

TALL AL-KAFRAYN: THE UNIVERSITY OF IOANNINA HELLENIC - JORDAN EXPEDITION, PRELIMINARY REPORT ON THE NINTH EXCAVATION SEASON (2009)

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Introduction

Excavations were carried out at Tall al-Kafrayn, situated in the Jordan Valley about 5km north-east of the Dead Sea and 3km south-south-west of the al-Kafrayn dam, between 15 March and 12 April 2009 (**Figs. 1 and 2**). As in previous seasons, the directors of the expedition were the authors, based at Ioannina University in Greece. Khaled Ahmad al-Hawawrah, from Madaba, represented the Department of Antiquities of Jordan (DoA).

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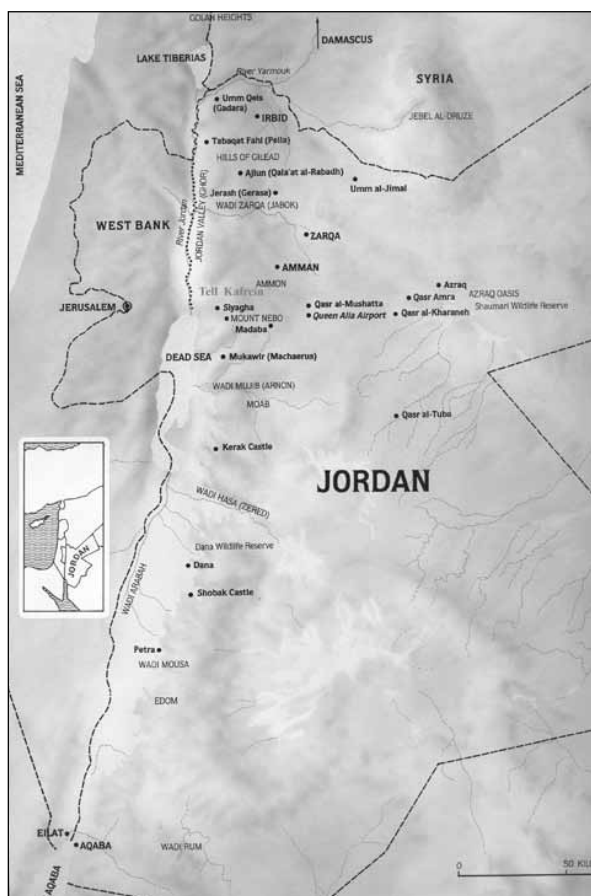
Trench supervisors were post-graduate archaeology students from the University of Ioannina: Kostas Paschalidis, Kostas Theodoridis, Spyros Thermos, Dimitris Mengidis, Panagiotis Palates, Kalliopi Lambri and Theodora Alevra. Stavros Oikonomidis and Anagnos - Konstantinos Tsonos from the same University were draftsman and pottery specialist respectively. Other team members included Aris Frantzws-kakis, Myrisi Choira (Archaeologists), Alexandros Lagopoulos (University of Thessaloniki) as architect, Suleiman al-Jamal and Tawfiq al-Hunete (DoA) as surveyors, Kleio Zervaki (MA University of London) as conservator, Efstathia Margaritis (PhD University of Cambridge) as Archaeobotanist, Artemis Oikonomou (EKEFE, Dimokritos C14 Laboratory, Athens) as archaeometrist and Dimitris Papaeliou as photographer. A number of other archaeology students from the University of Ioannina assisted in the field (**Fig. 3**).

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Results of the 2009 Season

The main objectives of the 2009 excavation season (for location of trenches see **Fig. 5**) were as follows:

1. To investigate the east and south-west slopes of the *tall*, it's most vulnerable sectors, for further remains of the fortification walls already discovered to the west and north (Trenches P14 - 15, O16 - 17 and J16 - 18).
2. To continue excavating in the south, east and north parts of the *tall* where, among other finds, important remains of (?) LBA / Iron Age houses and towers were exposed in pre-



1. Map of Jordan



2. Tall al-Kafrayn (Google Earth).



3. University of Ioannina excavation team, 2009.

vious seasons.

3. To extend the large exploratory trench cut into the north slope of the *tall* in order to reveal the entire occupational sequence from the bulldozer cut to the summit of the *tall*.

Information about the recording system can be found in the preliminary report of the 2005-2008 seasons, published in the Annual of the

Department of Antiquities of Jordan (ADAJ).

