

BANGANARTI

2004/2005

Bogdan Żurawski

The 2004/ 2005 SDRS season, being the fifth completed so far at the site of Banganarti, lasted from 13 December 2004 until 16 March 2005.¹ The work was accomplished concurrently with projects at Der el-Arab and on Saffi Island, part of the staff commuting from the dig house on Saffi to the fortress site of Dar El-Arab in a motor boat named "Heidelberg" after the main sponsor of the Dar El-Arab project.

The restoration of the Upper Church murals, especially new ones revealed under a thick layer of washed down plaster and mud, was the chief task of the conservation unit this season. Ceramics were in the capable hands of Jacke Phillips, who organized and supervised the studies, which also covered the stored collection from previous SDRS campaigns.

Top on the agenda was a reconstruction of the Lower Church layout (especially the western section), as well as testing and surface clearing of the northern and western sections of the enclosure wall (first surveyed in 2001).² The excavations in the Western Building were aimed at reconstructing its complete plan, phasing the building history and reconstructing the function and rationale behind subsequent enlargements. Of importance for the pottery study project were stratigraphic cuts dug along the eastern section of the girdle wall, both inside and outside it. Other tasks included aerial (kite) photography of the site and its immediate surroundings (Figs 1,2), as well as finehoning the contour plan of the kom and its surroundings, and measurements of the so-called Western Building and both (Upper and Lower) churches.

1 The Banganarti team worked concurrently with the expedition to the Fourth Cataract area, both projects being directed by Dr. Bogdan Żurawski. The teams comprised: Prof. Dr. Karol Piasecki, physical anthropologist; Dr. Adam Łajtar, Greek epigraphist; Dr. Jacke Phillips, archaeologist and ceramologist; Dr. Marcin Wiewióra, archaeologist, specialist in mud brick architecture; Dr. Magdalena Łaptaś, art historian, iconologist; Ms Dobrochna Zielińska, archaeologist, iconologist; Mr. Piotr Osypiński, prehistorian and archaeologist, lithic material specialist; Ms Olga Białostocka, Mrs. Edyta Klimaszewska-Drabot, Ms Hanna Kozińska-Sowa, Mr. Artur Obłuski, archaeologists; Ms Mariola Orzechowska, archaeologist, documentalist; Mrs. Marta Osypińska, archeozoologist; Ms Anna Błaszczuk, Ms Marta Momot, students of archaeology, documentalists; Mr. Cristobal Calaforra-Rzepka, Mr. Wojciech Chmiel. Ms Monika Czerniec, restorers; Eng. Ryszard Szmraj, constructor /building restorer; Mr. Maciej Łopaciuk, student of geodesy and cartography; Mr. Maciej Komornicki, photographer.

The NCAM was represented by senior inspector Mr. Fawzi Hassan Bakhit, whose inestimable assistance allowed the mission to complete its objectives in the Fourth Cataract area, and by Ms Sara Abdel-Latif, who was inspector in training at Banganarti.

2 Cf. results of work at Banganarti reported annually in *PAM* starting with volume XIII.



Fig. 1. Aerial view of the Banganarti church complex including the Western Building and kilns (at bottom of picture). View from the southwest. Note the shelter roof installed over the Upper Church interior at top (Photo B. Żurawski)

BETWEEN THE UPPER CHURCH AND WESTERN BUILDING

Spaces K, G, P (not excavated in 2004) along the west wall of the Upper Church portico were cleared of deposits down to the mastaba that ran around the Upper Church [cf. *Figs 1, 2, 5*]. These units turned out to be completely blind, not communicating with the outside. They were created by

abutting the highly strained western wall of the church with walls running E-W.

The fill found in the units consisted of Nile silt and sand with some red brick debris and lime plaster fragments (especially in the lowermost section). The amount of potsherds was insignificant.

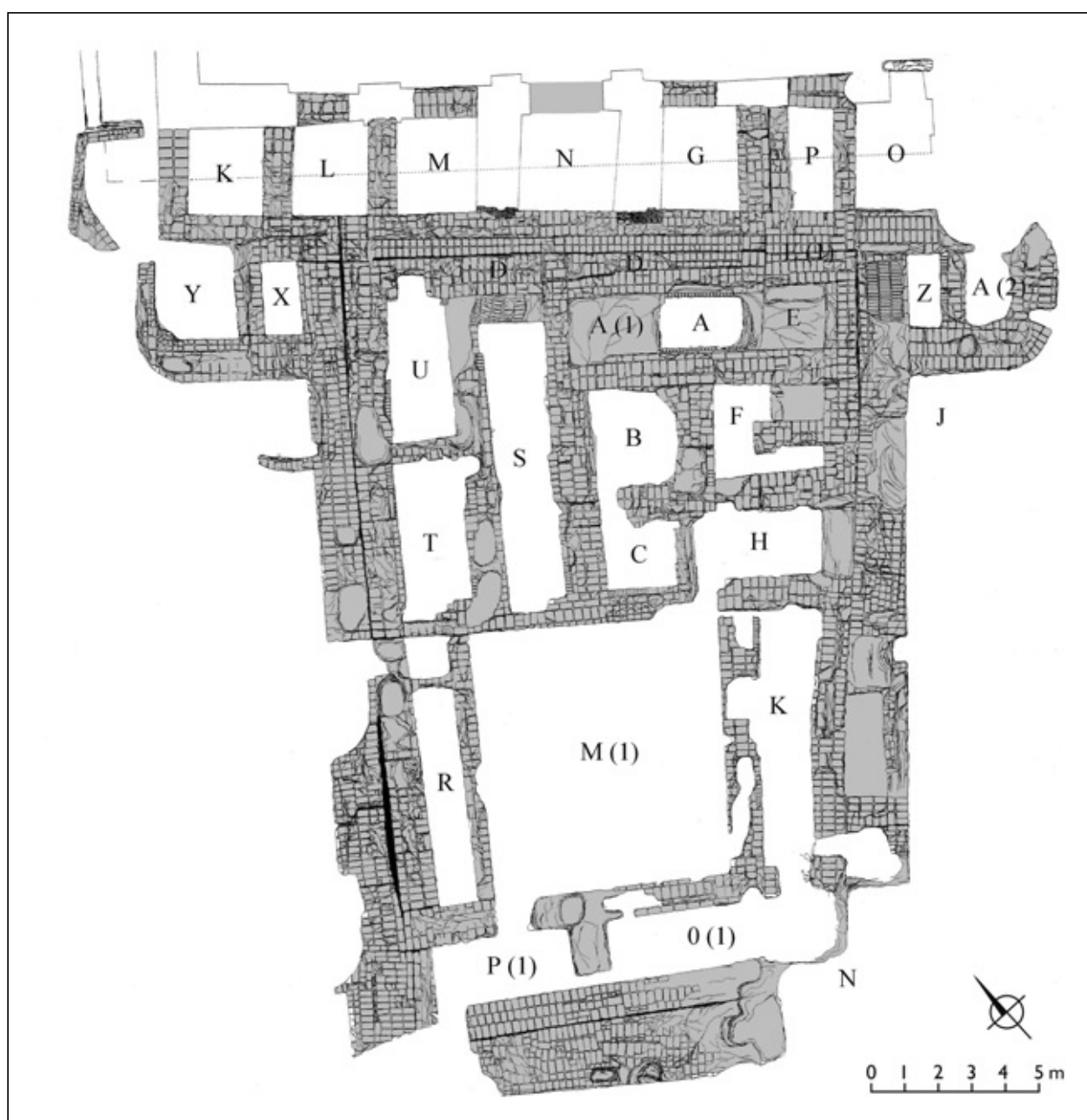


Fig. 2. Western Building at Banganarti with numbering of rooms
(Measured R. Łopaciuk, drawing A. Błaszczyk and B. Żurawski)

WESTERN BUILDING

The Western Building had been partially excavated during the 2004 season and tested in 2002 and 2003. The highest and most central point of the site was explored first, and then work proceeded down and out. Work commenced in the unexcavated corner, between rooms cleared during the previous season, and continued in each successive space [cf. *Figs 1,2*]. Excavations reached to the deeper layers in rooms A, B, C, D, E, F, H, E. For the most part, however, safety concerns precluded digging down to the floor levels.

