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Cover picture: The head of Amun from the Northern Complex at Berenike; photo by S. Sidebotham.

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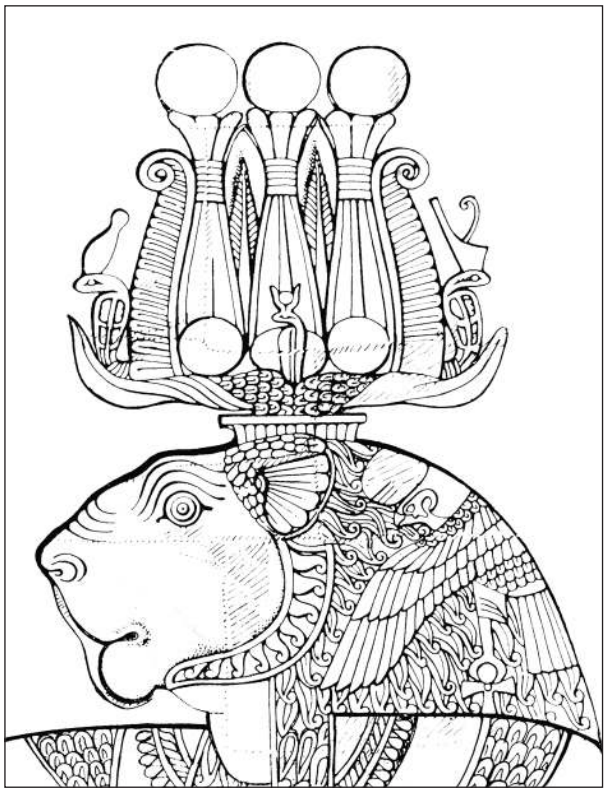

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Sudanarchäologische Gesellschaft zu Berlin e.V.

Angesichts der Tatsache, dass die globalen wirtschaftlichen, politischen und ökologischen Probleme auch zu einer Gefährdung der kulturellen Hinterlassenschaften in aller Welt führen, ist es dringend geboten, gemeinsame Anstrengungen zu unternehmen, das der gesamten Menschheit gehörende Kulturerbe für künftige Generationen zu bewahren. Eine wesentliche Rolle bei dieser Aufgabe kommt der Archäologie zu. Ihre vornehmste Verpflichtung muss sie in der heutigen Zeit neben der Forschung darin sehen, bedrohte Kulturdenkmäler zu pflegen und für ihre Erhaltung zu wirken sowie ihr Wissen mit der Öffentlichkeit zu teilen.

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Wir gedenken unserer verstorbenen Kollegen in der Sudanarchäologie

Sandro Salvatori (1948–2020)

Der Archäologe Sandro Salvatori führte Ausgrabungen in der Türkei, im Iran, im Oman, in Pakistan, Turkmenistan und Usbekistan durch, aber auch in Ägypten, in Mittelamerika, in Italien – und vor allem auch im Sudan. Er war viele Jahre Direktor für Archäologie bei der „Soprintendenza per i Beni Architettonici e del Paesaggio del Veneto Orientale-Venezia" und Mitbegründer des Zentrums für Sudan- und Subsaharastudien. Er führte gemeinsam mit seiner Frau Donatella Usai Grabungen im Sudan durch, wobei insbesondere die Erforschung Prähistorie (Mesolithikum und Neolithikum) im Mittelpunkt stand.

Abdelgadir Mahmoud Abdallah (1937–2021)

Professor Abdelgadir war ein bekannter Wissenschaftler und einer der ersten sudanesischen Archäologen. Er war der Gründer des Departments für Archäologie an der Universität von Khartum. Er spezialisierte sich auf die meroitische Kultur im Allgemeinen und auf die meroitische Sprache im Besonderen. Er lehrte Sudanarchäologie nicht nur an der Universität von Khartum, sondern auch an anderen akademischen Einrichtungen im Sudan und im Ausland. Er verfasste zahlreiche Publikationen über die meroitische Sprache und Kultur.

Jean-Claude Goyon (1937–2021)

Professor Jean-Claude Goyon war promovierter Literaturwissenschaftler und leitender Forscher am CNRS. Er lehrte als Professor für Ägyptologie an der Universität Lyon II. Er war am IFAO (Institut Français D'Archéologie Orientale) tätig und wissenschaftlicher Leiter des französisch-ägyptischen Zentrums für die Erforschung der Tempel von Karnak. Aus seiner breiten Bibliographie ist für die Sudanarchäologie besonders das zusammen mit Richard A. Parker und Jean Leclant veröffentlichte Werk „The Edifice of Taharqa by the Sacred Lake of Karnak" (Brown Egyptological Studies 8; Providence, 1979) von Bedeutung.

Mohamed Bashir, Sara Mamoon, Osman Khaleel[1]

Kedurma Eastern Hinterlands in North Sudan: An archaeological Survey

Introduction

This paper presents the results of the University of Khartoum Archaeological Project undertaken in the eastern hinterland of Kedurma, north of the Nile Third Cataract Region (Fig. 1) during season 2021. The project was funded by the British Institute in Eastern Africa (BIEA), and conducted with the assistance of some colleagues in the Department of Archaeology, University of Khartoum.

The surveyed and analytically recorded area is about 40 square kilometers in size extending from the mouth of Wadi Kedurma at the eastern edge of the site to the mountains range in the east (Fig.4). The project recorded different archaeological remains, which belong to the Lower and Middle Paleolithic, Middle Kerma up to the medieval periods. The survey of this landscape has led to a greater understanding of the distribution of the sites and their inter-relations. It would be useful firstly to look at the study area and its geography before proceeding with reporting on the sites discovered.