To start with, work resumed in trenches J16 and J17, where important finds have been made in previous seasons, including a ‘column base’ with a well-preserved charred wooden upright indicating that the space was roofed, a fine Attic red-figured sherd of the Classical period (fifth century BC) and a krater sherd with a stamped



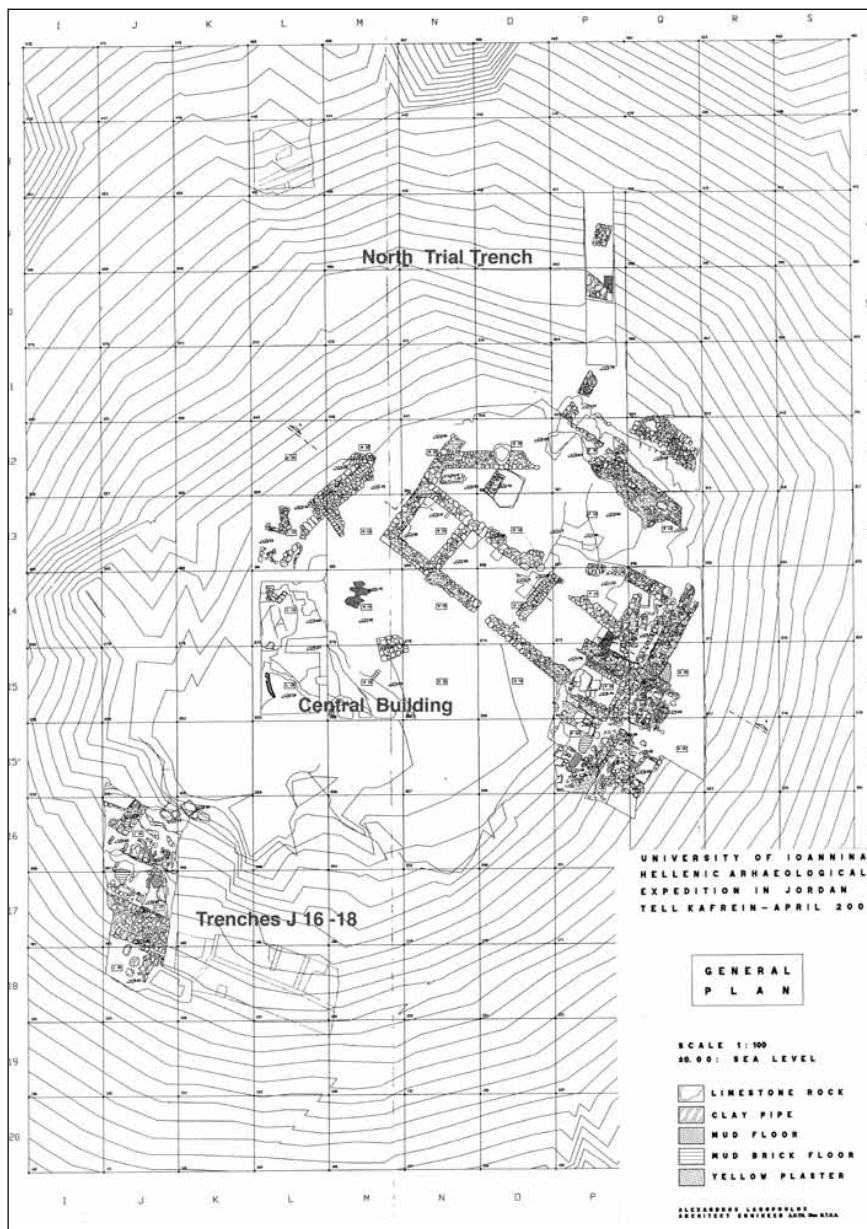
4. Trench J17.

cultic scene. During this season, Trench J17 was excavated to a depth of 3.15m below ground surface, revealing more charred wooden beams (depth 2.80m) and architectural remains. The latter included part of the original floor (2.90 x 2.70m) of a domestic structure, consisting of a layer of beaten earth that was covered by a series of carefully laid symmetrical, solid, yellowish mud-bricks of roughly equal size (25 x 45cm) (Figs. 4 and 5). In the northern corner of the trench, a roughly circular structure (1.40m diameter), with its base lower than the surrounding floor of the trench (depth 3.45m), was discovered. It was partly made of stones and mud-plaster, and partly cut into the rock with visible traces of burning (Fig. 6). Its use is not entirely clear, although it may be suggested on the basis of its shape, associated assemblage of broken Iron Age I - II cooking pots, evidence for burning, ash and charcoal, and the presence of botanical remains including wheat and barley grains, olives and grapes, that it was a hearth or – more likely – an oven of Steen’s ‘dug-in’ type (van der Steen 1991: 140), making the space a kitchen or ‘bakery’. Two narrow mud-plastered openings in the adjacent natural rock, at a height of *ca.* 1.15m from the floor, have been interpreted as the chimneys of this oven.

Further north, towards the top of the *tall*, Trench J16 was re-examined with a view to in-

creasing our understanding of its association - if any – with the structures previously uncovered in Trench J17. It seems that the robust wall, oriented east-west and built of large stones intermixed with mud-bricks, which was discovered during the previous season at the edges of the two trenches was a retaining wall. Although one is tempted, in view of the krater fragment, to suggest a cultic function for the space represented by Trenches J16 and 17, other factors, such as the presence of an oven, are more indicative of domestic activities. Therefore, the function of and relationship between the two trenches are not yet clear.

