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PRESUMED GIRAFFE PETROGLYPHS IN THE EASTERN DESERT OF EGYPT

Style, location and Nubian comparisons

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Abstract. In the Eastern Desert of Egypt there are many animal petroglyphs apparently dating from the predynastic period. This paper reviews the presumed giraffe images in detail in terms of style, location and context, and compares them with similar images from the Nile Valley and (less comprehensively) the Sahara. Stylistic similarity indicates some cultural homogeneity. The work of individual artists or groups working in specific locations is apparent. There is only a little indication that the animals were hunted. In some cases it appears that petroglyphs of ‘giraffes’ predate those of ‘boats’.

Introduction

Herodotus famously described Egypt as the gift of the Nile, and so it was and still is in terms of day-to-day existence, because the river has been for millennia the source of sustenance for Egypt’s people. But in another sense, that of the origin of Egyptian civilisation, it is coming to be realised that Egypt is as much the gift of the desert as of the Nile, and possibly more so. In particular the Eastern Desert, the rocky, gravelly land between the Nile and the Red Sea, has been of great significance. It has always been clear that from the beginning of historical times it was a source of minerals and a valuable trade route, but recently evidence has come to hand to indicate that in an earlier period, before the establishment of the Egyptian state and in its early years, the Eastern Desert was even more important. Much of this evidence comes from the rock art.

One of the important facts the rock art bears witness to is that the Eastern Desert was not always a desert. The large numbers of images of animals, both wild and domesticated, that cannot survive in the present arid conditions indicate that the area once had enough rainfall to support a flora similar to that of the savannahs of present-day East Africa and the fauna to go with it. And of course the rock art tells us that these savannahs were inhabited, temporarily if not permanently, by people who were presumably hunters and herders. These people were early Egyptians, and the rock art tells us something about their way of life and therefore about the development of Egypt.

The object of this paper is to present some preliminary results of a study of a subset of the Eastern Desert rock art: the petroglyph images of ‘giraffes’. These are among the most prominent of the wild savannah animals that appear to date to the period of the formation of the Egyptian state

or just before.

The published data

Two recent publications have made available details of many hitherto unrecorded petroglyph sites in the Eastern Desert (Rohl 2000; Morrow and Morrow 2002). Between them they list 159 ‘new’ sites (Morrow and Morrow 2002: 230–1) and contain about 990 photographs of petroglyphs. Even allowing for some duplication with older publications, they present us with several thousand new petroglyph images. It is not surprising that they have excited a lot of interest (Wilkinson 2003; Butzer et al. 2004).

The most important earlier publication of Eastern Desert petroglyphs is that of Winkler (1938), but it includes only a selection of the photographs he took in the course of his 1936–37 expedition. Èervièrek, working from Winkler’s records, has since published a description of all the petroglyphs Winkler observed, but unfortunately was able to include only a small additional number of photographs (Èervièrek 1986). It is to be hoped that the complete corpus of Winkler’s images will be published soon. More recent publications are those of Resch (1967), Èervièrek (1974), Fuchs (1989) and Redford and Redford (1989). Resch (1967) and Èervièrek (1974) summarise results of earlier work in their compilations, and Èervièrek’s is particularly valuable in that it includes some of the images collected by the important German 8th DIAFE (Deutsche Inner-Afrikanische Forschungsexpedition) of 1926. Many of the images published by Resch are repeated by Rohl or Èervièrek. The sites reported by Fuchs in the Wadi Barriamiya and Redford and Redford in the Wadi Hammamat are covered by the Morrrows.

In 1961–64 an international campaign under the aus-

pices of Unesco recorded the petroglyphs in the part of the Nile valley in Nubia that was flooded when the Aswan High Dam was built. The publication of some of the results, including photographs and drawings of thousands of petroglyphs, has provided us with a corpus of images similar to and larger than that from the Eastern Desert (Almagro Basch and Almagro Gorbea 1968; Hellström and Langballe 1970; Otto and Buschendorf-Otto 1993; Váhala and Èervîèek 1999). Hellström includes some data collected by Myers in 1947–48. Other data from the regions now flooded are reported by Dunbar (1941), as well as Winkler and Èervîèek (op. cit.).

There are of course petroglyphs in the Nile Valley north of Aswan. For example, there are many in the vicinity of El Kab, El Hosh, Silsila and elsewhere (Huyge 2002; Winkler 1938). However, while descriptions and analyses of some of them have been published, there are as yet no systematic publications of the images themselves, and they are not available in a convenient form for comparative study. For this reason alone the northern Nile Valley has been omitted from the present work. It is to be hoped that in due course the gaps in publication will be filled, making a more complete assessment possible.

The definition of a 'petroglyph site'

The term 'petroglyph site' is used in different ways by different authors. In many cases what constitutes a site is clear in that several images are located close together on a rock face or group of faces within, say, 10 metres of each other and separated by a large distance from any others. However, in some cases petroglyphs are scattered over a wide area, the division of which into sites is to a degree arbitrary. This applies particularly to the region of the Second Cataract where the Joint Scandinavian Expedition found thousands of petroglyphs in an area of some four square kilometres. For the purpose of reporting, this area was divided into 32 'sites' and then subdivided into 257 'stations' (Hellström and Langballe 1970: 26). Other authors do not make a distinction between sites and stations and would probably have counted some if not all of Hellström's 'stations' as 'sites'. In this paper, Hellström's terminology has been used, but it should be born in mind that some of his sites have many more individual petroglyph images than those of other authors. For example his site 157 consists of 23 stations containing a total of 488 separate rock surfaces, some of which bear five or more images.

