

Whistler's Watercolors



F1905.115 - *London Bridge*
Top image was taken in normal light. Bottom image was taken using ultraviolet light to induce visible fluorescence.

Lee Glazer, Curator of American Art
Emily Jacobson, Paper & Photographs Conservator
Blythe McCarthy, Senior Scientist

Introduction

Combining the methods of art history and conservation science, this study focused on the more than 50 watercolors by James McNeill Whistler (1834-1903) in the Freer Gallery of Art. These works---the world's largest collection of Whistler watercolors---are part of Freer's larger collection of Whistler's art including oils, prints, drawings and copper etching plates. Technical studies have analyzed Whistlers' oil paints, prints, and pastels, but few studies exist on his watercolor practice. The collaboration of a paper conservator, a scientist, and an art historian allowed us to synthesize a technical examination and analysis of Whistler's paper, pigments, and working techniques with a comprehensive survey of the history of the works' exhibition and reception in Britain and America. The results of this study illuminate Whistler's working methods in the medium and establish a baseline of information to which other collections of Whistler watercolors can be compared.

From an art historical perspective, this study clarified the relationship between preliminary studies and finished work in Whistler's oeuvre; illuminated the relationship of Whistler's watercolor practice to his peers in both Britain and the United States; and explained the connection between Whistler's watercolor work and his experiments in other media. This project filled a major gap in Whistler studies and has also contributed to a growing body of literature on the significance of watercolor in late 19th-century America and Britain.

This research project addressed both Grand Challenges of Understanding the American experience and Valuing World Cultures. It fulfilled elements of the Smithsonian's strategic plan by providing insights into 19th century artistic practices, by enriching our understanding of the American artistic experience within a broader, cross-cultural context and by providing materials that can be used to inspire audiences in a future planned exhibition. This project also aligned with the Freer | Sackler's priorities of engaging in international collaborations and increasing research on and access to the Freer Sackler collections.

Art Historical Research

A Smithsonian Scholarly Studies Grant enabled the curator of American art to hire Michelle Dacus Carr, a part-time research assistant, to conduct guided research on the project from October 2013 through March 2014. With the curator's direction, Michelle developed a bibliography, conducted a review of secondary literature, and completed a survey of archival materials, historical newspapers, journals, and other period sources to develop a baseline of knowledge about the exhibition, reception, and distribution of the works under study. She also did a survey of related period literature, including sales catalogs, business directories, etc., to gather data related to artists' materials and supplies. She also assisted with image research and the creation of a hard-copy portfolio of materials related to the research project, including bibliography, notes, comparanda, scanned documents, and related images.

In addition to research support, the Scholarly Studies Grant was used to purchase study images of watercolors and artists' materials in the collections at the Art Institute of Chicago, Bowdoin College, Tate Britain, the Portland Art Museum, the Fitzwilliam, the Victoria and Albert, the National Gallery of Ireland and the Ashmolean.

Fellowships

Stacy Bowe joined us to use our computed radiology equipment with our Whistler watercolors to create a good working protocol for imaging watermarks in paper. While watermarks in paper have been imaged using traditional film x-radiography, digital or computed radiography (CR) allows for the identification of significantly more legible watermark images. Stacy researched the current literature and contacted experts in the field to come up with a system for x-raying our Whistler watercolors. CR radiographs were created for all of the Whistler watercolors with both processed and raw files labelled and stored on our server. For watercolors where watermarks were discovered, archival images were printed for storage in the object treatment files. The biggest challenge was trying to come up with a method that might reveal watermarks in papers that were mounted to secondary support boards. Stacy worked from October 28- November 22, 2013 and July 21- September 30, 2014. Supplies purchased for this part of the project included a digital x-ray plate for imaging and archival paper for printing images. A summary of Stacy's work can be seen in the Smithsonian digital x-ray blog post at: <http://my.si.edu/DigitalX-ray/watermarks>.

Amy Hughes came on board to use several imaging technologies to examine our 53 Whistler watercolors. These technologies can be useful in identifying pigments as well as areas that might need further study or require the use of different instrumentation. Amy photographed all of the Whistler watercolors using reflected infrared photography and UV-induced visible fluorescence photography. Examples of the type of information obtained by these imaging techniques can be seen in figures 1 and 2. Amy also experimented with both transmitted UV and IR photography to see if useful information could be obtained using these different techniques. In addition to creating a work flow for UV and IR photography for the department, Amy participated in a Whistler object study workshop that was held from June 9- June 12, 2014. Amy started June 9 and worked through Aug 19, 2014. Supplies purchased for this part of the project included watercolor papers and paints, and UV filters and rulers. Amy wrote a blog on her project for the Freer | Sackler blog Bento which can be seen at <http://bento.si.edu/from-the-collections/american-art-from-the-collections/beyond-the-instagram-filter/>.



Figure 1.

F1902.116- *Chelsea Children*

UV-induced visible fluorescent photograph showing the typical yellow fluorescence of zinc white (black arrow) and the typical orange fluorescence of cadmium yellow (red arrow).



Figure 2.

F1907.170- *Milly Finch*

Reflected infra-red photograph revealing portions of the main figure's skirt that were subsequently overpainted.

Fellow Chika Mori was supported part-time with this grant while on Fellowship from August 21, 2013 to August 21, 2014. After determining the best experimental conditions, she performed analysis of the watercolors and several reference materials using fiber optic UV- VIS reflectance spectroscopy (FORS). Mori analyzed the same locations that were analyzed previously by the F|S senior scientist and the paper conservator using x-ray fluorescence spectroscopy (XRF). Determining the analysis point, though challenging given the small spot size of the microfocus XRF, was possible through photomicrographs taken at the time of the XRF analysis. The two noninvasive techniques can be used together to identify a range of pigments. Mori collected several hundred spectra that we continue to study along with the XRF data.

Conclusion

Funding from a Smithsonian Scholarly Studies grant was invaluable in allowing us to continue and solidify our research on the watercolors of James McNeill Whistler. It allowed us to bring in experts to focus on discrete elements of the project that we would not have had time to complete ourselves. It gave us the opportunity to travel to examine and analyze watercolors in other collections to augment the studies on the Freer watercolors. Travel to other collections also gave us the opportunity to discuss our project with other curators and conservators working with similar materials.

The work on this project will continue through 2018. There are large amounts of analytical data that continue to be reviewed and assessed. Discussions are underway with Smithsonian Scholarly Press to produce a publication on our research. Additionally, an exhibition of Freer's watercolors is planned after the Freer reopens to the public, probably in spring 2018. This important interdisciplinary project combines the disciplines of art history, science, and conservation, and fulfills the Smithsonian's mission to "increase and diffuse knowledge."