Between Trench J17 and the new Trench J18, a modern east - west retaining wall was demolished in order to extend the dig southwards with a view to finding some answers to the problematic occupational history of this area, by uncovering parts of the fortification wall and additional building remains. After removing the modern wall and digging a few centimeters below the ground surface, a spread of medium and large cobbles appeared (Fig. 7), similar to those discovered at Tall ash-Shūna North (Baird and Philip 1992: 72, figs. 2 and 4, pls. 1 and 2). These seemed to cover an area of at least 5 x 2.40m, were orientated east-west and sloped north-south. The northern face of this probable large wall, consisting of large stones, is clear,



5. Plan of trench J17.

but the southern face has been destroyed by a modern terrace. The exposed structure suggests a function other than that of domestic habitation, so it has provisionally been interpreted as part of the fortification wall. Such wide (2.40m) wall foundations must have had a substantial superstructure, but unfortunately no trace of it survives. Most probably this wall is part of the *tall*'s defenses, but this is speculation and further excavation may clarify its form and function.

Extra muros, in the south-eastern part of Trench J18, a peculiar free-standing bench-like structure (dimensions 2.10 x 1.16 x 0.66m) was

uncovered (Figs. 8 and 9). It is carefully built of mud-bricks laid in five courses (each 0.12cm in height). Its interior was filled with earth, small stones and a few sherds, with its slightly sunken top being sealed with a thick layer of mud. At first we thought it was an Islamic tomb, but its shape and construction were different to other tombs found on the *tall*, in that its interior was solid and contained no bones. Its alternative interpretation as an altar was also rejected, as objects and pottery definable as 'cultic' were absent. Its unique shape and the absence of any dateable finds at present make its function dif-



6. Trench J17: circular hearth or oven.



7. Substantial stone wall between Trenches J17 and 18.

ficult and its date impossible to determine.

Turning now to the east slope of the *tall*, which had so far provided the best stratigraphic sequences and most important finds (e.g. abundant Iron Age pottery, metal-working furnace, textile-weaving workshop), we decided to continue with work in this location, especially in Trenches P16, Q14 and Q15. Trench P16 is a southwards extension of the previously excavated Trench P15; Q14 - 15 extended Trenches

P14 - 15 to the east.

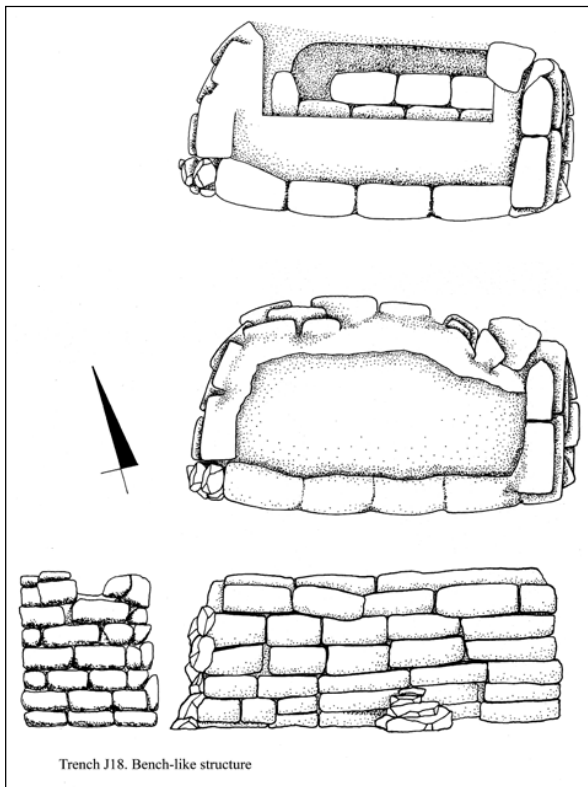
The uppermost layer of Trench P16 showed signs of erosion and modern disturbance which complicated study of the stratigraphy. Nevertheless, we managed to expose three massive stone walls (present dimensions of Wall 1 3.06 x 1.67 - 2.10 x 0.72m, Wall 2 5.10 x 1.69 x 1.37m and Wall 3 1.63 x 0.75 x 1.10m) (Fig. 10) and distinguished at least three distinct occupational layers, broadly dated to Iron Age I - II period. A



8. Trench J18: bench-like structure.



10. Trench P16.



9. Plan of bench-like structure.

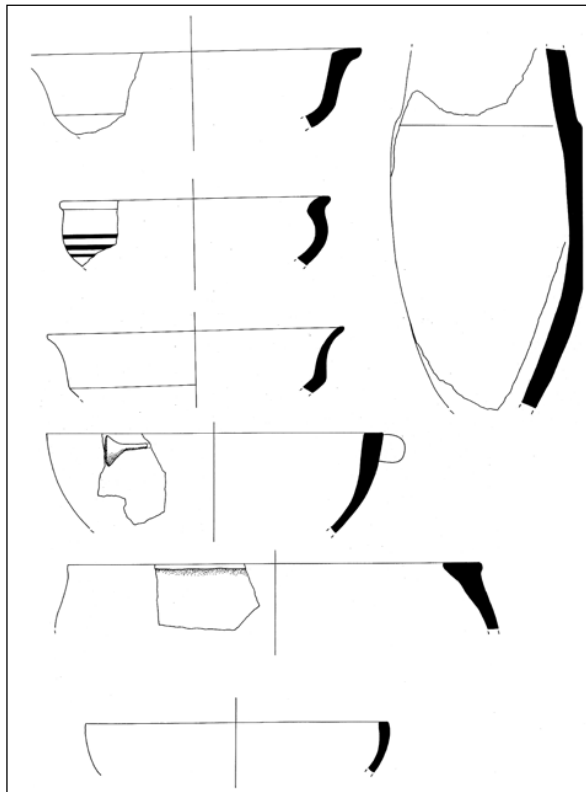
large rectangular pit cut into the ground (1.57 x 0.71 - 0.79 x 1.67m), its interior carefully lined with stones of various sizes, was discovered at the lowest, eastern part of this trench (**Fig. 11**). It was filled with soil, some boulders and a few sherds, but no dateable objects were found thus making it impossible to determine its date or function with confidence.

