

ORIENTAL INSTITUTE INVESTIGATIONS IN YEMEN 1995

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Introduction

The Dhamar Plain, located about a hundred kilometers to the south of Sanaa, is the largest agricultural area in the central highlands of Yemen (fig. 1). The Himyarite Kingdom, which ruled much of Yemen in the period between 100 B.C. and A.D. 600, was built upon this superb agricultural base. Undoubtedly, Himyar benefited from tolls on the camel caravans that passed through its territory laden with frankincense and myrrh from farther south, as well as spices and other goods from beyond the Arabian Peninsula. Although not as famous as Saba (= Sheba), which has become known to the world through the visit of the queen of Sheba to King Solomon, the kingdom of Himyar, which succeeded Saba and extended its control to most of Yemen, played a key role in east-west trade and politics during the period of the Romans.

The history and archaeology of the Dhamar area in the period in which it was part of the Sabaeen Kingdom (Iron Age) and in even earlier times is only now beginning to be known. Archaeology in Yemen is still in its formative stages, and we must use imprecise terms like Bronze Age to designate the period from about 3000 to 1000 B.C., and Iron Age for the first millennium B.C., while we await radiocarbon dates.

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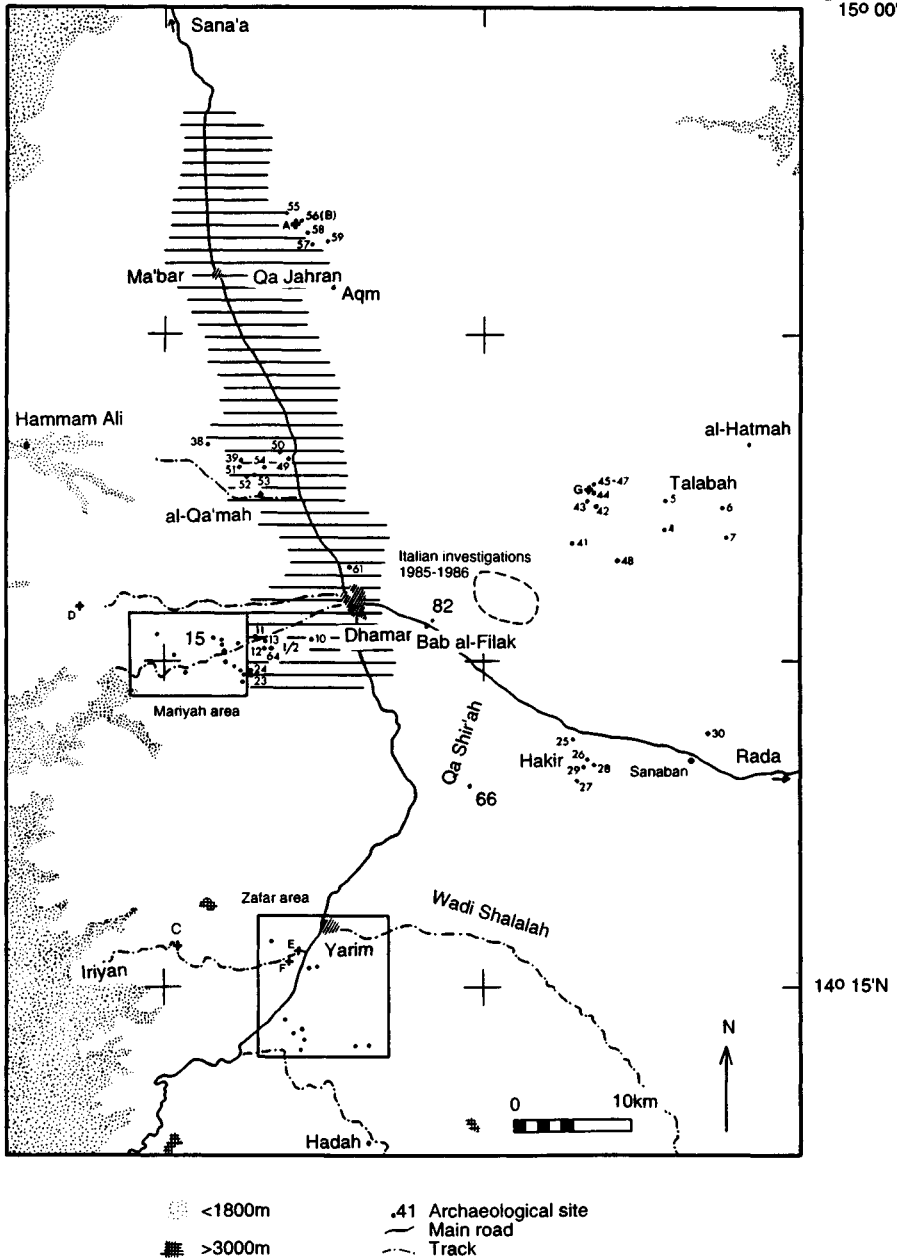


