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Eastern desert ware : traces of the inhabitants of the eastern desert in Egypt and Sudan during the 4th-6th centuries CE

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CHAPTER FIVE

The Eastern Desert and the Production of Eastern Desert Ware

Despite the macroscopic and geochemical investigations discussed in Chapters 2 and 3, the production areas of the pottery identified as Eastern Desert Ware remain unclear. However, as the results of the study of the raw materials (Chapter 3) as well as the technology and appearance of the vessels (Chapter 2) suggest, they probably did not originate in the Nile Valley, but rather in a several, yet unknown, other localities. The most likely alternative for the Nile Valley as the source for Eastern Desert Ware are one or more sites in the Eastern Desert, possibly located somewhere in the region where the vessels were found. The relevant parts of the history of this region, at present the southeast of Egypt and the northeast of Sudan, was discussed in Chapter 1. An outline of its geology was presented in Chapter 3 and in Appendix 6.

In this chapter the modern landscape of the Eastern Desert is described as an arid desert, which has become increasingly dry since the end of the Holocene 'wet phase', about 5000 years ago. In combination with human intervention this has caused serious ecological degradation, especially during the 19th century CE. This is followed by a description of the current inhabitants of the region, collectively known as the Beja. If Eastern Desert Ware was produced and used by the one of the indigenous people of the area in which it was found, their lifestyle may have been equivalent to that of the Beja. Many of the problems encountered by the modern inhabitants of the desert will also have been encountered by the ancient desert dwellers and their solutions may have been similar. The study of these problems and their modern solutions may shed light on what is found in the archaeological record. This can only be done with the appropriate care as the dwellers of the Eastern Desert have changed important aspects of their lifestyle over the past 1500 years and the Beja cannot be equated with the dwellers of the desert at the time that Eastern Desert Ware was used. These have since mixed with Banu Kanz, Ma'aza and Rashaïda tribes, which invaded the area from the Arabian Peninsula in the 11th and 19th centuries CE respectively (Chapter 1); incorporated the camel, coffee, cars and plastic containers into their daily life; and have first adopted Christianity and finally Islam.

The modern inhabitants of the Eastern Desert do not produce any pottery, but ceramic items play an important role in their everyday life. Pottery that is not only expensive, but also fragile and relatively heavy, especially as it has to be protected in special basketry or wooden containers. The importance attached to these

items apparently partly depends on their vulnerability, as discussed below. Even though the majority of mobile groups use pottery, only a minority produces their own and, if they do, this is usually crude and undecorated (D.E. Arnold 1985; Bar-Yosef and Khazanov 1992; David et al. 1988; Eerkens 2008; Eerkens et al. 2002; Rice 1999; Rosen 1987; Rosen and Avni 1993; Sadr 1990; Schiffer and Skibo 1987). However, it is shown here that it is eminently possible for people living like the Beja, in a setting like the Eastern Desert, to produce pottery like Eastern Desert Ware. This leaves the question, to be discussed in Chapter 6, why they would do so rather than purchase their vessels like the Beja do today.

The Eastern Desert

The area encircled by the sites at which Eastern Desert Ware has been described is cut from northwest to southeast by the Red Sea Mountains (Figure 5-1; cf. Figures 1-1 through 1-3). On either side of these is a sandy desert that stretches all the way to the Nile Valley in the west and to the Red Sea in the east. It is this mountainous area that has been the focus of human activity in the region because of its mineral wealth (gold, ornamental stone, Appendix 6) and the relatively shallow aquifers that permit sparse vegetation (Figure 5-2 and 5-3). At present the region receives 20-200 mm rain per annum, mostly in the winter and more towards the south. As the rainfall is much localized, a specific area can go years and even decades without any precipitation. Substantial showers may cause a flash flood (سيل, *sayl*) carving out a riverbed (خور, *khôr*) in the sandy surface of the desert valley (وادي, *wadi*). The water will quickly disappear into subterranean aquifers and slowly make its way to the Red Sea or the Nile (Figures 5-2 and 5-3). These aquifers provide water to the sparse vegetation that is characterized by *Acacia* trees (سنت, *sant*), such as *Acacia nilotica* and *A. raddiana*, *Zilla spinosa* and *Salsola imbricata* (tumbleweed, خريط, *khareet* which is reflected in the place name Wadi Khareet, Figure 5-4). Towards the Nile Valley the landscape gets barren until irrigation from the Nile replenishes the water supply. Close to the Red Sea, the vegetation changes into one typical of a saline environment, including *Tamarix* trees (طرفة, *tarfah*) and patches of mangrove (*Rhizophora* sp., Cappers 2006; Krzywinski and Pierce 2001).

Eastern Desert Ware

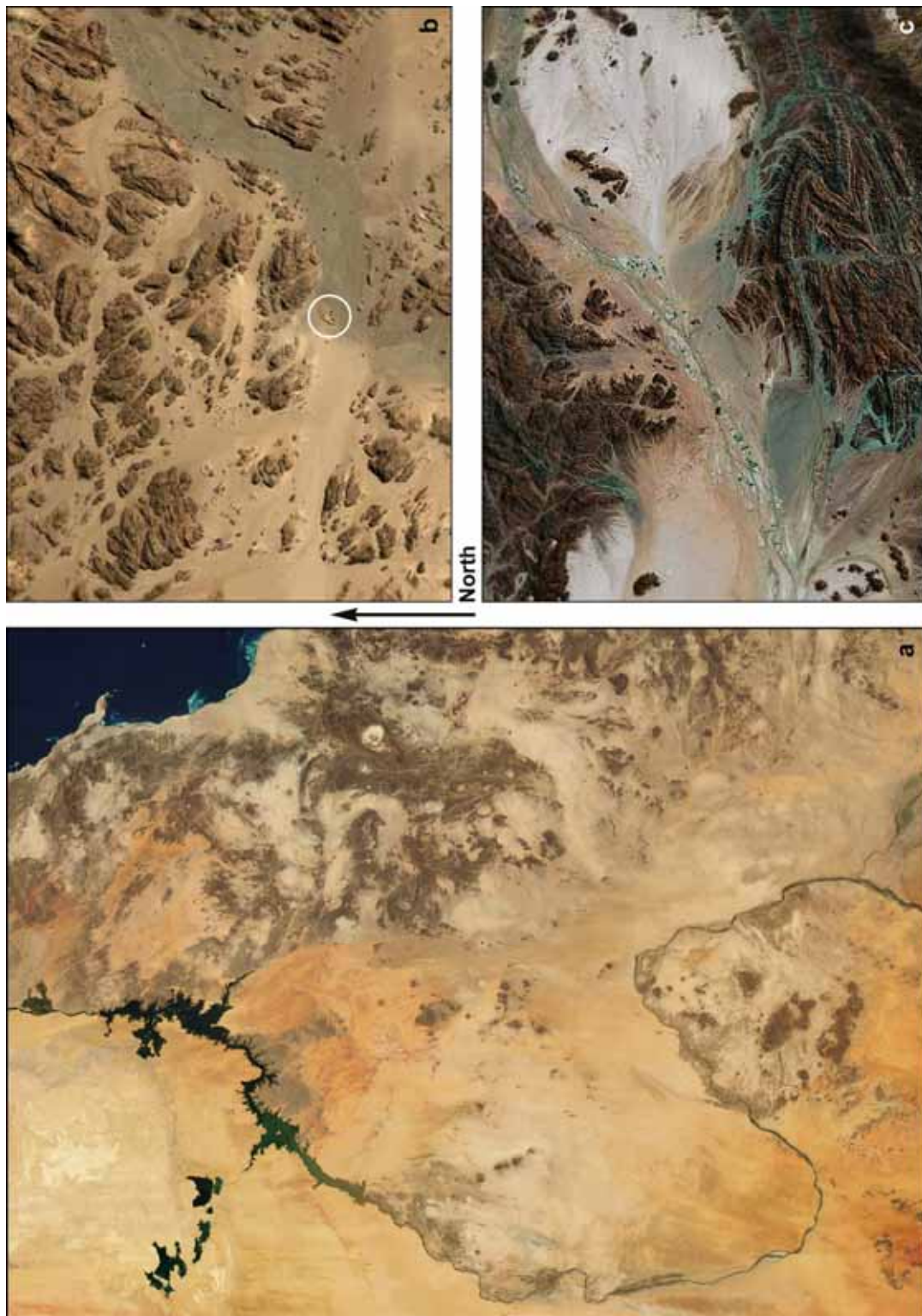


Figure 5-1: Satellite images of the Eastern Desert; a: Overview captured in October 2001 by NASA's Moderate Resolution Imaging Spectroradiometer (MODIS); b: Google Earth image of the Mons Smaragdus area showing the environs of the Graeco-Roman road station Apollonos (encircled) in Wadi Gamal (accessed April 2007); c: Google Earth image of the area in which Tabot and Nubt are located (accessed April 2007).

