Tower-fortresses of Ancient Magan
A study of the tower-fortresses of the third millennium on the Oman Peninsula

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Introduction

From the early Akkadian period, c. 2350 BC, Magan enters the Mesopotamian world scene. Sargon of Akkad boasted in his famous inscription of the ships of Magan coming to the quarry of Akkad, together with those from Dilmun and Melluha, while his successors almost showed a predatory interest in it. The reason for this, was the fact that ancient Magan, identified as modern Oman, had an abundance of natural resources, including lead, silver, high quality stones such as diorite, a variety of soft stones and semi-precious stones, but above all sulphide copper, which seems to have been exploited from the 4th millennium until the Islamic period. Around the same time that we find Magan mentioned in the Akkadian texts as one of the major players in ancient Mesopotamia, we see new features occurring on the Oman Peninsula. We see the emergence of larger settlements with one or more tower-like buildings , new types of burial tombs, an increase in the copper trade and sings that indicate stratification of the society. This thesis will focus on the first feature mentioned, namely the tower-fortresses found in the larger settlements.

The distribution of these so called tower-fortresses runs from the Arabian Gulf to the Indian Ocean and from the area of Sharjar to the Sharqiyah (Crawford 1998, 112). The towers show more similarities than differences. A total of 15 tower-houses have been excavated or surveyed by archeologists in the past decades and yet their purpose inside the settlements is still poorly understood. Several major factors hinder the interpretation of these buildings. First of all there is very limited data available, with only a handful of the tower-fortresses having been excavated and fully published. Secondly, the fact that we have not a single written record from ancient Magan itself makes the interpretation of these structures difficult.

Bearing these handicaps in mind, this thesis will nonetheless focus on the socio-political meaning of these tower-fortresses. What can these structures tell us about the economical, political and social situation on the Oman Peninsuala during the third millennium B.C.? By answering this specific question, we might get a better understanding of the socio-political situation in ancient Magan, as well of the entire Gulf region at the time of the Akkadian expansion till the Ur III period.. The research questions that will be addressed in this thesis are: How are these structures build? What kind of social organization would have been necessary to archive this? Are these structures related to the copper mines of the Oman Peninsula, as some archeologists suggest? Could these structures have functioned as dwelling for the local elites?

To answer these questions, this thesis will consist of four main chapters. Chapter two will discuss the chronological context of the area in which Magan was located, introduces and provides a definition for the tower-houses. Chapter three will discuss the evolution of the settlement pattern on the Oman Peninsula, where I shall discuss four of the best documented tower-house in more detail, namely the one at Hili 8, Bat, Bidya and Tell Abraq. The chapter four will analyze and evaluate the existing theories about the tower-houses and I shall offer an alternative theory by taking into account the locations, size and construction techniques of these buildings, using the survey and excavation rapports. Chapter five will discuss the decline of ancient Oman and the demise of the tower-fortresses.

Ancient Oman

During the early Agade period, c. 2350 B.C. Magan enters the Mesopotamian world stage. Sargon of Agade boasted in his famous inscription of the ships of Magan coming to Agade, together with those from Dilmun and Melluha, while his successors almost showed a predatory interest in it (Potts 1999, 36). Rimash and Manishtusu campaigned against it, while Naram-Sin claims not only to have mined diorite for his royal statues in Magan, but also campaigned against it and won a great victory. So where was this famous land that even the kings of an empire wanted to conquer?

The area referred to as Magan in ancient times, was located on the Oman Peninsula and consists today of the modern states of the United Arab Emirates and the Sultanate of Oman (Fig 2). In geographical terms, the Oman Peninsula can be roughly divided into three main areas. The first area is the northern coastal strip from Qatar to the Musandam. The second area is east of the great mountain range of the Hajar al Gharbi, with the fertile Batina coast and the western slopes of the mountain range with the oasis being the third geographical area (Crawford 1998, 105).

During the Last Glacial Maximum, from ca. 6800-8000 B.C. the winds blowing in the desert regions of the globe were too strong and too severe for humans to endure (Glennie et al 1994, 2-3). This might very well explain the fact that archeologists have so far not found any settlements older than 8000 B.C. on the Oman Peninsula (Potts 2001, 35). After the Last Glacial Maximum a more milder and slightly moister climate was introduced in the region which lasted until 3000 B.C., this period is also described as Climatic Optium (Glennie et al 1994, 3). After 3000 B.C. the modern, arid climate set in and even though some minor climate fluctuations have occurred since then, it is safe to say that the basic pattern observable in the region today, has been the same for the past five millennia

The third millennium at the Oman Peninsula

It is during the third millenium that we find the first substantial structures on the Oman Peninsula, in the form of large, collective beehive-shaped tombs. They are found from the Umm-an Nar area to the al Hajar mountains and down to the Sharqiyah. Named after the site Hafit where they were first discovered, these "Hafit-"type tombs are completely without precedent in the archeological sequence. The tombs can be divided into two types (Crawford 1998, 108). The first group is more conical in shape, stone built, usually constructed with a number of concentric ring walls surrounding the burial chamber itself and the space between the ring walls is filled with smaller stones (fig 3a). The second type of tomb has a lower, humped profile, has usually an inner and outer wall, the space between the walls is filled with rubble and the whole construction covered with a mound of stones (Crawford 1998, 109) (fig 3b). Since most of the Hafit tombs were robbed in antiquity, little data is available on the number of occupants. The tombs found at Jebel Hafit range in size, from 7 to 11m in diameter, whereas the Jebel al-Emalah examples are approximately 11 to 12m across. To date roughly sixty tombs that have been excavated, have also been published (Potts 2001, 30). The funerary goods found inside these tombs consists of stone and faience beads. The basis for dating these tombs to the early third millenium (ca. 3000 B.C.), consists of a handful of small, biconical ceramic vessels. However, these vessels are not only superficially reminiscent of the Jamdat Nasr pottery known from Sumeria, but analysis of the ones found at Jebel Hafit and Jebel al Emulah have been confirmed that this material was

imported, some even form the type site of Jamdat Nasr in southern Iraq (Merry1991, Mery&Schneider 1996 in Potts 2001, 37).

