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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 SIX
Interpretative Summary and Conclusions

Eastern Desert Ware retains an unusual position within the archaeology of Egypt and Sudan. In these countries, and indeed their wide environs in most time periods, pottery fabrics and forms are typically firmly associated with a known cultural context. Ceramic finds routinely serve not only to characterize archaeological sites, but also to date them. In contrast, Eastern Desert Ware appears in archaeological records that are associated, according to the large majority of ceramic and other finds, with two different cultures (Table 6-1), both in cultural and political flux (Chapter 2): Late Roman to Early Byzantine Egypt and Late Meroitic to Early Christian (Ballana Culture or X-Group) Nubia.

During the 4th century CE the Roman Empire, which had included the Nile Valley north of the First Cataract since 30 BCE, changed from a 'pagan' state, that had seen fierce persecutions of Christians under Emperor Diocletian (284-305 CE), into an officially Christian state under Emperor Flavius Theodosius (379-395 CE). After the death of Theodosius the Roman Empire permanently split into the Western and the Eastern Roman (Byzantine) Empire (Chapter 1). The fact that the Temple of Isis at Philae was the only temple in the Roman Empire allowed to remain active, for visitors from Nubia and probably also the Eastern Desert, shows the reluctance of those south of the border to follow the Byzantine example, as well as their power to do so.

Once Nubia was converted into Christianity, after both Dyophysite and Monophysite evangelization campaigns during the 7th century CE, it appeared equally reluctant to follow its neighbours into Islam, which came shortly afterwards with the next wave of invasions into the area. This conversion happened gradually during the beginning of the 14th century CE, with the influx of the Muslim Banu Kanz into the Kingdom of Makuria, the ascension to the throne by a Muslim king in 1323 CE and the subsequent struggle for power between the kings and the *Kanz al-Dawlah*, the traditional leader of the Banu Kanz. The Treaty of Philae (*circa* 453 CE), under which terms the Temple of Isis was to be the only pagan temple in the Byzantine Empire to remain open for another hundred years, is mirrored by the *baqt* (*circa* 652 CE), which regulated the contacts between the Muslims and the Christians in the region until the invasions of the Funj from the south (1504 CE) and the Ottomans from the north (1517 CE). Both treaties created a special position in history for the Nile Valley between the First Cataract, just south of Aswan, and roughly the Blue Nile-White Nile confluence (at modern Omdurman and Khartoum). This carried on into the surrounding deserts, already isolated and now almost outside the main stream of historical events in this part of the world.

Around the beginning of the 4th century CE, the Nile Valley south of the First Cataract was invaded by different groups from the south (Adams 1984). This eventually caused the collapse of the Kingdom of Meroe, around 350 CE, and gave rise to the 'post-Meroitic' Ballana Culture (Chapter 1). The archaeology of this period is characterized by remnants of the Meroitic material culture, with influences from both further south as well as from the Roman and Byzantine Empires. There are notable similarities between the Ballana Culture (X-Group) and the Kerma Culture (C-Horizon) about 2000 years earlier (Adams 1984). One example is the hand-made black burnished ware with incised decorations identified as Family D.I, Ware H 11 (Chapter 2, Adams 1967-1968). Like the alternating invasions from the south and from the north, the Treaty of Philae, the *baqt* and the subsequent delays in following the surrounding nations into a new religious sphere, this adds to the impression of the almost cyclic nature of 'Nubian' history (Adams 1984; Dunham 1970). After the conversion of Nubia to Christianity and the formulation of the *baqt*, the region could thrive into an unprecedented prosperity, until another wave of invasions (Banu Kanz, Funj and Ottoman) returned the area under foreign rule at the beginning of the 16th century CE.

	Nile Valley	Eastern Desert	Red Sea coast
Lower Egypt		●	●
First Cataract			
Nubia	●	●	
Atbara-Nile confluence			
Upper Sudan			

Table 6-1: The distribution of Eastern Desert Ware over three different landscapes (columns) and two different cultural spheres (rows).

Eastern Desert Ware has not only been found on both sides of the long-standing border between two different, and often clashing, cultures on either side of the First Cataract in the Nile, but also in three environmentally very different regions (Table 6-1): the Nile Valley, the Red Sea coast and the Eastern Desert in between (Chapters 2 and 5). It is noteworthy that outside the Nile Valley, in the Eastern Desert and on the Red Sea coast, Eastern Desert Ware has been found, usually in relatively small quantities, among ceramic finds associated with Graeco-Roman Egypt; while in the Nile Valley Eastern Desert Ware has been found among ceramic finds associated with the Ballana Culture (Nubia). At all sites Eastern Desert Ware stands out because of its technology, fabric, forms and decoration (Chapter 2). As no sites are known that have exclusively, or even predominantly, yielded Eastern Desert Ware, association with a specific source area or cultural context is problematic. The former scholarly association of Eastern Desert Ware with the Blemmyes of the ancient textual sources must now be discarded as this is no longer supported by the available evidence (Chapter 5; Barnard 2005; Barnard 2007).

Explanatory Models

The occurrence of similar ceramic finds at several sites, as in the case of Eastern Desert Ware, can be interpreted in various ways. The pottery may have been produced locally, which leaves the question how and why potters in different locations produce similar products (Adams et al. 1979; Arnold 1985; Arnold et al. 1991; Rice 1987; Stark 2003). It may also be that a small group of travelling potters produced all the vessels, or that the local potters belonged to a group that has dispersed from a much smaller central area, taking with them their customs, technologies and styles (Adams et al. 1979; David et al. 1988; Herbich 1987). Alternatively, there may have existed a common set of technological skills and aesthetic values, shared by potters and their costumers in different locations, which resulted in similar pottery and which was somehow maintained over time and space (Arnold 1995; Dever 1995; Herbich 1987).

On the other hand, the pottery may have been imported from one or several central production areas, either because of their contents, after which the vessels could have been re-used for other purposes, or because of the vessels themselves (Adams et al. 1979; Hayes 1996; Maxfield and Peacock 2006; Peacock and Blue 2006; Peacock and Maxfield 2001; Sidebotham et al. 2001; 2002; Strouhal 1984; Tomber 1999a; b; Wendrich et al. 2006; Whitcomb 1982). People and vessels may also have travelled together and the presence of the remains of certain vessels represents the former presence of specific groups of people (Adams et al. 1979; Arnold 1985; Jones 1997; Magid et al. 1995; Rice 1987; Rose 1995; Sidebotham and Wendrich 1996a; b). It is not always possible to distinguish between these interpretations, and certainly not on the basis of ceramic analysis alone, without taking into account the available additional archaeological and historical information (Adams et al. 1979; David et al. 1988). Very little such information is available concerning Eastern Desert Ware, leaving several possible interpretations to be investigated.

