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HELPING THE MUTE STONES SING: ACHIEVING AN AESTHETIC RESOLUTION

Patricia S. Griffin

Introduction

The Egyptian collection of the Cleveland Museum of Art was historically the first to be acquired in the museum's history, with an important group of artifacts purchased in 1913, three years before the museum opened (Kozloff 1999). Therefore, Egyptian art has always been associated with the institution and has been a much-loved part of the Cleveland Museum experience. For this reason, the collection was one of two chosen for reinstallation as part of a "Convening the Community" project, supported by the Lila Wallace-Reader's Digest Fund. The newly installed Egyptian galleries were opened to the public on September 24, 1999 (Figs. 12-14). It was a collection reborn (Berman and Griffin 1999).

This rebirth came out of the extraordinary collaboration between curators, conservators and designers, which developed a shared sense of aesthetics that informed decisions regarding conservation and display. For the reinstallation, the reliefs were treated with a respectful eye toward both their current fragmentary condition and their continued preservation. New mounts were designed to be unobtrusive, yet provide complete support as reliefs on the gallery walls; and also, allowed the reliefs to be lit to their best advantage. A subdued color scheme in muted beige, moss and blue was used for walls and case furnishings; these colors not only provided a contextual background for display, but also maximized the visual impact of the artifacts (Berman and Griffin 1999). These design details were crucial for successful reinterpretation and presentation (Figs. 11-14). However, it proved to be the conservation treatments of the stone reliefs that were the most important factor towards achieving our aesthetic goals.

An important step in the recent conservation of the reliefs was to remove the old plaster repairs to expose the jagged outlines consistent with their fragmentary state. Conservators devoted many months to the painstaking tasks of freeing the images from the layers of plaster, as well as treatment of the reliefs to make them safe for display and more coherent to the viewer (Figs. 1-2). This integrated approach not only enhances their monumental, sculptural quality, but also reveals the subtle modeling of the surfaces and enlivens the remaining colors (Figs. 3-4).

Considerable thought went towards developing an approach to filling and toning of losses. The goals were to create visual coherence, and to unify the fragments in each relief without distracting from their distinct style and beauty. Fill compensation ranged from no intervention to full integration of missing elements. Decisions were on a case by case basis with curatorial consultation. In all cases, upon close inspection, restorations are readily visible. Typical of conservation treatments performed today, the materials used for filling and inpainting were carefully chosen for stability, good aging properties and reversibility. The results of this approach have restored both meaning and vitality to the reliefs, resurrecting them as masterpieces within a museum context.
This paper will present an overview of the conservation of the thirty-three stone reliefs in the collection. The reliefs date from the Old Kingdom (Dynasty 6) to the Late Period (Dynasty 25-30). However, despite the disparity in dates, all share similar aesthetic considerations based on their manufacture and history. All the reliefs are fragments of large-scale architectural depictions from tombs or other monuments. All the reliefs are sculptural and meant to be viewed as three-dimensional depictions. The legibility of the images relies on a subtle play of texture, shadow, and form crafted using flat planes, sunk relief, raised relief, delicate modeling and finely incised details. Most were intended to be polychromed; pigment survives on a few, usually in trace amounts.

The focus of discussion will be the aims of the conservation treatment of the reliefs, with an emphasis on the decision-making processes as influenced and guided by a heightened awareness of aesthetic considerations. This heightened awareness grew out of a close working relationship with curatorial staff that developed during multi-year examination and research project undertaken in preparation to producing a comprehensive catalogue of the collection. All of the objects were examined carefully by curators and conservators, with detailed technical studies resulting for most objects from the latter (Berman et al. 1999). These studies grew into an interest in reconstructing the original appearances of objects (Griffin 1999 and Griffin 2000). This in turn, led towards a critical evaluation of the current appearance of objects with the aim of restoring as much of their original impact and beauty as was possible. Therefore, aesthetic concerns were a primary focus for the development of conservation treatments.

Aesthetic and structural problems caused by the earlier treatment of reliefs will be summarized, followed by an overview of the current approach to treatment. The conservation problems encountered will be introduced; however, the primary topic for discussion will be the steps taken to address aesthetic problems in presentation. Finally, discussion will focus on a series of case studies to illustrate the profound effects that careful consideration of the surface and condition of each individual relief had towards developing an individualized treatment approach towards filling and inpainting. This approach enabled the visual appearance of the reliefs to be improved dramatically (Figs. 1-4), restoring both meaning and vitality to them, and increasing the public’s appreciation.

**Previous Treatment Approach**

The overall aesthetic of the previous reinstallation and treatment campaign can be described as tight and boxy, with the apparent goal of presenting the reliefs much as pictures on the wall (Figs. 5-6). Towards this goal the reliefs were encased in plaster and wood to produce uniform, rectangular, “free-standing” images; and they were sunk into the walls. The broken, ragged edges of the fragmentary reliefs were squared by three methods: (1) plaster fills or stone inserts were directly attached to the stone using pins, adhesive or by casting in place, (2) wooden inserts were fitted into losses and attached to the wooden frames surrounding the stone, (3) wooden frames surrounding the stone might be roughly contoured to match the profile of the stone. The
negative effects of this methodology were twofold: first, the reliefs were presented and viewed as complete, freestanding depictions rather than as fragments; and second, the finely carved surfaces were considerably flattened, visually diminishing their impact (Figs. 3-4).

This poor presentation was compounded by poor standards for the execution and quality of the treatments. Typically, the plaster fills were not level or smooth in texture, and the resulting unevenness and coarseness was visually invasive. In some cases when plaster was used to bridge the gap between two adjacent pieces of stone, it was not filled to be level with the two; rather it was lower and exhibited a visible meniscus, calling unnecessary visual attention to the restoration (Fig. 27, see especially upper left corner). In addition, the choice as to how fills were developed - whether they were flush with the surrounding stone surfaces, or recessed - appears to have been haphazard and not governed by careful consideration. Therefore, the patterns of shadow created by the fills often interfere with the carved relief surfaces, obscuring the impact of the image and the compositions (Figs. 1, 22).