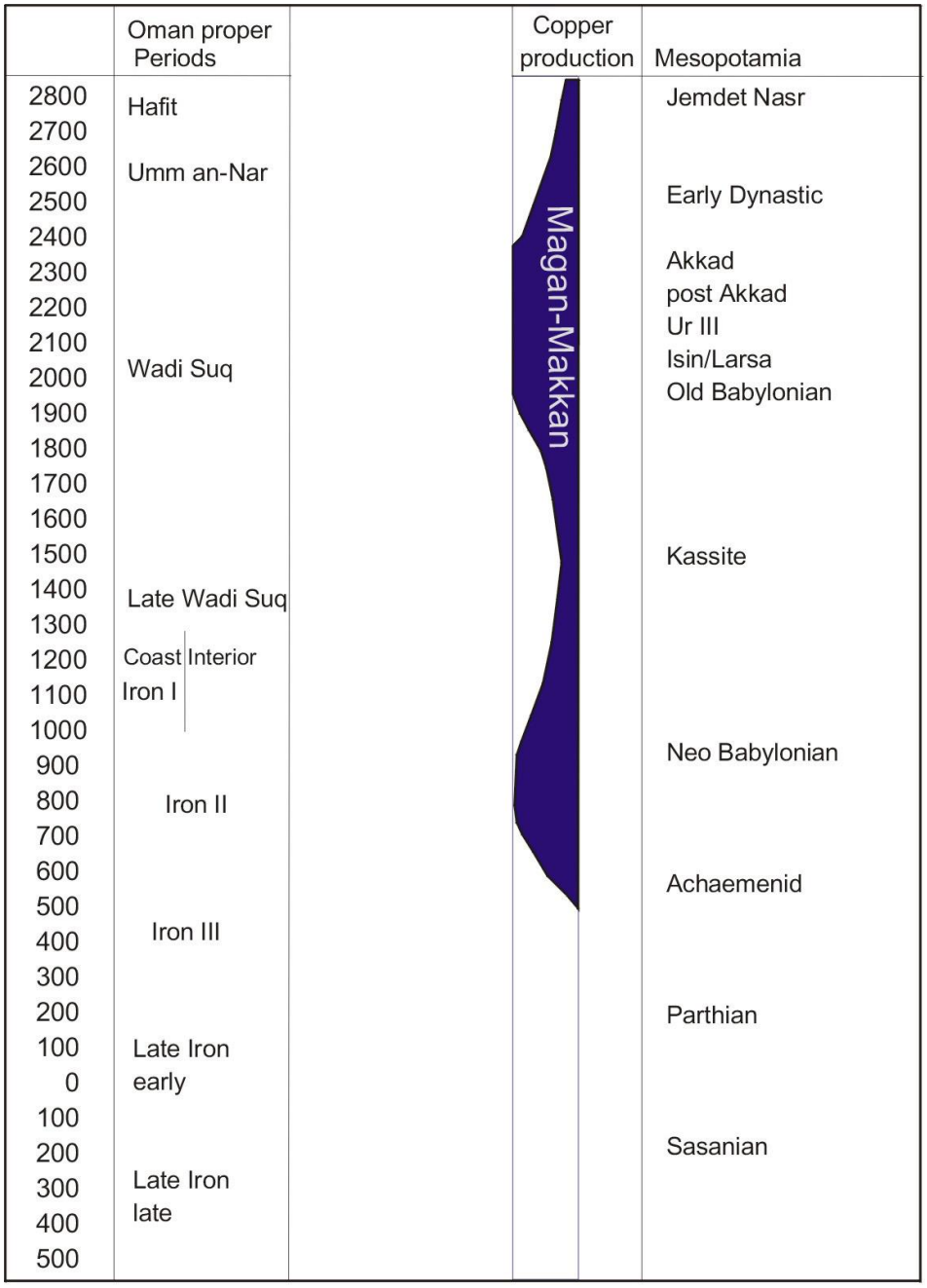

Fig 1: Chronology for the Oman Peninsula and Mesopotamia

Fig 2: The Oman Peninsula with the Umm-an Nar settlements

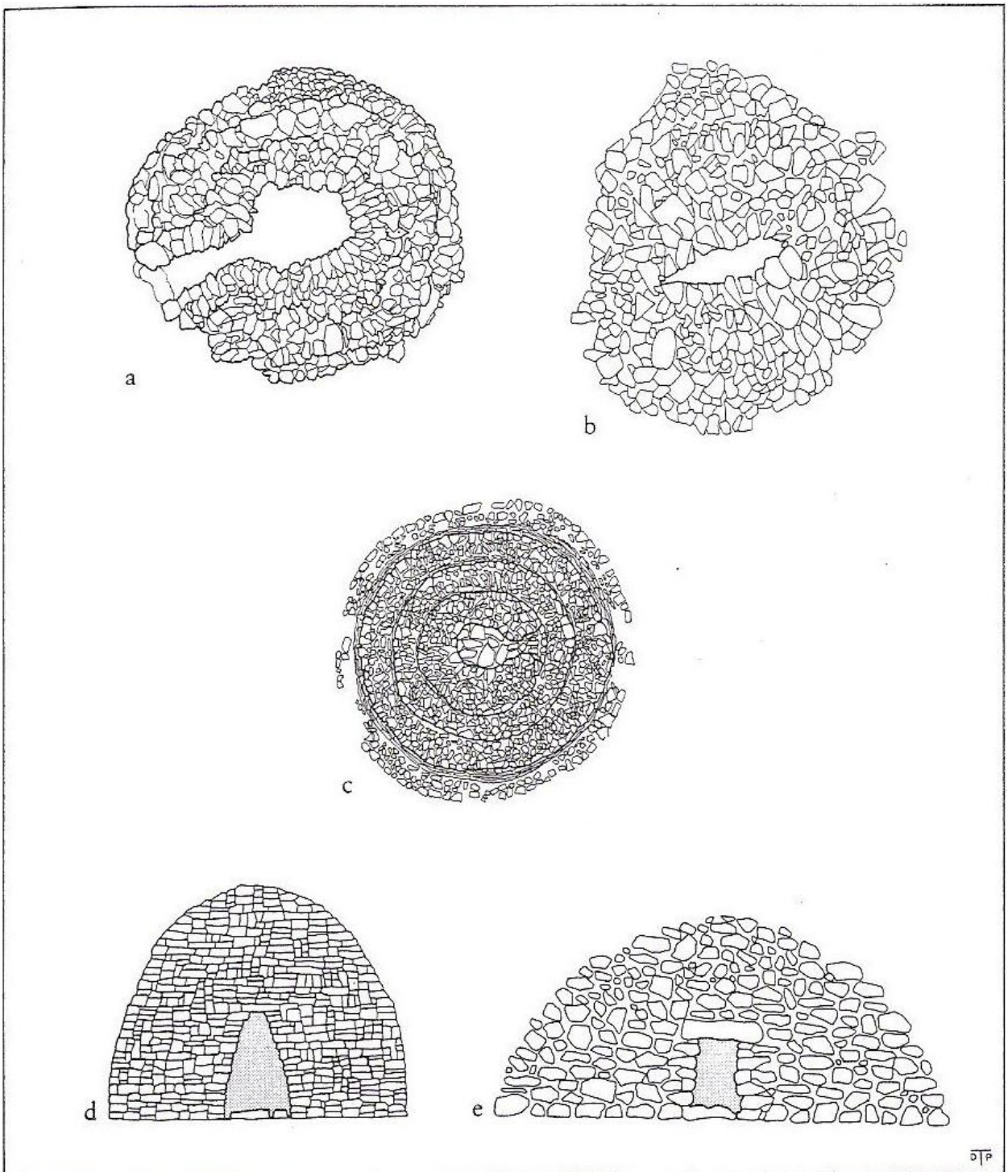

Fig 3: Planes of the two types of Hafit burial tombs (a-b), along with a reconstruction of both types (d-e).

The question naturally arises why the contact arose between Mesopotamia and Oman, which transmitted the Jamdat Nasr vessels to Oman and how this contact was organized. An economic motivation is the best answer. What kind of resources were transported to Mesopotamia is still unclear, but it is highly likely that it was copper from the Hajar mountains. The breakdown of the late Uruk trading network around 3000 B.C., which linked Mesopotamia with the copper resources of south-east Anatolia, makes the theory very attractive (Algaze 1993). We can suggests that the Mesopotamia city-states had to look elsewhere for its metal and turned southwards to Oman.

