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Saqqara 2010-2011

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SAQQARA 2010–2011

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with appendix by Zbigniew Godziejewski²

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Abstract: The main purpose of excavations in 2010 was to complete the exploration of the area located between the enclosure of the “Step Pyramid” and the eastern edge of the “Dry Moat”. New burials from the Ptolemaic period were discovered in the Upper Necropolis layers and investigations were undertaken in some Old Kingdom tombs. In 2011, the mission limited its activities to conservation and studies of the finds. A detailed conservation report is appended.

Keywords: Saqqara, geoarchaeological research, Dry Moat, copper tools, mummies, burials, Old Kingdom, Ptolemaic, conservation

The Polish–Egyptian archaeological mission continued its work in Saqqara, concentrating activities in two successive seasons, in 2010 and 2011, on the area adjacent to the Djoser pyramid enclosure from the west. Excavation in the first of the two reported seasons (no excavations were undertaken in 2011 owing to the volatile situation following the events of the Arab Spring) was limited to the area that was going to be the subject of publication in the fifth volume of the *Saqqara* series (Kuraszkiewicz 2013; Welc, Trzeciński *et alii* 2013). It comprised the southern part of squares 1808 and 1809, where exploration had not been finished in 2009 (Myśliwiec 2012: 164, 166–167, Fig. 6).

Conservation work was continued both on site and in the SCA storerooms in Saqqara. The main target on the site were the decorated cult chapels of Merefnebef and Nyankhnefertem, where the weak

structure of local rock and unending salt efflorescence pose a continuous threat to the reliefs and paintings. A few small objects discovered during the excavations this year as well as finds from previous seasons were also conserved. In 2011, by decision of the authorities of the Supreme Council of Antiquities, only conservation tasks were addressed.

Geoarchaeological research was aimed at an analysis of the relation between the natural environment and socio-cultural development, based on observation of the strata visible in various parts of the excavated site (Myśliwiec, Welc, Trzeciński 2012).

Studies were carried out on groups of objects discovered in this and previous campaigns, specifically those that were going to be published in the *Saqqara V* volume: anthropological material, Old Kingdom pottery and a diversity of small objects.

ARCHAEOLOGICAL ACTIVITIES

The aim of the excavations in 2010 was to finish exploration of the funerary structures discovered in previous campaigns [*Figs 1, 2*], among others, four shafts, two of which were located on the lowest plateau, adjacent to the eastern façade of the Dry Moat (Shafts 50 and 117), and two others found in front of Corridor 2, hewn in the façade (C2/18 and C2/20) [see *Figs 1, 2*].

Particularly interesting were the discoveries made in Shaft 50, situated in square 1909 [see *Fig. 1*], which was excavated in 2009, except for the burial pit hewn in the floor of its burial chamber. Upon discovery, the pit was covered with a massive limestone lid (measuring 2.04 m by 1.18 m, 0.26 m thick), which had been broken by robbers. Inside the pit, a disturbed burial (No. 604) was found,

Team

Dates of work: 15 September–21 October 2010; 1–23 September 2011

Director: Prof. Karol Myśliwiec (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences; 2010, 2011)

SCA representative: Wahiba Saleh Ahmed (2010); Mohamed Hussein Mohamed Hendawi (2011)

Egyptologists: Dr. Kamil O. Kuraszkiewicz (Institute of Archaeology, University of Warsaw; 2010, 2011); Dr. Fabian Welc (independent; 2010)

Archaeologists: Agnieszka Kowalska (independent; 2010); Małgorzata Radomska (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences; 2010, 2011)

Egyptologist/ceramologist: Dr. Teodozja I. Rzeuska (Institute of Mediterranean and Oriental Cultures, Polish Academy of Sciences; 2010)

Geologist: Dr. Jerzy Trzciniński (Faculty of Geology, University of Warsaw; 2010)