Figure 1. Map showing main sites and survey areas mentioned in text

The second field season of archaeological survey in the Dhamar area took place in March and April 1995. This year the field team again consisted of McGuire Gibson and T. J. Wilkinson, with the addition of Christopher Edens (Harvard University) and Jerry Lyon (graduate student of the Department of Near Eastern Languages and Civilizations). Even though there had been a major civil war immediately after the 1994 field season, life had returned to normal in Yemen by March 1995, and friends and colleagues in the General Organization for Antiqui-

ties, Monuments, and Manuscripts (GOAMM) made it easy to resume fieldwork on schedule. We must thank Dr. Yusuf Abdullah of the GOAMM, Sanaa, as well as our two representatives, Ali Sanabani (Dhamar office) and Abd al-Bassit Qa'id Numan (Sanaa office). We are particularly grateful to the National Science Foundation and to a private donor, for providing funding without which fieldwork would have been impossible.

As in the previous field season the objective of the project was to describe the archaeology of the high plains around Dhamar in the context of the long-term development of the ancient landscape of terraced fields, roadways, dams, wells, and threshing floors. Our results largely amplify and extend the results of the 1994 field season so that now both the environmental and cultural framework of the region is significantly strengthened.

The 1994 policy of surveying smaller subareas was continued in 1995 with the result that most of the new sites discovered came from six sample areas, namely Qa Shir'ah, Bani Abdallah, Qa'ima, Bab al-Filak, Talabah, and the Sedd Adhra'ah/

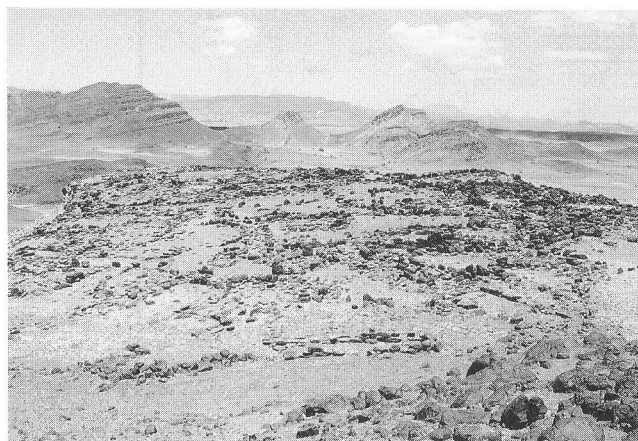


Figure 2. Hilltop site showing pattern of ancient walls, near Aqm

Hakir area. In addition brief one- or two-day reconnaissance visits were made towards Iriyan and in the areas of Bani Hudayja, Hammam Ali, and Wadi Shallalah (see fig. 1). The 120 sites recorded in 1995 bring the total number of sites thus far recorded to 185. Not only does this number emphasize the richness of the archaeological record of the region, but also it can be taken as a rough indicator of past population levels, which appear to have been substan-

tial back until at least the Bronze Age. Because the survey results depend upon surface artifacts and remains in order to provide archaeological control and to strengthen the chronological framework, trial excavations were conducted at two Iron Age sites ('Irn Umar [Site 82] and Dafinah [Site 15]) and one site apparently of the Bronze Age (al-Sibal [Site 66]). Fieldwork was again centered on Dhamar, but to accommodate the enlarged team and in order to undertake necessary finds processing and drawing, a new base of operations was rented within the town of Dhamar. This not only enabled us to enjoy the gastronomic delights of downtown Dhamar but also put us in an optimal position to benefit from the almost daily power cuts of the town.

