

# SUDAN & NUBIA

The Sudan Archaeological Research Society

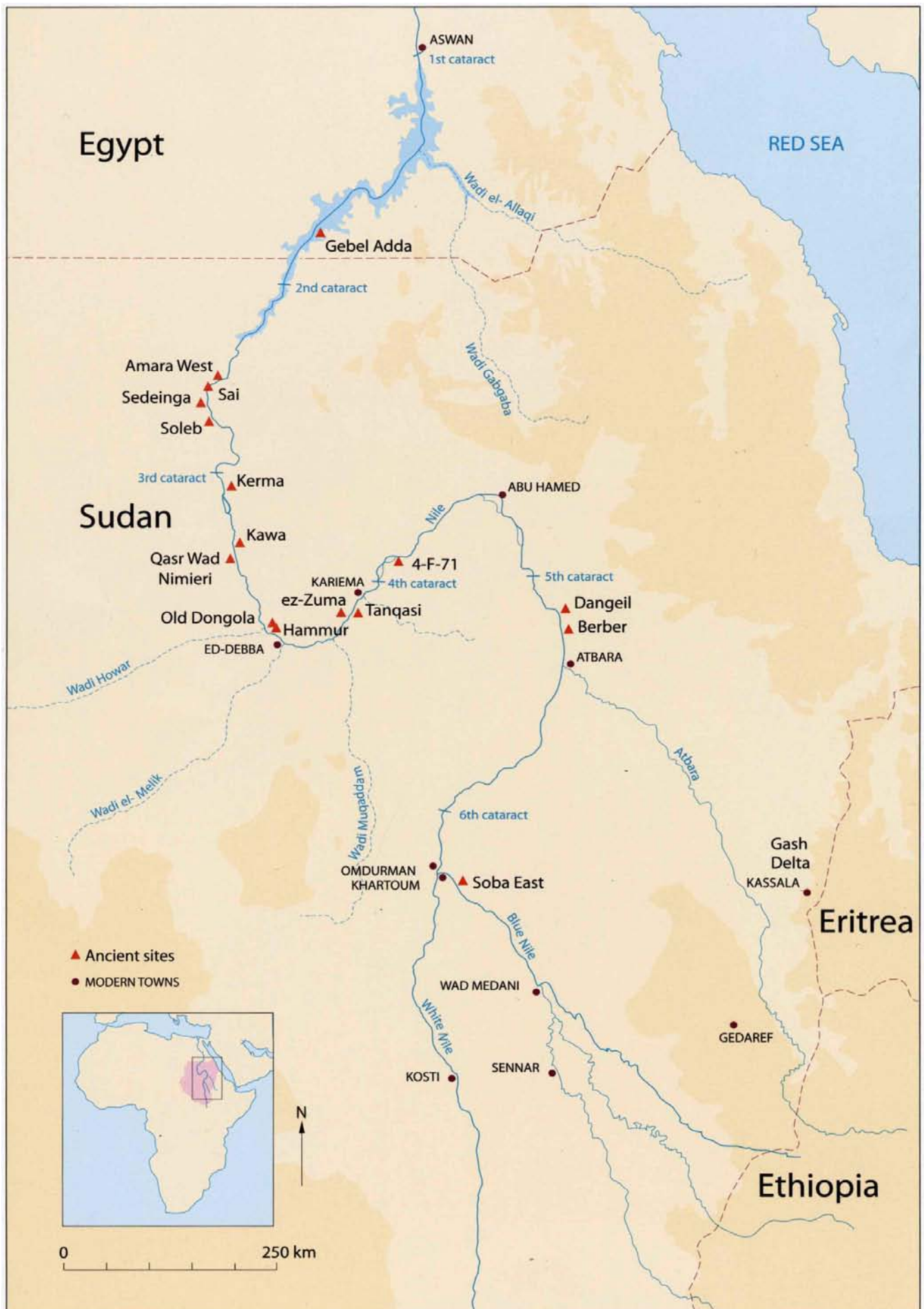


*Bulletin No. 14*

2010







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*Front cover:* Berber Meroitic Cemetery. Tomb, BMC 8, showing grave goods, the extended position of the skeleton and the remains of a coffin (photo: Mahmoud Suleiman Bashir).

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# Ethnoarchaeology and post-holes: building a Bisharin house

*Julie R. Anderson and Salah eldin Mohamed Ahmed*

Since 2000, a team from the National Corporation for Antiquities and Museums, Sudan, led by the authors, has been conducting excavations at Dangeil, a Kushite site situated just to the south of the Fifth Cataract roughly 350km north of Khartoum. Excavations have focused on the 1<sup>st</sup> century AD late Kushite Amun temple, which is situated in the centre of the site within a temenos wall, and most recently on its long southern room where several early Kushite royal statues of the 7<sup>th</sup> century BC were uncovered (Figure 1) (cf. Anderson and Salah 2009).

During the 2009 field season, excavations further exposed the remains of a mud-floor surface within the temple's southern room as well as several large mud-brick walls belonging to an earlier building. The floor surface is contemporary with the late Kushite temple and runs over the top of these earlier walls, and the late Kushite temple itself was founded on some of them. Associated ceramics and faience suggest an early Kushite date for these early mud-brick walls.

