

AL-KARAK RESOURCES PROJECT 1995: A PRELIMINARY REPORT ON THE PILOT SEASON

by

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Introduction

The al-Karak Resources Project (KRP) conducted intensive surface survey and environmental study on the al-Karak plateau between July 5 and August 7, 1995. This was the first of a projected three or four seasons of research; the team will resume fieldwork in the summer of 1997 and continue excavation and survey in the odd-numbered summers. By means of its multidisciplinary approach, this project builds on the important work of other surveys and excavations completed in the al-Karak district by investigating general and specific archaeological and environmental factors. The main purpose of KRP is to document ways in which inhabitants of this region have exploited available natural resources, including site location and access to local and long-distance trade goods. In addition to completing intensive surveys at 17 carefully selected sites, KRP photographed features from 20 additional sites – all of which had been located and examined briefly by the Miller-Pinkerton survey between 1978 and 1983.

Gerald L. Mattingly (Johnson Bible College), who worked with the Miller-Pinkerton team, coordinated KRP's pilot season. Team members for the 1995 season were Reuben G. Bullard Jr. (graduate student, Northern Kentucky University), Joel F. Drinkard Jr. (Southern Baptist Theological Seminary), Donald W. Garner (Carson-Newman College), James H. Pace (Elon College) [another alumnus of the Miller-Pinkerton survey], Wilbur A. Reid Jr. (Johnson Bible College), Richard A. Stephenson (East Carolina University), and John D. Wineland (graduate student, Miami University). Ahmed Ma-

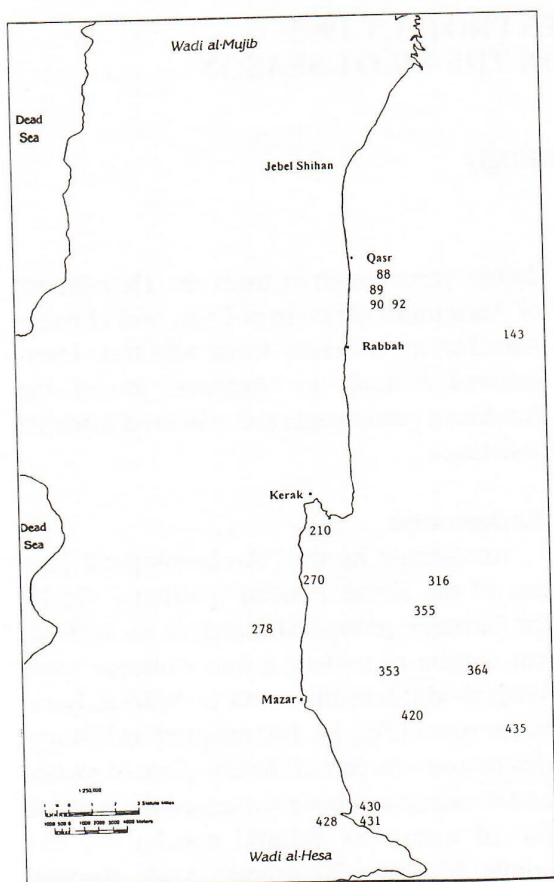
dadah, representative from the Department of Antiquities office in al-Qaṣr, and Hussein Atta Hasan, a driver from Mashrek International Schools in 'Ammān, joined the American participants and rendered valuable assistance.

Background

As defined by the "Archaeological Project of the Kerak Plateau" (Miller 1991:1), the territory around al-Karak is an 875 sq. km section of tableland that stretches from Wādī al-Mūjib in the north to Wādī al-Ḥasa in the south (Fig. 1). For much of its history, this region was part of the kingdom of Moab, and its occupants have witnessed the rise and fall of numerous cultural epochs, for example Moabite, Nabataean Arab, Roman, Byzantine, and various dynasties in the early and late Islamic periods.

Until relatively recent times, occupants of the al-Karak plateau were somewhat isolated by the al-Mūjib and al-Ḥasa canyons on the north and south, the Dead Sea escarpment on the west, and the Syrian desert to the east. In spite of its relatively dry climate, sedentary and nonsedentary inhabitants of these highlands have developed a diversified and, on occasion, a thriving economy.

The plateau's western side has a higher elevation than the "desert fringe" on the east, and the former receives more rainfall and is better suited for agriculture. The land of Moab has always been famous for its pasturage, and the symbiotic relationship between the so-called "desert and the sown" is one of the most interesting and dynamic aspects of this region's history. Archaeological remains reflect this cultural diversity, which is represented by a broad spectrum of site-



1. Sites examined by KRP 1995.

types, from large, walled towns to widely scattered campsites.

Literary references to this part of Jordan are limited in number (Miller 1991:6-14), and our knowledge concerning the details of its culture and economy is extremely limited. Fortunately, major excavations have been conducted between the al-Mūjib and the al-Ḥasa in recent years (e.g., Olávarri at Khirbat al-Mdaynah al-Mu‘arajah, Parker at al-Lajjūn, Worschech at Khirbat al-Bālū‘, Johns and McQuitty at Khirbat Faris), and several archaeological surveys have been conducted in this same region (i.e., the surveys of Jacobs, Parker, and Worschech). Naturally, all of this recent work builds on the pioneering exploration of Musil, Albright, Glueck, etc. (Miller 1991:14-17, 20-22).

A major contributor to our understanding

of the al-Karak plateau’s settlement history is the archaeological survey that was directed by J. Maxwell Miller and Jack M. Pinkerton from 1978 until 1983. This Emory University survey investigated a total of 443 sites, ranging in date from Paleolithic through Ottoman times. In 1991, Miller published his edited volume, *Archaeological Survey of the Kerak Plateau*. As noted above, the sites visited by the new al-Karak Resources Project had been examined briefly by the Miller-Pinkerton team. The published site descriptions and sherd collection from the earlier survey are, therefore, the point of departure for KRP’s new investigations in this territory.