In other cases, restorations were inaccurate or damaging, thereby changing meaning and appearance of the images in fundamental ways. The visual appearance of a series of six reliefs from the tomb of Nyankhnesut was compromised severely by the previous restorations. Problems introduced by treatment included misalignment of fragments, and excess plaster used to fill in missing areas, often traversing original surfaces (Berman et al. 1999, 135ff). In addition, restoration of missing sculptural details (hieroglyphs or figures) was often inaccurate and confusing. Plaster of Paris was spackled in between and over the adjoining edges of the fragment blocks. The texture of the plaster was left rough or as spackled. The attempted reconstruction of the decoration is crude, often obscuring the adjacent extant areas of stone, and contributed to the illegibility of the reliefs. For these reasons, the filling of losses made interpretation of the scenes and hieroglyphs difficult in many areas. One area on the lower proper right was recut to compensate for misalignments introduced during assembly (Fig. 8).

Finally, mounting of the reliefs was not well thought out and also was damaging. For instance, the group of sixteen Late Period reliefs from the tomb of Mentuemhat came to the museum in two groups (in 1949 and 1951) already restored (Berman et al. 1999, 393ff). A feature of both groups of restored fragments were systems of invasive reinforcement and mounting that did little to support joints (Berman and Griffin 1999). These support systems were cumbersome, heavy, and physically attached to the stone by a myriad of metal fittings secured by copious amounts of plaster poured into and around a series of drilled holes. For the larger Mentuemhat reliefs, as many as fifty holes had been drilled into the reverse to house the metal support system. [1]

It should be noted that there was one aspect of the previous installation that was fortuitous if not well planned. The reliefs - all housed in wooden frames - had been installed in the galleries into wooden niches (Fig. 9) or openwork lattices, formed by interlocked sections of wood (2 x 4” planks), by a series of wooden wedges, bolts and screws. Once installed, contoured plywood or particle board was fitted around them and painted to match the plastered structural walls, giving the impression that the reliefs had been recessed within the gallery walls. This arrangement
Griffin proved easy to reverse, requiring only screwdrivers, hammers, sufficient manpower and prefabricated padded wooden palettes to support the reliefs once they had been deinstalled.

Current Approach to Treatment: Stabilization and Mounting

The goals of the current treatment campaign were to stabilize the reliefs and create visual coherence within each assembled group of fragments. The majority of reliefs did not exhibit structural problems; for these reliefs, the current treatments were limited to addressing aesthetic problems introduced by the previous treatments and mounting. However, a third of the reliefs did have structural problems requiring stabilization.

These reliefs belonged to one of two groups: the problematic Old Kingdom reliefs from the tomb of Nyankhnesut, and several of the reliefs from the Late Period tomb of Mentuemhat. It was clear that the structural problems in these two groups arose as a result of previous treatment. The problematic support systems that riddled the Late Period reliefs from the tomb of Mentuemhat (described above) had caused many of the old repairs to fail, and new cracks to form in several of the reliefs. The failed joints were reversed and readhered, and cracks were stabilized by introducing adhesive into them (Rhoplex AC33 and/or Acryloid B-72 in acetone). Cracks and breaks were reinforced using thin, rigid patches of bulked epoxy putty (Milliput or Pliacre) over a thick, strong isolating layer of Acryloid B-72 lightly bulked with glass microballoons (Scotchlite, 3M) and cellulose fiber (Whatman CF 11). The old support systems were adjusted to fit the actual contours of the stone, reducing their weight a little. However, these heavy metal systems were mostly left intact because they could not be safely removed. Therefore, mounting was an integral part of treatment; the new mounts, although visually unobtrusive (Figs. 12-14), were designed to support both the relief and the heavy support systems (Figs. 10-11).

As previously noted, the systems employed by the previous restorers to reinforce joints was invasive, heavy and cumbersome (Berman and Griffin 1999). Most joints appeared stable. It was feared that removing the plaster and metal supports would damage the reliefs. In addition to the stresses from reversing so many invasive repairs, the limestone used in many of the reliefs contained thin clay lamellae that responded unfavorably to prolonged contact with moisture or solvents, a common geological feature of some Egyptian limestones (Bradley and Middleton 1988, Rodríguez-Navarro et al. 1997). Therefore, these systems were left in place, and the new mounts were designed to support both the heavy rod-channel-pin-plaster armatures of the old mounting system as well as reliefs themselves. This in and of itself was a vast improvement towards their preservation, as previously the reliefs were bearing the weight of their supports. Most mounts consisted of a steel backplate with a continuous shelf along the bottom edge that supported the relief and any pre-existing support structure attached to the relief. This shelf was contoured to match the contours of the relief using bulked epoxy putty cast on the shelf with a Mylar separator protecting the stone. A series of brass and/or steel brackets, padded to fit the contours of the stone, secured the relief on all sides (Figs. 2, 4, 10).
The series of six Old Kingdom reliefs from the tomb of Nyankhesut were also structurally unstable, with visible cracking of plaster within joints (Berman et al., 135ff). These reliefs previously had been thinned to less than 3 cm in thickness and had been reassembled by casting the fragments in plaster of Paris within wooden frames without the benefit of an adhesive. These reliefs were easily disassembled after deinstallation, and most extraneous plaster was carefully cleaned from the stone surfaces.

Re-assembly of the larger, multiblock reliefs was not straightforward. Most joints were heavily eroded leaving adjoining fragments with little or no purchase. The thinness of the fragments precluded pinning. Therefore, it was decided to mount the blocks separately and rely on carefully designed mounts to hold them in proper position. A few smaller fragments with tighter joints were reassembled using adhesive (Acryloid B-72 in acetone) prior to mounting, to form larger, regularly contoured blocks. These joints were reinforced on their reverses using a thin layer of bulked epoxy putty (Milliput or Pliacre) spackled over patches of woven fiberglass fabric adhered with B-72.