Anthropologists: Prof. Dr. Andrew Chamberlain, Iwona Koziaradzka-Ogunmakin (both University of Sheffield; 2010)

Archaeozoologist: Prof. Salima Ikram (American University in Cairo; 2010)

Architect: Beata Błaszczuk (freelance; 2010)

Conservators: Zbigniew Godziejewski (National Museum in Warsaw; 2010, 2011); Magdalena Abramowska (freelance; 2010); Urszula Dąbrowska (freelance; 2011); Amr Abdelfatah Abdelsamia Shakel (Supreme Council of Antiquities, Cairo; 2011)

Photographer: Jarosław Dąbrowski (freelance; 2010)

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Our *rais*, Mr. Sayed Kereti, was very efficient, as usual, and we all owe him a debt of gratitude for his devotion to our work.

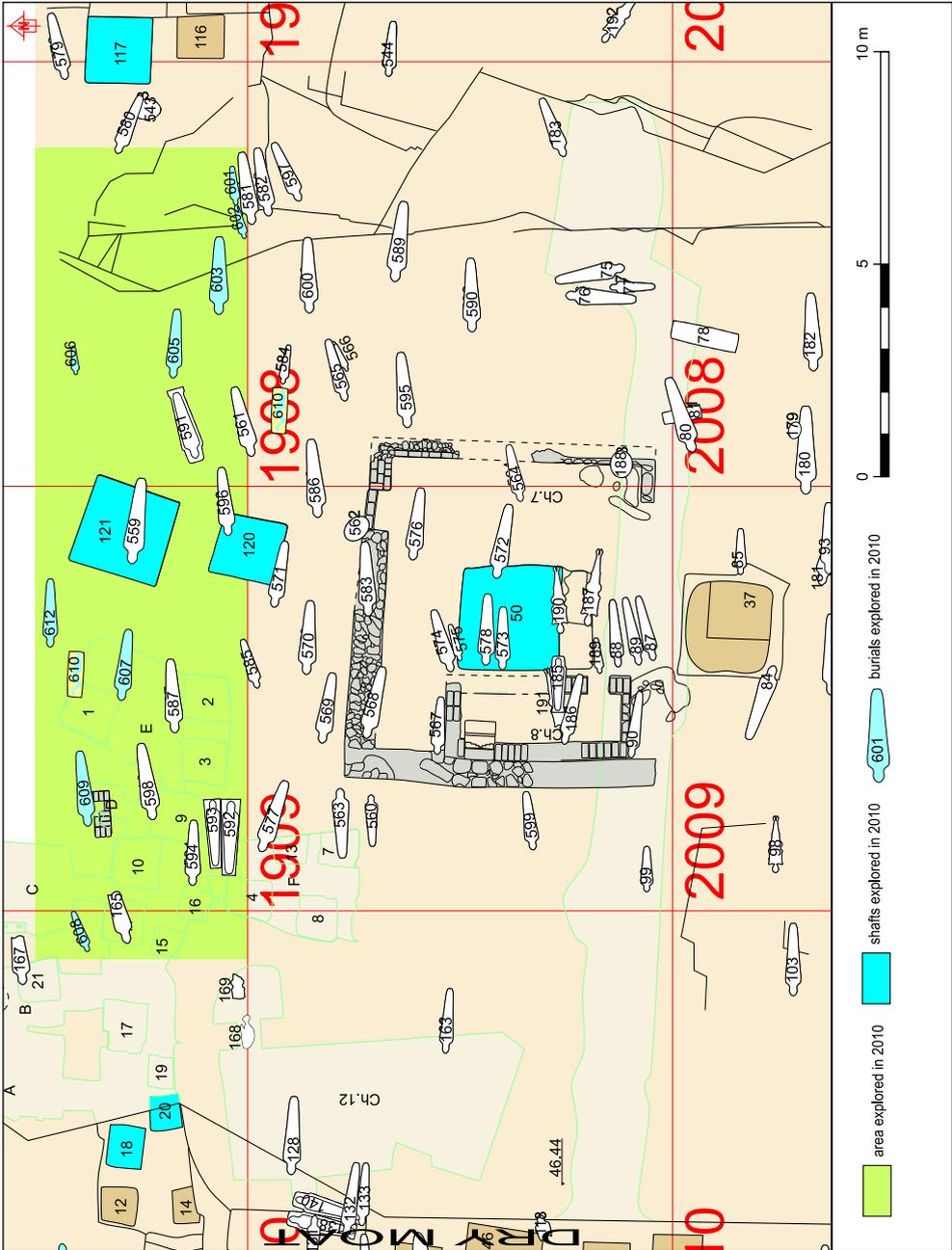


Fig. 1. Plan of the area explored in 2010
(Drawing B. Blaszczyk)



Fig. 2. View of the excavated area from the west at the beginning (top) and the end of fieldwork in 2010 (Photo J. Dąbrowski)

covered with a layer of mud deposited by water. On the bottom of the pit there was a set of at least 31 miniature copper objects [Fig. 3]: 22 chisels, four axes, three adzes, a small spouted vessel [Fig. 3, top], one fragmentary bowl and a number of

unidentifiable small fragments. Most of these objects were found broken and were restored, a task which will be completed in successive seasons.

A layer of *dakka* in a strip 5 m wide (N–S) and 17 m long (E–W) was explored down to bedrock (squares 1808 and 1809, see Figs 1, 2). Eleven burials in this area had already been explored in 2009 (Myśliwiec 2012: 163–167). In 2010, ten new burials of the Upper Necropolis were unearthed (Nos 601–603, 605–610 and 612). All of these were oriented East–West, their heads toward the west, except for two burials (Nos 609 and 610), which had heads to the east [Fig. 4]. Most of these burials were mummified (the only exception being



Fig. 3. Miniature copper tools found in the burial pit of Shaft 50; top, close-up of small spouted vessel from the deposit (Photo J. Dąbrowski)

Burial 610); there were four mummies of children among them (Nos 601, 602, 606 and 608). One burial (No. 610)

contained a body laid in a rectangular reed coffin. All human remains were subjected to anthropological examination.

