

Smithsonian American Art Museum

Conservation Department

Treatment Report

Artist: John Folinsbee (1892-1972)

Description/Title: *By the Upper Lock*

Acc. #: 1982.106

Medium: oil on canvas

Date: 1922

Dimensions of the painting: 32¹/₈ x 40¹/₈ inches (or 81.6 x 101.8 cm)

Examined by: Sarah Gowen, 2011-2012
Paintings Conservation Intern from the
Winterthur/University of Delaware Program in
Art Conservation

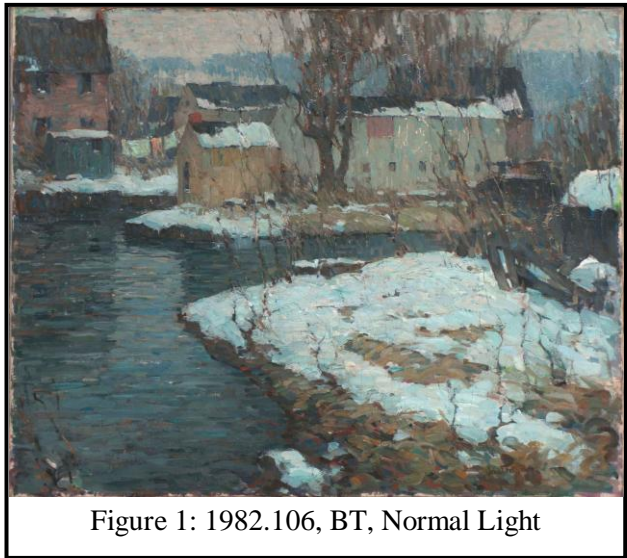


Figure 1: 1982.106, BT, Normal Light

Consulted: Amber Kerr-Allison, Paintings Conservator; Tiarna Doherty, Chief of Conservation; Claire Walker, Smithsonian Postgraduate Conservation Fellow; Martin Kotler, Frame Conservator

Treatment completed: June 27, 2012

Treatment Materials:

- EDTA. Ethylenediaminetetraacetic acid. ACRÖS Organics. www.acros.com. Product 118430010.
- Bis-tris. Sigma, Life Science. www.sigmaldrich.com/life-science.html. Product B9754.
- Hydrochloric acid. Fisher Scientific. www.fishersci.com. Product SA48.
- Sodium hydroxide. Museum Services Corporation. www.museumservicescorporation.com. Product AR E3070.
- Carbopol 934. Polyacrylic acid. Talas. www.talasonline.com.
- Ethomeen C-12. Polyethoxilated amine. Talas. www.talasonline.com.
- Regalrez varnish. Regalrez 1094 hydrocarbon resin. Talas. www.talasonline.com.
- Golden PVA Conservation Paints. Pigments in 1:1 AYAA and AYAC polyvinyl acetate resins. Talas. www.talasonline.com.

- Paraloid B72 Retouching Gels. Ethyl methacrylate/methyl acrylate copolymer with hindered amine light stabilizers in either 1-propoxy-2-propanol or 1-methoxy-2-propanol. www.artcare.org.
- Rabbit skin glue. Sepp Leaf Products. <http://www.seppleaf.com/slp>. Product RS33503.
- Rolco Quick-Dry Gold Size. Sepp Leaf Products. <http://www.seppleaf.com/slp>. Product RQ.
- Nazionale Composition Gold Leaf, Color 1. Sepp Leaf Products. <http://www.seppleaf.com/slp>. Product N2110.
- Gamboge. Sepp Leaf Products. <http://www.seppleaf.com/slp>. Product GAM.
- Dragon's Blood. Sepp Leaf Products. <http://www.seppleaf.com/slp>. Product DB.

Treatment Procedure:

The Painting

- 1) The painting was photographed before, during, and after the treatment using a Nikon D300 camera. Images were processed using Adobe Photoshop CS5.
- 2) Grime was gently reduced from the canvas verso and stretcher with a fine brush and HEPA vacuum.
- 3) The paint surface was cleaned using an ethylenediaminetetraacetic acid (EDTA) solution (approximately 1.5% w/v) in deionized water buffered to pH 6.5. A 200mL solution was made using the Modular Cleaning Program. The recipe included 2.1 grams of Bis-tris, 2.9 grams of EDTA, 4.8mL of 10% (v/v) hydrochloric acid, 10.7mL of 10% (w/v) sodium hydroxide, and additional acid or base to bring the solution to the appropriate pH. The cleaning solution was cleared using deionized water adjusted to pH 6.5 (with glacial acetic acid and ammonium hydroxide). Both the cleaning and clearing solutions were applied using cotton swabs.
- 4) The Soluvar Gloss varnish (documented as used in the 1984 treatment by Q.R.) was reduced using predominantly a 1:1 xylene to petroleum benzine gel. The ingredients of the gel were 100mL of solvent, 2g of Carbopol 934, 20mL of Ethomeen C-12, and approximately 1mL of deionized water. During the varnish reduction process, some areas of paint appeared to be slightly sensitive to anything but petroleum benzine. This is possibly due to the use of Vulpex (an alkaline soap) used in the 1984 treatment. When reducing the varnish with the gel, if an area appeared sensitive, the gel was cleared using petroleum benzine. Otherwise, the gel was cleared using 1:1 xylene to petroleum benzine solvent. Finally, for varnish areas that were more difficult to reduce, toluene solvent was found to be more effective than the gel. Overall, the Soluvar Gloss restoration varnish appeared to solubilize unevenly, resulting in paint areas that are more matte than others; however, some of the variation in gloss also appears to be due to the artist's paints.
- 5) After reducing the varnish, the painting surface was reassessed. Without the varnish glare along the paint cracks, the paint cupping appeared significantly less severe. The cracks were examined under magnification (10-50x), and the paint appeared stable. It was therefore decided that humidification and consolidation treatment would not be necessary.
- 6) The paint surface was also reassessed to determine if more cleaning was necessary. There is a dark, glossy material in many of the interstices of the paint that is likely grime combined with old varnish. Various solvent and aqueous solutions were tested (on small cotton swabs) to reduce this material; however, each was either unsuccessful or affected

the paint. Acetone-containing solvent solutions were the most effective at reducing the dark material, but all solvents were too strong for one or more paint colors. Due to the paint sensitivity and the fact that the dark material is not visually distracting, the material was not further reduced.

- 7) The painting was varnished with 5% (w/w) Regalrez 1094 in ShellSol D38, which provided a more homogeneous matte surface.¹ The decision to varnish the painting was made because of the variation in surface gloss after varnish reduction. Current research has been inconclusive as to whether Folinsbee applied varnish to his works or not. According to the conservation file documents for this painting, the previous conservator removed a varnish layer before applying Soluvar Gloss; however it is not known whether this initial varnish was original or restoration. To learn more about the artist's technique, the Folinsbee paintings of the Corcoran Gallery of Art and the Phillips Collection were examined and compared to *By the Upper Lock*. Both *Grey Thaw* (of the Corcoran) from 1920 and *Along the Canal* (of the Phillips) from 1921 have a varnish layer. *Grey Thaw* was treated shortly after the painting entered the Corcoran collection, but there is no record of the treatment, and the varnish could be a restoration layer; however, the varnish of *Along the Canal* is very thin and could be original, as the painting does not appear to have been treated.
- 8) Visually distracting paint cracks were inpainted using Golden PVA Conservation Paints (1:1 AYAA and AYAC polyvinyl acetate resins, diluted using 9:1 isopropanol to diacetone alcohol) and Paraloid B72 Retouching Gels (ethyl methacrylate/methyl acrylate copolymer with hindered amine light stabilizers in either 1-propoxy-2-propanol or 1-methoxy-2-propanol). Surface abrasions required a more matte inpainting medium, and so Golden MSA Conservation Colors (pigments in a Mineral Spirit-borne Acrylic resin system diluted with 4:1 diacetone alcohol to xylene) were used.
- 9) The painting keys were replaced, and the painting was keyed out. A small hole was drilled into each key so that a wire could be inserted and used to secure the key to a screw on the stretcher. Previous screw holes were used when possible. Some of the screws stripped the wood of the previous holes. In these cases either a longer screw was used to secure the wire or yellow cabinet-maker's glue (polyvinyl acetate) was used to strengthen the wood.
- 10) A padded backing board was made for the painting using foam-core board and Musetex Polyester Batting. The batting was cut to fit within the stretcher bars, positioned on the foam-core board using tape, and then sewn to the board using button thread.

The Frame

- 1) Flaking design layers of the frame were consolidated using thin rabbit skin glue (1 ounce of glue to 8 ounces of water).
- 2) Frame losses were filled with traditional gesso (toned with red and yellow ochre pigments).
- 3) Distracting restoration paints (including bronze paint) were reduced using solvents, including acetone, 1:1 acetone and petroleum benzine, and ethanol.
- 4) The compo loss at the upper proper left corner of the frame was rebuilt with gesso. The gesso was applied in layers and then smoothed using cotton swabs dampened with

¹ The Regalrez mixture was prepared by Chief Conservator Tiarna Doherty.

deionized water. The corner fill was then toned with red and yellow ochre pigments in thin rabbit skin glue.

- 5) Oil (Rolco quick dry gilding size) was applied to the surface of each fill. Once the oil was tacky, metal leaf (Nazionale gold imitation leaf, number 1) was applied.
- 6) The metal leaf of the fills was toned using a solution of shellac, gamboge, and dragon's blood. These materials were combined until the solution was close in tone to the original surface.
- 7) Utrecht and Winsor & Newton oil paints (raw sienna, viridian, and raw umber) were used to further tone the fills.
- 8) Losses along the frame edges were toned with Kremer Pigmente watercolor paints.
- 9) The worn fabric lining the rabbet was replaced with felt.
- 10) The labels on the frame were protected with Mylar. The polyester sheeting was cut slightly larger than the labels and taped (with double-sided tape) to the frame reverse.
- 11) The painting was rehoused in the frame using mending plates.

