

MUGHR AL-ḤAMĀMAH: A PREHISTORIC CAVE SITE IN THE WESTERN ‘AJLŪN DISTRICT REPORT ON THE INITIAL SURVEY SEASON

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Introduction

From July 7 to July 11 2008, a small team of archaeologists from Emory University, University College London and the Department of Antiquities carried out topographic and surface collection surveys of Mughr al-Ḥamāmah, a recently identified prehistoric cave site situated between Wādī Rājib and Wādī Kufrinja, in the western portion of the ‘Ajlun Governate. The aim of the survey was to evaluate the potential of the site for future excavations, with a focus on the possible preservation of *in situ* Palaeolithic deposits. Excavating a potentially stratified Palaeolithic site in the eastern Jordan Valley would likely yield significant insights into the Palaeolithic sequence in Jordan and beyond.

Background

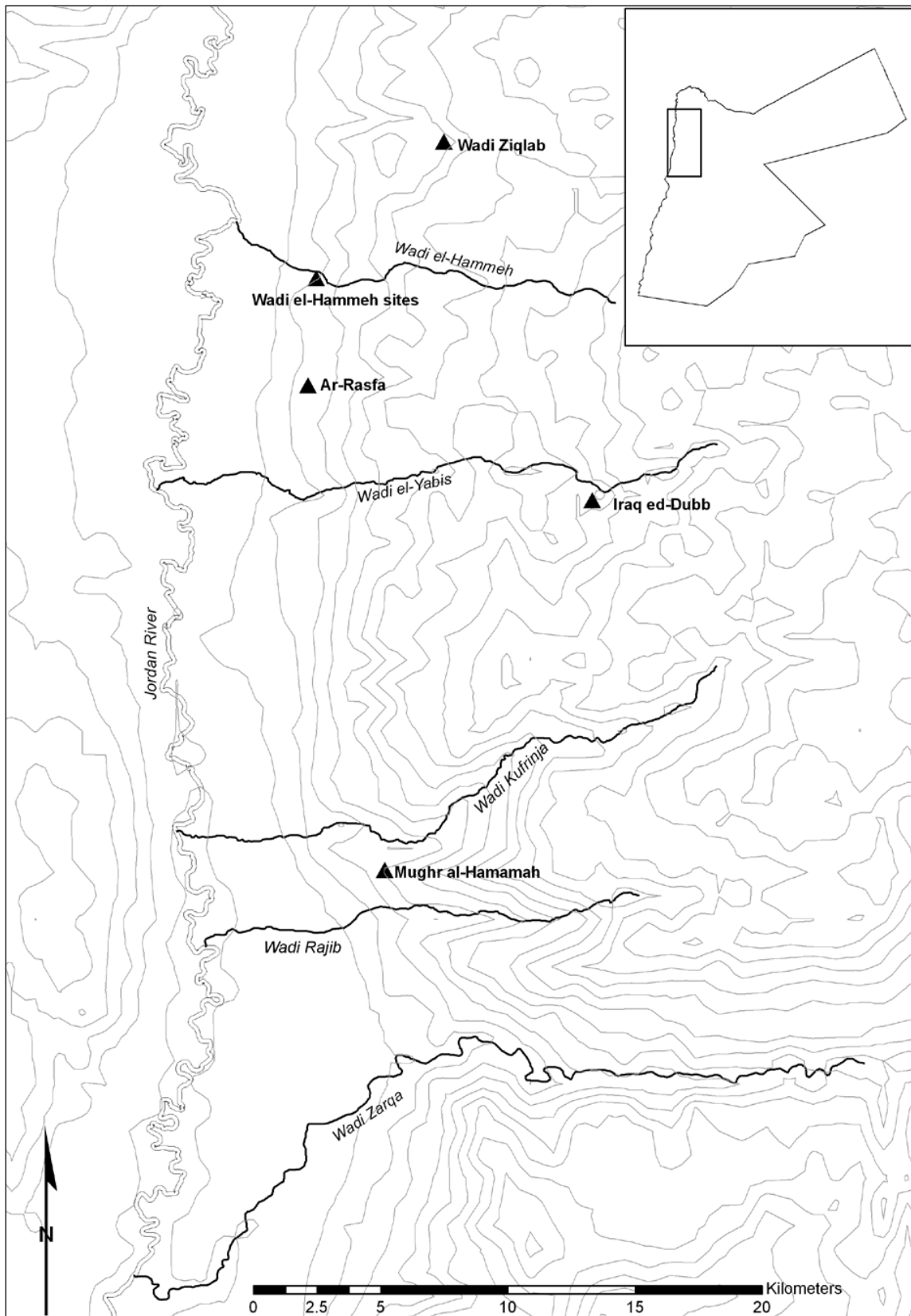
Mughr al-Ḥamāmah appears to have first been reported as an archaeological site in 2006, when members of the Ritual Landscape Project (RLP), directed by Dr Jaimie Lovell (Council for British Research in the Levant), visited the site and produced a short description and sketch-plan of the caves and terraces. Unsystematic surface collection yielded a number of Paleolithic flint artefacts, including an undiagnostic blade blank, a Levallois point and a single platform bladelet core (J. Lovell pers. comm. 2007). These preliminary finds suggested that the caves may have been used by humans during multiple periods in the later Middle or Upper Pleistocene (*ca.* 200,000 - 10,000 BC).