KRP’s Research Design and Objectives

The purpose of KRP’s first season was to examine the surface remains and immediate vicinities of a small group of important sites that were documented by the Miller-Pinkerton survey and pay special attention to ways in which the ancient inhabitants of these sites utilized the available natural resources. In this pilot season, little attention was given to the modern flora and fauna of the site catchments; future seasons will consider this aspect of the environment, in terms of both the living biological communities and the ecofacts recovered during excavation. Accordingly, the team concentrated on the interrelationships between visible archaeological remains (i.e., surface architecture and artifacts and off-site features) and those aspects of their environmental contexts subject to this kind of study—primarily climatic factors, water resources, surficial geology, and geomorphology.

In an important article on Egyptian quarrying and mining, Ian Shaw (1994) observed that little systematic research has been carried out on the procurement of raw materials used by the various peoples of the ancient world. While there are many significant gaps in our understanding of the ancient history and culture of central Jordan, Shaw’s com-

ment certainly applies to the al-Karak plateau. In the absence of written records, much can be learned about ancient labor, industry, and technology by studying the ways in which people have "made a living" by using the available natural resources. A better understanding of the economic aspects of ancient life can be attained when excavated artifacts and ecofacts are seen in light of the environmental context in which ancient peoples lived, that is when we study the raw materials/natural resources from which people made/extracted what they needed to live. KRP's fieldwork and program of publication are intended to help fill the gap identified by Shaw.

This venture is especially important since the archaeological sites of the al-Karak district are, in fact, being damaged or obliterated at a rapid pace. Alumni of the Miller-Pinkerton survey, Mattingly and Pace, noted significant damage at site after site. The Department of Antiquities is well aware of this problem and has attempted to delay the destructive forces at work, though the latter are out of control in many countries around the globe. Large-scale agriculture and commercial and industrial development have accompanied the expansion of "Greater al-Karak" as a center of regional and national political, economic, and educational activities. Discussions about the mining of oil shale have been especially ominous in recent years, but it is the ordinary demographic and economic changes that explain most of the pressure put on the archaeological sites in the al-Karak district. In other words, the archaeological resources around al-Karak are endangered by what we call "progress", where ancient and modern are often in competition for the same space, and future seasons of KRP must be seen as a response to this threat.

The objectives for KRP's first field season were quite specific. First, 17 sites (listed and described below) were subjected to intensive survey. Most workdays of the field season

were consumed with this task. Sites covered by the project's 1995 permit were chosen because (1) they offer significant, even extensive, surface remains for examination; (2) they represent different topographic-environmental zones and a variety of site-types; (3) they— for the most part— yielded surface pottery from a wide range of historical periods but had no modern occupation (which would bring about a dramatic rearrangement of surface remains); and (4) they will be damaged or destroyed by agricultural, industrial, or construction activities. A modified version of the Mādabā Plains Project survey manual (used with permission of its authors, Larry G. Herr and Gary L. Christopherson), was used to collect pertinent data at each site; one of the KRP staff, Drinkard, had the primary responsibility of checking site reports and transferring this information to a computer data base. Additional insights on the detailed study of surface remains were gleaned from recent articles by J. L. Bintliff and A. M. Snodgrass (1985) and Ian Shaw and Robert Jameson (1993). In all written documentation and photographic records (discussed below), attention was given to the "residual patterns" of surface structures (e.g., fortifications, gateways, house foundations, industrial installations, cisterns) and the materials and techniques used in their construction. Specimens of raw materials used in construction were collected, along with potsherds and other surface artifacts, and technical analyses of these materials will be reported in other publications.

Second, the immediate "neighborhoods"— within a 1km radius of each site — were examined. This placed each site within a broader environmental context, in terms of surficial geology and geomorphology, and allowed team members to locate off-site features (e.g., cisterns, reservoirs, quarries, water channels) and to identify the kinds of modern activities going on around each site. This was the primary function of two team members, Stephenson and Pace, although

they were assisted in this work by other staff. Stephenson began the process of obtaining precise coordinates for important features at these sites by using a GPS unit, and he has begun to study the sites around al-Karak through the multifaceted technology called GIS. In 1995, special attention was given to features and installations that related to water management.

Third, extensive photographic records were made on most sites and in their environs. Two team members, Bullard and Reid, concentrated on photography, and a total of 4200 pictures were made, half in color slides and half in black and white prints. Contact sheets were printed in a makeshift darkroom at the al-Karak Rest House. Since most of the sites in al-Karak are threatened by future development, this photographic archive will provide a record of their "state of preservation" in 1995. As with all the artifacts and information collected by KRP, its collection of slides and negatives supplement the data collected and published by the Miller-Pinkerton project.

Fourth, the month of fieldwork allowed team members to get acquainted as they worked and traveled together, and the entire group became more familiar with the modern inhabitants, ancient sites, and countryside of the al-Karak plateau. All team members were involved in the process of choosing a site for excavation in KRP's second season, in 1997. The site of Khirbat al-Muḍaybi' was chosen because (1) it sits in an interesting part of the plateau that needs further study; (2) its excavation will contribute information concerning the utilization of natural resources (e.g., site position, building materials and techniques, access to trade, procurement of food and water), and (3) its remains are still impressive (and should be preserved for the future) but are threatened by the growth of nearby villages and the increase of agricultural activities in this region. As additional staff members are recruited and a consortium is created to

advance the purpose of the al-Karak Resources Project, the 1997 team plans to work on three fronts by: (1) opening a small-scale, problem-solving excavation at Khirbat al-Muḍaybi', (2) coordinating specialized regional and on-site research by social and natural scientists; and (3) continuing to photograph and document features on/around the 443 sites located by the Miller-Pinkerton survey.

Pottery and Artifacts Collected in 1995

The al-Karak Resources Project collected surface sherds, geological specimens, and stone implements at the 17 sites it surveyed in 1995. As noted above, the geological materials and stone implements (primarily grain-processing tools) will be published separately, but the pottery readings from the new collections are included in the site reports. The Miller-Pinkerton survey collected over 50,000 potsherds (Miller 1991:169), but KRP registered and "read" a total of only 1381 sherds, all of which are diagnostic. Some sites yielded relatively few sherds, since the earlier survey had taken such large samples, but "fresh" sherds have been exposed by human and natural activities at a few sites.

