

Reviews and Publications

Al-aflāj fī dawlat al-imārāt al-'arabīyat al-mutahida. Dirasāt āthārīya fī anzamat al-rayy al-qadīma, Ministry of Information and Culture, Abu Dhabi (2002), ISBN 9948-03-028-1, pp. 161 [= Aflāj in the United Arab Emirates. Archaeological studies on ancient irrigation systems]. By Dr Walid Yasin al-Tikriti.

The *falaj* (Pl. *aflāj*) irrigation system is encountered all over the Oman peninsula but no comprehensive and detailed monograph of the systems within the UAE has been published hitherto. Dr Walid al-Tikriti's contribution to our knowledge of these irrigation systems is therefore extremely welcome and has brought together the results of his research over nearly three decades on the *falaj* systems of the Emirates.

He provides an account of the environment in which the use of *aflāj* developed for the exploitation of the limited water resources available in this arid country. These channels, both on the surface and tunnelled underground, allowed the oases of the Emirates and Oman to develop an irrigation system that has permitted sustained agriculture from the Bronze Age through the Iron Age down to the Islamic period.

The central body of the work records Dr al-Tikriti's survey and excavations of a number of significant *falaj* systems around Hilī, Bida' Bint Sa'ūd, in Al Ain itself and on the Madām plain in Sharjah. The book also includes a discussion of the broader tradition of the *falaj* system in the more familiar context of Iran.

Dr al-Tikriti traces the earliest instance of the use of the word *falaj* (in its cognate form, *palgu*) to Akkadian texts of the 3rd millennium BC from Mesopotamia with the meaning *qanat*/channel. Subsequently, the term is encountered in New Babylonian sources.

This is relevant to an important distinction that must be made in the design of *falaj*, between the water channel-type, excavated relatively shallowly into the surface of the earth, standing either above ground with stone side walls and covering slabs, or set just below ground-surface, again below slabs that prevent evaporation: these are termed by Dr al-Tikriti as *al-qanat al-mahfūra*. The alternative system, whose use depends on the lie of the land, is subterranean, termed *al-qanat al-jawfīya*, deeply cut into the bedrock through deep tunnelling. A given *falaj* system may involve both systems, depending on the topography of the landscape that the channel crosses. While both types of *falaj* require very subtle engineering to ensure a gradient, the skills for the tunnelling of subterranean *falaj* channels underground are of a different and a higher order. These subterranean *aflāj* are reached through access shafts termed *thaqba*. An interesting effect of the long-term use of a *falaj* arises from the build-up of surface soil: this creates complex stratigraphic problems illustrated well in plate 40 (p. 83), where a *thaqba*/access of Iron Age date, once excavated, was exposed to stand high above an earlier *falaj*. The *thaqba* had been dug down when siltation had raised the level of the land: its purpose was to access a more ancient irrigation infrastructure which presumably had once been on the surface.

The *aflāj* of the Emirates were a crucial and basic element of the agricultural system of the oases of the region. They once constituted the essential infrastructure for maintaining an agricultural regime that appears to have operated in one form or another from the Bronze

Age down to the pre-oil period. In a map, Dr al-Tikriti shows the principal groupings of *falaj* in the UAE, principally in the area of al-Hilī, Al Ain in Abu Dhabi, on the western slopes of the Jabal Hajar in Sharjah and on the east side of the same mountain range in Fujairah. As a mild criticism, one hopes that a future edition might provide a more refined location map of these *aflāj*, and this point can, perhaps, be addressed in future editions of this important book. The sheer number of UAE *aflāj* that have been discovered is impressive and it would be an interesting exercise to expand Dr al-Tikriti's mapping to encompass the *aflāj* of Oman as well, for the cumulative list would probably be quite formidable.