STUDIES

Besides the usual examination and documentation of the anthropological and ceramological material, as well as various groups of small objects from current and previous excavations, there was an extensive geological study of the archaeological strata visible in various sections all over the excavated area. This study turned out to be particularly telling on the lowermost rock-hewn platform adjacent to the eastern border of the Dry Moat. Traces of tools, as well as cracks and rifts left in the process of extracting stone, proved that this area was originally used as a stone quarry (Welc 2011). The lowermost strata, containing black-

colored mud bricks, stone chips, blocks with painted marks, and *dakka* with a great deal of potsherds, proved that the quarry was used in the times of the Third Dynasty, most probably as a source of stone for the pyramid of Djoser or its gigantic enclosure wall. A sequence of irregular steps hewn in the rock and leading eastwards to the next platform, located approximately a meter higher up, must be interpreted as a track used by stonemasons for transporting blocks to the pyramid. Parts of the rock surface on both the lower and the upper platforms were overlaid with dark mud or a brick layer, proving that some features of the quarry



Fig. 4. *Burial 609 from the Ptolemaic period in the Upper Necropolis*
(Photo J. Dąbrowski)

may have been reused for other purposes, possibly ritual, right after or a short time after stone had been extracted.

In this context it is important to observe that the rock-hewn Corridor 1 ending in a chamber containing two deposits (wild animal bones and the unique wooden harpoon which is now in the Imhotep Museum) was correlated with a rock-hewn ledge separating the

two lowermost platforms of the quarry from one another. This would confirm an earlier assumption that some of these early, very fragmentarily preserved walls in the ex-quarry may have belonged to the superstructure of a ritual complex encompassing the subterranean crypt, perhaps as early as in the times of the Third Dynasty, and not only later (Sixth Dynasty), as supposed previously.