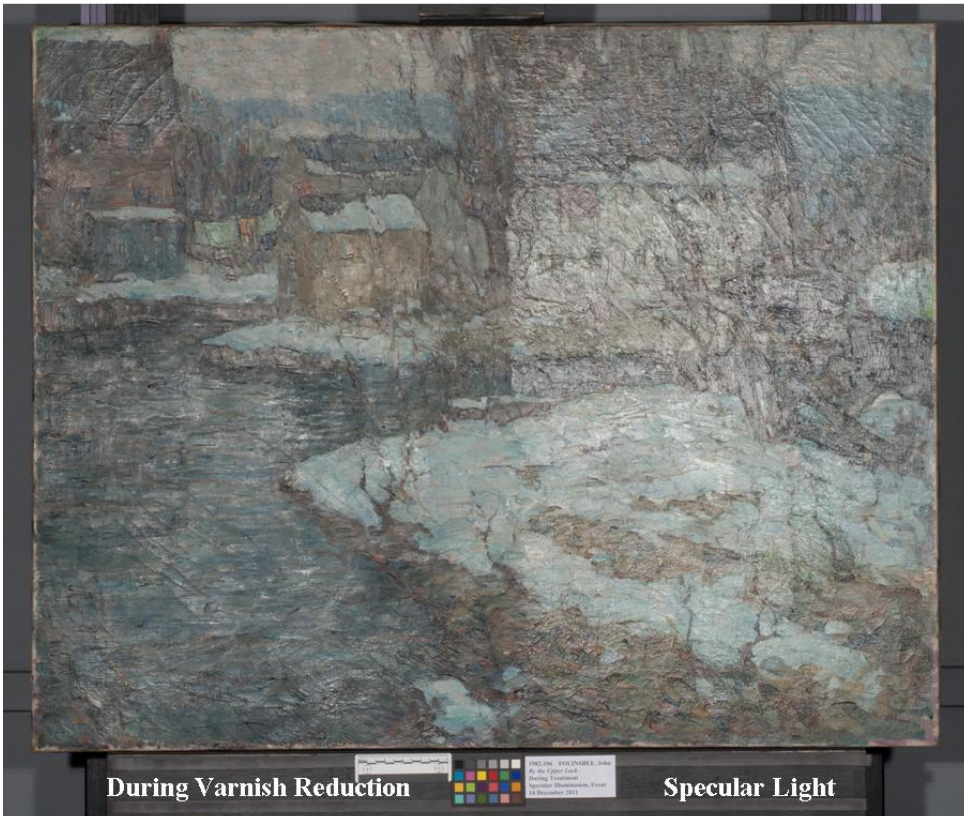
Submitted by:

Sarah Gowen
Graduate Paintings Conservation Intern

Date

Amber Kerr-Allison
Paintings Conservator

Date



Reducing Grime and Varnish

Surface cleaning with 1.5% EDTA in deionized water at a pH of 6.5 (and clearing with water modified to the same pH)



Reducing the varnish using a solvent gel of 1:1 xylene and petroleum benzine (and clearing with those solvents in a 1:1 mixture or, for sensitive areas, just petroleum benzine)

