

Polish Centre of Mediterranean Archaeology, University of Warsaw
Institute of Archaeology and Ethnology, Polish Academy of Sciences

Soba Expedition

Preliminary report

on the season of fieldwork conducted in 2019-2020



Khartoum 2020



Our team in December 2019 (photo Mariusz Drzewiecki)

List of contents

Introduction by Mariusz Drzewiecki	3
The large-scale geophysical prospection of Soba in the 2019/2020 season by Robert Ryndziewicz.....	8
Excavations by Tomasz Michalik and Joanna A. Ciesielska	17
Pottery studies by Ewa Czyżewska-Zalewska	44
Bioarchaeological analysis of human skeletal remains by Joanna A. Ciesielska	47
Ethnographic research by Maciej Kurcz	50
Fieldwork training from the perspective of a trainee by Mokhtar Maali Alden Mokhtar Hassan	55
References	56

Introduction

by Mariusz Drzewiecki

At the end of 2018 the Polish Centre of Mediterranean Archaeology, University of Warsaw, applied for a research concession in Soba East. The request was accepted and the boundaries of the area have been set (Fig. 1). At the same time the National Science Centre in Poland accepted a project proposal based on agreement no UMO-2018/29/B/HS3/02533. The project was entitled *Soba – the heart of Alwa. Spatial organization of the capital city on the Blue Nile*. The project introduced a new approach to study the urban plan of the city (Drzewiecki and Ryndziewicz 2019, <https://link.springer.com/article/10.1007/s11759-019-09370-x>).

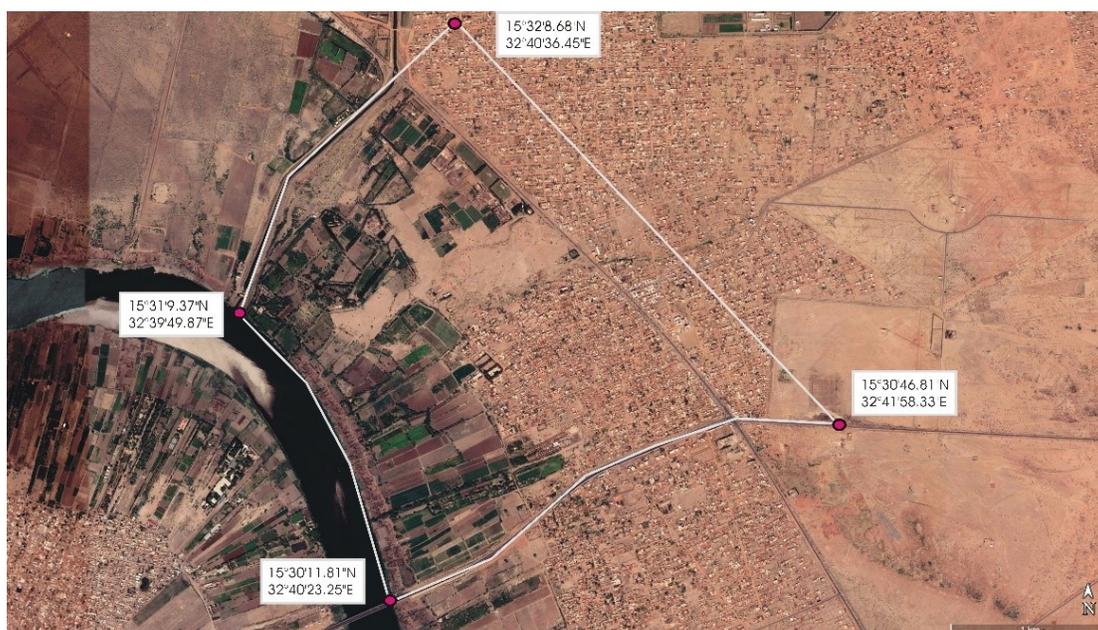


Figure 1. Research concession (background image – Google Earth)

The idea for the research included extensive fieldwork utilising various methods and techniques. The area of the site which is still available for study will be surveyed using geophysical methods. Test trenches will be made in locations where the geophysical data is difficult to interpret or that indicate various kinds of archaeological remains, such as kilns, diverse architectural remains, streets, cemeteries etc. Small finds from excavations will be analysed to understand the character of the place and chronology of the features. The already overbuilt parts of the site will be the area of investigation for the cultural anthropologist. He will interview the inhabitants, asking about local oral histories and legends connected with the archaeological remains. He will also undertake the subject of the material remains with which the residents may have contact on an everyday basis. An additional task for the cultural anthropologists, as well as the other members of the team, will be to approach the community and create opportunities to involve the residents in the study and protection of the site. Over the following pages the results of the first fieldwork season will be presented.

In this season the geophysical survey was conducted in the northern and western parts of the available area of the city. There, in six selected places, archaeological excavations have been conducted. One additional dig was opened outside of the geophysical survey area. Trench 1SH was set next to the Police station. The place was selected for the construction site of a storage house for small finds collected during our research. Results from the excavations in 1SH are the subject of a separate report which already has been delivered to the NCAM prior to the start of the construction (Drzewiecki, Ciesielska, Michalik 2020).

We continued to use the names of the mounds and areas which were introduced during previous research in Soba (Welsby and Daniels 1991, 12–15). Thus we made our research in the following areas: N, O, OS, ES, FN, F, HN, H, HW, G, CE, CS, C, CW (Fig. 2).

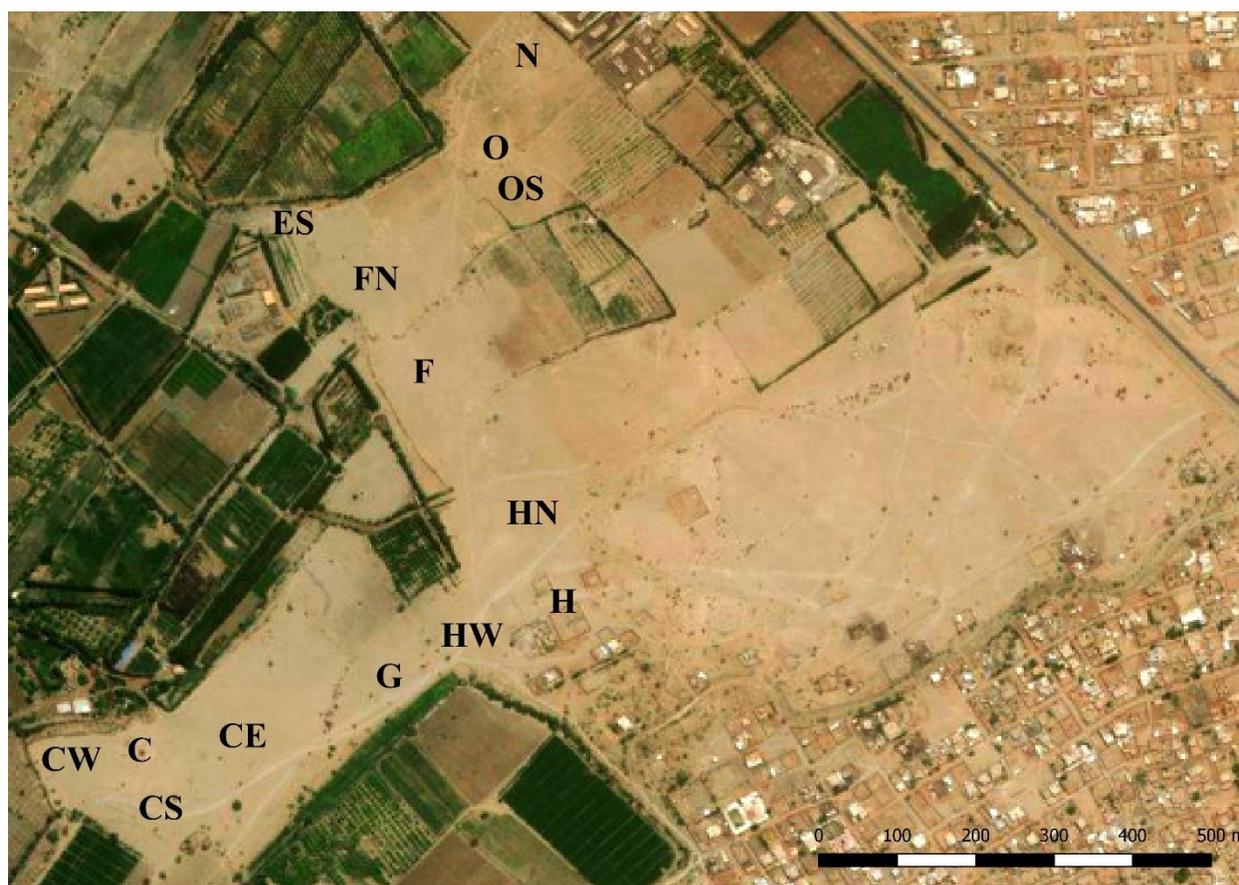


Figure 2. Location of the area under investigation (background image Google Earth)

Before the geophysical survey and excavation, the surface of each area was documented by means of aerial photography. In combination with ground control points the photographs were used to build a 3D model of each of the areas. Subsequently, digital elevation models (DEMs) and orthomosaics were created (Fig. 3).

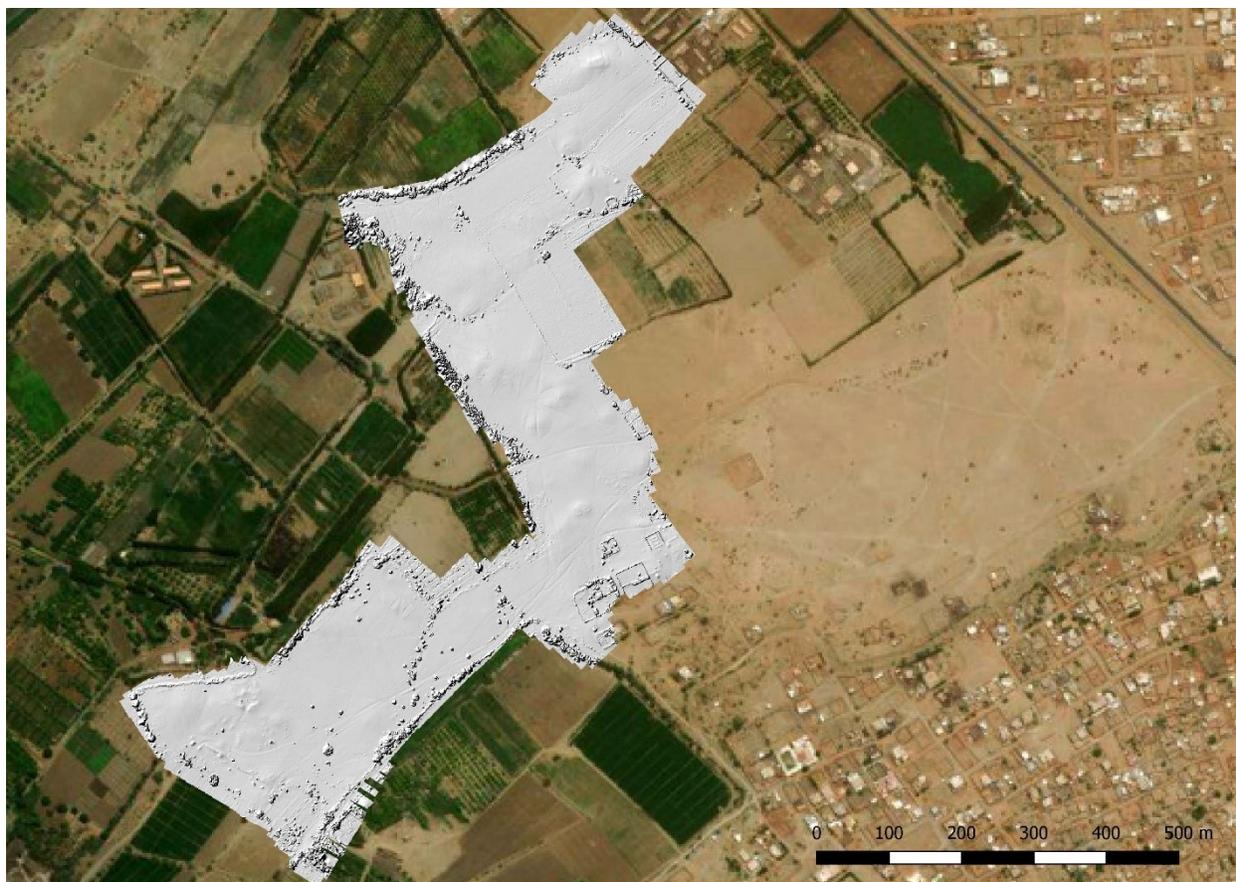


Figure 3. Grayscale parts of the image are DEMs made during the season 2019-2020 (prepared by Mariusz Drzewiecki, background image Google Earth)

The project is hosted by the Polish Centre of Mediterranean Archaeology, University of Warsaw and the Institute of Archaeology and Ethnology, Polish Academy of Sciences. Institutions supporting the project are the National Corporation for Antiquities and Museums of Sudan (NCAM), Al-Neelain University, Historic Environment Scotland and the University of Silesia.

The first season of fieldwork was conducted in 2019-2020. The research started November 18, 2019 and ended on February 12, 2020 with a break between the December 12, 2019 and January 12, 2020.