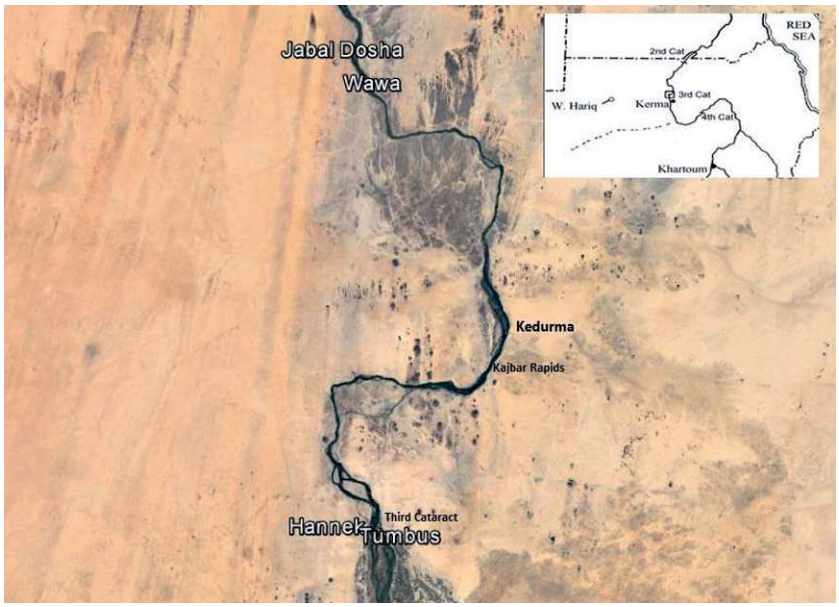

Fig. 1: Third Cataract Region (based on © Google Earth).

The study area

As it has been mentioned, the surveyed area is located at the northern end of the Third Cataract Region of the Nile, northern Sudan. This region begins at the north end of the Dongola Reach extending from the area of the villages of Hannik (west bank) and Tombos (east bank). It begins immediately upstream of the Third Cataract and extends downriver as far as the area of Jebel Dosha (west bank) and Wawa (east bank), in the north (Fig. 1). The northern boundary is clearly marked by the cliff-face at Jebel Dosha, overlooking the west bank of the river some 5 km downstream of Soleb. This is the end of a long ridge, which runs about 3 km into the desert, and forms a prominent natural feature (Osman and Edwards 2012, 37).

The study area, in the eastern hinterland of Kedurma, is located at the northern end of the Mahas region ca. 10 km south of Delgo and 9 km north of the Kajbar rapids (Edwards 1995, 37).

The geography

Being situated in the northeastern end of the Third Cataract Region, the area of study is characterized by many elements, such as mountains, desert and Wadies. Hence, the geographic subdivisions of the region and its geological formations consisted of a basement complex of pre-Cambrian rocks and enclosed by the Nubian sandstone, mudstones, a variety of conglomerates, and grits (Whiteman 1971, 11, 54-55).

