



Food for eternity? The analysis of a date offering from a 3rd millennium BC grave at Hili N, Abu Dhabi (United Arab Emirates)

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ABSTRACT

Ever since the early 3rd millennium BC the date palm (*Phoenix dactylifera*) has played an important role in eastern Arabia where its remains, in the form of seeds, fruits and stem fragments, are preserved on numerous archaeological sites. The recent discovery of a carbonised mass of pitted dates in a collective burial pit from the end of the Umm an-Nar period (ca. 2200–2000 BC) at Hili (United Arab Emirates) constitutes the earliest example of a food preparation involving this species. The present paper describes the discovery and identification of this unique offering before addressing the question of its significance in a funeral context in Bronze Age Arabia.

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1. Introduction

The Early Bronze Age in eastern Arabia is marked by major changes in the economic and social organisation of local populations. The first examples of agricultural production appear in the form of irrigated date palm gardens of oasis type, first installed in the foothill zone and in the wadis of the Oman mountain range (Cleuziou and Costantini, 1980; Tengberg, 2003). Metallurgical activities and pottery production develop parallel to the intensification of long-distance trade involving the regions located on the northern shores of the Persian Gulf (Mesopotamia, Indo-Iranian borderland) (Méry, 2000; Weeks, 2003).

During this period villages were organised around large circular mud brick towers, built on a massive base and reaching a height of several metres (Potts, 1990, 78–80, 101–102). A well in the centre of the tower provided an independent supply of water to its inhabitants. Archaeological excavations have shown that surrounding dwellings consisted of either small mud brick houses or ephemeral hut-like structures.

Another typical feature of the Bronze Age cultures in the Oman peninsula are the graves associated with particular funerary practices. During the second part of the Early Bronze age (Umm an-Nar period, 2700–2100 BC) graves are characteristically monumental, circular and constructed of carefully picked and fitted stone masonry. They are

divided into several chambers and contain collective burials, sometimes involving several hundred individuals. Around 2200 BC, another kind of collective burial, consisting of large sepulchral pits, appears in eastern Arabia (Al Hadouh, 1989; Al Tikriti, 1989). One of the two examples known so far is located in the northern part of the Hili oasis (Hili N), 150 km east of the modern city of Abu Dhabi in the United Arab Emirates (Fig. 1). The pit was first excavated by an Emirati team (seasons 1984–1989) then by a French team (seasons 1998–2006) (Al Tikriti and Méry, 2000; Al Hadouh, 1989; Gatto et al., 2003; McSweeney et al., 2008; Méry et al., 2001, 2004, 2008).

The recent discovery in this pit of a loaf-shaped food preparation, identified as made of date fruits, constitutes a unique example of a plant food offering in the Arabian peninsula. Previous finds of offerings probably intended as food in funerary contexts from the Neolithic and later consist exclusively of faunal remains, such as bones from mammals and fish (Salvatori, 2007, 22). The presence of an alimentary preparation involving dates, the first of its kind in the Middle East, echoes the importance of the date palm (*Phoenix dactylifera*) in this region, both from an economic and a symbolic point of view.

The present article describes the discovery and identification of the Hili date find before a more general discussion on the role played by the date palm as well as the practice of offering foodstuffs in burial contexts in Bronze Age Arabia and surrounding regions.

2. Excavation of the burial place at Hili N

The sepulchral pit at Hili N is part of a larger burial ground called Hili Garden that includes a dozen characteristic, circular Umm

