Return to Kadakol: new research on Site 1 (LTI019) in the Letti Basin (Sudan)

Abstract: Early comparative research on the material from the site of Kadakol 1 in the Letti Basin (Sudan), which was surveyed in the late 1960s, suggested an association with the Kerma Culture horizon while not excluding multicultural occupation. Investigations, which were resumed in 2022 within the frame of a new research project exploring the significance of the Middle Nile Valley in prehistoric times, have yielded data confirming the early findings and contributing information on younger occupational episodes from Napatan and Christian times, in both cases attested by extensive burial grounds.

Keywords: Nubia, Letti Basin, Kerma, Napatan/Christian period, burials

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INTRODUCTION

A prehistoric pan-African crossroads in the Middle Nile Valley is at the core of a new research project run by Piotr Osypiński under a grant from Poland's National Science Center. The project, which started in 2022, aims to explore in depth pre- and protohistoric human occupation in the Letti Basin, a depression in the African Sahel, located in the Dongola Reach of the Nile, between the Third and Fourth Cataracts (today northern

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Sudan). This involves a new survey of the entire area, updating current knowledge of prehistoric settlement, in preparation for a study of the role played by the Middle Nile Valley, of which the Letti Basin is an integral part, in a pan-African exchange of material goods and ideas (see Osypiński et al. 2022, in this volume). Earlier investigations in the Letti Basin had already established the potential of Holocene sites for this kind of study (see Jakobielski and Krzyżaniak 1967–1968; Kobusiewicz and Krzyżaniak 1974; Grzymski 1987; Kobusiewicz and Kabaciński 1996; Usai 1998; Chłodnicki and Kabaciński 2003; Chłodnicki and Grzymski 2018).

The selection of the site of Kadakol 1 (LTI019) for excavation in the first season addressed the need for the acquisition of additional data to explore the regional specificity of the Kerman cultural horizon outside the central zone of the reported functioning of this culture and its immediate hinterland. The excavation results, which are discussed in this preliminary report, have also demonstrated the significance of this locality for local communities also in post-Kerman times, notably, the proto-Kushite(?) and Napatan periods.

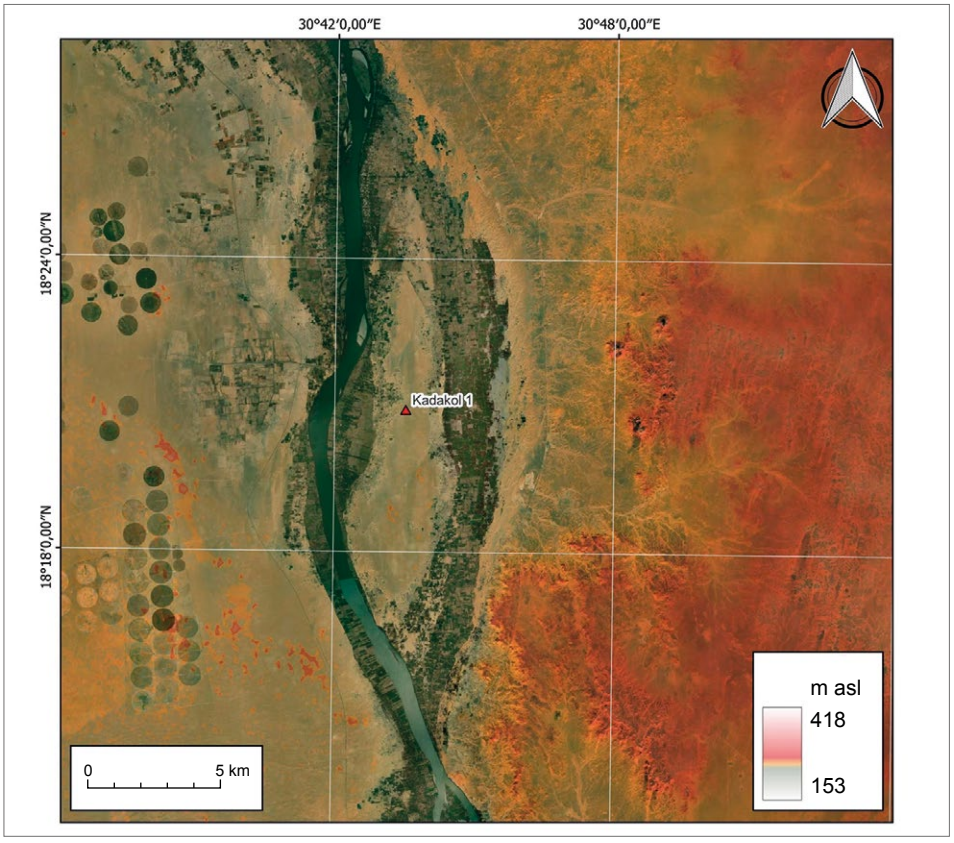

Fig. 1. Location of site Kadakol 1 in the Letti Basin in Sudan (IAE PAS | base map P. Wiktorowicz, editing P. Bobrowski)

DISCOVERY AND PAST RESEARCH AT KADAKOL 1

The site of Kadakol 1 (N 18020′55″, E 30043′34.4″) is located centrally in the insular part of the Letti Basin [*Fig. 1*], on undeveloped land about 250 m east of the modern buildings of Kadakol village. It lies on a small silt outlier, blanketed with layers of windblown sand. The silt patch is about 5 ha in size, standing 4 m above the flat ground around it, which is itself 8 m above the level of the present flood terrace.