In Trenches Q14 - 15, a long, massive, north-east-south-west wall (present dimensions 15.2m, w 1.30 - 1.50m, h 1.7m) was exposed.



11. Trench P16: large rectangular pit.

Roughly mid-way along its length, a pronounced rectangular projection to the east (present dimensions 4.95 x 2.3 - 2.5m) interrupts the wall's long façade, giving the impression of a tower-like structure (**Figs. 12, 13 and 14**). Work immediately in front of the eastern face of the long wall revealed two floor layers, the uppermost consisting of stones covered with mud-clay and the lower of beaten earth. Finds include Iron Age I - II pottery (**Fig. 15**), stone tools and implements, animal bones and sea-shells.



15. Iron Age I - II pottery from Trenches Q14 and 15.

Above Trench P16, close to the summit of *tall*, two new trenches, O16 and O17, were opened and partially investigated. Part of a massive, double-faced, north-south wall (l 4.32m, w 1.45m) (**Fig. 16**) was provisionally interpreted as either a retaining wall, or as a part of the upper defensive wall, part of which was exposed in 2007 on the north-west slope. Excavation immediately south of this trench is needed to establish the size, date and function of this wall.

Moving to the eastern part of the *tall*'s summit, Trench N16 was entirely unproductive, as flattened bedrock appeared just a few centimeters below the ground surface (**Fig. 17**).

Regarding the north slope of the *tall*, work was resumed in both Trench L8 and the long exploratory trench. Trench L8 was partly examined in 2005, but its full investigation was interrupted by the discovery right in its centre of an Islamic tomb. Last season, the well-built wall unearthed at that time (2005) was cleared and re-examined, as was the area of the Islamic tomb (**Fig. 18**). With the exception of a few Iron Age I - II sherds (**Fig. 19**), no dateable objects were found. It seems likely, however, in view of



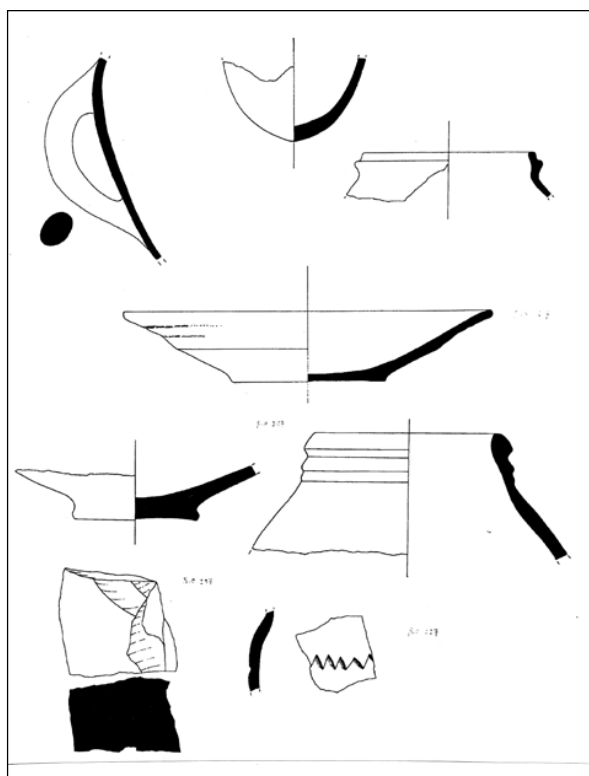
16. Trenches O16 and 17.



17. Trench N16.



18. Trench L8.



19. Trench L8: Iron Age I - II pottery.

the presence of some lenses of ash and charcoal, that the wall and clay-plastered floor in front of it to the north were used for everyday domestic activities. Further work is needed on this part of the *tall* and it is hoped that new trenches will be opened here next season.