Walls in most of the rooms either preserved the vaults or were standing up to the lower ceiling spring. Where arched ceilings were found, an upper storey floor was identified as well. The upper parts of the south wall of rooms B and C is of later construction and after its collapse, it must have blocked off these rooms. In D, which runs immediately east of Room A, the walls revealed several probable doorway blockings and the floor level was attested by the line of plaster on the northern and eastern walls. Presumably there is no 'room' below, as it seems to represent repeated attempts to

support the west wall of the rooms to its immediate east. The repeated abutting of walls adjoining the seven rooms at the eastern end of the Western Building complex indicates that all spaces here were later additions to these seven rooms. Space F turned out to be the staircase that provided access to the upper storey. However, no stairs were exposed before excavation ceased. Finally, there is the long corridor-like space S running E-W with partly preserved vault. In 2004, a Christian burial had been found in the floor of Room S with a short inscription in debased Greek next to it (on the northern wall). The room was intensely used as a kitchen space in the latest (squatter) period of occupation, as the smoked walls might suggest.

Testing inside the Western Building was done on a limited scale, the more serious operation being carried out outside, especially on the southern side. In effect, the outline of the Western Building has been revealed in detail. In some places, like the southwestern corner, the foundation courses (the only undisturbed part of the masonry in this place) were reached.

LIME KILNS

Fragments of vitrified bricks started to emerge from the clean, blown-in sand being removed from the area between the western wall of the Western Building and the hemispherical bastion already cleared in 2001. The main concentration was between the outer perimeter wall of the enclosure and the Western Building. Testing on the spot soon revealed the topmost part of a cylindrical updraft type of lime kiln of 2.20 m in diameter. The clearing of the surrounding area revealed another kiln, slightly bigger and slightly higher [cf. *Figs 1, 2* for

location on the plan and in the field]. Both kilns were set within a larger system of rooms that join the girdle wall system. The older (smaller) kiln no. 1 was built into a vault of the older vaulted space. They were both also incorporated into the outer wall of the enclosure.

The two kilns differ slightly in the construction mode, the latter (bigger) one has the stoke hole opening in its northern wall (from where the prevailing winds blow), whereas the smaller kiln has no stoke hole at all [*Fig. 3*]. It was apparently loaded

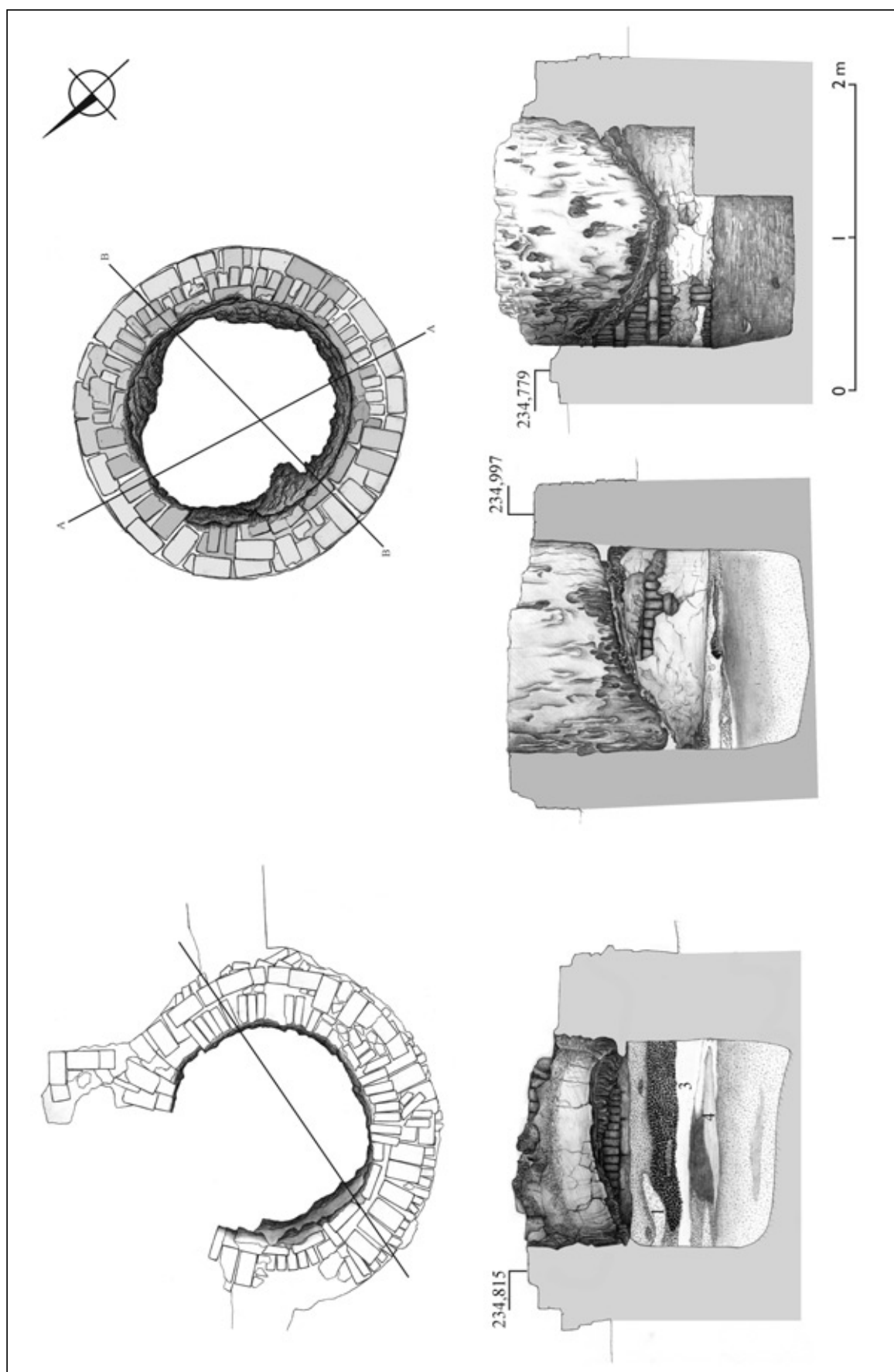


Fig. 3. Plans and sections through the two lime kilns
(Drawing M. Momot)

from above and the burning process did not need to be facilitated by the draft effected by the wind.

The scatter of Classic Christian ceramics was particularly dense over there, thus giving a ceramic date for the kilns in the c. 11th-12th century. It means that they were constructed to provide the burnt lime required for plastering the Upper Church

and to produce the peculiar lime-mortar window grilles this church was provided with [Fig. 4], rather than for any other building within the enclosure.

