

SUDAN & NUBIA

The Sudan Archaeological Research Society



Volume 25

2021

Reports

- An inscribed basin of the 18th dynasty (reign of Amenhotep III) from the fortress of Shalfak in Lower Nubia** 1
W. Vivian Davies
- Angareeb-bed production in modern Nubia: Documenting a dying craft tradition** 11
Manuela Lehmann
- The biocultural heritage and historical ecology of date palm cultivation in Nubian villages, northern Sudan** 24
Philippa Ryan, Mohammed Hassan, Mohamed Saad, Marcus Jaeger, Caroline Cartwright, Dorian Fuller and Neal Spencer
- The archaeological and heritage survey of the Northern el-Mahas region. First season's report (2020)** 40
Abdelrahman Ibrahim Said
- Preliminary report for the Western Desert of the Third Cataract Region Project (Wadi Gorgod - first season 2018-2019)** 49
Hamad Mohamed Hamdeen, Altayeb Abdalla Hassbrabo, Safa Gamal Idres, Samar Salah Mustafa, and Fatima Idris Mahmoud
- Starting anew at Old Dongola** 67
Artur Obłuski and Dorota Dzierbicka
- From development displacement and salvage archaeology in Nubia to inclusive sustainable heritage and development crafting in Old Dongola** 82
Peter Bille Larsen
- Dialogue Community Project in Old Dongola (2019-2021)** 95
Tomomi Fushiya
- Wadi Abu Dom investigations: El Rum Oasis** 108
Tim Karberg and Angelika Lohwasser
- Goldmines, nomad camps, and cemeteries: The 2018 season of the Atbai Survey Project** 121
Julien Cooper
- Archaeological report on the excavation of a post-Meroitic necropolis at el-Madanab (Shahid Rescue Archaeological Project)** 135
Fakhri Hassan Abdallah, Romain David and Iwona Koziaradzka-Ogunmakin
- The archaeological site of Damboya in the Shendi Reach. Second season** 154
Marc Maillot
- Building E at Damboya, second season** 168
Gabrielle Choimet
- (Re)examining the tomb of Queen Yeturow at Nuri** 184
Meghan E. Strong, Susan Doll, Fakhri Hassan Abdallah, Helen O'Brien, Simone Petacchi, Abigail Breidenstein and Pearce Paul Creasman
- Dental insights into the biological affinities of the inhabitants of Gabati over a period of cultural transition** 195
Emma L. W. Phillips, Joel D. Irish and Daniel Antoine
- Jebel Hawrā, a new archaeological site in Eastern Sudan** 209
Enrico Giancristofaro

Studies

Was the individual buried in MOG012.4 a Christian, a pagan, or both? Evidence for the appropriation of Christianity from a Late Antique-Early Medieval tumulus grave on Mograt Island 221
Claudia Näser, Alexandros Tsakos and Jens Weschenfelder

After ‘InBetween’: Disentangling cultural contacts across Nubia during the 2nd millennium BC 230
Aaron de Souza

Skeuomorphism in Kerma metal vessels 243
Carl Walsh

Heart scarabs and other heart-related objects in New Kingdom Nubia 252
Rennan Lemos

***Sheikh and Melik* 1925: A short note** 270
Paul T. Nicholson

Book reviews 274

Obituaries

Peter MacKenzie Smith (1946-2020) 279

Professor Abdelgadir Mahmoud Abdallah (1937-2021) 279

Sandro Salvatori (1948-2020) 280

George Hart (1945-2021) 283

Biographies 284

Miscellanies 289

Front cover. Cattle and two goats\gazelle from Site GRD-14 in the Wadi Gorgod (photo Hamad Mohamed Hamdeen).

Sudan & Nubia is a peer-reviewed journal. The opinions expressed within the journal are those of the authors and do not reflect the opinions or views of the Sudan Archaeological Research Society or its editors.

Preliminary report for the Western Desert of the Third Cataract Region Project (Wadi Gorgod - first season 2018-2019)

Hamad Mohamed Hamdeen,¹ Altayeb Abdalla,² Safa Jamal,³ Samar Salah,⁴ and Fatima Edris⁵



Figure 1. Satellite image showing the area of study (Google maps 2019).

Introduction

In December 2018 and January 2019 the first season of archaeological survey for the Western Desert of the Third Cataract Region Project was carried out by a team from the Department of Archaeology, University of Al Neelain, directed by Dr Hamad Mohamed Hamdeen. The area of study is located on the western bank of the Nile in the northern part of the Third Cataract region, northern Sudan (Figure 1) The main objective of the project was to search for archaeological sites in the desert wadis near the western Third Cataract, including the Wadi Gorgod as well as other wadis in this area. Special attention was paid to palaeo-environmental data (e.g. palaeochannels, palaeolakes and pools, etc.) and prehistoric sites, for instance the extensively distributed Palaeolithic and Neolithic sites, tethering stones, and stone structures, as well as examining the archaeological potential of the area away from the Nile in the western desert of the Third Cataract (Hamdeen 2017; 2018; Hamdeen and Polkowski 2018).

The aim of this paper is to present the preliminary results of this work with the intention of carrying out a more intensive archaeological reconnaissance in the western desert in the future. It will focus on sites in the Wadi Gorgod (see Figure 13). This wadi is located on the western bank of the Nile in the Third Cataract region, c. 5km north of Sesebi, and runs 15km west-east. Finds included scatters of surface stone tools, rock art, and a small number of pottery sherds, and landscape data, photographic documentation, drawings and GPS coordinates were recorded.

¹⁻⁴ Department of Archaeology, University of Al Neelain; ⁵ Department of Archaeology, University of Shendi.

The survey area

The area was divided into three main sections according to the concentration and distribution of rock art and other sites, and based on the geomorphology of the wadi:

- The eastern section: located near the Nile, encompasses 14km on both banks of the wadi. Thirty-four archaeological sites were recorded here (Sites GRD-01 to GRD-034), with rock art sites the most common, sometimes associated with Neolithic sherds and lithic tools, stone structures and tethering stones (Figure 2).
- The central section: located c. 6km from the Nile, encompasses 9km on both banks of the wadi over a large flat area. Six sites were recorded (GRD-35 to GRD-40); four of these are rock art sites and one a section of wadi wall (Figure 3).
- The western section: located c. 8-10km from the Nile, the area encompasses 10km over both banks of the wadi. Eleven sites were recorded here (GRD-41 to GRD-51), with the majority of these workshop areas dating to the Palaeolithic, with some pottery sherds collected from the surface that may be Pre-Kerma. Two stone structures and tethering stones were also found. The landscape of this section has been heavily damaged by gold digging (Figure 4).

