CONSERVATOR REPORT

Alberto Sucato and Emiliano Ricchi

"Red Monastery Nave Conservation and Training Project"

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Address: 8700 Crownhill Blvd. Suite 507, San Antonio, TX 78209, Tel: (210) 821-7000

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Preliminary campaign

March-April 2016

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Figure 1

ABSTRACT

The Spring campaign at Deir el-Ahmar took place between 30 March and 20 April 2016. Its principal aim was to carry out all the procedures necessary to complete the restoration of a section of the west wall, working from the top downward (Figure 1). During the campaign, the right end of the north wall was also investigated in order to ascertain the possible presence of wall paintings (Figure 2).

The conservation campaign was carried out on behalf of the American Research Center in Egypt, under the direction of Dr Michael Jones and the Ministry of Antiquities (MoA), and supervised on site by Dr El Said Mohamed Mahmoud. Chief conservator Alberto Sucato headed a conservation team comprising Emiliano Abrusca, Emiliano Albanese, Luigi De Prezzo, Sara Scarafoni, Riccardo Remigio and Emiliano Antonelli (Figures 21 and 22). The team also included MoA conservator Ahmed Mahmoud Abdel Karem and benefited from the generous co-operation of the inspectors of the West Sohag office of the Sohag Inspectorate.

During this campaign work was carried out on a large section of the west wall of the nave starting from the top of the wall and descending to the level of the wall paintings of the first tier (Figure 1). As a result of the data and results obtained, we were able to obtain a precise idea of the time required to conserve large sections of the wall both with and without surviving plaster. This information is important as it allows us to formulate a feasible schedule for the entire project, as well as providing a clearer idea of the possible esthetic impact of the work on a large scale. Furthermore, the campaign has made a crucial contribution to our understanding of the most suitable methods for tackling and repairing those areas where extensive falls of plaster have revealed the underlying brick masonry.

At the same time, the test cleanings carried out on the right side of the north wall (Figure 2) have helped us ascertain whether there are wall paintings in the area where the current state of preservation of the surfaces has prevented us hitherto from formulating a solid theory. The test cleanings were also intended to provide vital data to be used as a basis for deciding definitively whether or not to extend the gallery floor to be rebuilt this fall.

