



## **Banganarti and Selib. Two field seasons in 2008**

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by Bogdan T. Żurawski

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Source: *PAM 20 (Research 2008)*, 251-266

ISSN 1234-5415 (Print), ISSN 2083-537X (Online)  
ISBN 978-83-235-1144-1

Published: Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW),  
Wydawnictwa Uniwersytetu Warszawskiego (WUW)

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# BANGANARTI AND SELIB TWO FIELD SEASONS IN 2008

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**Abstract:** In the double season in 2008, work continued on the Churches site, including excavation and geophysical prospection of the girdle wall and the architecture inside the walls. More evidence supported dating the first complex to the 6th/7th century. New ramparts were added when the Upper Church was raised in the mid 11th century (according to the pottery and finds). Three appendices present a revitalization project in progress, current conservation of church murals and the pottery assemblage from the excavations).

**Keywords:** Banganarti, church, fortifications, Selib, geophysical prospection, magnetic method

The Banganarti archaeological dig overlapped with salvage fieldwork in the Fourth Cataract, during the double season, early in January–March and in November–December 2008. Following the end of work at Banganarti, the team was transferred to the Fourth Cataract. Apart from a brief inspection visit to the upriver sites of Abkur and Diffar, the mission concentrated on testing and excavations at the sites in Banganarti and Selib.

Aerial kite photography of Banganarti and Selib and their immediate surroundings was continued. Altogether 1300 images of the archaeological *status quo* were taken,

including newly excavated areas and documenting rainfall damage after the heavy rains in the winter of 2007.

By the end of the season all of the Upper Church at Banganarti was protected with a corrugated iron roof, the extension protecting new storerooms for ceramics and archaeological dig equipment and conservation materials.

Iconologist Magdalena Łaptaś completed the documentation of all 62 murals from the Upper Church in Banganarti for the general catalogue she has been preparing, verifying and correcting where necessary existing descriptions.

## FIELDWORK AT BANGANARTI

Archaeological activities in the two seasons in 2008 were concentrated in the Lower Church at Banganarti [Fig. 2]. Excavations included four trial pits: LC 3a in

the eastern passage behind the apse (once some of the overhanging walls of the Upper Church could be dismantled following a transfer of the inscribed plaster

found there); LC 3b in the eastern part of the northern sacristy (*prothesis*); LC4 in the nave below the *Anastasis* scene; LC5 in the unit 18 (the middle one of the three western units) where documentation was completed of murals and inscriptions discovered already in 2004.

Of these, LC 3b proved of the biggest importance. The *prothesis* appears to be the only part of the Lower Church where the original ceramic tile paving has survived [Fig. 1] with ceramic pipes set vertically in the ceramic flooring (found in 2007), cutting down to sterile sand layers. The theory proposing their drainage function was confirmed by yet another pipe found against the north wall of the narthex. The



Fig. 1. Draining pipe in the ceramic pavement of the *prothesis* against the north wall, below a lamp niche (Photo B. Żurawski)

### Team

*Dates of work:* 11 January–7 March and 3 November–22 December 2008

*Director:* Dr. Bogdan Żurawski (Research Center for Mediterranean Archaeology, Polish Academy of Sciences)

*NCAM representatives:* Mustafa Ahmed el-Sharif, Adjab wad Adjab

*Archaeologists:* Anna Błaszczyk (freelance), Mariusz Drzewiecki (PhD candidate, Adam Mickiewicz University, Poznań), Karolina Gawlik (University of Łódź), Aneta Kulpa (freelance), Jarosław Święcicki (freelance), Magdalena Włodarska (freelance), Magdalena Woźniak (PhD candidate, University of Paris–Sorbonne IV)

*Ceramologist:* Dr. Dobiesława Bagińska (Archaeological Museum in Poznań)

*Geophysicists:* Tomasz Herbich (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Dawid Świąch (freelance)

*Iconologist:* Dr. Magdalena Łaptaś (Cardinal Stefan Wyszyński University in Warsaw)

