Results, limits and potential: burial practices and Early Bronze Age societies in the Oman Peninsula

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Summary
This paper presents the results of research carried out between 1998 and 2008 at Hili (eastern region of Abu Dhabi, United Arab Emirates), by a multidisciplinary team consisting of archaeologists, archaeological scientists, anthropologists, geologists, potters and stonecutters. The research incorporated the excavation of a collective pit-grave from the end of the Umm an-Nar Period, the study of the extraction, cutting, and setting up of the stone used to construct EBA tombs at Jebel Aqlah and Hili, and the study of local techniques of pottery fabrication at the end of the 3rd millennium BC.

Keywords: Arabia, Bronze Age, collective grave, architecture, pottery

Introduction

Without texts, iconography or specific finds in context, we know nothing today of funeral rites and their development in the Oman Peninsula during the Neolithic and Bronze Age, although we are able to identify certain funerary practices and activities based on data from excavations and studies of material. In the present article I will concentrate on the Early Bonze Age, especially its second phase the Umm an-Nar Period between 2700/2600 and 2000 BC, as data are more numerous and accurate for this time period.

Our knowledge of funerary practices is dependent upon the state of preservation of the remains, and the funerary monuments in the Oman Peninsula are usually ruined and incomplete. The bone material is not always preserved, and when it is, it usually consists of poorly preserved fragments. Another limitation is that our knowledge depends very directly upon the standards of excavation, study and publication. Finally, our hypotheses and classifications are conditioned by certain methodological or theoretical presuppositions: this is the case for the palaeo-demographic reconstructions, whose principles and procedures differ widely among researchers of different schools. This is not without effect on the mortality curves as well as on the hypotheses concerning the possible causes of death, and thus on the comparisons which can be made between sites. I will not enter into this debate, which more directly concerns the physical anthropologists who study the skeletal remains. Despite these reservations, it is clear that the data from funerary archaeology available today in the Oman Peninsula throw important light on ancient societies – their population, their social organisation – which is discussed here for the Umm an-Nar period.

The most frequent funerary structure in the Umm an-Nar period is the monumental circular stone tomb (Figs. 1 and 2), whose dimensions and number of compartments doubled over time (e.g. Vogt 1985, Frifelt 1991, Gagnaison et al. 2004). These are collective tombs, in which burials took place as deaths occurred, the deaths appearing to have been natural for the most part, over a period of time which is very difficult, even impossible, to estimate based on published data, but which was probably not more than one to two centuries according to the pottery assemblages. Correspondingly, the individuals buried in each tomb number from several dozen to nearly 400 (Fig. 3), although the calculation of MNI (Minimum Number of Individuals) is such a complex procedure for such deposits that it would be more correct to speak of "estimates", especially as almost all of the tombs of this type have been plundered.

In the Oman Peninsula during the Umm an-Nar period, two other types of burial exist, but they are much more rarely found, due to lack of efficient research. These are pit-graves, dug near the older monumental tombs (Figs. 1 and 4), which exhibit two types:

(1) collective graves, dating to the very end of the Umm an-Nar period and prefiguring the underground tombs of the Wadi Suq period (Al Hadouh 1989; Al Tikriti 1989; al Tikriti and Méry 2000). The pit-graves are large in size and were discovered in an undisturbed state, which is *never* the case for the circular tombs. The grave at Hili contains the remains of 625 individuals (MNI), without any selection by age or sex, according to the work of K. McSweeney (this volume), and whose natural deaths occurred over a time period of 100 to 200 years at the most, according to the radiocarbon dating on bones and charcoal and to the analysis of the artefacts. Everyone in the community had access to the collective burial.
(2) graves filled with bone material and artefacts, dated to about 2400 BC for the few tombs we know; these are secondary burials, with adaptations (Benton 1996, Montchablon et al. 2003).

Aims of the recent research conducted at Hili and methods of study

We know that profound transformations occurred in the societies of the Oman Peninsula at the end of the Neolithic, leading to the emergence of new societal configurations in the Bronze Age, but the mechanisms in play are still largely to be documented and clarified. Whatever the mechanisms and their relation to climatic developments, it is in the 3rd millennium that an agricultural system appeared which was to last to the