In what follows sites are referred to where possible by means of the nomenclature used by Morrow and Morrow (2002: 230–1). The sites not included in their list are designated by reference to the publication in which they are found as follows: 'D' refers to Dunbar (1941), 'CCK' to Èervîèek (1976), 'A' or 'AA' to Almagro Basch and Almagro Gorbea (1968) and 'H' to Hellström and Langballe (1970). 'DU', 'SB', 'MU' and 'SH' refer respectively to unpublished sites in the wadis Dumqash, Sibrit, Muweilhat and Sha'it, all of which are part of the basin that drains into the Nile at Kom Ombo.

The nature and likely dates of the petroglyphs

Almost all of the rock art images from the Eastern Desert so far recorded are petroglyphs — that is they are cut or carved into the rock. They are coloured only insofar as the patina was removed when the petroglyph was made and where it has not reformed or has reformed only partly, the substrate material shows lighter. The other main category of rock art, pictograms made by painting the surface of the rock, is represented by only a handful of examples in the Eastern Desert (Rohl 2000: 129; Morrow and Morrow 2002: 112; Hobbs and Goodman 1995). Most of the petroglyphs seem to depict people, animals or boats. There are also a few in the form of geometric shapes, patterns and sinuous lines, some of which can be seen in Figure 6. In the main these are heavily patinated and appear to be older than the pictures. There are also inscriptions in several languages.

Some, in particular the images of horses and camels, can be dated with some certainty, at least to the extent of a *terminus post quem*, because the historical record indicates when they were introduced into Egypt (horses around 3700 BP and camels in the third millennium BP). In contrast a rough *terminus ante quem* can be assigned to others if it is assumed that the petroglyphs depict animals that were actually present in the wild state when they were drawn. This implies dates no later than the early years of the fifth millennium BP for the 'big game' animals such as giraffes that depend on a savannah habitat, because after that time the climate in the Eastern Desert was too arid to support them. Thus with some degree of certainty, some at least of the petroglyphs of these animals can be dated to predynastic or early dynastic times. On the other hand some of the petroglyphs might record animals that were introduced artificially, either for curiosity or for economic or military purposes, or they might refer to animals that were known about, by means of travellers' tales, for example, but were not actually present. However, the fact that giraffes are present among the petroglyphs in such large numbers is a strong indication that the animals were actually present.

Other approaches to the question of dating tend to confirm the conclusion that most of the 'giraffe' petroglyphs were drawn in the predynastic period. Winkler (1938), arguing from considerations of juxtaposition, style and similarity of patina, identifies four groups of people, native and immigrant, all predynastic, who drew petroglyphs including giraffes in the Eastern Desert and the Nile Valley. He also identifies later petroglyphs but there are no giraffes among them.

A few images of giraffes are to be found on artefacts from the Naqada I period (about 6000–5500 BP) (see, for example, Wilkinson 2003: 67, 73). Comparison with these and similar images leads Èervîèek to date his 'Q horizon' petroglyphs, among which are many 'giraffes', to before 5500 BP. Similarly, Huyge assigns the large number of 'giraffes' he has found in the vicinity of El Kab to a 'Horizon 1' contemporaneous with Naqada I (Huyge 2003: 63, 64). This method of dating is persuasive but not quite conclusive because the style in which giraffes are apparently represented on Naqada I pots is similar but not identical to

that of the 'giraffe' petroglyphs (see Huyge 1998).

Further dating evidence is no doubt contained in the superimposition and relative patination of various petroglyph images, but this is beyond the scope of the present paper.

This paper is based on petroglyphs of which images are available, either in the publications cited above or in photographs taken at so far unpublished sites by the author. It is important to recognise that this database is not complete for several reasons. Firstly, several editors, notably Hellström, Rohl and the Morrors, present photographs or drawings of only a selection of the petroglyphs they refer to in their descriptions of the sites (because of the sheer numbers of individual images). Nevertheless, in all the publications the text indicates that most of the observed images, and probably all the largest and clearest ones, have been published in pictorial form.

Secondly, obviously, the publications cover only the known petroglyph sites. Undoubtedly there remain sites to be discovered and reported. In the Eastern Desert the immediate vicinities of the modern metalled roads joining the Valley to the Red Sea coast have been thoroughly searched for petroglyphs in the years since the Second World War, and most of the major wadis in the off-road region west of the Red Sea mountains and between 24° 30' and 26° 30' north have been explored in the period since the late 1990s, when GPS location became available. In this area, in wadis that have been searched by teams of at least two or three people on foot, it is the author's estimate, or rather guess, that no more than 10 % of major petroglyph sites have been missed, and no more than about 30 % of minor sites (i.e. sites with five or fewer individual images). These subjective estimates are based on experience in the field. It is unlikely that many sites in the part of the Nile Valley covered by the Unesco expeditions were missed, but any that were are now inaccessible.