The mounts were designed and fabricated as described above, except for the largest relief that exhibited two tiers of blocks (Berman et al., 137-138). For this mount an internal shelf with short pins on both sides to aid in alignment was added, so that both tiers of blocks were supported (Figs. 11). The shelves and backplate were contoured as needed to match the contours of the relief using bulked epoxy putty (Pliacre) cast onto the mount with a Mylar separator protecting the stone. Rigid, stationary spacers were cast onto the backplate of the mount to prevent lateral movement of the individual blocks, using the same method. Fills were executed in one of two ways depending on the individual conservators. Cellulosic spackle (Polyfilla) was applied over a subfill made by adhering sections of polyethylene foam (Ethafoam) to the backplate; or B-72 putty bulked with glass microballoons (Scotchlite, 3M) and cellulose fiber (Whatman CF 11), was applied onto the surfaces of the Pliacre spacers. All fills were slightly recessed and most were finished to a flat neutral surface toned to closely match the color of the stone using watercolors and gouache (Pelikan, Winsor & Newton), or acrylic emulsion paints (Liquitex, Golden), depending on the individual conservator. After removal of plaster, careful consideration of structural needs and careful consideration of filling strategy- these reliefs have never looked better. The eye easily glides over losses without calling attention to them (Figs. 8, 11).

Current Approach to Treatment: Aesthetics and Loss Compensation

The conservation treatment of the reliefs was the most important factor for achieving our aesthetic goals. The most important steps towards restoring aesthetic qualities to the reliefs were the successful reversal of previous treatments and a carefully considered and executed approach to loss compensation. All loss compensation was removed from around the edges of fragments. Poorly executed or unstable fills were removed or resurfaced. Loss compensation was developed on an individual basis. The aesthetic goals were to unify the fragments comprising...
Griffin

each relief as a cohesive image; and to enable the surviving carving and pigmentation to be the focus for the viewer. The fragile and fragmentary nature of the reliefs was accepted, not disguised; however, it was important that the surviving decorated surfaces be the focus for viewing. The successful treatments needed to accomplish these goals without distracting the viewer from the distinct style and beauty of individual reliefs. Each image had to shine.

A major step in this conservation project was removing the old plaster repairs to expose the jagged outlines consistent with the relief’s fragmentary state. Conservators devoted many months to the painstaking tasks of freeing the images from the layers of plaster, as well as treating the reliefs to make them safe for display and more coherent to the viewer. Removing the plaster restorations to reveal the jagged outlines of fragments had a profound effect. Both context and the play of flat and undulating surfaces were often restored through this single step (Figs. 3-4).

Considerable thought went towards developing the approaches to filling and toning losses. In general, it was found that some level of fill compensation was necessary for most relief fragments composed of multiple pieces. Fill compensation ranged from none to full integration of missing elements. Decisions were on a case by case basis with curatorial consultation. Upon close inspection, all restorations are readily visible. Typical of conservation treatments performed today, the materials used for filling and inpainting were chosen for stability, good aging properties and reversibility. The results of this approach have restored both meaning and vitality to the reliefs, resurrecting them as masterpieces within a museum context. The following objects on display in our recently renovated Egyptian galleries illustrate the complexities of treatment decisions. All are carved and painted stone, however, differing approaches to compensation were key towards their presentation. They are organized according the degree of aesthetic compensation that was required; the execution of loss compensation is the focus of discussion for each example. However, other aspects of treatment that were performed to ensure the relief’s continued preservation (consolidation, re-assembly and structural reinforcements) will also be mentioned. An overview of this project which describes aspects beyond the approach to loss compensation has been published elsewhere (Berman and Griffin 1999).

1. No loss compensation: Mentuemhat as Priest with Staff and Sceptor (1949.492) and Female Offering Bearer (1949.496).

Two reliefs dated to the Late period depict the deceased and a female offering bearer. Both belong to a group of sixteen in the museum’s collection from the tomb of Mentuemhat (Berman et al. 1999, 393ff) mentioned above because of structural and aesthetic problems introduced by the previous restorations. Although the tomb was unfinished, the Cleveland reliefs were well executed in a fine-grained limestone using both raised and sunk relief, and both exhibiting finely sculpted and incised details. Reliefs that were completed - those in raised relief - were finely finished with abrasives and exhibit traces of polychromy and a resinous varnish (Berman et al., 393ff). Unfinished reliefs - those executed in sunk relief - exhibit painted guidelines, numerous
chisel marks, and rougher appearing surfaces overall. On all, the compositions were tightly organized with overlapped or interconnecting elements. All of the Cleveland reliefs are characterized by the extraordinary fineness and clarity of the carved depictions (Figs. 1-2, 15-24, 26).

All of the reliefs in this series were unframed by carefully prying apart the frame members and removing wooden wedges used to secure the irregular shaped stone edges of the reliefs within the straight edged frames. On most of the reliefs, compensation for losses around the edges had consisted of wooden recessed wooden inserts attached to the frame. Therefore, the goal of displaying the reliefs as true fragments, with ragged, broken edges, was simply and efficiently accomplished. However, the majority of reliefs required some degree of loss compensation to unify the finely sculpted, complex pictorial images which relied on the successful play of subtle raised and sunken relief, and incised elements. The shattering of most reliefs into numerous fragments, and the poorly conceived, haphazard application of previous fills often comprised pictorial legibility.

The two reliefs discussed here were exceptions; it was found that removing the obtrusive framing elements was enough to bring the images together (Flotte 1999a). Given the quality and level of damage to either one, it was clear that loss compensation would provide a visual distraction rather than enable losses to recede from the viewer’s awareness.

A relief depicting Mentuemhat as a Priest with Staff and Sceptor (Fig. 15) exhibited three large and sharp-edged losses to the edges and a series of wide, shallow, and scalloped losses along the horizontal block line traversing the torso. Some losses had been partially filled previously with toned plaster. In addition, there were several sharp-edged breaks between adjoining fragments. Despite these damages, the fineness of the carving became the focus for viewing once the wooden frame and toned wooden inserts along the edges were removed (Fig. 16).

