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ANIMALS IN ROCK ART. RESULTS OF ARCHAEZOOLOGICAL RESEARCH AT THE SITE OF EL-GAMAMIYA 67 (FOURTH CATARACT, SUDAN)

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The area of the PCMA concession within the Fourth Cataract zone had not yielded much in terms of rock art, which was surprising considering the length of the concession (more than 100 km along the Nile) and the discoveries made on Saffi and Uli islands, but foremost the impressive sites of this nature recorded on the opposite bank of the Nile (H. Paner, personal communication). Single carvings had been found, but these were for the most part the work of modern local artists, who proudly claimed authorship.

In the 2007/2008 season, complementary survey and excavation work was carried out by part of the team from the PCMA and the Archaeological Museum in Poznań in the neighborhood of the village of el-Gamamiya in the central part of the Polish concession on the Fourth Cataract (Chłodnicki *et alii* 2010). For the first time in this project, an impressive rock art gallery

was located on a panel situated at the confluence of two large wadis (el-Gamamiya 67) [*Fig. 1*]. Altogether almost 200 images, mainly of cattle, were recorded. Among the depictions there were also three giraffes, an apparent lion and single human silhouettes. The carvings were recorded professionally by specialists Eliza Jaroni and Ewa Kuciewicz from the Poznań Archaeological Museum, who noted execution techniques, exposition and other formal characteristics (Jaroni, Kuciewicz 2010). The subject matter, however, comprising as it did almost exclusively animals, prompted taking up archaezoological research on the assemblage in the broader context of current knowledge of domestic animals in northern and central Sudan.

In analogy to rock art from Europe, the carvings from Africa had also been classified into so-called "schools" with the purpose of establishing a relative chronological framework for the different types. The classification criteria were different. Since the 1930s it has commonly been accepted to consider the "bubaline school" as the oldest (Muzzolini 2000). The name derived from an extinct species of giant buffalo *Bubalus antiquus* that was depicted on carvings from the period. In chronological terms this 'school' was associated with depictions of so-called Ethiopian fauna, that is, giraffes, ostriches, elephants, antelopes) and dated to the Neolithic and more precisely, to a humid period between the 5th and the 3rd millennium BC. This

Fig. 1. Recording rock art at el-Gamamiya 67 (Photo P. Osypiński)

dating has now been seriously questioned upon considering in juxtaposition with climatologic, archaeological and archaeozoological data (Churcher 1972; Cremaschi 2002; Gautier 2001). 'Ethiopian' fauna disappeared from the Sahara irrevocably around 40,000 years ago, long before the Neolithic (Cremaschi 2002). The same is true of the territory of Sudan. Gazelle, hares, possibly also Oryx antelope may have still lived in this region and most certainly hippopotami and crocodiles, but certainly not giraffes, elephants, lions, zebras and buffalo (Gautier 2001). Another premise that questions in effect the association of representations of giraffes and elephants with the Neolithic is the absence of recorded rock art sites in the neighborhood of Neolithic sites. The Nabta Playa region broadly understood offers a good example as it was occupied solely in the Neolithic (Gautier 2001). The situation is similar in the vicinity of large sites like Multaga in the South Dongola Reach (Osypińska 2004) and also Kadero (Gautier, Van Neer 2011).

It is therefore reasonable not to treat rock art depicting 'Ethiopian' fauna in strictly chronological terms and connect it unquestionably with the Neolithic. Artists do not seem to have drawn upon the world around them in making their pictures. Giraffes and elephants in Late Christian (13th–14th century) wall painting in the church at Banganarti and in the monastery at Dongola (own research by the author), similarly as the giraffes from the Fourth Cataract region, did not reflect in all likelihood animals actually inhabiting the local ecosystem. It seems that certain species, giraffes in particular, held special symbolic meaning. Representations of wild animals (it should be noted that the themes are fairly restricted) could have been meant rather as recording events of special significance or character. The three giraffe images discovered at el-Gamamiya seem to have had just such significance. It should be kept in mind that Nubia in broad terms was an "exporter" of wild animals, such as giraffes, antelope, elephants, lions and monkeys, which were sent to the north in different periods as tribute. It remained so through the end of the Kingdom of Makuria (14th century). For the inhabitants of the Fourth Cataract region and the northern areas of Sudan caravans of wild animals moving north must have been a highly moving and curious event.