Finally, continued work in the exploratory trench opened last season (2008) (**Fig. 20**) exposed new architectural remains, as well as important finds. Expansion of the narrow, vertical cut (present dimensions 18 x 2.1 x 5.5m) confirmed that the massive and impressively high Wall A (h 2.4m) (**Fig. 21**), is most probably part of the settlement's defensive wall and can be



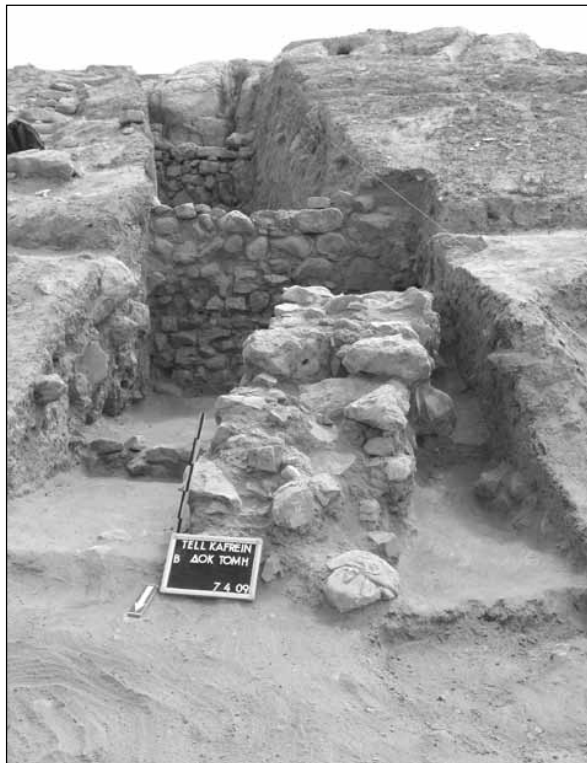
20. Exploratory trench: view from north.



21. Exploratory trench: Wall A.

dated, on the basis of associated pottery, to the Iron Age IC period.

Further to the north, parallel to and at a distance of 5.25m from Wall A, a new wall (Wall B, h 0.5m, w 0.87m) was discovered, with a third wall (Wall C, present dimensions h 0.87m, w 0.85, l 3.6m) joining it (**Fig. 22**) at a distance of 1.17m from Wall B. In the space between Walls B and C, an unusual structure appeared below a thin mud layer at a depth of 0.77m from the top of Wall B. It consists of a horizontal line of holes (1.10 x 0.2m) (**Fig. 23**), the function of which is not entirely clear but may be the remnants of a reed and mud roof. These new walls were probably parts of *extra muros* dwellings. This hypothesis is supported by the discovery in the corner formed by these walls of the remains of a mud-plastered floor, ash, burned mud-bricks and wooden beams, and cereal seeds, which were sampled for further investigation. Other finds include a sandstone quern (cf. Edwards *et al.* 2001: 141, fig. 5), stone vase fragments, flint blades, loom-weights, shells (**Fig. 24**) and Iron Age I - II pottery (**Fig. 25**) (cf. Amiran 1969: 191ff, pls 60-63; Fredericq and Franken 1986: 154ff; Hendrix *et al.* 1996: 158ff).

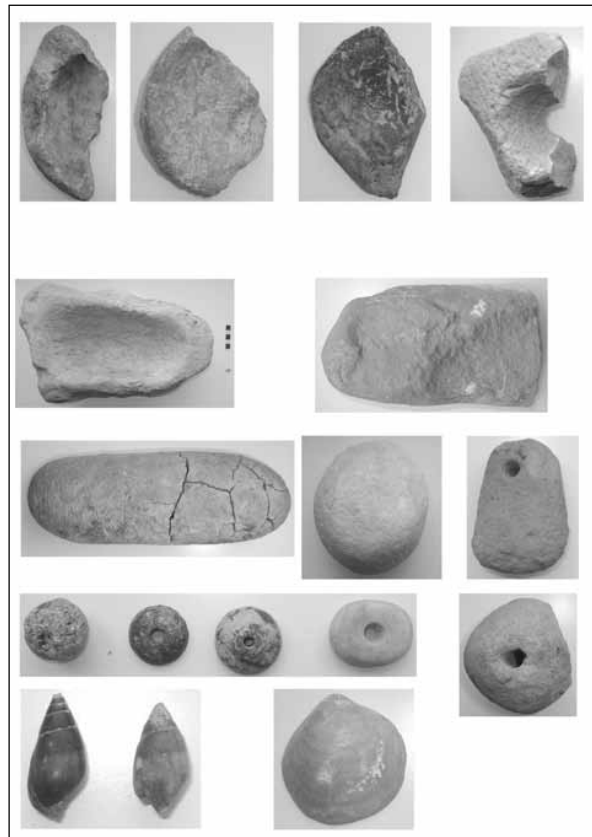


22. Exploratory trench: Walls B and C.



23. Exploratory trench: structure with series of holes.

Of special importance is the discovery of a scaraboid made of blue, non-glazed faience (frit), with a three-sign inscription (**Figs. 26, 27 and 28**) (Kell 1995: 243). According to Dr Nir Lalkin, “on the top and right side there are two