It was first recorded in the late 1960s by Lech Krzyżaniak, a prehistorian, participating at the time in Kazimierz Michałowski's and Stefan Jakobielski's Old Dongola project (Jakobielski and Krzyżaniak 1967–1968; Krzyżaniak 1968). Detailed investigations in 1970 involved two lines of trenches, each 5 m by 5 m, exploring a combined 425 m² of ground on the northwestern slope of the outlier [*Fig. 2*]. Artifacts were scattered all over

Fig. 2. Kadakol 1. General map of the site (IAE PAS | base map P. Wiktorowicz, editing P. Bobrowski)

the surface, always in the blanketing layer of aeolic sand. The concentration of finds observed below the crest of the site was interpreted at the time as the effect of downslope flow caused by heavy rains. The collected assemblage of pottery and lithic/stone artifacts was studied and published jointly by Michał Kobusiewicz and Lech Krzyżaniak (1974).

Christian-period pottery dominated the set of a few hundred sherds from the site (which were not covered, however, in the publication). Among the older pottery Kobusiewicz and Krzyżaniak distinguished two groups of handmade pots, differing in technology and ornamentation. The pottery was severely eroded. The fabric was clay heavily mixed with chaff and sand temper. Vessel shapes included large pots, some of which bore an impressed, most frequently basket pattern. A few sherds preserved a red slip.

The collection of more than a thousand lithic artifacts was characterized by a range of stone raw material. Quartz and chert were the most common; agate and petrified wood were used for a small share of artifacts. Chipping was practically the only technique represented in the assemblage. Debitage (chiefly flakes and production waste) constituted about 95% of the lithic inventory; the remaining 5% was composed of a few types of cores and some tools, the latter including groovers, notches and denticulate pieces, retouched flakes and flakes with natural back, a point of the Kadan type, segments, an arrowhead (Kobusiewicz and Krzyżaniak 1974: 181–182).

In their publication of the results of work at Kadakol 1, Kobusiewicz and Krzyżaniak could not be completely sure of the chronological and cultural attribution of their finds. This was due primarily to the state of research on prehistoric settlement at the time and an acute shortage of comparative material from the Middle Nile Valley. The researchers perceived a typological similarity to stone finds of the so-called Abka stone industry and the Cataract Tradition, and a similarity of the pottery to Kerman ceramics. They described Kadakol in general terms, as a seasonal hunting and fishing campsite roughly from the period between 2700 and 1800 years BCE, without offering an in-depth chronological and cultural interpretation (Kobusiewicz and Krzyżaniak 1974). This changed with more comprehensive research on Kerma culture and its southernmost extent (Gratien 1978: 21), and the work of the Royal Ontario Museum (ROM) expedition headed by Krzysztof Grzymski, starting in 1985, which discovered a series of sites with a Kerman finds assemblage in the Letti Basin (Grzymski 1987: 22–23, 25–26; Chłodnicki and Grzymski 2018). In the ROM records, Kadakol 1 appears as site ROM 29. The pottery collected from the site is described as sherds with comb and mat impressions, fragments of tulip beakers, and examples of the so-called Pink-and-orange paste of Egyptian tradition that was frequent in Kerma (Gratien 1994: 68–69). A review of the pottery assemblage from Kadakol 1 (now in deposit at the Poznań Archaeological Museum), and observations made by the ROM team members at the site in 2002, confirmed the multicultural nature of the site, verifying at the same time the presence of an early and middle Kerma occupation phase at Kadakol (Chłodnicki and Grzymski 2018: 442).

NEW RESEARCH

Resuming investigations at Kadakol in 2022 (now codemarked as LTI019), the excavators started with a detailed prospection of the surface of the outlier. The results matched earlier findings: artifacts, represented by pottery sherds and lithics, were found scattered over the entire site. Moreover, several concentrations of fragmented human bones were recorded on the surface of the southern slope of the outlier. These are interpreted as severely eroded burials of unknown date. A series of earth-and-stone structures were observed at the highest point in the southern part of the site. Corresponding to it was a greater than elsewhere concentration of finds.

The excavation started with a square trench, 10 m to the side, aligned according to the cardinal directions, located on a spot with structural remains. Structures were revealed under a top layer of small stone rubble and subsequently excavated by removing another arbitrary layer 5–15 cm thick. Further work was limited to the western part of the trench, a zone 10 m by 6 m, explored by removing another arbitrary layer of dune sand. Culturally sterile sand was reached 25 cm below the ground surface. It lay atop sterile, heavily consolidated, grey-brown clay.

The outlines of three features appeared by the east section wall of the reduced trench; these were F13, F14 and F15 respectively, looking from the north. They took on the shape of large rectangles, 200 cm by 100 cm, the longer sides aligned roughly E–W, deviating slightly toward the north [*Fig. 3*]. The fill in this case consisted of yellow dune sand with some fine silt mixed in. Pit F2 clearly cut into feature F14. Along the southern margin of F13 was a narrow zone of strongly consolidated silt mixed with sand, heavy with artifacts, both ceramic sherds and lithics. This arching zone was roughly 70 cm wide [see *Fig. 3*].

