

An archaeological survey of Gadarif State (Eastern Sudan) from 2006-2013

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Gadarif is one of three districts that comprise the archaeologically neglected Eastern Province of Sudan, the other two being Kassala and the Red Sea. Inadequate interest in the region has resulted in the cultures and history of the area along the southern and northern borders of Ethiopia, from the river al-Rahad, Atbara, Setite, the Red Sea, and the Ethiopian plateau, being largely overlooked and many places and aspects essentially unknown to scholars.

To highlight the current and future potential of archaeological work in Gadarif, surveys were undertaken between 2006 and 2013. The goal of this work extended beyond merely locating archaeological sites, to encompass exploration of the culture within the state in order to gain an understanding of (pre)historical cultural links between this region and its eastern Africa neighbors. Traveling by car and guided by a Global Positioning System (GPS) device, the survey teams followed the latitude and longitude limits of the area in fixed intervals. Examination of Google Earth images and aerial photographs of the region suggested potential sites for direct inspection, and enquiries made of the local people also played a significant role in guiding the team to archaeological sites.

Geography, Climate, Topography, and Soil

The state of Gadarif lies between (14°02'29.4" N/35°23'24.7" E) (Figure 1). It shares borders with Ethiopia (to the east) and the states of Kassala (north-east), Sennar (south-west and west), Gezira (west), and Khartoum (north-west). Two climatic zones that are environmentally diverse, distinguished by rainfall rates and the diversity of their natural resources, characterise the state. Its northern and northwestern regions feature a semiarid climate defined by a relatively short summer season (July–October). There is also a wet climate with rainfall ranging from 500-900mm annually. The 550mm rain line of the second climatic zone represents a dividing line between the two. The minimum temperature in this state is 17° C in January; the average temperature is 47° C in April–May and the average wind speed is 10km/h (Fakhri Hassan *et al.* 2008, 3).

The topography of the state consists of three principal units. Along the international border with Ethiopia, the southeastern region is dominated by highlands and isolated mountains. A region of fertile, clayey plains stretches across the state (Figure 2). The third unit is the valley area that includes the sedimentary land (Figure 3) associated with four seasonal rivers, the Atbara, Setite, Rahad, and Bahr Salam.

Across the state, soil is distinguished by a high percentage of clay (45-80%) and good fertility (Fakhri Hassan *et al.* 2008, 4), but this muddy black soil impedes the appearance of archaeological monuments, and the preservation of organic matter. Surface runoff also causes severe erosion that results in characteristic rippling mounds known locally as *karab* (Figure 4) and also damages or destroys many archaeological sites (Al-Nour *et al.* 2010).

The second phase of the project will start in 2022, and will involve several seasons' work. Archaeological research will be focused on conducting excavations in the cemeteries that are spread at a high density across the east of the state of Gadarif in the el-Fashaqa area, which is located on the banks of the Atbara and Setite rivers. Our work aims to understand more about the inhabitants of the region and to identify the chronological use of the cemeteries. We will begin with the site of el-Mugata, a particularly interesting cemetery that is under threat from the growth of *el-Meskate* trees on the site.

Past Archaeological Research in the State of Gadarif

Despite the presence of several archaeologically promising areas, fieldwork in Gadarif has been neglected, perhaps because the rainy climate has resulted in a scarcity of preserved monuments on the surface. Nonetheless, several important discoveries have contributed to the development of archaeological research here.

Among the first of these was the work of John Winter Crowfoot (1873-1959), who, early in the 20th century, described the importance of villages and archaeological sites in the eastern part of the Butana. He pointed out that most of the sites are located in the areas associated with the collection and conservation of rainwater, i.e., Duraishab, Umm Rewashed, and others. Here various tools and rock carvings reflect early human interest and occupation in the



Figure 1. Map of Gadarif (from Google Maps).



Figure 2. Mud flats in Gadarif.



Figure 3. Flood zones in Gadarif.



Figure 4. General view showing the 'Karab' phenomenon.

region. These sites require dedicated, systematic archaeological study (Crowfoot 1920, 85-92).