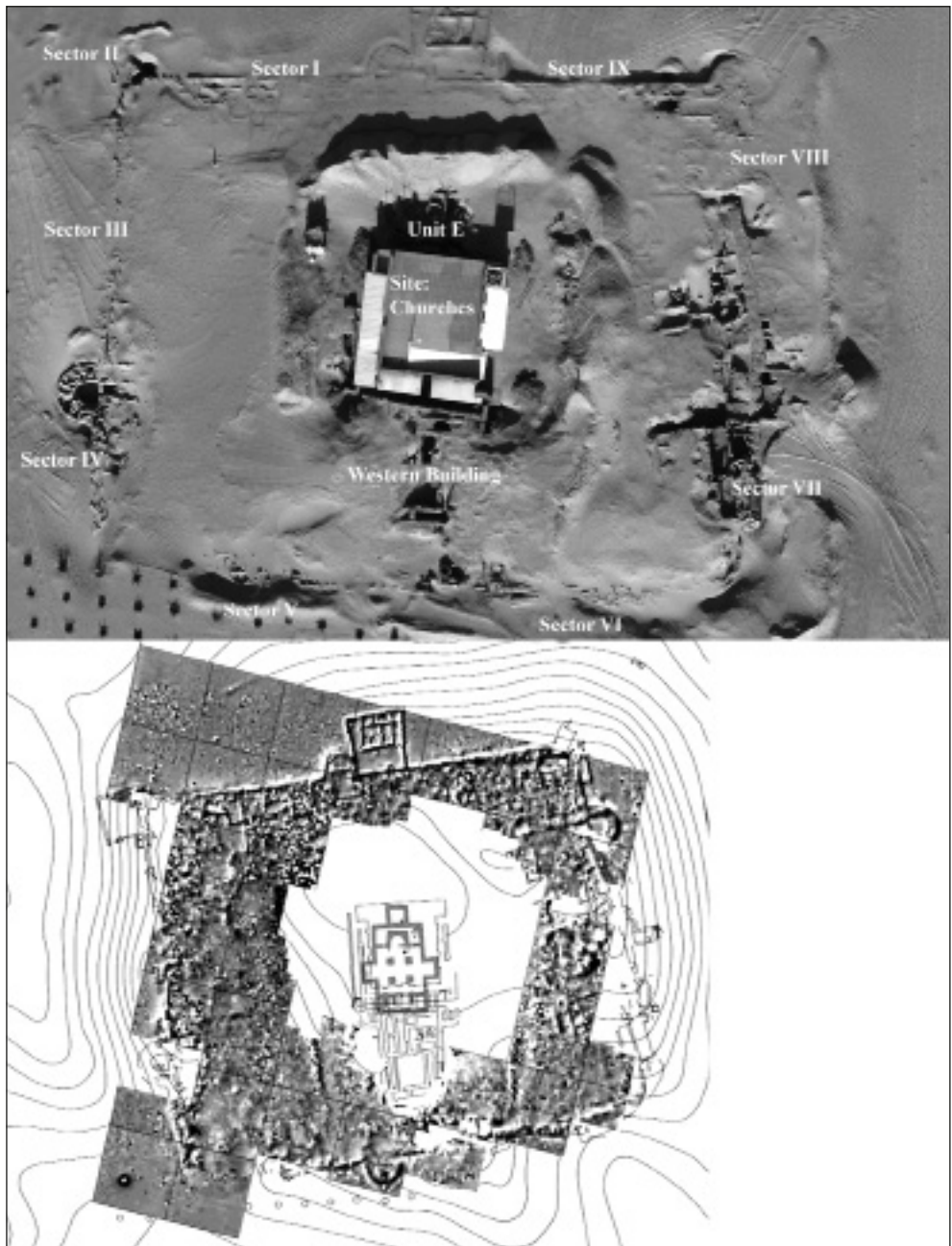
*Restorer:* Wojciech Chmiel (freelance), Dorota Moryto-Naumiuk (freelance)

*Architect/construction engineer:* Michał Mirecki (freelance)

*Photographer:* Marcin Jamkowski (freelance)

*Student-trainees: archaeologists:* Martyna Mazur, Alicja Płaskowska (Institute of Archaeology, Adam Mickiewicz University, Poznań)

*Student-epigraphist:* Agata Deptuła (Institute of Archaeology, University of Warsaw)



*Fig. 2. Site of Banagnarti after the 2008 season: aerial kite view (top) and magnetic map of the church enclosure (Photo B. Żurawski, magnetic map processing T. Herbich)*

water would have been used plausibly for cleaning liturgical vessels and was disposed off directly to the layer of absorbent sand through the ceramic pipes.

The LC 3a pit revealed two niches, one in the east wall of the passage behind the apse and another in the south wall of the narthex space. The two niches produced a collection of liturgical vessels, consisting of a juglet (Inv. No. 10/XI/2008), saucer-like patene (Inv. No. 10/XI/2008) [Fig. 3, left] and a ceramic dish for blessing fruits of the earth(?) (Inv. No. 7/XI/2008). Another patene (Inv. No. 12/XI/2008) with the Raphael monogram scratched in the underside was found in the northern niche (N.1). Significantly, joining fragments of a juglet came from the two niches. The patene (White Ware) is a standard example of Adams' Style N IV/W5, while the juglet (N IV/W6) is dated to AD 850–1000; the bowl with the Raphael monogram (N IV/W5) can be assigned to the same period.

There can be no doubt now that this part of the Lower Church remained in use in the 9th and 10th centuries.

A commemorative slab of Aberkios the *epitropos* [Fig. 4] was also found rather unexpectedly, serving as a sort of shelf in the niche in the eastern passage behind the apse of the Lower Church (the uppermost rounded part with the incipit of the text was pointing north). Traces left by burning lamps were noted on the stele surface. A collection of liturgical(?) paraphernalia, consisting of a handful of small corroded iron fragments, including two bigger pieces, namely, a hook and a knife(?), body fragments of a broken thin-walled glass vessel, halves of two rock crystal beads and a small copper-alloy plate with hemispherical bottom were also found among the debris removed from above the epitaph.