However, Magan did not only have contact with Mesopotamia. Contacts with other parts of the world are also attested in Oman. Incised grey and painted black-on-grey wares found in numerous Umm-an Nar tombs show manufacturing signs from Iran and/or Baluchistan, while painted brown-on-buff pottery of the Kafti type, found in tombs at Tell Abraq and Shimal/Unar 2, indicate contacts with the Elamite region of southwestern Iran (Potts 2001, 43). Diagnostic examples of black-washed, finely levigated, thick orange ware originating from the Indus Valley have been found at settlements such as Tell Abraq, Hili 8 and Asimah (Potts 2001, 45). These represent fragments of storage jars, suggesting that something was being exported from the Harappan world to the Gulf region in bulk. Gouin has suggested that a milk-product, perhaps a sort of cheese, was the commodity in question (Gouin 1990, 48-49). Etched carnelian beads, thousands of paste micro beads, small ivory objects and cubical chart weights, with identical parallels at all of the major Harappan sites, found at many of the Umm-an Nar settlements further imply contacts between the Oman Peninsula and the Indus Valley during the third millennium B.C.

It is during the Umm-an Nar period that we see for the first time the development of widespread sedentary occupation, in which agricultural formed the subsistence base. The origin of these agricultural settlements will be discussed in chapter 3, for now we will continue with discussing the subsistence strategy of the settlements. The cultivation of the date palm, *Phoenix dactylifera*, was crucial for the early agricultural settlements. Without the date palm, the shade necessary for the growth of other, less hardy cultivars including cereals, vegetables and fruits, was lacking (Potts 2001, 39). Among the limited published data about the Umm-an Nar agriculture, we find the third millennium B.C. paleobotanical evidence from the Hili 8 settlement, which yielded seed-imprints in pottery and mud bricks of barley, wheat, jujube fruit stones, date stones and charred palm wood (Cleuziou 1989, 79). More paleobotanical evidence for agriculture have been found at Maysar 1, Bat, Ra's al Jinz, Tell Abraq and the coastal site of Umm-an Nar.

It has also been argued that irrigation was practiced, since at Hili 8 and Bat traces have been found of ancient trenches for channeling water to a nearby ditch. (Nasser 2009, 124). Recently Nasser has suggested that there was a widespread rural occupation, not only at the larger wadis, but also at the at the smaller wadis (Nasser 2009). His argumentation is based on the data collected during the Wadi Andam survey (Nasser 2009). This survey used a field

methodology that was specifically developed to permit the quantified investigation of low-level, rural settlement patterns and densities, taking into consideration the nature of post-depositional processes in the region. The methodology was designed to allow the detection of small-scale occupation, even in situations where all structural and funerary evidence has been destroyed and only redeposited pottery sherds have remained (Nasser 2009, 125). The evidence he gathered from the Wadi Andam survey indicated also that the location of even these smaller Umm-an Nar sites tends to be close to viable agricultural resources. They are generally located on the banks of the wadis, in places where sufficient space is present between the wadi channel and the hill slopes allowing date-palm cultivation. The location of these settlements, away from other possible resources suggests that the settlements were predominantly agricultural (Nasser 2009, 129).

Political organization during the third millennium

Unhelpfully, the political landscape of Oman during the third and second millennium has not been thoroughly discussed in the archeological literature. The archeological evidence is contradictory. On the one hand we see aspects of social and economical organization that point to a centralized political system. Some of these aspects are: the collective burial and its uniform architecture; the standardized, high-quality and large scale pottery production; large, multi-centered settlements such as Hili and Bat (Frifelt in Nasser 2009); the large scale copper ore exploitation and international trade (Begemann 2010); usage of cylinder and stamp seals (Potts 2010); and the beginnings of a distinct artistic idiom and range of artifact production in soft stone, shell and bone objects (Potts 1990, 106-113).

On the other hand there are also a number of social and economical organizational aspects which are *not* present during the Umm-an Nar period on the Oman Peninsula, that *do* occur contemporary in Mesopotamia and the Indus valley. These include: writing, large scale surplus production, centralized storage and redistribution system focused and organized by the religious temples (Begemann 2010); crucial elements for the development of a state. If the Oman Peninsula was not governed at a state level in the third millennium, despite a high degree of cultural uniformity, on which level was the political organization present?

It is common for archeologists to define the complexity of a society, and thus its political organization, along an evolutionary trajectory on which "less" complex societies are labeled as *egalitarian* segmental societies, or "simple/small-scale" societies. The "high" and complex societies are termed as *state* societies. The notion of *chiefdom* is used in this context as an intermediate "stage" between egalitarian and state. However, in the early 1980s Carneiro has put a extra "stage" between chiefdom and state, namely a *stratified non-state* society (Carneiro in Gledhill et all 1988). What exactly could a stratified non state society look like in political terms? Carneiro defines it as: "an autonomous political unit comprising of a number villages or communities under the permanent control of a paramount chief." The stratification would be based on differential access to basic resources or luxury items.

As mentioned above, during the Umm-an Nar period a number of aspects of social and economic organization are present on the Oman Peninsula, which puts the region in a liminal phase/stage between a chiefdom society and a state society, following Carneiro. This level of social organization fulfills the qualification for the term introduced by Carneiro, therefore it is to my opinion that the Oman Peninsula of the third and second millennium B.C., was a stratified non-state society.

Recently Serge Cleuziou has put forward a new theory, suggesting that the Oman Peninsula of the third and second millennium B.C. consisted of what he calls an *Arabian Tribal system*, which was grounded in kingship and juridical equality among individuals (Cleuziou 2003, 140). This of course does not mean that there were no differences in wealth or power between individuals, but that wealth and power followed different lines: accumulation of wealth was not favorably seen, sharing was important and power was viewed with suspicion (Cleuziou 2003, 141). He argues that the coastal settlements, engaged in overseas trade, cannot be considered as isolated entities or relay stations trading with the interior, but rather as a part of larger political entity based on kingship relations, exploiting simultaneously or seasonally multiple resources in a variety of ecological niches (Cleuziou 2003, 141). Cleuziou's theory on the function of the tower-fortresses in an Arabian Tribal system are discussed in chapter 4.

The fortress-towers on the Oman Peninsula

As discussed above, the earliest, sedentary settlements of the Oman Peninsula were agriculturally based. The inhabitants of those villages felt compelled to construct imposing, tower-like fortifications. These buildings appear for the first time in the middle of the third millennium with no architectural forerunners predating them. The distribution of these towers runs from the Arabian Gulf to the Indian Ocean and from the area of Sharjar to the Sharqiyah (fig 4). Before proceeding any further on this topic, a clear and working definition of "fortress-towers" must be made. Fortress-towers are architectural features of monumental size build of brick, stone or a combination of both, usually on a raised circular platform. Additionally they have several massive crosswalls, intervening hollows filled with gravel and a stone-built well within the perimeter wall or close behind it.

The architecture of any society does, to some extent, mirror the values and needs of that society, as well as playing an active role in promoting socially desirable behavior (Crawford 1998, 113). This means that we may use the architectural remains of past societies to gain insight in their social organization.

