Article: New Methodology for Analytical Identification of Historic Coatings on Salted Paper Photographs at Harvard University (Abstract)
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New Methodology for Analytical Identification of Historic Coatings on Salted Paper Photographs at Harvard University

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Harvard Library's Weissman Preservation Center has been working on a multi-year initiative which seeks to enhance our understanding of salted paper prints and to ensure their long-term preservation. This comprehensive project encompasses an integrated approach to photograph preservation: survey, conservation treatment, housing and storage, cataloging, digitization, scientific analysis, and interpretation. Significant curatorial and conservation data has been collected during the salt print survey. This data both sharpens and broadens the conservators' understanding of the physical and chemical nature of salt prints and will help in targeting preservation efforts.

Material analysis and characterization of photographs are important tools for dating and identifying individual photographs, making preservation decisions, and contributing new scholarship to our understanding of the history of photography. A large number of coated salted paper photographs were identified at Harvard collections through the survey with large pockets located at Harvard University Archives (HUA). The photographs of Harvard students for class albums from 1852-1864 were made by well-known Boston located photographers who worked at Harvard University: J. Whipple, J. Black, and G. Warren. The salted paper process was used through all these years and many of them were coated with different types of coatings for aesthetic and preservation reasons. Examples of the possible coatings include wax, varnish, gum Arabic, albumen, gelatin, casein, dammar, sandarac, shellac, copal. The unique collection at Harvard demonstrates the continuous evolution of the salted paper photographic process as practiced by such great photographers and hence provides a rare opportunity to explore the progression of the use of organic coatings.

This paper will highlight the major components of the project, new information that has been observed, and the latest work in scientific analysis carried out in collaboration with Harvard Art Museum's Straus Center for Conservation and Technical Studies and the Center for Nanoscale Systems at Harvard University. The analysis focuses on identification of coatings used on salted paper prints through Specular Reflection FTIR (Fourier Transform Infrared) spectroscopy and MALDI-TOF-MS (Matrix-Assisted Laser Desorption/Ionization – Time-Of-Flight Mass Spectroscopy). The relative strengths of each analytical method will be compared through analysis of known coating samples from a series of newly made salted paper prints. Specular Reflection FTIR is particularly promising as a non-destructive, non-contact analytical method but requires a library of reference spectra that is specific for reflectance mode.

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