The archaeological sites (Figure 13)

Rock art

The petroglyphs in the Wadi Gorgod were briefly studied by the Italian mission from the University of Pisa in the early 1960s (Schiff Giorgini 1966; Schiff Giorgini *et al.* 1971, 776-780). The expedition, directed by Michela Schiff Giorgini, worked mainly in Sedeinga and Soleb, and the discovery of rock art in the

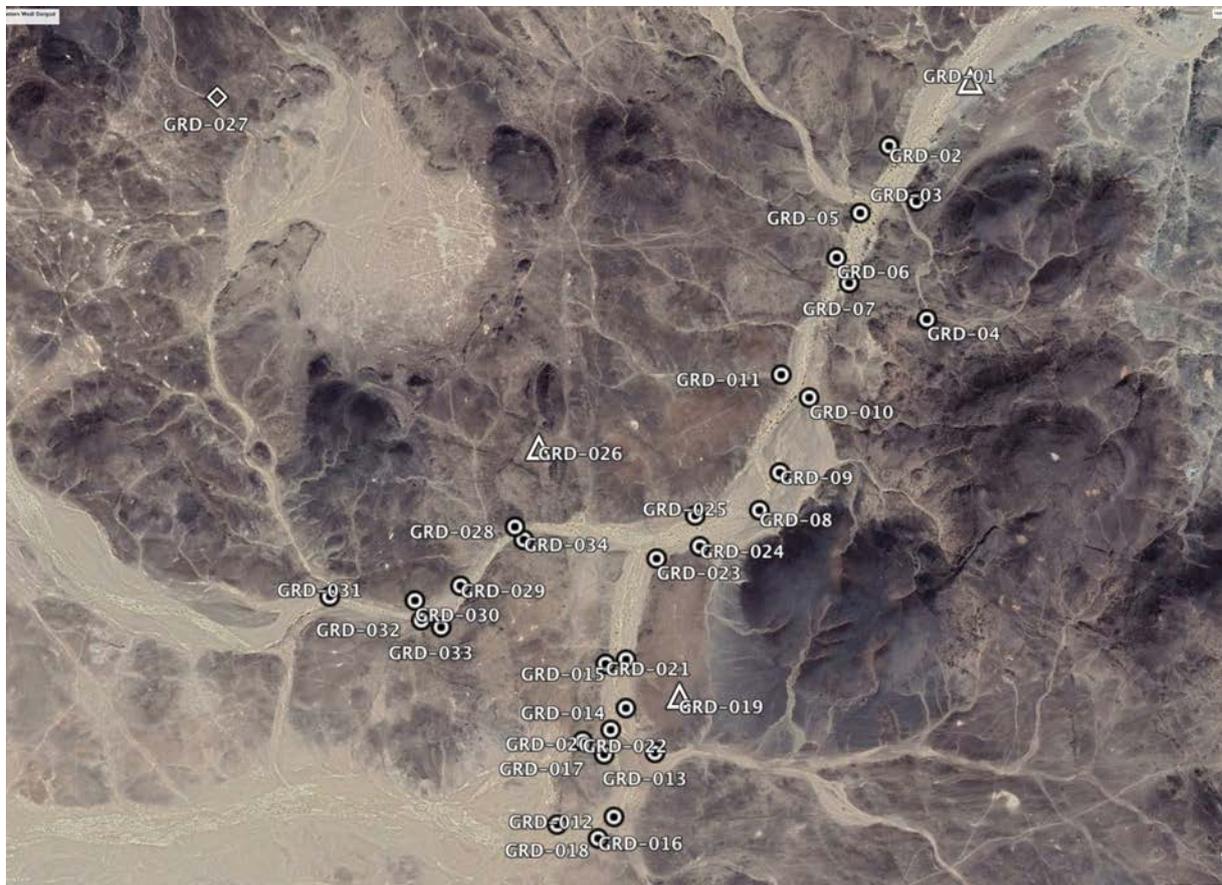


Figure 2. Satellite image showing the eastern section of Wadi Gorgod and the distribution of archaeological sites.

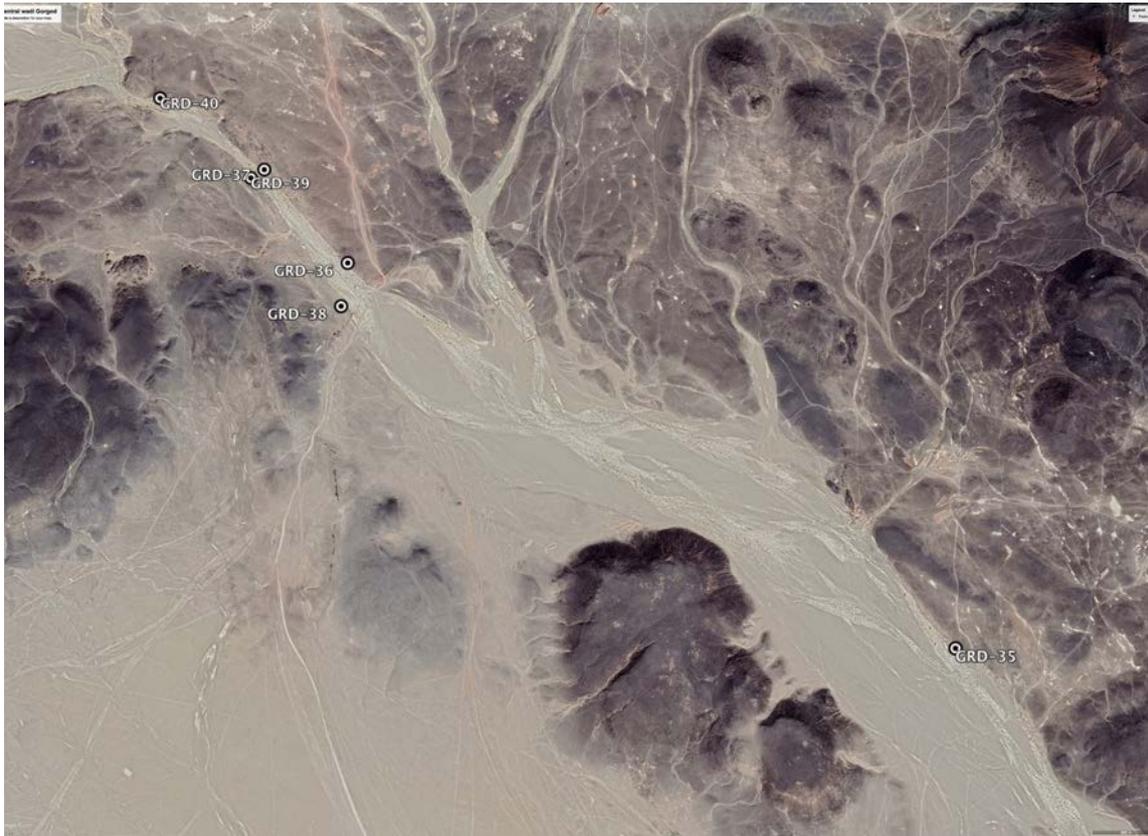


Figure 3. Satellite image showing the central section of Wadi Gorgod and the distribution of archaeological sites.