Pace directed the collection, washing, and packing of all sherds, geological specimens, and stone implements in al-Karak, and he registered all of this material singly and handedly. Pace, Garner, Reid, and Mattingly participated in the process of sawing the 1381 sherds, with the assistance of Stan Dunagan, a Ph.D. student at the University of Tennessee-Knoxville. Pace took the sherds to Canadian Union College, in College Heights, Alberta, and spent five days studying the pottery with Larry G. Herr, who provided the official readings given below.

Both Herr and Robin M. Brown, who read most of the pottery for the Miller-Pinkerton survey (Brown 1991:169-279), were trained by James A. Sauer. Therefore, the terminology and approach of Herr and Brown

are similar, though differences of opinion in the "call" for some sherds might vary. The period designations and abbreviations in the Herr-Pace report match those followed in Miller's volume (1991:27). As in Miller, the number of sherds from a particular period are given after the period designation (e.g., "Byz 8"). A few differences in the way sherd readings are reported should be noted, however. Designations like EB3 or Ir1 = EB III and IR I, respectively. The use of a slash (as in "LB/Ir 1") indicates that the unstratified sherd(s) could be read either way (i.e., could be assigned to either period), and the one making the call cannot be more specific. A dash between period designations ("Rom-Byz") indicates that the ware and/or form are/is typical to both periods, and the sherd(s) cannot be assigned more precisely. When a question mark follows a reading ("EIsl? 3"), there is some uncertainty in the call. As with Miller, UD = "unidentified."

1995 KRP Site Reports

Both the sherd readings and the site reports are intended to supplement the information found in Miller's 1991 volume. In other words, the following reports provide material that has not been published or, at least, was not emphasized in the same way. Because of its purpose and/or the constraints of time and space, the Miller-Pinkerton survey was not looking for this kind of information, did not have time to collect it, or did not choose to publish it.

Site 88: Umm al-Habaj (Miller 1991:60-61)

KRP collected a total of 329 sherds: Chalco-EB 1; EB 69; EB? 11; EB399; EB3/48; EB4 5; EB4? 2; Ir1 1; Ir2 3; Hell? 1; Nab 1; Rom 14; Rom? 1; Rom-Byz 11; Byz 37; Byz? 2; Byz/EIsl 12; EIsl 12; EIsl? 3; LIsl 23; LIsl? 1; UD 8; Post EB UD 1; Post-Ir body 2.

Umm al-Habaj sits right on the 880 m contour along the west side of Wādī as-Saninah, one of main tributaries of Wādī al-

Bālū'. Since sites 88-92 are all within sight of each other, it is clear that this vicinity, with its abundant water sources and good farmland, supported a number of settlements over a long period of time. Along with 328 sherds from a number of periods, KRP added only one period to what Miller-Pinkerton recovered – by finding one Ir1 sherd at site 88.

Building ruins are concentrated in an area that measures 75m (N-S) by 55m (E-W), though terrace walls extend over a 350 m by 200m area. Features include rectilinear structures, wall lines, terrace walls, and cisterns. The smaller, heavily covered space is ca. 60% archaeological sediment, with the remainder of it under cultivation or broken up by exposed bedrock. Approximately half of the vegetation on the site results from cultivation, but the rest is covered by dwarf shrub. Sherd distribution and reused building materials suggest that the archaeological deposits at Umm al-Habaj are badly disturbed, though it is possible that Early Bronze occupation was concentrated on the south side of the site.

The area around this hilltop village produces abundant crops of wheat, and cultivated plots of ground are found inside the old terrace walls, right up to the edge of concentrated archaeological debris. Limestone outcrops, piles of basalt field clearance and ancient walls, and numerous cisterns have protected Umm al-Habaj from further encroachment. Umm al-Habaj will suffer further damage because it is only 2 km east of al-Qaṣr. Four major wells/cisterns were measured and photographed.

Along with other surface artifacts made from a variety of materials, KRP collected eight fragmentary basalt bowls, mortars, and grindstones. Such ground-stone objects, most of whose forms and functions changed little over a long period of time, were found on most sites and will be the subject of a separate study. Of course, the abundance of such food-processing implements points to the major activity of the ancient population, and

the widespread availability of basalts on the al-Karak plateau makes the study of raw materials in this area all the more interesting. KRP will have more to say about the contribution that Jabal Shiḥān and other volcanic vents and dikes made to the inventory of available materials (Koucky 1987:37-39). And issues related to the ancient trade and transport of basalt (e.g., the recent report by Weinstein-Evron *et al.* 1995) fall within the parameters of KRP's purpose.

Site 89: al-Ḥmaymāt NW (Miller 1991:61)

KRP collected a total of 62 sherds: EB 2; MB 1; MB-LB 2; LB 1 LB? 1; LB/Ir1 1; Ir 1; Ir2 2; Hell 1; Hell? 1; Nab 2; Rom 16; Rom? 1; Rom-Byz 4; Byz 19; Byz-EIsl 1; UD 4; Pre-Classical UD 1; Post-Ir UD 1.

Al-Ḥmaymāt NW is located 200 m south of Umm al-Habaj, along the west side of Wādī as-Sanīnah. Along with 61 sherds from a number of periods, KRP added one period to what Miller-Pinkerton recovered by collecting several LB sherds.

Site 89 measures ca. 355 m (N-S) by 185 m (E-W). As at Umm al-Habaj, the ground around this site is cultivated right up to the basalt boulders that demarcate the limits of ancient debris, though there are some plowed areas on the site itself. Bedouin were camped to the east and south-east of al-Ḥmaymāt NW, and there are remains of campsites in the ruins. There would appear to be some excavation potential here, but it is likely that the frequent reuse of this knoll has disturbed the archaeological sediment. Features include rectilinear and circular structures, wall lines, terrace walls, and cisterns.

Most of the vegetation on site 89 results from cultivation on its flat surface, which is strewn with basalt boulders and chips. Three major wells/cisterns were cut into the chalk member below the cap rock of limestone and chert. As was frequently noted at wells and cisterns in July of 1995, the well on the southern end of al-Ḥmaymāt NW still had

water in it. KRP collected eight fragmentary basalt bowls, mortars, and grindstones at al-Ḥmaymāt NW.