CATTLE

Cattle were undoubtedly the most important species represented in rock art on the Fourth Cataract. These animals are present in all styles, but their importance seems to have peaked in the so-called "Bovidian" period, the oldest noted in the Fourth Cataract region.

Two characteristic morphological types can be distinguished in the cattle images from the el-Gamamiya area. Both are known from archaeological sites. The first is long-horned cattle *Bos primigenius*, the second is short-horned *Bos brachycerus* (Rütimeyer 1860; Gautier 2002; Lasota-Moskalewska 2005).

AFRICAN LONG-HORNED CATTLE

Primigenius cattle are an early morphological type descended directly from the

auroch. In Africa these animals were characterized by massive horns and long legs. The bones were also massive and in height they reached 150 cm. Skull structure resembled that of the auroch. Cattle of this kind were bred in North Africa in the Neolithic, the Kerma period and probably also in the times of the kingdoms of Meroe and Makuria, although at this time it must have been imported in all likelihood. In Africa, unlike Europe and Asia, *primigenius* cattle survived in the traditional economy of pastoralists from the southern valley of the Nile into modern times. *Sanga* cattle have many traits of native African cattle.

In this context the identification of cattle images from el-Gamamiya has produced interesting data. The "Bovidian" period in rock art of the entire northern and eastern Sahara region characterized the era from the 3rd to the 1st millennium BC and the el-Gamamiya images can be dated for the most part to this period. The subject matter — almost exclusively cattle — is characteristic, as is the highly realistic style shared with vast expanses of the southern Sahara. The form of horns and color variants of the animals depicted in the el-Gamamiya "gallery" is of considerable cognitive value. A herd from el-Gamamiya [***Fig. 2*** left] includes both cows with calves and bulls. All the cows are humpless [***Fig. 3***]. Traits typical of modern *sanga* cattle can be observed on the depictions from el-Gamamiya [***Fig. 4*** left]. The horns on cows are lyre-shaped, those on bulls like a crescent and these two variants of horn shape can be observed in the rock art images. Representations also reveal the characteristic spotted color of *sanga* cattle [see ***Fig. 1***, left].

The carvings from el-Gamamiya also produced evidence of cultic rituals to which cattle were subjected and which

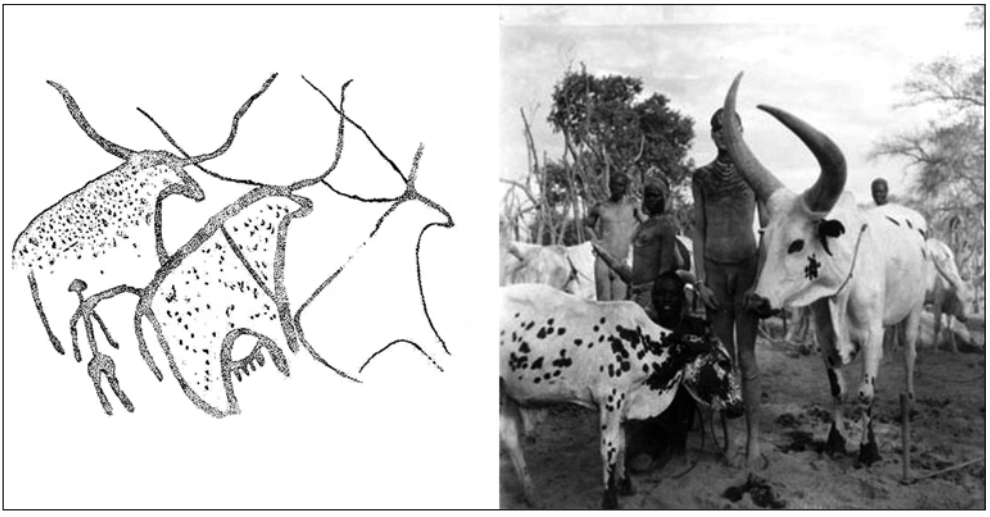

Fig. 2. Herd of cattle from el-Gamamiya, left, and Mandari youths with display ox and his herd, Bahr el-Jebel, southern Sudan (Drawing M. Osypińska; photo after R.C. Buxton, Pit Rivers Museum, http://southernsudan.prm.ox.ac.uk/index.php, Accession Number 1998.97.380)

