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## Pemulen Case Study:

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*A Midsummer-Night's Dream* is a set of nine bas-relief sculptures by British-born American sculptor John Gregory (1879-1958). Eight of the nine plaster maquettes are in the collection of Scripps College while the ninth panel is located at Amherst College. The Scripps reliefs are the models for the marble versions located on the facade of the Folger Shakespeare Library in Washington, DC. Preliminary research has identified the Piccirilli brothers as the stone carvers of the marble renderings at the Folger.



Figure 1. Before Treatment.

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# A Midsummer-Night's Dream

by Donna Williams

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In 2007, Scripts College undertook the conservation of their plaster reliefs. The reliefs are installed in a covered exterior arcade on the walls of Balch Hall at the Claremont, CA campus. All of the reliefs have been painted with two layers of gray colored wall paint -- the same paint applied to the surrounding wall surfaces. In general, the paint is well adhered to the plaster with localized areas of powdering, lifting, cracking, and flaking.

College archive documentation is limited but does show the reliefs without overpaint shortly after their installation in 1968. Records suggest overpainting first occurred sometime in the early 1980s. Conservation intervention was undertaken to remove the non-historic paint to reveal the original surface and to more fully understand how the reliefs were fabricated, and their relationship to the marble artwork at the Folger.

Analysis by Richard Wolbers and David Scott to identify overpaint binders and pigments, and plaster composition, revealed that the overpaint layers are emulsion paint, a combination of an oil protein mixture, e.g. linseed oil, casein. The plaster is gypsum with a wide particle size distribution.



Figure 2. During Treatment.

Overpaint removal was initially performed by application of benzyl alcohol applied by brush to randomly selected locations. Application of benzyl alcohol was repeated until the paint appeared saturated and showed signs of cracking or lifting from the substrate. Several applications were required in approximately 25% of the test areas before swelling and lifting of the paint was visible. Repeated applications of benzyl alcohol to the remaining test areas over a period of several hours resulted in uneven paint removal and left the plaster saturated and slightly softened. Ultimately, this treatment was not satisfactory as it was found to be ineffective in areas where the paint was well adhered and slightly cross-linked to the plaster substrate.

The removal of the overpaint revealed small deliberately applied pencil marks. In some areas the marks are a small dot and in other areas the dot is surrounded by a small circle. In addition, small "X" marks are also visible. These marks appear to be location marks applied by the sculptors during the "pointing" process of translating the sculpture from plaster to marble.

The not entirely successful preliminary cleanings test suggested that a more controlled application of benzyl alcohol to the overpaint was necessary. Isolating the solvent to the overpaint layer without saturation of the plaster substrate or disrupting the pointing marks was required.

Initially a 2% Pemulen TR-2 and benzyl alcohol gel polymer in deionized water, neutralized with triethanolamine at a pH of 7.5 was applied to the overpaint. After duration of ½ - 2 hours (without damage to the plaster substrate) the slightly congealed gel and overpaint was removed with compressed air. The compressed air cleanly lifted the paint and gel from the surface. The plaster surface was cleared of any remaining gel and overpaint with a solution of deionized water and triethanolamine pH adjusted to 8.5 and cotton swabs. (As the treatment progressed, the viscosity of the gel was increased to a 4% solution to reduce dripping and pooling of the gel. Even thicker Pemulen/benzyl alcohol solutions will be tested in future treatments.)



Figure 3.  
During Treatment –  
After paint removal but  
before removal of paint  
residues.