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RESEARCH OF THE NUBIAN ARCHAEOLOGICAL AND ANTHROPOLOGICAL EXPEDITION OF THE RESEARCH INSTITUTE AND THE MUSEUM OF ANTHROPOLOGY OF MOSCOW STATE UNIVERSITY IN CENTRAL ATBAI (2017–2022)

Materials and methods. *This article is a collective research conducted by the members of the Nubian archaeological and anthropological expedition of the Research Institute and Museum of Anthropology of the Lomonosov Moscow State University. The article outlines the main results of the expedition's work over four field seasons at the Deraheib site, located at the headstream of Wadi al-Allaqi, in the northern part of the Nubian desert (Central Atbai) in the Republic of Sudan. From 2017 to 2022 The Nubian expedition excavated the Northern Fortress, Building 3 (Mosque) at the settlement of Deraheib, the Southern Necropolis; carried out a reconnaissance mission to the Onib ring structure.*

Results and discussion. *Based on the study of the obtained archaeological materials (primarily the analysis of ceramics and textiles), as well as data from written sources, it was established that the medieval part of history of the monument covers the period between the 9th and 12th centuries. The archaeological site of Deraheib can be associated with the city of Al-Allaqi, mentioned in Arabic sources as a gold mining center in the Nubian desert, a trading city that was located on one of the caravan routes connecting the Red Sea port of Aidhab and the city of Aswan. The materials of the excavations of the Northern Fortress made it possible to advance a hypothesis that the building, erected in the 9th century, functioned more like a fortified castle of the local ruler rather than a fortress. The study of Building 3 allows us to say with confidence that it was a Friday mosque, founded at the beginning of the 10th century. Ongoing excavations in the Southern Necropolis have revealed Muslim burials (25 out of 31 investigated burials) and burials that are associated with the population that lived on the territory of Atbai in the Late Antique — Early Medieval period, known from classical sources as Blemmyes. A group of anthropologists obtained important data on the sex and age of the population of Deraheib, traces of daily activities and pathologies reflected in the skeleton.*

An important direction in the research of the MSU complex expedition is the study of the modern population of Central Atbai, primarily the Bisharin tribe of the Beja tribal union. The article outlines the main directions of these studies and preliminary results.

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Keywords: Sudan; Central Atbai; Nubian Desert; Wadi al-Allaqi; Deraheib; Onib; Blemmyes

Introduction

By Central Atbai we mean the vast territory of the Nubian Desert between the latitude of Aswan city in the north and Abu Hamad city in the south, bordered by the Nile river in the west and by the Red Sea – in the east (Fig. 1)

The distinctive feature of the Central Atbai landscape is the Red Sea Mountains which stretch along the Red Sea from Suez to the spurs of the Ethiopian Highlands, and reach their maximum altitude (about 2 km) in the Atbai region, where in the Halaib Triangle the mount Jebel-Shandib is located.

Like the rest of Egypt and Northern Sudan, the Eastern Desert sits on a Precambrian platform of igneous (diorite and granite) and metamorphic rock (gneiss and schist). This platform is rich in precious metals (primarily gold) and gemstones.

The largest wadi (Arab.: dry riverbed) of the Nubian Desert called Al-Allaqi is located in the Central Atbai; it originates from the mountains on the borders between Egypt and Sudan and flows into the lake Nasser 300 km northwest. Wadi Gabgaba stretches from north to south from Wadi al-Allaqi to Abu Hamad.

The distinctness of historical development of the Central Atbai population in Antiquity, the Middle Ages and at present time is determined by both the geological and geographical features of the territory: the northern part of the Nubian Desert, as well as the Lower Nubia region adjoining it from the west (the Nile Valley between the First and Second Cataracts, from Aswan to Wadi Halfa) are sandwiched "between two worlds", according to L. Török's figure of speech [Török 2009]: between Egypt and Sudan,

who have built civilizations. Thus, Central Atbai and Lower Nubia are a borderland of sorts, where not only the geopolitical interests of the "two worlds" were clashing, but also an active exchange of goods and ideas took place. Moreover, if Nubia, according to W. Adams, was a "corridor to Africa" (this gave a name to his famous book) [Adams 1977], Central Atbai was a corridor connecting civilizations of the Nile Valley with the cultures of the Red Sea basin.

Another distinctive feature of the region is the abundance of gold-bearing sand that fills the wadi's bottom, and the quartz veins of the Red Sea Mountains which are rich in gold. Gold is the main mineral of the Nubian Desert. The region of Wadi al-Allaqi



Figure 1. Geographical features mentioned in the article (Map made on the base of the Google Earth image)

Рисунок 1. Карта, сделанная на основе сервиса Google Планета Земля с указанием основных географических названий, упомянутых в статье

and Wadi Gabgaba is considered the richest in gold. Starting from the Middle Kingdom and up to the present day, the gold was attracting prospectors to Central Atbai from both neighboring and distant countries.

Finally, it was the northern part of the Nubian Desert (especially the headstream of Wadi al-Allaqi) that has been the most inhabited and remains such, since the near-surface aquifers provided reach vegetation compared to the rest of the desert (various types of acacia and numerous shrubs: *Acacia tortillis*, *Acacia Raddiana*, *Balanites aegyptiaca*, *Leptodenia pyrotechnia*, *Salsola imbricate*, *Salvatora persica*, *Zilla spinosa*) [Barnard 2012, p. 4]. In Central Atbai, precipitation occurs up to 200 mm annually. Rains mostly fall in October-November due to the moisture brought by the tropical monsoons.

For thousands of years the life of the Central Atbai inhabitants was closely related to Lower Nubia. The area between the First and Second Cataracts was thoroughly explored by archaeologists during the three rescue campaigns: 1907-1911, 1929-1934 campaigns associated with the constructions and subsequent enlargement of the English Dam in Aswan and a large-scale UNESCO Savor campaign caused by the construction by Egypt with the financial and technical assistance of USSR of the Aswan Hydropower Complex. Within the framework of this campaign, the Nubian Archaeological Expedition of the USSR Academy of Sciences worked in Nubia for two seasons (1961-1963) [Krol, 2021].

Atbai is one of the poorly archaeologically explored parts of Sudan [Cooper 2021, p. 121]. Until recently, the study of Nubian Desert cultures was marginal for both specialists in Ancient Egyptian archaeology and specialists in the "classical" Sudan cultures, such as Kerma, Napata, and Meroe. Besides, archaeological studies of the Nubian Desert sites present a certain logistical difficulty. Traveling is possible only on the off-road vehicles that must be driven by experienced drivers, which is quite a luxury. There is no cell service in the desert. Also, there are practical and economic difficulties with organizing an archaeological expedition in such an arid and rocky desert environment. An additional impediment that for many years has not allowed for full-scale archaeological and ethnographic studies of Central Atbai is the proximity of the state border

between Egypt and Sudan, and to the disputed territory of the Halaib Triangle.

So far, only a few major attempts have been made to systematically study the antiquities of Atbai.

The region was first explored by the expedition led by the French engineer Linant de Bellefonds, which traveled from Aswan to Jebel Elba in February-March 1832. The goal of his journey was to explore ancient and medieval gold mines. He made a stop at Deraheib for a week. In addition to a detailed description of the settlement, the French engineer drew up a schematic plan and made some drawings of Deraheib ruins, marking the settlement itself, two fortresses and numerous mines – the traces of goldmining in Deraheib. According to Bellefonds, the city which lies in the source of Wadi al-Allaqi was founded back in the pharaonic period as a goldmining center in the Nubian Desert [Linant de Bellefonds 1868].

In 1961-1963 the one hundred kilometer sector of Wadi al-Allaqi, adjacent to the Nile river, was explored by the Nubian Archaeological Expedition of the USSR Academy of Sciences, led by B.B. Piotrovsky. The Soviet expedition discovered and explored 200 Ancient Egyptian inscriptions, which mostly related to Dynasties 18, 19, and 20, and were left by the ancient expeditions heading to the Nubian Desert for gold and building stone [Piotrovsky 1983].

The next research stage was related to the Eastern Desert Research Center (Centro Ricerche sul Deserto Orientale, CeRDO) activities. The Center was founded by two brothers – Angelo and Alfredo Castiglione, and Giancarlo Negro. The Center's tasks included the study of archaeological sites in the Nubian Desert in the Northeastern part of Sudan. Since 1989 till 1994 the Center has explored a vast territory of about 50 000 square kilometers. More than 200 archaeological sites were discovered and recorded, among which were ancient and medieval mines; rock quarries; goldminers' settlements related to various periods, from the Old Kingdom till the Middle Ages; necropolises and individual graves; petroglyphic drawings [Sadr, Castiglioni Al., Castiglioni An. 1998, p. 203-203; Sadr, Castiglioni Al., Castiglioni An. 1999, p. 52-57]. The discovered antiquities of the Nubian Desert were introduced to the academic community and became a large scientific sensation [Williams 2002, 147-148].

The settlement of Deraheib presented particular interest to researchers. In 1989-1994 the Eastern Desert Research Center conducted a reconnaissance mission at the site. In 1997-1999 the Center carried out systematic archaeological excavations at the site. According to not yet published reports, for two fieldwork seasons a month long each 14 pits were drilled in order to identify the stratigraphy of the site and to date its various parts.

The researchers believed that these finds prove their hypothesis that the lost city of Berenice Panchrysos (Berenice the All-Golden), mentioned in Book 6 of Natural History by Ptolemy the Elder, was located on the territory of Deraheib. Perhaps also in course of the 19th Dynasty (New Kingdom) a settlement was located in the source of Wadi al-Allaqi, where miners working in the nearby goldmines lived [Paul 1954, p. 27; Castiglioni Al., Castiglioni An., Vercoutter 1998]. However, no valid evidence was introduced to support this theory [Bukharin, Krol 2020].