Ceramics from a corresponding layer of fill in the passage consisted mostly of

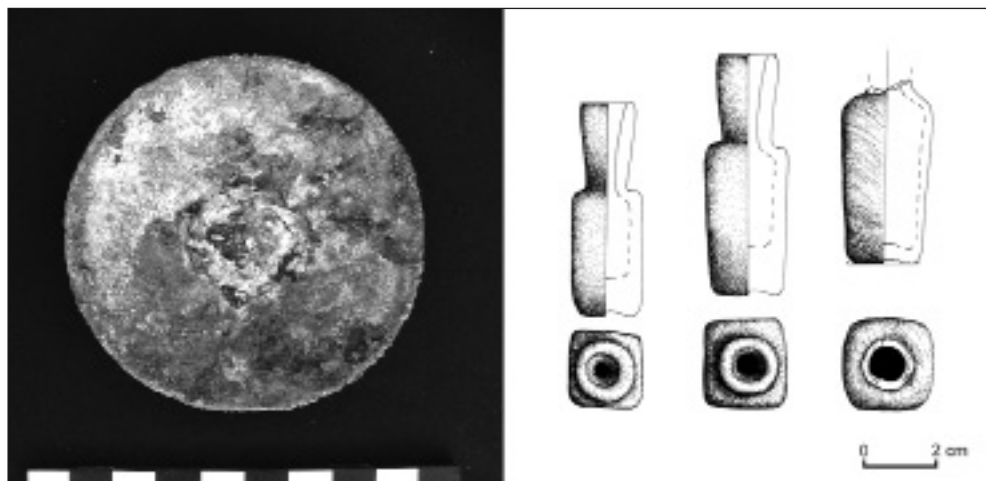


Fig. 3. Finds from niches in the prothesis of the Lower Church: copper alloy patena (diskos?) from above the niche with the Aberkios stela (left) and glass perfume bottles (Photo M. Mirecki, drawing A. Błaszczuk)

sherds of amphorae and jars (see below, appendix on the pottery from the season). A blocked door in the east wall of the passage had once led to the eastern annex. It was blocked in two stages separated by a destruction layer.

In unit 18 the backfill from the excavations in 2004 was cleared and the exploration continued down to culturally sterile sand layers. Conservation and consolidation of plaster and murals duly commenced, followed by tracing of the wall paintings (documentation by Wojciech Chmiel). The painting found on the north wall of unit 18 represents a mounted saint spearing a figure lying on its back beneath the horse's hoofs. The letters MAXIMI

identify the fallen figure with one of the Maximiani (Galerius Maximianus, being the most plausible choice). The saint has not been identified so far and neither has the figure on the right holding the horse's reins. The scene was painted on the latest layer of plaster in the uppermost section of the wall.

Slightly to the right and below the mural there was the longest inscription found so far in Banganarti. It comprises 60 lines of Greek text written in very good hand (letter height does not exceed 6 mm). A preliminary appraisal by Adam Łajtar (from photographs) identified the text as a selection of liturgical chants sung at mass (see Deptuła 2011, in this volume).

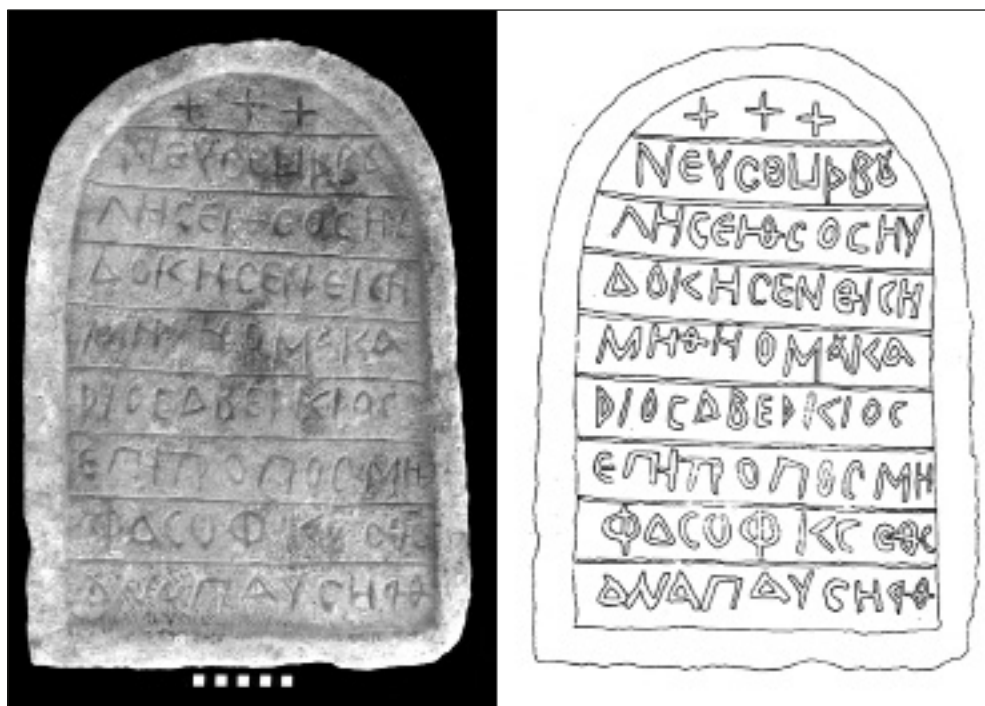


Fig. 4. Commemorative stele of Aberkios the epitropos  
(Photo and drawing A. Pląskowska)



Outside the church complex, testing aimed at:

- documenting the mud-brick abutment reinforcing the subsiding walls of the Lower Church;
- reconstructing the stratigraphic sequence predating the raising of the Upper Church;
- documenting the red brick mastaba encasing the Upper Church (fragments of the outer facing had been drawn in previous seasons).

A secondary aim of fieldwork outside the Raphaelion in 2008 was to improve the drainage system around the church.<sup>1</sup>

Altogether two huge test pits were dug along the northern and southern walls of the church. Both reached culturally sterile

sand at a depth of 4 m below present walking level.