Pottery Production

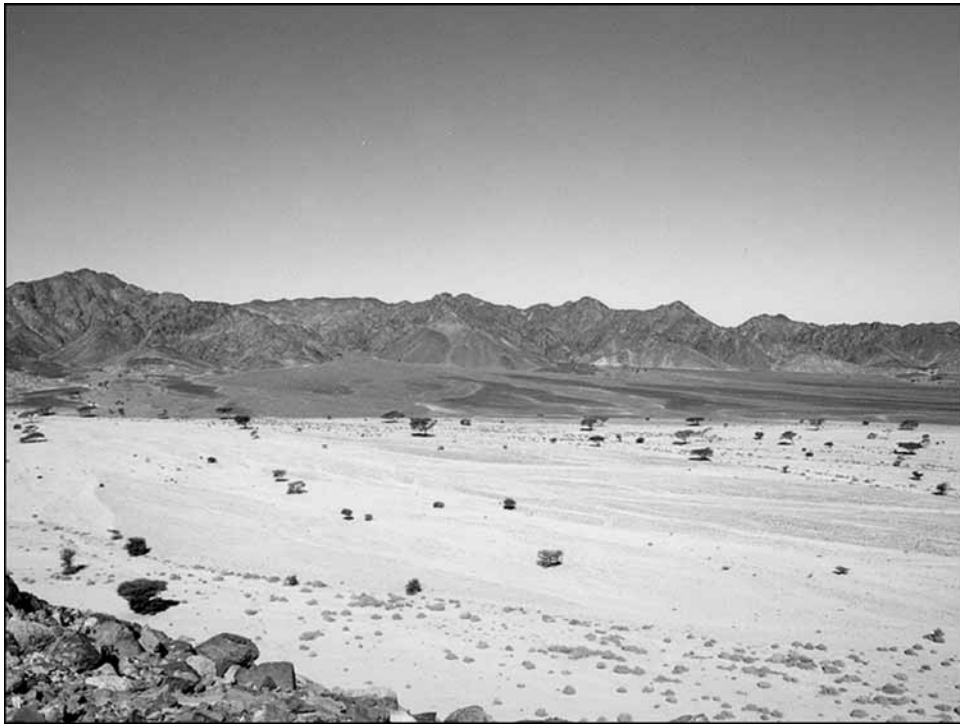


Figure 5-2: View of the Egyptian Eastern Desert, just inland from Berenike, showing a sandy valley (*wadi*) with scattered *Acacia* trees and *Zilla* shrubs bordered by gravel slopes and bare mountain tops (Figure 5-3).

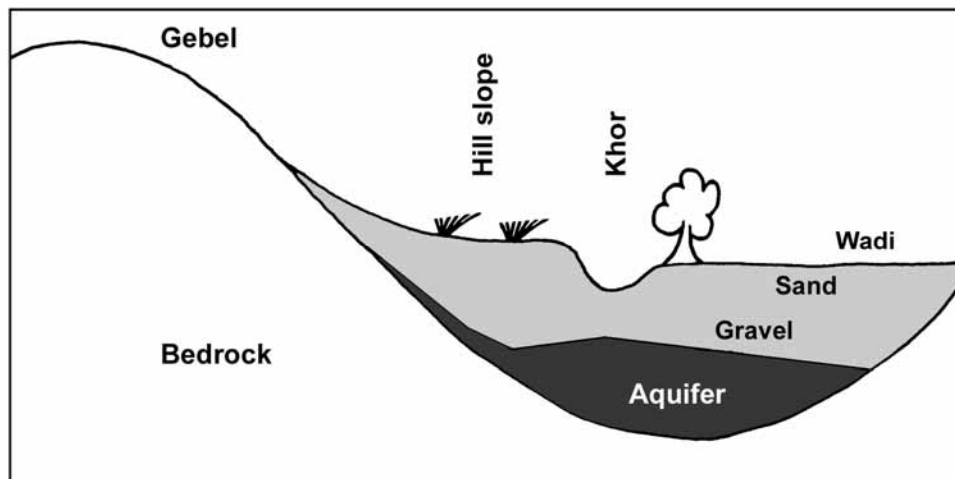


Figure 5-3 (after Aldsworth and Barnard 1996:416; 1998:9; Krzywinski 2001:14): Schematic section through the Eastern Desert landscape (Figure 5-2).

Around 12,000 years ago the last Ice Age came to an end, marking the transition from the Pleistocene to the Holocene (Appendix 6). In North Africa the early Holocene (12,000-7,000 years ago) was characterized by relatively cool and wet conditions, the 'Holocene pluvial period' or 'Holocene wet phase', which enabled the exchange of flora and fauna between the Mediterranean

and tropical Africa. Later the climate became warmer and increasingly arid, pushing plants, animals and humans south or into the Nile Valley. Giraffes disappeared from southern Egypt around the beginning of the Pharaonic period (ca. 3000 BCE), elephants were last reported in northern Sudan in the first centuries CE and ostriches disappeared from the area in the early 20th

Eastern Desert Ware

century CE (D. Arnold 1995; Davis 1978; Eide et al. 1998; Manlius 2001; Reed 1970). The dwindling numbers of hippopotamus, crocodile and doam palm (*Hyphaene thebaica*, نوم) in the northern parts of the Nile Valley and the deforestation and desertification of the Eastern Desert are partly due to this climatic shift, and partly to human intervention (Krzywinski 2001). The introduction into North Africa of domesticated cattle, from the south, and cereals and ovicaprids (goats and sheep), from the Levant, at the end of the Neolithic (around 5000 BCE) facilitated the emergence of new ways of life (Hassan 2002; Wendorf and Schild 1976; Wendorf et al. 1976; Wengrow 2006; Williams and Faure 1980). On the one hand it enabled the settlement of a relatively large number of people in the shrinking inhabitable areas, ultimately mostly limited to the Nile Valley. On the other hand, a lifestyle could develop that was better adapted to an arid environment especially that of the Red Sea Mountains, which are characterized by shallow and regularly replenished aquifers (Figures 5-2 and 5-3). This pastoral nomadism was later complemented by donkeys (around 4000 BCE) and ultimately the dromedary (*Camelus dromedarius*). Although being introduced into Egypt by invading Asian armies during the 7th-6th century BCE and possibly even earlier (D. Arnold 1995; Davis 1978; Midant-Reynes and Braunstein-Silvestre 1977; Rowley-Conwy 1988), dromedaries (جمال, *gamal*) were probably not adopted by the civilian population until Graeco-Roman times (332 BCE-395 CE). By the first century BCE the civilian use of dromedaries appears to have spread as far south as Meroe in modern Sudan (Bulliet 1975; Wilson 1984; Magid 2008). Much like the introduction of the horse in the New World, the introduction of the camel into Nubia and the surrounding deserts had a profound effect on the local and regional political configurations (Chapter 1; Adams 1984).

Around 1350 CE, the famous Egyptian historian al-Maqrizi (تقي الدين محمد المقریزی) described the Eastern Desert as inhabited by nomadic people living in tents made of leather. According to al-Maqrizi, these nomads roamed the area searching for good pasture for their animals, which included large numbers of well-bred long-horned cattle, as well as dromedaries, goats (ماعز, *ma'az*) and sheep (غنم, *ghanam*). The accounts of al-Maqrizi also contain detailed descriptions of the plants in the region, describing a flora concurrent with a savannah rather than a desert environment (Magid 2008). Early European travellers, visiting the region in the 19th century CE, mention large numbers of trees, sometimes identified as *Acacia* (Burckhardt 1822; Colston 1879; Floyer 1893; Linant de Bellefonds 1868). Several commented on the recent deforestation that they attributed to the production of charcoal, but which may have been partly due to the changing climate. Archaeobotanical research in Graeco-Roman Berenike showed that in the early centuries CE various species of

trees were used for firewood (Vermeeren 1999; 2000), including *Acacia* species, *Rhizophora* species (mangrove) and *Tectona grandis* (teak). The presence of mangrove, which does not produce good charcoal, and teak, which was imported from India for shipbuilding, indicates that the local supply of *Acacia* trees, which produce excellent firewood, was probably not sufficient to accommodate a settlement the size of Berenike. The numerous remains of mangrove show that these trees must have been more common in the area in the first centuries CE than they are today (Cappers 2006; Vermeeren 2000), another indication of deforestation by human intervention and climate change.

After the end of the Holocene pluvial period, about 5000 years ago, the Sudanese part of the Eastern Desert receives more rain annually than areas further to the north and in some southern regions cattle husbandry remained possible until the 20th century CE (Krzywinski and Pierce 2001; Paul 1954; Magid 2008). That century also saw periods of serious drought leading to famine among the permanent inhabitants of the area (Table 5-1). Due to a lack of reliable data it remains unclear if such periods are more frequent and more severe now than in the past. The growing number of people depending on the resources of the area and the on-going ecological degradation of the desert landscape has certainly increased the impact of periods of droughts on the lives of the inhabitants of the desert. Many have decided to leave the area and have permanently settled in Wadi Khareet (in Egypt between Aswan and Edfu) or Suakin (south of Port Sudan, Figure 5-4).

