

**Doing With and Doing Without:  
water use patterns amongst the Qastal Fayez of Bani Sakhr**

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What follows is on its first level a discussion of water use patterns amongst the Qastal Fayeze of the Bani Sakhr bedouin of Jordan: the essence of my observations suggests that in order to develop effective water conservation policy it is necessary to be aware in a nuanced way of the ways in which cultural history (in this case the enforced settlement of nomadic pastoralists) shapes water use. At another level, perhaps more interesting to readers of a volume such as this, the discussion of water use eventually problematizes the use of the word *bedouin* (1) to describe meaningfully a socio-cultural group in the (post-) modern Arab world, (2) to describe a marginal ("fringe") element of Arab society or one in opposition to the urban Arab world.

This account is based on many years of working and socializing daily in al-Qastal, a village on Jordan's Desert Highway, about 25 km south of Amman.<sup>1</sup> Al-Qastal is one of the villages of the *'ashirat* al-Fayeze of Bani Sakhr, made famous as *bedouin par excellence* in Alois Musil's *Arabia Deserta* and elsewhere.<sup>2</sup> While it would be hazardous to generalize about all "bedouin," or nomadic pastoralists everywhere, most of the following observations apply to all of the Jordanian tribes. I was trained as an historian of religions, and my work at Qastal<sup>3</sup> was part of a larger effort to understand the water infrastructure that typically surrounds the Umayyad *qusur*, or "desert castles of Jordan," as they are often called. I was and still am interested in the ways in which water was used as a tool and symbol by the emerging Umayyad state. As a direct result of my work with the Fayeze at Qastal, however, I returned to graduate school in 2002 to pursue a masters degree in Landscape Architecture from the University of Arizona, concentrating on arid lands issues. It seems worth noting that the material gathered as part of the process of historiography is now being pressed into the service of development policy.

The Umayyad complex at Qastal includes over 70 cisterns (the largest of which hold over 400 m<sup>3</sup>), two large reservoirs, two dams – one over 400 meters long – and a sophisticated water harvesting infrastructure. Adjacent to Qastal – five minutes' walk from the *majlis* – is an iron age site called Tell az-Zubayr, where there are 18 more huge cisterns and another Umayyad reservoir. Each of the main families of the Qastal and Umm al-Amad Fayeze also owns a commercial *bi'r* at Qastal – which in this case means a pump station to fill the tank trucks which supply much of `Amman with its water. There is also a Water Authority *bi'r* there. In short, at Qastal water has been an important issue – a commodity worth significant investment – for at least 1,300 years and probably much, much longer.

In the process of locating and documenting the cisterns and reservoirs, particularly, we became more than intimately familiar with the Qastal community through hands-on contact with generations of their trash, which was hauled out of the cisterns by the dumptruck-load. During the second year at Qastal (1999-2000) the project transmogrified from one of purely historical interest into a project equally concerned with community development and environmental issues, and by the third year we had begun to rehabilitate some of the ancient cisterns for modern use,

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<sup>1</sup> I am indebted to Fayeze `Inad Muhammad al-Fayeze, `Afash Nuri Muhammad al-Fayeze, Khalid Khalid Fawwaz al-Fayeze and his sons `Ali and Khalid for, among other things, many hours of conversation about the settlement of Qastal. Notes for published sources are intended only to supplement the invaluable information I gained from my interlocutors and by observation.

<sup>2</sup> In what follows the word *bedouin* will refer to the historically nomadic-pastoralist tribes of southwest Asia for whom their primary residence was once the *bait shahr*, or hair tent.

<sup>3</sup> -- as part of the Qastal Conservation and Development Project, a non-government organization registered under the aegis of the Jordanian Ministry of Culture.

hoping to demonstrate the 8<sup>th</sup> century harvesting and storage techniques and use the water to sustain the landscaping planned for the site. As this work progressed and community interest in the cisterns grew, we became more and more engaged with the question of why the cisterns, if they were used at all, were used mainly for waste and why water harvesting and storage is practiced at no single house in the village.

