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CONSERVATORS ANONYMOUS: POST-ITS FROM THE EDGE

Katherine A. Holbrow

1. Introduction

This paper presents a series of quick ideas or tips—“Post-it Notes” from Williamstown Art Conservation Center (WACC). The tips aren’t really anonymous, as the title suggests, but they came from several different people and situations. Ideas were suggested by paintings and furniture conservators as well as objects people. Included are two computer tips, two examples of how to use a casting compound, one fill material, and lastly, a slightly longer discussion of some inpainting materials that are favorites of the author.

The Williamstown Art Conservation Center is a regional lab in the Berkshire Hills of western Massachusetts. It is a small operation, with ten to 15 conservators who work very closely together. On big projects, it is very common to borrow help from another laboratory, and this interdisciplinary cooperation leads to lots of creative solutions.

We also see many strange problems—our 60 member museums have a wide range of collections, and as they are small (and with small budgets), artwork tends to come to us needing extensive treatment. As a result, we do a lot of structural work, and like most conservators, we work under lots of time constraints. Shortcuts are very useful, where appropriate— it leaves more time for obsessing about the details!

These WACC tips were originally formatted as single page handouts, to be as accessible as possible. They include a short introduction, supplier, pros and cons (where that seemed appropriate), and treatment examples, with illustrations.

2. Tips for digital imaging

The first two tips concern digital imaging. In a regional lab like WACC, curators tend to be off-site— often several hours away. Digital imaging allows us instant long-distance consultations about the visual aspects of the treatment. Enhancing these images can often help to clarify the problem or questions that arise.

WACC Post-it #1: Adobe Photoshop™ and radiography

Product: Adobe Photoshop™ is an image-processing software program that enables the user to manipulate images and save them in different formats. It has many applications in conservation documentation.

Discussion: Radiographs of complicated three-dimensional objects can be very confusing to read because of the way they flatten an image. Overlapping components become hard to understand when all sense of depth is eliminated. To combat this, take a digital image under normal light from the same setup as the x-ray. Digitize the x-ray (either scan or photograph the film on a light box), and superimpose the two in Photoshop. Make the “real” layer partly transparent (by

changing the opacity in the Layers view). Matching up the 'inside' with the 'outside' can help clarify what you are seeing.

Example: The wood and iron yoke of a large bell radiographed here appear flat, when in fact the images were taken at a $\frac{3}{4}$ angle. Superimposing an outside view adds depth and makes the radiograph more readable.



Figure 1a. Bell with wood and iron yoke (Paul Revere, 1805; Town of Greenfield, MA).



Figure 1b. Digital images overlapped using Adobe Photoshop™.

WACC Post-it #2: Adobe Photoshop™ and ultraviolet images

Product: Adobe Photoshop™ is an image-processing software program that enables the user to manipulate images and save them in different formats. It has many applications in conservation documentation.

Discussion: Ultraviolet images can be made a lot clearer with image enhancement. With traditional photography, one can use filter gels on the camera lens to filter out all the red light. With digital images, one can filter out all the red color, and also heighten the contrast. In this case, contrast and brightness in the different layers of the image are adjusted differently and two images are displayed side-by-side for comparison.

Example: This terrestrial globe, signed by various explorers, was light-damaged. The orbits traced by some of the astronauts are visible only in ultraviolet light.