1 University of Khartoum, Faculty of Arts, Department of Archaeology.

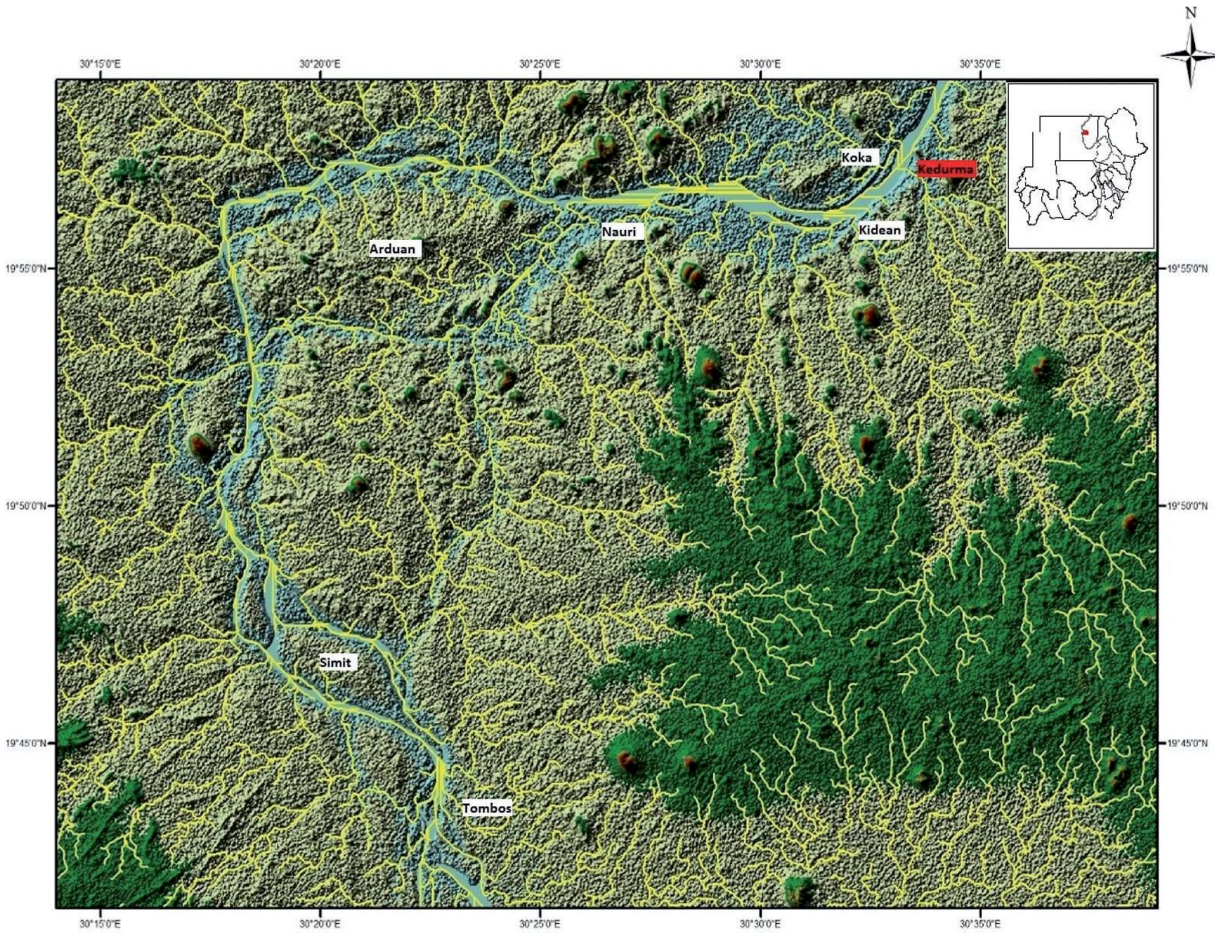

Fig. 2: The landscape of the Third Cataract Region (based on © Sudan Survey Authority "SSA", 2018).

There are several seasonal streams 'Wadies', bisecting the region, all of which are fed by rainfall. The rainfall regime is unstable, due to the fact that it is highly dependent on the climatic changes and weather instability. The most important permanent water source in the area is the Nile, which crosses the region from the South to North. The river here runs in several channels, and between two cataracts (the cataract of Tombos in the south and the cataract of Sabu-Kajbar in the north). The area is very rocky and rugged, and is in fact, part of the cataract system itself (Osman 2004, 34) (Fig. 2).

As is common in most parts of the Nile, especially in cataract areas, available agriculture land is restricted to a narrow strip along the banks. However, in contrast with other cataract regions, this strip in the Third Cataract Region is a rich alluvial land, especially the area between Nauri and Sabu-Kajbar. It has a width of about 3 km on the southern bank, and is more than 13 km in length (Osman 2004, 34-35).

The physiographical character of the geological formation of the flanking ridges surrounding this area has affected the pattern of drainage of this part of the plain. A separate sub-area is called Wadi Kedurma, after the name of the modern village of Kedurma. Wadi Kedurma connects the town with the eastern desert (Fig. 3). In terms of geological structure, the physiographic and drainage patterns of Wadi Kedurma shows certain common features with other Wadies in the area of the Third Cataract.

As outlined above, the general landscape of the area of Wadi Kedurma is characterized by isolated mountain ranges to the east. Desert lands and water courses has made it a natural corridor with favorable environmental conditions suitable for human occupation but also for east-west interaction.

Survey and Fieldwork Methodology

The only available study of this area is the Mahas Survey Project of the University of Khartoum. This project has provided a general description of the region. It aimed to understand the Third Cataract Region as an ancient frontier zone between Egyptian powers to the north and the Sudanic world of central Sudan to the south. This survey extended over some 80 km of the Nile and its immediate hin-

Fig. 3: General view of Wadi Kedurma (photo: © M. Bashir).

terland an area of about 5 km in width (cf. Osman and Edwards 2012). Following several seasons of the Mahas Survey Project in the region, data relating to more than 690 registered 'sites from different pre-historic and historical periods' or other features were collected and documented (cf. Osman and Edwards 2012) which provide us with firm evidence of the settlement history of the region. Enough data have, however, already been collected to present an outline of the long-term development of the region's settlement landscapes. Such regional patterns may also be related to those encountered in adjoining regions to the north (in Lower and Middle Nubia) and south (the Dongola Reach and the Fourth Cataract region) (Edwards et al. 2012, 451). It is evident that limited research efforts addressed the areas far from the Nile.

By contrast, the present study recorded in detail all archaeological sites and remains as well as landscape features exploring the vast open area east of Kedurma site. In addition, two sets of air photographs were used to draw a map of the terrain. This was achieved by recording archaeological features in the survey area utilizing the following three-phases of survey methodology:

The first phase involved a general reconnaissance of the Wadi and its surrounded plains from the east side of Kedurma to the east for about 40 km2. In this phase, an attempt was made to identify the main features of the area, such as mountains, plains, and paleo-channels.

The second phase was a systematic survey, identifying features from satellite images and then, using a GPS, and digital photography recording those features on the ground. This approach was particularly fruitful in the flat, less dissected eastern section of the Wadi zone, where it was possible to record, among other things, ancient Paleolithic sites.

The third phase of the investigation was an intensive survey around the major prehistoric sites (sites number KDRM 119 and 121). The aim of surveying these sites was to systematically collect materials from the surface of the sites and adjacent tributaries. The collection of this surface material is a key element in comprehending the horizontal distribution of the archaeological material in the sites.

Sites Gazetteer

Many archaeological sites have been discovered in the area, mainly situated close to the Wadi and recorded by the name 'KDRM which means Kedurma and given numbers from 100 onwards' (cf. Fig. 4). Twelve of these sites are related to the Paleolithic period and have revealed large stone tools. Samples were collected systematically from these sites for further detailed studies.