In sum, what I will suggest is the following:

- (1) the bedouin of Jordan have no cultural tradition of what I will call "water husbandry:" the harvesting and storage of water and conservative water use – they know how to "do without it," not what to "do with it;"
- (2) the coerced settlement of the bedouin by the Ottoman, British and Hashemite states has been accompanied by the social and economic privileging of agriculture over pastoralism and settled land ownership over nomadic land ownership;
- (3) wealthier, landed tribes have been encouraged to pursue agriculture regardless of the long-term land and water resources available to them;
- (4) settlement constituted a major change in lifeways, but there has been no concomitant cultural re-tooling to address new problems – e.g. waste-management, changed means of income generation, water consumption, et al. – presented by settled life;
- (5) water-use is attached to deep cultural symbologies, e.g., the Islamic "paradise garden" tradition, the "fountains of The Garden (heaven)," the bedouin aesthetic and the tradition of hospitality, which encourage the luxuriant use of water;
- (6) combined, these factors have made the bedouin some of the most abusive water users in Jordan.

By now it is a scholarly commonplace to acknowledge the interdependencies between the "desert and the sown," the nomadic and settled communities, which undercut the convenient dichotomy often drawn between them. But to make matters more complicated still, the Jordanian *badawin* – "bedouin," people of the *badiya*, the empty places – now by and large live their whole lives in cement houses and drive cars. In Jordanian colloquial Arabic *badawi* no longer means "of the *badiya*," it no longer actually refers to a particular lifestyle. Still, for a variety of reasons *badu* is still a politically and culturally significant self-identity in Jordan. Not the least of these is the fact that in order to consider oneself *urduni-urduni* – "Jordanian Jordanian" – one must be able to trace one's lineage from one of the historically nomadic-pastoralist tribes of the Jordanian plateau or "east bank." There are farming families from the north who can trace their tenure back 500 years who are not considered truly Jordanian by tribes such as the Bani Sakhr, Huweitat or Ruwala. One need only absorb the plaintive apologetic tone of Raouf Abujaber's much-loved book, *Pioneers over Jordan*, to grasp a sense of this discourse.

The Fayeze are an especially powerful clan within the Bani Sakhr<sup>4</sup> -- at the time of writing (summer 2004) Jordan's Prime Minister is Faisal al-Fayez from Umm al-Amad, a village nearby Qastal -- but they are by no means the only politically and economically enfranchised bedouin in Jordan. Indeed the Hashemite kings continue to style themselves as bedouin sheikhs and much of the business of governance is conducted in traditional tribal manner: the "sheikhs" -- the Hashemite royal family -- sit in *majlis*, receive clients who have a greater or lesser claim to their attention based on their tribal affinities, and grant favors according to much the same criterion. In Jordan today, to identify one's lineage as "bedouin" confers a particular nationalist legitimacy and primacy, and connects one to a vast network of intra-tribal relationships and benefits. Thus it is difficult to configure the bedouin as the "fringe" of Jordanian society -- the tribes are its very core.



Figure 1: Former Crown Prince Hassan and King Hussain of Jordan, from the dedicatory pages of Muflih al-Fayez' *Life and Times of the Bani Sakhr Clans*. These are only samples of dozens of iconographic representations of the Hashemite regime as bedouin sheikhs.

According to Abjuaber, Sattam Fandi `Abbas al-Fayez in the 1870's acquired a vast tract of land -- which included al-Qastal -- from sheikh Diyab al-`Adwan of the Balqa' (180-181). The Bani Sakhr pride themselves on their heritage as one of the great camel herding tribes, and are known for their horses, their record of military service, and their loyalty to King Hussain (Fayez, *passim*). The Fayeze, however, are also notable at least partly for the fact that Sattam was the first of the great bedouin sheikhs to lay hand to plough and make a significant enterprise of agriculture (Abujaber 177-196). Muhammad Fawwaz Sattam built a house on top of the hill at Qastal in 1954 and the family of Khalid Fawwaz Sattam moved into the Ottoman police station

<sup>4</sup> Three Fayeze sheikhs served as regional governors during the Ottoman period (Abujaber 179) and a dozen more served as high-ranking officials in the Hashemite armies, the court and Jordanian government (Fayez, *passim*). The Bani Sakhr includes the Khreisheh and Zubn clans, who have also been politically influential.

at Qastal<sup>5</sup> sometime after the First World War. As the Ottoman police station had already been constructed, *bait* Sattam was probably the first building in Qastal constructed from scratch, expressly for the purpose of settled habitation, after the Umayyad period.