The burning process in Banganarti kilns qualifies them as the so called intermittent kilns, that is, the kilns that were fully loaded with charcoal and after 3-5 days of firing were totally unloaded. Despite the

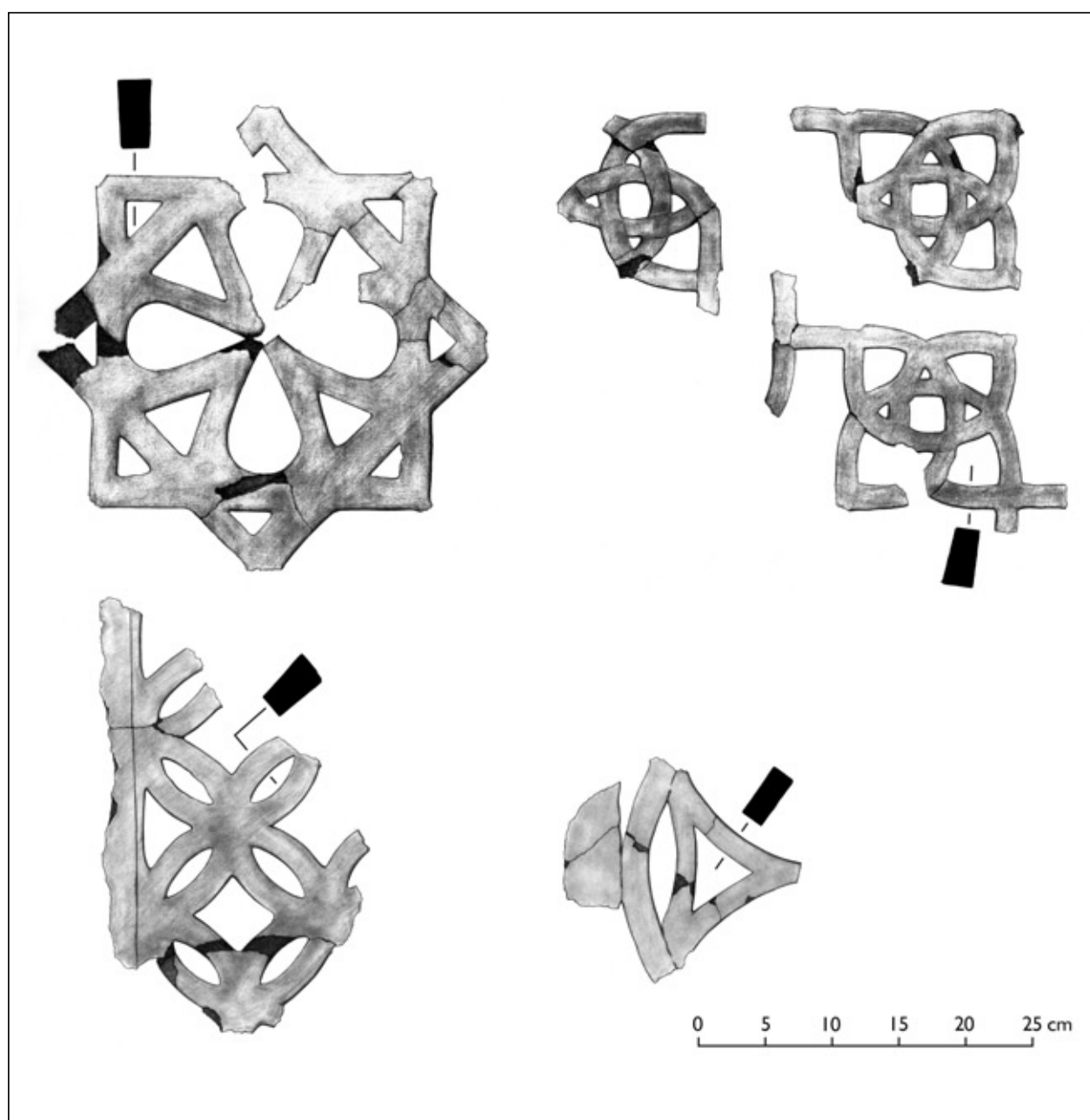


Fig. 4. Selection of lime-mortar window grilles from the Upper Church
(Drawing M. Momot)

poor raw material that contained much magnesium, the lime burnt in the Banganarti kilns was of unexpectedly high quality; mixed with huge amounts of large grained sand and crushed ceramics, it stood well against the harshness of the Nubian climate.

The residues of cracked calcite-like rock mixed with charcoal left no doubt as to the character of the Banganarti kilns. Similar kilns were found by the GAME team in the

Fourth Cataract region, in Wadi Umm Rahau, at the edge of the extensive Kerma settlement site (HP 221).³ The kilns were dated firmly in the Meroitic period. The only difference of any significance was the stokehole opening direction, leeward in Umm Rahau and windward in the bigger kiln at Banganarti. A similar lime kiln, but of quite modern date was found within the GAME Concession in the previous field-work season.⁴

EASTERN GIRDLE WALL TEST PITS

Two test pits were started against the eastern face of the peribolos wall, one (S.1) by the southwestern corner of the East Annex (so-called extramural *xenodocheion* excavated already in 2002) where it joined

the eastern girdle wall of the enclosure and the other one (S.2) further north along the same wall [cf. Fig. 7].⁵

The foundation courses of the *xenodocheion* and the main girdle wall were reached [Fig. 5].

At least three distinct rows of upright header bricks, more or less equidistantly separated by the more usual footer brick rows, were revealed in the tapering girdle wall. The middle of these header rows is at the same level as the header row that is the foundation level of the Eastern Annex.

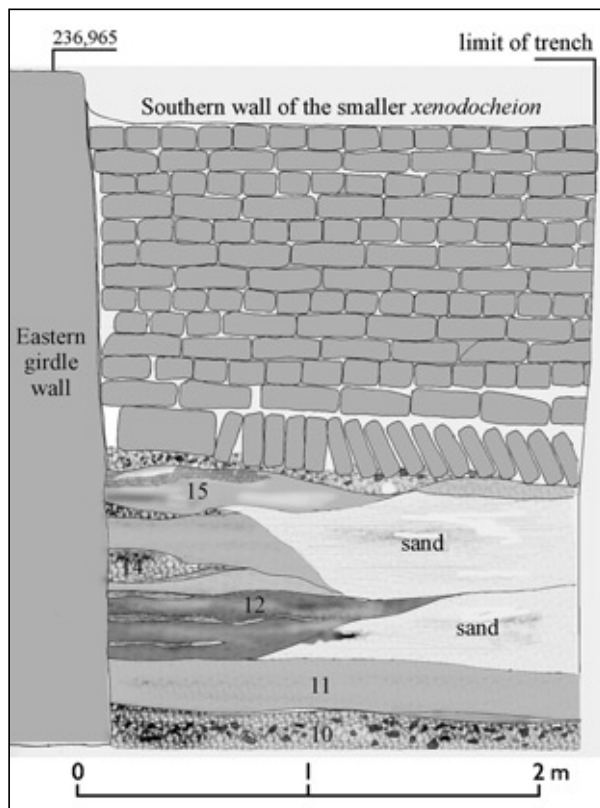


Fig. 5. Stratigraphy of the deposits outside the eastern girdle wall in trench S.1/2005. North trench wall cut in line with the south wall of the East Annex. Layers: 10 - dustified Nile silt with well fragmented mud brick debris, potsherds and crushed bones; 11 - fine-grained sand mixed with dustified Nile silt; 12, 15 - ashy layer with plenty of charcoals, potsherds and animal bones; 14 - sand with small admixture of ashes and muck (Drawing B. Żurawski, P. Osypiński)

³ K. Pluskota, Pottery and Lime Kilns in the Fourth Cataract GAME Concession, *GAMAR* 4, 130-132, Figs 10-12.