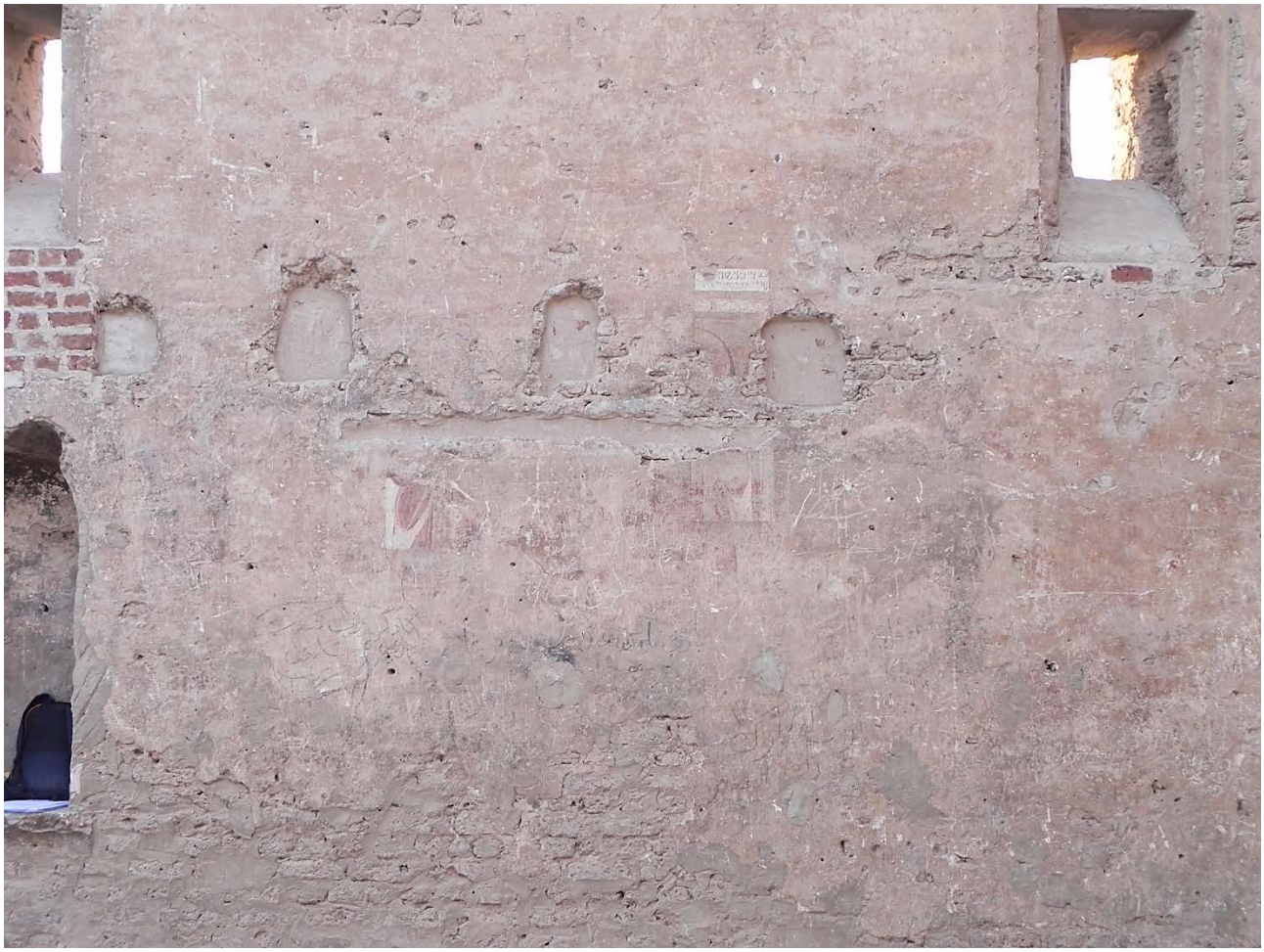

Figure 2

During the course of the campaign the main working methods to be used in the *on the job* course for student conservators were refined and an optimal layout for the scaffolding was erected and tested so that conservators and students could work safely side by side.

Current state of preservation

Given the exposure to the elements of the painted surfaces, their current damaged state can be attributed mainly to environmental factors such as sunlight, temperature range (and the different response thereto of the various materials comprising the stratigraphy of the plaster), wind, deposits of bird droppings and other damage inflicted by humans.

The appearance of the surfaces has been profoundly altered by the presence of deposits of dirt and dust that have built up over centuries.

The plaster at the top of the wall has been exposed to the elements since the start of the medieval rebuilding phase; consequently it has a great many lacunae and the plaster has completely disappeared from the stone blocks comprising the upper *cavetto* cornice. This was the result of structural instability in particular as well as work carried out on the blocks themselves in the past (Figure 3).

Immediately below this, along the old roof line, the plaster is also extremely patchy as a result of the collapse of the roof in antiquity.

Figure 3

Figure 4

There are many lacunae in the plaster around the holes where wooden beams were inserted to support the roof and the surface of the remaining plaster is badly abraded as a result of exposure to the elements (Figures 4 and 5).

Figure 5

All the plaster suffers badly from widespread surface encrustations and deposits caused by natural agents such as dust, sand, sooty deposits and the sporadic but violent rains that encourage salts to migrate to the surface and crystallize (Figure 6).

Figure 6

The presence of large numbers of birds also inflicts constant wear on the plaster which is riddled with small holes caused by the persistent erosive action of wind and air currents, attack by insects feeding on the straw in the plaster and numerous instances of earlier damage inflicted by humans.

In the upper tier in particular the action of the wind, which is often laden with sand, has caused widespread abrasion of the layer of whitewash used to finish the preparatory layer.

The paint layer of the paintings in the lower tier is also affected by the same kind of phenomenon, albeit in a more localized and less serious manner.

The disappearance of many figurative details can be linked equally to the breakdown of the binder owing to continual exposure to sunlight. For the same reason, all the finishing touches that may have been added to the paintings using the encaustic or wax resist method have been lost over the past few centuries.

Working method

The masonry is of fired brick that is partly medieval and partly late antique. The late antique bricks were probably reused in rebuilding work following structural collapses. The bedding mortar is made of lime, sand, medium and large inclusions of fragments of local brick and brick dust. The mortar is grayish in color as a result of numerous black inclusions from the insides of the fired bricks (Figure 7).

Figure 7

As already described in the fall 2011 report, the plaster is made of lime and sand with a generous amount of straw in the mix. It is pale yellow in color and the sand it contains is very fine-grained, like that found in the vicinity of the monastery. The straw content of the plaster meant that it could be applied in layers ranging from 5 to 10 mm in thickness. The plaster is finished with a thin layer of whitewash, probably lime wash.