The Beja

At present the Eastern Desert is inhabited by the Beja, best known from 20th century CE descriptions (Barnard 2000; Cappers 2006; Keimer 1951; 1952a; b; 1953a; b; 1954 a; b; Krzywinski and Pierce 2001; Magid 2008; Murray 1935; Newbold 1935; Paul 1954; Wendrich 2008). The Beja confederation is an amalgam of tribes and clans, including larger groups like the Ababda, the Beshareen, the Otman, the Amarar, the Hadendowa and the Beni Amer (Figure 5-4). Some of these are pastoral nomads herding sheep, goats, dromedaries and donkeys (حمار, *himaar*). Others, in the south, are semi-nomadic cattle herders or settled agriculturalists. Many Beja have settled along the roads in the area, on the outskirts of the cities on the Red Sea coast or on the fringes of the Nile Valley. The little that is known about the ancient long-distance migratory routes has been briefly discussed in Chapter 1 (see also Sadr 1987). Most Beja speak Arabic, as a first or a second language, or the Cushitic (Afro-Asiatic) language *Beja (To-Badawi)*. The first language of the Beni Amer is *Tigre (Xasa)*, a Semitic language (like Arabic), which is a reason for some to exclude them from the Beja confederation (Magid 2008).

Pottery Production

Year	Name	Remarks
1890-'94	<i>Sanat sitta</i>	Named after 'year 6' (of the Islamic 13th century AH) marking the beginning of the drought
1920-'21	<i>Kurbagat</i>	Named after 'the whip' used to control the people during food distribution
1940-'41	<i>Fuliyah</i>	Named after 'the beans' distributed to relieve the food shortages
1949-'50	<i>Nigmah Umm Danab</i>	Named after the comet (<i>Umm Danab</i>) that was seen during the famine
1959-'62	<i>Amarikany</i>	Named after 'the American' government that supplied food during the famine
1969-'72	<i>Kiloyat</i>	Named after 'the kilos' in which food was measured out during its distribution
1984-'85	<i>Khawagah</i>	Named after 'the foreign' relief workers that distributed food during the famine

Table 5-1: Overview of the main periods of drought and famine in the Sudanese part of the Eastern Desert between 1890 and 1990 (modified after Krzywinski and Pierce 2001:92-93).

Despite the fact that the Beja are usually described as pastoral nomads, much of their activities could perhaps better be described as multi-resource nomadism or even hunting and gathering (Wendrich 2008), something which is true for most people with a mobile lifestyle (Rosen 2003; Salzman 1972; Wendrich and Barnard 2008). Furthermore, most Beja will go back and forth between a settled and a mobile lifestyle depending on their changing circumstances. Of the Beja that adhere to a nomadic way of life, the women and children 'follow the rain', looking for areas that will provide sufficient grazing for their flocks (Chapter 1). Some of the men go out into the desert to hunt, to burn charcoal or to collect medicinal plants (Barnard et al. 1996; Cappers 2006); commodities that are highly valued at markets in the Nile Valley. Other men travel to the Nile Valley to sell these products or to assist with the harvest. This used to be especially important in Lower Nubia where many men had left to work in Cairo as cooks, servants and guards. After the harvest, the Beja labourers received some of the wheat and were allowed to graze their flocks on the abandoned fields. This arrangement came to an abrupt end in the 1960's with the closing of the High Dam at Aswan, drowning Lower Nubia under the water of Lake Nasser (Chapter 1). Men also seek employment in road construction and building, or as driver and guide (primarily for tourists and scientists such as geologists and archaeologists). Some use their knowledge of the border area between Egypt and Sudan to engage in smuggling.

The staple food of the Beja is *aseedah* (عصيدة), a thick porridge made of flour, water and salt, cooked over an open fire in a stone or metal pot (برمة, *burmah*). Sorghum or wheat flour can be used and butter or milk is sometimes added. *Aseedah* is eaten from a communal bowl (قدح, *qadah*), traditionally made of wood, but

now often metal or ceramic. Another dish is *ridaaf* (رداف), bread of sorghum flour baked on heated stones. First, a fire is built on a layer of stones placed in a shallow depression. After a while, the fire is brushed aside and the dough poured on the stones. The fire is brushed back over the dough which will bake into bread in 20-30 min. Dough made of wheat flour can be baked directly in the sand into bread named *qaburi* (قبوري). A third type of bread is *ruqaaq* (رفاق) for which the dough is rolled out into very thin layers that are baked on a sheet of metal (often the lid of an oil drum) balanced over a fire. *Ruqaaq* is made when only dung is available for fuel as its preparation requires no contact between this fuel and the food.

In wet years, the more sedentary Beja sow sorghum (درة, *durah*, *Sorghum bicolor*), corn (also درة, *durah*, *Zea mays*) or barley (شعير, *sha'yr*, *Hordeum vulgare*). The environment never allows the cultivation of wheat, which needs approximately 300 mm rain per annum (Araus et al. 2007; Cappers 2006), or its equivalent in irrigation. Wheat, and in dry years also sorghum, has to be purchased on the market. On the Red Sea coast, fishing for reef fish and molluscs supplement the Beja diet that mainly consists of cereals, cheese, sugar and coffee (Barnard 2000; Krzywinski and Pierce 2001; Wendrich 2008). Meat and vegetables are not regularly added to the meal although onions, tomatoes, cheese, fish or game will be consumed when available. Slaughtering sheep, goat and dromedaries from the flock is limited to special occasions, such as religious holidays and weddings. A similar diet, high in starches and sugars, low in proteins and vitamins, is common among nomadic groups throughout the Middle East and North Africa (Baba et al. 1994; Cole and Altorki 1998; Fraser et al. 2001; Hobbs 1990; Roe 2008; Saidel 2008; Stene et al. 1999; Wendrich 2008).

Eastern Desert Ware

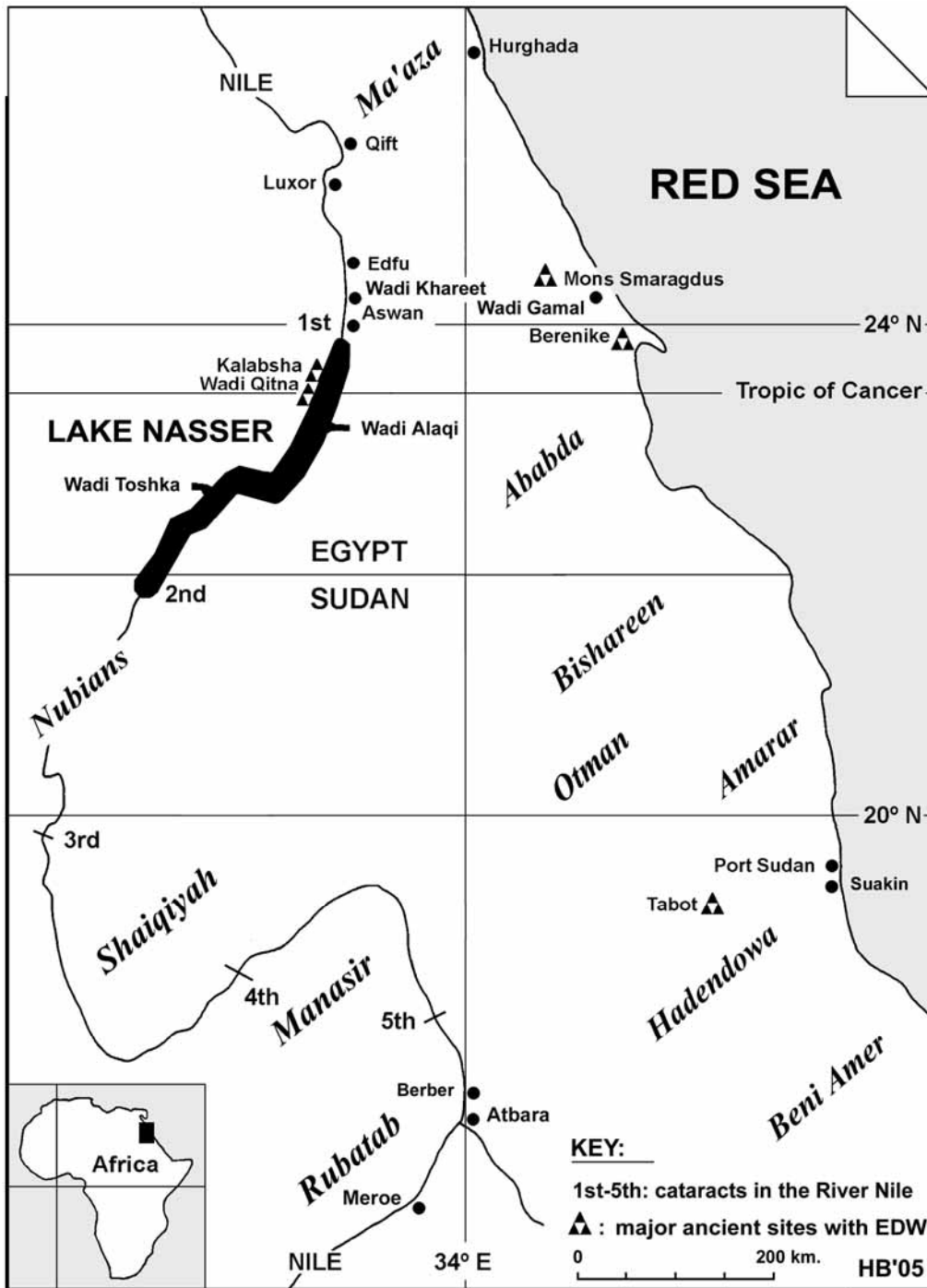


Figure 5-4 (after Cappers 2006; Hobbs 1990; Krzywinski and Pierce 2001; Magid 2008; Manger 1996; Murray 1935; Paul 1954, Wendrich 2008): Map showing the approximate territories of the major groups currently inhabiting the Eastern Desert as well as the major ancient sites that produced Eastern Desert Ware (cf. Figures 1-1 through 1-3 and 1-7).