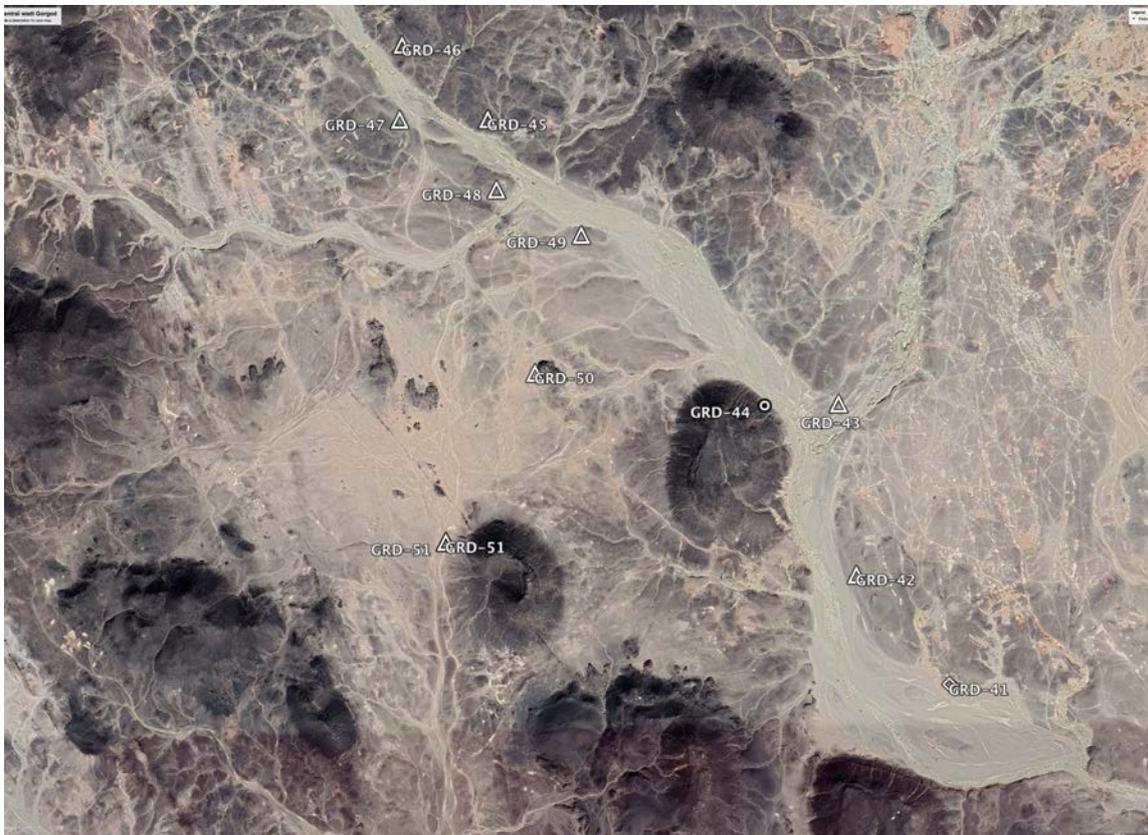


Figure 4. Satellite image showing the western section of Wadi Gorgod and the distribution of archaeological sites.

Wadi Gorgod should be treated as an additional outcome of the archaeological survey. Based upon this research, Leone Allard-Huard (in cooperation with Jean Leclant) began her fieldwork, which lasted from 1979-1985. This extensive one-person survey has been the most thorough to date, and resulted in a number of publications (e.g. Allard-Huard 1980; 1982; 1983; 1985; 1993; 2000; 2011). The results of this research, however, were largely presented as mixed with other types of rock art from Egypt and the Sahara, being discussed mainly from a typological and comparative perspective (Allard-Huard 1993; 2000; 2011), meaning the publications do not give a clear view of the petroglyphic repertoire of Wadi Gorgod – its full content and distribution – because it is displayed selectively and combined with other non-local elements.

Leclant mentions activities in the Gorgod region undertaken by the Sedeinga Archaeological Unit (SEDAU) in 1991 and 1999 (Leclant and Clerc 1993; Leclant and Minault-Gout 2001). These comprised photographic documentation and the GPS coordinates of selected rock art sites. To the best of our knowledge, these works were not published. The Gorgod rock art sites were also briefly explored but not documented by the Mahas Survey Project, directed by Ali Osman and David Edwards (2012, 287-288). These studies divided the rock art in the wadi into three main areas of c. 10km each, designated A, B and C. This constituted 36 rock art sites. This still remains a valuable source, but they focused on specific rock art types (typically animals) and did not document other drawings and archaeological sites associated with these pieces, which are vital in interpreting these sites. Furthermore, the GPS coordinates of the sites were not recorded, while photographic records were limited, and pieces were typically drawn without a scale.

Systematic fieldwork in this region is needed. The results of the first season show there are more than three thousand examples of rock art in the wadi, some of which were reported by Allard-Huard but others were discovered for the first time. The rock art includes a wide range of subjects including domesticated animals, such as cattle, horses, camels, goats, dogs etc., and wild animals, such as giraffes, elephants, gazelles, hippopotamuses, crocodiles, and birds, as well as human figures and geometric inscriptions (Figures 5a-s). The majority of rock art in the Wadi Gorgod can be considered as horizontal, although many are inclined – in addition to some rare vertically oriented panels. Cattle drawings are the most common.

The techniques and styles include incising an outline of an object in the soft surface of the sandstone, or pecking the outline into the rock. There is no evidence for painted art. Some rock art has already been destroyed by gold mining activities (Figures 6a, b).



Figure 5a. Rock drawing of four cattle and man holding a stick in his left hand.



Figure 5b. A scene of a dog hunting a rabbit from Site GRD-06.



Figure 5c. Two gazelles from Site GRD-07.