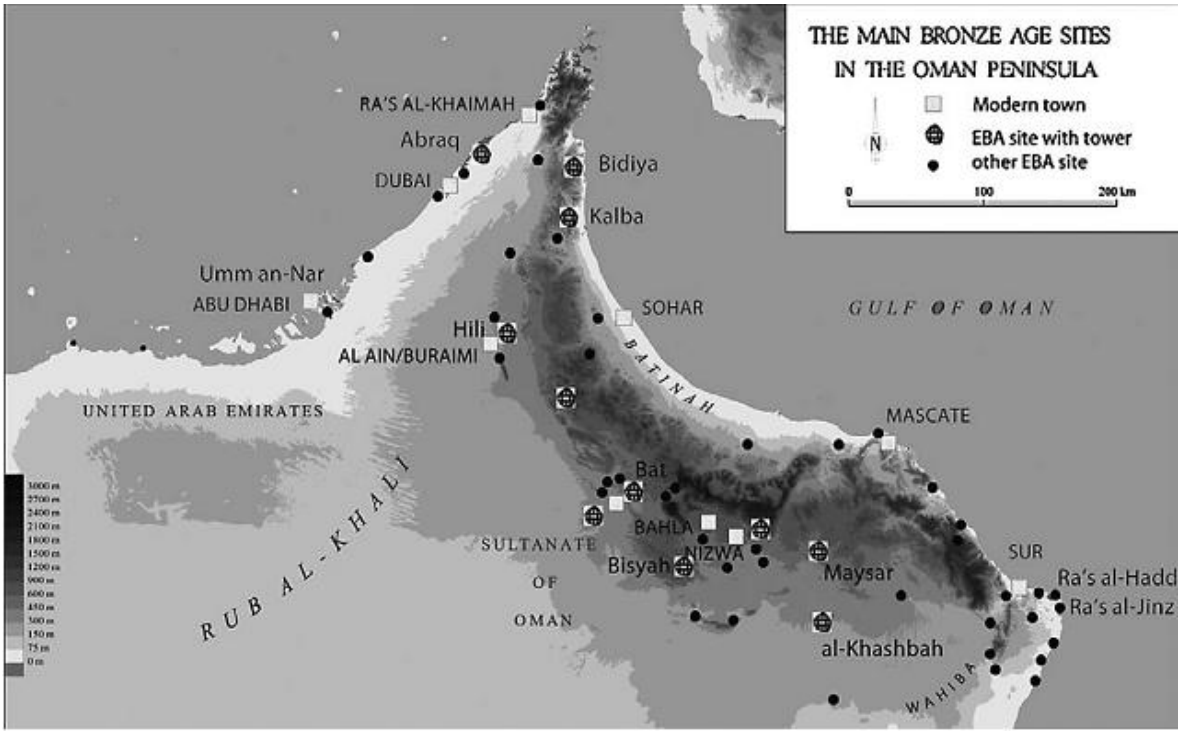

Fig 4: Map of the Oman Peninsula with the main Bronze Age sites.

Settlements and towers

The positioning of the towers-fortresses within the settlement is an important aspect in understanding the socio-political and symbolic significance of these buildings. Unfortunately, most sites with a tower-fortress are only, and poorly, surveyed and those that have been excavated have only focused on the tower itself and paid little to no attention on the perimeter surrounding the towers. Hence, we can only study at this moment the few "tower-sites" which have been excavated and also investigated the area surrounding the tower. Only four sites have been chosen for this thesis and each of these sites will be discussed in this chapter. However, before proceeding on this topic, it is important to look at the general evolution of settlement patterns on the Oman Peninsula. For it is important to understand first *why* people settled at a certain location, before understanding *what* they have build at their settlements.

In the Neolithic, ca 6000 B.C., most of the settlements seem to have been located around ancient lagoons and on the coast. The subsistence strategy seems to have been focused on the exploitation of coastal resources from mangrove swamps and lagoons (Giroud 2009, 746). During the early third millennium there was an increase in archeologically visible sites. The "new" sites seems to be situated at places where there used to be, and still are, small date palm gardens. Since we know that the date palm tree lays at the basis for agricultural practice on the Oman Peninsula, we might conclude that here we are witnessing the birth of the oasis culture, which will dominate the third millennium and second millennium settlements. By the third and second millennium B.C., we see a clear shift of the settlements towards the interior of the Oman Peninsula. Even though this process seems to correlate with a drastic decrease of the total amount of settlements, it has generally been accepted that all of these "later" sites must have been more densely populated than in previous times (Giroud 2009, 748). The shift from a fishing culture to an oasis culture, seems to have been caused by a decrease of resources in the lagoonal areas due to penetration by seawater and the ensuing filling by continental sediments (Cleuziou 2009, 734). Palynological studies have also indicated a continuous aridification of climate which eventually destroyed almost all of the lagoons (Giroud 2009). The shift to the oasis's brought a diversification of resources as well as a tighter appropriation of space. This finally resulted in a rather dense occupation of the oasis-settlements during the third and second millennium B.C.

We will now look closer at the location of the tower-fortress inside these settlements and the building methods used to construct these buildings. As mentioned above, this thesis will only focus on four settlements with towers. Two of these settlements are found inland and are based on the oasis culture discussed above: Hili and Bat. Two other settlements are based on a combined agricultural and fishing culture and are located along the coast: Tell Abraq and Bidya. The reason I have chosen for these four settlements, is the fact that they not only contain the few excavated and fully published towers, but also by comparing the "inland towers" with the "coastal towers" we may get a better understanding of the similarities and/or differences, which then again may provide us with information about the possibility of the presence of different political organizations in the third millennium B.C.

Hili

Hili is located in the modern state of the Emirate Abu Dhabi, between the al-Khattum sand dunes, a northern extension of the Rub'al-Khali and the al-Hajjar mountains of Oman (fig 4). The site has been excavated on a yearly base between 1977 and 1984 by Serge Cleuziou. Consisting of ca 30 hectares, the site seems to be have been occupied during the third and second millennium B.C., thus making Hili one of the sites created by the "settlement shift" discussed above. Some 15 collective burials, similar to those of Umm-an Nar, together with five towers were located on the site. The area selected for excavations was termed Hili 8 on which the excavators stumbled upon three superimposed mud brick towers and adjacent buildings, dating between ca 3000 and 2000 cal B.C. (Cleuziou 1989). The accumulated tower is located north-east of the site and surrounded by a ditch that had at some time been filled with water (Cleuziou 2009, 730) (fig 5). Important to note here is the fact that the tower of Hili 8 was build on virgin soil. Inside the tower structure a well was located in a rectangular drainage chamber. Next to the towers, some rooms were uncovered, surrounded by a wall (Cleuziou 2009, 729). The interior of the platform, on which the tower resides, is divided symmetrically into rows of rectangular chambers on either side of the central well (Cleuziou 1989). Traces of interior walls and of floors have been recovered, however these were so badly eroded that no plans could be reconstructed. Yet they indicate that the tower-fortress was used, at least for a time, as a residence (Cleuziou 1989). The tower increased in size throughout the occupational period of the site, from 20 m in diameter to 35m. The lowest part of the tower is a solid base and the height can be estimated to over 10 m, with no entrance at ground level and it is supposed that the living quarters, located in the upper parts, could only be accessed by a door at a certain height in the wall (Cleuziou 2009, 730). Through archeobotanical evidence, an oasis economy can be reconstructed for the site of Hili 8. The substance strategy seems to have been based on the exploitation of palm trees, some fruits and legumes cultivated under the protecting shadow of the trees, as well as winter cereals grown in the irrigated surrounding fields (Cleuziou 2009, 730). Remains of domesticated animals have also been found at Hili 8, such as cattle, sheep, goat and donkey.