In the beginning of 2000 German scientists Rosemary and Dietrich Klemm conducted research in the Eastern Egyptian Desert and Nubian Desert in Sudan, within the framework of their goldmining research project of the region [Klemm R., Klemm D. 2013].

In 2018 the Atbai Survey Project was launched, directed by Julian Cooper [Cooper 2021, p. 121-134]. The project is dedicated to understanding and elucidating the relationship between nomadic cultures of Atbai and Egyptian and Nubian riverine cultures who have ventured into this desert. The project's goal was to chart all the sites relating to the desert reclamation by Ancient Egyptians, and to study the local nomadic cultures. Within the framework of the project only one fieldwork season was conducted up until now, back in 2018.

Since 2017 the combined expedition of the Research Institute and Museum of Anthropology of Moscow State University has been working in the Central Atbai. The Russian concession includes the archaeological site of Deraheib and the territory around it (about 25 square kilometers), along with the Onib ring structure (about 1024 square kilometers). (Fig. 2)

Until the present one reconnaissance (November-December 2018) and three fieldwork seasons (November-December 2018, February 2020, February-March 2022) were carried out at the site of De-

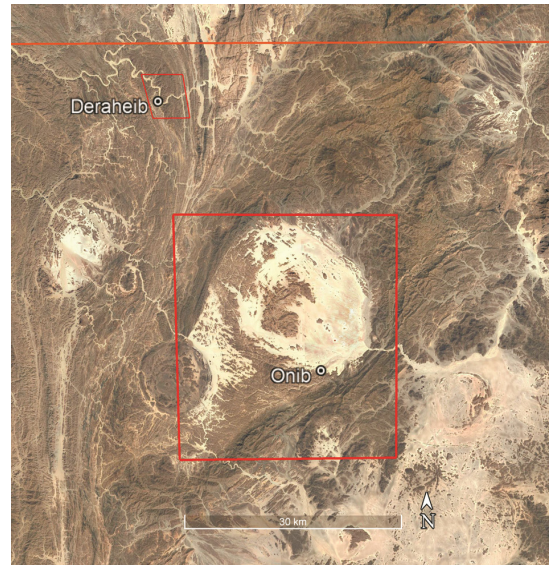


Figure 2. Map pointing at the location of the Nubian mission of Lomonosov MSU archaeological concession (Map made on the base of the Google Earth image)

Рисунок 2. Карта, сделанная на основе сервиса Google Планета Земля, с указанием местоположения археологической концессии Нубийской экспедиции МГУ

raheib. In season 2022 a reconnaissance trip was made to the Onib ring structure,

The goals of the combined expedition are:

- To study the cities and settlements of Central Atbai;
- To conduct anthropological, primarily paleoanthropological, research in order to study the Ancient and Medieval population of the region;
- To study Stone Age in Central Atbai;
- To carry out epigraphical work and record petroglyphics of Central Atbai;
- To study mining carried out in the region in Antiquity and the Middle Ages;
- To study caravan routes which connected the Red Sea with the Nile River;
- To conduct ethnographic research of the Central Atbai population, primarily Beja tribes;
- To perform paleogeographic, paleoclimatic, and paleoecological reconstructions.

The expedition main works are currently conducted at the site of Deraheib (Fig. 3)

The site of Deraheib

The archaeological site of Deraheib is situated in the Red Sea province of the Sudan Republic at the headwaters of Wadi al-Allaqi at a distance of



Figure 3. View at the Northern part of the archaeological site Deraheib. Photo by dron K. Samurskii

Рисунок 3. Вид на северную часть археологического памятника Дерахейб. Съемка с квадрокоптера К. Самурского



Figure 4. Map of the Deraheib site mentioning main archaeological features

Рисунок 4. Карта памятника Дерахейб с указанием основных археологических объектов

about 400 kilometers from the Nile and 200 kilometers from the Red Sea. Its remoteness from “civilization” is the reason for the site’s unique preservation condition and for the fact that its’ been poorly researched.

The site includes the following archaeological features: “Northern Fortress”, “Southern Fortress”, Settlement, South Necropolis, goldminers’ settlements, place of ancient and medieval goldmining (Fig. 4).

Currently the studies are conducted on the layers relating to the medieval history of Deraheib, which is dated to 9th-12th centuries based on the written sources.

During this period a caravan route ran through Deraheib, known in Arabic sources as al-Allaqi. This route was used to deliver the goods from Arab and African countries, India and China via the Red Sea to

the port of Aidhab, and then they were transported through the Nubian Desert to Aswan. The main goods transported via this route were spices and incenses from India and Arab Peninsula, and also silk and ceramics (primarily celadon) from China [Krol 2018]. Al-Allaqi was also the center of gold mining in the Nubian Desert [Bukharin, Krol 2020]. Through al-Allaqi many pilgrims traveled for the Hajj from Maghreb, Egypt, and Muslim Spain.

The main research objects were: Northern Fortress, Southern Necropolis, Building 3 (the Mosque) in Deraheib settlement. In season 2022 a reconnaissance trip was made to the Onib ring structure, where the elite necropolis of Atbai population dated 5th-8th centuries is located.

More detailed information on these objects is as follows.

The Northern Fortress

Archaeological excavations of the Northern Fortress have started in order to establish the architectural features of this object (depth of the foundation, height of the walls, etc.), as well as to establish a possible date for the foundation of the Fortress.

The Northern Fortress (NF) is a fortification with a square shape of 26.50 × 26.50 m.

In the center of the southeastern wall of the Fortress there is a tower with an entrance, which is a high arched opening. It opens access to the inner part of the tower, where another lower opening is located, leading to the inner space of the NF. The walls of the NF are composed of slate slabs laid on a binder mortar. The height of the best-preserved eastern part of the southwestern wall is about 10 m.

At a later time, a 10 × 10 m section, adjacent to the southwestern wall of the NF, was additionally surrounded by a wall. In the center of the southeastern wall of the Fortress there is a tower with an entrance, which is a high arched opening. It opens access to the inner part of the tower, where another lower opening is located, leading to the inner space of the NF. The corners of the NF are reinforced with a kind of buttresses, erected to protect the foundation of the fortress from the impact of mudflows. The walls of the NF are composed of slate slabs laid on a binder mortar. The height of the best-preserved eastern part of the southwestern wall is about 10 m.

Inside the NF is a complex of buildings of different times, covered with rubble of walls and ceilings.

At the end of 1980 – 1990, in course of the works conducted by the expedition of the Center for the Study of the Eastern Desert at Deraheib a fragment of a wooden beam above the entrance to the fortress was taken for radiocarbon dating. This analysis gave the date 740 AD. [Travelling the Korosko Road 2021, p. 42-43]

According to Angelo and Alfredo Castiglioni, Deraheib was one of the capitals of the Blemmyes kingdom. Researchers believed that when in the middle of the 6th century AD the Blemmyes were defeated by Silko, the king of Nobatia, the Nubian Desert remained their main habitat. During this period, their capital was Deraheib, where a fortress was built [Sadr, Castiglioni Al., Castiglioni An. 1999, p. 55]

The studies of the MSU Nubian expedition do not confirm this hypothesis put forward by Italian specialists.

In 2020 the Nubian mission has started excavations near the tower in the center of the southwestern wall, in which the entrance to the fortress was located. Here in the 2000s, with the help of construction equipment, robbers have dug a deep pit. Their goal was probably to pull down the wall that would open the entrance to the interior of the Fortress. However, having stumbled upon a retaining wall that strengthens the foundation and having disassembled only a small fragment of the masonry, the robbers have stopped. In 2020 we have cleared a swollen robber's pit, which made it possible to reveal a retaining wall. In addition, one of the pit sides was cleaned, which made it possible to trace the stratigraphy of the building (Fig. 5).

In the layer related to the construction (or reconstruction) of the fortress a heavily oxidized coin was found. After the restoration, it turned out that the copper coin is a fals of the Egyptian ruler Ahmed Ibn Tulun (868-884), minted in Egypt in 258 AH, which corresponds to 871/2 AD. Interestingly, the found coin refers to the first coinage issued by Ibn Tulun after he gained control of the finances of Egypt in 258 [Grabar 1957, p. 29-30, Pl. I] (Fig.6). Based on this find we were able to date the layer associated with the construction (or reconstruction) of the Northern Fortress.

The second work site was located at a rectangular (55×65 cm) opening in the center of the northwestern wall of the Northern Fortress. Under this opening was a mound of filling from Room I, located inside the Fortress (Fig. 7). A pack of Egyptian *Cleopatra* cigarettes suggests that robbers



Figure 5. Excavations Area near the Entrance to the Northern Fortress. Profile of the Robber's Pit. Photo by drone: K. Samurskii
Рисунок 5. Раскопки рядом с входом в Северную крепость. Съемки с квадрокоптера К. Самурского



Figure 6. Fals of Ibn Tulun 258 AH (871/2 CE). Photo: A. Krol
Рисунок 6. Фельс Ибн Тулуна 258 AH (871/2). Фото А. Крол



Figure 7. Rectangular opening in the center of the northwestern wall of the Northern Fortress. Photo: K. Samurskii
Рисунок 7. Прямоугольный сквозной проем в центре северо-западной стены Северной крепости. Фото К. Самурского

were operating here in 2005. The filling was carefully sifted through several sieves, and then it was decided to clear the filling of the robber's pit inside Room I, which made it possible to obtain important



Figure 8. (1) Jewelry (beads, earring). (2) Fragments of paper with Arabic script. (3) Spindle whorl made of bone. (4) Fragments of wall carvings on tuff. (5) Bronze Bowl. (6) Furniture hardware (?). Photo (1-6): K. Samurskii
 Рисунок 8. (1) Бусы, серьга. (2) Фрагменты бумаги с арабографичной надписью. (3) Костяное пряслице. (4) Фрагмент резьбы по туфу. (5) Бронзовая чаша. (6) Декоративные накладки на мебель (?). Фото (1-6) К. Самурского

information about the time of the use of the Northern Fortress and the nature of its functioning.