To understand better the implications of the ceramic data the large number of possible interpretations limited by considering only three possible source areas for the pottery, three different kinds of movement of the pottery, and three different types of potters (Table 6-2):

- local: production took place close to where the pottery was found;
- remote: production took place at a single site more than a day's walk from where the pottery was found;
- multi-sited: production took place at more than one remote site;
- pots: pots are transported from producers to users for their intrinsic value;
- contents: pots are transported primarily because of their contents;
- people: pots moved with their users as part of their household inventory;
- ethnic: potters, or their customers, made specific functional or aesthetic choices that were notably different from their neighbours;
- travelling: one or several small bands of professional potters moved from site to site; and finally:
- relocated: potters, or their customers, have moved while retaining their original technology and aesthetics.

There always is a subtle interaction between potters and the users of their products in which the potters have to make the vessels that the users want, or at least find acceptable, and in which the users have to procure the vessels that are made available to them by the potters. Each group has different ways to influence the other, but the final result usually appears to be only very gradual changes in an otherwise remarkable conservative trade. This is the foundation below archaeological ceramic analysis (Arnold 1985; Rice 1987; Shepard 1976; Stark 2003), even though the correlation between ceramic finds and historical events is usually not unequivocal (Adams et al. 1979; David et al. 1988; Stark 2003; Chapter 5). These and many other considerations are not reflected in the simple model presented in Table 6-2, which shows only the 27 basic configurations that will be used here to discuss the data collected on Eastern Desert Ware.

Source	Movement	Potters	Category
Local	Pots	Ethnic	**1**
Local	Pots	Travelling	**2**
Local	Pots	Relocated	**3**
Local	Contents	Ethnic	**4**
Local	Contents	Travelling	**5**
Local	Contents	Relocated	**6**
Local	People	Ethnic	**7**
Local	People	Travelling	**8**
Local	People	Relocated	**9**
Remote	Pots	Ethnic	**10**
Remote	Pots	Travelling	**11**
Remote	Pots	Relocated	**12**
Remote	Contents	Ethnic	**13**
Remote	Contents	Travelling	**14**
Remote	Contents	Relocated	**15**
Remote	People	Ethnic	**16**
Remote	People	Travelling	**17**
Remote	People	Relocated	**18**
Multi-sited	Pots	Ethnic	**19**
Multi-sited	Pots	Travelling	**20**
Multi-sited	Pots	Relocated	**21**
Multi-sited	Contents	Ethnic	**22**
Multi-sited	Contents	Travelling	**23**
Multi-sited	Contents	Relocated	**24**
Multi-sited	People	Ethnic	**25**
Multi-sited	People	Travelling	**26**
Multi-sited	People	Relocated	**27**

Table 6-2: Theoretical interpretations of the data on Eastern Desert Ware.

Most of the sherds found at sites in the Eastern Desert, where Eastern Desert Ware is only a small fraction of all ceramic finds, belong to categories 13 or 22 in Table 6-2. They are from vessels made in professional workshops as far away as Cyprus, France (*Gaul*) or Morocco (*Mauritania*), and subsequently used to transport wine, olive oil or other commodities (Wendrich et al. 2006). Empty and even broken vessels were then re-used for a multitude of different purposes, including the production of *garum* (a sauce made out of fermented fish) and to serve as a writing surface (when potsherds were used as *ostraka*). Sherds of the *jabanah* coffee maker (Chapter 5) would belong to categories 10 or 16. These vessels are made by professional potters in Sudan for a particular market, after which the vessels are transported to be used for their specific purpose until they break and are discarded. The combination of the hypothetical framework presented above with the results of the analysis of Eastern Desert Ware, presented in Chapters 2 through 4 and summarized below, allow the discussion of the hypothetical interpretations of the archaeological observations.

Analytical Data on Eastern Desert Ware

In Chapter 2 it was shown that Eastern Desert Ware is a distinct corpus of pottery, internally coherent and at the same time quite different from other contemporary traditions in the region. Storage and cooking vessels appear largely absent from the corpus, which is dominated by cups and bowls. This is similar to the pottery produced by other nomadic groups in the region (Haiman and Goren 1992; Rosen and Avni 1993; Chapter 5). In the deserts of California and Nevada, in the western United States, ancient nomadic potters appear to have produced large cooking vessels (Eerkens 2008; Eerkens et al. 2002). These were not taken, but rather used and stored close to the source of the commodities for which they were needed. The modern inhabitants of the Eastern Desert are known to store items for later use (Wendrich 2008; Chapter 5), but the distribution of food in the Eastern Desert does not allow for a fixed migratory pattern and the storing of cooking utensils along the associated routes (Chapter 1). Putative owner marks, incised in the vessels after firing, were seen on two cups (H 1) in the cemetery site at Wadi Qitna. The same site yielded several feeding bowls (H 6), often associated with female skeletons, with or without the remains of children or infants. The settlement sites in the desert yielded relatively more bowls (H 2), probably used for communal meals. Most ancient and many modern societies present food in communal vessels (Vroom 2003). Most likely, however, did the users of Eastern Desert Ware also have individual vessels much like the modern Beja have today (Chapter 5).

The shape and decoration of the vessels are shown to have been mostly determined by the potter and not to be dictated by the available raw materials. These raw materials were discussed in Chapter 3. The assumption, based on macroscopic observations, of multiple sources other than Nile clay (or any other of the common fabrics listed in the Vienna System) was confirmed by petrographic and chemical analysis (by IPC-MS).

The study of the organic remains in the vessels, more specifically the lipid residues in 54 sherds from six sites, was presented in Chapter 4. These numbers are too small to allow statistical investigation of the data, but in individual cases the organic residue confirmed the hypothesis, based on macroscopic observations, about the function of a vessel. All tested vessels appeared to preserve an organic residue, most likely from food that was once in the vessels, and it seems that Eastern Desert Ware was not produced to be used as drinking vessels or grave goods exclusively.

In Chapter 1 the history was outlined of the area in which Eastern Desert Ware is found, and well beyond (both in time and space); while the landscape of this area and its present-day inhabitants, collectively known as the Beja, was described in Chapter 5. This last chapter concluded with an overview of the possibilities and problems that these people would face in producing their own pottery as a possible analogy for the production of Eastern Desert Ware. The Beja do not produce their own pottery, but the ceramic artefacts that they purchase have an important function in their everyday life, most notably in the 'coffee ceremony', which symbolizes hospitality, luxury, pleasure and relaxation. Eastern Desert Ware may well have been associated with similar practices in the 4th-6th centuries CE, before the introduction of coffee, tea and sugar into the region. It is noteworthy that the modern coffee ceremony requires ceramic vessels imported from Sudan and China, and that the modern Eastern Desert dwellers do not produce any of their pottery. Presumably the ceremony developed around imported commodities and paraphernalia that were exotic, expensive and therefore special (Chapter 5). This could well have replaced a different ceremony, with a similar meaning and an equal importance, which required local commodities and equally local Eastern Desert Ware.