The mud-brick mastaba-like abutment of the Lower Church, which prevented the outer walls of the building from collapsing (either under the pressure of a newly constructed dome or due to high flooding in the period, or both), was exposed in both pits. It was phased into two distinct structures that were raised one above the other with a conspicuous accumulative layer in between. A full building sequence was reconstructed. Stair-like approaches to the southern and northern entrances of the Lower Church were recorded within the thickness of the abutment, negotiating this feature in the latest phase of the first church.

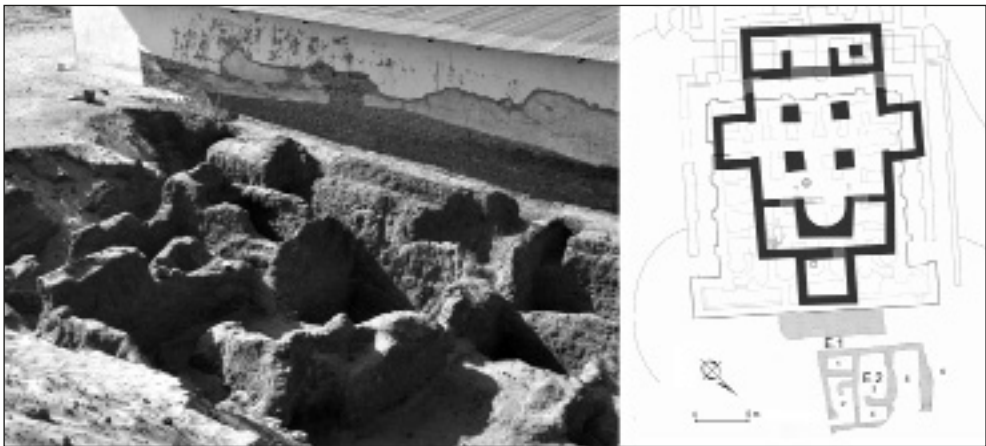


Fig. 5. Unit E (for location of trenches in 2008, see plan on right): the mastaba abutment of the Lower Church in the background (by the wall of the Raphaelion) and building E.2. in the foreground (Photo B. Żurawski, drawing K. Gawlik and B. Żurawski)

<sup>1</sup> Drainage of accumulated rainfall poses an issue at Baganarti as at most archaeological sites located lower than the immediate surroundings. Small artificial hollows at either end of the east wall, receiving rainwater from the shelter roof over the church, had worked well with regular rainfall, but failed to drain water effectively from the site during the record downpours that took place in August 2007. To address this problem, trial pits were dug on the spot of the drainage hollows, reaching sterile sand, and after the stratigraphy had been documented, they were filled with broken bricks to flush down and soak up excess water. The system, known locally as *massas*, helps to soak up water from *hammams* among others. It was tested satisfactorily in the Baganarti dig house in 2007 and 2008.

The steps were made of reused blocks and red brick. A precise reconstruction of the appearance of these steps is difficult.

Trial pit E/1 aimed at exposing the mastaba abutment reinforcing the outer walls of the Lower Church, but was expanded eastward when a building (E.2) was discovered [Fig. 5]. This structure was constructed shortly after the mastaba abutment of the Lower Church was completed. It remained in use after the Lower Church had been pulled down with part of its interior serving as cesspits for the latrines used probably by pilgrims

visiting the Raphaelion. This secondary use of the structure caused its unplastered walls to be heavily eroded. Multiple fragments of ceramic toilet seats were found in rooms nearest to the Raphaelion and the ceramic assemblage from the fill appeared to fall within the AD 850–1500 time span (see below, Appendix 3 on the pottery). A 6th/7th century plate was found on a level corresponding to the Lower Church foundations. Significantly, ceramics from unit 3 proved to be much later (mainly Adams' Style N VI, AD 1150–1500)

The trenches produced some architectural debris from the Lower Church, including plastered stone elements with polychrome painting in some cases [Fig. 6]. A corner fragment of a sandstone lintel featured a *polychronion* (wish of many years) for King Abraham I of Dongola painted on the render [Fig. 7]. The Abraham mentioned in it was apparently the adopted son of King Zacharias, who was involved in a well known dispute with Bishop Kyriakos (Monneret de Villard 1938: 96–97). Abraham's ephemeral reign fell before the year 768, when King Kyriakos was reported on the throne in Dongola by the *History of the Patriarchs of Alexandria*. The find proves that the Lower Church II, reconstructed in



Fig. 6. Decorated architectural elements from the Lower Church found in the fill, the bottom one recut from a jamb into a lintel (Drawing A. Błaszczyk)

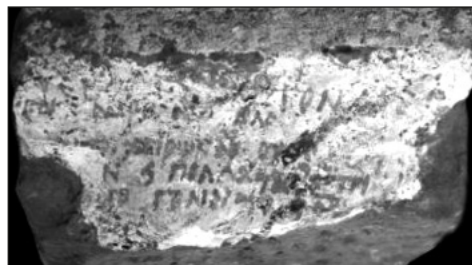


Fig. 7. Fragment of a plaster lintel with an inscription mentioning Abraham (Photo M. Jamkowski)



the mid 9th century by King Zacharias, was in use from the mid 8th century at the latest. It also suggests that the Lower Church II could have been built or embellished by King Abraham or at least plastered with a thick layer of lime render (of yellowish color, fading to greenish yellow) during his reign. Significantly enough, debris originating from this church has been found only in a single trial pit dug from the level of Upper Church construction, outside its northwestern corner.