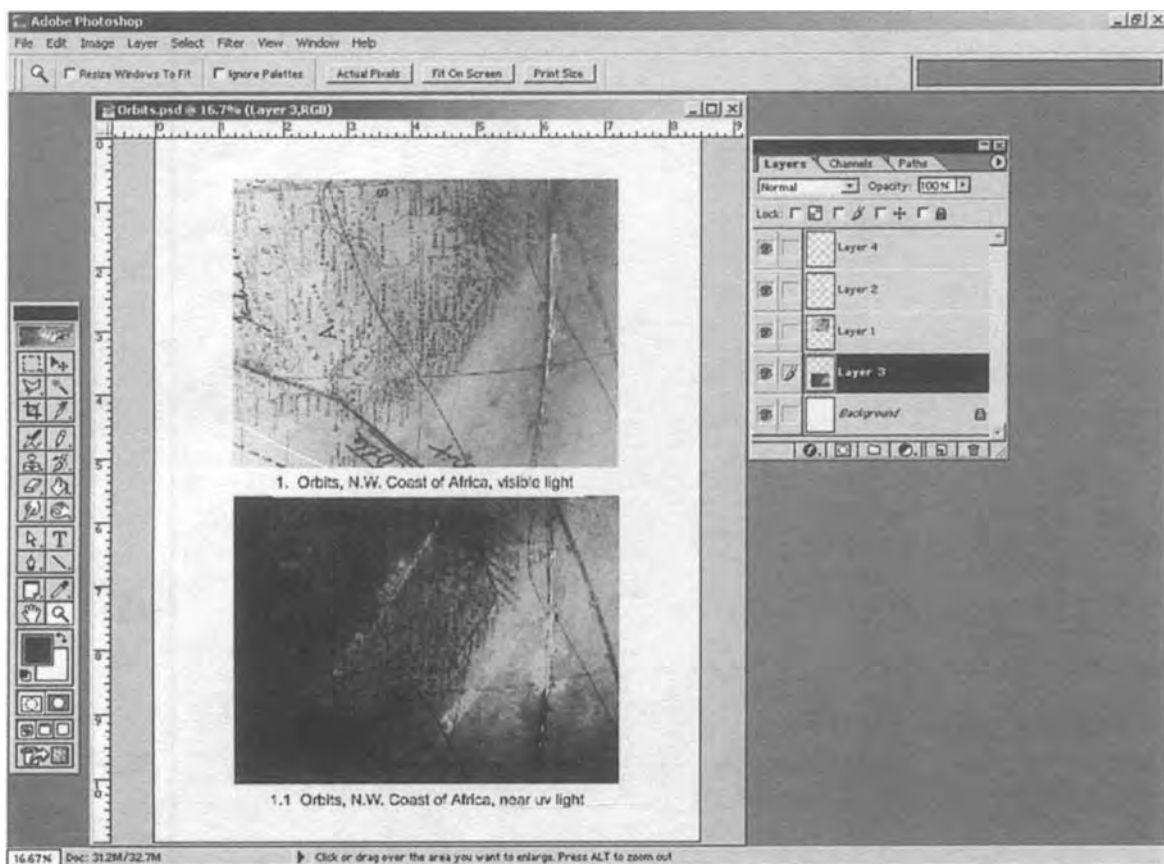


Figure 2. Visible and ultraviolet light digital images compared using Adobe Photoshop™.

3. Treatment tips: use with caution

Publishing any treatment ideas, and “tips” in particular, can raise issues of conservator ethics. Is it irresponsible to present what are, in effect, recipes for treatment? No such thing exists in conservation, as we all know. Objects are unique, they do not age consistently or even predictably, and if anything can go wrong, it generally will.

However, experience does pay, materials recur, and mechanisms of degradation can be scientifically determined. It may be better not to consider these “tips” as recipes, but rather as the collective experience of many conservators. Experience constantly undergoes growth and change, and as such the “tips” have a finite usefulness.

It should also be emphasized that none of the topics presented here includes full and complete instructions or descriptions. To keep things brief, a level of professional knowledge about topics such as casting and inpainting is assumed. Also taken for granted are proper documentation, the use of isolation layers, and other standard practices, as are:

- use of MSDS sheets
- literature searches
- calls to the manufacturer
- talking to colleagues

And, of course, *testing it yourself*. There is no substitute for common sense and professional responsibility.

WACC Post-its #3 and #4: Reprosil™ Casting Compound: Quick 3-D Casts

Product: Reprosil™ is a very high viscosity vinyl polysiloxane impression material marketed as a dental casting compound. It is a very quick and convenient way to cast small shapes and textures.

Discussion This two-part putty sets very quickly (in about two minutes). It is stiff enough to cast three-dimensional forms without building dams or special forms (unlike a pourable RTV silicone such as Dow Corning 3110 RTV). The material is expensive, but the time saved can be worth it. It does not give quite the fine detail of Dow 3110, and thickness and quick setting time can cause trapped air bubbles. As with any silicone casting material, a separator may be needed to protect the object, and the surface may need to be solvent cleaned

Example 1: The missing finger on this bronze *Hermes* was replaced by a copy, cast from the adjacent finger. The cast took about ten minutes to make, by simply wrapping the putty around the figure and letting it set for five minutes or so. Building a form to pour a cast completely in-the-round would have been particularly time-consuming.



Figure 3a. *Hermes* with missing finger, before treatment.