Tentative Interpretations

Various research techniques were employed, ranging from low-tech physical measurements to high-tech mass spectrometry, to find the people behind the sherds. As is evident from the results summarized above, this has been only partly successful. The connection between pottery and people, although one of the cornerstones of archaeology, is not robust enough to allow the understanding of a people from their pottery alone. More remarkable than this was that the visual inspection of the sherds yielded the most relevant information, while many of the high-tech techniques could only confirm what was already presumed on the basis of these observations. The initial assumption that Eastern Desert Ware was produced and used by the pastoral nomads of the Eastern Desert could only partially be substantiated. As always, more research is necessary including the following elements:

- a more comprehensive survey of selected areas of the Eastern Desert to locate and investigate ephemeral camp sites;
- the geological sampling of clay sources in the Eastern Desert combined with a more detailed analysis of the petrographic thin-sections of Eastern Desert Ware;
- the study of additional Eastern Desert Ware sherds, including those unearthed at Shenshef (now in the SCA storeroom in Quft) and in Lower Nubia (now in the Oriental Institute in Chicago); and:
- residue analysis of more Eastern Desert Ware sherds, preferably including the analysis of proteins and with special attention for the possible special meals or food stuffs for which Eastern Desert Ware may have been used.

After the above summery and caveats the initial research questions, that were at the start of this, now shown to be preliminary, study (Chapter 1), can be addressed following selected parts of the answers of the eleven original respondents (Appendix 1). Although these may disagree on specific details, they all agree that more research needs to be done. This study is certainly the beginning of such, but definitely not the conclusion.

1 - Is the name 'Eastern Desert Dwellers' preferable over 'Blemmyes', 'Megabari' and 'Trogodytes', or vice versa, and should the name 'Blemmyes' be considered a collective word, more like 'Belgian', 'Arab' or even 'gypsy'?

<u>Fifth Respondent:</u> Even 'dwellers' is not entirely neutral. The distribution of archaeological remains and the exiguous ancient textual material suggest that some of the members of the groups attested in the desert dwelt in the Nile Valley, and the present lifestyles of the Ababda and Beja support this conclusion. On the analogy of usage in Nubian studies, we might have referred to 'Eastern Desert Groups' (subcategorized as A, B, C, etc.); but current terminology seems to have taken root. It is probably better to retain 'Eastern Desert Dwellers' than to introduce competing labels, but to agree upon a conventional definition of what that designation implies (Appendix 1).

<u>Eight and Ninth Respondent:</u> Until now, general conclusions have been drawn about 'the Blemmyes' from the written sources, whereas we are highly sceptical whether these conclusions have any bearing at all on the dwellers of the Eastern Desert. They may merely apply to fringe groups that may have been 'marginal' both ways, both from the perspective of the Nile Valley as well as from that of the desert (Appendix 1).

Tentative conclusion: As it remains unclear what exactly the situation was like in the Eastern Desert at the time that Eastern Desert Ware was in use, during the 4th-6th centuries CE, it also remains unclear what exactly the term 'Blemmyes' referred to (Barnard 2005; 2007; Chapter 1, Appendix 3). Apparently there was a lot of movement of people between the Nile Valley and the Eastern Desert (Adams 1984), and it is well possible that one of these groups should be identified as the Blemmyes. Whether or not they were the producers of the graffiti in the temple of Shesmetat in Elkab or the users of Eastern Desert Ware has yet to be demonstrated, as it has to be demonstrated that these very different things originate from the same cultural context. There must have been many groups of people in the area, about which precious little is known, and any of these could have carved the graffiti or made Eastern Desert Ware. Collectively they should be referred to as 'Eastern Desert Dwellers' as this term reflects our lack of knowledge and avoids prematurely identifying some of these dwellers as one of the groups mentioned in the ancient textual sources.

2 - What was the livelihood of the dwellers of the Eastern Desert in the 4th-6th centuries CE and how does their lifestyle compare to that of the present-day nomads?

First Respondent: I think that a very important moment in the adoption of this kind of livelihood coincided with the introduction of the camel (Appendix 1).

Second Respondent: Late ancient, Axumite, and Arabic references suggest a variety of life-ways including that would include towns, mining settlements, caravaneers, and even large scale livestock raising. Hellenistic and Axumite texts refer to Bega having live stock holdings, the latter referring to thousands of cattle (Appendix 1).

Fifth Respondent: I expect that some of the population lived in the Nile Valley, providing both a channel for trade and other relations with the dominant peoples settled there and a refuge during periods of environmental stress. I also expect that some desert dwellers provided labour and services for Nile Valley people who entered the desert to exploit its minerals, metals and stones. Probably there was also trade in animals, medicinal plants and charcoal (Appendix 1).

Seventh Respondent: The current edge of the 'Sudanic Belt' might resemble those conditions. This area covers a zone of transition between, from north to south desert, arid savannah and grassland areas. In the Sudanic Belt one can find nomads, which are seen and who see themselves as belonging to the same ethnic group, herding camels in the north and cattle in the south (Appendix 1).

Tentative conclusion: Given the historical and ethnographical evidence it seem safe to assume that the Eastern Desert Dwellers were multi-resource pastoral nomads, partly settled near wells, mines and quarries and partly mobile herders of sheep, goats, donkeys and camels, much like the Beja today (Chapter 5). Important details of their lives, however, were different because of the continuous development since the 4th-6th centuries CE occurring in the Eastern Desert similar to everywhere else (Barnard 2007). There have been, for instance, several episodes of immigration into the area, by Banu Kanz, Ma'aza and Rashaida Arabs, while Islam, the Arabic language and the 'coffee ceremony' are important and relatively recent changes of life in the Eastern Desert. There has also been a continuous decrease in precipitation and ecological degradation, rendering the raising of cattle increasingly difficult.

3 - What artefacts other than pottery can be attributed with any certainty to the dwellers of the Eastern Desert in the 4th-6th centuries CE?

Fourth Respondent: Desert surveys, conducted using the methods of prehistoric archaeology, have almost always proven remarkably efficacious in finding the remains of even the most pathetic nomads. We find tent remains, hearths, corrals, special extraction sites, ceramics, metals, milling stones of various types and other site furniture. Prehistorians find tiny scatters of lithics dating to tens of thousands of years ago. Pastoral nomads had much larger social groups than middle Palaeolithic hunter-gatherers. The problem is more one of recognizing the remains, than of their poorness, or absence (Appendix 1).

Seventh Respondent:
- calabash gourds, reworked with leather or *'zaf'* matting and coated with mud for making clarified butter and transporting milk or honey;
- containers for salt and sweetening products;
- leather ornaments and straps, leather or *'zaf'* luggage bindings;
- wooden artefacts like digging sticks or (part of) hoes and axes;
- metal (iron, copper or silver) artefacts and ornaments like knifes, swords, hoes and jewellery;
- media of exchange like shells or beads (Appendix 1).

