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WHS 1065 (Ṭor aṭ-Ṭarīq): An Epipaleolithic Site in its Regional Context

Introduction

Wādī al-Ḥasa Survey Site 1065 (Ṭor aṭ-Ṭarīq) was discovered in 1982 by Burton MacDonald during a survey of the south bank of the al-Ḥasa (MacDonald 1988). Situated on the north-west shore of a former Pleistocene lake at an elevation of 815 m asl, the site covers an area of about 812 m^2 along a slope below a collapsed rockshelter and fossil spring (FIG.1). Artifacts cover the entire slope, although much of the downslope material appears to be derived from above due to erosion and colluviation. Disturbance is less evident upslope where deposits are relatively intact and the slope of the landsurface is less pronounced. Initial assessments of the nature of site occupation suggest a series of camps moving up and down the slope following the fluctuations in the level of the lake.

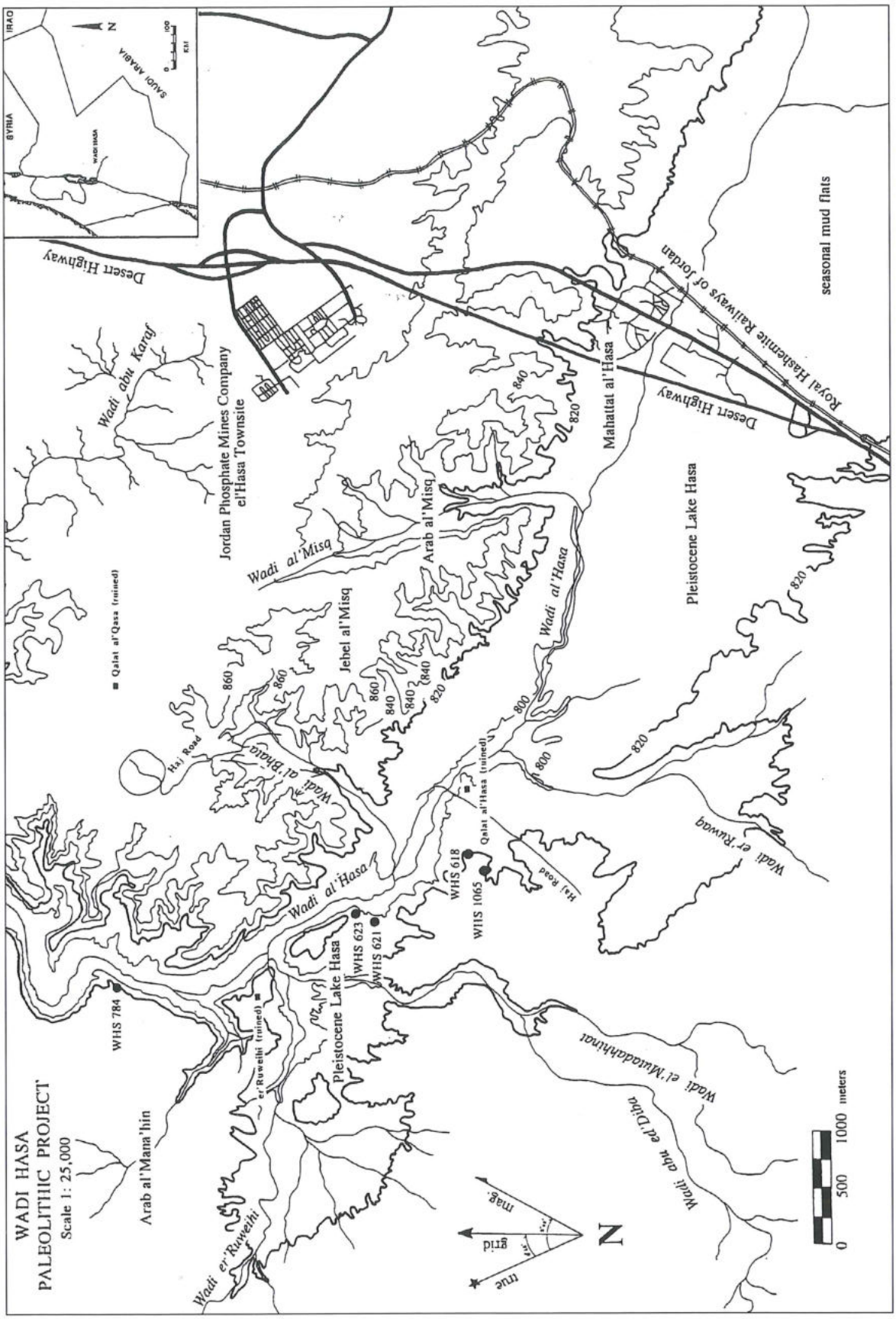
Fieldwork was initiated in 1984 under the auspices of the Wādī al-Ḥasa Paleolithic Project with the aim of recording information pertaining to the paleoenvironmental, geomorphological and cultural history of the eastern al-Ḥasa basin. At Ṭor aṭ-Ṭarīq, this included an extensive surface collection (95%) followed by excavation of a 44 m long step-trench that bisected the site and extended down into the lake marls below (Coinman *et al.* 1989; Clark *et al.* 1987). This resulted in the collection of faunal and pollen samples, and more than 160,000 pieces of chipped stone. The high density of lithic material in distinct strata indicates that the locality around the spring was occupied repeatedly and intensively over a long interval of time. The major part of the occupation appears to represent the Kebaran phase of the Levantine Epipaleolithic based on typological indicators (high incidence of narrow backed bladelets) and radiocarbon dates that range between 16,900 and 15,600 BP. Changes in typology, and an increase in geometrics in the upper levels in some parts of the site suggest a later Epipaleolithic component corresponding to the Geometric Kebaran or perhaps to the Natufian (Clark *et al.* 1987).