are known from both the burial ground in Kerma and modern ethnological research (Chaix 2004b). The ritual in question is deformation of the horns (Chaix 2004). The process begins when the animal is still very young. Horns are undercut from the front or, as in the case of tribes from Ethiopia, pushed in with a rock. This is done only on animals of special importance: a bull (*majok* for the Dinka tribe) which is the "soul mate" of a specific male [***Fig. 5***, right]. A bull with deformed horns was recorded

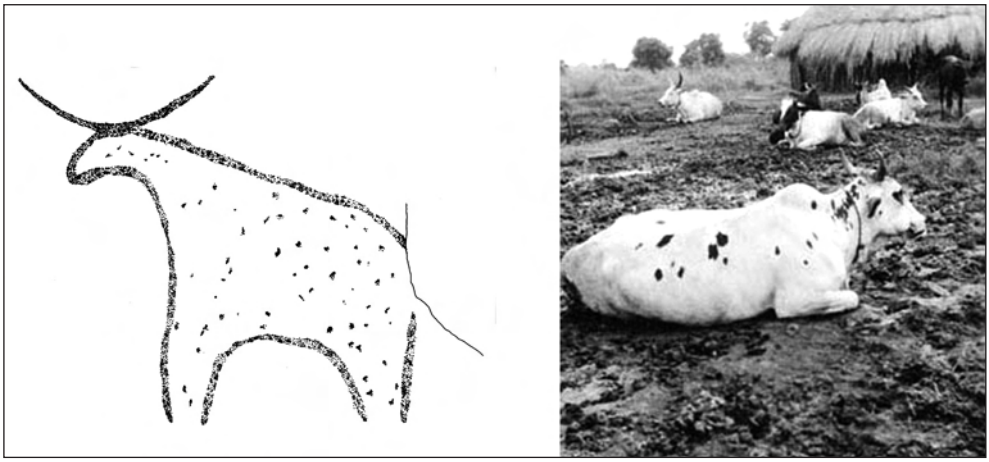

Fig. 3. Bull from el-Gamamiya, left, and Nuer cow, Jonglei Akobo, southern Sudan (Drawing M. Osypińska; photo after E.E. Evans-Pritchard, Pit Rivers Museum, http://southernsudan.prm.ox.ac.uk/index.php, Accession Number 1998.355.724.2)

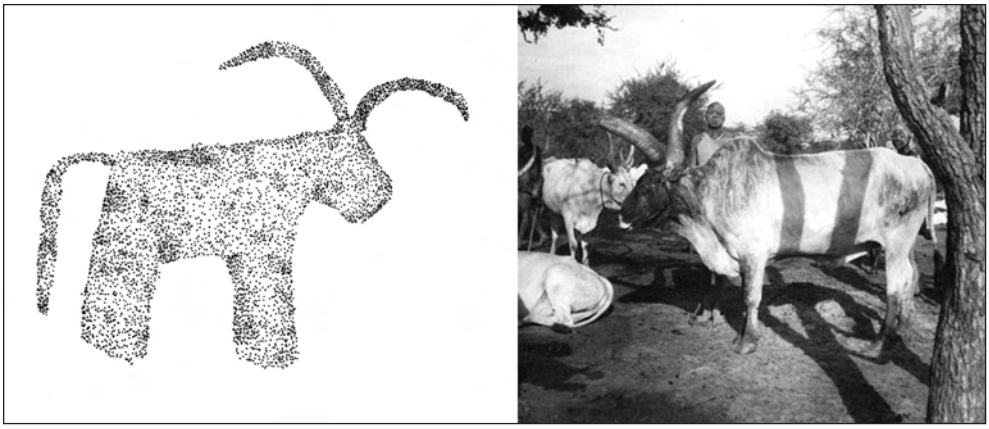

Fig. 4. Cattle from el-Gamamiya and Mandari youth with display ox, southern Sudan, Bahr el-Jebel (Drawing M. Osypińska; photo after R.C. Buxton, Pit Rivers Museum, http://southernsudan.prm.ox.ac.uk/index.php, Accession Number 1998.97.372.2)