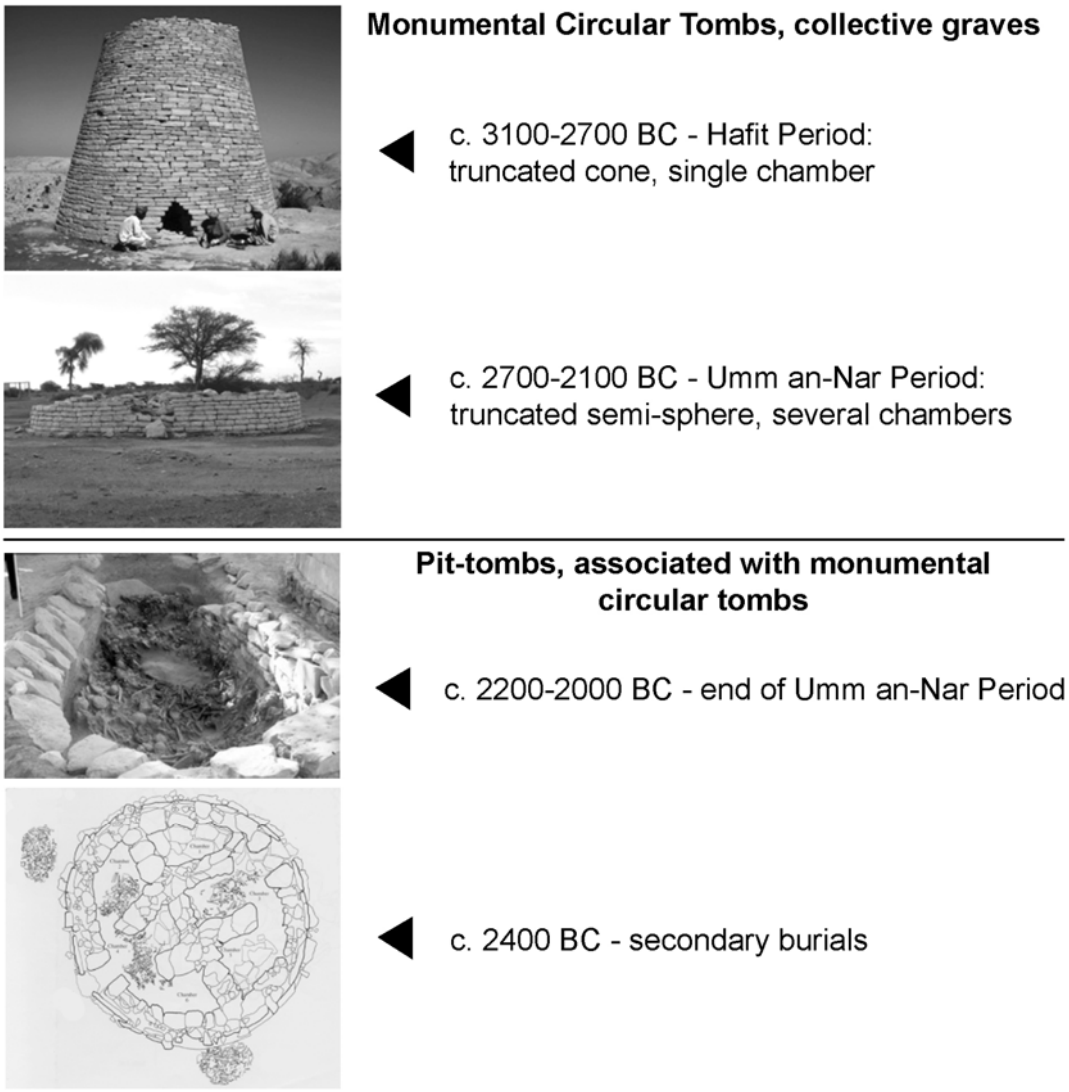

Figure 1. The three types of funerary structures in the Early Bronze Age of the Oman Peninsula.

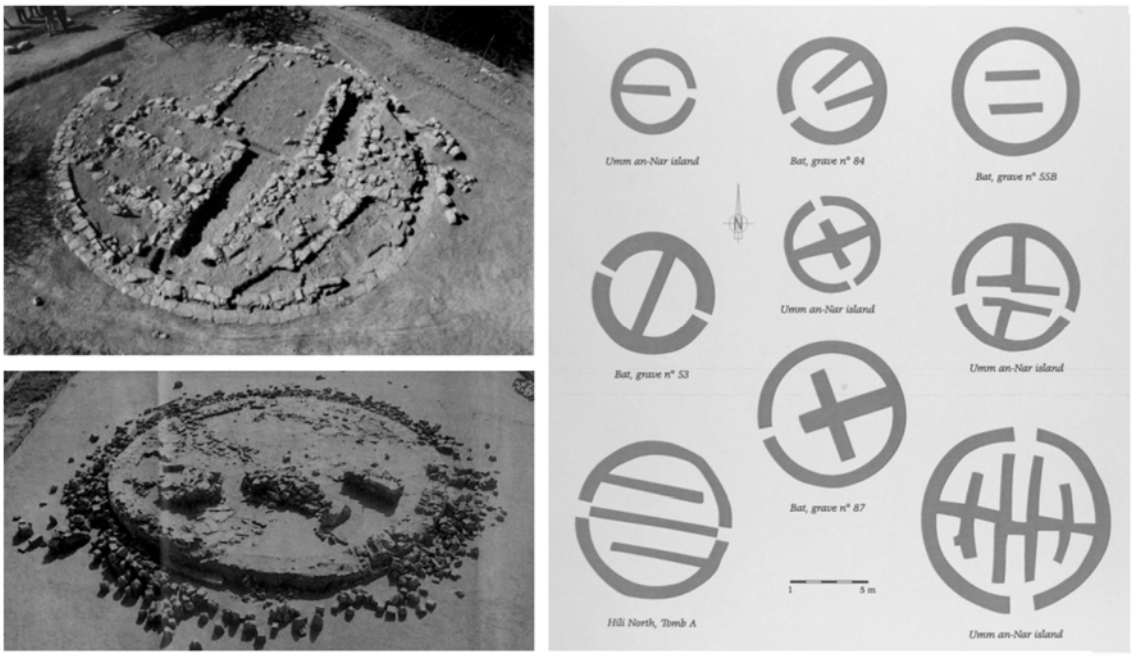

Figure 2. Main architectural features of the monumental circular tombs during the Umm an-Nar period.

Figure 3. The Umm an-Nar period monumental circular tombs are collective tombs, in which burials took place as deaths occurred.