Figure 5d. A boat with a long paddle and a sail.



Figure 5e. A scene of a caravan of camels and anthropomorphs from Site GRD-09.



Figure 5f. A boat with paddle and a sail; a sickle-shaped boat with a steering oar and a central cabin from Site GRD-10.



Figure 5g. A caravan of camels, anthropomorphs, and cattle from Site GRD-12.



Figure 5h. Cattle and two goats/gazelle from Site GRD-14.



Figure 5i. A rider on a camel holding a sword or stick in his right hand from Site GRD-20.



Figure 5j. A boat with paddle and a sail and three people, one of whom holds a sail, Site GRD-15.



Figure 5k. Four men pulling a boat with a rope, from Site GRD-22.



Figure 5l. A dog hunting two giraffes, Site GRD-31.



Figure 5m. A rock art group from Site GRD-24.



Figure 5n. A scene of hunting a giraffe with three dogs, three crocodiles, cattle, and an ostrich, Site GRD-33.



Figure 5o. An anthropomorphic scene with four humans one of whom is carrying something on their head, Site GRD-33.



Figure 5p. An ostrich with another undetermined animal from Site GRD-35.



Figure 5q. A group of ostriches from Site GRD-39.



Figure 5r. A rock art group from Site GRD-37.



Figure 5s. An anthropomorphic scene with a group of people carrying sticks in their right hands, facing cattle.



Figure 6a. Evidence of destructive gold mining activity in the central section of Wadi.



Figure 6b. Rock art from Site GRD-02 destroyed by gold mining activities.

In the Wadi Gorgod, we are not dealing with a homogenous rock art assemblage. It seems that all major phases of Sudanese history are represented here – from the prehistoric to fairly recent times. The majority of depictions can perhaps be situated in a time frame between the Kerma/ Egyptian colonial dynastic period and the Roman and Islamic periods (Hamdeen and Polkowski 2018).

Tethering or trapping stones

Tethering or trapping stones are stone artefacts with a groove or notches along their short axis. They measure c. 300-450mm long and weigh c. 20kg; however, some weigh more than 100kg, with lengths over 1.1-1.3m. The term grooved stone is accurate for purely descriptive purposes, but the term tethering stone has been chosen because the groove is thought to have been used to hold a rope to restrain either domesticated or wild animals (Pachur 1991, 14). Tethering stones are widespread in northern Sudan and in the oases of the Libyan and Egyptian Sahara, implying that the use of these stones as part of hunting or trapping techniques was prevalent throughout the Holocene.

There are 150 tethering stones recorded in the three areas of the Wadi Gorgod, most of them from the southern flat area in and around the edges of the small khors and drainages (Hamdeen 2018) (Figure 7). These are very similar to examples that were reported from the eastern part of the Third Cataract (Abdeen *et al.* 2019). The methodology for documenting these stones included:

- Measurements: the length ranged between 250mm-850mm, and the width from 140mm to 300mm.
- Weights: these ranged between 6kg and 80kg.
- Manufacturing techniques: Two techniques for manufacturing the stones were identified: a) pecking across the edges of the two ends of the middle part of the stone; b) pecking and incising across the middle part of the stone to make a groove.



Figure 7. Tethering stone from the Wadi Gorgod.

- The raw material: four materials were used, sandstone, ferruginous sandstone, basalt and granite.
- Geological position: some are located on the edge of the khors and water drainage paths, while others are on a gravelly and rocky flat plateau.

Palaeolithic sites

Many Palaeolithic industries have been reported in northern Sudan. The evidence from Lower



Left to right: Figure 8a. Palaeolithic tools from Site GRD-19; Figure 8b. Palaeolithic tools from Site GRD-26; Figure 8c. Palaeolithic tools from Site GRD-27.



Left to right: Figure 8d. Palaeolithic tools from Site GRD-47; Figure 8e. Palaeolithic tools from Site GRD-50.

Nubia indicates the similarities in technology development to sequences around the Third Cataract. They can be divided into five major cultural stages, which indicate a particular level of technological or typological development, and not necessarily a specific chronological position (Wendorf 1968). Generally, the

closest typological parallels are with Khor Abu Anga in lower Nubia and other Acheulean sites in central and northern Sudan.

Fourteen Palaeolithic sites were discovered in the Wadi Gorgod during the first archaeological survey. There was a clear concentration of Palaeolithic materials in the western section of the wadi at Sites GRD-42, 43, 45, 46, 47, 48, 49, 50, 51, while Site GRD-41 was associated with a stone structure. Other sites were located in the eastern part of the wadi, including Sites GRD-01, 019, 26, while Site GRD-27 was a complex of stone structures. Finally, in the eastern and western parts, some Palaeolithic finds were scattered on the surface including a handaxe, levallois points, and scrapers. The preliminary study of the Palaeolithic sites from the Wadi Gorgod in the western Third Cataract region suggested the presence of workshops, containing an Acheulean handaxe, Levallois and Mousterian points, and scrapers (Figures 8a-e) like those found in the Southern Dongola Reach assemblages (Osypinski 2003). The Levallois point foliates and scrapers show similarities with Palaeolithic materials from Sai Island and can be related to the Nubian complex (Geus 2000, 124-126), as well as to the late Acheulean types and flakes with faceted butts found in the Selima oasis in the western Sudanese Sahara (Arkell 1949, 45). There are also similarities with Nubian Middle Stone Age examples in Lower Nubia (Wendorf 1968). The Palaeolithic materials from the Wadi Gorgod need a more detailed analysis in the future to assess how they relate to other Palaeolithic sites across Sudan.

Neolithic sites

The Neolithic material is concentrated at Site GRD-02. This site was located on a small rocky hill towards the eastern part of the wadi, and was associated with rock art depicting cattle, camels, dogs, footprints, marks, dots and cupules. A stone structure of c.1m in diameter was also noted. Neolithic sherds and lithic tools were scattered on the surface (Figures 9a, b). Lithic artefacts included points, various blades, scrapers, crescents and borers, all made from Nile pebble; however, there is a complete absence of other Holocene industries like lunates and burins. A few Neolithic pottery sherds with dotted decoration were



Figure 9a. Lithic tools from Site GRD-02.



Figure 9b. Neolithic pottery sherds from Site GRD-02.

collected from this site. This is a common pattern on Neolithic pottery from the Third Cataract region (Sadig 2005), with other decoration including simple impressions, and chevrons. Dotted wavy line pottery, which provides an essential link between the Khartoum Hospital site and Shaheinab, is completely absent from Third Cataract sites.