Site 90: al-Ḥmaymāt SW (Miller 1991:61)

KRP collected a total of 11 sherds: Byz 10; LIsl 1.

As Miller observed, few architectural remains are visible at this site, although the earlier survey found wall lines and a large number of sherds. KRP collected only a handful of Byz and LIsl sherds from this bare, eroded hillside. It is impossible to say if erosion accounts for the lack of ruins on al-Ḥmaymāt SW. Exposed bedrock and boulders cover the landscape, and there is some rubble with no discernable pattern. Nowadays the south end of this site is a regional center for winnowing and bagging wheat.

Three major cisterns were measured and photographed, the most important one identified as Feature A (Fig. 2). Its state of preservation is poor, but the mouth had been cleaned out and the shaft was being excavated when KRP arrived. Less than a meter of soil and rubble had been removed, but the youths at work indicated that it was worth the effort. In other words, the local residents –villagers and bedouin alike – still know how to access the water table after winter rains recharge/saturate the soft limestone below the cap rock.

Site 92: al-Ḥmaymāt SE (Miller 1991:61)

KRP collected a total of 119 sherds: EB 3; MB? 1; LB/Ir1 1; Ir2 1; Rom 3; Rom-Byz 3; Byz 17; Byz-EIsl 1; EIsl 1 EIsl? 1; LIsl 84; LIsl? 2; UD 1.

Al-Ḥmaymāt SE sits right on the 880 m contour along the east side of Wādī as-Sanīnah and is located immediately south of the road that connects al-Qaṣr with Ḥmūd and Smākiyyah; the site covers an area that measures ca. 350 m (N-S) by 200 m (E-W). In addition to the periods represented in the



2. Cleaning a cistern at al-Ḥmaymāt SW (Site 90).

Miller-Pinkerton collection, KRP added sherds from EB, MB?, LB/Ir1, and Ir2.

Other surface finds include basalt tools, tesserae, and glass fragments.

The area all around Site 92 is under cultivation, but the northern end of the site (next to the road) has been turned into a garbage dump, while much of the southern end was inaccessible in the summer of 1995 because of bedouin camps – and the dogs that frequent such campsites. Many of the walls from ancient or Islamic periods have been rearranged as sheepfolds, and the site holds little excavation potential. Features include rectilinear and circular structures, wall lines, and cisterns, with the outstanding feature identified as Feature A, a large, capped well. By means of a rope and bucket, it was determined that water was available – in abundance – at a depth of 5.9 m from the top of the well and its adjacent trough. The good farmland, water sources, building stone, and route along the flat floor of Wādī as-Saninah made this an attractive area for settlement over a long period.

Site 143: Khirbat al-Mdaynah al-‘Āliyah (Miller 1991:74)

KRP collected a total of 28 sherds: Ir1 26; Byz 2

This impressive, wedge-shaped site is located ca. 6.5 km E-SE of Ḥmūd, on an isolated ridge that fills a bend in the canyon where Wādī aḍ-Ḍab‘ah and Wādī al-Mukhayris flow together; north of this bend the name “Wādī al-Mūjib” is used on the K737 map. The sparse population in this region and its topographic isolation explains Khirbat al-Mdaynah al-‘Āliyah remarkable state of preservation (Fig. 3). Indeed, the limited soundings completed here by Bruce and Carolyn Routledge in 1994 indicate that the Iron Age I living floor is only 1-1.5 m below the modern surface. Excavations here, which the Routledges hope to undertake, would call for the clearance of building rubble as much as actual digging and will result in the exposure of one of the most interesting settlements on the al-Karak plateau (Fig. 4). Its excavation potential is very high, and no



3. Western end of Khirbat al-Mdaynah al-'Āliyah (Site 143), with moat, towers, roadway, and collapsed gate.



4. Monolithic pillars from Iron I buildings at Khirbat al-Mdaynah al-'Āliyah (Site 143).

expense should be spared to protect al-Mdaynah al-'Āliyah and include it among the sites visitors choose to see when they pass through this region.

Like the Miller-Pinkerton team, KRP recovered almost all Ir1 sherds from Site 143;

with the recovery of 2 Byz sherds, however, the team added another period to those represented at al-Mdaynah al-'Āliyah. The very small number of sherds from MB, ERom, and Byz make it probable that most of the visible remains at this fortified town are

from Iron Age I; Routledge confirms that his excavated sherds are almost exclusively from this period.

The general appearance of this well preserved ruin is enhanced by the fact that its surface is almost bare of vegetation, since this eastern side of the plateau is so dry. A specially adapted type of wheat is grown in the fields just west of al-Mdaynah al-‘Āliyah, but the productivity of a given plot in this region is still small. Bruce Routledge has disagreed with Miller’s reference to the site as serving “a primarily military function” (1991:74). The former claims that the presence of charred grain, domestic pottery, and grain-processing tools identifies the site as an ordinary village, as opposed to a military outpost. But the massive fortifications almost certainly point to a defensive purpose – though not necessarily ruled by a central bureaucracy – but it is likely that domestic life was carried on here as well.

While the Iron II military site of Khirbat al-‘Akkūzah (Site 428), discussed below, offers some parallels, the similarities between al-Mdaynah al-‘Āliyah and the Iron II site of Khirbat al-Marjamah (located in the hills northwest of Jericho) are even more instructive (Mazar 1995). Both sites are located on isolated ridges, cut off from the adjacent hill by a moat or fosse which is protected by a tower. Occupants at al-Marjamah had access to a fertile valley and a copious spring at the foot of a steep slope; the position of al-Mdaynah al-‘Āliyah provided its occupants with arable land on the plateau and in the wadi floor, along with the perennial wadi which surrounds the site on three sides. Three KRP team members spent a day recording natural features and remnants of human activity in the wadi floor, where modern farmers have established an extensive irrigation system. [Spending time along the stream in the bottom of Wādī al-Mūjib – around so much water, fish, and luxurious vegetation – adds a new dimension to any fieldworker’s experience of Moab!] Though isolated and located

in relatively dry areas, both of these positions (al-Mdaynah al-‘Āliyah and al-Marjamah) were selected to take advantage of available resources, and their locations also called for the construction of significant defenses to safeguard occupants from enemy attack.