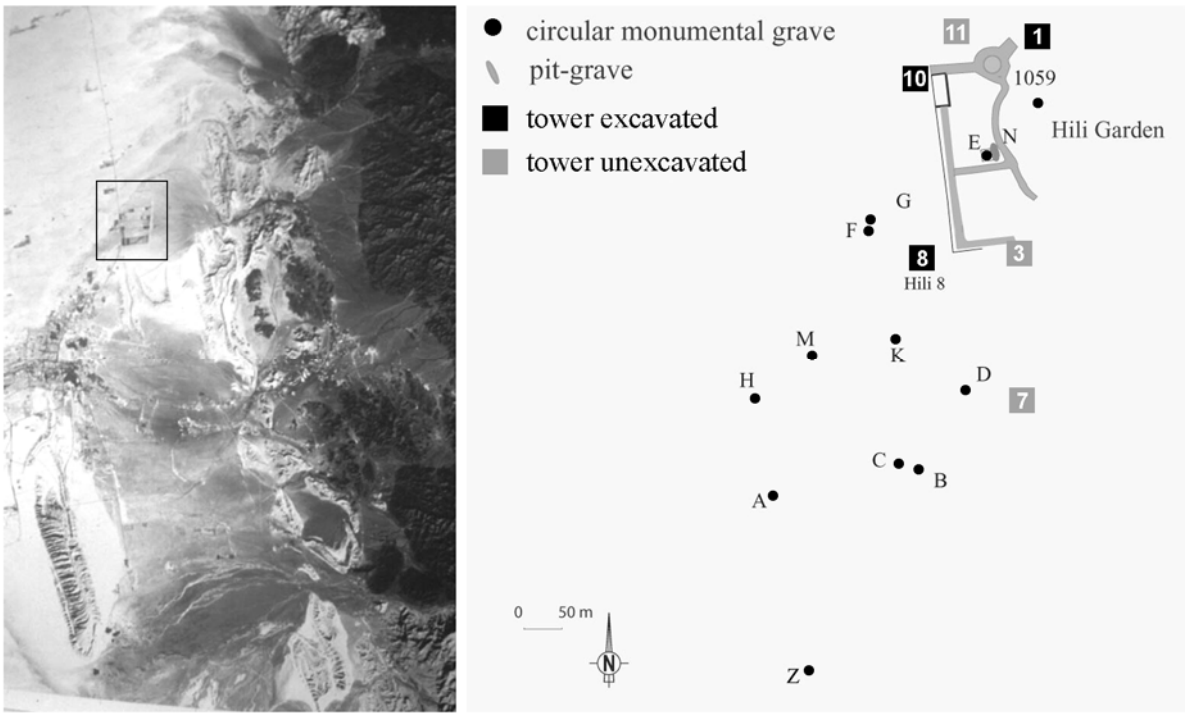

Figure 4. Distribution of the three types of Umm an-Nar period funerary structures.

present day: the oasis, based on the irrigated cultivation of the date palm, and which concentrates the sedentary occupations in the piedmont areas and in the mountain valleys, in contact with the wadis and the water tables (Tengberg 2003).

It does not appear that there was a local seat of invention for pottery (unlike Khuzistan and Baluchistan beginning in the 7th millennium); the pottery production established in the Oman peninsula in the 3rd millennium appears to have been a well-developed craft, with its origin in the Kech-Makran region and south-eastern Iran (Méry 2000, Potts 2005). However, this initial phase of production corresponds to the ferment of a technical and stylistic technique peculiar to the Oman peninsula, which grew during the 3rd millennium, along with other arts related to

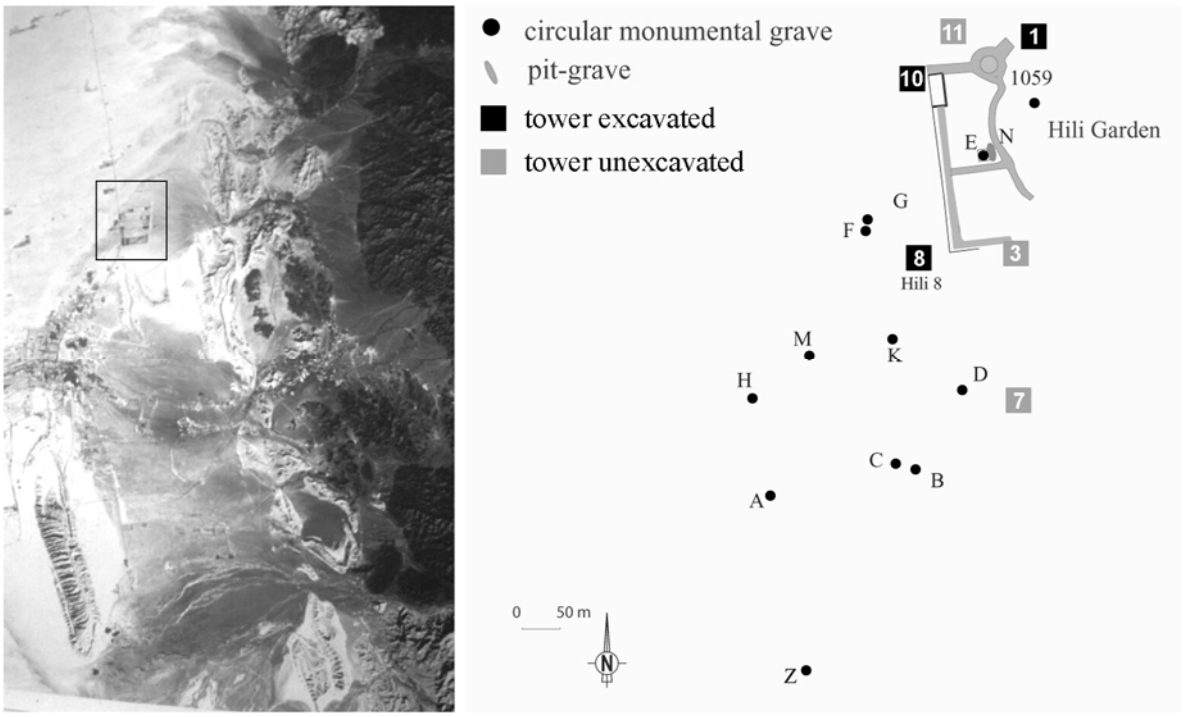

Figure 5. Distribution of the Umm an-Nar tombs at Hili.
The architecture of the tombs was studied in order to better establish the relative chronology.