#### TESTING OF THE ENCLOSURE WALL

In 2008, the stratigraphy and the building sequence of the southern stretch of the enclosure wall (Sectors VII, VIII and IX) were examined. Additional work complementing earlier investigations was done in Sectors IV (north gate), as well as II and III (northeastern tower). Most of the pottery recovered from these trenches could be placed in the 8th–9th century, but there was a 6th/7th century Red Ware plate coming from the foundation fill in the northernmost part inside the gate and at the other end of the spectrum, the later wares are represented by Adams' Style N VI (plates and vase mainly) and an 11th century amphora.

In Sector VII of the ramparts (western part of the southern stretch), fieldwork was aimed at elucidating the subsequent reconstructions of the girdle wall. Between Sector VII and Sector VIII the wall is strangely reduced in thickness and is founded on different levels. There appear to have been at least two stages of the remodeling, with an added coat on the outside being built on top of earlier structures, hence the difference in levels. Another tower was located parallel to the entrance

gate in the eastern part of the southern stretch of wall.

A chronological framework was established based on a study of the ceramics (see below, Appendix 3 on the pottery). The earliest assemblage features a 7th century handmade beer jar fragment with flaring rim. The fill above the foundations was investigated as two arbitrary levels, the lower one characterized by a collection of plates and vase of Adams' Style N V dated to AD 1000–1200 and a Style N VI plate from AD 1150–1500. The topmost layer was dominated by late amphorae from the 12th/13th centuries. The same chronological span was recorded in room 18, from a 7th century plate in the lowest section of the walls to Style N V plate from AD 1000–1200.

In Sector S, which is on the inside of Sector VII of the girdle wall, culturally sterile layers were reached 4 to 5 m below ground level, revealing two long units accommodating kitchen facilities (for a detailed report on this and the fortifications, see Drzewiecki 2011, in this volume). Deposits of layered ashes with burnt earth and kitchen waste filling most of the space originated mostly from an open-air kitchen located in between a round grain silo exposed in 2007 and the newly uncovered units. High walls sheltered the space against the wind. A huge amount of kitchen waste and ashes accumulated mostly on the leeward (i.e., southern) side of the courtyard. The ceramic sequence comprised assemblages from the 7th century (earliest layers) through the 11th–13th century (topmost layers). Finds included three glass bottles [*Fig. 3*] and a stone weight, which weighed in at four pounds.

Geophysical prospection helped to reconstruct the general layout of the

living quarters within the walls. More importantly the high intensity magnetic survey in the northwest and southwest corner units revealed no trace of any bastions. It appeared that the enclosure had been lightly defended from the riverside.

Excavations in Sector IX confirmed that the wall here was also doubled and the eastern coating was founded on the upper level. The abundant assemblage of ceramics from this trench was dated mainly to AD 850–1100, but spanning a period from the 6th/7th century (mostly of Red Ware bowls, plates, bottles and cups) through the 12th century (bottle and saucer of Style N VI, from approximately AD 1150).

A trial pit dug between the southeastern bastion and the east section of the girdle

wall produced evidence for the phasing of the fortifications, starting with heavily built defenses of the 7th century slowly deteriorating into a weak enclosure wall surrounding the church and settlement until the late 11th century. A red brick abutment, 4 m long and 1.50 m wide, was recorded reinforcing the southeastern bastion at the foundation level, suggesting considerable height of the bastion in question as well as a loose footing consisting of deposits made mostly of domestic waste and sand. A distinct layer corresponding to a huge conflagration was noted preceding the raising of the bastion itself. The ceramics found in the test pit suggest a late 12th century date at the earliest for the erection of the bastion.

## MAGNETIC SURVEY AND TESTING AT SELIB

The site of Selib occupies a location by the Nile palaeochannel that once separated Tanqasi island from the left riverbank. Upriver from this spot Meroitic potsherds were found scattered over a vast stretch of ground covered by dunes. Outlines of mud-brick houses can also be seen there. Both sites were tested during the two seasons in 2008.

At Selib, geophysical surveying revealed the existence of an unusual round structure some 8 m in diameter, located east of the central kom [Fig. 8]. Testing to verify the geophysical findings revealed a wall of unplastered red brick, shallowly founded, buried under 20 to 50 cm of sand.

Testing on the central kom, supervised by Jarosław Świącicki in February 2008, verified the results of the magnetic survey which had revealed substantive architecture. A trench 4 m by 1 m uncovered a pavement associated with a wall lying to the south of

an apse, part of which was cleared [Fig. 9]. The complex appears to be situated on a level about 2 m above the surrounding surface and there is every reason to believe that it stands on top of some earlier structure.

At present, based on analysis of pottery finds (see Appendix 3 on the pottery), the building can be assigned to the 11th–13th century(?). It was a church (built possibly on top of an earlier church) set within a walled enclosure of unplastered red brick. The girdle wall appeared on the surface as a row of loose stones; its width was determined based on the geophysical prospection and testing revealed it to be made of mud bricks laid in a regular pattern (the loose stones had been fill behind the outermost row of bricks and were deposited as found when the outer layer of bricks was washed out).

Shallow troweling on the site of the Meroitic potsherds, authorized by the NCAM, gave an idea of the architecture in

this extensive settlement [Fig. 10]. The core is formed by a huge rectangular structure composed of a set of small rooms arranged around a central yard. It was built entirely of mud brick and provided with an entrance

in the northern (shorter) wall. Sherding gave a date in the 1st–2nd century AD (see Appendix 3 on the pottery).