A study conducted by Anthony John Arkell in the 1940s in the region of Agordat was published in the 1960s (Arkell 1954; Shiner 1971). Near Khashm al-Girba, in the Middle Atbara Valley, a survey revealed archaeological sites of the prehistoric and Meroitic periods, such as at Jebel Reirah and Jebel Qili. This survey was carried out by the Institute of Egyptian Studies at the University of Humboldt in Berlin in the eastern region of Butana between 1957-1958 (Fritz 1959).

During the 1980s, archaeological work was distributed between two missions: a Sudanese-American collaboration worked in the west and central areas, while an Italian group worked in the east, around the Gash River. The joint mission sought to discover the role of the Southern Atbai in the prehistoric development of Sudan in general, in addition to its role during other eras, including those of civil discord, from traces left in the archaeological record (Fattovich *et al.* 1984; Mohammad Ali 2005, 66). Studies of prehistoric periods in eastern Sudan provide a valuable opportunity to explore models of different economic and social processes and various ways in which urban communities developed (Al-Nour 2004, 3).

In the mid-1970s, Salah Omar al-Sadig of the National Corporation for Antiquities and Museums (NCAM) visited the al-Mugata area on the left bank of the Atbara River, c. 7km east of the National Road between Kassala and Gadarif. This became the first archaeological site in Gadarif state registered on the map of archaeological sites of Sudan. In 2006, Mohamed Faroug Abdelrahman, also of NCAM, conducted a survey on the area of al-Fashaga, revealing many more archaeological sites concentrated north of Ash Showak, a town on the west bank of Atbara river, along the Wadi Abugraa. These sites, which include both cemeteries and settlements, are of many periods (Abdel Rahman and Faroug 2006, 4).

In late 2006, the Department of Antiquities and Museums, which integrates detection, survey, archaeological excavation, and cultural heritage preservation, was established within the Ministry of Culture, Youth and Sports, Gadarif State. Intended to pursue further archaeological exploration, this development provided the necessary organisation to coordinate and undertake comprehensive archaeological surveys in the state and to train the necessary teams within the department (Fakhri Hassan *et al.* 2012, 2).

Overview of the 2007–2013 Surveys

Beginning in 2007, the Gadarif State Department of Antiquities and Museums initiated three stages of archaeological survey. The first survey covered the southern part of the state and revealed 24 archaeological sites, and the second (2008 and 2009), undertaken in the eastern and middle parts of the state, revealed about a dozen. The third survey, in 2010, covered a large expanse: the Butana area (Safeya, Wadi Bishara, and Jebel Qili), the al-Faw area, (Jebel Dnabo, Jebel el-Hamra, and the structure of Sheikh Baspar), and the al-Mafazah area (Wad el-Ammas site) (Fakhri Hassan *et al.* 2012, 2).

In its 2010 survey, the NCAM team intended to register archaeological remains in areas affected by dams on two rivers, a project funded by the dam enforcement unit of the Ministry of Electricity and Dams and implemented by members of the NCAM, with participation by specialists from the Department of Tourism and Antiquities in the states of Gadarif and Kassala. Undertaken as rescue archaeology, this survey quickly recorded the areas to be affected by a dam complex on the Sitite and Upper Atbara Rivers, with a result of more than 47 sites covering most historical periods (Al-Hassan *et al.* 2010, 1-2). The next year, an archaeological survey was initiated because gold mining operations in the Butana threatened to destroy many archaeological and historic sites. This work identified 15 sites (Fakhri Hassan *et al.* 2012, 4).

Between March 2nd and May 20th 2013, work resumed in the endangered areas of the Sitite Valley and the Upper Atbara River. Supervised and implemented by NCAM, this conservation and excavation effort encompassed 62 archaeological sites threatened by the construction of dams. Surface studies, testing, and partial excavation were done, in addition to the documentation and preparation of site maps. Despite the limited scope of work, the results have been promising, especially as the Bakr area previously has received little study (Abdelsawi *et al.* 2013, 27-28).