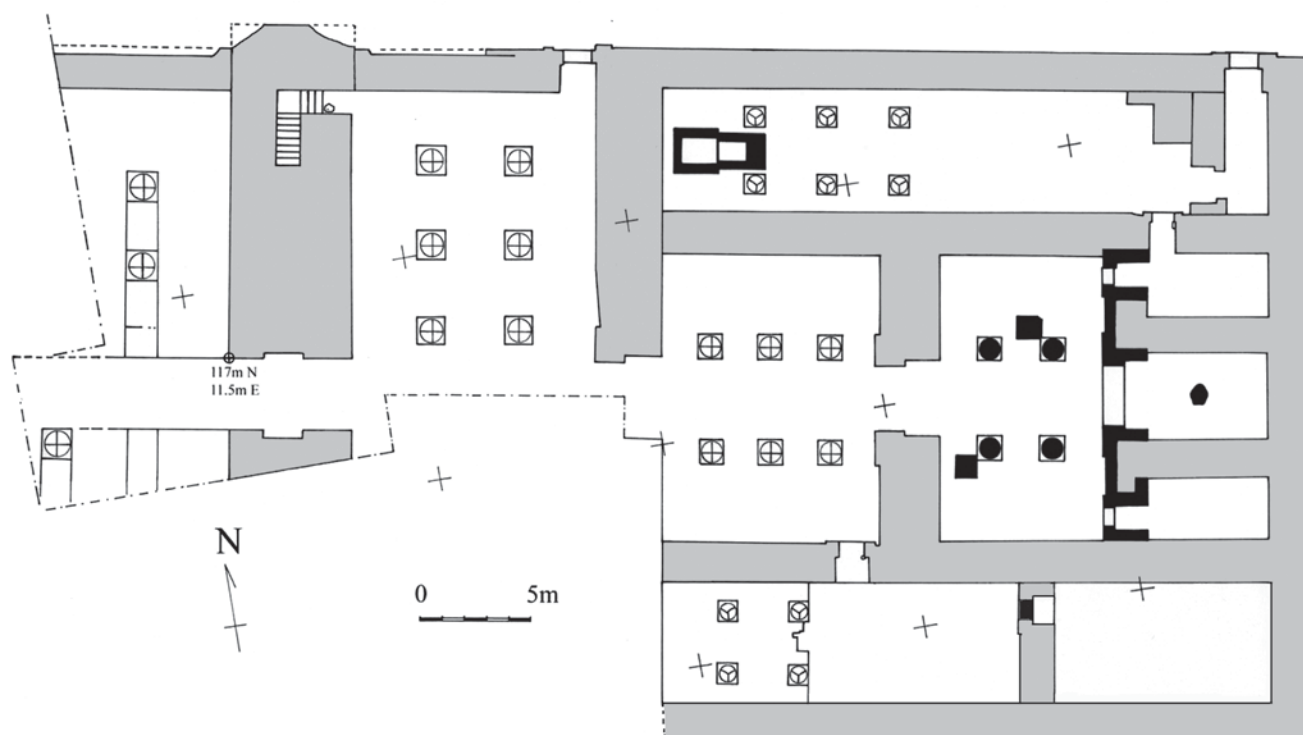
The early walls and overlying floor surface had been extensively pitted during the destruction phase of the later temple. The fill of numerous pits was removed exposing the bottom of the pit cuts along with traces of copious numbers of post-holes (Plate 1). Some post-holes cut into the early



*Plate 1. Pit cuts and numerous post-holes in the south-east room of the Amun temple.*

mud-brick walls, while others had been cut by the extensive pitting leaving only traces in the bottoms of the various pits. While it is possible to suggest that most of the post-holes cutting the walls are contemporary, as they were sealed by the same overlying surface, the same cannot be said for those in the pits. The robbers who dug the pits removed all traces of the surfaces from which these post-holes were dug, so it is not possible to establish their original relationship to one another. Some may be earlier, while others must have been made later.

The early Kushite mud-brick walls were quite substantial, measuring 1.2 to 1.25m in width, and are preserved two to four courses high (c. 180-400mm) (Plate 2). The eastern and



*Figure 1. Plan of the Amun temple, December 2009.*





Plate 2. Early Kushite mud-brick walls.

southern walls of the later temple were built directly on top of some of the earlier walls and share their orientation. It is evident that a substantial mud-brick structure preceded the late Kushite Meroitic temple and it seems likely, based upon its size and orientation, that this was an earlier Amun temple. It is also probable that the early Kushite royal statues discovered mixed in the destruction debris of the Meroitic temple originated from this earlier building.

Not all the early Kushite walls were covered by the later temple and post-holes had been cut through some of them. Visible in the south-west room, cutting the northernmost early Kushite wall (H593), was a line of three post-holes (Plate 3). This wall runs parallel to a later temple wall and it is likely in this



Plate 3. Post-holes in early Kushite wall H593.

case that these holes may have been created by some of the scaffolding used to aid in the construction of that building. These holes were sealed by a mud surface contemporary with the later temple.

The discovery of all these post-holes, and indeed past excavation of countless holes on other occasions on other sites, encouraged the authors to reflect upon the nature of the structures whose posts had been housed in these holes

and upon how archaeologists interpret them. Frequently, post-holes are the only traces left of earlier structures found during excavation. Further, 'a danger exists for researchers to overestimate the use of bricks as opposed to wood, for example, because – as years pass – wood structures disappear at a greater rate than brick... many structures, especially of wood or mud, may leave virtually no trace after a short period of decay' (Noble 2007, 93).

From a simple, circular arrangement of post-holes, it is easy enough to postulate that a circular hut had formerly been present. Appropriate ethnographic analogies can assist in suggesting reconstructions of ancient structures and as such it is possible for excavators to create hypothetical reconstructions of buildings, as for example one based upon the *tukel*, a small, windowless, circular thatch and mud building constructed around a timber frame, commonly found in southern Sudan and East Africa (Plate 4). Ethnographic



Plate 4. *Tukels* at Soba East (photo © D. A. Welsby).

analogies are useful because they provide information on how living people actually use space and, therefore, aid in the generation of hypotheses. Through the observation of modern cultures, insights into past conduct may be gained 'particularly when strong similarities can be shown to exist between [the] environments and technologies of the past and [the] contemporary socio-cultural system being compared' (Kramer 1979, 1).