APPENDIX

CONSERVATION WORK

Zbigniew Godziejewski

National Museum in Warsaw

Conservation activities in both seasons were concentrated on the two decorated chapels (those of Merefnebef and Nyankhnefertem) and on artifacts discovered in fieldwork past and present. In 2011, following the unrest of the first few months of the year, the team checked the condition of all the structures unearthed in previous campaigns. Both decorated tombs, sealed at the end of the 2010 campaign, were intact. The reliefs and paintings inside these chapels had not suffered any damage and their state of preservation indicated that the methods used for their conservation had been appropriate. Intruders had only displaced some loose mud bricks in the eastern chapel of the tomb of Merefnebef, as well as some red bricks from the ceiling built by the mission above the iron roof blocking the mouth of the shaft behind the chapel of Ikhy/Meri, at the western end of the site. In both cases, reparation of the damage was easy and was accomplished at once.

FUNERARY CHAPELS

An inspection at the beginning of the 2010 season, checking for the quantity and type of efflorescences and the resultant number and type of detachments, cracks, peelings etc., revealed progressing stabilization of the state of preservation of the chapels of Merefnebef and Nyankhnefertem. In chapel 15 (Nyankhnefertem), large spaces were covered with salt efflorescences in the form of tiny crystals constituting a thin layer covering the surface of the rock (e.g., southern part of the west wall), less frequently that of mortars or polychromy. This type of salt concentration does not cause major damage, such as broad detachments or cracks of the painting layer. Only in a few places did salt crystals, growing below the surface of the painting, cause rifts in the painting layer. These were mounted to the background once the efflorescences had been removed. Part of the salt concentrations (e.g., in the lower part of the walls and on the ceiling) had

become connected to the polychromy and stabilized during consolidating procedures and their removal now is impossible. Efflorescences that appeared after the season in 2009 were removed mechanically (hard brushes, scalpels). As a matter of fact, these conservation issues and procedures are similar with respect to the interior and the facades of both chapels.

Detachments of the painting and mortar layers, found on very limited surfaces, were mounted with PRIMAL E330 in water solution (8%) following procedures described frequently in previous reports. No major salt concentrations were observed in the chapel of Merefnebef. Small spots (1–3 cm²) were infected by efflorescence (needle tuft) in no more than 10 places, mainly on the northern and eastern (at its northern edge) walls, much less in the southern part of the chapel.

Detached and peeling places, which were numerous, but mainly small-scale, were mounted with a water solution of PRIMAL E330 (8%). They were most frequent in the northern part of the chapel. Wherever growing salt needles or lumps had caused detachment, the efflorescences were removed first, after which the detached layer was mounted to the matrix. Larger detachments had appeared on the figure of the vizier (head) represented on the east wall of the chapel, in the northeastern corner. These rifts were doubtless caused by erosion of the rock surface and crumbling of the old lute. Neither salt efflorescences nor major deformations of relief surface were observed.

Inspection again in 2011 showed a thin layer of fine-grained salt covering the surface void of polychromy in the chapel

of Merefnebef. It was loosely connected with the background. Parts of walls that had lost their painted surface were not dripped with consolidation agents during previous campaigns, the purpose being to direct new salt concentrations toward areas deprived of painting. Some salt efflorescences of limited size (diameter up to 1 cm) and composed of hard, richly ramified crystals had appeared in a number of places inside the chapel and on its facade. These efflorescences were removed with hard brushes and, wherever necessary, scalpels.

The polychromy was observed to be detached on small surfaces (1–3 cm²), but the fragments did not tend to become crushed and fall off. All were mounted to the rock matrix using a water solution of PRIMAL E330 (7–8%) operated with syringes and small brushes. This treatment was made in two stages, according to the procedure described in previous reports.