Christian sites

A small quantity of Christian pottery sherds was recorded on the surface of sites GRD-23, 28, and 50. A brief analysis of these fragments indicated that most were wheel-made, with few handmade sherds. Fragments were typically from bowls and cups, the forms and styles of which are characteristic of the classic and late medieval period (Figures 10a, b).

Stone structures

Several stone structures were noted with varying shapes and types, including circular, ovate, and ring etc., with varying diameters, measuring 1-13m in length, and 0.2-1m high. These were located on small hills, plateaus and flat areas. Some of these were associated with rock arts sites, such as Sites GRD-02, 04, 23, 24 and 34, while others were related to Palaeolithic and Neolithic sites as at Sites GRD-01, GRD-02, 27 and 42 (Figures 11a, b, c).

According to Borcowski and Welsby (2012) many of these stone structures were also reported in the Fourth Cataract region. They can be divided into two categories, funerary and non-funerary structures, although when dealing with a number of unexcavated monuments there can never be a certainty that it is a funerary or non-funerary structure. In such cases, the context must be taken into account. The funerary structures can be divided into tumuli, dome graves, crevice graves, frames, pavements and



Figure 10a. Christian pottery sherds from Site GRD-50.



Figure 10b. Christian pottery sherds from Site GRD-23.



Figure 11a. Stone structure from Site GRD-02.



Figure 11b. Stone structure from Site GRD-24.



Figure 11c. Stone structure from Site GRD-27.

boxes, cairns and miscellaneous funerary monuments, while non-funerary structures can be divided into pavements, rectangular, circular and oval stone settings, free standing structures, structures abutting bedrock and linear features.

Unfortunately, most of these sites were not associated with any datable finds, so their period of construction and use is difficult to ascertain. Welsby (2005) suggested that some of the non-funerary structures (types S.XII, S.VIII) could have been used as shelters as they were usually open to the south away from the prevailing wind, and many were placed up against rock outcrops and boulders. Tahir (2007) also suggested that stone rings in Wadi Farja in the eastern part of the Third Cataract region were hut bases.

Wadi dry-stone walls

A wadi dry-stone wall was reported in the middle section of the Wadi Gorgod c. 8km from the Nile. There are two walls divided by the wadi, with the total length of the wall being 100m (Figures 12a, b). It was associated with rock art depicting cattle, riders, giraffes and boats.

Wadi walls are one of the most prominent archaeological features in the Third Cataract Region and feature dry-stone walls with none, or few, artefacts directly associated with the sites (Osman and Edwards 1994). In the Third Cataract region the wadi walls were constructed by piling smaller stones around large out crops of the mountains and hills, in common with others in wadis. Therefore, all the walls are strong, rough and porous, and built to a height insufficient to conceal a standing man (Tahir and Sadig 2014).

Some authors assume that these walls were used as game traps during the 7th-2nd millennium BC (Edwards 2006). Hobler and Hester (1969) have found such walls in the Libyan Desert (Kukur and Dungul areas) and correlated them with the C-Group people (1690 BC+/-180). They recorded walls of several kilometres in length and contended that they were game traps built across wadis and between mountains for capturing ostrich and possibly gazelle. Riemer (2004) in the southern Great Sand Sea of Egypt (dated to c. 6500-4900 BC), also identified examples as game drives



Figure 12a. Wadi wall from Site GRD-40.



Figure 12b. Wadi wall from Site GRD-40.

or traps. In Sudan, near the Fourth Cataract, Wolf (2004, 17-26) described up to 120m-long dry-stone walls observed with Neolithic artefacts. However, he could not associate the Neolithic finds with these 'structures'. Wolf and Nowotnick (2005) found similar structures in the Fourth Cataract region with no artefacts for relative dating. Welsby (2005, 2-8) identified many types of these walls in the Fourth Cataract, among them what he called 'the boundary walls' and mentioned that their dating was problematic and their function unclear, since they were never high enough to form an effective barrier against either men or animals.

Tahir and Sadig (2014) have recently presented a new hypothesis for the function of these walls, based on the wall designs and locations. They suggest that the primary motivation for the walls was water harvesting and silt accumulation. This was for agriculture and drinking water during dry periods in the post-Holocene, mainly during Pre-Kerma (c. 3000–2500 BC) and Kerma (c. 2500–1500 BC), but even as late as the Christian period (c. 500–1500 AD). The second suggests that wadi walls might have been used as protective enclosures.

Final Remarks

Today the archaeological remains (see Figure 13) in the area of Wadi Gorgod are endangered, as some of the rock art panels have already been destroyed by gold diggers operating in this region. During our survey there were many recent gold mining and gold camps reported in three sections of the wadi. Satellite imagery studies undertaken by McLean (2017) indicate that the region of the Wadi Gorgod hills, between the settlements of Soleb and Sesebi, was a significant source of gold production in the 18th dynasty, and while the mineralisation zones were relatively small, miners exploited this resource by surface or near surface working. Analysis of satellite images revealed ancient trackways and direct links to Soleb and Sesebi. Analysis of the zone of influence makes it clear that the infrastructure supported multiple sites. The characteristic campsite varied in size, which suggests that a relatively small number of workers mined these sites.

This report from the first season of the archaeological survey for the Western Desert of the Third Cataract Region Project confirmed that Wadi Gorgod is very complex, containing rich rock art, prehistoric workshops, stone structures and numerous tethering stones, with dates ranging from the Palaeolithic to Islamic periods. It requires comprehensive fieldwork, excavation and more analytical study in the future.