The team included:

Anna Weźranowska – pottery specialist

Elmontaser Dafaalla Mohamed Elamin Elmoubarak – NCAM antiquities inspector and translator

Ewa Czyżewska-Zalewska – pottery specialist

Hashim Khidir Ahmed Karrar – Khartoum State Ministry of Culture and Information and Tourism, Administration of Tourism, Antiquities Inspector

Joanna A. Ciesielska – archaeologist and physical anthropologist

Krzysztof Kiersnowski – geophysicist

Dr Łukasz Banaszek – topographer

Prof. dr hab. Maciej Kurcz – cultural anthropologist

Dr Mariusz Drzewiecki – archaeologist and director of the project

Tomasz Herbich – geophysicist

Dr Tomasz Michalik – archaeologist

Robert Ryndziewicz – geophysicist

Prof. dr hab. Włodzimierz Rączkowski – remote sensing specialist

During the fieldwork, a training program was implemented for graduates from Al-Neelain University and trainees from National Corporation for Antiquities and Museums of Sudan. The trainees were working in the field with each of the specialist learning methods and techniques of geophysical survey, archaeological excavations, ethnological interviews, topographic measurements, aerial photography, inventory of small finds and GIS application in archaeology.

The trainees were (in alphabetical order):

Abdallah Mohamed Abdallah Ishag

Arafa Mostafa Alamin

Bayan Talp Themadan

Essam Mohammed Ebrahim

Fatima Awadallah Abdallah Elhasan

Malaz Abdalfatah Fadalalseed

Mohamed Ahmed Ali Ibrahim

Mokhtar Maali Alden Mokhtar Hassan

Rajaa Alamein Adam

Acknowledgments

We would like to thank the following individuals for the help and support:

Dr Abdelrahman Ali Mohammed

Dr Ghalia Garelnabi Abdelrahman

Dr El-Hassan Ahmed Mohamed

Amel Gismillah

Waleed Arafat Ali

Dr Artur Obłuski

Prof. dr hab. Mahmoud El-Tayeb

Katarzyna Szczepkowska

Beata Madaj

Dr Fawzi Hassan Bakhiet

Our work would be impossible without the welcoming community of Soba, for which we are truly grateful.

The large-scale geophysical prospection of Soba in 2019/2020 season

by Robert Ryndziewicz

Non-invasive research plays an important role in contemporary archaeological research, successfully locating previously unknown archaeological features in many types of archaeological sites. The geological conditions and character of numerous archaeological sites on the Nile Valley are very suitable for the geophysical methods, with the result that these methods are frequently used in Sudan and Egypt as the principal tool for recognising the spaces inhabited by past societies. Large-area geophysical research is one of the most crucial elements of the research program currently being developed in Soba.

The main objectives of the geophysical survey undertaken in Soba were to:

- Obtain knowledge about spatial organization of the city and urban planning patterns
- Obtain precise information about location and plans of the buildings, streets and open areas
- Evaluate the state of preservation of the site and structures
- Elaborate a cohesive archaeological research strategy

In order to obtain the wide range of information, it was decided to use two geophysical methods in parallel; magnetometry and GPR (Ground Penetrating Radar), of which the magnetic method was used as the leading one. In the 2019/2020 season, the area investigated by magnetic method was about 20.5 ha and by the GPR method about 4.4 ha (**Fig. 4**). Research was focused mainly on the western and southern areas of the site. A significant part of the archaeological site of Soba is not available for geophysical surveys due to the presence of agricultural fields, modern houses, the tarmac road and other infrastructure elements, as well as scrub vegetation (bushes and small trees). For this reason, the studied areas have an irregular shape, dictated by the accessibility of the terrain.

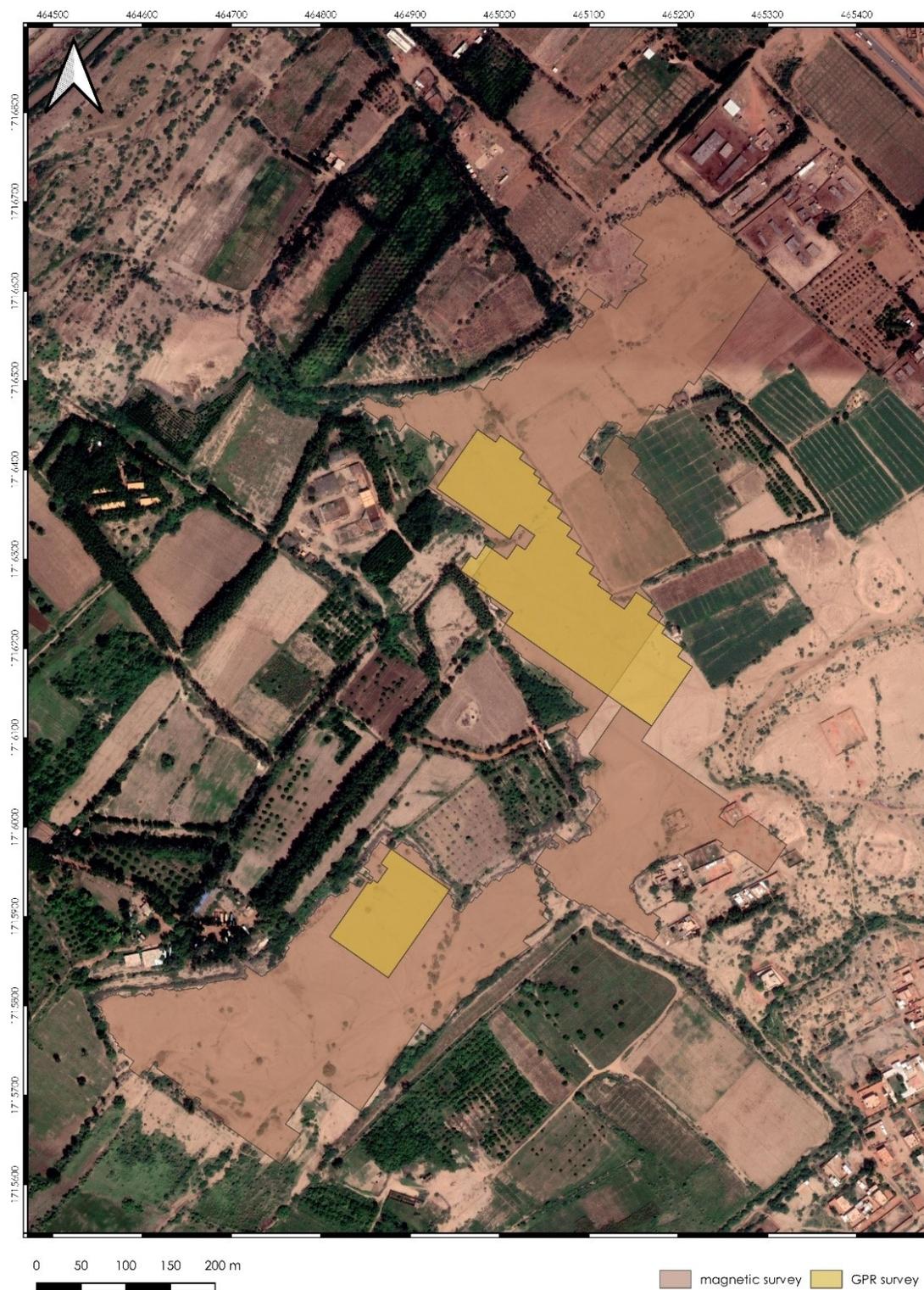


Figure 4. Areas surveyed in 2019/2020 season. Data positioning: Łukasz Banaszek. Background image: www.maps.google.com (prepared by Robert Ryndziewicz)

Methods:

Magnetometry in the archaeological survey practice is considered as the most suitable tool to identify areas of 'archaeological potential' and for the large-scale mapping of archaeological features. Using high resolution measurements, it is also possible to analyse shapes and the character of individual anomalies. (see more: Schmidt et al. 2015, 13). The magnetometer survey is classified as a passive geophysical method: the amplitude of the local changes of existing magnetic field of the Earth - caused by the archaeological features buried in the ground - is measured directly by the system of the sensors. It can be applied in the registration of archaeological structures due to differences between the magnetic properties of the features and their surroundings. In the conditions of Nile Valley archaeological sites, using this method it is possible to trace e.g. the red-brick and mud-brick walls, kilns, deposits of ash, pits, large deposits of pottery, magnetic fractions of rocks (e.g. basalt, granite), palaeochannels and other natural changes in the soil. The Bartington Grad 601 (with dual sensor configuration) Fluxgate Gradiometer was used in Soba (**Fig. 5**). This kind of instrument measures the gradient of the vertical component of the Earth's magnetic field and offers rapid ground coverage. It is not possible to determine precisely the depth of features, but the theoretical depth of fluxgate gradiometer prospection is generally not more than 1 m, depending on the local geology and soil properties. The measurements were carried out in a parallel mode within 20 x 20 m grids. The density of sampling was 8 measurements per 1 sq. metre (measurements every 0.25 m along traverses 0.5 m apart).



Figure 5. Magnetic survey in Soba (photo Mariusz Drzewiecki)

The GPR Method (Ground Penetrating Radar) is often used for detailed surveys, making it possible to obtain more precise information about buried structures. As an active geophysical method, it uses a high-frequency electromagnetic wave fed into the soil. Part of the energy emitted by antenna is reflected and refracted by buried features and then returning to the surface, where it is received and recorded by the GPR system as a radargram. By observing the changes of the reflected electromagnetic wave, as well as the 'travel-time' (time between emission and receiving a signal) it is possible to obtain information about the position, shape, size and depth of buried features and layers. The effectiveness of this method depends on the contrast in dielectric permittivity (ϵ) between the soil and buried features. The theoretical resolution and depth of prospection depends on the frequency of electromagnetic wave. A high antenna frequency gives a better resolution but also shallower depth penetration. Using low frequency antennas, it is possible to increase the depth of penetration, but the resolution decreases. However, the practical effectiveness of

the method depends greatly on the local soil conditions and electromagnetic properties of the ground. Some types of soil cause a strong attenuation of the electromagnetic wave and a decreasing depth of penetration and data quality. For the investigations in Soba, we used the Mala GX HDR Ground Penetrating Radar System equipped with 450 MHz shielded antenna to obtain optimum compromise between depth of prospection and resolution (**Fig. 6**). The measurements were carried out along the parallel profiles 0.5 m apart. Within the profiles, data was collected each 0.025 m.



Figure 6. GPR survey (photo Mariusz Drzewiecki)

Data positioning for both methods was obtained by the Topcon Hiper SR RTK GPS. The coordinate system in use was WGS 84/ UTM zone 36N [EPSG:32636]. To carry out geophysical surveys, a 20m square grid was marked out in the field. Based on its points, measuring tapes were laid out on the ground, for precise positioning of geophysical equipment.

Data processing:

The data obtained was processed by dedicated software. In the case of the magnetometry, the data was preliminarily processed by the use of Geoscan Research Geoplot 4.0, performing standard procedure including zero mean traverse filter and interpolation to improve the image continuity, and presented as gray-tone maps of distribution of the local changes of the magnetic field. White tones correspond to extreme negative values and black to extreme positive values. GPR data recorded as vertical profiles were processed with the use of GPR Wave software performing a static correction, background removal, bandpass and FK migration procedures and then transformed into time-slices to visualise a horizontal distribution the summarised electromagnetic reflectivity on particular depth levels. Then, based on the coordinates of the points laid out in the field, the resulting maps were integrated in QGIS software. It should be mentioned here that geophysical measurements were taken and analysed in combination with the orthomosaics and DEMs of the investigated areas. It should also be clearly noted that the obtained signal

from both geophysical methods requires further processing, aimed primarily at minimising noise and interference generated during the measurement, and the data presented in this report are preliminary.

Results:



Figure 7. Gradient of the vertical component of the Earth's magnetic field. Instrument Bartington Grad 601-2. Interpolated. Data acquisition: Robert Ryndziewicz and Krzysztof Kiersnowski. Data processing: Robert Ryndziewicz. Background image: www.maps.google.com (prepared by Robert Ryndziewicz)

The geophysical surveys provided high-resolution images that revealed information about the spatial organisation of the architectural remains. The results of large-scale magnetic prospection (**Fig. 7**) provided information on the location of individual development zones of the site. On the areas marked (see **Fig. 2**) as OS on the magnetic maps a large complex of regular, linear anomalies is visible, interpreted as a reflection of well-preserved mud-brick walls. This interpretation was confirmed by a trench excavated in Nov/Dec 2019 (trench 1/OS).

Similar, but much larger areas with a dense pattern of anomalies of identical nature indicates the existence of a remains of a vast, well-preserved district of houses built of mud brick visible on area F. Based on this data, it is possible to obtain a clear idea of the arrangement of the town district, reconstruct the plans of many buildings and partially reconstruct the street layout. Much weaker anomalies on its northern outskirts, where the farmland is currently located, indicate that the remains of buildings in this place have been irretrievably destroyed by plowing, which is associated with very shallow foundation of the remains of the walls under the surface of the ground. A similar set of remains of mud-brick buildings is located in area H, which on its east side is covered with modern residential buildings.

In the course of the magnetic measurements, concentrations of a large amount high-amplitude noise, characteristic of red bricks, was also recorded. These areas are visible on the surface of the site as elevations (mounds) covered with red-brick debris scattered on the surface. With the use of a magnetic method it is not possible to determine whether inside these elevations there are well-preserved remains of brick architecture. However, it seems likely that many of these areas have been looted and destroyed in the past. Particularly noteworthy is the vast area of this nature designated as C. On its surface, the remains of stone columns are still visible, indicating the existence of a once stately building (see Welsby and Daniels 1991, 85–91). Similar, though smaller phenomena were registered in areas O, N and in the northern part of H. Based on DEM analysis of the shape of the mound, there may be the remains of a well-preserved, regular building.

In area CE, however, a set of regular, high-amplitude linear anomalies indicate very likely remains of a red-brick building complex in good condition. In the vicinity of many of the areas discussed above, irregular, high-amplitude noise, among which linear anomalies indicating the presence of walls are very poorly readable, indicates that these areas have been damaged probably by levelling the ground. Studies on magnetic maps provided also some insights into natural processes occurring within the site - they are probably related to Nile river activity, such as palaeochannels or traces of floods. Verification of their nature should be carried out in cooperation with a geomorphologist. A collective interpretation of the results discussed above is shown in the **Fig. 8**.