⁴ Dr. Mahmoud El-Tayeb, personal communication.

⁵ The trenches were opened by J. Phillips and later extended by P. Osypiński in an effort to collect archaeological material for stratigraphical studies.

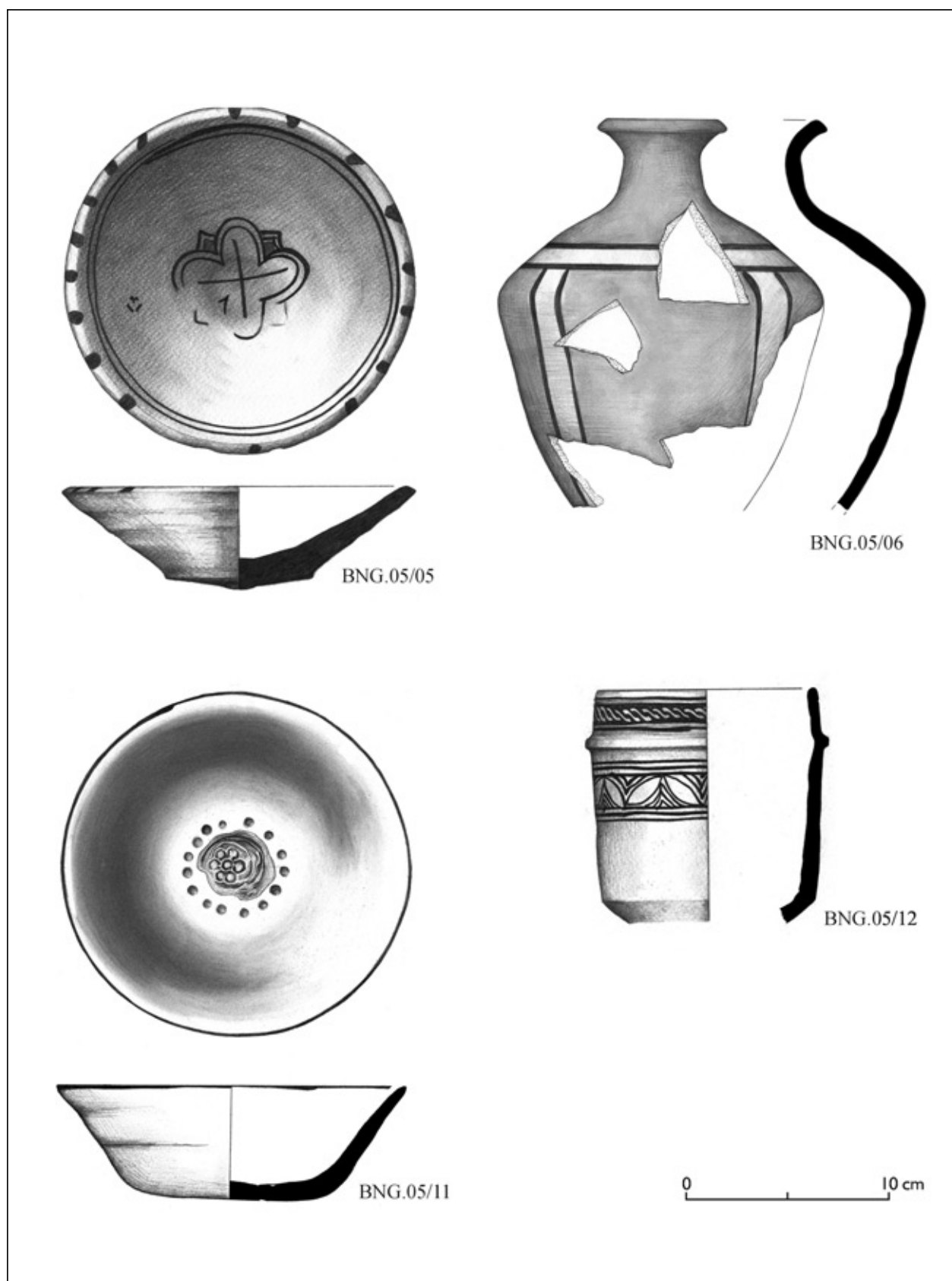


Fig. 6. Selection of pottery from trench S.1 (lower right) and from below the pavements in Chapel 5 of the Upper Church (Drawing M. Momot)

Evidence was found that the exterior face of the walls of both the fortifications and annex were plastered.

Four main levels were distinguished in S.1. In the topmost Level I, Late and Terminal Dongola wares predominate, however some ceramics suggest a Funj-period occupation of the site. The space was used as a midden and goat pen.

Level II was connected with the *xenodochion* outside the outer perimeter walls. The general prosperity of the site was reflected by a huge percentage of good quality wheel-made ceramics (mostly table wares) [Fig. 6].

Level III (divided into two units) is characterized by a huge percentage of

kitchen waste. The area outside the walls apparently served as a midden for the kitchen space within the walls. All the ceramics were either burned or mixed with ashes (found together with dustified Nile silt and sand, the two main components of the strata). The ashes and kitchen waste reached almost to the bottom of the foundations, proving the presence of a kitchen on the inside of the wall already in the earliest occupation period of the site.

The lowermost Level IV contained a considerable admixture of broken red bricks. The layer contents is characterized by a high percentage of top quality wheel-made table wares, dominating significantly over handmade wares.

UPPER AND LOWER CHURCHES

In 2005, the entire Upper Church was measured again and the plans and sections documentation augmented. All the inscriptions and murals have now been copied and thoroughly studied. Three new inscriptions were found in the process and many more were "revisited" by Adam Łajtar in an effort to gain better understanding of the texts. Restoration work on the murals proceeded, but much more effort is still needed to stabilize the painting layer and plasters. Done properly, they should guarantee their survival for ages.

The superposition of the two churches is the reason why testing in the Upper Church directly affects the exploration of the edifice below. The layout of most of the Lower Church was traced already in 2002, 2003 and 2004. This year's work (trenches S.3 and S.6 primarily) completed the investigations, resulting in a detailed reconstruction of the later phases [Fig. 7]. The plan of the original structure preceding the two cruciform phases remains an enigma.

A general note is in order at this point. At least two layers of painted plaster have been observed on all the walls of the Lower Church. The lime mortar (usually mixed with mud) is in lamentable condition, mostly powdering and heavily damaged by salt incrustations. Significantly enough, note has been made of ancient repairs, demonstrating prolonged existence.