Finds from the filling of the robber's pit in the Room I conventionally can be divided into the following groups: ceramics (Nubian hand-made pottery, Aswan ware, glazed ceramics (see section *Ceramics. Preliminary remarks*); items related to the life of the inhabitants of the Fortress: jewelry (beads, an earring) (Fig. 8.1); fragments of glassware; fragments of paper with Arabic script (Fig. 8.2); textiles and items related to textile production (bone spindle whorl) (Fig. 8.3), fragments of wall carvings on tuff (Fig. 8.4); bronze vessel (Fig. 8.5); furniture décor moulding (?) (Fig. 8.6); personal hygiene items (a comb, toothbrush sticks); leather; basketry; plan residues.

A separate and numerous types of finds consist of animal bones, coals, and porous – black fragments of organic matter, which turned out to be human fecal masses.

It is likely that in the final period of the Northern Fortress's existence, Room I was used as dump for domestic waste including contents of latrines.

In season February-Marcy 2022 exploration of the Northern Fortress continued. Under the rectangular opening in the center of the northwestern wall a square 2x2 m and 2.20 m in depth was laid. All the selected soil was carefully sieved. An analysis of the finds (ceramics, animal bones, coals) shows that a multi-meter midden was found near the northwestern wall, and it was formed during a very short period when the castle was functional. The midden formation dates back to the 10th century based on the analysis of luster ceramics originating from the excavation area.

Based on the nature of the finds we formulated the hypothesis that the Northern Fortress was rather a castle of the local ruler rather than a Fort with the permanent garrison.



Figure 9. Building 3 (Mosque). Photo by dron: I. Shkribliak

Рисунок 9. Здание 3 (Мечеть). Фото с квадрокоптера И. Шкрибляк



Figure 10. Excavation area 2018 in the Building 3. Photo by dron: I. Shkribliak. (1) Floor of the Building 3. (2) Semicircular protrusion in the eastern wall of the Building. (3) Fragment of a collapsed column

Рисунок 10. Раскоп сезона 2018 г. в Здании 3. Фото с квадрокоптера И. Шкрибляк. (1) Пол Здания 3. (2) Полукруглый выступ в восточной стене Здания. (3) Завал колонны, сложенной из плит сланца

This suggestion might be also proven by the citation from the book Dictionary of countries by Arab scholar Yakut ar-Rumi (1179-1229): "Allaqi ... a fortress in the Bujah country, south of Egypt. There is a mine of native gold (ṭibr). Between this place and Aswan, in a very wide stretch of land, one may dig and, if one finds anything, one takes a half, while the other is due to the Sultan of Allaqi, who is a man of the Bani Hanifa, a branch of the Rabia tribe. Between this place and Aydhah there are eight days" [Vantini 1975, 345].



Figure 11. Fragment of the tuffa with carved decorative elements. Found in the Building 3.

Photo: K. Samurskii

Рисунок 11. Декоративные элементы, вырезанные из материала на основе туфа.

Найдены при раскопках Здания 3.

Фото К. Самурского

The excavation of Building 3 (Mosque)

Excavations of Building 3, located in the center of the Settlement, began in 2018. Building 3 is the largest structure of the settlement (29x16 m) facing an eastern direction (Fig. 9). The eastern wall of this building is facing the main street. Its walls were made of slate slabs, laid on tuff based mortar. The masonry is 1 to 3 meters high. In the eastern wall of the building there are two fully preserved and two partially destroyed arched openings. On the sides of the building there are two entrances and a semicircular protrusion, which is probably a mihrab, if we accept the assumption on the cult purpose of the building. There are two preserved towers in the southwest and northeast corners of Building 3. Also in the northeast tower there are traces of several steps of a spiral staircase.

A stratigraphic trench was dug out on the inside and outside of the eastern wall of Building 3 7x2 m. A stratigraphic trench that was dug inside Building 3 in 2018 revealed a well-preserved floor.

The floor was made of crushed tuff [Kandinov, Krol 2021]. At the western end of the trench we have found a square-shaped slate column base and a fragment of a collapsed column or an arch (Fig. 10). This find allows us to assume that the eastern part of the interior of Building 3 was blocked, and that the ceiling rested on columns or arches. Unfortunately,

during the excavations, no artifacts were found that would allow us to date the periods of Building 3 functioning or abandonment, and to determine its purpose with certainty. Numerous fragments of repeating decorative elements carved from tuff-based material were found in the desolation layer (Fig. 11).

As a working hypothesis we have assumed that Building 3 served as the Friday Mosque of the city of al-Allaqi. This is primarily indicated by the architectural features of the building – the hypostyle, which is traditional for religious buildings of Early Islamic architecture. Its internal space was divided into almost equal parts: an open courtyard (*sahn*) and a covered prayer part adjacent to the wall, in the middle of which there was a semicircular protrusion with a niche pointing to Mecca (*mihrab*), which is the most important part of any mosque.

The test trench was extended from the outside of the eastern wall (2×2 meters). The foundation of a semicircular protrusion was unearthed. In the lowest layers of masonry there was a niche formed by a horizontal slate slab and two slate slabs placed edgewise. A lower part of a handmade vessel without bottom was placed in the niche. There was also a completely corroded iron (?) object and coals placed in the deposit. Radiocarbon analysis gave a calibrated date of 931¹.

Research of Southern Necropolis

The Southern Necropolis is located on a small plateau about 85×65 m. Excavations were conducted here in 2018 and in 2022. For two seasons a 150 sq. m. area was opened, and 31 burials were unearthed.

Aside from six burials all the studied interments relate to Islamic period which is witnessed by the one and the same burial rite. The burial pits along the axis oriented north-south with a slight shift of front part to the west. In the lower part of the eastern wall of grave a niche was cut, in which the body was placed. The deceased was lying on their right side in an extended position, with their head to southwest, facing east (the direction to Mecca). Judging by the finds of decayed textile fragments of the same type found in most of the graves, all the dead were wrapped in a shroud. No grave goods

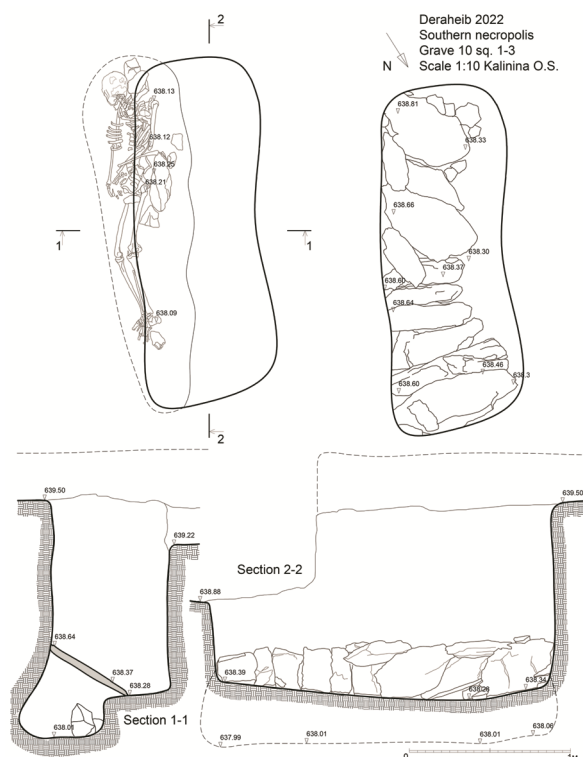


Figure 12. Grave 10, Southern Necropolis.
Drawing: O. Kalinina

Рисунок 12. Могила 10 Южного некрополя.
Чертеж О. Калининой

were found in these burials, which is another distinctive feature of Islamic burials.

The niche with the body of the deceased was blocked by long slabs of slate, and then the grave pit was backfilled. On the soil surface the location of burials was marked either with a pile of stones, laid along the north-south axis, or by a gravestone – a slate slab, which was vertically dug at the place where the head of the deceased was (Fig.12). Grape seed discovered in burial # 6 were handed over for radiocarbon analysis, which gave a calibrated date of 925².

Six burials stand apart from the rest. The deceased were buried in shallow oval-shaped pits in a crouched position on their left or right side, with their hands by their face, or (as in the case of burial # 5), with one hand by their face and another by their hip. The bodies were facing North, South, or East. Burial # 5 turned out to be the richest in terms of archeological finds. Under the stone blockage, which was elongated along the north-south axis and

¹ IGAN ams10154. The analysis was performed in the Laboratory of Radiocarbon Dating and Electron Microscopy in the Institute of Geography of the Russian Academy of Science (IG RAS).

² IGAN ams10152. The analysis was performed in the Laboratory of Radiocarbon Dating and Electron Microscopy in the Institute of Geography of the Russian Academy of Science (IG RAS).

consisted of large stones, a burial was found in an oval pit 25-30 cm deep. The deceased lay in a crouched position on his left side, with his right hand next to his face, and his left – hugging his hip. The wrists of the deceased were adorned with bracelets made of cowrie shells and a leather bracelet, and at his feet lay large sea shells. Also at his feet there was a heavily fragmented leather object with remains of seams (Fig. 13).

Fruits of Christ's thorn jujube (*Ziziphus spina-christi*), *Cocculus hirsutus* and *Cocculus pendulus* were discovered in the area of abdomen and chest of the deceased. Radiocarbon analysis of the jujube endocarp gave a calibrated date of 307³. This allows us to suggest that the Southern Necropolis was used to bury the population of Atbai in the Late Antique period, when the vast territory of the Eastern and Nubian Deserts was ruled by a people known as the Blemmyes in ancient sources.