Thirdly some petroglyphs have been lost. Some have been buried by sand and gravel deposited by flash floods. At site SAL7 in the Wadi Umm Salam, for example, there are partly-buried petroglyphs at the present ground level (Rohl 2000: 62, illustration 13). It is very likely that there are others under the gravel at this site, and there may well be other sites that are completely buried. There has been no excavation (or at least none has been authorised) to find out. In addition, some will have been erased by wind-erosion of the rock on which they were drawn and some sites have probably been lost by modern quarrying and road-building operations. A few sites near the roads have been



Figure 1. 'Giraffe' petroglyph at site SAL14.

marred by modern spray-paint vandalism.

In view of these unquantifiable losses it is assumed for the purposes of this paper that the selection of images published is representative, in a statistical sense, of the images that were originally drawn. The images that have been 'lost', either because the authors did not see fit to publish them, or because in the course of fieldwork they were missed, or because they were destroyed (by natural or human agencies) before they could be recorded, are taken to be a random selection, the absence of which does not distort conclusions drawn. It is of course possible that this assumption is incorrect and that at some time images have been erased or modified in a systematic manner. There is no obvious indication that this has happened in the Eastern Desert, but the possibility must be kept in mind.

'Giraffe' petroglyphs

In its published form the mass of data on the petroglyphs of the Eastern Desert is not easy to understand or interpret. It has to be ordered before it can be comprehended, and the first purpose of the present paper is to report the results of collating and classifying one subset, selected as follows. The majority of the petroglyphs are apparently images of animals, people or boats, and of these the animals are most numerous. Among the animals, giraffes are usually unmistakable — there is often little doubt that a 'giraffe' petroglyph is intended to represent a giraffe (Fig. 1) — and for this reason they have been chosen as the starting point for the task of classification.

For the purposes of this paper, Eastern Desert 'giraffe' images have been collected from the publications of Winkler (1938), Rohl (2000), and Morrow and Morrow (2002). To these have been added unpublished images of petroglyphs observed by the present author in the region of the Wadis Sha'it and Muweilhat. Both Resch and



Figure 2. Location of 'giraffe' petroglyphs in the Eastern Desert.

Èervièek report additional petroglyph sites in the region of the Wadi Hodein, to the south-east of the region covered by the above publications, but none of them has any presumed images of giraffes.

The second purpose of this paper is to compare the Eastern Desert 'giraffe' petroglyphs with those from the Nile Valley in Nubia. For the purpose of comparison, 'giraffe' images from a limited number of the available publications were selected and classified. The publications chosen were those of Dunbar (1941), Almagro Basch and Almagro Gorbea (1968), Hellström and Langballe (1970) and Èervièek (1974). This comparison allows the similarities between the populations from two geographically close but dissimilar regions to be determined.

From these sources a database of 324 'giraffe' images from 66 sites has been assembled: 28 sites with 58 'giraffe' images from the Eastern Desert and 38 sites with 266 images from the Nile valley. The locations of these giraffe sites are shown in Figures 2 and 3.

Present-day giraffes inhabit savannah in which there are sufficient trees and bushes to provide food. They browse the leaves and twigs of leguminous trees such as acacia, impervious to its thorns. They will also take crops such as maize when available. They need water every second day unless their food is lush. Most live in territorial herds con-

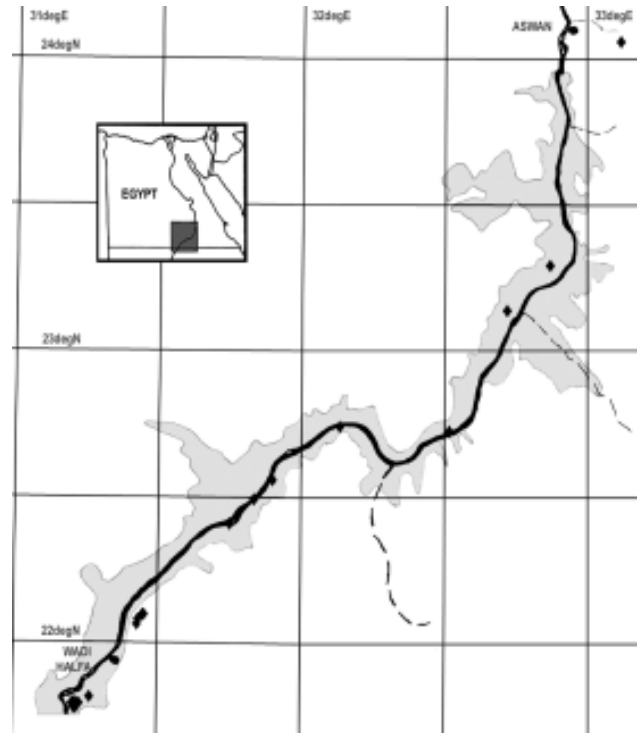


Figure 3. Location of 'giraffe' petroglyphs in Nubia.

sisting of up to thirty or so individuals dominated by a bull, but old bulls may be solitary. Male giraffes fight by dealing blows with the top of the head, which is armed with up to five small horns covered with skin and hair. A giraffe can gallop at over 50 km/h, and as it does so it holds its tail curved over its back. Apart from man, giraffes have no predators other than lions, which will take the young (Haltenorth and Diller 1980; Dorst and Dandelot 1970).