fire (such as copper metallurgy and possibly ornaments in faience). Other specialised craftwork developed in the same period, in particular finely worked stone, mud brick construction and vessels in soft stone. All this contributes to forming the image of a "coherent" cultural entity, in any case one that shares an ensemble of rules and representations, first of all in the funerary domain.

The most recent advances in funerary archaeology enable us today to record these processes more precisely, and it is this which I will attempt to show in presenting the results of research carried out between 1998 and 2008 at Hili, by a multidisciplinary team consisting of archaeologists, archaeological scientists, anthropologists, geologists, potters and stonecutters. Our research concerned three aspects:

1) Excavation was resumed at one of the rare collective pit-graves mentioned earlier, firstly excavated in by M. Al Haddu (1989) (Fig. 4). At Hili N, the funerary deposits of this grave were intact, with a complex but readable stratigraphy, covering the last two centuries of the 3rd millennium. The relative chronology of the different funerary deposits and the succession of funerary manipulations were reconstructed with field anthropologists specially trained in the excavation of complex collective burials (Gatto et al. 2003; McSweeney et al. 2008; Méry et al. 2001; Méry et al. 2004; Méry et al. 2008).

2) The study of the extraction, cutting, and setting up of the stone used to construct EBA tombs at Jebel Aqlah and Hili. This facilitated a better understanding of ancient techniques and craft specialisation, and clarified the relative chronology of the Umm an-Nar tombs (Gagnaison et al 2006). The core of that study was constituted by the tombs at Hili Garden and Hili Fun city (Fig. 5). Numerous tombs of the Umm an-Nar circular monumental type were excavated at Hili in the period from the early 1960s to the early 80s, and the study aimed to establish the relative chronology of these Umm an-Nar tombs based mainly on a study of their finely worked stone. This was necessary as two-thirds of the tombs lacked the artefacts and pottery necessary for relative dating.

3) Finally, the techniques of pottery fabrication were studied, in particular the techniques of shaping, in order to work on the question of the ancient techniques and craft specialisation. Such issues are central to debates surrounding the EBA in the Oman Peninsula.

Main results of the research conducted at Hili

Tomb Numbers and Chronology

The first result of our research was a re-evaluation of the number of monumental tombs at Hili and the duration of the period during which they were constructed was possible. It was previously considered that 14 circular tombs were constructed at Hili over a time period of 600 or 700 years, from about 2700/2600 to 2000 BC. But our studies have shown that this time span is shorter, as there was probably no construction of Umm an-Nar circular tombs after 2300-2200 BC at Hili. Moreover the total

Figure 6. The facing-stones of three Umm an-Nar monumental circular tombs, whose location at Hili is still not known, were reused in Hili 8 settlement.