The Reconnaissance Mission in the Ring Structure of Onib

In course of February-March 2022 field season a reconnaissance trip to Onib was conducted. Onib is located 40 km away from Deraheib (Fig.14), in the Southeastern part of the ring structure. It was here that back in March 1990 Italian archaeologists Alfredo and Angelo Castiglione have discovered a vast necropolis built on a raised plateau of about 700x400 m. The site reconnaissance revealed that the necropolis consists of a dozen circular platform tumuli, built of stones, and lined with large vertical stone slabs (Fig.15). The diameter of larger tumulus burial is about 10 m. The space between the tumulus burials is occupied with various burials of other types. Castiglione assumed that Onib was the necropolis of the Beja kings who used to live in Deraheib. However, as of now, before archaeological excavations, we have no grounds to support or reject this hypothesis.

Burial structures shaped as a ring platform (tumulus) are frequently encountered throughout the large area from al-Mualla in Upper Egypt to Khor Nubt in Sudan. Usually they are dated to the

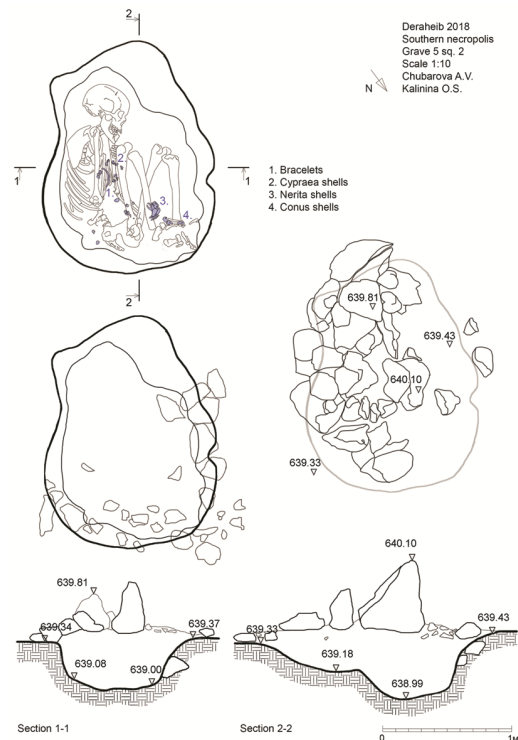


Figure 13. Grave 5, Southern Necropolis.

Drawing: O. Kalinina

Рисунок 13. Могила 5 Южного некрополя.

Чертеж О. Калининой

Late Antique-Early Medieval periods and are associated with the Blemmyes, and in Arab written sources – with the Beja [Lassányi 2010; Cooper 2021; Krziwinski 2012]. The size of the burial structures at Onib suggests that there is an elite necropolis of the Northern Atbai inhabitants. However, the tumulus burials found in Onib are not the largest burial structures of this type discovered in the Nubian Desert. For example, in Khor Nubt the tumulus burials were discovered, two of which have a diameter of about 20 meters.

The Arab geographer al-Yaqubi back in the 9th century wrote that the Beja had five Kingdoms spreading from Aswan south almost till the borders of modern Eritrea. Each kingdom had its own King [Vantini 1975, 70]. Perhaps, one of those “kingdoms” had its political center in Wadi al-Allaqi. In this case, the burial ground for the “kings” could have been Onib.

We hope that systematic excavations at the site which will start before long will give answers to some of these questions.

³ IGAN ams 10153. The analysis was performed in the Laboratory of Radiocarbon Dating and Electron Microscopy in the Institute of Geography of the Russian Academy of Science (IG RAS).



Figure 14. Onib landscape. Photo: V. Kislov
Рисунок 14. Вид Ониба. Фото В. Кислова



Figure 15. One of circular platform tumuli
in Onib. Photo: K. Samurskii
Рисунок 15. Одна из кольцевых структур в
Онибе. Фото с квадрокоптера К. Самурского

During the reconnaissance trip to Onib, stone tools were collected, mostly made of quartz. As of now we cannot identify the exact time period these tools were manufactured in. They can refer to both the Paleolithic and Neolithic. A systematic research in Onib conducted by an archaeologist specialized in Stone Age should give answers to these crucial questions.

Anthropological research at the site of Deraheib⁴

Materials and methods

The materials available for anthropological research are the skeletal remains of individuals of both sexes and different ages. Soft tissues are almost not preserved; some individuals have hair. The preservation condition of bone tissue of individ-

uals buried in the Deraheib Southern Necropolis is fair, however, due to the significant loss of organic component, the bones are very fragile. During the two excavation seasons at the necropolis (2018 and 2022), 32 individuals were examined, of which 6 were buried in a crouched position and 26 were buried according to the Islamic burial rite.

The sex and age of the buried were determined by the cranial and postcranial parts of the skeleton, in accordance with the standard anthropological methods. The age of adult individuals was recorded based on the degree of obliteration of cranial sutures, the state of their dentition, the presence of age-related changes on the pelvic bones, the presence of osteophytes [Pashkova, 1963; Alekseev, Debec, 1964; Todd, 1920; McKern, Stewart, 1957; Ubelaker, 1989]. For the children and adolescent categories the ratio of eruption of deciduous and permanent teeth, the degree of fusion of the epiphyses to bone, and the length of the diaphyseal part of the limb bones were taken into account [Ubelaker, 1989]

Only adult skulls were used for craniological analysis. The measurement of skulls was carried out according to the methodology adopted in Russian anthropology [Debec, 1935; Alekseev, Debec, 1964; Shirobokov, 2016; Martin, 1928].

To fix non-metric traits on human skull, an original program (111 traits) was used, formed on the basis of published methodological works [Movsesyan, Mamonova, Rychkov, 1975; Movsesyan, 2005; Kozincev, 1984, 1988; Tomashevich, 1990; Berry, Berry, 1967; Choudry, Choudry, Anan, 1988; Shapiro, Robinson, 1967, Hauser, De Stefano, 1989] and the author's traits by D.V. Pezhemsky.

The osteometric study was carried out according to the program classical for Russian anthropology: according to methodology introduced by R. Martin [Martin, 1928] adopted by V.P. Alekseev. For osteometric studies, both adult and children's skeletons were used.

The program for fixing stress markers and pathological condition was applied to all the studied individuals. Degenerative-dystrophic diseases of the joints were recorded according to the classification of M. Schultz [Schultz, 1988]. Signs for determining markers of cumulative and episodic stress, as well as other pathological changes on the bones of the skull and postcranial skeleton were carried out according to the programs of A.P. Buzhilova and D. Ortner [Buzhilo-

⁴ This section was written by N.Y. Berezina, A.Kh. Chirkova and O.A. Fedorchuk.

va, 1995, 1998; Ortner, 2003]. These methodologies make it possible to assess the health level of the researched population, the presence of infectious diseases, civilian traumas or combat injuries, and to assess the level of environmental stress on the study group.

Results of the study of anthropological materials

Of the six skeletons of individuals buried in a crouched position, all turned out to be adults. The preservation condition of the bones of most of the individuals from this group was very poor, so the biological age categories determined for some adult individuals were limited to wide age intervals.

Among the twenty-six individuals buried according to the Islamic rite all sex and age categories were represented: in total, nine men, five women and 12 children of different ages were examined. The infant mortality rate, revealed at this stage of the necropolis study, is 46%, of which more than a quarter are children who died before turning the age of one.

17 skulls were available for craniometric studies, of which 4 (2 male and 2 female) belonged to individuals buried in a crouched position, and 13 (8 male and 5 female) in an extended position.

The preservation of the skulls of individuals buried in a crouched position in most cases allowed us to take only some dimensions of the craniometric program, therefore, only individual descriptions were possible for this group. Male skulls from Muslim burials are characterized by an average length of neurocranium with a small width and height; forehead and hind-head of the skull are narrow, as is the base of the skull. The zygomatic diameter belongs to the category of small values. The nose is average wide and average high. The orbits are medium wide and medium high. The index of protrusion of the face for the group falls into the middle category, but at the individual level for one individual (burial # 25) this index falls into the category of large values, which indicates a general prognathism of the viscerocranium (Fig. 16.1). Female individuals buried according to the Islamic rite, in general, according to dimensional characteristics, fall into the same classifications. One female skull with prognathism stands out (burial # 15) (Fig. 16.2). In an intergroup analysis with contrasting Caucasoid and equatorial groups, most of the individuals from Deraheib are Caucasoid, while some individuals show traits belonging to the large Equatorial race.



Figure 16. Skulls with pronounced prognathism from Islamic burials of the Southern Necropolis of the Deraheib site: (1) Male of 25-35 years old (burial No. 25); (2) Female of 17-19 years old (burial No. 15). Photo by A. Chirkova

Рисунок 16. Черепа с выраженным прогнатизмом из исламских захоронений в Южном некрополе памятника Дерахейб: (1) Мужчина 25-35 лет (погребение № 25); (2) Женщина 17-19 лет (погребение № 15). Фото А.Х. Чирковой

32 skulls belonging to adult individuals of both sexes and children were studied using the epigenetic traits program. Taking into account the fluctuating nature of sexual dimorphism of the epigenetic traits, no division of materials by sex and age was carried out [Movsesyan, 2005], with the exception of only some traits that depend on the individual's age (for example, metopic suture, holes in the tympanic ring). At this stage of the study, the frequency of bilateral signs was calculated per individual.

A series of skulls from Islamic rite burials is characterized by a high frequency of posterior condylar canals (in Latin terms – *Canalis condylaris*) (90.9%), mastoid foramina (*Foramen mastoideum*) of the occipitomastoid suture (72.2%), an additional mental foramina (*Foramen mentale*) (69.2%), a through parietal foramina (*Foramen parietale*) (60%), squamomastoid sutures (*Sutura squamomastoidea*) (60%), Vesalius foramen (50%), lambdoid ossicles (*Os Wormii lambdoidae*) (47.1%), and sphenomaxillary sutures (*Sutura sphenomaxillaris*) (45.4%). A series of skulls from Islamic rite burials is characterized by a high frequency of posterior condylar canals (in Latin terms – *Canalis condylaris*) (90.9%), mastoid foramina (*Foramen mastoideum*) of the occipitomastoid suture (72.2%), an additional mental foramina (*Foramen mentale*) (69.2%), a through parietal foramina (*Foramen parietale*) (60%), squamomastoid sutures (*Sutura squamomastoidea*) (60%), Vesalius foramen (50%), lambdoid ossicles (*Os Wormii lambdoidae*) (47.1%), and sphenomaxillary sutures (*Sutura sphenomaxillaris*) (45.4%).