The 'Great Hut' at Kerma, excavated by the Swiss Archaeological Mission, is thought to have been the audience hall of the Kerma rulers (2500-1500 BC) and was rebuilt several times during this period (Bonnet 2004, 79, 81). A suggested reconstruction of this audience hall is largely based upon structures like the *tukel* (Figure 2, Plate 5).

The excavation of the pre-Kerma settlement in the Kerma East cemetery (c. 3000 BC) revealed a more complicated settlement plan. The areas interpreted as individual buildings and walls or enclosures are delineated in grey. Again, using ethnographic analogies based upon modern structures like the *tukel* and villages in East Africa, the excavators created a vision of the pre-Kerma village complete with huts, palisades, animal pens and storage areas (Figures 3 and 4). Ceramic models of houses were also discovered during excavation which further helped to support their reconstruction (Honegger 2004, 64, 66).



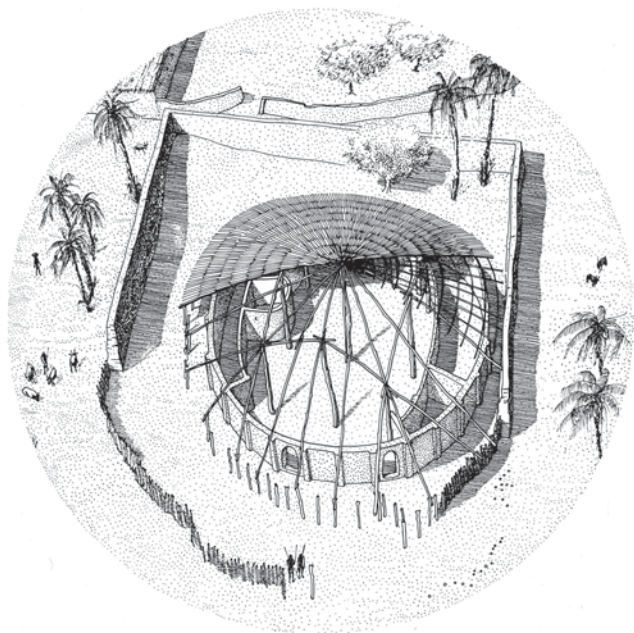


Figure 2. Suggested reconstruction of the 'Great Hut' at Kerma.  
(© Swiss Archaeological Mission to Kerma).

However, more often than not, it is difficult to discern patterns and building shapes from collections of post-holes. For example, archaeological evidence recovered from Soba East suggests that many domestic structures in the medieval kingdom of Alwa were wooden constructions,<sup>1</sup> as was evidenced by the numerous post-holes excavated, but frequently it was



Plate 5. The 'Great Hut' at Kerma (© Swiss Archaeological Mission to Kerma).

<sup>1</sup> Mud-brick structures were exposed in several excavation areas and many trial trenches conducted on gravel mounds across the site indicating that mud-brick buildings also formed an important component in the medieval settlement; however, many of these features were not investigated further (e.g. Welsby 1998, 20).



Figure 3. Reconstruction of the Pre-Kerma settlement in the Kerma East cemetery (Honegger 2004, 66, fig. 48; Drawing by Alain Honegger, © Mission archéologique Suisse à Kerma).

difficult, if not impossible, to sort out individual structures and discern forms and shapes. Many post- and stake-holes, associated floors and domestic debris were discovered under Soba mounds B and Z.2 and in areas MN3 and MN8, including the traces of two circular huts. Over 400 post-holes were discovered in trial trench MN8 (Welsby and Daniels 1991, 33-125; Welsby 1998, 22-23, 34-45) (Plate 6).

Ethnoarchaeology is a useful means of examining the relationships between behaviour, function, culture, and artefacts and may suggest rules and concepts governing their

organization (Kent 1987, 541), but appearances can also be deceiving, leading to misinterpretation or to incorrect reconstructions of archaeological evidence. While traces of post-holes that form a circle are most likely the remnants of round *tukl*-like buildings, in actuality, the ancient structures may have been something completely different. For example, storage buildings constructed upon stilts may be found near Kadugli in southern Kordofan (Colour plate XXXVII). In these structures, grain is kept on a platform above the ground to protect it from various vermin and the damp. The archaeological footprint of these structures would give little hint of their true form or function as the raised platforms would most likely not survive in the archaeological record, leaving only the

post holes created by the stilts.

In theory, the greater the number of affinities which can be drawn between the comparison of modern and past societies, the more accurate and persuasive the analogy and the