Figure 8. Collective interpretation of the magnetic survey data. Background image: www.maps.google.com (prepared by Robert Ryndziewicz)

Research using the GPR method allowed us to obtain additional information. Despite the poor conditions for measuring (very strong attenuation of the electromagnetic wave by the ground), very precise mapping of building remains and analysis of the Soba spatial organisation is possible. Comparison of GPR measurement results with magnetic survey results (Fig. 9 and Fig. 10) shows that they also provide information that cannot be registered with a magnetometer. The results of GPR survey, due to the considerable time and work-consumption of data processing have been presented exclusively for selected areas, and their full and detailed development will be presented in subsequent studies.

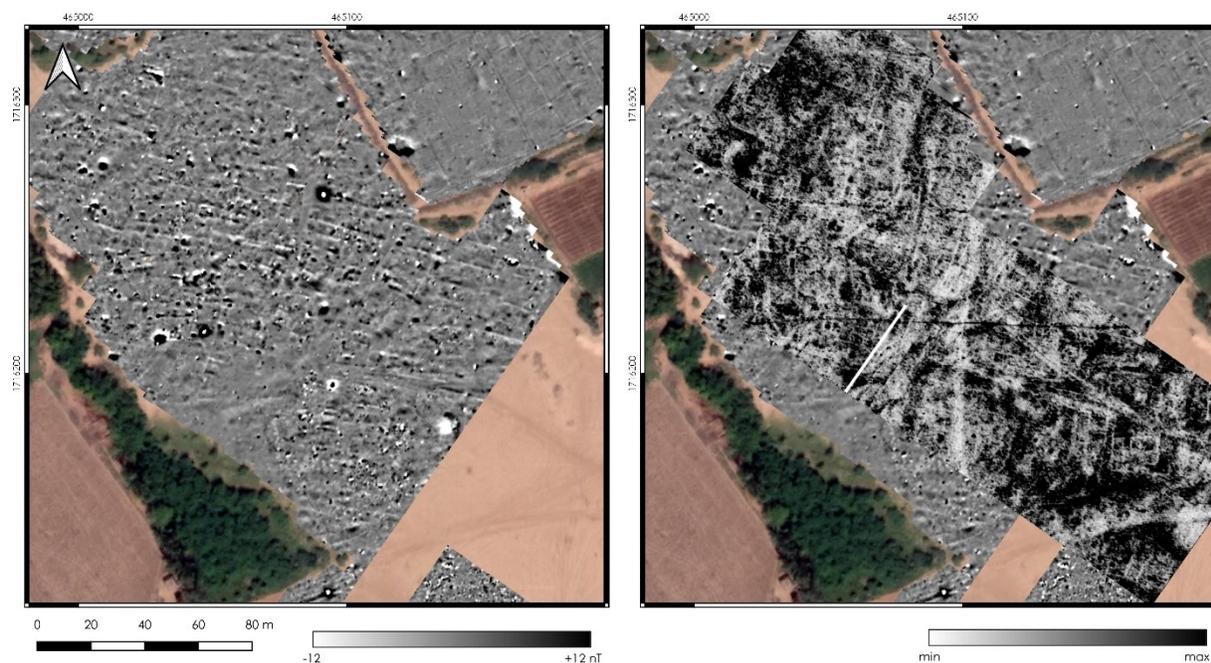


Figure 9. Comparison between magnetic and GPR survey results. Area F. Left: Gradient of the vertical component of the Earth's magnetic field. Instrument Bartington Grad 601-2. Interpolated. Data acquisition: Robert Ryndziewicz and Krzysztof Kiersnowski. Data processing: Robert Ryndziewicz. Right: Reflectivity of the ground - sum of amplitudes. Estimated depth 40-60 cm. MALA GX HDR with 450MHz Antenna. Data acquisition: Tomasz Herbich. Data processing: Robert Ryndziewicz. Background image: www.maps.google.com (prepared by Robert Ryndziewicz)

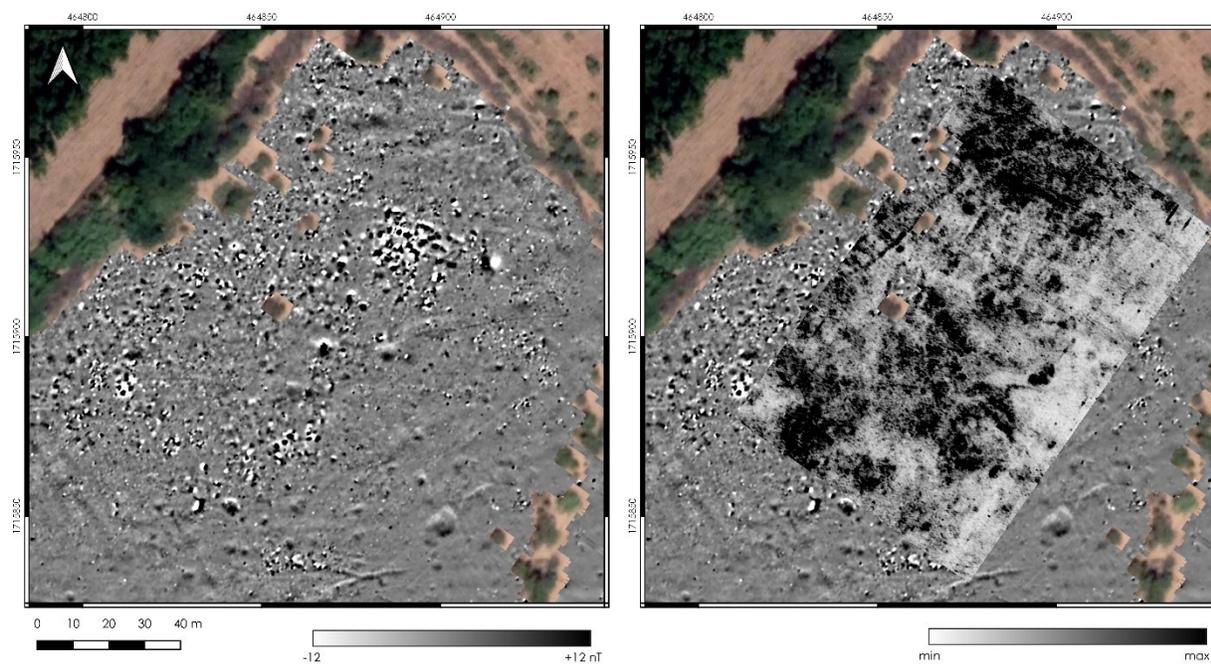


Figure. 10. Comparison between magnetic and GPR survey results. Area CE. Left: Gradient of the vertical component of the Earth's magnetic field. Instrument Bartington Grad 601-2. Interpolated. Data acquisition: Robert Ryndziewicz and Krzysztof Kiersnowski. Data processing: Robert Ryndziewicz. Right: Reflectivity of the ground - sum of amplitudes. MALA GX HDR with 450MHz Antenna. Estimated depth 40-60 cm. Data acquisition: Tomasz Herbich. Data processing: Robert Ryndziewicz. Background image: www.maps.google.com (prepared by Robert Ryndziewicz)

Excavations

by Tomasz Michalik and Joanna A. Ciesielska

Trench 1/OS

Trench 1/OS was excavated in the second half of November and first half of December 2019, at the beginning of the first part of 2019–2020 excavation season. The full investigation of the trench took 25 days between Nov 18 and Dec 12, 2019. Trench 1/OS was located in the central part of the mound OS (**Fig. 11**). Initially dimensions of the Trench were 10 by 10 metres. After discovering mud-brick architecture, the excavation area was limited to the central construction (designated in the documentation as Feature 17; dimensions 4 by 5 metres – **Fig.12**). The main research questions related to the excavations in trench 1/OS concerned the recognition of the layout of mud-brick architectural remains, the structure of the layers in this part of the site and their character as well as chronology.

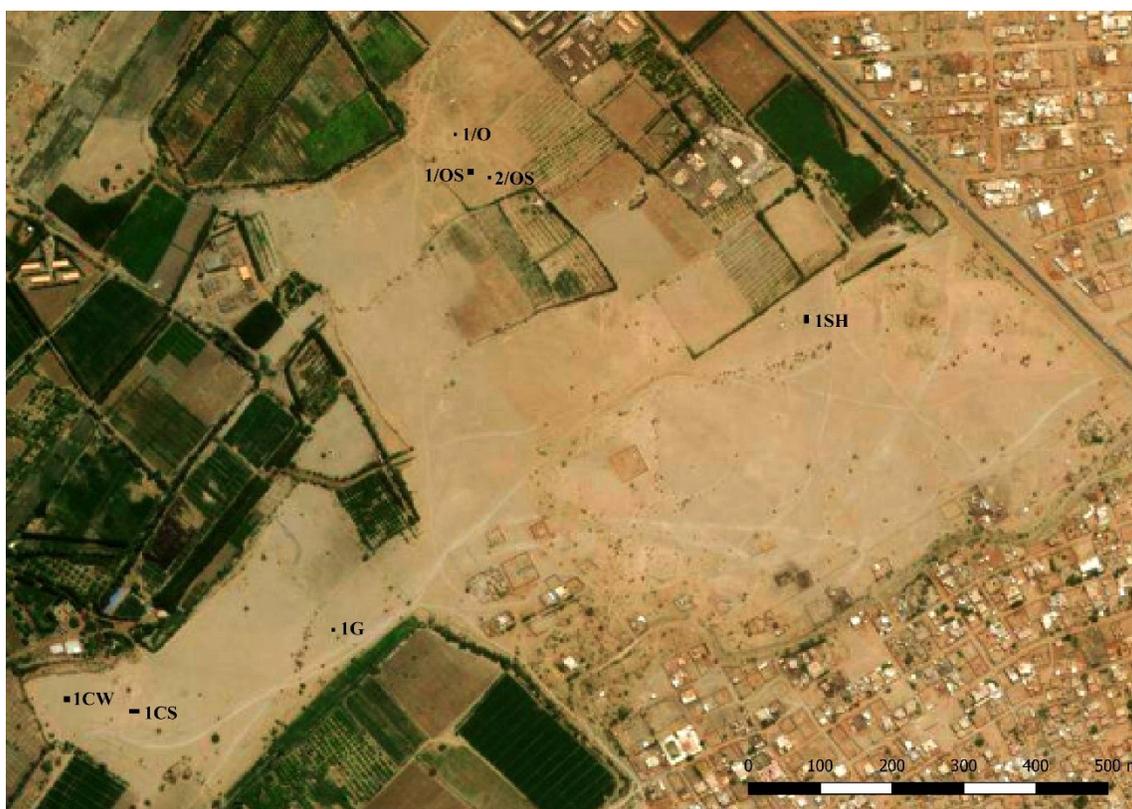


Figure 11. Location of trenches (background image Google Earth)

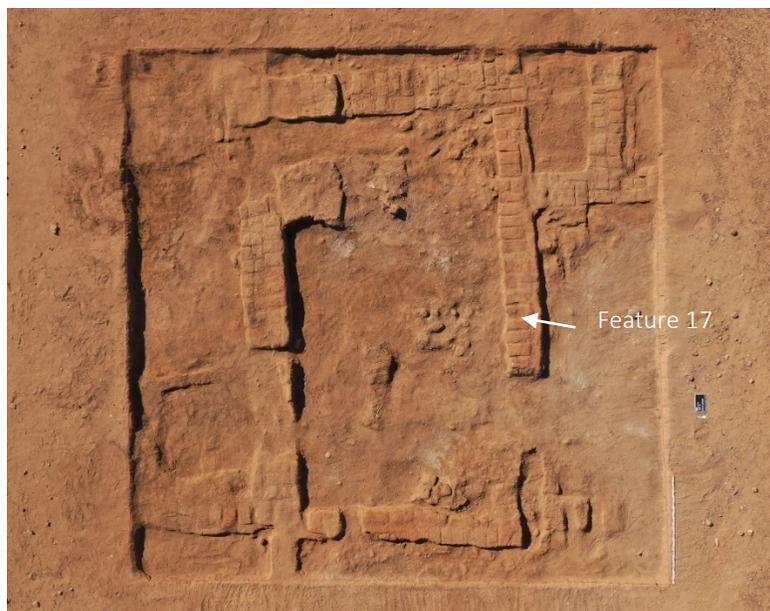


Figure 12. Trench 1/OS after exploration of mechanical layer 2. On the surface mud-brick architecture is visible. As a part of further work only the central construction (Feature 17) was excavated (photo Mariusz Drzewiecki)

Excavation works in the Trench 1/OS was preceded by surface collection. On the surface fragments of pottery were found. During excavations 34 deposits were distinguished. Eighteen of them were accumulated over time following abandonment (different types of soil mixed with fragments of pottery, ash, charcoal and faunal remains). Four deposits were identified as walking levels (**Fig. 13**) and seven as occupation or consumption deposits (containing traces of consumption and garbage). Two deposits were destruction deposits (remains of digging). During excavations also remains of mud construction destroyed by the water, and a transitional layer (transition between the first occupation deposit above the natural packed gravel deposit) were identified.

