the Mount of Olives and Mount Scopus. Still further away, within a radius of 7–9 kilometers, there was yet another circle of villages, such as Hizma, Beit Hanina, Hazor (Khirbet Hazur), El-Burej, Horvat Hamoza, Giloh, Suba and Bethlehem. These two belts

may be regarded as one wide peripheral agricultural hinterland extending for a distance of 5–9 kilometers around the city. The settlement hierarchy of this belt reflects the extent of the village lands, the size of their population, their activities, and so forth.

The settlements within this outer belt also had their own burial grounds next to them. The inner agricultural belt, located up to 4 kilometers from the city, with the burial caves described in this article, was tied much more directly to Jerusalem. There were no real villages here, and no settlement hierarchy existed as in other rural areas. The large city was the central focus of life for the surrounding population. The burial caves discussed here were all located within the agricultural periphery of plots and parcels of land that were owned by the city residents. The owners of these properties and those who helped cultivate them, or were the same as those who were buried in these tombs.

Appendix:

Burial Cave at Tel Goded (Tell el-Judeidah) in the Judean Foothills (Map Refs. 1416: 1156).[20]

On the north-eastern slope of the mound there are many burial caves of various periods that once served the local population, and some of them have been opened and robbed in later times.The burial ground extends over a large area along the slope of the mound and as far as the adjacent valley to the northeast. The tombs were cut into the soft nari chalk beneath overlying flint.

The burial cave comprised a large, rectangular hall from which tall openings lead into the burial chambers (Fig.16). The main hall measures 4.3 m from west to east and 2.6 m from north to south at its eastern side, and 3 m at the western side. The ceiling is at least 2.2 m high, but the accumulation of earth inside precluded establishing its exact dimensions without actual excavations. The entrance to the hall was most probably on the northern side, but it is now covered over with a great quantity of soil that managed to penetrate the hall

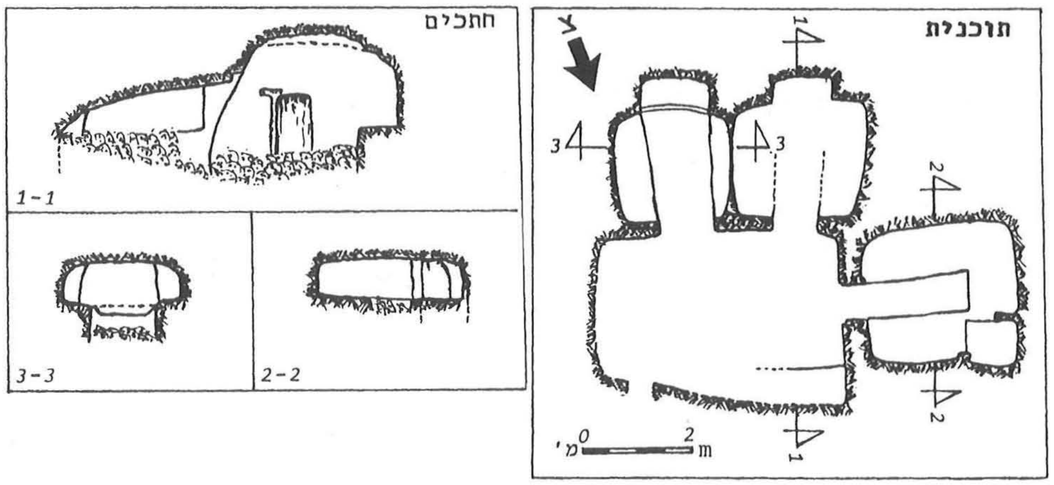

Fig. 16. Plan and sections of burial cave at Tel Goded.

through the entrance. There are signs of a narrow opening, about 0.45 m wide near the north-eastern corner at a level near the ceiling and it may possibly have been the main entrance to the complex, but this would only be possible to verify by excavation.

The doorways from the main hall to the burial chambers are trapezoidal-shaped, narrowing toward the bottom, and are about 1.4 m high. Two chambers were hewn into the southern wall and another one into the west wall of the main hall. Similar openings giving access to the burial chambers from the main hall of the tomb are known from Jerusalem: for example, the monumental cave tombs from the Iron Age located in the grounds of the Dominican St. Étienne Monastery on Nablus Road (Barkay *et al.*, 1994). Around the carved frame of the opening to the western chamber there is a rafter and a door-jamb set in relief.

The burial chambers on the southern side resemble each other. They have a central rectangular space measuring 2 × 1.1 m. Along the long side are benches with flattened arcosolia over them[21]. The benches are 1.9 to 2.1 m long and their width varies between 0.45 and 0.70 m.[22] The arcosolia extending over them have a height of 0.70 m. The benches and the arcosolia along the narrower sides of the chambers, are shorter and shallower: about 1.1 m long and 0.40–0.50 m wide. Most of the chambers were full of earth that had penetrated inside the cave over the centuries and so it is hard to be more precise regarding its exact dimensions. The modern tomb robbers had disturbed the order of the chambers, as they had done in the entire complex. The burial chamber on the western side was emptied of most of the soil that filled it. It is square in plan with three benches along the walls. The space in the centre, 1.85 m long and 0.65 m wide, was full of earth. The benches are 0.85–0.90 m wide. In the north-western corner is a square repository pit measuring 0.90 × 0.75 m, and these are common in burial caves from the Iron Age.

Fragments of pottery collected in the cave are dated to the eighth and seventh centuries BC. The finds include parts of bottles, juglets, bowls and so forth, and they indicate that the burial cave was hewn and used during the 200 year period preceding the conquest of the Judean Kingdom.

The details of the plan of the cave, with the arrangement of chambers around a central hall, the form of the openings, the benches and the repository pits, all point to the same dating. The cave was large and quite sumptuous, and this is reminiscent of the layout of the monumental burial caves from the time of the Judean monarchy in Jerusalem. Hence we believe it is possible that the burial cave originally served one of the wealthy families in the settlement that existed at Tel Goded at that time.

Notes

1 The burial caves discussed in this paper were excavated and surveyed by archaeological teams working for the Israel Department of Antiquities during the 1950s up until the 1980s. My thanks to everyone who helped with this work.

2 The cave was discovered on 22 February 1975 during earth levelling operations for the construction of a kindergarten. The excavation was conducted by the present writer and the late Y. Gat with Permit No. 608 issued by the Department of Antiquities. The cave was reported to the Department by Y. Almog who lived nearby. The cave was measured by M. Feist and the plan drawn by F. Resnik. The photos are by Z. Sagiv. The cave was destroyed at the end of June to permit construction on the site. To simplify the description, general directions are given. In fact the side of the entrance actually faced southeast – referred to here as south, and so forth. The earth-moving equipment broke into the south-eastern corner. Family tombs of the square, single-chamber type with headrests are quite rare; generally, headrests have only been found in large caves with a complex plan. Until now, only two such smaller tombs are known from Gibeon (Eshel 1987); and see also Caves 5 and 6 above. See also Kloner 1992: 241–243; Kloner 2001: site [102] 240.

3 The examination of the osteological remains was carried out by J. Zias of the Department of Antiquities.

4 The cave was first surveyed by us in 1978 when we visited the park with B. Shoshani of the Public Works Department. The measurements and plan are the work of D. Huli in 1981. For further details: Kloner 1992: 243–244.

5 The cave was discovered at the beginning of April 1956. Measurements were made by S. Amit on 6 April 1956 and he also drew up the plan and sections presented here. The cave was broken through from the ceiling. It was recorded by staff of the Department of Antiquities and destroyed soon after. See also: Kloner 1992: 244.

6 The cave under discussion is probably the one reported by O. Negbi in the Sheikh Badr site file in the archives of the Department of Antiquities (unpublished). The finds on the benches included potsherds of the Second Temple period, a coin of Tiberius (?) and parts of an assuary. The cave was hewn in the Iron Age and was re-used in the Early Roman period.

7 The cave was discovered in January 1954. E. Anati worked in the cave for two days during 17–18 January, with two workmen assigned to him by the foreman of the military cemetery. See the brief reports by R. Amiran of 15 January 1954 and Anati on 18 January 1954 in the Mount Herzl/Jerusalem file in the archives of the Israel Department of Antiquities. The cave was surveyed by the Jerusalem District Archaeologist in 1978. Its location was marked during a visit to the site on 26 March 1978 with U. Cohen, then in charge of the military cemetery. The plan of the cave presented here was drawn by A. Hagian on 26 January 1990. The photos are by the architect, the late A. Hiram, who gave them to G. Solar, from whom I received them for publication. My thanks to them all. For further details: Kloner 1992: 244–245.

8 Short report by E. Anati; see Note 7 (above).

9 In the above report; Notes 7 and 8.

10 In July 1984 this cave tomb was discovered by Z.H. Ehrlich after it had been plundered by robbers. A brief rescue dig was conducted there with the assistance of the Cave Research Centre of the Society for the Protection of Nature in Israel, under the direction of the present writer and H. Eshel, and on behalf of the Department of Antiquities. See Eshel and Kloner 1990, which also provides a detailed bibliography concerning Iron Age burial caves and their architecture, burial customs and the identification of the site.

11 Stone 'cushion' headrests are known mainly from Jerusalem, where over 100 have been found; see: Broshi, Barkay and Gibson 1983: 26; Ussishkin 1993; Barkay 1986: 19–20; Barkay 1994: 93–96; Barkay, Kloner and Mazar 1994. Outside Jerusalem headrests are also known from El-Kom, Gibeon, and Cave 6, above. See: Dever 1970; Eshel 1987.

12 No further published references to such arrangements are known to me.

13 In Cave 20 at Ketef Hinnom there are corners in internal rooms of the burial cave that were not worked because of natural fissures and veins in the rock (Barkay 1986). In the cave at Khirbet Hazur the inferior workmanship in the right-hand corner was not due to imperfections in the rock but because it had no functional significance.

14 Such raised edgings are common in Jerusalem tombs; see: Macalister 1901; Barkay, Kloner and Mazar 1994; Mazar, 1976; Barkay and Kloner 1986; Broshi, Barkay and Gibson 1983. Outside of Jerusalem, caves with raised edgings are known from Lachish, Kh. Beit Lei, El-Kom, Gibeon; and Cave 6, above. See: Tufnell 1953; Naveh 1963; Dever 1970; Eshel 1987.

15 All the bones found in the excavation, and the bone material found in the accumulation of soil removed by the cave robbers, was gathered and placed into the repository pit.

16 In the material dumped outside by the tomb robbers there was a fragment of a ribbed vessel which may attest to a disturbance in the cave in the Byzantine period.

17 Examination of fruit pits and stones was by M. Kislev of Bar Ilan University. It is noteworthy that also in Ketef Hinnom two of the cave tombs hewn in the latter part of the First Temple period were used throughout the Persian and Hellenistic periods, and until the Roman period (Barkay 1986; 1994).

18 The first excavation was done in an uncontrolled manner by a member of Kibbutz Tzova. Thereafter, work was conducted in the cave in 1980 by R. Kalifon and volunteer workers from the Kibbutz, under Permit No. 898 and was supervised by the present writer on behalf of The Department of Antiquities.

19 For Kh. el Khamis, see Kloner 2000: 57*–58*, site no. [105] 152.

20 The cave at Tel Goded was measured and drawn by D. Huli. Illegal excavations within the burial caves of the site began in the 1970s and intensified during the 1980s, mainly between 1982–1984. Several of the robbers were apprehended by the surveillance staffs of the Department of Antiquities and by the Border Police.

21 The Latin term *arcosolium* is used here in the Roman sense – despite the anachronism implied by its application to an Iron Age context.

22 The plan shows a narrower funerary bench in the left-hand (eastern) chamber due to an error in the drawing.

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The Monastery of Marda: Masada in the Byzantine Period

YIZHAR HIRSCHFELD

The extensive excavations conducted by Yigael Yadin on Masada in 1963–1965 uncovered remains from the Byzantine period. These included a church, service buildings, and cells scattered over the entire site.[1] The grandeur of the Herodian buildings and the power of the myth of the Zealots distracted the attention of the excavators from Masada's Byzantine remains, although these remains had already been identified at the end of the nineteenth century as an eremitical monastery (*laura*), known in the sources as 'Marda'.[2] Yadin's excavations appear to confirm the proposed identification and permit us, for the first time, to understand the extent and internal organization of the Byzantine remains of Masada.

The Byzantine remains at the site display a rare combination of two factors that enable a better understanding of their nature. Firstly, thanks to Masada's isolation and its dry climate the preservation of its remains, including those of the Byzantine period, is remarkable. Secondly, the wide extent of Yadin's excavations and the publication of the final excavation report by Ehud Netzer have made the monastery of Marda the best-known monastery of the *laura* type in the Judean Desert.[3] The aim of this paper is, therefore, to describe the remains of the *laura* on the summit of Masada and to examine its place in the typological framework of the monasteries of the Judean Desert.

Historical background

The hagiographical literature of the Judean Desert contains two sources that record the presence of monks on the summit of the mountain known as 'Marda'. The first of them, *The Life of Euthymius* written by Cyril of Scythopolis in c. 560 AD, describes Marda as a stop on the route of St. Euthymius in the Judean Desert. According to Cyril, in around 422 Euthymius wandered with his pupil Domitian in the Judean Desert along the Dead Sea coast, until they came to 'a high mountain, separated from the others, called Marda'.[4] The two settled on the summit of the mountain, quenching their thirst from a 'well of water that had collapsed' that they found there and eating saltbush leaves. Euthymius did not stay there long; in the words of Cyril: 'After first building a church there, the one preserved till the present day, and erecting an altar in it, he left there and came to the desert of Ziph, out of a wish to see the caves where David took refuge from the face of Saul.'[5]

The second source, entitled *The Spiritual Meadow* (*Pratum Spirituale* in Latin; *Leimonarion* in Greek), by John Moschus, was written in *c.* 620 AD. It mentions a community of hermits on the summit of a mountain known as 'Mardes'.[6] According to Moschus, who was a monk in the Judean Desert, one member of the community cultivated a vegetable garden six miles (some 9 km) from the mountain. This is how Moschus describes the community:

> There is a mountain by the Dead Sea called Mardes and it is very high. There are anchorites living in that mountain. They have a garden about six miles away from where they live, near the edge of the Dead Sea, almost on its banks. One of the anchorites is stationed there to tend the garden. At whatever hour the anchorites wish to send to the garden for vegetables, they put a pack-saddle on the ass and say to it: 'Go to the one who tends the garden and bring us some vegetables.' It goes off alone to find the gardener; when it stands before the door, it knocks with its head. The gardener loads it up with vegetables and sends it away. You can see the ass returning alone each time, but it only serves those elders; it supplies the needs of nobody else.[7]

The term used by Moschus to describe the monks, 'anchorites', indicates that the monastery on the summit of Mount Marda was a *laura*.

The identification of the mountain with a monastery on its summit has been the subject of prolonged debate. Several scholars have suggested that it is el-Mird (Hyrcania), to the northeast of Nahal Kidron. However, other scholars, myself among them, prefer to identify Marda/Mardes with Masada.[8] Masada's location near the shore of the Dead Sea and the remains of the eremitical monastery exposed on its summit accord with the descriptions of Cyril of Scythopolis and John Moschus.

The name Marda (Aramaic for 'fortified place', 'fortress') is well suited to Masada's natural defences and the use to which the site was put in the Second Temple period.[9] The 'well of water that had collapsed' mentioned by Cyril was most probably part of the water-supply system of the Second Temple period, while the vegetable garden described by Moschus may have been next to one of the springs near Masada, such as 'En 'Aneva in Nahal Ze'elim, where cells and an irrigated garden of the Byzantine period have been found.[10]

The precise foundation date of the monastery of Marda is unknown. Cyril notes that the church built by Euthymius and his pupil there was 'preserved till the present day', i.e. until the days of Cyril in the mid-sixth century. It thus seems that the monks who preserved the cell and the tradition of the site's sanctity lived there before that date. Yadin proposed that the monastic settlement should be dated to the fifth century.[11] A small piece (11 × 14 cm) of inscribed papyrus found in one of the cells was dated on paleographic grounds to the fifth-sixth centuries.[12] However, additional considerations enable the foundation of the monastery of Marda to be dated more precisely, to the second half of the fifth or early sixth century. Rina Talgam, who has made an extensive study of the mosaics of Palestine, re-examined the Byzantine mosaics of Masada; in her opinion the mosaic pavements of the church belong to a stylistic group of monastery mosaics dating from the second half of the fifth century.[13] From the historical point of view too, it is unlikely that the

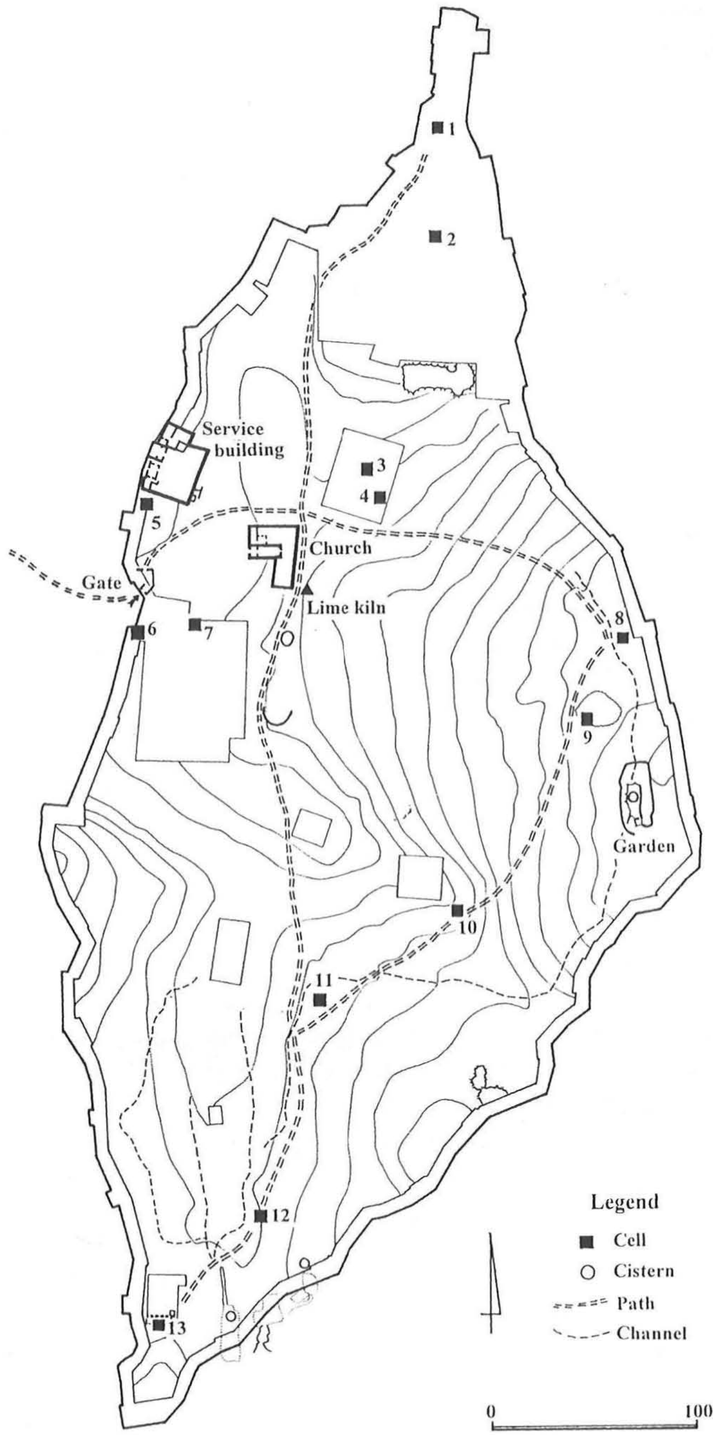


Fig. 1. Plan of the *laura* on the summit of Masada. Centre: the church and service buildings, surrounded by the hermit cells (after *Masada* III, Plan 78).

monastery of Masada was founded before the mid-fifth century, since the monastic movement of the Judean Desert began to flourish only after the Council of Chalcedon in 451. It seems probable that the monastery of Masada, located far from Jerusalem in the southern Judean Desert, was part of the expansion of monasteries into the desert in the second half of the fifth century.[14]

Though Yadin related the abandonment of the monastery of Masada to the Persian conquest of 614 AD, it is more likely that the monastery was abandoned later in the seventh century as a consequence of geopolitical changes that occurred in Palestine after the Muslim conquest of 638.[15] A similar phenomenon may be observed at various sites in the Judean Desert and elsewhere. Thus, the monastery of Marda probably existed from about the second half of the fifth century to the mid-seventh century, a period of some 150–200 years.

The archaeological finds

The first systematic description of the Byzantine remains of Masada was given by the surveyors of the Palestine Exploration Fund: C. Warren and later C.R. Conder and H.H. Kitchener.[16] At the time of their visit the walls of the church still stood to their full height, including the semicircular dome of the apse (the roof of the church, made of wood and tiles, had probably collapsed not long after the abandonment of the monastery). The description of Conder and Kitchener mentions one of the caves used by the monks to the southeast of the church. M. Lagrange, who visited the site in 1894, was the first to suggest an identification for Byzantine Masada and published a description of the church, with its mosaics and walls studded with potsherds.[17] A fuller description of the church, with a detailed plan, was given by the German scholar A.M. Schneider, who visited the site in 1931.[18]

In 1963–1965 the excavations of Y. Yadin took place at Masada, uncovering most of the Byzantine remains. This fact is of great importance, since to date this is the only *laura* in the Judean Desert that has been completely and systematically excavated.[19] In the final report on the finds of the excavation by E. Netzer, a separate chapter is devoted to the church and the adjacent courtyard.[20] However, the remains of the service buildings and the thirteen cells are described in the framework of different areas. The report contains a wealth of precise details, presenting a relatively complete picture of the monastery of Marda and enabling its plan to be drawn (Fig. 1).[21]

The layout of the remains of the monastery of Marda is that of a *laura* built on level ground.[22] Although Masada is surrounded by steep cliffs, its summit is flat. The summit is 600 m long and its width ranges from 0 m to some 280 m at the centre. This area, comprising about 8 hectares, is the total area of the monastery. A casemate wall running around the top of the cliffs was built in the Herodian period, and was partly reconstructed by the monks in the Byzantine period. According to Netzer, the monks rebuilt the casemate wall to prevent them from falling off the cliffs.[23] The only building actually constructed from its foundations by the monks was the church (including its annexes). All the other structures were built on,

between or within the ruins from the Second Temple period. The monks selected parts of buildings or walls that were in relatively good repair, such as the gate of the Western Palace and the *caldarium* of the large bathhouse, as a basis for the construction of cells. They also made intensive use of the caves and cisterns on the summit. The main construction material was building stones from earlier periods, which were plentiful at the site. Architectural elements were put to various uses; for instance, column drums served as bases for tables, and half-columns were used as door-jambs. The monks also manufactured white mosaic tesserae from building stones that they found at the site, as attested by the mosaic manufacturing waste found in one of the cells (see below). The remains of a lime pit excavated to the southeast of the church point to local manufacture of lime, probably from the marble fragments that the monks found at the site.

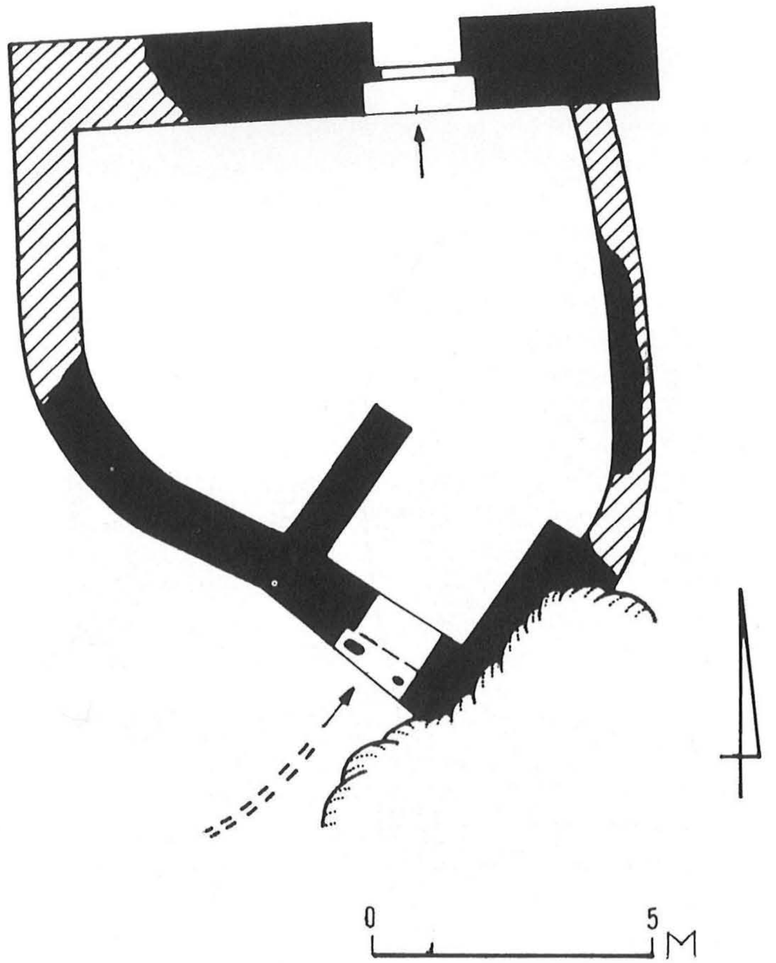


Fig. 2. Plan of the Byzantine gate of Masada (after *Masada* III, Plan 39).