Trench S.3 was dug between the southwestern pier of the Upper Church and the entrances to Rooms 20 and 21. Both southern piers appeared to be founded on a foundation made of bricks and stones laid in rather haphazard manner and stabilized with mud mortar toughened with lime. The foundations reached 4.29 m beneath the bench mark on the upper surface of the stone threshold of the southern entrance to the church [Fig. 8]. For the painting discovered on the walls of the Lower Church, see below. Meanwhile, the conservation works in the Upper Church revealed a huge mural of a Nubian ruler (or

dignitary) under the holy protection of an archangel on the wall of Chapel 21 of the Upper Church.⁶ An interesting feature observed on the divider between the southern pastophorium and the naos of the

Lower Church (east wall of the trench) was a cross-like hole in the wall structure, filled in and plastered over. Holes like these could have been left by crosses of some unknown material, placed in the walls presumably in

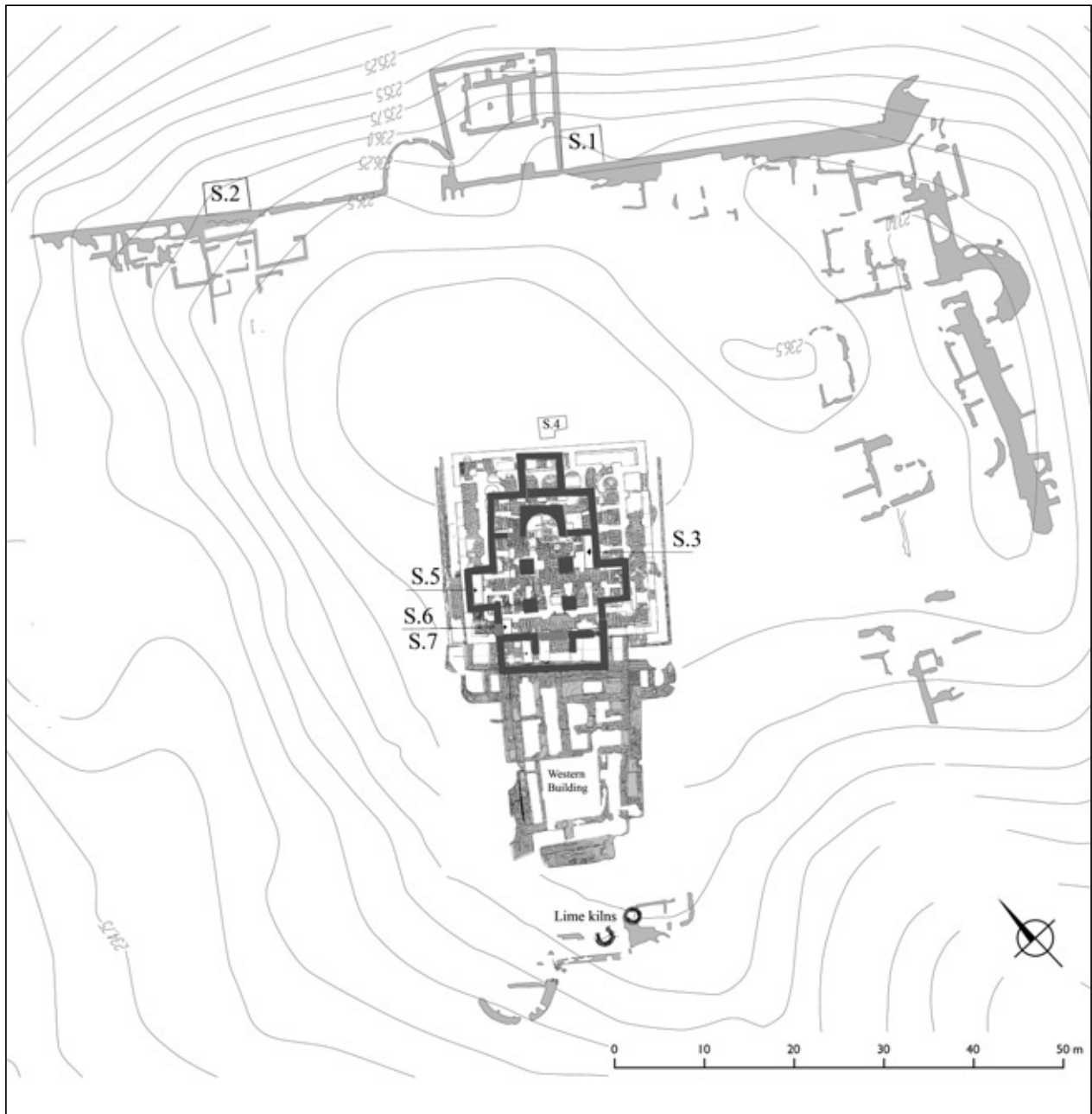


Fig. 7. Plan of Banganarti site with the trenches of 2005 marked in; walls of the Lower Church shaded in gray (Measured R. Łopaciuk, drawing B. Żurawski)

6 Since the picture is much damaged in the middle part (occupied by the protégé), the assumption that the archangel might be protecting a royal couple or more than one person is quite plausible.