By means of photographs and written records, KRP documented a number of features at Site 143, including several complexes of buildings and walls on top of the ridge (Fig. 5), the rock-cut moat, towers, collapsed gate complex, the roadway, and quarries. The dry moat, which is visible in the upper right on Fig. 3, separates the spur on which the site is located from the “mainland” of the plateau. This moat runs N-S and measures ca. 44.5 m long x 18.7 m wide x 4.5 m deep. Even more interesting is the road that runs from the crest of the hill west of the site, down through the a low “saddle,” and up to the collapsed gate complex (visible in the center and upper left of Fig. 3). The roadway ran for ca. 145 m and was ca. 4 m wide; it was paved with large, flat slabs that are ca. 30 cm thick. These slabs and the blocks and monoliths required to build al-Mdaynah al-‘Āliyah houses, walls, gateway, towers, etc. came from the excavation of the moat and terraces and quarries along the ridge’s upper slopes, like the one seen in Fig. 6.

Site 210: Khirbat al-Qaryatayn (Miller 1991:91)

KRP collected a total of 44 sherds: Ir 2; Ir1 2; Ir2 4; Ir2? 1; Rom 4; Rom-Byz 1; Byz 10; Byz/EIsl 1; EIsl? 1; LIsl 16; UD 2.

This prominent ruin on a ridge S-SE of al-Karak has been damaged by bedouin activity, especially the rearranging of stones for sheepfolds. A number of illegal excavations on the site indicate that local residents hope to discover tombs or “treasure” in such ruins, but an even bigger threat is posed by the expansion of al-Karak, whose suburban neighborhoods and roads for future development already cover much of this ridge.



5. Ruins of buildings and walls on south side of Khirbat al-Mdaynah al-'Aliyah (Site 143).



6. Quarry at east end of Khirbat al-Mdaynah al-'Aliyah (Site 143).

Ancient inhabitants chose this location for strategic purposes; the rounded slopes of the ridge descend to steep, nearly vertical, slopes to the wadis on either side. Outcrops of limestone with chalk deposits directly below them made for good water catchment and storage, and four well preserved cisterns were measured and photographed, including one with a large bell-shaped interior on the site's south end. A terrace and debris from working the cap rock into building stone are

evident on the E-NE corner of the hill, below which are small cultivated fields and vineyards. It is worth noting that viticulture seems to be increasing in the al-Karak area, but the number of presses is quite small, especially when compared to the large quantity of such installations found by the Mādabā Plains Project.

Site 270: Khirbat al-Ḥawiyyah (Miller 1991:111)

KRP collected a total of 121 sherds: EB 3; EB? 2; LB? 1; Rom 5; Rom-Byz 5; Rom-EIsl 1; Byz 19; Byz/EIsl 8; Byz-EIsl 1 EIsl 6; EIsl? 2 LIsl 56; LIsl? 7; UD 5.

A heavy buildup of debris and abundant sherds from many periods on the west side of Wādī al-Ḥawiyyah indicates that this location has been settled and used extensively through the centuries. When the Miller-Pinkerton survey visited this site, which sits just above the confluence of two wadis, there was no modern occupation. Now several

large buildings, which incorporate ancient materials, indicate some kind of "industrial" activity at this location. The rocky site is covered by dwarf shrubs, but the damage that al-Ḥawiyyah has suffered is quite visible. Structures have been built in front of several large caves on the south to provide good protection for sheep, and the eastern side of the site has been turned into a garbage dump. While the excavation potential at Khirbat al-Ḥawiyyah is low, the occupational history of this site is impressive. Nine major cisterns were measured and photographed. Though the dominant building stone is chert, the typical fragments of basalt mortars and grindstones were collected, and KRP recovered a coquina grinder and pieces of scoria from the jumbled remains.

Site 278: al-Kfarāz (Miller 1991:114)

KRP collected a total of 53 sherds: Chal? 1; Rom 7; Rom/Byz 6; Byz 14; Byz/EIsl 8; Byz/EIsl? 1; EIsl 1; LIsl 14; LIsl? 1.

KRP found this site essentially as Miller described it, though the dimensions should be increased (to ca. 400 m N-S by 320 m E-W) to include the Turkish buildings and ruins west of the road. The remains represent a mass of rectilinear structures and walls that were reused/rebuilt over a long period of time, and the modern use of the site has damaged it along the western side. The road cuts through the site and local farmers use its western side to thresh and winnow wheat and process other crops before they are bagged and trucked away. Intensive cultivation of the large plain in which al-Kfarāz sits has encroached along the edges of the ruins, where several walls still stand up to six courses high. Site 278 was undoubtedly one of the major farming communities on this section of the plateau, whose gently undulating surface falls abruptly into the Wādī Iraq ca. 1.5 km to the west. Although the archaeological sediment of al-Kfarāz is badly disturbed, there is some excavation potential

here, but the modern activities will continue to damage standing ruins. Seven major cisterns were measured and photographed. Fragments of ceramic roof tiles were included with the normal range of surface artifacts.

Site 316: al-Mraygha (Miller 1991:123-24)

KRP collected a total of 213 sherds: Ir 2; Ir1 1; Ir2 4; Ir2? 1; Hell 2; Hell? 1; Nab 13; ERom 1; Rom 49; Rom? 3; Rom-Byz 6; Byz 33; Byz? 1; Byz/EIsl 64; EIsl 4; EIsl? 2; LIsl 13; LIsl? 2; UD 11.

Miller suggested that this major site "cries out for more intensive investigation," but the two days that KRP gave to the site did not eliminate the need for further work. This important, walled town should be excavated as soon as possible, since it is seriously threatened by future development in this area. A paved road leads almost to the base of al-Mraygha itself, and large-scale bedouin encampments have already damaged the northern and eastern sides of the city walls, including its northern gate. Residents of al-Karak said there were plans to establish a settlement of farmers at al-Mraygha to open up more land for commercial purposes.