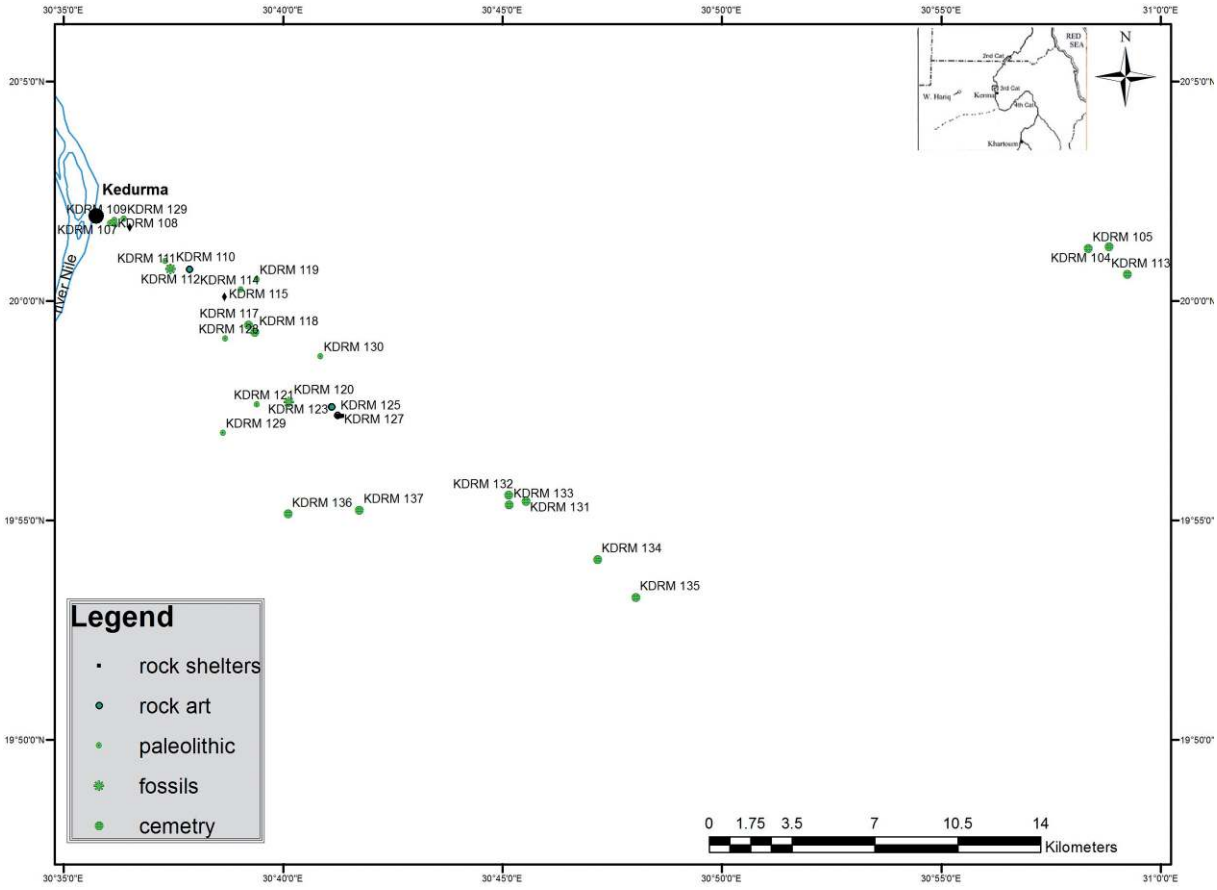

Fig. 4: Sites distribution (based on © Google Earth).

KDRM 101 (N 20° 01' 47.6" / E 30° 36' 05.5"):

This site contains tethering stones and grinders over a wide area in the middle of the Wadi and situated east of the Kerma-Halfa highway over a distance of about 300 meters (Fig. 5, 6). Some eroded pottery sherds were also reported from the surface of the site (Fig. 7).

KDRM 102 (N20° 01' 64.7" / E30 36' 018.5"):

Site KDRM 102 is a low gravel mound with a rectangular shape situated at the right bank of the Wadi, and extending of about 50 x 300 m. Micro-lithic tools were collected along with colored stones.

Fig. 7: Pottery sherd from KDRM 101 (Source: M. Bashir).

Figs. 5, 6: Samples of grindings and tethering stones from KDRM 101 (photo: © M. Bashir).

Fig. 8: An example of a semi-circular stone feature on site KDRM 103 (photo: © M. Bashir).

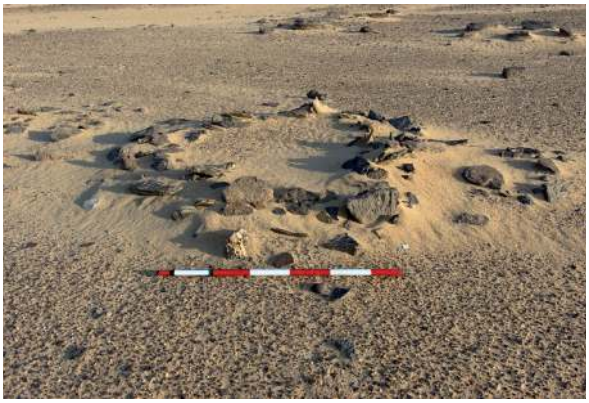

Fig. 9: A grave? at KDRM 105 (photo: © M. Bashir).

KDRM 103 (N20° 01' 407" / E30° 36' 303"):

Here is a semi-circular stone building, 2 m in diameter situated about 300 m south-east of KDRM 102 (Fig. 8). A small number of red pottery sherds were collected from the surface.

KDRM 104 (N20° 01' 141" / E30° 36' 771"):

The site is of 30 x 50 m size. It is a cemetery of small circular tumuli with black stone superstructure forming a kom. It is situated on the elevated mound at the east bank of the Wadi. Two stone tools were collected.

KDRM 105 (N20° 01' 120" / E30° 36' 788"):

The site is a cemetery consisting of five small circular tumulus situated in an open area about 200 m south of site KDRM 104 (Fig. 9). The size of the site is 60 x 40 m, some eroded pottery sherds and nine stone tools were collected as a surface samples.

KDRM 106 (N20° 00' 974" / E30° 36' 875"):

The site is situated in a flat area in middle of the Wadi just south of KDRM 105. It contains upper grinding stones spread over an area of 60 x 50 m. Samples of highly eroded pottery sherds and grinders were collected. The site had been unfavorably impacted by the traditional gold mining activities. In fact, some parts of the site were dug randomly by the gold seekers.