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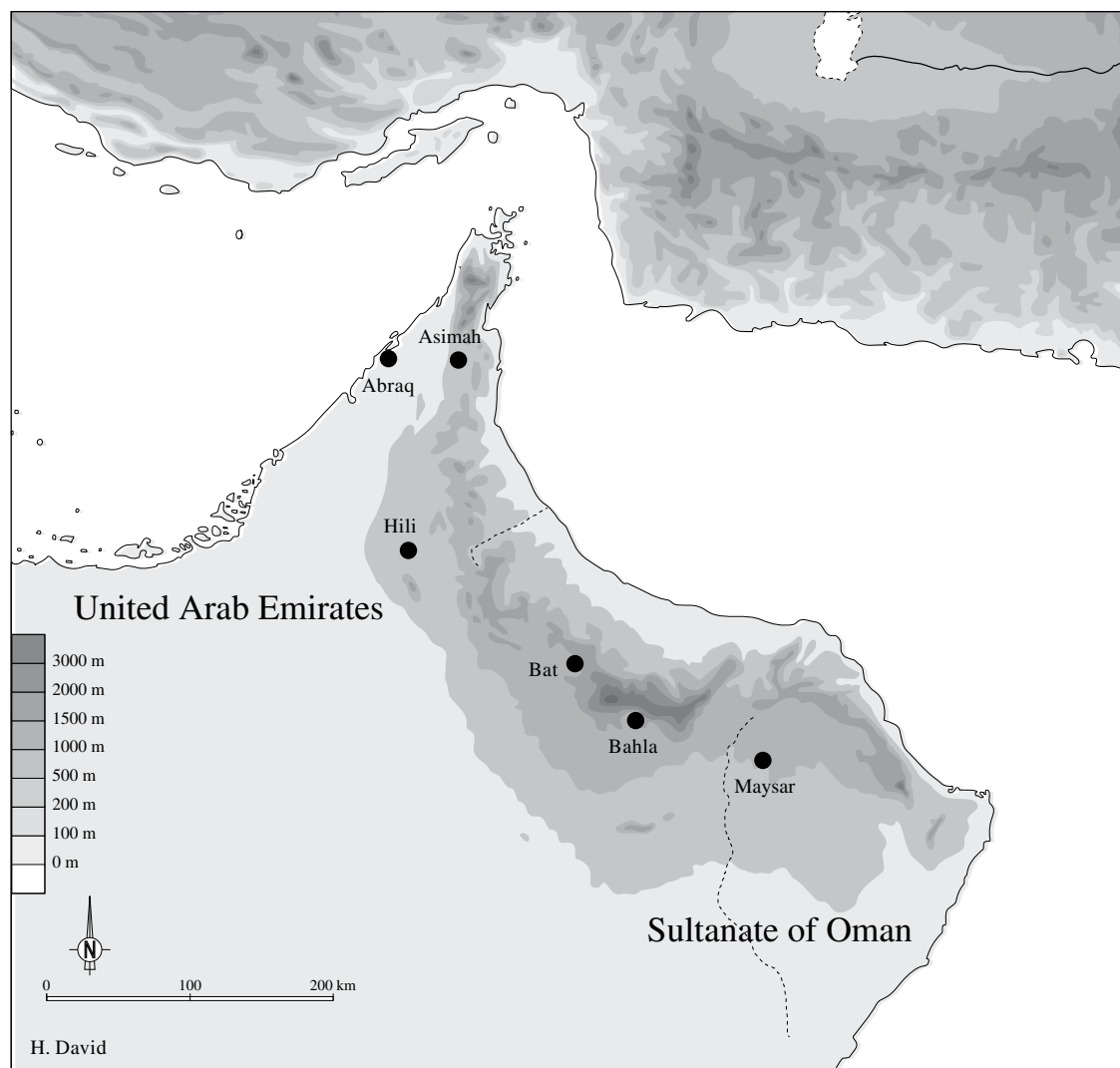


Fig. 1. Location of Hili and other 3rd millennium BC oasis sites in the Oman peninsula.

an-Nar graves. The Hili N pit constitutes the last collective burial in the area dated to the Umm an-Nar Period and is situated around 100 m from the most recent of the earlier monumental stone graves (no. 1059), that is also one of the most famous ancient monuments of the United Arab Emirates. An older monumental grave called Hili E is immediately adjacent to the pit (Fig. 2).

