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One Region – Diverse Perspectives

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# When the Desert Dried Up: Late Prehistoric Cultures and Contacts in Egypt and Northern Sudan

(PLATES 30–31)

By HEIKO RIEMER, MATHIAS LANGE and KARIN KINDERMANN

## 1. Introduction

The western hinterland of Lower Nubia and Upper Egypt is desert, an area of extreme character, with little rainfall and sparse vegetation, nearly unpeopled and seemingly endless in its extension. Looking closer at that vast region, one recognizes that the desert is not that barren and simple but offers a diversified landscape and an enormous amount of archaeological traces of past human existence.

Interest in prehistoric archaeology of the desert developed very slowly in Egypt and Sudan. Most of our knowledge about the prehistoric cultures west of the Nile results from the last 30 years of archaeological research. These areas west of the Nile have traditionally been called the “Libyan Desert”, but today this name is often replaced by “Western Desert” in Egypt or “West Nubian Desert” in Sudan. Systematic research did not start there prior to the 1920s and 30s, a phase that generally saw a boom of desert explorations most of which were initiated or accompanied by members of the Geographical Survey. GERTRUDE CATON-THOMPSON’s camel expedition over the Egyptian Limestone Plateau from Luxor to Kharga in 1928 and the prehistoric research that she conducted in the Kharga oasis is truly the first major investigation in systematic archaeological excavations and collections, and among the best which has ever been published about the oases<sup>1</sup>. During this period, a small number of desert expeditions by car were devoted especially to archaeology, namely the DIAFE XI and XII (“German Research Expedition to Inner Africa”) in 1933 and 1935 and the Sir ROBERT MOND Desert Expedition in 1938, which both set the pattern for rock art research in the Western Desert<sup>2</sup>. These glory days of desert exploration were not followed up until

the close of the Nubian campaign, when the Combined Prehistoric Expedition (CPE) set off in 1972 to the Western Desert of Egypt, where they have continued fieldwork until today<sup>3</sup>. A growing number of other long-term missions entered the scene during the following decades, of which the Dakhla Oasis Project (DOP) was the first in 1978 followed by the Cologne University B.O.S. project in 1980 (“Settlement History of the Eastern Sahara”). Between 1995 and 2007, many of the approaches established by B.O.S. were developed and extended under the umbrella of the ACACIA project at the University of Cologne. Both projects introduced a much more systematic field survey and more comprehensive treatment of archaeological sites in the deserts outside the oases. While most other projects were entirely restricted to specific sites or micro-regions, B.O.S. pursued a proper geographical strategy investigating case sites or areas within a 1,500 km long transect between the Mediterranean coast and the Wadi Howar in Sudan (Fig. 1). This transect not only covered the entire climatic and vegetation sequence across the Sahara from the subtropical north to sub-Saharan Africa in the south but also focused on the manifold cultural traditions west of the Nile and their chronology and spatial distribution.

Despite the immense historical value of the data that have been collected during the last 30 years in the deserts of Egypt and Sudan, archaeology has virtually recovered only a very few pieces of the puzzle, and most desert regions still remain largely unexplored. This is not surprising, when taking into account that we are dealing with a study area of approximately 1,500 km in north-south direction and 600 to 800 km between the course of the Nile in the east and the borders to Libya and Chad in the west.

<sup>1</sup> G. CATON-THOMPSON, *Prehistoric Research Expedition to Kharga Oasis, Egypt Preliminary Outline of the Season's Work*, in: *Man* 31, 1931, pp. 77–84; *Id.*, *Kharga Oasis in Prehistory*, London 1952.

<sup>2</sup> H. A. WINKLER, *Rock-Drawings of Southern Upper Egypt I*, London 1938; H. RHOTERT, *Libysche Felsbilder*, Darmstadt 1952.

<sup>3</sup> F. WENDORF ET AL., *Holocene settlement of the Egyptian Sahara, Volume 1: The archaeology of Nabta Playa*, New York/Boston/Dordrecht 2001.

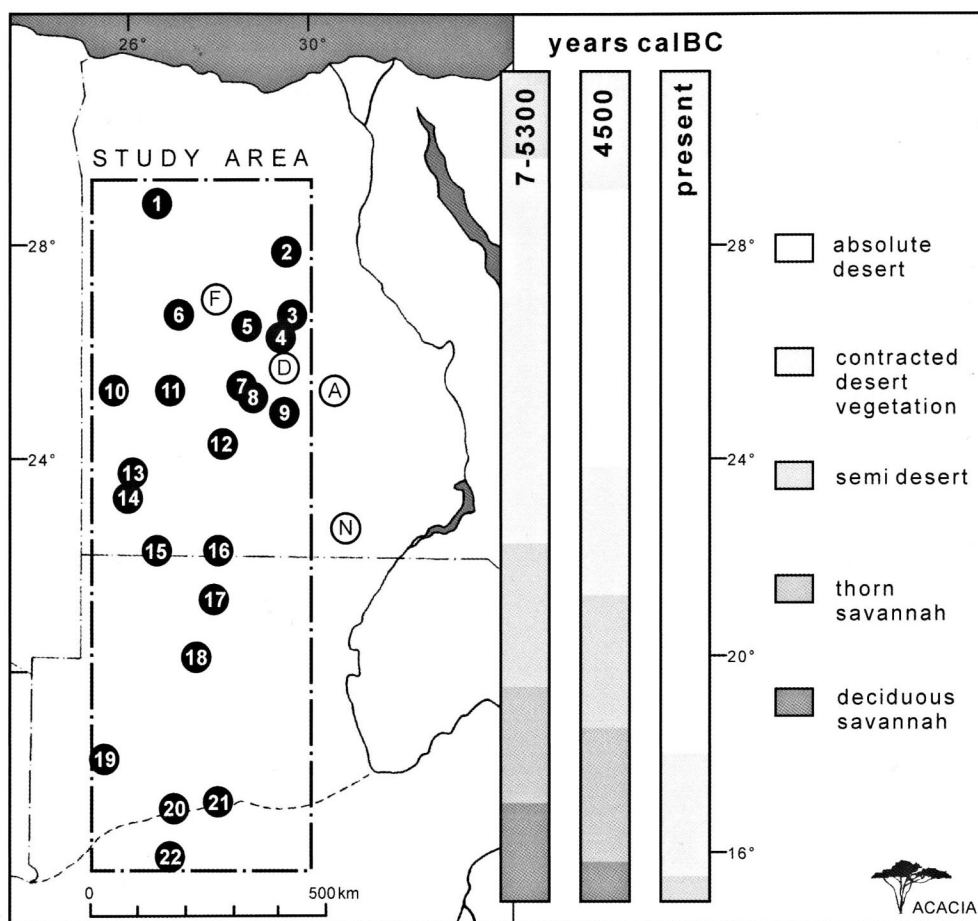


Fig. 1 The north-south transect investigated by the B.O.S. and ACACIA missions of Cologne University between 1980 and 2007. Sites and study areas where excavations and surveys were carried out by B.O.S. and ACACIA numbered 1–22; other study areas are: D = Dakhla; A = Abu Tartur; N = Nabta Playa/Bir Kiseiba. Right hand: Change of vegetation zones during the Holocene after NEUMANN 1989a; 1989b; KUPER/KRÖPELIN 2006

Nonetheless, however fragmentary our knowledge is, we begin to recognize the important role the desert has played for the cultural development along the Nile<sup>4</sup>. This is basically true for the late Prehistoric Period, which started with the drying of the desert in c. 5,000 cal BC and the beginning of the first fully-fledged Neolithic cultures at the Nile and closed when the Egyptian state constituted and started to explore the desert west of the Nile.

This paper will give an overview of the recent state of our knowledge in late prehistoric archaeology of the Libyan Desert in Egypt and Sudan. Since not all of the study areas and the many facets of artefacts can be presented here, the following paragraphs will emphasize those regions and key artefacts which especially display cultural contacts to neighbouring regions, and in particular to the Nile Valley. The paper

falls into three parts. The first chapter will introduce the climatic background and its dramatic change during the Sixth to Third Millennia cal BC. The second part is devoted to the cultural development in the Egyptian Western Desert, while the third part views the later prehistoric development from the La-qiya region in northern Sudan.

## 2. Climatic Change and Settlement History of the Eastern Sahara

Today, the Sahara is a dry land featuring the largest and most arid zone on earth. In particular its eastern part, which extends over most areas of Egypt and Su-

<sup>4</sup> R. KUPER, *Routes and Roots in Egypt's Western Desert: The Early Holocene Resettlement of the Eastern Sahara*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 1–12.

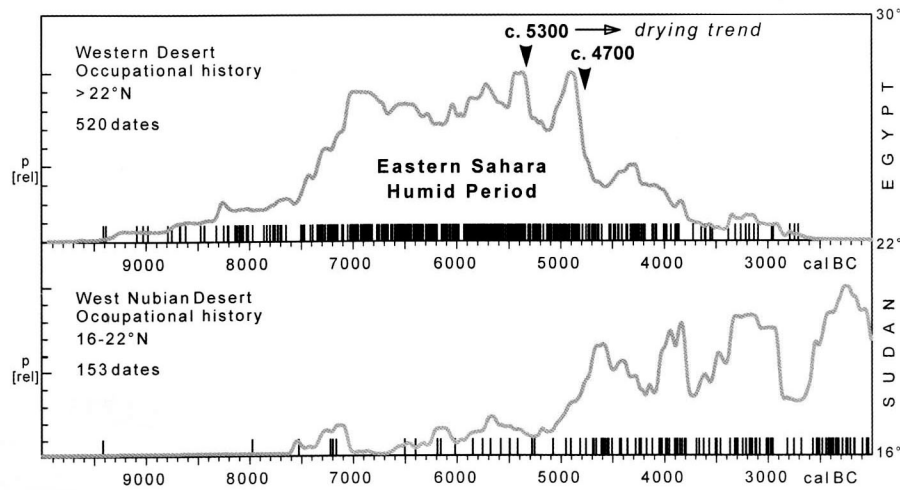


Fig. 2 The occupation of the Eastern Sahara during the so-called Holocene 'humid phase' between c. 9,000 and 5,000 BC evidenced by 520 radiocarbon dates from archaeological sites in the Western Desert of Egypt, and 153 dates from the Nubian Western Desert (RIEMER 2006a). Ticks on the x-scale represent calibrated mean values of the individual dates. The cumulative curves include all calibrated dates and their standard deviations calculated with the Cologne laboratory calibration program CALPAL ([www.calpal.de](http://www.calpal.de)). The drying spells at 5,300 and 4,700 BC impacted a dramatic depopulation of most territories in the Egyptian Western Desert. In the Nubian Western Desert, chronologies lasted significantly longer because of the moderate retreat of the monsoonal summer rain belt to the south (Main sources of dates: McDONALD 2001; WENDORF ET AL. 2001; KUPER/KRÖPELIN 2006)

dan west of the Nile, is characterized by hyper-aridity with rainfall less than 5 mm per year. The oases of the Western Desert (or Libyan Desert) are the only localities which are nowadays inhabited because of the permanent groundwater of the Nubian Aquifer. However, the Sahara was not always so harsh. Before climatic conditions reached those of the present, increased precipitation had turned the Western Desert into a dry savannah with annual downpours of up to 100 or 150 mm<sup>5</sup>. This was the period of the so-called "Holocene humid phase" that set in after the hyper-arid Pleistocene around 9,000 cal BC due to global warming lasting for some 4,000 years before arid conditions started to return<sup>6</sup>. During the humid phase, the deserts were occupied by hunter-gatherers, and in some parts the introduction of domesticated animals took place. Typical desert and dry savannah fauna, such as small gazelles and antelopes, had occupied the Libyan Desert forming a resource

for the hunt. The conditions were far from being a paradise. The rainfall estimate reveals an arid environment with episodic rains and a patchy and unpredictable availability of surface water and vegetation. Moreover, there was a scarcity of permanent waters which were restricted to the river Nile and the oases. These factors created living conditions of high risk and stress for the foragers of the Eastern Sahara. Highly variable mobility patterns are likely to be adaptational expressions of risk minimization, such as illustrated by the distribution of exotic raw materials, stone tool traditions and pottery over hundreds of kilometres<sup>7</sup>.

The occupational development of the desert areas outside the oases and the Nile is closely linked to the changing climatic conditions, in particular rainfall and associated availability of surface water, vegetation and animal life. Archaeological sites excavated and surveyed in various regions of the Western

<sup>5</sup> K. NEUMANN, *Holocene vegetation of the Eastern Sahara: charcoals from prehistoric sites*, in: *African Archaeological Review* 7, 1989, pp. 97–116; *Id.*, *Zur Vegetationsgeschichte der Ostsahara im Holozän. Holzkohlen aus prähistorischen Fundstellen*, in: R. KUPER (ed.), *Forschungen zur Umweltgeschichte der Ostsahara*, in: *Africa Praehistorica* 2, Köln 1989, pp. 13–181; F. WENDORF ET AL., *Holocene settlement of the Egyptian Sahara, Volume 1: The archaeology of Nabta Playa*, New York/Boston/Dordrecht 2001.

<sup>6</sup> K. NICOLL, *Radiocarbon chronologies for prehistoric human occupations and hydroclimatic change in Egypt and Northern Sudan*, in: *Geoarchaeology* 16, 2001, pp. 47–64; R. KUPER/S. KRÖPELIN, *Climate-Controlled Holocene Occupation in the Sahara: Motor of*

*Africa's Evolution*, in: *Science* 313, 2006, pp. 803–807; H. RIEMER, *Archaeology and Environment of the Western Desert of Egypt: <sup>14</sup>C-based human occupation history as archive for Holocene palaeoclimatic reconstruction*, in: S. A. A. YOUSSEF (ed.), *Geology of the Tethys. Proceedings of the First International Conference of the Geology of the Tethys, Cairo University, November 2005*, Cairo 2006, pp. 553–564.

<sup>7</sup> H. RIEMER, *Mapping the movement of pastro-foragers: the spread of Desert Glass and other objects in the Eastern Sahara during the Holocene 'humid phase'*, in: O. BUBENZER/A. BOLTEN/F. DARIUS (eds.), *Atlas of Cultural and Environmental Change in Arid Africa*, *Africa Praehistorica* 21, Cologne 2007, pp. 30–33.

Desert do not only illustrate the settlement history of the deserts, but the occupational history in itself represents a veritable archive for environmental reconstruction and a high-resolution long-term record of the climatic change over millennia (Fig. 2). The human response to climatic change was often dramatic, and abrupt changes in occupation data require intensive climate fluctuations. The consequences of droughts and food-shortages in arid zones are particularly revealing of the vulnerability of hunter-gatherer and pastoral societies, as water is the most critical resource. The dramatic loss of parts of the Sahara to human subsistence at the end of the humid phase around 5,000 cal BC is only one, but a most prominent manifestation of this causal relationship between climate and cultures, not least because of its impact to the formation of early complex societies along the Nile.

More than 400 <sup>14</sup>C-dates from campsite contexts of the humid phase have been accumulated during the ACACIA project and the former B.O.S. project of the University of Cologne. Coupled with some hundreds of dates from other projects working on the Holocene prehistory of the Eastern Sahara, the data form a high-resolution source for the reconstruction of the cultural and climatic history. Fig. 2 gives a cumulative curve of 520 <sup>14</sup>C-dates from the Western Desert of Egypt and 153 dates from the Western Nubian Desert in northern Sudan, which illustrates the exact timing of the climatic and occupational history. The start of the early Holocene warming and increase of humidity around 9,000 cal BC is combined with earliest dates of human presence in the Western Desert after the hyper-arid Pleistocene. The beginning of a rapid increase of occupational data at 7,500 cal BC obviously followed the stabilization of maximal humid conditions that lasted in the Egyptian Western Desert until the end of the Sixth Millennium cal BC. Earliest signals for the return of dryer conditions are evident at 5,300 cal BC indicated by a first rapid drop off of dates in the Egyptian Western Desert curve. That was the time when the core areas of the Western Desert far away from permanent water resources were depopulated for which best evidence is given in the areas of the Great Sand Sea and on the Egyptian Limestone Plateau<sup>8</sup>.

