

# EXCAVATIONS AT DEIR 'AIN 'ABAṬA 1988

by  
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## Introduction and Objectives

Although the local inhabitants and people working in Ghor eṣ-Ṣafi were aware of the ancient ruins of Deir 'Ain 'Abaṭa (Fig. 1: Palestine grid reference E 197.98 N 052.77), Burton MacDonald was the first to record their existence during his survey of the region in 1986<sup>1</sup>. After another visit to the site by MacDonald and the author in the following year, further investigation was deemed necessary (Pl. XL,1).

In November and December 1988, two years after MacDonald's discovery, archaeological excavations began at Deir 'Ain 'Abaṭa. The main objectives were to set up a grid plan, to define more clearly the standing structures (especially the highest standing building), to retrieve as many material finds as possible from the surface and to establish a stratified sequence by excavating in two separate areas of the site. It was also decided to begin collecting information concerning the geomorphology, environment and modern human occupation in the immediate vicinity (locally referred to as 'Abaṭa and el-Khanzir el-Aḥmar). Theoretically, the purpose of the project was to investigate the cultural remains at Deir 'Ain 'Abaṭa as fully as possible to try to understand what type of occupation existed and how it might fit into the past.

## Survey and Surface Work

The work began by finalising a grid plan oriented on the highest standing wall along the best preserved building on the basis of a brief topographical survey conducted in August 1987 and by fixing several key points with cement. Each area was then allocated a capital Latin letter corresponding to specifically designated surface spaces delimited by distinctive features,

such as visible standing walls, buildings or geological formations. The areas were further sub-divided by Roman numerals representing arbitrary excavation trenches or functionally different positions within the area. The locus number system was employed during all excavations beginning with locus number 1.1.

Area A is on the inside of the highest standing and best preserved building. Area B is inside the northwestern wall limiting the site. Areas C and D are two separate one-roomed structures on the far southern end of the site. Area E is west of a sandstone shelf at the foot of the site, and contains much of the eroded and tumbled material. Area F is the source of the best architectural and stone finds, including *in situ* mosaic tesserae, and lies immediately to the north of Area A and south of Area B. Area G is outside the northwestern wall of Area B and is probably the ancient rubbish dump. Area H represents the massive tumbled stones and debris to the west and downslope of the structures in Area A and F. An area several hundred metres to the north of the main ruins and enclosing walls was not dealt with during the season's work. It consists of cleared fields, piles of unworked stones and cairn tombs.

An intensive systematic surface collection was conducted on the lower slopes (Area E is subdivided into four sections) and in the bulldozer scrapings (Area E.I). All exposed pottery sherds, glass, worked marble, flint, tesserae and metal fragments were collected. Sandstone architectural blocks, column drums, capitals and bases were plotted on the grid map and numbered in blue paint. The pieces that had been upset and damaged by the bulldozer were removed to the Kerak Museum. In future it is planned to complete the surface collection from the entire site in order to