The excavation of the burial pit has revealed the presence of exceptionally thick (up to 1.7 m) and intact burial deposits (Fig. 3a and b). These offered a unique possibility to reconstruct the precise chronology and nature of the burial practices that lasted for at least two centuries according to C14 dating and the artefacts from the deposits (Méry et al., 2004). Four different burial phases have been distinguished containing a majority (if not all) of primary burials (Gatto et al., 2003). The study of over 850 ceramic vessels and rims, dozens of stone vessels and metal objects as well as several thousand ornaments found during the excavation of the pit has even led to a reconsideration of the chronology of the end of the Early Bronze age in this region (McSweeney et al., 2008).

The 8 m long and 2.5 m deep pit seems to have been covered originally by a light structure, possibly made of the midribs of palm leaves. Later, it was closed by limestone slabs that preserved the tomb from discovery after its abandon. The skeletons found in the pit seem to have resulted from natural death followed by a rapid burial. Some of the corpses were placed against the wall of the pit,

but in most cases they were laid down in a flexed position either on their left or on their right side, sometimes in a decubitus dorsal position. The position of the deceased was variable, depending on the space that was left or could be freed in the tomb. Sometimes sand was added in order to create an artificial level on which the



Fig. 2. General view of the burial pit at Hili N and the adjacent circular Hili E tomb (© S. Méry).

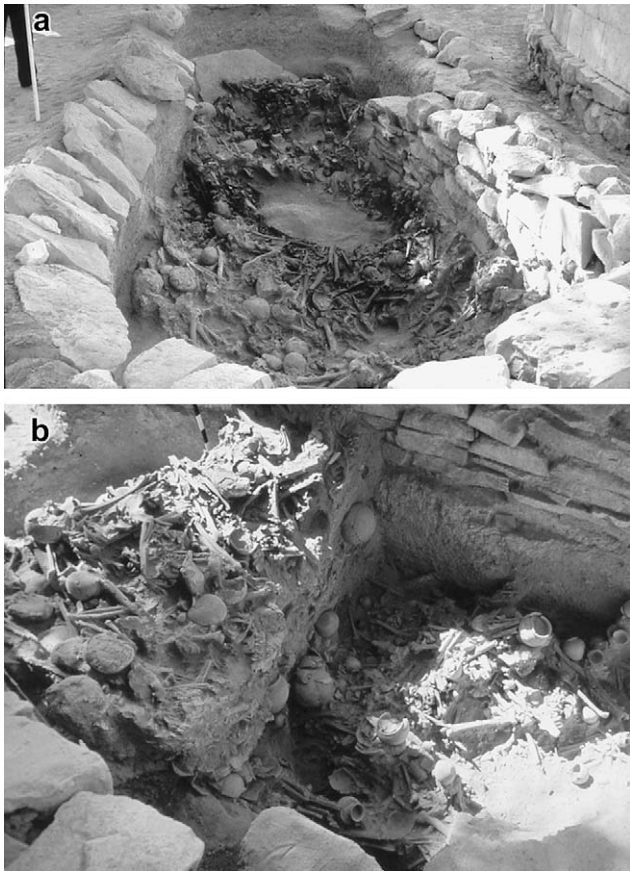


Fig. 3. Hili N pit-grave was originally excavated by an Emirati team (A) who left part of the burials located in the central part of the pit intact (B). The remaining c. 6 m³ of deposits were subsequently excavated by a French team (© W.Y. al Kikriti).

corpse could be placed. Among the approximately 600 individuals discovered in the pit, almost half had died before reaching adult age and a quarter before attaining five years.

The associated material, notably the pottery, is mainly of local origin, indicating that the people buried in the tomb were the same as those inhabiting the Hili oasis at the end of the 3rd millennium BC. All categories of the population, probably consisting essentially of agriculturalists and craftsmen, seem to have had access to collective burial without distinction of age, sex and social status.

The material found in the lower levels is predominately of local manufacture but pottery and ornaments imported from the Indo-Iranian borderland are also well represented. This situation is similar to that of the most recent monumental Umm an-Nar tombs at Hili as well as contemporary burials elsewhere in the Oman peninsula. Nevertheless, some differences exist that confirm the later date of the Hili N pit: very few ceramics of Makran origin (south-west Pakistan) and few soft stone vessels produced regionally (designated as *série récente*) were found in the pit.