Although previous projects have documented numerous early prehistoric sites in the eastern Jordan valley foothills, as yet only a handful of the localities have been thoroughly investigated (Banning 1992; Banning *et al.* 1992; Edwards 1987, 1991, 2001; Edwards *et al.* 1996; Kuijt

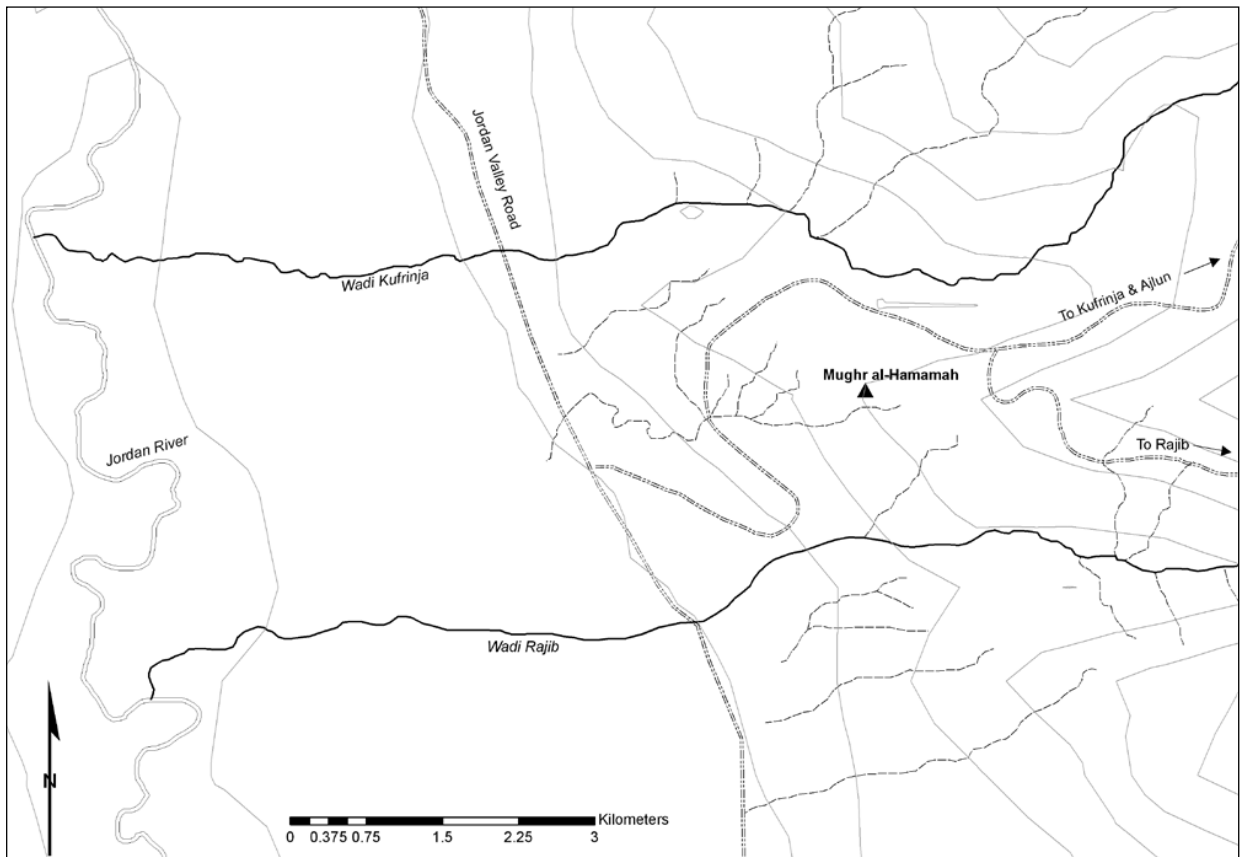
2002; Kuijt *et al.* 1991; Mabry and Palumbo 1988, 1992; Macumber *et al.* 1997; Maher 2007; Maher *et al.* 2002; Muheisen 1988; Shea 1998, 1999; Shea and Crawford 2003). The majority of sites that have been excavated date to the Epipalaeolithic period (*ca.* 22,000 - 10,000 BC). Many other prehistoric localities that have been previously charted in this region are unfortunately deflated, eroded or otherwise disturbed, or of limited size. Moreover, no multi-period stratified Pleistocene-age cave site has yet been excavated in north-western Jordan. The lack of data from such a site is particularly relevant with respect to the number of Palaeolithic caves and rockshelters excavated in the western Levant. To date, we lack a stratigraphic sequence that could be chronometrically dated and compared to similar long-term cave sequences in the western, central or northern Levant (Bar-Yosef 1994, 1998). In general, caves would have been long-term sources of shelter in Paleolithic hunter-gatherer landscapes and, just as importantly, are often traps for sediment that may bury and preserve archaeological material. Initial surface collections suggested that Mughr al-Ḥamāmah might preserve *in situ* stratified occupation deposits, and systematic excavation could potentially yield important new insights into Palaeolithic settlement in the area.