Figure 3b. During treatment, finger replaced.



Figure 3c. After treatment.

Example 2: An oil painting on canvas had a loss in the glossy black background necessitating a very thin, textured fill. A flat sheet of Reprosil was pressed on the front of the canvas to produce a mold of the canvas texture (Fig. 4). The loss was mostly filled with Modostuc (a calcium carbonate/ PVA filler), and topped off with a mixture of Golden Heavy Gel, Golden Heavy Body Acrylics for color, and a few drops of Golden Retarder to prevent uneven drying. The Reprosil mold was then set on top with light weights (the canvas was supported from below) to impress the canvas texture on the fill, and the fill allowed to dry overnight. In some cases, an even thinner “skin” of texture can be cast over a colored fill, using transparent Golden self-leveling gel alone.

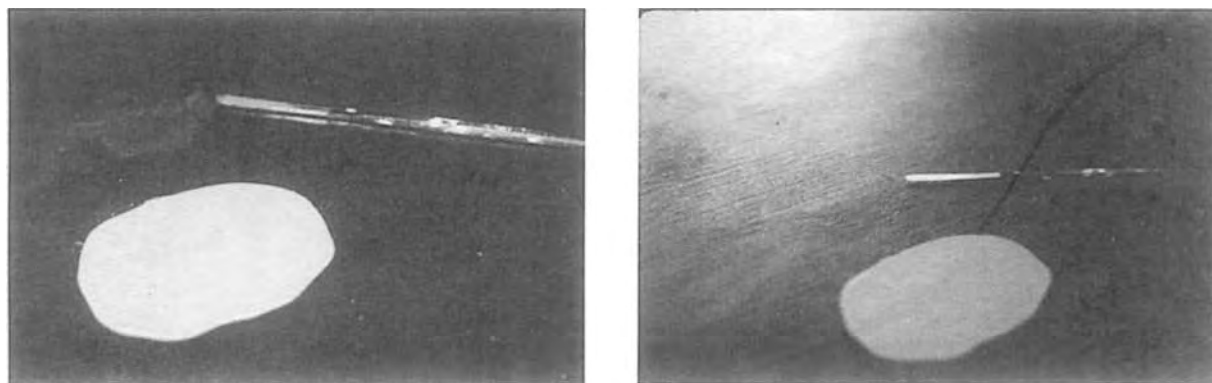


Figure 4. Oil on canvas. Left: flat fill. Right: completed fill with textile imprint.

WACC Post-it #5: Paraloid B-72/alpha-cellulose putty

Product: Many conservators use Paraloid B-72 acrylic resin mixed with bulking agents such as glass microballoons or fumed silica, and colored with dry pigments, as a putty for reversible fills. These fills can be too rubbery to carve or shape easily, however, and solvent evaporation can cause large air bubbles to form.

Discussion: Adding alpha-cellulose to the putty can mitigate these problems, as well as reduce shrinkage and improve handling. If made very stiff, the putty can be press-molded, cut with a scalpel, adhered with liquid B-72, and shaped with a hot spatula (silicone release Mylar or paper can help). The final appearance is that of coarse terracotta, which can be painted or clear-coated.

Example: Losses in this 17th-century terra cotta relief were filled with putty made from (proportions are rough estimates):

- 1 part 30% B-72 (in 1:1 toluene:acetone)
- 1½ parts alpha-cellulose
- ½ part glass microballoons
- dry pigments to color

Fig. 5a shows the many losses (where the black glaze is missing, so is the surface of the terracotta) after filling; Fig. 5b detail shows an area of press-molded, applied putty after burnishing but still uncoated. Fig. 6 shows the putty as it appeared before application.



Figure 5a. Terracotta plaque (Fort Ticonderoga, NY) with surface losses filled.



Figure 5b. Detail of applied putty, burnished but uncoated.