References

- Abdeen, M., H. M. Hamdeen, and A. O. Salih 2019. 'Tethering stones from the Eastern Bank of the Third Cataract Region', *Sudan & Nubia* 23, 52-57.
- Allard-Huard, L. 1980. 'Nouveaux sites rupestres du Gebel Gorgod (Nubie soudanaise, 3e cataracte)', *Bulletin de la Société préhistorique française* 77(2), 38-40.
- Allard-Huard, L. 1982. 'Nouveaux témoignages de la culture des Chasseurs au Gebel Gorgod, Soudan, 3e cataracte', *Bulletin de la Société préhistorique française* 79(4), 124-128.
- Allard-Huard, L. 1983. 'Nouvelles stations rupestres dans le secteur de la 3e cataracte du Nil (Nubie soudanaise)', *Bulletin de la Société préhistorique française* 80(5), 142-143.
- Allard-Huard, L. 1985. 'Prospections rupestres sur le Nil soudanais et au Hoggar', *Bulletin de la Société préhistorique française* 82(8), 240-241.
- Allard-Huard, L. 1993. *Nil-Sahara dialogues rupestres. I - Les chasseurs*. Divajeu.
- Allard-Huard, L. 2000. *Nil-Sahara dialogues rupestres. II - L'homme innovateur*. Divajeu.
- Allard-Huard, L. 2011. *Nile-Sahara dialogues of the rocks. III - Innovative people*. Divajeu.
- Arkell, A. J. 1949. *The Old Stone Age in the Anglo-Egyptian Sudan*. Sudan Antiquities Service Occasional Papers 1. Khartoum.
- Borcowski, Z. and D. Welsby 2012. 'The Merowe Dam Archaeological Salvage Project (MDASP): Provisional type series of monuments', in H.-P. Wotzka (ed.), *Proceedings of the Third International Conference on the Archaeology of the Fourth Nile Cataract, University of Cologne, 13-14 July 2006*. Köln, 15-32.
- Edwards, D. N. 2006. 'Mid-Holocene game drives in Nubian landscapes?', in K. Kroeper, M. Chłodnicki and M. Kobusiewicz (eds), *Archaeology of Early Northeastern Africa*. Studies in African Archaeology vol. 9. Poznan, 49-64.
- Geus, F. 2000. 'Geomorphology and prehistory of Sai Island (Nubia): report on the current research project', in L. Krzyżaniak, K. Kroeper, and M. Kobusiewicz (eds), *Recent Research into the Stone Age of Northeastern Africa*. Studies in African Archaeology 7. Poznan, 119-128.
- Hobler, P. M. and J. J. Hester 1969. Prehistory and Environment in the Libyan Desert. *The South African Archaeological Bulletin* 23 (4), 120-130.
- Hamdeen, H. M. 2017. *Palaeoenvironment and Cultural Adaptations During Late Prehistoric Periods in Sudanese Desert West Nile: Between El Mahas Region and El Golied Plain*. PhD thesis. Department of Archaeology, University of Khartoum.
- Hamdeen, H. M. 2018. 'Archaeological Survey for tethering stones in Western Third Cataract desert (Sudan)', *Nyame Akuma* 90, 36-45.
- Hamdeen, H. M and P. L. Polkowski 2018. 'Rock art in Wadi Gorgod in the Western Third Cataract region', *Der Antike Sudan, Mitteilungen der Sudanarchäologischen Gesellschaft zu Berlin E.V.* 29, 17-38.
- Leclant, J. and G. Clerc 1993. 'Fouilles et travaux en Égypte et au Soudan, 1991-1992', *Orientalia* 62, 282-284.
- Leclant, J. and A. Minault-Gout 2001. 'Fouilles et travaux en Égypte et au Soudan, 1999-2000', *Orientalia* 70, 435-436.
- McLean, I. 2017. 'Human intervention in the landscape through ancient mining: a regional study applying satellite imagery', *Sudan & Nubia* 21, 82-96.
- Osman, A. and D. Edwards 1994. *The Archaeology of a Nubian Frontier: Survey on the Nile Third Cataract*. Bristol.
- Osyński, P. 2003. 'Palaeolithic sites from the Southern Dongola Reach Survey, preliminary report', in L. Krzyżaniak, K. Kroeper and M. Kobusiewicz (eds), *Cultural Makers in the Later Prehistory of Northeastern Africa and Recent Research*. Studies in African Archaeology 8. Poznan, 307-310.
- Pachur, H. 1991. 'Tethering stones as palaeoenvironmental indicators', *Sahara* 4, 13-33.
- Riemer, H. 2004. 'Holocene game drives in the Great Sand Sea of Egypt? Stone structures and their archaeological evidence', *Sahara* 15, 31-41.
- Sadig, A. M. 2005. 'Neolithic pottery from the Third Cataract (Mahas Region- Northern Sudan)', *Adumatu* 12, 47-60.
- Schiff Giorgini, M. 1966. 'Sedeinga 1964-1965', *Kush* 14, 244-261.

Schiff Giorgini, M., C. Robichon and J. Leclant 1971. *Soleb II. Les Nécropoles*. Florence.

Tahir, Y. F. 2007. *Environmental Archaeology of Third Cataract Region, Case Study Wadi Farja*. PhD thesis. Department of Archaeology, University of Khartoum.

Tahir, Y. F. and A. M. Sadig 2014. 'A new provision to the nature and function of the wadi walls ('Dry-stones') in the Nile's Third Cataract region', *ADAB, Journal of Faculty of Arts, University of Khartoum* 33, 36-58.

Wolf, P. 2004. 'The SARS Anglo-German Expedition at the Fourth Cataract of the Nile: The 2003/04 season', *Sudan & Nubia* 8, 17-26.

Wolf, P. and Nowotnick, U. 2005. 'The second season of the SARS Anglo-German Expedition to the Fourth Cataract', *Sudan & Nubia* 9, 23-31.

Welsby, D. 2005. 'The Merowe Dam Archaeological Salvage Project Excavations in the vicinity of ed-Doma (AKSE), 2004-2005', *Sudan & Nubia* 9, 2-8.

Wendorf, F. 1968. *The Prehistory of Nubia*. Dallas.