The gate

The entrance gate of the monastery, which the excavators termed 'the Byzantine Gate', was apparently built as part of the reconstruction of the Herodian wall that encircled the monastery (Fig. 2). The gate is located opposite the siege ramp built by the Romans at the shortest access route to the summit from the west. This is a sturdily built stone gate with an arched lintel (Fig. 3).[24] The entrance, 1.2 m wide and at least 2.5 m high, is large enough to permit the passage of beasts of burden (Fig. 4).

In fact, Yadin's excavations established that this was a double gate. The outer, smaller gate led to an internal courtyard and then to the larger inner gate. In all probability the courtyard served as a waiting area for guests.[25] To my knowledge, this is the only preserved gate of a *laura* in the Judean Desert.[26] The construction of the gate and the rebuilding of the casemate wall attest to the importance attached

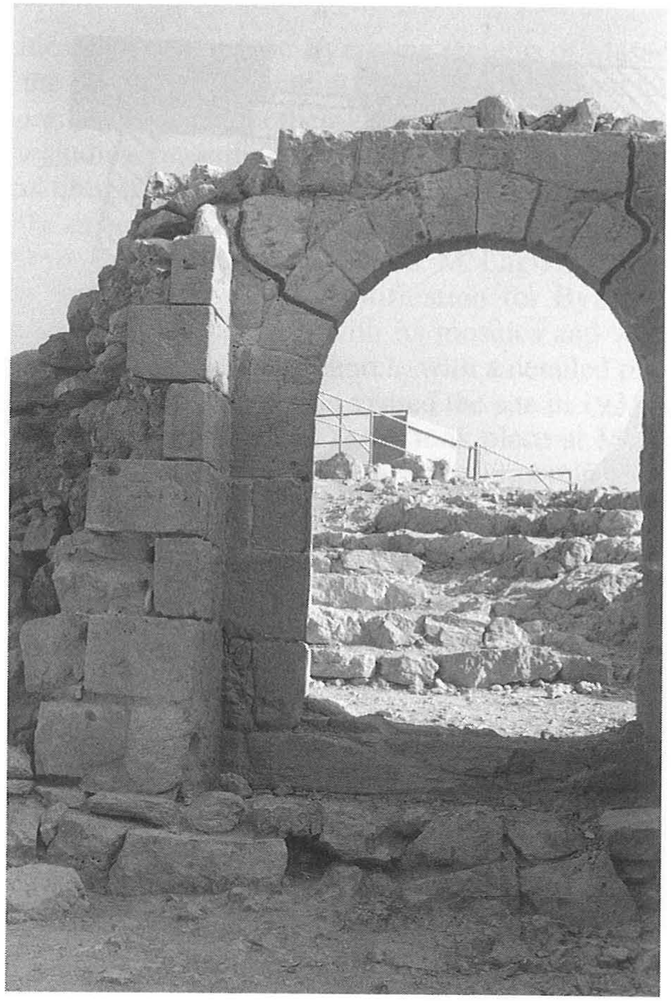


Fig. 3. The Byzantine gate of Masada.

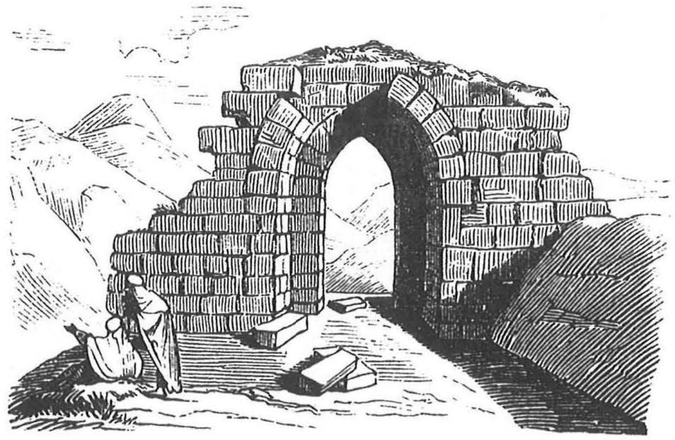


Fig. 4. The Byzantine gate of Masada (after Sepp 1873).

by the monks to the definition of their living area and its physical circumscription. This feature is not unique; it is known at other *laurae* in the Judean Desert (see below).

The church

From the gate, a beaten earth path leads to the core of the *laura*, which comprises two elements: the church complex and the service structures to its northwest. The church complex consists of a prayer hall, a narthex and two adjacent rooms to the north (Figs. 5–6). To the east of the church is a courtyard surrounded by a stone fence, 110 m^2 in area. The church is of the 'monastic chapel' type, which characterizes most of the monasteries of the Judean Desert.[27] It comprises a single hall with one apse oriented to the east (Fig. 7). The prayer hall (including the apse) is some 10 m long and it is only 4.8 m wide (internal measurements). The entrance is from the narthex on the west, which runs across the entire width of the prayer hall. According to Netzer, when the dimensions of the church are calculated according to the standard Byzantine foot (32 cm), the results are round numbers: the western façade of the church is 50 feet long, and the prayer hall measures 15 × 24 feet.[28] As Netzer correctly notes, this indicates that a team of professionals was employed in the church's construction, master builders who worked according to a plan established in advance.

The church was paved with mosaics, of which only small parts have survived, decorated with a rope pattern and an interlaced border. The area of the *bema* in front of the apse was enclosed by marble chancel screens. A few fragments of the panels of these, decorated with ivy and crosses, were discovered in the excavations. In the rock substructure of the floor of the apse was a long hollow that served, in the

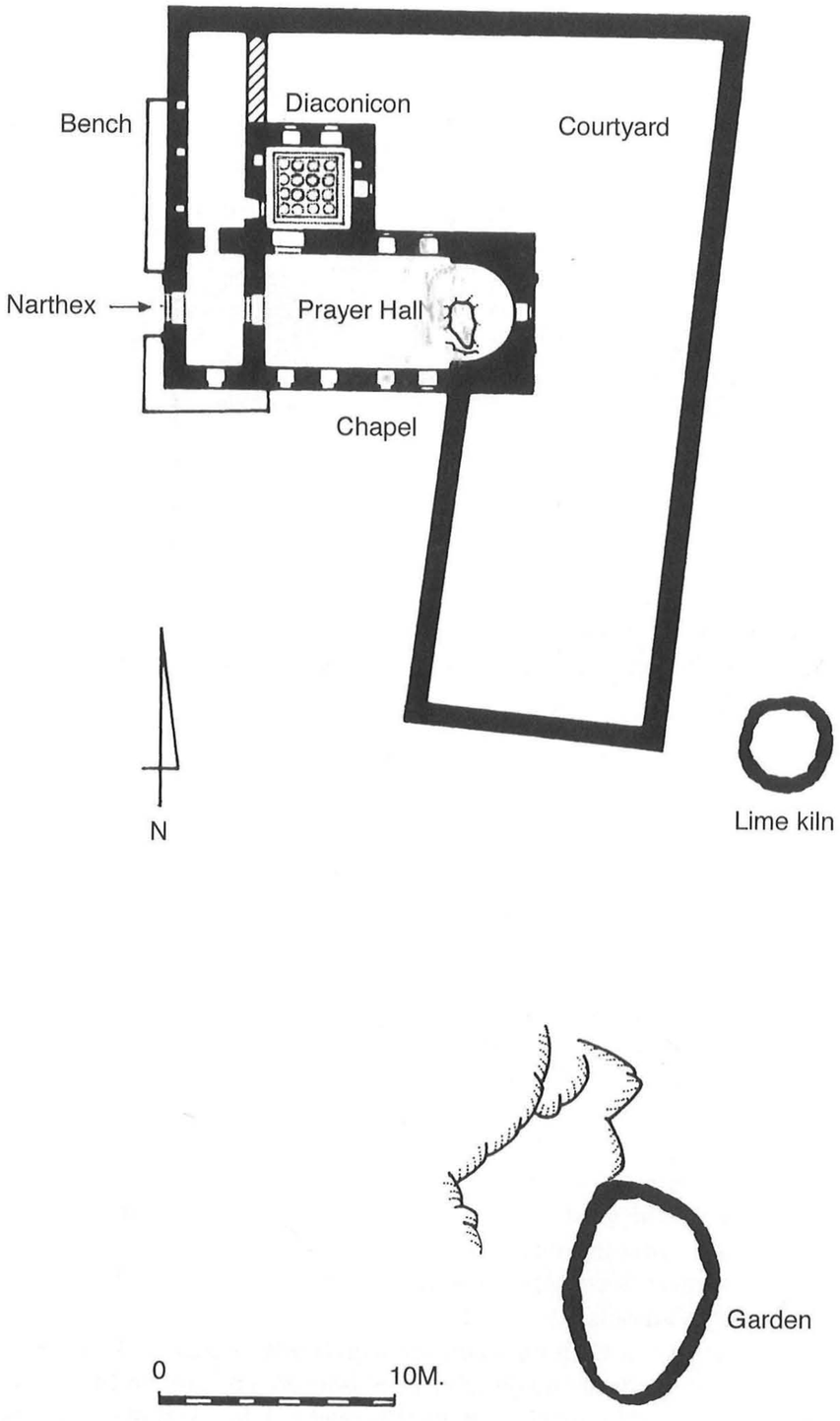
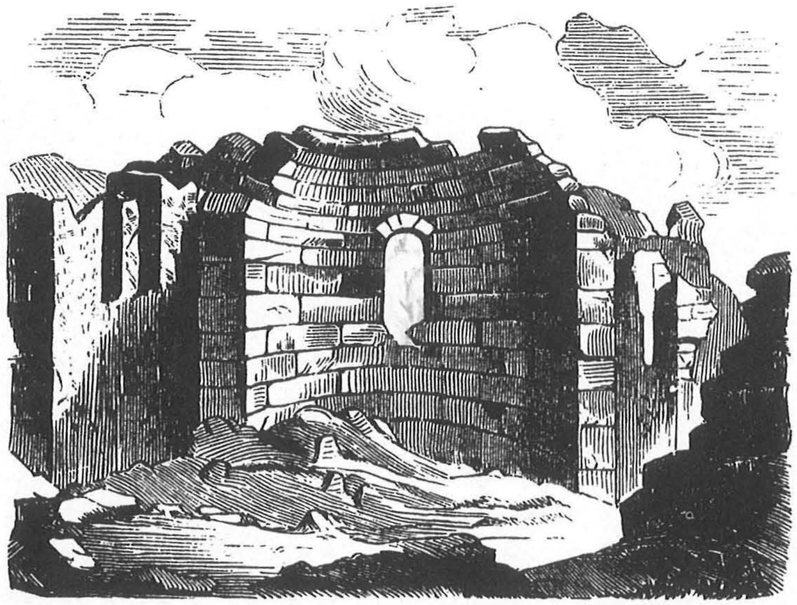


Fig. 5. Plan of the church complex of Masada (after *Masada* III, Plan 25).

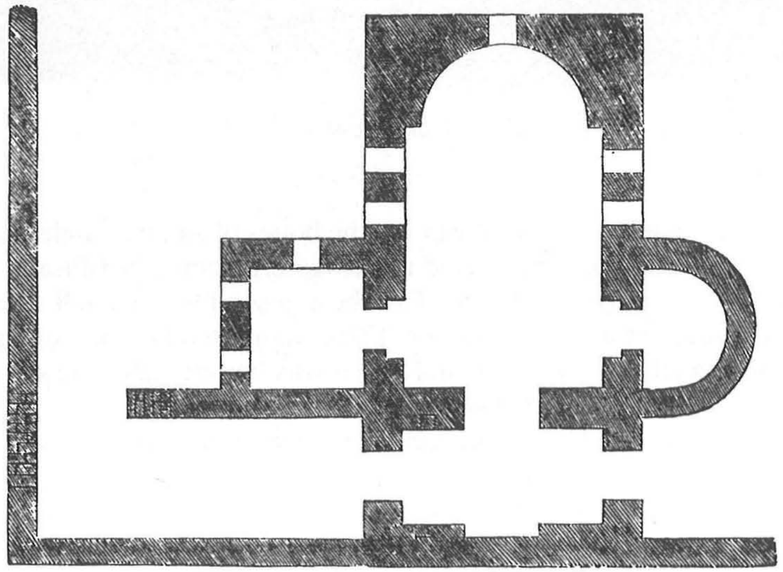
Fig. 6. The remains of the church at Masada, looking east.

opinion of the excavators, as a reliquary for the bones of saints.[29] Indeed, in one of the rooms of the casemate wall in the northwestern sector of Masada a marble reliquary chest was recovered (Fig. 8). The chest, resembling a small sarcophagus, was found buried under a cairn of stones. Yadin suggested that the reliquary chest was originally placed in the church, and that it was buried under the stones by the monks when the monastery was abandoned.[30]

Parts of the church's walls are still preserved to their original height. High in the walls were seven windows: one in the apse, four in the long southern wall and two in the long northern wall. The window in the apse is 2.3 m above floor level and measures 0.6 × 1.2 m. The windows are narrow on the exterior and widen towards the interior of the church. Fragments of their glass windowpanes were found in the excavations. The lintels of the window frames were arched, and one of them was decorated with a cross (Fig. 9). This conical keystone, 25 cm high and 8–14 cm wide, was found in the excavations. The window of the apse, looking out over the Dead Sea and the mountains of Moab, is paralleled at other monasteries of the Judean Desert, such as the *laura* of Firminus and the monastery church excavated at Upper Herodium.[31] The plaster covering the interior of the church is studded with potsherds of the Byzantine period, whose purpose was to ensure the adherence of the outer layer of plaster.



Herodesburg bei Masada.



Grundplan der Herodesburg bei Masada.

Fig. 7. Engraving and plan of the church (after Sepp 1873).

Near the northwestern corner of the prayer hall is an opening leading to two adjoining rooms. The first of these was identified by the excavators as the *diaconicon*, i.e. the room in which ritual objects and other valuables of the monastery were stored.[32] The room is square, measuring 3.5 × 3.5 m. Its floor is paved with

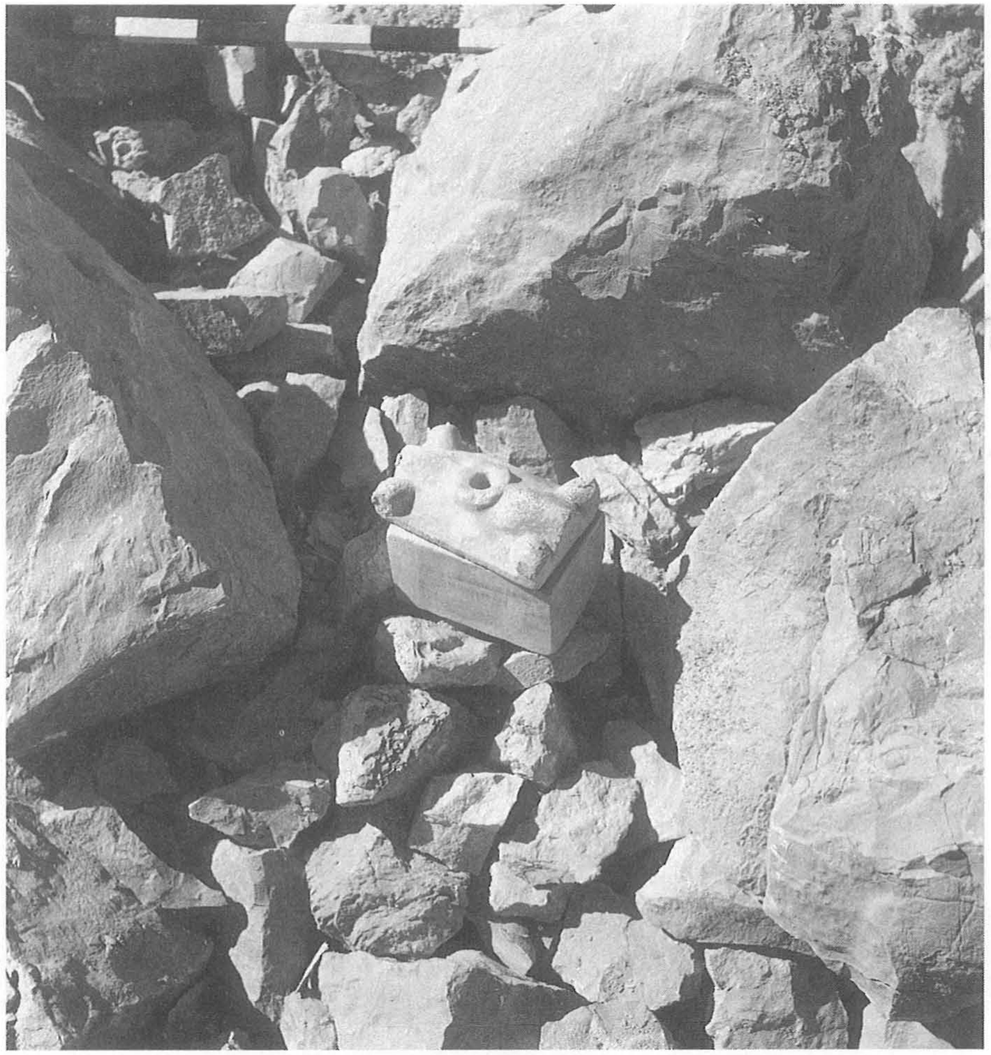


Fig. 8. The reliquary chest as it was discovered in the western casemate wall of Masada.

attractive mosaics (Fig. 10). The mosaic pavement is composed of 16 medallions surrounded by winding rope patterns. The medallions are populated by geometric and floral motifs and by fruits, such as pomegranates, figs, citrus and grapes. One of the medallions contains a wicker basket decorated by a cross; the making of such baskets was a traditional handicraft of the monks of the Judean Desert and elsewhere.[33] In the southwestern corner of the room's floor was a round depression decorated with a chequerboard pattern, intended to drain waste water after cleaning the floor. The walls contain several niches used as cupboards. Near them were discovered pieces of wooden boards that were probably used as shelves and as cupboard doors.

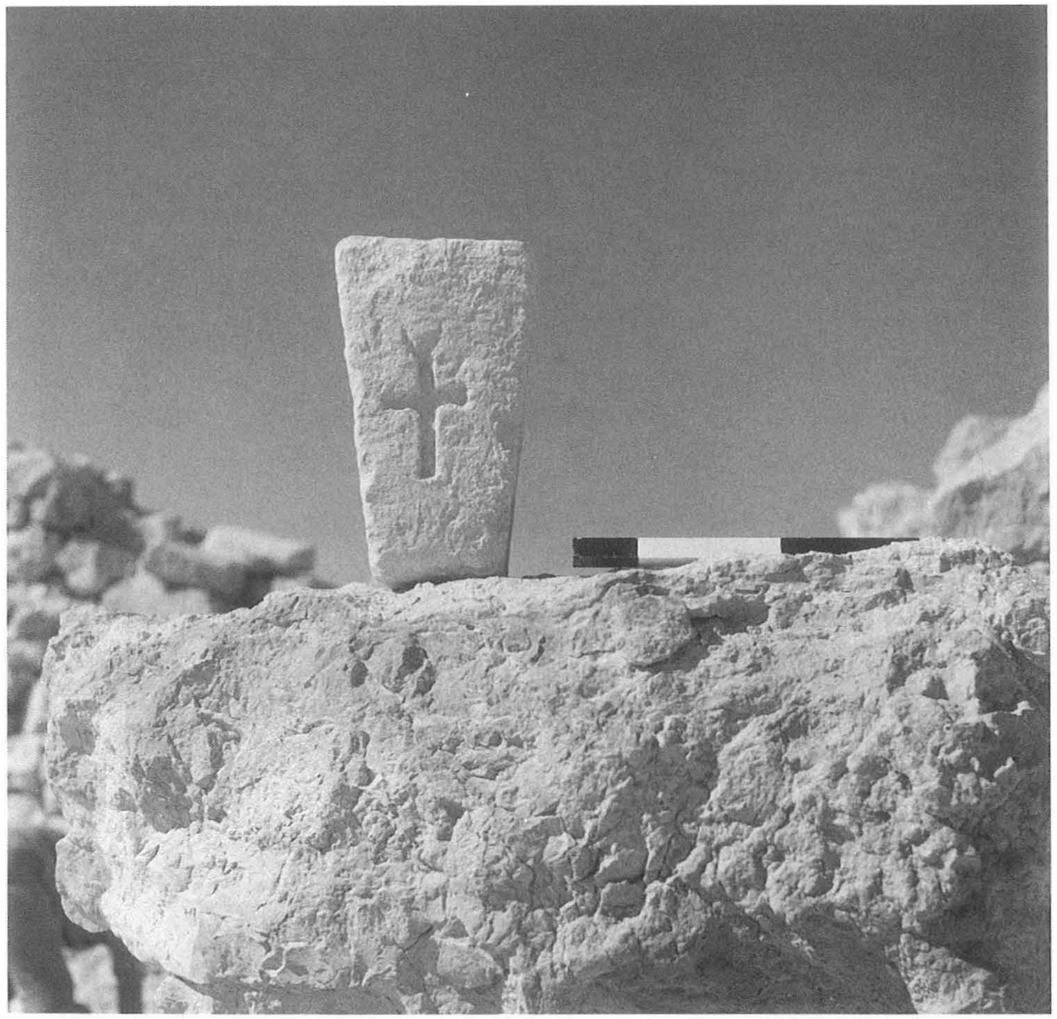


Fig. 9. A keystone decorated with a cross from one of the window lintels of the church at Masada.

The second room, long and narrow, is entered from the first. It measures 3 × 8 m. In its northwestern corner a complete Byzantine jar, protected by a covering of sandstones, was discovered. In Netzer's view, the jar was used for the storage of food.[34] In the long western wall of the room were four storage niches. Yadin believed that the room was used for accommodation, but this interpretation seems unlikely in view of its location leading off the *diaconicon* of the monastery's church. The discovery of two adjacent rooms in the church of Masada accords with what is known from the sources about the *diaconicon* in the monasteries of the Judean Desert in the Byzantine period. In his description of the *diaconicon* of the church in the Monastery of Euthymius, Cyril notes the existence of an 'inner room', in which meals were served to honoured guests of the head of the monastery. Cyril

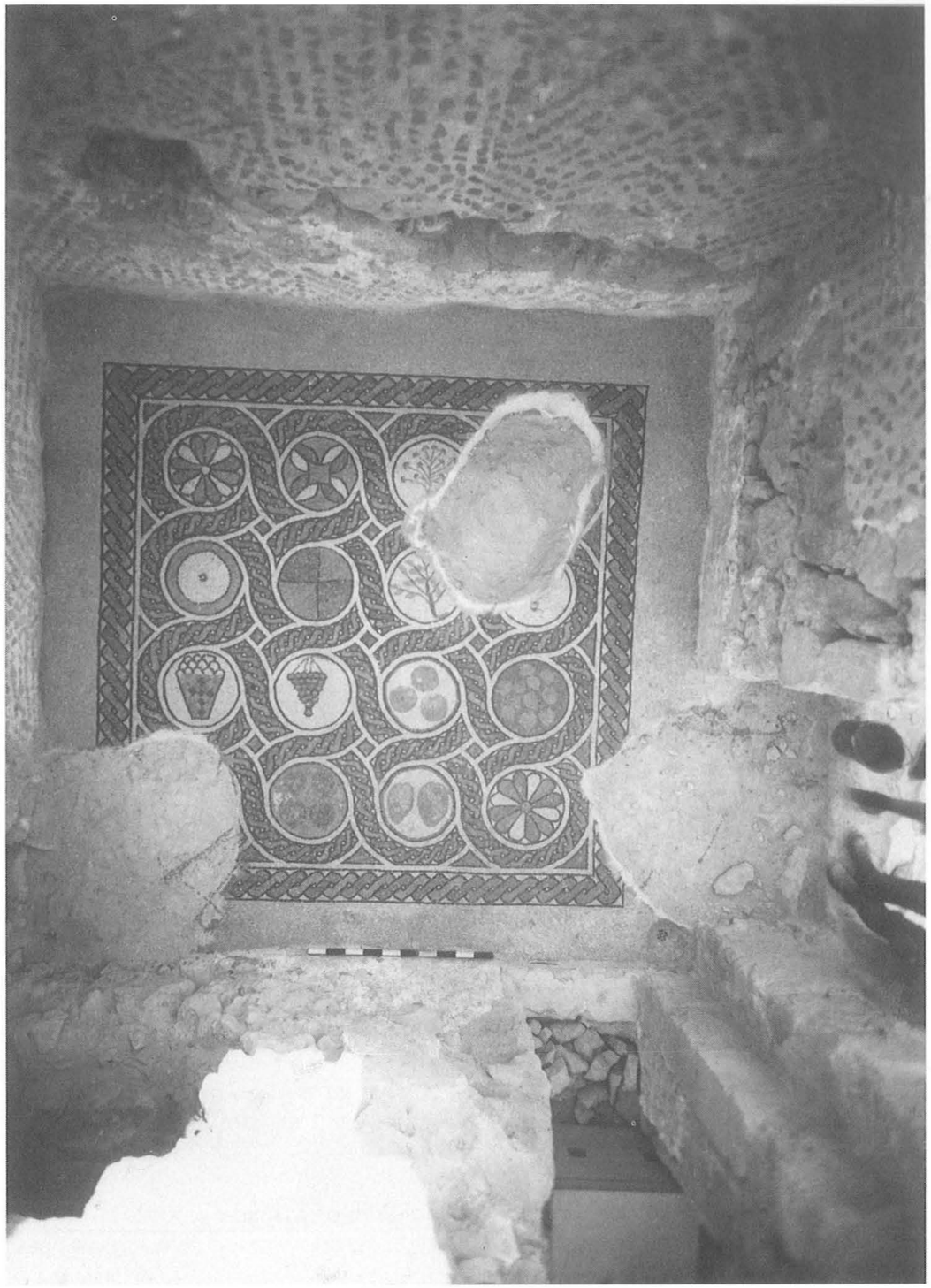


Fig. 10. The mosaic floor of the *diaconicon*, adjacent to the church.

also mentions the cupboards in the *diaconicon*, in which the valuables of the monks of the Monastery of Euthymius were stored.[35] Consequently, it seems likely that the two adjacent rooms in the church of Masada were a *diaconicon* composed of two rooms: an outer room in which the valuables of the monastery were stored, and an inner room used for hospitality on special occasions.