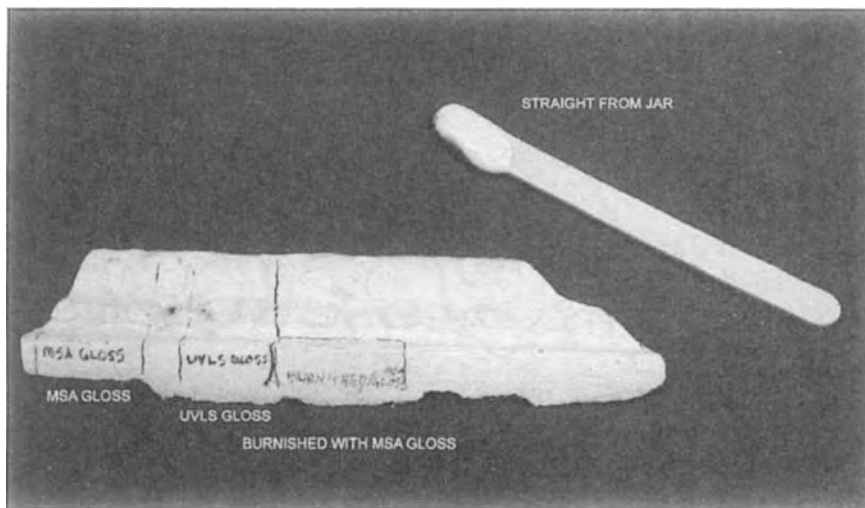


Figure 6. Stages in application of the putty.

4. Inpainting with Golden Acrylic Colors

Inpainting losses and cracks in ceramics can involve the following problems:

- translucency differences cause shadows between repair and original ceramic.
- gummy edges and tidelines form from overly-thick paint.
- paint is not transparent enough.
- inpaint is not glossy enough to mimic ceramic glaze.

Using Golden Paints' system of versatile acrylics can help resolve some of these problems. Airbrushing can make transitions gradual enough to avoid shadows, at the cost of a very slight overspray. Airbrush paints are made with a light-bodied binder that dries very flat. They can also be used with a paintbrush for inpainting designs on ceramic, minimizing tidelines and gumminess. Adding Transparent Airbrush Extender and Slow-drying Glaze medium can also help to achieve a more transparent, flat glaze effect. UVLS High Gloss Varnish dries very thin (again, no tidelines at the edges), and makes a good topcoat. It comes as a water-based emulsion or in mineral spirits (which needs to be spray-applied to avoid disturbing the underlying layers).

Golden products can be used interchangeably. This means that with the proper additives, such as airbrush extender, retarder (polyethylene glycol), or acrylic media, you can adjust transparency, gloss, and other characteristics. The acrylic mediums (known as GACs) adjust hardness, crazing, and viscosity. Golden paints also come in different forms, ranging from the thick Heavy Body Colors (most familiar to conservators, these mimic the texture of oil paints) to the very thin Transparent Airbrush Colors. These thinner paints can be much more useful for objects conservators than the Heavy Bodies, since using fill material to build up thickness (and keeping the paint thin) often gives a more satisfactory final product.

Test panels can be a useful way to get to know the different qualities of the products. This test panel shows the different application characteristics of the paints, applied by brush. Note that the first four streaks are cadmium red, but the airbrush colors (the two stripes at the right) are Naphthol red instead. Golden has developed these colors to allow a non-toxic option for spray applications, rather than spray the highly-toxic cadmium pigment.

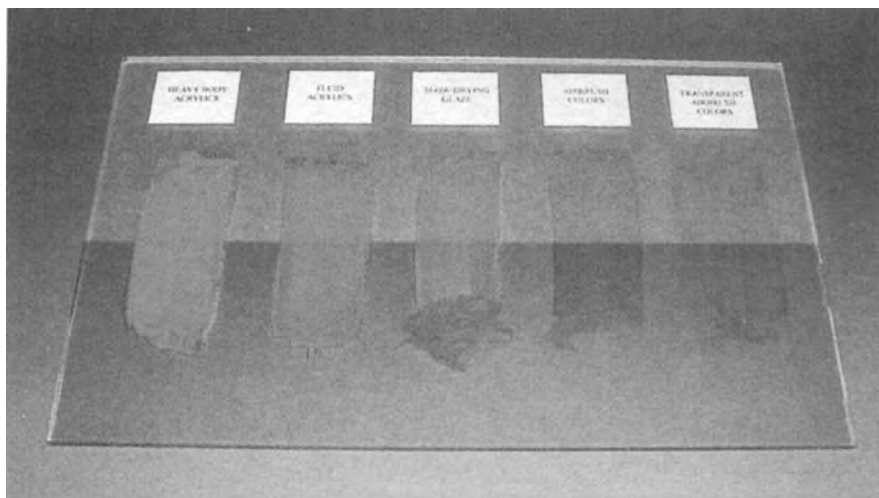


Figure 7. Test panels for red pigments.