Few remains of giraffes have been found in Egypt, and those only in the Western Desert and the Nile Valley. Based on the incidence of petroglyphs it has been concluded that giraffes inhabited the whole of Egypt south of Memphis until they were driven out by man around 5000 BP, as increased aridity forced them to attack crops (Osborn 1998). Remains dating from dynastic times have been found only in domestic contexts. They probably relate to animals kept in captivity or to hunting trophies (Boessneck 1988: 38, 57).

The styles of the 'giraffe' petroglyphs

The 'giraffes' are drawn in styles ranging from the carefully-depicted and 'realistic' to the crudely-worked with grossly exaggerated features. Within this range some stylistic features recur, to illustrate which the descriptive scheme specified in Table 1 has been drawn up.

This classification is arbitrary. In many cases the characteristics of the image are not pronounced or clear, and some images have characteristics of more than one type. Images have been assigned subjectively to the type which, in the author's opinion, they most closely resemble. Others might classify them differently with equal validity.

It is possible, of course, that some of these images, especially those of Type 7, may not have been intended to represent giraffes: they might have been other real animals

Type	Description
1	These are the most realistic images in a Western sense, with a correct outline, sloping back and accurate proportions of the neck, legs and tail, and also showing the reticulated pattern.
2	These 'giraffes' are also 'realistic' in outline and proportion and differ from Type 1 only in that they lack reticulation. In some cases the outline is filled (either by abrading or hammering the rock surface) while in others it is left open.
3	'Giraffes' of this type are represented diagrammatically, the determining characteristic being an oval-shaped body. The neck, legs and tail are usually shown as single strokes and often the neck and sometimes the tail are exaggerated in length.
4	These 'giraffes' are also shown diagrammatically but unlike Type 3 the body is rectilinear, being indicated by a single broad stroke or a more-or-less rectangular box.
5	Among the more diagrammatic representations a distortion that occurs quite frequently is for the neck to be horizontal or even depressed below the horizontal.
6	In a few cases the neck is vertical, usually when the body is indicated by a rectangular box. While this is not an entirely unrealistic posture for a giraffe to adopt, the overall effect is stiff and 'wooden'.
7	Some images do not fit easily into any of the above categories. In a few cases it is doubtful whether the image is intended to be a giraffe.

Table 1. 'Giraffe' petroglyph styles.

or indeed unreal imaginary animals. It has therefore to be recognised that the database referred to above was constructed from all the available images of long-necked animals, except those that are clearly not giraffes. In practice this is a clear definition because there are few animals with necks of intermediate length; necks are either long or short. Among the long-necked animals are a few which have horns curved forwards at the tip. These are clearly not meant to be giraffes. They are probably gerenuks (or possibly diabatags), and have been excluded from the database.

Figure 4 shows typical examples of each of these types and Table 2 shows the frequency with which they occur in the Eastern Desert and in Nubia.

Table 2 indicates that there are no significant differences between the Desert and the Valley in terms of the style of the 'giraffe' images. In both regions about 21 % of the images are realistic (Types 1 and 2), and among the less realistic images, strikingly, the ratio of round-bodied representations (Type 3) is nearly the same at 16–19 % of the total.

The tails of a few of the 'giraffes' are treated in a

conspicuous manner. Some (six in the Eastern Desert, 26 in Nubia) are curved upward in the shape of a 'C'. This style is not confined to any one type of representation, but in Nubia 18 out of the 26 C-shaped tails are on the more realistic giraffes of Types 1 and 2, and of these 15 are in the group of sites close to the Second Cataract. Although giraffes cock their tails in this manner when galloping, none