KDRM 107 (N20° 00' 812" / E30° 37' 057"):

Site KDRM 107 is located to the south-east of KDRM 105, at the left bank of the Wadi (Fig. 10). Remains of a micro-lithic workshop and stone cores were encountered on the surface of the site. The archaeological material was collected and recorded. The southern part of the site has been damaged by traditional gold miners.

Fig. 10: General view of KDRM 107, with destruction (photo: © M. Bashir).

Fig. 11: General view of KDRM 108 (photo: © M. Bashir).

Fig. 12: General view of KDRM 109 (photo: © M. Bashir).

KDRM 108 (N20° 00' 720" / E30° 37' 157"):

This site is situated on the left bank of the Wadi, at a distance of about 155 m east of KDRM 107, on an elevated sandstone mound about 3 m high (Fig. 11). The site 250 x 50 m in size, contains the remains of a micro-lithic workshop. Samples of this material were collected.

KDRM 109 (N20° 00' 543" / E30° 37' 187"):

This site is of about 200 x 20 m size and situated on a low mound at the right bank of the Wadi, about 300 m south of KDRM 108 (Fig. 12). Samples of micro-lithic tools were collected.

KDRM 110 (N20° 00' 438" / E30° 37' 263")

The site contains remains of calcified wood that covers an area of 10 x 15 m, its long axis north-south, and situated on the elevated mound at the right bank of the Wadi (Fig. 13).

KDRM 111 (N20° 00' 454" / E30° 37' 254"):

The site situated in an elevated area covering of 300 x 150 m. One Acheulean hand axe and small upper grinders were collected.

KDRM 112 (N20° 00' 432" / E30° 37' 519"):

This site is located on the left bank of the Wadi at the foot of a high mountain. The site has one rock drawing depicting what seems to be a trap with some geometric shapes on a horizontal surface of a sandstone outcrop (Fig. 14).

KDRM 113 (N20° 00' 364" / E30° 37' 645"):

The site is a cemetery situated on an oval elevated ground, at the left bank of the Wadi, and lies about 300 m south-west of KDRM 112. The site covers an area of 150 x 150 m. Samples of lithic tools were collected.

Fig. 13: General view of KDRM 110 (photo: © M. Bashir).

Fig. 14: The rock drawing of KDRM 112 (photo: © M. Bashir).

Fig. 15-16: Rock structures of KDRM 115 (photo: © M. Bashir).

KDRM 114 (N20° 00' 154" / E30° 37' 937"):

The site is an open area, situated at the foot of sandstone plateau on the left bank of the Wadi, south of KDRM 114. It covers a maximum area of 10 x 10 m. Some micro-lithic tools were collected along with two fragments of a small black jar.

KDRM 115 (N20° 00.0' 53" / E30° 38' 397"):

The site consists of two structures made from only one row of stones, situated at the left bank of the Wadi (Fig. 15, 16). The first structure is 0.60 m in length, 0.50 m wide and 0.50 m high. The second, situated 85 m to the south of the first structure, is 0.30 m high, 0.60 m wide, and 0.70 m in length. No archaeological material was encountered on the surface.

KDRM 116 (N17° 59' 720" / E30° 38' 922"):

The site is formed by four circular stone rings (between 2–3 m in diameter) in an area of about 30 x 10 m. It is situated on the flat Wadi bed. No material was noted on the surface.

KDRM117 (N19° 59' 725" / E30° 39' 128"):

In this site there are 15 small mound tumuli (Fig. 17). They occur in clusters and separately from the summit to the foot of the mountain over an area of 70 x 70 m.

Fig. 17: General view of KDRM 117 (photo: © M. Bashir).

Fig. 18: A grave from KDRM 118 (photo: © M. Bashir).

KDRM118 (N19° 59' 714" / E30° 39' 212"):

The site is a cemetery, consist of about nine small mounds which are distributed in a flat plain over an area of 300 m2(Fig. 18). It is located on the left bank of the Wadi in a few hundred meters east of KDRM 117. Samples of upper and lower grinders were collected from the surface.

KDRM 119 (N19° 59' 690" / E30° 39' 240"):

This site is situated at the left bank of the Wadi, and extends from north-west to south-east along the Wadi for about 500 m sloping gradually from north to south. A large quantity of Acheulean hand axes were found on the surface, along with grinders and tethering stones; some samples were collected from the site along with a piece of decorated pottery (Fig. 19, 20).

KDRM 120 (N19° 57' 422" / E30° 40' 749"):

The site is flat area, covered by calcified wood, along with sandstone debris. A sample of grinding stone was collected.

KDRM 121 (N19° 57' 381" / E30° 40' 969"):

The size of this site is about 700 m north-south and 250 m east-west (Fig. 21, 22). Its surface contains many hand axes and flakes from different materials, such as chert, quartz, flint and sandstone. It is interesting that on the eastern slope of the site, roughly-built stone shelters and rock drawings cover the area. On the northern slope of the site close to the center, several flakes and hand axes are noticeable. One rough pottery sherd in a red color was also found.

In sites KDRM 119 and KDRM 121 there is a vast depression area full of sporadic artefacts, lithic tools, ostrich egg shell, grinding stones scattered around the northern part of the sites, probably representing secondary occupation.

Figs. 19, 20: Piece of pottery and some hand axes from KDRM 119 (photo: © M. Bashir).

Figs. 21, 22: General vew and some axes from KDRM 121 (photo: © M. Bashir).

Figs. 23, 24: Samples of rock drawings from KDRM 122-124 (photo: © M. Bashir).