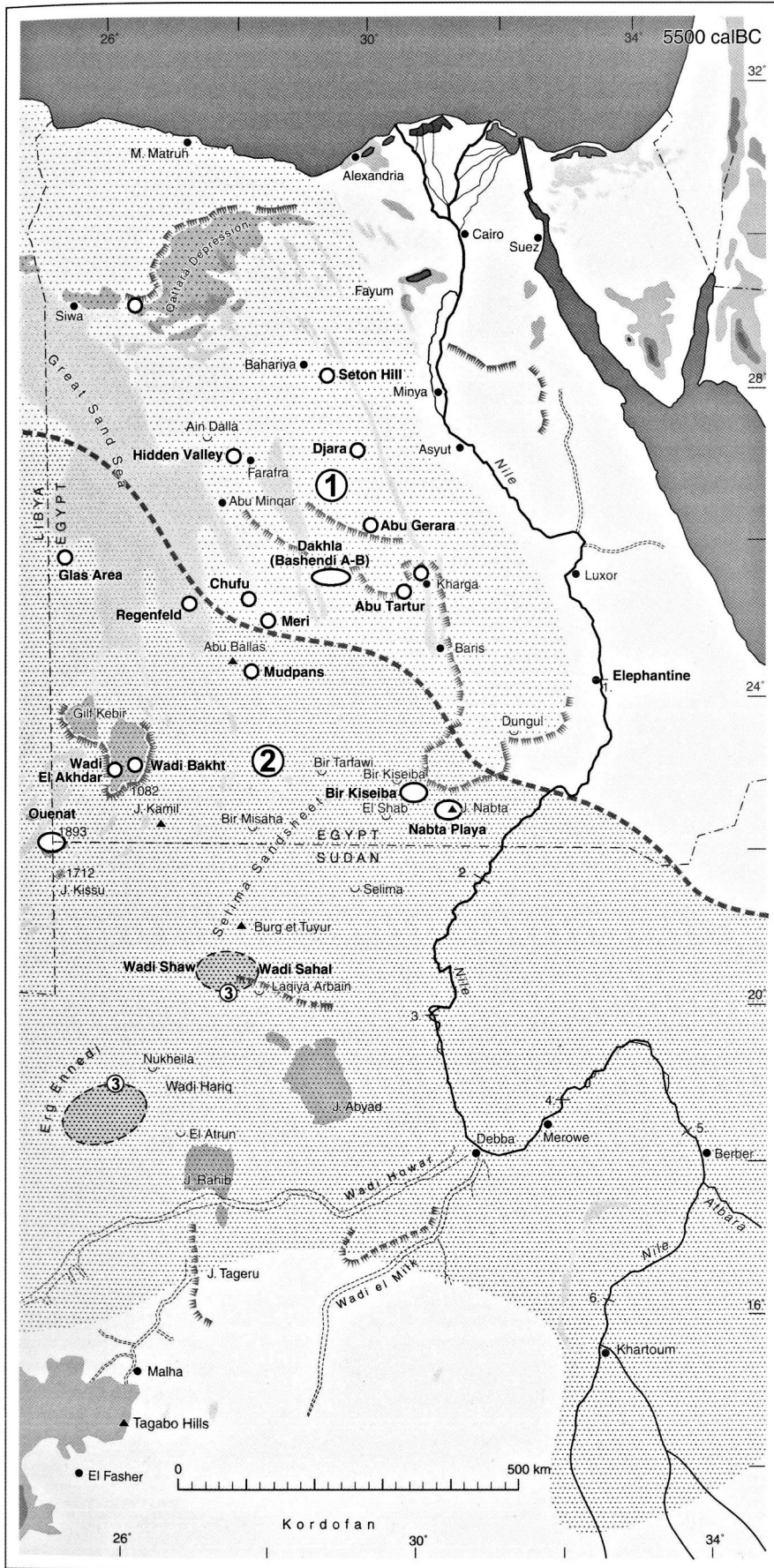
The drying process took some 3,000 or 4,000 years to complete, as can be illustrated by the grow-

ing depopulation of the Western Desert, illustrated in the sequence of maps in Figs. 3–7. This process was unsteady, and in various intervals humid conditions obviously returned between the Fifth to Third Millennium cal BC. However, the general trend was that towards hyper-aridity, and humid conditions never returned to the initial level of the climatic optimum. This steplike development after 5,000 cal BC has only roughly been traced in all its oscillations because of two primary factors. First, the depopulation of desert areas resulted in a massive loss of archaeological and environmental data from the deserts. Remaining information is currently very scanty and, statistically speaking, too poor to reconstruct what exactly took place during these millennia. Second, the cultural development along the Nile is less significant for a climatic reconstruction since it was based on the waters of the river that can be seen as climatically independent or buffered from the dramatic desiccation of the Eastern Sahara. Moreover, the population growth along the Nile that set in with the beginning of dryer conditions in the Eastern Sahara goes along with fundamental socio-economic changes towards sedentism, cultural complexity and agricultural production and intensification, to name but some prominent implications of the predynastic development. The beginning transition from nature-dominated to human-dominated environmental change that ultimately followed this development and the increased technical, economic and organizational possibilities to buffer aridity (field irrigation, storage production etc.) are factors that limit the potential to analyse changes of the ecosystem and their cultural consequences in all its complexity.

Although it becomes visible that the occupation history of the Western Desert in Egypt was climatically induced, a number of regional factors are apparent. Regional developments are affected by individual habitats for which the availability of water is the most important factor. These are at best illustrated by long-lasting settlement curves in the oases and in mountainous regions, such as the Gilf Kebir or Ouenat in Egypt's southwest<sup>9</sup>, both contrasting with the very early depopulation of the core zones of the Western Desert. Another factor that has to be taken into account is the process of southwards shifting of the monsoonal summer rain belt with the onset of dryer conditions. There is a clear distinction between

<sup>8</sup> B. GEHLEN ET AL., *The Holocene Occupation of the Eastern Sahara: Regional Chronologies and Supra-regional Developments in four Areas of the Absolute Desert*, in: JENNERSTRASSE 8 (ed.), *Tides of the Desert – Gezeiten der Wüste, Africa Praehistorica* 14, Cologne 2002, pp. 85–116.

<sup>9</sup> B. GEHLEN ET AL., *op. cit.*; J. LINDSTÄDTER/S. KRÖPELIN, *Wadi Bakht Revisited: Holocene Climate Change and Prehistoric Occupation in the Gilf Kebir Region of the Eastern Sahara, SW Egypt, Geoarchaeology* 19, 2004, pp. 753–778.



Djara ○ Important archaeological sites or areas (selected)      - - - - - Approximate boundary between major cultural units (overlapping zones to both sides of the line)

Fig. 3 Occupation of the Eastern Sahara and the major cultural complexes at c. 5,500 BC (Phase of "Formation" during the end of the humid period after KUPER 2006a):  
 1 "Bifacial complex" with thin-walled and early rippled and black-topped pottery (regional phases: Djara B–Late Bashendi A/Bashendi B);  
 2 "Microlithic complex" or "Khartoum-style complex" (regional phases: Nabta Late Neolithic (earlier phase)–Mudpans B–Regenfeld D–Gilf B1)

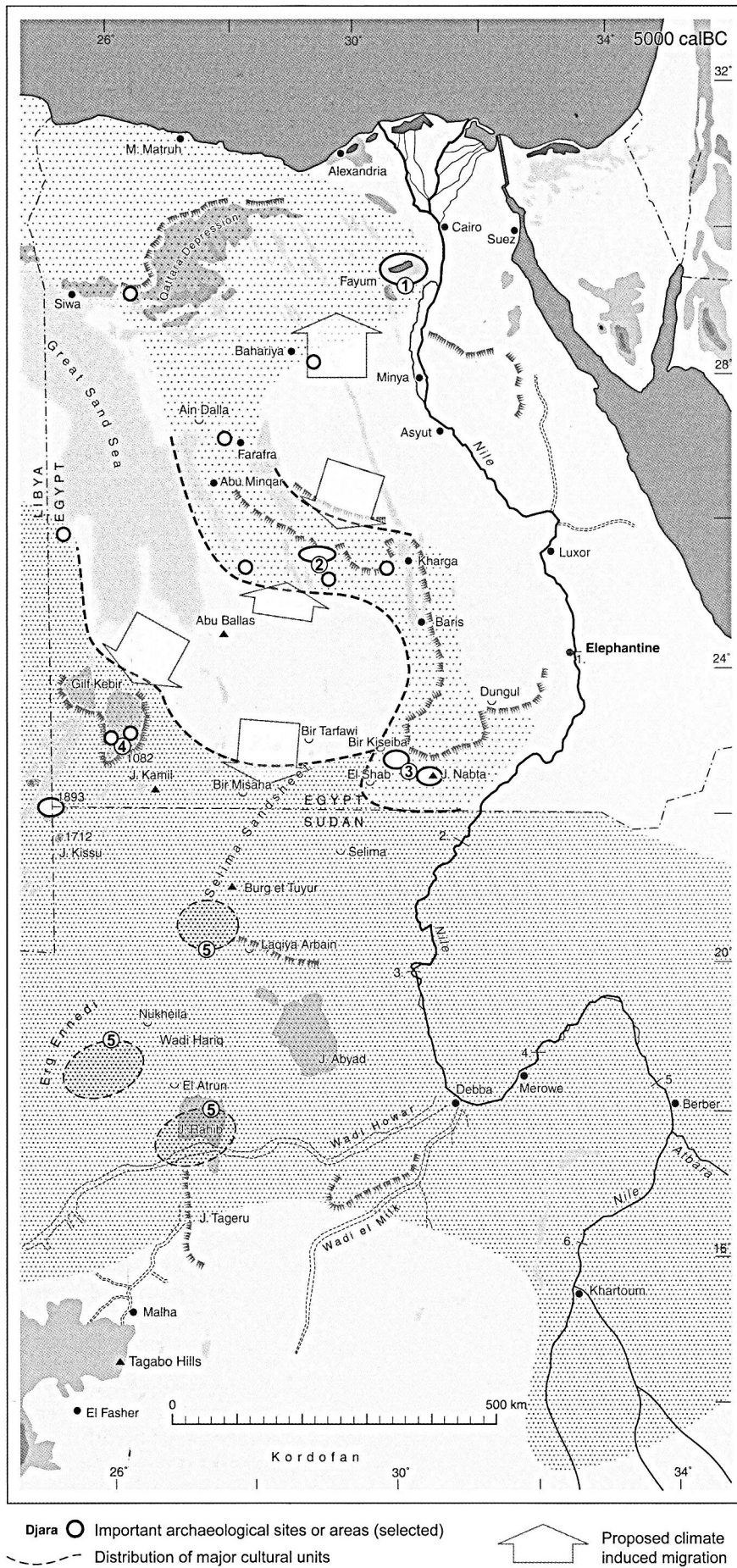


Fig. 4 Occupation of the Eastern Sahara, and the major cultural complexes at c. 5,000 BC (beginning of "Regionalization" after KUPER 2006a):

- 1 Fayum A;
- 2 Bashendi B in oases and adjacent desert areas;
- 3 Nabta Late Neolithic (later phase);
- 4 Gilf B2;
- 5 Laqiya type pottery



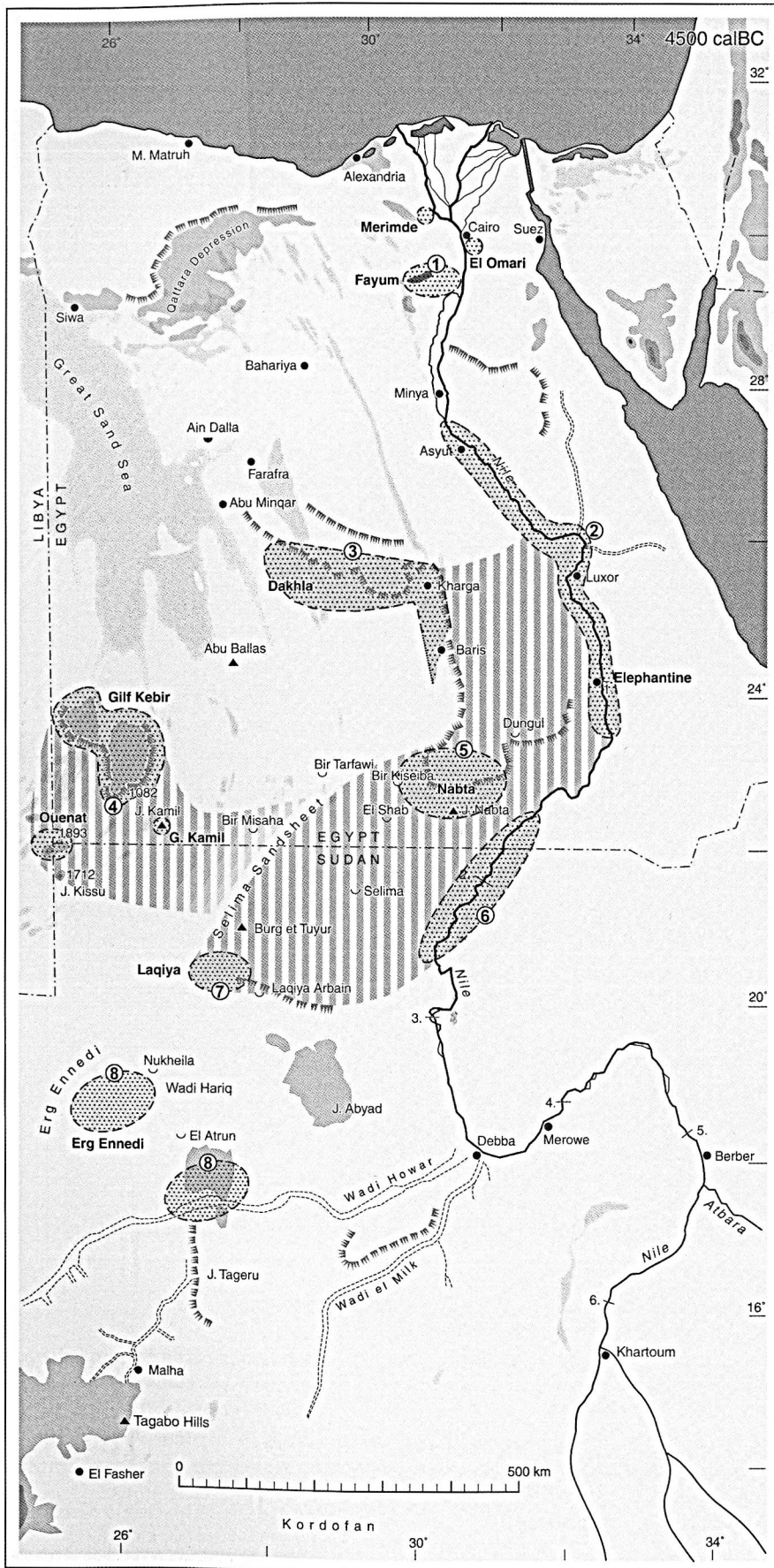


Fig. 5 Occupation of the Eastern Sahara, and the major cultural complexes at c. 4,500 BC:

- 1 Merimde, Fayum, El Omari;
- 2 Badarian/Naqada I;
- 3 Bashendi B and Early Sheikh Muftah in oases;
- 4 Gilf B2-C in the Gilf Kebir-Ouenat region;
- 5 Nabta Late-Final Neolithic;
- 6 Abkan;
- 7 Early Nubian Horizon at Laqiya;
- 8 Laqiya type pottery

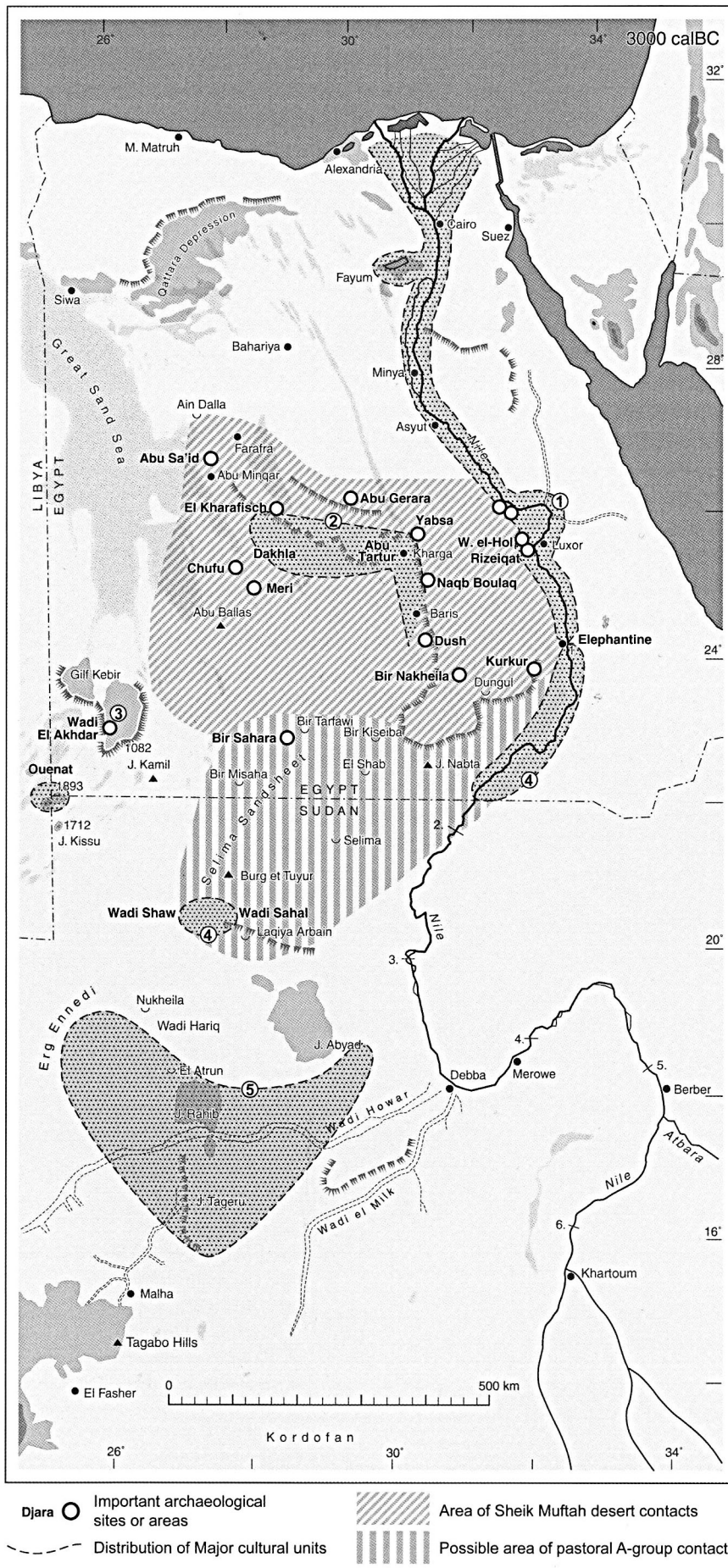


Fig. 6 Occupation of the Eastern Sahara, and the major cultural groups at c. 3,000 BC (phase of "Marginalization" after KUPER 2006a):  
 1 Naqada III;  
 2 Late Sheikh Muftah in oases;  
 3 Gilf D in the Gilf Kebir (and possibly Ouenat);  
 4 A-Group in Nubia and Laqiya;  
 5 *Leiterband* pottery