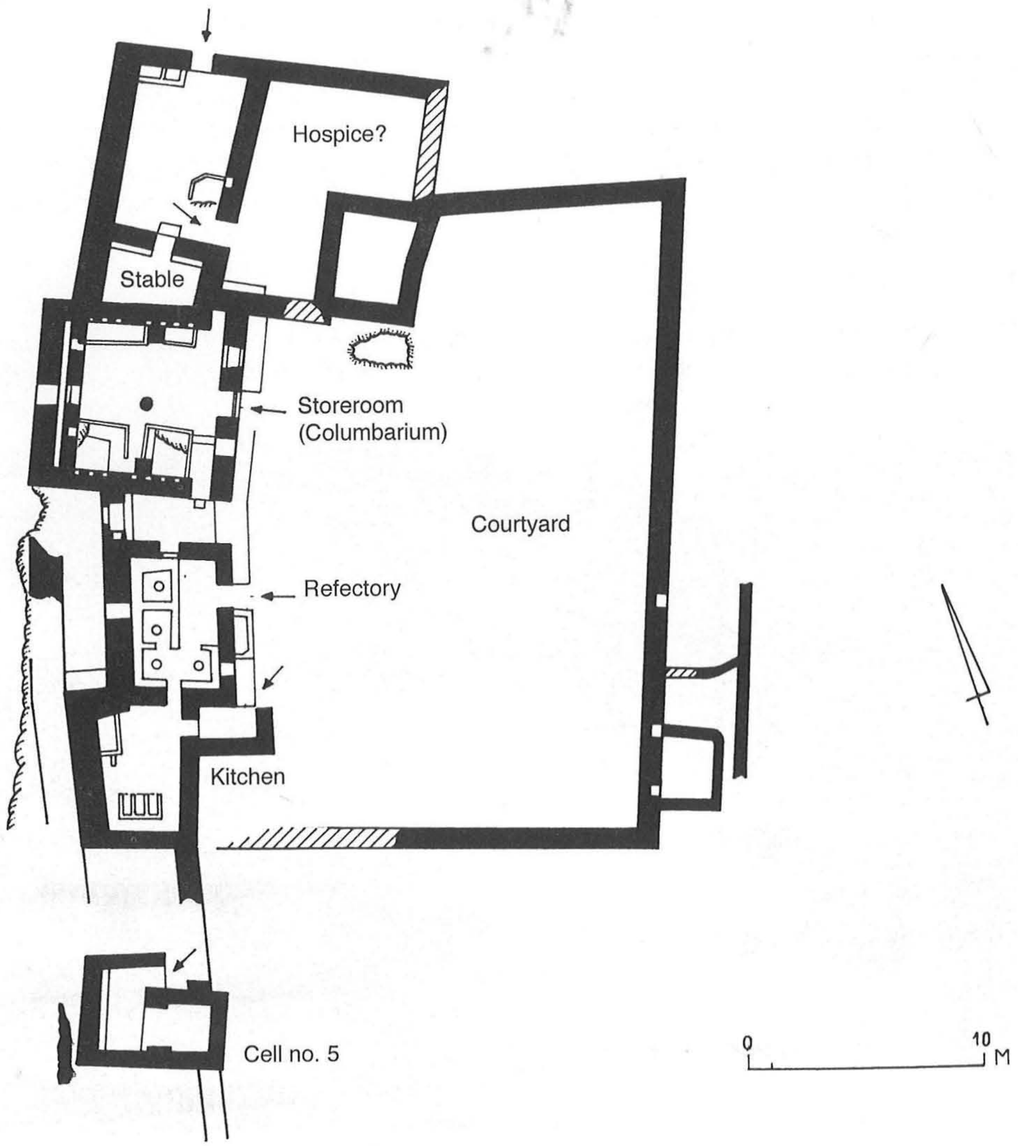


Fig. 11. Plan of the service buildings of Masada and Cell 5 (after *Masada* III, Plan 38).

The service buildings

The service buildings of the monastery are located in the rooms of the casemate wall some 50 m west of the church.[36] The complex consists of a long row (43 m) of rooms of different sizes, including a refectory, a kitchen, stables and a columbarium (dovecote) of the Herodian period, adapted in the Byzantine period for use as a storeroom (Fig. 11). The rooms open onto a large courtyard (some 620 sq. m) extending to the east. Attached to the outside of the eastern walls of the rooms were benches built of stone and plaster for the repose of the monks, especially in the afternoons.[37] The courtyard was bounded by a sturdy stone wall, 0.80 m wide.

The monks built numerous storage niches in the walls of the rooms. Large quantities of potsherds of the Byzantine period, mostly from storage jars, were found in the rooms. In addition, a papyrus whose contents relate to the economic activity of the monastery was found here.[38] These finds support the assumption that these rooms served the domestic needs of the monastery. The sources relate that the service complexes of monasteries included a bakery and storerooms for vessels and food.[39]

The columbarium

The columbarium, in the centre of the service complex, is outstanding in its size (7.6 × 8.1 m) and the preservation of its walls to a height of 4.5 m (Fig. 12). In the

Fig. 12. The columbarium in the service complex, looking west.

Herodian period pigeons roosted in the niches in its walls. The entrance, in the eastern wall, has a window on either side. Another opening in the southern wall leads to the refectory and the kitchen (see below). A column drum that served as the base of a table was found *in situ*, set into the light-coloured plastered floor of the room; similar column drums were found in the adjacent refectory. At the edge of the room, to the south of the table, were two plastered storage pits, each 0.80 m deep. Two pilasters on opposing walls supported the ceiling of the room.

To the north of the columbarium are two or three rooms, one of them stone-paved. The rooms have a separate entrance on the north. In Netzer's opinion, the stable for the monastery's beasts of burden was located here.[40] It is possible that these rooms sometimes served as a hospice for the accommodation of guests, a facility that would have been necessary in view of the monastery's isolated location.

The refectory and kitchen

To the south of the columbarium a long narrow corridor led westward to a room within the casemate wall. In Netzer's opinion, this was a patio open to the view.[41] To the south of the corridor was a fairly large room with internal measurements of 3.5 × 5.4 m (19 m^2), which seems to have been the refectory of the *laura*. The room had a main opening on the east and two subsidiary openings, one on the north from the corridor and one on the south leading to the kitchen (see below). In the floor of the room, which is made of light-coloured plaster, are four square seating installations (1.2 × 1.2 m), each consisting of four benches and a column drum in the middle which served as the base of a table (Fig. 13). On the assumption that one diner was seated on each of these benches, the refectory could have served some 16 people, and as we shall see below, this is the estimated size of the monastery's community.

The discovery of a refectory at the monastery of Masada is of great importance, since this is the only known refectory of a *laura* in the Judean Desert. From the sources we know that the monks of a *laura* met for communal meals on Saturdays and Sundays, but up to now it has not been clear whether they took these meals in the church, in the courtyard of the church or in some other place.[42] The refectory of Masada provides evidence that in this type of monastery the refectory was part of the complex of service structures.

To the south of the refectory the kitchen was uncovered. It has two openings: one from the refectory in the eastern wall, and one in the southern wall providing a separate entrance. The kitchen is rectangular, measuring approximately 3.5 × 5.4 m. At its southern end was found the cooking stove, a fairly large installation with three fire compartments measuring 1.1 × 1.8 m and 0.40 m high.

The church and the service complex comprise the core of the *laura* at Masada. Around and within them the daily routine of the monastery's community was conducted. A noteworthy feature is the physical separation between the two complexes. This feature has been noted in the remains of other *laurae*, such as the New Laura near Teqo'a and the *laura* of Pharan in the northern Judean Desert.[43] It

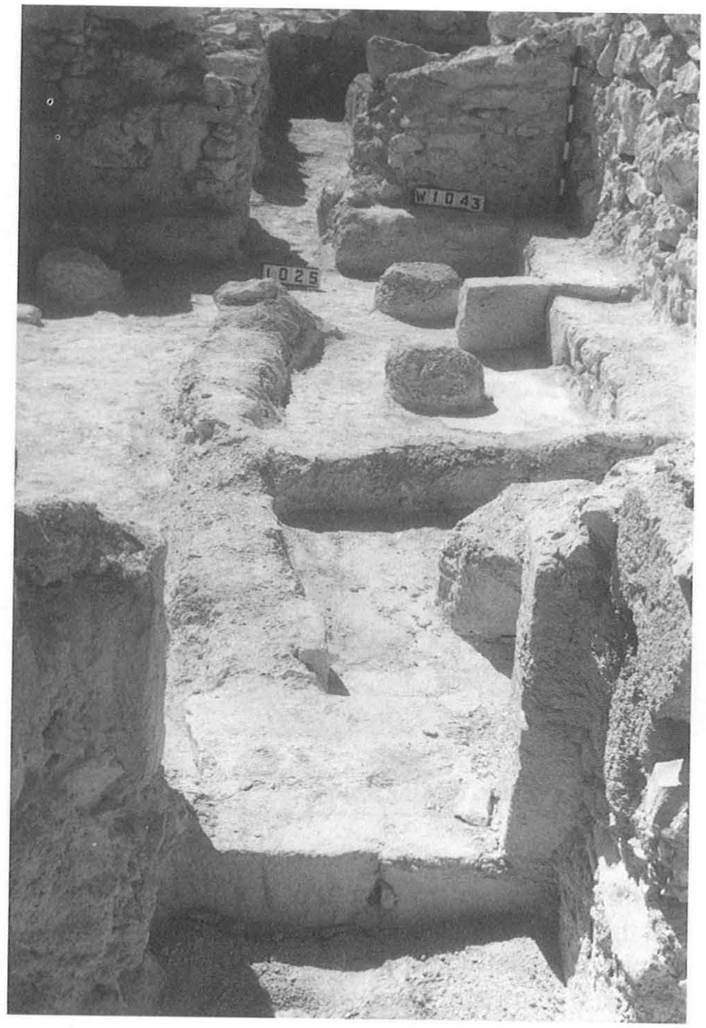


Fig. 13. The refectory in the service complex, looking south.

is plausible that the separation of the service buildings from the church and its annexes was designed to ensure quiet and to distance the bustle of practical activities from the area reserved for prayer. The living quarters of the abbot and his chief assistant, the steward (Greek *oikonomos*), were generally located in the core of the *laura*.[44] The other members of the community lived in cells that were scattered in random fashion around the central structures.

The cells

The remains of 13 cells and rock shelters inhabited by monks were found on the summit of Masada. On average they are 62 m from one another. Most are fairly

Fig. 14. Cell 1 in the Northern Palace, looking southwest.

small structures with a rather uniform plan. Most are divided into two or sometimes three rooms, like the cells known from other *laurae* in the Judean Desert.[45] The division into rooms was usually functional; one room served for sleeping, another for prayer and a third for storage. Thus we should see each cell as the dwelling of a single hermit.

Structurally, the cells are characterized by white lime floors, niches in the walls and windows that are narrow on the outside and widen towards the inside, smaller versions of the windows of the church. Some but not all of the cells are built between or within the Herodian ruins of the site. All of the cells made intensive use of building stones of the Herodian period. The following description of the cells is in order of their location in the site, from north to south.

The northernmost *Cell 1* (No. 1 on the plan of the *laura*, Fig. 1 above) was discovered in the courtyard of the upper terrace of the Herodian Northern Palace (Fig. 14).[46] This is one of the largest cells on Masada; it is roughly square, measuring about 8.5 m on each side, and its area is thus some 72 sq. m (Fig. 15). The cell is divided into three rooms opening onto a corridor and an additional room to the west of the corridor. The latter room is larger, with internal measurements of 2.5 × 3.5 m, and has a separate entrance. The entrance to the corridor is on the south. The rooms to the east of the corridor are square, measuring 2.2 × 2.4 m. The excavations

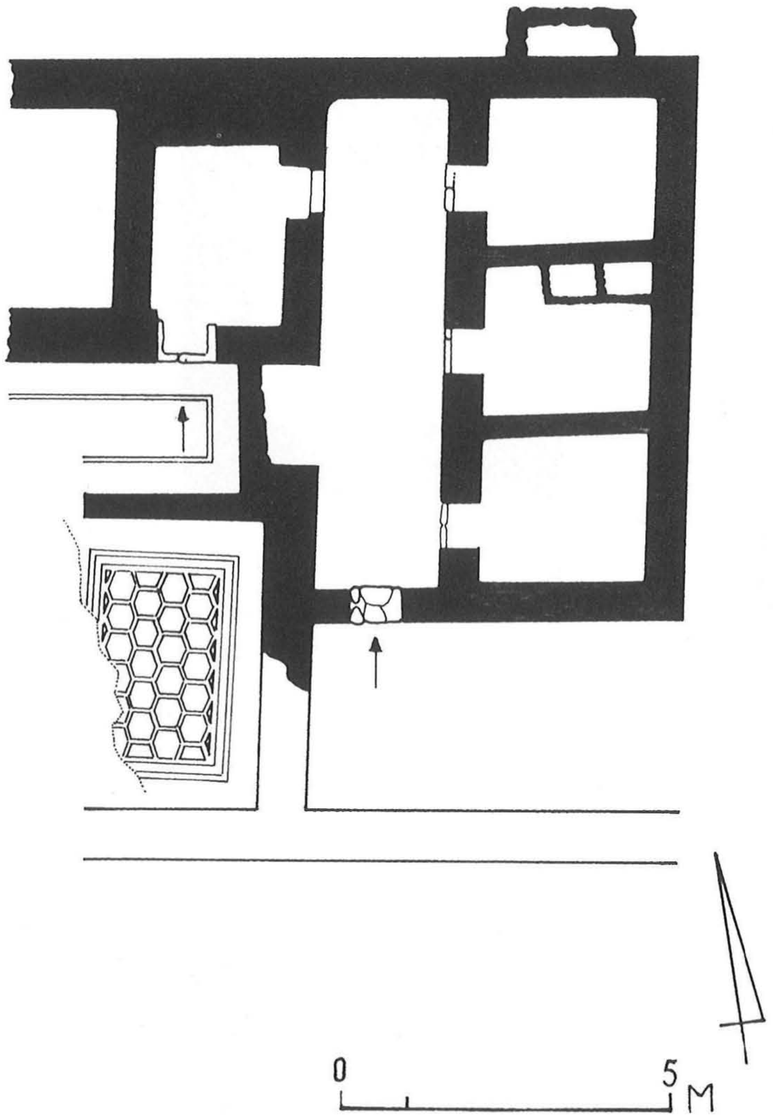


Fig. 15. Plan of Cell 1 (after *Masada* III, Plan 10).

uncovered fragments of windowpanes in the ruins of the cell, pointing to the existence of glazed windows.

Cell 2 was found abutting the wall of the *caldarium* of the Herodian bathhouse, some 50 m from Cell 1.[47] This is one of the smallest cells on Masada with internal measurements of only 1.4 × 2.5 m, i.e. a living space of some 3.5 m^2 (Fig. 16). Its entrance was in the south, and there was a window in the opposite northern wall. The large niche in the western wall was originally part of the heating system of the Herodian bathhouse.

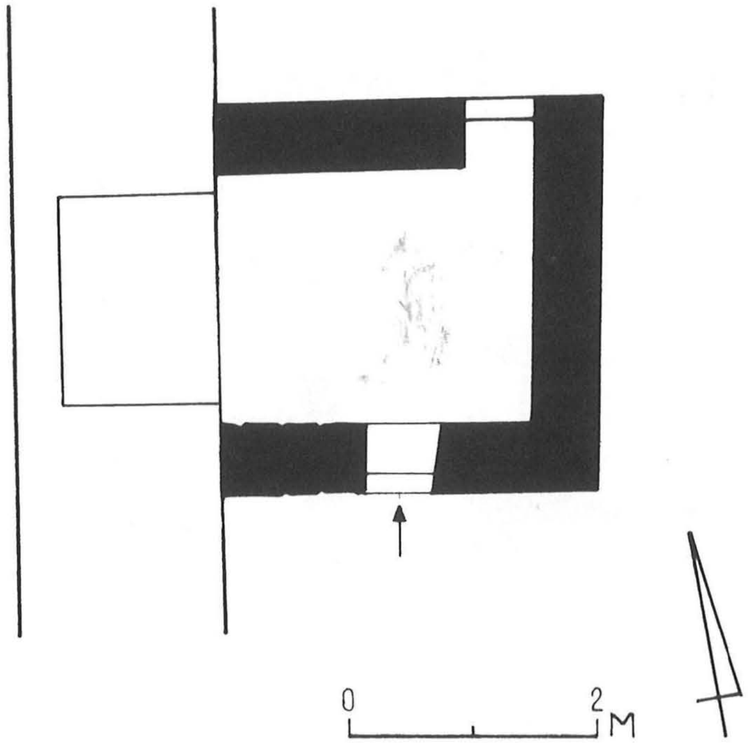


Fig. 16. Plan of Cell 2 (after *Masada* III, Plan 6).

Cells 3 and *4* were found in the large residence of the Herodian period (Building IX), some 50 m northeast of the church.[48] Cell 3, which is larger, is in the centre of the courtyard (Fig. 17). It is irregular in shape, with external measurements of 5.5 × 7 m (40 m^2). It comprises three small rooms. An entrance in the southern wall leads to a central room, from which there are openings into two lateral rooms. The eastern room has a separate entrance facing north (Fig. 18). Opposite the entrance, a window is preserved in the southern wall, widening towards the interior. In the western room, two wall niches were found; on the base of one of them a splendid bronze lamp was found. The adjacent Cell 4 was small, measuring 2 × 3.2 m (6.4 m^2), and had an entrance on the east.[49] To the west of the cell was a storeroom and beside it a large cultivated plot, bounded by a stone fence. As we shall see below, cultivated plots were found in several places on the summit of Masada, indicating that the monks practised agriculture.

Cell 5 was located some 5 m south of the service complex (Fig. 11 above).[50] This is a typical cell, measuring 4.5 × 6 m in external measurements and composed of two small rooms. Along the western wall of the western room is a stone bench.

Cells 6 and *7* exemplify the use made by the monks of the ancient structures they found at the site. Cell 6 is located in the Herodian casemate wall south of the Byzantine gate.[51] It is rectangular and fairly small, measuring 1.8 × 4 m (some 7 m^2).

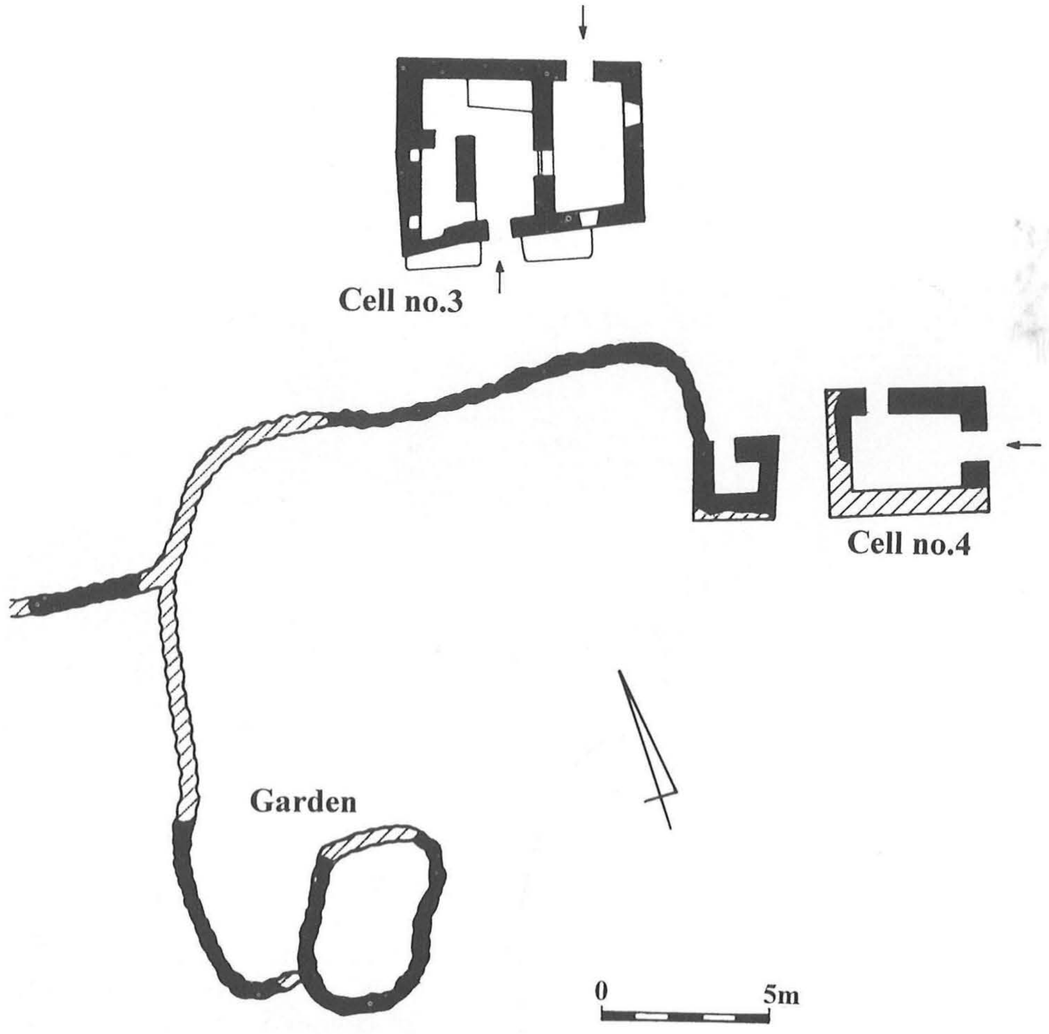


Fig. 17. Plan of Cells 3 and 4 in Building IX (after *Masada* III, Plan 16).

Cell 7 is in the entrance gate of the Herodian Western Palace (Fig. 19). To form the cell, one of the entrances of the gate was blocked, and the original benches were renovated to serve the occupant of the cell. A cooking pot, apparently for the storage of food, was sunk into one of the benches. To the south of the cell a cistern decorated with crosses was found.

The next two cells were found adjacent to the eastern casement wall, some 150 m east of the church. *Cell 8* was to the south of the Snake Path Gate.[52] This is a relatively complex cell, comprising three rooms of varying size and a courtyard surrounded by a stone fence (Fig. 20). The largest western room (1.7 × 2.2 m internal dimensions) was apparently the main living room. The second room had two

Fig. 18. The eastern room of Cell 3, looking northwest. Note the window in the right-hand wall.

entrances and a window in the southern wall. The windowsill was only 0.45 m above the floor, probably to ensure maximal exposure to the breeze to air the cell. This feature is shared by most of the cells of Masada. Netzer believed that this unit accommodated two or three monks, but in my view this cell, despite its complexity, housed only one monk.