*Images taken by Amber Kerr-Allison, Paintings Conservator

Varnishing and Inpainting



Varnishing with 5% Regalrez 1094 in ShellSol D38



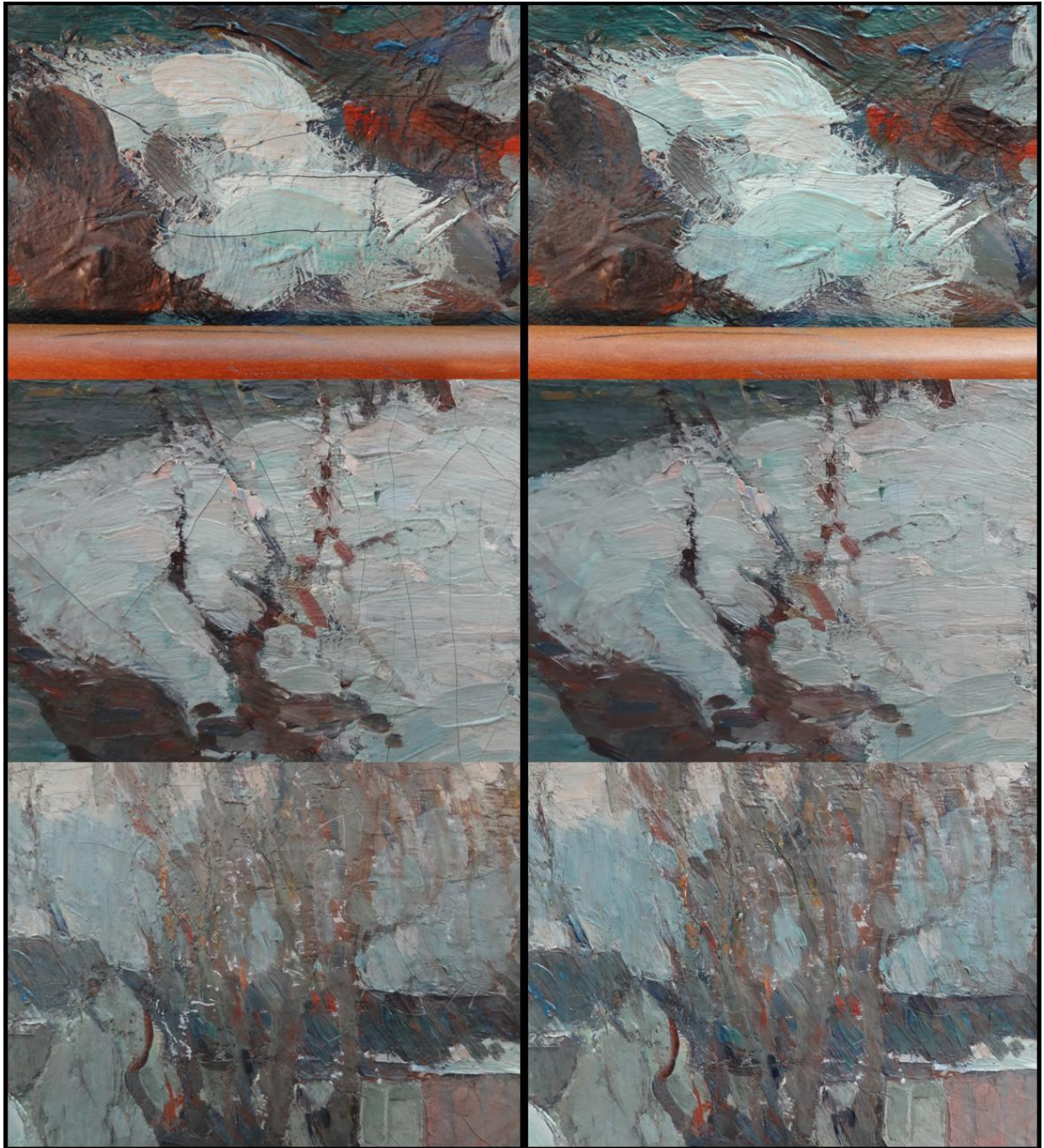
Inpainting with
Golden PVA
Conservation
Paints and
Paraloid B72
Retouching Gels

*Upper image taken by Amber Kerr-Allison, Paintings Conservator; lower image taken by Susan Edwards, Conservation Technician