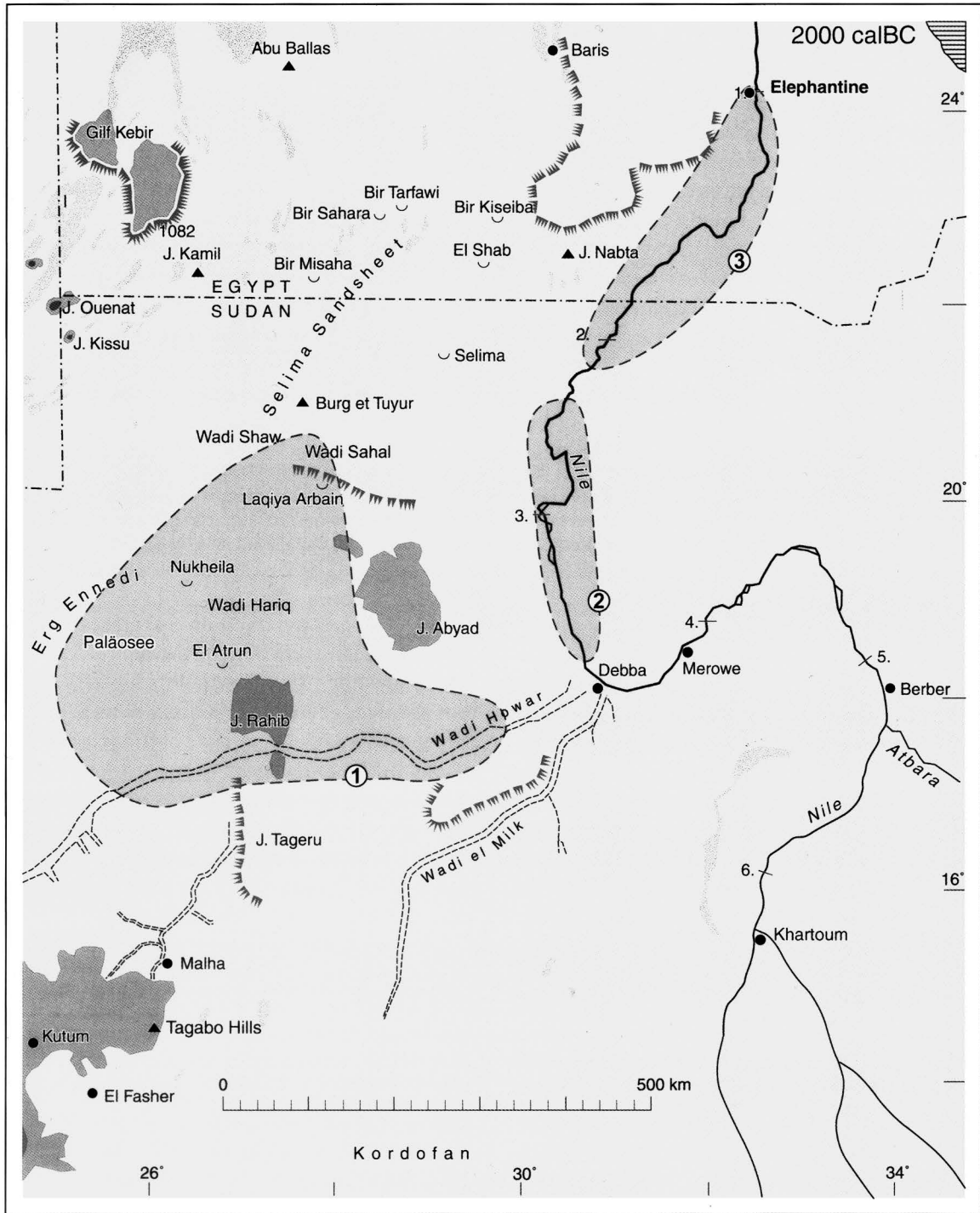


Fig. 7 Northern Sudan and southern Egypt, and the major cultural groups at c. 2,000 BC: 1 Handessi; 2 Kerma; 3 C-Group

north and south in the Saharan climate caused by the individual influences of the southern monsoonal summer rains and the northern Mediterranean winter rains. While the latter affected rains in Egypt's north, the southern rain belt impacted Sudan and southern Egypt during the humid phase. After the beginning of the drying trend around 5,000 cal BC, aridification followed the southwards retreat of the

monsoonal summer rain belt for which an average of 35 km per 100 years has been calculated. This north-south time-gradient of slowly progressing aridification and depopulation started in some areas of the Western Desert of Egypt in 5,300 cal BC and reached northern Sudan not before the end of the Third Millennium cal BC, where chronological sequences lasted significantly longer than in Egypt's Western Desert.

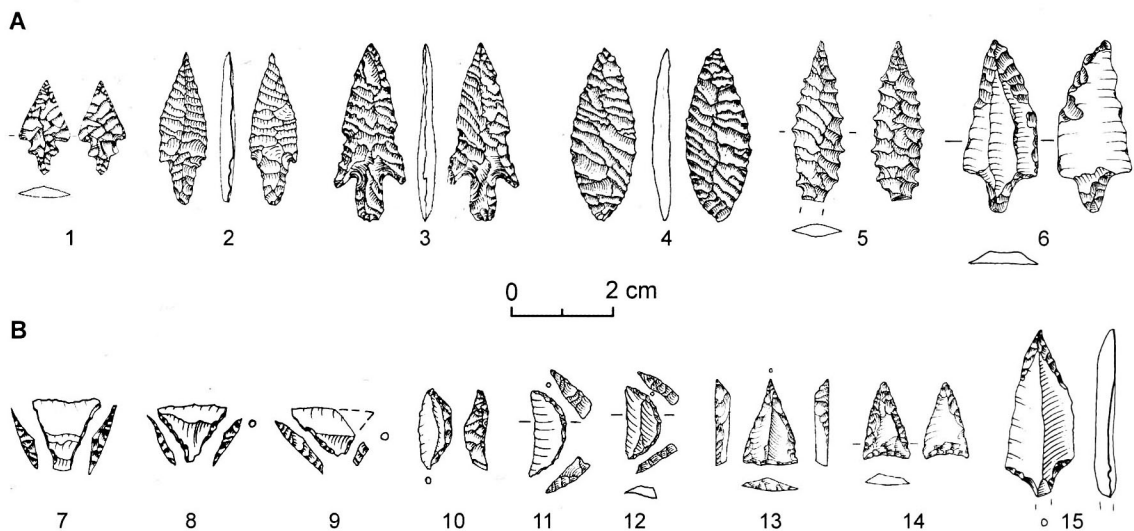


Fig. 8 Characteristic arrowheads of the Western Desert during the 6th Millennium BC:

- a. Northern "Bifacial complex" featuring bifacially retouched leaf-shaped (4–5), stemmed or winged points (1–3; 6);  
 b. Southern "Microlithic complex" featuring transversal arrowheads (7–9), segments (10–12), triangular points (13–14) and stemmed points with lateral retouch (15). Artefacts from sites at Abu Tartur, Chufu, Djara, Mudpans, Regenfeld and Wadi Bakht

### 3. The Egyptian Western Desert

#### 3.1 Cultures and Distribution at the End of the Humid Phase (c. 6,000–5,300 cal BC)

During the final phase of Holocene humid conditions (c. 6,000–5,300/5,200 cal BC), the material culture in Egypt can clearly be separated into two distinct traditions (Fig. 3). This is best evidenced by the lithic material, both in flaking and modification techniques, and in the tool types that were produced. Egypt's north features less elaborate blank production and the facial or bifacial thinning and modification of tools, the latter gives reason to establish the term "Bifacial complex" for this tradition<sup>10</sup>. The spectrum of tools that appears from the north is varied and many types are diagnostic, such as bifacial knives, circular scrapers and the so-called side-blow flakes (see below). The south is characterized by a flake industry; however, the tool types are less pronounced featuring the lateral modification as the most important attribute. The tool traditions can best be distinguished in the production of arrowheads (Fig. 8), which occur in great proportions on most sites in the Western De-

sert<sup>11</sup>. The northern tradition is characterized by the bifacial modification. Among the typical arrowheads, leaf-shaped and stemmed points are very frequent, but also winged points occur, as well as a great number of sub-types with notched hafting traces or barbs (Fig. 8a). The arrowheads were produced from small flakes or weathered flint sherds collected from the flint outcrops of the Egyptian Limestone Plateau. The arrowheads of the north represent typical "one-piece points" which contrast with the dominating microlithic tradition of the south.

In the south, transversal arrowheads (short triangles and trapezes), segments (lunates), stemmed points and triangular points occur (Fig. 8b). They have an abrupt or semi-abrupt lateral retouch of the edges in common, while a flat or facial modification is lacking. The most impressive feature is that they have been produced out of blades or elongated flakes by typical microlithic techniques, which initiated the term "Microlithic complex" for the southern lithic tool tradition. This is best evidenced by discarded microburins, which represent the basal or terminal ends of the blades and flakes; arrowheads were produced out of the latter. Microlithic insets are not only common in southern Egypt, but are well known from Sudan (in

<sup>10</sup> K. KINDERMANN, *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muhariq-Plateau, Ägypten)*, *Africa Praehistorica* 23, Cologne 2010.

<sup>11</sup> H. RIEMER, *Mapping the movement of pastro-foragers: the spread of Desert Glass and other objects in the Eastern Sahara during the Holocene 'humid phase'*, in: O. BUBENZER/A. BOLTEN/F. DARIUS (eds.), *Atlas of Cultural and Environmental Change in Arid Africa*,

*Africa Praehistorica* 21, Cologne 2007, pp. 30–33; *Id.*, *When hunters started herding: Pastro-foragers and the complexity of Holocene economic change in the Western Desert of Egypt*, in: M. BOLLIG ET AL. (eds.), *Aridity, Change and Conflict in Africa, Proceedings of an International ACACIA Conference held at Königswinter, Germany, October 1–3, 2003, Colloquium Africanum* 2, Cologne 2007, pp. 105–144.

particular segments/lunates) where they are connected to the Khartoum Mesolithic (or Early Khartoum) and related desert sites until the transition to the Neolithic between c. 5,000 and 4,600 cal BC<sup>12</sup>.

The differences between the northern and southern traditions in Egypt are not only evident in the lithic tradition but to some extent in the ceramic material culture as well, though pottery is less frequent on the sites than lithic objects. The most distinctive tradition is represented by Khartoum style decorations that occur in southern Egypt, among which the Packed Dotted Zigzag is most common (apparently combined with Dotted Wavy Line on some of the vessels), while incised Wavy-Line decorations were restricted to Egypt's southwest corner<sup>13</sup>. Dates from excavated sites place the Packed Dotted Zigzag sites in southern Egypt between 6,600 and 5,000 cal BC. There are also indications for a further sub-division into an early phase, c. 6,600–6,000 cal BC, which features quartz-tempered Packed Dotted Zigzag pottery (and Dotted Wavy Line), and a late phase, c. 5,600–5,000 cal BC, with plant-and-quartz-tempered Packed Dotted Zigzag (without Dotted Wavy Line). The incised Wavy Line pottery is plant-tempered, and there is one <sup>14</sup>C-date that falls into the later horizon<sup>14</sup>.

The dates as well as the decoration patterns associate the pottery with sites of the Saharan "Wavy Line pottery", c. 9,000–5,000 cal BC<sup>15</sup>, and those of the Khartoum Mesolithic at the Nile, c. 7,000–5,000 cal BC<sup>16</sup>, a fact that enables us to speak about a "Khartoum style complex" in southern Egypt. Pottery of

that tradition spread as far north as the oases of Dakhla and Kharga<sup>17</sup> congruent with the "Microlithic complex" described above.

The pottery tradition associated with the northern "Bifacial complex" is less significant. Moreover, there are regions where pottery has not or only rarely been used, such as at Farafra and Djara. At Dakhla and possibly at Kharga, as well as on the Egyptian Limestone Plateau north of the oases, a tradition of non-decorated small and thin-walled vessels occurred<sup>18</sup>. While most vessels comprise a roughly burnished surface, there are also red-polished vessels, some of which indicate early blackened rims and a kind of surface rippling (see below).

The traditions mentioned above, namely the "Bifacial complex" in the north and the "Microlithic" or "Khartoum style complex" in the south, are distinctive in their ideal attributes, but on the archaeological distribution map, they appear with some overlap at the fringes of their distribution. This contact zone with overlapping traditions is best evidenced in the Dakhla region and in the Nabta/Bir Kiseiba region where intensive archaeological work of various projects was carried out. Sites situated in Dakhla and its desert fringes are dominated by the bifacial tradition, and by pottery that is most characteristic for the oasis as mentioned before. However, some minor intrusions of microlithic elements and Khartoum style pottery occur<sup>19</sup>. The opposite appears in the desert areas southwest of Dakhla. There, the percentages in bifacial elements diminish with growing distance from

<sup>12</sup> L. KRZYŻANIĄK, *Early farming in the Middle Nile basin: Recent discoveries at Kadero (Central Sudan)*, in: *Antiquity* 65, 1991, pp. 515–532; A. E. MARKS/A. MOHAMMED-ALI, *The place of Shaqadud in the late prehistory of the central Nile Valley*, in: A. E. MARKS/A. MOHAMMED-ALI (eds.), *The Late Prehistory of the Eastern Sahel. The Mesolithic and Neolithic of Shaqadud, Sudan*, Dallas 1991, pp. 237–259; I. CANEVA, *El Geili. The History of a Middle Nile Environment 7000BC–AD1500*, BARIntSer 242, Oxford 1988.

<sup>13</sup> A. R. WARFE, *Interregional Contacts with the Sudan: Ceramic Evidence from the Mid-Holocene Period*, in: G. E. BOWEN/C. HOPE (eds.), *The Oasis Papers 3. Proceedings of the Third International Conference of the Dakhleh Oasis Project, Dakhleh Oasis Project: Monograph 14*, Oxford 2003, pp. 77–88; H. RIEMER/F. JESSE, *When decoration made its way: the northern extent of Khartoum-style pottery in the eastern Sahara*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Rome 2006, pp. 63–72.

<sup>14</sup> H. RIEMER/F. JESSE, *op. cit.*

<sup>15</sup> F. JESSE, *Rahib 80/87. Ein Wavy-Line-Fundplatz im Wadi Howar und die früheste Keramik in Nordafrika*, *Africa Praehistorica* 16, Köln 2003.

<sup>16</sup> A. E. MARKS/A. MOHAMMED-ALI, *The place of Shaqadud in the late prehistory of the central Nile Valley*, in: A. E. MARKS/A. MOHAMMED-ALI (eds.), *The Late Prehistory of the Eastern Sahel. The Mesolithic and Neolithic of Shaqadud, Sudan*, Dallas 1991,

pp. 237–259; I. CANEVA, *El-Geili. The History of a Middle Nile Environment 7000BC–AD1500*, BARIntSer 242, Oxford 1988.

<sup>17</sup> A. R. WARFE, *op. cit.*; H. RIEMER/P. SCHÖNFELD, *The prehistoric pottery of Abu Tartur, Western Desert of Egypt*, in: C. KROEPER/M. CHŁODNICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa, Studies in African Archaeology* 9, Poznań 2007, pp. 335–354.

<sup>18</sup> C. A. HOPE, *Pottery Manufacture in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs 2*, Oxford 1999, pp. 215–250; ID., *Early and Mid-Holocene Ceramics from the Dakhleh Oasis: Traditions and Influences*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 39–61; H. RIEMER/K. KINDERMANN, *Contacts between the Oasis and the Nile: A résumé of the Abu Muhariq Plateau Survey 1995–2002*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Toulouse (France), 5th–8th September 2005, OLA 172, Leuven 2008, pp. 607–631.

<sup>19</sup> C. A. HOPE, *Pottery Manufacture in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs 2*, Oxford 1999, pp. 215–250; ID., *Early and Mid-Holocene Ceramics from the Dakhleh Oasis: Traditions and Influences*, in: R. FRIEDMAN (ed.), *Egypt and Nubia –*

the oases, while microlithic items become the dominating lithic class among the arrowheads<sup>20</sup>. This overlapping zone between both traditions extends for some hundred kilometres to both sides of the hypothetical boundary characterized by significant decrease or increase in the specific cultural tradition. This phenomenon can best be explained by the seasonal mobility of the hunter-gatherers and early pastoral-foragers that covered hundreds of kilometres in search for open water pools, vegetation and game.

### 3.2 Depopulation of the Desert and Early Predynastic Formation (c. 5,300–4,500 cal BC)

Regarding the cultural development during the phase of transition from the humid period to the early Predynastic along the Nile Valley, the climatic change appears as the most important factor of cultural movement and change. This is the time of the depopulation of the Western Desert as a result of the fundamental climatic change in the Sahara. The onset of the desiccation process can be illustrated by the rapid decrease of settlement activities and radiocarbon chronologies from the most sensitive areas of the desert far away from any groundwater charge, such as in the Great Sand Sea ("Regenfeld") and in the Abu Ballas region (Mudfans), as well as in the central parts of the Egyptian Limestone Plateau (Djara, Abu Gerara) (Fig. 9). In these areas with only episodic surface water and large distances to the permanent groundwater resources, earliest signals for the onset of the desiccation trend are marked by a drop off of the <sup>14</sup>C-dates and connected archaeological sites at 5,300/5,200 cal BC<sup>21</sup>.

By the end of the Sixth Millennium cal BC, many sites in the desert areas disappeared as a result of the beginning drying trend (Fig. 4). During that time,

both overlapping traditions that formerly covered the entire Western Desert started to separate, following the northern and southern retreat of the rains and the savannah vegetation. In the oases of Farafra, Dakhla and Kharga as retreat areas, now becoming isolated from the north and south, individual new cultural traditions and subsistence strategies started to develop on the basis of the former material culture, as manifested in the Bashendi B and early Sheikh Muftah cultural units in Dakhla<sup>22</sup>. This increasing isolation of the Western Desert populations has best been characterized by KUPER as the phase of "Regionalization"<sup>23</sup>.

Despite these remote core zones of the Egyptian Western Desert, there are a number of areas in the vicinity of the oases and locations with higher fluvial dynamics of surface rain water run-off where occupations continued or shortly returned during the following centuries. What remained from these desert areas between 5,300/5,200 and 4,500 cal BC displays many of the former traditions, but also some change that has yet not fully been understood because of the very limited number of sites. There is a remarkable decrease in sites and dates, and often the campsites are small, short-lived and appear to be very sporadic. Occupations at these sites were apparently short and became less frequent.

The cultures of the Western Desert were not fully isolated during this period. The bow of the Egyptian oases probably functioned as a conduit of contacts between the north and the south, since the nomadic groups, which now increasingly adapted stock-herding, covered large territories during their annual cycles. This picture seems to change after the middle of the Fifth Millennium cal BC when increasing aridity affected many retreat areas as well.

A second spell towards dryer conditions is indicated by a rapid decrease in occupation dates during the first half of the Fifth Millennium cal BC (Fig. 2),

*Gifts of the Desert*, London 2002, pp. 39–61; A. R. WARFE, *Inter-regional Contacts with the Sudan: Ceramic Evidence from the Mid-Holocene Period*, in: G. E. BOWEN/C. HOPE (eds.), *The Oasis Papers 3. Proceedings of the Third International Conference of the Dakhleh Oasis Project, Dakhleh Oasis Project: Monograph 14*, Oxford 2003, pp. 77–88.