The Environmental Framework

Any study of the archaeological landscape should be set within the context of the contemporary environment and within, if possible, a long-term trajectory of environmental change. These objectives were aided by the exposure of numerous deep sections in the plain of Qa Shir'ah, located to the southeast of Dhamar. This exposed sequence demonstrated that during the height of the glacial period, between

approximately 18,000 and 12,000 years ago, the Qa Shir'ah (and presumably the upland plains in general) were rather arid with the result that major sand dunes accumulated to depths in excess of 8 meters. The presence of a thick layer of volcanic ash within this eolian sequence attests to the activity of local volcanoes, both in the late Pleistocene (18,000–10,000 years ago) and after this during the postglacial period. Potentially such horizons can provide valuable chronological markers which enable stratigraphic sequences to be correlated from place to place, an advantage that we hope to employ more in future seasons. Following this arid phase, rainfall increased, and between about 7000 and 3000 B.C. hillslopes appear to have been blanketed by vegetation, which created thick humus-rich soils, which in valley floors merged into lake or marsh sediments. Together, these deposits testify to increased rainfall resulting from the strengthening of the summer monsoons throughout southern Arabia.

It was towards the end of this moist phase around 3000 B.C. that sedentary settlement increased in the Dhamar Plain. Such occupations, signaled by the presence of small flakes of obsidian and less commonly obsidian and flint tools, appeared initially on the surface of the above mentioned sand dunes or in the upper part of the buried humic soils. However, within most stratigraphic sections examined, the deposition of such artifacts was almost immediately followed by the accumulation of stony loam soils, a sign of erosion of the valley sides. Tentatively we blame this rapid increase in soil erosion on increased human interference with the natural environment, for instance, the removal of vegetation, possibly exacerbated by a decrease in annual rainfall that further reduced the vegetation cover. However, with the presently available data it is not possible to distinguish between effects on the landscape of human or natural activity.

Archaeological Survey

The 1995 campaign benefited considerably from our observations in 1994, which showed us just what the local archaeological sites looked like. This knowledge then enabled us to recognize on our aerial photographs the faint pattern of walls, usually on hilltops, that distinguishes such sites (fig. 2). By recognizing sites prior to our presence in the area, we could therefore restrict survey to a selection of hill summits so that we could minimize the exhausting experience of clambering up every single hill.

Of a total of thirteen sites that exhibited Bronze Age (ca. 3000–1000 B.C.) occupation, six were major occupations. Of these, the largest site was Hamat al-Qa' comprising some five hectares of rectilinear buildings spread over a large flat hilltop near the village of Aqm (to the northeast of Dhammar on fig. 1). As at Site 45 recorded in 1994, the presence of very weak

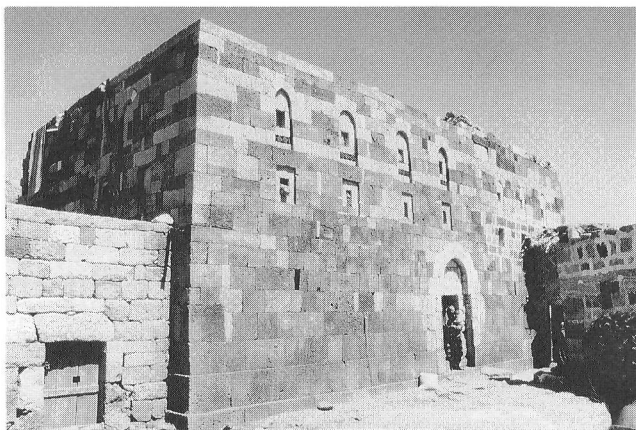


Figure 3. Himyarite house at al-Hatmah

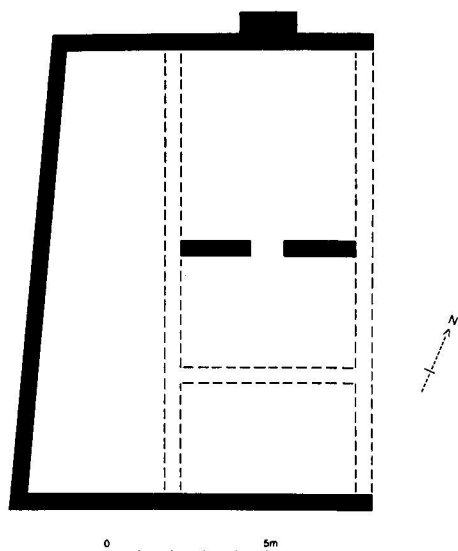


Figure 4. Drawing of mosque at Site 48

largest concentration of population yet defined in the region prior to the Himyarite period. Although large, such Iron Age sites appear to lack the architectural sophistication of Himyarite sites, which typically exhibit well-dressed and coursed stonework, “classical” or south Arabian architectural embellishments, or even south Arabian inscriptions. Of the Himyarite sites thus far identified by us, the most remarkable was that of al-Hatmah (Site 148) within which we identified what appeared to be an intact, complete, and still occupied Himyarite house (fig. 3) dating from a time contemporary with the Roman period.