Excavations were resumed in 1992 in an effort to refine the definition of the various occupational episodes and to expose horizontal areas adjacent to the main trench. Two 4 m^2 units were opened up adjacent to the trench in Steps B and C in order to identify additional site features and/or architecture associated with the occupations (FIG. 2). This resulted in the collection of an additional 40,000 lithic artifacts along with fauna, shell and ground stone (Clark *et al.* 1992).

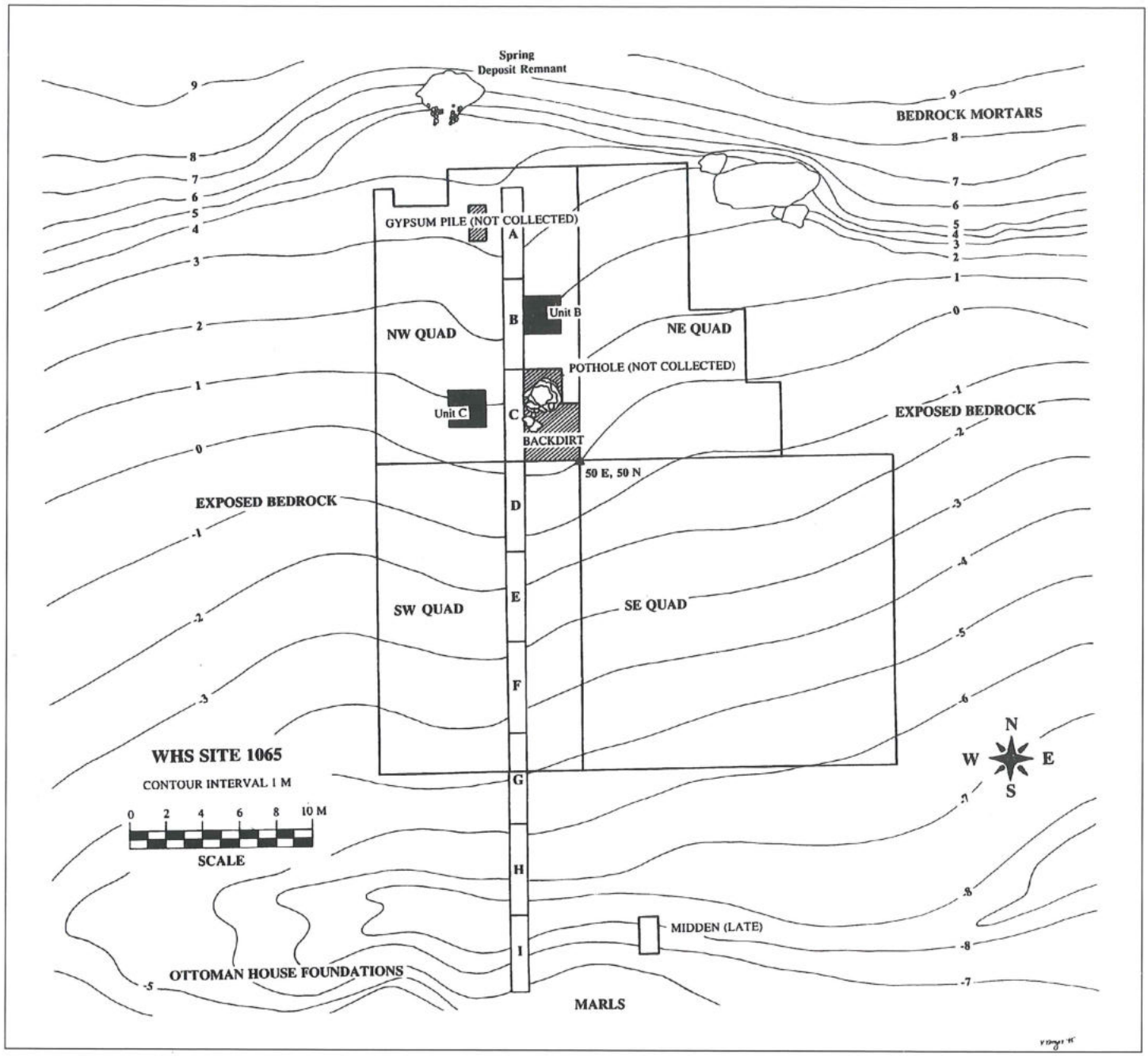
Eight radiocarbon samples have been processed so far. Six of the eight determinations cluster in the 16.9-15.6 kyr BP interval – dates compatible with other radiocarbon dated Kebaran industries elsewhere in the southern Levant (Bar-Yosef and Vogel 1987). Typologically, the paucity of geometric microliths and a high proportion of backed bladelets in the radiometrically dated levels correspond to a generalizable Kebaran pattern described by Bar-Yosef (1981) and Henry (1983). These radiocarbon dates come from the lowest levels in Steps A, B and C. Although they provide an internally consistent cluster of dates for the Kebaran, the Ṭor aṭ-Ṭarīq dates do not shed much light on the question of subsequent occupations, as the upper layers did not yield datable remains.The later material, containing higher proportions of geometric microliths, is confined to Step C and rests well above the dated levels from that unit. Typologically, this material appears to be similar to the Geometric Kebaran levels at al-Kharrāna IV in eastern Jordan (Byrd 1994:211; Muheisen 1985:156-158;1988:362-365; Olszewski *et al.