Ecological Setting

Geographical considerations alone predict that the western ‘Ajlūn District should have a rich Pleistocene archaeological record. Mughr al-Ḥamāmah is situated in the low foothills just above the upper terrace of the Jordan Valley bottom (**Figs. 1 and 2**). While little is known about the geology of the earlier Pleistocene palaeolakes in this section of the Jordan Valley, Mughr



1. Mughr al-Ḥamāmah in the geographic context of north-western Jordan.



2. Mughr al-Ḥamāmah in local context. The site is located at 80m. asl. The contour lines are drawn at 100m. intervals; the al-Ḥamāmah Caves are shown in their location near the 100m. asl contour. Due west of the caves, the Jordan River flows at ca. -350m. asl.

al-Ḥamāmah would have been only 3-5km away from and 300-400m above the shores of Lake Lisan (which occupied the basin from the Holocene Sea of Galilee and Dead Sea, from ca. 70 ka to 13 ka) (Stein 2001). The portion of the lake immediately downstream from Mughr al-Ḥamāmah would have contained fresh water. Mughr al-Ḥamāmah would have faced Lake Lisan just south of its narrowest point. While the lake would have limited Upper Pleistocene human movement across the Jordan Valley, its maximum east - west width opposite Ḥamāmah during Lisan's highest stand (ca. 26 ka) would have been only 5km. Thus, Ḥamāmah's location may have favored some contact directly across the Jordan Valley, at least in later Paleolithic periods.