The more recent levels of the burial are characterised by a decrease in the number of objects imported from the Indus valley as well as the apparition of local ceramics produced with less elaborate methods than during previous periods. The soft stone vessels start to show stylistic traits that will later be typical of the Middle Bronze age, at the beginning of the 2nd millennium BC.

3. Discovery of the food offering

Four hearths, used during the two last phases of burial (levels 3 and 4) were discovered inside the tomb. The precise purpose of



Fig. 4. The fire pit located in the upper layer of the funeral deposit in the centre of the tomb (© S. Méry).

these is not established but it seems clear that they were neither intended to burn all the bones nor one individual in particular. The hearth of particular interest to this article was located in the centre of the tomb, and penetrated the entire burial level 4 (Fig. 4). Two different fires, both of which seem to have been entirely controlled, had been lit independently (Gatto et al., 2003, 34–35). The traces of the first fire were partly covered by those of the second one that also caused the carbonisation of the food offering described below.

The observation, in the section, of burnt bones, still in anatomical connexion and presenting different degrees of burning, allowed the distinction between the periphery and the heart of the hearth. Stains of more or less ashy sediments as well as charcoal pieces also characterised this zone. Among the latter some vertically oriented twigs were identified as coming from the locally growing jujube tree (*Ziziphus spina-christi*) (Soulié, 2006). In the area where the bones are blackened, the temperature of cremation seems to have attained 300–350 °C (Gatto et al., 2003). In the grey coloured parts temperatures may have reached 550–600 °C and even 600–650 °C in the lowest parts, as indicated by the presence of white ashes as well as light grey, mineralised and cracked bones. In this part of the excavation, artefacts were rather rare. Except a few objects (copper rings, shells, sherds of locally and regionally manufactured pottery) characteristic of the late Umm an-Nar period, an imported stone stamp seal as well as an untypical soft stone vessel is worth special mention.

During the excavation season of 1999–2000, an oblong, carbonised mass, more or less in the shape of a 10 cm long and 6 cm thick loaf, was noted in association with Individual no. 1, who was partly burnt in the above mentioned hearth (Fig. 5). The lower part of the body was burnt after the complete decay of soft tissues that had taken place *in situ* according to the position of the thoracic cage and the left wrist. Buried during the last phase of use of the pit (level 4) this skeleton is one of the two best preserved primary burials in the tomb (Fig. 3). It was complete from the head down to the pelvis with the bones of the wrist (*carpus*) as well as other, so called unstable connexions, still preserved.

The carbonised lump was located more or less at the height of what would have been the stomach of the deceased, who was a young adult of undetermined sex, lying on his/her back but slightly twisted to the left. The left arm was bent upwards with the hand placed in front of the jaw, a little to the left of the chin.

4. Analysis and identification of the carbonised mass – microscopical and experimental approach

The carbonised mass that was slightly fragmented when retrieved from its initial context and later transported to