**Figure 2: Bait Muhammad Fawwaz Sattam al-Fayez; original structure is the left half of the building, built from stone.**

Five generations later, like most of Jordan's population, the Fayez are settled bedouin. Qastal is a largish village with an industrial estate on it and thousands of dunums of olive orchards and greenhouses. Today, if they have livestock herds at all, Syrians, Iraqis and Palestinians herd them – and often drive them home in the evening in trucks to corrals. The Qastal Fayez are still, in a new way, semi-nomadic – the more affluent typically have a house on the farm, a house in their home village (in this case Qastal), and a house in the fashionable suburbs of West `Amman. They buy decorative paisley tents made in India and go out to the *badiya* for a couple of weeks in the spring to shoot things up and drink some Black Label. Nestled within this change from the empty places to cement villages is, perhaps the most important single issue in understanding water use in these communities: that the shift to settled existence and the consumption habits that come from it have not been accompanied by concomitant changes in approaches to natural resources (Sanlaville 13-14; Velud 74ff.; Bocco 209 n.44).

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<sup>5</sup> Based on the pottery evidence and the inscriptions on the headstones in the ancient graveyard, the Umayyad palace at Qastal was used continuously through the Mameluke period. In the Ottoman period the northwest quadrant of the palace was refitted as a police post, into which Khalid Fawwaz Sattam moved sometime after the First World War.



**Figure 3: Fayez farms at Qastal**

Before work at Qastal began we were aware from earlier research (Carlier & Morin 1985, 1986; Carlier 1984, 1989) that there existed abundant cisterns onsite and that the qasr had a huge central cistern under its courtyard, capable of holding as much as 1,200m<sup>3</sup>. When we began work in 1998, however, the enormous extent of the system was unknown, the cisterns had not been mapped or documented and no connection had been established between the surrounding



**Figure 4: Opening to the central cistern of the Umayyad qasr at Qastal. The cistern now opens into the middle of the courtyard of *Dar Shibli Khalid Fawwaz al-Fayez*, and serves as its septic tank.**

reservoirs and dams, the cisterns, and the Umayyad complex. Furthermore, in the late '80's and early 90's the antiquities site had been used as a dump for debris from the construction of the

frontage road, and after that as a town dump. The huge central cistern had for some years been closed and used as a septic tank by *dar* Shibli Khalid Fawwaz al-Fayez (*fig.4*).

As the debris was cleared, we started to uncover the mouths to cisterns and mark them (*fig.5*). Most weeks one or two of the local Fayez patriarchs walked through the site to watch the project, and eventually they began to point out places where they remembered there to have been cisterns. Without exception, if we dug where they showed us, indeed there was a cistern. Though cisterns were inevitably filled with debris and closed with blocks from the *qasr*, it was clear that they were of some significance to the older generation.



**Figure 5: "Bi'r 8," in the Qastal mosque courtyard -- the location indicated to us by Mithqal Mashhur al-Fayez and the cistern opening uncovered there.**

We eventually determined that the cisterns at Qastal had once – during the Umayyad period – been connected to each other, to a spring on the hill, and to roof harvesting at the *qasr*. Though there is ample evidence that surface catchment was important to the original Umayyad system, the cisterns are capable of holding far more than the evident surfaces could have harvested, and we determined that the linked cisterns stored water from a spring on a hill in middle of town. The spring on the hill had run dry in the mid-80's, but even before that the Fayez had not utilized the cisterns to store water – households carried water from the spring. Because Qastal lies within the 300mm rainfall line, barley was dry-farmed. Eventually we discovered that before the Fayez were completely established in Qastal, the *qasr* had been used as stabling and the cisterns had been used to store *tibn*, or dry fodder for livestock. The cisterns which had never been used for trash – only for *tibn* – would turn out to be in very nearly perfect repair, and still capable of holding water. The very fact that hay could be stored in them for over two years without being damaged by moisture suggests the integrity of the cistern linings. In sum, water was always scarce at Qastal, elaborate infrastructure for harvesting and storage was available, some of it still functional, but we encountered only one cistern – of dozens – that had in fact been used to store water, and it was no longer in use.