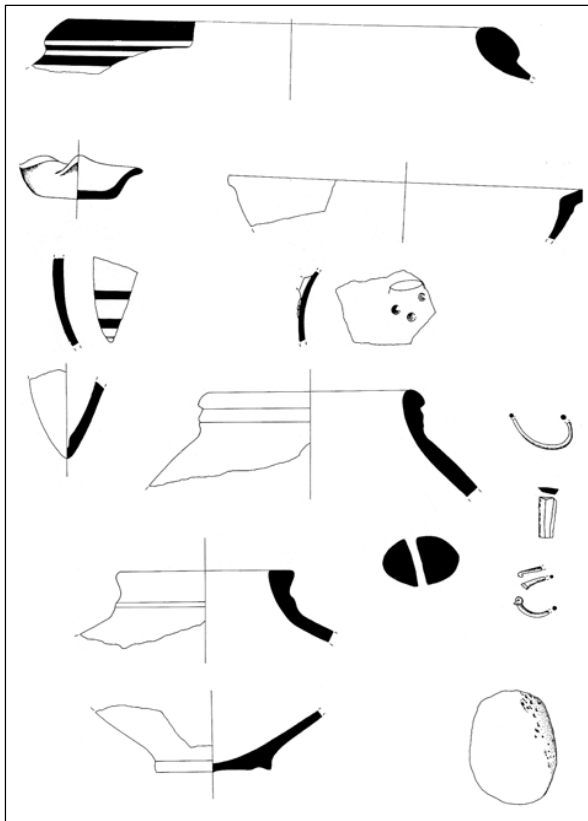


24. Exploratory trench: selected finds.

variants of the letter S, on the left side there is a debased W3S scepter. The scaraboid doesn't look Egyptian, maybe Phoenician or Greek, and probably dates to the Iron Age (8th-7th centuries BC)”. However, different suggestions about the identity, provenance and date of this artifact have been put forward by Dr V. Crysikopoulos and Dr Jacke Phillips, both of whom agree about its Egyptian origin but differ about its date, with the former assigning it to the 22nd Dynasty (*ca.* 950 - 900BC) and the latter to the early-middle 18th Dynasty. Jacke Phillips also says that “it seems not to be a moulded piece but is instead individually carved, which is interesting”. In the meantime, Dr Kay Prag has informed us that an unpublished XIX Dynasty seal - plaque, incised on both sides and bearing the human-headed Re, was picked up in ar-Rawḍa and brought to her while she was digging at Iktānū; it may have come from a site in the near vicinity, perhaps Tall al-Kafrayn¹.

1. We cordially thank Drs Lalkin, Crysikopoulos and Phillips for their valuable help and suggestions, and

Dr Prag for kindly providing us with a photo of the scaraboid from ar-Rawḍa.



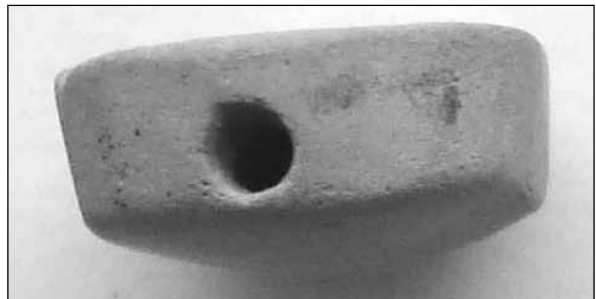
25. Exploratory trench: Iron Age pottery and small finds.



27. Blue faience scaraboid.



26. Blue faience scaraboid.



28. Blue faience scaraboid.

Another noteworthy find is a miniature cube-shaped 'altar' made of grey pumice (**Figs. 29 and 30**).

As well carrying out field work, the team has been busy with post-excavation work and the preparation of finds for publication (**Figs. 31, 32 and 33**), as well as with the conservation of exposed architectural remains. Also, during the excavation local inhabitants drew our attention to two EBA vases (**Figs. 34, 35 and 36**) and a stone statuette of a bearded man, possibly Early Babylonian in date (**Fig. 37**) (cf. Müller-Karpe 1974: Taf. 242). Most likely they come from a robbed local cemetery and, with the kind permission of the owner, they will soon be published.



29. Miniature cube-shaped altar.



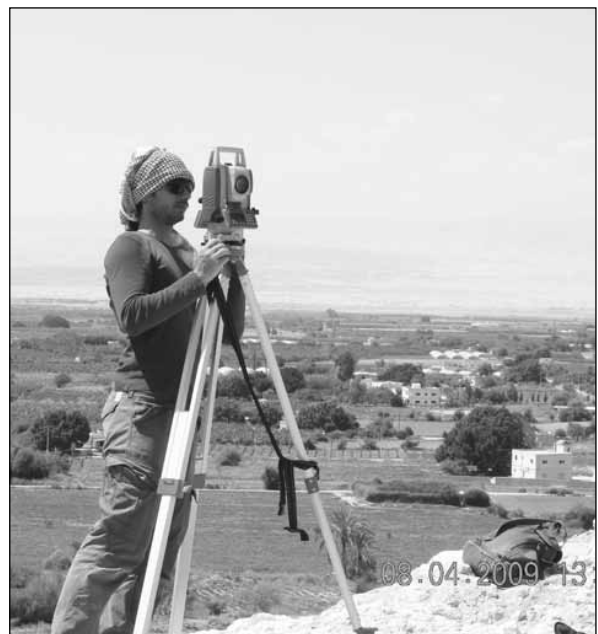
30. Miniature cube-shaped altar.