The population characteristics of the Muslim population of Deraheib group were assessed against the background of the cranio-phenetic diversity of Africa as a whole [Tomashevich, 1990]. Based on the results of this comparative analysis, less than half of the traits fit well into the African range of variability in terms of their frequencies. At the same time, more than a third of studied traits have very high frequencies, which are not specific to the known diversity of African populations [Movsesyan, 2005].

Based on the osteometry, the male part of the group buried according to the Islamic rite is characterized by the average length of humerus with a large length of forearm bones, as well as the average length of the femur with a large length of shin bone. The analysis of body proportions based on the length of segments of the upper and lower limbs gave the following results: the intermembral index is average and below average; tibiofemoral and radiohumeral indexes fell into the category of very large values [Pezhenskij, 2011]. In other words, one can talk about an elongated lower limb in relation to the upper one, as well as elongated distal segments of arms and legs in relation to proximal ones, which reflects one of the features of the tropical adaptive type [Alekseeva, 1986].

The study of the frequency of occurrence of *cribra orbitalia* (Fig. 17) did not reveal this sign amidst the crouched deceased individuals. Among those buried according to Islamic custom, in a group of 26 individuals the *cribra orbitalia* sign was noted in 11 cases (42.3%), and almost all cases (10 individuals) belong to the children's part of the series, which is 83.3% of the children's sample. Another case of *cribra orbitalia* was noted in a teenage boy. This trait was not found in the adult part of the sample. *Cribra orbitalia* in bioarchaeological reconstructions is considered a consequence of anemia, which may be caused by a variety of reasons, from lack of nutrients or congenital metabolic disorders, to various parasitic invasions, including various types of malaria [Wapler, Crubézy, Schultz, 2004]. Hemolytic anemia is typical for the course of all types of malaria. Pregnant women, infants and children under 5 years of age are at risk for this infection. Also, in these groups malaria takes severe forms. It is likely that malaria is one of the main causes of anemia and death amidst young children in this region, along with rapid enteric and pediatric infections.

Ceramics. Preliminary remarks

A significant array of finds at the site is represented by ceramics. It should be emphasized that the work on the study and systematization of Deraheib ce-



Figure 17. Porous lesions of the orbital roof (*cribra orbitalia*). Infant of 6-12 months old (Burial 4, skeleton 1). Photo by N. Ya. Berezina
Рисунок 17. Криброзные изменения стенки глазницы. Ребенок 6-12 месяцев (Погребение 4, скелет 1). Фото Н.Я. Березиной

ramics has only just begun, so the comments made in the article should be considered as preliminary.

The ceramic material originating from different archaeological locations in Deraheib is rich and diverse. Ceramic deposits are represented both hand-made wares and wheel-made wares. Most finds can be preliminarily attributed to the Medieval period (9th-12th centuries), although there are also individual fragments of Nubian Post-Meroitic pottery and Eastern Desert pottery, which are usually dated in literature to the Late Antique period, 4th-6th centuries BC [Barnard, 2002; Barnard, 2008]. Their exact dating and place in the archaeological context is yet to be clarified.

Preliminarily we were able to identify several main groups of ceramics, the presence of which in the archaeological layer is an important chronological marker. Among them are Egyptian and Iraqi glazed pottery (primarily the so-called luster pottery, groups G1 and G2 according to Adams), Aswan Early Islamic and Medieval pottery, and hand-made Nubian pottery.

The main dating indicator was the presence of luster pottery⁵ at the site. Fragments of vessels covered with luster painting were found in Room I of the Northern Fortress; in excavation area of the season 2022; in the ashpit area in the settlement. Most fragments of luster pottery (about 20 finds) come from the excavation of the season 2022.

⁵ Issues related to the classification, definition and search for the origins of the origin of luster ceramics are widely discussed in Russian and foreign literature, but this is not the subject of discussion within the scope of this article.

According to the definition of V.Y. Koval, luster is a complex paint composition applied to the glaze surface after the first firing and fixed on it during the second low-temperature (600–700 °C) firing. In the process from the oxides and sulfides of copper and silver, contained in the “raw” luster applied to the glaze, pure metals were reduced, which formed a fine film on the surface of the glaze. The refraction and reflection of light rays in this film gave the final product a kind of shine or luster – Lustre [Koval, 2010, p.40]. According to one of the main versions of luster origins, luster ceramics has first appeared in the 9th century in Basra, Iraq [Mason, 2004; Pradell et al, 2008; Pradell et al, 2008a]. This center existed until the end of Abbasid rule in the second quarter of the 10th century, when, in all likelihood, the master potters moved from Basra to Fustat, the capital of Fatimid Egypt.

It should be emphasized that Iraqi luster of the 9th century was polychromic or, later, dichromic – such items are not found at the Deraheib site. Most of the fragments found in Deraheib (Fig. 18.1) belong to the group of monochromic Iraqi luster of the 10th century, which is characterized by a cream of pinkish so-called Basra clay body [Mason, 2004; Pradell et al, 2008] and olive green, light brown décor with a metallic sheen. This pottery is represented by fragments of rims and bodies of small bowls (Fig. 18.1) with figurative images on the inner surface (in particular, an image of a human foot is visible on one of the fragments) and typical ornament of dots and lines on the outer side. Another feature of these bowls' décor were oval medallions with blessings to the drinker inscribed in Arabic script.

Among the numerous analogies, a bowl found in Nishapur (which is undoubtedly of Iraqi origin) is worth mentioning, which is currently displayed in the Metropolitan Museum of Art (Inv. No. 40.170.27). It's decorated with a figure of a man playing a musical instrument (?). Another similar bowl with a musician playing a lute is displayed in the National Museum Kuwait [Watson, 2004, p.191]. All of them belong to the series of ceramics with the so-called scenes of “palace pleasures”.

The origin of several more fragments of ceramics with luster painting (Fig. 18.2), found in the excavation area of the season 2022, is controversial. Among them there is a rim of a vessel with an Arabic inscription on the inside and floral ornamental decoration. On the outside of the bowl, distinctive images of trees and birds are visible. Also noteworthy is a fragment of a bowl rim with floral ornament and an image of a hare, and a fragment of a bowl on an annular tray with a palmette placed in the center.

Famous analogies – a vessel from the Metropolitan Museum of Art (Inv. No. 63.16.3), a bowl from the Benaki museum [Philon, 1980, Pl. X, fig. 309] and others – as a rule are attributed to Fustat luster, dated to the beginning of the Fatimid reign, the end of 10th century. However, it is also quite probable that these fragments belong to the group of Iraqi ceramics, as we preliminarily suppose on the basis of analysis of clay body (its correspondence to the “Basra clay body”, according to Mason).

Among the ceramic deposits of Deraheib there is a large number of Egyptian glazed or so-called Fayum earthenwares and fritwares (Fig. 19)⁶ with violet, blue, emerald green or polychrome glaze, most of which presumably originated from Fustat or, most probably, Aswan workshops. This pottery dates to the 10th-11th centuries – groups G1 and partially G2, according to Adams.

About 40 percent of ceramics found at the site belong to the so-called late groups of Aswan ceramics (Fig. 20) – AIII-AIV according to W. Adams [Adams, 1986, p. 546-557]. Some vessels discovered in Deraheib combine features of groups AIII (9th-10th centuries) and AIV (10th-14th centuries). Most of the vessels are made of pinkish clay body, the main color of the decoration is dark brown, and the additional details are highlighted with reddish-beige. The vessels are covered with white and light beige slip on the inside and with beige, light red and red-brown on the outside. Ornamental friezes with floral and geometric décor are common. The functional purpose of such vessels was quite diverse. Among the finds there are bowls on an annular tray, fragments of rims of small pots and cups, plates, amphoras and jugs.

There is a significant amount of hand-made Nubian pottery (Fig. 21) at the site (30-40% of the total number of finds). It should be emphasized that this post-Meroitic and medieval hand-made pottery carries on the general tradition of Nubian pottery which dates back to the Neolithic [Adams, 1986, p. 47], which is reflected in the décor, manufacturing methods and some of the most common forms. Most vessels, discovered in Deraheib, can be related to groups DII (4th-10th centuries) and DIII (10th-15th) according to W. Adams [Adams, 1986, p. 420-433]. These are hand-made wares of various shapes, mostly small pots, bowls and cups.

⁶ The name of this group is pretty conditional, because this kind of glazed pottery comes from various Egyptian sites. Actually, its Fayum origin has no evidence at the moment.