The discovery of this huge settlement site in the heart of the Dongola Reach

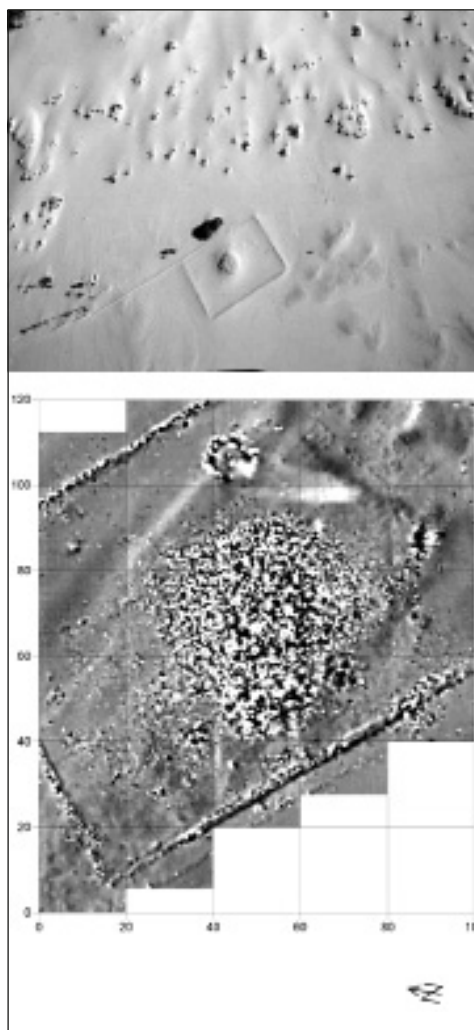


Fig. 8. Aerial kite view of the Selib church site (top) and magnetic map of the enclosure (Photo B. Żurawski, magnetic map processing T. Herbich)



Fig. 9. Features excavated in the test trench at Selib (Photo B. Żurawski)



Fig. 10. Aerial kite view of the Meroitic site at Selib (Photo B. Żurawski)

came as a surprise in view of a virtually complete lack of Meroitic remains in the region. Meroitic sherds had been recorded during an earlier survey of Selib in 2003 (Żurawski *et alii* 2003: 166), but the extent of the site is astonishing. The quality of the fine wares from the surface collection,

in context with the large building complex, suggests an important center, commercial or administrative, or both.

The site is in need of protection measures to preserve it, as it is open not only to wandering sand dunes, but also to heavy road traffic passing through this flat terrain.

## APPENDIX 1

### REVITALIZATION PROJECT AT BANGANARTI

Bogdan T. Żurawski

A grant from the Polish Ministry of Foreign Affairs, allocated as part of the Polish Aid to Africa program, was used to revitalize the site by building a museum and establishing an archaeological zone around the site. It is expected that a growing flow of tourists could benefit local villagers in much the same way as pilgrims did in antiquity (market for local souvenirs, guidance, catering, transport services etc.). The first phase of the so-called Raphaelion

Project was carried out in the 2008 season. The objective was to raise a 1:1 scale model of the southeastern corner dome made of steel pipes by a local welder (supervised by Michał Mirecki [*Fig. 11*]). Part of the exterior of the building of the Raphaelion was plastered with good quality lime, as was also the church interior. Dividers were reconstructed together with the original pilasters in the western part. The project will be continued in future seasons.



*Fig. 11. Computer generated model of the corner dome in the context of the standing shelter (left) and the final stage planned for 2012 (Photo B. Żurawski, model W. Chmiel)*

## APPENDIX 2

# BANGANARTI CONSERVATION REPORT (JANUARY–FEBRUARY AND NOVEMBER–DECEMBER 2008)

Dorota Moryto-Naumiuk,<sup>1</sup> Bogdan T. Żurawski<sup>2</sup><sup>1</sup>Warsaw, <sup>2</sup>Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences

Further work was concluded on the conservation and restoration of the murals in both the Upper and Lower Churches and experiments with the render for the restoration of the walls of the Raphaelion (Upper Church) were continued. Preparations for mounting of a 1:1 model, made of iron piping, of the dome over part of the building comprised extension of the corrugated iron roof over the northwestern corner and part of the southeastern corner and sealing of the existing roof with cold bitumen to protect the rivets and screws. The walls were raised to one level. (For the finished model dome installation, see Appendix 1 above).

## UPPER CHURCH

Maintenance monitoring appraised the need for repairs on the southern face of the pillar separating Chapels 3 and 4. Some fragments of plaster with the lower part of a mural had chipped off due to the lack of bondage between the original wall (with the mural) and a later abutment built to absorb the pressure of a subsiding vault. The collapsed plaster fragments were collected and cleaned of crust and accumulated deposits, as was also the face of the wall. Injections of liquid PRIMAL AC33 diluted 10:1 in water were used to consolidate the plaster which was affixed to the wall with new mortar (2 parts lime : 2 parts mud : 3 parts sand with addition of PVA).

A similar abutment terminating the pillar between Chapels 4 and 5 was dismantled in order to protect already preserved fragments of murals from a similar fate as that which met the polychromed plaster from the pillar between Chapels 3 and 4 and to enhance the view of the main chapel which had no matching abutment on the other side (it was found already collapsed). Dismantling of this structure had the additional strength of permitting further excavation in the Lower Church (especially the passage behind the apse and northern *pastophorium*). The inscriptions and graffiti on this abutment were transferred to a newly built pillar using the *stacco* method (see below).