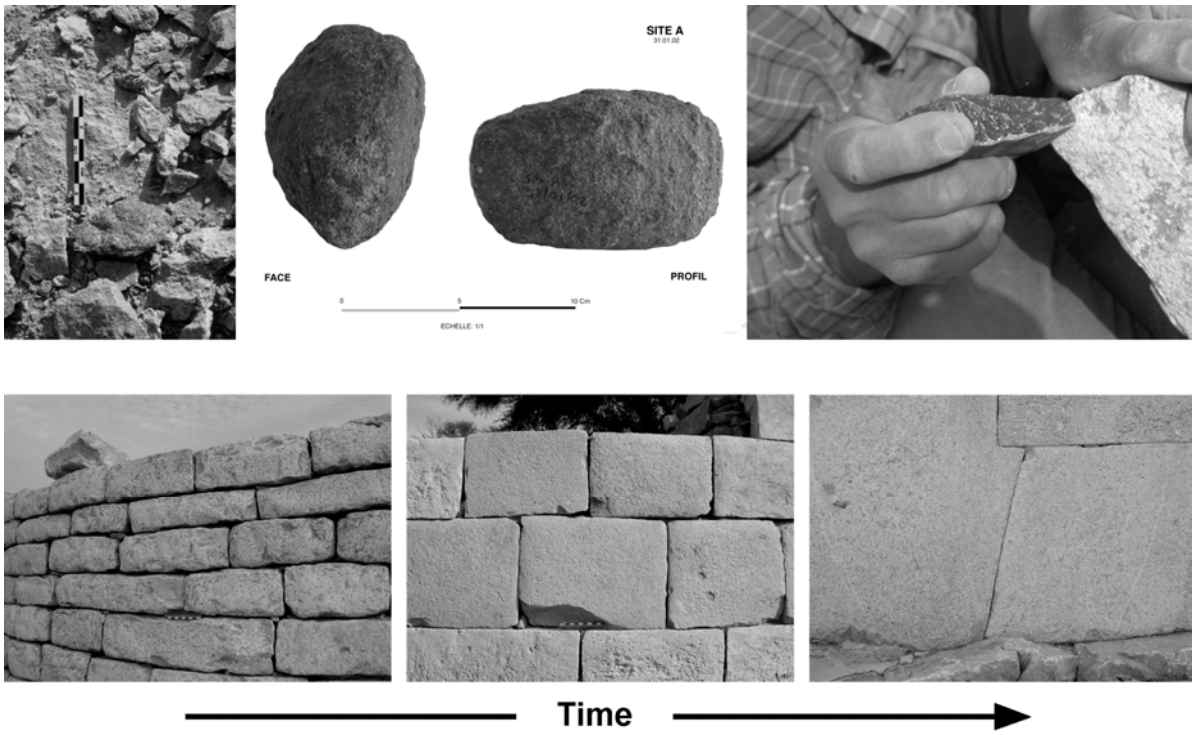

Figure 7. Top: Diorite percussion tools used for the cutting and picking of the calcarenite blocks. Bottom: in the Umm an-Nar period, cutting and dressing of the facing blocks was completed at the place where the tombs were to be constructed and the search for the 'perfect join' was growing through time.

number of tombs is not 14 but 17, in addition to the pit-grave, because there were three more circular tombs at Hili Garden (still not located), indicated by facing stones that were reused at the beginning of Period II at the Hili 8 settlement (Fig. 6). Moreover a tomb was discovered, or better, re-discovered by ADACH south of the enclosure of the archaeological park, and designated tomb Z. It was excavated in the early 1970s but forgotten thereafter.

Tomb Construction Techniques

The second result of our research was an improved understanding of the processes of construction of the tombs and the architectural sequence at Hili. C. Gagnaison (2006) has researched the origin of the construction stones and identified many traces of extraction in the layers of a limestone range, the Jebel Aqlah, located 1.5 km from Hili. The zones which were preferentially exploited in the different phases of the Umm an-Nar period were able to be defined. The local limestone, hard and difficult to work, breaks easily when cut: the blocks were thus summarily prepared on the Jebel Aqlah, which limited problems of transport and loss. During the Umm an-Nar period, cutting and dressing of the facing blocks was completed at the place where the tombs were to be constructed, in order to adjust the joins. The search for the 'perfect join' was growing through time, as documented by J.-C. Bessac and P. Dubeuf (Fig.

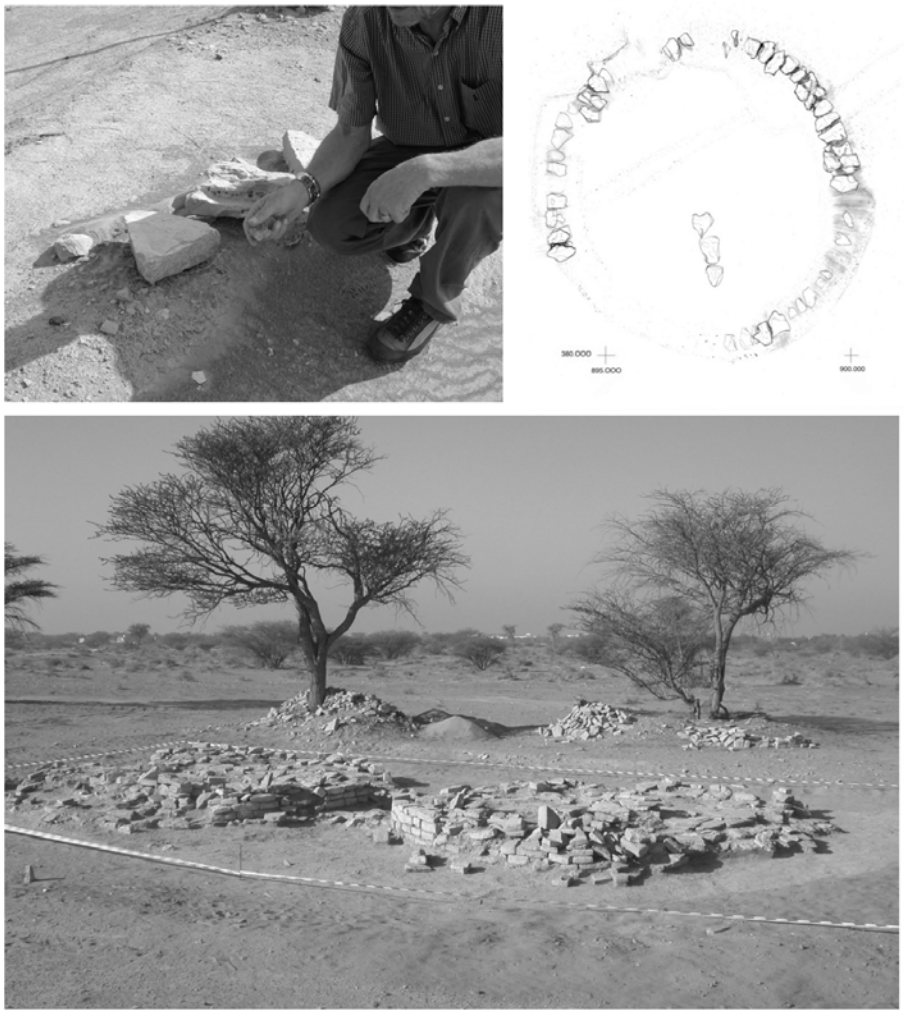

Figure 8. The oldest Umm an-Nar circular tombs include small facing stones only, worked on the edge and superficially dressed.