Pottery Production

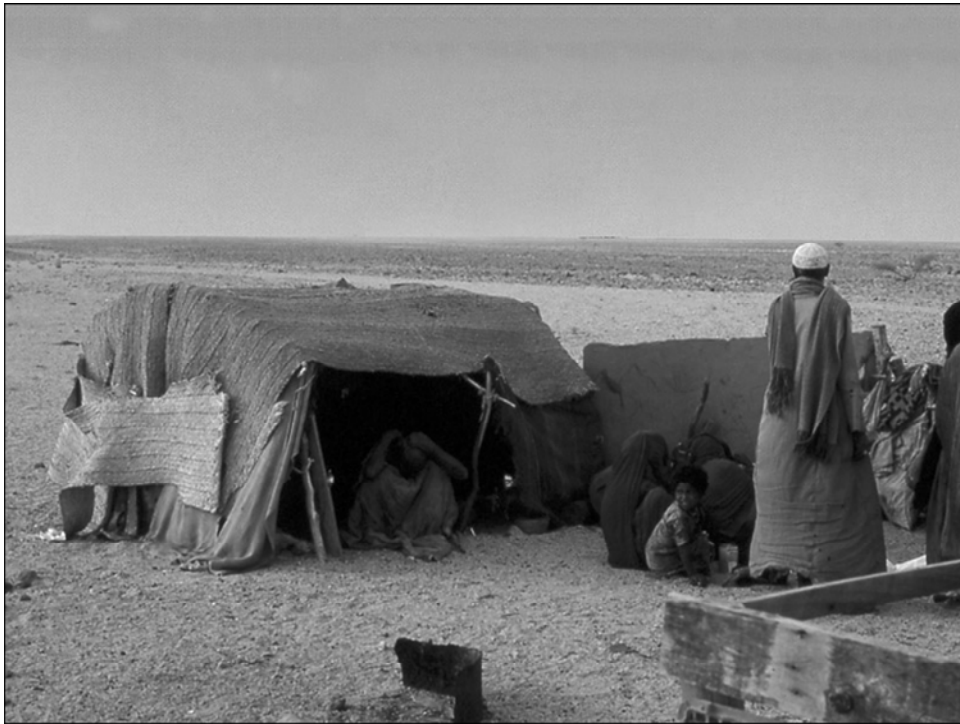


Figure 5-5: An Ababda 'bayt al-birsh' in southeast Egypt, near the Sudanese border.



Figure 5-6: A Beni Amer hut in northeast Sudan, near the Eritrean border (the nicer structure to the right is provided by the Sudanese government).

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Figure 5-7: A Hadendowa dwelling made of *Euphorbia* stems in northeast Sudan, near the Egyptian border.



Figure 5-8: Ababda headrest (wood and metal) in the collection of *Bayt al-Ababda* Museum in Wadi Gamal, Egypt (photograph by W.Z. Wendrich/EDAPP). Such headrests are remarkably similar to those known from Ancient Egypt (Keimer 1951; 1952a; b; 1953a; b; 1954 a; b).

Pottery Production



Figure 5-9: An Ababda woman surrounded by the paraphernalia for the Beja 'coffee ceremony' (Figure 5-10). The ceramic coffee maker and cups are imported from Sudan and China respectively (photograph by W.Z. Wendrich/EDAPP).

The dwelling typically associated with the Beja is the 'mat-house' (بيت البرش, *bayt al-birsh*), a small hut made of rugs and mats over a dome-shaped wooden frame (Figure 5-5). The mats are made of palm fronds (*Phoenix dactylifera*, نخل or *Hyphaene thebaica*) and the frame usually of *Acacia* roots. Such dwellings appear to be mentioned in Egyptian Middle Kingdom and Late Kingdom texts while Strabo reports, in the first century CE, that the nomads in the desert live in dwellings made of interwoven split pieces of palm leaves (Magid 2008; Prussin 1995). Medieval Arabic sources, such as al-Istakhari, Ibn Haugal and al-Hamadhani, however, mention that the Beja live in dwellings made of animal hair (بيت الشعر, *bayt al-sha'ar*), an observation confirmed by early European travellers (Magid 2008). These dwellings, now no longer seen (Barnard 2000; Cappers 2006; Keimer 1951; 1952a; b; 1953a; b; 1954a; b; Murray 1935; Wendrich 2008), did most likely not look like the 'black tent' of the nomads on the Arabian

Peninsula, but more like the dome-shaped mat-house (Magid 2008). Mat-houses are light-weight alternative to tents, provided the materials are available, easy to put up and to take down and therefore eminently suitable for a nomadic lifestyle. Apart from the procurement of the raw materials, the temporary dwelling is the responsibility of the Beja women (Wendrich 2008).

Next to these temporary dwellings, more permanent dwellings are build of scraps of wood and metal, supplemented with sheets of plastic, rugs and mats (Figures 5-6 and 5-7). Such dwellings are often inhabited intermittently, standing empty when the women are in the desert with their flocks and the men are away on their various jobs. A special kind of permanent dwelling is constructed of the stems of *Euphorbia abyssinica*, a cactus-like plant growing in northeast Sudan. The stems of these are driven into the ground to form a slightly slanted circular or oval structure, which is then roofed

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with rugs, mats or sheets of plastic or metal (Figure 5-7). al-Maqrizi tells us that majority of the houses in Aydhab, on the Red Sea coast at the present border between Egypt and Sudan, were made of 'reeds' (Magid 2008). At the time, Aydhab was at its peak as a port for pilgrims and trade caravans crossing the Red Sea and will have attracted many nomads to settle, like Quseir and Suakin did more recently.

The material culture of the Beja is characterized by gear to deck out a dromedary, for the men, items for personal adornment, for the women, and the paraphernalia for the 'coffee ceremony' (Cappers 2006; Keimer 1951; 1952a; b; 1953a; b; 1954a; b; Wendrich 2008). Men can list an impressive array of dromedary gear, mostly made of leather, the majority of which is purely decorative. Each tassel, belt and bag is identified by an individual name and usually seems to serve mainly to emphasize the swaying movements of a running dromedary. Jewellery is important to the women, both as means for personal adornment and as investment. Gold earrings and nose ornaments as well as heavy silver anklets (خلخال, *khulkhal*) are a woman's savings. They may use beads, kauri shells or fake coins to decorate their plaited hair (Cappers 2006). Men do not usually have jewellery, but may wear leather necklaces or armbands containing apotropaic amulets (Barnard 2000; Wendrich 2008). They will use 'afro-style' combs, made of wood, metal or plastic, to decorate their curly hair that made the British call them 'fuzzy-wuzzies' in the 19th century CE. The use of headrests may serve to protect the elaborate hairdos of both men and women (Figure 5-8). Similar headrests are used in Ethiopia and Eritrea and are also known from Pharaonic Egypt, in the latter case mostly from funerary contexts.

Of major importance in the daily life of the Beja is the preparation, serving and consumption of *jabanah* (جبنة), coffee freshly roasted and prepared, usually with ginger, on a charcoal fire in a special globular ceramic vessel also called *jabanah*. First, this *jabanah* vessel is filled with water and put in the fire to come to the boil. Meanwhile, coffee beans are roasted in a separate metal vessel, often an old tin can, and crushed in a wooden mortar with some ginger root. The ground coffee is then transferred into the *jabanah*, which is put back in the fire to brew. A small bung of date palm fibre or nylon rope is stuffed in the long narrow neck of the vessel to act as a strainer. The *jabanah* drink is served in small porcelain cups, made in China, filled with sugar. Only part of this sugar will dissolve in the first serving and subsequent servings are poured onto the remaining sugar (Figure 5-9). Guests are encouraged to drink three or nine cups. The paraphernalia for this 'coffee ceremony' are stored in special wooden or basketry containers, adding to the weight of the items, and taken along on long as well as short trips (Cappers 2006; Krzywinski and Pierce 2001; Wendrich 2008). This is

remarkable as ceramics are fragile and relatively heavy. It shows the importance attached to these imported symbols of luxury.

Coffee (*Coffea arabica*, in Arabic referred to as قهوة, *qahwah*, instead of *jabanah*, while the beans are called بن, *bunn*) or tea (شاي, *shay*) are served as part of a hospitality ritual throughout the Middle East (Baram 1999; Birnbaum 1956; Racy 1996; Saidel 2008). Coffee spread through the area in the 15th-16th centuries CE, from Ethiopia (where it was domesticated before the 9th century CE), long after the introduction of sugar in the 10th century CE (Watson 1983). Tea and tobacco were introduced during the 17th century CE (Baram 1999). The combined use of these products became embedded in daily life as symbols of a new social structure in which recreation and pleasure played an important binding role (Baram 1999; Birnbaum 1956). The importance attached to these ceremonies, and the related commodities and paraphernalia, beyond their everyday use is illustrated by the care given to the vessels and their containers, which are usually well-made and richly decorated; by their representation in effigy, to be found along the roads throughout the region (Figure 5-10); and by the fact that they are often dedicated in graves (Figure 5-11; Barnard 1998:399-401; Cappers 2006:41-42).