Tentative conclusion: It has been suggested that the *ekratel* platform graves in the Eastern Desert (Krzywinski and Pierce 2001; Sadr et al 1994; 1995) as well as several panels with graffiti, both in the Eastern

Desert and in the Nile Valley (Winkler 1938), are the products of Eastern Desert Dwellers. How these archaeological artefacts relate to each other, to Eastern Desert Ware and to any of the groups mentioned in the historical sources remains uncertain (Chapter 1; Barnard 2005; 2007).

4 - What archaeological finds would be expected when reading the historical sources concerning the southeast of Egypt and the northeast of Sudan in the 4th-6th centuries CE and what references would be expected in those sources when looking at the actual finds?

Fifth Respondent: I think it unlikely that temporary campsites will be found, but it is possible that excavation of *'medinas'*, such as those at Nugrus, Gelli, and Sikait, might yield finds that could be compared with those from Nile Valley sites datable to the period of Blemmy occupation. Prominent on a ridge between ruined buildings at Kab Marfu'a there is a classic *'ekratel'* (Appendix 1).

Eight and Ninth Respondent: It can be expected that their artefacts are mixed with the artefacts of other groups settled in the Nile Valley (e.g. 'the Noubades' of the sources) and that a Byzantine influence is seen as well. Moreover, next to the proximity of a (foreign) 'status culture', a growing social complexity should be reflected in the material remains (Appendix 1).

Tentative conclusion: As the historical sources mention the presence of multi-resource pastoral nomads in the Eastern Desert in many places (Chapter 1; Appendix 3), and pastoral nomads still inhabit the area today, their typical remains can be expected, including fire places, ephemeral campsites with artefacts 'borrowed' from surrounding communities, and simple graves and shrines (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). So far, no systematic search for such remains has taken place in the Eastern Desert, partly because of the difficult access into the area, both logistically and politically, and partly because of the wealth of other sites of archaeological interest in the region (Chapters 1 and 5; Barnard 2005; 2007). Given the remarkable appearance and obvious importance of Eastern Desert Ware, a remark referring to its production or use would not be unexpected in the ancient textual sources.

5 - How can the geographical distribution of the Eastern Desert Ware be explained and how its remarkable archaeological distribution, always among a much larger selection of other sherds?

Third Respondent: I would prefer a hypothesis of a distinctive ware, produced by a few or more local pottery kilns (future analyses and comparisons should determine some of them). This ware became dispersed over a larger territory by commercial exchange (e.g. for food from the Nile Valley) with different cultural groups (having their own pottery of other, mostly imported, origin) (Appendix 1).

Fourth Respondent: Perhaps EDW ought actually to be considered a fine ware, of greater value. Perhaps it is to be associated with specific functions with symbolic loading, which rendered Roman or Byzantine wares inappropriate (Appendix 1).

Fifth Respondent: Function may have played a role in the relative frequency of wares at a site: the EDW may have been used in some specialized social context(s) comparable to *'jabanah'* coffee-making among the Ababda and Beja today, while the other vessels may have been used in a broader range of activities (Appendix 1).

Tenth Respondent: EDW may have been used exclusively at sites that were seasonally, or otherwise only shortly occupied by Eastern Desert Dwellers and therefore little trace has been left. Elsewhere EDW occurs in association with Roman material on sites of more permanent occupation, and it is these sites for which we have evidence. The presence of EDW on Roman sites would most likely result from either the co-habitation of nomads and Romans on the same sites, or the barter or exchange of EDW with Romans on sites occupied exclusively by Romans (Appendix 1).

Tentative conclusion: As discussed above, there are several possible interpretations for the archaeological observations (Table 6-2). The most likely are that groups of travelling potters visited the sites to produce Eastern Desert Ware while taking the surplus vessels (categories 20 and 26); that a group of people temporary settled on the sites were Eastern Desert Ware has been found and kept producing and trading their own pottery (categories 21 and 27); or that the pastoral nomads of the area produced Eastern Desert Ware for their own use (categories 22 and 28). Until additional archaeological, historic and ethnographical date become available, the relation between the potters, their customers and their products will remain unclear.

6 - Where was the pottery now known as Eastern Desert Ware produced, close to the Nile or in the desert proper, in one or more specific areas or where ever the need occurred and was this done by men or women, in specialized work-shops or as household production?

Seventh Respondent: Among the Zaghawa and other contemporary nomadic groups fired pottery is made by women of the '*hadadeen*'. Men are the black-smiths and leather tanners, occasionally also cotton spinners and weavers, while women make pottery. Both are using fire for their production and deal with materials directly from the earth, which makes them a despised caste allegedly once attached to the nomadic clans as slaves (Appendix 1).

Tentative conclusion: According to the results of the study of Eastern Desert Ware fabrics (Chapter 3), these were produced in several geologically different places. No Eastern Desert Ware vessels appeared to have been made of Nile clay, or any of the usual fabrics listed in the Vienna System. Until additional research into Eastern Desert Ware fabrics and possible raw materials from geologically different source areas has been preformed, it is impossible to determine if the production took place in specific places or was truly opportunistic. The technology and execution of the Eastern Desert Ware vessels suggest a household production which, according to ethno-archaeological evidence (Stark 2003), was most likely performed by women.

7 - What were the routes, annual or over another period of time, of the nomads through the Eastern Desert in the 4th-6th centuries CE and how do these compare to those of the present-day dwellers of the Eastern Desert?

Tentative conclusion: In ancient times the movements of the pastoral nomads in the Eastern Desert depended on several factors, including the winter rains (December-February) in the Red Sea Mountains, the harvest in the Nile Valley in April-May, the summer rains (June-August) in the area south of the Atbara river and the inundation of the Nile in August-September (Baines and Malek 2000; Krzywinski and Pierce 2001; Sadr 1987; Chapter 1). The movements of the pastoral nomads were not only governed by the rainfall, providing fodder for the animals, but also by the demand for labour in the Nile Valley as well as in the desert (mines, quarries, caravans). As these events can be rather unpredictable, both in timing and in magnitude, the movement of the nomads was not truly cyclic, but instead opportunistic with people moving away from exhausted areas towards more promising ones. In the last 50 years this way of life has been disrupted by the modern border between Egypt and Sudan, by the construction of Lake Nasser (that stopped the inundation north of the First Cataract, filled the Nile Valley between the First and the Second Cataract with water and displaced the Nubian farmers), by the overpopulation of both the desert and the Nile Valley (limiting the possibilities for unskilled workers to find employment) and by the mechanization of agriculture and trade across the desert (limiting the necessity for unskilled labour).

8 - Would the dwellers of the Eastern Desert in the 4th-6th centuries CE have considered themselves an ethnic unity as suggested by the similarities of Eastern Desert Ware found in far removed regions?

