Salted Paper Prints and The Harvard Class Albums

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**Cover Page Footnote**
We recently submitted an article to the Hermitage State Museum in St. Petersburg, Russia that looks at the overall salt print survey at Harvard. The article submitted here focuses specifically on the survey and material analysis of the Harvard class albums.

This article is available in Journal of Contemporary Archival Studies: http://eliscolar.library.yale.edu/jcas/vol2/iss2/4
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SALTED PAPER PRINTS AND THE HARVARD CLASS ALBUMS

Photograph collections at Harvard University, which total nearly 10 million images, include a wide range of early processes. Recently the Weissman Preservation Center (WPC) at the Harvard Library has focused on the preservation of and enhanced access to salt prints held in repositories throughout the university. Salt prints constitute the first negative-to-positive photographic technique, introduced by William Henry Fox Talbot in 1839. During the course of the project, thousands of photogenic drawings, paper negatives, and salted paper prints were identified in Harvard’s libraries, museums, and archives. (The term “salt print” is broadly used to represent these processes collectively.) Because of their significance and vulnerability, the salt print collections at Harvard emerged as ideal candidates for an initiative to address the preservation of a single photographic format across the university in a systematic way. Components of the salt print initiative have included a survey, rehousing, analysis, treatment, cataloguing, digitization, exhibition, publication, workshops, a website, and a symposium.

The survey revealed a wealth of early, rare materials by Talbot and his contemporaries as well as the work of commercial photographers worldwide. One collection, a group of early class photograph albums in the Harvard University Archives, proved particularly illuminating. The collection represented a new use of photography at Harvard, revealed the year-by-year evolution of the salt print process, and inspired the survey team to explore innovative methods of material analyses that have shed light on the technical history of the salt print process itself.

The first appearance of photographs in class albums at Harvard occurred in 1852, beginning a tradition that continues to the present day. The albums include photographic portraits of the graduating college classes, faculty, and staff, along with views of the campus and surrounding Cambridge area. “Thanks to the aid of photography we are enabled, as we take leave of each other today, to carry with us precious memorials of college associations,” Charles Carroll Tower, Harvard Class of 1855, wrote. Treasured keepsakes for the students, the albums evolved from simple notebooks in the early 1850s to giant tomes with elegant titles and gilt-edged pages by the 1860s. Over time, classmates added inscriptions, obituaries, and later photographs that illustrated both the evolving lives of the graduates and the special connections students had with one another. A number of inscriptions, for example, include tender remembrances of fellow classmates who served in the Civil War.

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A class committee took responsibility for organizing production of each official class album, which was usually deposited in the Harvard University Archives so that returning graduates could view the volumes during reunions and commencements. Graduates could also order their own custom-made albums. These volumes were sometimes bequeathed back to Harvard and thus account for the sizeable collection of albums found today in the archives.

In 1852, Boston photographer John Adams Whipple created a daguerreotype of each student. Daguerreotypes are one-of-a-kind, unique images. In order to provide graduates with photographic copies of their classmates’ portraits, Whipple took a negative of each daguerreotype from which he created a positive salted paper print copy. Joseph Hodges Choate, Harvard Class of 1852, remembered the photographic prints of his fellow classmates. “No friendships of after-life began to equal in ardor and intensity those of college days. . . . I have in my bedroom the photographs of eighty-five of our members. . . . I often put myself to sleep by calling the roll of my classmates, whose names are as familiar now as then.”

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The following year and thereafter, Whipple and his partner, James Wallace Black, made salt prints from glass-plate negatives taken directly of the students. Professionals and amateurs came to Whipple and Black’s studio to learn the art of photography as well as the team’s advances with glass-plate negatives and paper prints. “Mr. Whipple . . . saw the great commercial advantages of the collodion process over the Daguerreotype, and he grafted it on the elder branch of photography almost as soon as it was introduced,” English photographer John Werge remarked of Whipple’s ingenuity in 1853.3

In 1861, Harvard commissioned George Kendall Warren, who had developed a specialty in producing class photographs for a number of Ivy League colleges. Warren continued to use the salt print process until 1865, at which time he switched to albumen prints. As the class albums clearly illustrate, from 1852 through 1864, the photographers experimented with the salt print process, making aesthetic and technical choices with different backgrounds, vignetting techniques, papers, toning, and coatings.