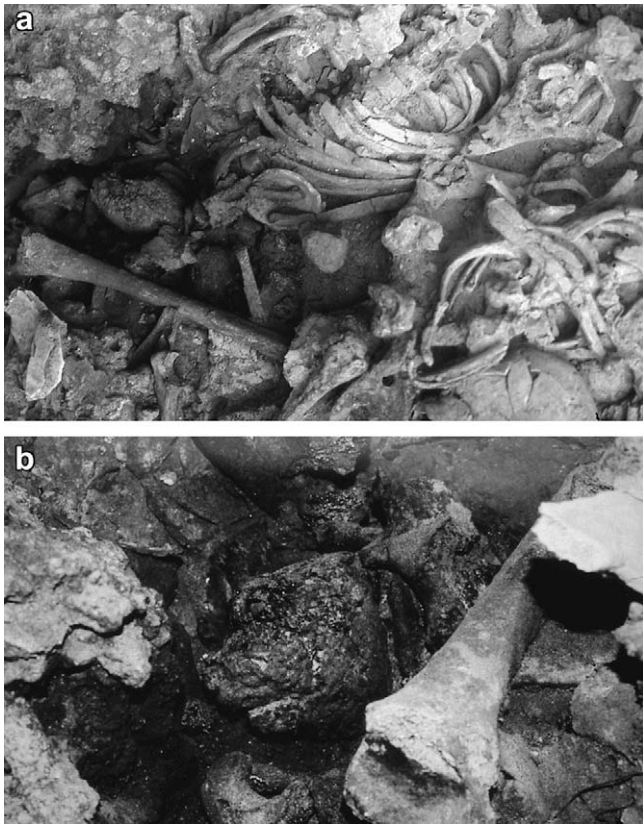


Fig. 5. The burial of Individual no. 1 with the position of the carbonised lump (a) and a detail of the latter (b) (© S. Méry).

a laboratory was examined with the help of a stereomicroscope. Of heterogeneous composition the lump presents portions of a slightly alveolate and shiny structure, interrupted by numerous patches, smooth and dull, covering at most a few cm² (Fig. 6a and b).

This structure of the carbonised mass was compared to and found to match very closely to that of an assemblage of carbonised whole date fruits found in a burnt building at the Iron Age site of Muweilah (Sharjah, UAE). In both cases, the fleshy and sugar-rich mesocarp of the fruits had transformed into an alveolate and glossy mass while the “skin” (botanically the epicarp) of the dates presents a smooth surface. The only difference between the Hili and Muweilah samples is the absence of seeds (date ‘stones’) in the former, which has been subjected to some sort of preparation, implying at least the stoning of the fruits and their shaping into a rounded form.

In order to confirm this first identification we decided to prepare masses of modern date fruits and carbonise them artificially. Four different qualities of the *Deglet Nour* variety from North Africa were chosen. They had all been collected in a ripe state but varied slightly in dryness and size:

1. Large ($L = 4\text{--}4.5$ cm), dry dates
2. Intermediate ($L = 3.3\text{--}3.9$ cm), dry dates
3. Intermediate ($L = 3.8\text{--}4.1$ cm), soft dates
4. Small ($L = 3.1\text{--}3.6$ cm), soft dates.

The seeds were removed and the remaining pericarp (fleshy part of the fruit) was worked manually into a rounded shape similar in size to that of the archaeological lump. The experimental date preparations, weighing more or less 500 g each, were then wrapped in aluminium foil and carbonised in an electric laboratory oven at 250 °C during 2 h. For comparison and after having been

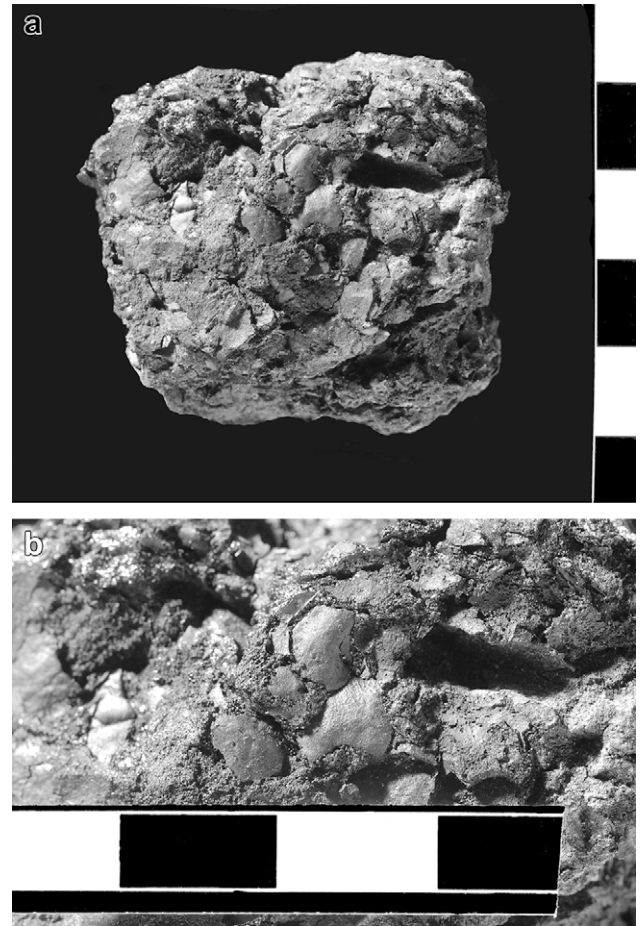


Fig. 6. The Hili N 3rd millennium BC date lump: general view (a) and detail of the surface (b). Scale in cm (© S. Oboukhov).

observed, two of the masses (nos. 2 and 3) were further heated during 1 h at 300 °C. This treatment did not significantly alter their initial morphology but made them somewhat more brittle.