Ḥamāmah is also strikingly well situated between the valley bottom and the Transjordanian plateau. The 'Ajlūn Mountains (900-1100m. asl) are located only 15km away as the crow

flies, via the Wādī Kufrinja. The hills of the Dībḥḥ Forest (700-900m. asl) are directly accessible 12km away, via the Wādī Rājib. Fresh water would likely have been available in perennial wadi streams and springs throughout both valleys. Within one-day or overnight trips from al-Ḥamāmah, foragers would have been able to traverse valley-bottom wetland and gallery forest, lower-elevation grassland and open oak forest terrain, and rich, denser oak forest zones that would have prevailed at higher elevations along the wedge-shaped ridge between the Kufrinja and Rājib valleys. Overall, the 'Ajlūn area — extending from the Transjordanian Plateau in the east to the palaeolake margin in the west — would have probably offered a diverse spectrum of big game, small game, nuts, pulses, fruits, grains and possibly tubers within a one-day foraging radius. While flint outcrops have not been systematically mapped in the region, abundant flint nodules and tablets occur in the limestone

bedrock outcrops and wadi bottoms throughout the 'Ajlūn district.

Previous Paleolithic Investigations in the 'Ajlūn District

While the potential of north-western Jordan's Paleolithic archaeological record is well acknowledged (Muheisen 1988), the central and southern portions of the 'Ajlūn district have not been systematically investigated. To our knowledge, Shea and Crawford (2003) have conducted the only survey in these areas specifically focused on identifying Paleolithic sites. They worked in the Wādī Kufrinja, visiting and inspecting numerous caves and rockshelters, mostly in the upper reaches of the valley. While some sites had Middle, Upper or Epipaleolithic artefacts eroding out on the surface, almost all of the caves were very small or had been extensively disturbed by erosion or historic and recent human activities. Lovell's RLP survey, while focusing on Chalcolithic and Bronze Age ritual use of caves in Jordan, has incidentally confirmed Shea and Crawford's results, with Mughr al-Ḥamāmah representing a relatively rare exception of substantial surface finds, indicating potential buried stratified deposits (J. Lovell pers. comm. 2007). In this context, we note that survey for Paleolithic-age open air sites in either the Wādī Kufrinja or Wādī Rājib has not yet been conducted. This raises an additional reason to investigate Mughr al-Ḥamāmah. If stratified

deposits are indeed preserved there, we would have a local cave sequence with which to anchor the chronological placement of nearby open air deposits.

The Site

Mughr al-Ḥamāmah (Caves of the Doves) are located approximately at N32°15'23.5" / E035°38'04.1" and situated at roughly 80m. asl (see **Figs. 1 and 2**). Based on visual inspection, we report the approximate Google Earth coordinates as N32°15'26.79" / E35°38'4.05". The site consists of a series of five distinct caves and rockshelters, whose south-facing mouths are exposed in a 10-15m thick limestone outcrop that defines the upper slope of the right bank of a small, only seasonally flowing wadi, which dissects the ridge between the mouths of the Wādī Rājib and Wādī Kufrinja (see **Figs. 2 and 3**). The caves are fronted by a relatively narrow, rubble-strewn terrace, which gives way to quite a steep 25°-30° slope down to the wadi bed. As seen in **Fig. 3**, this slope appears to preserve remnant agricultural terraces. Sparsely distributed ceramic sherds are visible along the entire slope, suggesting a likely Roman - Byzantine date for the terracing. We have numbered the caves from 1 to 5, oriented from west to east. Our surveying efforts focused on total station mapping of the cliff face, cave wall contours and major cave terrace features (**Figs. 3-6**). Here, we briefly describe the five caves and their terraces.



3. View of Mughr al-Ḥamāmah from the south. The five main chambers are numbered from west to east.



4. View of Maghārat al-Ḥamāmah 3 during site mapping. Note in foreground that the exposed bedrock is ancient breccia that likely dramatically predates the Middle and Upper Pleistocene formation of the archaeological deposits. In the middle distance a shepherd wall is visible. Cave 3 and Cave 4 (the latter is off-picture to right) appear to be the remnants of a largely collapsed chamber that may preserve intact Pleistocene deposits under more recent roof fall.



