

CONSERVATION ACTIVITIES SAQQARA 2006

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THE ROCK-HEWN OLD KINGDOM CULT CHAPELS

The deterioration of the condition of decorated walls in the cult chapels of Merefnebef and Nyankhnefertem due to heavy rains in early 2005, noted during the previous season, prompted a thorough examination of the chapels and the anonymous Chapel 16 (cf. Myśliwiec 2004: 112, Fig. 1) at the beginning of the present season. Fortunately, rains had not been as severe earlier this year. Even so, the state of preservation differed in the three chapels.

Salt concentration on the walls of the chapel of Merefnebef was insignificant, localized in various parts of the structure, including the façade and unfinished chapel located to the south of it. They do not constitute any danger to the preservation of the polychromy. Nearly no salt concentration appeared in Chapel 16. In Chapel 15 (Nyankhnefertem), however, a layer of salt 2 cm thick covered the surface of the southern part of the west wall, to the right, behind the entrance. Considerable salt concentration was noted also on the other walls, particularly in the 30 cm zone immediately below the ceiling and in the 1.00-1.20 m zone above the floor. The concentration of salt on the ceiling does not appear to have changed, but it was still very dense, the salt crystals impossible to remove without damaging the polychromy. Detachment of the

painting layer was observed on large parts of the ceiling. The conservation treatment applied in 2005, aimed at saving the decoration of the ceiling, has obviously been insufficient and had to be continued in the present campaign.

It is now clear that the heavy rains which lasted for several days in February 2005 are still having an effect. Water had gathered excessively in a hole above the roof of Chapel 15, seeping deeply into the rock, the structure of which, as well as the many rifts in its thickness have facilitated absorption in considerable quantity. Protection introduced by the mission in the previous and present campaigns – roofing over the chapel (in 2005), refilling of all rock cavities with sand, evaporation of excessive humidity inside the chapels – should help to normalize the situation. Still, there is a positive aspect: the high concentration of salt in the atmosphere inside the chapels allows no mildew fungi to grow.

METHOD APPLIED IN THE CHAPELS

Salt from the walls of Chapel 15 was removed mechanically with thick brushes and scalpels. Soft brushes were used on salt appearing on the surface of the painting. The salt was not allowed to fall to the floor and was subsequently taken out of the chapel.

Numerous detachments of both the ground and polychromy were mounted with a solution of PRIMAL E330 in water (c. 8%), after each spot in question had first been softened with a mixture of alcohol and water (1:1). Syringes and brushes were used for this procedure. The ceiling was subjected to similar treatment, although in this case only preliminary. The polychromy was mounted with PRIMAL E330 (as above) after removing salt crystals from underneath the detached scales. Parts with preserved polychromy were subsequently overlaid with a solution of PARALOID B72 (produced by Rohm and Haas, USA), c. 12%. Successive parts of the ceiling were first moistened with ethyl alcohol.

Five fragments of polychromy originating from the northwestern corner of the chapel of Nyankhnefertem, found on the surface of the debris upon discovery in 2003 (Myśliwiec 2004: 114-120; Godziejewski 2004: 127-129), were now mounted on the northern part of the west wall. They belong to the face of the figure represented in the upper register, the hieroglyph w found in the same register, and the necklace of the large-size figure of the tomb owner represented on the north wall (Godziejewski 2004: 128, Figs 1-2). Given that the rock substance had crumbled away in these places, it proved necessary to apply a pasting mortar to fill the missing parts. The mortar was produced based on PARALOID B72 (Rohm and Haas, USA), calcium carbonate and a pigment (natural sienna).

Detached fragments were mounted in the chapel of Merefnebef as well, after removing the salt concentration from both the façade and inside the chamber. These fragments are quite numerous, but their surface usually very tiny. Exceptions necessitating larger surfaces to be mounted concern the face of Meresankh on the north

wall of the doorway (Myśliwiec *et alii* 2004: Pls XVIIa, XLII and XLVI d-e), and a fragment of polychromy in the southern part of the façade. In the second case, it was necessary to use a watery lute (using PRIMAL AC33 with mineral flour made by Remmers, and pigments) injected with a syringe in order to fill the empty space underneath the polychromy preserved on an extremely thin layer of rock. A PRIMAL E330 water solution, c. 8%, was generally used for the mounting. The procedure was the same as in the tomb of Nyankhnefertem.

Remains of whitewash preserved in the cavities between the vessels represented in relief on the offering tables (Myśliwiec *et alii* 2004: Pls XLIX, LIV, LXII, LXXII and LXXVIa-b) were also subject to conservation treatment. They were reinforced by repeated dripping with PRIMAL E330 (water solution, c. 8%).

Also mounted was a part of the ceiling foliating horizontally in the southwestern part of the chapel near the false door. It was additionally luted down to the deepest accessible level. The substance was prepared based on PRIMAL AC33 (water solution, c. 10%), adding mineral flour made by Remmers, some desalted and sieved sand (1:1), as well as natural sienna for coloristic homogeneity.