Within a generation of settlement, piped water was installed in some houses in Qastal and the commercial wells began to operate, making cheap trucked water available to anyone who

could afford JD50 for a tank on his roof. Moreover, those in the best position to invest in water infrastructure and the greatest need for water for irrigation – the principal Fayez households at Qastal – owned the commercial wells.<sup>6</sup>

At first glance Qastal it appears to be a very water-thrifty community. But a closer look at the high-income homes reveals an often gross waste of the resource. The garden aesthetic is entwined with a deep ethic of hospitality, and the paradigmatic garden is green, deeply shaded and includes the sound of running water and hardscape on which to place chairs and tables.



**Figure 6: Household garden, Qastal**

Created landscapes tend toward traditional stereotypes which prefer exotic species, high-water-use plantings and large water features (Addison & Livingston, 2004). Choices of landscaping plants adhere to these aesthetics with little regard for water resources. Government water is piped in for 8-12 hours once or twice a week depending on the season, and during those hours *dar* Shibli and others let hoses run open on their gardens for the entire period that the water is coming. Household water use also tends away from conservation. There exists a purity ethic which prefers cleaning with water over "dry cleaning," i.e., sweeping or dusting, and the more water that is used the cleaner things – including expanses of hardscape – are thought to be. Crops are chosen purely with regard to market demand and not to their water needs, since for the

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<sup>6</sup> In a 1974 report by the Jordanian Department of Natural Resources – only twenty years after the construction of *bait* Muhammad – no fewer than seven groundwater wells are noted for Qastal municipality itself (Abu Ajamieh 42, fig. 2)

largest producers – the Qastal Fayeze – water is all but free. In sum, those who can waste water do so. Lower income houses exhibit the same use patterns on a smaller scale.

Bedouin are often romanticized as a people who lived in harmony with nature, as innate conservationists.<sup>7</sup> In fact this is belied by most of our experience in Jordan. The bedouin are enormously *resourceful* within a context of scarce natural resources. They are skilled at using what comes to hand. Oystein LaBianca talks about "indigenous hardiness structures," which include the tendency toward low-overhead, low-investment projects (1997), maintaining flexibility, and the ultimate tendency to decamp when resources run out. Before pasturing circuits were obstructed by national boundaries, when life-expectancy was limited and infant mortality rates high, and before urbanization and the extension of agriculture into the *badiya* depleted the water table, the Bani Sakhr did, in fact, live more or less in harmony with their



**Figure 7: Farming beyond the 100mm rainfall line, east of Khan az-Zabib**

resources: they moved from water source to water source over a relatively large expanse of territory, depleting the resources at a site and moving on, effectively letting that land "lie fallow" until the next year (Abujaber 290 n.44). Improvement of water sources, however, was minimal, as we can see from countless sites throughout the *badiya*, most of which have not been significantly improved since Umayyad or even Nabataean times. Thus the Bani Sakhr, at least, have no cultural tradition of water husbandry – they were skilled at doing without water. Now that water is a resource seemingly abundant and immediately at hand, they are using it essentially as a low-overhead crop.

Numberless personal discussions with local residents at Qastal as well as the owners of the commercial wells has yielded ample evidence that the relationships between pumping, drought, rainfall, springs, and the water table is ill-comprehended. Again and again we encountered certain common, prevailing misconceptions:

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<sup>7</sup> For an extreme example see Rami Sajdi's discussion of the `Amareen tribe of southern Jordan at [www.bedouincamp.com](http://www.bedouincamp.com).



**Figure 8: Commercial tank truck filling at Bi'r 'Akif, Qastal**

- (1) that the drying of springs and lowering of the water level in wells was due to rainless years; in other words, that the lowering of the water table was solely drought-related;
- (2) that rain would restore the springs and wells; in the rare cases in which the interviewee was aware of the existence of the aquifer, they believed it rechargeable in the short term, e.g., after three or four good rain years;
- (3) that should Jordan actually run out of water, money and technology could drill deeper for or pipe water immeasurable distances (e.g., from Turkey and even Libya!).

Thus ignorance about water supply and its mechanics reinforce the abuse of resources by sustaining the impression of an indefinite supply of water. Water itself is "harvested" without foresight for the effects of pumping on agriculture or potable water supply.