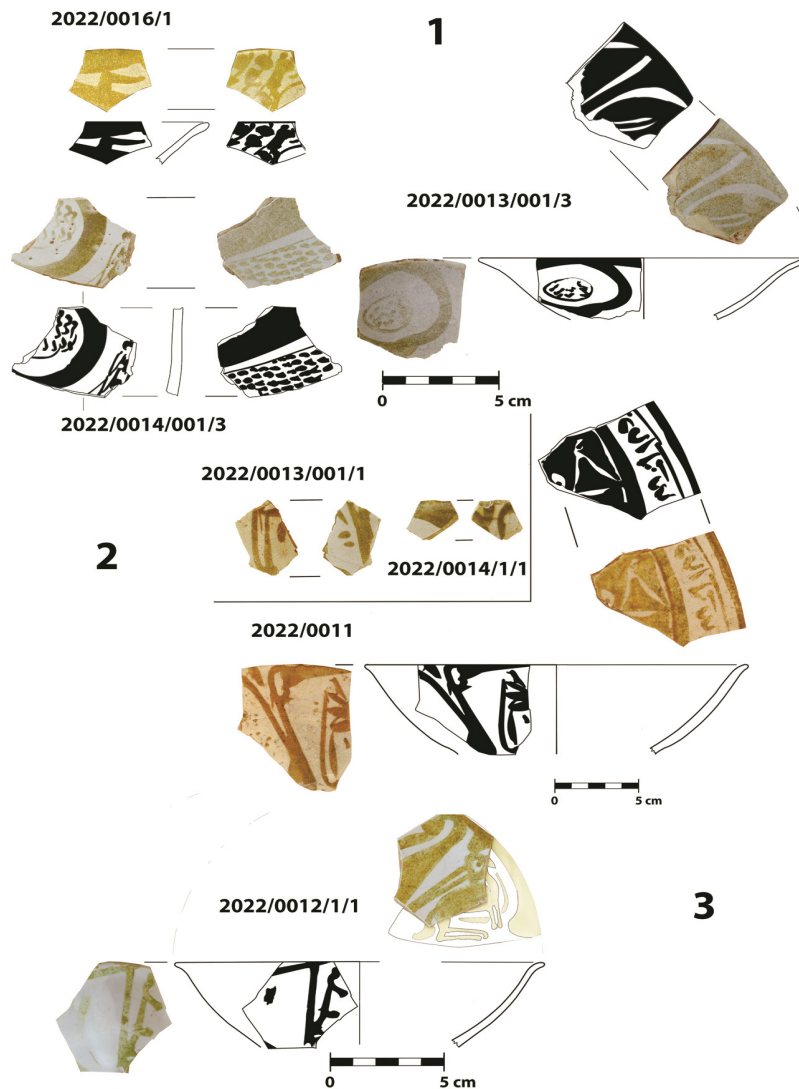


Figure 18. Lustre ware from the 2022 season excavations at Northern Fortress
 (1) Fragments of the lustre bowls rims. Drawings: E. Tolmacheva, Photo: E. Tolmacheva, K. Samurskii.
 (2) Fragments of the lustre bowl rim with Arabic inscription. Drawings: E. Tolmacheva, Photo:
 K. Samurskii. (3) Fragment of the lustre bowl rim with representation of a hare. Drawing and reconstruction:
 E. Tolmacheva, Photo: K. Samurskii

Рисунок 18. Люстровая керамика из шурфа
 (1) Фрагменты венчиков люстровых чаш. Рисунок Е. Г. Толмачевой. Фото Е. Толмачевой,
 К. Самурского. (2) Фрагменты чаши с арабской надписью. Рисунок Е. Толмачевой. Фото
 К. Самурского. (3) Фрагмент венчика чаши с изображением зайца. Рисунок Е. Толмачевой. Фото
 К. Самурского

The clay is mostly brown and dark-brown. Some vessels are covered with slip with their surface burnished or polished, but also there is household ware without polishing. Many vessels are decorated on the outside with incised ornament in the form of wavy lines, as well as with geometric ornaments consisting of X-shaped elements, triangles and rectangles filled with a lattice of incised lines (Fig. 21). There are some interesting objects decorated with incised ornament, which in literature are mostly identified as incense burners with holes

in the bottom, originating from different archaeological layers at the site (Fig. 21.2). A similar object (identified as a pottery stand) was published by K. Sadr, A. and A. Castiglioni [Sadr, Castiglioni, Castiglioni, 1994, p. 165] and assigned to the group of the Eastern Desert pottery. However, all such objects discovered at Deraheib come from the layers that can be dated – based on the finds of glazed and luster ceramics present there – to a time period no earlier than the 10th century. Moreover, W. Adams attributes incense-burners with ornaments in

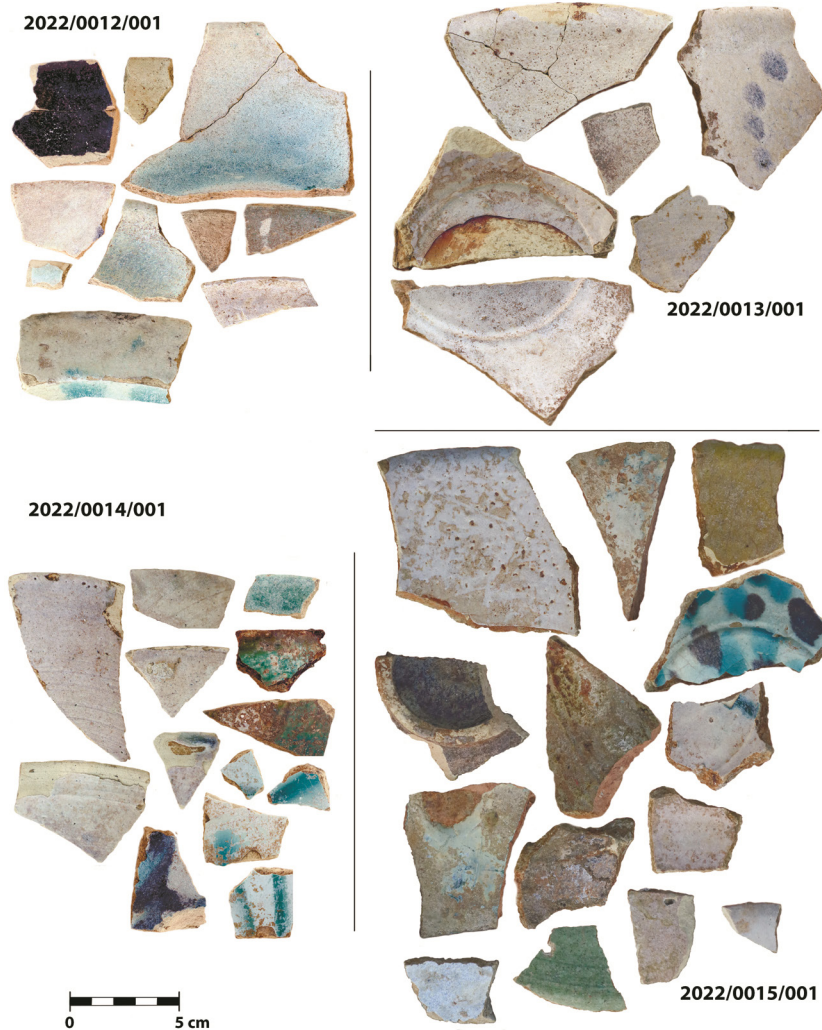


Figure 19. Glazed pottery from 2022 season excavations at Northern Fortress.

Photo: K. Samurskii, E. Tolmacheva

Рисунок 19. Поливная керамика из шурфа. Фото К. Самурского, Е. Толмачевой

a shape of incised cross [Fig. 21.2] filled with diamond-shaped lattice (N24) to a group DIII of medieval ceramics [Adams, 1986, p. 267]. Similar incense burners were discovered in other Nubian and Egyptian sites, also in medieval layers [Phillips, 2004, Fig. 7B; Williams, 2022, pl. 15].

In conclusion it should be emphasized that the ceramics discovered at the Deraheib site are not limited to the groups presented above. However, an important characteristic of ceramic vessels of these groups is the fact that they are found everywhere at the site and often come from the same archaeological layer.

Archaeological textiles

The study of archaeological textiles is of great importance from the point of view of dating, features of the funeral rite, understanding the social

status and way of life of the population that once lived at the site of Deraheib. Due to the climatic of Egypt and Sudan, textiles discovered in settlements and burials often are one of the well-preserved and informative sources.

All the archaeological textiles of Deraheib could be divided into two main groups: textiles originating from the robber's midden by the northwestern wall of the Northern Fortress and textiles from the burials.

Among other finds, about 150 textile fragments were found in the robber's midden. As a result of studying this textile deposit it became obvious that it is unique and has practically no analogies on other sites of Upper Egypt and Nubia. The uniqueness is determined both by the set of textiles and their quantity and technological diversity. Most of the finds (about 57%) are cotton fabrics. There is a number of woolen fabric fragments (about 17%). As in other Nubian

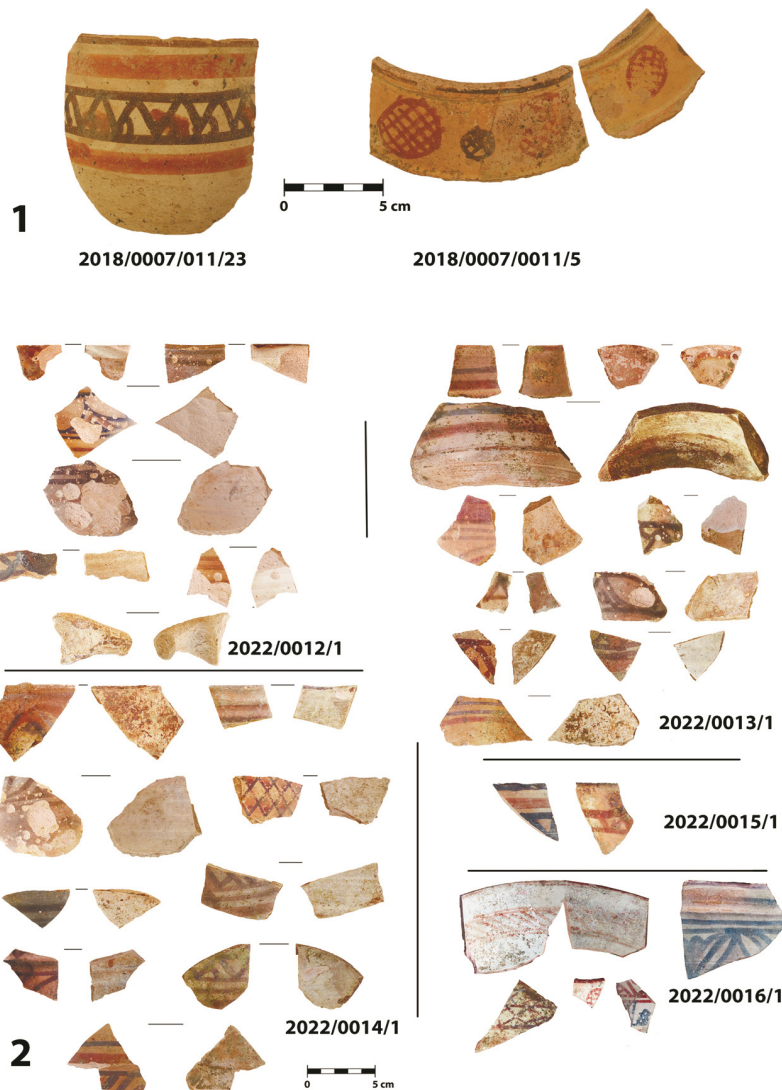


Figure 20. Aswan ware. Type AIII, AIV

(1) Fragments of AIII wares from the settlement area with typical Aswan ornament. Photo: K. Samurskii.