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The survey team at Harvard, comprising a photographic conservator and curator, entered information on intellectual content, physical description, and condition of salt print images found in seventy-five Harvard albums into a customized database. The team found great diversity among the prints and used this opportunity to refine existing terminology regarding photographic processing variations and finishing techniques, which included stabilization solutions for photogenic drawings, negative types for salt prints, toning, and coatings. These descriptive terms will be presented in detail on the upcoming website.4

The team also recorded information on physical damage and chemical deterioration such as fading and yellowing, especially common in salt prints. Rather than assigning subjective terms such as “brown” or “purple” to a print, spectrophotometer readings were taken.5 Testing of the technique demonstrated that one hundred readings in the most sensitive areas of a print did not cause fading to the image. The team created a handmade grid with holes punched through Mylar polyester film, which they placed on top of each print to record readings representing maximum highlights and density on exact location marks. In the future, conservators will be able to re-examine the prints on the same grid points as a way of detecting any color fading or discoloration.

Action items such as treatment, rehousing, digitization, and selection of items for future exhibition were recorded. Prints that would benefit from analytical techniques were noted in the database as well. For example, the seventy-five Harvard class albums surveyed include salt prints that reveal a variety of coatings. Photographers historically used coatings to improve image quality and prevent further deterioration. Today, analysis of print coatings can aid conservators, curators, and collection managers in identification, attribution, treatment, and preservation.

Davies Wilson
Class of 1853 Album,
belonging to Urial H. Crocker
John Adams Whipple and
James Wallace Black
Salt print coated with gum arabic, 1853
HUD 253.705

4 The Graphic Atlas is a useful reference for information on the characteristics and identification of salt prints: http://www.graphicsatlas.org/.
5 More details about the use of spectrophotometer readings to describe color can be found at http://www.xrite.com/documents/Literature/EN/L11-029_Color_Guide_EN.pdf.
To analyze the coatings, the WPC, in partnership with the Center for Nanoscale Systems at Harvard University and the Straus Center for Conservation and Technical Studies at the Harvard Art Museums, employed Specular Reflection FTIR (Fourier Transform Infrared). FTIR is a well-known method to identify organic materials. The method can be performed in several different modalities including Transmission, Attenuated Total Reflection (ATR), and Specular Reflection. The most common mode is ATR, which requires contact with a sample surface. Specular Reflection FTIR is the only noncontact method and therefore more desirable to conservators.

Unfortunately, commercially available libraries of reference prints consist solely of Transmission or ATR spectra. The Harvard survey team was able to make contributions to the field through the creation of a unique spectral reference library of sample prints for use with Specular Reflection FTIR. The library included prints with nine common nineteenth-century coatings: beeswax, gum Arabic, albumen, gelatin, dextrin, dammar, sandarac, shellac, and copal. The prints served as a reference with which to compare coatings identified on the original salt prints.

In one of the Harvard class albums from the late 1850s, for example, photographs appeared to have an albumen coating; however, the Specular Reflection FTIR clearly identified it as dextrin. Correct identification of coatings, which might sometimes be misleading to even a highly trained eye, will aid in determining further conservation treatment and indicate possible deterioration tendencies particular to each coating material. Findings of the analysis were shared at the major conservation conference and will be published in a peer-reviewed journal.

In 2015, in collaboration with the Harvard University Archives, the WPC also mounted an exhibition and related website of the early class photograph albums. As salt prints are subject to fading, the prints were displayed for a limited period of time in cases with low levels of light, temperature, and relative humidity. During the exhibition preparation process, the team was able to accomplish a number of preservation goals in preparation for digitization and exhibition including surface cleaning, mending tears in album pages, and flattening loose prints that had been exposed to high humidity. The albums can now be viewed in their entirety at http://library.harvard.edu/photos/class-albums-exhibit.

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6 For more information on the Center for Nanoscale Systems at Harvard University, see http://cns.fas.harvard.edu/.

7 While the class albums contained acidic paper, in general the salt prints benefited from their placement within the environment of the albums, which protected them from exposure to pollution or fluctuations in temperature and humidity.
The survey, material analyses, stabilization, exhibition, and digitization of Harvard’s early class photograph albums allowed for a detailed study and characterization of a large body of prints. During the course of the project, the cross-disciplinary exchange among conservators, conservation scientists, curators, and collection managers provided the opportunity to gain a more nuanced understanding of the year-by-year evolution of this seminal photographic process by some of Boston’s pioneering nineteenth-century photographers.

Gore Hall
Class of 1858 Album
John Adams Whipple and
James Wallace Black
Salted paper print coated with gum arabic, 1858
HUD 258.704.1 F