Figure 9. Tomb H is the most recently constructed monument among of the oldest group of monumental Umm an-Nar circular tombs at Hili.

Figure 10. Tomb A, one of the most elaborate Umm an-Nar circular tombs at Hili is characterized by large facing stones, worked parallel to the edge and carefully dressed on the 5 sides.

Figure 11. As for Tomb M, Tomb J is classified in the intermediate chronological group of Umm an-Nar tombs at Hili.

7). Only stone tools were used by the stonecutters; dozens of fragments of these diorite percussion tools, whose efficiency has been proven by experimentation, were found around the Hili tombs and on Jebel Aqlah.

Except for these two very early Umm an-Nar tombs at Hili, constructed at the same time, it is now clear that the tombs were built one after the other and that there was a continuous and almost *linear* development in the quality of construction during the Umm an-Nar period (Gagnaison et al. 2006). Tomb Z, south of the cemetery, is the earliest tomb (Fig. 8); Tomb 1059, located in the heart of the Umm an-Nar settlement, is the latest one.

The oldest tombs are the simplest, with small facing stones, worked on the edge and superficially dressed (Figs. 8 and 9). This work may have been carried out by individuals who cut stone only occasionally. The

youngest tombs are the most elaborated ones, with much bigger facing stones, worked parallel to the edge and carefully dressed on the 5 sides (Fig. 10). According to J.-C. Bessac, these later stonemasons were experienced craftsmen, no longer limited by size to the thickness of the natural stone layer, which enabled reduction of the number of courses. The tombs with underground chambers belong to this group.

Other tombs at Hili are classified in an intermediate group (Fig. 11), including the tombs identified from the reused facing stones at Hili 8 (Fig. 6). This indicates that Tomb M is not the oldest Umm an-Nar tomb as was previously thought (Cleuziou 1989). It also shows that the beginning of the Umm an-Nar period precedes Period IIa at Hili 8.

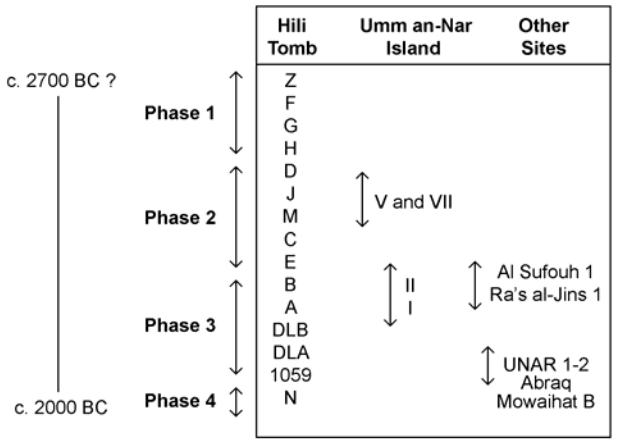

Figure 12. The relative chronology of the Umm an-Nar tombs at Hili and their correspondence with other Umm an-Nar tombs (monumental circular tombs and pit-graves) from the Oman peninsula.