The surface of the Female Offering Bearer is rough overall; the relief was not finely finished and the surface retains many chisel marks and miscarvings which have not been removed or disguised. The relief is comprised of four adhered fragments. Joints are relatively tight with some small associated erosion and chipping. Again, removing the framing device and one insert to the bottom proper right edge had a profound effect for viewing. No other treatment was required for visual integration of the carved image (Figs. 17-18).


Two different reliefs in the Mentuemhat series depicting a Male Offering Bearer and Mentuemhat in ecclesiastical dress required selective loss compensation to unify the images and render them more legible (Flotte 1999b and Flotte 1999c). The relief depicting the Male Offering Bearer was unfinished and its appearance and condition was much as was noted for the
Female Offering Bearer described above. However, the relief was reassembled from at least eighteen fragments, instead of four, making a much more prominent crack pattern (Fig. 19). There are several small, sharp-edged losses in addition to chipping and abrasion of break edges. These losses in combination with the numerous breaks provide visual competition with the delicate sunk relief carving. In order to make the heavily fractured relief read more easily, it was decided, with curatorial consultation, to selectively fill the larger losses in the main part of the relief and tone them to closely blend with the stone. No attempt was made, however, to fill the extensive network of cracks (Fig. 20). Where cracks crossed the fill, lines were incised at the edge of the fills to visually complete the cracks. Losses were filled with a B-72 putty bulked with glass microballoons (Scotchlite). The fills were toned to match the surrounding stone (Fig. 21) with acrylic emulsion paints (Liquitex and Golden).

The figure and background on the relief entitled Mentuemhat in Ecclesiastical Dress were finely finished despite the fact that the relief was never completed. For instance, the curls were shaped but the individual tresses were not carved or drilled, and the hieroglyphs were painted in yellow, with detailed red overpainting rather than carved. The carved and painted surfaces exhibit little wear and are very well preserved (Fig. 22). Unfortunately, the relief was badly broken and was reassembled from at least thirty-four fragments. Most losses were previously filled and toned a neutral hue. In general fills between adjoining fragments were filled flush with the adjacent stone surface and larger fills within losses were recessed. Losses along the bottom edge had been compensated by attaching painted wooden wedges to the frame. A piece of stone had been inserted as a "dutchman" into a loss below the belt of the figure, and carved to match the topography of the relief. Treatment of this relief involved stabilization and adaptation of the cumbersome support system to reduce the risk of further damage— the general methodology for which has been outlined above.

The old mounting system had caused serious damage to the relief. The reverse was riddled with internal brass pins, brass staples, an aluminum "strainer" (inset slightly from the edges of the relief, created using four sections of aluminum channel), short strips of twisted aluminum, and heavy threaded steel rods and an aluminum backing board, all secured with copious amounts of plaster. Similar systems have been described and illustrated elsewhere. (Berman and Griffin 1999, 6-7). A number of apparent new cracks developed in the stone, as well as in the previous repairs. The extensive cracks at the old joints were consolidated using an acrylic emulsion (Rhoplex AC-33), and reinforced with woven fiberglass adhered with adhesive (B-72). The aluminum back plate and channels were cut down to the shape of the fragment. A new mount was designed to support fully the weights of both the relief and the old mount— taking considerable strain off of the joints.

Cosmetic treatment included toning the extraneous "dutchman" to more closely blend to the original stone and resurfacing fills to restore legibility to the image (Fig. 23). Deeply recessed fills were brought flush to the level of the stone in several areas where it was difficult to understand the topography of the relief, such as the proper right arm and shoulder. Other areas were left slightly recessed. Fills were executed using a B-72 and glass microballoons (Scotchlite)
Griffin

putty below a fine surface fill made with a cellulosic spackling compound (Fine Surface Polyfilla). Fills were toned to closely blend with the surrounding stone using a watercolors and gouaches (Winsor & Newton) over a base coat of acrylic emulsion paints (Liquitex, Golden).

3. Overall Loss Compensation with Complete Reintegration of Losses: Marsh Scene with Cat and Birds (1949.498).

Another relief in the Mentuemhat series depicting a Marsh Scene with Cat and Birds is fragmentary; however, the carved surface is well preserved and many traces of pigment remain. Despite earlier treatment involving re-assembly and filling of small losses, several large diagonal losses had been left unfilled (Fig. 24). These were highly disfiguring and marred the beautifully conceived and executed scene.

Treatment of this delicately carved image involved re-assembly of the upper right side from a number of small fragments and chips; reinforcement of the old repairs on the reverse (fig. 25); and creation of faux break faces on the sides to disguise the old support system (fig. 10). The fragment group on the upper proper right was exhibiting cracks in old joints. The old repairs carefully were reversed with acetone, and the fragments were reassembled using B-72 in acetone. The support system on the back was reinforced as previously described for other reliefs in this series. An additional step was taken to disguise the support system so it was not visible from the side. This was accomplished by adhering overlapped patches of Japanese tissue to the bottom edge of the stone along the sides using B-72 in acetone, floating it over the support system and adhering it to the aluminum backplate on the reverse of the support system. The tissue was spackled using a pigmented putty consisting of glass microballoons (Scotchlite), cellulose fiber (Whatman C 11), dry pigments and B-72 in acetone. The spackle was sculpted wet, and carved and sanded dry to mimic the rough worn edges of the stone. The faux stone surfaces were toned to blend using watercolors (Pelikan).

Gap filling and inpainting of the decorated surface disguised the extent of breaks and losses so they would not detract from the charm of the highly detailed scene. Although care was taken to fully integrate fills with the surrounding stone, no attempt to replace the missing paint was attempted. A filling putty was manufactured to be a sympathetic match in texture and tone to the original stone surface, as described above for the surface treatment of the faux sides. Fills were inpainted to closely blend using watercolors and gouaches (Pelikan, Winsor & Newton). Three filled areas retaining fragmentary paint remains appear to be original, including an area on the cat’s torso and two areas on lotuses (Berman and Griffin 1999); these are probably manufacturing flaws left from carving that were repaired using gesso and carved prior to painting. These areas were left untouched. The final result is a unified image that showcases both the strong verticality of the composition and the precise and naturalistic rendering of the fauna (Fig. 26).