The paintings in Chapel 1 were cleaned of dust and steps were taken to counter the powdering of the paint layer. A 2% solution of PARALOID B72 in toluene was used to impregnate the painting on the west wall of the apse, while the voids and cracks were injected with PRIMAL AC33 diluted 1:8 with water. Bands of mortar (2 parts lime : 2 parts mud : 3 parts sand with PRIMAL E330) were added reinforcing the edges of the painting. On the north wall injections were made with same injection liquid and mortal putties filled the bigger gaps. Powdering paint layer on the south wall was treated as a test with gum Arabic in very weak water solution.



In the other chapels similar treatment was undertaken:

- **Chapel 6:** 2% solution of PARALOID B72 in toluene applied to powdering paint layer after cleaning off the dust and dirt;

- **Chapel 7:** Mortar bands (2 parts lime, 2 parts mud, 3 parts sand with PRIMAL E330) reinforcing edges of paintings on the east wall; putty similar in composition to the original plaster filling parts with decayed plaster; bigger gaps and cracks filled with PRIMAL AC33 water dispersion (1:8);

- **Late pillar** between Chapels 12 and 13: bonding of late plaster on south wall with injections of PRIMAL AC33 water dispersion (1:8); the biggest gaps injected with liquid made with lime, soft sand and PVA and pressed to the wall with stamps. Cavities filled with mortar and edges of plaster supported with mortar bands. The surface of the pillar was then cleaned with combined water and alcohol (1:1);

- **New mortar plaster** on the lower part of this pillar was introduced to support the original fragments higher up;

- **Late pillar** between rooms 13, 14 and 15: Injections of a PRIMAL AC33 water dispersion (1:8) were made to tie the plaster layer to the wall wherever voids had appeared. These parts were stamped for the duration of the gluing process. New mortar was applied on the lower part of these pillars;

- **Wall** opposite Chapels 3 and 4: Injections of a PRIMAL AC33 water dispersion (1:8) bonded the loose plaster to the wall; the biggest gaps were injected with a liquid made of lime, soft sand and PVA and pressed to the wall. New mortar filled the voids and bands of the mortar supported edges of the plaster.

In both seasons in 2008, attention centered on transferring inscriptions from

pillars of the Upper Church which had to be dismantled to permit explorations of the Lower Church. This concerned the pillars ending the dividers between Chapels 4 and 5, 5 and 6 and 6 and 7. The *stacco* procedure was applied for the purpose. By this method the limewash layers are first consolidated with a 2% solution of PARALOID B72 in toluene. Then a double layer of Japanese tissue paper is used to face the surfaces, glued on with KLUCEL G (about 6 big spoons per 1 liter of water) mixed 1:3 with skin glue (diluted 1:7 in water) or just skin glue in the same dilution. This is followed with one or two layers of polyester fabric (including mosquito nets). These thin and strong fabrics have been found to be better than the commonly used cotton and linens, which owing to their thickness hinder glue migration to the wall. The edges of the fabric were fixed to wooden frames and tied up to the pipes of the shelter roof, thus holding up the adhering plaster as the gradual process of cutting away the bricks from the back proceeded one by one (the bricks proved to have been reused in these late additions).

The plaster with inscriptions was placed face down on an iron mesh. The backing was worked to obtain a thin flat layer. Next water with alcohol was applied to diminish surface pressure, followed by MOWILITH DMC2 water dispersion (1:10). A glass fiber net was then attached with a mixture of pow (1:1 with water with coarse sand). The transfers were prepared for mounting on the wall and two were actually fixed in place using lime mortar strengthened with glue applied to the backing. Stamping supported the fragments in place during the drying process.

Once the transfer had dried, the facing was removed with water and alcohol.

Water with alcohol and pure technical ethanol were used to remove all glue residue. Liquid MOWILITH DMC2 water dispersion (1:10) was applied wherever the limewash layer had lost adhesion. The transfers were supported by mortar bands which fixed the edges of the glass fiber net to the wall.

The original mud-plaster coat from the first phase of the Upper Church was cleaned mechanically using lancets, brushes and glass fiber sticks, revealing faint traces of paintings underneath which were also treated.

#### LOWER CHURCH

A new painting was discovered on the north wall of room 18, alongside new sections of known paintings on the west wall. Soil, dirt and dust were brushed off the surface of the murals mechanically. Subsequently,

the paint layer was consolidated with a 2% solution of PARALOID B72 in toluene. This treatment was repeated three times.

Injections with PRIMAL AC33 water dispersion (1:8) were made to consolidate the lime plaster layer. Bigger cavities were filled with a mortar putty (2 parts lime, 2 parts mud, 3 parts sand with PRIMAL E330) and the edges of paintings were supported with mortar bands.

#### TRIAL PIT NS1

Parts of a sandstone cornice with fragments of gypsum plaster with inscriptions on it recovered from the trench required gentle cleaning with very soft brushes owing to the fragility of the gypsum surface layer. The layer was subsequently impregnated with a 1% solution of PARALOID B72 in toluene. This treatment was repeated a few times to consolidate the layer.