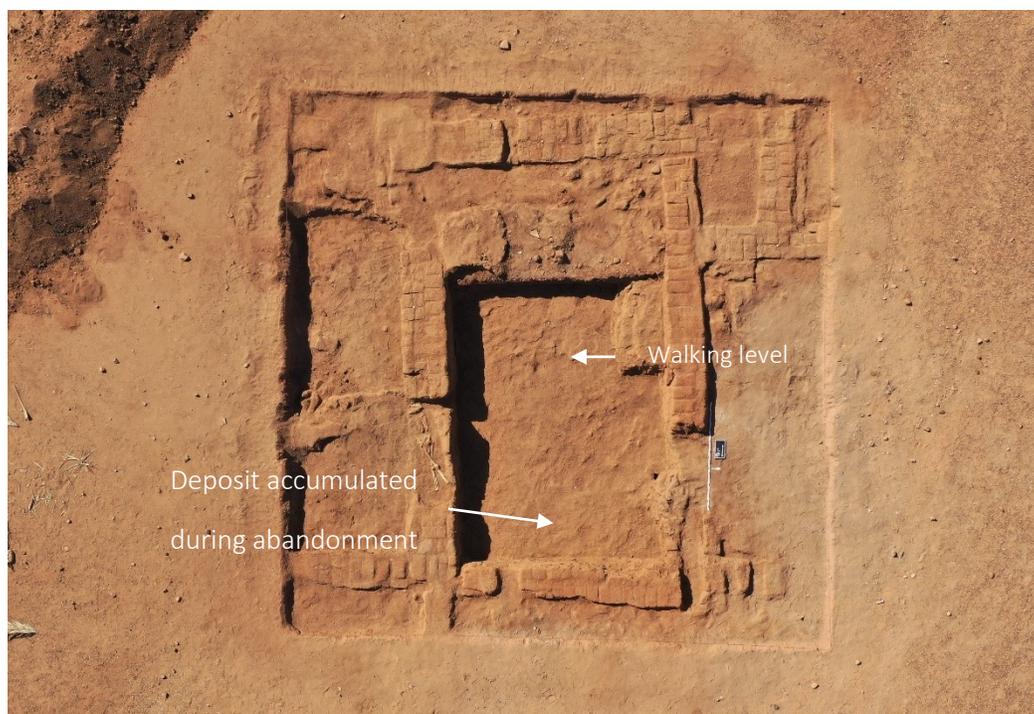


Figure 13. Trench 1/OS after exploration of mechanical layer 6. The surfaces exposed including a walking level (deposit 17_1OS) and deposit 18_1OS (deposition during abandonment) are visible (photo Mariusz Drzewiecki)

The deposits described above contained pottery fragments (cooking vessels as well as fine ware pottery), fragments of mud stoppers, stone tools, beads (**Fig. 14**), fragments of glass, a metal ring, a fragment of a bronze bracelet (**Fig. 15**), a fragment of a spindle whorls, a fragment of a ceramic censer (?) (**Fig. 16**), a fragment of casting mold (?) (**Fig. 17**) and human as well as animal bones. Among the small finds pottery fragments, beads and animal bones dominated. Sixteen fragments of pottery were inscribed (**Fig. 18**).



Figure 14. Beads found in the Deposit 33, Feature 17 (photo Tomasz Michalik)



Figure 15. Bronze ring found in Trench 1/OS (Grave no 5) inv no SOBA_2019/OS1/sf006 (photo Joanna A. Ciesielska)



Figure 16. Fragment of a ceramic censer (?) found in Trench 1/OS inv no SOBA_2019/OS1/sf012 (photo Joanna A. Ciesielska)



Figure 17. Casting mould (?) found in Trench 1/OS inv no. SOBA_2019/OS1/sf043 (photo Joanna A. Ciesielska)



Figure 18. Inscribed fragment of pottery inv no SOBA_2019/OS1/sf025 (photo Joanna A. Ciesielska)

As well as the remains of mud-brick architecture, 19 graves (18 with body orientation typical of Christian burials, along an east-west axis, and one oriented north-south) were discovered. Mentioned burials occurred in the whole researched area to a depth of half a meter. Preliminary research indicates that Feature 17 has three main architectural phases, preceded by a settlement phase without permanent walls. The entrance was found, as well as red plaster covering most of the walls (Fig. 19). On the eastern wall, next to the entrance, traces of white lines, made most probably with fingers, were recorded (Fig. 20). On the ruins of the building a cemetery was created, constituting the last (fifth) phase of occupation recorded during excavations (Fig. 21).



Figure 19. Entrance recorded in the northern wall of Feature 17 (photo Tomasz Michalik)



Figure 20. Remains of red plaster with traces of white lines, made most probably with fingers found on the western wall of Feature 17 (photo Tomasz Michalik)



Figure 21. Grave no 6 discovered in Trench 1/OS. The burial cuts the wall of Feature 17, indicating that the cemetery originated after the mud-brick architecture went out of use (photo Tomasz Michalik)

From Trench 1/OS 60 samples were taken for further investigations. Forty-five of these were fragments of human and animal bones taken for isotopic investigation. Eleven contained charcoal. Charcoal samples were taken in order to enable dating of the occupation phases. One sample contained ash and burnt organics, one was the fill of a pot. The final two samples were of textile fabric and mud plaster.

Further analysis of samples as well as artefacts found in Trench 1/OS will be directed towards more detailed dating as well as recognition of function and the differences in occupation phases in the researched area.

Trench 2/OS

Trench 2/OS was excavated at the beginning of the first part of 2019/2020 excavation season. The full investigation of Trench 2/OS took 16 days between Nov 25 and Dec 10, 2019. Trench 2/OS (dimensions 5 by 5 metres) was located in the eastern part of the mound OS (see **Fig. 11**). It was set on an area of high magnetic anomaly recorded during the geophysical survey. The trench was placed in the area where large circular-shaped magnetic anomalies were visible. The main research question related to the excavations concerned the identification of the structures causing the anomaly.

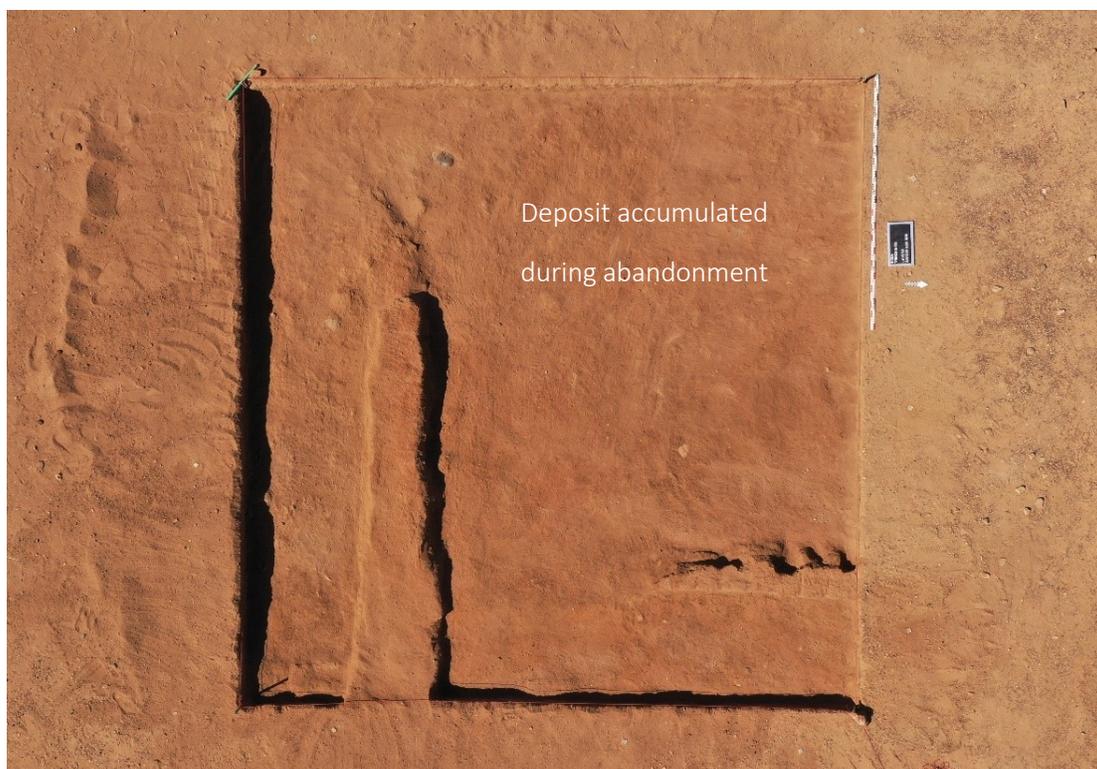


Figure 22. Trench 2/OS after exploration of mechanical layer 2. On the surface mud-brick walls as well as Deposit 3_2OS (accumulated during abandonment) are visible (photo Mariusz Drzewiecki)

Excavation in Trench 2/OS was preceded by a surface collection. On the surface fragments of pottery were found. During the excavation 17 deposits were distinguished. Six of them were accumulated during abandonment of researched area (different types of soli mixed occasionally with fragments of pottery and remains of animal bones). Eight deposits contained traces of consumption or production (charcoal, burned construction elements, burned animal bones). One deposit consisted of lime. During excavations also layers of stones and bed rock were distinguished (examples of deposits are visible are on **Figs 22** and **23**).

From the above mentioned deposits pottery fragments (cooking vessels as well as fine ware pottery), stone tools, beads, fragments of glass, shells, a metal ring (**Fig. 24**), animal and human bones were found. Among the finds pottery fragments, beads (64) and animal bones dominated. Three pottery sherds were inscribed (**Fig. 25**).

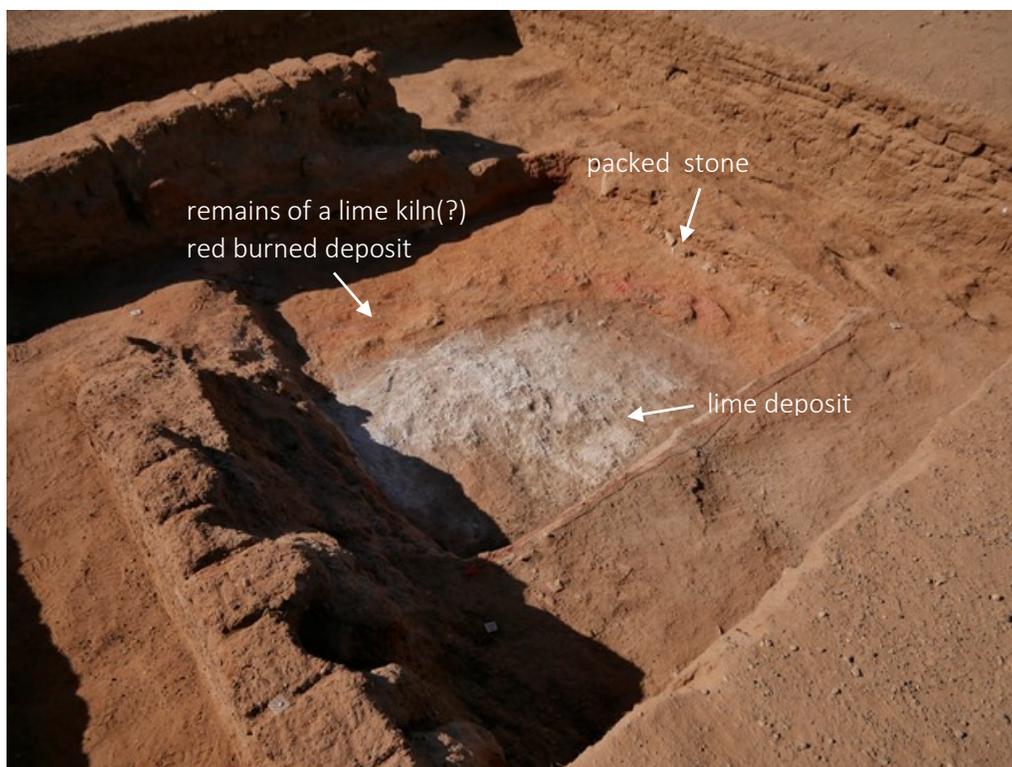


Figure 23. Lime production zone. Walls, red burned deposits (possibly caused by long-term use of fire), the lime layer and a layer of packed stone are visible (photo Tomasz Michalik)



Figure 24. Remains of a metal ring found in the Trench 2/OS inv no SOBA_2019/OS2/sf046 (photo Joanna A. Ciesielska)



Figure 25. Inscribed fragment of pottery inv no SOBA_2019/OS2/sf062 (photo Joanna A. Ciesielska)

Besides the artefacts two graves (with body orientation typical of Christian burials) as well as the remains of a lime production zone, represented by a lime kiln (?) surrounded with mud-brick walls, were discovered.

Analysis of the stratigraphic relationships suggests that this area was used over a long period of time. After the place ceased to be a lime production zone, it was adopted for use as a cemetery (**Fig. 26**).

From Trench 2/OS 16 samples were taken for further investigation (**Fig. 27**). Five of them were fragments of human and animal bones taken for isotopic analysis. Six contained charcoal. The charcoal samples were taken so as to enable dating of the periods before and after the establishment of the lime production zone. Four samples contained pieces of lime, one contained a burial mat.



Figure 26. Grave no. 20 discovered in the central part of the trench 2/OS. Near the skeleton remains of a mat are visible (photo Tomasz Michalik)

Further analysis of samples as well as artefacts found in the Trench 2/OS will allow detailed chronological consideration and studies of lime production.



Figure 27. Trench 2/OS at the end of excavation (photo Mariusz Drzewiecki)

Trench 1/O

Trench 1/O was excavated at the beginning of the first part of 2019/2020 excavation season. The full investigation of the trench took 9 days between Dec 2 and Dec 10, 2019. Trench 1/O (dimensions 5 by 5 metres) was located in the eastern part of the mound O (see **Fig. 11**). The main research questions related to the excavations conducted in Trench 1/O was to recognise the degree of destruction of the red-brick architecture, the date and function of the building/s located in the eastern part of the mound O.



Figure 28. Trench 1/O after exploration of mechanical layer 2. On the surface the destruction deposit is visible (photo Mariusz Drzewiecki)

Excavation in Trench 1/O was preceded by surface collection of finds and magnetic survey. On the surface fragments of fired red bricks, white plaster and pottery were found. These remains are a result of brick extraction. During the excavation ten deposits were identified. Five of them were destruction deposits (different types of soli mixed with fragments of red bricks and plaster) (example **Fig. 28**). Three deposits can be related to the Christian Period – remains of a floor made of red brick, a mud layer levelling the ground located directly under the brick floor and a walking level (compact silt) (**Fig. 29**). The top of the natural was reached; it consisted of packed gravel.