Eleventh Respondent: Cohesion of ceramic style throughout the Eastern Desert need not mean ethnic unity. It is, for example, possible that certain groups had greater specialization in pottery than did others, and that they exchanged this for other goods. There are also well attested examples of ceramic styles being produced as a result of the movement, through marriage, of women from one group into other groups so that the pottery itself, whilst perhaps marking 'Eastern Desert Dwellers', may have no meaning in terms of overall ethnic identity (other than that of its female producers) (Appendix 1).

Tentative conclusion: Given that in the region ceramic artefacts are usually representative of a cultural context (Chapters 2 and 5), it seems safe to assume that the producers and users of Eastern Desert Ware will have considered themselves united in some way by lifestyle, background or ethnicity, rather than that they simple preferred Eastern Desert Ware because of certain aesthetic or physical qualities. The relation of this specific group with other groups in the regions, or any of the groups mentioned in the historical sources, remains unclear.

9 - What can be the reason that so few precursors of Eastern Desert Ware have been found and why did its production so suddenly stop?

First Respondent: In any case, we start to detect EDW when the people producing and using this pottery started to visit the Nile Valley and the Red Sea coast more frequently, perhaps to be involved in the caravan trade or perhaps to expand their political control of the region. This enlargement of their 'action-radius' started in the 3rd century CE as a consequence of the decreasing power of centralized states in the Nile Valley and of the adoption of the camel by the Eastern Desert dwellers (Appendix 1).

Tentative conclusion: One reason for this can be that there were no precursors or successors of Eastern Desert Ware, another that the limited research in the area has not revealed them. Eastern Desert Ware seems to be related to the hand-made Nubian pottery (Chapter 2), a few sherds of which have been found in Marsa Gawasis, a Middle Kingdom (1975-1640 BCE) harbour on the Red Sea coast south of Hurghada (Bard and Fattovich

2003). However, a clear connection between the two has yet to be established and the similarities could be purely coincidental. One explanation for the apparent lack of successor of Eastern Desert Ware is the lack of archaeological data caused by the greatly diminished mining and quarrying activities in the Eastern Desert after the 7th century CE and the resulting lack of archaeological sites. The logistical and political difficulties of working in the area, as well as the wealth of other sites of archaeological interest, have also impeded the study of Eastern Desert Ware *in situ*.

10 - Can firm results, like the actual geographical source or the contents of the vessel, be expected from the laboratory research of the Eastern Desert Ware, or will this just provide additional attributes by which individual sherds can be grouped?

Fifth Respondent: Most likely the data will not exhibit the degree of specificity desired, but will become part of a set of observations amenable to several interpretations (Appendix 1).

Tentative conclusion: As is evident from Chapters 3 and 4, laboratory research provides additional attributes to archaeological artefacts. These should be combined with all available archaeological, historical and experimental data, after which the complex should be studied in its entirety (Barnard et al. 2007a; b).

11 - Are the current inhabitants of the Eastern Desert to be considered the ethnic descendants or the cultural heirs of their ancient counterparts, in other words, can the present-day nomadic group that calls itself 'Beja' be identified with the 'Blemmyes' which are mentioned in the ancient sources?

Fourth Respondent: Even were we able to demonstrate that the current residents of the region are indeed genetic descendents of the 'Blemmyes', we must avoid assuming that their cultural, social and also ecological adaptations are fundamentally similar. In fact, we must assume that these groups are just as historical as any other, and have undergone historical transformations like any other group (Appendix 1).

Seventh Respondent: However, as life-style is the primary condition for cultural belonging, the Beja might in that respect be considered the present-day counterparts of the ancient Eastern Desert Dwellers (Appendix 1).

Tentative conclusion: As discussed in Chapter 5, as well as in my answer to Question 2, the Beja should not be considered the ethnic or cultural counterparts of the Blemmyes (Barnard 2005; 2007). Equating the Beja with the Blemmyes is like thinking of the modern Belgiums as 'the bravest of all Gauls' (Julius Caesar: *De Bello Gallico* book I: 1,2).

12 - Can all the graves which resemble the graves containing Eastern Desert Ware, like those in Wadi Qitna, be attributed to the 'Eastern Desert Dwellers' and are the sherds found in those graves from re-used utilitarian vessels or representatives of a separate corpus?

Tentative conclusion: As the Eastern Desert has attracted miners, quarrymen and traders since Pre-Dynastic times (*circa* 3000 BCE) until today, many of the graves in the area must be associated with them rather than the indigenous Eastern Desert Dwellers. The presence of Eastern Desert Ware in graves may be indicative of the latter group, see also my answer to Question 8, but without clear cultural markers it is difficult to attribute a burial to any group. The study of skeletal material may provide important information, but its correlation to culture and ethnicity is almost as problematic as the data from ceramic analysis (Arnold 1995; Barnard 1995; Dever 1995; Hutchinson and Smith 1996; Jones 1997; Ratcliffe 1994; Yinger 1994). Organic residue analysis has shown organic residues in all tested Eastern Desert Ware vessels (Chapter 4), indicating that the corpus was probably not produced as drinking vessels or grave goods. As is common in the region, graves were outfitted with the used personal items of the deceased, a practice that is occasionally still practiced today (Chapter 5).

13 - What was the true relation of the Eastern Desert Dwellers with their neighbours, ranging from assisting with the harvest in the Nile Valley to raiding early Christian monasteries, and how were internal conflicts solved?

Seventh Respondent: Current examples from dwellers in the Western Desert, such as the Cyrenaica Bedouin, and from Darfur, such as the so called 'Arab' cattle and camel herders (Bagara and Awlad x, y, z respectively) and the Zaghawa semi-nomads, show a flexibility in taking up an ethnic identity belonging to a certain lifestyle. Sedentary farmers might invest in cattle or camels and give them to seasonally migrating nomads to tend for them, taking them to watering and grazing places in agricultural areas during the dry season, in exchange for the milk and part of the off-spring. However, given the animosity between nomads and sedentary peoples, this always involves a risk and a farmer could (and, as examples indicate, would) take up a nomadic lifestyle tending his own herd after his herd became large enough. This makes him a nomad; he becomes a Baggara or an Arab. Although the first generation of such new nomads would be singled out for being 'not good enough´, the change of ethnic identity related to lifestyle was

in itself not contested. The same is true the other way round. Women, children and elderly people from a nomadic group would be the first to settle, or be left behind from their perspective, when a drought reduced the herd and thus the number of people it could sustain. Young men would be those who would migrate further north and south than usual, with smaller herds and less people, in order to survive at all. If this did not succeed, due to continued drought, cattle diseases or raids, a sedentary lifestyle would become the basis of survival (Appendix 1).