In the lower tier where it was intended to be decorated, this finishing layer is thick and opaque (Figure 8) while it is thinner above the level of the women's gallery where it was not intended to be painted. One curious detail to come to light as a result of cleaning in the section of wall above the women's gallery was a small *graffito* of a quadruped (Figure 9) and a second shape that proved impossible to identify (Figure 10). Both were probably incised during the medieval period when the gallery still existed.

Figure 8

Figure 9

Figure 10

The only wall paintings to be tackled during the mission were those discovered on the right side of the north entrance. Here, immediately below the line of the windows, at the same height above ground as the martyr on horseback painted inside the church, we observed a row of figures, most likely a host of Coptic saints. Careful cleaning revealed details of the habit and halos of two saints in a hieratic pose (Figures 11 and 12) as well as part of a Coptic inscription above the cornice that, when revealed in its entirety, will certainly provide important clues for the identification of the saints depicted (Figure 14).

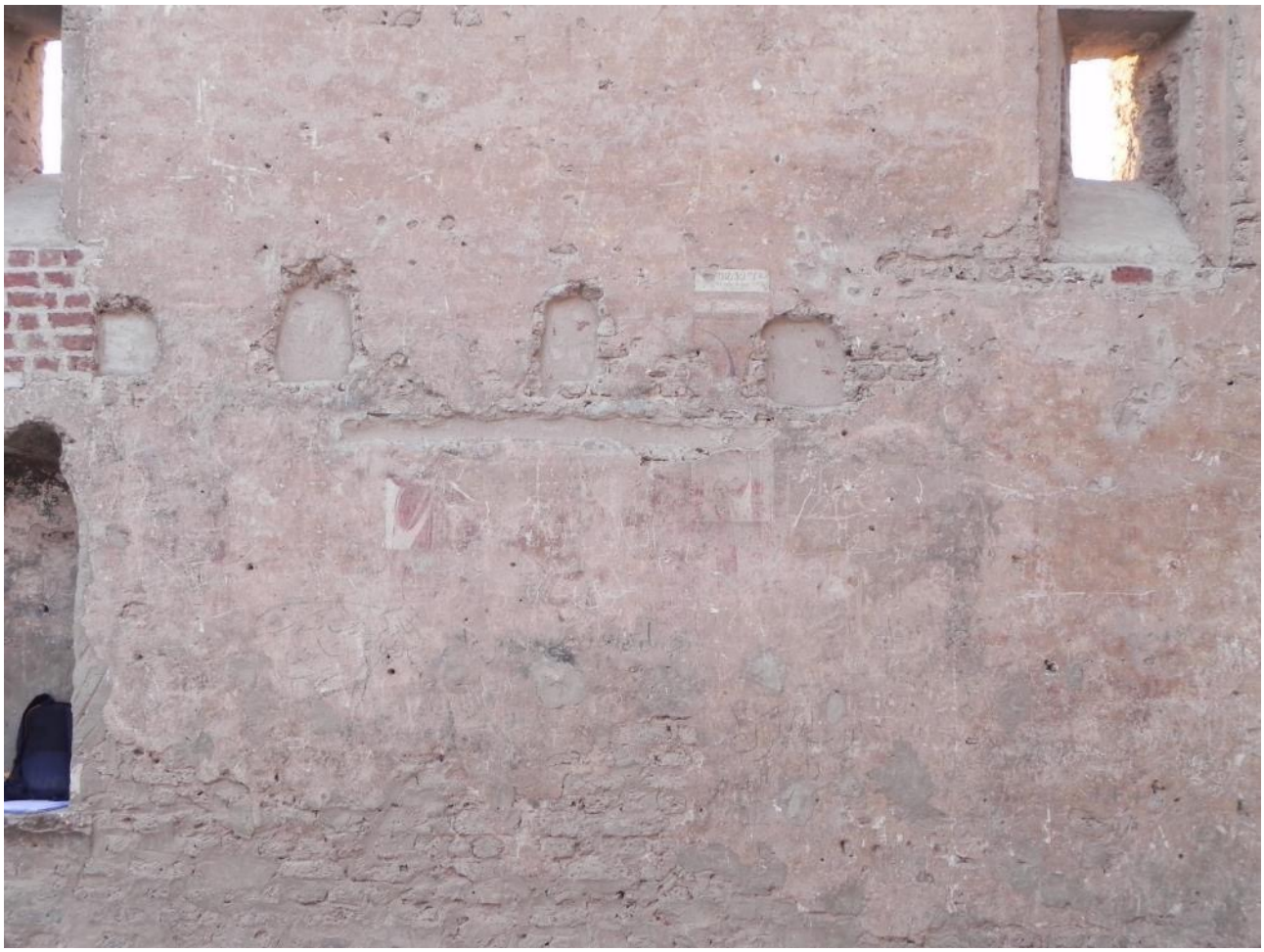

Figure 11

Figure 12