## APPENDIX 3 OVERVIEW OF CERAMIC STUDIES AT BANGANARTI IN 2008

Dobiesława Bagińska

Archaeological Museum in Poznań

More than 800 of the over 3000 sorted sherds were documented and illustrated. The time span covered by the ceramics extends from the 6th to the 13th century. The overview is broken down by trenches.

#### BANGANARTI

##### Lower Church: Room 18

Large assemblage of 6th/7th century superimposed on culturally sterile sand and mixed with architectural debris. Mostly “beer jars” with flaring rims, *gawadis* and

the most abundant, amphorae produced in the Dongola kilns.

##### Lower Church: eastern passage behind apse

Amphorae in layer starting 1.50 m beneath the floor of the Upper Church, density of sherds growing toward the bottom where the assemblage consists almost exclusively of broken bricks and potsherds. The material comprises beer jars and *gawadis*, virtually identical with the set from LC Room 18, dated to the 6th/7th century AD.

### Test pits along north and south facades of Upper Church

The most ceramics came from the easternmost section of the northern pit (no. 3), possibly because of the proximity of the living quarters which come up almost directly to the church. On level with the Upper Church foundations, the pit contained a substantial variety of Adams' styles N IV (AD 850–1100), N V z1200) and N VI (AD 1150–1500).<sup>1</sup> The lowermost section, especially pit N3, produced some good specimens (plate and bowl fragments) of 6th/7th century wares. The make-up of different forms, as well as the chronological appropriation of wares is roughly the same in both pits.

### Sector S: Rooms 8 and 2

Bottom parts and knobs of *gawadis*, containers of *tisht* type, late (flat-handled) amphorae, pilgrims bottles, *dokat* etc. attributed to Adams' Style N V (AD 1000–1200) and N IVA (AD 850–1100) and consequently dated to AD 850–1200.

### Sector S: Room 9

Table red and orange wares (plates, bowls, bottles), extensive quantities of handmade cooking pots, *gawadis*, storage vessels, dated according to Adams' chronology to Style NV (AD 1000–1200).

Sample of 6th/7th century wares with red wares predominating, found in the layer above the red brick pavement (superimposed directly on culturally sterile sand) in front of the red brick arch that was also raised on culturally sterile sand (similar to ceramics from Old Dongola: plates and bowl with ledge rim, Samian wares).

### Sector S: Room 12

Wheel-thrown vessels (bowls and plates, *gadás* bottoms) and handmade forms (cooking pots, *dokat*, bowls), all belonging to Styles N IV and N V (AD 850–1200).

### Sector S: Room 1

Table wares (plates, bowls and cups) of red and orange wares, virtually all representing Styles N V (AD 1000–1200) and N VI (AD 1150–1500).<sup>2</sup>

### Sector S: Room 6

Wheel-thrown forms comprising bowls, bottles, plates of red and orange ware. Handmade forms include bowls, *dokat* and pots. All dated analogical to forms of Adams' Style N IV (AD 850–100).

### Sector E/2010

Huge quantities of handmade vessels (bowls, *dokat*, pots, storage vessels etc.) apparently thrown away outside the walls. Plentiful animal bones. Wheel-thrown ceramics represented by *gawadis*, *tisht* containers, amphorae, late beer jars, small bowls (red and orange), bottles etc. Associated with Adams' Styles N IV and N V, roughly datable to AD 850–1200.

### Unit E

Huge assemblage of ceramics contained within the time span of AD 850–1500. Highlights included two specimens of Adams' Style N IVA, i.e. vase dated to AD 950–1050 and bowl dated to AD 850–1100. The first (topmost) mechanical layer provided a vase of Style N VB dated to AD 1000–1200 and a plate datable to AD 850–1000. The level of the foundation of the Lower Church yielded a 6th/7th century plate. A plate of Style N V was

<sup>1</sup> Style N VI was found in a layer which accumulated mostly when the church was already built. However, the stratigraphic evidence recorded mostly in the northern trial pits is strongly indicative that some wares contained within Adams' Style N VI should be dated earlier, i.e., to the first half of the 11th century.

<sup>2</sup> The dating of this pottery (based on Adams' chronology) seems to be too late for this assemblage; AD 1000–1200 seems to be more appropriate.

found together with a ceramic toilet seat, whereas Room 1 yielded a collection of Style N V plates and bowls, all dated to AD 1000–1200. The ceramics found in Unit 3 were much later. The potsherd collection was dominated by Style N VI vessels dated to AD 1150–1500 (one with a hitherto unknown decorative pattern.)

### SELIB

All forms from the Meroitic compound were from the 1st and 2nd century. The church site produced amphorae, storage vessels and cups datable to AD 1300–1500 (Adams' style N VII). The earliest possible date for these forms is AD 1250.

### SUMMARY

Testing in the Lower Church in 2008 produced a particularly rich repertoire of

ceramic forms, including a fine collection of fragmented 6th/7th century ceramics consisting of handmade jars with flaring rims and Red Ware amphorae made most probably in the Dongola kilns (trial pit LC4) and Red Ware bowls and amphorae, as well as classic (Adams' N IVA) bowls and vases (trial pit LC3) dated to AD 850–1100. One vase(?) belonged to Style N III dated to AD 650–975.

Older material was found in the debris above the partly dismantled pavement, whereas later potsherds were distributed throughout the superimposed strata, up to the pavement of the Raphaelion. The 11th century date for the Upper Church (Raphaelion) has now been confirmed. 48 local fabric types were identified and samples of all kinds were taken for petrographical analysis.

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