<sup>20</sup> H. RIEMER, *Out of Dakhla: Cultural diversity and mobility between the Egyptian Oases and the Great Sand Sea during the Holocene humid phase*, in: K. KROEGER/M. CHŁODNICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa. In Memory of Lech Krzyżaniak, Studies in African Archaeology 9*, Poznań 2006, pp. 493–526.

<sup>21</sup> R. KUPER/S. KRÖPELIN, *Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution*, in: *Science* 313, 2006, pp. 803–807; H. RIEMER, *Archaeology and Environment of the Western Desert of Egypt: <sup>14</sup>C-based human occupation history as archive for Holocene palaeoclimatic reconstruction*, in: S. A. A. YOUSSEF

(ed.), *Geology of the Tethys. Proceedings of the First International Conference of the Geology of the Tethys, Cairo University, November 2005*, Cairo 2006, pp. 553–564; K. KINDERMANN ET AL., *Palaeoenvironment and Holocene land use of Djara, Western Desert of Egypt*, in: *Quaternary Science Reviews* 25, 2006, pp. 1619–1637; O. BUBENZER/H. RIEMER, *Holocene Climatic Change and Human Settlement Between the Central Sahara and the Nile Valley: Archaeological and Geomorphological Results*, in: *Geoarchaeology* 22, 2007, pp. 607–620.

<sup>22</sup> M. M. A. McDONALD, *Dakhleh Oasis in Predynastic and Early Dynastic Times: Bashendi B and the Sheikh Muftah Cultural Units*, in: *Archéo-Nil* 12, 2002, pp. 109–120.

<sup>23</sup> R. KUPER, *After 5000 BC: The Libyan Desert in Transition*, in: *C. R. Palevol* 5, 2006, pp. 409–419; ID., *News from Nubia's western Hinterland*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Rome 2006, pp. 355–363.

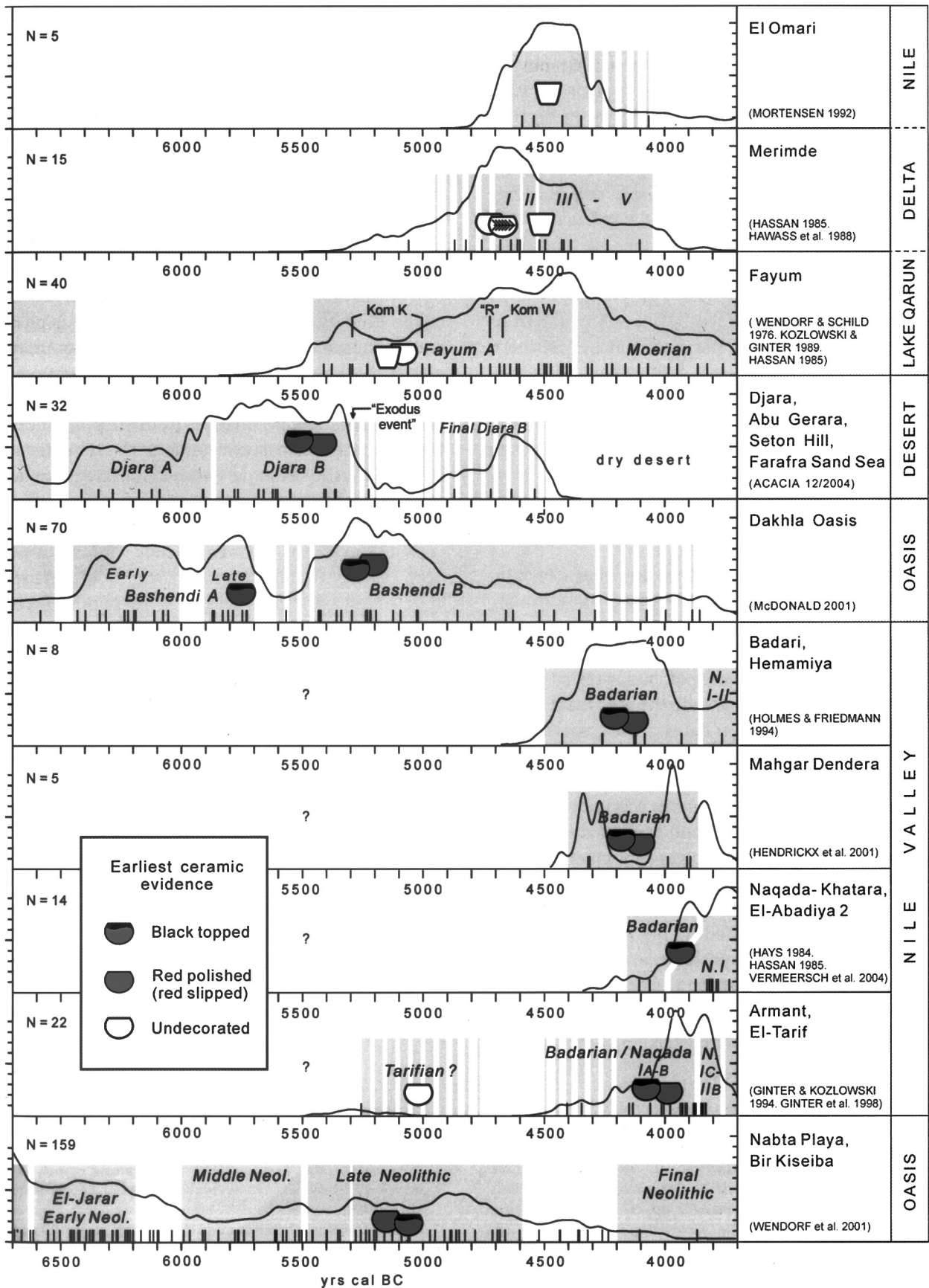


Fig. 9 Selected regional calibrated <sup>14</sup>C-curves from the Egyptian Western Desert and the Nile Valley during illustration the timing of desert depopulation (cf. curves of Djara and Dakhla) and the beginning of the early predynastic cultures along the Nile (after RIEMER/KINDERMANN 2008)

which finally led to the complete loss of most desert areas to human subsistence. It is moreover interesting to observe that the dates from Dakhla Oasis did not significantly decrease before this second drying spell (Fig. 9)<sup>24</sup>. The oasis could probably buffer the first migrational wave but suffered during the second one because of over-population. From about 4,500 cal BC onwards, the desert is nearly void of any archaeological material (Fig. 5). What remained west of the Nile is clearly concentrated within the oases and in the mountainous refuges, such as the Gilf Kebir and the Ouenat. Moreover, there is the general southwards shift of the populations that followed the retreat of the monsoonal summer rains into zones in southern Egypt and northern Sudan where savannah-like conditions existed for some time longer. Most parts of the networks established in the Eastern Sahara by the high mobility of the hunter-gatherers and early pastoral-foragers during the former humid phase diminished, and the surviving cultures, most of which now shifted to a fully-fledged pastoralism, became “marginalized” (Fig. 6)<sup>25</sup>.

The rapid decrease in dates and sites which go along with the two mentioned drying spells can remarkably be paralleled with the beginning of early predynastic cultures along the Nile (Fig. 9)<sup>26</sup>. While there is no secure evidence of campsites or settlements in the Nile Valley prior to the predynastic Neolithic (except much earlier dates of the epipalaeolithic), earliest expressions of the Fayum Neolithic date to the final Sixth and the beginning of the Fifth Millennium cal BC, and dates from Merimde are only slightly younger<sup>27</sup>. The second spell of desiccation, which led to the nearly complete depopulation of the Egyptian Western Desert, terminates at 4,500 cal BC. This is the time when the Badarian culture in Upper Egypt emerged, indicated by the earliest absolute dates. The remarkable synchrony in timing of the depopulation of the desert, on the one hand, and the beginning of the early Predynastic along the Nile, on the other hand, can not be explained by coincidental

circumstances, but most likely illustrates a strong causal relationship. The latter was effected by massive ecological stress in the Western Desert and resulting migrational shifts into the Fayum, the Delta and the Nile Valley.

### 3.3 Desert-Nile Connections: Evidence of Cultural Continuity and Economic Change

The climatic development and the timing of occupation curves at the transition from the desert cultures to the Predynastic are self-explanatory, but it only creates the scenery in which the proposed migrational shift into the Nile Valley could happen. The economy of the mobile hunters and gatherers of the Western Desert fundamentally diverges from the economy of the Nile-based farmers and herders. The subsistence indicated by the settlement sites of the Badarian was apparently based on agriculture and animal husbandry. Storage facilities pointing to a surplus production revealed the remains of wheat, barley, lentils and tubers. Fishing was important, but hunting wild game appears to have been a minor activity. In the light of these divergences, which seem to contradict the desert origins of the early Predynastic, the question rises whether there are any parallels that can be isolated from the material culture between the desert cultures of the Sixth Millennium cal BC and their proposed followers at the Nile.

We have summarized the most important trends in the material culture of the Sixth Millennium cal BC in a former chapter, but it is wise to have a closer look at the artefacts that occurred in the northern “Bifacial complex”, since they play a major role in attempting to link the desert with the Nile Valley. The following excursion to the assemblages excavated on sites of the Egyptian Limestone Plateau between the Nile Valley and the oases of the Western Desert (in particular at Djara and Abu Gerara) reveals astonishing similarities in the two major artefact categories which

<sup>24</sup> M. M. A. McDONALD, *The late Prehistoric radiocarbon chronology for Dakhleh Oasis within the wider environmental and cultural setting of the Egyptian Western Desert*, in: C. A. MARLOW/A. J. MILLS (eds.), *The Oasis Papers 1: The Proceedings of the First Conference of the Dakhleh Oasis Project, Dakhleh Oasis Project: Monograph 6*, Oxford 2001, pp. 26–42.

<sup>25</sup> R. KUPER, *After 5000 BC: The Libyan Desert in Transition*, in: C. R. PALEVOL, 2006, pp. 409–419; ID., *News from Nubia's western Hinterland*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Rome 2006, pp. 355–363.

<sup>26</sup> K. KINDERMANN, *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muhariq-Plateau, Ägypten)*, *Africa Praehistorica* 23, Cologne 2010; H. RIEMER/K. KINDERMANN, *Con-*

*tacts between the Oasis and the Nile: A résumé of the Abu Muhariq Plateau Survey 1995–2002*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference “Origin of the State. Predynastic and Early Dynastic Egypt”*, Toulouse (France), 5th–8th September 2005, OLA 172, Leuven 2008, pp. 607–631.

<sup>27</sup> For a complete list of citations regarding <sup>14</sup>C-dates see H. RIEMER/K. KINDERMANN, *Contacts between the Oasis and the Nile: A résumé of the Abu Muhariq Plateau Survey 1995–2002*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference “Origin of the State. Predynastic and Early Dynastic Egypt”*, Toulouse (France), 5th–8th September 2005, OLA 172, Leuven 2008, pp. 607–631.



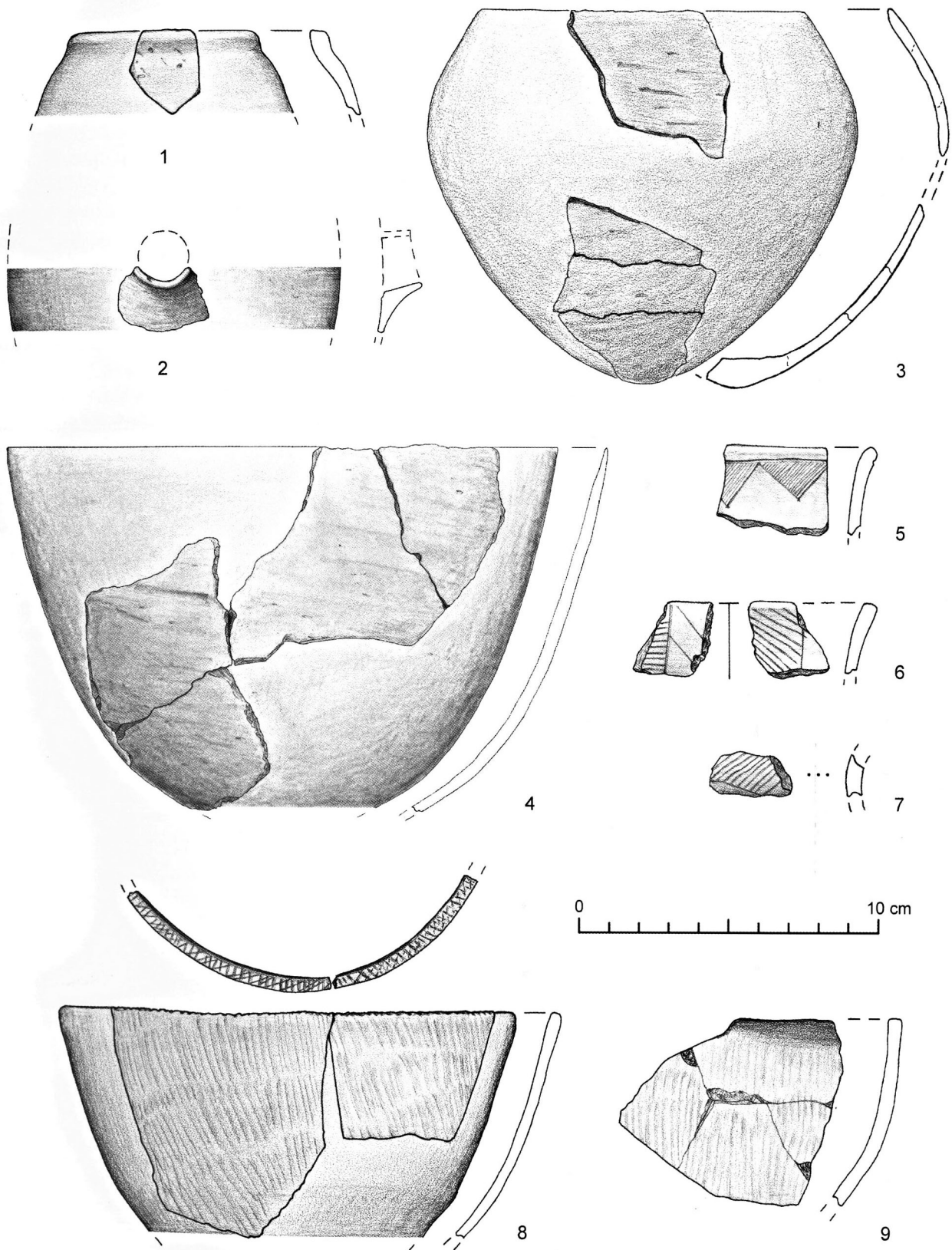


Fig. 10 Pottery from the 6th Millennium in the Western Desert of Egypt, such as characteristic at Dakhla and on the Egyptian Limestone Plateau:

- 1-4 Small thin-walled vessels (Djara, Abu Gerara);
- 5-7 Tasian-like beakers (Abu Tartur);
- 8 Bowl with rippled surface (Abu Tartur);
- 9 Red-polished and black-topped rippled bowl (Abu Tartur)

occur in the desert: ceramics and lithics. While the lithic material particularly indicates strong affinities to the Fayum and Merimde, there are a number of indications among the pottery that additionally point to Upper Egypt.

Rippled pottery, most characteristic for the Badarian, probably developed among the desert dwellers, though only very few sherds are known from Dakhla and Abu Tartur (Figs. 10.8–9, Pl. 30a.3–4)<sup>28</sup>. The same appears for the black-topped rims, which were found at some sites at Nabta Playa<sup>29</sup>, Dakhla<sup>30</sup> and on the plateau<sup>31</sup> (Figs. 10.9, Pl. 30a.4). They are small in number, and the techniques do not display the control and execution of surface treatment and firing process of the Nile Valley potters, a fact that characterizes the “desert black-topped” as rather black-smudged. However, in the light of the non-sedentary conditions under which pottery were produced in the desert, they probably show the beginning of what finally emerged in the Upper Egyptian early Predynastic as “black-topped”. Absolute and context dating of a number of sites where desert black-topped sherds occur in the desert indicate its incipient presence within the second half of the Sixth Millennium cal BC (Fig. 9). Another pottery tradition that appears in the Nile Valley is the Tasian beaker, which has recently been discovered in the Eastern Desert of Egypt<sup>32</sup> as well as in Nabta<sup>33</sup>, in the region of Dakhla<sup>34</sup> and in Abu Tartur<sup>35</sup>. Sherds of beak-

ers with rather straight everted rims show geometric incised or punctuated patterns at the outer or at both surfaces below the rim (Figs. 10.5–7, Pl. 30a.2).

Turning to the lithic tradition, there is a much greater basis of material available from well-dated sites of the Sixth Millennium cal BC. The most impressive element in lithic technology is the facial or bifacial modification of tools<sup>36</sup>. The bifacial technology characterizes the sites of the flint-rich limestone formations from the northern Mediterranean coastal area to the southern end of the Egyptian Limestone Plateau at Nabta Playa, as well as their immediate vicinity, of which many sites in the oases of Farafra<sup>37</sup>, Dakhla<sup>38</sup>, and Kharga<sup>39</sup> can be cited. The archaeological investigations carried out at sites in Djara and Abu Gerara half way between the oases of Dakhla and Farafra and the Nile Valley indicate the first appearance of bifacial technology already during the second half of the Seventh Millennium cal BC<sup>40</sup>. The technology applied to arrowpoints and some knife-like tools during that initial phase are roughly executed and do not reveal any substantial control of the knapping process. Bifacial tools rapidly increased in number during the following Millennium, and finally form the primary type of tool modification in the second half of the Sixth Millennium cal BC. Among the typical tools are arrowheads, knives, planes and bifacial drills (Fig. 11), which often show a careful thinning of preforms and a final regular

<sup>28</sup> H. RIEMER/P. SCHÖNFELD, *The prehistoric pottery of Abu Tartur, Western Desert of Egypt*, in: C. KROEPER/M. CHŁODNICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa, Studies in African Archaeology* 9, Poznan 2007, pp. 335–354.

<sup>29</sup> K. NELSON, *Ceramic types of the Nabta-Kiseiba area*, in: K. NELSON AND ASSOCIATES (eds.), *Holocene settlement of the Egyptian Sahara, Volume 2: The pottery of Nabta Playa*, New York/Boston/Dordrecht 2002, pp. 9–19.