(2) Fragments of Aswan wares from the 2022 season excavations at Northern Fortress.

Photo: K. Samurskii, E. Tolmacheva

Рисунок 20. Асуанская керамика типа AIII, AIV

(1) Фрагменты двух сосудов типа AIII, найденных на территории поселения, с типичным декором.

Фото: К. Самурского. (2) Фрагменты асуанской керамики из шурфа. Фото: К. Самурского, Е. Толмачевой

medieval sites, the percentage of linen fabrics is relatively small – 11%.

However, it should be noted first, that a rather significant amount of silk was discovered at the site. In course of sorting and analyzing the materials we have found 10 fragments of silk fabric, four of which could probably relate to one product.

One of the most interesting finds were several fragments of silk fabric decorated with eight-pointed stars and images of birds (Fig. 22.1), woven using a complex lampas technique which has first appeared in the 11th century. Judging by the analogies we have at our disposal (for example, the one

from the Cleveland Museum of Art, Inv. # 1950.525), this fabric could have been used for sewing a Muslim headdress – qalansuwa-cap. In the Middle Ages noble people of high status wore such garments. Luxury fabrics also include fragments of a scarf or shawl, ornamented with a silk tapestry décor (Fig. 22.2). The discovery of the only intact item was also important – a linen bag decorated with embroidery of Arabic script, probably made from recycled tiraz (Fig. 22.3).

Regarding the textiles from burials, the deposit of archaeological textiles of the necropolis is also unique compared to other textile finds in the

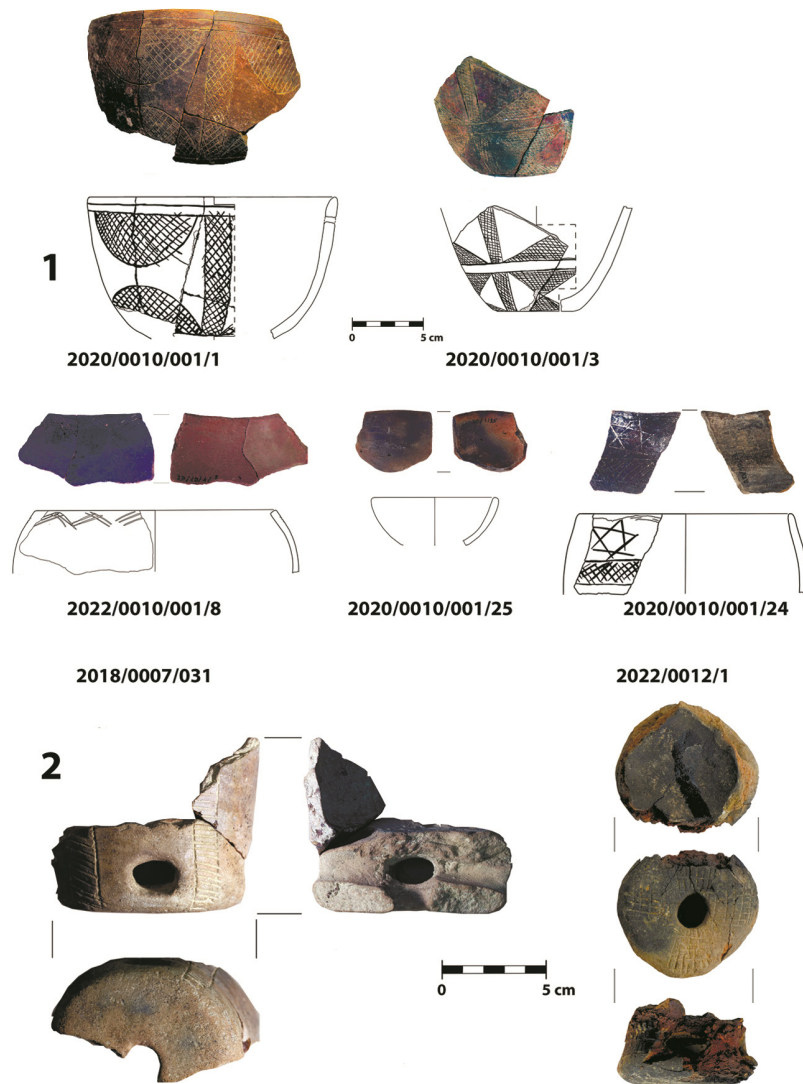


Figure 21. Nubian hand-made wares

(1) Fragments of hand-made wares from the Room 1 of the Northern Fortress. Drawings and photos E. Tolmacheva. (2) Censers from the different locations of the Deraheib site. Photo: K. Samurskii, drawings E. Tolmacheva

Рисунок 21. Нубийская лепная керамика

(1) Фрагменты нубийской лепной керамики из Помещения 1 Северной крепости. Рисунки и фото Е. Толмачевой. (2) Курильницы, найденные на разных объектах памятника Дерахейб. Рисунок Е. Толмачевой, Фото К. Самурского

post-Meroitic and medieval necropolises. Fragments of partially decayed textiles were found in 14 burials (Fig. 22.4), and all of these textiles represent a more or less uniform group: mostly cotton of fair and medium quality, balanced fabric, as far as the preservation condition allows us to judge, with no signs of wear, seams, or repairs. Wool and silk textiles in the necropolis are absent. That is, it can be assumed that the fragments discovered were not part of clothes, but rather of some shroud sewn specifically for burial.

A large amount of discovered fabrics with Z-twist (in 9 burials), probably imported, is peculiar. Only two linen fabrics were found there. Local cotton with S-twist

was discovered only in 4 burials. Further research will show whether the presence of Z-twist and S-twist fabrics at the site is a chronological marker.

Scientific perspective of studying Beja Bisharin of Atbai

Within the framework of the Nubian Archaeological and Anthropological Expedition in accordance with one of its tasks, ethnographic studies of the Beja Bisharin living in the vicinity of the Deraheib archaeological site have been carried out since 2020.

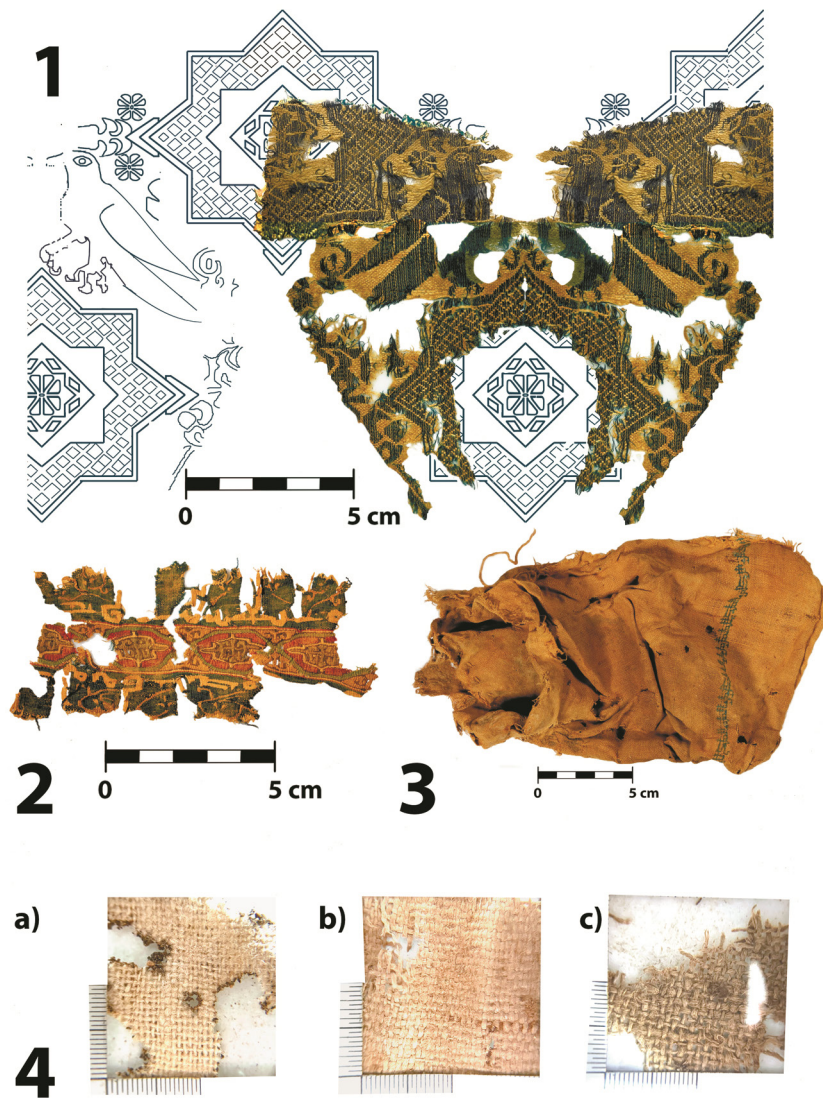


Figure 22. Archaeological textiles from the Northern fortress and the Southern Necropolis
 (1) Virtual reconstruction of the silk with octagonal stars and birds decoration. O. Orfinskaya, E. Tolmacheva. (2) Tapestry fragment. Photo: K. Samurskii. (3) Linen bag with tiraz silken embroidery. Photo: K. Samurskii. (4) Textiles from the graves. a) Cotton tabby weave with Z-twist. b) Cotton tabby weave with S-twist c) Linen tabby weave with S-twist. Photo: E. Tolmacheva