In contrast to the Himyarite towns, the Iron Age sites may simply have been local centers, rather than being urban places integrated into the network of Sabaean and other South Arabian states that were so prominent along the desert fringes to the north during the first millennium B.C.

For the 1994 and 1995 seasons combined there is a progressive increase in the number of sites through time as follows: eighteen Bronze Age, thirty-four Iron Age, forty-two Himyarite, and finally fifty-three Islamic period. However, because of differences in the length of the periods as well as variations in the size of sites, such an increase cannot at this stage be used to indicate growth in population. Nevertheless, it is clear that by Himyarite times the landscape was quite densely settled with a combination of large hilltop settlements, smaller villages, and occasional farmsteads or villas. Although numerous,



Figure 5. Major Himyarite terrace walls at Hadah dwarf Chris Edens

traces of highly eroded terraced fields on hillslopes below the site suggests once again that terraced cultivation was taking place as early as the third millennium B.C.

Although it is not yet possible to demonstrate cultural continuity throughout the third, second, and first millennia B.C., it appears that sedentary occupation continued into the Iron Age, by which time a conspicuous group of ceramics could be used to date the sites. Probably the most noteworthy site of the second half of the first millennium B.C. is that of ‘Irṇ Umar (Site 82) located on a high plateau top near Bab al-Falak, immediately east of Dhamar. This straggle of building mounds extending across some 10–15 hectares of plateau was surrounded by five or six satellite sites each positioned on one of the neighboring hills. Together this settlement complex probably represents the

Islamic sites are generally rather small so that by this time the landscape must primarily have been dotted with a scatter of small, dispersed farmsteads and villages, a pattern which resembles that of the twentieth century. Although in general rather undistinguished, one Islamic site (Khirbet al-Atla [Site 48]) was made noteworthy by the presence of a small stone-built mosque with attached ablution area (fig. 4).

Archaeological Excavations

During the current season, we made small soundings in three sites, Sites 15, 66, and 82. One of these, Site 66, was a sizable, hilltop settlement of the Bronze Age (3000–1000 B.C.). Located at the side of a fairly wide and rich valley of Qa Shir'ah, the site was clearly the most important early settlement in its area. The buildings were relatively large and constructed of large stones. We chose a spot at the edge of the settlement, where it appeared that refuse that was meant to find its way to the bottom of the cliff presented a chance for a good selection of pottery, charcoal, and other cultural debris. This small pit was dug to about 50 centimeters depth at which point we encountered bedrock. We did succeed in recovering some sherds to supplement the collection we had made on the surface. More important, we collected enough charcoal for radiocarbon dating, which, when finished, will give us one possible fixed point in time.

The other soundings, at Irn Umar (Site 82) and Dafinah (Site 15), were meant to retrieve the same kind of artifacts and charcoal that would help to assign dates within the Iron Age (first millennium). Both settlements were impressive ones, Site 82 being



Figure 6. Trackway with side walls of dry stonework near Talabah

on the top of a rocky outcrop and Site 15 around and above the head of a wadi. Both sites exhibited remains of well-built stone houses, but Site 15 also had at least three circular tombs and a remarkably rich assortment of obsidian tools on the surface. The soundings in these sites were located so that we could sample the remains inside and outside the houses. In both cases, the pits outside the houses yielded more material, an indication of good-housekeeping. In the soundings at both sites, we recovered charcoal sufficient for radiocarbon dating and await the results of the tests.

Landscape Studies

The presence of terraced fields and their associated soils above buried humus-rich soils that have been dated to between ca. 7000 and 3000 B.C. demonstrates that terraced fields, though no earlier than 3000 B.C., may have been initiated shortly thereafter. That terracing began early is suggested by the above-mentioned association of faint and highly weathered terraced fields with Bronze Age sites. Even with no other evidence, we could state with certainty that terraces must predate the

Himyarite period since we have evidence of a wall of a small terraced field within wadi floor sediments of Iron Age or even Bronze Age date that are sealed by silts accumulated behind the Himyarite dam of Sedd Adhra'ah (at Site 27 near Hakir, fig. 1).