When the Miller-Pinkerton team conducted their survey of this area in 1982, the Roman-Byzantine cemetery to the east of al-Mraygha was being robbed – as Miller put it – "systematically, tomb by tomb . . ." The 1995 KRP participants walked across the fields which contain the ancient cemetery and estimate that over 800 tombs have been opened and ransacked. It is impossible to say how many undisturbed tombs remain, but the clandestine diggers have recently broken new ground outside the large field where most of the tombs were located. If the local grave robbers are aware that the al-Mraygha neighborhood will be settled in the near future, the looting has probably reached a frantic pace.

Al-Mraygha was a large, walled town that

dominated the northern end of the al-Fajj al-'Usaykir, a prominent graben that extends over 20 km (north-west to south-east) across the southeastern quadrant of the al-Karak plateau (Koucky 1987:30). As the Glueck, Parker, and Miller-Pinkerton observed in their surveys, the rims on either side of the al-Fajj are lined with watchtowers and fortified sites. Sitting on a barren hilltop at the al-Fajj's northern end (on its eastern side), al-Mraygha is the counterpart of al-Muḏaybi' (Site 435), which sits near the al-Fajj's southern end (on the western side) of the al-Fajj. Both positions were heavily fortified, and both commanded access to this broad valley which must have served as a thoroughfare for traders and travelers across the centuries. Al-Mraygha is oriented to the north and probably controlled traffic coming toward al-Karak from the east, toward the "Desert Highway". Excavations at al-Mraygha would uncover interesting architectural remains,

and it is likely that the inventory of objects found would include a number of trade goods. Along with pottery sherds, basalt grindstone fragments, bits of glass, and broken roof tiles, KRP found pieces of worked marble and a 7.5 x 10cm block of alabaster.

At least two of the "foxholes" that Miller mentions on page 124 are industrial installations of some kind, perhaps lime kilns. These stone-lined chambers, whose interior diameters measure ca. 5 m, have flues that open toward the west, and pieces of slag-like residue were found around their edges. The age and function of these installations need further investigation.

The northern gate is moderately well preserved, but its stones are being hauled away for use elsewhere. The rectilinear gate complex is ca. 19.4 m long by 17.0 wide. Looking out of al-Mraygha toward the north, Fig. 7 shows the inside face of the eastern tower and the gateway itself in the upper left; most



7. Interior of north gate at al-Mraygha (Site 316).

of al-Mraygha's interior is covered by large blocks and building rubble, including the circular structure in the right center. Several large structures were built just outside and adjoining the city wall on al-Mraygha's south end; some of these additions display interesting features, including stones with a raised boss (Fig. 8).

Outside the city gate, to the north of al-Mraygha, KRP measured and photographed six large cisterns; these cisterns range in depth from 3.6 m to 6.75 m. All were dry in July of 1995, and bedouin were watering sheep from large tanks filled periodically by trucks.

Site 353: Khirbat al-Inshanish (Miller 1991:131-33)

KRP collected a total of 47 sherds: Rom 14; Rom-Byz 8; Byz 8; Byz/EIsl 1; EIsl 3; LIsl 8; LIsl? 2; UD 3.

This hilltop site offers a good view in all directions, and is located in a region with many archaeological sites. Wheat fields and bedouin camps stand out against the bare hills, and the new buildings of Mū'ta University are clearly visible ca. 6 km to the west. Four major cisterns were documented on this ridge, which is situated between two wadis.

Bedouin camps cover the eastern side of al-Inshanish, while the entire northern side



8. Building stones with raised boss at al-Mraygha (Site 316).

has been turned into a huge complex of sheepfolds – all built out of stones taken from the upper part of the site. Numerous caves on the south and east are also used for barns. Building stone was obtained from terraces on the eastern and western sides of the hill, and heavy archaeological sediment covers the top of the ridge and its slopes. Individual buildings are discernable amidst the rubble, but much of the ancient material has been removed for use elsewhere. Two column drums were noted, though one was discovered recently by someone digging on the site; the ones noted by the Miller-Pinkerton team seem to have disappeared. Surface finds were meager, and the recent damage done to Khirbat al-Inshanish makes it an unlikely candidate for further study.

Site 355: Khirbat al-Batrā (Miller 1991:133)

KRP collected a total of 83 sherds: Ir 2; Ir1 1; Ir1? 1; IR2 8; Hell 1; Nab 38; Rom 18; Byz 8; LIsl 2; LIsl? 1; UD 3.

This prominent site is located at an elevation of 1000 m, and it has a commanding view of the Fajj and the region between the latter and the al-Karak-al-Qatrāna road. Its wide chronological range of diagnostic sherds indicates that the natural advantages of this position were well recognized from the Middle Bronze through the Late Islamic periods. Water was obtained from cisterns which cut into the ridge's silicified limestone, chert, and chalk; five major cisterns were measured and photographed.

Like al-Mraygha, which is located ca. 2.5 km to the N-NE, the economy of Site 355 was probably linked in some way to the al-Fajj traffic, and residents at both sites farmed the floor of Wādī al-Batrā and surrounding hillsides. It is likely that al-Mraygha and Khirbat al-Batrā were inhabited at the same time during several periods through the centuries, and it is interesting to imagine the view that occupants of both sites had of their counterparts, especially at night.

KRP participants drove to Khirbat al-Batrā along a heavily used track which approaches the site from the south-east. Although there is still – in Miller’s words – “a massive tumble of stones,” it is obvious that this ancient settlement has become a modern quarry, and much of the well dressed masonry has been trucked away. Much of the heavy debris is scattered down the eastern slope of Jabal al-Batrā, though a considerable amount of this building stone has been reused for walls in front of the sheepfolds noted by Miller. The “large square building” which Miller mentions (p.133) and is illustrated in photograph 35 (p.135) has been dismantled and removed.

Site 364: Nameless Site (Miller 1991:136-37)

KRP collected a total of one sherd: Ir? 1.