Figure 29. Trench 1/O after exploration of layer 5. On the surface the floor made by red bricks, the walking level made of compact silt as well as the destruction deposit are visible (photo Mariusz Drzewiecki)

In the deposits pottery fragments, stone tools, red-brick debris, shells and animal bones were found. Among the finds pottery fragments (cooking vessels as well as fine ware pottery) and animal bones dominated. One fragment of pottery was inscribed (**Fig. 30**). Stone tools were represented by grinders.



Figure 30. Inscribed fragment of pottery inv no SOBA_2019/O1/sf052 (photo Joanna A. Ciesielska)

Due to the disturbed character of an overwhelming number of deposits (which makes dating based on ceramics impossible), four charcoal samples were taken to further investigations. Samples have been taken from locations that will enable dating the periods before and after the construction of the red-brick floor. Apart from charcoal, one sample of plaster was taken.

Trench 1/CW

Trench 1/CW was established in the easternmost part of the site, in area C, to the west of the church C, thus labelled 1/CW (see **Fig. 11**). The location of the trench was chosen based on the results of the geomagnetic survey, which shows an unusual orientation of structures in this part of the site along a NW-SE axis instead of the E-W which is the norm over the rest of the site. The excavation was conducted between January 19 and February 9, 2020.

The trench measuring 5 by 5 metres was established along a N-S axis. First, the area of the dig was photographed, followed by collection of pottery sherds from the surface (**Fig. 31**). Additionally, ca. 10 stone tools were found, along with half a dozen beads (**Figs 32 and 33**). Subsequently, the excavation of the first mechanical layer was initiated. Deposit 1 is loose, grey silt with large amounts of pottery sherds (**Fig. 34**), animal bones, beads, some shell and a few stone tools. The remnants of two mud-brick walls were uncovered underneath, one protruding from the middle of the northern wall of the trench aligned N-S, the other in the NW corner of the trench (Feature 31). It was later confirmed that the former used to run along its medial N-S axis, however its central part was severely destroyed and weathered, partly due to water dissolving the bricks – thus forming a mud-brick-derived mass which covered the central part of the trench (labelled Feature 30). Another fragment, probably of the same wall, was uncovered protruding from the southern wall of the trench. Since both sections probably formed one wall, they were labelled together Feature 29.



Figure 31. Ceramic material from the surface of Trench 1/CW (photo Joanna A. Ciesielska)



Figures 32 and 33. Clay beads collected from the surface (left) and glass and ostrich eggshell beads from Deposit 1 (right) of Trench 1/CW (photo Joanna A. Ciesielska).



Figure 34. Ceramic material collected from Deposit 1, Trench 1/CW (photo Joanna A. Ciesielska)

The rest of the trench under Deposit 1 was filled with similar grey silt, but with charcoal inclusions. Deposit 2 in the NE corner of the trench contained a large concentration of burnt palm wood, while large amounts of ash, charcoal, pottery (including Soba Ware, **Fig. 35**) and animal bones were found throughout the fill. Deposit 2 covered most of the trench at this level, with the exception of the SE corner, where Deposit 3 – a brownish grey silt with less pottery, but clearly distinguishable red-brick powder. A large, fully preserved

mud-stopper, especially large (ca. 20 cm in diameter), with its base preserving the shape of the vessel it used to seal and the top decorated with lines made in the wet mud, was found within Deposit 2 (Fig. 36).



Figure 35 and 36. A fragment of Soba Ware (left) and a mud-stopper (right) recovered from Deposit 2 in Trench 1/CW (photos Joanna A. Ciesielska)

A single grave (Object 28) was cut into the walking level (Deposit 4), next to Deposit 5 in the central part of the trench. The burial belongs to a sub-adult, placed slightly flexed on the right side along the N-S axis, with head to the south and facing east (Fig. 37).



Figure 37. Grave no. 1 found in Trench 1/CW (photo Joanna A. Ciesielska)

Underneath Deposit 4, another walking level (Deposit 6) was uncovered in the NE corner. The small restricted space between two walls at a right angle in the NW corner of the trench (Feature 31) and wall

29 was filled with Deposit 7. The rest of the trench was covered with Deposit 5, brownish grey silt with some pottery and animal bones. Upon the excavation of Deposits 5, 6, and 7, the remains of a walking level (Deposit 8) in the eastern half of the trench and along the southern part of the western wall were uncovered (Fig. 38). The level contained noticeably large amounts of painted pottery fragments (Fig. 39). A number of circular depressions were recorded in its NE portion. The central area of the trench seems to be destroyed and the underlying context, containing lots of ashes, charcoal and animal bones, was labelled Deposit 9 (see Fig. 38). Meanwhile, Deposit 10 is limited to the space between walls 29 and 31. Two more mud-stoppers, similar in shape, but slightly smaller than that already described, were recovered from within Deposit 9.

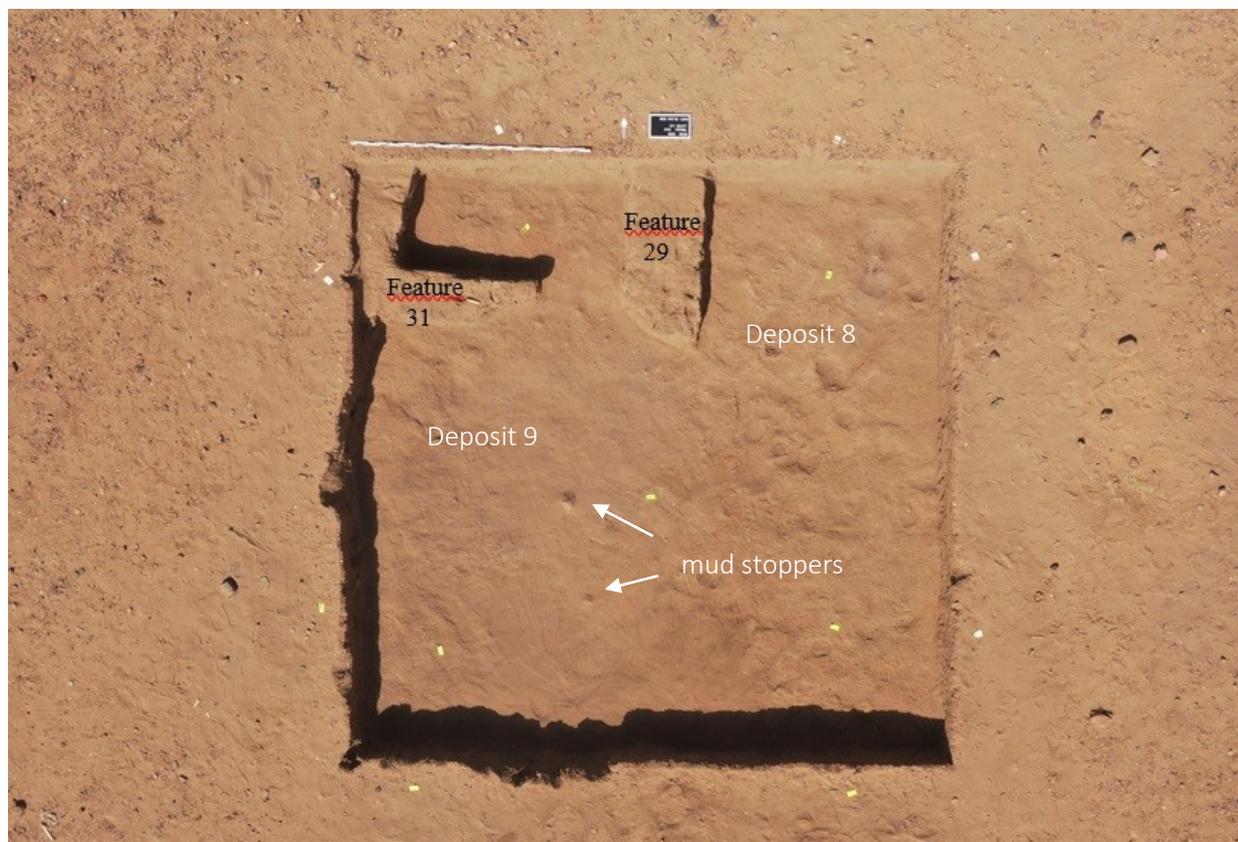


Figure 38. Trench 1/CW after exploration of mechanical layer 4. On the surface, Deposit 8 (with traces of wooden architecture - postholes) as well as Deposit 9 (fill of the pit) are visible (photo Mariusz Drzewiecki)



Figure 39. Painted pottery sherds collected from Deposit 8, Trench 1/CW (photo Joanna A. Ciesielska)

Deposit 11 was a trampled-mud floor with many circular depressions, especially in the NE corner. Meanwhile, under Deposit 9 was a gap in the walking level, filled with Deposit 12, brownish grey layer with lots of charcoal, animal bones and pottery. Fragments of a bowl inscribed in Greek letters were found (Fig. 40).



Figure 40. Fragments of a bowl inscribed in Greek from Deposit 12, Trench 1/CW (photo Joanna A. Ciesielska)

the seventh spit seemed to be composed of at least three separate contexts: a walking level made of trampled mud with admixture of lime, brownish grey with orange hue (Deposit 15), quite thick (ca. 5-10 cm) and relatively hard, in the eastern half of the square; the remains of another walking level along the western wall of the trench, but less compacted and severely weathered, greyish with little to no lime (Deposit 13); and a loose deposit of brownish grey silt in-between (Deposit 14), containing lots of pottery, animal bones and charcoal. The extension of this context beyond wall 31 to the north was found to contain a lot of pottery sherds and animal bones. Additionally, three large mud-stoppers were found in the central part of Deposit 14. Meanwhile, a number of inscribed pottery fragments were collected from Deposit 13.

Deposit 14 was succeeded by another context (Deposit 18) containing large amounts of charcoal and animal bones, as well as pottery fragments and three fully preserved mud-stoppers. Deposit 16 consisted of a thick layer of brown, very compacted silt with pieces of lime on top and underneath, Deposit 15, a compacted layer of greyish brown mud. The excavation of this context revealed the existence of a red-brick wall (37) oriented SE-NW from the SE corner of the trench towards the northern stretch of wall 29 (**Fig. 41**). Next to it the remains of another, mud-brick wall were identified, along with the remnants of two perpendicular walls running NE-SW, defining a rectangular space. The fill of the space at this level, Deposit 17, was composed of greyish silt with charcoal, pottery and animal bones. The only artefact made of bone, a fragment of a square object was found within Deposit 17 (**Figs 42 and 43**).

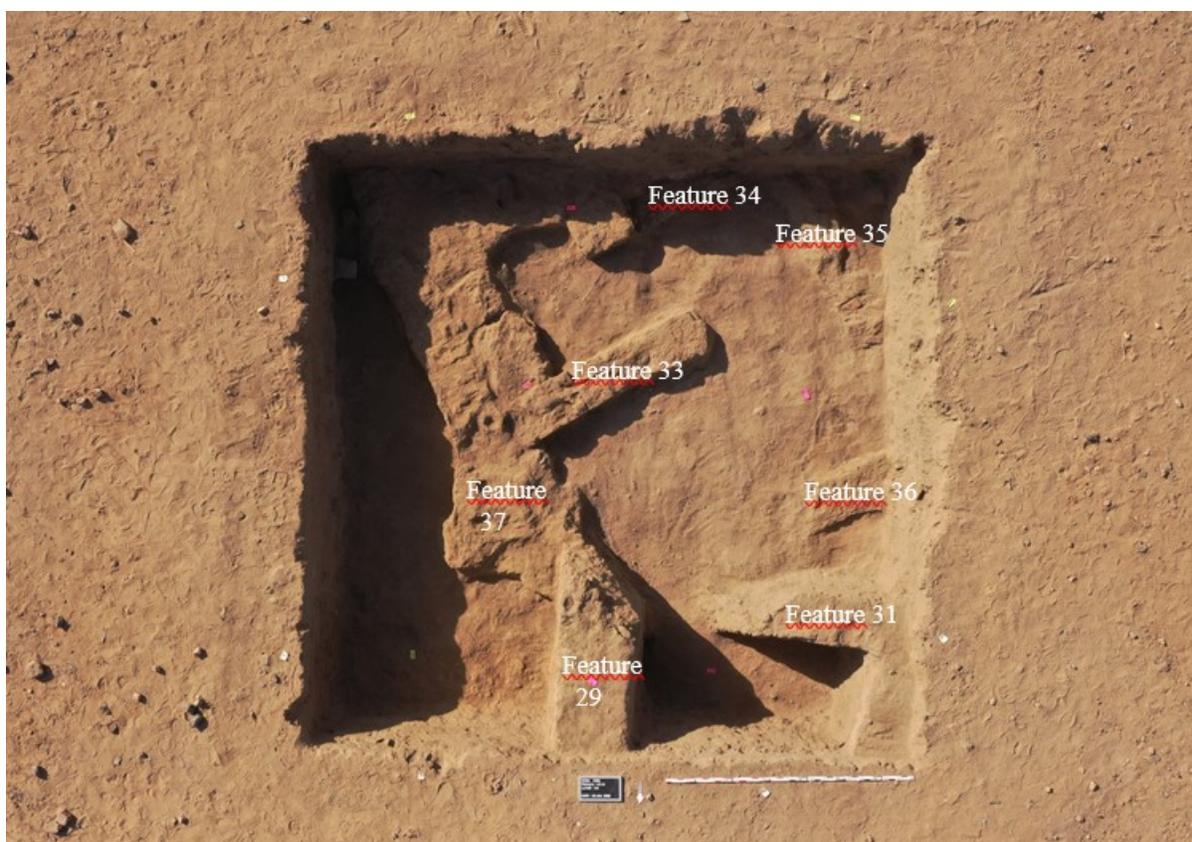


Figure 41. Trench 1/CW after exploration of mechanical layer 6. On the surface mud-brick architecture is visible (photo Mariusz Drzewiecki)



Figures 42 and 43. Bone object from Deposit 17 (left) and an inscribed fragment of pottery from Deposit 13 (right) of Trench 1/CW (photo Joanna A. Ciesielska)

After the discovery of the mud-brick architecture several occupational phases (identified on the basis of walking levels) were noticed.