Cell 9 is one of the finest and best preserved on Masada. The cell is located within a large depression (16 × 18 m), which extends about 3 m below surface level. In the opinion of the excavators, this depression was an ancient quarry.[53] The building of the cell within the depression presumably enhanced the occupant's feeling of isolation. The cell itself is built in the mouth of a large cave (Fig. 21). It is

Fig. 19. Cell 7 in the entrance gate of the Western Palace, looking south. Note the secondary use of the two benches of the gate.

rectangular (3.5 × 7 m) and has a single opening on the north. The opening is wide (1.8 m) and built of ashlars. Within the cell, there are benches for seating on either side of the entrance, and at each end is a sleeping bench, 1.2 m wide and the same length as the width of the cell (2 m). In the inner wall is an entrance to the cave with a window on either side. The large main space of the cave measures 2.7 × 7 m and is 2.4 m high. Inside the cave is a masonry bench with a silo beside it. Three smaller spaces branch out from the main space. The westernmost and largest of these is separated from the main space by an entrance in which arrangements for locking are discernible. This space had a small opening, a kind of window, enabling access from the outside. The description of this cave by Conder and Kitchener mentions an inscription in red paint bearing the name Kyriakos, and on either side a cross and a pomegranate or a flower of some kind.[54]

Cell 10 is located to the southeast of the large Herodian structure (Building XII), in the southern half of the summit. This cell was termed by the excavators a 'mosaic workshop', because of the large numbers of mosaic tesserae found near it.[55] The cell comprises two small rooms, and its external measurements are approximately 5 × 6.5 m (Figs. 22–23). To its north is a small courtyard surrounded by a stone fence. To the west of the cell were discovered the remains of a small structure, which

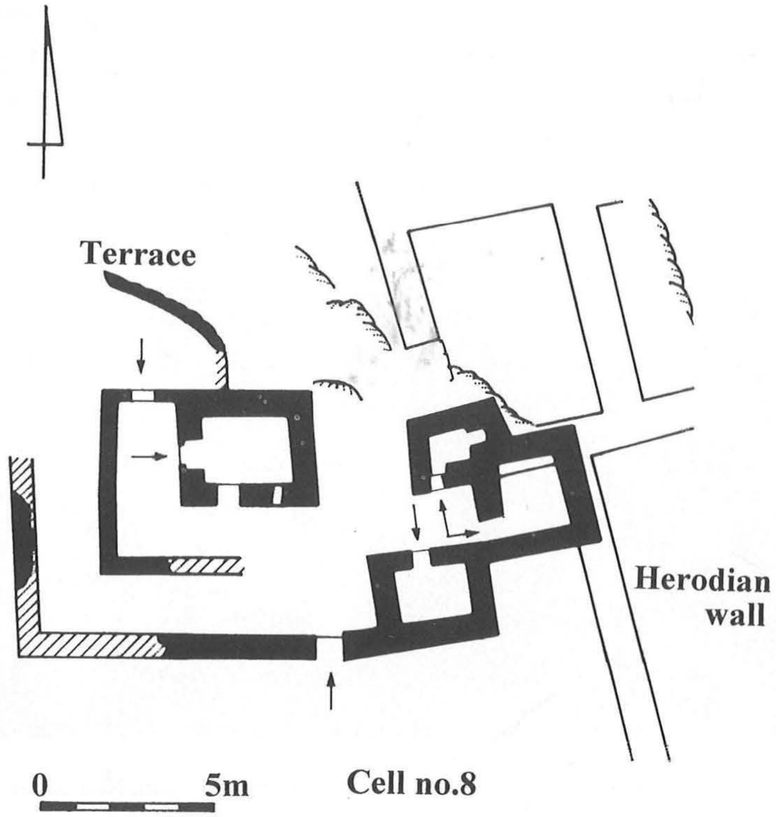


Fig. 20. Plan of Cell 8 abutting the eastern casemate wall (after *Masada* III, Plan 55).

perhaps provided shade for the monk who manufactured the mosaic tesserae found nearby. To the southwest of the cell evidence of cultivated plots was found, and to the east is a cave on whose walls several painted crosses survived.[56]

Cell 11 is some 70 m southwest of the previous one.[57] The monk who built the cell utilized a round Herodian columbarium for his purpose. A small room that served as an anteroom was attached to the southwestern side of the tower (Fig. 24). The anteroom leads to an opening 0.8 m wide leading into the interior of the columbarium. The round space (interior diameter 5.7 m) was divided by a partition wall into two rooms. In the inner room was a rectangular bench (0.8 × 2.15 m), 0.30 m high above the cell floor.

Cell 12 is located near the southern tip of Masada, some 100 m south of the previous one.[58] This is one of the smallest cells at the site, with external dimensions of only 3.6 × 5.4 m, and is divided into two rooms (Figs. 25–26). The cell is entered by an opening in the southern long wall. The entrance room, which measures 1.4 × 2.1 m, has two wall niches. The inner room is a little larger (1.9 × 2.1 m) and has a window in its rear wall. A depression in the floor of this room probably held a jar of drinking water.

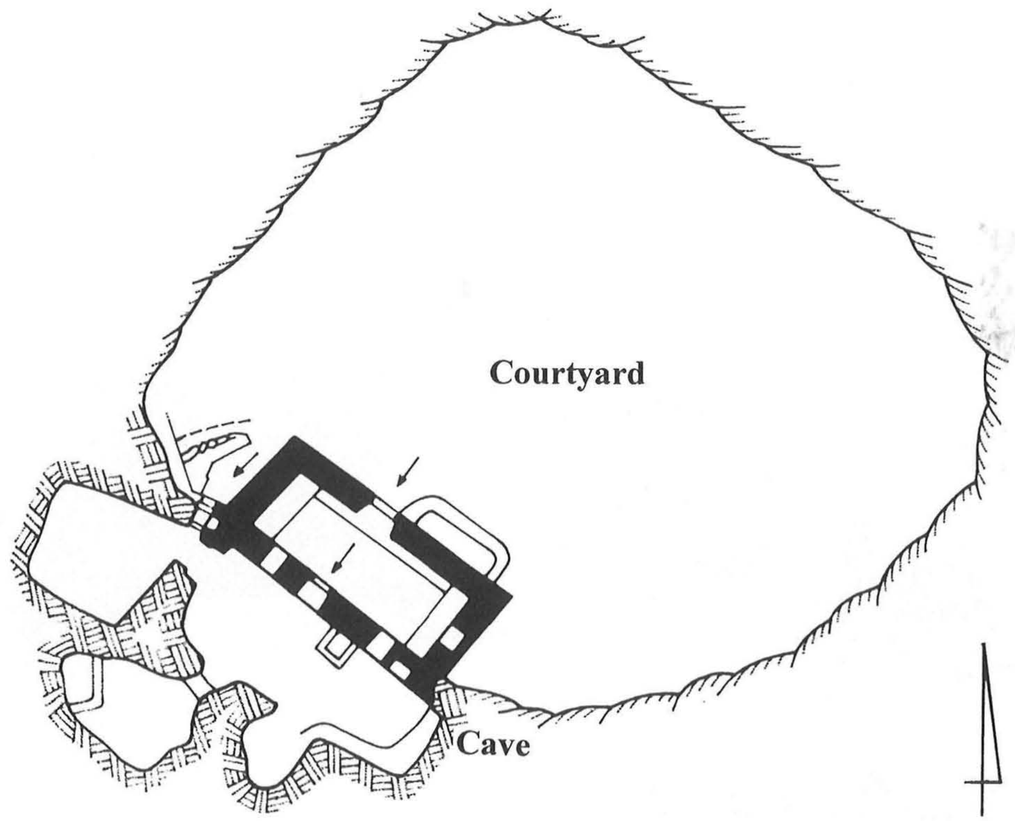


Fig. 21. Plan of Cell 9 built into a cave (after *Masada* III, Plan 33).

Cell 13, at the southern tip of Masada, was built next to the large Herodian swimming pool.[59] The cell consists of three rooms abutting the southern wall of the pool (Fig. 27). The central room (internal dimensions 2.3 × 5.3 m) served as an anteroom. The two lateral rooms, identical in size (2.7 × 3.7 m), are furnished with low windows, 0.50 m above the floor. In the eastern room is a sleeping bench measuring 1 × 2.5 m.

A large cistern whose origins are in the Second Temple period was found at the southern tip of the summit of Masada.[60] This cistern, with two or three additional ones, would have provided adequate water for the needs of the monks in the Byzantine period. In the opinion of the excavators, they also used some of the large

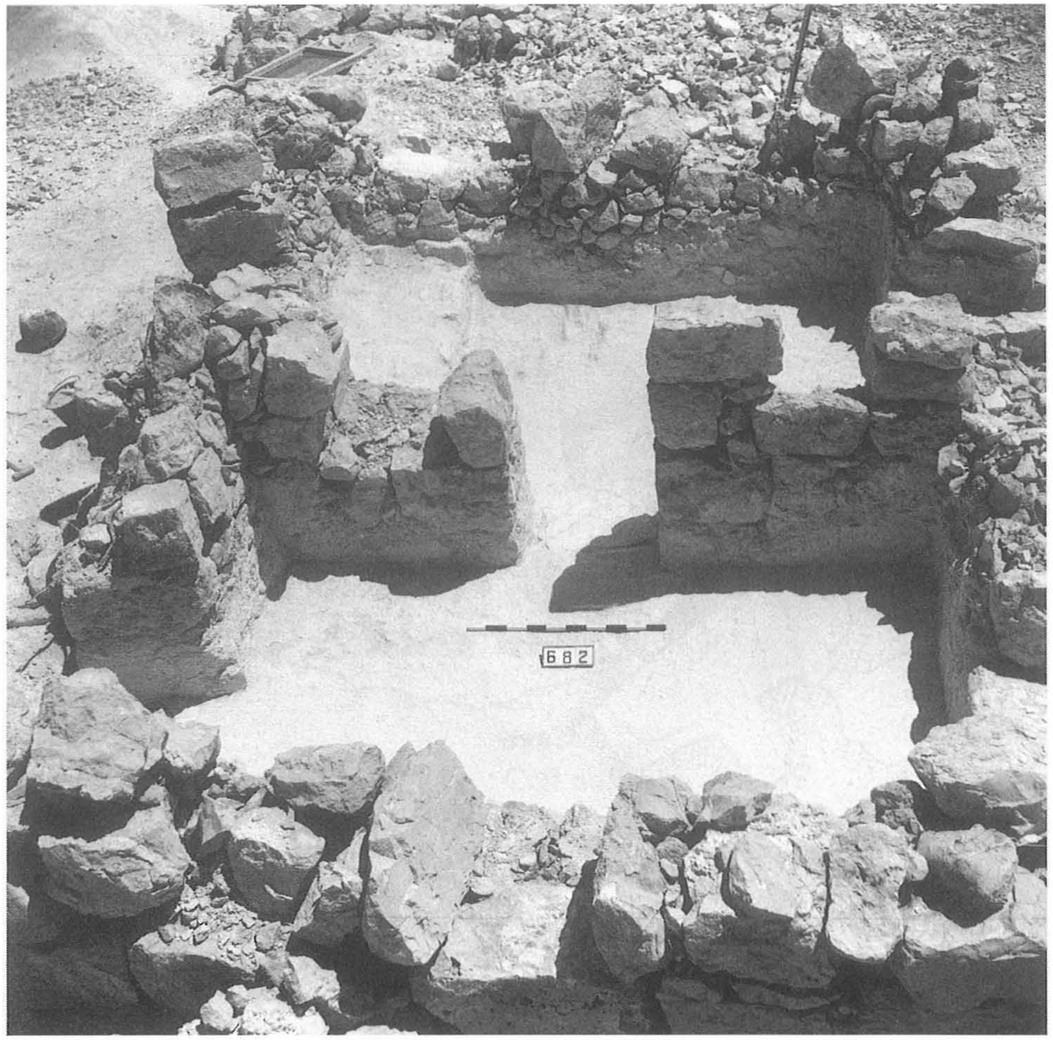


Fig. 22. Cell 10, looking east.

cisterns in Masada's northern slope. If necessary, they could have brought water from 'En 'Aneva in Nahal Ze'elim, some 6 km north of Masada (see above).

From the number of cells, one may calculate that the monastic community of Masada numbered only 17 or 18 members.[61] This number comprises 13 monks inhabiting the cells and another 4 or 5 living in the core of the *laura*. The small size of the community is not surprising, since most of the monasteries of the Judean Desert housed small communities. At the *laura* of Pharan near 'Ein Fara northeast of Jerusalem, the remains of 15 cells were discovered.[62] A somewhat larger number of cells (25) was found at the *laura* known as Heptastomos, north of Nahal Kidron.[63] At the *laura* founded by Jeremias, a pupil of Sabas, northeast of Mount Muntar, the

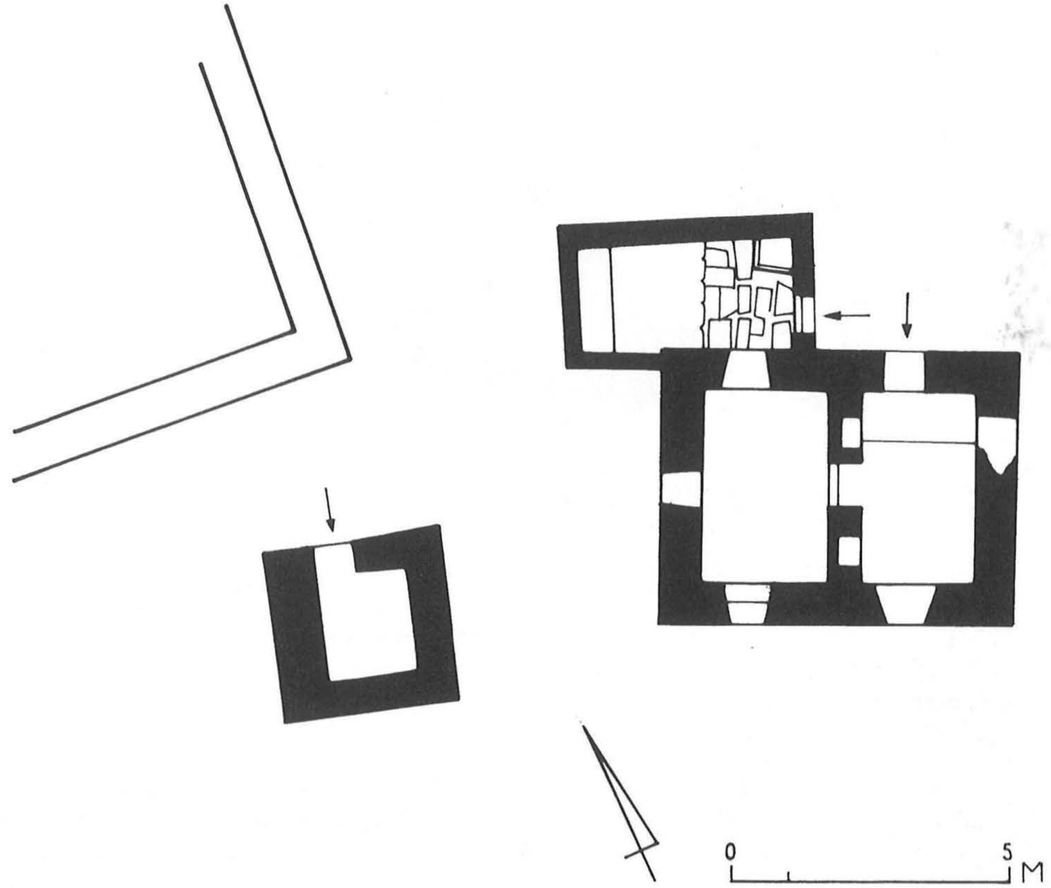


Fig. 23. Plan of Cell 10 (after *Masada* III, Plan 23).

remains of 11 cells were surveyed.[64] In general, the coenobitical monasteries of the Judean Desert were also small. This may perhaps reflect the influence of the monasticism of Cappadocia in Asia Minor, as expressed in the Rules of St. Basil the Great, on the monasticism of the Judean Desert.[65]

The paths

A network of paths connected the cells scattered over Masada's summit with the structures of the *laura*'s core. The paths are clearly visible in aerial photographs of the site. After the abandonment of the monastery in the seventh century the summit remained desolate, and thus it is likely that these are the paths trodden by the feet of monks in the Byzantine period. Two of the paths are especially prominent, one leading from the Byzantine West Gate to the Snake Path Gate, and another connecting the cells in the northern and southern part of the site with the core of the

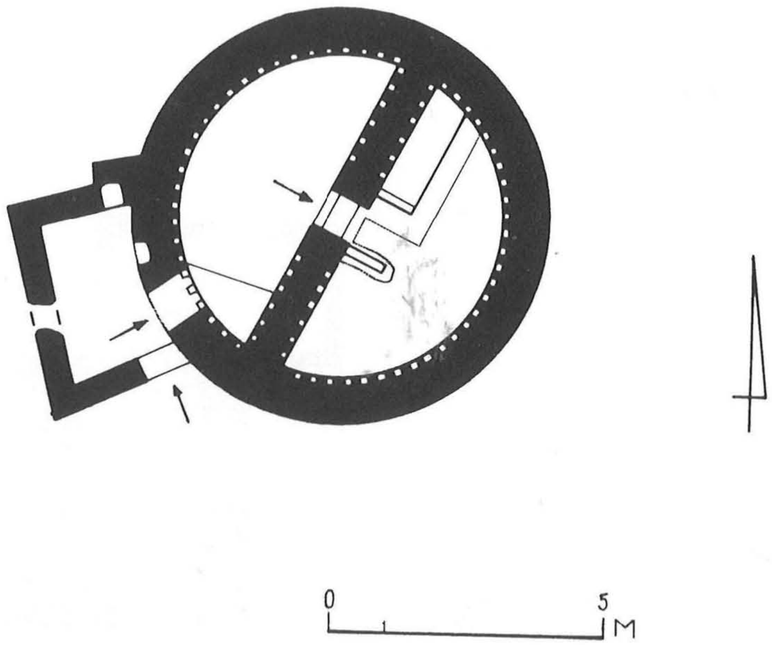


Fig. 24. Plan of Cell 11 in the Columbarium (after *Masada* III, Plan 29).

laura. These main paths form a crossroads near the church. This arrangement enabled convenient access for the monks to the centre of the *laura*, and provided a direct approach to the church for visitors who entered through the West Gate. Thus guests could visit the church without disturbing the tranquillity of the monks in the cells scattered over the summit.

The gardens

Gardens were an integral part of the landscape of the monasteries of the Judean Desert. According to both historical sources and archaeological finds, in every *laura* there were communal gardens that were cultivated in an organized fashion, and private gardens that were tilled by each monk individually. In these irrigated gardens, lovingly cultivated, the monks grew the fruit and vegetables that contributed seasonal fresh produce to their diet.[66]

Remains of gardens and plots were found at various places on Masada. Near Cells 3–4 was a fairly large plot (15 × 15 m) surrounded by a stone fence. Two additional plots were identified to the south of the church complex. However, the best-preserved plot was found near the eastern casemate wall of Masada. This is a large plot, measuring 16 × 35 m (560 m^2) (Fig. 28). The plot is surrounded by a stone fence 1.2 m high. In its centre is a large cistern (7 × 20 m) whose ceiling has collapsed. If the cistern was still intact in the Byzantine period, the garden was sited above it. However, Netzer believes that the ceiling had collapsed before the

Fig. 25. Cell 12 at the southern tip of Masada, looking northwest.

Byzantine period.[67] In this case, the garden was sunken and thus benefited from increased shade and humidity. It is likely that this large plot was cultivated communally by the monks of the *laura* of Masada. To this we should add the garden near the sea shore described by John Moschus, which supplied vegetables to the community with the assistance of an ass.

Discussion

The monastery of Masada belongs to a group of monasteries founded on top of and within the ruins of fortresses of the Second Temple period in the Judean Desert. Remains of monastic dwellings were found in six of the eight fortresses: Masada,

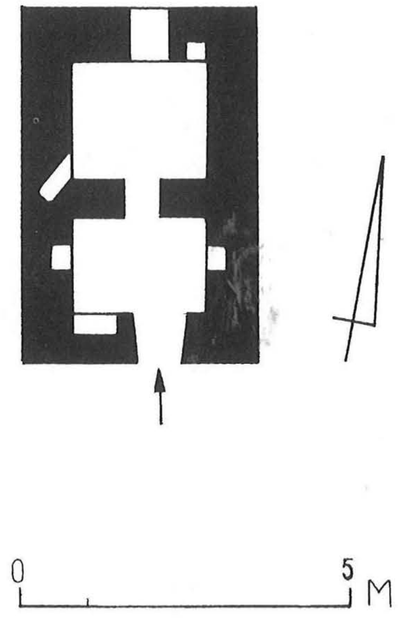


Fig. 26. Plan of Cell 12 (after *Masada* III, Plan 31).

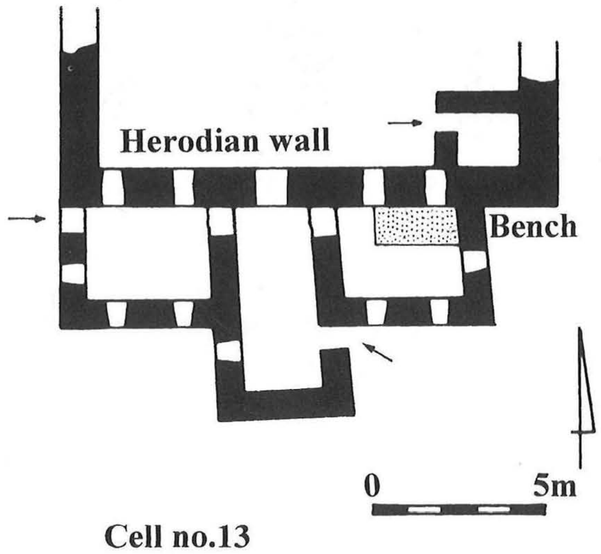


Fig. 27. Plan of Cell 13 abutting the Herodian pool (after *Masada* III, Plan 45).

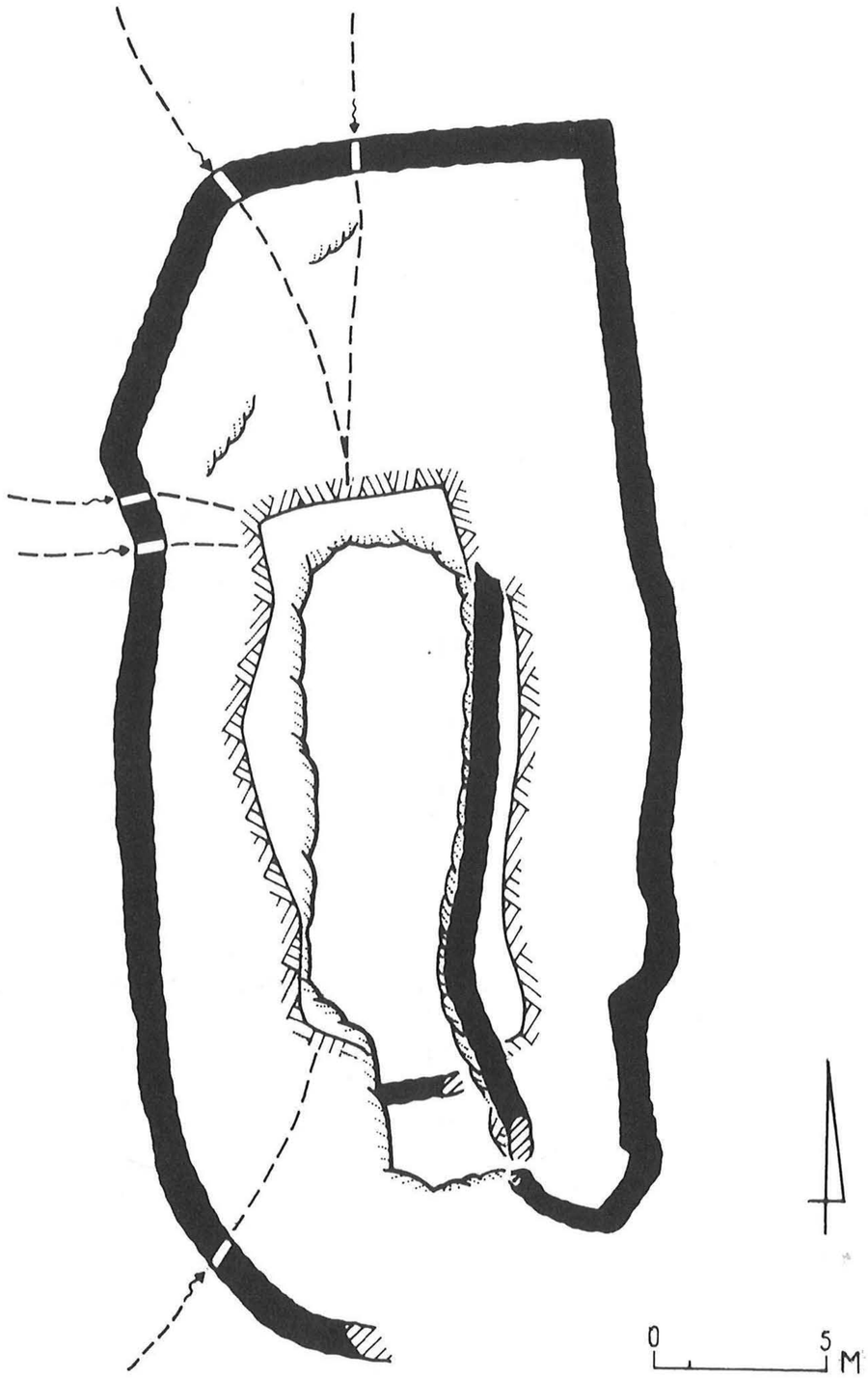


Fig. 28. Plan of the cultivated plot at the eastern tip of Masada (after *Masada* III, Plan 54).