The subsequent comparison, at a macroscopic and microscopic level, between the modern and archaeological lumps seems to confirm the hypothesis that the Hili specimen was indeed made from the fruits of the date palm (*P. dactylifera*). The experimental date lumps showed a similar structure with an amorphous surface strewn with fruit epicarps (Fig. 7a and b). However, the surface of the modern preparations was in general more shiny than the archaeological lump.

Among the four varieties used for the experimentation, no. 4 was the closest match to our archaeological sample with regards to the size of the dates. Moreover the less dry state of the fruits made them stick together, on the contrary to the drier varieties (nos. 1 and 2) that tended to fall somewhat apart.

5. The role of the date palm in Bronze Age Arabia

Remains of date palm are frequently found on archaeological sites in the Arabian peninsula, in the form of carbonised seeds and fruits as well as stem fragments and impressions of mats and basketry. The earliest examples of the consumption of dates in the region come from two Neolithic settlements, one situated on the island of Dalma (Abu Dhabi, UAE) and the other near Sabiyah (Kuwait) (Beech, 2003; Beech and Shepherd, 2001). These consist of a few carbonised date stones dated by C14 to the late 6th–early

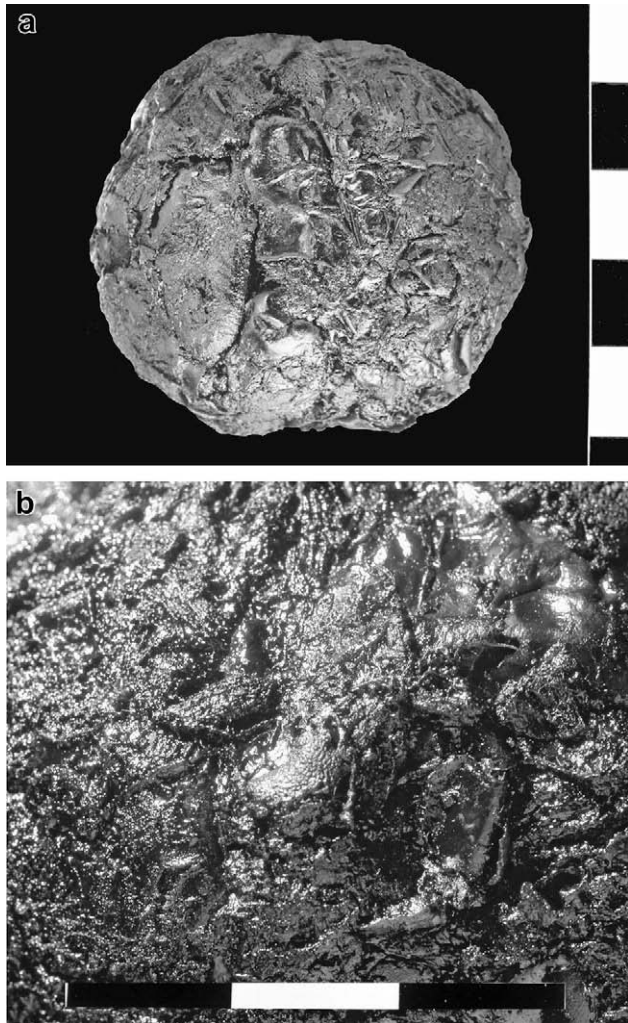


Fig. 7. An experimentally produced and carbonised date lump: general view (a) and detail of the surface (b). Scale in cm (© S. Oboukhov).