Results of the First Archaeological Survey in Gadarif State

The large number of archaeological sites (Figure 5) revealed by the survey indicate the richness of the area, providing evidence for human activity from prehistoric times to the present day. It has become clear that most of these sites share common characteristics. The prehistoric sites (Paleolithic and Neolithic) were characterised by surface spreads of stone tools and crushed pottery, clear evidence for human settlement during these early periods, particularly the Neolithic, when groups became more settled and left evidence of agriculture and fishing. Other sites date to around the Meroitic period, as well as Christian, Islamic and more recent times. Others have not yet been accurately dated. The majority of these undated sites are cemeteries, with burials featuring oval superstructures. Petroglyphs

signal potentially long-term areas of activity near mountainous areas and slopes. Other sites are spread along the banks of the al-Rahad and Atbara Rivers, close to modern habitations (Fakhri Hassan *et al.* 2012, 9).

Creating an historical sequence for the Gadarif region is not yet possible without relying largely on archaeological finds made elsewhere in Sudan. Through such comparisons, attempts can be made to assign archaeological sites found within the state to Sudanese historical periods.

Prehistoric Sites

The surveys recorded about 12 prehistoric sites spanning the Paleolithic, Mesolithic, and Neolithic periods. Particularly prominent are Neolithic habitation sites, most of which are located in areas close to riverbanks and mountains. The presence of huge quantities

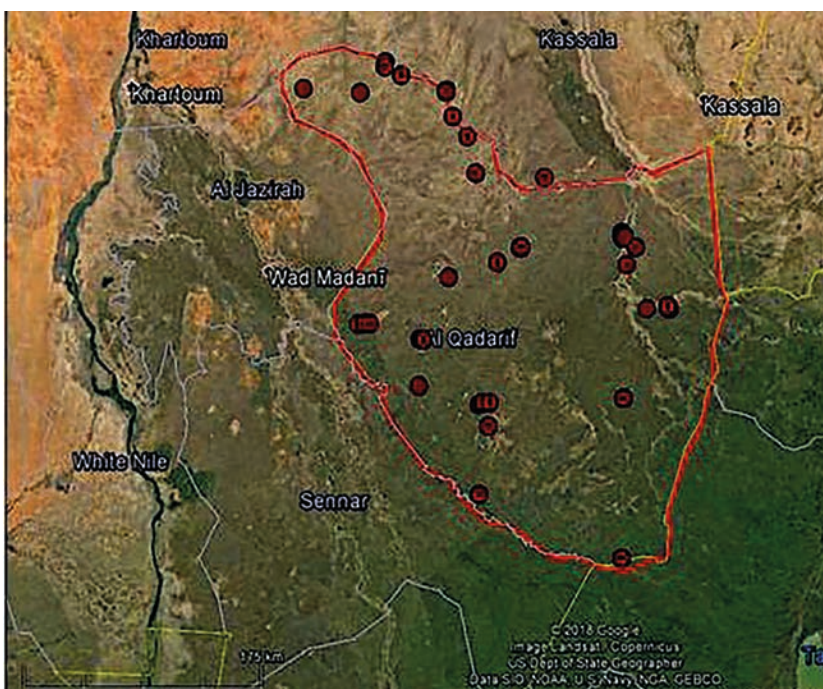


Figure 5. Satellite map showing the locations of many of Gadarif's previously unknown archaeological site concentrations (after Google Maps).

of stone-working materials and tools, and potsherds representing vessels of different shapes and decorative patterns, characterise these sites. Among the most important features are stone hand-axes (Figures 6 and 7) and other tools (Figure 8) sometimes made from basalt, which have been found very well preserved, as well as objects of personal adornment (Figure 9). Evidence for human settlement abounds especially for the Neolithic period, when groups became more settled and left evidence for the practices of agriculture and fishing. Among the most important sites of this date are those located in the village of Saworta in al-Fashaga (Figure 10), in Hamayeb in the Butana, and at Jebel Kasmor in the center of the city of Gadarif (Figure 11) (Abdel Rahman and Farouk 2006, 4; Al-Nour *et al.* 2010; Fakhri Hassan *et al.* 2012).

Christian Period Sites

Sites of this period are also characterized by significant representative surface finds, including pottery with distinctive decorative patterns, such as fish motifs (Figure 12), and, at the old Safya site in the Butana area (Figure 13), red bricks. Most important among these sites is Wad el-Ammas at al-Mafazah, in southern Gadarif, which local villagers believe to contain the dwellings and tombs of the mythical 'Anag' ethnic group. Other important sites were identified at Jebel Abu Qulut, Jebel Hillat Gajah, and Jebel Kbashab.