Outlined clearly in the fine-grained, weakly consolidated dune sand, was a long feature, marked as F11, measuring about 280 cm by 70 cm (longer side aligned NW–SE). The fill consisted of fine grey silt mixed with dune sand. A small oval feature F12 with a similar kind of fill

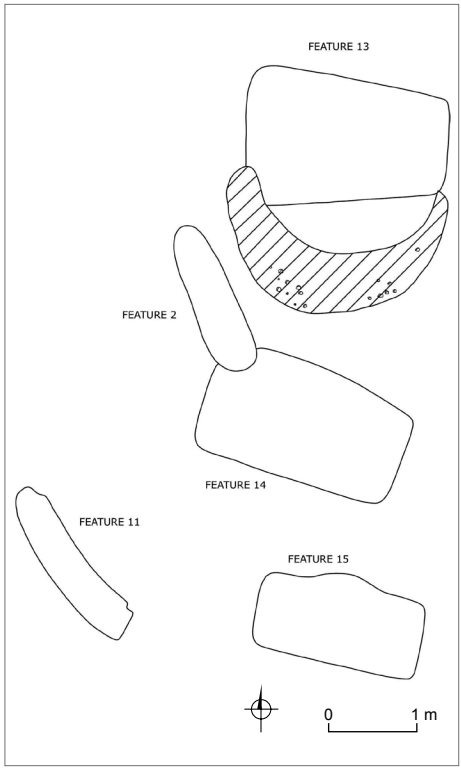

Fig. 3. Kadakol.1. Plan of the western part of trench excavated in 2022 (top of sterile layer) (IAE PAS | drawing J. Kokolus)

was located further to the east, already by the southern edge of the trench.

Northwest of F11 there was another pit, F2, filled with the same kind of fine grey silt mixed with sand. It cut into an earlier feature, F14. Seven similar features: F1, F3, F4, F5, F6, F7, and F8, were located in the western part of the trench. The outlines of all eight were discernible in the sand already 5 cm below the surface, once the top layer of stone rubble was removed [*Fig. 4*]. These pits were mainly of an elongated oval shape, the long axis aligned NW–SE. In size, they ranged from 240 cm by 180 cm (F2) to 160 cm by 100 cm (F7) at the top. Mounds of small stones, mainly pebbles of quartz, chert and ferruginous sandstone, in better or worse state of preservation, appear to have covered these pits. They formed a kind of pavement, set in strongly consolidated grey silt. Some of the stones from these mounds were identified as fragmented cores, debitage and mortar lumps from older occupation levels. The best preserved are the pavements of F2,

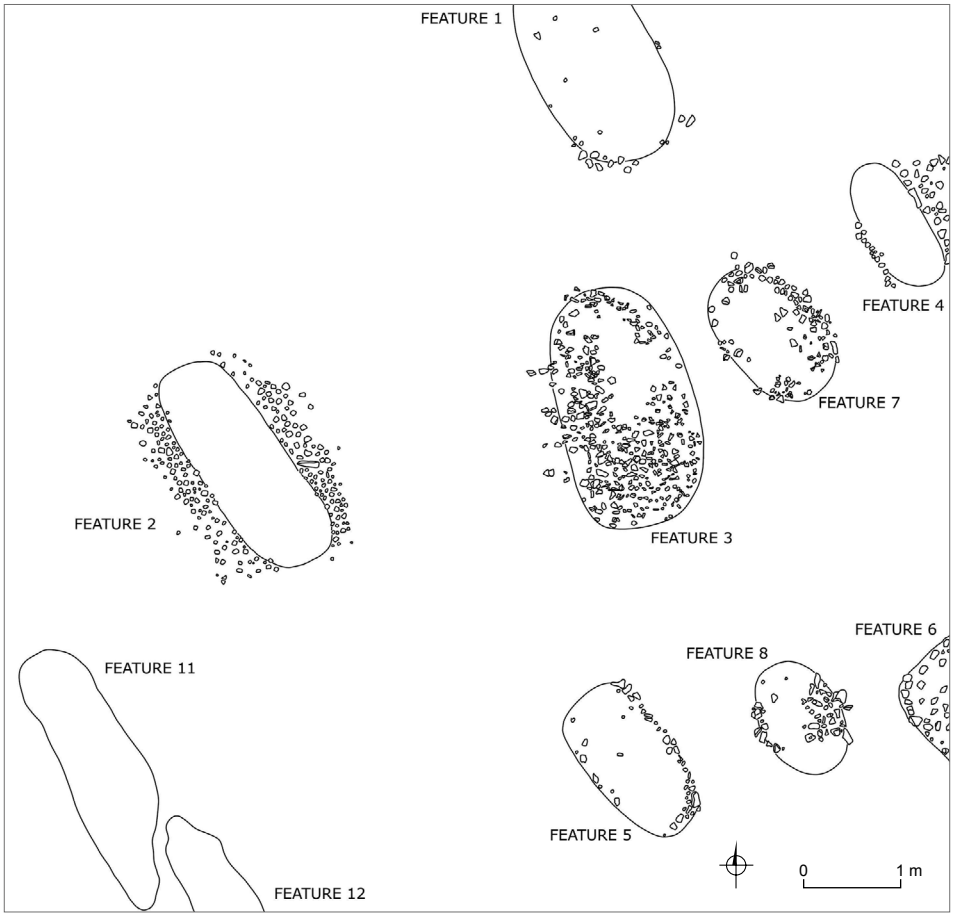

Fig. 4. Kadakol 1. Plan of the whole trench excavated in 2022 (subsurface layer) (IAE PAS | drawing J. Kokolus)

F3 and F6; the others appear to have been largely destroyed. Interestingly, the earlier pit F11 did not yield any evidence of a stone pavement of this kind.