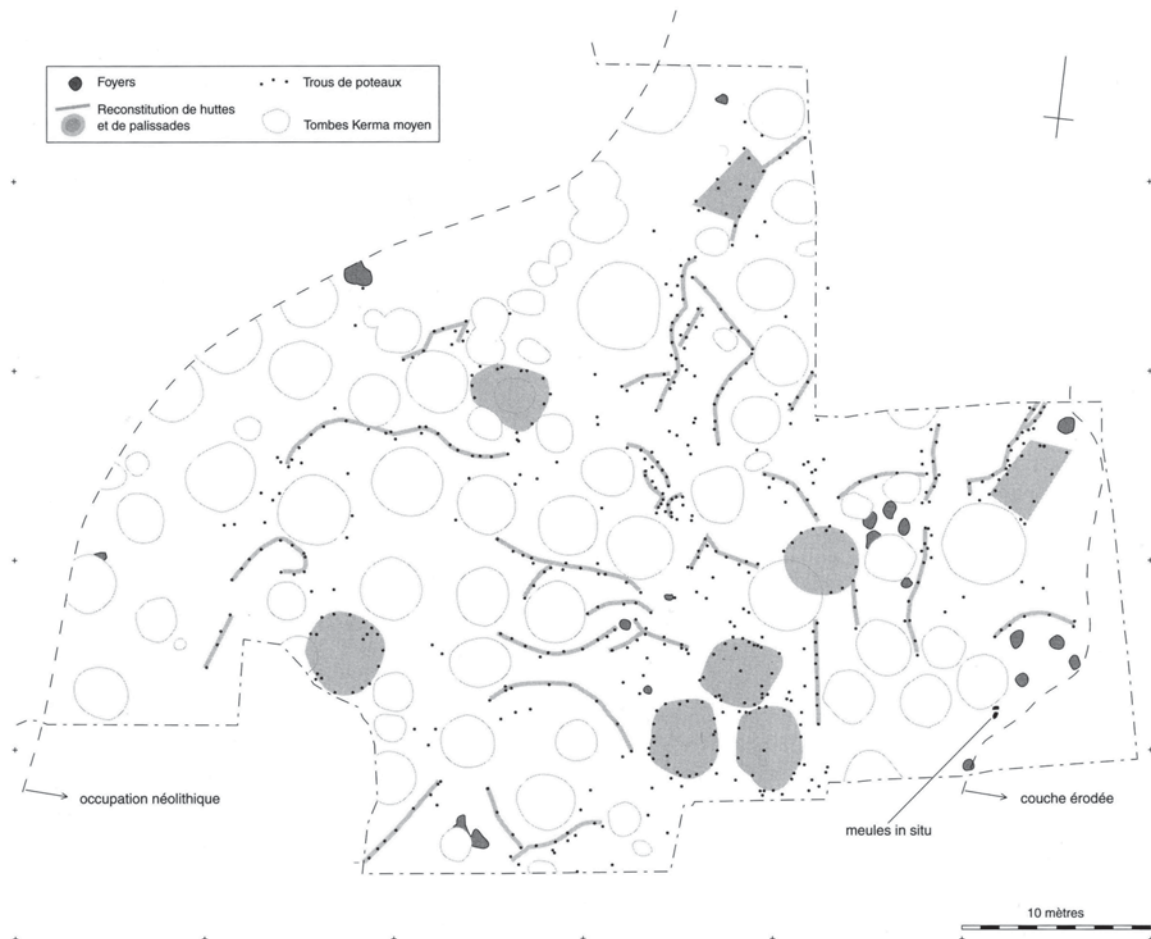


Figure 4. Pre-Kerma settlement in the Kerma East cemetery (Honegger 2001, 224, fig. 4; © Mission archéologique Suisse à Kerma).



Plate 6. Post-holes in area MN8, Soba East  
(photo © SARS Soba Archive).

hypotheses thereby generated, but clearly such analogies need to be made with care. 'Where continuity between the past and present can be assured it is easier to acknowledge many formal similarities between the information being compared ... one way in which the number of formal similarities between a past and present situation can be increased is by comparing a recent archaeological site with modern sites in the same area' (Hodder 1982, 18). Unfortunately, the archaeological use of ethnography tends to operate under the assumption that

cultures do not change through time and that for most past material cultural patternings there is a modern behavioural equivalent. It also neglects to account for chance likenesses (Hodder 1982, 12). Similarities found in some instances are not necessarily indicative of further similarities, and perceived analogy may often be subjective, so caution needs to be exercised. Archaeologically, it is often difficult to distinguish boundaries beyond those delineated by the purely physical.

With the aforementioned caveats in mind, the mission took an informal look at various types of vernacular wooden structures present within the surrounding cultural landscape of Dangeil and at what sort of footprint they could potentially leave in the archaeological record. In addition to the *tukls*,



Plate 7. Animal pen (*zariba*).



Plate 8. Wooden hut located east of the hafir at Musawwaret es-Sufra (photo © D. A. Welsby).

this included animal pens (*zariba*) (Plate 7) and temporary shelters of palm frond and wood (*rakuba*). More permanent buildings, such as the wooden hut structure in Plate 8, were also noted. This particular building, with a complicated array of numerous posts and beams, was located south of Dangeil at Musawwaret es-Sufra, just east of the *hafir*.

As of 2003, a large percentage of our local excavation work force and friends at Dangeil have been Bisharin. This was partially the result of the accidental discovery of a large late Kushite Meroitic cemetery on the edge of their encampment. As a result of our close relationship, the mission has been invited to experience and participate in many aspects of Bisharin culture and for this we are very grateful.

In Dangeil, the Bisharin reside in an extended family group on the edge of the modern village in a temporary settlement consisting of six to seven wood-framed tent structures covered in matting. These tents (Tu Bedawyic: *ombadayago*; Arabic: *beit elbirish*) are oval or round with a domed appearance and are made of closely woven palm matting (Arabic: *birish*) placed over and attached to a wooden skeletal framework. Each of the tents belongs to a family unit and is portable to accommodate their semi-nomadic lifestyle. The Dangeil Bisharin are semi-nomadic pastoralists who breed and keep camels, goats and sheep, and engage in seasonal transhumance. Groups of men and boys will take herds and flocks into the desert hinterland (*keballa*) in search of seasonal grazing. Small children, women and older, infirm people remain behind in the main camp. 'Dangeil Bisharin' is specified here because there are groups of Bisharin who have settled in the area of Atbara and the upper Atbara river and no longer pursue a nomadic or semi-nomadic lifestyle.