KRP visited this site, a compact and unfinished fort along the Jabal al-Batrā ridge, to see if more partially worked stones, like the one in Miller’s photograph 38 (p. 137), could be located. No other building stones in this condition were found, though quarry sites are located on both sides of the ridge. It is unlikely that the massive limestone blocks, some which are 2 m long, have been looted from Site 364, since there is no track leading to this place and such large stones would not be in big demand for modern usage. Glueck described Site 364 as “the very large foundation stones of a strongly built block-house,” and it appears likely that this nameless ruin was never more than that—a foundation, a fortified position that was begun but never finished. It would have been just one more in a series of forts and watchtowers on the al-Fajj rims, and it is difficult to understand why so many were built so close to each other in the first place. Perhaps the builders realized that the large scale of their foundation walls was impractical, even though the quarries were nearby. So the partially worked stone in Miller’s photograph 38 probably symbolizes the point at which

construction stopped.

Pottery collected by the Miller-Pinkerton survey comes from a wide chronological range, which probably means that the site was used for a variety of purposes over a long period of time. Interestingly enough, Glueck lamented the fact that he found one sherd (at least one “fine Nabataean-Roman sherd”), and KRP also recovered a single sherd from Site 364. The Miller-Pinkerton team probably gave the area a more thorough examination than Glueck and (obviously!) made a fairly exhaustive collection.

While there are no cisterns on this site, a water catchment system with channels and a large cistern was documented by KRP on the lower slope of this ridge, just northeast of Site 364. As Koucky (1987:30) has observed, the al-Fajj is a dust bowl in the summer, but its floor is a muddy, fertile plain in the winter and spring, and the lack of rainfall in the dry months (when most archaeological fieldwork is done) is not an insurmountable problem. In fact, it is likely that the al-Fajj will be developed for even more agricultural activity, as the word about a modern settlement at al-Mraygha would seem to indicate. More ominous is the construction of a major road in the pass that cuts through the Jabal al-Batrā ridge, just north of Mahri (Miller site 366). This road will help with regional economic growth, but it will also make remote sites in this southeastern section of the al-Karak district more accessible to stone robbers.

Site 420: Nakhl (Miller 1991:154-56)

KRP collected a total of 150 sherds: Ir2 2; Hell 1; Nab 16; Hell/ERom 1; Rom 24; Rom/Byz 1; Rom-Byz 7; Byz 36; Byz? 3; Byz/EIsl 8; Byz-EIsl 2; EIsl 3; LIsl 42; LIsl? 1; UD 1; Post-Ir UD 2.

Nakhl is another impressive site, though it does not fall into the same category as Khirbat al-Mdaynah al-‘Āliyah, al-Mraygha, or al-Muḍaybi’. Its state of preservation does

not equal these three sites that were studied by KRP in 1995, but its impressiveness results from its size and remarkable position. Miller does not provide dimensions but includes the comments of Musil (among others) who observed that Nakhl is "one of the most extensive ruins in the area. . . ." Indeed, the heavy concentration of ruins on this prominent hill extend to the measure of ca. 500 m (N-S) by 300 m (E-W), at its longest and widest parts.

On this site, which is far removed from other archaeological sites in al-Karak's southeastern quadrant, a long history was played out, from the Early Bronze Age through Late Islamic times. Other scholars are certainly correct in their assertion that most of the debris at Nakhl dates to the Nabataean, Roman, and Byzantine eras. Like several sites examined by KRP, Site 420 calls for more careful study and merits an article of its own. [In fact, two KRP team members plan to publish a paper on the distinctive features of Nakhl's water system.] And, responding to the appeal offered by Miller on pages 154 and 156, the Department of Antiquities, Mū'ta University, and Robert Schick have conducted excavations at Nakhl's rectilinear Nabataean temple and triapsidal Byzantine basilica, though the results of their work are not available yet. KRP also documented these important features, the special work of Garner and Wineland (both of whom were usually involved in collecting information on architecture).

Nakhl dominates a large wheat-producing region that centers upon the modern village of Umm Ḥamāt. At an elevation of ca. 1090 m, the site is the watershed of at least three significant drainage areas. With sufficient precipitation, this territory's red, rocky soils produce bumper-crops of high quality grain.

Some 75% of the site is covered with archaeological sediment, and the balance is exposed bedrock. Limestone and marl were the dominant materials used by the ancient builders, most of which was quarried on the

site; these quarried and shaped stones have been used over and over through the centuries. Making sense of construction sequences would be a demanding job at Nakhl, though the excavation potential is high.

Nine of Nakhl's major cisterns were measured and photographed by KRP, and special attention was given to a series of dams which were important in water retention. Surface remains included tesserae, numerous fragments of basalt grindstones, and glass fragments; samples of cistern plaster were also collected.

Site 428: Khirbat al-'Akkūzah (Miller 1991:158-60)

KRP collected a total of 40 sherds: LB/Ir1 1; Ir 6; Ir1 16; Ir2 17.

Along with Khirbat al-Mdaynah al-'Āliyah, Khirbat al-'Akkūzah is a case study in strategic site location. This fortified position, whose pottery dates almost exclusively to the Iron Age, offered its occupants/defenders a spectacular panorama of Wādī al-Ḥasa (to the south) and a more focused, but functional, view of Wādī Falqa (to the north). In addition to a number of grindstones (whole and fragmentary), KRP collected 16 sherds that date to Ir1, a significant addition to the collection made by the Miller-Pinkerton survey. Many of the Iron Age walls have tumbled down the slopes of this fortified ridge that sits in a hairpin curve in the modern "King's Highway", and some of the ancient walls on the north slope were recently cut away when this roadbed was widened. If the dimensions of al-'Akkūzah's northern slope, visible in Fig. 9 (the dark area with goat paths above the light-colored road cut), are compared with Miller's photograph 45 (p. 159), it is obvious that the site was seriously damaged. Khirbat al-'Akkūzah's main tower can be seen in Fig. 9, at the east (left) end of the site, just west (right) of the rock-cut moat. The new road cut comes right up to the base of this heavily fortified tower, whereas Mill-



9. Looking south at Khirbat al- 'Akkūzah (Site 428).

er's photograph 46 (p. 159) shows that the ancient walls extended far below the person standing in the center of the photo; the wall immediately below the human scale has been destroyed.