A walking level (Deposit 20) was uncovered in the eastern part of the trench, to the east of walls 29 and 37. Underneath, a very compacted brownish deposit with large admixture of lime (Deposit 21), possibly a backfill layer, was unearthed. The entire context was excavated, yielding moderate amounts of pottery and animal bones.

Another walking level (Deposit 23) was uncovered underneath Deposit 21 on the eastern side of walls 29 and 37. A very similar walking level was uncovered at the same level in the space bounded by walls 37, 33, 34 and 25, therefore we have decided to treat both as a continuous deposit, Deposit 23. Deposit 23 yielded no artefacts, however the underlying Deposit 24 (thick layer of dark grey silt) contained lots of pottery and animal bones. On the other side of walls 37 and 33 to the NW, a new Deposit 22 was distinguished, based on the presence of less ash and charcoal in the fill. Apart from that the context seemed to be quite similar, still yielding significant amounts of pottery and animal bone, as well as a single mud-stopper.

Another walking level (Deposit 25) was discovered underneath Deposit 24, covering most of the trench, except the small space bounded by walls 33, 37, 34 and the southern edge of the trench, where the remnants of Deposit 24 were still identified, along with a new context – Deposit 26 – dark grey silt with lots of gravel and only a few sherds of pottery. Meanwhile, Deposit 22 continued in the limited space in the NW corner bounded by walls 29 and 31.

Two deposits were distinguished underneath Deposit 25: Deposit 27 in the western part of the trench, between walls 35, 33, 36, 31, 29, and 37, and Deposit 28 on the eastern side of walls 37 (and 40 under it) and 29. A number of new contexts were distinguished within spit 12:

- Deposit 29 – a walking level recorded throughout most of the trench;
- Deposit 30 – compacted coarsely-grained gravel with sand, identified on the E side of wall 40;

- Deposit 31 – loose light grey silt in the NW quarter of the trench;
- Deposit 32 – mixed grey-and-black-sand between walls 33, 34, and 37;
- Deposit 33 – light brown compacted sand in the NE corner of the trench, between walls 37 and 34;
- Deposit 34 – light yellow compacted sand in the NE portion of the trench, to the W of wall 38.

After exploration of layer 12 excavation was terminated and final documentation was made. Nine charcoals samples were taken for further investigation. Although no bed rock was found, it was possible to distinguish in the trench three main occupational phase: (1) earlier mud-brick architecture (represented by features 33-38 and 40, 45) (**Fig. 44**), (2) wooden architecture (represented by postholes); (3) late mud-brick architecture (represented by features 29 and 31).



Figure 44. Trench 1/CW at the end of excavation. On the surface mud-brick architecture and later activity layers are visible (photo Mariusz Drzewiecki)

Trench 1/CS

A linear arrangement of fired red bricks was spotted running NW-SE on the surface in Area CS, ca. 50 metres to the south of the church C. Furthermore, the results of geophysical magnetometric survey indicate the presence of a 'U'-shaped structure (arranged NE-SW, open to the SW) on the western side of the supposed wall. Therefore, a new trench was established on its western side.

Trench 1/CS was excavated between January 21 and February 9, 2020. The trench, measuring 5 by 7 metres, was established along the axis of the wall instead of usual N-S orientation. First, all of the red-brick

fragments were removed from the surface and pottery sherds were collected. The excavation of the first spit, ca. 10-15 cm in thickness, revealed that the linear arrangement of red bricks along the NE side of the trench was composed only of one course. Only one context, Deposit 1, grey silt with large amounts of broken red bricks, pieces of plaster, moderate amounts of pottery sherds and animal bones, was identified throughout the trench down to a depth of ca. 30 cm (**Fig. 45**).



Figure 45. Trench 1/CS after exploration of layer 1. On the surface Deposit 1 is visible (photo Mariusz Drzewiecki)

Based on a concentration of ash and charcoal pieces, another context (Deposit 2) was distinguished in the eastern quarter of the trench. The context continued down to the level of ca. 50 cm below the present ground surface. Apart from pottery and animal bones, some beads (**Fig. 46**) and several inscribed sherds were collected (see **Fig. 47**).



Figure 46. Ceramic and ostrich eggshell beads from Deposit 2 in Trench 1/CS (photo Joanna A. Ciesielska)



Figure 47. Inscribed fragment of pottery from Deposit 2 in Trench 1/CS (photo Joanna A. Ciesielska)

At ca. 50-60 cm below the present ground surface the excavation was reduced to the western half of the original extent of the trench. Two new contexts were distinguished in the western half of the trench:

Deposit 3 (loose brownish silt with some pottery) in the southern part and Deposit 4 (greyish silt with lots of red-brick debris) in the northern part. While the latter continued downwards at least to the level of ca. 50 cm, two new contexts were distinguished upon the excavation of Deposit 3: a walking level made of trampled mud covering the southern 1/3 of the excavated half of Trench 1/CS (Deposit 5) and a small patch of silt mixed with ash and charcoal between Deposits 4 and 5 (designated Deposit 6) (Fig. 48).

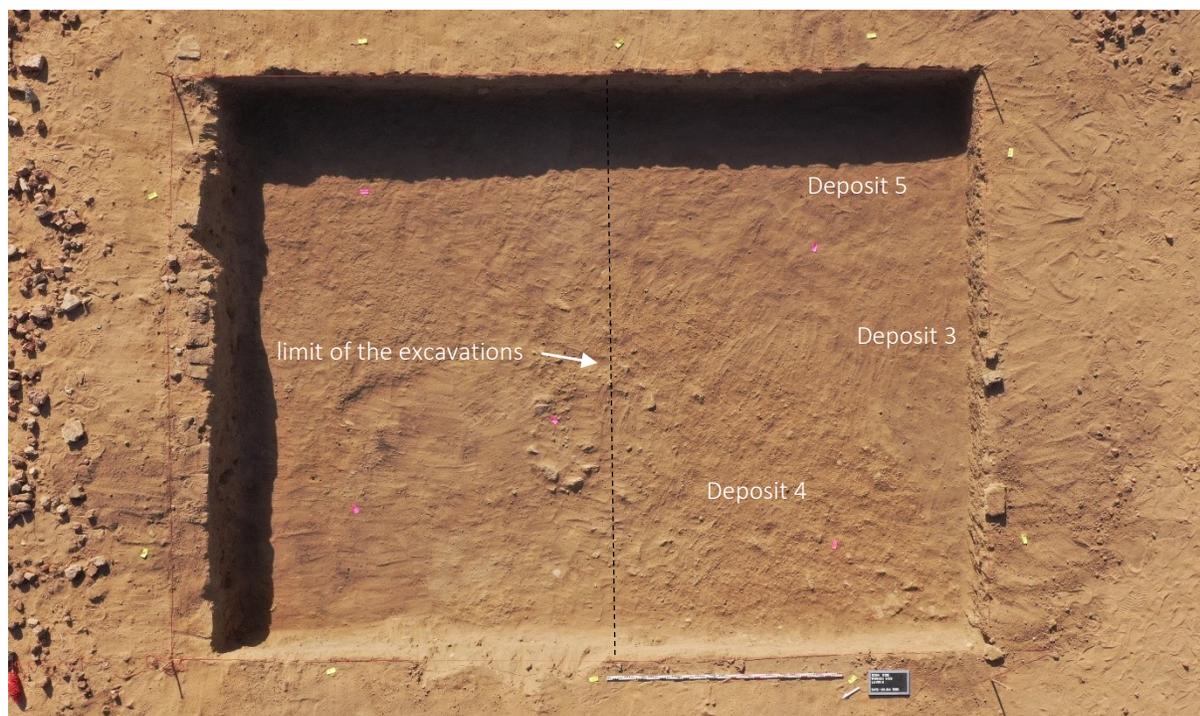


Figure 48. Trench 1/CS after exploration of layer no. 3. On the surface deposits 3, 4 and 5 are visible. After exploration of layer 3 only half of the trench was excavated (photo Mariusz Drzewiecki)

Further on, Deposit 4 continued only in the western corner of the trench, while a new context - Deposit 7 (silt with large amount of ash and charcoal) - was identified to the east. Deposit 7 yielded large amounts of pottery sherds and animal bone. Upon the removal of Deposit 4, a new Deposit 8 was distinguished, composed of brownish grey silt with almost no brick fragments, but with a larger amount of pottery sherds and animal bone. Underneath Deposit 8, another context - loose, brownish grey sand with small amounts of pottery (Deposit 9) - was identified. At this level, the remnants of a mud-brick structure were uncovered in the western corner (Feature 43). Subsequently three new deposits (10-13) and one new feature (pit) were distinguished. One of the above mentioned deposits (no 11) was a walking level, another (Deposit 12) located in the south-western part of the trench seems to be a continuation of a large semi-circular destruction layer visible in the unexplored part of the trench (Fig. 49).

After exploration of layer 9 excavation was terminated. A feature causing magnetic anomalies was not found. Although the excavated area exhibited a high degree of destruction, charcoal samples taken from the intact deposits may help to date the described features.



Figure 49. Trench 1/CS on the top of the layer 8. On the surface deposits 10-13 as well as features 43 and 44 are visible (photo Mariusz Drzewiecki)

Trench 1/G

Trench 1/G was excavated over 4 days, February 2 - 5, 2020.

The new trench was established based on the results of the geophysical magnetometry survey, which shows a number of small circular and oval anomalies, suggestive of a cemetery. In order to confirm the identification of these anomalies as graves, a 3 by 3 m square in the area to the east of CE was investigated. Following the designation given by previous researchers, the trench was labelled 1/G. After photographic documentation, the excavation of the first sub-surface layer was initiated; no pottery was recorded on the surface. Deposit 1 was a greyish yellow sand, rather compacted, with no inclusions. The first 10 cm below the surface contained almost no pottery, while more fragments were collected ca. 15 cm underground. One inscribed fragment of a bowl was recorded (**Fig. 50**).



Figure 50. Inscribed fragment of a bowl from Deposit 1 in Trench 1/G (photo Joanna A. Ciesielska)

After removal of ca. 15 cm in thickness of Deposit 1, we encountered an incredibly compacted level (Deposit 2), brownish grey silt with large admixture of lime (or some other hardening agent) all over the trench (**Fig. 51**). However, it was preserved best in the center of the trench, being weathered in other parts. Only a small amount of pottery was collected from Deposit 2.

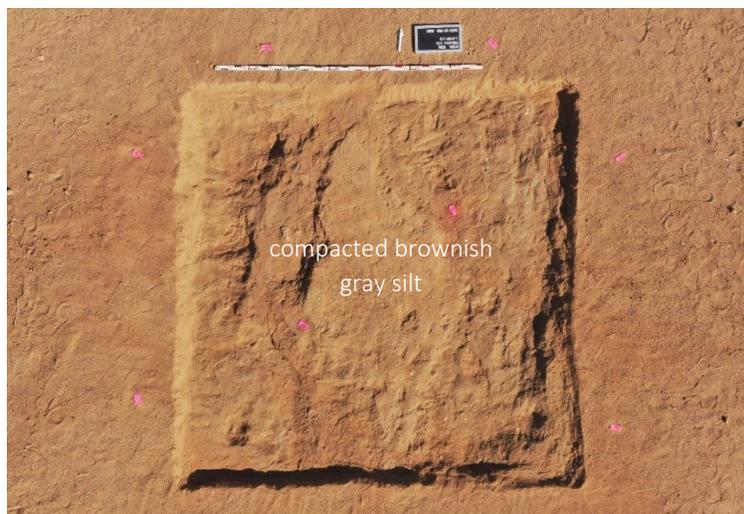


Figure 51. Trench 1/G after exploration of mechanical Layer 1. On the surface Deposit 2 is visible (photo Mariusz Drzewiecki)

The excavation of Deposit 2 uncovered another very compacted, a layer of brownish red silt with clearly visible white spots (probably lime), labelled Deposit 3. Two circular pits, ca. 20 cm in diameter were identified within the context: 41_2020, located roughly in the middle of the NW quarter, and 42_2020 in

the northern part of the SE quarter (**Fig. 52**). Due to the end of the fieldwork during this season, works were stopped at this point.

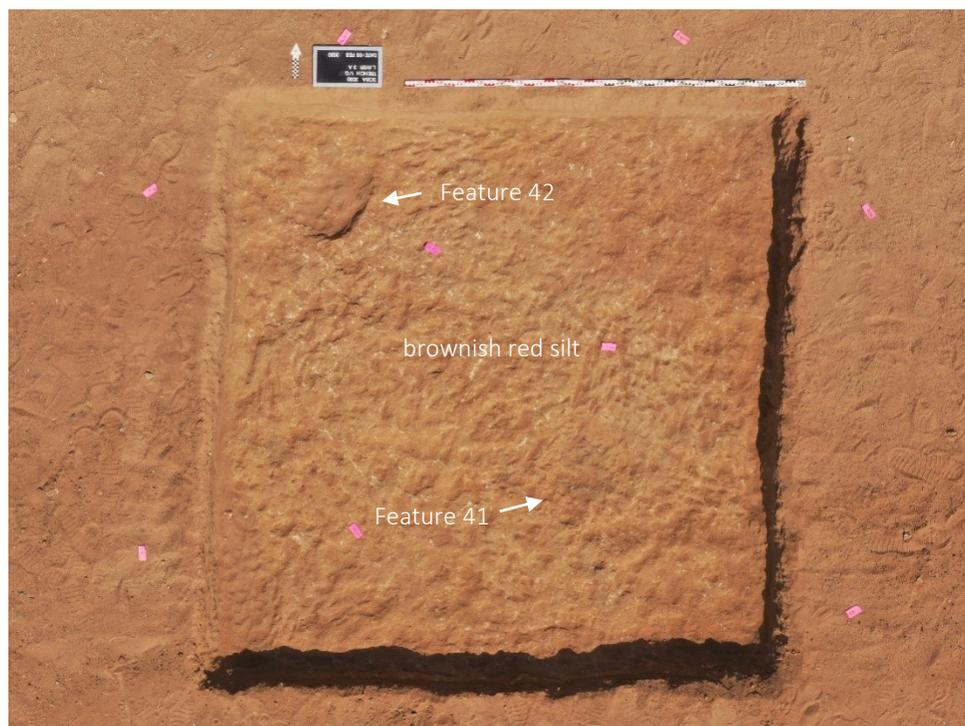


Figure 52. Trench 1/G after exploration of mechanical layer 3A. On the surface Deposit 3 as well as Features 41 and 42 are visible (photo Mariusz Drzewiecki)

Pottery studies

By Ewa Czyżewska-Zalewska

Pottery discovered during the 2019 season was fully examined in two areas, 1/O and 2/OS, as well as the pottery discovered on the surface (in the area of Church C and Kom N). Pottery excavated from area 1/OS was examined only partially. The pottery recorded during January-February 2020 fieldwork will be analysed in the next season.