Whereas full integration was appropriate on the Marsh Scene describe above, a more restrained approach was used on a large relief from the Ramesside period depicting the Chief Physician Amenhotep and his family. This relief is a masterpiece from the 19th dynasty. The figures were carved in raised relief with many areas articulated in subtle sculptural relief and/or finely incised details, such as the hair, headdresses and hieroglyphs (carved in sunk relief). Enough traces of the original polychromy remain on the upper portion to indicate how the relief originally appeared. The background was yellow. The lines separating the columns of hieroglyphs were painted in blue, while the hieroglyphs were painted in blue, red, orange-red, yellow and green. The hair, cosmetic lines, brows and pupils were painted black. The skin of the women was painted orange-red and the skin of the men red. Pigment identifications are published elsewhere (Berman et al. 1999, 251).

Previously, losses along the edges were filled with plaster and painted a flat beige color except on the upper proper right where a stone insert was used, all effectively squaring relief (Fig. 27). Most of the interior fills were flat and featureless, interfering with the legibility and composition of the image; the exception being some of the fills associated with the figures. In this case, the old plaster fills also recreated missing details of the figures in gaps or losses; however, the quality of the carving of these fills was coarse as compared to the original carving of the stone. Furthermore, some of these areas were reconstructed inaccurately, as is apparent by comparing these details to an earlier photo in which the stone surface was less eroded and much better (Berman et al. 1999, 251). Overall, the restorations diminished the quality of the work of art, and obscured the masterful and detailed carving.

Treatment included the careful removal of all fills and inserts, refilling of interior losses, and creating faux stone edges to disguise the plywood support backing (Figs. 28-29). The fill material was prepared as described above for the Marsh Scene to provide a sympathetic texture and tone. The new fills were constructed using as a guide the photograph of the relief prior to the additional surface damage (Berman et al. 1999, 251). Minimal reconstruction of missing decorative elements was carried out with the idea of unifying the fragments. In general, only the outlines of figures and major internal contours were recreated in order to carry the eye across losses; finer details such as the pleats within garments were not recreated. Except for the narrow horizontal fill traversing the upper torsos of the figures, fills were toned a flat beige similar to that of the unpainted stone. Because the narrow fill across the figures’ torsos created a sharp horizontal it was necessary to more closely blend its tone to match the pigmentation of the surrounding stone, which varied due to pigment residues, dirt and staining. At a slight distance the fragments pull together upon viewing and losses do not register. However, upon close inspection restorations are readily visible. The results of this approach have restored both meaning and vitality to the relief; the masterful carving can once again be appreciated (fig. 30).

The New Kingdom relief of the Nome Gods Bearing Offerings is one of the masterpieces of the CMA’s collection. It is dated to the late 18th dynasty to the reign of Amenhotep III and is remarkable for both its degree of preservation and its detailed painted and varnished decoration (Griffin 2001, Griffin 1999, Berman et al. 1999). The carving in subtle raised relief is exquisitely detailed and the polychromy is rendered with extreme precision. Even the individual hieroglyphs were carved and painted to be highly detailed and decorative. Fine details such as the plumage and fur are meticulously described by masterful layering of strokes of pigment in related hues.

The palette of pigments was extensive, with more than 14 different hues visually identified and confirmed as different pigments or pigment mixtures by analysis (Griffin 1999, Griffin 2001 and Berman et al., 1999). In addition to the extensive palette, colors were layered to achieve specific effects. For instance, an overall ground layer was not used; however, white pigment was applied as an underpaint in some areas. An additional element of the complicated polychromy was the use of selectively applied coatings or varnishes with specific areas left in reserve. Examination of the surface of the relief using normal light and magnification suggests three visually distinctive varnishes: a colorless waxy layer, a pale yellow matte layer, and a yellow glossy layer. The deliberate manner in which the three visually different coatings were employed suggests their use was deliberate.

Fifteen years after the museum acquired the first larger block with three Nome Gods in procession, another adjoining block with an additional Nome and fragments of an upper became available. Once purchased, conservators had the task of reintegrating the two blocks. Each block was independently mounted within an aluminum box using iron pins set into their reverses. The gap between the two blocks was filled with plaster toned a flat neutral tone (Fig. 31). This system proved problematic for two reasons. First, the two fragments were of different weights and moved independently from each other within the mount. In contrast, the plaster bridging the gap between the fragments was rigid. These factors eventually led to cracking of the original, weaker stone along the joint. In addition, the use of iron bolts set into the stone with plaster was of great concern because the hygroscopic plaster creates an environment conducive to rust. Heavy rusting could cause iron staining, or cracking and splitting of the stone as the pins expanded with corrosion.

These issues were addressed by conservation treatment in preparation for the 1996 Pharaohs exhibition (Christman and Griffin 1995). The iron pins were replaced with stainless steel pins; and the plaster fill was removed and replaced with a flexible synthetic fill (B-72 bulked with glass microballoons applied over strips of compressed, closed cell polyethylene foam worked into the joint). This fill was designed to be weaker than the stone and more flexible, to prevent further damage from movement. The fill was toned to closely blend with the surrounding stone; its appearance was similar to that of the earlier plaster fill.
Griffin

This solution worked well in terms of preventing further damage to the relief; however, it was unsatisfactory from an aesthetic standpoint. The fill attempted to provide an unobtrusive joint between the adjacent carved and painted surfaces by providing a flat bridge. Instead, it took on a life of its own and was a visual focus for several reasons. First, the two blocks, both rectangular, do not match, and as a whole the relief has an odd shape. Second, the surfaces are not perfectly aligned. The smaller block on the proper left side is approximately a millimeter or more higher in some areas; therefore, the surface of the fill is uneven. Also, the level of the fill had been matched to the level of carving in many areas which made it more noticeable. Finally, the attempt to mask the fills by toning it to closely blend with the surrounding stone made it appear "painted" and therefore, more rather than less obvious.