An important piece of this picture is the fact that the bedouin were either forced or actively encouraged – both by the state and by the institution of national borders – to settle (Hiatt, *passim*). Moreover, there has been a persistent effort to engage them in agriculture, and agriculture has been privileged by the state in terms of development input and taxation (Tall, 90ff.). There continues to be a concerted effort to extend irrigated agriculture further and further into the badiya. Even newly developed water sources – e.g., treated wastewater – often tend to be viewed as surplus water, not as a substitute for pumped groundwater. At the same time little effort has been made to adapt bedouin cultural patterns to a new lifeway and livelihood. The latter has adduced problems not only of water management, but income generation and waste

management as well. Three generations ago, bedouin did not carry significant amounts of non-biodegradable materials such as plastics and polystyrene. As long as they kept moving, they left manageable amounts of biodegradable waste behind them, and their consumption of hard goods was limited by their mobility. Nomadic pastoralists never developed a tradition of waste management simply because it was never necessary.

Technology and population increase have complicated both waste management and water harvesting. In the case of semi-nomadic groups, waste management has been exacerbated by rising population and the development of affordable, non-biodegradable products. In the case of nomadic groups, trucks have made it more feasible to carry lightweight non-biodegradable materials. Thus waste materials are produced, but no management system has been introduced at the same time. Similarly, tank trucks now move water into the *badiya*, which means that the very few remaining nomadic groups have not had to develop new harvesting methods. Instead of moving from water source to water source, the water moves to them.



**Figure 9: Truck herding; in this case the small flock is actually moved along with the water tanker.**

The same interlocking dynamics of population increase, increase in the use of non-biodegradable goods, and the development of water technology apply to formerly nomadic groups who are now settled. In the case of settled groups these dynamics are intensified by static settlement. Mobility no longer limits the consumption of non-biodegradable goods. Biodegradable waste is accumulated in place faster than it can degrade. Because water is now affordably piped or transported in tank trucks to residences, waste management has been a more pressing problem than water. Water is brought in trucks and stored in tanks on roofs, but roofs and terraces are not used as catchment surfaces to harvest rainwater to store in cisterns which already exist. Lacking a tradition of water harvesting and the use of cisterns, settled bedouin communities have used the cisterns for waste disposal.

Clearly the problem is *not* that formerly bedouin communities *cannot* learn new technologies quickly and effectively. At Qastal the Fayez pump water in enormous quantities at

Bi'r Akif and Bi'r Humeidi for sale on the commercial market. They also operate some of the most sophisticated olive presses in the country and employ efficient drip irrigation on many olive farms. Yet waste from the presses is crudely disposed of in cisterns (fig.10). To fall back on



**Figure 10: Olive press waste dumped in cistern at Tell az-Zubayr, half a kilometer southwest of Qastal.**

folk wisdom, however, "necessity is the mother of invention." It hasn't been necessary for the Favez to be very inventive about water. Making a living and disposing of waste have been pressing and immediate needs, whereas water has been made easily available: there has not been a perceived need to learn new (or to relearn old) water technologies – especially ones which require considerable overhead in terms of labor and construction.

From an immediate policy point of view, the mechanics of water abuse by the Favez reveals the importance of understanding both recent history and the *longue duree* if we are to implement conservation practices effectively at all: clearly education is an urgent priority need; waste management and population control, among others, have to be implemented alongside water management measures; xeriscape measures will have to be adapted to a complex aesthetic tradition with important social and metaphysical associations; water needs to be rationed and, beyond the subsistence level, taxed aggressively to discourage commercial pumping and encourage water harvesting which does not stress the aquifers.

As for the subject of the bedouin, *per se*, it would seem that the foregoing discussion problematizes the word altogether. Water use is one set of concrete practices which has changed dramatically within in a few generations, even as more conceptual expressions of bedouin identity persist. The investigation just of this one particular aspect of transition in bedouin life does much to disabuse the romantic of illusions about the bedouin's relationship to the natural landscape they inhabit, and certainly to dismantle any kind of existing dichotomy at all between *bedu* and *fellah*. The designation *bedouin* in Jordan is today almost entirely disconnected from nomadic-pastoralism except in a strictly historical sense – and yet the word still conveys a powerful political and cultural self-identity. It seems to this author that a careful dissection of

the transitions effected during state-supported and -enforced settlement may reveal the very basis of what constitutes bedouin identity.

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