In both areas, 1/O and 2/OS, the pottery assemblage is poorly preserved and consists mainly of handmade cooking vessels like jars, large bowls (Figs 53 and 54). Among pottery from the analysed assemblage, only a few examples of Soba Ware were recorded (Fig. 55)



Figure 53. The excavated pottery (area 1/O) – state of preservation (photo Joanna A. Ciesielska)



Figure 54. Examples of cooking vessels (area 2/OS) - (photo Joanna A. Ciesielska)



Figure 55. Example of Soba Ware (surface area of Church C, Soba_2019/Church_C/032)- (photo Joanna A. Ciesielska)

Black or red-slipped burnished (handmade) bowls were noticed in a small quantity. Wheel-made pottery was also registered in small numbers and was represented by jars, pipes and probably *qawadis* (Fig. 56).



Figure 56. Examples of black and red-slipped small bowls (2/OS area) - (photo Joanna A. Ciesielska)

Imported pottery occurs occasionally, represented mainly by amphorae preserved only as sherds, derived from the Dongola area (regional import), Egypt and Aswan area and the Mediterranean Basin (Fig. 57).



Figure 57. Imported pottery (probably Egyptian), a fragment of a handle (2/OS area) - (photo Joanna A. Ciesielska)

Among the pottery, a few examples of sherds re-shaped as “discs” were discovered. Some of them were probably used as lids or plugs (Fig. 58 left), and some of them have drilled holes and could be used as gaming pieces, loom weights or buttons (Fig. 58 right).



Figure 58. Examples of re-shaped pottery (left – 2/OS area, right – 1/OS area) - (photos Joanna A. Ciesielska)

In both areas, 1/O and 2/OS, the pottery assemblage represents similar types and forms.

At this stage of the analysis the pottery assemblage corresponds with the pottery excavated by Derek Welsby and published in the BIEA excavations at Soba (Welsby and Daniels 1991, Welsby 1998).

Pottery samples have been taken for analysis.

Bioarchaeological analysis of human skeletal remains

by Joanna A. Ciesielska

Archaeological fieldwork during the first part of the season (Nov-Dec 2019) was conducted in three trenches in the northern part of the site, two of them located in the area designated Kom OS (labelled 1/OS and 2/OS), while the third one was situated to the north-west on Kom O (1/O). Human remains were found in Trench 1/OS and Trench 2/OS. Additionally, two sets of human remains were recovered during the second part of the season (Jan-Feb 2020), one in Trench 1/SH and one in Trench 1/CW. Altogether 24 graves were uncovered, containing the remains of at least 25 individuals (MNI = 25) (**Table 1**).

Cemetery at Kom OS

The majority of the burials (19 out of 25) was located in Trench 1 (1/OS). Apart from more or less complete human skeletons interred in burial pits, fragments of bones were scattered within contexts 2, 4, 5, 6, and 7 in Trench 1/OS. As some of the burials were severely disturbed, it is possible that some of those remains belong to the individuals buried in the recorded graves, however connecting loose skeletal elements to individual burials proved impossible. Commingled human remains were thus included in the inventory of mass finds.

The sheer number of interments, along with roughly uniform manner of burial and no graves cutting on one another suggests that the site must have been intentionally chosen as a burial location. With most graves situated in the upper layers of the excavated area, some of them cutting into underlying structures (for archaeological context see the “Archaeological report” by Tomasz Michalik and Joanna A. Ciesielska), its initiation can probably be placed after the cessation of residential activity at Kom OS.

Most skeletons were completely preserved, with one individual (SOBA_2019/OS1/B003) preserved only partially (only lower appendices present). SOBA_2019/OS1/B002 was represented only by a single humerus uncovered underneath the remains of SOBA_2019/OS1/B001 in Grave 1. While only the cranium of individual no. 5 (SOBA_2019/OS1/B005) was recovered, with the remaining part of the body embedded in the eastern section of Trench 1 (1/OS), it is assumed that the complete skeleton was present. A similar situation was encountered in the N-E corner of Trench 1/OS, where the lower legs of an adult individual SOBA_2019/OS1/B015 were found, with the remainder of the body probably located beyond the northern edge of the excavation area. All of the remains display a brittle appearance, with some severely damaged by trampling and the weight of overlying soil. This applies especially to the uppermost burials, i.e. the ones located immediately beneath the present ground level. The condition of human remains improves progressing towards deeper deposits. Some of the burials in the northern part of Trench 1 (especially SOBA_2019/OS1/B001) show traces of pink staining (possibly of fungal origin?).

Fifteen out of 23 burials were aligned E-W with head to the west; only an adult female, SOBA_2019/OS1/B021, was buried with the head towards the east. The orientation could not be reconstructed for SOBA_2019/OS1/B011, SOBA_2019/OS1/B012 and SOBA_2019/OS1/B013, whose burials were disturbed, but in each case human remains belonging to one individual only were found closely clustered. The alignment is also doubtful for SOBA_2019/OS2/B020 in Trench 2/OS, with its spine running

E-W, sacrum oriented N-S and cranium displaced to an upside down position to the west of the spine. One individual, an adult female, SOBA_2019/OS1/B014, was clearly aligned N-S with the head to the north. Which way the deceased faced seems to have been independent of body positioning. Individuals interred supine in an extended position were facing up or towards the east, the ones placed on their right side are usually facing south, with the exception of individual SOBA_2019/OS1/B021 (with the head towards the east, the face turned to the north). All three individuals buried in Trench 2/OS seem to have been placed on their side instead of supine. Additionally, at least three ventral burials were recorded in Trench 1 (1/OS). The hands were usually placed on the pelvis or along the sides. In two cases only (SOBA_2019/OS1/B006 and SOBA_2019/OS1/B008) were both hands folded in front of the faces of individuals placed on their side-

Tiny pieces of dark brown, coarsely woven fabric recorded with the remains of SOBA_2019/OS1/B010 and SOBA_2019/OS1/B016 indicate that at least some of the bodies were initially wrapped in burial shrouds or buried in clothing. Organics were however very poorly preserved and for now render further analysis impossible. Only one find was clearly connected to one of the burials – a metal ring SOBA_2019/OS1/sf006 was found on one of the fingers of the adult (SOBA_2019/OS1/B006) buried in grave 5. Some beads were also recovered from the contexts associated with graves 8, 10, and 15.

Among the 23 individuals, human remains from 15 individuals belonged to adults, one (SOBA_2019/OS1/B015) was probably an adult, while the remaining seven were sub-adults (aged below 20 years). Two among the adult individuals were identified as males and nine as females or probably females. Sex could not be established for the remaining four. Six of the adults were between 20 and 35 years at death, three were 35-50, while three females (or probable females) were over 50; age could not be estimated for the remaining adults. As for sub-adults, due to the poor preservation of remains the age was estimated only for two individuals: SOBA_2019/OS1/B013 died at about 6 years and SOBA_2019/OS1/B023 at ca. 8 years.

Detailed pathological analysis of human remains was hindered by the preservation of skeletal material. A few cases of trauma were recorded. SOBA_2019/OS1/B014 sustained a healed fracture to the right proximal femur, while SOBA_2019/OS1/B017 had an isolated healed fracture of the right 11th rib. Meanwhile, male individual SOBA_2019/OS1/B010 suffered a healed fracture of the shaft of the left clavicle, as well as a sharp force trauma to the anterior portion of the vertebral body of L3 – with no signs of healing, the injury was probably inflicted *peri mortem* and might have been connected to the individual's death.

Isolated burials

Two sets of human skeletal remains were identified during excavation conducted in Trenches 1/SH and 1/CW. Grave 1 in Trench 1/CW contained the poorly preserved remains of a child, with the cranium, most of axial skeleton and part of lower appendices present. The child was interred on its right side oriented N-S, head to the south and facing east. Dental eruption suggests ca. 1.5 years of age at death.

Meanwhile, the remains recorded in Trench 1/SH belonged to an adult individual, interred in an oval pit oriented E-W with the head to the east. The morphology of the remains indicates that the deceased was a male, ca. 35-50 years at death.

Whenever possible, samples of skeletal tissue samples were collected for further laboratory investigation of diet and mobility. Fragments of bone will be subjected to the analysis of carbon and nitrogen isotopes ratios for the estimation of diet, along with samples of dental enamel, analysed for carbon and oxygen isotopes' content. At the same time, the ratio of strontium isotopes within dental enamel will provide data to allow reconstruction of mobility of the deceased individuals. Faunal samples collected during fieldwork will provide a baseline for the following analysis of the obtained results.

INV. NO	AREA	FEATURE	AGE	SEX
SOBA_2019/OS1/B001	OS1	grave 1	adult (50+ yrs)	F
SOBA_2019/OS1/B002	OS1	grave 1	subadult	-
SOBA_2019/OS1/B003	OS1	grave 2	subadult	-
SOBA_2019/OS1/B004	OS1	grave 3	subadult	-
SOBA_2019/OS1/B005	OS1	grave 4	adult (20-35 yrs)	F (?)
SOBA_2019/OS1/B006	OS1	grave 5	adult (20-35 yrs)	?
SOBA_2019/OS1/B007	OS1	grave 6	adult (35-50 yrs)	M (?)
SOBA_2019/OS1/B008	OS1	grave 7	adult (20-35 yrs)	F
SOBA_2019/OS1/B009	OS1	grave 8	adult	F (?)
SOBA_2019/OS1/B010	OS1	grave 9	adult (20-35 yrs)	M
SOBA_2019/OS1/B011	OS1	grave 10	subadult	-
SOBA_2019/OS1/B012	OS1	grave 11	subadult	-
SOBA_2019/OS1/B013	OS1	grave 12	subadult (ca. 6 yrs)	-
SOBA_2019/OS1/B014	OS1	grave 13	adult (35-50 yrs)	F
SOBA_2019/OS1/B015	OS1	grave 14	-	-
SOBA_2019/OS1/B016	OS1	grave 15	adult	F (?)
SOBA_2019/OS1/B017	OS1	grave 16	adult	F (?)
SOBA_2019/OS1/B018	OS1	grave 17	adult (20-35)	M (?)
SOBA_2019/OS1/B019	OS1	grave 18	adult (50+)	F (?)
SOBA_2019/OS2/B020	OS2	grave 19	adult (50+)	F (?)
SOBA_2019/OS2/B021	OS2	grave 20	adult (20-35)	F (?)
SOBA_2019/OS1/B022	OS1	grave 21	adult (35-50)	M
SOBA_2019/OS1/B023	OS2	grave 22	subadult (ca. 8 yrs)	-
SOBA_2020/CW1/B024	CW1	grave 1	subadult (ca. 1.5 yrs)	-
SOBA_2020/SH1/B025	SH1	grave 1	adult (35-30?)	M

Table 1. All human remains recovered during the 2019/2020 season (prepared by Joanna A. Ciesielska)

Ethnographic research

by Maciej Kurcz

For the Sudanese Soba has basically two meanings today. The first is as the capital of the medieval Nubian kingdom of Alwa ("Soba past"). The second is, above all, as a dynamically developing suburban area of the Khartoum agglomeration ("Soba today"). These two continuously overlapping space-time continua have become the main object of ethnographic research. In the research we were interested in how relationships are formed between people and archaeological traces - more broadly - an archaeological site, and whether and to what extent ancient Soba is a part of the local history? An issue was also addressed of "creating" a social space, hence a group reproduction and its historical memory, as well as the relationships between the site and a category of rootedness and the manner of assigning a meaning to the place in which history and origin are subject to specialisation.

Students from Al-Neelain University participated in this year's ethnographic research as assistants, and trainees of the National Corporation for Antiquities and Museums of Sudan (NCAM), above all Ms Rajaa Alamein Adam. Also Elmontaser Dafaalla Mohamed Elamin Elmoubarak, employees of NCAM, took part in the research. The cultural memory of the inhabitants is not very long. It is associated with "intimate" and "kinship" bonds. This is a memory of ancestors, family or tribal leaders, saintly men, migrations or ecological changes. Historical Soba occupies no significant place in memory. It is considered a deserted pile of rubble and stone of the *harab* category. Unlike in the areas of northern Sudan, the creators of the Nubian kingdom are not considered real ancestors. In this case we may rather talk about "oblivion". Soba, however, is an object of memory and oblivion alike. In particular, among the representatives of elite groups (former traditional leaders, a few among the intelligentsia) and belonging to well-established inhabitants (Mugarba Arabs), we can talk about some sort of pride.