It is unclear when coffee was first used in the Eastern Desert. It may have been before the 16th century CE, simply because the area is between the Middle East and Ethiopia (and Yemen on the other side of the Red Sea) and closer to the latter. The fact that the drink is referred to as *jabanah*, rather than *qahwah* (or a directly related term like *café*, *Kaffee* or *coffee*), supports the idea of an independent, early introduction. The word *qahwah* may be derived from *qawwat al-bunn* (قوة البن = power of 'bunn') or refer to the Kingdom of Kaffa that ruled parts of Ethiopia between 1390-1897 CE. *Jabanah* may refer to the Red Sea harbour town (14°N 56' / 42°E 57') with the same name in Yemen, much like *mocha* is named after Mokha (13°N 19' / 43°E 15') about 200 km. to the south. On the other hand, the introduction of coffee may have been relatively late as the Eastern Desert was and is far from the cultural centres where social changes took place, while at the same time its inhabitants had and have few resources to indulge in recreation and pleasure. What social activities involving food and drink were practiced in the Eastern Desert before the introduction of coffee and sugar remains unclear. No traces of coffee have been found in Eastern Desert Ware (Chapter 4). The fact that the 'coffee ceremony' is a defining part of Beja life, however, may serve to show the importance that pottery can have for mobile people, despite the problems of its vulnerability and weight.

Pottery Production

Modern and Ancient Desert Dwellers

Given the variety in lifestyle, history and language between the various groups comprising the Beja conglomerate, as well as the cultural similarities between the Beja and groups further to the north and south, it is difficult to discern what exactly defines the Beja as a separate entity. This definition is further complicated by the mystification by the Beja of their history and origins, as is typical of any oral tradition. Many of my family members, for instance, claim to possess noble blood because of Barnard Castle, a city near Newcastle (UK). This place is in fact named after Bernard de Baliol while the actual castle as well as the title Lord Barnard have been in the possession of the descendents of Henry Vane since the 17th century CE. Others claim to be descendants of the Huguenots, Protestants who fled France after Louis XIV revoked the Edict of Nantes in 1685, or to be related to the famous South African surgeon Dr. Christiaan Barnard, who was the first to successfully perform a human-to-human heart transplant in 1967. Although not entirely impossible, there is no firm evidence to support any of these claims. Similarly, the Beja claim to be descendants of a number of common ancestors, often close to the prophet Mohamed. The names of these vary between informants as well as over time (Wendrich 2008). On other occasions, they

state to have been living in the desert since time immemorial or to be the heirs of an ancient empire such as the Meroitic kingdom or Pharaonic Egypt. Adding to the confusion are the Ma'aza and the Rashaida who arrived in the area from the Arabian Peninsula in the 18th and 19th centuries CE, but are not usually referred to as Beja (Hobbs 1990; Krzywinski and Pierce 2001; Magid 2008). Being a Beja seems to be largely a matter of self-definition as can be illustrated by the case of the Beni Amer. They include themselves in the Beja confederation, but several other groups within the Beja deny them this status, partly because their first language is *Tigre* (Magid 2008).

It is often maintained that the Beja are identical with or the direct descendents of the ancient Bulahau, Blemmyes, Bega and Bougaites (Cappers 2006; Dahl and Hjort-af-Ornas 2006; Keimer 1951; 1952a; b; 1953a; b; 1954a; b; Krall 1900; Krzywinski and Pierce 2001); names mentioned in the historical sources on the region (Eide et al. 1994; 1996; 1998; Updegraff 1988; Appendix 3). Such identifications are based on the uncritical use of the historical sources and a disregard of the cultural, historical and ethnic developments that the people living in the desert attained in the course of two millennia (Barnard 2005; 2007; Burstein 2008; Wendrich 2008).



Figure 5-10: Statue of a *jabanah* (coffee maker) with cups at a road crossing near Suakin, Sudan (Figure 5-9).

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It is also often argued that the typical Beja culture is disappearing because of increasing influences from the outside world or other external reasons, observations that echo the notion of the 'noble savage' and that implicitly deny the Beja access to cars, televisions, mobile telephones and the Internet (Wendrich 2008), but also modern education and healthcare (Barnard 2000). The fact that the culture of the Beja can 'disappear', or rather change to be part of our 'global village', shows that something similar may have happened in the past. Even if the modern Beja are the genetic descendents of the Eastern Desert Dwellers of 2000 years ago, which they may or may not be, they have implemented many changes to their way of life to create what is now perceived as the Beja culture. Obvious examples include the constant adaptation to the changing climate and the ecological degradation of the desert environment as well

as the introduction of the camel, the coffee ceremony, Islam, the Arabic language and, more recently, cars, plastic containers and television. Contacts with Graeco-Roman miners and quarrymen (Cappers 2006, 39), Christianity (Eide et al. 1998, 1185-1188), Ma'aza and Rashaida Arabs, which invaded the area in the 19th century CE (Hobbs 1990; Krzywinski and Pierce 2001), and especially with the Banu Kanz, an Arab group that mixed with the dwellers of the Eastern Desert during the 11th-16th centuries CE (Chapter 1), will have had profound effects on those living in the area. The successive Christian (the Kingdoms of Nubia and Makuria), Funj (the Sultanate of Sinnar), Ottoman, British, Egyptian and Sudanese governments (Adams 1984), although relatively distant, also had their influence and left their traces in past and present Beja society and culture.



Figure 5-11: A modern Ababda grave near Berenike with a metal cup and teapot (cf. Barnard 1998; Cappers 2006).

The Beja definitely deserve the study and recording of their culture and history, such as the recently opened *Bayt al-Ababda* Museum in Wadi Gamal (Egypt) and the few pages here. They also deserve to be the agents of their own destiny, the main opposition against which are not only the regional and national authorities, but also scholarly misconceptions. Equating the Beja with the Blemmyes is like thinking of modern Belgians, Flemish and Walloon alike, as 'the bravest of all Gauls' (Chapter 1; Barnard 2005), completely ignoring people such as Leo Baekeland, Jules Bordet (Nobel laureate in 1919),

Godfrey of Boullion, Jacques Brel, Pieter Breughel, Albert Claude (Nobel laureate in 1974), Hugo Claus, Kim Clijsters, Jean Claude Van Damme, James Ensor, Cesar Franck, Guido Gezelle, Justin Henin, Corneille Heymans (Nobel laureate in 1938), Victor Horta, Saint Hubertus (patron saint of hunters, mathematicians, opticians and metalworkers), Jacky Ickx, Jacob van Maerlant, Maurice Maeterlinck (Nobel laureate in 1911), René Magritte, Gerardus Cremer (Mercator), Eddy Merckx, Paul van Ostaijen, Josquin des Prez, George Remi (Hergé), Peter Paul Rubens, Adolphe Sax and

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many others. It may be impossible for Europeans to compose a similar list of influential Beja, but most Beja probably can. And even if they would be unable to do so, for whatever reason, then the above may serve to illustrate that Beja society and culture should be considered no more rigid or frozen in time than the Belgium (Barnard 2007).

Apart from these fundamental problems there are the more practical problems with the written historical sources as discussed in Chapter 1. What is clear from the ancient texts is that the Eastern Desert has been inhabited by various groups since at least the Egyptian Middle Kingdom (1775-1640 BCE), and most likely for a long time before that (Magid 2008; Fattovich 1993), and that the ethnic and cultural composition of these groups was then probably as convoluted as it is today (Barnard 2005; Huyge 1998; Paul 1954). It is impossible to match the rather ill-defined groups in the area today (Figure 5-4) with any of the many names mentioned in the ancient sources (Eide et al. 1998; Barnard 2005). Especially as it is evident that in most of the ancient sources the mentioned names should be interpreted as representing 'the other' and that they aim to simplify the diversity of the inhabitants of regions outside the realm of the known rather than to explain it (Barnard 2005). The attribution of archaeological remains, such as graves, funerary monuments (*ekratels*) and pottery (Eastern Desert Ware), to specific groups, most often to the Blemmyes, is an equally hazardous affair and should be avoided until more archaeological and historical data become available.

The Beja are discussed here to serve as an example of how a people can employ the limited resources provided by the Eastern Desert and its environs and combine a life in the desert with contacts with the settled populations in the Nile Valley and on the Red Sea coast into a viable and durable lifestyle. Although specific aspects of daily life will have been different, other aspects may have been remarkably similar in the 4th-6th centuries CE, the period in which Eastern Desert Ware was made and used. At present the Eastern Desert dwellers do not produce any pottery although ceramics clearly play an important role in their everyday life (Figures 5-10 and 5-11). Most larger receptacles are now of metal or plastic, lighter and more durable than ceramics, but were until recently manufactured individually out of wood, the *qadah*, or stone, the *burmah* (Sidebotham et al. 2002; Wendrich 2008). Several of the smaller items related to the coffee ceremony, however, are imported ceramics. The great importance attached to these imported items may imply that Eastern Desert Ware vessels once were equally important, even though they clearly fulfilled different functions. This is supported by the fact that 70 (24%) of the 290 Eastern Desert Ware vessels in this study were found in funerary contexts (Badawi 1976;

Barnard et al. 2005; Strouhal 1984; Strouhal and Barnard 2002; Appendix 5).