Inpainting Details

Before

After



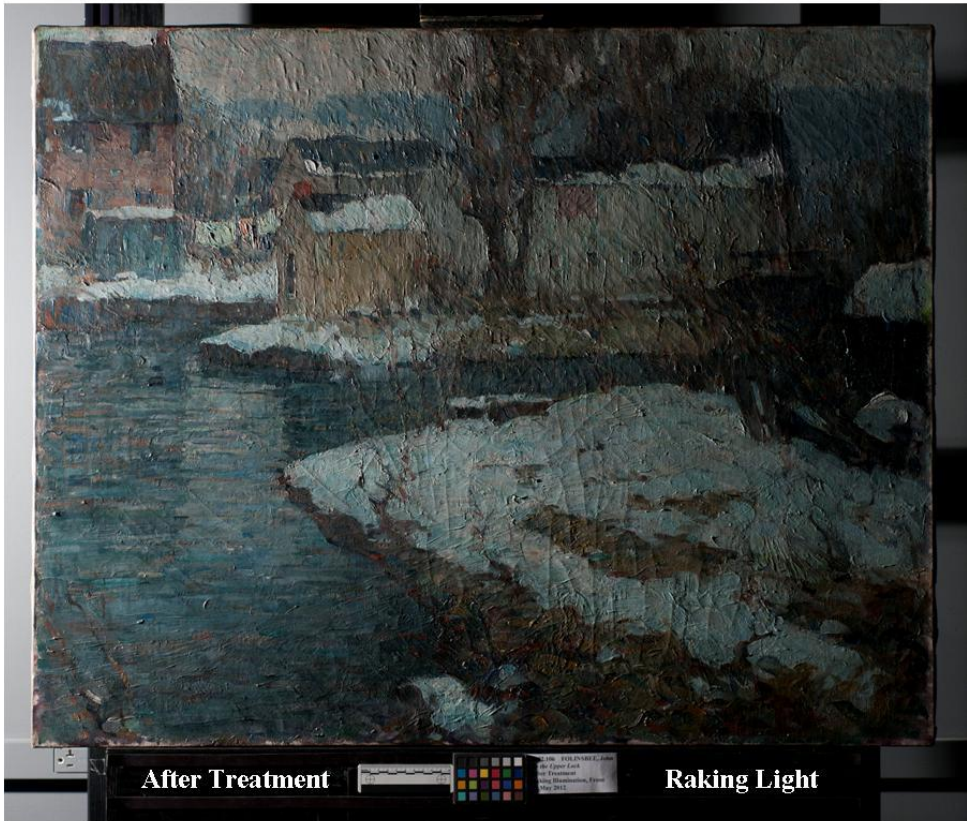
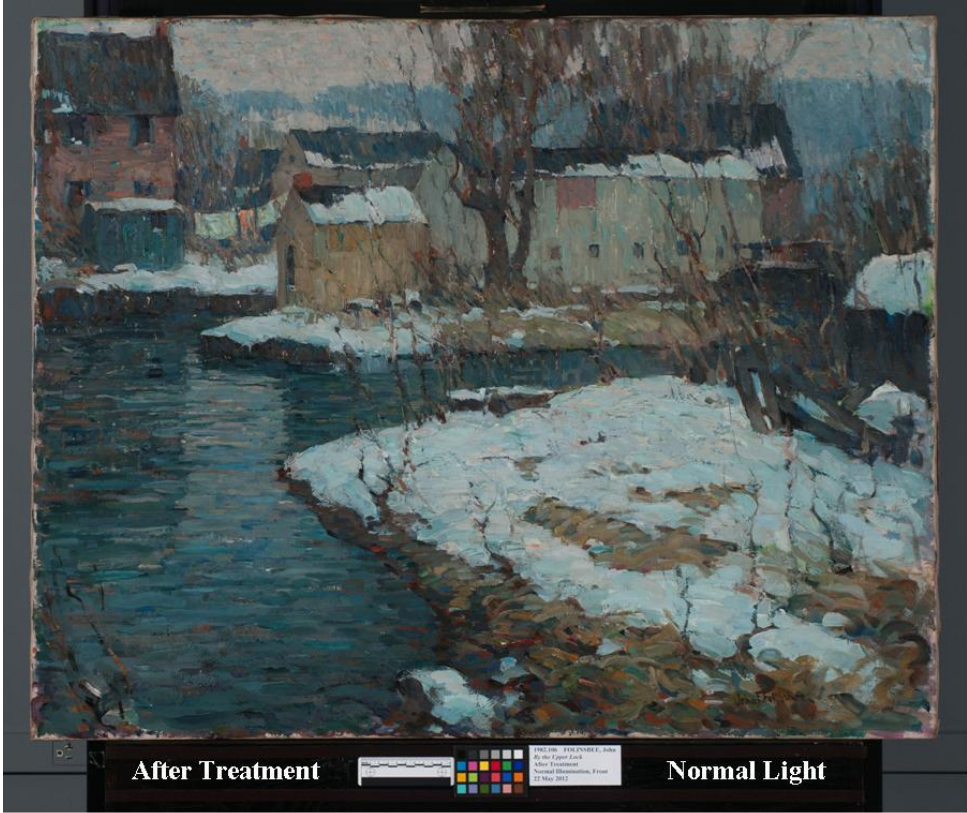
Inpainting Details