among the dozens of carved images from el-Gamamiya [***Fig. 5***, left] and it does not seem to be a hugely unique representation in the Fourth Cataract region considering the findings of other missions (Osypińska 2005; Gdańsk Archaeological Museum research, H. Paner, personal communication). Scenes representing bulls with deformed horns (Chaix, Hansen 2003) and with ornaments hung from the neck, frequently in the company of male figures, can be found at other sites. They are often misidentified due to the shape of the horns as antelope, sheep, mouflon etc. One should also take into consideration, however, other traits important for species identification, such as tail length, overall shape and shape of neck. It should also be noted that breeding long-horned and *primigenius* cattle has always been associated with a nomadic pastoral way of life (Carter, Flight 1972). On the grounds of these traits it can be suggested that the site was first occupied and used most intensively in the so-called Kerma period, that is, 2400–1400 BC (Chaix 1993). Remains of a settlement identified by the pottery remains were noted by the Polish survey on a hilltop in the immediate vicinity (Chłodnicki *et alii* 2010).

SHORT-HORNED CATTLE

In the Nile Valley long-horned cattle was gradually superseded the short-horned *brachycerus* variant originating from the Near East. Already at the end of the Old Kingdom in Egypt the short-horned and hornless varieties had been introduced intentionally, replacing long-horned cattle in animal husbandry. In the territory of Sudan this process took longer and occurred later than in Egypt. Unfortunately, there is an almost absolute lack of archaeozoological evidence from the period that appears to have been of key importance in this process, that is, the broadly understood Kingdom of Kush. It can only be suspected that the nomadic pastoralists with their long-horned cattle of the Kerma period were gradually pushed

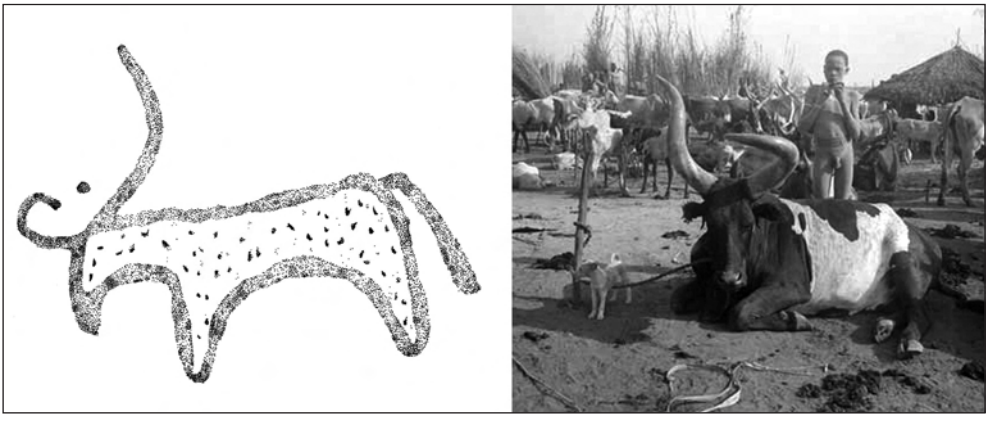

Fig. 5. Bull with deformed horns from el-Gamamiya, left, and Mandari Köbora boy and display ox, southern Sudan, Bahr el-Jebel (Drawing M. Osypińska; photo after J.C. Buxton, Pit Rivers Museum, http://southernsudan.prm.ox.ac.uk/index.php, Accession Number 1998.97.383)

to the south, either in a cultural process or an environmental one, due to the disappearance of large stretches of grazing ground. The settled population of the Nile Valley bred mainly the short-horned variety, which was better suited for milking and harnessing.