Sites of the Islamic Period

The surveys have recorded more than 35 archaeological sites dated to the Islamic period. These consist of large-scale cemeteries found in different parts near settlement sites, as well as 'domes of the righteous' (Figures 14-17). Jebel el-Hambra, Jebel Danabo in the al-Mafazah area, and Jebel Sorog Minana in the Butana area are among those that can be dated to this period.

Sites of Uncertain Date

Fifty-one of the sites revealed by the surveys could not be dated due to a lack of sufficient archaeological finds or other obstacles, such as agricultural practices or grass overburden growing over the site. These sites featured oval superstructures that probably mark tombs (Figures 18 and 19). The surrounding environment has had a significant impact on the survival of the superstructures: some remain well-preserved despite the presence of erosive forces, such as rain and wind. The presence of many petroglyphs in the mountain of Suki el-Sadgab was also noted (Figures 20 and 21) (Fakhri Hassan *et al.* 2012, 3).

Multi-Period Sites

About nine archaeological sites were found to have the remains of more than one historical period side by side on the surface. These probably date to the pre- and Post-Meroitic period and to the Medieval period. The age of these remains is suggested from surface finds of pottery, but alongside these, material cultural remains of unknown date were also found which may pre-date the Middle Ages. The most important of these multi-period sites is the Wadi Abu Gara site in the area of al-Fashaga, which has tombs characterised by either circular, oval and rectangular superstructures constructed of local sedimentary rocks, or white and black pebbles (Figures 22 and 23). The phenomenon of decorating graves is a burial custom practiced in Sudan from the time of the kingdom of Kerma (2500-1500 BC), suggesting a continuation of cultural influences, and perhaps cultural communication between various regions of Sudan (Abdel Rahman 2006, 3).

Cemeteries were also identified at the site of Shenqayra, also in the al-Fashaga area, where the survey noted a circular superstructure of white and black gravel that may be dated to a pre-Islamic period (Figure 24). A trial excavation of one of these tombs revealed a funerary structure probably dating to the pre-Christian period (Figure 25). This consisted of a round pit (perhaps with a lateral cavity), c. 1.4m deep and c. 1.70m in diameter, where the deceased was interred in a contracted east-west position, with the head to the east, laid on his right side to face northward. This type of burial position was prevalent in Sudan before the arrival of Christianity.

Circular foundations made from local rocks seem to have been used for dwellings constructed of other materials, such as straw and wood (Figure 26). Finds here included objects of daily life such as mortars and pestles (Abdel Rahman 2006, 3).



Figure 6. Basalt hand axes from Galbi in southern Gadarif.



Figure 7. Stone hand-axes from the surface of Site 41 in the Fashaga area.



Figure 8. Stone tools from Kasmor site in northern Gadarif.



Figure 9. Ornaments made of ostrich eggshell and ivory from Galbi in southern Gadarif.



Figure 10. Saworta Site 41 in the Fashaga area.



Figure 11. Pottery fragments from the site of Jebel Kasmor.



Figure 12. Decorated pottery from Wad el-Ammas.



Figure 13. A well, built of black stone near the Safya site in the Butana area.



Figure 14. Dome-shaped structure of red bricks at Sheikh Baspar.



Figure 15. Dome-shaped structure of red bricks at Sheikh Baspar.



Figure 16. Building for Sheikh el-Tayeb in Suki el-Sadgab village.



Figure 17. Islamic tombs at the Jebel el-Hambra site.



Figure 18. Circular tomb in Brnawi village in the Fashaga area.

Figure 19. Tomb in el-Mugata in the Fashaga area.



Figures 20 and 21. Some of the abundant petroglyphs at the mountain of Suki el-Sadgab.



Figure 22. Rectangular tomb in Wadi Abu Gara.

Figure 23. Circular kom (mound) in Wadi Abu Gara.

Sites of Modern History

The state of Gadarif occupies an important strategic location in a border area that has seen many battles in recent times, particularly during the late 19th century and the Second World War, so it is not surprising that comprehensive surveys have yielded several archaeological sites of modern date. This included the Mahdist State era cemetery at Ban Ali Khalifa in southern Gadarif (Figure 27), archaeological remains at Gallabat dating to World War II along with the cemetery of el-Sheikh el-Arbab, which includes the graves of el-Galyeen and the dome of Sheikh Ahmad al-Badawi. Two other sites of modern date are towers: the Turkish tower, situated at the mountain of Gala el-Nahal in southern Gadarif (Figures 28 and 29), and the Abu Qlout tower to the east, built from local rocks and clay during the Second World War (Figure 30).