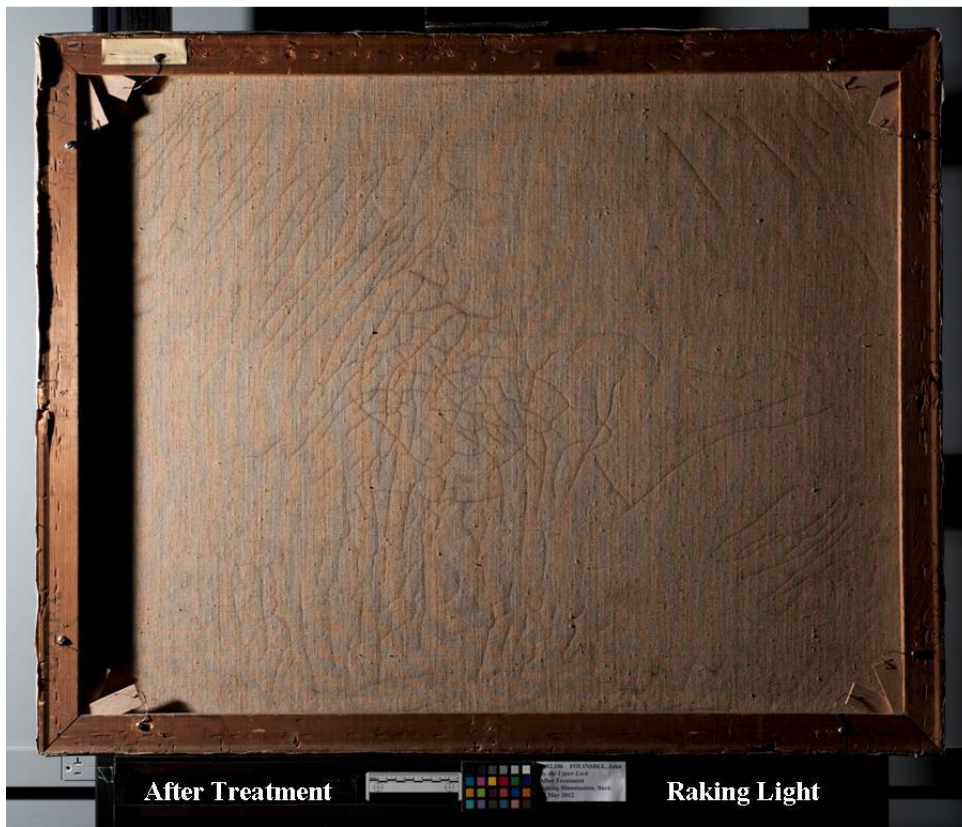
Before

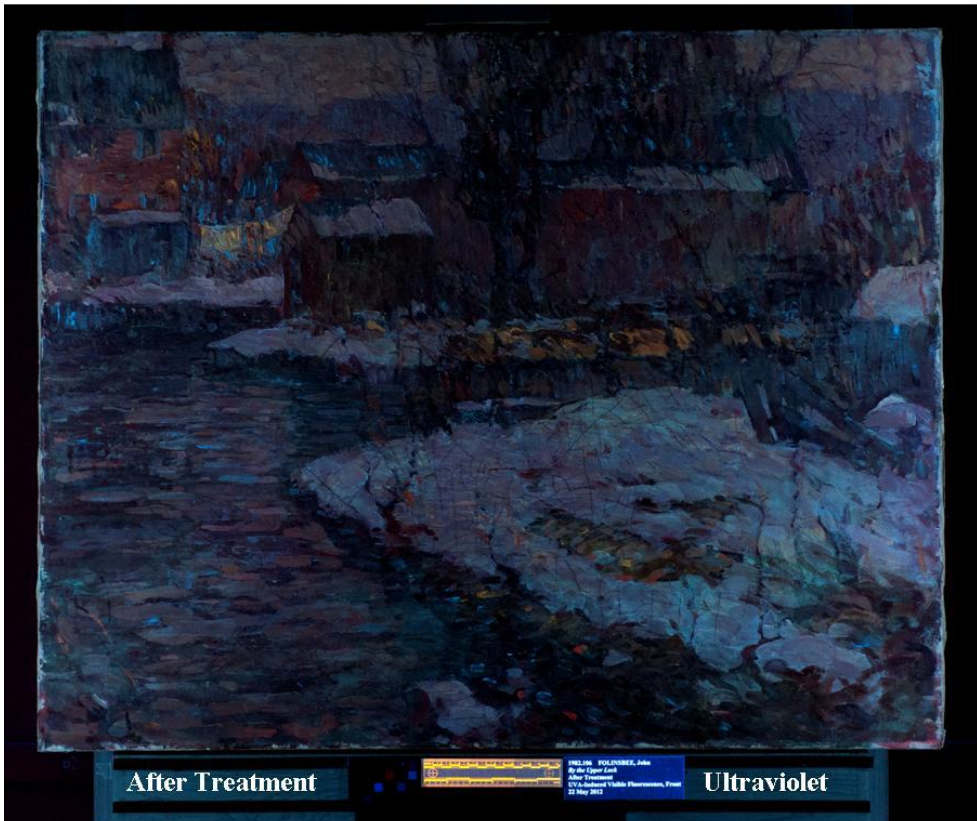
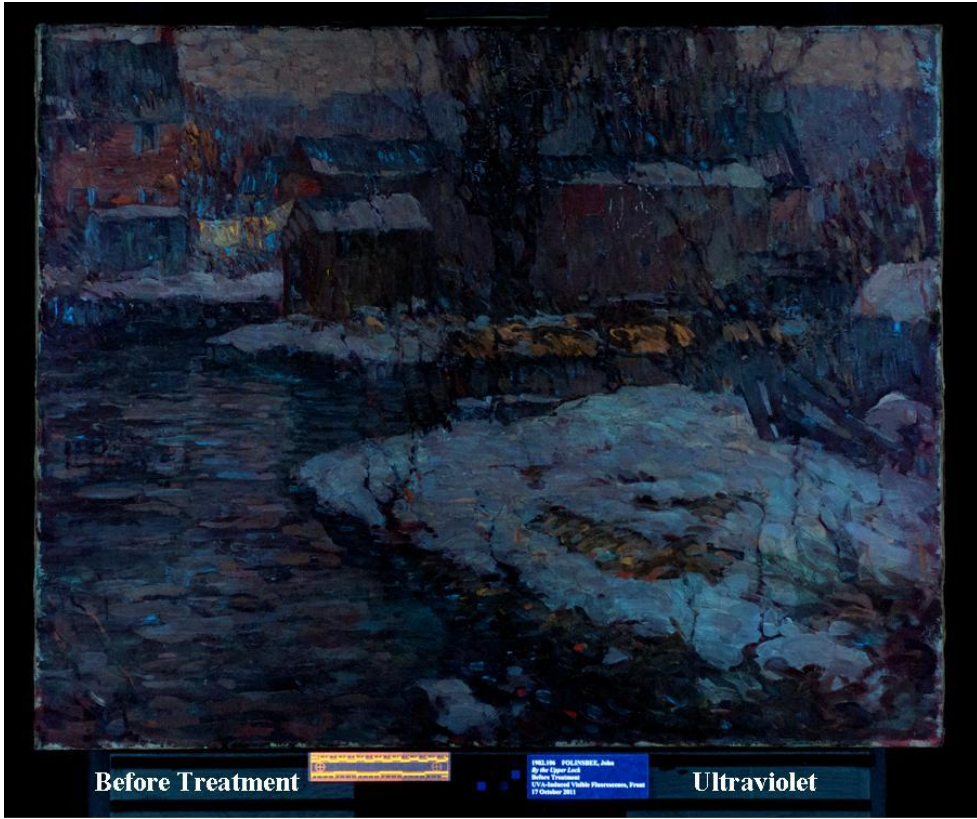