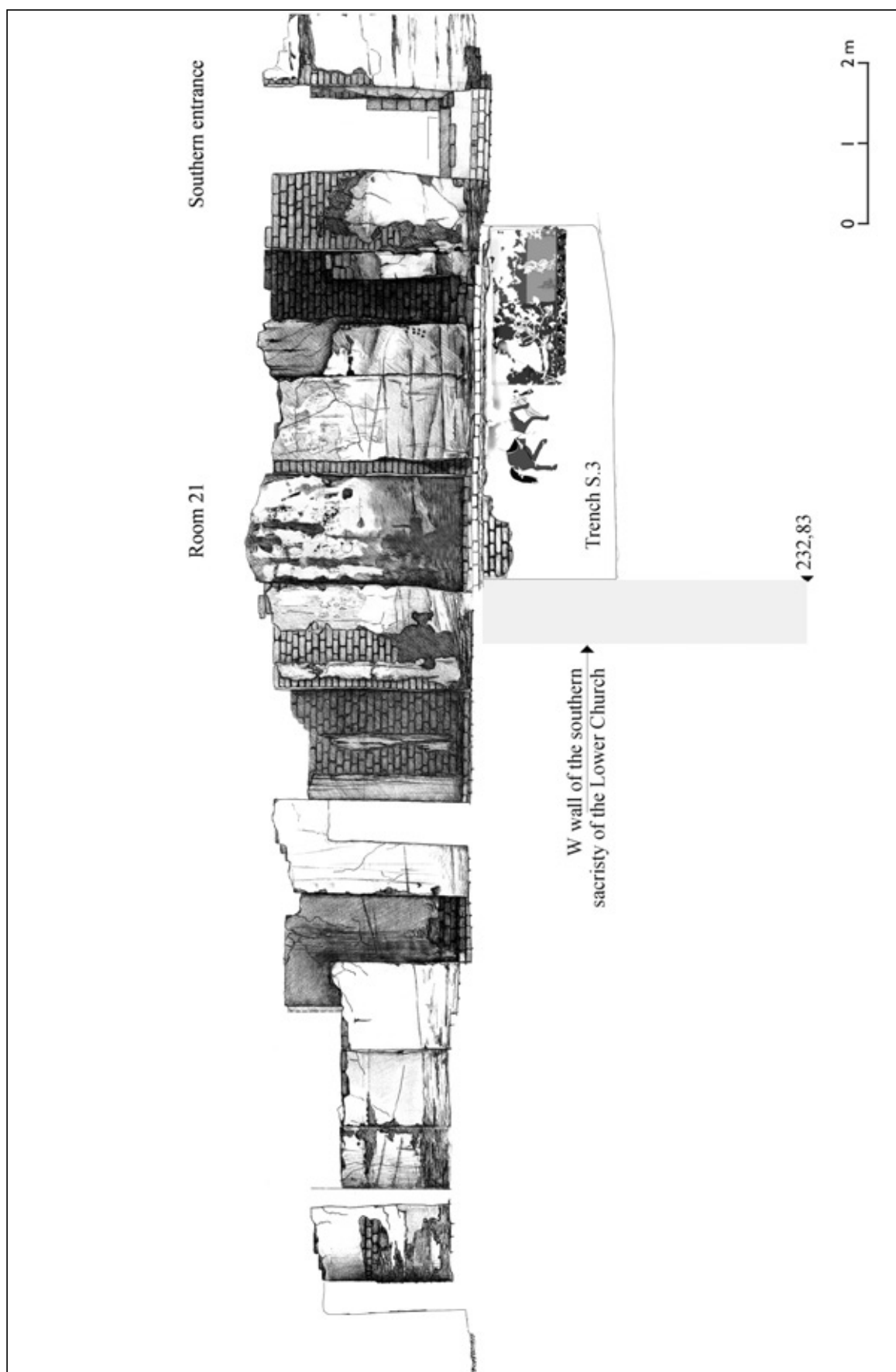


Fig. 8. Section E-W through the Upper Church with trench S.3
(Drawing M. Momot and B. Żurawski)

some kind of ceremony of consecration of a newly built church. Once the church was abandoned, these crosses would have been (or were at least in this case) removed and the empty holes replastered.

Trench S.4 was dug outside the east wall of the Upper Church, near its middle, in an effort to ascertain the foundation level of the mud-brick mastaba that abutted the east wall of the church.

Trench S.5 sunk in Space 30, immediately north and northeast of the northern entrance to the Upper Church, it revealed murals on the west and east walls

of the Lower Church northern exedra [Fig. 9]. The foundation course of the Upper Church revealed in the northern trench wall was extremely well-preserved. A faintly preserved composition of a standing figure was preserved on the wall to the left and next to it a bust in tondo.

Trench S.6 excavated in the southern half of Space 33, in the western portico of the Upper Church, revealed the blocked northern entrance to the Lower Church beneath the red-brick pavement of the portico.



Fig. 9. Ink copy of a mural on the west wall of the northern exedra of the Lower Church (Trench S.5) (Drawing A. Błaszczuk)

THE ANASTASIS⁷ FROM THE LOWER CHURCH (TRENCH S.3)

The digging of Trench S.3 brought to light a spectacular composition painted on the southern wall of the Lower Church (just behind its southeastern pier). It consists of a double scene bordered by a red and black frame, depicting the dead in hell on the left and a striding figure on the right, and an unframed mural left of it, representing a mounted saint spearing a naked female demon. An inscription in black appears below the horse's hooves [*Figs 10, 11*]. The frame is doubled at the lower edge by a broad repetitive band composed of interlacing black and red elements. The narrow straight line that encircles the whole mural is intensely red.

The scene is known also under an old English designation as Harrowing of Hell. Only Christ, Hades and Adam are painted as full figures whereas the rest, Eve included, are painted in half figure. Only the three protagonists and Eve are in physical contact, bound by common action initiated by Christ. The focus of the scene is the disproportionately big figure of Christ radiating with light (as in Transfiguration scenes) painted in the middle section of the composition. The Redeemer is shown bent forward as he leans toward the naked figure of Adam. In his left hand he holds a crossed staff (?). Christ pulls Adam up by a firm grasp on his right forearm. At the same time, he tramples Hades, who, prostrated on the ground, naked and incapable of resistance,

vainly tries to stop Adam by grasping his feet. Eve follows Adam, half hidden behind his back. Her skin is white, her femininity is emphasized by a breast painted rather awkwardly below the armpit. Painted in half-figure, as a purposely minor actor in the drama, she stretches out her right hand to Christ in a gesture of supplication, while holding Adam's forearm with her left hand. Strangely enough she is inferior also to Hades, who, although defeated and humiliated, is shown in full figure. Adam and Eve both stretch out their hands towards the blinding rays of light that radiate from Christ

The figures of the dead are treated separately, each one painted in an individual and most original posture [*Fig. 13*]. The scene is vigorous and dynamic, the figures are writhing in pain. It is a far cry from the static Byzantine 'diagrams' of the Underworld where fully clad Justs statically and solemnly await redemption.⁸

Apart from the iconographic inspirations that were probably derived from miniature painting, the painter profited profoundly from observation of Nubian commonfolk, whom he must have simply portrayed. The racial composition of the black and white figures surely reflects the racial composition of Nubian society.

The background of the scene is dark grey. The abode of the dead is visually defined by the greyish darkness that allowed the Banganarti master to em-

7 In the Eastern tradition *Christ's descent into Hell* is referred to as *Anastasis*. In the Khludov Psalter (ed. N.P. Kondakov, *Miniatiury grecheskoj rukopisi Psaltiri IX veka: iz sobraniia A.I. Khludova v Moskvie* (Moscow 1878), Pl. X.3) the scene is called *Η ΑΝΑΣΤΑΣΙΣ ΤΟΥ ΑΔΑΜ*. Also the *Suidae Lexicon*, ed. A. Adler (Leipzig 1928), I, 180) defines the word *ἀναστασις* as the raising of Adam.

8 *Rigor mortis* is a feature of style that made an appearance in Byzantine art from the 10th century onwards.