Site code	Coordinates	Type of site	Period	Notes
GRD-01	N 20° 10.19 \\ E 30° 31.96. Alt 214m	Workshop- stone structure + tethering stones	Palaeolithic ?	The site was situated in the eastern part of Wadi Gorgod about 2km from the Nile. Some Palaeolithic tools including Acheulean handaxe were collected. There is one sandstone structure with a diameter of 2m, and one tethering stone was recorded on one edge of the wadi.
GRD-02	N 20° 10.06 \\ E 30° 31.83 Alt 219m	Rock art + stone structure, settlement	Neolithic ?	The site was located on the eastern part of the wadi. Rock art recorded included: cattle, camel, dog, footprint, marks, dots, cupule. Stone structures with 1m diameters were recorded. On the surface of the site some Neolithic pottery and lithic tools were collected.
GRD-03	N 20° 09.97 \\ E 30° 31.87 Alt 2239m	Rock art	?	To the SE of Site GRD-02 on the eastern bank of the wadi, 5 rock art images were recorded including dots, footprint, cupules and cross-shaped marks.
GRD-04	N 20° 09.78 \\ E 30° 31.87 Alt 224m	Rock art + stone structure	?	Site was situated about 360m south of Site GRD-03. Rock art recorded included cattle, giraffe, human, footprints. Two stone structures with 2m diameters were reported.
GRD-05	N 20° 09.95 \\ E 30° 31.77 Alt 217m	Rock art + stone structure	?	The site was situated at the eastern part of the wadi. Rock art recorded included: cattle, camel, footprints, marks, human. There is one circular stone structure with a 1.5m diameter.
GRD-06	N 20° 09.89 \\ E 30° 31.72 Alt 216m	Rock art	?	To the south of Site GRD-05, about 200m, there is another rock art complex, including images of cattle, footprint, mark, animal rider, dog hunting, animal rider.
GRD-07	N 20° 09.84 \\ E 30° 31.75 Alt 214m	Rock art	?	About 100m SE from Site GRD-06, rock art recorded included: cattle, camel, gazelle, boats, animal rider, marks and footprints.
GRD-08	N 20° 09.47 \\ E 30° 31.60 Alt 215m	Rock art + tethering stone	?	The site was situated about 726m south of Site GRD-07. Rock art recorded included cattle, camel, ostrich, animal rider, boats, marks.
GRD-09	N 20° 09.53 \\ E 30° 31.65 Alt 217m	Rock art	?	To the north of Site GRD-08 about 150m, there is a rock art complex. Rock art recorded included cattle, camel, animal rider, hunting with dog, marks, boats, footprint, cupules, footprint.
GRD-10	N 20° 09.65 \\ E 30° 31.68 Alt 215m	Rock art	?	Rock art was recorded including cattle, camels, animal riders, giraffe, gazelle, dog, ostrich, birds, dots, cupules, marks, human, boats, footprints.
GRD-11	N 20° 09.69 \\ E 30° 31.64 Alt 221m	Rock art	?	The site was situated about 110m NW from Site GRD-10. Rock art was reported including cattle, camel, ostrich, human, boats, footprint, signs.

Figure 13. Archaeological sites in the Wadi Gorgod.

GRD-12	N 20° 08.97 \\ E 30° 31.35 Alt 223m	Rock art	?	The site was situated on the eastern part of the Wadi Gorgod, 24 rock art images were recorded on the sandstone outcrop, including cattle, camel, animals being ridden, cupules.
GRD-13	N 20° 09.72 \\ E 30° 31.42 Alt 223m	Rock art + fossil trees	?	About 220m to the north of Site GRD-12, there are 10 rock art images including cattle, camel, animals being ridden.
GRD-14	N 20° 09.14 \\ E 30° 31.37 Alt 218m	Rock art	?	This site was located about 150m to the NW of Site GRD-13. Rock art recorded included cattle, camel, hare, animal's rider, signs, footprints.
GRD-15	N 20° 09.22 \\ E 30° 31.37 Alt 218m	Rock art	?	The site was located about 150m to the north of Site GRD-15. Rock art recorded included cattle, camels, gazelle, dogs, ostrich, animal rider, human, marks, footprints, cross, boats, cupules.
GRD-16	N 20° 08.93 \\ E 30° 31.32 Alt 220m	Rock art	?	This site was located in the eastern bank of the wadi, rock art was recorded including cattle, camel, footprints, human, marks, dots.
GRD-17	N 20° 09.16 \\ E 30° 31.46 Alt 221m	Rock art+ settlement	?	To the north of Site GRD-016 on the opposite bank of Wadi Gorgod, rock art was recorded including: cattle, camel, dog, giraffe, human, cupules, dots, footprints, marks. some Christian pottery were collected.
GRD-18	N 20° 08.96 \\ E 30° 31.25 Alt 222m	Rock art+ settlement + tethering stone	?+ Christian ?+ ?	This site was located about 120m to the west of Site GRD-16. Rock art reported included: cattle, giraffe, human, signs.
GRD-19	N 20° 09.07 \\ E 30° 31.33 Alt 222m	Workshop + tethering stone	Palaeolithic +?	The site was situated on a small sandstone and gravel plateau, about 170m from Site GRD-14. On the surface of the site there are many Palaeolithic tools, and four tethering stones were recorded.
GRD-20	N 20° 09.11 \\ E 30° 31.35 Alt 220m	Rock art	?	About 100m to the north of Site GRD-17 on the opposite bank of the Wadi Gorgod, there is a rock art complex. Images include cattle, camels, animals being ridden, human, boats, footprints, cupules.
GRD-22	N 20° 09.09 \\ E 30° 31.30 Alt 217m	Rock art	?	The site was situated about 100m to the west of Site GRD-20. Rock art recorded included cattle, camel, dogs, animal rider, human, giraffe, boats, footprints, cupules.
GRD-23	N 20° 09.39 \\ E 30° 31.42 Alt 218m	Rock art + stone structure + settlement	? +? + Christian	About 300m to the north of Site GRD-15, a rock art complex was recorded including cattle, camel, dogs, giraffe, ant-eater, ostrich, animals being ridden, human, cupules, dots, footprints, signs, boats, sun, footprints. There is crescent stone structure with 180m diameter and some Christian pottery was collected.
GRD-24	N 20° 09.41 \\ E 30° 31.50 Alt 217m	Rock art + stone structure	?	About 124m to the east of Site GRD-23, rock art was recorded including cattle, camel, dogs, giraffe, gazelle, birds, animals being ridden, footprint, dots, signs. Also a circular stone structure 2m diameter was recorded in the eastern part of the site.
GRD-25	N 20° 09.46 \\ E 30° 31.49 Alt 217m	Rock art	?	About 120m to the north of Site GRD-24, on the opposite bank of the Wadi Gorgod, another rock art complex was recorded including cattle, camel, giraffe, birds, footprints, human, boats, signs.

Figure 13 (continued). Archaeological sites in the Wadi Gorgod.