* 1994:137). Two other dates were obtained from bulk sediment samples of a heavily calcreted, consolidated layer in Unit B. At 11,280 and 9,010 BP these dates are much younger than the others and are considered problematic with regard to site chronology because of potential problems inherent in the bulk sampling technique, and the possibility of contamination (Neeley *et al.* n.d.).

The Local Context

Ṭor aṭ-Ṭarīq is only one of dozens of Upper and Epipaleolithic sites recorded in the eastern basin of the al-Ḥasa drainage. The high incidence of Pleistocene archaeological sites along the wadi is due in part to its function as the only perennial watercourse draining the central Jordanian Plateau between the Dead Sea and the Gulf of ʻAqaba. More mesic biomes flanked the al- Ḥasa intermittently during the late Quaternary, although rainfall is now sparse and the project area is mostly contained within the 100-200 mm isohyets. Significantly, most Levantine regions associated with open air late Paleolithic assem-



1. Map of the eastern end of the Wādi al-Ḥasa indicating the extent of the Pleistocene lake and the location of Ṭor aṭ-Ṭariq (WHS 1065) along with other nearby Upper– and Epipaleolithic sites .



2. Site map of Ṭor aṭ-Ṭarīq indicating the 1984 step trench (A-I) and the 1992 excavation unites (B and C).

blages are found within the same precipitation belt and today sustain similar Irano-Turanian steppic vegetation.