Nomadic Pottery Production

If we temporarily except the tentative conclusions of the macroscopic and geochemical studies (Chapters 2 and 3) that Eastern Desert Ware was produced somewhere in the area where it was found, rather than in the Nile Valley or further afield, we can then propose that it was made by one of the indigenous groups inhabiting the Eastern Desert at the time. This hypothesis induces two new issues that need to be addressed: is it indeed possible for people living like the Beja in an environment like the Eastern Desert to produce pottery; and, if so, what made the dwellers of the Eastern Desert 'suddenly' start and then stop producing their own pottery, in the 4th and in the 6th century CE, respectively. The first will be the focus of the following discussion of a suggested *chaîne opératoire* of nomadic pottery sherds (Table 5-2); the latter will be discussed in the final paragraphs of this chapter. Other possible interpretations of the archaeological observations will be discussed in Chapter 6.

Some people adhering to a nomadic lifestyle produce pottery, although usually either coarse and undecorated or crude copies of vessels that were imported from elsewhere (D.E. Arnold 1985; Barnett and Hoopes 1995; Eerkens 2008; Rice 1999). Eastern Desert Ware does not answer this description as it is rather well made, albeit with basic methods, and typically also decorated (Chapter 2, Appendix 5). In order to understand the possibilities and problems faced by a potter with a mobile way of life to produce vessels such as Eastern Desert Ware (Starck 2003), I temporarily joined amateur potter David Verity in his endeavour to master the ceramic techniques most famously practiced in Mata Ortiz (Chihuahua, Mexico). This pottery is a relatively close modern equivalent of Eastern Desert Ware (Bell 1994; LeFree 1975; Wisner 1999), the closest local parallel being the vessels of the C-Horizon, produced by Nubian groups that inhabited the Nile Valley from the First to the Third Cataract between 2300-1500 BCE (Chapter 2). These experiments are in no way meant as definite proof that Eastern Desert Ware was indeed made by pastoral nomads, rather than by settled desert dwellers or inhabitants of the Nile Valley, but only serve to show that it would have been feasible for them to do so. Based on their results I put forward a *chaîne opératoire* (operational sequence) for nomadic pottery sherds (Table 5-2), which not all Eastern Desert Ware vessels necessarily have gone through (Barnard 2008). As archaeologically retrieved sherds are the subject of this study I have taken them as the end product of the proposed *chaîne opératoire*, rather than intact vessels.

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Both in Arabic and in English, 'clay' means different things to geologists, potters and archaeologists (Table 3-1; Appendix 7); something which is even more true for 'temper' (Bourriau et al. 2000; Hertz and Garrison 1998; Rice 1987). A prospective nomadic potter in a familiar landscape, however, will need to see how clay and temper present themselves only once or twice to be able to find and recognize them. As water and fuel are unlikely to be available in the same area, it will be necessary to either bring those or to carry out the clay. Settled potters typically do the latter (P.J. Arnold 1991; Deal 1998; Gosselain 1992; Wisner 1999), while mobile people may do the former as they will usually be

carrying water and fuel for other, house-hold purposes. Although clay and temper may be easy to recognize, their behaviour during the production process is more difficult to predict. It is therefore very likely that mobile people, like their settled counterparts, will have returned to sources that had proven to yield good raw materials, or at least raw materials with known properties (P.J. Arnold 1991; Arnold et al. 1991; Deal 1998; Gosselain 1992; Wisner 1999). They may have included such valued sources in their migratory routes, as they will almost certainly have done with sources of special supplies, such as micaceous temper or clays suitable to be used as slip.



Figure 5-12: Four of the vessels made to demonstrate the feasibility of the production of Eastern Desert Ware by pastoral nomads.

After collecting clay, water and temper these are combined into a paste that can be shaped and fired. One of the ways to do this is suspending the raw clay, which will be mixture of clay, silt and other mineral inclusions (Chapter 3, Appendix 7), in water and allowing large particle to sink to the bottom (*levigation*). Pure clay is not suitable for the production of pottery as it will shrink dramatically while drying, causing cracks and breaks. Therefore, not all inclusions should be removed from the raw clay, or some 'filler' should be added to the paste. These non-plastic materials will be cemented by the clay particles, forming a network that will sufficiently reduce, but not completely eliminate, shrinkage. Many materials are used as filler, including volcanic ash, silt, dung,

chopped straw and crushed shells or pottery (grog), each with their own effect on both the technological process and the appearance of the vessel (Arnold et al. 1991; Bourriau et al. 2000; Rye 1981; Schiffer et al. 1994; Shepard 1976). As these processes require much time and water naturally levigated clays, at the bottom of dry lakes or ponds, will have been used preferentially or exclusively. It is unclear if the inclusions in Eastern Desert Ware were added, as necessary in Santa Clara (New Mexico, LeFree 1975), or that they were naturally present, as in Mata Ortiz (Mexico, Wisner 1999). Experience will have shown which sources naturally produced clay and temper in a favourable ratio. These will have attracted mobile people to return, especially as

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such raw material required much less preparation. I chose to add about one part of sieved silt to four parts of well-levigated clay.

Once the paste is fit to be shaped, which can take several days, there are many ways to model it into the desired form, apart from a potter's wheel, including pinching a ball of clay into the right shape or connecting two or more rings to a base (coiling). The surfaces can be smoothed with a wet finger or a damp wad of cloth, and decorations can be impressed into the wet surface with, among many others, a finger nail, a blade, a shell, an animal bone or a potter's 'comb' (Rye 1981; Shepard 1976). After this the vessel is allowed to dry until it is 'leather hard' meaning that the paste has lost its plasticity, but still holds 20-30% free water (Bourriau et al. 2000; Rye 1981; Shepard 1976; Chapter 3). In this stage the shape of the vessel can no longer be changed, but small repairs can be made to its surface and additional decorations can be made (LeFree 1975; Rye 1981; Shepard 1976). It is also possible to further smooth the surface with a piece of damp cloth or leather (Bell 1994). It is possible that the potters who made Eastern Desert Ware did either of these; I worked on my vessels only in the plastic and in the 'bone dry' stages. This latter stage is reached after all the free water has evaporated from the fabric. This can take several days, but may be accelerated by carefully warming the vessel, for instance by placing it in the sun and regularly turning it around (Bourriau et al. 2000; Deal 1998; Gosselain 1992; Kramer 1997; Shepard 1976; Wisner 1999).

When bone dry, the vessel can be smoothed, with sandpaper or another abrasive, slipped and burnished. If they did not do so when the vessel was still leather hard, the potters working on Eastern Desert Ware may have smoothed their bone dry vessels with sand or an abrasive stone, like pumice or vesicular basalt, a technique reminiscent of burnishing. Slipping is the application of a thin suspension of clay with a distinctive colour, naturally or because of an added pigment, by pouring or brushing this on the desired areas (Shepard 1976). Clays that make a good slip, bonding securely while delivering a bright colour, are rare and will have been collected when encountered, or even warranted a detour, and carried around until needed. Burnishing is the polishing of a vessel by rubbing it with a hard object, like a pebble, after wetting the surface with slip, water or oil. The frequent combination of the slipping and burnishing of Eastern Desert Ware makes it likely that these were joined actions. The high lustre of many Eastern Desert Ware vessels indicates that these were fired at relatively low temperatures (below 750-800°C) as such lustre tends to fade upon exposure to higher temperatures.

The next stage of pottery production, the firing of the clay vessel, is the shortest and most dramatic (Appendix 11). When the paste reaches sufficiently high

temperatures the clay minerals irreversibly lose their ability to turn back into a plastic paste. Another important effect, depending on the conditions during the firing, is the burning off (oxidation) or deposition (reduction) of carbon, which greatly influences the colour of the vessel (Rye 1981). At higher temperatures the iron-oxides in the clay can also be reduced or oxidized, changing between black and red, respectively (Bourriau et al. 2000). If Eastern Desert Ware was indeed produced by nomadic potters, it was most likely fired in an open fire, unless space and time was negotiated in kilns belonging to settled potters, in the Nile Valley. As is apparent from their results, several undesirable effects of firing vessels in an open fire were evidently circumvented by the nomadic potters. An important difference between a kiln and an open fire is that the temperature in a kiln can be better controlled, will have smaller temperature gradients and can be made to reach a higher maximum. As the water bonded to the clay minerals needs to be driven out gently, to prevent blistering, cracking or even exploding of the vessel, an open fire needs to be carefully monitored. The choice of fuel can facilitate this: dry wood will burn swift and hot, while animal dung or charcoal will take longer to heat up and reach lower maximum temperatures. A method to prevent the vessels from being destroyed by the firing is to force most of the water out first, by heating the vessel to a moderate temperature for a prolonged period of time. One or two summer days in the desert sun may be hot enough to do so (Shepard 1976; Wisner 1999). Alternatively, the vessels may have been buried in heated sand as is currently the way that the Beja bake their bread (Appendix 11).