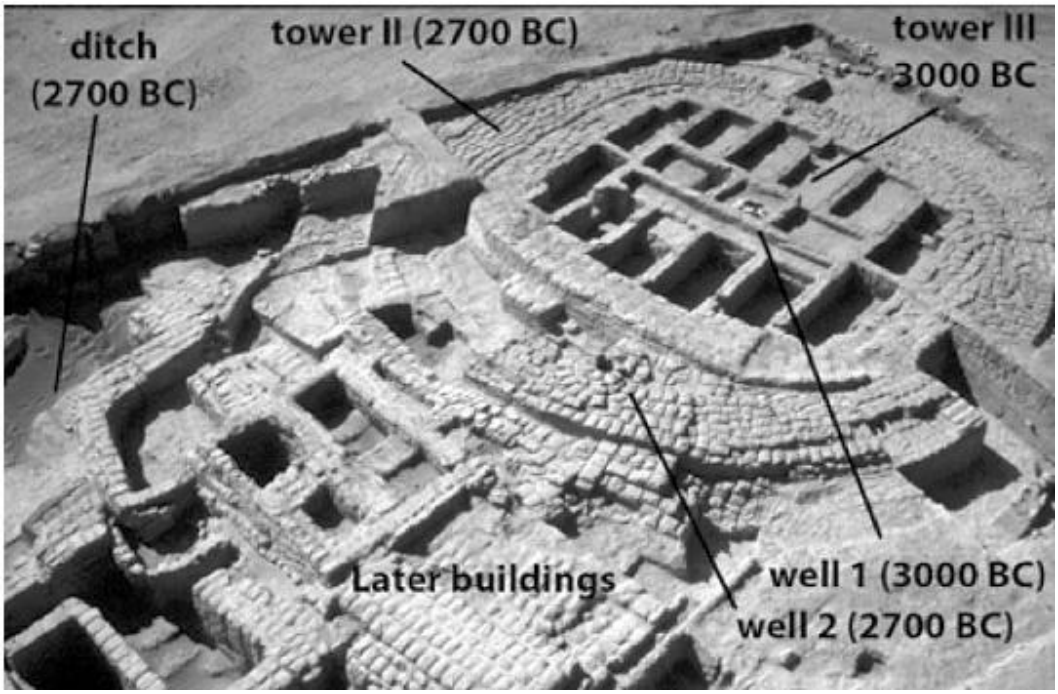

Fig 5: Ariel view of Hili 8 from the north-east.

Bat

The settlement of Bat is located north of the modern day village and palm grove of Bat, near Wadi al Hijr on the Oman Peninsula (fig 4). Excavation began in 1972 under Karen Frifelt and she discovered 5 towers. Only one of the towers has been fully excavated and this tower is dated between 2595-2465 B.C. The inhabited area covered as much as 40 to 50 hectares (Frifelt 1976). The tower is build on a platform upon virgin soil. The interior of the platform consists of two rows of parallel rooms on either side, with a well in the centre. The tower itself consists of a stepped external ring wall of stone blocks 7 m high, about 20 m in diameter and the entrance apparently approached by a ramp or steps from the south (Crawford 1998, 115). Unfortunately no traces of floors have been found, however the excavator points out that these might have been eroded away (Frifelt 1976). A few rooms abut the tower on the north-east side. Further to the east, on a slope, a series of rectangular houses with central courts have been excavated (Frifelt 1976). Even though not many archeobotanical remains have been found at Bat, it is most likely that the settlement was based on an oasis culture, since it vicinity to Wadi al Hijr.

Bidya

The settlement of Bidya is located on the northern coast of Oman Peninsula, in modern day Emirates of Fujairah. It is one of the oldest settlements on the north-east coast which extends from Khatmat Malaha in the south to Dibba in the north (fig 4). Bidya is located on the southern bank of a small wadi. The site has two towers of which one has been excavated by Wadi Yasin al Tikriti in 1989. The tower was already severely eroded and stones from the outer wall had been removed in the past, for the construction of an adjacent and more recent fort. The tower was build on virgin soil on top of a platform, the perimeter wall is constructed of stone and the internal wall of mudbrick. The tower measures a total diameter of 26m (al Tikrirti 1989a). Inside the platform there seems to have been two rooms, like at Bat and Hili, however due to their bad state of preservation it is not clear if the rows of rooms were divided by a central corridor. North of the tower traces have been found of a ditch about 4 m wide and some 80 cm deep. In a corridor between two walls, traces of a floor were found, which yielded some Umm-an Nar sherds (al Tikriti 1989a). The foundations of a stone wall were found between the circular walls. It runs at right angles to the ring wall and might possibly have supported steps. The tower-structure has no well within the building, however al Tikriti suspects that the well might have been covered up by a more recent one, which is still being used today, located to the south-east of the tower (al Tikriti 1989a, 109). No floor levels have been found inside the structure, however like the tower-fortress at Bat, the excavator points out that due to the bad state of the building, it is very likely that the floor levels have been lost due heavy erosion (al Tikriti 1989a, 109). The substance strategy of the settlement must have been a combination of agriculture and fishing, since archeobotanical remains of a few date trees have been found at the site and the proximity of the settlement to the coast must in the past, as in modern days, have provided the inhabitants with various seafood (Clezuiou 2003, 137).

Tell Abraq

The site of Tell Abraq is a large mound over 10m high located on the coastal highway linking Abu Dhabi with Ras al-Khaimah (fig 3). Excavations of the site started in 1989 under Daniel Potts. Compared to the above mentioned sites, Tell Abraq is rather a small settlement, since it only covers 4 hectares. It seems to have been occupied for a period of 2000 years, roughly from 2300 B.C. till 300 B.C. Already during the first year of excavation, the team of Potts stumbled upon the remains of the largest tower-fortress yet uncovered on the Oman Peninsula. The tower-fortress of Tell Abraq is 40 m in diameter and preserved to a height of some 8 m. It was build of with a combination of stone and mud brick (Potts 2000, 21). Like the other towers, this tower is build on a platform. Even though a small portion of the platform has been excavated, Potts is convinced that the interior of the platform consists of two rows of rooms. A stone-lined well was located at the centre of the building. Carbon 14 samples taken from deposits at the base of the tower date the building to around 2200 B.C.

Meters of earth punctuated by post-holes surround the tower and the soil deposits around the post-holes contained thousands of animal bones, fish bone, shells, carbonized date-stones, grinding implements, tens of thousands of fragmented pottery and hundreds of copper and bronze artifacts (Potts 2000, 22). It seems that these post-holes represent the remains of palm-frond houses inhabited by the common people (Potss 2000, 23).

For the first time we find Umm-an Nar tombs in the direct proximity of a tower-fortress at Tell Abraq. Men, women and infants have been found buried in typical Umm-an Nar tombs just 10 m from the tower. Perhaps more importantly, one of these Umm-an Nar tombs yielded upon excavation dozens of complete pots, metal weapons, stone vessels, hundreds of beads, a dozen ivory combs, several gold pendants and a ivory stamp seal (Potts 2000, 88). Judging by the rich grave goods found inside the tomb, the tomb clearly must have belonged to people from the upper layer of the society at Tell Abraq.