1. See MacDonald, Clark and Neeley (1988), p. 37.

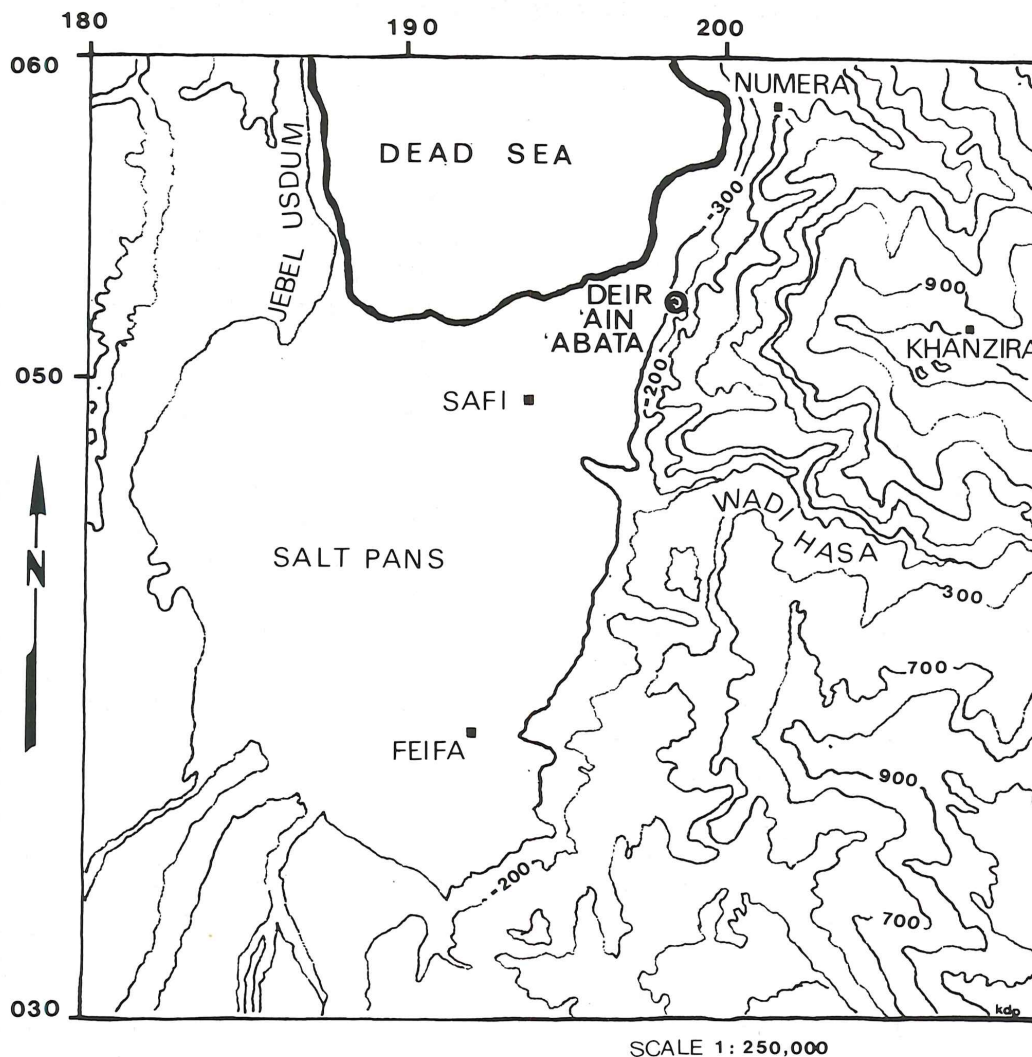


Fig. 1. Location of Deir 'Ain 'Abata.

help postulate the functions of various areas and produce a more complete picture of the material independently of excavation.

There is evidence from the surface of an agricultural system at Deir 'Ain 'Abata, in Area E where bulldozer action exposed two terrace walls by sectioning them, and also just north of the main site where another flat area has been cleared of stones (as mentioned above).

A continuous good pathway leading up to the main buildings of the site was not clearly distinguished, but there are some remnants of walkways or paths to and around Deir 'Ain 'Abata. Considering the more than 30° slope on which it is located, secure access should have been a major

consideration. That is, unless the residents of Deir 'Ain 'Abata were not very concerned with much social interaction and communication outside their own secluded community<sup>2</sup>.

There is also evidence of temporary modern human occupation at the main site of Deir 'Ain 'Abata and along the slopes of the mountain, represented by cleared oval surfaces and modern debris (such as sardine tins and plastic items). And indeed, during the time spent on the site, several bedouin tents were erected to the north at the foot of the mountain near a spring. Every morning at dawn a herd of some 500 sheep/goat (mostly goats) were taken out past the spring, southwards past the site and returned in the afternoon above the

2. It has been suggested that Deir 'Ain 'Abata is a monastic complex, see MacDonald and Politis (1988).



site, crossing it and returning to the camp. Each time the herd passed the site, rubble was kicked further down the slope. This animal action seems to have been a major destructive element of the site before the bulldozer arrived, except for natural erosion caused by the steep slope on which the site was built and the bombs that exploded on the site during the 1967 war.