The site lies atop a 10-20 m high bedrock spur that overlooks the dissected basin of the former lake, above a third order al-Ḥasa tributary (the Wādī ar-Ruwāq) that has incised the site landform to a depth of 10-12 m. The uppermost site surface slopes at 16 degrees from the mouth of the rockshelter to the wadi floor. The substrate is characterized by complex interdigitations of cultural sediments and calcareous wadi and marl deposits that are laterally discontinuous. At depths ranging from 0.3 m to greater than 1.3 m, cultural sediments rest on a base of fluviolimnic sands, silts and clays that in turn overlie lacustrine marls. The marls have accumulated over bedrock that was exposed only along the eastern edge of the rockshelter. The sediment complex is typical of lake edge depositional environments, where poorly sorted alluvium and mud flows were laid down intermittently over a period of several millennia. Structural and textural variability within these sediments suggests that they represent deposition under paludal (ponded) conditions (Schuldenrein and Clark 1994:38).

Stratigraphic separation between the cultural and the uppermost palustrine deposits is obscured by lenses and

pockets of colluvial detritus. Human occupation of the slope, combined with wave cutting and shoreline movements along the lake margins stripped away lake edge deposits in the immediate vicinity (although they are preserved at nearby WHS 618), and transported anthropogenic residue downslope. Portions of the stratified marls are preserved atop eroded bedrock and are most extensive midway down the slope. The palustrine sediments incorporate extensive, silicified root casts, indicating a sustained vegetal community over the course of the occupation. The faunal inventory contains high proportions of *Testudo* (38.6% of the bone count), *Gazella* (34.8%), *Bos* (10.9%) and equids (7.6%). Pollen profiles include cattail (*Typha*), riparian willow (*Salix*), pine (*Pinus*) and oak (*Quercus*). There is also a substantial chenpodiaceae component (> 40% in most samples). Collectively, these elements suggest a mosaic of relatively mesic Mediterranean open woodland-steppe environments.

The Regional Context

Integration of the late Quaternary al-Ḥasa sequence is best modeled after reconstructions for the western an-Naqab highlands (the drainage of the Nahal Zin) and the Jordan Rift-'Arabah Valley. The former is similar in topography and is located 100 km to the west on the same latitude (30 degrees 50'). Hydrogeographically, the Nahal Zin is the al-Ḥasa's drainage equivalent west of the Rift and, like the al-Ḥasa, it preserves a more or less continuous geoarchaeological record. The Rift-'Arabah is the regional catchment for both the Zin and the al-Ḥasa, and is one of the most thoroughly researched late Quaternary arid zones.

Although geoarchaeological data on al-Ḥasa hydrology and paleolandscapes extends back nearly to the Middle-Upper Pleistocene boundary, at 130 kyr BP (Schuldenrein and Clark 1994), it is only the ten millennium interval between 25,000 and 15,000 years ago that is of interest in the context of this paper. The first five millennia of this period are characterized by relatively mesic environments, and recharging of aquifers documented in the eastern al-Ḥasa drainage at the lakeshore Ahmarian site of 'Ayn al-Buḥayra (WHS 618), located a scant 200 m north-east of Ṭor aṭ-Tarīq (Coinman 1993). The an-Naqab equivalent of these occupations is the site of Boker with dates between 25.5 and 23.6 kyr BP (Marks and Ferring 1988). Although the an-Naqab does not contain lake basins, its higher energy fluvial environment corresponds with the moist peak of ca. 22 kyr BP in the Rift and the al-Ḥasa.

By around 20 kyr BP, initiation of a drying trend is marked by erosion of the Lower Terrace at Boker and incision of the al-Ḥasa marls. More generally, high lake levels throughout the eastern Mediterranean had begun to decline after about 19 kyr BP. Across the southern Levant, widespread valley erosion is inferred from a total absence of dated fluvial deposits between 22 and 17 kyr BP. Only Macumber and Head (1991) argue for no significant retreat of lake levels at this time, based on silting of the lower reaches of the Wādī al- Ḥammah, an eastern tributary of the Jordan.