With these factors in mind the fill was reworked in 1999 in preparation for the reinstallation of the Egyptian galleries. The goal for the treatment was to make the fill as unobtrusive as possible, to carry the eye over the gap without calling attention to the loss. A new flexible and soft fill was prepared, using the same materials as described above for the Marsh Scene and the Ramesside relief. The fill was made similar in texture and tone to the fine-grained limestone. Dry pigments were added to create a neutral beige color, similar, but not identical to, the color of the unpainted limestone. The fill was slightly recessed from the relief to read as a relatively flat, eroded surface. Finally, the demarcation between the blocks was cut into the fill. They now read as two blocks, side by side, with some losses to the decorated surfaces at the block edges (Fig. 32). This fill approach is very successful at disguising the extent of losses and the added material is barely discernible with close inspection. It improves upon the previous flexible fill in that it is not damaged or destroyed when the relief is moved. The fill successfully allows the masterfully carved and painted surfaces to be the focus of viewing, and they shine.

To create the illusion of a fragment floating on the wall, consistent with the mounting of the other reliefs, the heavy aluminum box that housed the fragments was cut back and disguised with a panel fitted over the relief. The box is mounted on the wall, and the surrounding surface was built up in wood disguising the thickness of the box and pins. The effect of the edges of the relief rising slightly above the display panel promotes the illusion of fragments mounted onto a wall (Fig. 32).

Conclusion

The recent reinstallation of the Cleveland Museum of Art's Egyptian collection was successful because of the close collaboration between the essential departments within the institution. However, the time and consideration that was taken for the conservation component of the work had the most far-reaching effect on the presentation and aesthetic appreciation of the collection of carved limestone reliefs. The materials and conservation techniques used during this project were standard. However, the detailed thinking that guided their use was not. This careful thinking and considered approach to the compensation of losses had a profound effect on the way the individual reliefs are seen by scholars and the general public. Freeing these reliefs from
Griffin

their plaster and wooden prisons has restored their magic and vitality. Subtle details in carving, color and composition can once again be appreciated. Although fragmentary and worn, the appearance and meaning of these archaeological artifacts was enhanced immeasurably by not applying a standardized “archaeological” approach of minimal reconstructions to their treatment. These objects are archaeological fragments, and they are also masterpieces. These treatments emphasizes both of these characteristics. The importance of the conservation treatments towards revealing these masterpieces—recently hidden by previous restorations—was recognized within the museum and without; and was duly noted as part of the publicity and fanfare surrounding the reinstallation (Apollo 1999, Berman and Griffin 1999). It was a collection reborn (Figs. 12-14). Despite the ravages of time and early restoration, these rich depictions thrive once again in a noble afterlife, and continue to dazzle with their tantalizing glimpses to the past.

Acknowledgments

The success of this project is due to the many minds, hearts and hands that participated. I would like to thank Larry Berman and Ken Bohac, the curatorial forces behind the project, for their extraordinary intelligence, insight, collegiality and support. Contract conservator Jack Flotte beautifully executed many of the treatments, several of which were discussed in the body of this text. The conservation work could not have been completed without the help of chief conservator Bruce Christman, conservation intern Beth Adler, and art handlers Beth Wolfe and Joe Ionna. The design and mounting work of the Design and Facilities division was crucial to achieving our aesthetic and preservation goals. In particular I would like to mention Rusty Culp, Jeffrey Strean, Jeff Falsgraf, Dave Geiger, Brian Ulrich, Joe Blazer and Carlo Maggiora. Essential photographic support was provided by Joan Neubecker, Janet Burke, Bruce Shewitz and Dave Brichford. It is impossible to complete any project well without the help of Judy Devere.

Endnote

1. The series of reliefs have been illustrated and described before treatment (Berman et al. 1999, 393ff). Please note, however, that the extent of instability of several of the reliefs as well as the cumbersome and invasive support systems were not apparent until after the reliefs were deinstalled. Therefore, the extent of condition problems is not reflected in the earlier publication.

Materials

Acryloid B-72 (Rohm and Haas, Philadelphia, PA)
Talas (212-219-0770, www.talasonline.com), Conservator’s Emporium (775-852-0404,
Griffin


Dap Vinyl Spackling Paste (Philadelphia Resins, Montgomery, PA)
Hardware stores, K-Mart, Home Depot, etc.

Ethafoam HS 600 polyethylene compressed closed cell foam (Dow Chemical Co., Midland, MI)
American Foam, Painesville, Ohio (440-352-3434)

Golden acrylic emulsion paints (Golden Artist Colors, Inc., New Berlin, NY)

Liquitex acrylic emulsion paints (Binney and Smith, Easton PA)
Art supply stores

Milliput epoxy putty (The Milliput Co., Dolgellau, Gwynedd, UK)
Conservator’s Emporium

Pelikan watercolors (Pelikan Vertriebsgesellschaft mbH & Co. KG, Hannover Germany)
Art supply stores

Pliacre epoxy putty (Philadelphia Resins, Montgomery, PA)
Conservation Support Systems

Fine Surface Polyfilla (Polycell Products, Welwyn Garden City, England)
Conservator’s Emporium

Rhoplex AC33 (Rohm and Haas, Philadelphia, PA)
Talas, Conservator’s Emporium, Conservation Support Systems

Scotchlite Glass Bubbles (3M, St. Paul, MN)
Conservation Support Systems

Whatman Fibrous Cellulose Powder (CF 11) (Whatman Inc., Clifton, NJ)

Art supply stores
References

Apollo, December 1999. Reinstallations and Renovations of the Year. Apollo: The International Magazine for the Arts 150 (154 n.s.) 59, 61, fig. 25.