After



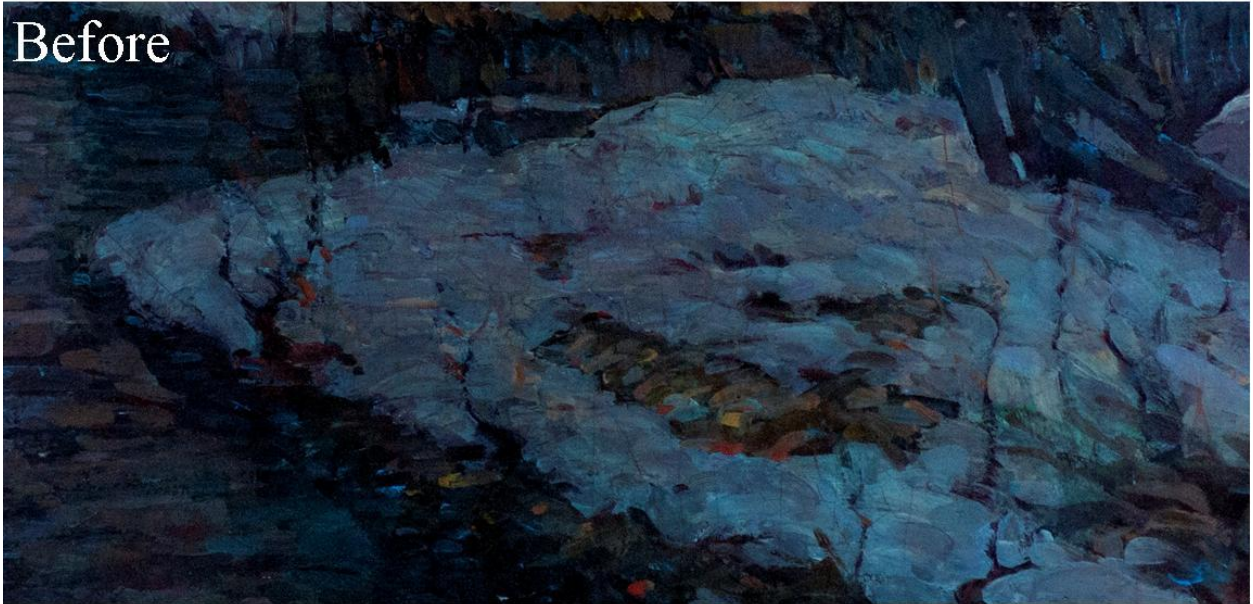






Ultraviolet Details

Before



After



Treating the Frame



Consolidating flaking design layers using thin rabbit skin glue

Brush applying the glue and then setting down the design layers using a rubber-tipped tool