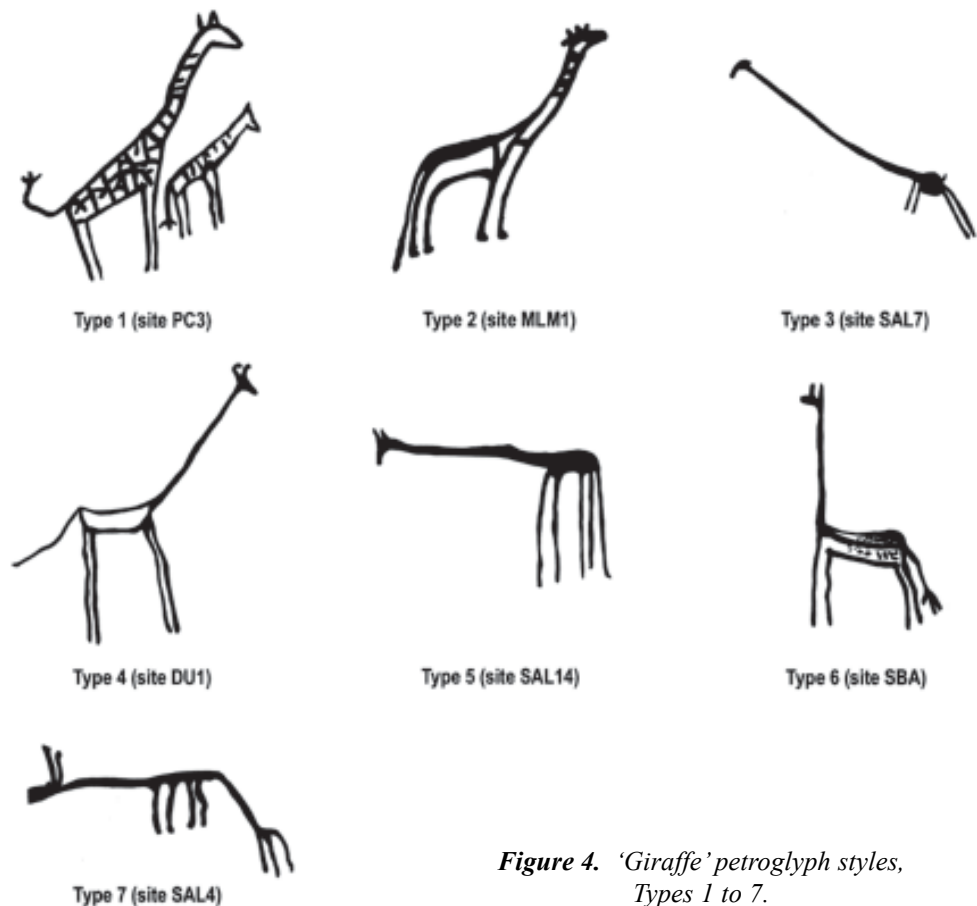


Figure 4. 'Giraffe' petroglyph styles, Types 1 to 7.

Type	Eastern Desert		Nubia	
	No.	%	No.	%
1	5	9	17	6
2	7	12	40	15
3	11	19	43	16
4	21	36	101	38
5	9	16	44	17
6	5	9	15	6
7	0	0	6	2
Total	58		266	

Table 2. Distribution of 'giraffe' images by type.

of the C-type tail images gives any indication of movement. In fact the 'giraffes' are without exception shown with their legs straight in a static pose.

More remarkable are a few 'giraffes' with tails grossly exaggerated in length, which, more remarkable still, bear a sparse tuft of still more exaggerated terminal hairs. There are 11 of these in the Eastern Desert (19 % of the total) while there is only one in the Valley. All the hairy tails are on cruder, more diagrammatic images. Most remarkable is the fact that nine of these distinctive tails are at sites in the Wadi Umm Salam (sites SAL4, 7, 10, 14, and 29). Figure 1

shows one of these and Figure 5 shows a cruder example.

A small group of 'giraffes' with similar exaggerated and 'hairy' tails at a site near Kharga in the Western Desert is reported by Winkler (1939: Pls LIII and LIV). While the 'giraffe' images are not unlike some of those in the Nile Valley, the context is very different. The Kharga 'giraffes' are surrounded by people shown in a style unlike any that has been found in the Eastern Desert or the Nile Valley.

The significance of the concentration of this 'giraffe' image in the Wadi Umm Salam is not clear. It could be that it had a particular significance for the people who inhabited or frequented the wadi at some time, or alternatively, these images might be the work of a single artist and represent the quirk, or particular interest, or sense of humour, of one particular person. There are no other geographical concentrations of this image: only individual examples appear at other places. This suggests that the Wadi Umm Salam was the centre of the 'long hairy tail cult' (or interest, or joke) and that it spread sporadically to other places, either because the Wadi Umm Salam artist travelled and left examples of his or her work, or people from elsewhere visited the Wadi Umm Salam and copied what they saw there when they returned home. Either way the wide-ranging occurrence of this distinctive feature implies wide-ranging social contact and travel in the Eastern Desert and the Nile Valley and into the Western Desert.

The geographical distribution of giraffe images

The most northerly 'giraffe' petroglyph of which an image has been published is in the Wadi Qash (at site HW18). There are some in the central part of the Wadi



Figure 5. 'Giraffe' and other animals at site SAL4.

	Eastern Desert	Nubia
Number of 'giraffe' images	58	266
No. of sites with 'giraffe' images	28	38
Average No. of 'giraffes' per site	2	7

Table 3. Distribution of 'giraffe' images by site.

Minch and in the Wadi Barramiya and a few scattered elsewhere, but the main concentrations in the Eastern Desert are in and near the Wadi Umm Salam and at a major site in the Wadi Sibrit. 'Giraffe' images have been found throughout the Nile Valley between the First and Second Cataracts. At Abka near the Second Cataract there is an immense concentration of petroglyphs of animals of all sorts including 103 'giraffes'.

While most of the presumed giraffes appear in ones or twos, usually with other animals, at some sites there are larger numbers. Table 3 shows the average number of 'giraffes' per site. In the Eastern Desert two out of the 28 sites, and in Nubia nine out of 38, have more than five 'giraffes'. These numbers are to some extent confused by the ambiguity of the term 'site' as applied particularly to the vicinity of the Second Cataract as explained above, but in spite of this there is a clear tendency to 'giraffe sites' in the Valley but not in the Desert. This is particularly apparent in Dunbar's work: he reports 30 petroglyph sites between the First and Second Cataracts, seven of which have

53 'giraffes' between them while the remaining 23 have none. At site D018 in the Wadi el Arab there are 10 while at site D008 at Armenna there are 19 (Dunbar 1941: Figs 1 and 7).