KDRM 122-124 (N19° 57' 353" / E30° 41' 058" and N19° 57' 354" / E30° 41' 062" and N19° 57' 232" / E30° 41' 150"):

Sporadic rock drawings of various horned animals of Bovidae were recorded at these sites, which are situated on an isolated sandstone plateau east of KDRM 121 (Fig. 23, 24). Samples of grinders, tethering stones and ostrich eggshell were collected.

KDRM 125-126 (N19° 57' 226" / E30° 41' 178" and N19° 57' 229" / E30° 41' 209"):

These sites are composed of rock shelters situated on an isolated sandstone plateau southeast of KDRM 124. Samples of ostrich egg shell and rock drawing were recorded (Fig. 25, 26).

KDRM 127 (N19° 56' 638" / E30° 41' 625"):

The site is a mixture of grinder stones and tethering stones, scattered on a flat area east of KDRM 126.

KDRM 128 (N19° 56' 449" / E30° 42' 362"):

The site is located next to a small branch of the Wadi, with outcrops of silica rocks overlooking the Wadi. Remains fossil woods were noticed in the surface.

Figs. 25, 26: Samples from rock shelters of KDRM 125-126 (photo: © M. Bashir).

Fig. 27: A grave from KDRM 129 (photo: © M. Bashir).

Fig. 29: A grave from KDRM 131 (photo: © M. Bashir).

KDRMM 129 (N19° 55' 263" / E30° 45' 321"):

The site is situated about 1km east of KDRM 122, on an elevated pebble ground. It consists of five tumuli, 1.50-3 m in diameter (Fig. 27). A concentration of material, from micro lithic tools, ostrich egg shell and shells, were recorded not far from the site.

KDRMM130 (N19° 55' 348" / E30° 45' 886"):

The site, situated to the east of KDRM 129 on the north-east edge of a hilltop, covers an area of 20 x 20 m and consists of several stone tumuli (Fig. 28). At least four tumuli 1–2 m in diameter were noted. Moreover, grinders, pottery sherds and ostrich egg shell were collected from the surface.

KDRM 131 (N19° 55' 217" / E30° 45' 276"):

The site is a cemetery situated about 200m to the south of KDRM 130. At least 25–30 tumuli were recorded, apparently well preserved associated with mainly undecorated ceramic materials. The size of the tumuli ranges from 1m to 3 m in diameter (Fig. 29). An isolated tumulus was found to the north-west of the other aforementioned tumuli at the mountain foot, it is made of black stones supported by a series of outcrops. Rough pottery sherds and a grinding stone were collected associated with this grave.

KDRM 132 (N19° 54' 700" / E30° 47' 897"):

The site is located 300 m east of KDRM 131, and extends to about 300 m. It consists of several tumuli and small mounds. These structures are of different types: mounds of big blocks of stone and tumuli of small pebbles. At least seven tumuli, 1–5m in diameter, were found right on the bank of the Wadi, while within the Wadi bed, two other concentrations of stones, possibly originated from tumuli were identified. The site appears to be disturbed by the erosion and the Wadi flooding.

Fig. 28: General view of KDRM 130 (photo: © M. Bashir).

Fig. 30: Samples of micro-lithic tools on the surface of the site KDRM 132 (photo: © M. Bashir).

To the east, two tethering stones and micro-lithic material were scattered within an area of about 200 m (Fig. 30). A specific sampling was made in the northern sector of the site because of the occurrence of a major concentration of material in that area.

KDRM 133 (N19° 53' 153" /E30° 48' 028"):

The site is situated about 700m north-east of KDRM 132. It is very small, ca. 50 x 50 m. characterized by three stone tumuli 1.50–2 m in diameter without evidence of associated ceramic or lithic materials except a hand axe and ostrich egg shell fragment.

KDRM 134 (N19° 55' 992" / E30° 40' 677"):

The site, situated south-west of site KDRM 122, was located near the bed of the Wadi. For this reason, it was damaged by water activity. Remains of three tumulus, 1.50 m, 2 m, and 1.50 m in diameter made of dark stones are visible on the surface (Fig. 31). A hand axe was collected from the surface.

KDRM 135 (N19° 55' 143" / E30° 41' 443"):

The site is situated to the south-east of KDRM 134 on a sandy mound surrounded by rocky ridges. It is well preserved and extends over an area of 200 x 300 m. In the north-eastern sector a very large amount of pottery sherds were visible on the surface. Other samples were taken from different spots of the site. A tumulus 1.5 m in diameter was visible on the surface but it is possible that other similar features originally occurred and are now badly eroded.

All over the surface of the site there were fragments of hammer stones and hand axes (Fig. 32), and two concentrations, 20 cm in diameter were observed.

Fig. 31: A sample of stone tumuli at the surface of the site KDRM 134 (photo: © M. Bashir).

Fig. 32: Collection of hammer stones from the surface of KDRM 135 (photo: © M. Bashir).

Discussion

The survey of Kedurma's eastern hinterlands yielded information of great importance in relation to the Eastern Desert and its archaeological and cultural context. The archaeology of the Eastern Desert in that region is still poorly known due to the lack of in-depth survey and excavation efforts. Meanwhile, this work and the future investigations will certainly enhance our understanding of chrono-cultural events in the area and will permit the reconstruction of the complex net of relationships that link Eastern Sudan to the Nile Valley and other more westerly regions of Africa (cf. Manzo, 2012, 71).

The initial aim of the survey project was to obtain firm data that would enable studying in detail the relation between the Meroitic town and its eastern hinterlands through the study of the occupational sequence. However, the complete occupation sequence of the sites and its surrounding areas cannot

be obtained through surveying, even if intensive, and only intermittent evidence has been highlighted.

The survey yielded a total of 35 sites, which were recorded. These sites vary from cemeteries to workshops and individual large cutting tools distributed in the Wadi bottom and along its banks. Not all the material available for study was actually examined: this remains a very preliminary report whose aim is to illustrate the sites, their associated material, possible chronology, and to offer a first insight about it.