Evidence for renewed humidity after ca. 17 kyr BP comes from the most recent Rift Valley pollen records. The Hula core (Golan Heights) shows that, after the pleniglacial maximum, ratios of tree pollen to steppe plants increased steadily from a low of 20%, at ca. 22 kyr BP, to a high of 75% at about 11.5 kyr BP, followed by a precipitous decline (to 30%) during the following millennium (Baruch and Bottema 1991). Kebaran pollen records at Ṣalibiya-Fazael in the lower Jordan Valley show earlier climatic amelioration (Schuldenrein and Goldberg 1981). Progressively mesic environments were marked by renewed alluviation, creation of fan-deltas at the junctures of major tributaries and local palustrine basins in the al-Ḥasa and in the lower Jordan Rift. Prevailing climatic conditions at this time are inferred from a 13 kyr BP an-Naqab paleosol, the formation of which required 500 mm of annual precipitation (2.5 time greater than present) (Goodfriend and Magaritz 1988). Rainfall gradients were depressed 150 km southward in the an-Naqab and, by extension, in the al-Ḥasa, which is on the same latitude.

Most reconstructions of lake environments in the al-Lisān basin suggest that high lake level stillstands culminated there at about 14.6 kyr BP (Begin *et al.* 1985). Transferring this chronology to the al-Ḥasa basin might account for the densest lake margin occupation at Ṭor aṭ-Ṭarīq during the Kebaran. The rising lake levels in the Rift Valley, which persisted into Natufian times, may have promoted backfilling in the vicinity of the site, as evidenced by variability in marl composition. Inundations of the wadi mouth would have resulted in the periodic relocations of the site's inhabitants that seem to be documented archaeologically. Although there is reasonable overall agreement between the al-Lisān and al-Ḥasa sequences, the smaller size of the al-Ḥasa basin would have tended to produce a different series of microenvironments in the immediate site vicinity, regulated by geomorphic and hydrographic processes that were strictly local.

The clustering of radiocarbon dates from the eastern end of the drainage indicate that optimal human occupation of the al-Ḥasa lake plain was essentially confined to the late Ahmarian, between 25 and 20 kyr BP, and to the Kebaran, between 17 and 15.5 kyr BP. These periods coincide with high lake level stillstands, moist climatic cycles, and transitions to paludal environments (Schuldenrein and Clark 1994:52). Seasonal, lakeshore marshes in the vicinity of strong freshwater springs seem to have acted as a powerful attractor for intensive human settlement in the eastern al-Ḥasa, as was generally the case across the southern Levant (Clark 1992).

Deconstructing Base Camps

Previous reports have suggested that Ṭor aṭ-Ṭarīq was a

residential base camp, or a series of superimposed base camps, based in large part upon the areal extent of the site, the potential for architectural remains, and the high density of lithic and bone debris (Clark *et al.* 1987). This interpretation should be reassessed in light of the 1992 data. The long span of human use of the locality, and the likelihood that continuing processes of erosion (esp. colluviation) have artificially inflated the surface area of the site making the "base camp" interpretation less straightforward than it appeared to be in 1986 (cf. Clark *et al.* 1987; Neeley *et al.* n.d.).

The use of the term "base camp" is somewhat ambiguous since what is implied by a base camp will depend almost exclusively upon perceptions of the mobility strategies of the prehistoric foragers involved. In the Levantine context, mobility strategies have been dichotomized conceptually by Marks and Freidel (1977) as "circulating" versus "radiating". The Kebaran and its regional variants, as well as most of the Upper Paleolithic, are usually thought to be characterized by a circulating strategy. With a circulating strategy, extractive localities and other kinds of limited activity sites are apt to be small, perhaps archaeologically invisible loci, whereas base camps, which vary in the length of occupation, are not expected to be formally structured in terms of their use of space, since the anticipated duration of occupation is likely to have been short. The result is typically little intrasite patterning with regard to the use of space, and because of repeated, non-continuous occupation over time, a tendency for patterns originally present to become "blurred".

Under a radiating strategy, believed to characterize the latter part of the Middle Paleolithic and the Natufian, base camps are organized logistically and may be highly visible because of protracted occupation and the accumulation of midden deposits. They can contain greater intrasite patterning with regard to structures, features and trash disposal areas. Extractive sites are expected to be more numerous, and perhaps better defined in terms of their residues, but still potentially invisible archaeologically because of the limited range of activities occurring there. Relatively convincing examples of logistically-organized base camps include Ein Gev I (with architecture), Ohalo II (flora and fauna indicate long-term occupation), al-Kharāna IV and Jilāt 6 (both with human remains and structures) (Nadel and Hershkovitz 1991; Garrard *et al.* 1994). Thus, the term "base camp" might best be prefaced by reference to the organizational properties of a settlement system, for the archaeological "signature" varies accordingly.