A number of caves along the upper slope of the site's southern side provided access to water trapped in the chalk. By cutting a moat, the ancient builders added considerably to what nature had provided, since this defensive feature (which is 16.8 m long x 35 m wide x 8 m deep) made the narrow ridge even less accessible from the east. In the process of cutting the moat through silicified limestone, chert, and chalk, the defenders of al-'Akkūzah obtained much of the stone they needed to construct their hilltop fortification. The Miller-Pinkerton team found slingstones (hammered chert nodules) in the rubble on the summit, and KRP recovered a disproportionate number of thick body sherds from large storage vessels, which probably reflects the military (i.e., non-food producing) nature of this site.

Site 430: Rujum al-'Abdah
(Miller 1991:160-61)

KRP collected a total of 26 sherds: Ir? 1; Nab 2; Byz 4; LIsl 19.

As Miller observes, there is not much left at this site, since it sits on the edge of a cultivated field and has been heavily damaged. Some fragmentary wall lines, five cisterns, and ashy soil distinguish this small plot from the surrounding field. Apart from a small number of sherds, no other surface finds were collected. One sherd might date to the Iron Age, which would be an additional period beyond what Miller-Pinkerton found.

Site 431: Kfeir/Khirbat al-'Abdah
(Miller 1991:161)

KRP collected a total of 33 sherds: Pers? 1; Hell 1; Nab 3; ERom 1; Rom 3; Rom? 2; Byz/EIsl 13; EIsl 1; LIsl 6; UD 2.

Because of its location on the northern rim of Wādi al-Ḥasa, this site has suffered

considerably since the Miller-Pinkerton survey. Farmers from Dhat Rās and other thriving villages have pushed the line of cultivation right to the edge of the plateau and have begrudgingly bypassed spaces covered with tumbled walls, cisterns, etc. There is, in fact, a thin layer of widely scattered debris (covered by dwarf shrub) on this 75 x 100m site, along with caves (just below the rim of the canyon) and seven major cisterns. Soft limestone and chalk – into which cisterns were cut – were quite accessible here, since the harder cap rock has been stripped off for building stone. Many of the ancient building blocks have been removed for modern construction, but the rocky soil and patches of exposed bedrock have protected Kfeir/ Khirbat al-‘Abdah from being plowed away. While the farmers might have spared the site, this position was chosen for the construction of a large transmission tower and a substantial protective fence, a project which did further damage to site 431. A possible Persian sherd is the only addition to the periods represented in the sherd collection made by the Miller-Pinkerton team at this site. [It should be noted that the numbers for Site 429 and Site 431 are reversed on the large folding map in the Miller volume.]

Site 435: al-Muḍaybi‘ (Miller 1991:163)

KRP collected a total of 21 sherds: Ir2 7; Byz 7; Byz? 1; LIsl 5; LIsl? 1.

The impressive site of al-Muḍaybi‘ occupies a strategic position in the southeastern section of the plateau, just south of the road that comes out of the Fajj al-‘Usaykir and passes below the southern end of Jabal al-Batrā. While this region appears somewhat inhospitable, at least in the summer months, its advantages were clearly recognized in ancient times, from the Early Bronze through the Late Islamic periods. During the Iron Age, a tremendous amount of effort was made to fortify a bare ridge that was protected on three sides by wadis; limestone was quarried from nearby outcrops, and basalt was carried in from the volcanic dike in the wadi on the site’s north side (Fig. 10). This substantial but compact fortress, which measures ca. 60 m x 90 m, has been occupied, repaired, and remodeled until modern times, when many of its internal walls were rearranged for sheepfolds. Water was obtained from caves and cisterns near the site and in the al-Fajj; a modern reservoir in the wadi on the north side of al-Muḍaybi‘ has replaced an ancient dam, remnants of



10. Looking south toward al-Muḍaybi‘ (Site 435), with modern reservoir to the right.

which were reported by Glueck.

KRP gave considerable attention to the two gates of Site 435, one in the eastern wall and one in the western wall, and a more detailed study will be provided in the future. Both were built entirely of semihewn or dressed limestone blocks, some of which were quite large. The plan of the western gate is similar to the eastern gate, though the former was smaller. The east gate of al-Muḍaybi' has received more attention because of its view to the al-Fajj and because of the so-called proto-Aeolic capitals found in its proximity, the largest of which is seen in Fig.11 – and nicely illustrated in Miller's photograph 48 (p. 165). This kind of monumental architecture is well known from six ancient Israelite sites, where these capitals were always "uncovered near administrative buildings and palaces" (Kempinski and Reich 1992:212). When Negueruela (1982) published his study of the al-Muḍaybi' capitals, there were four known on this site. Unfortunately, the KRP team must report that one of the smaller fragments has been taken

from the site. And, as will be reported in more detail in a separate article, a proto-aeolic capital has turned up at yet another site in Jordan. Because al-Muḍaybi' needs to be examined more carefully – and preserved for the future, KRP hopes to continue its long-term study of resource exploitation by conducting excavations here and by coordinating other research that will place this important site in its historical and environmental contexts.

Conclusion

The main purpose of this article is to summarize the work accomplished during the 1995 season of the al-Karak Resources Project and to identify some of the highlights of this pilot season.

In many instances, the KRP team compared the 1995 state of preservation for a given site with the way things were when Miller and Pinkerton directed their survey between 1978 and 1983.

A secondary purpose for providing the preceding synopsis is to announce a be-



11. Looking out the eastern gate of al-Muḍaybi' (Site 435), with large proto-Aeolic capital in the foreground and al-Fajj al-'Usaykir in the background.

ginning for this new phase of research in the al-Karak region. KRP hopes to continue its multidisciplinary research in the odd-numbered summers for two or three more seasons. As in most of the Middle East (and in many parts of the world), this kind of investigation represents a race against the clock. Traditional culture and the residual patterns of ancient societies are disappearing quite rapidly in the Hashemite Kingdom of Jordan – because of economic growth and sociocultural change. Such progress is, of course, a cause for celebration, since it normally results in an improved standard of living. In terms of the survival of archaeological sites, progress usually means that sites will be damaged or destroyed, and scholars will have less access to information concerning the past. KRP intends to collect such data while it is still available in this interesting region.

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