Hyrcania, Dok-Dagon, Herodium, Cypros and Nuseib el-'Aweishireh.[68] This phenomenon is not confined to the Judean Desert, but is encountered in different variations and in various places in Palestine and elsewhere. A monastery was founded over and within the abandoned ruins of a camp of the Tenth Legion south of Jerusalem.[69] An additional example is the monastery at Horvat Rimmonim (Khirbet el-Kiliya), erected in the ruins of a Roman fortress.[70] The remains of abandoned desert fortresses offered attractive locations to the monks. Firstly, these fortresses were sited on mountain peaks in remote locations, a feature that appealed to the monks' desire, for isolation. Secondly, when they came to these abandoned fortresses in the desert the monks found walls and an abundance of building materials, and they were able to reactivate, with a minimum of effort, the water supply systems that they found.

A literary account that exemplifies the process by which the monks transformed an abandoned fortress into a monastery is the description of the foundation of the monastery of Castellion on top of the ruins of Hyrcania. According to the account, Sabas arrived at the place during Lent (which fell between January 21st and April 5th) of the year 492, and purified it for his prayers. After Easter, Sabas brought a group of monks from the Great Laura 'and began to clear the place and to build cells from the material he found there'.[71]

The monks' first task at the site was to clear it of the stones that had collapsed from the ancient buildings. The monks were repaid for their efforts, since according to Cyril they found 'a large vaulted inhabitable room made of wonderful stones'. This was probably one of the Herodian vaults uncovered in the excavation of the foundations of the monastery.[72] The building of the monastery, which received its name from the ruins of the ancient fortress, was completed eight months later, at the end of 492 AD.

The transformation of Herodian Masada into a monastery was thus a routine procedure that was carried out in other desert fortresses. More significant is the definition of the monastery of Masada as a *laura*. The monasteries of the Judean Desert belong to one of two basic categories: the eremitical monastery (*laura*) and the communal monastery (*coenobium*). The architectural distinction between the two is unmistakable. The *laura* is scattered over a large area, and its different components are connected by paths. In contrast, the *coenobium* is built as a compact entity with continuity between its structures, and is contained within an enclosing wall.

By definition, the *laura* was a monastery of anchorites who lived a solitary life, meeting only on Saturdays and Sundays for communal prayer and meals and to equip themselves with food and raw materials for the coming week.[73] Consequently, the *laura* consisted of two main components: the core, consisting of a church and service buildings, and cells for the monks. The core provided accommodation for the abbot, the steward (*oikonomos*) and the priest, and sometimes for holders of special offices, such as the baker, the warden of the hospice, etc. These offices were rotated from time to time. The anchorites, or 'cell-dwellers' as they are known in the sources, lived around the core of the monastery.[74] They spent their time in

solitude, occupying themselves with prayer or simple and repetitive handicrafts, such as basket weaving or rope making.

Typologically, the monastery of Marda belongs to the category of the level *laura*. While the mountain on which the site is located is part of the escarpment of the Judean Desert, the summit is flat and almost completely level. The distinction between the level *laura* and the cliff *laura* has been established by several scholars.[75] The cliff *laura* is built against a vertical cliff or steep slope, and its cells are scattered in random fashion in accordance with the topographical conditions and the presence of natural caves and rock shelters. In contrast, the cells of a *laura* of the level type are distributed in a more organized manner, and the structures of its core are built to a more coherent, and sometimes even regular, plan.

A typical example of a level *laura* is that known as Heptastomos, which was founded by Sabas in 510.[76] This *laura*, identified with Khirbet Jinjas, is located in an area of low hills north of Nahal Kidron. Within the boundary of the *laura*, defined by a stone fence, the remains of some twenty-five cells were surveyed. In the centre of the *laura* the ruins of a church and adjacent rooms arranged around a central closed courtyard were noted.

The *laura* known as Heptastomos and the *laura* of Marda on the summit of Masada share certain characteristics. Both contain a relatively large core consisting of a church and service buildings. In the planning of the structures of the core, a tendency towards regularity of planning can be discerned, for example in the courtyard in front of each of the buildings. In both the cells are distributed over the terrain around the core, at an average distance of 50–60 m from one another. A stone wall defines the area of each *laura*.

Summary

The excavations of Masada uncovered the remains of a monastery that has been identified with the mountaintop monastery known as Marda. According to both the literary sources and the archaeological evidence, this is one of the monasteries of the *laura* type, which were founded in the Judean Desert from the early Byzantine period. The isolated location of Masada in the southern Judean Desert points to a relatively late foundation date for the monastery, in the late fifth or early sixth century.

The excavations of Masada provided information on the structure of the monastery and the material culture of its monks. The entrance gate of the monastery, sited opposite the Roman ramp, was part of the reconstruction of the Herodian casemate wall of Masada. Near the gate were erected the structures of the core of the monastery (the church and the service buildings). There was a physical separation between the church and the service buildings (including a kitchen, a refectory, storerooms etc.) to its west. The monks' cells were distributed over the entire summit, connected by a network of paths, and evidence of irrigated gardens was found next to many of them. From the number of cells, it seems that the community of the monastery numbered no more than twenty monks. From this point

of view the monastery of Marda is representative of the monasteries of the Judean Desert, which were generally limited in size and housed small communities.

Notes

1 Masada's Byzantine remains were described by Yadin in the preliminary reports and in popular accounts of the excavations; see Yadin 1965: 99–102; *idem*, 1966: 111–115; 1993: 984.

2 The first to identify the Byzantine remains of Masada as those of a *laura* was the French scholar Lagrange (1894: 271–272; see also Delau 1899: 280–281).

3 Netzer 1991.

4 Kyrillos von Skythopolis, *Vita Euthymii* 11.

5 *Vita Euthymii* 11 (ed. Schwartz, p. 22; trans. Price, p. 17). On the wandering of Euthymius to Mount Marda, see Vailhé 1908: 181–183; Génier 1909: 82–86.

6 The name 'Mardes' mentioned in the Latin version of John Moschus' work is preferable to 'Mares', which appears in the Greek version; see Johannes Moschus, *Pratum Spirituale* (*Leimonarium*) cap. 158 (ed. P. Migne), *Patrologiae Cursus, Series Graeca* 87, III, Col. 3025, c–d. The Greek text published in various editions is based on a version of the sixteenth century; in contrast, the Latin translation of the fifteenth century is based on an independent version and is thus more reliable: Chadwick 1974: 41–44. On the date of the *Pratum Spirituale*, see Baynes, 1947, p. 404. For a translation into English, Worthey 1992.

7 Johannes Moschus, *Pratum Spirituale*, *ibid.*; trans. Worthey, p. 131.

8 I have summarized the various opinions in my article: Hirschfeld 1990: 53–55 (No. 35).

9 Yadin 1993: 973. One of the most important monasteries of Syria, also located on the summit of a mountain, was known as the 'monastery of Marda' too; see Vööbus 1960, p. 160.

10 On the remains of 'En 'Aneva, which issues from the southern slope of Nahal Ze'elim, see Porath 1983. The latest settlement level of the site (Stratum 1) contains the remains of a large building (6 × 15.5 m), agricultural terraces and a water supply system consisting of a pool and an aqueduct. This level was dated by its archaeological finds to the fifth-sixth centuries AD. These finds raise the possibility that the vegetable garden mentioned by John Moschus was at 'En 'Aneva.

11 Yadin 1966: 119–120. The fact that Cyril mentions only a church on the summit of Mount Marda would seem to indicate that the *laura* was founded only after the completion of Cyril's work, i.e. in the second half of the sixth century. However, it is possible that Cyril chose to ignore the existence of the monastery of hermits on Mount Marda and confined himself to hinting at the presence of monks who, in his words, maintained 'till the present day' the sanctity of the church founded by Euthymius.

12 Cotton and Geiger 1989: 89–90.

13 I am grateful to Rina Talgam for her dating of the mosaic at Masada.

14 On the spread of monasticism in the Judean Desert in the mid-fifth century, Chitty 1966: 92–93. Examination of the development of Judean Desert monasticism shows a concentric spread from the centre outwards. As I showed in the excavation report of the monastery of Khirbet ed-Deir, most of the monasteries in the remote parts of the Judean Desert were founded no earlier than the late fifth century: Hirschfeld 1999: 153–155.

15 On the end of Byzantine Masada, see Shick 1995: 404.

16 Conder and Kitchener 1883: 420–421.

17 Lagrange 1894.

18 Schneider 1931: 251–253.

19 In this connection one should mention the excavations, albeit partial, conducted by Patrich at the *laura* of Jeremias (Wadi ez-Zaraniq), northeast of the Great Laura (Mar Sabas); see Patrich 1990: 295–311.

20 Netzer 1991: 361–369.

21 This plan is based on the general plan in Netzer 1991, Plan 78. Most of the photographs of Masada were kindly made available to me by the excavation expedition.

22 On the level type of *laura*, see Hirschfeld 1992: 28–31.

23 Netzer 1991: 640.

24 Photographs of the gate taken by Henry Phillips in 1867 show that the arch was pointed; this is one of the earliest appearances of the pointed arch in Byzantine architecture. The photographs were kindly made available to me by Dr. Rupert L. Chapman, Executive Secretary of the PEF in London. The pointed lintel arch led Conder to suggest that the gate postdates the Byzantine period; Conder, 1875: 137. [Editor's Note: The two photographs by Phillips – P1091 (north side) and P1094 (south side) – were taken during Charles Warren's trip to Masada in the late afternoon of 9th July 1867. For further details about the gate, see: Warren and Conder 1884: 451. An excellent engraving of the gate was also published by Sepp (1873: 827).]

25 Netzer 1991: 437–438.

26 An interesting parallel to the Byzantine gate of Masada is found in the area of the 'Cells of Choziba', about one kilometer east of the monastery of Choziba (St. George) in Nahal Perat (Wadi el-Qilt). The path leading to the cells passes through two sturdy stone gates, on the west and the east; see Patrich 1990: 205–226. These gates were apparently built during the resettlement of the monastery in the nineteenth century, but their resemblance to the gate of Masada is noteworthy. This testifies to the continuity in way of life and material culture between the monasticism of the Byzantine period in the Judean Desert and its renewal in our days.

27 The monastic type of chapel has been defined by V. Corbo 1958: 257. For a discussion accompanied by examples from the Judean Desert, see Hirschfeld 1992: 369.

28 Netzer 1991: 369. [Editor's Note: for an early plan and engraving of the chapel, the latter showing the cupola in a better state of preservation, see Sepp (1873: 825)].

29 Yadin 1965: 100.

30 Yadin 1965: 75. See also Netzer 1991: 397–398.

31 The breathtaking view from the window in the apse of the church at Masada is noted by Lagrange 1894: 272. The monastic churches of Firminus and Herodium were studied by Corbo. For Firminus, see Corbo, 1960: 141. For Herodium, see Corbo 1967: 116–119.

32 Yadin 1965: 99; Netzer 1991: 362.

33 Hirschfeld 1992: 104–107.

34 Netzer 1991: 367.

35 *Vita Euthymii* 48 (ed. Schwartz, p. 69).

36 For a detailed description of the complex of service buildings, see Netzer 1991: 427–434.

37 The usual hour of the meal in monasteries was the ninth hour, i.e. 3 p.m; see Hirschfeld 1992: 80–81.

38 Cotton and Geiger 1989: 89–90.

39 Descriptions of different *laurae* in the Judean Desert mention various service buildings beside the church. A bakery, for example, is mentioned in the account of the foundation of the *laura* of Euthymius in Mishor Adummim (*Vita Euthymii* 15, ed. Schwartz p. 24). So too in the foundation of the New Laura south of Teqo'a (*Vita Sabae* 36, ed. Schwartz p. 123). The service building (*oikonomeion*) of the Laura of the Towers near the River Jordan is referred to by Moschus (*Pratum Spirituale* 5, col. A2857). See also Hirschfeld 1992: 73–75.

40 Netzer 1991: 429–430.

41 Netzer 1991: 432.

42 Hirschfeld 1992: 190–191. In this connection one may mention the custom of holding *agape* meals in the monasteries of the Judean Desert. Cyril mentions that such meals were held from time to time in the Great Laura of Sabas in Nahal Kidron. According to him, on

these occasions Sabas would send portions of food to the monks of the *laura* named Heptastomos (*Vita Sabae* 39, ed. Schwartz p. 130). It is quite possible that such meals were held in the *diaconicon*, such as the room preserved in the monastery of Marda.

43 On the New Laura and the laura of Pharan, see Hirschfeld 1990: 36–38, No. 22; 6–7, No. 1 in that order.

44 Hirschfeld 1992: 73–74.

45 Hirschfeld 1992: 177–183. On the hermitages in *laurae* in the Judean Desert, particularly in the Great Laura, see Patrich 1993: 233–243.

46 Netzer 1991: 138–142.

47 Netzer 1991: 97–98.

48 Netzer 1991: 223–224.

49 Netzer 1991: 230–231.

50 Netzer 1991: 495.

51 Netzer 1991: 438.

52 Netzer 1991: 549.

53 Netzer 1991: 379–381.

54 Conder and Kitchener 1883: 421.

55 Yadin 1965: 14; Netzer 1991: 342–343.

56 I was informed of the existence of this cell by E. Netzer. The cultivated plot is easily discernible in aerial photographs of Masada; see Yadin 1965: 256–257.

57 Netzer 1991: 372–373.

58 Netzer 1991: 375.

59 Netzer 1991: 483.

60 Yadin 1965: 36.

61 In contrast to the opinion of Yadin (1965: 14) who believed that the community of Masada numbered 30–50 monks.

62 Hirschfeld 1992: 21–23 (Pharan).

63 Hirschfeld 1992: 29–30.

64 Patrich 1990: 295–311.

65 The specific injunction that monasteries should be small is found in the rules of Basil the Great; Lebe, 1969: 116–119, regula 35; Clarke 1925; Wagner 1950.

66 On gardens and cultivated plots in the monasteries of the Judean Desert, see Hirschfeld 1992: 200–204.

67 Netzer 1991: 542.

68 The only fortresses in which remains of monasteries were not found are Alexandrion and Machaerus. For Nuseib el-'Aweishireh, see Tsafrir, Di Segni and Green 1994: 197.

69 Aharoni 1962: 2–4; Testini 1962: 73–92; Testini 1964: 101–106.

70 Magen 1990: 321–322.

71 *Vita Sabae* 27, ed. Schwartz p. 111. On the foundation of the monastery of Castellion, see Patrich, 1993: 639–641.

72 In the opinion of Chitty 1966: 120, n. 77, this was a double vault with a B-shaped profile, and hence the term *biotikos*.

73 Hirschfeld 1992: 18.

74 See, for example, *Vita Sabae* 47, ed. Schwartz p. 138.

75 Hirschfeld 1992: 20.

76 Hirschfeld 1990: 44–45, 143.

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Review Article

Qasr al-Abd: A Mausoleum of the Tobiad Family?

STEPHEN G. ROSENBERG

E. Will and F. Larché, *Iraq al Amir, Le Château du Tobiade Hyrcan*, with F. Zayadine, J. Deutzer-Feydy and F. Queyrel, and contributions by P.-M.Blanc and O. Dussart. Librairie Orientaliste Paul Geuthner, Paris, 1991. Vol. I, Texte, 310 pp., plates 98pp. Vol II, Album (drawings), figs. 100.

From 1976 to 1986 the French team of the Institut Français Orient d'Archéologie du Proche Orient laboured to rebuild the Qasr al-Abd at Airaq al-Amir in Jordan and in 1991, the two leaders of the team, Ernest Will and François Larché, published the results of their exhaustive work in two magnificent volumes, one of text, one of plates. The size and scope of the volumes matched those of their earlier compatriots such as Chipiez, De Saulcy, De Vogüé and De Luynes, who in the nineteenth century published many folios on the wonders of the Levant, and particularly on the Temple of Jerusalem, with exquisite plates of drawings and engravings. In most cases, these were the works of single savants who had travelled through the Near East on remarkable voyages of discovery and recorded their experiences in a mixture of adventure and scholarship. Their work exhibits some of the excitement of travelling on horseback through wild territories inhabited by savage Bedouin tribes, and tripping on the way over exotic and monumental ruins. Not quite the stuff of Rider Haggard and 'King Solomon's Mines', but a more sober equivalent that brought to light extensive monumental ruins previously unknown or known only from ancient literature.

The efforts of Will and Larché fit into this category but, coming on the scene one hundred years after their French colleagues, their work is more restrained and scholarly but no less exciting. They gathered together an impressive array of specialists and had the invaluable help of the Jordanian Department of Antiquities in the person of Fawzy Zayadine. Indeed the element of excitement was still there, for they tackled a monument of giant stones, known since 1818, but in such a state of splendid ruination that its purpose and location had aroused speculation after wild speculation and it was their purpose to restore the monument to its early state and to reveal its true function. This was their aim and in their splendid two-volume

publication they believe that this was their achievement. But is this really so? Let us examine the site and the restored monument as far as we can and see how it compares with the publication.

The Qasr al-Abd ('Castle of the Slave') is the chief ruin in a village of scattered ancient monuments known today as Airaq al-Amir, which lies 15 kilometres to the west of Amman. The name means 'Cliff of the Prince', which is a reference to a range of limestone caves that dominate the north of the site. The caves are in two tiers, partly natural and partly man-made. The two largest caves, which have been hewn into rectangular chambers with a corniced ceiling, are fronted with rudimentary façades cut into the rock, each entered by a rebated doorway and each carrying the single ancient inscription 'Tobiah' alongside the door.

Some 300 m south of the caves is a small village built over an earlier *tel*, which seems to be the earliest settlement at the site. The remains go back to Iron Age I with later traces of the Hellenistic period, but the whole area is much destroyed, much built over, and investigation has been hampered by local conflicts over property rights. About 600 metres to the southwest of the village and at a level of some 60 metres below it, lies the Qasr al-Abd in splendid isolation.

It stands in a shallow depression, surrounded by fields of well-watered vegetables on four sides, except for a kind of raised jetty on the east, that gives access to the ruins. Beyond the local depression the ground rises sharply to the east, to the village *Tel*; it rises to the north, to the far end of the range of caves, and again to the west, where there is a further line of cliffs. But to the south, the depression is artificially limited by a great dyke that holds back any water that accumulates in the basin. Still further south, the land falls away sharply to the Wadi es-Sir. The Qasr itself stands on a slightly raised terrace within the depression and so dominates its immediate surroundings while it, in turn, is dominated by the natural features on three sides (Fig. 1).

The Qasr, which measures about 19 m by 38 m on plan, is built of great monoliths in its lower courses and is topped by an upper storey of slender columns with virtually no walls at all. The building is orientated north to south and at both ends there is an impressive portico of two columns *in antis*. The entrance is from the north portico; the south one, or *opisthodomos*, seems to have been built for reasons of symmetry. The architectural details of the Qasr all point to a Hellenistic date, displaying a typical combination of Corinthian column and capital, Ionic frieze (at first-floor level) and Doric entablature (at second), characterized as typical of the period (Lawrence 1983: 378). From its rediscovery in 1818 and until the advent of the French, only three courses of the megaliths were visible and it was thought that the columns scattered around the site formed part of a single-storey construction with monoliths externally and a peristyle of columns internally. This, in one form or another, was certainly the view of the early explorers, such as De Vogüé (1864), De Saulcy (1865), Conder (1889), and Butler (1907). Even in 1961, when Paul Lapp organized the first archaeological expedition to the site, his architect Michael Brett reconstructed a single-storey hallway with internal engaged columns on each of the long monolith walls and a two-storey construction only at the north and south

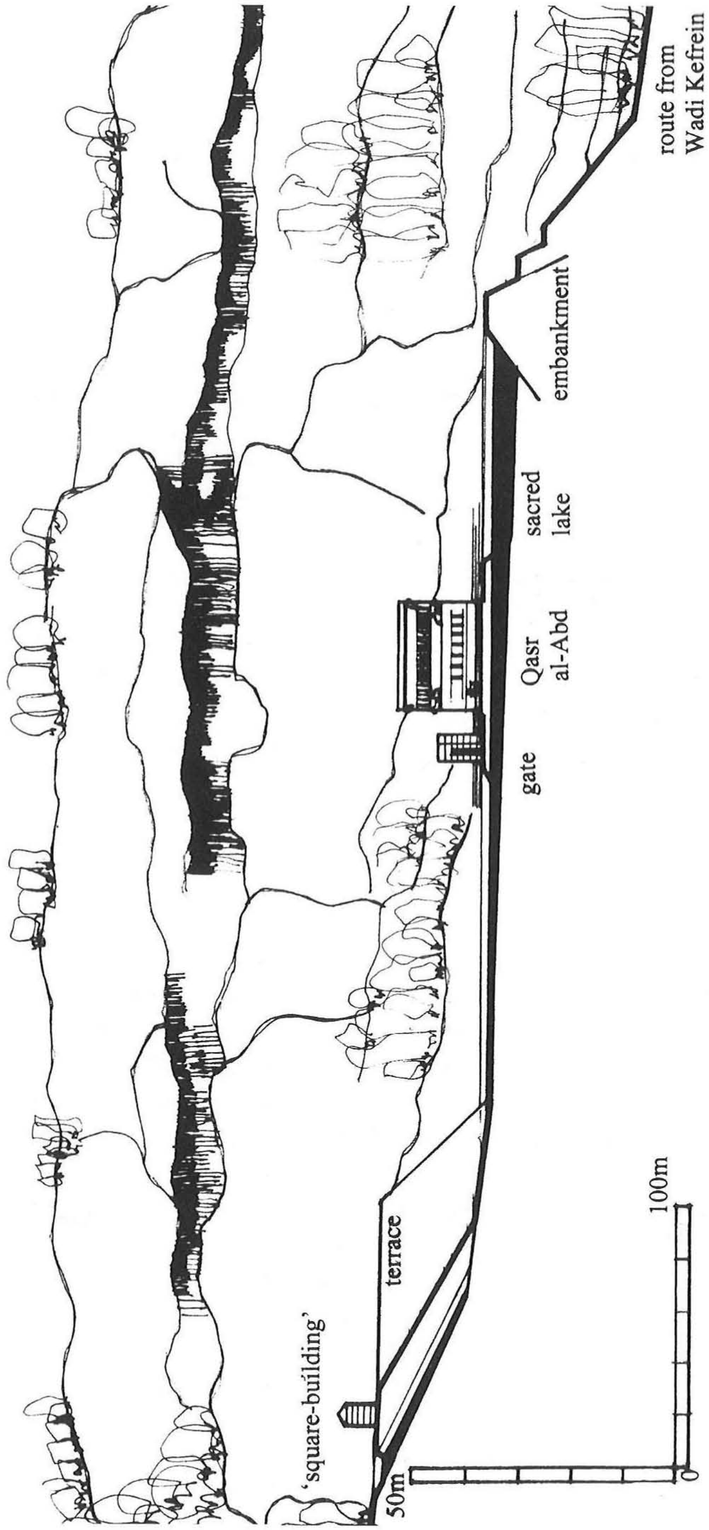

Fig. 1. Qasr al-Abd as seen from the west.