GRAVES

Further exploration of the features observed in the western part of the trench identified them as graves belonging to at least two occupation phases of the site. Two types can be distinguished among the graves: type I represented by graves F13, F15 and F14, and type II, that is, graves F2 and F11, and, most probably, also the seven features found in the eastern part of the site and not extensively explored.

Type I [*Fig. 5*]

Pit F13 was trapezoid in section at the bottom, narrowing to the east, and in the long vertical section, narrowing toward the bottom. The bottom dimensions were 2.30 m from east to west and from 0.90 m on the eastern side to 1.20 m on the western side from north to south. The east wall of the pit was closer to the vertical, while the west wall was more inclined. The bottom of this pit was noted about 1.70 m below the top. About 1.10 m above the sterile level there was a hollow with semicircular top, cut in the west wall of the pit, filled with the same kind of fill that was found all over the trench. This turned out to be

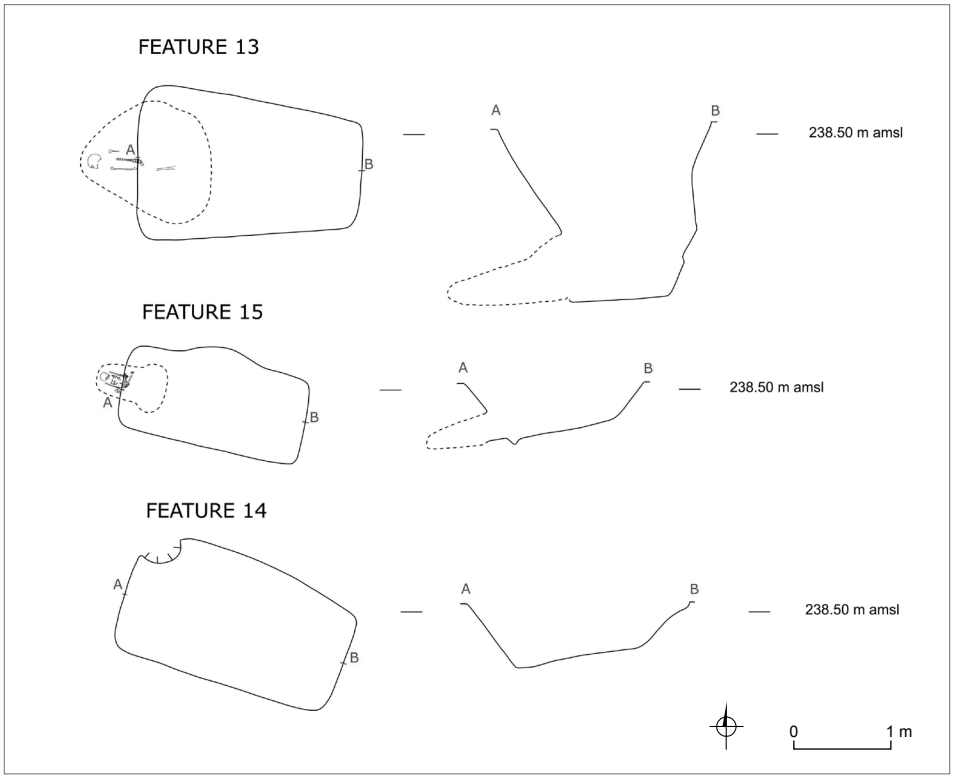

Fig. 5. Kadakol 1. Graves of Type I: plans and long sections (Napatan period) (IAE PAS | drawing J. Kokolus)

a niche in the west wall of the shaft, which had a total depth of about 1.35 m counting from the bottom.

The skeleton in the grave was preserved fragmentarily. Only the skull and upper body were still in place, but the position of the body could be traced. The body lay on its back, the head to the west and facing south, the arms alongside the body. The lower limbs were not preserved. Single pieces of fragmented long bones and phalanges were recorded. One possibility is that the body was only half inside the niche, the lower limbs sticking out beyond its outline, but it is more likely that the niche had partly collapsed, while the scattered bones are witness to later plunder. Near the bottom of the pit (outside the niche), three date stones were found and a lump of charcoal radiocarbon-dated to 2425±30 BP (Poz-153049), corresponding after calibration to 570–403 BCE (72.3%).

The zone along the southern border of the pit, filled with more artifacts than the rest of the feature, must have been the dump formed by the digging of the grave or its later plundering.

Pit F15 was rectangular in shape, 2.00 m by 1,00 m, the long side aligned E–W, with a slight deviation to the north. The long section on axis was trapezoidal, the eastern side gently inclined and the western side steeper, the bottom gently falling toward the west. About 0.30 m below the top of the culturally sterile layer (observed throughout the trench), an opening about

Fig. 6. Kadakol 1. View of grave pit F15 and the stone blocking the entrance to the niche (IAE PAS | photo P. Bobrowski)

0.60 m wide and 0.40 m high was blocked with a single large block of stone [*Fig. 6*]. The niche extended back 1.10 m, its bottom dropping off gently to the west/southwest. The burial inside this pit was that of an infant (*infans* I, identification based on an estimate of ontogenetic bone development). The body lay on its back, the legs spread out, the head to the west and facing south. A small carnelian bead was the only find from this burial [see below, *Fig. 11*].