Images of short-horned cattle were noted among the representations in the el-Gamamiya rock art gallery, similarly as on Uli island (Osypińska 2005), but in much smaller numbers than the long-horned examples. The pictures are more schematic, less perfect in rendering details of the animals' appearance; they are also much smaller and situated more on the outside of the area containing the rock carvings. Moreover and importantly, the animals are represented always individually, never in groups. It could be evidence for changing breeding practice from a nomadic pasturing of large herds to household breeding of individual animals, a model also known from modern times.

One image of a cow of the *brachycerus* type was associated with a predator [***Fig. 6***] which might be identified as a hyena or lion based on the rounded ears and long tail. The former species in particular is known to have ventured episodically into the territory of central Sudan, as reported by local inhabitants.

Another interesting scene from el-Gamamiya depicted herdsmen with their herd [***Fig. 7***]. The garb of the herds-

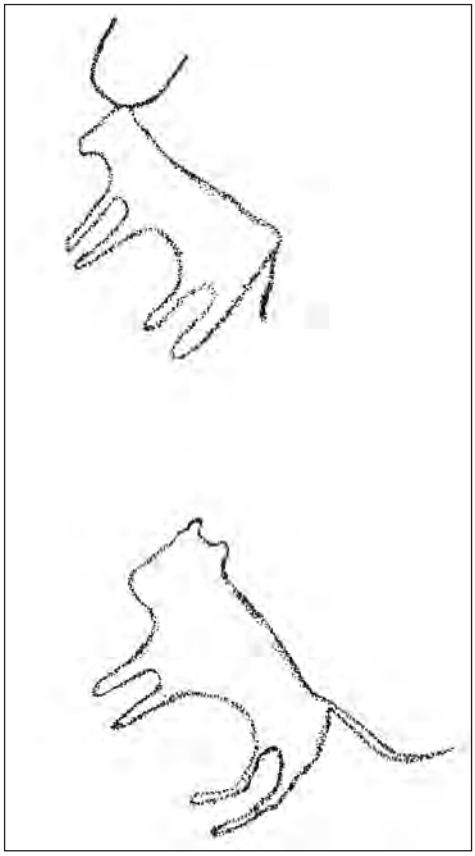

Fig. 6. Cow and predator from el-Gamamiya (Drawing M. Osypińska)

Fig. 7. Herdsmen and herd from el-Gamamiya (Photo P. Osypiński)

men was of particular interest as it appeared to be characteristic of Nubians: knee-length skirt and ostrich feather stuck in the hair (e.g. Nubian archers in the Tomb of Mesehti, Nubian slaves in the Great Temple at Abu Simbel, Nubians with gold tribute in the Tomb of Huy). The scene can be considered as highly realistic, showing as it does not only short-horned and horn-less cattle, but also goats and canids of the "shepherd dog" type.

HUMPED CATTLE

Images of humped cattle have also been recorded from the wider region of the Fourth Cataract [***Fig. 8***, left]. The presence of these animals in breeding has been the subject of archaeozoological debate (MacDonald 2000) and it is currently accepted that the hump developed in native African cattle independently of the Asiatic zebu (it is positioned differently on the African animals compared to the zebu). It would explain the presence of a small hump in depictions of African long-horned cattle. Genetic studies have demonstrated, however, that zebu bulls were imported most probably to North Africa in Ptolemaic times; consequently, the hump trait would have thus spread up the Nile in effect of cattle cross-breeding. The oldest osteological remains of zebu or part-zebu are dated to about 100 BC. In consequence, representations of cattle with a large hump and short horns must, at least until there is new evidence for an earlier date, be dated *post quem*.