Because most terrace walls are built piecemeal and are frequently refurbished, they are virtually impossible to date stylistically. Nevertheless, the discovery of a series of monumental walls extending to a maximum of 8.4 meters high in the south-east of the survey area (fig. 5) are of distinctive Himyarite-style masonry. Their presence, as a series of steps down the hillside overlooking the Wadi Bana, hints that they may have originally formed part of a Himyarite estate of unknown size.

In order to comprehend the complexity of the present day landscape of field boundaries, tracks, and other walled alignments, it was essential that we analyze intensively a small area of landscape. This investigation was undertaken with the aid of stereo pairs of aerial photographs as well as by detailed mapping of individual features and sites in the selected field area of Talaba to the northeast of Dhamar. It thus became immediately apparent that the Talaba cisterns, both dated by Himyarite inscriptions, formed the focus of three stone-walled tracks (fig. 6). The walls alongside these tracks, being both heavily weathered and coated in desert varnish, are conspicuously old, and their relationship to the cisterns strongly suggests that these tracks too are of Himyarite date. Elsewhere in this mosaic of field boundaries and terraces, several small buildings associated with Himyarite pottery appear to be the remains of Himyarite farmsteads or even villas, and the association of each farm/villa with a single heavily-varnished threshing floor (fig. 7) plausibly suggests that such features are indeed of Himyarite date. However, detailed survey suggests that rather than being exclusively Himyarite, this landscape extends back over several millennia to include sites and landscape features of Iron Age and perhaps even Bronze Age date.

Wherever possible during survey, advantage was taken of any pits or other exposures of soils that existed, and in one such hole at Mahanishah near the major Himyarite dams at Sedd Adhra'ah (near Hakir, fig. 1) an anomalous scatter of stones at depth within the apparently natural sediments attracted our attention. By cleaning the section we demonstrated that during an early period a well had been constructed through preexisting valley floor silt plain and marsh deposits, presumably

in order to irrigate a small area of surrounding fields (fig. 8). The well was abandoned, and then after a period of further silt accumulation, about eighty centimeters of silt and loam containing occasional potsherds accumulated over the top. Such deposition presumably resulted from the distribution of muddy irrigation water over the plain, probably from one of the main flood-diversion dams



Figure 7. Himyarite (early first century B.C.) threshing floor near Hakir

in the area. Although poorly dated, the well clearly post-dates the development of valley floor marshes of the so-called Neolithic pluvial (dated to between about 5200 and 2600 B.C. by radio-carbon). If the upper flood-irrigation deposits resulted from the distribution of water from the Himyarite dams, then the well is clearly pre-Himyarite and is probably Iron Age or Bronze Age in date. Thus in the Hakir area the early stages of agriculture appear to have utilized irrigation by wells, whereas later phases (following a gap of indeterminate length) employed flood irrigation from major monumental dams.



Figure 8. Prehistoric well at Mahanishah near Hakir

Conclusion

The results of the 1995 field season generally support the notion that prior to the third millennium B.C. there existed a rather pristine landscape in highland Yemen, after which in the Bronze Age there was a significant increase in sedentary sites. This settlement expansion was approximately contemporaneous with a continuing phase of long-term soil erosion, presumably partly initiated by more intensive use of the land, but perhaps partly influenced by decreased valley-side vegetation which may have resulted from the slight climatic drying that took place following the Neolithic pluvial. Site survey suggests that there was then a gradual increase in the number of sites through time resulting in the present, very densely populated, landscape. As in 1994, field data suggest that terraced agriculture was an early feature of the landscape, probably dating from as early as the third millennium B.C. Thus at least part of the landscape was under the control of terracing during the prehistoric period and, as suggested in last year's annual report, the presence by the Himyarite period of a controlled landscape over much of the area meant that a significant quantity of annual rainfall was absorbed. As a result, flood levels were suppressed and dams in such areas were not breached and eroded by floods but rather remained as elements in the present day landscape. In contrast, the early engineers anticipated high floods in the unterraced basins, but even the massive and sturdy dams that were constructed were insufficient to contain the peak floods that sometimes occurred. It is this long-term interaction between archaeological features and the natural environment that results in very early walls and dams becoming enshrined within this evolving but very ancient landscape of highland Yemen.