5th millennium BC. It is uncertain though if these remains came from wild or cultivated date palms and even if they were of local origin or imported from elsewhere, perhaps from neighbouring Mesopotamia.

On the contrary, date palm cultivation seems certain in Arabia from the 3rd millennium BC when remains of *P. dactylifera* become increasingly common on archaeological sites, particularly in the Oman peninsula (Cleuziou and Costantini, 1980; Tengberg, 2003). On Bronze Age sites date palm remains are often associated with the seeds or fruits of other cultivated plants, such as cereals and pulses. These finds suggest the existence of intensively cultivated date palm gardens in which perennial and annual crops were grown together under irrigation. This type of oasis agrosystem is particularly adapted to the climatic conditions of this part of the Middle East where limited rainfall and the absence of permanent watercourses prevent any practice of extensive agriculture.

Dates probably constituted the main product of the palm gardens and an important element in human diet. Rich in sugar as well as in vitamins A, B and D, the fruits can be consumed fresh or in a more or less dried state. Modern and historical sources also provide numerous examples of dishes or beverages prepared from dates, often in association with other ingredients such as flour or seeds (Landsberger, 1967; Nesbitt, 1993; Postgate, 1987).

The archaeological record, on the contrary, contains very little information on how dates could have been prepared. Indeed, the

finding from Hili N seems to be the only example of a food preparation made of these fruits known so far from prehistoric and early historic contexts in the Middle East. It seems to correspond to a date paste similar to traditional preparations of pitted or non-pitted date fruits consumed in the Middle East and in North Africa.

Another type of preparation made from dates is the date 'honey' or syrup, now called *dibs* (in Arabic), produced in specific structures, known traditionally as a *madbasa* in the Persian Gulf region. Bags with ripe dates are placed on a plastered floor with channels leading to a recipient in which the sweet liquid exuding from the fermenting fruits is collected. Such an installation has been discovered in an early 2nd millennium context at Qal'at al-Bahrain on the island of Bahrain (Højlund, 1990; Rougeulle, 1982).

Besides its valuable fruits the date palm provides many other useful products such as timber for building, leaves for basketry and the covering of roofs, fibres for making ropes... These uses have all been recorded from archaeological contexts in the form of macro-remains or impressions (Potts, 2002, 17).

In the absence of texts and with limited iconographic evidence, it is unclear whether the date palm also had a symbolic and ritual value in Bronze Age Arabia, as was the case in neighbouring Mesopotamia where the tree is frequently associated with divinities and involved in religious ceremonies (Jacobsen, 1976). The presence of an offering of dates in the Hili N grave certainly suggests that the fruit had a particular significance in funerary contexts. As an important foodstuff in life, dates were apparently also considered to be appropriate for the afterlife. Interestingly enough, this is not the only example of the association of dates with burial. Carbonised date stones are reported from several graves, dated to the mid- and late 3rd millennium BC, in the Royal Cemetery of Ur, in southern Mesopotamia (Ellison et al., 1978). Moreover, the jewellery found in the tomb of Queen Pu-abum (grave 800) at the same site included several golden pendants representing male inflorescences and fruit-bearing branches of date palm (Miller, 2000).

6. Conclusion

Examples of the offering of food from the plant world are extremely rare in funerary contexts in the ancient Middle East, to such an extent that one could draw the conclusion that this was not a common practice. On the contrary, animal remains in the form of bones from mammals and fish suggest that meat was often deposited with the deceased (for Mesopotamia, see Potts, 1997, 223–224). This state of fact may however be more the result of differential preservation than the reflection of actual funerary practices. In both the Hili N burial and in the Royal tombs of Ur, food remains had been fortuitously preserved through the contact with fire. In the vast 3rd millennium BC cemetery of Shahr-i Sokhta, eastern Iran, plant remains (wood, fruits and spices) are exceptionally well preserved in particularly dry and saline conditions (Costantini et al., 2003). It may thus be that perishable plant foods, both unprepared or more or less transformed, were indeed part of funerary deposits in the Bronze Age in the Middle East in general as well as in eastern Arabia, for which the date offering from Hili N constitutes the first and so far unique example.

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