5. Mughr al-Ḥamāmah 2 looking east, with rockfall-strewn terrace in the foreground. Massive roof collapse indicates a former outer chamber, which is now collapsed.

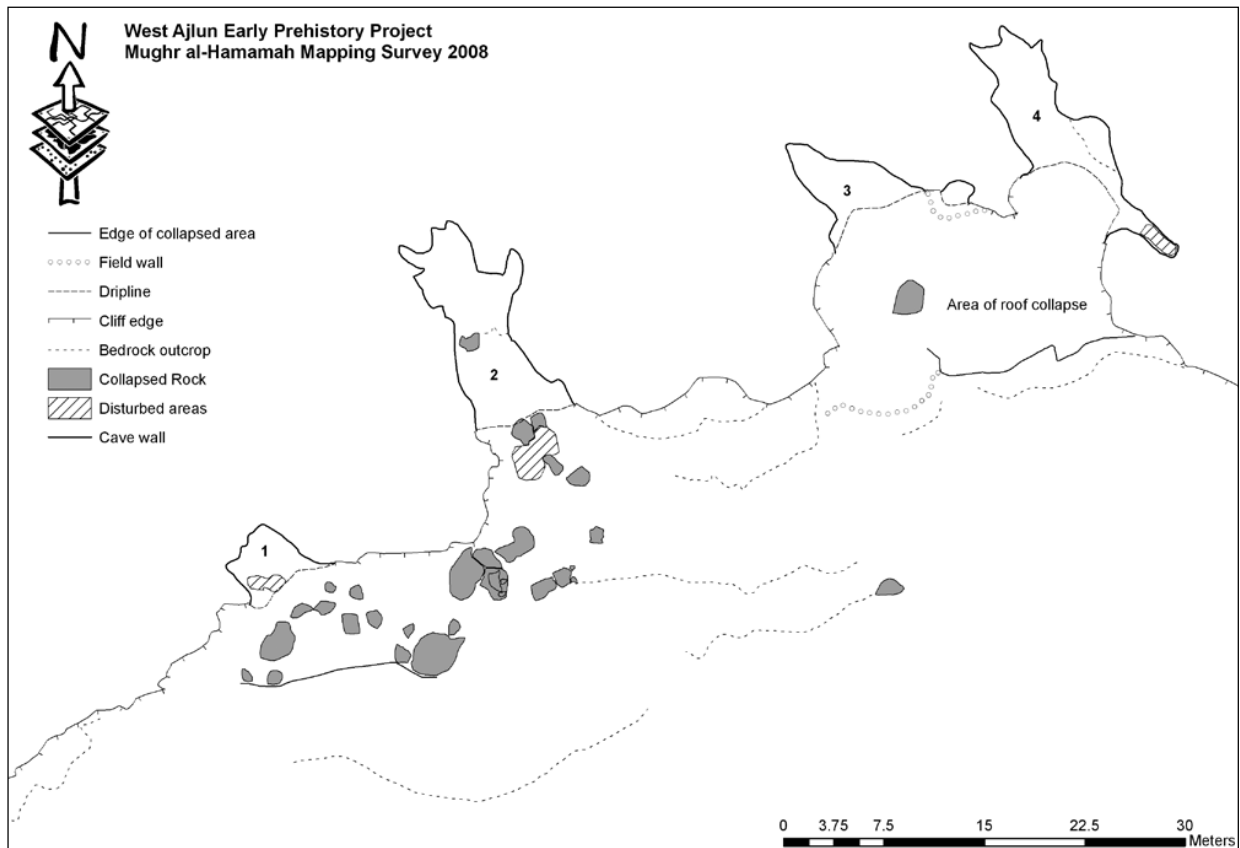
Al-Ḥamāmah 1

This chamber is small — approximately 4 by 4 meters in plan with a maximum entrance height of *ca.* 4m. Little in the way of sediment is preserved and much of the floor of the cave is defined by a relatively flat bedrock shelf. However, a fairly large hole (likely dug by shepherds to store hay, other supplies or trash) intrudes into sediment that had filled in a crack in the limestone shelf. Toward the dripline, the hole was dug out to a depth of about 150cm, under a large slab of rockfall lying flat and extending onto the terrace. Thus, sediments on the terrace are preserved and may be fairly deep. Unsystematic surface collection around Cave 1 revealed most-