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Griffin

Figure 1. Seated Couple: Mentuemhat Ancestors. Limestone. H. 57.3, W. 53 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.493. Before Treatment Photo. The relief previously was reassembled from at least eighteen fragments. Most losses were compensated with recessed fills toned a flat beige; however, the numerous losses remained visually distracting— the eroded breaks and recessed fills created a competing play of light and shadow.
Figure 2. Seated Couple: Mentuemhat Ancestors. Limestone. H. 57.3, W. 53 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.493. After Treatment Photo. Most areas were filled to be flush with the carved stone surface using a bulked B-72 putty (glass microballoons/dry cellulose/dry pigments) mixed to match the texture and tone of the stone. Sculpted forms were completed when possible by making obvious connections; one loss in the figures was left flat and slightly recessed because the original contours were unknown. Treatment has restored the play of light and dark and enables the finely carved composition to be appreciated.
Figure 3. Talatat: Portrait of Nefertiti. Painted sandstone. H. 21.5, W. 24.3 cm. Dynasty 18, reign of Amenhotep IV. © The Cleveland Museum of Art, Purchase from the J.H. Wade Fund, 1976.4. Before Treatment Photograph. This group of reliefs previously had been cast into cumbersome plaster blocks, put in heavy wooden frames, and sunk into the wall. This treatment and display philosophy made viewing difficult—deadening the images and dulling the characteristic features of their innovative carving.
Figure 4. Talatat: Portrait of Nefertiti. Painted sandstone. H. 21.5, W. 24.3 cm. Dynasty 18, reign of Amenhotep IV. © The Cleveland Museum of Art, Purchase from the J.H. Wade Fund, 1976.4. After Treatment Photograph. Removal of the surrounding plaster and new inobtrusive mounts enable the reliefs to be properly lit and viewed. The subtle play of flat surfaces and raised and sunk relief were successfully restored.
Figure 5. View of gallery 204 before reinstallation. The Old Kingdom reliefs of Nyankhesut are centered in the picture. The old presentation and restoration approach interferes with the viewer's appreciation of compositional details and the quality of the workmanship. The arrangement of squares and rectangles on the wall is what focuses the eye.
Figure 6. View of gallery 205 before reinstallation. The Late Period reliefs of Mentuemhat are centered in the picture. As noted for figure 5, the installation does not promote the study nor visual appreciation of these works.
Figure 7. Tomb Relief of the Chief Physician Amenhotep and Family. Limestone with traces of paint. H. 128, W. 199.5 cm. Dynasty 19, early reign of Ramesses II. © The Cleveland Museum of Art, Leonard D. Hanna, Jr., Fund, 1963.100. During Treatment Photo. The laborious and painstaking task of removing the plaster revealed numerous flat chisel marks on the lower proper left suggesting that the area had been retooled after the surface was damaged, probably to create a better surface for filling. In addition, details in dress on the two female figures were inaccurately reconstructed.
Figure 8. Relief of Agricultural Scenes. Painted limestone. H 92.5, W. 173.8 cm. Early Dynasty 6. Gift of the John Huntington Art and Polytechnic Trust, 1930.736. After treatment photograph. Please note that a block on the lower right appears to be misaligned based on the position of the register line and the figure's feet. This is not the case. The block was misaligned previously and the surface was recarved to compensate for the previous mounting. The recarved areas no longer match up when the block is correctly positioned. Due to the large losses between fragments fills were finished to be slightly recessed, smooth and matched in tone.
Figure 9. View of gallery 203 before reinstallation. The empty wooden niches once held a series of four sandstone reliefs from Amarna (fig. 3-4), attached within the niches by screws in their surrounding wooden frames.
Figure 10. Marsh Scene with Cat and Birds. Limestone. H. 38, W. 41.7 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.498.

After Treatment Photo. This detail shows the side after treatment to disguise the old mounting system. Gaps on the reverse were consolidated with adhesive (B-72), filled with B-72 putty (glass microballoons/cellulose fiber), and reinforced with thin patches of bulked epoxy putty (Pliacre). The aluminum backplate was cut down and reattached. The gap between the stone and the backplate, ranging from 1-3 cm, was bridged with tissue, spackled with bulked B-72 putty and painted with watercolors. The new mount fully supports both the fragment and the old support system by way of a complete backplate, contoured lower support shelf, and brackets around all edges.
Figure 11. View of gallery 205 after reinstallation. The wall case on the right contains the series of Old Kingdom reliefs from the tomb of Nyankhesut. The large Agricultural Scene (fig. 6) hangs above the ceramic. The new inobtrusive mount is visible on the side.
Figure 12. View of gallery 203 after reinstallation. This gallery is thematically arranged around the subject of "Pharaohs and Deities." The Nome Gods Bearing Offerings (fig. 31-32) and the four reliefs from Amarna (fig. 3-4) can be seen in the far corner.
Figure 13. View of gallery 204 after reinstallation. This gallery is thematically arranged around the subject of “Daily Life”. The Tomb relief of the Physician Amenhotep and his Family (fig. 27-30) is visible on the far wall. The new inobtrusive mounts allow the art to be the focus of the room.
Figure 14. View of gallery 205 after reinstallation. This gallery is thematically arranged around the subject of "Afterlife". The sixteen reliefs from the Tomb of Mentuemhat are visible on the far wall (fig. 1-2, 10, 15-26). The new inobtrusive mounts allow the art to be the focus of the room; and allow for deliberately harsh lighting to bring out every subtlety of the carving.
Figure 15. Mentuemhat as a Priest with Staff and Sceptor. Limestone. H. 85.2, W. 46 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.492. Before Treatment Photo. The relief previously was reassembled from at least twenty fragments. Several of the adjoined edges of fragments are straight and appear to correspond to the original dressed edges of individual stone blocks; these can be seen running horizontally through the relief.
Figure 16. Mentuemhat as a Priest with Staff and Scepter. Limestone. H. 85.2, W. 46 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.492. After Treatment Photo. The carving on this relief is extremely fine; for instance, the curls of the wig were also drilled using one of two different drill bits depending on the size of the area. Traces of red and blue pigments remain from the original polychromy.
Figure 17. Female Offering Bearer. Limestone. H. 28, W. 21.4 cm. Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.496. Before Treatment Photo. The relief is fragmentary and has been reassembled from four fragments. The surface is pitted and eroded with some random scratches.
Figure 18. Female Offering Bearer. Limestone. H. 28, W. 21.4 cm. Dynasty 26. Gift of Hanna Fund, 1949.496. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.496. After Treatment Photo. The relief is unfinished and was never polychromed. Chatter marks from planing the background using a point chisel are visible in many areas, as well miscarvings. There is no evidence of a corrective gesso layer to disguise miscarvings, as present on the Marsh Scene with Cat and Birds from the same tomb (Figs. 10, 24-26).
Figure 19. Male Offering Bearer. Limestone. H. 35.3, W. 21.1 cm. Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.497 Before Treatment Photo. The relief is fragmentary and has been reassembled from at least eighteen fragments, with a pitted, eroded and scratched surface. The relief is unfinished and was never polychromed. Chatter marks from planing the background using a point chisel are visible in many areas.
Griffin