Faunal and floral remains have been found at Tell Abraq, showing an subsistence strategy based on agriculture; domesticated animals such as sheep's and goats; wild animals such as birds, gazelles, turles and dolphins and the fishing of snappers, spadefish and shellfish (Potts 2000, 59-69). An interesting point to note is the fact that eventually, somewhere in the second millennium, the entire tower-fortress became hidden from view when it was "capped" with a massive mud brick platform covering the entire top of the structure, while the settlement was still inhabited. Although the reason of "in capping" the tower and the significance of the platform is still unclear, the scale of its construction is impressive (Potss 2000, 23-25).

So what are the differences and similarities between the four towers discussed above? Interesting enough, one first notices the many similarities between the towers, instead of the differences. We will first start with discussing the only difference visible between the towers. The only clear difference we see, is the fact that the inland settlements have more towers than the coastal sites. Bat as well as Hili 8 have 5 towers, where as Bidya and Tell Abraq have two and one tower respectively. Cleuziou suggests in his final report that at Hili 8 at least two towers must have been simultaneously been used during the third millennium B.C. Unfortunately this possibility has not been investigated at Bat, so we cannot conclude whether this a common feature for the inland towers or that Hili 8 is an exception.

So what are the similarities? First of all the positioning of the towers seems to have been roughly north-east of the settlements, even though at Bidya it is uncertain since the remains of the third millennium settlement seems to lay underneath the modern village. However, if we look at the position of the tower and compare it to the modern day village, than the tower is located north/north-east part of the village. There is a good chance that the modern day village at Bidya is a continuation of the third millennium settlement. Therefore we might tentatively conclude that the tower at Bidya was originally positioned north-east of the settlement, like the other towers.

The second similarity that we see is the size of the towers. Most of these towers seem to have had a diameter of approximately 20 m, with Tell Abraq as an exception. The reason why Tell Abraq is an exception will be discussed later in the thesis, for now we will continue with summarizing the similarities.

The third and perhaps the most striking similarity, is the way these buildings have been constructed. All of the towers are build on virgin soil by constructing first a platform. The interior of this platform consists of two rows of parallel rooms on either side, divided by a corridor or a well. Each of these towers is build out of mud brick stones, natural stones or a combination of both and all have one or two ditches surrounding it. Upon completion the towers could only have been accessed through a ramp. It also appears that next to these towers, dwellings made of lesser material, for example palm fronds, were located.

So what do all these similarities tell us about the socio-political and symbolic meaning of these towers? Before we discuss that point, we will first look and discuss the different theories that have been put forth to explain these towers.

Theories and Towers

In the past decades, various theories have been proposed to explain the function of the tower-fortresses. These are: 1 That the towers were build to protect and safeguard the copper mines and the copper trade, 2 That the towers were build as dwellings for the local elite and that they functioned as the locus of regional power in a chiefdom society and 3 That the towers functioned as residences or strongholds under the control of local leaders in an Arabian Tribal system. Here we shall discuss each of these theories, starting with the oldest one.

Defensive towers

The oldest theory suggests a defensive function and is proposed by various archeologists (Crawford 1998, Weisgerber 1980, Frifelt 1976). This theory is based on the fact that most tower-fortresses have strong walls, ditches, a safe water supply in the form of a well and the observation that in a number of cases the towers were in such a manner positioned that it appears that an approaching enemy could be caught in a pincer movement between the towers. This positioning is visible at Bidya, where two towers are located on opposite sides of the wadi leading from the mountains to the coastal plain (Crawford 1998, 112). The natural question that rises with this theory is of course: what were the towers protecting? In addition to safeguarding the agricultural settlement in a marginal environment, the theory suggests that the tower-fortresses were also build to safeguard the copper production in these settlements (Crawford 1998, Weisgerber 1980, Frifelt 1976). This leads us to discuss the development of copper production on the Oman Peninsula.

Copper production and towers

Numerous surveys and excavations have shown that the smelting of copper from local ores in the Oman mountain ranges and the production of copper, has fluctuated in time (Begemann et al 2010, 137). Copper objects and copper based artifacts have been found on the Oman Peninsula as early as the fourth millennium B.C. Metallurgy was still in its infancy during the Hafit period. Copper production during this period is represented by a couple of sites at Ras al Hadd, on the very eastern cape of the Oman Peninsula. At one of these sites 59 copper objects were unearthed in a shell midden, dating to the fourth millennium B.C. According to semi-quantitative analyses of their chemical composition, most of these objects contain arsenic as a major impurity, therefore it is believed that these objects have been smelted from ores that occur in the Samail ophiolite complex of Oman and are thus not imported from abroad (Begemann et al 2010, 138) .

The entire copper production scenery changes dramatically during the following Umm-an Nar period (Fig 1). In the second half of the third millennium B.C. a marked increase in copper production is visible all over the peninsula, form Masirah island in the south to al Safarfir in the north, culminating into a peak of copper production at around 2000 B.C. (Begemann et al 2010, 138). Copper seems to have played a major role in the village economy. At Maysar numerous stray finds of pea sized copper prills and centimeter sized pieces of scrap, point to surplus

production beyond local needs. The amount of copper present in the settlement as prills and lumps exceeds the amount present as manufactured objects such as pins, awls or axes recovered from there (Begemann et al 2010, 138). A hoard of plano-convex ingots, which was found just under the upper soil in the entrance of House 4, further proves the production of a huge surplus far beyond the local need. Al al Aqir near Bahlu we find another large collection of copper finds. In a 300 m long dam, numerous building offerings were found. These depositions comprise of copper ingots, ingot fragments, anthropomorphic figures, a heavy hoe, a large knife and a flat axe (Weisgerber&Yule 2003). A large amount of these copper objects have impurities such as nickel and arsenic. Weisgerber and Yule suggest that they were cheap imitations intentionally produced as offerings to the deities (Weisgerber and Yule 2003). Copper smelting sites dating to the Umm-an Nar period have been located at Arja, Assayab, Tawi Ubaylah in Wadi Jizzi, Miadin, Tawi Rakah, Hawqayn, Muaidin, Mullaq, Wadi Salh and Gebel Saleli. Recent chemical analysis of copper artifacts of ancient Mesopotamia, has shown that copper from the Oman Peninsula had been used in the production of these artifacts. The chemical signature of Omani copper is encountered in Mesopotamian artifacts from the Uruk till the Akkadian period. The import of Omani copper must have been particularly important during the Early Dynastic III and Akkadian period, since half of the copper artifacts produced during these periods bears the Omani signature (Begemann et al 2010).

It is by now a well accepted fact that the copper trade that occurred on the Oman Peninsula marked the development of an economic, social and cultural complex system. Surely this was an aspect worthwhile defending? However if we take a closer look at the distribution of the tower-fortresses one notices that two-third of the these structures are not even located in the proximity of a copper mine (fig 6). Surprisingly enough only 33% of the settlements surrounding the copper mines, the ones which have been exploited during the third and second millennium B.C., have a tower-fortress (fig 7). Furthermore, if we look at the location of the four settlements discussed in chapter 2, we see that only two of them are in close proximity of the copper mines (fig 6). Hili 8 is roughly 50 km from mines 14 and 7; and Bat is less than 30 km from mines 10 and 37. If indeed the main function of these structures was to protect and safeguard the copper production, one would expect to find a higher concentration of these buildings in the area around the copper mines. Therefore it is highly unlikely that, how lucrative the copper trade might have been, that these structures are build as some sort of watchtowers, to protect the copper mines and the copper production.