31. Study of finds at the dig-house.



32. Conservator Kleio Zervaki at work.



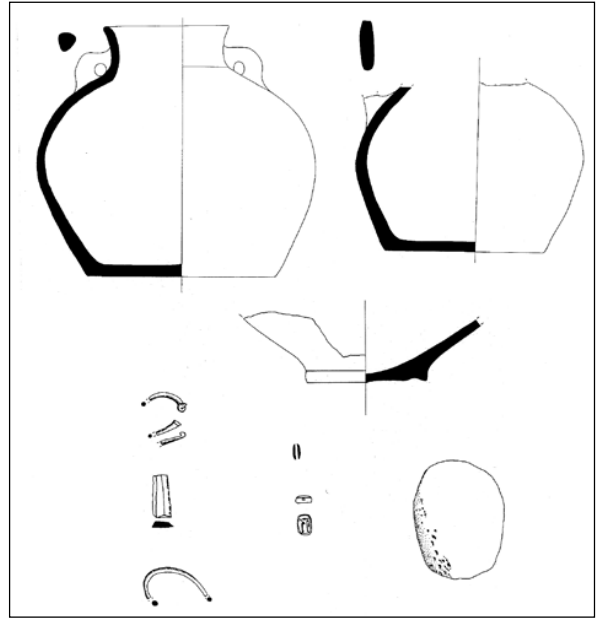
33. Architect Alexandros Lagopoulos at work.

Charcoal Samples from Wooden Beams

Charcoal samples from different wooden beams were collected by archaeometrist Artemis Oikonomou for radiometric dating by Dr I. Maniatis at the Dimokritos C14 Laboratory (EKEFE) in Athens. The sample from Trench J17 returned a calibrated date of 725 - 395 BC and the sample from the exploratory trench a date of 750 - 400 BC.



34. EBA vase.



36. EBA vases and small finds (drawings).



35. EBA vase.



37. Early Babylonian statuette (front and back).

Botanical Remains

As laboratory analysis of the paleobotanical remains from stratified contexts is still being undertaken by Dr Efstathia Margaritis, a short interim report is presented here:

The plant remains discussed here were collected by hand during the 2009 excavation. Prior to 2009, flotation was used to recover charred material from soil samples, but these have not yet been processed and will be the subject of a subsequent report. The plant remains under discussion here consist of barley grains, lentils, peas, olives, grapes and a very interesting find of *Carthamus* sp.

Hordeum sp. (barley)

Identification of hulled barley grains was based on their wide, shallow ventral groove, convex ventral surface and lack of any dorsal

ridge. Additionally, they taper at the ends, resembling a rugby ball. They are furthermore characterized by an angular cross-section and have lines on both ventral and dorsal surfaces. The identification of naked barley (var. *nudum*) is based on its shriveled skin and narrow apex. Grains with horizontal wrinkles on the dorsal surface, a rounded cross section, slightly rounded ends and an absence of hulls were therefore identified as naked barley. Both varieties were present in the assemblage, although their separation was problematic owing to poor preservation, with the result that most were recorded simply as *Hordeum* sp.

Domesticated barley falls into two main types, two-row and six-row, on the basis of the morphology of the rachis internodes. In two-rowed barley, all kernels are straight and symmetrical and each ear contains only two vertical rows of fertile spikelets. In six-rowed barley, the lateral grains are “often slightly bent and somewhat asymmetrical” (Zohary and Hopf 2000: 60f.) and the ears have six vertical rows of fertile spikelets.

In the current assemblage, both asymmetrical (*Hordeum vulgare vulgare*) and symmetrical grains were present. The symmetrical grains might indicate the presence of *Hordeum vulgare distichum*, without excluding the possibility that these straight grains represent the medial spikelet of six-rowed triplets. In the absence of rachis fragments, the only method of determining whether a sample of barley containing twisted grains is pure six-row or whether it also contains two-row is by statistical analysis of the ratio of symmetrical to asymmetrical grains.

Lens culinaris (lentil)

Lentil seeds had a flattened, circular shape, with a small hilum on the rather sharp margin. Cultivated and wild species are morphologically very similar; their distinction is based on size, as wild lentils are likely to be smaller.

Pisum sativum (pea)

Seeds with a spherical or cylindrical shape with a short, ovate hilum were categorised as *Pisum sativum*.