On the brush-applied paint test panels, from left to right, the applications are: heavy-body paint; fluid acrylic; slow-drying glaze; airbrush colors; and transparent airbrush colors. Two other useful test panels display airbrushed samples of various transparent media (the larger panel), and various ultraviolet light stabilized (UVLS) varnishes in matte, satin, and gloss versions (the smaller panel). They provide a quick reference for just how matte the results will be, or how invisible a clear topcoat can be.

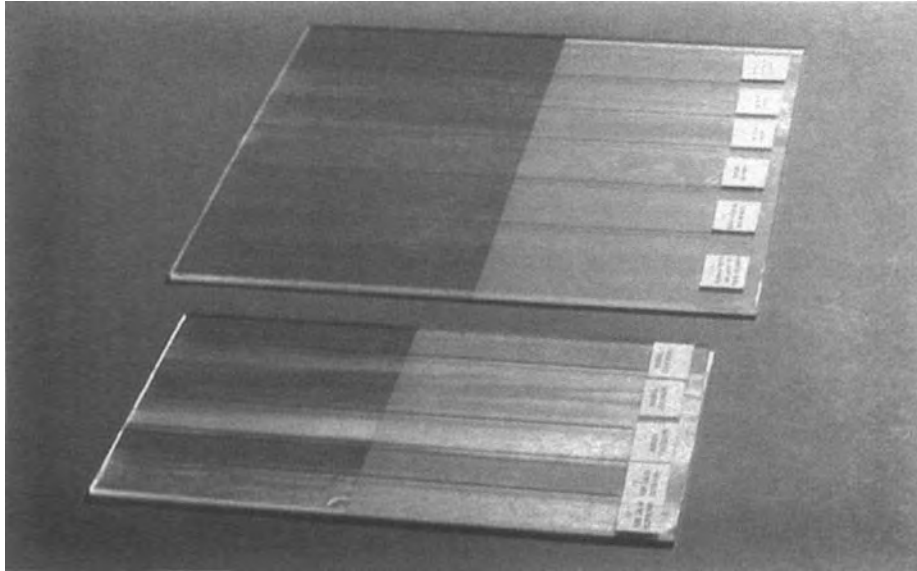


Figure 8. Test panels for transparent media.

The larger panel shows the airbrush-applied medium test panel. From top to bottom, the applications are as follows: transparent airbrush extender; GAC 200 (the hardest medium, which cracks when used alone); GAC 500 (slightly softer, used in the fluid acrylics); slow-drying glazes (allow blending); and a 1:1:1 mixture of airbrush extender: slow-drying glaze colored with fluid acrylics: water. This mixture is useful for simulating porcelain.

The smaller panel shows airbrush-applied UVLS varnishes. From top to bottom they are: water-based gloss; water-based satin; water-based matte; mineral spirits gloss; and mineral spirits matte.

WACC Post-it #6: Inpainting with Golden Acrylic Colors

Product: Inpainting on high-gloss ceramics and other objects can be made easier by using Golden acrylic paints, mediums, gels and varnishes.

Discussion: Acrylic emulsions produced by Golden Paints offer a number of advantages: both water-borne emulsions & resin options; a wide range of emulsion formulas including heavy-body, fluid and airbrush; a wide range of additives, all compatible; well-tested light-stability and reversibility; and great technical support.

Disadvantages: these paints have the cloudy whiteness of any emulsion when wet, and consequently dry a darker and cooler color than they appear during application. To avoid this, let each test patch dry before mixing more color, and try to mentally adjust for the amount of cool white you know will disappear upon drying. It gets easier with experience, and is very worthwhile for safety reasons.

Examples: The following examples show some recent inpainting on ceramics, both porcelain and white-bodied stoneware. They are all high-gloss surfaces; two have monochrome glazes which are replicated most successfully by airbrushing, the other has decoration which necessitated brush application.

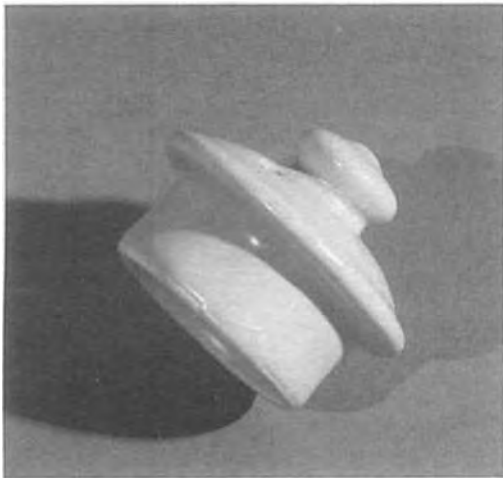


Figure 9a. Airbrush inpainting on teapot lid (private collection).