For the most part, Kebaran sites appear to represent a strategy of circulating mobility characterized by small site size (15-400 m^2) and a limited range of artifacts (Bar-Yosef 1990: 65-67). Extensive scatters of material and/or associated evidence of architecture are rare. Settlement pattern models pertaining to seasonal movement like that suggested in regions of high relief have not been developed for the Kebaran itself, due in large part to the paucity of Kebaran-like sites from different environmental contexts (Henry 1994). While Ṭor aṭ- Ṭarīq is not a sedentary site in any absolute sense of the term, it does not appear to be a limited activity station either, given the high density and diversity of remains and features. Whether it represents a long-term, semi-sedentary locality like Ohalo II, or is the result of repeated, short-term occupation over a span of several millennia is the question of interest here.

The location of the site on the lakeshore in association with a strong spring at the confluence of a tributary wadi and the evidence for paludal conditions indicates a rather diverse mosaic of local microenvironments that probably attracted a variety of potentially exploitable plant and animal resources to the area. These would include open woodland, steppe and aquatic species, all concentrated around the lake in the swamps and ponds found along its shores. The presence of "site furniture" in the form of bedrock mortars and heavy, non-portable ground stone tools reinforces the notion that plant resources in the site vicinity might have played a significant role in repeated visits to the area (Peterson 1994). Given the mildly alkaline lake, fresh water from the spring would have been a powerful attraction. In addition to its southern exposure, potentially important for winter occupations, the bedrock promontory above the site would have provided a vista for observing most of the eastern lake basin (an area of >75 km^2), and been useful for tracking the movements of game.

Conclusions

Taken in aggregate, most of the evidence does not suggest long-term, continuous occupation at Ṭor aṭ-Ṭarīq. The high density of artifactual debris evidently accumulated over several millennia.The different ages and placement of the hearths and the relatively informal nature of their construction would also seem to militate against permanency, since it is more likely that long-term occupants would have invested greater time and effort in constructing site features had they planned to occupy the area for an extended period of time. The lone architectural feature is tenuous in its association with the Kebaran levels. Other evidence for long-term occupation such as living surfaces, houses or burials were not identified. The heavily microlithic assemblage can also be argued to be a response to the demands of mobility in which lightweight, portable and interchangeable, multifunctional tool elements would be highly desirable (Neeley and Barton 1994; Kuhn 1994). The informal, expedient quality of many of the ground stone tools lends additional support to a higher degree of group mobility. The only category of evidence that might support a more permanent occupation is the formation of dark organic levels, probable midden deposits given the absence of any features. These areas are characterized by high densities of bone and lithic debris, but the rate at which this material accumulated is not known and it is

entirely possible that they resulted from relatively intensive, short-term or seasonal occupations.

Finally, these conclusions concerning the place of Ṭor aṭ-Ṭarīq within the regional settlement system are derived from a single site. Clearly, a single site will not encompass the full range of structural poses that characterize forager behavior over the course of an annual round. Only through the continuation of survey, excavation, and geomorphological studies in the al-Ḥasa basin can we enhance our understanding of the prehistoric settlement-subsistence strategies of this region.

Acknowledgements

We wish to thank the Department of Antiquities of the Hashemite Kingdom of Jordan, and its former Director - General, Dr Safwan Tell, for encouraging us to pursue the research reported here, and Department of Antiquities representative Mr Jihad Darwish, for logistical assistance and many kindnesses during our stay in aṭ-Ṭafīla. We also acknowledge the help of the American Center for Oriental Research (ACOR), and its Director, Dr Pierre Bikai, who also provided logistical assistance and, parenthetically, a periodic respite from the weather during the terrible winter of 1992. This is Wādī al-Ḥasa Paleolithic Project Contribution No. 26, supported by grants from the National Science Foundation (BNS-8405601, BNS-9013972, DBS- 9302853, SBR- 9406034), the National Geographic Society (2914-84), the Chase Bank of Arizona and the Research Vice-President's Office at Arizona State University (90-0729).

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