In some cases where there are several 'giraffes' at the same site they are drawn in a uniform style and appear to be intended to be seen as a group or herd. Examples of these are the six Type 4 images at site SB4 (Fig. 6) in the Desert and the 19 at site D008 (Type 3) and 10 at site D018 (Types 3 and 4 but very similar) in Nubia. In other cases there are several 'giraffes' but they are in different styles and distributed in an apparently random way. Examples are the six or more giraffes at site SAL14 and the 10 or more in the lower part of site H154i. At sites such as SB4, D008 and D018 the similarity of style is so close that the 'giraffes' look as if they were all drawn by the same artist.

At some of the sites where there are many 'giraffes' there are also many other animals of different species. Site SAL14, for example, is a confused mass of images superimposed on each other (Fig. 7), as is site H154i. At site D018 there are five or six 'elephants' among the 'giraffes'.

The overall impression is that giraffes were usually seen and represented by the artists as individual animals. Rarely in the Desert but more often in the Valley in Nubia, they were represented as groups or herds. In several cases they were grouped with other animals. A few sites, mainly in Nubia, seem to have been of special significance in that they attracted many giraffe images: others had a different significance in that many images of different animals (as well as people and in some cases boats) were crowded onto them and superimposed several deep. At the latter it appears to have been more important to the artist that the



Figure 6. 'Giraffes', 'boats' and other images at site SB4.



Figure 7. Superimposed animal images at site SAL14.

image should be present on the favoured site than that it should be seen clearly (although it should be remembered that, if the images were cut over a lengthy enough period, the earlier ones would have become partially obscured by patination, allowing a fresh new image to be more prominent than it is now).

Direction and orientation of the 'giraffe' images

Without exception all 324 presumed giraffe images are side views. In the Eastern Desert 27 out of 58 (47%), and in Nubia 89 out of 266 (33%), face to the left. The probability of there being fewer than 90 left-facers out of 266 if individual giraffes are equally likely to face left or right is less than 0.1%, indicating that the artists in the Valley, but not those in the Desert, had a significant preference for drawing giraffes facing right (see Endnote 1 below).

Unfortunately in most of the older publications the orientation of the rock surface bearing the petroglyph is not recorded. Hellström and Èervivèek give the orientation in some cases but not others. Only Rohl and the Morrows consistently state it. Table 4 shows the number of individual 'giraffe' images and of rock faces bearing 'giraffe' images, for which the orientation is known. (In this table an image or a site is defined as oriented to the north (for example) if it is between NE and NW *inclusive*. That means that a few images and sites are counted twice, because if the orientation is given as 'NE' it is counted in the totals for both north-facing and east-facing.)

It will be seen that in the Desert there is a marked pref-

Orientation	Eastern Desert		Nubia	
	Images	Sites	Images	Sites
North	30	16	27	13
East	4	3	13	7
South	8	5	15	8
West	18	7	14	8
Total	47	24	50	26

Table 4. Orientation of 'giraffe' images and image sites.

erence for placing images on rocks facing north or west. This may be because these rock faces are in the shade in the morning and in the heat of the day and therefore more pleasant to work on. In Nubia such a preference is less marked, possibly because, especially in the region of the Second Cataract, there are so many petroglyphs crowded into a relatively small area that there were not enough shady sites for all the images the artists wanted to draw. It may have been so necessary to draw a petroglyph that the discomfort of working in the sun was unimportant.

In principle it is possible that there are more petroglyphs on rock faces oriented north or west because more of the suitable rock faces are oriented in these directions than in others. This seems very unlikely, partly because the wadis of the Eastern Desert are extremely tortuous and have walls



Figure 8. Older and newer petroglyphs at site MLM1.

facing in all directions, and partly because many petroglyphs are on boulders separated from the wadi walls. These boulders (some of which are as big as houses) have, of course, faces oriented in all directions.

Huyge (2002) has analysed the orientation of 'giraffe' images in the region of El Kab and has found that 80 % of the images face left and 60 % of them are orientated to the west. He relates these preferences to the role of the giraffe as a heliophor, a bearer of the sun-god on his diurnal journey. It will be seen that the statistics of Table 4 do not support the direct application of this conclusion to giraffes in the Eastern Desert in general. However, of the 30 north-oriented giraffes, 19 (63 %) face left. There is only a 7 % probability of so many left-facers if individual images were directed at random, so there is some indication of a deliberate preference to make them face left. It is not clear how this would relate to a heliophoric function, because an observer looking at a north-oriented rock surface would see a left-facing giraffe on it as opposing the sun as it moved across the sky behind.

Interpretation of the 'giraffe' images as scenes

Most of the 'giraffes' appear singly or with one or two others. There are a few examples of a large giraffe being shown with a smaller one, presumably a calf, by its side (sites PC3, MUA17, SAL11 and MIY1 in the Eastern Desert and sites D018, CCK15, H377 and possibly others in the Nile Valley). An example can be seen in Figure 4.