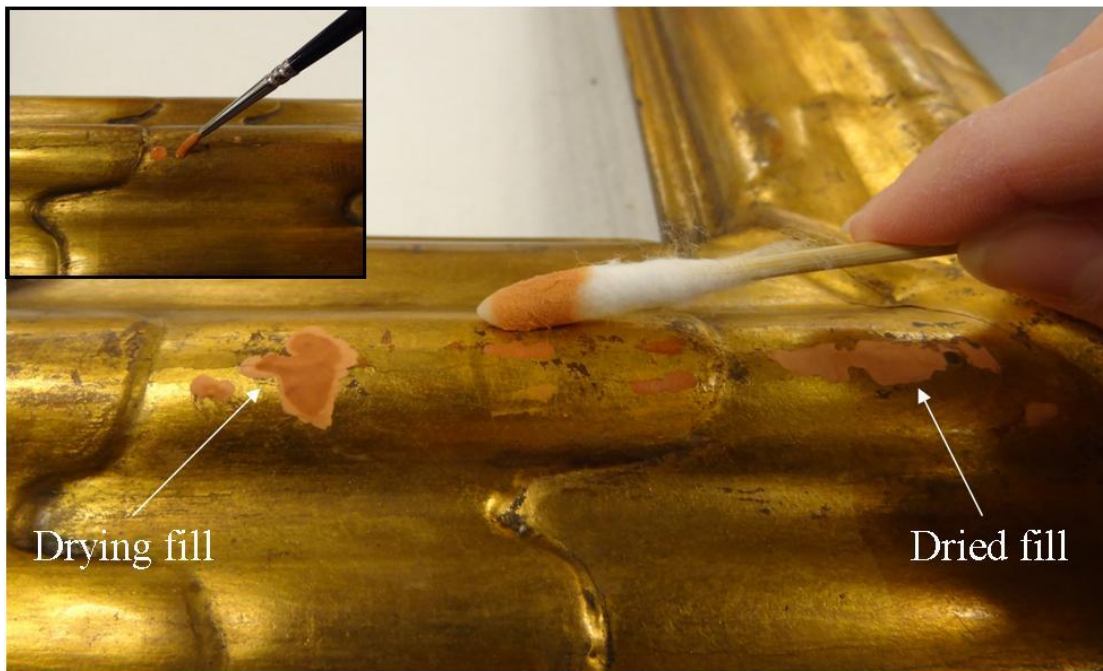
Reducing bronze and restoration paints using neat acetone, ethanol, and petroleum benzine



Swabs with overpaint

*Top images taken by Claire Walker, Fellow in Paintings Conservation; bottom left image taken by Amber Kerr-Allison, Paintings Conservator

Treating the Frame



Filling losses with toned gesso (inset) and smoothing the fills with a dampened swab



Smooth and dry fills

Treating the Frame: Reconstructing the Corner



A: The upper proper left corner with a significant loss in the design compo



B: Martin Kotler, Frames Conservator, demonstrating how to create tothing holes in the wood to hold the gesso fill



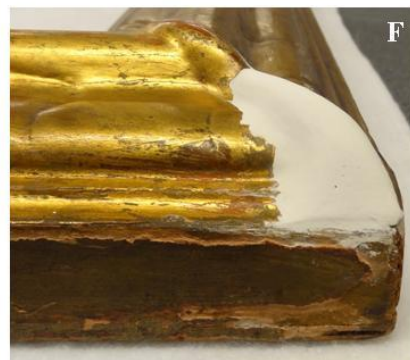
C: A coat of gesso for the corner fill, allowed to dry prior to the application of the next gesso layer



D: Hand-warming the gesso in preparation for the next layer



E: The layered fill, built to the approximate shape



F: The fill after smoothing the surface with dampened swabs

Treating the Frame: Reconstructing the Corner

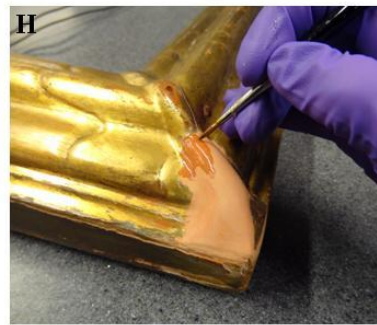
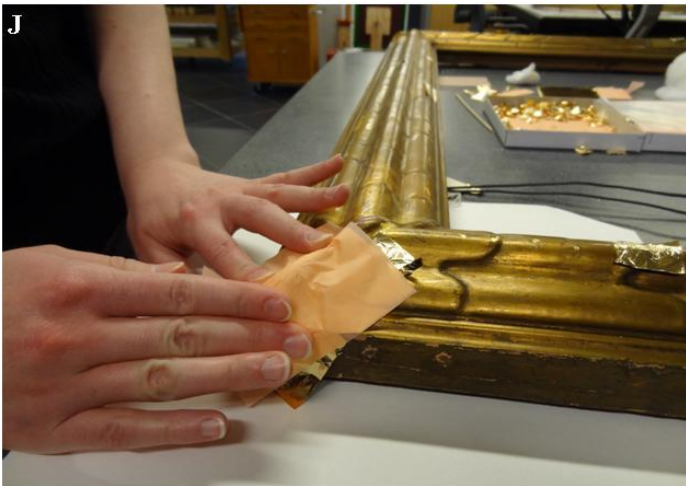
G: The dried gesso corner fill

H: Applying Rolco gilding oil size to the fill after toning the surface with red and yellow ochre pigments in thin rabbit skin glue

I: The darkened fill with a coating of the gilding oil size

J: Applying metal leaf (Nazionale, number 1) by hand and gently pressing the leaf into place

K: The fill with metal leaf applied; image taken prior to the oil drying and the excess metal leaf removed



*Lower left image taken by Blair Bailey, pre-program intern

Treating the Frame: Reconstructing the Corner



L: Corner with metal leaf

M: After toning with shellac, gamboge, and dragon's blood

N: The corner fill after treatment

O: The corner fill after treatment under more even lighting