Many crucial questions remain and others have been raised by the work, but it is anticipated that the results obtained will contribute to a better understanding of the interaction processes between the Nile and the desert in the Third Cataract Region. However, only systematic excavations will be able to validate our reconstruction and confirm whether scatters of archaeological evidence reflect real settlement patterning. More generally, it will cast light on the assemblages of sites KDRM 119-121 and the other compound sites in the area.

Furthermore, intensive surface sampling showed that lithic tools were distributed densely over parts of the Wadi. This was the case at KDRM 119 and KDRM 121, which are located on the alluvial fan of the bottom of the Wadi. The distribution of Acheulean hand axes (300,000 years ago) covers an area of between 4–6 ha.

An assemblage of 200 stone tools has been collected by random surface sampling, these distinguished tools were taken for comprehensive classification.

The most diagnostic stone tools are hand axes and blades, which suggest a Lower to Upper Paleolithic date for the assemblage. Characteristic tools of this periods were intensively recorded at 12 sites (KDRM 102, 106, 107, 108, 110, 111, 119, 120, 121, 133, 134, and 135). The raw material at both KDRM 119 and KDRM 121 indicates the presence of lithic workshops.

The preliminary study of these tools based on a descriptive or morphological approach on which the physical characteristics and the external features of the artifacts, and categorizing artifacts distinctively on their type, weight, situation, material, or whichever class the individual decides upon.

These classification approaches have revealed large variations in the Paleolithic stone tools production, mainly the OSA, MSA technology. Most of tools bore traces of manufacturing utilising Levallois methods of wide palette of raw materials. Lower and Middle Paleolithic assemblages with the Lanceolate and projectile tip point technology were detected (cf. Tahir and Nassr 2015, 100) in which numerous cores for flakes and points were recorded.

Most of the tools represented multiple cutting ends and edges, which indicate different activities, specially hand axes. The small points and picks indicate the use of special techniques for special functions (cf. Nassr 2014, 112).

The raw materials (sandstone, cherts, mudstone and petrified wood) are available in most parts of the survey area and it is evident that these resources have been exploited intensively during this period. Silicified sandstone and quartz are the common rocks of the stone tools and chert and Ferruginous sandstone are secondary.

Tethering stones were present in the area of study, appearing as isolated finds in the area. These artefacts had multiple uses and possibly re-uses throughout the Holocene, and the debate on their functional aspects and dating is still open (Gallinaro et al. 2018). Almost 153 stones identified as tethering stones occur as isolated finds in the whole surveyed area; there is no evidence on which to date these and they presumably reflect a wide-spread use throughout the landscape. The highest percentage of these isolated tethering stones occurs in the depression areas and they are mainly of the shaped of less grooved types. The depressions are geomorphological features particularly suited to retaining moisture and are characterized, even today, by the presence of a denser vegetation cover, i.e., discontinuous grass cover. Although it is difficult to say for certain, they might reflect task-oriented activities, likely including hunting.

The identification spot of the tethering stones in the study area proved that some of them were not retrieved during the survey in their original locations. Water erosion can possibly affect these tethering stones.

Evidence of these stone tools has been reported from various parts of Africa and Asia (Allard-Huard 1993; Gallinaro and di Lernia1, 2018, 1; El Mahi 2007, 38). Studies of tethering stones have shown different aspects in past human life when it comes to physical interactions with the environment and subsistence, (cf. Gallinaro and di Lernia1 2018, 16; El Mahi 2007, 53; Sciuto 2018, 12).

Once again, the material collected from the surface survey indicates that the area was occupied from at least 300,000 years ago. The major occupation seems to have taken place during the transition between lower and upper Paleolithic periods.

Altogether 12 sites of this date range (Stone Age) were found, including rock-shelters and open-sites. The sites were located along foothills or flat area and are usually near paleo-channels.

Rock art were detected in the study area. The identified rock art sites were at KDRM 112, 122, 123 and 124, (cf. Fig. 4), and the number of individual petroglyphs was 23.

The petroglyphs and motifs were found in groups or single in a vertical and horizontal scene. Is the most common are the scenes of various horned animals (Bovidae), a pattern evident in the other rock art sites in Nubia (cf. Hamdieen and Polkowski 2018, 31).

It is interesting to observe that the rock art scenes in Kedurma indicate clearly the northern extension of the savanna region in Africa during prehistoric times. Today, none of the animals depicted in Kedurma exists in the region of the Third Cataract in North Sudan. The prehistoric artist who made these rock scenes must had been inspired by the animals in his environment, and hence copied what he saw and experienced in his territory.

Furthermore, it crucial to point out that the animals depicted in those sites do not include any domestic animals. On the contrary, all the scenes depict wild animals. Again, this can possibly indicate that these rock art scenes were executed during the Paleolithic or the Mesolithic period when man was a hunter and a gatherer.

Pottery were rarely reported in the study area. Most of the collected pieces seems to be water washed since most of them were found in the depressions and the bottom of the Wadi. The distinguished pieces are No. 1 and 2. (See above Fig. 7 and 19). The first decorated with incised lines and impressed triangle decoration looking unusual in the Third Cataract Region (see Osman and Edwards 2012) but quite similar to what is found in the Fourth Cataract Region and Eastern Desert dated to the Middle Kerma Period (cf. Steven et al. 2006, 98), while the second is a vessel recorded in Pan Grave assemblages dating to the 13th Dynasty at Hierakonpolis, and in Second Intermediate Period, Early New Kingdom, Pan Grave cemeteries in Lower Nubia (cf. Jiuliani 2001, 40; Säve-Söderbergh 1989, 166-174).