<sup>30</sup> C. A. HOPE, *Pottery Manufacture in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs* 2, Oxford 1999, pp. 215–250; M. M. A. McDONALD, *Dakhleh Oasis in Predynastic and Early Dynastic Times: Bashendi B and the Sheikh Muftah Cultural Units*, in: *Archéo-Nil* 12, 2002, pp. 109–120.

<sup>31</sup> H. RIEMER, *Abu Gerara: Mid-Holocene sites between Djara and Dakhla Oasis (Egypt)*, in: L. KRZYŻANIAK/K. KROEPER/M. KOBUSIEWICZ (eds.), *Cultural Markers in the Later Prehistory of Northeastern Africa and Recent Research, Studies in African Archaeology* 8, Poznan 2003, pp. 73–93; H. RIEMER/K. KINDERMANN, *Contacts between the Oasis and the Nile: A résumé of the Abu Muhariq Plateau Survey 1995–2002*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference “Origin of the State. Predynastic and Early Dynastic Egypt”, Toulouse (France), 5th–8th September 2005, OLA* 172, Leuven 2008, pp. 607–631; H. RIEMER/P. SCHÖNFELD, *The prehistoric pottery of the Abu Muhariq Plateau*, in: K. KINDERMANN, *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muharik-Plateau, Ägypten)*, *Africa Praehistorica* 23, Cologne 2010, pp. 715–764.

<sup>32</sup> R. F. FRIEDMAN/J. J. HOBBS, *A ‘Tasian’ tomb in Egypt’s Eastern Desert*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 178–191.

<sup>33</sup> K. NELSON, *Ceramic types of the Nabta-Kiseiba area*, in: K. NELSON AND ASSOCIATES (eds.), *Holocene settlement of the Egyptian Sahara, Volume 2: The pottery of Nabta Playa*, New York/Boston/Dordrecht 2002, pp. 9–19.

<sup>34</sup> C. A. HOPE, *Pottery Manufacture in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs* 2, Oxford 1999, pp. 215–250; ID., *Early and Mid-Holocene Ceramics from the Dakhleh Oasis: Traditions and Influences*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 39–61.

<sup>35</sup> H. RIEMER/P. SCHÖNFELD, *The prehistoric pottery of Abu Tartur, Western Desert of Egypt*, in: C. KROEPER/M. CHŁODNICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa, Studies in African Archaeology* 9, Poznan 2007, pp. 335–354.

<sup>36</sup> K. KINDERMANN, *Djara: excavations and surveys of the 1998–2002 seasons*, in: *Archéo-Nil* 14, 2004, pp. 31–50.

<sup>37</sup> B. E. BARICHI/G. LUCARINI, *Archaeology of Farafra Oasis (Western Desert, Egypt)*, in: *Archéo-Nil* 12, 2002, pp. 101–108.

<sup>38</sup> M. M. A. McDONALD, *Dakhleh Oasis in Predynastic and Early Dynastic Times: Bashendi B and the Sheikh Muftah Cultural Units*, in: *Archéo-Nil* 12, 2002, pp. 109–120.

<sup>39</sup> G. CATON-THOMPSON, *Kharga Oasis in Prehistory*, London 1952.

<sup>40</sup> K. KINDERMANN, *op. cit.*

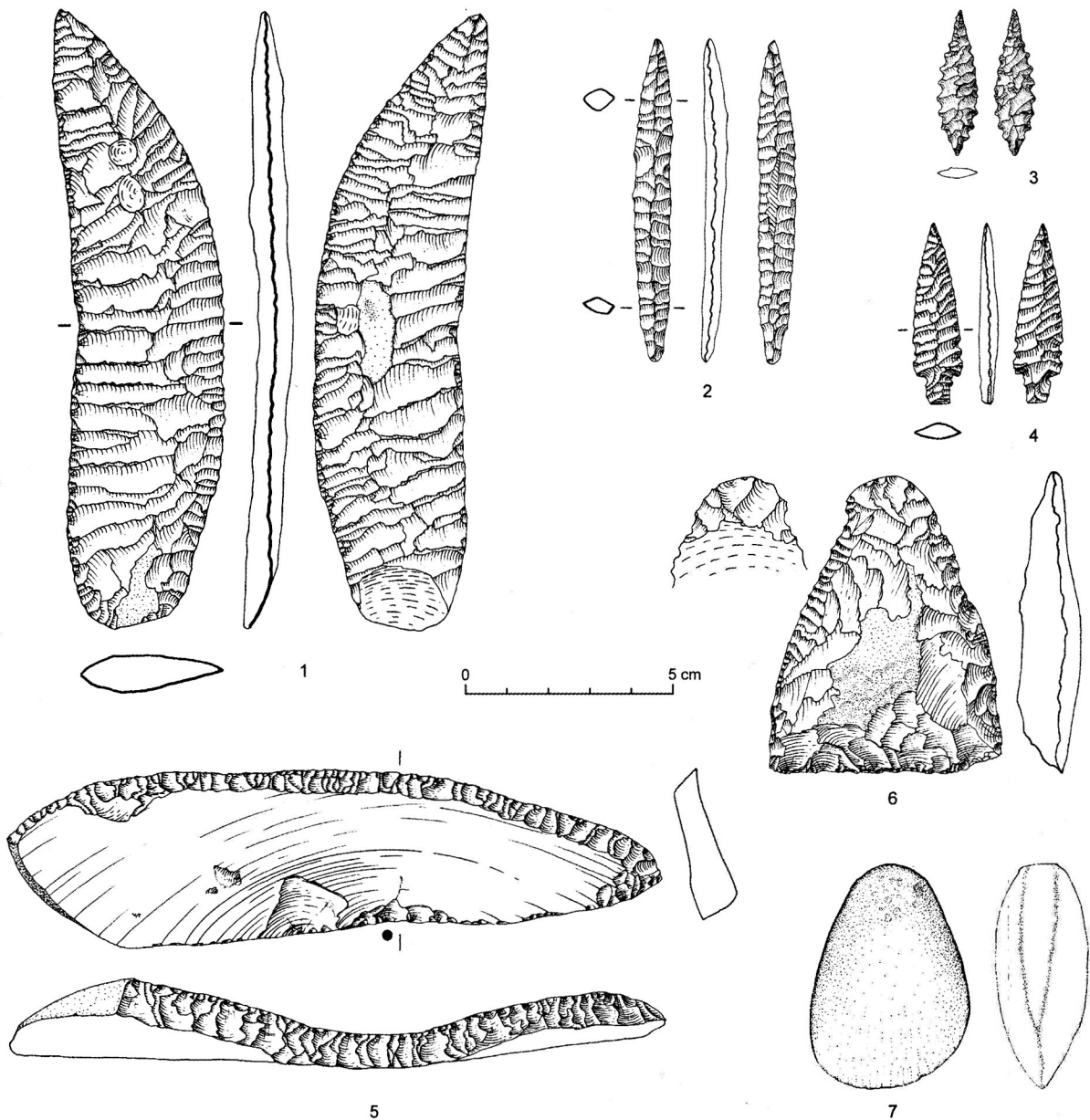


Fig. 11 Type sheet of lithic tools from Djara, such as characteristic for the oases and the Egyptian Limestone Plateau for the second half of the 6th Millennium BC:

- 1 Bifacial knife with regular pressure-flaking; 2 Bifacial drill;  
3–5 Bifacial arrowheads; 6 Plane; 7 Side-blow flake

pressure flaking, which developed among the ripple-flaked knives of Naqada II to technical perfection<sup>41</sup>. The amount of effort spent to create such tools and the fact that most of the very regular pressure flaked items tend to be graceful, but less appropriate for their primary function, point to the interpretation that flint tools were going to develop into objects of status and

representation. The shapes of the elaborate knives and other bifacial tools, however, still refer to their former original function, and no such elaborate forms as the flint animals found in Naqada I–II burials occurred<sup>42</sup>. The latter, however, do not differ in the technique of the bifacial modification that appears to be identical to that of the earlier desert material.

<sup>41</sup> P. KELTERBORN, *Towards Replicating Egyptian Predynastic Flint Knives*, in: *JAS* 11, 1984, pp. 433–453.

<sup>42</sup> S. HENDRICKX/D. HUYGE/B. ADAMS, *Le scorpion en silex du Musée royal de Mariemont*, in: *Cahier de Mariemont* 28–29, 1997/1998, pp. 7–33; R. FRIEDMAN, *Figures in Flint*, in: *Nekhen News* 12, 2000, pp. 7–14.

There is not only the bifacial technology, but also the tool types and classes that may indicate strong affinities in particular to the Fayum Neolithic (Fayum A). Comparing the types and their proportion by which they occur on individual sites, there is no significant difference between the desert material at Djara and Abu Gerara and the collections from the Fayum Neolithic, such as knives, circular scrapers, side-blow flakes and planes, to name but a few key-types (Fig. 11)<sup>43</sup>. There are two exceptions to that rule that are most significant for the fundamental economic change that took place when the desert groups migrated to the Nile and adjacent refuge areas, such as the Fayum depression. The first item is the bifacial sickle that is well-known as an inset in wooden sickle shafts from the Fayum and elsewhere<sup>44</sup>. While it refers to the existence of domesticated plants and agriculture in the Fayum, its lack at the former desert sites goes well with the desert subsistence based on hunting and gathering of wild cereals. Likewise, there is a substantial development in the points. While sites in the desert yielded a great amount of light and small arrowpoints most useful for hunting small gazelle, antelope and hare over a certain distance in the open desert plain, there is the rather larger and weighted hollow-based point that forms the typical arrow- or spearhead for hunting activity over shorter distances in the thickets and densely vegetated areas in the Fayum or at the Nile<sup>45</sup>.

What emerges from these examples does explain why there are significant traditions that continue in identical or very similar shape, while others developed in adaptation to the contrasting environments and new economic strategies that were taken over when desert dwellers settled down along the Nile. What survived or developed are the techniques of bifacial surface modification as a kind of fancy work or “decorative element” applied to the tools, while new tools were created useful in farming and foraging in the alluvial habitats. It also indicates that the early Predynastic did not appear from a single source. Although it is reasonable to suggest that the desert hunters and gatherers once banished from the Western Desert

by the harsh climatic conditions have settled down at the Nile, it is quite clear that they are not the origin of agriculture. The domesticated plants first used in the farming economy of the early Predynastic were introduced from the Near East<sup>46</sup>. This consequently allows to draw a multi-componential origin of the predynastic Neolithic, and points to the fact that contacts with groups from the east took place at the Nile. The constraints of human agglomeration at the Nile that apparently resulted from the depopulation of the Western Desert and the limited territories at the Nile ultimately led to sedentarism and the adaptation of farming concepts. It should finally be noted that in contrast to wheat and barley, which first occur in the early Predynastic, goat, sheep and cattle were already introduced to the Western Desert communities during the Sixth Millennium cal BC. This, however, did not change the traditional concept of the desert hunter-gatherers, but was even developed to a full-fledged herder economy in the early Predynastic<sup>47</sup>.

### 3.4 The Egyptian Western Desert during Pre- and Early Dynastic Times (c. 4,500–2,500 cal BC)

Following the ACACIA surveys and excavations on the Egyptian Limestone Plateau as well as in other desert regions west of the Nile Valley, there is a marked difference in site and artefact density between the former humid phase and the Predynastic time. The rapid drop off of sites and dates after 5,300 cal BC signals the deterioration trend, and only a small number of sporadic occupation events took place during the first half of the Fifth Millennium cal BC. The surveys on the plateau did not yield any evidence from the Predynastic Period between 4,500 and approximately 3,000 cal BC<sup>48</sup>. Neither among the artefacts of more than 400 sites discovered on the Egyptian Limestone Plateau nor among the <sup>14</sup>C-dates can any indication be listed that is linked to the Predynastic or any oases' equivalent, such as the Early Sheikh Muftah in Dakhla. As implied by the results of the survey, we

<sup>43</sup> K. KINDERMANN, *Djara. Zur mittelholozänen Besiedlungsgeschichte zwischen Niltal und Oasen (Abu-Muhariq-Plateau, Ägypten)*, *Africa Praehistorica* 23, Cologne 2010.

<sup>44</sup> G. CATON-THOMPSON/E. W. GARDNER, *The Desert Fayum*, London 1934.

<sup>45</sup> See J. EIWANGER, *Merimde-Benisalâme III. Die Funde der jüngeren Merimdekultur*, AV 59, Mainz 1992, p. 44.

<sup>46</sup> A. B. L. STEMLER, *Origins of plant domestication in the Sahara and the Nile Valley*, in: M. A. J. WILLIS/H. FAURE (eds.), *The Sahara and the Nile*, Rotterdam 1980, pp. 503–526.

<sup>47</sup> H. RIEMER, *When hunters started herding: Pastro-foragers and the complexity of Holocene economic change in the Western Desert of Egypt*, in: M. BOLLIG ET AL. (eds.), *Aridity, Change and Conflict in Africa, Proceedings of an International ACACIA Conference held at Königswinter, Germany, October 1–3, 2003, Colloquium Africanum* 2, Cologne 2007, pp. 105–144.

<sup>48</sup> H. RIEMER/K. KINDERMANN, *Contacts between the Oasis and the Nile: A résumé of the Abu Muhariq Plateau Survey 1995–2002*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Toulouse (France), 5th–8th September 2005, OLA 172, Leuven 2008, pp. 607–631.

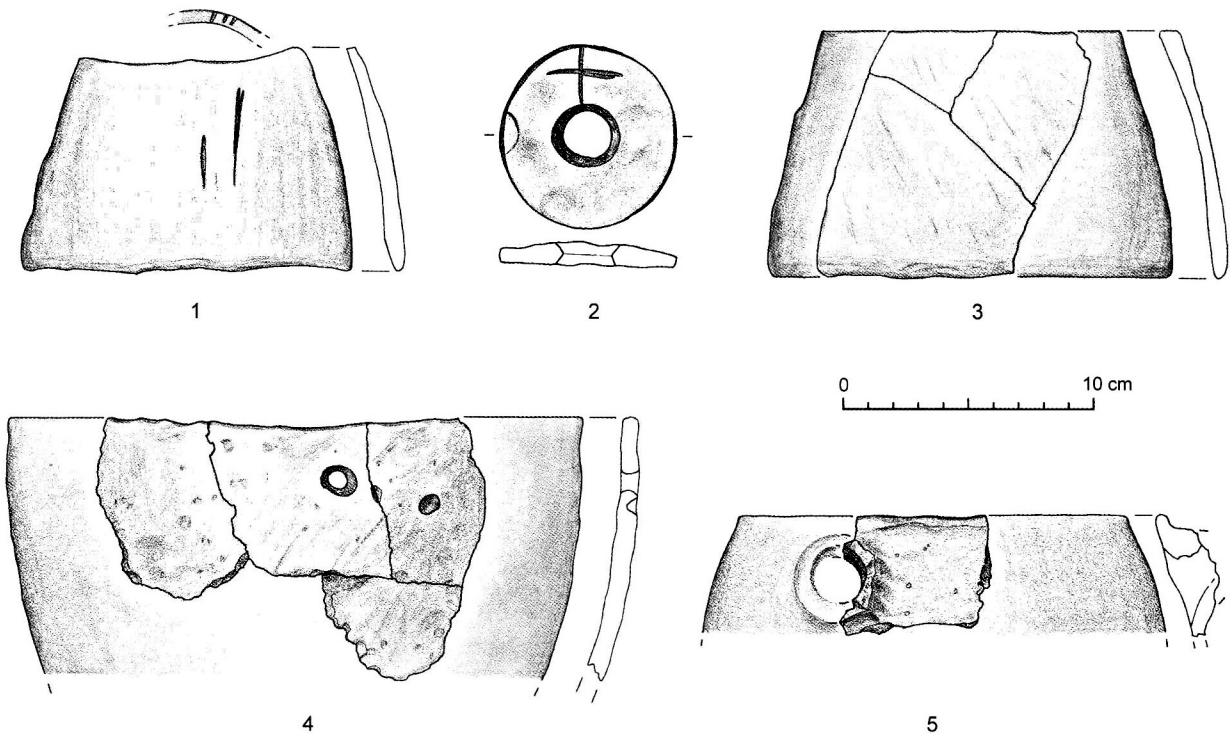


Fig. 12 Characteristic Late Sheikh Muftah pottery from El Kharafish:  
1–3 Clayton rings and disk;  
4–5 Jar and spouted bowl made of the very coarse shale fabric

have to state that there were no or only very sporadic contacts across the desert.

This is somewhat astonishing, as during the last decade a number of findings were made by the DARNELLS on the southern Limestone Plateau between Kharga and the Nile Valley<sup>49</sup>. Potsherds found here are dated to the early Predynastic, and it cannot be ignored that this is an area where the distance between the Nile and the oases is no more than 150 or 180 km, which appears to be half of the distance that had to be covered across the northern plateau regions. It would, therefore, be possible that the southern plateau was a kind of corridor through the inhospitable desert during a time when there was no hope of finding any surface water.

Around 3,000 cal BC (Fig. 6), the situation obviously changes towards a return of intensified desert contacts. It is helpful to start with a look at Dakhla Oasis where the Dakhleh Oasis Project (DOP) has established a useful cultural chronology for the area, mainly based on the pottery<sup>50</sup>. The most significant pottery fabric during this time is the very coarse shale temper exploited from the Dakhla shales, but finer fabrics that may include sand and fine shale occurred as well (Fig. 12, Pl. 31a). The “cultural unit” is the Late Sheikh Muftah, which is parallel to the Late Predynastic/Early Dynastic at the Nile, and which seems to survive until the end of the Old Kingdom<sup>51</sup>.

The Sheikh Muftah people have been described as pastoral nomads using the oases as the territory

<sup>49</sup> D. DARNELL, *Gravel of the Desert and Broken Pots in the Road: Ceramic Evidence from the Routes between the Nile and Kharga Oasis*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 156–177.