The prominent elevation of the Turkish tower allowed it to overlook broad swathes of the region. There are no other buildings or watchtowers in this area, but the survey did locate a paved road running directly to the top of the mountain from the south. Oral accounts heard in the region suggest that the area may have been used for observation in recent times, possibly when the Ottoman Empire ruled Sudan (1820-1885). Also in the area of Gala el-Nahal is evidence for a former railway station, where some of the occupants or those nearby had also been beekeepers. Circular hives of rock and cement overlook the railway station, dated to the late 19th century. The tower may have served other security purposes, related to the English inspector in the region.

At another site, Ban Ali al-Saeed Khalifa Abdullah al-Taashi, in the Ban region, there is a large Muslim cemetery on the western side of the mountain. Dating to the Mahdist period and later, this cemetery features the tomb of Prince Abdul Qayyum al Hassan, after whom is named the famous Abdul Qayyum Gate in Omdurman; along with the grave of Prince Khater Humaidan, hero of the Battle of Umm Debakrat (November 1899), and the tomb of Nadifa, one of the Mahdi's wives. The Tabiya Abu Qlout is next to the cemetery. Gallabat is a military site on the Ethiopian border that includes numerous burials. Among them are tombs of the Ja'aleen, who are descendants of Mak (King) Nimr (c. 1785-1846), graves of soldiers of the Mahdi, and the dome of Sheikh Ahmad al-Badawi. Nearby is the tomb of Sheikh al-Arbab in the al-Mutamah region in Ethiopia (Figure 31), which dates to the Turkish period in Sudan. A number of pieces of weaponry used during World War II were also documented.

Threats and the Future

Periodic inspections of archaeological sites in the state ascertain that a variety of forces are having deleterious impacts upon the cultural remains there. Besides the natural forces of erosion, such as rain and river flow and flood, human activities in the region have taken their toll. Gold mining (Figures 32 and 33), the removal of soil for construction, and the production of mud bricks intrude upon sites or otherwise harm them. Construction of basins to collect rainwater (known locally as *hafir*) present risks to sites, as do the associated farming and grazing. People who settle temporarily on the sites also inflict damage. The archaeological sites, most of which are cemeteries dating to the Islamic period, consequently suffer full or partial destruction, the exposure of human remains (Figure 34), and the irretrievable loss of cultural and historical information. These impediments to study and analysis result in the loss of the state's invaluable heritage and history, and past neglect have already made the current place of Gadarif in the cultural map of Sudan a virtual blank. The Sudan National Museum, which displays the archaeological heritage of a number of states, lacks material from Gadarif.

Nonetheless, these several years of surveys indicate that Gadarif is one of the archaeologically richest in the region. Accordingly, a second phase of archaeological work with additional surface study and excavation is required to collect data and undertake analysis and comparative studies. External relationships and support from other projects, including some of the very ones that threaten the region such as the Upper Atbara and Setite Dam Complex, will benefit this undertaking, which it is hoped will incorporate the cultural history of Gadarif into that of Sudan and the broader east African region, and facilitate the communication of new knowledge through media and displays in the National Museum of Sudan.

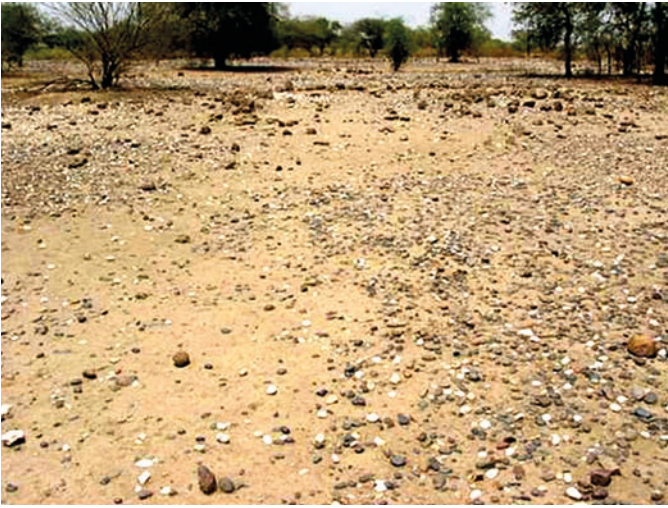


Figure 24. General view of the gravel-covered circular tombs at Shenqayra.