Geographically, the Bisharin reside over a large area that stretches from around Atbara eastward to Port Sudan and the Red Sea Hills and extends northward into Egypt. They are a sub-group of the Beja tribe, a Muslim, non-Arab people,

and they speak Tu Bedawie. There are five main groups within the Beja, the Bisharin, Amar'ar, Hadendowa, Beni-Amir and the 'Ababda, and each of these has numerous sub-divisions.<sup>2</sup> Some of these groups are settled, while others remain nomadic or semi-nomadic.<sup>3</sup>

The Bisharin entered the Atbara-Berber area around AD 1750 (Starkey 2010, 1) coming from the region around Aswan in Egypt. A comparison between images of Bisharin tents that date to the early 20<sup>th</sup> century from the region of Aswan<sup>4</sup> and those constructed currently at Dangeil (Plate 9) demonstrates a consistency of traditional building practices that span both time and distance.

Available local materials and the environment, particularly the heat, wind, sun and sand have played an important role in determining the layout and structure of these tents. To form a habitat suitable for human physiology, the tents are designed to take advantage of



Plate 9. An ombadayago, Dangeil 2009.

the physical properties of their construction materials and the environment in order to alter the microclimate within and around the structure. These structures can also easily be moved on the back of one or two camels, thus facilitating a semi-nomadic or nomadic lifestyle.

Further, individual structures are widely spaced apart if possible, and no entrance faces another even though persons may be closely related. The distance between tents also ensures that conversations will not be overheard as they may be spaced 20-25m apart. They are designed with attention given to accommodating privacy and to a certain extent the Islamic practice of secluding women kin from strangers.

<sup>2</sup> For a listing of the Beja tribes, sub-groups and districts of residence see Paul 1954, 137-139. As of July 2009, based upon the 2008 census, the population of Sudan was estimated around 41,100,000 of which 6% were Beja. Cf. <https://www.cia.gov/library/publications/the-world-factbook/geos/su.html>

<sup>3</sup> It has been suggested that the Beja are to be identified with the Blemmyes. For further information concerning the Blemmyes see Barnard 2005; Updegraff 1978.

<sup>4</sup> For example, see further Seligman 1915, plate G.



However, the seclusion of women tends to be less rigidly kept amongst the temporary encampments of the Bisharin. The demarcation of public/exterior space, versus private/interior areas, does not require an actual physical barrier to create and maintain it. The absence of an actual wall makes it physically harder to hide women; however, they may be considered concealed within their cloth wraps (*tob*). Further, an entire settlement of related persons, such as a temporary encampment, may be viewed as ‘an extended domestic space’ (pers. comm. J. Boddy 1989 and 2010).

Within the tents, there is little furniture apart from beds, and most possessions are hung from the ceiling. The flooring is often a fine gravel or sand specifically collected for this purpose. It is spread around the interior to produce a clean surface that is easily renewed. Traditionally a low mud platform was constructed and covered with matting or a rug and used for sleeping; however, now modern beds are predominantly used.

As Sudan becomes increasingly modernized with the introduction of the mobile phone, satellite dishes, tarmac roads, numerous cars, dams and mechanized irrigation schemes to name but a few things, it is accompanied by a certain degree of cultural homogenization. The Bisharin are under increasing pressure to become sedentary, to give up some of their traditional ways of life, including their tents, and to adopt that practiced by the settled riverine Arabs such as the Ja’aliyin.

In the area around Dangeil, the number of hemispherical Bisharin tents is noticeably decreasing, with these structures being replaced with rectilinear buildings of brick and jalous. Plate 10 shows a particularly fine example of this cultural change. The family resides in an *ombadayago*, but has a satellite dish and is in the process of making mud bricks to construct a brick room.

Concurrent with the replacement of the traditional hemispherical tent structures with rectilinear brick buildings is a transfer of technology, as well as culture. The Bisharin are borrowing and learning new construction techniques from the neighbouring riverine Arab community (largely Ja’aliyin and Kamalab, a subsection of the Mirafab) and from us, the

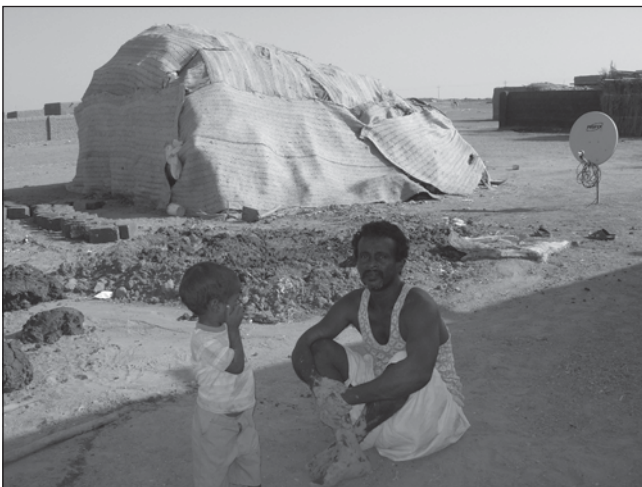


Plate 10. Constructing a brick room, north-west Dangeil.

archaeologists. As part of the Berber-Abidiya Archaeological Project’s training and capacity building initiative, several of our workmen including the Bisharin are being trained in conservation and building techniques so that in future the archaeological site of Dangeil can be preserved and maintained by a skilled local labour force, using inexpensive, locally available materials.

The switch to mud-brick houses has also impacted upon the traditional gender roles of men and women within Bisharin society. Whereas the tents are constructed by women, mud-brick rooms are built by men. While a lengthy discussion of the effect this will ultimately have upon gender relations is beyond the scope of this paper, it is evident that the men’s paradigm is becoming increasingly dominant, in line with that of the settled riverine Arabs, while that of the Bisharin women is diminishing and their female cultural idiom will be increasingly filtered and articulated through an environment built by men.