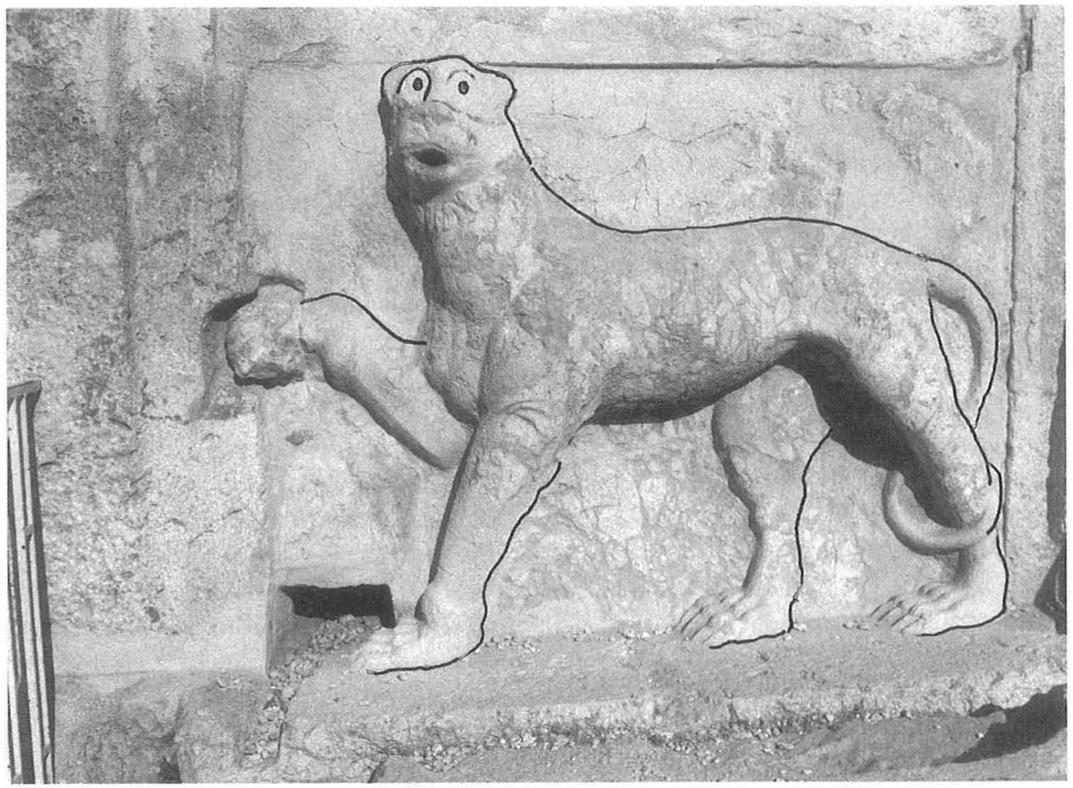

Fig.2. The Panther Fountain (west side of Qasr).

porticoes (Brett 1963: Figs 1–2). This was all very plausible as the Qasr was in a state of complete ruination and the collapse of the upper monoliths, of up to 45 tonnes in weight, made investigation of the interior extremely difficult and also hazardous. But even in its ruined state the Qasr displayed certain exceptional features. The third course of megaliths, still standing at the northeast corner, was decorated with a frieze of at least two lions, which seemed to continue with more felines around to the north portico. Further lion-sculptured blocks of similar size lay scattered around the site. On the basis of this evidence, Butler (1907: Fig. 1) produced a splendid elevation of the north front, which held the field still in 1949 when Albright included it in his book *Archaeology of Palestine* (1949: 150).

Owing to the unusual megalithic construction and animal sculptures, it was difficult to determine the function of the Qasr. De Vogüé and Conder would not commit themselves, but De Saulcy plumped enthusiastically for an early Moabite or Ammonite temple dedicated to Molokh (1865: 222 and plan). On this assumption he built a complete scenario of pagan funerary practice. The deceased rulers of Moab were brought to the Qasr for the last rites and then their bodies were escorted on a processional way up to the caves of the cliff for burial. He based this on the existence of a curious line of paired standing stones, later designated 'cippi' by

Conder (1889: 85), that led from the Qasr jetty right up to the foot of the caves. De Vogüé was more cautious, and when his friend de Luynes visited the site and was asked to give an opinion for de Saulcy, he was diplomatic enough to suggest that the Qasr was not a temple but that the lion sculptures may have come from another building that might have been a temple (1874: 139, 144). Conder was non-committal on the subject, but Butler, somewhat reluctantly, could only suggest a temple (1907: 18) though without providing direct parallels. Even Lapp in 1962 adhered to the temple theory (1963: 30), basing himself mainly on the fact that the building was a *tetrapyrgia*, that is one having a tower at each of its four corners, and R. Amy had produced a study of such buildings in Syria, all of them temples (Amy 1950). However Amy himself had mentioned the Qasr in his work and pronounced it not to be a temple (1950: 123). Lapp thought otherwise, partly because in his second season he had uncovered a feline-shaped fountain on the east side of the Qasr (Fig. 2) which was certainly a most extraordinary find and reminiscent of a cultic function. The sculpture had been covered by debris and fill from the Byzantine period. It stood at the base of the wall and its mouth acted as a water spout. The chamber behind, still partly plastered, had clearly acted as a water reservoir to supply this animal fountain. Unfortunately Lapp died shortly after his early investigations and his work at Airaq al-Amir was discontinued, and so it was not until the French came to the site in 1976 that further progress was made.

We mentioned above that two of the caves in the northern cliffs carried the single inscription 'Tobiah' (Fig. 3). This family name was well known from several ancient sources. The Book of Nehemiah mentions 'Tobiah the Ammonite, the Servant', several times (Neh. 2:10 and 19; 4:1; 6:1, 12, 14, 17, 7: 62), and the papyri of the

Fig. 3. The two 'Tobiah' inscriptions (based on Littmann 1907).

travelling Egyptian factotum Zenon talk of his visit to the 'Birta' of Ammonitis inhabited by 'Toubiah' (Tcherikover and Fuks 1957: 118–128), a friend of the Egyptian minister Appolonius, and his king, Ptolemy II (282–246 BC). Most important of all, is the saga of the Tobiads in the writings of Josephus (*Antiquities* XII: 160–236) which relate how Joseph, son of Tobias, became a tax farmer to one of the Ptolemies, gained power and riches among his Jewish brethren and was succeeded by his youngest son Hyrcanus, who fell out of favour with his family and retired to the family estate near Amman, which he develops and names 'Tyros'. There he built a 'baris' of white stone, surrounded by water and decorated with large animals. He converted many caves into stables and banqueting halls, he built other halls, he fought the local Arabs and finally committed suicide at the accession of Antiochus IV Epiphanes (in 175 BC) who appropriated the estate for his own use. The whole story is wonderfully embellished with romantic detail by Josephus, but the point of interest for us is the building with the animal sculptures and the water surrounding it (XII, 230).

As early as 1818, William Bankes of Dorset, travelling with the explorers Charles Leonard Irby and James Mangles, identified Airaq al-Amir as the 'Tyros' described by Josephus (Irby and Mangles 1823: 473). Bankes, who travelled throughout the Levant and Egypt, but never published his findings, obviously knew his Josephus. The description in *Antiquities* fits the Qasr and the nearby caves and even the name 'Tyros' is preserved in the adjoining valley, the Wadi es-Sir. 'Sir', or its Hebrew form of 'Tsur', is related to 'Tyros' and means 'rock'. The name was not invented by Hyrcanus as it also occurs in the earlier Zenon papyri (Tcherikover and Fuks 1957: 116). Bankes was right, and subsequent explorers and archaeologists, such as Butler and Lapp, also accepted the identification. On the face of it, the Qasr and its animals was then a 'baris'.

In the Greek 'baris' is a fortress but it could also mean fortified dwelling. Will devotes a whole chapter to 'Qu'est que c'est un Baris?' (1991: I, 31), concluding that in this case Josephus was indicating a kind of royal dwelling or palace, and that the Qasr was the palace of Hyrcanus or, as he calls it in the title of his work 'Le Château du Tobiade Hyrcan', a description first used by De Luynes (1874: 141). But there is no general agreement that the Qasr was a defensible building, both because of its form and location. On the upper storey its colonnades leave it completely vulnerable and its situation in the centre of a depression, or basin, leaves it open to attack from higher ground on three sides. This was immediately obvious to de Saulcy and his military colleague Major Gelis (1865: 222). Hence, they tried to interpret 'baris' as a temple, by analogy with the fort Antonia alongside the Temple in Jerusalem, which was also called *baris* by Josephus (*Ant.* XV: 403). Will rejects this argument, showing that a baris can be residential and, therefore, he favours the meaning of palace or château; the word château, like castle, implying a certain degree of fortification. So when Will finally poses the question "A La Recherché d'une Identité, Temple où Palais", he plumps for palais or more specifically for château (Will and Larché 1991: I, 264). In the words of the Israeli historian Dov Gera, 'Will proves that the Qasr is a palace' (Gera 1998: 44, n. 35).

One must agree with Will that the Qasr is not a temple. The French reconstruction shows clearly that the ground floor, albeit raised, consisted of four enclosed chambers surrounded by an ambulatory. The chambers had no light source, but the surrounding corridor was lit by seven plain openings (rather than windows) through the megaliths on the east and west sides, and three openings at the south to the *opisthodomos* (rear portico). This could not have been the form of a temple. Will is very scathing of de Saulcy and later temple adherents (Will 1983: 149), but to be fair to them, they could not have been aware of the interior of the Qasr. Will interprets the dark inner chambers as stores and utility rooms, with a well-lighted corridor around for access. In this way he justifies the residential use, with the main living quarters on the upper storey and the service rooms below. This, he claims, is typical of other residential quarters in the Levant (Will 1983: 152) and this view is supported by, among others, Nielsen (1994: 143). Another reason to negate the temple idea is that there is no sign of an altar either within or without the building.

The question of the lion frieze and the feline (now called panther) fountains, is not really relevant to the temple argument. Such decoration could apply equally to a temple or a residence of palatial dimensions. The one factor that might indicate it as a building of special function such as a temple, is the overall plan of the building. Here the plan is symmetrical along its northsouth axis, and nearly symmetrical (except for the fountain reservoirs) along the eastwest axis (Fig. 4). Such a neat layout is not typical (but not impossible) of residential buildings, which always require side-rooms and outhouses. A temple does not need these and therefore can have a 'perfect' plan. But a temple does need access and here we have a building set in the middle of a lake with no possibility of an approach except by water. But then a residential building also needs to be approachable and isolation in the centre of a lake is hardly practical. Although the Qasr stands in a depression it is today not surrounded by water, though the configuration does cause ponding at times during the winter. The question is, what was the original design for the Qasr, was it planned to stand in a lake or not?

It is clear that the enormous dyke to the south of the depression must have been built for a purpose. It runs for a length of nearly 400 metres and stands 15 metres high in places . Ehud Netzer has calculated that its construction would have required the moving of two hundred thousand cubic metres of spoil, a superhuman effort entailing months of work by many hands (Netzer 2000: 342). It is clear that it was there to contain the waters around the Qasr and that an artificial lake was planned. The present jetty on the east side was a temporary expedient necessary to move the megaliths to the Qasr but eventually it was meant to be removed. If Hyrcanus planned to have the Qasr standing in the middle of the lake, how could it have been a temple? On the other hand, could it have been a château with access only by water?

The answer given by Will is that this was planned as a place of retreat for Hyrcanus, when he wanted to get away from the cares of the world and the estate. He compares it to Herod's stepped palace on the north face of Masada. There, Herod could relax on the cool side of the rock, while his functionaries were busy in the stores and offices on the summit of the fortress. Similarly Hyrcanus, who preceded

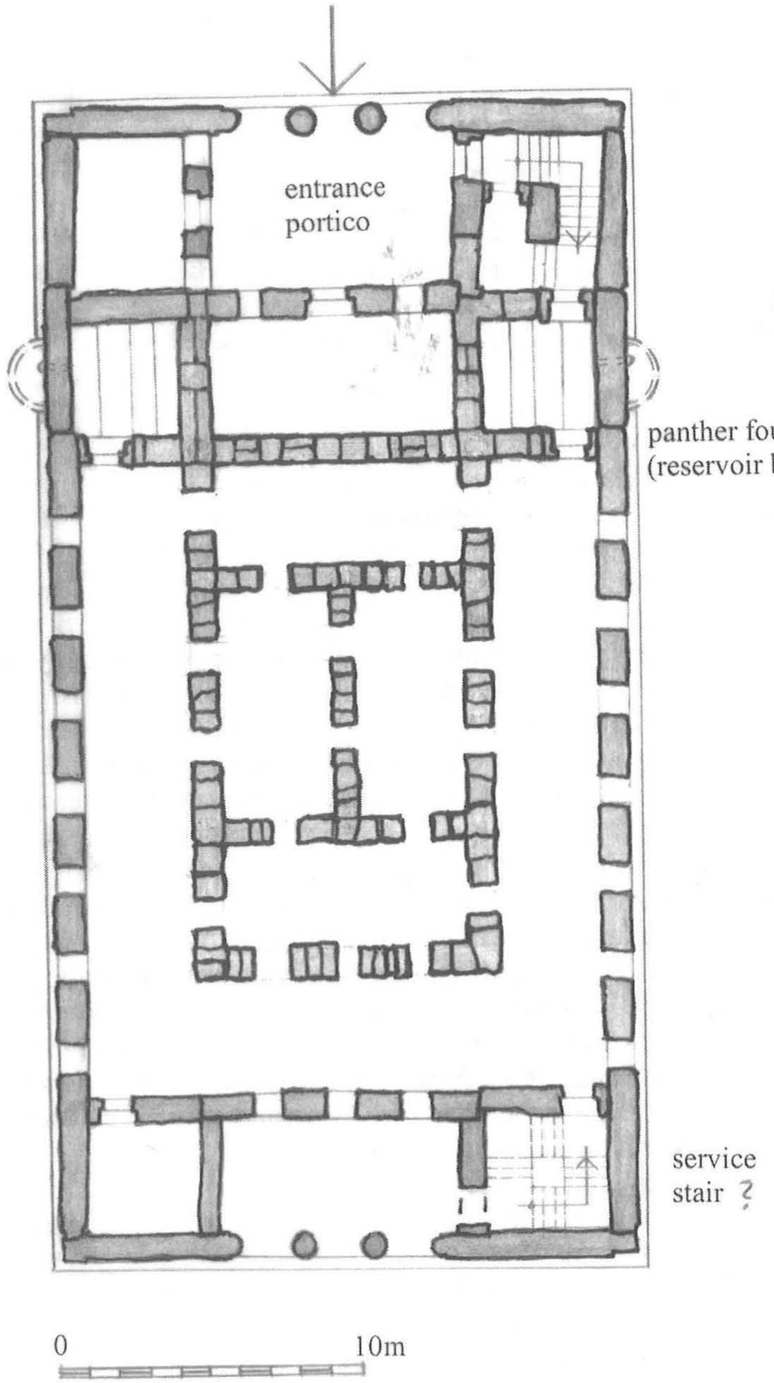

Fig. 4. Plan of Qasr al-Abd at ground floor (based on Will and Larché 1991, II, 8).

Herod by some two hundred years, was planning to relax in his island palace while the business of the estate continued at the village *tel* and the caves to the north and east (Will and Larché 1991: I, 265). Netzer goes further: he sees the château on the island like a palatial boat, like the *Thalamegos* or floating palace of Ptolemy IV, which Hyrcanus could use for the entertainment of important guests, for the glorification of his little empire in the sticks (Netzer 2000: 347). But surely what was fine for Ptolemy, emperor of a vast kingdom with contacts with Greece and Rome, could hardly apply to Hyrcanus, friend though he may have been to the Ptolemies. And, in any case, the *Thalamegos* rode on the river Nile and could be boarded from the land here and there. The Qasr was immobile and would have needed a fleet of skiffs to ferry Hyrcanus and his friends every time they went there to feast.

To ascertain the real purpose of the Qasr one has to look again at the animals with which it was decorated. Thanks to the work of the French team, we know that it was surmounted at the top level by six eagles, that at the intermediate level it carried a frieze of twelve lions and lionesses, and at ground level there were two fountains of felines usually described as panthers. All three animals, the panthers, lions and eagles, can be interpreted as having a regal function as well as an apotropaic (protective) one. All three creatures are strong, fierce, aggressive and dangerous. But if they all serve the same function, why was it necessary to introduce all three of them? Ptolemy II's Pavilion in Alexandria had *acroteria* of eagles, presumably to symbolize his royal qualities and protect him from his enemies (Nielsen 1994: 135), but he had no lions or panthers. If one requires protection or royal significance, it would seem to weaken the argument by having three animals to symbolize the same quality.

My own opinion is that Hyrcanus had something quite different in his mind when planning the Qasr. Hyrcanus was a man who attracted attention, and we do not have to take Josephus at face value to realize that. Even if the stories about him are not true, he was obviously the kind of larger than life character, who attracted legends and anecdotes about himself. He came from a famous family line, he was left in charge (or put himself in charge) of a large rich family estate, somewhat off the beaten track in Transjordan, where he could beaver away without too much supervision from the ruling party, or even from his own family, who were mainly entrenched in Jerusalem (*Ant.* XII, 229). And he had considerable resources at his disposal, particularly a substantial group of military farmers (*cleruchs*) attached to the estate, who were his tenants and owed him their living. The estate could live on its produce and its breeding grounds, at times when trade could be conducted with Egypt, with Judaea and with the Nabataeans of the hinterland. Although situated in a remote location, Hyrcanus's 'Tyros' was in a pivotal position. It was midway between Jericho and Philadelphia (Amman) and just off a trade route that led west to Gaza and Alexandria. To the east lay the great King's Highway from Aqaba to Damascus. It was supervised by the Nabataeans, but the side route to the west, from Heshbon to Jericho, via the Wadi Kefrein, was easily controllable from Hyrcanus' 'Tyros', and it can be assumed that he would exact tolls or protection money from

caravans passing in the valley. The presence of a number of Iron Age forts in this valley (Prag and Barnes 1996), plus one that we have identified in the Wadi es-Sir, directly below Airaq al-Amir ('Tyros'), testifies to the importance of this route in pre-Hellenistic times. That Zenon took this route from Egypt, also testifies to its continuation into the Hellenistic era (Tcherikover and Fuks 1957: 121). With his military *cleruchs* and his breeding of horses, Hyrcanus was able to control this trade-route and build up his own personal wealth. Josephus claims that he spent his time fighting the local Arab tribes (*Ant.* XII, 229) and this may have been so for a time, but seeing that his estate was later on maintaining reasonable terms with the Nabataeans, as indicated in the Second Book of Maccabees (4:26 and 5:7), it is more likely that he first spent some time establishing his authority and then subsequently imposed an era of peaceful co-existence with the local Arabs. It must have been so, I believe, as the extent of his building activity shows.

Throughout the estate there is clear evidence of Hellenistic architecture having been imposed on a site that was fairly wild and primitive, quite apart from the Qasr itself. To the north lies an artificial terrace and at its west end is a small 'Square Building' (about 6 × 6 m). Early explorers saw it as a shrine (Irby and Mangles 1823: 474) or perhaps a tomb (Butler 1907: 22). Whatever it was, the ruins include

Fig. 5. Doric entablature at the Square Building.

several lengths of Doric entablature (Fig. 5), a threshold and column drums matching the Hellenistic architecture of the Qasr. Further up the hill, the caves and grottoes are of indeterminate date, but in one of them, Lapp found a piece of triglyph of Doric entablature (Lapp 1963: 38), though it may have been in secondary use. Clearer evidence is that of two main caves which had been squared off and given a shallow-arched ceiling sitting on a cavetto moulding (Conder 1889: 75) similar to Hellenistic *triclinia*, such as the later ones at Petra. Further up the hill is a natural spring that supplied most of the water to the estate, and which was made into a pool with an artificial basin. The evidence is unclear because of ongoing work there by the French team, but, again, the ruins show pieces of Doric entablature scattered around the site. In the village area, which was the location of the *tel* with Iron Age remains, there is extensive evidence of Hellenistic activity represented by entablatures and fluted column drums, all in the style of the Qasr, lying around the site or in secondary use in the village houses.

It is clear therefore that Hyrcanus instituted an ambitious building programme, all in Hellenistic architecture, throughout the site. He erected several buildings but particularly he converted existing features to the Hellenistic style (a sign of progress?) that he wished to impose on his estate. The main building on the *tel*, which went back to the Iron Age, he rebuilt in his chosen style and added luxury apartments, as evidenced by the 'Plaster Building' found by Lapp (1963: 17–20). This building, or complex of buildings in the village, served as his residence and administrative centre. It was well placed on a hillock and could be defended with the original Iron Age fortifications. It was also close (300 m) to the caves and to the water supply that emanated from the foot of the caves from a hillside spring. All of this Hyrcanus created in order to make his estate a 'modern' Hellenistic one.

The Qasr was another element in all of this, but it was profoundly different from the rest of the estate. The Qasr was intended to stand in a hollow or three-sided basin. To enable this to hold water, of which there was an abundance at the site, Hyrcanus also had to dam the fourth or southern side. He did this with the help of an enormous artificial earthwork that rose to a height of some 15 m above the valley in a series of three steps. Its formation required, as we have said, the shifting of hundreds of thousands of cubic metres of soil, which in itself was a very considerable achievement. And to what purpose?

Hyrcanus obviously wanted a lake to surround his Qasr and went to very considerable trouble and expense to achieve it. Although there remained a tongue of land connecting the Qasr to the 'mainland', this was only a temporary access used to build the Qasr. It was in no way a main approach, as it leads only to the side of the building and not to either one of the porticoes , north or south. It was therefore not a formal approach but only a temporary expedient for constructional purposes. The plan was to leave the Qasr as an isolated island in the middle of an extensive lake (Fig. 6), but it never happened, as Hyrcanus was unable to finish this project, according to his plan, and the Qasr itself was never completed. Butler thought this might be the case (1907: 19) and Lapp (1963: 24) suspected it, but Will and Larché were able to prove that it was never completed (1991: I, 93–96). Nevertheless,

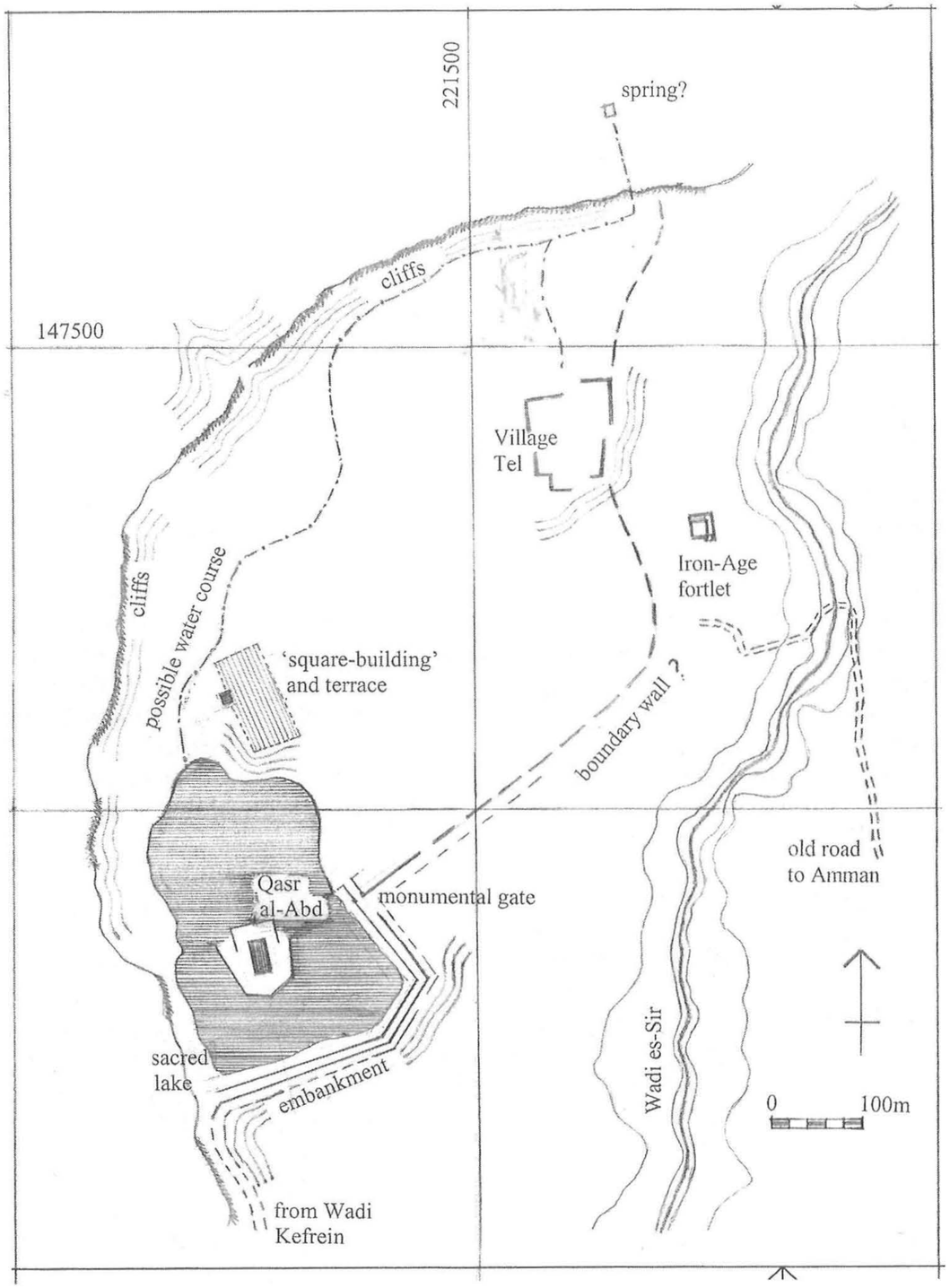

Fig. 6. Plan of the Airaq al-Amir sites (based on Will and Larché 1991, II, 1).