Tentative conclusion: Pastoral nomads are always in a precarious relationship with the settled population around them (Bar-Yosef and Khazanov 1992; Barnard and Wendrich 2008; Cribb 1991), in the case of the Eastern Desert Dwellers with the inhabitants of the Nile Valley as well as the miners, quarrymen and traders in the outposts in the desert and on the Red Sea coast (Chapter 1). At times such a relationship would have been almost symbiotic, with both parties benefiting from each others specific knowledge and skills. At other times it could be parasitic, when the Eastern Desert Dwellers raided the trade caravans, or entail a violent competition for scarce resources such as fuel and water. At all times, however, both groups needed and partly defined each other (Rosen 1987; 1988; 1993; 2003; 2006; 2007). There is no archaeological and only very limited ethnographic information on the solving of conflicts within or between groups of pastoral nomads. At present, the peaceful resolving of conflicts is done by mediation of a *sheikh* (Murray 1935; Paul 1954), which may have had its ancient equivalents. Less peaceful solutions probably included the fights or separation in space of the disagreeing parties (Cribb 2008).

14 - Can the desert settlements described as *'Fluchtdörfer'* by Ricke (1967) and as 'enigmatic settlements' by Sidebotham, Barnard and Pyke (2002) be attributed to Eastern Desert Dwellers as suggested by the authors?

Fifth Respondent: I am inclined to regard '*medinas*', like Nugrus and Gelli, as having been occupied, if not founded, primarily by desert folk, during the period of 'Blemmy' domination, and it would not be surprising if the 'enigmatic settlements' were as well (Appendix 1).

Seventh Respondent: They might have been temporary sites near settlements of sedentary peoples or settlements located off-course due to climatic conditions, threats of war, other raiding nomads or another, unknown reason. They also have been the basis for a more permanent settlement (...) when a nomadic life-style was (temporarily) impossible to maintain (Appendix 1).

Tentative conclusion: Until excavation has taken place of these settlements this suggestion can be neither confirmed nor refuted. One argument against this interpretation is the size of the settlements, which would strain the limited natural resources, and the impression that they were inhabited for a considerable period of time.

The Archaeology of Mobility

During the past decades the anthropological theory on the relationship between the settled majority and the mobile minority in the Near East has developed from the permanent conflict reflected by the historical sources to the more symbiotic relationship that can be deduced from archaeological and ethno-archaeological data. Our current terminology, with fixed categories for mobile and sedentary groups, is no more applicable to the ancient situation, in which these groups were even more intertwined, then to the present situation. Much like ancient ethnic names, like Blemmyes (or Medjay, Chapter 1), do not correspond with our modern use of such terms, our understanding of words such as 'clan', 'tribe', 'nomad' or 'Bedouin' may not correspond to reality (Abu-Lughod 1989; Bar-Yosef and Khazanov 1991; Barnard and Wendrich 2008; Cole 2003; Porter 2002; Ratnagar 2003; Salzman et al. 1999; Veth et al. 2005). It has recently been appreciated that nomadic people are not archaeologically invisible (Childe 1951; Finkelstein 1992, but see Rosen 1992), but leave traces that are discernable and often specific for a nomadic way of life (Bar-Yosef and Khazanov 1991; Barnard and Wendrich 2008; Chang and Koster 1994; Cribb 1991; Haiman 1995; Rosen and Avni 1993; Veth et al. 2005). New archaeological tools and techniques (such as Google Earth™, geographic information systems, virtual reality, chemical residue analysis and fingerprinting, etc.), and techniques adapted from other scientific disciplines (such as geology, palaeontology, climatology, statistics, etc.) will dramatically increase the amount of sites and artefacts, as well as the information gleaned from them (Barnard et al. 2006; Barnard and Strouhal 2004; Sadr 1987; 1988; 1990; Sadr et al. 1994; Wendrich and Barnard 2008).

Historical and archaeological research each produces data sets that can be analogous, complementary or contradictory (Bietak 1979; Rosen 2006; Wendrich et al. 2006). These different sources of information should be pursued more or less independently, although their confrontation can serve as an additional heuristic tool, and one cannot replace the other, or be considered superior. In Egypt, the enormous wealth of Pharaonic monuments and the early translation of Egyptian hieroglyphs have long overshadowed the archaeology of settlements and daily life. Egyptian archaeology was initially perceived as a technique to find more texts and object of museum quality. Independent archaeological observations were readily explained from the textual data. Only recently has the archaeology of Egypt become a specialism in its own

right, generating its own specific data, although often still haunted by legacies of the past. The dearth of archaeological data is all the more significant in areas not comprehensively covered by the texts, such as pastoral nomads or the Eastern Desert. Here we are confronted with extremely limited information, written by outsiders and strongly biased towards a settled life in the Nile Valley, which nevertheless often still dominates the interpretation of the relevant archaeological finds.

Three groups are usually associated with the Eastern Desert: the Medjay (in Pharaonic times, Figure 1-7), the Blemmyes (in Graeco-Roman times) and the Beja (in modern times). The Medjay are mentioned in a number of Egyptian sources, mostly dated to the Middle Kingdom (1975-1640 BCE), but they also feature in earlier and later texts (Bietak 1966; Faulkner 1962; Gardiner 1947; Giuliani 1998; Hafsaas 2006; Sadr 1990). From these, they appear to be part of a southern Nilotic, 'Nubian' and dark skinned conglomerate, for instance in the *Biography of Uni* (2325-2175 BCE, Posener 1958), or to live as pastoral nomads in the Eastern Desert, for instance in the *Semna Dispatches* (1938-1755 BCE, Smither 1945). Elsewhere, in later texts, 'Medjay' seems to refer to mercenaries (bowmen) or guards, often without obvious ethnic connotation (Bietak 1966; Gardiner 1947). Other Ancient Egyptian names of nomadic groups include Aamu (now usually placed in the Sinai and said to have survived by cattle raiding, Weinstein 1975), Iuntiu (like the Medjay said to be bowmen from the Eastern Desert, Lansing 1947; Meredith 1957), Tjehenu or Tjemehu (now usually identified as Libyans, but said to be at war with Nubian peoples, Breasted 1962; Murray 1965) and *jwntj·w* ('Cairn-people', although descriptive believed to refer to a specific ethnic group, Behrens 1982).

More general terms for (pastoral) nomads include *ḥrjw·šc* (sand-people), *nmjw·šc* (sand-walkers) and *htjw·t3* (vagabonds); these could possibly have been used for representatives of more than one of the peoples mentioned above. The existence of such descriptive terms suggests that the other terms, with no obvious meaning in Ancient Egyptian, are based on a foreign language. These terms could indeed have referred to the identity of these groups, like modern 'Beja'. They could also have been related to the lifestyle of segments of the group, such as 'Bedouin' (Cole 2003), or have a more complicated history like 'Barbarian' (βάρβαρος), an originally Ancient Greek derogatory onomatopoeia with no previous meaning in any language, or 'Eskimo' (Algonquian for "eaters of raw meat" or Montagnais for "speakers of a different language," Mailhot 1978), a pejorative taken from the language of a third people.