OTHER ANIMALS

One should also note other species of animals appearing marginally in the rock art gallery at el-Gamamiya. These include sheep, goats and dogs, which represent the most commonly encountered remains in archaeozoological assemblages from the late Neolithic into historical times, but which engendered little interest for the makers of rock engravings. At el-Gamamiya, they were represented solely in the image of the herd with herdsmen [see ***Fig. 7***]. Numerous representations of camels and horses were noted in the Fourth Cataract region (Osypińska 2005; Gdańsk Archaeological Museum research,

Fig. 8. Humped cattle from the Fourth Cataract region (Uli Island), rock carving, left, and modern specimen (Drawing and photo M. Osypińska)

H. Paner, personal communication) but not at el-Gamamiya. Both species were represented especially often in close proximity to images of the cross and with armed riders. Carvings of similar style are evoked on the wall plaster of churches and monasteries in Nubia, e.g. Ghazali, Banganarti, Old Dongola (personal observation). The horse and the camel were introduced into the Nile Valley at a relatively late date and had a limited range. The horse was used almost exclusively for military purposes. Indeed, apart from a short episode of preference for the animals by Taharqa, pharaoh of the Twenty-fifth Dynasty, manifested by horse burials at the El Kurru pyramid tombs, the species did not play a more significant role until Makurian times. Their use by the Makurite army, attested in the written sources, has yet to be verified in archaeozoological research. Camels were not used more extensively in the economy before the 5th century. Isolated remains of camel were recorded in royal Meroe (Carter 1980). Larger assemblages of cattle bones were discovered in the 5th century AD tumuli graves at el-Zuma (Osypińska 2005; 2010), where they constituted an element of the furnishings in elite burials. The species was noted in consumption contexts for the first time in archaeological layers dating from the 13th century AD, that is, the terminal Makurian period (Osypińska 2003: 2010).

CONCLUSION

In recapitulation of the archaeozoological analysis of images of cattle from the site of el-Gamamiya 67, one should consider the possibilities for dating the images. The presence of *primigenius* cattle and the evidence for horn-deformation rituals known from Middle Kerman cemeteries (Chaix 2001) indicates that the el-Gamamiya "gallery" started around 2000 BC and continued through 1000 BC. The artists derived from a pastoral society with an economy based on breeding large herds of native African cattle. Of particular interest is the image tracing back to a distant past certain rituals from the spiritual domain. Observations made at el-Gamamiya confirm the unparalleled importance of cattle in culture, at the same time supporting and contributing new elements to current archaeozoological knowledge about the Kerma period in the history of the region.

The el-Gamamiya rock-art site was visited and even added to at later times. This is attested by images of short-horned and humped cattle as well as scenes previously not encountered, like the herdsmen and their herd. Considering the growing importance of cattle in local economy in the Meroe period (500 BC–AD 300) (Carter 1980) and the fact that rock art in Makurian times featured different themes (camels, horses, crosses), it seems reasonable to place the renewed activity of the el-Gamamiya artists in Meroitic times.

To conclude, one should note that the rock art of the Fourth Cataract region, considered by some as schematic, can be in truth a valuable source for archaeozoological analysis. The site of el-Gamamiya 67 has proved to be an excellent example of the kind of observations which can be made that are not forthcoming from examination of skeletal remains.

Archaeozoological research on rock engravings can provide information on morphological types of bred animals, their coloring, varieties and practices to which they were subjected. It can also identify the economic model characterizing the society to which the artists belonged and help in dating the execution of particular images, an issue still troubling many researchers of North African rock art.

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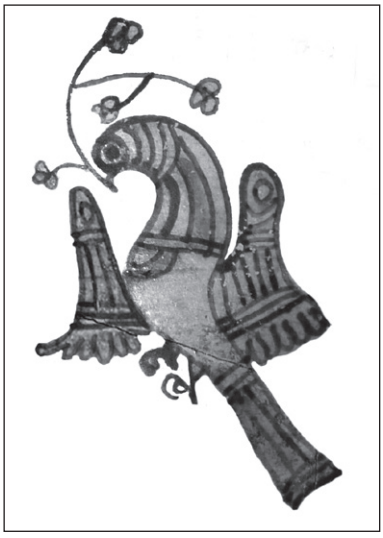
XXI

RESEARCH 2009



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