Pit F14 resembled pit F15 in shape. At the bottom, where it reached culturally sterile soil, it measured 2.50 m by 1.30 m. The longer side was aligned E–W with a slight deviation to the north. The vertical section was trapezoid in outline, with a gently sloping eastern side and a steeper western side. The floor dropped off toward the western side. The pit was 0.70 m deep from the top surface (by the west wall). There were no apparent openings that could have led to a burial niche; one could think that the structure was abandoned before a burial niche was cut for it. A less likely interpretation is that the pit was a missed robbery shaft.

From a formal point of view this type of grave is paralleled by funerary structures found in Napatan cemeteries. Similar graves can be encountered on sites of younger chronology, exemplified, for example, by a niche grave T8-GR32 from the cemetery at Enapsis (Middle Nile), dated by the excavators to the Meroitic period (Bushara, AbdAllah, and Bashir 2017: 128–129, Pl. 2). The form refers to graves of Type III at the cemetery in el-Zuma (Mahmoud El-Tayeb 2010: 474–476, Fig. 8; 2012: 61–63, 14g–i) and el-Kassinger HP47/3, dated to Phase II of the Early Makurian period (Kołosowska and Mahmoud El-Tayeb 2007: 26, Fig. 31; Mahmoud El-Tayeb 2012: 66). This grave type was common in the Old Dongola Reach and is also known from post-Meroitic burial grounds in central Sudan (Mahmoud El-Tayeb 2010: 478; Abdallah, David, and Kozieradzka-Ogunmakin 2021).

Type II [*Fig. 7*]

The pit under the earth-and-stone "pavement" in the case of grave F2 was of long oval shape (aligned with the NW–SE axis), measuring about 1.90 m by 0.50 m. In vertical section, the pit was basin-like, 0.40 m deep. Laid out at the bottom of the pit was the skeleton of a woman, who had died after 55 (sex and age determination based on bone ontogenetic and morphological features). The body was stretched out on the back, head to the southeast and facing east. The right arm was laid alongside the body, the left placed on the pelvis. Two copper rings were found on either side of the skull [see below, *Fig. 12A*], alongside two fragments of severely corroded metal of unidentified shape (iron ring?) [see below, *Fig. 12B*]. Dark staining on the long bones of the lower limbs can be considered as remains of the skin. An organic substance discovered around the pelvis and lower limbs could be either wood or plant fibers. A sample of the wood was radiocarbon-dated to 840±30 BP (Poz-153463), after calibration AD 1162–1267 (95.4%). The fill yielded a total of 257 pottery sherds and 28 lithics, all in secondary context.

The pit of F11 was narrow in horizontal section, resembling a curved oval, about 2.00 m by 0.50 m, U-shaped in vertical section. Its depth down to the

bottom touching on the sterile clay layer was about 0.50 m. A young male was buried in the pit, stretched out on his right side, the legs drawn up slightly, the head southeast and facing east. The left hand was stretched forward slightly. A series of larger fragments of fired bricks, nine in all, surrounded the lower body, pelvis, back and skull by the western and southern edges of the burial pit.

The practice of laying the dead in long narrow pits, stretched out on their backs or side, is typical of graves referred to as 'Christian'. Burials of this kind have been recorded at cemeteries in the Fourth Cataract region, at the sites of el-Sadda 34 (Osypiński 2010: 443–444, Fig. 9) and el-Ashamin village (Kołosowska 2010: 102–103, Figs 28, 30, 31), as well as in central Sudan, in Kadero (Krzyżaniak 2011: Figs 2–4) and at Khor Shambat (Bobrowski et al. 2017: 473–475, Figs 20–22). At the lattermost site, the practice was to place stones around the body of the deceased, either blocking or supporting the backbone, arms and pelvis. Neither the Kadero nor the Khor Shambat graves yielded any furnishings.