### Excavation of Area A

The first place excavated was inside the highest standing and best preserved building on the site (Area A). This is the most visible structure from a distance and has proved to be the sturdiest construction. It is a rectangular building approximately 18 metres (N-S) by 7 metres (E-W) built into the side of a steep cliff. It is supported by a second long wall to the west with buttresses on the down-slope side. The inside of this building, in which the work was concentrated, has remnants of seven arches protruding from the wall, all thickly covered with a white lime-based plaster with rounded gravel inclusions which could have been watertight (Pl. XL,2).

The first excavation trench (A.I) was two by two metres, and was placed against the wall in between two of the seven arch stubs. After the excavation reached a precarious depth with boulders and blocks in all the sections, it was extended by another two metres eastward. At a depth of about 4.5 metres (seven metres from the top of the wall) an open conduit meeting a small wall at a right angle was discovered (Pl. XLI,1). Both these structures stand about 1.5 metres high and were constructed of tightly packed stones and cement often mixed with pottery sherds (especially on the insides of the conduit). The conduit dips towards the south parallel to the seven metre high standing wall. The function of the small wall running eastwards and abutting the conduit may be a covered canal connected to the conduit internally, but no part was removed to test this hypothesis.

The bottom of this excavation trench revealed no floor surface as such, but

rather a thick, unevenly laid layer (about 50 cm. in places) of ashy-grey cement mixed with pottery sherds covering finer white lime-based plaster with rounded gravel inclusions, similar to that found on all the walls above. The bottom was therefore irregular and had no obvious floor occupation surface related to it.

The material finds from this trench were largely unstratified, but a careful sequence of the stratification was nevertheless maintained. Sediment samples were taken from most of the distinguishable layers which tended to consist of consecutive silty-sand and gravel deposits. At the level where the conduit and wall were discovered, the pottery became more prevalent but still was relatively scanty.

A preliminary analysis of the pottery suggests a Late Roman and Byzantine date. Many of these sherds came from cement and plaster. Several profiles were distinguished which may be identified as waterjugs or containers. Most notable perhaps, were the fragments of thin-bodied Nabataean wares, including characteristically painted ones found at the very bottom of the sounding.

Some glass fragments, metal and tesserae were also discovered, but mostly from the upper, less stratified layers of slope-wash. All the sandstone architectural pieces were recorded, described, numbered and stored in the southwest corner of the building (Pl. XL,2), as were the plaster chunks that were not collected as samples.

The southern half of the main building of Area A was cleared to a level surface and much of the fallen and loose debris was removed. The eastern limits of the building, built up against and cut into the natural conglomerate bedrock of the mountain, could be distinguished. A small opening was discovered (65 cm wide) in the southern wall that was roughly blocked but showed no evidence of being used as a doorway. A second trench (A.II) was opened immediately to the south and outside the building to help understand this structure, but time constraints did not allow more to be distinguished than a tumble layer with many coloured tesserae



and Byzantine pottery.

A third area (A.III), cleared on the eastern side of the building, revealed two walls, one made of hewn sandstone block and the other of rough stones, enclosing the best preserved exposed arch and two white lime-based plastered settling basins (Pl. XLI,2). The two basins are linked by a small gap with a similarly plastered bench serving as a division between the shallower one (about 30 cm.) above, trapping coarser sediments, which in turn overflowed into the deeper one (about 1.30 m.) below, where the finer sediments settled to the bottom. Again much of the pottery found here was covered by cement, indicating its use with watertight white lime-based plaster. An additional apse-like structure connected with the two basins above them was not completely excavated by the time the season's work had to stop.

The northern end of the building (A.IV), which was not excavated, has wooden roof beams still *in situ*. It is estimated that from this spot the building still stands to its original height of over seven metres. Preparation for future excavation of this area was made by numbering, plotting and planning all the architectural pieces and fragments on the surface.

### Excavation of Area B

The second place excavated was on the inside of the northwestern wall limiting the site. This area was recognised from the beginning as having the greatest potential for well stratified material and environmental remains. The surface was covered by ashy deposits rich in bones, pottery, glass and metal. It is from this area that a large fragment of a Late Roman C plate with an impressed cross and the letters "alpha" and "omega" was found on the surface.