Almost all the 'giraffe' images have no obvious picto-

rial relationship to the adjacent images. The giraffes are either alone or in a group with other giraffes. Sometimes the group is a tidy row but more often it is apparently formless. However, there are a few examples of 'giraffes' involved in an apparent action scene. At sites H160, H157 and H380, a giraffe appears to be the quarry of a hunt. The giraffes at H160s (Hellström and Langballe 1970: Pl. 54.2) seem to be attacked by steatopygous archers and possibly dogs, but as the site is crowded with many images it is not clear what the artists intended to depict. The artist of H157m (*ibid.*: Pl. 38.2), however, clearly intended to show his or her giraffe as being attacked by two archers. Site H380b (*ibid.*: Pl. 101.1) also shows an apparent hunting scene with four 'giraffes', at least four 'archers', and four 'dogs'. These 'hunting scenes' are all in the Nubia. In the Eastern Desert a 'giraffe' at site SAL10 in the Wadi Umm Salam (Morrow and Morrow 2002: 55, illustration E) is surrounded by 'dogs', and one at site MUA17 in the Wadi Abu Mu Awwad (*ibid.*: 116) may be the quarry of a nearby 'archer', but there are no scenes clearly intended to represent giraffe hunts.

At sites H160 and H380 there are scenes of 'giraffes feeding'. At H160s two giraffes feed from opposite sides of a tree (Hellström and Langballe 1970: Pl. 54.5) and at H380d a group of six giraffes is shown eating from at least three trees or bushes (*ibid.*: Pl. 102.1). While none of these 'feeding scenes' is particularly well drawn, they are of interest because they are evidence that the natural behaviour of the animals apart from human interaction was observed



Figure 9. More recent petroglyphs at site MLM1.

and recorded. This might indicate an interest in them for their own sake, not only as an economic resource. Similarity of style, to the extent that all these feeding giraffes have cocked tails, suggests that they were drawn by a single artist. There are no feeding scenes in the Eastern Desert.

There are no images of giraffes fighting.

Images accompanying and overlapping 'giraffes'

'Giraffes' in the Eastern Desert often appear with other zoomorphs, less often in association with apparently human figures. The relatively realistic giraffes give an impression of being more recent than the 'caricatures'. At sites MLM1 (Figs 8 and 9; see also Rohl 2000: 94, illustration 4; 95, Fig. 7) and MIY1 (Morrow and Morrow 2002: 161, illustration A), 'realistic giraffes' are clearly less heavily patinated than their diagrammatic fellows on the same or adjacent rock surfaces. At the two desert sites with most 'giraffes', SAL14 and SB4, they are crowded onto rock panels with many other images of animals, and also some 'boats' and anthropomorphs. However, the two sites are different in that while the rock at SAL14 is covered with dozens of images, in the main they are separate and do not overlap (Morrow and Morrow 2002: 62, Fig. F), whereas at site SB4 the 'giraffe' images overlap images of 'ibexes' and 'abstract' patterns, and in some cases each other (Fig. 6).

It is particularly interesting to note that at three sites, HAJ8, SAL7 and SB4, 'giraffe' images overlap apparent images of boats. Probably at HAJ8 and SAL7, and cer-

tainly at SB4 (Fig. 6), the 'boat' lies over the 'giraffe', indicating that it was drawn later. At SB4 a small but noticeable difference in patination confirms this conclusion.

The 'giraffes' in Nubia also usually appear with other animals and often with people. Only rarely are the people shown as having any interaction with the giraffes (see under 'Scenes' above). As there are very few 'boat' petroglyphs in the Valley, there are no clear indications of boats overlying the giraffes. As in the Desert, there are a few sites in the Second Cataract region, such as H154a, H376c, H377f and H378g, that have immense numbers of animal images, among them 'giraffes'. In some cases the images are crowded together and superimposed on each other.

The Western Desert of Egypt and the Sahara

It is not within the scope of the present paper to extend the survey of presumed giraffe petroglyphs farther afield or to make detailed comparisons with the extensive corpus of images from the Western Desert of Egypt and the wider Sahara. Nevertheless, a few brief comments will serve to illustrate the wider context.

Petroglyphs of some of the types identified above can be found in the Western Desert and the Sahara. There are many giraffes with realistic reticulated patterning, similar to those of the Type 1 defined above, at, for example, Gebel Uweinat (Zboray 2003) and Adrar des Iforas in Mali (Dupuy 1998). Giraffes similar to Type 2 are to be found in Libya north-west of Gebel Uweinat, where a group of six or more, all facing right, appear to be overlain by an elephant which

is dated, by consideration of its patina and in view of the carbon-dates of elephant remains from the Tibesti and elsewhere, to the fifth millennium BP (Berger et al. 2003). There are other Type 2 'giraffes' at I-n-Leludj in Libya, where they are associated with 'people' and other zoomorphs including bovids (Jelínek 2000). Farther south there are several diagrammatic rectilinear 'giraffes' similar to Types 4 and 6, many with cocked tails, along with 'elephants' and 'ostriches', near Lake Turkana in northern Kenya (Campbell and Coulson 1998). At Zolat el Hammad in north-western Sudan there are some Type 5 'giraffes' with 'ostriches' and round-headed anthropomorphs, all overlain by 'cattle' (Kröpelin 2004).