The younger generation of Bisharin are rapidly engaging with new technologies, such as mobile phones which began appearing in the village in 2004, and virtually all speak Arabic in addition to Tu Bedawie, whereas the same cannot be said for the older generation. This is accelerating the degree of cultural change that the Bisharin are experiencing.

In a study conducted in the Gezeira, the choice of house shape apparently was determined not by environmental factors and available construction materials, but by the higher status and prestige conveyed through the ownership of a rectilinear mud-brick house because it was viewed as a symbol of a modern urban society (Lee 1969, 395). Economics also played a role, as a thatched hut or tent was perceived to be the ‘abode of migrant workers and semi-sedentarized nomads ... it is thus a visible symbol of poverty, backwardness and impermanence’ (Lee 1969, 396). Currently, the Bisharin are semi-sedentarized nomads and as they settle and adopt modern technologies, it could be that the need to project an appropriate image to the surrounding settled community is a contributing factor in their adoption of the rectilinear brick house.

Bisharin mud-brick rooms are virtually indistinguishable from similar rooms built by the local settled riverine Arabs (Plate 11). Apart from the building itself, the most notable features are the introduction and adoption of large pieces of furniture such as tables and display cabinets. None of these items are particularly portable or conducive to a nomadic lifestyle.<sup>5</sup>

<sup>5</sup> This being said, the correlation between the distribution of objects, the objects present, room usage, gender and behaviour is not necessarily a simple one, due to cultural mediation. An object may have social significance and power because of its position within an abstract set of cultural symbols, whether or not this characteristic is consciously recognized within the society (i.e. the Christian symbols of a cross or fish would mean little to someone unfamiliar with Christianity). Theoretically, this symbolic framework should be visible in the expression of the material culture. Spaces and objects should be significant in terms of their function and place within the house or community as a whole



Plate 11. The interior of a Bisharin mud-brick room constructed for a wedding.

So that greater insight and a better understanding of the Bisharin traditional buildings, construction materials, techniques and associated cultural practices could be gained, in addition to just observing these buildings, the mission asked some of the local Dangeil Bisharin to build an *ombadayago* for us. The documentation of vernacular Bisharin structures has become increasingly necessary and important in order to record the historic cultural landscape of the area and a tradition that is rapidly being lost. It was also hoped that this exercise would enable a better understanding of the more general nature and behaviour of wooden buildings which might assist in interpreting various finds uncovered in the archaeological record.<sup>6</sup> As a caveat here, it should be noted when seeking to document structures that ‘almost all buildings, especially traditional ones, are in a state of continual, albeit often gradual, change... [and one of the questions to be considered is:] What should be preserved and emphasized?’ (Noble 2007, 184). What elements should be documented?

The most critical items of construction in an *ombadayago* are the posts and cross-beams which support the mat roofing. These are specially prepared and may be brought some distance depending upon the local availability of suitable wood. All wood utilized for the posts is carefully chosen for its size and shape and palm is not used (Plate 12). Bark and excess branches are removed and the green wood is left to season. Some of the poles are purposely bent into a slightly

because the governing symbolic principles permeate each relationship.

<sup>6</sup> Ethnoarchaeology may be defined as ‘the ethnographic study of living cultures from archaeological perspectives’. [It is] ‘a research strategy embodying a range of approaches to understanding the relationships of material culture to culture as a whole both in the living context and as it enters the archaeological record, and to exploiting such understandings in order to inform archaeological concepts and to improve interpretation’ (David and Kramer 2001, 2). For an extensive discussion and evaluation of ethnoarchaeology and the ethnoarchaeological approach see David and Kramer 2001.

curved shape, using heat treatment. When a decision to move is made, all usable wood is taken.

Insects, particularly white ants (*arda*), present an ongoing threat to any wooden or vegetal structure. Prior to construction, the entire length of each wooden pole is treated with a paste mixture of crushed, fired brick and gum arabic to dis-



Plate 12. Carefully chosen branches for the posts and crossbeams.

courage consumption by insects (Plate 13). Very occasionally, diesel fuel will be applied around the base of each pole where it contacts the ground, again with the purpose of preventing insect infestations; however, this is not common due to the expense of the fuel involved.

The most visible feature of the structure is the matting that covers the roof. It also influences the shape of the roof, giving the structure its signature dome-like appearance. At its most basic, the roofing mats are single-ply and constructed



Plate 13. Mixture of crushed red brick and gum arabic used to treat the wooden beams.

of long narrow strips of simply plaited palm fronds, which are then woven together to create larger sections of matting. The selvedge is finished with a twisted palm cord comprised of two elements though fancier mats may be finished in a variety of ways. The edge is folded over and sewn with a



two-element, twisted palm cord. The larger mats are then sewn together with a twisted palm cord along the selvedge (Plate 14).

Once the materials are assembled, the plan for the structure is laid out using a bed as the unit of measure (Plate 15). This appears to be a modern convention, though in the past some may have used a traditional wooden bed (*angareeb*) in



Plate 14. Palm matting used for the roofing.

the same fashion. While the wooden posts are acquired and prepared by men, the building itself is constructed by women. They also weave the matting, though the bulk of this is now normally purchased from a local market, which in the case of Dangeil, is in ed-Damer to the south. Purchased mats will be sewn together to make the strips of matting wider.

Holes are dug for the vertical posts according to an outline drawn on the ground (Plate 16). The posts are then secured in these holes and trimmed where required. Palm fronds are torn into long strips and soaked in water to make them pliable.



Plate 15. Laying out the structure's plan using a bed as the unit of measure.

These are then used to secure the roof beams to the vertical posts (Plate 17). Short wooden poles, about a metre long, are inserted into the ground exterior to, and in line with, the



Plate 16. Digging holes for posts following an outline drawn on the ground.

structure's upright posts at the north and south ends. These are used as anchors to secure the framework, both vertically and horizontally, together with rope (Colour plate XXXVIII).