Figure 9b. Airbrush inpainting on porringer (Historic Deerfield, acc. No. 61.268).

Example 1: Airbrushing was used to inpaint losses in these monochrome high-gloss ceramics, a porringer and a teapot lid (Figs. 9a, b). They were sprayed (over a Milliput epoxy fill) with a 1:1:1 mixture of Transparent Airbrush Extender, Slow-drying Glaze medium colored with Fluid Acrylics, and water. A clear coat of Transparent Airbrush Extender was used as a topcoat.

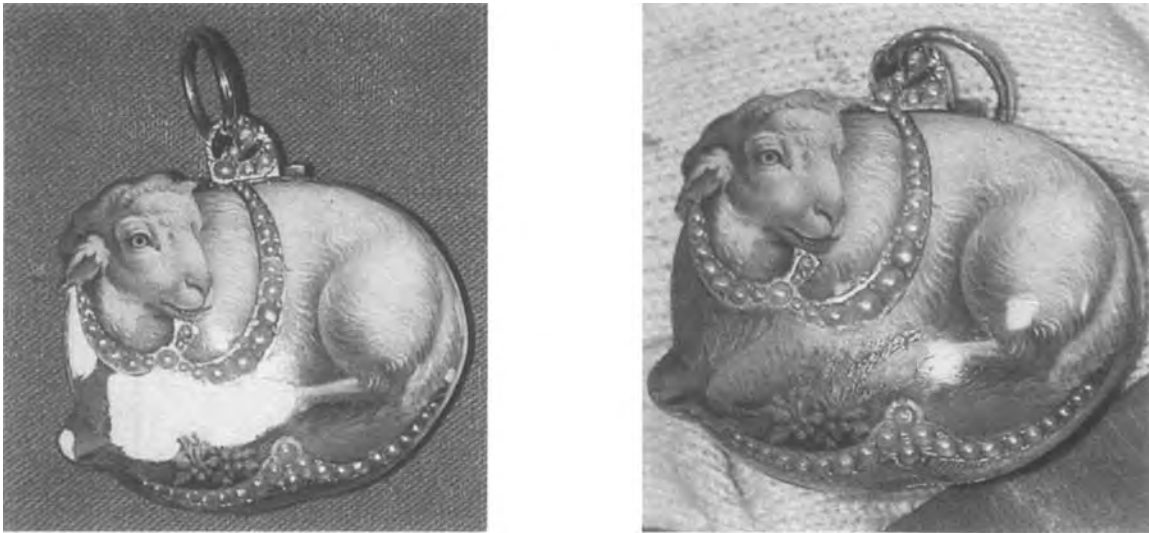


Figure 10. Inpainting with paintbrush (Lamb-form pocketwatch Munson-Williams-Proctor Institute, PC 358)

Example 2: A paintbrush was used to reintegrate the design on this chipped pocket watch. A highly polished fill of Milliput epoxy putty helps achieve the desired glossy result.

Acknowledgements

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Suppliers

Acryloid B-72: Conservation Support Systems and others

Adobe Photoshop™: It is available from Adobe Systems, Inc., San Jose, CA (www.adobe.com), for approximately \$700.

Alpha-cellulose: Sigma Chemical (www.sigma-aldrich.com).

Golden acrylic paints and media: Golden Artist Colors, Inc., 188 Bell Road, New Berlin, NY, 13411, (607) 847-6154, (www.goldenpaints.com). They are also available from suppliers of artists materials such as Dick Blick (www.dickblick.com).

Milliput: Conservator's Emporium, 100 Standing Rock Circle, Reno, NV 89511, Tel (775) 852-0404, (www.consemp.com).

Modostuc: Peregrine Brushes & Tools, P.O. Box 200, Wellsville, UT 84339, Tel (435) 245-5830, (www.peregrinebrushesand21s.com)

Reposil™: DENTSPLY International, Inc., #626110, Tel(800) 532-2855 x794. Approximate cost: about \$70 for 500 ml.

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