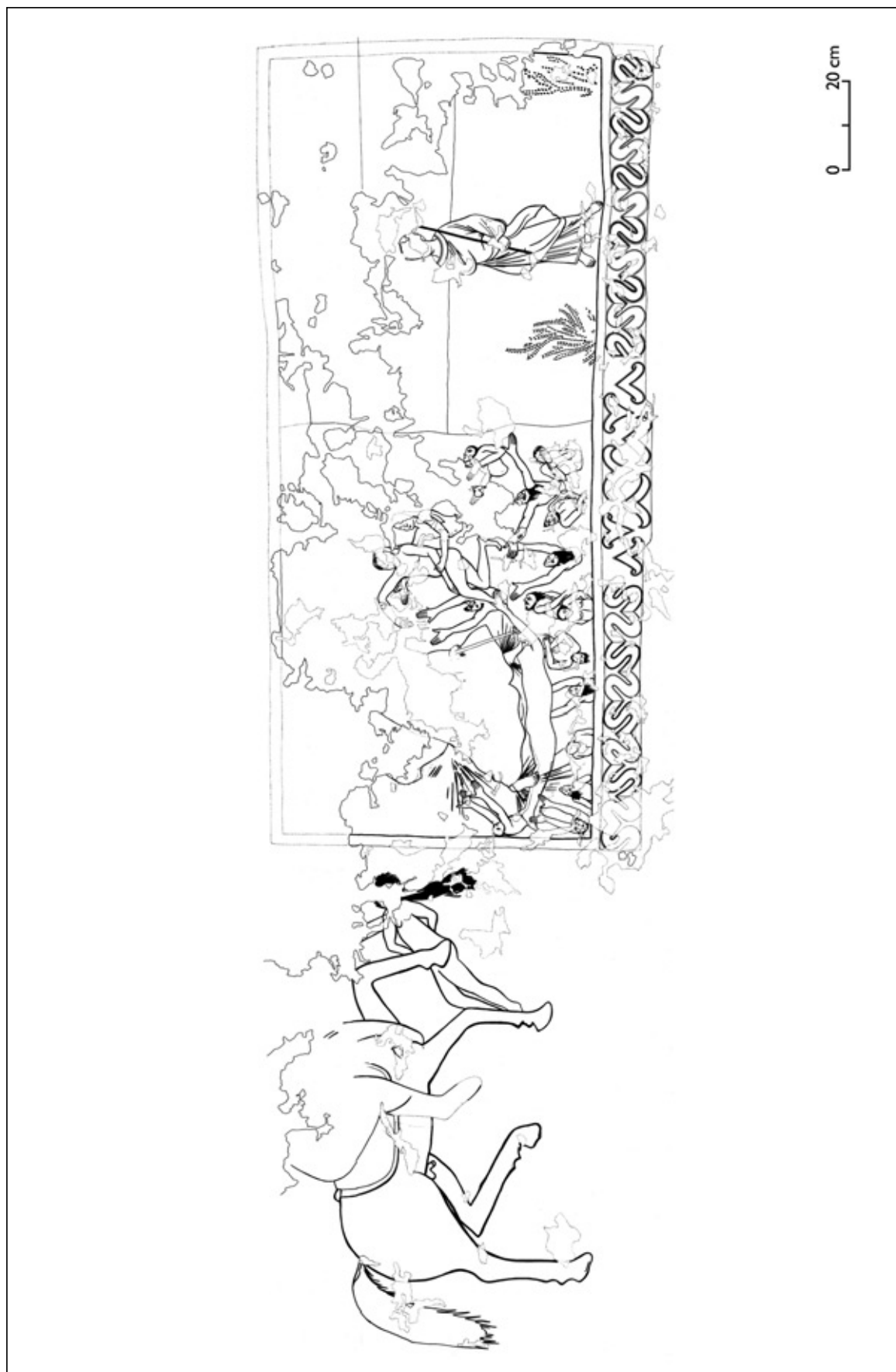


Fig. 10. Inked copy of the mural decoration of the southern wall of the Lower Church
(Drawing W. Chmiel)



Fig. 11. The two enframed pictures (black outline lines have been enhanced)
(Photo and enhancing W. Chmiel)



Fig. 12. The dead as seen on the wall before conservation (Photo B. Żurawski)



Fig. 13. Equestrian saint trampling female demon (black outlines enhanced) (Photo W. Chmiel)

phasize the glory of the radiating Christ, who brings conquering light to the Underworld. It lacks the typical attributes as coiled serpents, devils, shattered gates, monsters etc. The hellish fire is also not marked, at least there is no visible trace of it.

The Banganarti composition finds no exact parallel in the extensive repertoire of images of the *Anastasis* known from prior to the 11th century (which is the latest possible date for the Banganarti picture). It represents a curious stylistic and ideological amalgam of the local tradition with the Carolingian Psalter miniatures. The nakedness of the sinners, excessive pathos, and somewhat exaggerated expression achieved through the dramatic contortions of the human figures suffering in Hell definitely belong to the iconographical idiom of the West. While being well rooted in 8th/9th century theology, it found its fullest expression in the Psalter illustrations of the Carolingian Renaissance. The half-figure images of the sinners are executed with utmost artistry manifested in the expressively contorted figures and huge hands with outstretched thumbs and fingers that are typical of Western Psalter miniatures.

It perfectly fits the Western perception of the underworld that is a horrifying fire abyss, a real place of punishment where the dead suffer, not simply awaiting resurrection. Even in details, such as the outstretched, exaggerated hands, it corresponds to the very peculiar manner of early 9th century Carolingian *renovatio*, that in the sphere of visual arts looked back to Late Roman narrative art.

The portraits of the sinners in the Banganarti mural are a far cry from the rigid figures that began to haunt the Byzantine style from the 10th century onwards.

The paramount feature of the composition is its independence from any conceivable Christological cycle. It stands

apart on the south wall of the nave. Different from the dominant iconological trends of the 9th and 10th century, it represents an archaizing tradition, being also alien to its sole Nubian parallel from Faras.

The right panel contains a striding unhalloed, probably beardless figure clad in white, holding a rod in his left hand [cf. *Fig. 11*]. This anonymous personage painted *en face* in antique contrapost is flanked by two bushes that faintly stand out against the dominant local color that is orange, in the lower section and intensely red in the upper one.

Both parts of the composition differ in background color, both also convey a totally different aesthetic message. The left is convulsive and expressive, the right static and calm (despite the vivid coloration of the background). Plausibly the two pictures (forming together a single painting set within one frame) should be attributed to two different painters for both technical and esthetical reasons.

The identification of the figure and the hermeneutics of the scene are difficult to assess. The "man in white" could be either one of the prophets who foretold the Last Judgment and Descent of Christ into Limbo or one of the dwellers of paradise who were taken there by the action of God (Enoch, Elias, John the Baptist etc).

It would be easiest to interpret the scene as an episode in the christological cycle that follows the *Anastasis*, e.g. *Chairete*, Apparition to the Women at the Tomb, Ascension etc. Unfortunately, the scene does not provide any iconographic allusions to such interpretations.

The scene to the left is unframed. It represents the well-known motif of an equestrian saint, mounted on a reddish-brown stallion and trampling a demon in the form of a naked woman [*Fig. 13*]. The demon's hands are probably tied behind

her back. Her dark long hair is tied close to the head and hangs loosely. This part of the picture is not clear, but the saint's spear appears to be stabbing her through the neck.

The saint sits in a saddle without stirrups (at least no trace of them survives). The saddle is painted black with a yellow borderline. His dress is probably white. The horse's tail is intensely black.

The most widely known analogy to the scene is provided by a mural found in Chapel 17 in the Monastery of St. Apollo in Bawit. The mural represents St. Sisinnios subduing a female demon named Alabas-

dria (= Gyllou).⁹ The painting, however, reveals a striking resemblance to the representations of Solomon trampling a female demon, known from scores of engraved gems, die-struck and cast pendants, etc.¹⁰ It merits emphasis that Solomon continued to be either named or invoked through the "Seal of Solomon" on many 6th/7th century Byzantine amulets.¹¹

A particularly well founded suggestion as to the identity of the saint in question was proposed by Adam Łajtar who suggested St. George on the basis of the hardly legible inscription below the horse's belly.

AERIAL PHOTOGRAPHY

The progress of excavations and changes of the landscape in Banganarti (especially the palm groves, and other agricultural activities) are being documented on photographs taken with a remote-controlled camera suspended from a kite.¹² Since 1998

at least 1500 aerial photographs have been taken of the kom and its surroundings [Fig. 14]. In 2005, low-altitude photographs were taken of the kiln site, the girdle walls and, from a higher perspective, the Upper Church [cf. Fig. 1].