<sup>50</sup> C. A. HOPE, *Pottery Manufacture in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs 2*, Oxford 1999, pp. 215–250; ID., *Early and Mid-Holocene Ceramics from the Dakhleh Oasis: Traditions and Influences*, in: R. FRIEDMAN (ed.), *Egypt and Nubia – Gifts of the Desert*, London 2002, pp. 39–61; M. M. A. McDONALD,

*Dakhleh Oasis in Predynastic and Early Dynastic Times: Bashendi B and the Sheikh Muftah Cultural Units*, in: *Archéo-Nil 12*, 2002, pp. 109–120.

<sup>51</sup> A. J. MILLS, *Pharaonic Egyptians in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the Survey of the Dakhleh Oasis 1977–1987, Dakhleh Oasis Project: Monograph 2*, Oxford 1999, pp. 171–178; C. A. HOPE, *Egypt and ‘Libya’ to the End of the Old Kingdom. A View from Dakhleh Oasis*, in: Z. A. HAWASS/J. RICHARDS (eds.), *The Archaeology and Art of Ancient Egypt. Essays in Honor of David B. O’Connor I*, Cahiers ASAE 36, Le Caire 2007, pp. 399–415.

for their seasonal rounds. They kept goats and cattle, while hunting played only a minor role in the oasis<sup>52</sup>. Following McDONALD, they never ventured outside the oasis during their seasonal rounds, as the distribution map of Sheikh Muftah sites illustrates. Surveys investigated by DOP and ACACIA in the desert vicinity of Dakhla yielded similar results<sup>53</sup>.

The recent research of the El-Kharafish desert strip about 20–30 km north of Dakhla completes these results<sup>54</sup>. Here, typical domestic pottery was excavated (Fig. 12, Pl. 31a) together with a mass of lithic material. The number of vessels represented by the sherds has been estimated to about 200, and there are nearly 400 flaked tools together with some 60,000 pieces of waste products of flint working. This corroborates the interpretation that the sites at El Kharafish close to the oasis were repeatedly occupied as seasonal base camps, featuring the total spectrum of the Sheikh Muftah domestic artefacts known from sites in Dakhla. The faunal spectrum identified from bones and animal dung at El Kharafish includes cattle and possibly goat, but there is a significant high proportion of gazelles and birds, which were hunted during the spring, apparently the primary season when the people occupied the El Kharafish plateau strip. This also may illustrate that hunting was an important factor for occupying the near desert around the oasis and that aridity had not fully reached the present conditions.

Apart from the El-Kharafish strip at the southernmost edge of the Limestone Plateau, sites dating to the Late Sheikh Muftah Period are very rare or non-existent in the desert outside the oases<sup>55</sup>. The sites

found at Abu Gerara, about 100 km northeast of Dakhla, consist of isolated spots of potsherds or singular sherds while campsites and larger agglomerations of artefacts are absent<sup>56</sup>. The same appears for sites south and southwest of Dakhla (Pl. 31b). Based on these results, HOPE's and McDONALD's assumption that the Sheikh Muftah was a local oasis phenomenon can principally be proven true.

Next to the Sheikh Muftah, there is another phenomenon of pottery that appears during the same time: the so-called Clayton rings, conical tubes open at both ends and always combined with pierced disks (Fig. 12.1–3, Pl. 31b)<sup>57</sup>. The function of these enigmatic ceramic tools is still unknown, but there is a remarkable preference of desert sites where Clayton rings and disks are to be found. These sites are deposits of rings and disks at small hills, in rock shelters or caches in nearly all parts of the Eastern Sahara. The distribution map of Clayton rings illustrates a spread from northern Egypt to northern Sudan, and from the Libyan border to the Red Sea as well as to Israel<sup>58</sup>. It has therefore been suggested that they do not characterize an individual cultural group in the Eastern Desert, but that they were adapted as a useful tool for desert travel by nearly all nomadic desert groups<sup>59</sup>. While the fabrics of the Clayton rings from northern Sudan and Nubia seem to indicate a close connection to the A-group<sup>60</sup>, those found in Dakhla and at El Kharafish are made out of the typical finer fabrics used for the Sheikh Muftah vessels (Fig. 11.1–3, Pl. 31b). This is corroborated by the fact that the latter were produced in Dakhla by Sheikh Muftah potters. It is therefore reasonable to suggest that further

<sup>52</sup> C. R. CHURCHER, *Holocene Faunas of the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs 2*, Oxford 1999, pp. 109–115.

<sup>53</sup> M. M. A. McDONALD, *Neolithic Cultural Units and Adaptations in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the survey of the Dakhleh Oasis, Western Desert of Egypt, 1977–1987, Dakhleh Oasis Project: Monographs 2*, Oxford 1999, pp. 117–132.

<sup>54</sup> H. RIEMER ET AL., *The fire makers of El-Kharafish: a late prehistoric camp site in the Egyptian Western Desert*, in: *Antiquity* 79, 2006, www.antiquity.ac.uk/ProjGall/riemer/; H. RIEMER, *El Kharafish. The archaeology of Sheikh Muftah pastoral nomads in the desert around Dakhla Oasis (Egypt)*, *Africa Praehistorica* 25, Cologne 2011.

<sup>55</sup> M. M. A. McDONALD, *op. cit.*

<sup>56</sup> H. RIEMER, *Abu Gerara: Mid-Holocene sites between Djara and Dakhla Oasis (Egypt)*, in: L. KRZYŻANIAK/K. KROEPER/M. KOBUSIEWICZ (eds.), *Cultural Markers in the Later Prehistory of Northeastern Africa and Recent Research, Studies in African Archaeology* 8, Poznan 2003, pp. 73–93.

<sup>57</sup> H. RIEMER/R. KUPER, "Clayton rings": enigmatic ancient pottery in the Eastern Sahara, in: *Sahara* 12, 2000, pp. 91–100.

<sup>58</sup> H. RIEMER/R. KUPER, *op. cit.*; H. RIEMER, *Clayton Rings et empilements de pierres: les premiers voyages en milieu désertique dans le Sahara oriental*, in: M.-C. BRUWIER (ed.), *Pharaons Noirs. Sur la Piste des Quarante Jours. Catalogue Musée royal de Mariemont*, Mariemont 2007, pp. 21–27.

<sup>59</sup> H. RIEMER ET AL., *El Kharafish: A Sheikh Muftah desert camp site between the Oasis and the Nile*, in: B. MIDANT-REYNES ET AL. (eds.), *Egypt at its Origins 2. Proceedings of the International Conference "Origin of the State. Predynastic and Early Dynastic Egypt"*, Toulouse (France), 5th–8th September 2005, OLA 172, Leuven 2008, pp. 583–606; H. RIEMER, *op. cit.*

<sup>60</sup> P. FUSCALDO, *Pottery from the Nubian tombs (A and C-groups) at Serra West in La Plata Museum of Natural Sciences, Argentina*, in: C. J. EYRE (ed.), *Proceedings of the Seventh International Congress of Egyptologists, Cambridge 3–9 September 1995*, OLA 82, Leuven 1998, pp. 409–417; M. C. GATTO, *Two Predynastic Pottery Caches at Bir Sahara (Egyptian Western Desert)*, in: *Sahara* 13, 2001/2002, pp. 51–60; M. LANGE, *The Archaeology of the Laqiya-Region (NW-Sudan): Ceramics, chronology and cultures*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Roma 2006, pp. 107–115.

fabric analysis of the Clayton rings found at the desert depots will yield new information about the producers and owners who left rings and disks behind at places in the desert. Most recent results illustrate that Clayton rings apparently made of the Sheikh Muftah fabrics spread far beyond the distribution of the characteristic Sheikh Muftah domestic pottery (Fig. 6).

It turns out that the Clayton rings represent a new network of contacts through the inhospitable Western Desert<sup>61</sup>. In the case of the Sheikh Muftah, these contacts were not part of the seasonal pastoral rounds but possibly were carried out with pack-animals, such as the donkey, for carrying water, food and commodities, since the donkey was apparently kept by the Sheikh Muftah people<sup>62</sup>. The motivation and factors which led to the establishment of that early desert travel still remain unknown. The fine Sheikh Muftah vessels found at Abydos may point to a kind of reciprocity gift exchange<sup>63</sup>, but one should also take into account that the exchange of pastoral commodities for the primary products that could be offered by the farming communities in the Nile Valley was of primary importance to any pastoral society, as proposed in the symbiosis model by SADR<sup>64</sup>.

#### 4. The Laqiya Region in Northern Sudan

The Laqiya region is a wadi-system in NW-Sudan, located some 200 km south of the border between

Egypt and the Sudan and some 600 km south of Dakhla Oasis. It was intensively studied by the B.O.S.-expeditions of the University of Cologne led by RUDOLPH KUPER in the years 1982 and 1983<sup>65</sup>. In contrast to the Egyptian part of the Eastern Sahara, the process of drying out of the desert started with a delay of several thousand years.

##### 4.1 Early Contacts to the Nile Valley

In the Laqiya region, occupations by epipalaeolithic groups from the early Holocene did not produce dateable material. An increase of occupation data is not to be observed before the beginning of settlement by hunter-gatherers with Dotted Wavy Line pottery. The first dated finds of this pottery type in the Laqiya region are from about 5,700 cal BC according to <sup>14</sup>C-dating. They were found at site Wadi Shaw 82/57 in a layer covered by sediments of the so-called "Upper Limnic Horizon"<sup>66</sup>. Analysis of these limnic sediments showed that there must have been perennial lakes with fish, toads and molluscs, with elephants residing nearby<sup>67</sup>. According to the palaeobotanical reconstruction of the climate by NEUMANN during the Sixth Millennium cal BC, the landscape surrounding the Laqiya region must have been thorn-savannah<sup>68</sup>. This means that a favourable, oasis-like situation existed in the wadis of the Laqiya region due to the higher ground water supply.

At many sites, Dotted Wavy Line pottery was found together with sherds of the so-called Laqiya

<sup>61</sup> H. RIEMER, *News about the Clayton rings: Long distance desert travellers during Egypt's Predynastic*, in: S. HENDRICKX ET AL. (eds.), *Egypt at its Origins. Studies in Memory of Barbara Adams*, OLA 138, Leuven 2004, pp. 971–989; H. RIEMER, *El Kharafish. The archaeology of Sheikh Muftah pastoral nomads in the desert around Dakhla Oasis (Egypt)*, *Africa Praehistorica* 25, Cologne 2011, pp. 274–288.

<sup>62</sup> C. S. CHURCHER/M. R. KLEINDIENST, *A Pre-Dynastic Ass (Equus asinus) from the Sheikh Muftah Cultural Horizon of the Dakhleh Oasis, Western Desert, Egypt*, in: C. KROEPER/M. CHŁODNICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa*, *Studies in African Archaeology* 9, Poznan 2007, pp. 425–435.

<sup>63</sup> U. HARTUNG/R. HARTMANN, *Zwei vermutlich aus der Westwüste stammende Gefäße im prädynastischen Friedhof U in Abydos*, in: *MDAIK* 61, 2005, pp. 212–218.

<sup>64</sup> K. SADR, *The Development of Nomadism in Ancient Northeastern Africa*, Philadelphia 1991.

<sup>65</sup> R. KUPER, *Wadi Howar and Laqiya – recent field studies in the early settlement of Northern Sudan*, in: M. KRAUSE (ed.), *Nubische Studien. Tagungsakten der 5. Internationalen Konferenz der International Society for Nubian Studies*, Mainz 1986, pp. 129–136; *Id.*, *Prehistoric research in the Southern Libyan Desert. A brief account and some conclusions of the B.O.S. project*, in: *Actes de la VIIIe Conférence Internationale des Études Nubiennes. Lille 11–17 Septembre 1994. I – Communications Principales*, *CRIPEL* 17, 1995,

pp. 123–140; E. CZIESLA, *Excavations at Wadi Sahal*, in: M. KRAUSE (ed.), *Nubische Studien. Tagungsakten der 5. Internationalen Konferenz der International Society for Nubian Studies*, Mainz 1986, pp. 143–149; W. SCHUCK, *Wadi Shaw – Eine Siedlungskammer im Nord-Sudan*, in: *Archäologisches Korrespondenzblatt* 18, 1988, pp. 143–153; *Id.*, *From Lake to well: 5000 years of settlement in Wadi Shaw (Northern Sudan)*, in: L. KRZYŻANIAK/M. KOBUSIEWICZ (eds.), *Late Prehistory of the Nile Basin and the Eastern Sahara*, *Studies in African Archaeology* 2, Poznan 1989, pp. 421–429; M. LANGE, *The Archaeology of the Laqiya-Region (NW-Sudan): Ceramics, chronology and cultures*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Roma 2006, pp. 107–115.

<sup>66</sup> B. GABRIEL, *Die östliche Libysche Wüste im Jungquartär*, *Berliner Geographische Studien* 19, Berlin 1986.

<sup>67</sup> B. GABRIEL, *op. cit.*; B. GABRIEL/S. KRÖPELIN, *Jungquartäre limnische Akkumulationsphasen im NW-Sudan*, in: *Zeitschrift für Geomorphologie N.F.* 48, 1983, pp. 131–143.

<sup>68</sup> K. NEUMANN, *Holocene vegetation of the Eastern Sahara: charcoals from prehistoric sites*, in: *African Archaeological Review* 7, 1989, pp. 97–116; *See Id.*, *Zur Vegetationsgeschichte der Ostsahara im Holozän. Holzkohlen aus prähistorischen Fundstellen*, in: R. KUPER (ed.), *Forschungen zur Umweltgeschichte der Ostsahara*, *Africa Praehistorica* 2, Köln 1989, p. 133.

style decoration<sup>69</sup>. This style of decoration was a regionally confined later style development within the larger complex of the Wavy Line pottery. Contacts with the Nile Valley were, at their best, not extensive. On the other hand, the Laqiya style linked the Laqiya region closely with the Wadi Howar. Only two <sup>14</sup>C-datings can be linked to this phase: At site Wadi Shaw 83/117, a bone concentration with Laqiya style sherds can be tentatively dated to ca. 5,300 cal BC<sup>70</sup>. Bone finds from the sites with Laqiya style pottery in the Laqiya region and in the so called Ennedi Erg depict a hunter-gatherer society.

First contacts with Nubia apparently occurred in the Fifth Millennium cal BC. Around 4,700 cal BC, a new, noticeably different pottery style appears in Wadi Shaw and Wadi Sahal, named "Early Nubian Group of the Laqiya region"<sup>71</sup>. The surface of the vessel is now undecorated, but well polished and smoothed. Also, for the first time a red coating appears on some sherds while others show a rippled surface.

This new pottery shows similarities to the ceramics of the Abkan culture in the Nile Valley and the Late Neolithic from the area of Nabta Playa and Bir Kiseiba in the north<sup>72</sup>, so we can assume that it is part of a related development. On the contrary, the Wadi Howar in the south began a much different development with the continuation of the Wavy Line and Laqiya type of decoration and, from ca. 4,000 cal BC onwards, the creation of the Leiterband pottery<sup>73</sup>. This signals that ties between the Laqiya region and Wadi Howar, as seen earlier with the Laqiya style decoration, have been dissolved by new influences coming from the north and northeast. Thus, a profound shift emerges in the interregional association networks during the first half of the Fifth Millennium cal BC. Although bone remains of domesticated animals from the Fifth

Millennium cal BC have not been found in the Laqiya region, it might be assumed that the cultural changes of this era have some connection with the spread of animal domestication in Northern Sudan.

#### 4.2 Nubians in the Desert: The Nubian A-Group in the Laqiya Region (c. 3,500–2,500 cal BC)

In the second half of the Fourth Millennium cal BC, sites with pottery of the A-Group emerge (Fig. 13.5, Pl. 30b). A-Group pottery was found at six different excavated sites as well as at further survey sites in the region. These sites contain large amounts of A-Group pottery, as well as other artefacts like palettes and a copper awl<sup>74</sup>. The ware-composition of the assemblages is almost identical with that of comparable A-Group sites in the Nile Valley (Fig. 14). This can only be interpreted in the way that true settlement activities of the A-Group took place here, although up until recently, A-Group presence had only been proven in the Nubian Nile Valley<sup>75</sup>. Therefore, the Laqiya region was part of the settlement area of this culture which had its centre in the Nubian Nile Valley, meaning it was one and the same culture settling in the Nile Valley as well as the Laqiya region. Thus, for over a thousand years cultural associations with Nubia were maintained and became even stronger over time.

In the Fourth Millennium cal BC, the climate of the Eastern Sahara became drier, and the previously perennial lakes in Wadi Shaw became seasonal<sup>76</sup>. The Laqiya region lies now within the semi-desert<sup>77</sup>. Nevertheless, the depressions in Wadi Shaw, Wadi Sahal and the Laqiya Valley still present themselves as centres of attraction with advantageous living conditions due to the higher ground water influx. The finding of

<sup>69</sup> W. SCHUCK, *From Lake to well: 5000 years of settlement in Wadi Shaw (Northern Sudan)*, in: L. KRZYZANIAK/M. KOBUSIEWICZ (eds.), *Late Prehistory of the Nile Basin and the Eastern Sahara, Studies in African Archaeology 2*, Poznan 1989, pp. 421–429.

<sup>70</sup> See M. LANGE, *Fundplätze des 5. bis 3. Jahrtausends v. Chr.*, in: M. LANGE, *Wadi Shaw – Wadi Sahal, Africa Praehistorica 19*, Köln 2006, p. 186.

<sup>71</sup> M. LANGE/H.-Å. NORDSTRÖM, *Abkan Connections. The relationship between the Abkan culture in the Nile valley and Early Nubian sites from the Laqiya Region (Eastern Sahara, Northwest-Sudan)*, in: K. KROEPER/M. CHLONICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa. In Memory of Lech Krzyzaniak, Studies in African Archaeology 9*, Poznan 2007, pp. 297–312.

<sup>72</sup> See M. LANGE, *Fundplätze des 5. bis 3. Jahrtausends v. Chr.*, in: M. LANGE, *Wadi Shaw – Wadi Sahal, Africa Praehistorica 19*, Köln 2006, p. 181; M. LANGE/H.-Å. NORDSTRÖM, *op. cit.*

<sup>73</sup> B. KEDING, *The Yellow Nile: new data on settlement and the environment in Sudanese Eastern Sahara*, in: *Sudan & Nubia 2*, 1998, pp. 2–12; J. RICHTER, *Neolithic Sites in the Wadi Howar (Western Sudan)*, in: L. KRZYZANIAK/M. KOBUSIEWICZ (eds.), *Late Prehis-*

*tory of the Nile Basin and the Eastern Sahara, Studies in African Archaeology 2*, Poznan 1989, pp. 431–442.