The essential characteristic of this tethering is its flexibility. When subjected to environmental stresses, such as high winds and/or violent desert storms such as the *khamseen*, the entire skeleton can give in any direction without collapsing. The



Plate 17. Pliable palm fronds used to secure the roof beams.

Bisharin are modernizing the construction materials used in the *ombadayago*. For example, commercially produced rope may be used rather than that spun from palm fibres, as was done in the past; however, this change does not substantially alter the overall character of the structure, even though some of the materials are different or modern.

Palm ribs are tied together with the soaked palm fronds to create additional crossbeams. These are then stretched across and secured to the wooden roof beams to create the roofing infrastructure. The end result is a flexible wooden skeleton over which the matting can be secured. The particular framework produced for the mission was quite low but it was still high enough inside for an adult to stand upright (Plate 18).





At this point, the mats are unrolled and examined to decide upon their most suitable location atop of the framework. Once their position has been determined, the mats are re-rolled, then unrolled over the wood skeleton with the assist-



Plate 18. Completed wooden skeletal framework.

ance of long sticks (Plate 19). The mat sections are placed so that they overlap slightly. It is not uncommon to find modern elements such as plastic sugar sacking, cloth, rug pieces or even tarpaulin, introduced into the roofing, particularly if there is a shortage of matting or if the mats are inadequate in some way. In part, this is governed by local availability of materials. Just as with the adoption of modern rope, 'we see in the case of traditional building the constancy of approaches and concepts, and at the same time, the modifications reflection changes in culture, environment, economy, and lifestyles' (Noble 2007, 274).



Plate 19. Installing the mat roofing.

It is necessary to secure the matting and for this purpose sharpened wood stakes are prepared. These are interwoven through the layers of matting, connecting the mats together along the overlapping areas and to the palm rib framework beneath (Plate 20). As the entire structure and roofing are quite light, the building would be susceptible to damage from high winds were it not secured by both these wooden pegs and the cord or rope tethering.

When the mat sections at the very top of the structure need to be secured, one or two women climb on top of the matting and secure it to the underlying framework (Plate 21). This demonstration also serves to illustrate the tremendous

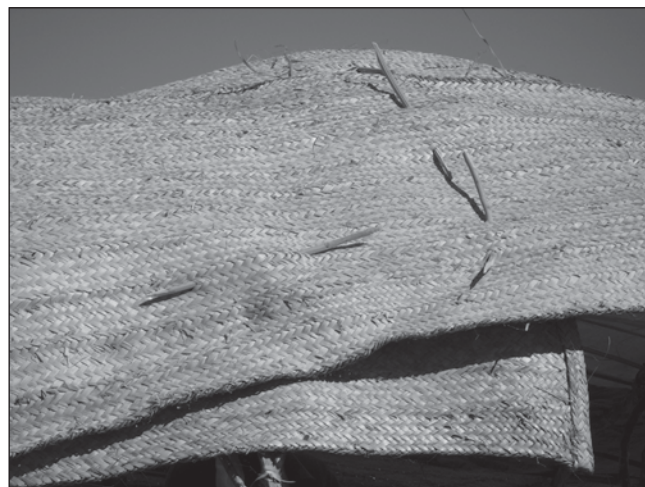


Plate 20. Wooden stakes securing the roofing.

strength of the building despite the seemingly flimsy materials of its construction. The load bearing is distributed across the numerous underlying palm ribs.

Finally, the back of the tent and the doors are put on to physically complete the *ombadayago* (Colour plate XXXIX). Where there are mats covering the entrance, they normally are smaller than those utilized elsewhere, likely because these are easier to manipulate thus facilitating closure or opening. Excluding the preparation of the matting and the wooden



Plate 21. Climbing on the framework to secure the matting on the top of the structure.



posts, the *ombadayago* itself was built by eight women in a single day over the course of five to six hours. It should be recognized, however, that this exercise was somewhat of a 'special community event' and under normal circumstances fewer individuals would be involved though the construction time would be roughly the same for a structure of comparable size.

To a considerable extent, traditional buildings, because they provide shelter, reflect the climate in which they are built' (Noble 2007, 167). The highest amount of precipitation in the Dangeil region is normally received in August and its annual mean measures 26.8mm. The dome-shape of the tent's roof encourages water run-off. The mean annual temperature ranges from 15-30° C in January to between 28-42° C in June.<sup>7</sup> With such climatic extremes, various strategies have been employed to enable the cooling or heating of the Bisharin tent.

These oval structures are normally orientated with their long axis north-south, the entrance facing east, presumably to catch the early rays of the sun, particularly during the winter. They also take advantage of the prevailing winds that blow from the north in the warmer season because the mat sides of the structure on the north and south may be raised or rolled up, slightly increasing ventilation by enabling a cooling breeze to flow through the tent, thus dissipating heat. This would not work if the structure was orientated east-west, as the long strips of matting are rolled out from north to south along the length of the tent and the selvedge edges of the matting do not roll up easily. Further, an east-west orientation would make the structure less stable and more susceptible to damage from high winds as it would function effectively as a wind scoop. Similarly, when the mat sides are lowered, they provide protection from cold winds and storms and conserve heat within the building. Gaps or spaces in the matting are filled with any available material to provide further insulation and protection. The structures themselves are very resilient and the domed, oval shape is aerodynamic, particularly when aligned with the direction of the wind. The porous organic nature of the matting allows hot air to escape while simultaneously absorbing moisture. This creates a reduction in the humidity of the structure's interior (Fathy 1986, 8). The constant convection of warm air through the roof creates further ventilation and circulation within, as air is drawn in through the doorway and under the bottom edges of the matting (Kidd 1982, 138).