A two by three metre trench (B.I) was opened against the northern wall enclosing the site. The trench yielded an abundance of pottery, bone, metal, coins, glass, tesserae and charred material. A smaller wall was distinguished running north-south, as

well as a roundish structure, over a metre high, roughly constructed of stones packed with reddish soil and straw (the impressions could be identified) (Pl. XLII,1). Ash was the prevalent deposit, ranging from pure black to white; much of the related pottery and bone took the respective colouring.

Preliminary analysis of the pottery shows a predominance of brittle, grey cooking ware and yellow-cream storage jars and jugs from the Byzantine period (4th-6th centuries A.D.). Late Roman C orange-red Phocian type plate fragments were also abundant. It is interesting to note that green and brown glazed or vitrified pottery was discovered in well stratified layers of B.I. Similar pottery has been found in Asia Minor and Greece belonging to the Roman and Byzantine periods. A proper quantification of all the ceramic types is still being worked on by the author.

The oil lamps and fragments that were recovered from Area B have been studied by Kate da Costa. She found that they all form part of the standard 5th century A.D. lamp repertoire of southern Jordan, although some of the types identified can be found as early as the 1st century A.D. and as late as the 8th century A.D. (Pl. XLII,2).

When excavations stopped, the end of the cultural deposits had not yet been reached, nor had the trench been extended to clearly define the limit and function of the round stone-built structure and its associated ashy layers. In future it is planned to dissect this structure in order to test the hypothesis that it was used as an oven.

### Botanical Evidence

Area B.I was the source of 34 samples taken to investigate the charred plant remains using the flotation tank from the British Institute in Amman.

A preliminary analysis of only a very limited amount of the charred material made by Alan Clapham showed that olives (*Olea europaea*), dates (*Phoenix dacty-*

*lifera*), bitter vetch (*Vicia ervilla*), grape (*Vitis vinifera*), apricot (*Prunus persica*), cucumber and/or melon (*Cucurbitaceae*), lentils (*Lens* spp.), barley (*Hordeum sativum*) and bread wheat (*Triticum* sp.) were consumed on the site.

Perhaps more important was the discovery of barley and bread wheat rakis in these charred remains. This indicates on-site processing of these species and therefore suggests that the inhabitants grew their own crops. This fits in very well with the evidence for an agricultural system of terrace walls and cleared fields (as described above).

Most of the wooden roof beams found in Area A.IV and among the rubble of H.I have also tentatively been identified as a type of palm wood. The others have yet to be identified, although some are probably from acacia trees.

In March 1989 the author made a collection of the flowering and other plants in the Deir 'Ain 'Abaṭa environs. A list of these species and their relation to the charred remains from the excavations will be included in the final botanical report.

### Animal Remains

A preliminary sorting of the animal bones found in Areas A, B and G by Louise A. Martin produced the following identifications: sheep (*Ovis aries*), goat (*Capra hircus*), horse/donkey etc. (*Equus* sp.), cattle (*Bos taurus*), pig/wild boar (*Sus scrofa*), gazelle (*Gazella* spp.), fox (*Vulpes* sp.) and Persian Fallow deer-Red deer (? *Dama mesopotamica*)? *Cervus elaphus*).

In addition are some fish bones (vertebrae) and an abundance of well preserved bird bones from Area B, which need specialist identification. Many bones were noted for cut marks/butchery.

### Geomorphology and Stone Sources

Deir 'Ain 'Abaṭa is located about 270 metres below mean sea level on a scree slope overlying Pre-Cambrian bedrock consisting mostly of conglomerates with some sandstone and igneous rocks (Pl.

XL,1). The 30 degree scree slope is loose in places, elsewhere it is varyingly cemented with calcium carbonate of groundwater origin. In several spots near the site travertine bands can be found. According to Dr. Philip Macumber and Richard Lakey, who briefly examined the geomorphology of the area, it is likely that a semi-permanent water outflow came from these places in the past, especially since there is an extensive permanent freshwater spring at the base of the scree slope today. Considering that the Dead Sea level was higher in the past, the watertable would also have been farther up. If the structure in Area A was a reservoir, it could have had three sources of water: from outflowing springs, from rain and from a deep well.