<sup>74</sup> M. LANGE, *Settlement sites of the A-Group from the Laqiya-Region (Eastern Sahara, Northwest-Sudan)*, in: L. KRZYZANIAK/K. KROEPER/M. KOBUSIEWICZ (eds.), *Cultural Markers in the Late Prehistory of Northeastern Africa and Recent Research. International Symposium, Poznan 2000, Studies in African Archaeology 8*, Poznan 2003, pp. 105–127; *Id.*, *Fundplätze des 5. bis 3. Jahrtausends v. Chr.*, in: M. LANGE, *Wadi Shaw – Wadi Sahal, Africa Praehistorica 19*, Köln 2006, pp. 15–343.

<sup>75</sup> But see now also M. C. GATTO, *Two Predynastic Pottery Caches at Bir Sahara (Egyptian Western Desert)*, in: *Sahara 13*, 2001/2002, pp. 51–60.

<sup>76</sup> See W. SCHUCK, *Wadi Shaw – Eine Siedlungskammer im Nord-Sudan*, in: *Archäologisches Korrespondenzblatt 18*, 1988, p. 145.

<sup>77</sup> See K. NEUMANN, *Zur Vegetationsgeschichte der Ostsahara im Holozän. Holzkohlen aus prähistorischen Fundstellen*, in: R. KUPER (ed.), *Forschungen zur Umweltgeschichte der Ostsahara, Africa Praehistorica 2*, Köln 1989, p. 146.



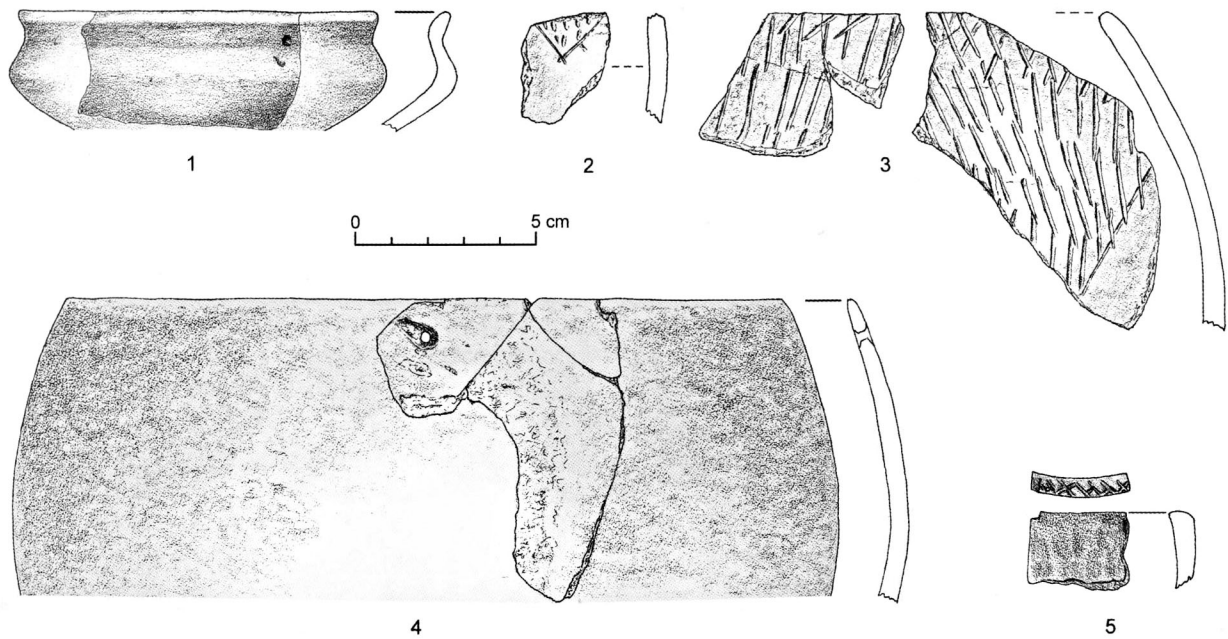


Fig. 13 Potsherds from Wadi Shaw and Wadi Sahal (Laqiya region):

- 1 Egyptian Meidum-bowl (4th or early 5th Dynasty) from Wadi Shaw 82/52; 2–3 Pottery incised decoration consisting of pending triangles filled with short incised strokes (c. 2,500 BC) from Wadi Shaw 82/52; 4 Red-polished ware from Wadi Shaw 82/52; 5 Red-polished black-mouthed ware of the A-Group from Wadi Sahal 82/38

a cattle skull in Wadi Shaw<sup>78</sup>, <sup>14</sup>C-dated to around 3,000 cal BC, is of extraordinary importance. Additionally, some sheep or goat bones were found at a site with A-Group sherds (Wadi Sahal 82/38–3), which prove that it surely were herder groups from the A-Group culture who visited this region. The Laqiya region offered the advantage that here reliable watering holes were available. One can therefore imagine a seasonal, transhumance cycle of A-Group herders moving between the Nile Valley in the dry season and the desert during the rainy season and shortly after (Fig. 6)<sup>79</sup>.

In the Wadi Shaw, in Serra West<sup>80</sup> and in Bir Sahara<sup>81</sup>, there are examples of the association of A-Group finds with Clayton rings<sup>82</sup>. This shows that contacts of the A-Group may have also involved the Dakhla area and that the use of the desert regions by this Nile Valley based group was not only focused on

cattle-herding but probably also on exchange with the Sheikh Muftah unit.

#### 4.3 Contact with Egypt (c. 2,500–2,200 cal BC)

The second half of the Third Millennium cal BC signals a change in the association networks. Some traditions of A-Group ceramic production continue, despite the fact that in the Nile Valley, remains of the A-Group disappear more or less completely from the archaeological record after the First Dynasty. On the other hand, new elements emerge as well. In the assemblage from site Wadi Shaw 82/52, dated around 2,500 cal BC, red polished vessels are still found, but incised motifs and new motif elements appear. Outstanding is the importance of several sherds of an Egyptian Meidum-bowl, dating from the late Fourth

<sup>78</sup> See W. VAN NEER/H.-P. UERPMANN, *Palaeoecological Significance of the Holocene Faunal Remains of the B.O.S.-Missions*, in: R. KUPEL (ed.), *Forschungen zur Umweltgeschichte der Ostsahara, Africa Praehistorica 2*, Köln 1986, p. 331.

<sup>79</sup> M. LANGE, *Wadi Shaw 82/52a Peridynastic Settlement Site in the Western Desert and its Relations to the Nile Valley*, in: T. KENDALL (ed.), *Nubian Studies 1998: Proceedings of the Ninth International Conference of the International Society of Nubian Studies, August 21–26, 1998*, Boston 2004, pp. 315–324; *Id.*, *Fundplätze des 5. bis 3. Jahrtausends v. Chr.*, in: M. LANGE, *Wadi Shaw – Wadi Sahal, Africa Praehistorica 19*, Köln 2006, pp. 15–343.

<sup>80</sup> P. FUSCALDO, *Pottery from the Nubian tombs (A and C-groups) at Serra West in La Plata Museum of Natural Sciences, Argentina*, in: C. J. EYRE (ed.), *Proceedings of the Seventh International Congress of Egyptologists, Cambridge 3–9 September 1995, OLA 82*, Leuven 1998, pp. 409–417.

<sup>81</sup> M. C. GATTO, *Two Predynastic Pottery Caches at Bir Sahara (Egyptian Western Desert)*, in: *Sahara 13*, 2001/2002, pp. 51–60.

<sup>82</sup> H. RIEMER, *News about the Clayton rings: Long distance desert travellers during Egypt's Predynastic*, in: S. HENDRICKX ET AL. (eds.), *Egypt at its Origins. Studies in Memory of Barbara Adams*, OLA 138, Leuven 2004, pp. 971–989.

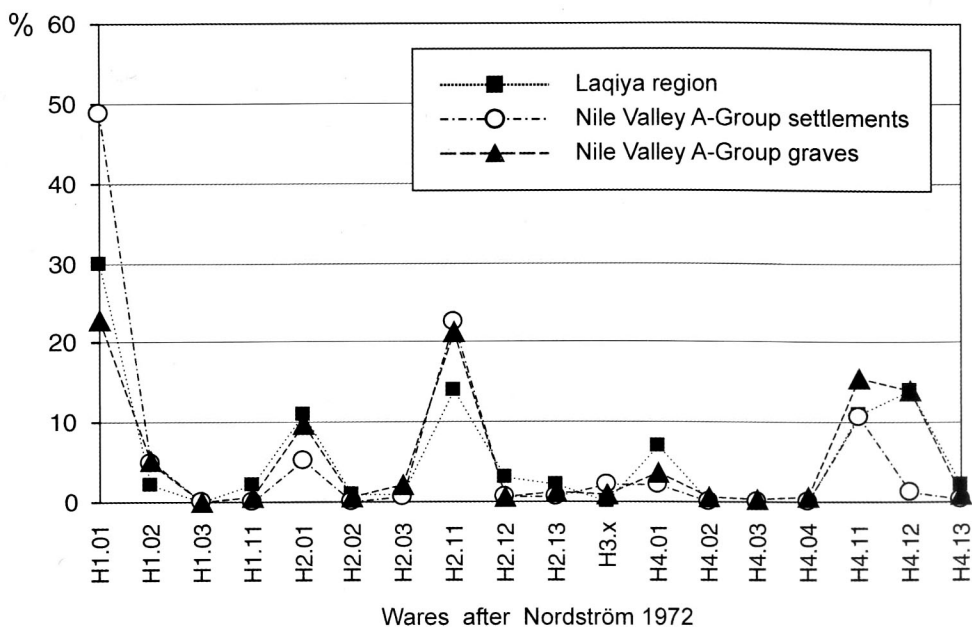


Fig. 14 Comparison of ratios of pottery wares from the Laqiya region (n = 100 vessel units) and selected A-Group settlements (n = 5363 sherds) and graves (n = 636 vessel units) from the Nile Valley. Data for Nile Valley sites and ware designation from NORDSTRÖM 1972

or early Fifth Dynasty (Fig. 13.1, Pl. 30c). This Meidum-bowl is evidence that the Laqiya region was not isolated at the time; instead it had direct or indirect trade relations with the Egyptian culture of the Old Kingdom<sup>83</sup>. Further connections can be seen in the decorative pattern of incised pending triangles filled with short incised strokes (Fig. 13.2–3), which also have been recorded in the Nubian pottery from Elephantine<sup>84</sup>.

In connection with the appearance of the A-Group in the Laqiya region, the finds from Wadi Shaw 82/52 receive additional weight because they could possibly contribute to explain the hiatus in the settlement of Lower Nubia. During the time of the Old Kingdom, Nubia was apparently so thoroughly controlled by the Egyptians that the A-Group culture disappeared from the Lower Nubian Nile Valley<sup>85</sup>. However, the finds from site Wadi Shaw 82/52 show that the Nubian tradition of red polished pottery continued in the Laqiya region (Fig. 13.4, Pl. 30c).

#### 4.4 Pastoral Nomads at the Desert's Fringe (c. 2,200–1,600 cal BC)

In around 2,200 cal BC, the finds of the Handessi Horizon follow<sup>86</sup>. The finds are evidence that connections still existed between the Nile Valley and the Laqiya region but that these ties were no longer so strong (Fig. 7). Red polished pottery remains in use. Although the motifs are often quite similar, qualitative differences in the execution of the decoration and of the surface treatment are apparent. Incised decoration, bouton decoration, triangle impressions and herring-bone patterns all appear as characteristic decorative elements<sup>87</sup>. Sites of the Handessi Horizon appear in the Laqiya region and in the Wadi Hariq and Wadi Howar to the south, signalling a new north-south alignment of association networks. This probably has to be seen in connection with the ever increasing aridification, as the Laqiya region now lies

<sup>83</sup> M. LANGE, *op. cit.*

<sup>84</sup> See D. RAUÉ, *Ägyptische und Nubische Keramik der 1.–4. Dynastie*, in: W. KAISER ET AL., *Stadt und Tempel von Elephantine*, 25./26./27. Grabungsbericht, in: *MDAIK* 55, 1999, Fig. 41.5.

<sup>85</sup> M. LANGE, *op. cit.*

<sup>86</sup> F. JESSE, *Pastoral groups in the Southern Libyan Desert: The Handessi Horizon (ca. 2400–1100 BC)*, in: K. KROEPER/

M. CHLONICKI/M. KOBUSIEWICZ (eds.), *Archaeology of Early Northeastern Africa. In memoriam of Lech Krzyżaniak*, *Studies in African Archaeology* 9, Poznań 2006, pp. 987–1004.

<sup>87</sup> U. FRANCKE, *Camp 49 re-examined*, in: M. KRAUSE (ed.), *Nubische Studien. Tagungsakten der 5. Internationalen Konferenz der International Society for Nubian Studies*, Mainz 1986, pp. 137–142.

on the edge of the desert. Nevertheless, there is still some contact with the Nile Valley, but rather limited in nature.

Bone finds from Wadi Shaw, site Camp 49, show that the keeping of stock animals like cattle and sheep or goats was a dominant economic activity<sup>88</sup>. It appears that the Handessi Horizon is a "true" nomadic culture as defined by SADR<sup>89</sup>. This can be seen from the fact that it is, unlike the foregoing A-Group, not part of the cultural groups in the Nile Valley. Rather, it can be assumed that trade relationships must have existed between the Handessi Horizon and the Kerma culture along the Nile and maybe also with the C-Group to the north. Cattle trade between these areas would be the most likely. Perhaps we can even conclude that these herders were the *temehu* mentioned by *Herchuf* in his famous report about his expedition to the south<sup>90</sup>.

The settlement of the Handessi Horizon in the Laqiya region ended about 1,700–1,600 cal BC<sup>91</sup>. The reason for this may have been the continuously poorer environmental conditions, which could not offer enough water nor pasture land.

Sporadic human presence did continue. It can be seen by Egyptian ceramics from the time of the New Kingdom found at the oasis Laqiya Arbain at site Laqiya Arbain 82/77–1<sup>92</sup>. These can be interpreted as evidence of a caravan trade route, possibly even following at least partly the Darb-el-Arba'in route. This trade route stretched from Assiut in Egypt to el Fasher in northern Sudan, later serving many purposes – one of which was slave trade. Here, there are possible starting points for analysis of further Egyptian trade and caravan routes through the desert beyond the Abu-Ballas-Trail.

## 5. Conclusion

Many lines of evidence must be pulled together to understand the contacts and influences between the deserts and the Nile Valley in all their facets. This brief overview only introduces a complex subject

strictly viewed from the desert west of the Nile. There are almost certainly more sites, objects and interpretations than can be listed here, but the examples mentioned are most significant to demonstrate the important role the prehistoric cultures of the Libyan Desert has played during the formation process of the Egyptian culture. In general, two distinct directions of influence and interaction may be discerned: first, the transfer of population and cultural elements from the desert into the Nile Valley, especially in Egypt, or farther southwards, such as in Sudan; second, the contrary use of the desert by Nile Valley based cultures like the A-Group or, later, the pharaonic Egyptians.

It does admittedly appear oversimplified to draw arrows in a distribution map pointing into the direction of influence to explain contacts. Contact does mean human interaction, and the way and mechanism in which this took place is an important aspect that needs to be stressed. This ultimately refers not only to similarities and parallels in artefacts or decoration, but on reconstruction of the entire complex world in which people of the past have lived. Patterns of mobility, subsistence as well as social and cultural complexity are only a few possible aspects that should be recognized if one is going to ask why contacts existed and how they were carried out. It is a major result of the study here that there are significant changes and developments that led to exchange of ideas, artefacts and symbolism, among which climate induced migrations, nomadic movements, trade and reciprocity exchange as well as pharaonic desert operations may be listed as those which begin to emerge from the growing body of archaeological data.

The following list of issues may function as a catalogue of aspects which are important to emphasise in our future research. It is consequently not systematic in its sub-divisions, nor may it claim completeness. It is a compendium of ideas based on what appeared from desert research during the last decades.

The understanding of the prehistoric development up to the onset of the drying trend that started around 5,000 cal BC has received a great deal of new information and interpretation from the most recent

<sup>88</sup> W. VAN NEER/H.-P. UERPMANN, *Palaeoecological Significance of the Holocene Faunal Remains of the B.O.S.-Missions*, in: R. KUPER (ed.), *Forschungen zur Umweltgeschichte der Ostsahara, Africa Praehistorica* 2, Köln 1986, pp. 330f.

<sup>89</sup> Compare K. SADR, *The Development of Nomadism in Ancient Northeastern Africa*, Philadelphia 1991, pp. 2–10.

<sup>90</sup> E. EDEL, *Inschriften des Alten Reiches V. Die Reiseberichte des Hr-w-hwjjf (Herchuf)*, in: O. FIRCHOW (ed.), *Ägyptologische Studien, VIO* 29, Berlin 1955, pp. 51–75; *Id.*, *Die Ländernamen Un-*

*ternubiens und die Ausbreitung der C-Gruppe nach den Reiseberichten des Hr-w-hwjjf*, in: *Or* 36, 1967, pp. 133–158.

<sup>91</sup> M. LANGE, *The Archaeology of the Laqiya-Region (NW-Sudan): Ceramics, chronology and cultures*, in: I. CANEVA/A. ROCCATI (eds.), *Acta Nubica. Proceedings of the X International Conference of Nubian Studies, Rome 9–14 September 2002*, Rome 2006, pp. 107–115.

<sup>92</sup> See *Id.*, *Fundplätze des 5. bis 3. Jahrtausends v. Chr.*, in: M. LANGE, *Wadi Shaw – Wadi Sahal, Africa Praehistorica* 19, Köln 2006, p. 184.

research. On this basis, we have stressed the rapid climatic and environmental change as a “motor” of the cultural development<sup>93</sup>. Mobility of prehistoric groups and the migrational shifts into refuge areas can be viewed as the central factors that created the conditions under which the early Predynastic along the Nile developed. The following Millennia indicate a patchy distribution of surviving cultural groups in remote areas west of the Nile, and first lines of interaction and contacts between them and the Nile Valley become visible. However, this network and the conditions under which it worked are yet less understood. New cultural groups, such as the Sheikh Muf-tah in the Dakhla Oasis or the Handessi Horizon in northern Sudan, have only been known for a few years. They urgently need further investigations before we can reconstruct their subsistence and way of life in detail. This also implies that it is necessary to incorporate systematic approaches in landscape archaeology to detect the many aspects of nomadic subsistence and outer contacts of the desert people. If one asks finally for a very traditional field of archaeology that should be developed in future research, one may name rock art research, which has nearly stagnated in the Western Desert since the times of WINKLER and RHOTERT<sup>94</sup>. But again, it is of great importance to integrate this source into a broader concept of archaeological research that concerns rock depictions as one of the many expressions of human culture.