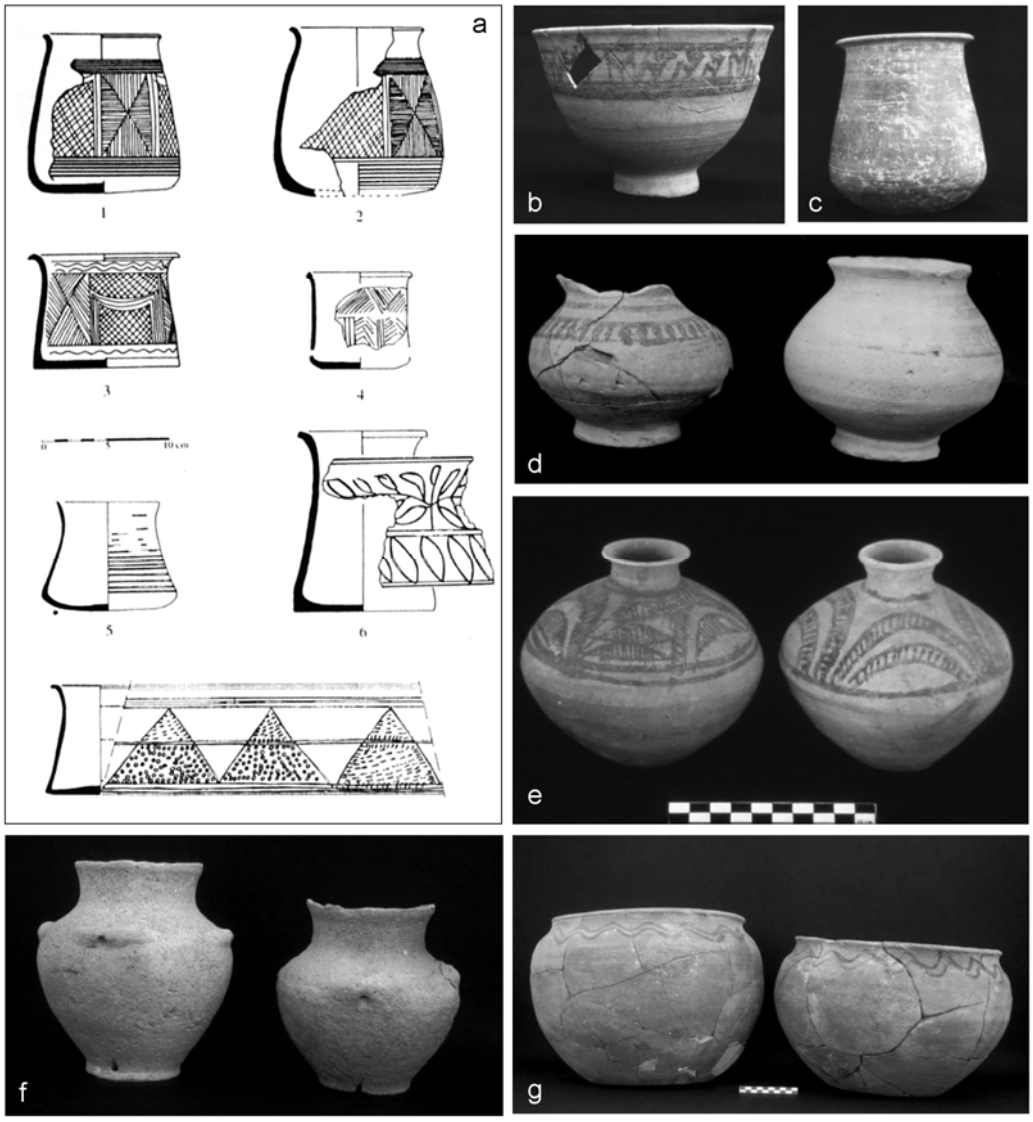

Figure 13. Some examples of imported and local pottery wares and types characteristic of the Hili tombs at the end of Phase 3 (Tomb A at Hili North). Many of the same types are associated with the first use of pit-grave N. Examples a-d: Dasht (Kech Makran, Pakistan); e: south-eastern Iran; f: Oman Peninsula; g: Hili. Not to scale. Drawing © P. Gouin, photographs © S. Méry.

Chronological Phases at Bronze Age Hili

A third result of our research is the fact that four chronological phases are now reconstructed for Hili in the Umm an-Nar period (McSweeney et al. 2008). Our phases are primarily based on architectural analysis. Phases 1 to 3 correspond to the period of construction of the circular monumental tombs, Phase 4 to the pit-grave at Hili. The correspondence between Hili tombs and other Umm an-Nar tombs in the U.A.E. is illustrated in Fig. 12.We know very little about **Phase 1**, c. 2700-2600 BC, as the tombs (Z, F, G, H) were in a ruined state when discovered. Material was rare, but also remains unpublished.

Phase 2 corresponds to the construction of the *intermediate circular tombs*, from about 2600-2500 BC. Little is known about the grave goods, except for Tomb M – in the middle of the sequence. Its pottery has good parallels with Period I, IIa-c1 and IIc2 at Hili 8 settlement, and we also know that Phase IIa corresponds to the construction of a building at Hili 8 which incorporates facing stones from Umm an-Nar tombs that are similar, but not identical, to those of Tomb M.
Phase 3 corresponds to the elaborate tombs, constructed from about 2400 BC. The most elaborate are the later ones. They date to a late but not final phase of the Umm an-Nar period, characterised by the importance of imported prestige artefacts from the Dasht valley in Kech-Makran, the Indus valley and possibly south-east Iran, but local and regionally-produced thrown pottery vessels are also characteristic (Fig. 13).

In **Phase 4**, no further monumental circular tombs were constructed at Hili, but the pit-grave was dug ca. 2200/2100 BC. Grave goods from the first period of use of the pit-grave indicate that the population and the social structure did not change as the local pottery is the same (in wares and types), and the proportion and composition of personal ornaments, including imported or rare items, are the same or similar (Fig. 13). During the second period of use of the pit-grave, the population did not change, although some important changes did occur. Exchange networks, such as with the Indus peoples, became less frequent and types of imported goods differed. Even more significant is the development of local pottery production.

Craft Specialisation

As a final result of our research, the excavation of these tombs and the analysis of the pottery they contained provide information on pottery production and craft specialisation within an EBA oasis such as Hili. The excavations carried out since the end of the 1960s have produced evidence for the existence of an agricultural and village population at Hili, but also of craftsmen whose degree of specialisation increased in the 3rd millennium – stonecutters as we have seen, but also potters. Small-scale metallurgy was also practised at the site, and possibly the cutting of soft stone, indicated by the discovery of a block of chlorite near Tomb H.

The technological analyses and the experiments which we have carried out together with S. Van der Leeuw and A. Dupont-Delaleuf during the study of the material from several tombs at Hili (tomb M, tomb A of Hili North and the pit-grave tomb N) have provided evidence for the use of thrown bases for the shaping of domestic pottery (Fig. 14). This is certain at Hili from at least 2600 BC, but throwing in the strict sense of the complete pot – that is, of a centred ball of clay, hollowed and raised – was probably not yet mastered.

This technique is not even certain 500 years later, as indicated by the extensive technological study which we have made of the material from the pit-grave. If so, it would have been exceptional, concerning only small or medium-sized vessels. Most of the domestic pottery was made from coils which were finished or shaped on the wheel, or from turned coils on a pinched, round flat ball of clay. But some were shaped on a thrown base.

The variety of technical styles and the degree of technical skill necessary indicates that knowledge of pottery fabrication at Hili continued in differentiated traditions. As indicated by the material discovered in the pit-grave, several "units" of production would have functioned at the same time at the end of the 3rd millennium, and produced groups of vessels which the technological and typological study is able to distinguish. I believe that this is the expression of an important phase of technological innovation in the region in this period, a phase of innovation that is perceptible in other domains, as shown for the funerary architecture.