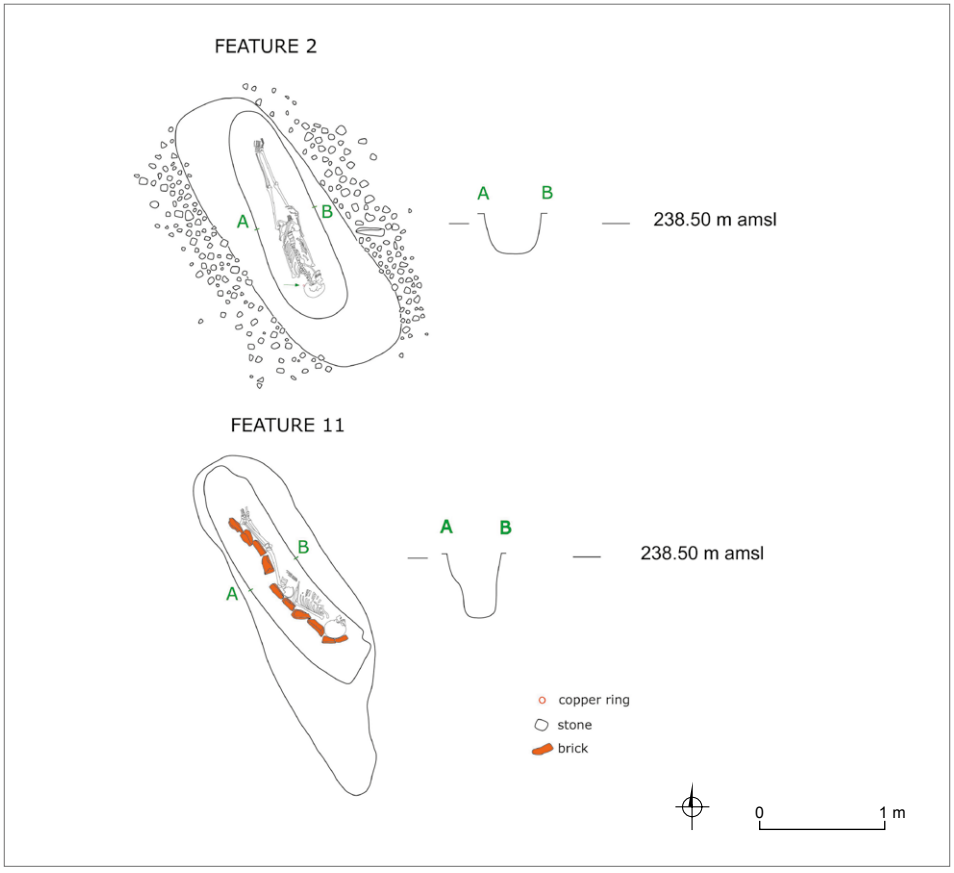

Fig. 7. Kadakol 1. Graves of Type II: plans and long sections (Christian period) (IAE PAS | drawing J. Kokolus)

ASSEMBLAGE

LITHICS AND STONE ARTIFACTS

A total of 789 flint artifacts was recorded from the trench. The finds came either from a deflated surface layer of sand or the mixed secondary fill of the features. Quartz (approximately 46% of the assemblage) and different varieties of chert (45%) dominated among the stone raw material. A much smaller share of the artifacts was made of ferruginous sandstone (approximately 4.7%), quarzitic sandstone (1.6%), agate (1.8%) and, minimally, petrified wood and greenstone (less than 1%). Among the quartz products, the majority were minor flakes and fragments of flakes, most frequently nodules with the cortex or single-platform cores, as well as chunks. Small cores, most often with single flake scars, constituted a small percentage of the assemblage. The chert artifacts included mostly flakes (most often uni- and multidirectional), with blades (of proportions similar to the flakes) being only incidental. Cores were relatively numerous, especially fragments of cores (37 specimens), both single- and multi-platform, not to mention single attestations of Levallois cores. Two large segments—the only actual tools found on site—were made of chert. One of the two, damaged, was made of a light-colored variety of chert [*Fig 8:2,4*]. Among the pieces made of other raw materials, the predominant group are minor flakes and small waste. Of interest are: a single-platform micro-core made of so-called greenstone [*Fig. 8:1*] and a multi-platform core of petrified wood [*Fig. 8:3*].

Other stone artifacts include 18 small fragments of querns or grinders, made of at least two different varieties of sandstone, that is, a light cream, fine-grained variety and a dark brown coarse-grained one.

The recorded set of lithic and stone artifacts replicates closely the set collected when the site was first discovered (see Kobusiewicz and Krzyżaniak

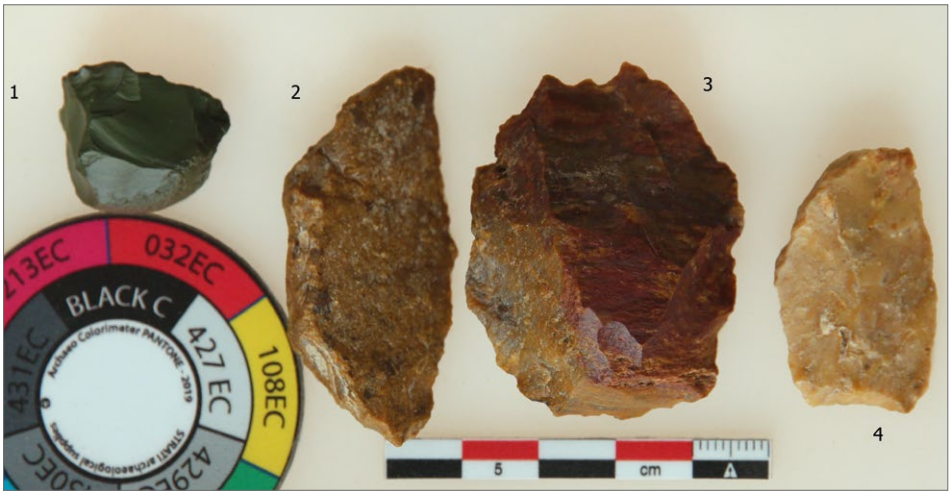

Fig. 8. Kadakol 1. Lithics from the surface: 1, 3 – cores; 2, 4 – segments (IAE PAS | photo P. Bobrowski)

1974). The typological and technological structure then identified was repeated in principle with differences of secondary significance concerning a slightly different raw material distribution and a small number of tool forms (large segments exclusively) recorded during the current research. The set is undoubtedly Kerman in character and reflects a Kerman occupation phase at the site. The same raw material, and technological and typological make-up was observed for another site explored within the frame of the current project, that is, site LTD001, which demonstrated undoubted links with Kerman culture (see Osypiński et al. 2022, in this volume).