ly Upper or Epipaleolithic diagnostic artefacts, including several blade / bladelet cores. These surface finds may have been thrown up during excavation of the hole. If so, the bulk of the deposits on the terrace are protected by rather massive rockfall. Currently, they are inaccessible, but limited clearance could allow sufficient test excavation in the future.

Al-Ḥamāmah 2

This cave consists of two moderately sized, successive chambers (**Fig. 5**). The back chamber lacks a chimney and is strewn with roof and wall fall fragments. It appears unlikely to contain archaeological deposits; patterns of wall



6. Plan view of Mughr al-Ḥamāmah 1-4. Surface collection results suggest that al-Ḥamāmah 1 Terrace and al-Ḥamāmah 2 Cave and Terrace have the most potential for preserving stratified prehistoric deposits. al-Ḥamāmah 3 Terrace may also preserve Pleistocene-age deposits. Cave 5 is located approximately 75m to the east and contains no intact deposits. The exposure of successive bedrock sills illustrate that the cave terraces are relatively narrow, with erosion having created a rubble-strewn talus slope down to the wadi floor, almost 50 meters below.

fall suggest that it had been at least partially sealed off from the front chamber for much of the cave's Pleistocene history. The front chamber is more regularly shaped, with a triangular entrance roughly 8m wide at the base and 9m high at the apex. While also lacking a chimney, its walls meet the current sediment surface diving virtually vertically down. Moreover, the surface is largely free of fallen rock. Preserved sediment is visible underlying the one major block of wall fall (likely from the collapsed entrance to the back chamber). This sediment resembles phosphatized Pleistocene cave deposits from sites in Cis-Jordan, including Hayonim and Kebara (**Fig. 6**). Thus, the outer chamber has the best observed potential to preserve buried intact cave deposits.

Cave 2 is also fronted by a relatively extensive terrace on which several large boulders and bedrock outcrops are exposed, suggesting

that one or more larger chambers have long ago collapsed. Indeed, it is notable that somewhat weathered cemented (probably calcified) terrace sediment includes visible flint and bone artefacts. Cave 2's outer chamber and terrace appear to provide the best potential for excavation. Surface artefacts found mainly on the terrace include diagnostic Middle Paleolithic (Levallois) material and Upper-Epipaleolithic (a carinated scraper, cores and bladelet debitage) flint pieces.

Al-Ḥamāmah 3 and 4

These two caves appear unlikely to hold archaeological deposits (**Fig. 4**). However, the terrace is strewn with relatively unweathered large roof and wall collapse boulders, suggesting that a large outerchamber collapsed relatively recently. No surface artefacts were found here, but the terrace of Cave 3, in particular, is relatively free of

roof fall and may preserve intact buried Pleistocene sediments. A number of low dry-stone walls have been constructed in the area, one of which encloses the entrance of a small, low rock shelter between Mughr al-Ḥamāmah 3 and 4. These reflect shepherd activity and use of the caves to pen animals. Further traces of similar constructions were observed on some of the terraces in front of the caves, often utilizing existing rock outcrops to facilitate wall construction.

Al-Ḥamāmah 5

Located approximately 25m east of Cave 4, the fifth cave is an irregularly shaped chamber with little sediment and an eroded, steep terrace. No surface artefacts were recovered and Cave 5 seems unlikely to preserve Pleistocene deposits. A low dry-stone wall seals off the entrance to the cave and was likely built by recent shepherds to pen animals inside the cave.