Scholars often connect the Medjay with the 'pan-graves', so called because they are shaped like a frying pan (Adams 1984; Bietak 1966; 1979; Friedman 2001; Hafsaas 2006; Sadr 1987; Säve-Söderbergh 1941, but see Friedman 2004; Sadr 1990). This conclusion was originally based on the abundance of weapons in the pan-graves near the Egyptian forts in Lower Nubia and the robust appearance of the bones, which led to the inference that these must be the graves of Medjay mercenaries known from the historical sources (Bietak 1966; 1979; Sadr 1987; Säve-Söderbergh 1941). The fact that these Medjay were considered to be directly related to the pastoral nomads of the Eastern Desert was seen reflected in the shell beads, mostly of Red Sea *Nerita* and *Conus* sp., and the interment of animal crania in the graves or in secondary pits nearby (Bietak 1966; Friedman 2001, 2004; Hafsaas 2006; Posener 1958; Sadr 1987; 1990).

There are obviously several problems with this interpretation (Bietak 1966; Sadr 1990). First is that the Medjay feature in the ancient sources from the Old to the New Kingdom, while most pan-graves were relatively securely dated, by associated finds, to the Second Intermediate (Hyksos) Period (1630-1520 BCE). This could be explained by assuming that pan-graves and the associated material culture went in and out of fashion among the Medjay. Second is the distribution of the graves, which were mostly found in or very near the Nile Valley downstream of the Second Cataract on both the east and the west bank, and not in the Eastern Desert proper. Intensive archaeological surveys in the Kassala area of eastern Sudan have revealed many potsherds with great similarity to those of the Pan-Grave Culture (Sadr 1987; 1988; 1990). These were dated to around 1500-1000 BCE, just after pan-graves and Medjay disappear from the Egyptian archaeological and historical records. The producers and users of these vessels were identified as the *Mokram Group*, after Mount Mokram near Kassala. This shows that archaeological research of the pastoral nomads in this area, although at times logistically and politically vexing, is technically eminently possible (Bar-Yosef and Khazanov 1991; Chang and Koster 1994; Cribb 1991; Sadr 1988; Veth et al. 2005; Wendrich and Barnard 2008). The relationship between the Mokram Group and the Pan-Grave Culture of the archaeological record, or the Medjay of the historical sources, however, remained unclear (Sadr 1988; 1990). Third, 'Medjay' may not have referred to a political, ethnic or cultural entity that can be connected one-to-one with a corpus of archaeological finds. Finally, there is no evident reason to connect the archaeological finds with the Medjay, rather than with the Aamu, Iuntiu, Tjehenu (Tjemehu) or the *jwntj·w*, or even the *ḥrjw·šc*, the *nmjw·šc* or the *htjw·t3*. There may have been a group of people in Ancient Egypt that was specifically identified, or identified themselves, as Medjay and it seem likely that the pan-graves were indeed constructed by groups of pastoral nomads, but their equation can, as yet, only be assumed.

An argument remarkably similar to that on Medjay and pan-graves above can be made concerning the proposed connection between the Blemmyes and Eastern Desert

Ware (Bietak 2006; Rose 1995; Sidebotham and Wendrich 1996; 2001). Like the Medjay, the Blemmyes feature in the historical sources well before and after Eastern Desert Ware appears in the archaeological record. Furthermore, Eastern Desert Ware is found far outside the area in which the written sources seem to place the Blemmyes, near or in the Nile Valley between the First and Second Cataracts (Barnard and Rose 2007; Burstein 2008; Dijkstra 2005; 2008; Updegraff 1988). Obviously pottery can be traded over long distances (Bourriau et al. 2000; Hayes 1995; 1996; Porat et al. 1991; Tomber 1998; 1999a; b), either for its contents or its intrinsic value; and production methods, shapes and styles can change rapidly without an evident relation to historical events (Adams et al. 1979). On the other hand, the highly recognizable appearance of Eastern Desert Ware would have set its users apart and it may well have functioned as a cultural or ethnic marker. Like 'Medjay', 'Blemmeys' did probably not refer to a political, ethnic or cultural entity, but was more likely used as a convenient term to talk about outsiders. And again, there is no apparent reason to connect the archaeological finds, including the tumulus graves (*ekratels*, Krzywinski and Pierce 2001; Sadr et al. 1994; Strouhal 1984) in which Eastern Desert Ware has been found and several enigmatic petroglyphs in the Eastern Desert (Barnard 2007; Huyge 1998; Winkler 1938), with the Blemmyes rather than with any of the many other groups mentioned in the ancient sources.

Further research on the available material and data will unlikely produce significant new insights into the history of the Eastern Desert and, unless substantial new textual sources are discovered, the historical research on the region seems exhausted. Archaeological research in Lower Nubia, between the First and Second Cataracts, is no longer possible and the same will be true for the area between the Fourth and Fifth Cataracts after the Merowe High Dam near Hamdab will be closed in 2008. The data collected during the rescue excavations in this area, similar to the UNESCO Nubian Monuments Salvage Campaign in the 1960s, will be published in the near future and shed more light on life in the Eastern Desert in ancient times (Welsby and Anderson 2004).

Archaeological evidence on the dwellers of the desert is scarce. The emphasis of the research has been on the better visible and easier to interpret remains of the mines, quarries, inscriptions and trade routes of outsiders temporarily settling in the desert. Many historical studies have been biased towards Pharaonic and Graeco-Roman Egypt, disregarding Napatan, Meroitic and Nubian sources. Ethnographic and ethno-archaeological information is equally limited and has often been shown to provide only very incomplete parallels between modern and ancient mobile groups in the region. Much more can therefore be expected from additional archaeological and ethnographic work in the Eastern Desert itself. This requires a specialized approach, combining the study of ephemeral campsites and low-density surface scatters with data on the environment, the available resources and the routes of the nomads. This methodology will be very similar for the study of pastoral nomads, mobile groups of hunter-gatherers or sections of a settled population that have temporarily been displaced. Only after such an archaeology of mobility has been developed, applied to the Eastern Desert as well as to selections of finds from that region, and confronted with the historical sources in a heuristic rather than a bellicose fashion (Bietak 1979; Rosen 2006; Wendrich et al. 2006), can the above issues be comprehensively addressed and more convincing associations can be made between the Medjay, the Blemmyes and the archaeological record of the Eastern Desert. Unfortunately, these insights come at a time that access into the Eastern Desert has become increasingly difficult.