POTTERY

The potsherd count from the trench amounted to 5100 fragments. The following is a provisional description pending a full study later on. The sherds were collected for the most part from the ground surface of the site and the upper layer of dune sand; a certain percentage of the finds came from the heavily mixed fill of the explored structures, but never from specific burial units. Interestingly, 3453 sherds (roughly 70%) came from the zone of concentrated artifacts around F13. The set is heavily fragmented, making most fragments relatively useless for further technological and typological, as well as cultural and chronological analyses. Undoubtedly, it reflects different occupational phases at the site.

Overall, two separate ceramic groups can be distinguished. The first one is a less numerous set of fragments of thin-walled black-topped beakers [*Fig. 9:A*] and a much larger set of so-called cooking ware, that is, thick-walled vessels with a fabric revealing organic temper. The edges are often thickened and decorated with oblique comb impressions [*Fig. 9:B*]. The bodies are either smooth, red-slipped [*Fig. 9:E,F*], or bearing mat impressions [*Fig. 9:D, F*]. The latter form of decoration was common in the Middle Nile Valley, not only on Kerman material, hence part of the assemblage could come from later times (e.g., proto-Kushite pottery; Klimaszewska-Drabot 2003: Pl. 5; Phillips 2003: Pl. 10). Of undoubtedly Kerman origin are the few pieces with decoration made with the rocker-stamp technique [*Fig. 9:B, F*] as well as engraved lines arranged in various patterns [*Fig. 9:C*]. Pottery decorated in this way finds numerous parallels on sites in the Letti Basin (Chłodnicki and Grzymski 2018; Osypiński et al. 2022, in this volume) and in the Fourth Cataract region (Sip 2007: 390; Bagińska 2010; Emberling and Williams 2010).

The other ceramic group consists of sherds from large bag-shaped vessels, usually with vertical body walls in the upper part of the container [*Fig. 10:A, D*]. The rim diameter of these vessels falls within the range of about 20 cm to more than 30 cm. The edges are straight or else thickened and everted. The light brown surfaces are not decorated. This group resembles vessels of proto-Kushite (pre-Napatan) or early Napatan date (Klimaszewska-Drabot 2003; Phillips 2003: 397–400). The radiocarbon dating of a sample from pit F13 stands in suport of such a chronology of this material. Two fragments of painted pottery are most probably of the same general date [*Fig. 10:B, C*].

Fig. 9. Kadakol 1. Pottery surface collection from Kerma Period (IAE PAS | photos M. Chłodnicki, editing J. Kokolus)