Elsewhere, for example in Western Sahara and Morocco, many animals are drawn in a characteristic 'Tazina' style (Pichler and Rodrigue 2003). They are engraved, with elegant outlines and exaggerated features. They bear some similarity to the 'giraffes' and other zoomorphs at site SHA4 in the Wadi Shallul, which are drawn in outline in a flowing style quite unlike anything recorded elsewhere in the Eastern Desert or Nubia (Morrow and Morrow 2002: 126, Fig. F). However, the absence of any other similar images (of giraffes or any other animals) in the Eastern Desert and the great distance from the Tazina zoomorphs leads to the conclusion that the similarity is merely coincidence and not the result of cultural contact.

The most striking aspect of a comparison of the rock art of the Eastern Desert with that of the west is the absence of some of the outstanding features of the latter. For example there are no equivalents to the very realistic animated and varied images of animals such as the beautiful recumbent giraffes in the Wadi Ufsé near Arak (Gauthier and Gauthier 2003) or the Wadi Ahloun near Fort Tarat (Soleilhavoup 2000) (both in Algeria). In north-eastern Niger at Dadafuy, several galloping giraffes are shown in company with elephants and bovids (Striedter 1999). None of the giraffes in the Eastern Desert or Nubia shows any sign of motion.

It is also notable that none of the giraffes in the Eastern Desert is shown as being in contact or close relationship with people, apart from the 'hunting scenes' described above. In contrast, at Tassili in Algeria there are two 'realistic' Type 1 'giraffes' with an anthropomorph between them in a pose reminiscent of a 'master of animals' (Soleilhavoup 1993). At Adrar des Ifaras a 'giraffe' is shown wound round a 'man' as if it is being carried (Dupuy 1999).

A recurrent image in the Sahara and elsewhere is that of a tethered giraffe or *girafe a lien*. Giraffes, often of Types 1 or 2, are shown with a line attached to the head or neck, sometimes joining the animal to a human figure (van Hoek 2003). It is not clear whether this represents a physical or a psychological bond: whether it relates to hunting (a few of the 'scenes' include 'men' armed with 'spears' or 'bows') or captivity, or alternatively to a giraffe as a 'rain animal'. This image does not occur in the Eastern Desert or Nubia. At Tassili there is a 'scene of bestiality' involving a giraffe (Soleilhavoup 2003). Again there is nothing of this nature in the east.

Conclusions

From this survey and comparison of the Eastern Desert and Nubian 'giraffe' petroglyphs a few significant points emerge. Firstly it appears that the body of material is large enough to make valid comparisons, and despite the various vicissitudes to which petroglyphs and their records are subject, nothing has emerged to undermine the assumption that the selections they present are representative and permit valid conclusions.

As far as 'giraffe' petroglyphs are concerned it is clear that there is no stylistic difference between the Eastern Desert and Nubia, implying a degree of continuing cultural homogeneity between the two regions. In both about 20 % of the 'giraffes' are represented in a realistic style, the rest more simply and diagrammatically. There is a little evidence from the Eastern Desert that the more 'realistic' 'giraffes' are more recent than the rest. There is a greater tendency to depict several giraffes at the same site in Nubia than in the Desert. In Nubia, but not in the Desert, most 'giraffes' face right, and in both Nubia and the Desert there is a preference for them to be drawn on rock faces orientated to the north or west.

'Giraffes' usually appear with other animals, sometimes many of them, but only very rarely is any coherent relationship, either between the giraffes or between giraffes and other animals, apparent. In Nubia there are a few 'naturalistic' depictions of giraffes feeding (possibly all drawn by the same artist), but there are no such images in the Eastern Desert and in the main the images are stiff, static and formal.

In some cases several 'giraffes' at the same site or neighbouring sites are so similar in style that they appear to have been drawn by the same artist. There are a few pictures of 'giraffes being hunted', but otherwise no relationship with people is shown. In particular there are no indications of giraffes in captivity. This suggests that most of the images relate to wild giraffes, and therefore date to the early fifth millennium BP at the latest. There are a few more 'realistic' images that appear to be more recent. There is a little evidence that some petroglyph depictions of 'boats' are later than some of the 'giraffes'.

Giraffes in similar styles can be found as far away as the Gilf Kebir and Libya, and as far south as northern Kenya. Many of the characteristics of presumed giraffe images from farther west in the Sahara are in contrast conspicuous by their complete absence from the Eastern Desert of Egypt. Thus the cultural contacts of the Eastern Desert giraffe artists, while wide within north-east Africa, seem not to have extended beyond that region.

Endnote 1

If the artist selected the direction in which his or her giraffe faced at random, left or right being equally likely, the probability of getting 90 or fewer left-facers out of 266 is the same as that of getting 90 or fewer heads if a fair coin is flipped 266 times. If many trials of 266 flips are made, the number of heads observed will be nearly normally distributed with a mean of 133 (= 266/2) and a standard deviation of 8.15 (= $\sqrt{266/4}$). An observation of 90 or fewer heads is about 5 (= (133-90)/8.15) standard deviations from the mean, the probability of which is less than 0.1 %.

Therefore it is almost certain that the artists of the Nile Valley did not choose the direction at random, but preferred right.

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