CONSERVATION AND RESTORATION WORKS

The key priorities on the Banganarti 2005 conservation and restoration agenda were:¹³

- stabilization of original plasters on the outside and inside walls (W. Chmiel, R. Szemraj);
- completing the transfer of two paintings from Chapels 5 and 6 begun in the previous season (C. Calaforra-Rzepka);
- continued fixing and stabilization of wall paintings in the Upper Church interior;

9 J. Clédat, "Le monastere et la necropole de Baouît", *MIFAO* 12 (Le Caire 1904), 80f., Pl. 55f., cf. also P. Perdrizet, *Negotium perambulans in tenebris. Études de démonologie gréco-orientale* (Strasbourg 1922), 13-16, 25-31, Fig. 6; H.A. Winkler, *Salomon und die Karima* (1931), 157-161; J. Engemann, "Magische Übelabwehr in der Spätantike", *Jahrbuch für Antike und Christentum* 18 (1975), 22-48, 39-40

10 J. Spier, "Medieval Byzantine magical amulets and their tradition", *Journal of the Warburg and Courtauld Institutes* LVI (1993), 25-62; Ch. Walter, "The intaglio of Solomon in the Benaki Museum and the origins of the iconography of warrior saints", in: Ch. Walter, *Pictures As Language. How the Byzantines Exploited Them* (London 2000), 397-414.

11 Spier 1993, 37.

12 On the methodology and history of aerial archaeology in Sudan with emphasis on research done so far in the region of Old Dongola, cf. B. Żurawski "Low altitude aerial photography in archaeological fieldwork: the case of Nubia", *Archaeologia Polona* 31 (1993), 33-42.

13 Remarks contributed by the team's restorers: Monika Czerniec, Wojciech Chmiel and Cristobal Calaforra-Rzepka.

Not the least, the mission intended to cover the entire Upper Church interior with a corrugated iron roof.

The plaster stabilization program gave interesting results. The lime plaster rendering of the portico columns and pilasters was repaired and stabilized. The experiment with lime putty proved highly promising. Lime was slaked in a huge epoxy resin container outside the church. Mixed with coarse-grained sand, it was then applied to the holes, gaps and cracks in unpainted plaster.

Extensions of surviving walls built to support the shelter roof were plastered with render composed of silt, sand and a thin solution of Gum Arabic in water mixed

with sand, a composition commonly used in the region. The plaster was even stronger when reddish desert clay was mixed with water and added to the paste instead of silt; however, the small and stable salt content in the silt outweighed the stronger bonding force of the desert clay. The plaster was wet-smoothed with gum water (water with Gum Arabic content considerably higher than used in the plaster) applied with a trowel. An ideal repair-paste composition was arrived at experimentally. Experiments were also conducted regarding the lime plaster that would be applied to the church exterior walls and columns (especially above the roofing).



Fig. 14. Aerial view of the post-Meroitic tumulus cemetery of Hammur Abbasiya in the foreground and the site of Banganarti in the upper right (Photo B. Żurawski)

The transfer of the two paintings from the blocking walls in Chapels 5 and 6 was completed this season.¹⁴ The mounted murals have been transferred to another space.

Important restoration works were carried out in the Upper and Lower church. In Chapel 1, the portrait of a Nubian dignitary on the south wall (mechanically cleaned, restored and protected with acrylic resin in previous seasons) was treated with a 1% solution of PRIMAL E-411 in ethanol. The solution helped to remove the acrylic resin applied earlier. The painting was afterwards cleaned with cotton swabs dipped in acetone. Finally, the painting was sprayed with 2% solution of PARALOID in toluene.

In Room 20, the image of a cross on the east wall was first mechanically cleaned with bristle brushes and fiber glass sticks. The flakes that stuck out from the mural face were made to adhere with a 10% solution of PRIMAL E-411 in ethanol. A small standing figure to the right of the cross was chemically cleaned with a 1% solution of PRIMAL E-411 in ethanol. The white ground was washed with acetone. Finally, the whole composition was sprayed with a 2% solution of PARALOID B72 in toluene.

The geometric pattern (on the robes?) painted on the west wall of Room 17 was covered with a thick coat of mud and dirt. This was first cut off with a restorer's knife. Then the dirt and leftover mud were cleaned with bristle brushes. The painting edges were stabilized with a protective band made of putty composed of: 1 part local caolin clay (*djir*) mixed with Nile silt and 1/5 part of PRIMAL AC-33 in factory solution. After the painting edges and the ground were

thus strengthened, fragments of the polychromy were cleaned with a 2% solution of PRIMAL E-411 in ethanol.

The binding medium of the mural of a Nubian ruler under the protection of an archangel in Room 22 was considerably degraded. Consolidation of the painting layer thus had to precede cleaning. A 2% solution of PARALOID B-72 in toluene was first sprayed and then applied repeatedly with a brush. The background was cleaned with acetone. The flaked-off fragments of the painting layer were glued back with injections of a 10% solution of PRIMAL E-411 in ethanol. The painting edges on the west and south walls were strengthened with putty bands (1 part sand, 1 part kaolin mixed with Nile silt, 1/5 part PRIMAL AC-33, and small addition of yellow pigment applied in order to balance the color difference between the putty and the original ground.

In Room 21, the much defaced east and west walls were treated chemically and mechanically in previous seasons. However, in 2005 the peeling off of the painting layer was noticeable. The endangered fragments were injected with adhesive (10% water dispersion of PRIMAL AC-33). The robes of the apostle Thomas (on the east wall) were mechanically cleaned with fiber glass sticks. Since the binding medium was also degraded, the painting layer was soaked with a 2% solution of PARALOID B-72 in toluene. A plaster paste was applied into the bigger cracks and gaps.

No attempt had been made so far to treat the most damaged painting on the south wall of Room 21 where faint traces of wings have identified it as depicting an archangel. It was covered with a thick coat

14 For the work of the previous season, cf. C. Calaforra-Rzepka, "Banganarti 2004: Conservation Report", *PAM XVI, Reports 2004* (2005), 314-320.

of dirt and mud mortar seeping down the walls with rainwater and the presence of a painting underneath was pure conjecture. Tests, however, revealed small patches of paint, as well as a total lack of adhesion of the painting layer to the ground. Protective bands of plaster paste were introduced to stabilize the painting before any other restoration works were attempted. Then the mural was injected with a 10% water dispersion of PRIMAL AC-33. The polychromy was cleaned with 1:1 solution of ethanol in water and then with 2% water dispersion of PRIMAL AC-33. Parts of the mural were cleaned mechanically with fiber glass sticks, sections, however, remained uncleaned due to the poor state of the polychromy.

The set of murals on the south wall of the nave of the Lower Church turned out to be in the worst state of repair imaginable. The upper part was almost entirely defaced, the lower part had suffered from the damp and the fill deposited in the ruins of the Lower Church and pressed against the wall by the enormous weight of the south-western pier supporting the Upper Church dome (c. 12 m high). The poor quality of execution of the paintings was also a factor

in their deterioration, exacerbated still further by salt incrustations on the surface. In effect of the combined action of these factors the painting layer had completely lost adhesion to the ground.

Conservation begun in 2005 was aimed at consolidation and stabilization of the plaster and paint layer. Due to time limits, desalination was not even attempted. The painting surface was first cleaned mechanically with soft brushes and fiber glass sticks, then an adhesive (12% water dispersion of PVA) was applied with injections. Wherever the painting layer had not survived, the powdering plaster was sprayed with a 3% solution of PARALOID B-72 in toluene.

After the 2004/2005 season, the Upper Church at Banganarti was roofed over with corrugated iron. Ventilation openings were fitted with a mesh to block entrance to insects, bats and birds. The original walls have been repaired and stabilized, whereas the new ones have been plastered. This has returned some of the past splendor to the church. Arrangements are being made to open a local museum in the building, presenting the history of the region, as well as of the Polish excavations at Banganarti.