In addition, observations on the stone tools and the rarity of pottery sherds in these sites suggest a pre-Holocene era. The sites of this period are located either on stone outcrops overlooked the Wadi or on low rocky ridges. Generally, it seems that in all known periods after the Paleolithic the favorite location for establishing occupation was small side valleys and the base of mountains around the area of the Third Cataract. The only difference between the various periods in choosing such environmental settings is the change in the concentration of sites in certain part of the region.

Twelve sites show evidence of funerary structures, which are either small mounds or rounded stone structures distributed in a flat or hilltop areas. Most of these structures were coincided with Z. Borcowski and D. Welsby's classification of funerary structures in the Fourth Cataract Region (cf. Borcowski and Welsby 2012).

The circular black stone superstructure of KDRM 104 is looking similar to the type FT04b, (cf. Borcowski and Welsby 2012, fig 1, p. 18; Pl.1, p. 311), which is ring of piled rubble several courses in height with earth filled center usually well below the level of the stone ring. This type usually belongs to Pan Grave or Middle Kerma. The circular tumuli graves and stone curve rings of KDRM 105 also have parallels in the Fourth Cataract Region, the graves look similar to type CS09 (cf. Borcowski and Welsby 2012, fig. 10, p. 27; Pl.5, p. 315), small ring of more than one row of stones set close together. This type is dated to the Islamic Period in the Fourth Cataract.The stone curved rings in KDRM 103 are similar to type SS10 that represented by a low wall forming an arc frequently in its south side. It might be a shelter or wind break (cf. Borcowski and Welsby 2012, fig. 11, p. 29; Pl.7, p. 317). The cemetery of KDRM 113 looks similar to type FC01b in a shallow dome shaped (cf. Borcowski and Welsby 2012, fig. 6, p. 24) frequently linked with Middle Kerma. The small mounds of KDRM 117 look similar to type FC02, representing by oval cairn of stones (cf. Borcowski and Welsby 2012, fig. 7, p. 24), and normally linked with Middle Kerma. The circular stones documented in the study area at KDRM 103 have parallels in the Fourth Cataract Region, which represented by types SS06a, and SS06b. The features of these types are low-walled circular feature often with an opening on the south side, often associated with pottery, or a circular to sub-rectangular building often with a doorways on the south side with a stone-slab lintel (cf. Borcowski and Welsby 2012, fig. 11, p.29; Pl. 7, p. 317). Those features belong to the Islamic Period in the Fourth Cataract Region.

According to the archaeological material and its parallels in the other areas such as the Fourth Cataract, one can conclude that the eastern hinterland of Kedurma was occupied during Paleolithic, Middle Kerma to the medieval Periods. The continuous occupation of the Kedurma eastern hinterland after the Middle Kerma and the existence of those sites along the Wadi, suggest that it was an area of some importance during the early periods in the region as well. In historical times and until today, the Wadis acting as trade routes in which the goods and cultural traits were moving from one place to another (cf.

Soghayroun 2010). The locations of all recorded sites in a line along the Wadi strengthen the interaction processes between the Nile and the desert regions. A perspective for interaction possibly east-west. It is evident that the interaction process was north-south during the later periods of the Third Cataract Region and ancient Sudan in general, which led us to think about the Third Cataract Region as a cross cultural point (cf. Osman and Edwards 2012).

The number of extensive Paleolithic sites in the surveyed area is considerable and this seems very important since it could contribute to shedding more light on the issues related to the study of Paleolithic and large cutting tools. There is no specific research into large cutting tools in Sudan which are only mentioned through the history of Sudan and Old Stone Age in the Nile Valley (cf. Arkell 1949, Wendorf 1968, Chmielewski 1987, Wendorf & Schild 1974). The only new systematic project mainly concerning the study of large cutting tools is 'EDAR' East Desert Archaeological Project run by the University of Neelain and the Institute of Archaeology, University of Wrocław in the Lower Atbara River (Nassr 2017).

Concluding remarks

Our archaeological understanding of eastern hinterland of Kedurma needs to be enriched with new evidence from the whole region, not just the Wadi. The data presented in this paper indicates that the Eastern Desert in Sudan was not isolated during the Paleolithic Period and it should be studied as part of a region-wide strategy aimed at examining the cultural, economic and political links across the entire region from the Nile to the desert and vice versa. The survey of the eastern hinterland of Kedurma is one of the missing pieces in the chain of cultural units in the Third Cataract Region and northern Sudan in general. Although, this work was a step towards the realization of this goal, away from studying the major riverine sites as isolated entities, towards a more holistic approach to the region.

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Zusammenfassung

In diesem Beitrag werden die Ergebnisse des archäologischen Projekts der Universität Khartum vorgestellt, das in der Saison 2021 im östlichen Hinterland von Kedurma, nördlich der Region des Dritten Katarakts des Nils, durchgeführt wurde. Das Projekt wurde vom British Institute in Eastern Africa (BIEA) finanziert und mit der Unterstützung einiger Kollegen der Abteilung für Archäologie der Universität Khartum durchgeführt.

Das untersuchte und analytisch erfasste Gebiet ist etwa 40 km2 groß und erstreckt sich von der Mündung des Wadi Kedurma am östlichen Rand des Geländes bis zur Bergkette im Osten.

Die Untersuchung ergab insgesamt 35 Fundstellen, die dem unteren und mittleren Paläolithikum, der mittleren Kerma- Zeit und bis hin zum Mittelalter zuzuordnen sind. Diese Stätten reichen von Friedhöfen über Werkstätten bis zu einzelnen großen Steinwerkzeugen und Fesselungssteinen, die im Boden des Wadis und entlang seiner Ufer verteilt sind. Die Untersuchung dieser Landschaft hat zu einem besseren Verständnis der Verteilung der Fundstätten und ihrer Beziehungen untereinander geführt.

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