Were the makers of domestic pottery specialists? Probably, in the sense that they mastered techniques not shared by everyone. Did they produce their pottery within the home or in specialised workshops? We have too few elements to judge this. However, a minimum of four "units" of production have been defined for each main phase of funerary deposit in the pit-grave of Hili, and these "units" of production were contemporary in their operation. We may thus suppose that production was probably organised within households. The fact that technical differences were observed between each unit supports this hypothesis, especially as these gaps persisted over time, through several generations. Were these full-time specialists? Probably not, as the techno-economic system existing at Hili in this period was founded on exploitation of the resources of an agricultural oasis, and it is reasonable to suppose that these potters were also farmers.

Conclusion

The excavation of Tomb N and the re-examination of the large circular tombs of Hili have provided new information on the chronology and the development of craft techniques and trade in the Umm an-Nar period. The monumental circular tombs do not represent the only model in use in the Oman Peninsula at the end of the

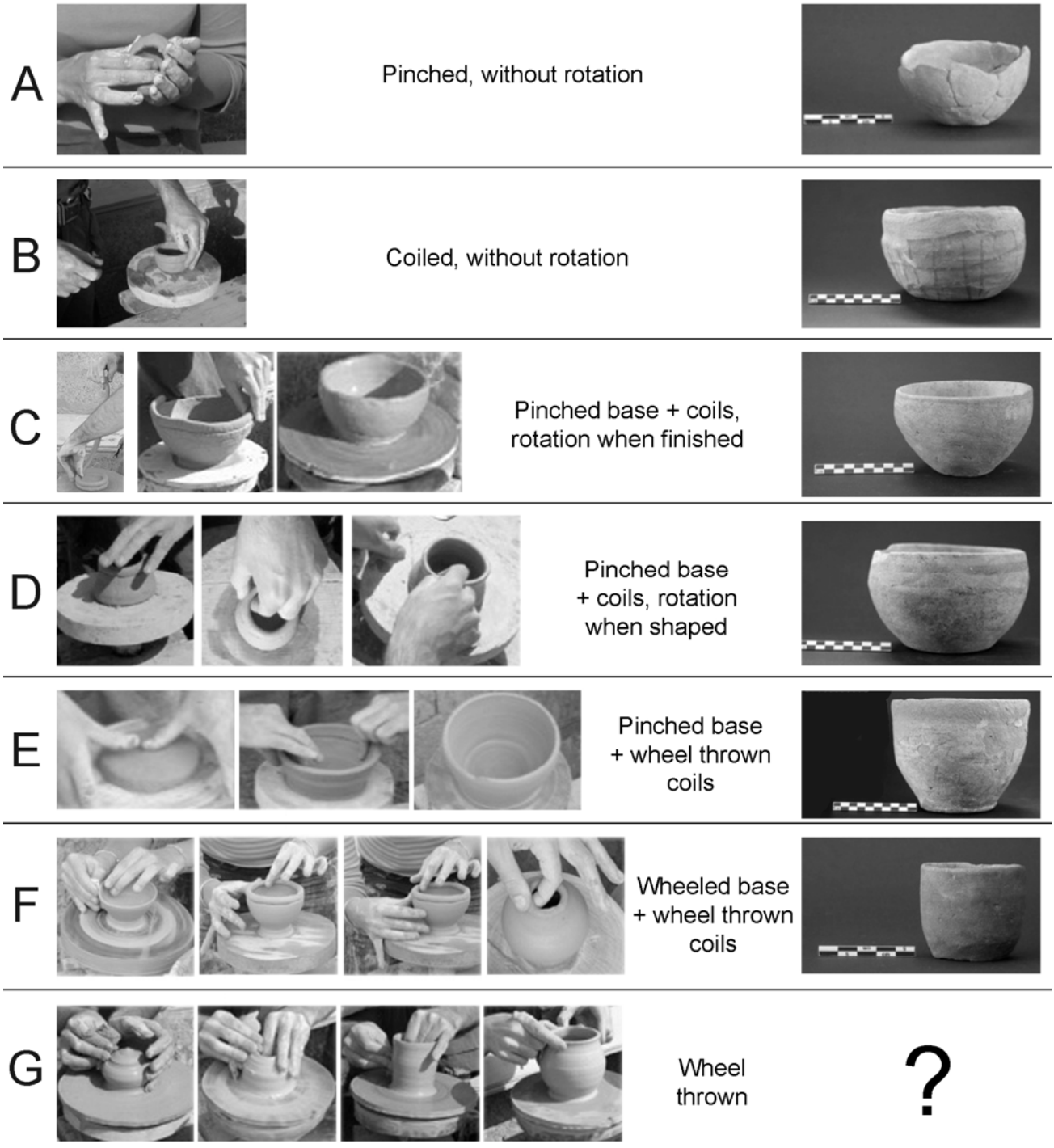

Figure 14. Six different shaping techniques were identified among the local (Hili Sandy Red Ware) and regional (Omani Fine Red ware) pottery wares at Hili, but wheel throwing of complete vessels (technique G) is not certain at the end of 3rd millennium BC.

Early Bronze Age, and the collective pit-graves of the end of the Umm an-Nar period do represent a new type of tomb, which appeared about 2200 BC and disappeared at the turn of the 2nd millennium. These changes correspond to the end of the Umm an-Nar period and herald the enormous subterranean tombs of "Wadi Suq" type. At about 2000 BC, this new "Wadi Suq" culture was to emerge throughout the Oman Peninsula, and all aspects of the material culture were to change or be re-arranged again. This was to be the Middle Bronze Age.

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