The bulk of the building stones used on the site were obtained from the immediate area and are predominantly greywakes. The source of the red and yellow sandstone used to make architectural blocks, columns, capitals and bases was probably several kilometres to the north where sandstone outcrops in the rift valley scarp. There is no local source for the finer white marble pieces found on the site, therefore it can be assumed they were imported.

### The Spring

A source of drinkable fresh water is of utmost importance to all human settlements. It is especially true in arid areas where rainwater is very scarce. This is certainly the case in Ghor eṣ-Ṣafi which receives a very small amount of precipitation each year.

The spring at Deir 'Ain 'Abaṭa, located at the base of the scree slope immediately northwest of the ancient site, is of particular interest as it is the nearest active spring. The water temperature was recorded at 27 degrees Celsius and did not have high concentrations of either sulfur or salts. Therefore it is fit for human consumption.

Recently, the spring was used by a cement-block maker whose one-roomed factory is situated next to the source. This



has now been abandoned as the entire region is being developed by the Jordan Valley Authority, which has built an irrigation canal to catch the water outflows. Still, the spring is neither covered nor controlled by the artificial structure and seeps out of the ground in several places forming streams and pools. The biological community has therefore succeeded in surviving.

Dr. Sayeeda Mir, who visited the spring in April 1989 with the author, could identify two species of fish still living in the water: *Aphanius dispar richardsoni* and *Garra ghorensis*. Dr. Mir was also able to distinguish three mollusc species: *Meloid tuberculata*, *Melanopsis costata* and *Theodoxus jordanicus*. The aquatic plants growing in the spring have not yet been identified, though a *Typha* species is present. Crabs (? *Potamion fluviatile*) were also found in the spring, presumably preying on the small fish.

The spring at Deir 'Ain 'Abaṭa could have been used as a source of fresh drinking water in the past, as it is today. Its very existence makes it quite likely that similar springs could have been active in the immediate area and were used by the inhabitants of the ancient site.

### Summary and Conclusions

The survey work conducted during the 1988 excavations at Deir 'Ain 'Abaṭa clarified the plan of the structures and added to the site plan several important features: the spring, two more occupational areas, a terracing and farming system, parts of the pathway leading up to the site and over a dozen cairn tombs. A fixed grid system keyed into the 1951 map coordinates of the region along with absolute sea-level heights was also established.

The surface collections yielded a good repertoire of the material remains that are likely to be unearthed in future excavations, and gave valuable sight as to where and what were the functions of the structures. They also helped rescue artifacts endangered by natural and human activities.

The highest standing and best preserved building in Area A, over seven metres in some places, proved to be a reservoir which included a water catchment and distribution system.

The round stone-built structure in Area B is most probably an oven, as both burnt cooking ware and charred plant and animal remains attest.

The earliest evidence of human occupation at Deir 'Ain 'Abaṭa comes from Late Chalcolithic-Early Bronze Age pottery and flint that was collected from the surface. But no structures can be related to these finds. Instead, all the surviving buildings at the site belong to a much later period, the exact date of which is yet to be determined. On the basis of the pottery types found so far, these buildings were constructed and used roughly from the 4th century A.D. to the beginning of the 7th century A.D. No burnt destruction was evident, although the degree of tumbled stone walls could indicate that a severe earthquake caused the inhabitants of Deir 'Ain 'Abaṭa to abandon their dwellings.

### The Staff

The excavation team from November to December 1988 consisted of: Hakim Mahameed, Department of Antiquities representative; Franz-Josef Reidel, excavation technician; Helga Fiedler, Area A supervisor; Anthony Lowe, Area B supervisor; additional volunteers were Michael Rawlings, Robert Schick and Jennifer Kieley; locally hired workmen included Ahmed Bowat, Khalil Bowat, Hassan Bowat and Rashid Hamadi; the project was directed by the author.

Preliminary post-excavation studies were begun by Franz-Josef Reidel on the architectural plans, Dr. Philip Macumber and Richard Lakey on the geomorphology, Alan Clapham on the botanical evidence, Louise A. Martin on the animal remains, Dr. Sayeeda Mir on the ecology of the 'Abaṭa spring, Kate da Costa on the oil lamps, Margaret O'Hea on the glass and by the director on the pottery, architectural

interpretations and pedology.

### Aknowledgements

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