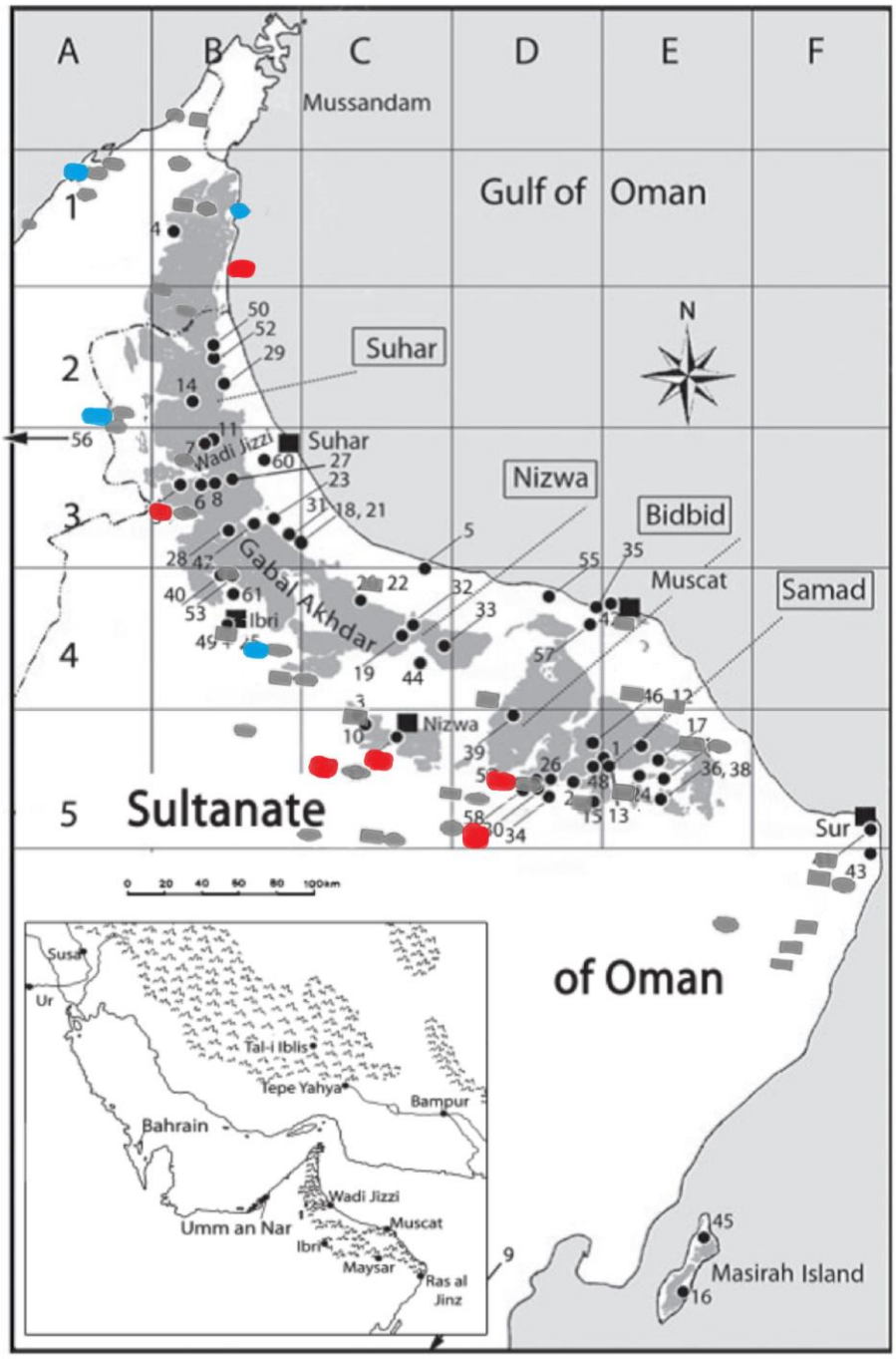

Fig 6 Map showing all the Umm-an Nar settlements (marked as grey rectangles and ovals) with the various copper mines exploited throughout the third and second millennium (marked as black dots and numbered). The four towers discussed in chapter 2 are marked blue and the other towers-sites are marked red.

Site	*Proximity to copper mine(s)*	*Tower structure present?*
Shimal	60 km	No
Ras al-Khaimah	85 km	No
Tell Abraq	70 km	yes
Umm an-Nar	100 km	No
Bidiya	40 km	yes
Umalih	20 km	No
Kalba	40 km	yes
Hili 8	45 km	yes
Al Ain	50 km	No
Wadi Far 1	<10 km	No
Bat	<10 km	yes
Amlah	<10 km	yes
Bahla	<10 km	yes
Bilad al-Maaidan	20 km	No
Nizwa	<10 km	No
Bisyah	40 km	No
Ra’s al Jabal	60 km	No
Adam	80 km	No
Maysar	<10 km	No
Al-Khashbah	<10 km	yes
Wadi al-Faij	20 km	yes
Bandar Jissah	15 km	No
Qurayat	20 km	No
Bimmah	40 km	No
Saith Bueird	20 km	No
Batin 1	<10 km	No
Wadi Ibra 2	<10 km	No
Ra’s al-Hadd	>100 km	No
Ra’s al-Jinz	>100 km	No
Ar Ruwais	>100 km	No
As-Surwayh	>100 km	No
Asselah	>100 km	No

Fig 7 List of all the Bronze Age settlements on the Oman Peninsula and their proximity to copper mines.

Towers and Prestige

Various authors suggests that the tower structures were status dwellings for the elites (Crawford 1998, Potts 1999). Potts, for example, points out that these fortified buildings probably formed the focus of each settlement, standing among other, more flimsier houses build with perishable palm-frond, a custom on Oman which was visible in the region until the 1990s (Potts 1999, 37). The central fortification might have been the locus of regional power, defined economically, politically or in terms of the prestige of a particular family. The general degree of parity in settlement pattern and material culture suggest not a politically centralized state at this point in time, but rather a mosaic of small, communities existed on the Oman Peninsula. Potts further refers to an Akkadian inscription, during the reign of Manishtusu. The inscription mentions that the Akkadian king Manishtusu campaigned against "the 32 lords of Magan". Potts uses this inscription as another evidence for the decentralized political landscape in the third and second millennium B.C. (Potts 1999, 38).

So, are the towers indeed status dwellings of the elite, as Potts suggests? It is a fact that not every Umm-an Nar settlement has a tower-like fortification. As mentioned in chapter 2, recent surveys on the Oman Peninsula have shown that there was a widespread sedentary occupation during the Umm-an Nar period, which was based on small agricultural villages. However, none of these villages provided evidence for copper production nor was there a tower-like fortification present (Nasser 2009). Of all the large settlements of the Bronze Age, only 21% has a tower-fortress present inside the settlement (fig 7) and as discussed in chapter 3, these towers have been used as a residence. The scarcity and the monumentality of construction, point to an elite status for these buildings. Therefore I agree with Potts theory that the tower-fortress of the Oman Peninsula indeed have functioned as dwellings and locus of regional power of a particular family or moiety. A large dwelling, visible from miles afar must clearly also have functioned as a symbol of power and as a tool for status-building. However, I disagree with Potts assumption that the society on the Oman Peninsula, during the third and second millennium B.C., consisted of chiefdoms. As discussed above, there are simply too many aspects of economic and social organization which do not fit in a chiefdom society. Furthermore, as discussed in chapter 3, there are also to many similarities in the construction methods used to erect these towers. Recapitulating, these include: the positioning of the towers within the settlements, the usage of a platform on which the towers rest, the interior of the platform consisting of two rows of chambers divided by a corridor or well, the ditches surrounding the towers and thus separating them from the rest of the settlement and the fact that all of the towers could only have been accessed by a ramp. These similarities indicate specialization and one has to wonder if the possibility exists of a specialized class of tower-builders, travelling from settlement to settlement. The possibility of specialization is yet another indicator for the fact that the political organization during the Bronze Age, was clearly at a higher level than that of a chiefdom.