Painted ceramics, large fired bricks and all sorts of objects of daily use are all heterogeneous symbols, silent evidence of the past which, nevertheless, appeals to the people. Archaeological work has become a kind of impulse in this respect. A category of antiquity is important, stimulates reflection and discussions about the lives of ancestors and analogies to them. It is, however, justified above all and evidence of a special multigenerational continuity. However, above all, in a mythical sense, the ruins of "Soba" are ours, deprived of any real connotations - since they were Nubians and additionally Christians, acquiring a dimension of a mystical harmony. Therefore, the historical Soba has been selectively incorporated into a collective memory - of the Mugarba Arabs' in particular - full of praiseworthy deeds and a high status, owed to them in their opinion, particularly from the 16th century till the end of the colonial era. In all this Soba plays a kind of starting point, the beginning of history, is some sort of a genesis.

Meaningful in this respect are evocation about *Aioba* - a woman who brought about the decline of Soba (*Aiobaharabat Soba*). So, what does this story, extremely popular in Sudan, tell us as a matter of fact? A phrase *Aioba destroyed Soba* is used when someone (especially if it is a woman) does something totally destructive. Interpretation: a misogynic element. A woman was the cause of the fall of the entire kingdom. She may be a secretive, treacherous weapon, and her beauty and charm usually become her arms. A misogynistic thread is also very clear in theatrical and TV versions of a story by Khalid Abu-Al Rouse. Maybe this story is also a commentary on the expansion of Arabs and Muslims in Sudan which came about through marriages and the conversion from a matrilineal to patrilineal system. This story may also contain a hidden

reason why the Arabs conquered Soba. Yusuf Fadl Hasan (2005, 132 and 133), relying on an oral and written tradition, mentions that the Arabs became united under the leadership of Abdallab to oppose the tyranny of the *kings of Anaj*. The correctness of this interpretation is supported by symbolic layer of the story. The story of Aioba symbolises archaism, is in opposition to the presence and civilisation (this motif can be also readily found in Sudanese folklore). The killing of Aioba and conquering Soba can be read as a kind of *the end of wilderness*. In folk narratives, an important place is occupied by peoples named *Anaj*. This name functions on several semantic levels. The first is used to name the Alwans - creators of the medieval Soba (Yusuf 2005:132). But it should not be associated only with the Nubians, and in particular with the native population of the region which the Arabs gave various names over time: Turug (Dago hills), Nuba or Amaji (al-Jazira). The Amajis (just like the Funji) were to be characterised – if we are to believe the “local wisdom” – by a very large height, war-like spirit (some claimed it was a group of slave-soldiers) and by putting many objects, including gold, into the graves of their dead.

Important figures for the residents of Soba are the first pious men (like sheikh Wad Taraf Sobani or sheikh Wad Hasoba), of foreign origin. Their domed tombs became the origins of the necropolis existing till the present day. At the moment they are places of pilgrimages and ecstatic Sufi practices. Likewise, the forefathers of the Mugarba Arabs - the oldest Soba population who came from as far as Morocco. In the narratives about the saintly men or family progenitors, a motive of Soba as “no man’s land” is repeated. According to folk narratives Soba, after being conquered, was uninhabited, free of inhabitants for a long time.

The archives of the collective memory include particularly destructive floods (1946, 1988 and 2013). These are important dividing lines referring to intimate kinship stories, full of suffering, but heroism as well. Excavations also occupy an honorable place within the structure of memory. A story about foreigners - daily contacts, including about friendships, fair employment and benefits connected with them (purchase of consumer goods). Soba was also a reservoir of building material. Karl Richard Lepsius, in the first half of the 19th century, mentioned bricks from Soba, transported to Khartoum which was being built at that time (Lepsius 1853, 162–163). Interlocutors often mentioned this event, but in different contexts. First of all, Soba was a reservoir of building material, later of archaeological monuments. They were also carried away by foreigners, including archaeologists working here in the last decades. First they were colonisers, later the representatives of Sudanese authorities. So a motif of imperial theft can be sought here. The second context is the closure of a certain chapter in the history of Soba. Its history was to definitely end with the demolition of the ruins. “Antiquity” ended, and “modernity” began. For the interlocutors representing this perspective, there are no monuments in Soba, this is a chapter that has been definitely closed and finally sealed by the two aforementioned archaeological campaigns, well remembered by the inhabitants. It is worth mentioning here that both narrations are a source of aversion towards archaeologists. This example perfectly illustrates what an archaeological site is for contemporary people. This is, above all, because it is always an ambiguous space, whose boundaries are permanently contested and negotiated. Finally, this is also a space towards which all sorts of claims are directed, connected with the fight for ownership rights or identity. The cohabitation with archaeological traces is a fact in the case of Soba. This is the consequence of building houses within the archaeological site. The remains of Soba, in preponderance hill like piles of bricks, belonged to the deserted category - the so-called *harab* or event *maskun* (“cursed”), as opposed to *amar*, an area inhabited by people. A series of oppositions: *haram* - *halal*, spiritual - human, cold-hot, empty - developed...

Small brick mounds, including one with several overturned granite and marble columns and capitals, innumerable pieces of ceramics, periodic water streams, single, low acacias (*acacia nilotica*). Wild dogs in their shade, tufts of dried grass from place to place, heaps of rubbish and excrements, one small building housing a police station, a car driving by from time to time, several information boards, a cast iron fence separating the site from the side of a street, one prayer place located within a charming garden. The fact that the ruins of former Soba have survived as long as till the 21st century seems to be a miracle. The relationships with archaeological traces are very different. As regards the building of houses, the problem must be discretely resolved. Bones and ceramics are thrown into the nearby wadi or onto informal garbage dumps (monument as waste). A fear of the archaeologists' return and subsequent expropriations is sensed. A paradox - stories about monuments are at the same time a part of each household's history. Something was always encountered - bones or ceramics, usually when digging a toilet, or leveling the area to build foundations, or after a particularly heavy rainy season. This was openly admitted. We also deal with some kind of fear here. A monument can bring formal and legal problems to a person. In people's opinion it can be a reason for eviction or a major impediment to business. In this case, we can speak of some kind of continuum. A monument - rubbish, an archaeological site - a rubbish dump (in a literal and metaphysical sense).

As a result, an archaeological site should be perceived as a kind of liminal space with an entire wealth of ambivalent meanings. In the urban context, it is a vile space, marginalised. In the local "mystical geography" it has a filthy, marginal, even dangerous status - the latter feature is a credit of night-time amateurs of alcohol or drugs, but also common thieves and tramps. It is hardly surprising. Soba is a site within an urban area. However, monuments have not always been disposed of. At least not all. The characteristic bricks, large and red, are widely recognised, although not many of them can be seen within the households today. They enjoy, however, high recognition when building foundations. More frequently they can be seen at nearby cemeteries. They were re-used to "surround" graves and as stelae (particularly large bricks with a plaster layer, in the sheikh Wad Tarafa cemetery). Similarly, with stone blocks, used in medieval buildings to erect foundations. They could be seen as the strengthening of walls or as boundary stones. Even ceramics are used to fill various kinds of holes (a monument as a material). Some objects, mainly due to analogies with equipment still in use in the province, are brought back to life. This is the case with smaller or larger grinders - such as, for example, the so-called *murhaga*. They can be found in many houses - at least not long ago they were still in use. The same with smaller grinders. The same with ceramics - especially the painted ones. An "interesting" object in the living room or in the courtyard. This, in turn, is connected with treating a monument as an object having aesthetic or sentimental qualities (a monument as an aesthetic object). Fragments of ceramics, coins or even single bricks are stored at home for their aesthetic value (**Fig. 59**). Finally, relics of the past can be sacred objects (a monument as a sacred object - in a good and a bad sense) and have a spiritual power. They can be various types of coins or pieces of ceramics used as talismans (coins attached to a wedding skirt or a festive mortar). Unlike human bones - treated with fear and thrown away or moved to another place. Perhaps they are objects of black-magic practices (however, the matter requires further research).

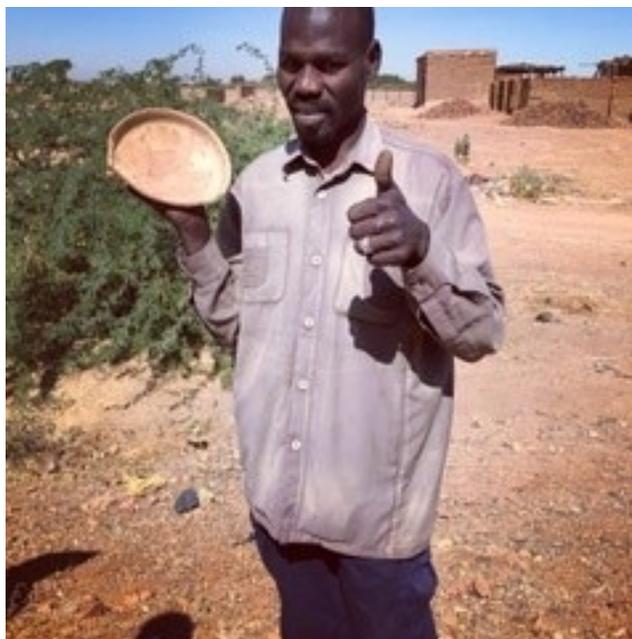


Figure 59. Painted bowl found by a resident after heavy rains (photo Maciej Kurcz)

Sudan has a simply obsessive attitude towards gold. The Islamic semantics of gold (a customary wedding gift) are also reinforced here by the myth of Sudan as a gold-bearing country, a kind of mythical El Dorado. The myth of gold refers especially to the times of Pharaonic Egypt and the ancient kingdoms of Kush and Meroe. It is believed that in the past epochs huge amounts of gold were mined, hence in Sudan gold is commonly associated with the antiquities. In fact, however, it is believed that among every ruin a fairy-tale treasure is hidden. However, it is guarded by supernatural beings: devils, fairy-tale snakes, dogs or cats, sinister mirages or other mediocre ghosts. Each treasure has its guardian. It was no different in the case of Soba. The archaeological site is a mysterious, ambiguous place, which various supernatural forces took a special liking to. They guard the secrets of this place from robbers of the past. Their common denominator is the space-time of the night - the liminal times: dusk, midnight or a time just before dawn in particular. The myth of gold also functions in the context of archaeological work.

Actually, any archaeological work becomes part of a series of mythical stories about gold. Always according to the aforementioned scenario. Foreigners - explorations - mystery - taking the treasure away. The story is the same in the case of each expedition.

My attention was also drawn to the stories about the "cursed house" (*beit maskun*) where a taboo was violated (e.g. a tree cut down, a snake killed). Belief in such phenomena is nothing exceptional. Stories of this kind can also play another role. Until recently, the area where these houses are located was still uninhabited and was an integral part of the archaeological site. The area was therefore customarily forbidden and associated with the metaphysical world. The tradition says it is forbidden to disturb the peace of such places. Also, nothing should be taken from there or built there (Old Dongola, Suakin and many others). In terms of their status, such places resemble cemeteries. They are places of memory of ancestors and their culture. They are important for the folk conceptualisation of space and a series of binary oppositions - to use the language of structural anthropology. In the case of Soba, however, the

demographic pressure turns out to be stronger. New migrants decide to build within the areas of former ruins, seizing increasing larger areas of the site, despite the disapproval of the well-established inhabitants, who paradoxically once did exactly the same. The stories of hostile, supernatural forces can be, in this case, a kind of mediation, or more precisely: the price for violating the customary taboo.

Fieldwork training from the perspective of a trainee

by Mokhtar Maali Alden Mokhtar Hassan

Fieldwork provides the student with practical knowledge. Here lies the importance of training and practice. During two months, I took part in the training program in Soba East. The site is located on the eastern bank of the Blue Nile, 22 km from Khartoum and 14 km from Al-Mansheya Bridge, near Umm Dhuaban.

During that time, I worked with archaeologists conducting excavations. I assisted geophysicists in magnetic survey. I took aerial photographs using a drone and participated in topographic survey using GPS RTK.

My benefits of this training were:

- operating and controlling methods of making vertical and oblique aerial photos as well as documentation to create 3D models;
- understanding the idea and practical application of geophysical methods in detecting underground features such as various kinds of brick architecture and traces of burning, as well as recognising geological and natural features;
- learning about Geographical Information Systems application in archaeology. GIS is an ideal technique for managing and organising research and studies in archaeology and heritage science;
- creating documentation in archaeology, thus obtaining various information that is related to natural characteristics, history, dimensions, forms and ornamentation. I have learned about the issues that can cause damage or destruction to archaeological remains and what kind of measures should be undertaken to protect the finds.

My plans for the future are firstly, to study fortifications in the Middle Nile valley cataracts because I'm intrigued by how the enclosures have been built. Secondly, I would like to develop my skills in using the Geographical Information System for archaeological research.

References

- Drzewiecki M., Ryndziewicz R. 2019. Developing a New Approach to Research at Soba, the Capital of the Medieval Kingdom of Alwa. *Archaeologies: Journal of the World Archaeological Congress* 16, 1–24 (doi.org/10.1007/s11759-019-09370-x).
- Drzewiecki M., Ciesielska J.A., Michalik T. 2020. *Soba Expedition. Preliminary report from archaeological excavation before the construction of the storage house.* Khartoum (doi.org/10.6084/m9.figshare.11981328.v3).
- Schmidt A.R., Linford P., Linford N., David A., Gaffney C.F., Sarris A., Fassbinder J. 2015. *EAC Guidelines for the use of Geophysics in Archaeology: Questions to Ask and Points to Consider* (EAC Guidelines 2). Namur.
- Welsby D.A., Daniels C.M. 1991. *Soba. Archaeological research at a medieval capital on the Blue Nile* (Memoirs of the British Institute in Eastern Africa number 12). London.
- Welsby D.A. 1998. *Soba II. Renewed excavations within the metropolis of the Kingdom of Alwa in Central Sudan* (Memoirs of the British Institute in Eastern Africa number 15). London.
- Yusuf Fadl Hassan 2005. *The Arabs and the Sudan. From the Seventh to Early Sixteenth Century.* Khartoum (4th edition).