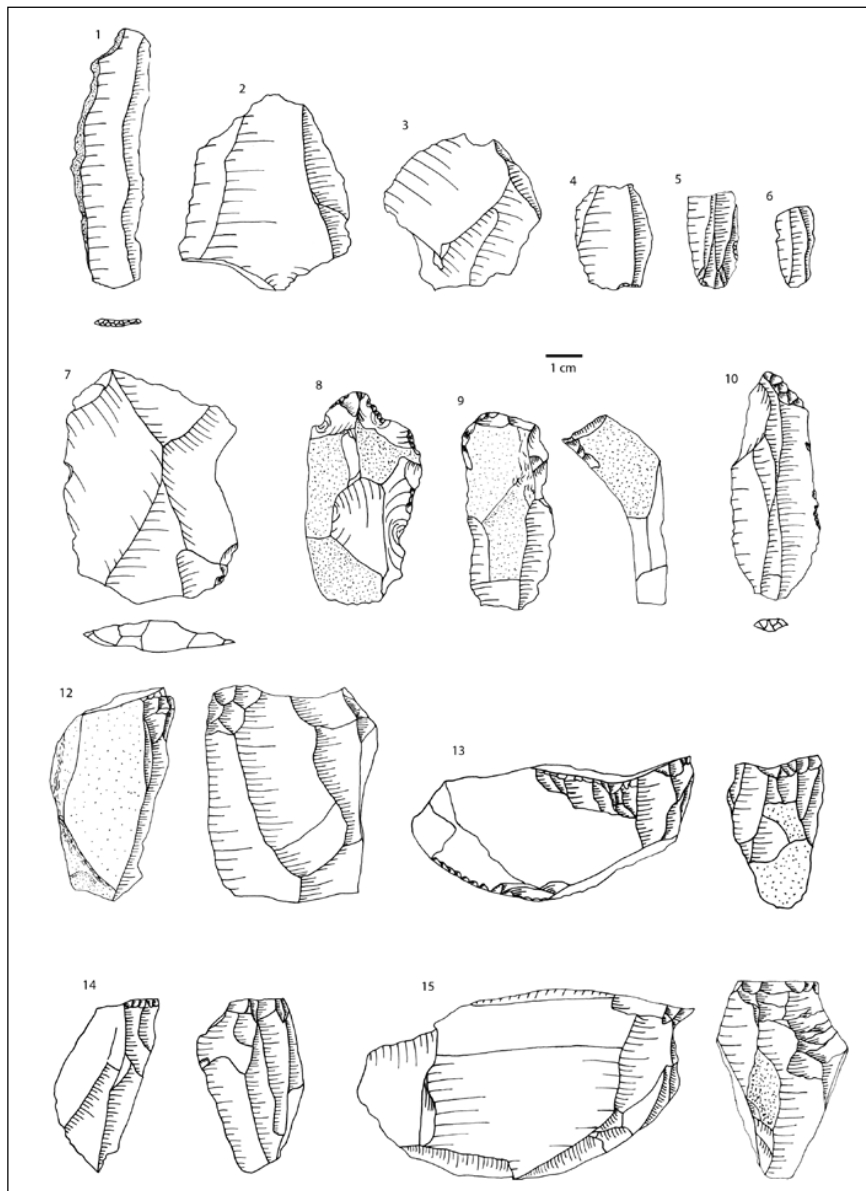
Finds

With a short field season, we conducted an unsystematic surface collection, resulting in the retrieval of 48 flint artefacts, one groundstone artefact fragment and two likely Pleistocene-age ungulate bone fragments. Pottery sherds dating to the Byzantine and later periods were also noted on the cave terraces and slope below, but were not collected. We note that RLP workers conducted two previous unsystematic surface collections. Here, we report only on the July 2008 surface collection. Many of the flint artefacts are broadly diagnostic to either the Middle (200,000-48,000 BC) or Upper / Epipaleolithic (48,000-10,000 BC) periods (**Fig. 8**). The Middle Paleolithic diagnostic pieces include four Levallois flakes, a small retouched Levallois point, one narrow Levallois blade and one bifacial artefact that appears to be a Levallois core with its dorsal surface reworked and battered. The Levallois pieces show mainly unidirectional dorsal scar patterns. We note also that the previous RLP survey carried out by Lovell and Wasse retrieved a unidirectional convergent Levallois flake. Most of the Middle Paleolithic diagnostic material was recovered from the Maghārat al-Ḥamāmah 2 outer chamber and terrace. Much of the Upper / Epipaleolithic material was recovered from al-Ḥamāmah 1. The Upper / Epipaleolithic artefacts include debitage (bladelets), three tools (various