Hyrcanus almost completed the work and now that we have the French reconstruction we can see what Hyrcanus intended. He built a ground floor of enormous megaliths, weighing over 40 tonnes apiece. It had two decent porticoes, but otherwise it was virtually 'blind', that is, it was solid and without windows. There were openings – seven on each side and three to the south – but they cannot be described as windows because they were just rectangular slots (cf. Will and Larché 1991: I, 94). They had no frames, rebates or recesses, that would have been suitable for shutters or panels, neither projecting lintels nor proper sills. These plain, unadorned openings were just apertures intended to interrupt the monolithic effect of the ground floor as little as possible. The 'windows' in the staircase at the north-east corner, were completely hidden, with only a tiny opening on the façade and not really noticeable from the exterior. The whole effect was that of a solid megalithic podium with entrances at the north and south (Fig. 7).

However, the upper floor was totally different. It was light and airy, and the façade consisted of a continuous colonnade on all four sides, with hardly any walling at all, even at the four corners of the building. The columns of the colonnade were made of half-columns with a solid backing behind, so as to provide sufficient solidity, but one that would only present a narrow dimension on the face. The whole effect was therefore totally different from that of the ground floor. In essence it was lightness on top of solidity, a delicate colonnade on top of a megalithic podium. In architectural terms, there is evidence for a colonnaded upper storey on top of a solid storey-height podium only in exceptional circumstances. And the fact that the lower storey was constructed in monoliths of exceptional size must suggest a rather special purpose.

Here we have to make a criticism of Ernest Will and François Larché, who insist on the Qasr being the palace or château of Hyrcanus. Their contention is that the lower megalithic storey was a service area for the grand apartments above. But if

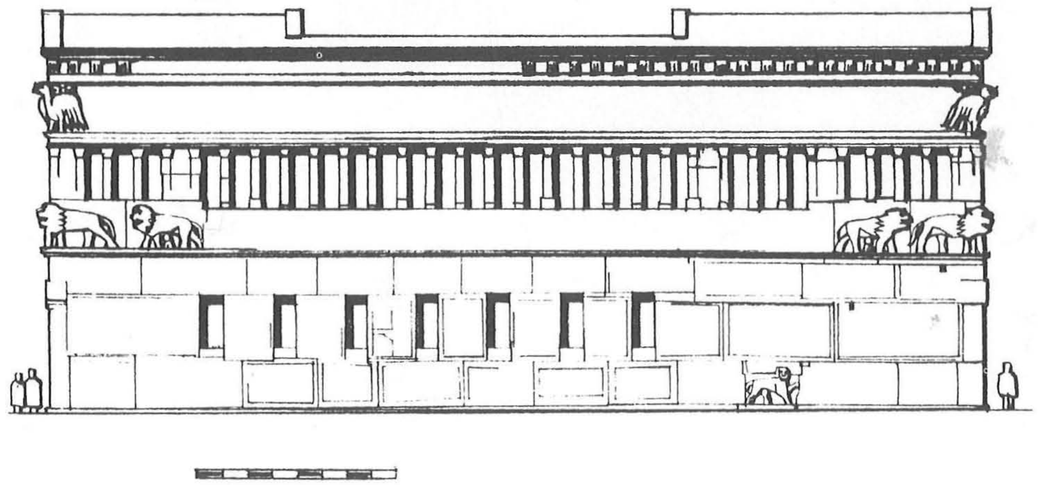

Fig. 7. East elevation of Qasr al-Abd (reconstruction based on Will and Larché 1991, II, 17).

so, why build it of such vast stones, and in such a dramatic fashion as Hyrcanus did? And there is another more practical argument. The ground floor of the main building was 2.2 m above the entrance level. This is clear from the fact that it had to be above the level of the reservoirs supplying the panther fountains on both sides. The staircase was attached directly to the wall of the reservoirs and the only way to get across the floor area was to pass above the reservoirs. Hence, the so-called service rooms were quite unserviceable, being two metres or more above the level of the entrance. This is also clear from the apertures in the podium floor, whose primitive sills relate to a ground floor at this upper level. It is therefore inconceivable that the ground floor, or rather this upper ground floor, acted as a utility area to service the residential quarters on the second floor level.

The Qasr was endowed with considerable animal sculptures: two feline fountains, a group of three or four lions and lionesses at each corner, and a winged eagle at each corner with another one on each side of the main entrance. We have already said that these animals can signify power, strength and indeed royalty. But I feel another explanation is possible. Let us start with the lions at the mezzanine level, on a frieze at the head of the megalithic podium. At each corner there would have

Fig. 8. Single head of lion on two bodies. southwest corner of the Qasr.

been a rather startling projecting lion head, as is still visible at the southwest corner (Fig. 8). It is well known that in Greek sculpture, the figure of the lion served as a grave marker ever since the seventh century BC (Boardman 1973: Fig. 75). In some circumstances the lion is at the foot of the monument, in others at its head. At Cnidos, one large lion crouches at the head of the tomb (Lawrence 1983: 254); at Halicarnassus there is a frieze of sixteen lions on each side of the Mausoleum (Lawrence 1983: 253); and at Xanthos four lions (of which two may be seen in Gallery Seven of the British Museum), were placed at the base of the Nereid Tomb (Lawrence 1983: 247). At the Qasr four lions stand aggressively at the four corners, their fierceness somewhat softened by the lionesses behind them, standing guard over their cubs (Fig. 9).

In many instances in Hellenistic work, lions act as gargoyles or as waterspouts at roof level. Examples occur at Priene, at Magnesia, at Baalbek (Lyttleton 1974: Fig. 104) and elsewhere. This is the image of the fierce lion tamed to serve man and then to provide him with the great blessing of water. The same may be said of the feline fountain. Whether panther or leopard, cheetah or lynx, this dangerous animal is tamed to provide water to the inhabitants of the Qasr. But this provision of water

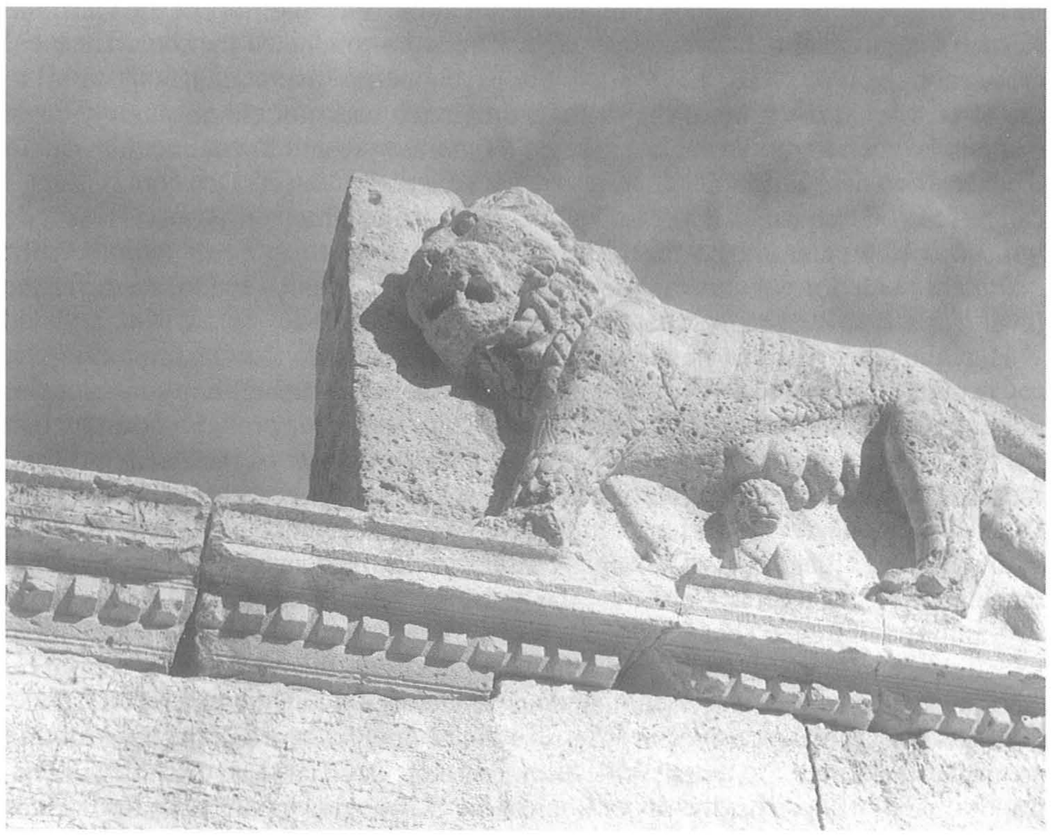

Fig. 9. Lioness and cub at northwest corner of the Qasr.

is for the after-life, when the dead need to be fed and watered as in this life (Toynbee 1971: 14). In many cases the panther was the mount of Dionysus (Cook 1972: Fig. 96b), who led the procession of animals in the after-life and who, in Hellenistic Alexandria, took the place of Osiris (cf. Herodotus 2:144), the Egyptian god of the underworld (Cumont 1966: 76). The panther was particularly appropriate at Airaq al-Amir, which was a wild part of the Ammonite plain that provided a habitat for this feline. In the nineteenth century, the explorer de Saulcy, who was at the site in 1864, was nearly attacked by a panther, and his companion, the architect Mauss, narrowly missed a similar fate when he chased a panther cub back to its lair (de Saulcy 1865: 225, 227). It is quite possible that the Tobiad estate, which supplied exotic animals to Ptolemy II according to the Zenon papyri, derived some of its revenue from the capture of local panthers as an exotic species for royal pleasure or for the Ptolemaic hunt. The panther may even have been a mascot of the Tobiad family and of Hyrcanus in particular, or perhaps a mascot to his entire military garrison. It should also be mentioned that in later times, one of the Bedouin tribes of the area was called the *Namr*, Arabic for 'tiger' (De Luynes 1874: 141). The symbolism of the panther is therefore multi-faceted, but that of the eagle is very clear.

The eagles stood as capitals (not *acroteria*) at the upper corners of the Qasr and as such were as near to heaven as possible. The eagle conducted the soul to heaven. Goodenough (1958: VIII, 121) called it a 'psychopomp' that conducts the spirit to the after-life. At the time of the Roman Empire, it was thought necessary for an eagle to be seen to rise from the emperor's funeral pyre and to conduct his soul to the heavens where he could then be at one with the gods (Cassius Deo 56:42). Eagles can be seen on Nabataean tombs and particularly on the famous Khazne ('Treasury') building at Petra, from the first century BC, where four eagles sit atop the split pediment, with lions or other felines (the sculptures are badly eroded) on the lower level (for a drawing see Fyfe 1936: Fig. 13).

Hyrcanus incorporated these animal representations into the Qasr not to reflect royalty or power, but to symbolize the after-life, since he was building a mausoleum not only for himself but for the entire Tobiad clan. Hyrcanus probably foresaw that the family was coming to the end of its line, with the decline of Ptolemaic rule and the rise of Seleucid domination (particularly following the accession of Antiochus IV in 175 BC). Hyrcanus did not require another palace, since he already had one in the adjacent village, and so he began building a family mausoleum, in a somewhat original style. He took as his model the mausolea he was aware of, notably those of Xanthos and Belevi (Fyfe 1936: 52) both of which have solid podia surmounted by a light columnar structure. At Xanthos, in particular, the solid base is topped by a colonnaded chamber that contained couches for reclining (Lawrence 1983: 247). And this was also Hyrcanus' purpose. The upper floor was for the *triclinia* (dining rooms) to celebrate the dead. Will states quite clearly (1991: I, 285) that it was impossible to reconstruct the upper floor of the building, even on paper, for lack of evidence at the site. Larché, however, has been working on a paper reconstruction which is due to be published and is awaited with interest. It will be tentative and

speculative but will be based on the presumption that there was a very considerable residential suite on this floor; and that it was fully roofed over and served by staircases to the northeast (for which there is ample evidence) and the southeast (for which there is very little).

However, I would beg to differ from this possible restoration and suggest that the upper floor was partly *hypaethral*, that is, open to the sky. This is based on two factors. Firstly, the central span between the columns is very large (ten metres or so), though it could perhaps have been spanned by timber trusses of a kind used in Alexandria (Kutbay 1998: 57). Secondly, with a roof partially open to the elements, rainwater could easily be collected and channelled into the two reservoirs serving the panther fountains. Hence, they need not necessarily have been served by the ground-level water, as was suggested by Kent Hill (1963: 46). The fact that the northern and southern lobbies were paved with enormous stone slabs, so large in fact that the French were unable to lift them into position, suggests that these two areas were also open to the elements and for this reason required solid stone surfaces (Will and Larché 1991: II, plan 10).

The arrangement of the upper floor could then have consisted of a number of *triclinia* on each side of a central peristyle courtyard, open to the sky. Such a layout, with dining rooms on each side of a *compluvium*, or open courtyard, is attested from Houses E and F at Delos from the first century BC (Lawrence 1983: Fig. 319) and in the earlier palaces at Alexandria (Kutbay 1998: 51). The *triclinia* would be banqueting rooms in which to commemorate the dead, or to re-enact the banquets which it was hoped the dead were themselves celebrating in their after-life. Hyrcanus was thus building a funerary monument that would combine the tombs of the dead ancestors, and presumably those of himself and his immediate family, with a facility for celebrating and commemorating the dead in this world and in the next. The result was an extraordinary building, or it would have been, had it been finished. In any case, this building is now one of the finest examples of Hellenistic architecture in Jordan (Fisher 1998).

Its function as a mausoleum makes its setting within a lake much more understandable. It was to be admired from afar, and it would certainly have been most impressive as viewed across the waters, while actual visits would have been few and far between. No need for regular access, as required by a château, palace or temple; just infrequent visits for banqueting, perhaps on specific days of commemoration for the dead. And on those occasions the rather cumbersome access by boat would have been justified. The mausoleum use would also explain the seven light slots on each side-elevation. Although the ground floor was otherwise blind (except at the porticoes) these openings would have enabled people on the banks to view from afar the interior chambers containing (according to the design), the sarcophagi of the Tobiad clan. Following his second campaign of work at the site, Paul Lapp records that he toyed with the mausoleum option briefly and then rejected it (1963: 27). Lapp was influenced by Amy's work on Syrian temples, though Amy himself did not accept the Qasr as a temple (Amy 1950: 123). But, it must be said that, until the French reconstruction work of 1976–1986 had been completed, the

actual form of the Qasr was hardly comprehensible and the existence of an upper storey was still highly debatable; neither Butler nor Brett (Lapp's architect), had reconstructed one. Since the identification of its function was still difficult, it is clear why the temple option was still an attractive one. It took Will to finally explode that theory but, in my view, his suggestion that it served as a palace or château is equally misguided.

It was the great W.F. Albright who first suggested that the *Qasr* might have been a mausoleum of the Tobiad family (Albright 1949: 149). Albright did not spend much time dwelling on the significance of the ruined monument, but he did go there in August 1931 to examine surface pottery around the Qasr al-Abd and elsewhere, finding only a handful of Hellenistic sherds at the Qasr. He concluded: 'the residence of the Tobiad family may perhaps have been a fortified villa (the castle 'Tyrus' of Josephus?). The tombs and especially *the mausoleum* (so probably rather than temple) belong to the dead rather than to the living, who evidently resided elsewhere' (Albright 1933: 29, my italics).

One problem remains: if the Qasr was indeed a mausoleum, why did Josephus call it a 'baris'? For this Gera has provided a convincing answer. Josephus' *baris* was not the Qasr at all but the village site which contained the fortified palace and administrative centre of the Tobiad estate (Gera 1998: 43). Hence, the Qasr was a funerary monument built by Hyrcanus to reflect glory that he perceived in the powerful clan of the Tobiads.

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Book Reviews

St John Simpson ed. *Queen of Sheba. Treasures From Ancient Yemen*, The British Museum Press, London, 2002. Pp. 224, 260 colour illus, 50 b/w plates, 9 line drawings, 2 maps. Price: £29.99.

Published in connection with a major British Museum exhibition (9 June–13 October 2002) focusing on the Queen of Sheba, this is not a mere compilation of visual aids to a collection of 'Treasures' as might be wrongly construed from the title, but as yet the best presentation of Ancient Yemen, serving as a reference book for academics, but also eminently readable by the general public.

In Gustave Flaubert's 1874 orientalizing novel *La Tentation de Saint Antoine* (and not as on p. 15, *Le Temptation*), the exotic and sexually alluring Queen of Sheba appears in a hallucination to St Anthony, the late 3rd century AD founder of Egyptian monasticism, as the quintessential temptress proclaiming: 'I am not a woman, but a world'. This volume explores not only her popularity evaluated by L. Llewellyn-Jones (Ch. 1) in Western Culture from E.J. Poynter's 1890 oil painting *The Queen of Sheba's Visit to King Solomon*, through King Vidor's 1959 Hollywood film *Solomon and Sheba* starring Gina Lollobrigida, to A. Pacheco's 2001 oil pastels on paper *Hairy Legs of the Queen of Sheba*, and the legends surrounding her mythical visit to King Solomon recorded in the Old Testament (1 Kgs 10: 1–13; 2 Chr 9: 1–12), Gospels (Matth 12: 42; Luke 11: 31) and Qurʿān (27: 16–44), and traced by P.A. Pennachietti (Ch. 2) in Mediaeval, Renaissance, Persian and Ethiopian art. It also delves into the fascinating archaeology and history of Yemen, thereby revealing the real Land of Sheba.

Illogically, the Neolithic period (with moister conditions resulting from a stronger and more northerly monsoon system encouraging seasonally mobile hunter-gatherers who may have also been farmers) and the Bronze Age (characterized both by agricultural villages and impressive pastoralists' mortuary monuments), are discussed in Ch. 5 ('Before Sheba' by C. Edens) *after* Ch. Robin's presentation (Ch. 3) of the Kingdom of Saba (8th century BC – AD 275) and its 120-ha capital, Ma'rib, with its two temples, a royal palace, gardens, and an elaborate irrigation system comprising a great dam on Wādī Dhāna, and *after* R. Hoyland's chronological survey (Ch. 4). The historical analysis is supported by the archaeological evidence systematically referred to and fully described in detailed catalogue entries listed at the end of each chapter.

The two principal aspects of the economy of Ancient Yemen are discussed in core chapters: 'Trade, Incense and Perfume' by N. Groom (Ch. 6) and 'Agriculture and the Countryside' by T.J. Wilkinson (Ch. 7). Whether the Land of Punt, destination of an Egyptian expedition *c.*1500 BC which unfolds on painted, low-

relief carvings (not 'fresco', as described on p. 88) in the South Portico of Queen Hatshepsut's Deir el-Bahari temple, was Somalia (for frankincense) or Eritrea (for an inferior quality of myrrh), the trade in aromatics from southern Arabia effectively only began in the late 8th century BC. At Shabwah in Hadramawt, frankincense from the Horn of Africa and Dhufar which had been imported through the port of Qani in the Gulf of Aden, was loaded onto camels together with locally harvested supplies. Skirting the waterless ar-Rub al-Khali – the Empty Quarter of central Arabia, caravans threaded their way south to Tamna (where they were joined by caravans bearing myrrh) and Ma'rib, and thence north to Najrān, Yathrib (al-Madīnah), Petra and Gaza. Not only does the catalogue entry for a remarkable third century AD calcite-alabaster incense burner depicting a camel rider (No. 110) which H. St J.B. Philby, the Arabist and political adviser to King Ibn Saud, presented to the British Museum, unjustly minimize the importance of his mapping under difficult conditions of the Shabwah-Najrān stretch of the incense route in 1936 described here as a 'journey from Mecca to al-Mukalla',[1] but it also tags onto his reputation of 'famous Arabian traveller' the irrelevant stigma of being the 'father of H.A. (Kim) Philby, the English spy' (in any case 'Communist' would have been more appropriate than 'English').

The exchange of Yemeni myrrh and alabaster for Egyptian cloth, clothing, saffron, unguents, wine and grain, was only one aspect of intensive Red Sea trade that put into contact Rome with India, this resulting in Graeco-Roman influence on South Arabian coinage and first century BC – fourth century AD bronze statuary, described by W.D. Glanzman (Ch. 8, 'Arts, Crafts and Industries'). The apparent incongruity in Arabia of luxuriant vine-scroll decoration, as on a second century AD calcite-alabaster cornice (No. 121) from Ma'rib and part of a second–third century carved limestone arch from Zafār (No. 122), is dispelled by the evidence in the Sabaean period for the cultivation of grapes for wine on irrigated terraces in the highlands north of Sana'ā', entwined around columns or heaps of stones (as in the Byzantine Negev desert).

Stone temple and city-wall architecture, and the combination of wood, limestone ashlar masonry and mudbrick in tower-houses and palaces, were strikingly indigenous (Ch. 9, 'Architecture' by J.-F. Breton), as was 'South Arabian Epigraphic' (late seventh century BC–AD 554), with its 29-sign alphabet, four dialects and three scripts – a monumental, geometric script, lines of writing being read alternately from right to left and from left to right (*boustrophedon*); from the fourth century AD, a squatter, more slender and more sinuous 'baroque' script carved in relief; and, a minute script on small sticks or palm-leaf stalks for daily transactions (Ch. 10, 'Languages and Writing' by F. Bron).

Based on thousands of mainly dedicatory inscriptions, A. Sima's cautious study of 'Religion' (Ch. 11) traces the differences in the pagan panthea of the Sabaeans, Mineans, Qatabanians and Hadramites, to which was added from the first century AD the cult of the morning star (al-ʿUzzā) by North Arabian mercenaries serving in the Sabaean army. Emphasis is laid on pilgrimage at important temples, notably that of Almaqah at Ma'rib, and on amulets (sometimes hung around the necks of

camels to protect them from the Evil Eye), both of which are familiar from Qur'ānic descriptions of pre-Islamic Arabia.

Ch. 11 also provides an eye-opening insight into religious relations. In AD 275, the Himyarite dynasty took control of Ma'rib and of Sabaean territory. Whilst Christian proselytizing initiated by Emperor Constantine was particularly successful in Najrān, the Himyarite royal family converted to Judaism in the third quarter of the fourth century, followed by the aristocracy and the lower social classes. This paved the way for a little-known instance of victim role-reversal. The overt persecution of the Christians during the reign of the Jewish King dhu Nuwas, is attested in three Sabaean inscriptions, as well as in Greek, Syriac, Arabic and Ethiopic sources: in November 518, the churches of Zafār and Hadramawt were burnt and the Christian population of Najrān massacred.[2] This leads us to hypothesize that it was the late fifth century – early sixth century build-up to this persecution and not solely repeated major failures in the irrigation system connected with the Great Dam on Wādī Dhāna, as generally surmised[3]), that compelled the Christian Arab Beduin tribe of Bānū, Ghassān which nomadized in the Ma'rib district, to find greener (and less hostile) pastures in the Syrian *Auranitis* and *Gaulanitis* where the Byzantine emperors employed it henceforth to defend the eastern *limes*.[4]

The book closes with a review of types of burial, grave-goods and funerary *stelae* (Ch. 12, 'Death and Funerary practices' by B. Vogt). By their spiritual density, mysterious ceramic face plaques, limestone face *stelae* and calcite-alabaster doll-like heads set in plaster or staring out of rectangular, limestone pillar *stelae*, both echo the carved portrait-busts of Palmyra (Clauss, 2002), and herald Modigliani's 1912 *Tête de Femme* in the Musée National d'art moderne, Paris (Dorival, 2002, 138–141).

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Notes

1 For a more objective assessment of H. St J.B. Philby's survey, see Monroe, 1973, 191–194.

2 The date *c.*523 quoted in Ch. 11 was traditionally accepted until, basing his demonstration on Shahid (1971), Devos (1974) convincingly argued for November 518 as the date of the martyrdom of the Christians of Najrān.

3 Notably, Hitti, 1949, 64–65.

4 On the Ghassānids, Sartre, 1982, 155–203; more specifically, in the Golan, Dauphin, 1982, 136–140; 1995.

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Netzer, E., *The Palaces of the Hasmoneans and Herod the Great.* 2001. Pp.144, Figs 175 (drawings and photographs). Yad Ben-Zvi Press and Israel Exploration Society, Jerusalem. Price $40 ($49 with postage).