Рисунок 22. Археологический текстиль из грабительского сброса в Северной крепости
 (1) Реконструкция декора шелковой ткани с изображениями птиц и восьмиугольных звезд. О. Орфинская, Е. Толмачева. (2) Фрагмент гобеленовой вставки. Фото К. Самурского. (3) Льняной мешочек с вышивкой арабской вязью. Фото К. Самурского. (4) Ткани, найденные в погребениях. а) Хлопковая ткань полотняного переплетения с Z-круткой нитей из могилы 16. б) Хлопковая ткань полотняного переплетения с S-круткой нитей из могилы 28. Льняная ткань полотняного переплетения с S-круткой нитей из могилы 26. Фото: Е. Толмачевой

Modern Beja are represented by several socio-political groups, the largest of them are Amar'ar, Bisharin, Hadendowa, Halenga and Beni-Amer. Some researchers also name the Ababde group, however the question whether this "tribe" belongs to the Beja remains open. In terms of language Beja belong to the Cushitic group: most of their tribes speak Tubdhaawi.

Beja are usually also fluent in Sudanese Arabic, which they use for external contacts. Each of the Beja "tribes", which are called gabils (singular: gabila) in Sudanese Arabic, has its own Tubdhaawi dialect, the leader – nazir, whose power is transferred by inheritance, and the land that they traditionally consider theirs: nazaara. Large gabila are divided into smaller sections, diwabs



Figure 23. (1) Beja from the Bisharin Tribe. Photo: Y. Makarenko. (2) Bisharin in the well near the Deraheib Site. Photo: K. Samurskii. (3) One of the huts of the Bisharin in vicinity of Deraheib. Photo: K. Samurskii. (4) Bisharin village. Photo: K. Samurskii

Рисунок 23. (1) Беджа из племени бишарин. Фото Ю. Макаренко. (2) Бишарин у колодца рядом с Дерахейбом. Фото К. Самурского. (3) Одно из строений поселения бишарин в окрестностях Дерахейба. Фото: К. Самурского. (4) Поселение бишарин. Фото: К. Самурского

(singular: diwab) which are also segmented and consist of large and small families. Atbai is inhabited by the Beja Bisharin of Umm-Ali section. Unlike their neighbors, the Beja Bisharin Umm-Nagi, who inhabit the valley of Atbara River, the Umm-Ali kept the traditional form of economy, which is referred to as “multi-resource nomadism” in the research literature [Weschenfelder 2012]. This type of sustainable economy based on nomadic pastoralism involves the diversification of family income sources, which allows the Beja Bisharin to survive in the unpredictable climate conditions of their region. Despite this practice of economic adaptation to the environment, developed by the Beja over many centuries, the drought of 1980-s and 1990-s had devastating impact on both their economic way of life and the social structure of Beja communities. Many Atbai Beja were forced to move to cities and “intensive farming” areas created as a part of the Sudanese government modernization projects [Young 2007]. Urbanization has inevitably led to the “Arabization”, or rather, the “Sudanization” of the Beja, which is expressed in the loss of their native language, the weakening of endogamy marriage prohibitions,

and the disintegration of agnatic ideologies that play an important role in the traditional world perception of the Beja community. All of this in our opinion, determines the urgent need for active ethnological research among those sections of the Beja who keep their traditional social structures, customs, and cultural characteristics alive (Fig. 23).

The Beja Bisharin Umm-Ali who live in Wadi al-Allaqi near the archaeological site of Deraheib, undoubtedly can be attributed to the part of community who adhere to the traditional nomadic economy and keep the Cushite culture alive, distinct from that of the Arabic-speaking Sudanese majority. One of the characteristics of habitus of the Beja communities is their closeness from external interference and control over the distribution of information that could potentially harm the diwab. This circumstance somewhat complicates the field research among the Beja Bisharin but doesn't make it impossible. Thus, in course of the ethnological field research carried out as part of the MSU Nubian Archaeological and Anthropological expedition in February 2020, the first contacts were established with the inhabitants of

the settlements near Deraheib. In the season 2022 these contacts have been expanded. The Beja Bisharin have not only approved of the archaeological excavations on their land, recognizing the significance of this work in terms of preserving the history of their community, but also accepted the medical assistance offered by the expedition doctor. In our opinion the development of good neighborly relations with the population of Wadi al-Allaqi not only guarantees the safety and fruitfulness of archaeological excavations, but also opens broad prospects for both highly specialized ethnological and complex interdisciplinary studies of the region's cultural landscape. Within the framework of these studies, the study of the phenomenon of identity of the Beja Umm-Ali is of particular interest. The group identity of Beja communities is a complex phenomenon that deserves the closest scientific attention, because it is shaped at the intersection of various strategies of consolidation and differentiation. On the one hand, most Beja sections, judging by the research literature and according to our informants, associate themselves with the inhabitants of the Arab Peninsula, which, among other things, finds its expression in the Arabic self-names *gabila*. On the other hand, recent research has shown that their Cushitic identity also plays an important role for many Beja. It serves as an alternative to the Sudanese Arab-Muslim cultural paradigm of the inhabitants of the Nile Valley, which the central government of the republic imposes on all citizens as part of the policy of cultural assimilation of ethnic minorities and the fight against "tribalism". The third part of Beja identity is their own genealogical narratives and historical memory expressed in their oral lore.

In our opinion further research of the Beja Bisharin identity transformation under the influence of complex modern cultural, historical, and political processes will contribute to the accumulation of the most important empirical field data. The theoretical understanding of the data obtained during this research will not only allow us to advance in understanding the ethnic, historical and cultural situation of the region, but will also serve as reference for studying similar processes in other "traditional" African communities.

The material culture of the Beja community is of particular interest. The Bisharin settlements in Atbai are basically "camps" (*dua*), which consist of several buildings used for several purposes (residential facilities and household outbuildings). These buildings are erected using woven acacia branches, and residential facilities are covered with rags of fabric. Most often a Beja family or their close relatives live in each individual settlement. These settlements are not their per-

manent dwellings; during seasonal migration the buildings can be completely abandoned. Further research of the purpose of each of these buildings in the Beja settlements, as well as the rules for arranging their living quarters, in our opinion, will help expand scientific knowledge about the social structures of their community. The material household activities of the Beja also open wide opportunities for ethnoarchaeological research. The literature mentions similarity of burial practices among the modern Beja with ancient pre-Islamic burials of the Eastern Desert [Paul 1954, p. 35].

It seems that the study of traditional historical narratives of the Beja about Wadi al-Allaqi, on the one hand, and the comparison of their material culture with archaeological finds, on the other, will significantly expand the research perspective and advance our understanding of the issues of cultural continuity of the Atbai population.

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ИССЛЕДОВАНИЯ НУБИЙСКОЙ АРХЕОЛОГО- АНТРОПОЛОГИЧЕСКОЙ ЭКСПЕДИЦИИ НИИ И МУЗЕЯ АНТРОПОЛОГИИ МГУ В ЦЕНТРАЛЬНОМ АТБАЕ (2017–2022)

Материал и методы. В коллективной статье, авторы которой являются участниками Нубийской археолого-антропологической экспедиции НИИ и Музея антропологии МГУ, излагаются основные результаты работы экспедиции за четыре сезона полевых работ на памятнике Дерахейб, расположенном у истоков Вади-аль-Аллаки, в северной части Нубийской пустыни (Центральный Атбай), на территории Республики Судан. С 2017 по 2022 г. Нубийская экспедиция провела раскопки Северной крепости, Здания 3 (Мечеть) на городище Дерахейб, Южного некрополя; была совершена разведывательная поездка в кольцевую структуру Ониб.

Результаты и обсуждение. На основании изучения полученных археологических материалов (прежде всего анализа керамики и текстиля), а также данных письменных источников было установлено, что средневековый период истории памятника приходится на IX–XI вв. Археологический памятник Дерахейб может быть отождествлен с городом Аль-Аллаки, упоминающимся в арабских источниках как центр золотодобычи в Нубийской пустыне и торговый город, лежавший на одном из караванных путей, связывавших Красноморский порт Айзаб и город Асуан. Материалы раскопок Северной крепости позволили выдвинуть гипотезу о том, что здание, возведенное в IX в., функционировало скорее, как укрепленный замок местного правителя, нежели как крепость. Изучение Здания 3, позволяет с уверенностью говорить о том, что это была пятничная мечеть, основанная в начале X в. Продолжающиеся раскопки на Южном некрополе выявили мусульманские погребения (25 из 31 исследованного погребения) и погребения, которые связаны с обитавшим на территории Северного Атбая в позднеантичный – раннесредневековый период населением, известным по античным источникам как блеммии. Группой антропологов были получены важные данные о половозрастном составе населения Дерахейба, следах повседневной деятельности и патологиях, отразившихся на скелете.

Важным направлением исследований комплексной экспедиции МГУ является изучение современного населения Центрального Атбая, прежде всего племени бишариин племенного союза беджа. В статье изложены основные направления этих исследований и предварительные результаты.

Ключевые слова: Судан; Центральный Атбай; Нубийская пустыня; Вади-аль-Аллаки; Дерахейб; Ониб; блеммии

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