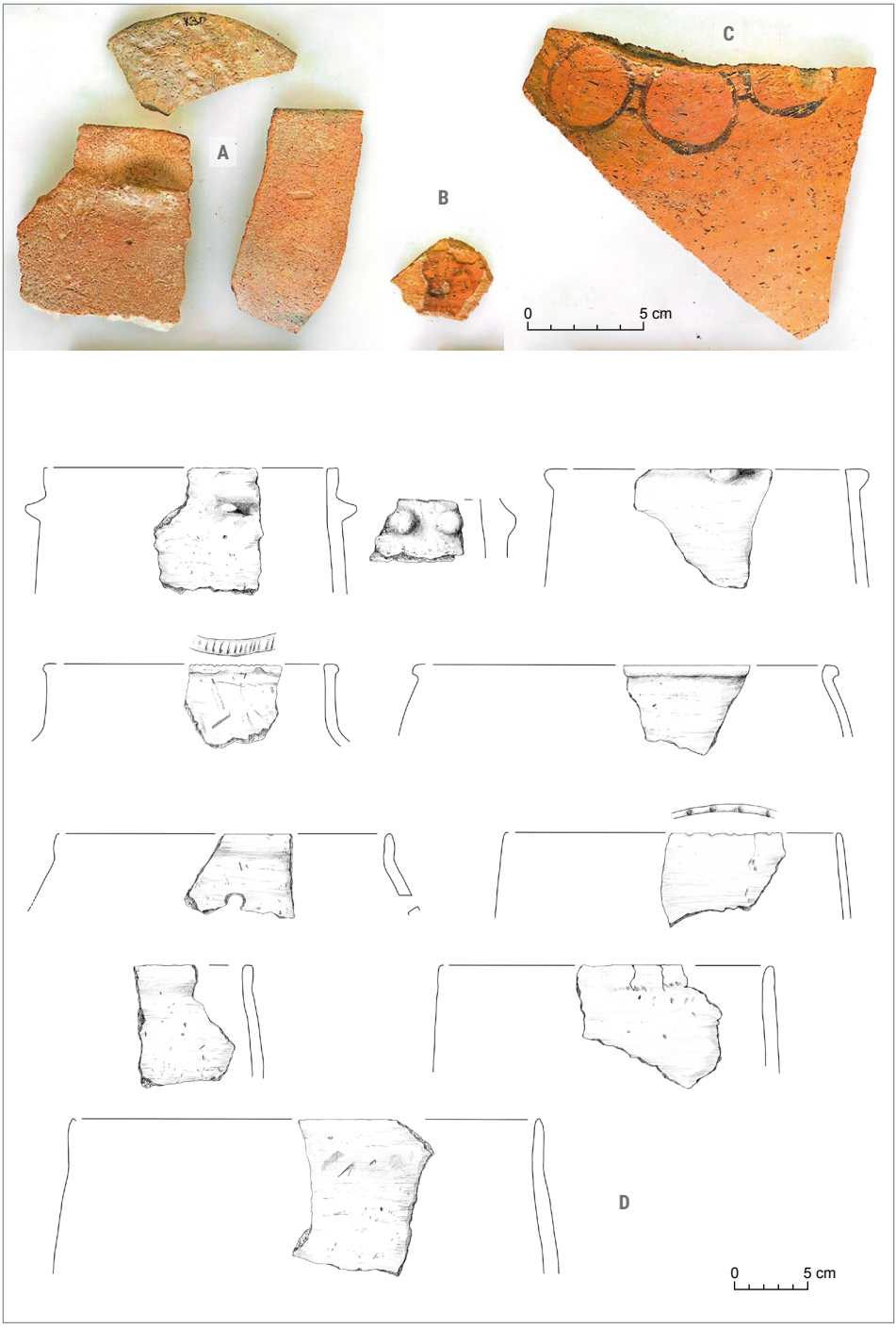

Fig. 10. Kadakol 1. Pottery from pre-Napatan or early Napatan period (IAE PAS | photos M. Chłodnicki, drawing B. Piotrowska, editing J. Kokolus)

GRAVE GOODS

Excavation of the graves yielded a few artifacts. The infant in grave F15 had buried with a regular barrel-shaped bead made of carnelian (6 mm long, 4.5 mm wide; aperture diameter about 2 mm) [*Fig. 11*]. The two copper rings (earrings?) from grave F2 were of similar size with a diameter of 12.5/15 mm. They were made of copper wire about 2.5 mm thick, thinner where the ends were joined together [*Fig. 12*]. The three fragments found in the same grave, generally resembling a ring, were made of an iron alloy and measured from 15 mm to 25 mm in diameter, with a thickness of 3–4 mm [see *Fig. 12*].

Fig. 11. Kadakol 1. Grave F 15. Bead made of carnelian (IAE PAS | photo J. Kokolus)

The practice of furnishing the dead with grave goods is deeply rooted in the Nubian tradition from the Mesolithic through the time of conversion to Christianity. Among the objects deposited in burials one finds mainly personal adorn-

Fig. 14. Kadakol 1. Grave F 12. Copper rings (earrings?) and fragments of iron rings (IAE PAS | photos and editing J. Kokolus)

ments, weapons and metal tools, pottery and food (Mahmoud El-Tayeb 2012: 80). The finds described here are not distinctive; they are found in graves of earlier date also in other regions. One can cite examples from Kadero: a copper ring from Grave 19 and fragments of iron ring-anklets from Grave 197, both of Meroitic date (Krzyżaniak and Krzyżaniak 2011: 201–202, Fig. 2, 209–210, Fig. 35), and from Hagar el-Beidha: a silver-wire ring from a post-Meroitic grave (Longa 2011: 506–507).

CHRONOLOGY

In light of the investigations carried out at Kadakol 1 this season, at least three occupational phases with a division into subphases for the second one can be ventured:

Phase I – settlement linked to the Kerman horizon, represented by a characteristic and relatively numerous ceramic assemblage and a presumably related lithics inventory.

Phase II (Subphase IIa) – a cemetery of graves classified as Type I; some of these burials were plundered in the next subphase (IIb), but even so, they do not seem to be that much older and are definitely not connected with the Kerman horizon (Phase I). The form of the burial reveals many formal links to Napatan ritual and later (through the post-Meroitic period).

Phase II (Subphase IIb) – attested by the ceramic assemblage, to be associated with Napatan-period occupation. Human presence at the site is supported by a radiocarbon date from pit F13, which could be interpreted as proof of an episode of plundering of the earlier graves; according to this scenario, the sherds could have come from the grave deposits.

Phase III – Christian period, confirmed by formal parallels to graves of Type II and an absolute date coming from one of the graves.

RECAPITULATION

New research at Kadakol 1 has verified earlier assumptions about the multi-phase character of settlement at the site. In the earliest phase of occupation identified on the outlier (Phase I), the site was used apparently by a community representing the Kerman Culture horizon, but without any indication of sepulchral function. The next phase (II) refers to a burial ground functioning in the Napatan period, corresponding to the presence of large settlements—LTI032, LTI034, LTI035—in the neighborhood. Artifacts belonging to these two phases were found solely in the layer of dune sand on the surface and in the fill of younger features. It is presumably due to strong deflational processes and anthropogenic change of the site environment over time. In the Christian period (Phase III), the outlier at Kadakol became a preferred burial ground for the local community. Evidence of this particular chronological horizon is exceptionally strong in the Letti Basin (see Grzymski 1987; Osypiński et al. 2022, in this volume). The overall impression, based on the results of the current project and the paucity of grave goods found with the burials, is that the cemeteries in both phases were very much provincial in character.

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