Discussion and Final Conclusion

The most important information for the understanding of Eastern Desert Ware is provided by the study of the fabric of the sherds. These can be shown, at several levels (macroscopically, microscopically and chemically), to originate from several geologically different sources, none of which appears to be Nile clay. The fabric of Eastern Desert Ware does not fall within any of the categories of the Vienna System, which classifies the most common fabrics of Egyptian pottery. In technology and style Eastern Desert Ware seems closer to the contemporary Nubian hand-made pottery (Family D, especially H 11), or even the much earlier hand-made bowls of the C-Horizon. However, these are all made of Nile clay with abundant organic temper, again very different from Eastern Desert Ware. This effectively eliminates categories 10-18 of Table 6-2 in which all vessels are made in one location far from all, or all but one, of the places where Eastern Desert Ware has been found, and distributed from there over the different sites. Instead, Eastern Desert Ware was produced close to where it was found ('local', categories 1-8), or in a number of production areas ('multi-sited', categories 19-27). An argument against the first option is that the environment of several sites all but precluded the production of pottery for lack of water or fuel. The lack of a clear correlation between fabric and provenance at any of the sites means that both interpretations must be complemented by a continuous movement of vessels between the different sites.

The general appearance of the vessels constitutes the second important source of arguments. The first of these is the observation that the vast majority of Eastern Desert Ware vessels are cups and bowls. This means that the corpus consists mainly of serving vessels unfit for the preparation, storage or transportation of foodstuffs. The transportation of vessels from site to site must therefore have taken place for their intrinsic value, either

as trade items ('pots' in Table 6-2), or as household articles ('people'). A second important argument emerges from the technology and surface treatment of the vessels. These set them apart from the much more common wheel-thrown and undecorated vessels, even when present only as a few small sherds (Chapter 2; Appendix 2). That they still do so today is indicative of how they must have done the same when they were in use, around 1500 years ago. There can be little doubt that both producers and users were acutely aware of this. The motives behind the choices leading to Eastern Desert Ware remain unclear. Potters will obviously produce vessels that they can either readily trade or use themselves, which means that the forms and decorations on Eastern Desert Ware were determined by demand. The vessels may simply have been considered aesthetically attractive by certain groups, or to be of a better quality than other available pottery. The burnishing of many of the vessels will have made them less porous that many of the more common vessels. Alternatively, Eastern Desert Ware may have been associated with specific foodstuffs or their preparation, much like the *jabanah* vessel is currently associated with coffee and the 'coffee ceremony' (Chapter 5).

The producers and users of Eastern Desert Ware may have moved from one 'homeland' region to the sites were Eastern Desert Ware has been found, taking with them their specific technological skills and aesthetic values. This would explain the sudden appearance and disappearance of Eastern Desert Ware in the archaeological record, coinciding with the arrival and the departure or assimilation of this group. As the history of the region is characterized by the movement of people there must frequently have been opportunities for a larger or smaller displaced group to enter the area in which Eastern Desert Ware is found. One argument against this interpretation is that no earlier site is known that predominantly produced Eastern Desert Ware, as expected of a hypothetical homeland of Eastern Desert Ware users. The multi-sited origins of Eastern Desert Ware are also not satisfactory explained by this interpretation without it being extended with the continuous movement of vessels between sites. Finally, it seems less likely, although certainly not impossible, that the producers and users of Eastern Desert Ware would move into three different areas to live among representatives of two different cultures (Table 6-1, Chapter 1).

Eastern Desert Ware may also have been produced by travelling potters that moved from site to site to cater for their customers (David et al. 1988; Gosselain 1992; Herbich 1987; Stark 2003). Surplus vessels could have subsequently been traded (category 20 in Table 6-2), or taken by the potters to be sold or bartered elsewhere (category 26). Alternatively, potters at several sites could have made Eastern Desert Ware for a specific group of consumers, at various other sites, after which the pots were traded (category 19), or taken by their new owners (category 25). A special case of this last interpretation is the opportunistic production of pottery, whenever the need occurred or the opportunity presented itself, by pastoral nomads or their specialized clansmen, as discussed in Chapter 5. As there are no indications that in this region pottery was ever produced by travelling groups of potters, while there is abundant historical (Chapter 1, Appendix 3) and ethnographical (Chapter 5) evidence of pastoral nomads, the last interpretation seems more credible. Until more archaeological evidence becomes available, the exact relation between the producers and users of Eastern Desert Ware, within categories 19-21 or 25-27, will continue to be unknown. Even more enigmatic remains the relatively sudden appearance of Eastern Desert Ware in the archaeological record and its disappearance about 250 years later. It could be that the vessels are the remnants of a group that came and went, as discussed above, or that the vessels were associated with a certain foodstuff or food 'ritual' that went in and out of fashion. An alternative explanation for the apparent lack of Eastern Desert Ware after the 7th century CE might be the lack of archaeological data caused by the greatly diminished mining and quarrying activities in the Eastern Desert after the Arab invasions in the region and the resulting lack of archaeological sites. Again, only additional archaeological research can possibly resolve these matters.

All in all the most likely explanation for the pottery now identified as Eastern Desert Ware, taking into account all currently available evidence, is that it was made and used by a group of (multi-resource) pastoral nomads, comparable to one or more tribes of the Beja federation today. Members of this group associated themselves with the temporary settlers that entered the region from the Nile Valley as miners, monks, quarrymen and traders along the long-distance routes between the Roman Empire and Egypt on the one hand, and sub-Saharan Africa, Arabia Felix and India on the other. A similar association took place in the Nile Valley between the First and the Second Cataracts (Lower Nubia), where the desert dwellers were needed as labourers during the spectacular increase in agriculture after the introduction of the water-wheel. The infrastructure provided for these economic activities not only enabled the nomads of the desert to settle for a relatively long time, enough for the production of pottery, but also provided them with the necessary excess of water and fuel to produce ceramic artefacts. The outsiders may also have supplied the former nomads with technological ideas or advice, although there is no evidence that they produced their own pottery while in the desert, but they likely did provide one of the motives. Eastern Desert Ware is so different in technology and decoration from the more common pottery in the region, be it from Graeco-Roman

Egypt or post-Meroitic Nubia, that it must have set its users apart. It is possible that Eastern Desert Ware was associated with certain ethnic meals or local foodstuffs, much like the *jabanah* coffee maker and China coffee cups are associated with the Beja 'coffee ceremony' today. The value and meaning attached to the ancient vessels is evident from the fact that many of them were found as grave goods.

The florescence of Eastern Desert Ware seems to coincide with the expansion of agriculture in Lower Nubia and the flurry of activity in the Eastern Desert, while its disappearance appears to correspond with the collapse of the trade and mining in the desert and the end of the growth of the agriculture in the Nile Valley. This is almost certainly also partly due to archaeological bias caused by the fact that the obvious settlements, installations and cemeteries of the outsiders have attracted all the attention whereas no systematic research has been devoted to the ephemeral archaeological traces of the long-term nomadic inhabitants of the desert. Until such has been done, which may be hampered by logistical and political issues but is archaeologically eminently feasible, it will be difficult to add to the knowledge and understanding of Eastern Desert Ware, its producers and users, and their relation to ancient and modern people that is presented here.