Figure 25. Test pit showing the burial in one of the tombs at the site of Shenqayra.



Figure 26. Remains of a settlement at Khor Abu Gara.



Figure 27. Mahdist tombs in Ban al-Sayed Ali.



Figure 28. Tower at the mountain of Gala el-Nahal, South Gadarif area.



Figure 29. View from the tower at the mountain of Gala el-Nahal, South Gadarif area.



Figure 30. Structure of Tabiyat Abu-Qlout, eastern area.



Figure 31. Ja'aleen cemetery at al-Mutamah in Ethiopia.



Figure 32. Detection of gold by metal detector at the site of Wad Bishara in the Butana area.



Figure 33. Destruction by gold-diggers at the site of al-Hagar in the Butana area.



Figure 34. Remains of a human skull exposed as a result of the excavation of a water basin in the Umm Ruweishd village in the Butana area.

References

- Abdelsawi Fedlelmula, A. Hassan, A. Awad, H. Ahmed, R. Khidr, I. Abdelrahman Zaroog Bakri and A. el-Ameen el-Sokari 2013. 'Project to save the effects of the areas affected by the Sitite Cemetery and Atbara - Salvage Excavations', Unpublished Governmental Report. Sudan.
- Abdel Rahman M. Faroug 2006. 'Archaeological works in the state of Gadarif, National Corporation for Antiquities and Museums', Unpublished Governmental Report. Sudan.
- Al-Hassan Ahmed Mohammed, Amel Hassan, Mahmoud Suliman, Rihab Khidr, Mohammed Saad and Zaki eldeen Mahmoud 2010. 'Project of saving the effects of the Setite River dam and the Atbara agricultural highlands project - Exploration Survey', Unpublished Governmental Report. Sudan.
- Al-Nour, Al-Tahir Adam, F. Hassan, F. Hassan, el-Tayeb Hassan, M. Magzob and R. Dak 2010. 'Exploration Archaeological Survey of the Setite River Region', Unpublished Governmental Report. Sudan.
- Al-Nour and Osama Abdel Rahman. 2004. 'Eastern Sudan in prehistoric times', *Arkamani* 5, 1-6.
- Arkell, A. J. 1954. 'Four Occupations at Agordat', *Kush* 2, 33-62.
- Crowfoot, J. W. 1920. 'Old Site in the Butana', *Sudan Notes and Records* 3 (2), 85-93.
- Fattovich, R., A. E. Marks and A. M. Ali. 1984. 'The Archaeology of the Eastern Sahel, Sudan: Preliminary results', *The African Archaeological Review* 2, 173-188.
- Fritz, H. B. 1959. 'Preliminary Reports of the Butana Expedition - 1958', *Kush* 7, 171-196.
- Fakhri Hassan, A. Yabuob, A. Nimr, Z. eldeen Mahmoud, M. el-Tayeb and R. Modawi. 2012. 'The archaeological works in the state of Gadarif, the General Administration of Tourism and Antiquities - Gadarif State', Unpublished Governmental Report. Sudan.
- Fakhri Hassan, A. Yabuob, A. Nimr, Z. eldeen Mahmoud and M. el-Tayeb. 2008. 'Gadarif Tourism Guide, General Administration of Tourism and Antiquities, Gadarif State', Governmental Report. Sudan.
- Mohammed Ali Abbas Sayed Ahmed. 2005. 'On the edge of the city the emergence and decay of agricultural villages in the plain of the Bataan (eastern Sudan)', *Research Symposium City in the Arab World in the Light of Archaeological Discoveries and Evolution. Adumatu*, 65-74.
- Shiner, J. L. 1971. 'Pre-Ceramic Sites', in J. L. Shiner, A. E. Marks, and V. Chmieleweky (eds), *The Prehistory and Geology of Northern Sudan* part 1. National Science Foundation report, 306-316.