Figure 22. Mentuemhat in Ecclesiastical Dress. Limestone. H. 132, W. 51.8 cm. Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1951.281. Before Treatment Photo. The relief is fragmentary and has been reassembled from at least thirty-four fragments. Despite this degree of fragmentation, the carved surfaces and painted hieroglyphic text exhibit little wear and are very well preserved.
Figure 23. Mentuemhat in Ecclesiastical Dress. Limestone. H. 132, W. 51.8 cm. Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1951.281. After Treatment Photo. The relief was carved in sunk relief with many areas articulated in subtle sculptural relief with finely incised details. The relief was left unfinished and was not originally polychromed except for the finely painted hieroglyphic columns which exhibit a solid yellow underdrawing painted over in considerable detail using red pigment.
Figure 24. Marsh Scene with Cat and Birds. Limestone. H. 38, W. 41.7 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.498. Before Treatment Photo. It was reassembled from eight fragments with several additional surface chips, using an unknown adhesive. Some of the smaller gaps between fragments had been filled with plaster of Paris and toned to blend with the unpainted stone. Losses at the corners had been compensated with painted wooden wedges, attached to a wooden frame surrounding the relief.
Figure 25. Marsh Scene with Cat and Birds. Limestone. H. 38, W. 41.7 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.498. During Treatment Photo. This photo shows a small version of the invasive metal support system that afflicts this series of reliefs. In this case bent lengths of brass stock were adhered to the reverse using a series of brass staples set into drillholes with an excess of heavy plaster. More invasive systems are illustrated elsewhere (Berman and Griffin, 1999).
Figure 26. Marsh Scene with Cat and Birds. Limestone. H. 38, W. 41.7 cm. Late Dynasty 25 to early Dynasty 26. © The Cleveland Museum of Art, Gift of Hanna Fund, 1949.498. After Treatment Photo. Pigment traces, generally preserved as a thin wash of color, are visible in many areas. Traces of two reds, blue, green and yellow were noted. A more complete discussion appears elsewhere (Berman et al. 1999, 412).
Figure 27. Tomb Relief of the Chief Physician Amenhotep and Family. Limestone with traces of paint. H. 128, W. 199.5 cm. Dynasty 19, early reign of Ramesses II. © The Cleveland Museum of Art, Leonard D. Hanna, Jr., Fund, 1963.100. Before Treatment Photo. The relief previously was reassembled from seven fragments. Losses had been filled with plaster of Paris, roughly carved and/or sanded and toned a flat beige. A poorly fitted stone block was inserted to fill a loss on the upper proper right, with plaster poured around to fill in the gaps. In general, the old fills exhibited some deterioration, with visible erosion, chipping, and cracking.
During Treatment Photo. After extraneous material around the edges was removed, the plywood backing was cut and sanded to match the contours of the relief and was inset slightly. A bulked adhesive (Rhoplex AC 33 with Scotchlite glass microballoons) was injected into the approx. 1 cm gap between the stone and the backing board; Tyvek tubing and a pastry bag was used to deliver the putty deep within the crevice. The edges of the plywood backing and the filled gap between the stone was disguised using overlapped patches of sturdy Japanese tissue adhered to and covering the plywood. The tissue was floated over the gap and adhered to the bottom edge of the stone (B-72 in acetone).
Figure 29. Tomb Relief of the Chief Physician Amenhotep and Family© The Cleveland Museum of Art, Leonard D. Hanna, Jr., Fund, 1963.100. After Treatment Photo. The tissue was spackled using a pigmented B-72 putty (glass microballoons, cellulose fiber and dry pigments), sculpted, sanded and toned.
Figure 30. Tomb Relief of the Chief Physician Amenhotep and Family. Limestone with traces of paint. H. 128, W. 199.5 cm. Dynasty 19, early reign of Ramesses II. © The Cleveland Museum of Art, Leonard D. Hanna, Jr., Fund, 1963.100. After Treatment Photo. New fills were constructed using existing photodocumentation as a guide. Decorative elements were minimally to unify fragments. Outlines and major internal contours were recreated; finer details such as pleats were not. Fills were executed using a similar pigmented, bulked B-72 putty and toned with watercolors
Figure 31. Nome Gods Bearing Offerings. Painted Limestone. H. 66, L. 133 cm. Dynasty 18, Reign of Amenhotep III. © The Cleveland Museum of Art, John L. Severance Fund, 1961.205, 1976.51. Photo taken after first treatment campaign. The relief is composed of two limestone fragments. Fragment 1976.51 (proper left fragment) is approximately 60 cm square and nearly uniform in thickness (approx. 4 cm). Fragment 1961.205 (proper right fragment) is roughly rectangular and measures approximately 20 x 60 cm. It varies in thickness, ranging from 9 cm to 10.5 cm. Plaster fills are found in both lower corners and the upper proper right.
Figure 32. Nome Gods Bearing Offerings. Painted Limestone. H. 66, L. 133 cm. Dynasty 18, Reign of Amenhotep III. © The Cleveland Museum of Art, John L. Severance Fund, 1961.205, 1976.51. After Treatment Photo. The new fill between the blocks extends the eroded break-faces so that they nearly touch but does not attempt to disguise the damage or the joint. This approach makes the fill unapparent and they viewer instead focuses on the marvelous carved and painted details.