New investigations in the later prehistory of the deserts do not only include the cultural expressions but also the progressing desiccation during the time of the Fourth and Third Millennium cal BC. If we resume that the drying trend was well underway during this period, this is only a makeshift in the light of a currently substantial lack of climate-relevant archives and proxies in the Eastern Sahara for the time after 5,000 cal BC. Hence, systematic investigations in environmental archaeology are of importance as a

subject in its own right accompanying new excavations and survey projects.

Interaction during that time does not only refer to the movements and contacts of the local groups that peopled the refuge areas of the desert during the late prehistory but also has to focus on the increasing interest and motivation the early Egyptian state spent on the desert regions. This may have started already with incipient expansions or reconnaissance operations during the Early Dynastic Period, though information is currently very scanty about that period<sup>95</sup>, but come to fully-fledged manifestation when Egyptians established marked desert roads and began to occupy and control the oases during the Old Kingdom. The resulting change to the networks that likely followed the progressing influence of the Egyptian state and the possibly dramatic consequences for indigenous groups form an interesting field for any future research<sup>96</sup>.

Finally, as an archaeologist working with the material culture that remains from the past, one realises that we should continue to explore new issues, methods and approaches, not least those primarily concerned with subjects in other disciplines. The need for multidisciplinary concepts in project design is most pressing to develop a broader horizon in tracing and interpreting the human past. The results of the present study have greatly benefited from geosciences and those sciences concerned with environmental disciplines, but there is also a great deal of information that derived from cultural anthropology, history, linguistics and not least from Egyptology.

## Acknowledgements

Research in Holocene prehistory in the Western Deserts of Egypt and Sudan has been carried out by

<sup>93</sup> R. KUPER/S. KRÖPELIN, *Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution*, in: *Science* 313, 2006, pp. 803–807.

<sup>94</sup> D. HUYGE, *Grandeur in Confined Spaces: Current Rock Art Research in Egypt*, in: P. BAHN/A. FOSSATI (eds.), *Rock art studies. News of the World II. Developments in rock art research 1995–1999*, Oxford 2003; H. RIEMER, *Prehistoric Rock Art Research in the Western Desert of Egypt*, in: *Archeo-Nil* 19, 2009, pp. 31–46.

<sup>95</sup> S. HENDRICKX ET AL., *Late Predynastic/Early Dynastic rock art scenes of Barbary sheep hunting in Egypt's Western Desert. From capturing wild animals to the women of the 'ACACIA House'*, in: H. RIEMER ET AL. (eds.), *Desert animals in the eastern Sahara: Status, economic significance, and cultural reflection in antiquity. Proceedings of an Interdisciplinary ACACIA Workshop held at the*

*University of Cologne, December 14–15, 2007, Colloquium Africanum* 4, Köln 2009, pp. 189–244.

<sup>96</sup> A. J. MILLS, *Pharaonic Egyptians in the Dakhleh Oasis*, in: C. S. CHURCHER/A. J. MILLS (eds.), *Reports from the Survey of the Dakhleh Oasis 1977–1987, Dakhleh Oasis Project: Monograph 2*, Oxford 1999, pp. 171–178; C. A. HOPE, *Egypt and 'Libya' to the End of the Old Kingdom. A View from Dakhleh Oasis*, in: Z. A. HAWASS/J. RICHARDS (eds.), *The Archaeology and Art of Ancient Egypt. Essays in Honor of David B. O'Connor I*, Cahiers ASAE 36, Le Caire 2007, pp. 399–415; F. FÖRSTER, *With donkeys, jars and water bags into the Libyan Desert: the Abu Ballas Trail in the late Old Kingdom/First Intermediate Period*, in: *British Museum Studies in Ancient Egypt and Sudan* 7, 2007, pp. 1–36.

two long-term projects from 1995–2007 in the frame of the Collaborative Research Centre ACACIA (Arid Climate, Adaptation and Cultural Innovation in Africa) generously funded by the Deutsche Forschungsgemeinschaft DFG. As fieldwork of ACACIA closed with the end of 2007, we feel indebted to report on the results of ACACIA in a more summarizing way. Apart from the necessity to publish full field and site reports, syntheses of the kind presented here pro-

vide the opportunity to amalgamate results that have emerged from hundreds of excavations and surveys in the Eastern Sahara. In doing so, we are grateful to a number of persons who accompanied the investigations of ACACIA as colleagues, co-operators or friends in Egypt, Sudan and elsewhere. In first instance, it is owed to RUDOLPH KUPER that these investigations in the archaeology of the Sahara came into being.

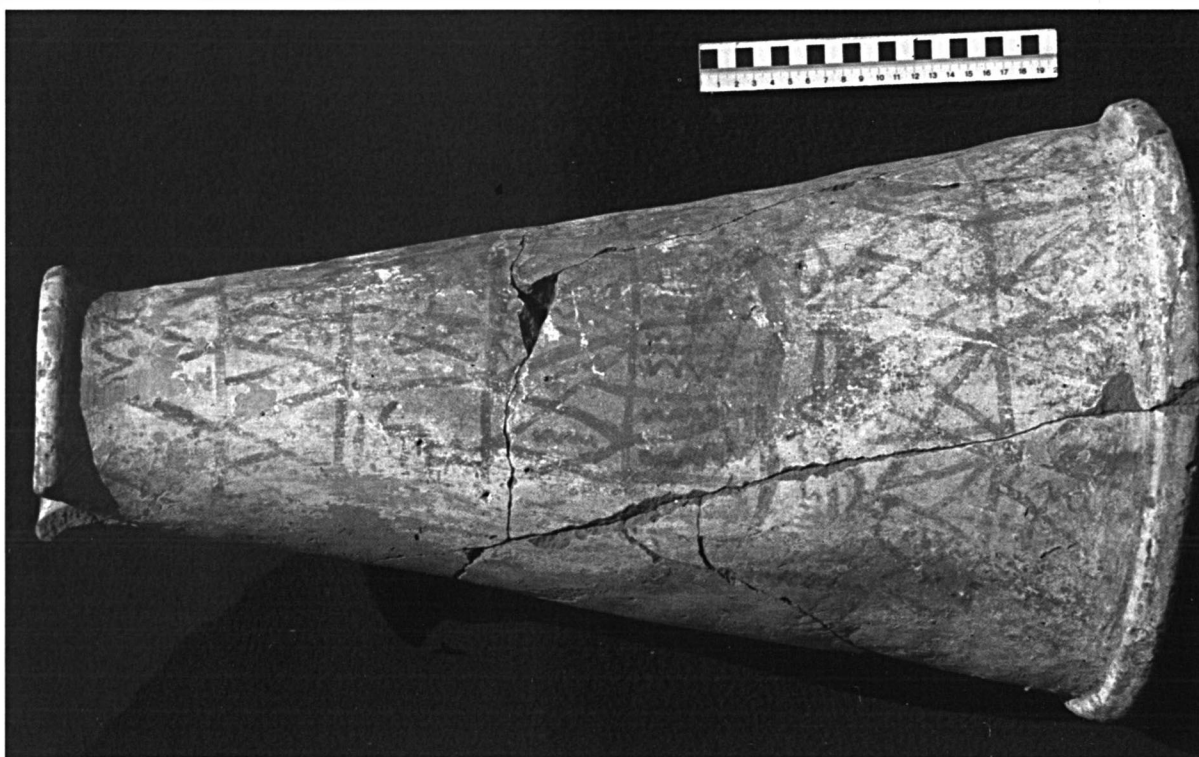




29b Elephantine, Area XXX: section in the dump areas of the early 4th Dynasty

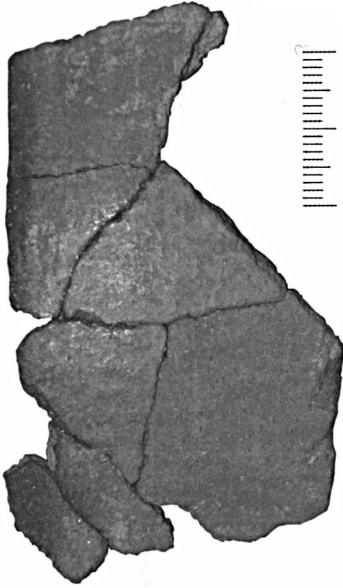


29c Elephantine, Area XXIV: section in the workshop areas of the later 5th Dynasty



29a Elephantine, pottery stand of the later 2nd Dynasty

30b Red-polished blacked-mouthed ware of the A-Group from site Wadi Sahal 82/38 (cf. Fig. 13,5)



30c Egyptian Meidum-bowl (4th or early 5th Dynasty) from Wadi Shaw 82/52 (cf. Fig. 13,1)



30d Red-polished ware from Wadi Shaw 82/52 (cf. Fig. 13,4)



2



1



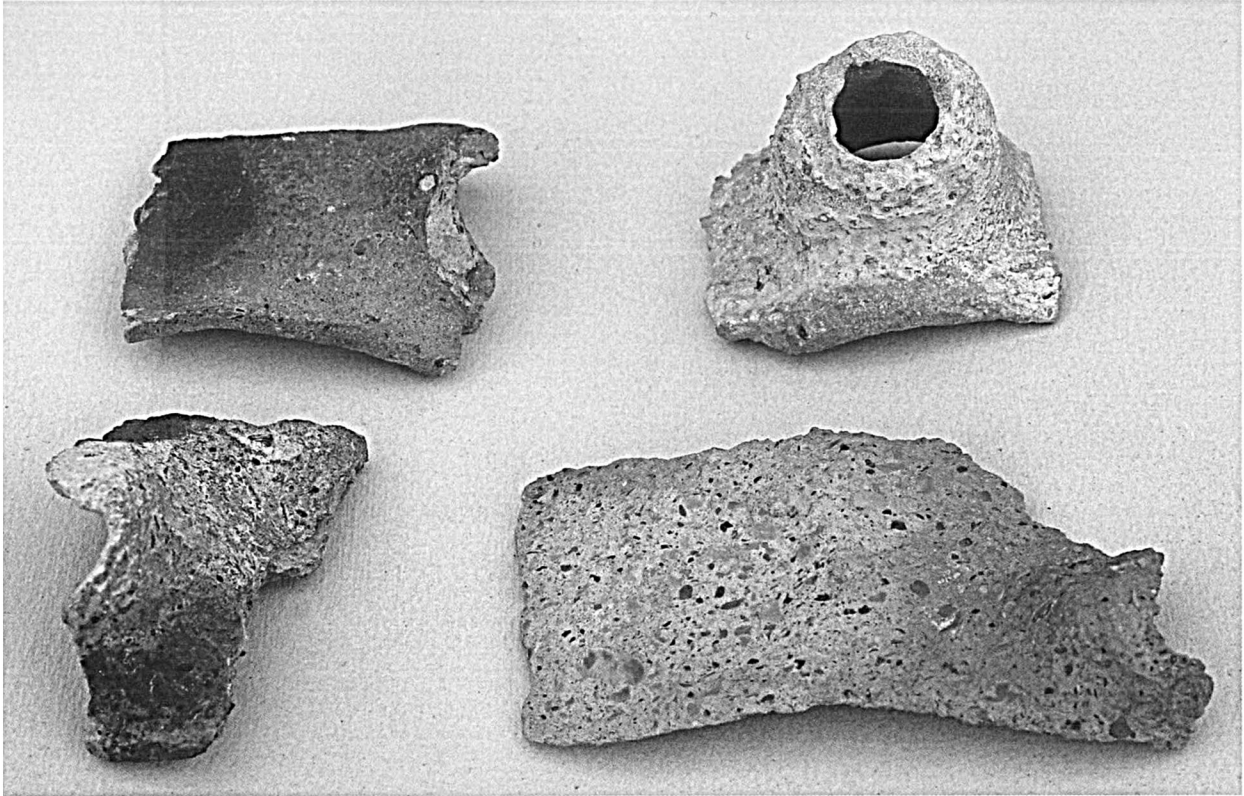
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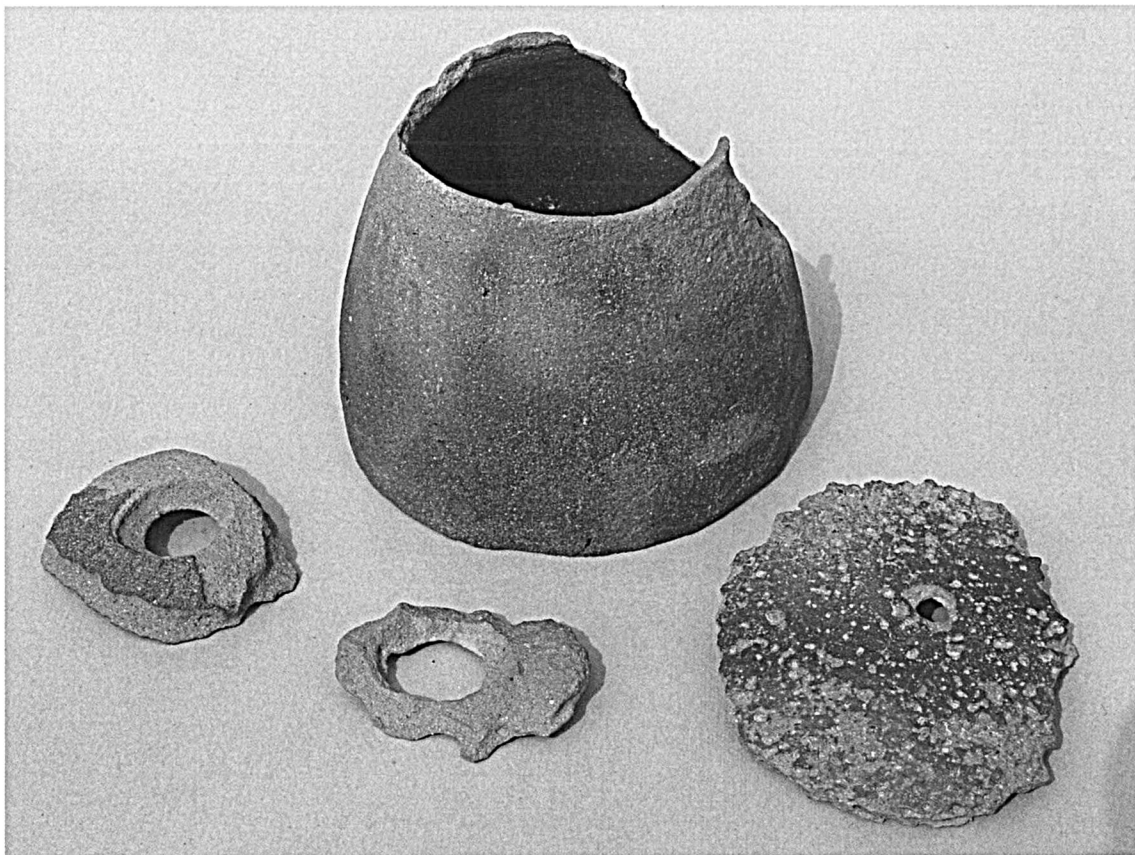
4

30a Pottery from the 6th Millennium in the Western Desert of Egypt (cf. Fig. 6):  
 1 Small thin-walled vessel with burnished surface;  
 2 Tasian-like beaker with incised geometric design at the outer surface;  
 3 Bowl with rippled surface; 4 Red-polished and black-topped rippled bowl

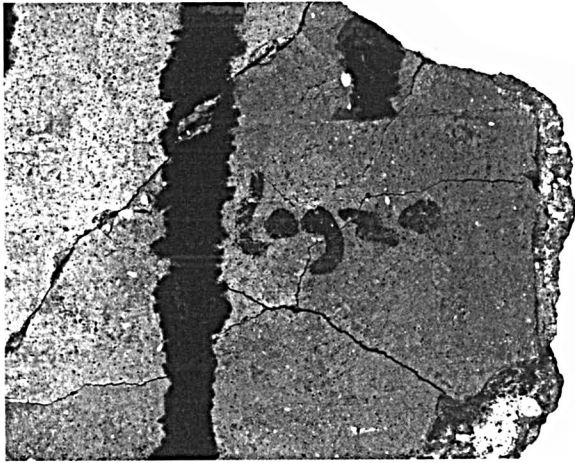




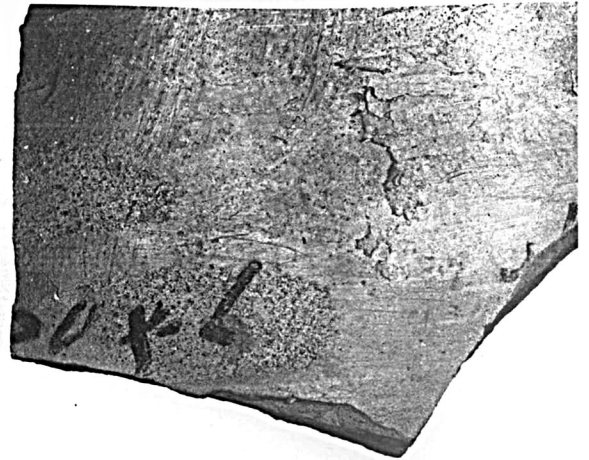
31a Fragments of Sheikh Muftah spouted bowls from El Kharafish (very coarse shale fabric)



31b Clayton ring, two wind-worn disks, and a coarse shale-tempered Sheikh Muftah sherd with repair hole from a site southwest of Dakhla (Meri 06/12)



32a Zu 1. Ostrakon 2319



32b Zu 2. Ostrakon 2330



32c Zu 3. Ostrakon 2326



32d Zu 4. Ostrakon 2317



32e Zu 5. Ostrakon 4757



32f Zu 6. Ostrakon 2322

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