Another crucial difference between an open fire and a kiln is the contact between the vessel and the fire. In a kiln the fire is separated from the vessels and allowing more or less air into the kiln generates an oxidizing or a reducing environment. By placing the vessel directly into an open fire, the flames will cause colour differences on the fired surfaces, leaving so-called 'fire clouds', while the collapsing fire will create a reducing environment. As most Eastern Desert Ware vessels do not show fire clouds or reduction, the ancient nomadic potters must have found ways to prevent them. The simplest way to reverse some of the fire clouds and most of the reduction is to take the hot vessel out of the fire, before it collapses, and allowing it to cool in the open air (Rye 1981). A better method is to protect the vessel with a 'saggar' or *quemador* (Wisner 1999). A saggar is a metal or ceramic container placed in or on top of the fire holding the clay vessel. I have successfully used an upturned terracotta flower pot, an old paint drum and a perforated cookie tin. Ancient potters could have separated their vessels from the fire with larger vessels, such as cooking vessels, or may have constructed *ad hoc* saggars with the sherds of broken vessels or slabs of stone (LeFree 1975). Like the receptacles used for the

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preparation of the paste, such items will have been relatively easy to clean and re-employed for their original function.

For these experiments I made about a dozen vessels and fired them using a variety of techniques. Put directly into an open fire vessels did not survive, while vessels buried below an open fire, like Bedouin bread, did not mature. Vessels fired in a saggar in a slowly started open fire did mature without cracking or reducing, but lost some of their lustre. A vessel placed on top of a small charcoal fire did also mature without cracking. This set-up appeared to allow enough oxygen to reach the vessel to

prevent absorption of reduced carbon released by the fuel. Some fire clouds remained, however, especially on the bottom of the vessel where it had been in direct contact with the glowing ambers. The resulting earthenware vessel, quite similar to Eastern Desert Ware (Figure 5-12), will be very porous. To reduce this property they can be 'seasoned' with butter, milk, oil, or honey (with beeswax) which saturates its walls and diminishes the permeability of the fabric. This is a common practice and should be taken into account when interpreting the organic residues found in ancient vessels (Bourriau et al. 2000; Barnard et al. 2007).

Phase	Tools	Skill	Time
<i>Vessel as concept</i>			
obtaining raw materials (clay, temper, water, fuel)	receptacles (shovel, axe)	+	++
preparation of the paste (sieving, mixing, levigating?, drying)	receptacles, sieve?	++	++
shaping the vessel (coiling, pinching)	none	+	+
surface treatment (wiping) and decoration (impressing)	cloth pointed tool	+	+
drying until leather hard	none	-	+
<i>Vessel as creation</i>			
surface treatment (smoothing) and decoration (incising)	abrasive blade	++	+
drying until bone dry	none	-	++
decoration (slipping) and surface treatment (burnishing)	brush, slip pebble, oil?	++	+
heating, pre-firing	none	++	+
firing, re-firing	saggar?	++	+
<i>Vessel as object</i>			
first use, seasoning	sealant	+	+
intended use	none	-	+++
re-use (for instance as grave gift)	none	-	+++
<i>Vessel as tool</i>			
breaking of the vessel	none	-	+
repair and re-use or utilization of (some of) the sherds	drill, thread adhesive?	+ / ++	+
discarding the remains of the vessel	none	-	+++

Table 5-2: A possible *chaîne opératoire* for the archaeologically recovered sherds of Eastern Desert Ware. Skill: -: no skills required; +: limited skills required; ++: expert skills required; Time: +: phase may take 0-6 hours; ++: phase may take 0.5-7 days; +++: phase may last for years.

Chaîne Opératoire

Assuming the presence of the necessary tools, skills and time, I suggest the following *chaîne opératoire* for the sherds of Eastern Desert Ware (Table 5-2), with an archaeological rather than an ethnographic perspective (P.J. Arnold 1991; Arnold et al. 1991; Arthur 2002; Bourriau et al. 2000; Deal 1998; Gosselain 1992; Kramer 1997; Longacre and Stark 1994; Rice 1996; Rye 1981; Schiffer et al. 1994; Shepard 1976; Stark 1991; 2003). A *chaîne opératoire* is typically used as a way to

describe the production process of a class of objects; it is used here as one of the tools to study the sherds of Eastern Desert Ware vessels found in archaeological contexts. As archaeologists typically deal with sherds rather than vessels, and usually do not attribute separate meanings to sherds or whole vessels, the suggested *chaîne opératoire* aims to explore the processes resulting in the sherds of handmade, burnished and decorated vessels recently found in the Eastern Desert assuming that these were locally made by the indigenous population. Not all these sherds necessarily see all the

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phases, or go through the phases in the given order. The final stages of all ceramic vessels are breakage and disposal, sometimes interposed with repair or re-use. Not all Eastern Desert Ware vessels in this study have seen these stages. They are discussed here to complete the chaîne opératoire that focussed on sherds, the basis of many archaeological studies, rather than vessels. It takes little time or skill to break a vessel, but this should not always be interpreted as an accident. The intentional breaking of vessels can be part of a *rite de passage* or be an expression of joy or mourning, for instance during a Jewish wedding, a Greek dance or in the context of the ancient Egyptian ritual 'breaking the red pots', where the breaking was usually followed, and sometimes replaced, by the burial of the vessels (Ritner 1993). There are no indications that Eastern Desert Ware was ever deliberately broken. However, many were recovered from graves, a custom still practiced by the pastoral nomads now living in the area, despite centuries of Christian and Islamic discouragement (Barnard 1998; Wendrich 2008).

There are indications that attempts were made to repair broken Eastern Desert Ware vessels, not by using an adhesive (such as a resin or bitumen), but rather by 'stitching' the sherds by threading holes drilled along the breaks, a technique commonly used. Eight (3%) of the 290 sherds that in this study (EDW 32, 41, 60, 109, 135, 229, 250 and 252) preserved a small hole (Appendix 5). Some may have been intended to suspend the vessel, other may be repair holes. No traces of adhesives, nor wire or string were seen. As the vessels must have been highly valued, it is hardly surprising that attempts were made to extend their functional life as long as possible, albeit possibly for a different task. After a broken vessel was judged beyond repair, its sherds may be used as cover, scraper, toy, gaming piece or as a surface to receive writing (ostrakon). Finally, the remains of the vessel may have been crushed to serve as temper for a vessel still to be made (grog), or simply discarded to be studied by archaeologists centuries later.

Pottery and People

Characterization and dating of archaeological sites, especially those in the larger Near East, rely almost entirely on ceramic finds. For this it is assumed that the retrieved pottery is indicative of the people that inhabited the site, and of the period during which they did so (Chapter 2; Appendix 2). The sites at which Eastern Desert Ware has been found (Appendix 2), for instance, have been both dated, mostly to the 4th-6th centuries CE, and characterized, as Graeco-Roman Egyptian or Late- or Post-Meriotic (X-Group) Nubian (Chapter 2), based on the pottery found. Only rarely have these inferences been confirmed by radio-carbon dates or other finds, such as coins or textual material. Given the well documented correlation between the pottery from this

region on the one hand, and its time period and ethno-cultural background on the other hand, such conclusions can be drawn with relative confidence. It is highly unlikely that ancient local assemblages are entirely the result of trade or traffic, which could theoretically have brought in all vessels from as far as China (Figure 5-9), or of local potters producing ceramics that closely resemble pottery from other regions or time periods, either intentionally or by coincidence. Usually local potters and their customers will have agreed on a more or less specific corpus of pottery, which they then continue to produce and use for a relatively long period of time. Archaeologists use the ceramic assemblages that are the result of this to correlate archaeological sites with people of the past. Changes within a corpus of pottery are considered to reflect socio-economic or ethnic developments and finds that are recognized from other geographical regions are regarded indications for contact between the two areas in the form of, for instance, trade or the movement of people (Adams 1986; D. Arnold 1993; D.E. Arnold 1985; P.J. Arnold 1995; Arthur 2002; Bourriau et al. 2000; Dever 1995; Gosselain 1992; Haiman and Goren 1992; Hayes 1995; 1996; Herbich 1987; Hope et al. 1981; Kramer 1997; Maxfield and Peacock 2006; Rice 1987; Sidebotham et al. 2001; 2002; 2005; Tomber 1998; 1999b).

This understandable and generally justified reliance on ceramic finds has sometimes given rise to questionable reconstructions of the past; and subsequently to a cautionary counter-movement that keeps reiterating the limitations of this methodology with the following almost self-evident adage:

pottery ≠ people

Obviously the pottery that is found in archaeological contexts should not be confused with the living people that once inhabited the site, even though these often appear to have been closely related. Pottery technology, style and decorations may change independent of socio-economical or political events, or remain remarkably stable in a rapidly changing environment (Adams et al. 1979; Binford 1987; David 1972; David et al. 1988). The way in which Eastern Desert Ware appears and disappears among very different pottery from comparatively long-lasting and well-described traditions (Chapter 2, Appendix 7), however, strongly suggests that it represents a different group. Much like we would not usually drink whiskey from a wine glass or wine from a Styrofoam cup, it seems unlikely that a Graeco-Roman Egyptian would use Eastern Desert Ware when an abundance of ERSB and ERSB was available.