This book is an excellent record of Netzer's work over the last thirty years or so in archaeology, having begun his career in architecture as a young man. It goes into considerable detail on the twenty major sites of palaces, ranging from the well-known hanging palace of Masada to the unknown palaces of Jerusalem that have disappeared. Each site is carefully described and illustrated with clear drawings and photographs. Some of the drawings are a bit sparse; and it must be said that, while the aerial photographs of sites such as Masada and Herodium are truly magnificent, the isometric reconstructions are surprisingly amateurish. On the other hand the cut-away drawing of Herodium (p.106) is remarkable.

Netzer gives a short history of each site, starting with the palaces of Jericho, excavated from 1973 onwards. From this site it is particularly clear that most of Herod's work came on the back of earlier construction work there by the Hasmoneans. As a builder, Herod has captured the imagination of the public, with his spectacular works at Masada and the Jerusalem Temple, but it was the Hasmoneans who initiated the exploitation of these sites. At Masada, they constructed cisterns, and the evidence shows that the palaces were designed by architects trained in work for the Hasmoneans. At the Temple Mount in Jerusalem the Hasmoneans enlarged the podium, which Herod then went on to extend to the north as well as the south. At Jericho, the Hasmonean monarch Alexander Jannaeus continued the work of his father John Hyrcanus I and Alexander's buildings were added to by his widow Alexandra Salome. In all, Jericho has the remains of four luxurious Hasmonean palaces, gardens and swimming pools, to which Herod added another three palaces. Netzer has done a magnificent job in reconstructing them on paper from minimal foundations.

Herodium was an original construction by Herod (unlike the other desert fortresses) and Netzer has done extensive work at the site to uncover its fascinating secrets. Many, however, are still hidden within the subterranean passages of this hollow mound, and the location of Herod's tomb, long considered to lie here, still seems to be elsewhere. Netzer's description of the lower Herodium palace complex, gardens, swimming pool, bath-house, ritual bath, halls and hippodrome, is extensive. It gives us the impression of a highly civilized and benevolent emperor, until we realize that it was actually in one of these pools that Herod arranged for Alexandra's son Aristobulos to be entertained and then held under the water until he drowned (Josephus *Antiquities* XV, 56). Netzer believes part of this complex still hides the location of Herod's tomb, and the so-called 'hippodrome' was probably the carriageway for his funeral procession.

Netzer goes on to describe the less famous palaces within the desert fortresses of Alexandrium, Dagon, Nuseib, Cypros, Qasr el-Yahud, Hyrcania and Machaerus, all of which have impressive remains on mountain-top locations and many of which were built over Hasmonean remains or renovated to reach the luxury standards set by Herod the Great. Also included are the harbour installations at Caesarea, with its fine sea-side palace boasting a courtyard swimming pool. Netzer adds a postscript on the Tobiad monument at Airaq al-Amir, outside Amman in Jordan (see above, Review Article). Although this Hellenistic monument is more likely to have been a mausoleum than the palace of entertainment that Netzer claims, its highly impressive and original architecture could well have served as one of the models for the later palaces of the Hasmoneans and Herod, as Netzer has suggested.

The book has no index and the 37 bibliographical references include 20 works by, or co-authored by, Netzer himself. A broader range is given in the extensive notes. A detailed location plan of the sites, particularly the lesser-known ones, would have been useful. However, this study is a valuable contribution on the subject of palaces and it manages to draw together and summarize a considerable amount of authoritative material on a fertile and important period of architecture that can be accurately called Jewish.

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Summaries of Lectures

Two Jewish Temples in Antiquity in Egypt

Stephen Rosenberg

This is the tale of two temples, one known to have been lost 100 years ago and now found; the other found 100 years ago and now lost. The first is the Temple of YHWH at Elephantine, the second is the Temple of Onias (Honia) at Leontopolis.

The Temple at Leontopolis was built by Onias IV, son of a High Priest of Jerusalem, in the district of Heliopolis, with the permission of Ptolemy VI and Cleopatra I. It was modelled on the Temple of Jerusalem (*Ant.* 13: 64–68) though, elsewhere, Josephus says that it was unlike Jerusalem, and had a tower 60 cubits high (*War* 7:426–430). Onias built it in about 170 BC and it stood until AD 73 when Vespasian ordered its destruction.

Leontopolis is also called Tel el-Yehudiah ('Hill of the Jewess') and this led Flinders Petrie to the site, outside modern Shibin al-Qantir, in late 1905. He claimed to have found the temple and, in May 1906, presented his findings to the Chief Rabbi and to the Jews' College, and later exhibited a model of it at University College, London.

This Temple was not condemned by Jewish law. In the Mishna, it is mentioned as a legitimate place to make an offering; and a priest of this temple may eat the sacred food in Jerusalem, but may not serve there (*Menahot* 13:10). It was not considered to be an idolatrous shrine (B. *Megilla* 10A); it was foretold in a passage in Isaiah about an altar in Egypt, which also refers to the City of the Sun (B. *Menahot* 110A) or Heliopolis.

Today there is little to be seen at the site and it is doubtful if Petrie's optimism was justified. The site consists of large sand

dunes surrounding a central sunken area. It was surveyed by du Mesnil de Buisson in 1927 and by G. R. H. Wright in 1968. The site is of restricted access to visitors today, and is neglected and used by junkies (as a picture by Dr. Joan Taylor indicates) and officials in the adjoining building do not allow photographs. They claim that an archaeological team will soon start digging at the site, which would be excellent, as the site has extensive remains from the time of Rameses III and later, and a section through the dunes may reveal something of the temple. Until that is done there can be no further claim that Onias' temple has been found.

This is not the case at Elephantine Island, 700 km further south, opposite Aswan. This important site, at the first cataract in the Nile, was a border post protecting Upper Egypt from the South. From 1893 onwards, local papyri came to light, showing that there had been a Jewish military colony on the island since before 525 BC, when the Persians conquered Egypt. These colonists had a small temple (*akora*) or shrine dedicated to YHWH and lived in several houses around the temple. As more and more papyri were published, more and more expeditions came searching for the temple, German, French and Italian, up to 1918, but to no avail. The documents described the colony in detail and one of the epigraphists, Bezalel Porten (1968) claimed that the Jews had come here at the time of King Manasseh in about 670 BC, and there is curious support for this early date in the Talmud (B. *Menahot* 110A). The general view is that these Jews came to Egypt with Jeremiah after 586 BC and were drafted to the southern border.

In the last twenty years, a joint German-Swiss team has been working at Elephantine on the early Egyptian temples of Khnum and Satet. North of the Khnum Temple complex they found a Jewish Aramaic village with houses made of mud-brick of the 5th Century BC, and nearby they uncovered an area of rather special floor tiles, different from anything in the houses. On checking with Porten's plans, they found the location of the Temple. It was a small mud-brick structure set in a plastered courtyard within an enclosure wall. Only the outline of the eastern side has remained, but there was enough to show that it was a small shrine about 6 metres wide, set off-centre in a courtyard of about 25 m in width. According to the documents, the temple was destroyed by the priests of Khnum in 414 BC but then was probably shortly afterwards rebuilt. Indeed, the excavators, led by Cornelius von Pilgrim, found two phases of the floor and two locations of the enclosure wall. The second alignment showed it clear of the 'Street of the King' mentioned in the papyri and von Pilgrim thinks that the priests may have destroyed it because the original line blocked the main street. It appears that the Khnum Temple was extended northwards and in order as to allow the road to continue across the island it was necessary to remove the wall of the Jewish temple enclosure.

Of course, the Egyptian priests, whose god was the ram-headed Khnum, would have been upset to see sacrifices in the Jewish temple of the Passover lamb, and the documents tell us that the Feast of Unleavened Bread was celebrated in Elephantine in the year 419 BC and probably also before that. The priests on their part had a prominent cemetery of rams' bodies in the Khnum complex. It is also clear that when the temple was rebuilt in 410 BC, it had to be without animal sacrifices. After that the temple did not last long, as the Persians were expelled from Egypt before 399 BC, and the Jews must have been forced out at the same time.

The plans of the little temple cannot be fully restored, but it looks as if it was a small structure 6 metres wide and at least 15 or 18 m in length, standing in a courtyard of about 25 m by 60 m. This would fit the sections of mud-brick wall extant at the site, and also the dimensions as was calculated by Porten from the papyri. It means the shrine was much like the description of the tented Tabernacle of the Desert, which was 10 by 30 cubits (5 ×

15 m) in a courtyard of 50 by 100 cubits (Exodus 26–27). Certainly it was more like the Tabernacle than the Temple of Jerusalem had been.

This leaves two questions. Is it at all possible that the fifth-century BC temple of Elephantine could have been based on the biblical description of the Tabernacle in the Desert? And, secondly, should Petrie have been looking at Leontopolis for a small shrine, like the Desert Tabernacle, rather than another version of the grandiose Temple of Jerusalem?

The Disappearance of Mrs. God

Diana Edelman

Archaeological evidence has documented that during the period of the monarchies of Israel and Judah (ca. 975-586 BC), before the exile, the official religion was not monotheistic; a divine couple was worshipped as the source of fertility and blessing. An inscription from a tomb in Kh. El Qom in Judah, dated to ca. 725 BC, calls for a blessing on the deceased by YHWH and 'šrth. The same couple is invoked in three blessings written as graffiti on jars found in a caravanserai in the Sinai Desert at Quntillet 'Ajrud, from about 825-750 BC. The phrase 'šrth has been interpreted either as 'his Asherah', although the final *heh* would more typically have been a *waw* in this case, or Asheratah, a goddess' name that contains a double feminine ending the old *tau* and the newer *heh*. One inscription contains a drawing of the divine king and queen of heaven, complete with tiaras underneath it as an illustration. In addition, hundreds of female figurines that are graced with prominent breasts, known as Judean pillar figurines in scholarly literature, have been found within Judah during this time period. Their function as toys, magical amulets intended to produce human fertility, or as statues of a fertility goddess have been widely discussed.

A search of extra-biblical texts shows that a goddess named Asherah was known as early as ca. 2200 BC in Syria at Mari, where she was the partner of the head god, Amurru. She figures regularly in a set of mythological texts about the gods that were excavated at the site of ancient Ugarit, on the Lebanese coast, dating from ca. 1300 BC. There, she is the queen of heaven and partner of the head god El. She is the 'creatrix of the gods', who are her 'pride of lions', and a homemaker who spins and cooks. When we look at the structure of the religions of the ancient Near East, we find a divine couple at the head of every pantheon; the male deity is responsible for the fertility of plants and animals while the female is responsible for human fertility.

Turning to the Bible, we discover that Asherah is mentioned there as well. A representation of her was part of the official cult in the Temple in Jerusalem that was removed, along with representations of Baal and Nehuštan, during the religious reforms of Hezekiah and Josiah (2 Kgs 18:4; 23:6, 15). These reforms did not outlive either king in Judah proper, however. Various texts indicate that she could be symbolized by a live tree planted beside YHWH's altar (Deut 16:21) or by some sort of symbol fashioned out of wood (1 Kgs 15:13). She had prophets who spoke in her name (1 Kgs 18:19), and women wove garments for her in the temple precincts (2 Kgs 23:7). Jer 7:17-18 gives a graphic description of her worship as the 'queen of heaven' outside the temple precinct by the local population.

Returning to the ubiquitous Judean pillar figurines, we find that they ceased to be used in the post-exilic, second temple community, even though their counterparts continued to be used in neighbouring regions. This fact suggests on the one hand, that they must have represented a female goddess in some respect, either directly or as an amulet, whose worship had become objectionable. If they had been amulets meant to ask YHWH to produce human fertility, there would have been no reason for their use to be discontinued. In light of the inscriptions from Kh. El Qom and Quntillet 'Ajrud, it is logical to identify the goddess behind the figurines as Asheratah/Asherah, the giver of human fertility. On the other hand, the forceful disappearance of the cult of Asherah during the Persian period gives us archaeological evidence for the date of the emergence of monotheistic Judaism as an official religion: the Second Temple community. It is likely that the priestly elite already had developed belief in a single divine entity by the end of the monarchy but was not able to introduce this idea successfully to the country at large. The exile gave them the opportunity to refine their thoughts, and when they returned to the land of Judah, which had become the Persian province of Yehud, and were put in positions of power beside a Persian-appointed governor, they were able to impose their set of beliefs upon the province. Those who had returned from exile would have accepted the new religion but those who had remained in the land and who would have continued their traditional worship of the divine couple would have had to have been forcefully 'converted' to the worship of YHWH alone. Isaiah 56-66 presents some of the struggles to impose monotheism in the early days of the return.

New concepts of YHWH were developed; the Ark was discarded as a no longer appropriate symbol, and in its place two new theologies were developed: Shem theology, and kabod theology, both of which removed God from His former home in the Jerusalem Temple to a more remote, heavenly domain but allowed divine manifestation on earth. Asherah's worship was suppressed, and the domain of human fertility was transferred to YHWH. Genesis has a number of stories emphasizing that YHWH alone opens and closes the human womb. References to the worship of Asherah (and Baal) that appeared in pre-monotheistic, monarchic era texts that had already become authoritative within the Jewish community were now condemned as illegitimate cults. Eventually, however, even further 'neutralisation' was carried out by placing the definite article in front of Asherah (and Baal) to render her an object rather than a deity proper; her name or title was also pluralized to the same end. As a result, Mrs. God disappeared, leaving Mr God not even as a divorcee or widower, but as a non-eligible, perpetual bachelor in monotheistic retrospect.

New Light on the Persian Empire

Amélie Kuhrt

The Persian empire (c.550–330 BC) is usually thought to be a turning point in the development of Judaism. It is argued that the Persians developed a unique policy of religious tolerance, which stands in contrast with their predecessors and successors. The notion has developed on the basis of the Books of Ezra and Nehemiah. Scholars have sought support for it in documents from other regions of the empire, given that the Old Testament material has been heavily redacted and its evidence is therefore rejected by sceptics. The best way to try to throw light on the problem is to see what picture of the Achaemenids we obtain by looking closely at some contemporary documents:

a) From Iran itself we can see that while Ahuramazda was the kings' most prominent deity, many other cults were royally supplied and by the fourth century additional gods are included in royal prayers, suggesting an evolution on the religious plane. Loyalty to king and empire was metaphorically equated with devotion to Ahuramazda – an ideology analogous to that documented for the Assyrian empire.

b) Babylonian and Egyptian documents depict Persian kings as acting under the orders of local gods only as part of the process of legitimization following conquest.

c) Official actions depicted in material from Elephantine (Egypt) and Lycia, which have been thought to show the Persian authorities intervening directly in the cultic affairs of their subjects, were almost certainly limited to administrative concerns.

d) Monuments showing Persian officials honouring local gods are evidence of private acts of devotion and a gradual process of acculturation.

In conclusion, there is nothing to substantiate the idea that the Achaemenids developed a special 'religious policy'; if anything, where we can pinpoint their actions they are, in broad terms, remarkably similar to those of the earlier Assyro-Babylonian and subsequent Seleucid empires.

The Search for Herod's Tomb

Ehud Netzer

Herodium merits inclusion not only in the list of principal sites (such as Jerusalem, Caesarea, Samaria/Sebaste and Jericho) developed by Herod the Great, but also in the long inventory of exceptional architectural complexes (such as the Temple Mount in Jerusalem, the temple complexes at Caesarea and Samaria/Sebaste, and the third palace and the hippodrome in Jericho) erected by the builder king.

Herodium's significance is integrally linked with Herod's decision to be buried and to perpetuate his memory in a place located within desert surroundings, outside the capital. The king came up with an ingenious solution to the "problem" he had set himself: at this location was built a huge summer palace (like Hadrian's Tivoli or Louis XIV's Versailles) and a prominent cone-shaped monument that was visible from afar – the Mountain Palace-Fortress – a very "in" and sought after site.

The excavations by the lecturer in Lower Herodium commenced in 1972 and continued, at intervals, until 2000. During the early years of the dig, the "Monumental Building" was revealed to the northwest of the mount; it was built on the axis of symmetry of the Course – a huge terrace, 350 m long and 30 m wide. Over the years, a large ritual bath (mikveh) and group of impressive ashlars (in secondary use in a Byzantine church) featuring decorations common in Second Temple period burial structures, were exposed near the Monumental Building, alongside the 'course'. The lecturer has interpreted (in various publications) all these remains as forming part of Herod's Tomb compound, while the Course corresponds amazingly to Josephus' description of Herod's funeral procession.

In the hope that further excavations would bring about the discovery of the foundations from which the splendid ashlars had been removed, as well as the revelation of the location of the tomb itself, a considerable area was exposed – mainly to the south and the east of the Monumental Building. (This work was based on the assumption that the 'missing' structure served as a mausoleum or as a portico at the entrance to the burial cave.) During these excavations, extensive Byzantine remains and even a wall built by the Romans *c.* 70 AD from when they besieged Herodium, were unearthed. Below these remains we also found evidence of a large U-shaped structure with a ritual bath next to it. This structure was built and then demolished during Herod's reign, prior to the construction of the 'course', the Monumental Building and the large ritual bath. In the lecturer's opinion, it is very reasonable that this demolished structure was meant to serve as the entrance to a burial cave, but that after a few years the plans were revised. (Even earlier on, the lecturer had discerned two technical stages at the time of construction of the Pool Complex, and it now seems that these phenomena are interrelated.)

In addition to the above-mentioned remains, the foundation of three rooms built in Herod's time were also revealed to the east of the Monumental Building, along the edge of the 'course'. These rooms were demolished during the Byzantine period. The ashlars were possibly taken from here, but only further excavations at the site will be able to either confirm or refute this assumption.

The search for the tomb is now in the situation of a stalemate as in a game of chess. The lecturer has no explanation for all of the above-mentioned structures, other than that they were part of Herod's Tomb Compound. The tomb itself either stood above the ground surface and was later completely demolished, it was subterranean and has not yet been discovered. Theoretically, the burial cave could have been located below the Mountain Palace-Fortress. However the lecturer utterly rejects the possibility that Herod was buried within the Mountain Palace-Fortress, and believes it was intended for use as a palace for everyday life. The lower part of its round eastern tower served merely as a solid foundation, similar to those of the three towers in Jerusalem – Phasael, Hippicus and Mariamme. It is hoped that further excavations at the site will provide a solution to this mystery.

Grants Given by the Society

NOËL SIVER

While in Jerusalem in November 2000, the author of this report was asked to assist with the recovery and assess the condition of a group of broken limestone ossuaries and lids from a first century AD tomb in the Hinnom Valley south of the Old City. The 370 fragments were examined, joins were found for 292 of them, photographs and measurements were taken, and a one-page report plus a seven-page preliminary catalogue were subsequently prepared.

A £250 travel grant from the Anglo-Israel Archaeological Society was used for the air fare to return to Israel where one month (23 May - 21 June 2001) was spent at the Council for British Research in the Levant, Jerusalem Office (formerly the British School of Archaeology in Jerusalem) conserving the 17 limestone ossuaries and fragmentary ossuaries, plus 19 of the lids and fragmentary lids. Conservation consisted of the following activities:

Identification of organic material on the surfaces of several of the ossuaries:
Material adhering to the interiors of three ossuaries and incorporated into the accretion on the exterior of one ossuary was identified as human bone and was shown to DNA specialists from the Hadassah Medical Centre who removed samples for analysis.

Cleaning the ossuary and lid fragments:
The 370 ossuary and lid fragments recovered in November 2000 plus an additional 30 fragments recovered subsequently were cleaned with tap water. In most cases it was possible to employ brushes of varying degrees of softness, the choice of brush being determined by the degree of softness of the various limestones which had been used by the craftsmen. In a few cases the limestone was so soft that the fragments were only dipped in water to remove loose sediment from their surfaces and were not brushed.

As a result of cleaning it was realized that the ossuaries and lids had been broken not only during an episode of vandalism in November 1998 but also on some earlier occasion or occasions. While some of the ossuaries and lids presented only fresh breaks others showed both new and older breaks or only old breaks. Cleaning also revealed an inscription not previously seen, thereby bringing the total number of inscriptions on ossuaries and lids from this tomb to five. In addition cleaning revealed a variety of tool marks on the surfaces of the ossuaries and lids.

Additional join-finding:
Join-finding was carried out with the 78 fragments for which joins had not been found in November 2000 plus the 30 more recently recovered fragments. Additional joins were found thus making the ossuaries and lids more complete. As a result of join-finding the total number of catalogued ossuaries and fragmentary ossuaries was reduced from 18 to 17 and the total number of catalogued lids and fragmentary lids was increased from 21 to 23. Nine of the 17 ossuaries were between 70% and 98% complete (but broken). Twelve of the 23 lids were between 85% and 100% complete (but broken).

Consolidation of joining edges:
Prior to mending, the joining edges of the ossuary and lid fragments were consolidated using a 7.5% solution of Paraloid B-72 acrylic resin (ethyl methacrylate co-polymer) in acetone:ethanol. Two coats of this consolidant were applied by brush with an interval of at least 24 hours between coats.

Mending:
The joining fragments of the ossuaries and lids were adhered using a 50% solution of Paraloid B-72 acrylic resin (ethyl methacrylate co-polymer in acetone: ethanol applied by brush. Eight complete and almost complete ossuaries were fully mended. The decision was taken not to mend or only partially to mend eight very incomplete ossuaries which would have required a great deal of gapfilling. One almost complete ossuary was not mended due to lack of time. Ten complete and almost complete lids were fully mended. The decision was taken not to mend four complete (but broken) lids which consisted of only two joining fragments until a suitable backing system could be devised which would prevent them from breaking apart again during handling.

Gapfilling of missing areas:
The eight fully mended ossuaries and four of the ten fully mended lids required gapfilling. Pollyfilla All Purpose Interior Powder and Unifilla, two different brands of English patching plaster (hemihydrate plaster with modifying additives and cellulose derivatives) which were brought out from the UK, and Clasimo X, a German patching plaster which was purchased in Jerusalem, were used for this purpose.

My thanks to the Anglo-Israel Archaeological Society for the travel grant which permitted me to return to Jerusalem and to Dr Shimon Gibson for paying the rest of my expenses.

OLIVER GARDNER

This summer, thanks to the money I received from the Anglo-Israel Archaeological Society, I was able to return to take part in the excavations at Sha'ar Hagolan in Israel. I had spent two weeks on the excavation last year, but returned for the whole season this time.

The site is located a few kilometres south of the Sea of Galilee in the Jordan Valley, close to the River Yarmuk and the border with Jordan. The first excavations at the site were carried out by Stekelis in the early 1950s. He identified a pottery at the site of the Neolithic culture which he named 'Yarmukian' after the nearby river. The identifying features of this culture is a pottery assemblage with red paint and herringbone decoration, large numbers of stone-and-clay figurines and part of the flint assemblage, particularly the sickle blades and arrowheads. Since then a number of other Yarmukian sites have been identified in Israel, Jordan and the Lebanon. Since the early 1990s excavations have been carried out by Dr Yossi Garfinkel of the Hebrew University of Jerusalem. Because much of the area was covered in fishponds, when Stekelis excavated there, he was limited to where he could dig. However the area is now cleared which has allowed Dr Garfinkel to carry out much more extensive excavations.

The recent excavations uncovered several large buildings in Area E, whilst another part of the site contained PPNC occupation levels. Because of the small size of the team this year our aim was to concentrate on Area E, in an attempt to define the limits of a large building discovered in a previous season.

In earlier seasons, a large building consisting of several rooms (including two store rooms) arranged around a central courtyard, had been excavated in Area E. A new courtyard-style building to the west of this building was discovered and our aim was to excavate this building so that it could be compared with the existing building. By the end of the season a large area had been excavated. Much of the northern wall of the building was uncovered and one room in this area contained a large *pithoi*. However the western extent of the building was not defined and much of the southern wall had been eroded by the River Yarmuk. So one of the aims for next season will be to finish the excavations on this building so that a clear picture of the area may be obtained.

One of the things which Sha'ar Hagolan is famous for are the large number of art objects, including stone-and-clay figurines. The most impressive of these are the clay 'mother goddess'

figurines. These are voluptuous female figurines often in a seated position with distinctive cowry shell eyes and painted decoration. The best examples of these are on display in museums in Paris and New York. This year was no different and a number of new figurines and figurine fragments were found. But the most important find this season was a zoomorphic figurine. It was the first found at Sha'ar Hagolan, although others have been found at other Yarmukian sites.

As well as having a very enjoyable time, the excavation gave me invaluable experience. New things that I learnt this season include the cataloguing and sorting of finds, on-site photography and for the last two weeks of the dig I was put in charge of supervising a small team of volunteers. All of these things have added to the experience I gained last season and on other excavations, and since returning to England I have been working as an archaeological assistant for The Trust For Thanet Archaeology. I have a place to study for an MA in Archaeology at University College London, starting in September 2002, and plan to write my thesis about the Yarmukian culture. I hope to return to Israel next year.

Notes for Contributors

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