Corrections on the mounting and luting were introduced in some parts of the rock preserving the remains of polychromy on the upper part of the south wall of the chapel of Merefnebef, and specifically on a fragment removed in 1997 and mounted one year later (Myśliwiec *et alii* 2004: Pl. LXIXf). The rifts between its components, as well as its edges, were filled with the kind of substance described above. Empty spaces noted in some places underneath this fragment have also been filled. The cracks around the mounted part

of the rock were treated similarly. The aim of this procedure was to reinforce the stability of the decoration in this part of

the wall and to make the relief clearer by eliminating the dark rifts overshadowing the preserved parts of the polychromy.

OBJECTS

Burial 483, found in a wall niche of Shaft 18, contained a mummy in a cartonnage, a wooden Canopic chest with painted surface, found lying on one side, its lid with a falcon figure, and a wooden statue of Osiris-Ptah-Sokar with rectangular base also preserving polychromy (cf. above, report by K. Myśliwiec in this volume). The feather crowns of the falcon and the Osiris-Ptah-Sokar statuette were found separately; the first was lying on the chest, the other in the debris.

The cartonnage was in very poor condition and it was covered with rock debris from the ceiling of the niche. The extensive powdering of the polychromy made it difficult to remove this debris thoroughly. The cracks on the gilded mask had caused it to collapse inside. Particular elements were faded and disintegrated at the very touch. The foot part retained the polychromy in a less powdered condition, but cracked in many places instead and falling away in large flakes. A general disintegration of subsequent technological layers was observed.

The painting covering the chest and the statuette of Osiris-Ptah-Sokar was also powdered to some extent, and tended to become detached. However, the wood of both objects, the statuette especially, was preserved quite well, except for the wall of the chest on which it had lain (cf. above, *Fig. 3* on 158). This part of the chest must have remained in wet ground for a longer time than the rest, hence it is the most damaged and distorted part of the object, showing losses of wood substance and minimal traces of the polychromy. Adding

to the damages and coloristic changes was the action and products of metabolism of multiple insect larvae, the hulls of which and eggs were found in huge quantities inside the chest.

Treatment in situ involved removing as much of the debris as possible and repeated sprinkling of the surface of the objects with PARALOID B72 in acetone, first a 3%, then a 5% solution. This procedure was applied after the polychromy was mois-



Fig. 1. Damaged wall of Canopic chest from Burial 483 (Ptolemaic Period), after conservation (Photo P. Lelek)

tened with ethyl alcohol for better penetration of the reinforcing and gluing substance (PARALOID). The other aim of the moistening was to fix detaching flakes of the polychromy to the wooden objects.

The objects were subsequently lifted from the niche (the mummy in four parts) and transferred to the shelter over the cult chapel of Merefnebef, where under field conditions the process of reinforcing and consolidating was continued. Subsequent technological layers were treated with Klucel GF in ethyl alcohol (cartonnage) and PARALOID B72 in acetone (c. 8%), the latter applied on all the objects. Parts of the polychromy falling from the wooden objects and the reinforced flakes of polychromy on the cartonnage were mounted with PRIMAL AC33 (water solution, c. 10%). Also the polychromy on the lid and the figure of the falcon was mounted and stabilized. The falling fragments of the most damaged chest wall were mounted using glue based on MOVILITH 50 in acetone.

Since the width of this very distorted chest wall had shrank in effect of the damages, it was taken out and treated separately. It was trickled with PARALOID (as above) on both sides. Some balsa strips, up to 1 mm thick and 15-20 mm wide, were prepared for reinforcement of the wall structure and re-attachment to the chest. Given that the strips could be moved flexibly according to needs, they were attached to the reverse of the chest with MOVILITH 50 (as above), retaining all the

existing bends. They were fixed vertically, the horizontal ones being attached only to the upper and lower edge of the wall. Prepared this way, the wall was placed in its original position, as an integral part of the chest [*Fig. 1*].

In view of the deformation of this wall, and particularly its reduced width, it has been blocked with small pegs made of balsa wood (c. 15 mm long, varying in width according to the context), located at its upper and lower borders (fixed with MOVILITH 50, as above). The detached part of the cornice surmounting this wall was also fixed in place. The color of the balsa strips and blocking pegs, sections of which can be seen through losses in the wooden substance, has been modified in order to reach a coloristic unity with the whole.

The figure of Osiris-Ptah-Sokar, composed of two longitudinal parts, was opened, revealing a fragment of rolled up linen inside (cf. above, *Fig. 4* on 159). The polychromy on the rear side of the statuette is preserved better than on the front. It has been mounted in order to prevent further deterioration. A water solution of PRIMAL AC33 (c. 10%) was used in the process. The two crowns were treated similarly.

Subsequent fragments of the cartonnage, after preliminary treatment, were transferred to a secure place. Supplementary work, aiming at amelioration of the condition of some cartonnages discovered in previous campaigns (1997 and 2004), was also carried out.

FINAL CONSERVATION OF THE HARPOON

The conservation of a wooden harpoon and its cylindrical case, from Corridor 1 (Myśliwiec 2001: 395-410) was now completed. Losses of wood in both objects were re-

filled, and the weakest part of the case, the front side with the thinnest walls, was reinforced. Missing parts of wood, as well as insect-related damage and cracks and

rifts resulting from long deposition in humid conditions, were completed with balsa wood fixed with MOVILITH 50 in acetone. The color of the new wood was

adjusted to fit that of the ancient one. The weakest parts of the case were further strengthened with plexi in order to avoid their further rifting and deformation.

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