Dr al-Tikriti has also provided a map of the sites which were in use in the Iron Age when *falaj* construction seems to have been especially extensive in the main areas with agricultural potential. It would be interesting also to see the distribution of *aflāj* in the area in the Islamic period, although distinguishing early and later Islamic examples inevitably presents problems of dating. Many of these Islamic irrigation systems continued in use up until the pre-modern period and were regularly cleaned out, thereby interfering with the stratigraphic accumulation that might have allowed dating. By contrast, the Iron Age *aflāj* have long-since fallen out of use and, sealed with later soil deposits, give a better chance of establishing dates.

The *aflāj* at Hili 2 and Hili 15 are especially interesting with the results of Dr al-Tikriti's excavation showing the structure of *falaj* channel system junction points as they intersect with other channels. These two sites are both dated to the Iron Age. Related to these *falaj* systems at Hili and the agricultural regime that they supported is a very large structure, a large *hisn* excavated by Dr R. Boucharlat and whose presence puts the *aflāj* of Hili into a broader Iron Age settlement context.

Apart from the sites at Hili, Dr Tikriti also records his excavations at the Bida' Bint Sa'ūd *falaj* system, 14 kms from Hili. The archaeological importance of this area had initially been recognised by Dr Karen Frifelt and the investigation of the site was continued subsequently by Dr al-Tikriti who has conducted extensive excavations there. In the neighbourhood of Bronze Age and Iron Age tombs, he found a remarkable *falaj* with a well-preserved system of steps for descending to the *falaj* channel. There was also a well-defined building of considerable size that he termed *Bait al-falaj* from which Iron Age pottery was recovered.

Aflāj at Al Ain/al-Buraimi of the early Islamic period which Dr al-Tikriti records correspond well with the early Islamic sources which show that this oasis, under the name al-Tuwwām, appears to have been one of the region's most important centres. A remarkably well-preserved stone-vaulted *falaj* found in the city of Al Ain itself is of early Islamic date. Its deep channel (*al-qanat al-jawfīya*) had over 3 m. of deposit which produced the typical blue glazed sherds of a type encountered at many other early Islamic sites in the UAE and the Gulf region more generally. Also pointing to an early Islamic date are the results of C14 analysis of samples recovered during excavation from this *falaj*. These produced dates of ca 670 AD and ca 820 AD (+/-25 years in each case), fitting well with the presence of blue-glazed early Islamic pottery.

Near to the Al Ain *falaj* was another very important

discovery, a mosque built of mud brick, whose origins also appears to be early Islamic. This is a discovery of note for we have virtually no record of early Islamic architecture in the Emirates. The presence of a *mihrah* niche suggests a post-early 8th C. date, corresponding well with the presence of early Islamic pottery.

Broader questions that are raised by these UAE *afilaj* include their relationship with the far better known Iranian tradition, a matter discussed at some length by the author. He also notes the important work of Dr Abdullah al-Nasif of King Saud University, Riyadh who has addressed the issue of irrigation systems in al-'Ulâ' in the Hijâz. Dr al-Nasif has raised the interesting social and economic issue of access to water in western Arabian irrigation systems and individual farmers' time-access to the water-flow from the al-'Ulâ' channels. The matter of time/water-flow access allowed to the owners of land is a question of relevance to the UAE and Omani *falaj* systems as well.

In the light of Dr al-Tikriti's work, it would be of interest to expand studies of *afilaj* to Oman, where those around Sohar have been recorded in detail but not so far to lesser known sites. In addition, it would be interesting in the light of Dr al-Tikriti's work to reconsider the irrigation channels in southern central Saudi Arabia at Laylâ' (in the district appropriately known as Aflâj) to estimate to what degree they relate to those of the UAE.

This is an elegantly designed book and it is desirable that a study of a subject so important for the history of settlement in the UAE should be published in Arabic: with few exceptions, there is little written in Arabic and thereby readily accessible to nationals and especially to students of history and archaeology in the UAE. It is important that such up-to-date studies should be made available to the national readership. Having said that, it is to be hoped that Al-Aflâj will, one day, be translated into a European language to make this important research accessible to the non-Arabic speaking public.