Some empty spaces were formed between the polychromy layer and a thin stratum of the rock as a result of rock disintegration. These spaces were filled with a mixture made on the base of PRIMAL AC 33 (water solution ~10%) with mineral dust filler (made by Remmers), calcium carbonate and pigments.

The salt efflorescences found on the walls in the chapel of Nyankhneferterem generally resembled those in the chapel of Merefnebef. However, salt concentrations in this chapel were not as intensive as those in the chapel of Merefnebef, particularly those observed in the northern part of the facade. The surface of the walls was cleaned and salt crystals were removed with brushes and scalpels.

CONSERVATION WORK
IN THE STOREROOM

In 2010, the objects subjected to conservation included elements of the cartonnage from Burial 37, a canopic box from Burial 509 and the crown of a figurine of Ptah-Sokar-Osiris from Burial 564, as well as two wooden coffins (B.53=S/98/3P and B.37). In 2011, work continued on the cartonnage from Burial 564, as well as cartonnages from Burials 406 and 37. Some of the stone objects in storage also required attention. Most importantly, however, the storeroom with registered objects from previous campaigns had not suffered in the aftermath of the “Arab Spring” and no objects were found missing.

The two coffins had been treated comprehensively in 2009 and monitoring a year later revealed the need for some additional mounting of the detached painting layer. In view of the poor condition of the wooden matrix, MOVILITH 50 in a solution of acetone (~20%) was used for the purpose. Loose fragments of the painting layer were reinforced with a solution of PARALOID B82 in ethyl alcohol and water (9:1), and then, wherever necessary, mounted to the wooden matrix by means of a water solution of PRIMAL AC33 (~10%). Similarly in the case of the canopic box (B.529) and the crown of a figurine representing Ptah-Sokar-Osiris (B.564), the polychromy was found to be stable on the whole following treatment in earlier seasons. Some fragments needed to be reattached to the matrix and for this purpose a water solution of PRIMAL AC33 (~10%) was used.

As for cartonnages, two elements from Burial 37 underwent further

treatment. The open-work shin-bone lap was mounted on a secondary matrix in order to stabilize numerous small, moving fragments. A solution of PARALOID B82 (~12%) in a mixture of alcohol and water (9:1) was used as a binder. The structure of the rectangular plaque was reinforced by dripping it with a thin solution of PARALOID B82 (~3%), as above.

The treatment of the cartonnage from Burial 564 continued (for earlier conservation, see Godziejewski 2012: 170–172, Figs 8–9). The first step was to remove sand, which had got attached to the cartonnage during the exploration of the burial *in situ*, when the remains of the object were fortified with PARALOID B72. Acetone, scalpel and glass fiber were used for this task. With the help of various dissolvents (alcohol, acetone), the position of the scales was corrected in order to place them on one common surface. Remains of original bandages were removed from the inner surfaces of many fragments, in order to prepare them for mounting on a secondary matrix. Cotton-gauze and MOVILITH 50 (polyvinyl acetate) were used as the binder, as in similar cases. Fitting elements were recomposed and mounted together on another gauze, whereas tiny fragments of scales were grouped according to color and decoration pattern, thus reconstructing larger parts. These were mounted with their decorated face to Japanese tissue, using polyalcohol (polyvinyl alcohol), after which it was fixed on gauze (using PARALOID B72 in acetone).

Some moving scales on elements of cartonnages from Burials 406 (six) and 37 (three) had to be re-mounted using PARALOID B72 or

MOVILITH 50 (depending on individual size of the detached piece).

Stone objects were cleaned and the covering dust removed, revealing some slight powdering or peeling of the surface in the case of offering table S/98/1p, inscribed fragment S/99/40P.

A+B and offering table S/05/15. The incremented peeling places were dripped with a solution of PARALOID B72 in acetone (~7%) for better adhesion. Powdering surfaces were repeatedly secured with a thin (~3%) solution of PARALOID B72 in acetone.

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