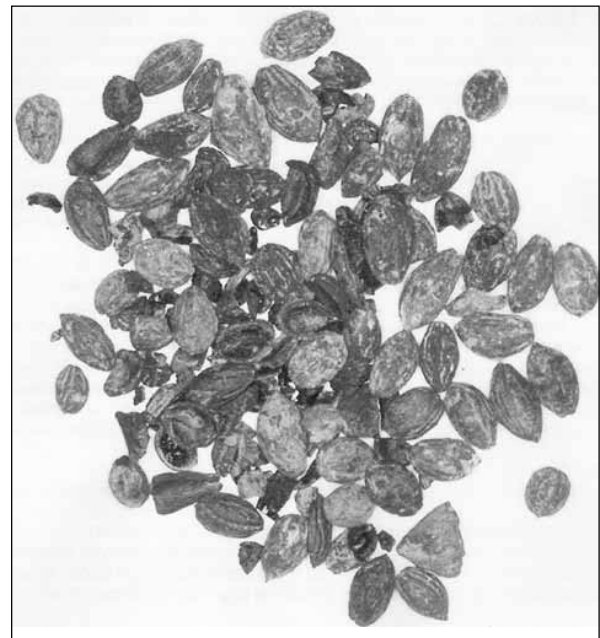
Olea europaea (olive)

Olive stones were identified on the basis of

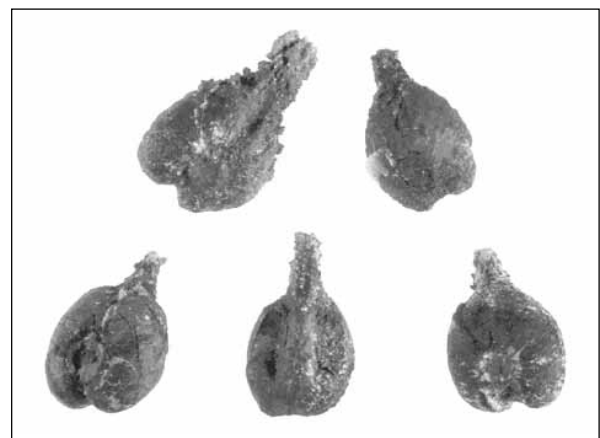
their structure and morphology, which strongly resembles modern examples. They had the distinctive features of an apex, hole at the base (at the point of attachment with the stem), suture line on the lateral side and distinct carpellar fascicles (**Fig. 38**).

Vitis vinifera (grape)

Grape pips were identified by comparison with modern material. The grape pips have a variety of shapes and sizes, ranging from 1.5-5 mm in length and 0.09-3.5 mm in width (**Fig. 39**). It has been suggested that the shape of the pips in cross section depends on the number of pips in each grape. Some pips were broken. Most of the breaks are modern as a result of damage



38. Olive stones (*Olea europaea*).



39. Grape pips.

during excavation, recovery and handling. Several researchers have carried out metrical and experimental studies on pips in an attempt to come up with a formula by which to differentiate between wild and domesticated populations. The grape pips under examination here were not systematically subjected to this type of analysis, but will be in future.

Carthamus sp.

The remains of *Carthamus sp.* recovered from Tall al-Kafrayn may derive from *Carthamus cf. tinctorius* (safflower). Only small fragments of the flower-heads and some seeds are preserved. The flower head-fragments have a quadrangular apex bordered with a distinct collar; the upper part of the fruit has transverse grooves. In general, archaeobotanical remains of *Carthamus sp.* are poorly preserved owing to the high oil content of the plant.

The main area of cultivation for this plant is central Syria, near the Euphrates river (Weiss 2000). The earliest archaeobotanical evidence of *Carthamus sp.* comes from Middle PPNB Syria (ca 7500 BC). In Jordan, it is known from the PPNB site of Wadi Jilat 7 and Early Bronze Age Khirbat az-Zayraqūn (Marinova and Riehl 2009).

The plant may have been used for its oil seeds or for its flowers. Numerous *Carthamus* flower-heads were recovered from the Early Bronze Age site of Tell Hammam in northern Syria, in contexts that suggest its use as a vegetable dye. Two types of dye can be produced from the flowers: a water-soluble yellow dye for flavoring food and an insoluble safflower carmine that produces a red dye used to colour textiles. Chemical analysis of textiles from 12th Dynasty Egypt has suggested that safflower carmine was used for this purpose. Safflower was also used in Egypt for making the garlands that adorned mummies (van Zeist and Waterbolk - van Rooijen 1992).

In their extensive research on the archaeobotanical remains of *Carthamus sp.*, Marinova and Riehl (2009) have examined the use of the plant as dye and also as a source of oil. Unfortunately, the material from al-Kafrayn is very limited and it is therefore not currently possible to determine for what purpose *Carthamus* was used at the site. However, this situation might change

after the systematic recovery of plant remains during the next season of excavation. The goals of the next field season are not only to retrieve more archaeobotanical material, but also to examine and interpret the remains in their archaeological context.

Conclusions

The 2009 excavation season at Tall al-Kafrayn has been successful in identifying the extent of the multi-period occupation on the *tall*. Further architectural remains and important finds have been discovered, and questions remaining from previous seasons clarified. Future seasons should help to answer new questions through more extensive excavation of the structures exposed to date, as well as completion of the deep probe (exploratory trench) which will document the entire history of occupation at Tall al-Kafrayn. It is reasonable to suppose that further investigation of the slopes of Tall al-Kafrayn will continue to produce stratified material dating from the prehistoric to the Hellenistic - Roman periods.

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