The final and latest theory that exists has been proposed by Serge Cleuziou. According to Cleuziou's hypothesis on political organization, discussed in chapter 2, the tower-fortresses are

considered residences or strongholds under the control of local leaders, possibly the heads of the main lineages settled in the associated oasis (Cleuziou 2003, 144). The problem with this theory is the fact that it has several contradictions. First of all, the suggestion of an Arabian Tribal system existing on the Oman Peninsula during the third and second millennium, is contradicted by the archeological data. As Cleziou himself explains, an Arabian Tribal system in based on kingship and juridical equality among individuals in which wealth and power accumulation was not favorably seen and even viewed with suspicion. However, we see quite the opposite occurring on the Oman Peninsula, especially during the third and second millennium B.C! As discussed above, it is during the third millennium B.C. that we see a clear development in settlement patterns, the rise of the tower-fortresses and development in burial customs towards a more stratified society. Even though most Umm-an Nar type tombs have been robbed in antiquity, the few which remained unharmed clearly show a more stratified society in which some people of the community were buried with lavish gifts, for example at Tell Abraq (see chapter 3).

Do the tower-fortresses not represent a clear division within the society and a strong symbol for wealth and power? The question that rises in regard to Cleuziou's hypothesis, is why would a society based on an Arabian Tribal system, build structures which enrich the power, wealth and status of certain individuals? In a truly Arabian Tribal system based society, the construction of such buildings would have been illogical for the common people and thus impossible for an elite individual to accomplish. As argued above, it is to my opinion that the Oman Peninsula during the third millennium consisted of a stratified non-state society in which the tower-fortresses functioned as residence for the local elite and as a power symbol visible for miles from the settlement. It is very possible that the local elite legitimized their power, wealth and status through kingship ties, however it is highly unlikely that this happened within a Arabian Tribal system.

The decline of Magan

Around 1800 B.C. profound changes occurred, rather abruptly, on the Oman Peninsula. The material culture became different, new types of graves appear both including single burials and some collective burials with less sophisticated rituals (Cleuziou 2009, 732). Most sites become abandoned or at least differently settled. It is during this time that the large tower-fortress at Tell Abraq becomes "capped in" and the size of the settlement shrinks (Potts 2000, 24) and the settlement of Bat and Hili 8 are abandoned (Cleuziou 1989, Frifelt 1976). The settlement record of the region seems to evaporate, leaving very few sites occupied on anything like a full-time basis. The few sites that are archeologically visible seem to have been smaller in size than their predecessors and no tower-like structure is present at any of the sites from 1800 B.C. onward.

The absence of direct references to Magan in Mesopotamian cuneiform sources after the Ur III period (2100-1900 B.C.) as well as disruptions in the Indus valley where the Mature Harappan period came to an end and the notion that the camel became domesticated in Oman around the same time, led many scholars to theorize that a collapse and even a reversion to full-time nomadism had occurred on the Oman Peninsula (Potts 2001, 44). The decline and reversion to full-time nomadism of the Omani society can only be explained if we look at what exactly occurred in the Indus valley and Mesopotamia, for the factors responsible for the decline of the Omani society lay outside Oman itself and relate to the complex international politics of the period in both Mesopotamia and the Indus valley.

The Harappan cities, including Harappa itself, were in decline as early as 1900 B.C. (Crawford 1998, 153). The trade routes linking Central Asia with the Harappan ports like Lothal seem to have fallen into disuse and as a result the long distance trade up the Gulf, through Oman and into Mesopotamia also ceased, because the precious raw materials like lapis lazuli and tin, which had formed an important element in the trade were, no longer available for export (Crawford 1998, 154). Around the same time the area south and east of modern Baghdad had become a mosaic of small warring states of which Babylon was the most powerful. Under the reign of Hammurabi, Babylon started to conquer and assimilate the other warring states, including the city-state of Ur, previously the main port of entry for goods from the Gulf (Crawford 1998, 154). However, the real economic and final blow for Oman came with the conquering of Mari by Hammurabi in 1759 B.C. Not only was Mari a rich prize in itself with its magnificent palaces, but it was the key to the control of the central Euphrates and to the rich traffic in imports from Anatolia and the Mediterranean, including the copper originating from these regions (Crawford 1998, 154). Thus the city of Ur, which imported copper from Oman for centuries, became redundant and eventually within a few decades the entire copper trade with Oman ceased.

With such widespread economic and political disruption on a global scale, it is difficult to see what market there would have been for imports from the Gulf even if an alternative port of entry would have been found. With the collapse of the copper trade the local elites on the Oman Peninsula lost their lucrative business and thus they lost their wealth and power. From 1800 B.C.

onwards we see the Omani society transforms from a stratified non-sate society back to a tribal society focused on nomadism. With this transformation the large Bronze Age settlements are abandoned or differently settled, like Tell Abraq, and the building of tower-fortress ceases.

Conclusion

The origins of the tower-fortresses can be found as early as the end of the fourth millennium B.C., when the settlement pattern on the Oman Peninsula shifts from the coast to the hinterland. The shift from a fishing culture to oasis culture, seems to have been caused by a decrease of resources in the lagoonal areas due to penetration by seawater and the ensuing filling by continental sediments. The shift from the coast to the oasis brought a diversification of resources as well as a tighter appropriation of space. This finally resulted during the third millennium in a rather dense occupation of the settlements.

Combined with an increase in the copper trade at the beginning of the third millennium, this induced more complexity in the social system, around the farming activities, control of the products of trade, their circulation but also around its means of transport: building and equipping boats, organizing the crew and cargo, etc. The role of high ranking or rich families would have been enhanced, coming into conflict with the theoretical equality among members of a tribal society. The form of social organization which emerged on the Oman Peninsula due to these factors, was one which was in a liminal stage between a chiefdom and a state society, called a stratified non-state society.

The tower-fortress of the Oman Peninsula functioned in such a society as dwellings and locus of regional power of a particular family or moiety. A large dwelling, visible from miles afar must clearly also have functioned as a symbol of power and as a tool for status-building. The few towers that have been excavated show many similarities, such as: he positioning of the towers within the settlements, the usage of a platform on which the towers rest, the interior of the platform consisting of two rows of chambers divided by a corridor or well, the ditches surrounding the towers and thus separating them from the rest of the settlement, the fact that all of the towers could only have been accessed by a ramp, etc. All of these similarities indicate specialization and one has to wonder if the possibility exists of a specialized class of tower-builders, travelling from settlement to settlement.

With the collapse of the copper trade, starting around 1800 B.C., the local elites on the Oman Peninsula lost their lucrative business and thus they lost their wealth and power. From 1800 B.C. onwards we see the Omani society transforms from a stratified non-sate society back to a tribal society focused on nomadism. With this transformation the large Bronze Age settlements are abandoned or differently settled and the building of tower-fortress ceases.

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