Surprisingly, stones or earth are not normally placed around the base of the matting during the winter to add further insulation, possibly because this might affect the aerodynamic nature of the structure or encourage damage to the matting by insects or damp. From an archaeological

perspective, the remains of these structures potentially would be an array of post- and stake-holes, but no stone or earth 'hut circles'. Documentation of an entire encampment could be difficult as it might not only be determined by environmental factors, such as surface defoliation, but also by the amount of area opened for excavation because the tents within an encampment are widely spaced apart. Random sampling could easily miss the occupation and might not necessarily provide a sufficient sample to determine the full range of activity areas or the means by which they are linked.

It is interesting to note that the rectilinear, mud-brick houses in the region function in the environment in a completely different way. Unlike the Bisharin tents, mud-brick houses are normally orientated east-west to take advantage of the northern wind with their windows, doors and porches on the northern and southern sides of the buildings (Plate 22). The walls of these buildings create areas of shade around them, further altering the microclimate. The bricks themselves retain heat during the winter while room interiors are cool in summer, in part due to the convective properties of mud brick as well as to the high ceilings and mat roofing.



Plate 22. The village of Dangeil, facing north. Note that the majority of structures are orientated east-west.

Once the *ombadayago* is completed and before it is occupied, a sheep is ritually slaughtered in a practice that echoes the story of Abraham's sacrifice of his son.<sup>8</sup> The door is marked with the sheep's blood essentially to ensure good fortune and to ward off evil. 'Doors, orifices, and other apertures open into a world which clearly presents hazards to the unwitting traveller but which, ..., is knowable and can be dealt with advantageously if one can obtain the compliance of its inhabitants' (Boddy 1989, 343). G. Vantini has suggested that the marking of a door, or door jamb, as practiced among the medieval Nubians, may be a cultural remnant originally derived from Passover traditions (1982, 27) echoing the book of Exodus (ch. 12, 3-13) wherein house lintels are marked with lamb's blood to ensure that the angel of the Lord passes over the house and the firstborn child is saved.<sup>9</sup> How, when

<sup>8</sup> Qur'an: Sura 37, The Ranks, 99-109; Bible: Genesis 22, 1-24.

<sup>9</sup> Early travellers to northern Sudan noted several customs, particularly among the Nubians, which appeared to be Christian in origin. In the early 20<sup>th</sup> century, the rite of 'Mariya' was practiced in some villages

<sup>7</sup> This data is based on that collected in Atbara, just to the south of Dangeil. For further climatic information see: <http://www.climate-charts.com/Locations/s/SU62680.php>



and from where, the Bisharin adopted the practice of marking their newly constructed tents in this fashion is uncertain. It may be the hold-over of a medieval practice,<sup>10</sup> it may have accompanied their conversion to Islam, or it may have been adopted from their settled Nubian or Arab neighbours at some point.

What is the cultural meaning or significance of the *ombadayago*? It has been suggested that consistency in use of a traditional building form, materials and techniques provides continuity within a society: 'It helps a society to maintain integrity and identity, especially in those instances where the group has migrated into alien territory' (Noble 2007, 275). This would have been particularly relevant during the initial migration of the Bisharin into the area around Dangeil. Essentially tradition binds and joins the generations together and the material culture, as represented by the house, attempts to embody and represent the societal ideals. As their culture is undergoing change, the Bisharin are adopting new societal ideals and values, a different lifestyle and concurrent with this, a new house form. At the same time, their cultural identity is becoming less distinctive, merging with that of the settled riverine population. The distinctive Bisharin tent is disappearing from the landscape.

The Berber-Abidiya Archaeological Project is grateful to our host community, the Bisharin women of Wad Toum, Dangeil, who shared their time, expertise and knowledge with us in building and documenting an *ombadayago* so that their cultural traditions should be recorded for posterity.

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south of the Second Cataract following the birth of a child. This entailed the following: After the birth of a child, the midwife and infant, accompanied by children and village women, travelled to the Nile. Dura was scattered by the midwife on her way, while chanting 'This is the portion of the Mariya. O Angels'. In response, the women accompanying her exclaimed 'By the Mariya! By the angels and by this new face, grant us, oh God our desires'. House sweepings, the afterbirth, midwife razor, an oil lamp and a flour cake were put on a straw raft and set adrift in the river. Nile water was collected and kept to wash the mother's breasts prior to the infant's first nursing upon the return from the river (Vantini 1982, 25-6; Crowfoot 1919, 183-93). The origin of the word 'Mariya', as interpreted by Vantini, appears to be Mary, mother of Christ. He was able to confirm his hypothesis with a Moslem Sheikh familiar with the custom (Vantini 1982, 30). Other practices noted were the drawing of a cross on a newborn's forehead after birth, and the painting of crosses on the newborn's house in sheep's blood (Vantini 1982, 27). Further examples of this nature can be drawn from among the Midob, the Dago of Darfur and from the area of Ain Serra (Vantini 1982, 32-40). Survivals of Christian traditions were noted around Serra where an invocation could be made to the Virgin Mary during the settlement of disputes concerning date palm rights and obligations (Kronenberg and Kronenberg 1964, 285).

<sup>10</sup> Cf. The identification of the Beja with the Blemmyes (Barnard 2005; Updegraff 1978).

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*Colour plate XXXVII.  
Ethnoarchaeology. Storage  
buildings constructed on stilts,  
Kadugli, Kordofan. (photo ©  
D. A. Welsby).*



*Colour plate XXXVIII.  
Ethnoarchaeology.  
Tethering the  
framework.*

*Colour plate XXXIX.  
Ethnoarchaeology.  
The completed  
ombadayago, with  
sides and door  
attached.*