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Emirates Bird Report No. 20. Edited and Compiled by Colin Richardson, Published by Emirates Bird Records Committee, PO Box 50394, Dubai, UAE. Price: Dh 70, inc. post and packing, inside the UAE. Available in good bookshops and through the three UAE Natural History Groups. Overseas rates on application to Colinr@emirates.net.ae. A5, 324 pp., 31 colour plates.

Emirates Bird Report No. 20 is a catch-up volume that summarises UAE bird records on a species-by-species basis for 1995-2000 and brings this formerly annual series more nearly up to date. For rare bird reports, the volume is current through summer 2003. This is especially important because the past several years have brought us a wealth of new species with each migration.

Also included are written reports of the first sightings of a number of species, a graphic index of monthly sightings (a picture is worth a thousand words), occasional graphs of comparative figures from year to year, and the UAE results of the Asian Waterfowl Census of conducted annually in the UAE's wetlands from 1996 through 2000. At the back of the main list are introduced species and escapees, many of which continue to survive, if not

thrive, in local parks and landscaped grounds, some to a greater extent than indicated by the records.

Publication was sponsored by the Ports, Customs & Free Zone Corporation of Dubai, and by the Emirates Natural History Group, Abu Dhabi, who deserve great thanks for their support of this addition to our collective knowledge about the natural history of the UAE.

For those whose principal interest is in ticking off new species on their life lists, this volume will alert you to what has been seen and where. But there is greater virtue in a comprehensive publication of data for several years, in that it has the potential to elucidate trends and patterns that may be of interest to students of ecology, behavior, migration patterns and timing, and biogeography. In many instances the authors have commented on apparent trends, especially population or range expansion or decline.

It is useful, nevertheless, to be aware of various factors that may influence the generalisations that come out of records such as these, but that are not expressly acknowledged in the volume itself. These include, among others, (i) the increase over time in the number of observers reporting to the Emirates Bird Records Committee, fuelled in part by regular visits by foreign birdwatchers and foreign commercial birdwatching tours; (ii) the influence of several years of relative drought on species numbers and diversity in wild areas (affecting 1998-2000); (iii) a continuing dearth of reports from mountain areas, and perhaps even a decline in the number of such reports (with the result that Jebel Hafit and Qarn Nazwa(!) are among the most frequently mentioned mountain sites); and finally (iv) the fall-off in the number of observers each summer (which, as much as anything, may account for the absence of summer sightings of two admittedly "elusive" or scarce resident birds that are restricted to "wild" areas, the Long-Billed Pipit and Desert Eagle Owl).

The individual records often make surprisingly interesting reading for both birdwatchers and general naturalists. Thus, one can learn that three barn owls were seen chasing a cat at a UAQ roundabout, an hour after sunset one September. Or that House Crows are limited to coastal towns and have yet to gain a foothold in Abu Dhabi, being seen there only in single digits through 2000. Among the many items that were news to this reviewer was the regular occurrence of the Hoopoe Lark at coastal sites, e.g., Khor Dubai, Khor Al-Beidah, Dreamland beach and Khor Kalba. There is even fuel for the emotions, from frustration to pride: I have yet to pick out the current, long-staying Red-Knobbed Coot at the Wimpey Pits, but, given the excitement that attends each Purple Gallinule, I was pleased to learn that the one I saw at Ramtha Wetlands in 1995 was only the UAE's fourth. Only occasionally do the editors seem to forget the nature of the underlying data, as when they remark of the Desert Eagle Owl that "most records [are] from Qarn Nazwa", without acknowledging that many of these sightings are likely to be of the very same individuals resident at this small site. Other comments may be excessively diplomatic: the Brown-Necked Raven is said to be "declining due to disturbance and development of desert areas" whereas the "[r]eason for decline at its Jebel Hafit stronghold is unknown."

The volume does not include an index, so it is helpful for readers to know the 'birdwatcher's alphabet' – the standard taxonomic order for listing bird species – but for those who do not, the table of monthly sightings serves