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Another issue in the relation between pottery and people is the question what the exact reasons are for people to start and continue making and using pottery. Because most cultures have known ceramic technology for millennia, we tend to take such for granted, but the use of pottery is certainly not an inevitable choice (D.E. Arnold 1985; Eerkens 2008; Eerkens et al. 2002; Hayden 1995; 1998; Rice 1987; 1999; Schiffer and Skibo 1987; Skibo et al. 1989). Not only are ceramic vessels cumbersome, but their production can interfere with the existing way of life. On the other hand, pottery will increase the efficiency of the use of the available resources, including time, and may increase the social status of its owner (Table 5-3). These considerations are

the same for sedentary and mobile societies, be they hunter-gatherers or pastoral nomads, although the outcome is often the opposite. Many of the Ababda say to prefer aluminium vessels, provided these are available and affordable, for their lighter and less fragile qualities. Pottery, and especially 'table wares' that are associated with the social rituals connected with food and meals, at some level represent the cultural and ethnic background of their owners and users (P.J. Arnold 1995; David et al. 1988; Dever 1995; Jones 1997). Different groups can therefore be expected to use different pottery, although this choice need not be consciously made.

Motives for (nomadic) pottery utilization	Barriers for (nomadic) pottery production
Pottery enables the utilization of a wider repertoire of possible food products	Pottery production requires a specific knowledge of the landscape as well as several technologies
Pottery enables a more efficient use of the available fuel, as well as the time spend cooking	Pottery production requires sedentism for at least a few days (in the right place at the right time)
Pottery may be associated with certain specific, introduced food products	Pottery production may interfere with other, more vital activities (in time or space)
Ceramic vessels may be associated with high status or a specific cultural background	Ceramic vessels are relatively heavy and fragile (compared to containers of other materials)

Table 5-3: Barriers and motives for (nomadic) pottery production (after D.E. Arnold 1985; Eerkens 2008; Eerkens et al. 2002; Hayden 1995; 1998; Rice 1987; 1999; Schiffer and Skibo 1987; Skibo et al. 1989).

Discussion

Sufficient archaeological and experimental evidence is now available to suggest that mobile people can produce their own pottery with a reasonable investment of resources and time (Tables 5-2 and 5-3). Pottery is fragile, relatively heavy and best produced in large quantities (the economy of scale). Mobile potters can emulate vessels produced by settled potters, especially when they were already importing their products, or develop their own type of vessels. Their methodologies will be similar, but nomadic potters will have to develop their own techniques to adjust to their specific environment and needs. Such adaptations are likely to differ from place to place, according to the local situation and the availability of the necessary materials. Features that are not essential, like micaceous temper or red slip, can be omitted and decorations preferably made with the thorn of a date palm can be made with the thorn of an *Acacia* tree instead. The current inhabitants of the Eastern Desert highly value their ceramic cups and *jabanah*, partly because of their vulnerability, but do not produce any pottery. It may be uneconomical for them to do so, but the emotional and symbolic value of the vessels will also partly depends on their monetary value. Other factors in the decision to purchase rather than produce pottery are convention and peer pressure: a

different, self-made cup or *jabanah*, no matter how personal or expensive in terms of resources and time, will simply not do in a social gathering. It would compare to serving a three course dinner with plastic knives and forks. This shows that these decisions are seldom based on rational, economic arguments alone. If there were, at any time, compelling reasons for the dwellers of the Eastern Desert to produce their own pottery, they will have found ways to do so.

If we assume that Eastern Desert Ware was produced close to where it was found, by people living like the Beja, the question remains why they would produce their own pottery, rather than otherwise obtain it, or indeed why they would use pottery at all. Most mobile groups use pottery, but only a minority produces their own and this is usually either coarse and undecorated or crude copies of vessels that were imported from elsewhere (D.E. Arnold 1985; Barnett and Hoopes 1995; Eerkens 2008; Haiman and Goren 1992; Rice 1999; Rosen 1987; 1993; Rosen and Avni 1993). The fundamental reasons to use pottery are essentially the same for all groups of people (Table 5-3), mobile or sedentary. One secondary reason for mobile groups to produce their own pottery may be a limited availability of imported vessels. Settled potters, or other possible sources of pottery, may be far away or difficult to reach. These will likely be associated

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with other cultural, religious or ethnic groups, which may obstruct the necessary contacts, or the available material can be of limited practical use to nomads or simply too expensive, in terms of currency, barter or otherwise. Any of these factors may prompt members of the mobile group to produce some of their own pottery. Modern developments will have decreased the need to produce pottery, replacing it with metal or plastic containers and providing access to ceramics produced in places as distant as China. During the 4th-6th centuries CE there was certainly no shortage of imported ceramic vessels in the Eastern Desert. The number of vessels that passed through as containers for trade items can only be guessed, but an abundance of vessels is found at the ancient harbours, road stations, mines and quarries throughout the region (Sidebotham et al. 2001; 2002). Some may have been intended for the long distance trade, but remained behind because they were damaged or appropriated, others will have contained supplies for those temporarily working and living in the desert. It seems unlikely that the pastoral nomads could not somehow have obtained a sufficient number of vessels from this copious source. If they were indeed the producers of Eastern Desert Ware, they must have had other, but obviously important reasons to produce their own vessels.

In the period during which Eastern Desert Ware was produced, the 4th-6th centuries CE, there was a substantial influx of outsiders into the arid landscape between the Nile and the Red Sea. A network of trade routes connected the Mediterranean Basin and the Nile Valley with the Red Sea coast, Arabia, sub-Saharan Africa and India (Sidebotham and Wendrich 1996; Wendrich et al. 2003). Next to these transient traders, the Eastern Desert was more permanently inhabited by numerous quarrymen, miners and early Christian hermits (Sidebotham et al. 2004; 2005). The resulting infrastructure of settlements, tracks and supplies, not equalled until the development of the Red Sea coast for tourism in the 1990's, allowed the pastoral nomads to settle temporarily when they accepted employment as labourers, guards, guides or prostitutes. Even more fleeting contacts, including those with a hostile nature, must have introduced the indigenous inhabitants of the Eastern Desert to the pottery of the more recent immigrants (Eide et al. 1998; Barnard 2005). Both groups will have benefited from the large volume of pottery imported into the region, as attested by the enormous quantity of recovered sherds.

Assuming that the mobile inhabitants of the Eastern Desert did indeed chose this period of relative plenty to produce their own pottery, this may be attributed to the following. Being in the same place for a longer period than they probably would have been previously may have enabled the pastoral nomads to see the pottery production process, as reflected in Table 5-2, through for

the first time. The infrastructure that allowed this will at the same time have provided them with the necessary surplus of water and fuel. Some of the immigrant traders, miners and quarrymen may have given more or less detailed instructions, suggestions or inspiration to the nomadic potters. Despite the possibility that they were educated by outsiders, the potters that produced Eastern Desert Ware decided to create their own corpus (Chapter 2), rather than imitate imported vessels. This decision may have been based on their desire to separate themselves from the more recently arrived inhabitants of the Eastern Desert. The growing number of immigrants and their growing influence will have increased this need. Other indications of these tensions are the violent confrontations between the desert dwellers and the settled population reported in the historical sources (Eide et al. 1998; Barnard 2005).

It is noteworthy that not only Eastern Desert Ware, but also the corpus of Negbit pottery, found in Iron Age contexts in the Negev Desert (Israel) and associated with mobile groups (Haiman and Goren 1992), as well as the pottery found in 7th-8th century CE contexts in the same area and likely produced by local Bedouin (Rosen and Avni 1993), are mostly cups and bowls. Such vessels may have not lasted as long as the more sturdy cooking and storage vessels, may have been harder to obtain (for economical or other reasons), or the customers may have wanted specific vessels that only local producers could provide. The question remains why some nomadic groups decide to produce their own pottery, while most of the other groups, including the modern Ababda, do not even though they all use pottery. Most likely contacts with the settled potters were problematic, for political, religious or economical reasons. In such circumstances vessels that are fragile and expensive, like thin decorated cups and bowls, become the first candidates for local production. On the other hand, pastoral nomads may need to produce what they cannot readily find on the market. In the 4th-6th centuries CE nothing like Eastern Desert Ware was produced in the area were it was later found (Chapter 2). If such pottery was what was really desired which, given its radically different technology and appearance seems likely, one option to obtain it would have been local production.

A final remark concerns the lack of archaeological data on large parts of the Eastern Desert and the bias that this may cause. Sherds of the pottery used by the desert dwellers will be concentrated near their settlements, be they temporary or more permanent. The more significant settlements, which are mostly those associated with mines, quarries and harbours, attract the attention of archaeologists prior to the more ephemeral campsites of pastoral nomads. Many isolated sherds may lay scattered unobserved over the vast stretches of arid landscape between the sites that have been studied so far. If this is indeed the case, and if Eastern Desert Ware was indeed

Eastern Desert Ware

associated with the desert dwellers, its sudden appearance and disappearance in the archaeological record may be reflect the relationship between those desert dwellers and the 'outsiders', rather than a cultural or technological development. More research, including a systematic survey of the area (Figures 1-1 through 1-3) will be necessary to understand the exact relation between Eastern Desert Ware, the pastoral nomads of the Eastern Desert between the 4th-6th centuries CE and the miners, quarrymen and traders that temporarily entered the desert from the outside, settled world. Research into the archaeological remains of pastoral nomads is imminently possible (Bar-Yosef and Khazanov 1992; Barnard and Wendrich 2008; Chang and Koster 1986; Cribb 1991; Rosen 1987; 2007; Rosen and Avni 1993; Sadr 1990; Simms 1988), as is also obvious from the numerous data-set collected on mobile groups of prehistoric hunter-gatherers as well as the pastoral nomads in the Sinai and Negev Deserts.