In terms of artistic technique, these figures would seem to be in line with the working methods used by the artists who painted the two martyrs on horseback and the fragments of medieval painting surviving on the left side of the facade.

A simple palette was used for the painting, comprising familiar local colors such as red hematite, yellow ocher and carbon black. Particularly notable is the presence of an intense blue used to trace the semicircular line around the halo (Figure 13).

This pigment could be lapis lazuli (ultramarine), a hypothesis which would be supported by the identification of the same precious pigment in a number of fragments on the archway leading to the north corridor of the sanctuary and belonging to the same medieval phase.

The fine detail of the red line outside the halo decorated with a line of white beads (Figure 15) should also be noted.

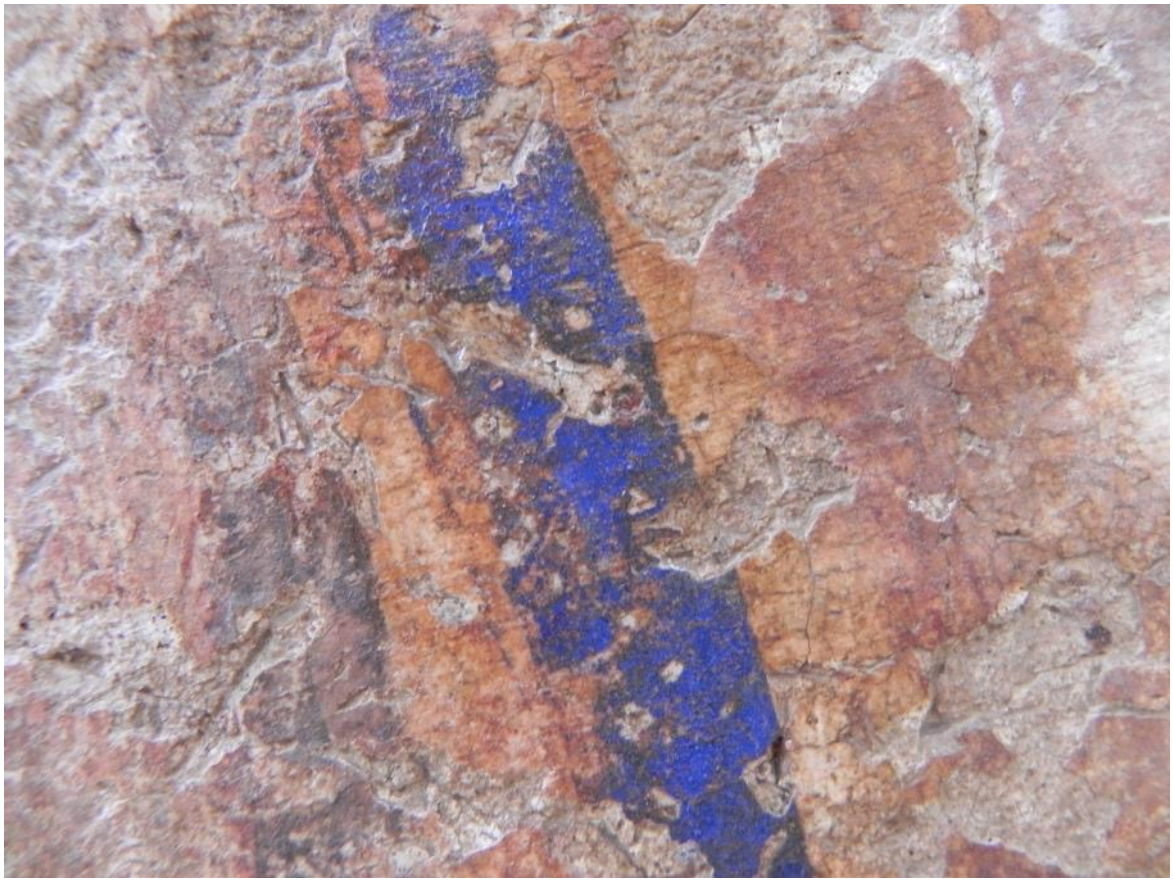

Figure 13

Figure 14

Figure 15

Given the state of preservation of the area it is still difficult to say with any certainty how many figures are depicted but at the present time there would seem to be seven. We will have to await the cleaning of the entire area in order to obtain further information about this painting.