kinds of endscraper) and 5 blade / bladelet cores (for examples, see **Fig. 7**). Two of the cores have a narrow-faced preparation, suggestive of Early or Middle Epipaleolithic. However, our sample remains too small — especially without more diagnostic tools having been recovered — to provide more precise results. We also note that a moderately thick retouched blade, with its bidirectional dorsal scar pattern and faceted platform, may be either Middle or Upper Paleolithic in age. We offer the same conclusion about two notched pieces made on thick flakes. The surface collection results confirm the presence of Middle and Upper / Epipaleolithic components at Mughr al-Ḥamāmah. Moreover, the majority of the flint artefacts recovered during this season, as well as the material recovered by Lovell's RLP team, are



7. View of exposed phosphatized sediments in Maghārat al-Ḥamāmah 2. Underlying cave wall fall (which may be very recent), these sediments are marked by phosphate inclusions, resembling diagenetically altered deposits from well-studied Middle and Upper Pleistocene cave sites in the western Levant. Thus, we expect the deposits in al-Ḥamāmah 2 to date at least broadly to the Middle - Upper Pleistocene. In such chemically altered cave sediments, bone will not be preserved, but the matrix is friable and relatively easy to excavate, while preserving flint artefacts datable by thermoluminescence. We note that bone preservation appears to be more promising on the terrace of al-Ḥamāmah 2.



8. Selected cores, debitage and tools recovered from the surface of Mughr al-Ḥamāmah 1 and 2. Middle Paleolithic diagnostic pieces include a Levallois blade (1) and flakes (2-4, 7). Upper or Epipaleolithic artefacts include bladelet fragments (5-6); a notched endscraper (7); a carinated endscraper on a thick cortical blade (8); and bladelet cores (13-15). A relatively thick re-touched flake (8) is consistent with Upper Paleolithic occupation, but we cannot rule out its association with a Middle Paleolithic occupation (Bar-Yosef and Kuhn 1999).

unpatinated and have fresh edges. This strongly suggests that the recovered material was exposed only relatively recently. This underscores the potential for finding well-preserved Middle or Upper Pleistocene archaeological deposits at the site.

Conclusions

The mapping survey, surface collection and geological observations indicate that Middle and Upper / Epipaleolithic archaeological deposits are most likely to be preserved in the outer chamber and terrace of Maghārat al-Ḥamāmah 2. Upper or Epipaleolithic deposits appear to be pre-

served under rockfall on the terrace of Maghārat al-Ḥamāmah 1. No surface artefacts were recovered from the terrace of Maghārat al-Ḥamāmah 3, but intact Palaeolithic deposits may be preserved underlying historical deposits and cave collapse. Our tentative conclusion is that Mughr al-Ḥamāmah is likely to preserve a later Pleistocene archaeological sequence, ranging from the Middle — and Upper — to Epipalaeolithic. Confirmation of this conclusion can only be achieved through future excavations at the site.

Acknowledgments

The authors are grateful to the Department of

Antiquities and especially the Director-General Dr Fawwaz al-Khraysheh for granting permission for the survey. We are also very grateful for the generous financial support and encouragement from Oxford College of Emory University, and especially the support of Dean Kent Linville. We acknowledge Dr Jaimie Lovell's generous encouragement of our proceeding with preliminary investigations at Mughr al-Ḥamāmah. We are extremely grateful for the support of the staff at the 'Ajlūn office of the Department of Antiquities, as well as the staff of the Qasr al-Rabad Hotel in 'Ajlūn.

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