GRD26	N 20° 09.57 \\ E 30° 31.30 Alt 217m	Workshop	Palaeolithic	On the top of the small sandstone hills, located about 500m NW of Site GRD-25, many Palaeolithic tools were collected from the surface.
GRD27	N 20° 08.88 \\ E 30° 31.16 Alt 218m	Workshop + stone structure + tethering stone	Paleolithic +?	Located c. 1.5km NW of Site GRD-26. There are two complexes of stone structures divided by small khors into two groups. 22 circular structures were recorded, of 1.5-2m diameter. In the eastern and western part of the eastern complex some Paleolithic tools and tethering stones were collected.
GRD-28	N 20° 09.43 \\ E 30° 31.18 Alt 214m	Rock art	? + Christian	It was located about 250m to the south of Site GRD-26. Some rock art was reported including cattle, camel, animal rider, giraffe, signs, footprints. Some Christian pottery sherds were collected.
GRD-29	N 20° 09.34 \\ E 30° 31.09 Alt 215m	Rock art	?	It was situated about 240m to the SW of Site GRD-28. Rock art reported included cattle, giraffe, human, signs, dots, lines, footprints, hunting with dogs, hunting with tethering stones.
GRD-30	N 20° 09.32 \\ E 30° 31.00 Alt 219m	Rock art	?	This site was located about 140m west of Site GRD-29. Rock art was recorded, including cattle, camel, dogs, human, hunting with dogs.
GRD-31	N20° 09.32 \\ E 30° 30.86 Alt 219m	Rock art	?	It was located about 260m to the west of site GRD-30. Rock art was reported including cattle, camel, giraffe, hunting with dog, animal rider, human, footprints, signs.
GRD-32	N 20° 09.29 \\ E 30° 31.02 Alt 219m	Rock art	?	It was situated about 280m east of Site GRD-31. Rock art reported included cattle, camel, footprints, boats.
GRD-33	N 20° 09.28 \\ E 30° 31.05 Alt 222m	Rock art	?	The site was situated about 100m to the east of Site GRD-32. Rock art was recorded including cattle, camel, giraffe, gazelle, crocodile, birds, cross, footprint, signs, dots, human, boats, dots, lines.
GRD-34	N 20° 09.42 \\ E 30° 31.20 Alt 223m	Rock art + stone structure	?	It was situated about 320m to the NE of Site GRD-33. Rock art recorded included cattle, camel, dogs, giraffe, crocodile, footprints, signs, dots.
GRD-35	N 20° 09.72 \\ E 30° 30.17 Alt 223m	Rock art	?	The site was located in the middle of Wadi Gorgod. Rock art reported included cattle, camel, dogs, ostrich, human, animal riders, dots, signs, footprints, star, cross, boats.
GRD-36	N 20° 10.34 \\ E 30° 29.15 Alt 225m	Rock art	?	It was located about 2km to the NW of Site GRD-35. Rock art recorded included cattle, giraffe, footprints, animal rider, ostrich, dogs, human, dots, cupules, signs.
GRD-37	N 20° 10.49 \\ E 30° 28.99 Alt 236m	Rock art	?	It was located about 380m NW of Site GRD-36. Rock art was recorded including cattle, camel, ostrich, giraffe, gazelle, human, footprints, boat, cupules, cross, signs.
GRD-38	N 20° 10.27 \\ E 30° 29.14 Alt 236m	Rock art + settlement	Prehistory +	The site was located about 120m to the south of Site GRD-36. Rock art recorded included cattle, giraffe, ostrich, camel, animal rider, signs, footprint, cupules, dots, human. Some pottery sherds were collected from the surface probably dating to the Christian period.

Figure 13 (continued). Archaeological sites in the Wadi Gorgod.

GRD-39	N 20° 10.48 \\ E 30° 28.98 Alt 237m	Rock art	?	It was located about 460m NW of Site GRD-38. Rock art recorded included cattle, camel, gazelle, dogs, ostrich, signs, footprints, human, animals being ridden, elephant, boats.
GRD-40	N 20° 10.61 \\ E 30° 28.82 Alt 245m	Wadi wall Rock arts	?	Wadi wall 'dry-stone' constructions were recorded in the middle section of Wadi Gorgod about 8km far from the Nile. The wall was divided by the wadi into two parts. The total length of the wall was 100m. The wall was associated with rock art including: cattle, animals being ridden, giraffe, boat.
GRD-41	N 20° 10.81 \\ E 30° 28.46 Alt 244m	Stone structure	? + Palaeolithic.	Located in the western part of Wadi Gorgod, there are two stone structures: the first with a 3m diameter: the second 2.5m in diameter. In the western part, there are a few Palaeolithic tools scattered on the surface.
GRD-42	N 20° 11.02 \\ E 30° 28.27 Alt 245m	Stone structure + Workshop + settlement	Palaeolithic + Nubian group \ Pre-Kerma	It was located about 500m to the NW of Site GRD-40. There are three stone structures recorded with diameters of 3.60m, 1.90m and 120m. Many Palaeolithic tools were collected, and some possibly Nubian or Pre-Kerma sherds.
GRD-43	N 20° 11.36 \\ E 30° 28.23 Alt 246m	Workshop + stone structure	Palaeolithic	It was situated about 640m to the north of Site GRD-41. On the surface of the site some Palaeolithic tools and upper grinding stones were collected. There, three stone structures of different shapes and diameters of 1.20m, 0.70m and 0.50m, were recorded.
GRD-44	N 20° 11.36 \\ E 30° 28.08 Alt 247m	Rock art	?	It was located at the NE edge of the small Jebel, about 250m west of Site GRD-42. Rock art recorded included cattle, camel, giraffe, leopard, wild cat, animal rider, footprints.
GRD-45	N 20° 11.92 \\ E 30° 27.51 Alt 259m	Workshop	Palaeolithic	The site was located about 1.34km to the NW of Site GRD-43. Many Palaeolithic tools were collected from the surface.
GRD-46	N 20° 12.06 \\ E 30° 27.33 Alt 259m	Workshop	Palaeolithic	To the NW, about 410m, from Site GRD-46, on the top of a small plateau, some Palaeolithic tools were collected from the surface.
GRD-47	N 20° 11.91 \\ E 30° 27.32 Alt 251m	Workshop	Palaeolithic	This site was located on a small plateau about 270m to the south of Site GRD-45. An Acheulean handaxe and other Palaeolithic tools were collected from the surface.
GRD-48	N 20° 11.78 \\ E 30° 27.52 Alt 253m	Workshop	Palaeolithic	It was located about 420m to the SE of Site GRD-46. One Acheulean handaxe and other Palaeolithic tools were collected from the surface.
GRD-49	N 20° 11.69 \\ E 30° 27.70 Alt 245m	Workshop	Palaeolithic	The site was located on the small flat plateau about 360m SE of Site GRD-47. Two complete Acheulean handaxes and scrapers, cores. etc. were collected from the surface.
GRD-50	N 20° 11.42 \\ E 30° 27.60 Alt 253m	Workshop + Settlement	Palaeolithic + Christian	To the south of Site GRD-48 about 500m, in the western part of the small sandstone hills, some Palaeolithic tools were collected from the surface and a few pottery sherds were also collected.
GRD-51	N 20° 11.09 \\ E 30° 27.42 Alt 256m	Workshop + Settlement	Palaeolithic + Christian	Situated about 710m south of Site GRD-49, in the north-western part of the small Jebel, some Palaeolithic tools were collected from the surface, and two tethering stone were recorded.

Figure 13 (continued). Archaeological sites in the Wadi Gorgod.