Figure 16

Whilst studying the decorative scheme of the entire nave we assumed that symmetry with the north entrance would have been a criterion and expected to find a large cross similar to the one on the left side rather than the saints just described. Actually, during a close observation of the portion of the wall above, we did find incoherent traces of color pointing to the possibility that a cross was painted on this part of the wall during the first medieval phase and has now been lost. An understanding of what the different artistic phases of this area may have been will also have to await a future conservation campaign.

At this stage it is hard to suggest a precise date for these paintings, let alone reconstruct the sequence of different painting types or decorative phases. However, the reconstruction proposed in recent years, positing the painting of the crosses as part of a more organic project connected with the rebuilding of the church is still plausible. In the context of this theory, the martyrs on horseback (Figure 16) as well as the recently discovered host of saints are likely to have been added at some stage after the erection of the wall.

Restoration work carried out

The first step was to remove dust from the surfaces using soft bristle brushes. In places where portions of plaster and paint layer were in immediate danger of becoming detached, they were stabilized using small strips of Japanese paper stuck to the surface with a 15% solution of acrylic resin (PARALOID B72) in acetone. In places where the plaster had become detached from the masonry, it was consolidated using injections of liquid mortar specifically intended for lime-based plaster and compatible with the original plaster.

Figure 17

All the areas where bricks were visible were replastered, with the exception of those within openings purposely made in the masonry. This was done primarily for the reasons of conservation alluded to above and in order to make our work consistent with that already carried out on the medieval wall inside the sanctuary and with the principle of anastylosis guiding the architectural work that ultimately included the floor and colonnade of the nave.

In view of the planned replacement of the roof at the height of the original women's gallery scheduled for Fall 2016, we have decided to adopt the conservation approach of repairing the lacunae in the upper tier (as previously stated, undecorated plaster) with pointing brought to slightly below the original level (Figure 19), whilst the lacunae below this line will be brought up to the level. With regard to the latter, this decision was made in order not to preclude the possibility of reintegrating the lacunae in the paintings using the toning-down technique, if necessary.

The repairs were carried out using a mortar of lime, local sand and powdered limestone similar in composition and aspect to the original plaster (Figure18).

Figure 18

Figure 19

The method used to clean the plaster involved firstly the use of organic solvents applied on Japanese paper with the aim of solubilizing any organic substances covering the surface. Consolidated and unconsolidated deposits, encrustations, salt blooms and sooty residues were solubilized and subsequently removed using applications of inorganic salts (ammonium carbonate) dissolved in water with a concentration of 70g per liter to which a small percentage (2%) of Tetrasodium EDTA had been added and applied in gel or cellulose pulp for 7 or 15 minutes respectively. These methods allow us to vary the number and length of the applications without soaking the wall excessively (Figure 20).

Figure 20

The painted areas of the north wall were cleaned using a solution of ammonium carbonate (70 g/liter) suspended in gel and applied twice for seven minutes each time. Where the surviving painted surface appeared especially fragile, the solution was rolled on through a sheet of Japanese paper using a wad of cotton wool. Some of the outlining of painted shapes that appeared particularly delicate was carefully fixed before cleaning on a case-by-case basis using a solution of acrylic resin (5% PARALOID B72) applied with a brush. Once the cleaning operations were complete, this fixing was removed using organic solvents applied through Japanese paper. The paint layer was then consolidated by applying a low percentage solution of acrylic resin (1.5% PARALOID B72) using a spray or, where possible, a brush.

Finally, the lacunae in the paint layer were reintegrated using the toning-down technique and special stable and reversible watercolors.

The limestone elements of the upper cornice were cleaned using a compress of ammonium salts in solution (160g/liter) and Tetrasodium EDTA (2%) applied in a cellulose pulp compress for twenty minutes. The compress was covered with sheets of aluminium foil. After removal of the compress the stone was carefully brushed and thoroughly rinsed.

All procedures were systematically photographed before, during and after execution.

Figure 21

Figure 22