



american
institute for
conservation

**Preserving Cultural
Heritage**

Title: Abstracts presented at the Book and Paper Group Session

Source: Book and Paper Group Annual 38, 2019.

Pages: 67-69

Editors: Justin Johnson, Managing Editor & Kimberly Kwan, Assistant Editor

Editorial Office: bpgannual@gmail.com

ISSN: 0887-8978

The *Book and Paper Group Annual* is published once each year in print format by the Book and Paper Group (BPG), a specialty group of the American Institute for Conservation (AIC).

The *Annual* is distributed as a benefit of membership to those who were members of the BPG in the date year of the issue. Additional copies or back issues are available from AIC. All correspondence concerning subscriptions, memberships, back issues, and address changes should be addressed to:

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The *Book and Paper Group Annual* is a non-juried publication. Papers presented at the Book and Paper Session of the annual meeting of the American Institute for Conservation of Historic and Artistic Works are selected by committee based on abstracts. After presentation authors have the opportunity to revise their papers before submitting them for publication in the *Annual*; there is no further selection review of these papers. Independent submissions are published at the discretion of the BPG Publications Committee. Authors are responsible for the content and accuracy of their submissions and for the methods and/or materials they present. Publication in the *Annual* does not constitute official statements or endorsement by the BPG or by AIC.

Abstracts presented during the Book and Paper Group Session

Select Tips and Tricks in Paper Conservation

J. Franklin Mowery, Head of Conservation, Mowery Conservation

With more than 40 years of experience, it is inevitable that any conservator would come up with a variety of ways to solve problems and exercise efficiency. Over the course of my career, I have developed some tips and tricks when it comes to paper conservation, specifically with regard to solvent work and washing of paper artifacts. Pressure-sensitive tape has always been a problem. Ever since its inception, it has been used to mend tears on works of art on paper. There have been several discussions and articles exploring the history of adhesives and the processes by which to remove both the adhesive and the associated staining; Stiber Morenus and O'Loughlin's research is thorough, with a great historical and chemical overview that can assist any conservator in understanding adhesives that have presented themselves in their practice.

To this work, however, I would like to add some practical suggestions in trying to minimize toxic exposure to requisite solvents. These are techniques that I have been using over several decades and produce superior results.

The topics include the use of "Kick-a-poo juice" (a five-solvent cocktail that I developed in the 1980s), which has proven to be an efficient method to remove pressure-sensitive tape adhesive residue; the effective use of a vacuum suction platen; and the use of disposable liquid pipettes and making disposable polyester vapor chamber trays for solvent delivery. These last two techniques enable minimal exposure to handling solvents for the conservator.

Last, I want to introduce or reintroduce the use of polyester washing sleeves. The ease of their construction and the protection they offer when handling wet and fragile items is invaluable for paper conservators when conducting any aqueous treatment.

The Conservator in the Age of Digital Reproduction: Color Matching and Digital Fills for a Matte Screenprint

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Papers presented at the Book and Paper Group Session, AIC's 47th Annual Meeting, May 13–17, 2019, Uncasville, Connecticut

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Uniformly flat screen-printed surfaces present unique filling and inpainting challenges for conservators. Research and extensive experimentation identified a successful loss compensation technique for an eight-color screen print by Noriko Yamamoto Prince entitled *Horizon'72*. Traditional inpainting techniques alone were insufficient to address the extensive damages to the matte-printed surface. Digital fills, already used in textile and photo conservation, provided a practicable option for treatment. However, the disparities inherent in reproducing perceived color across multiple digital color spaces requires careful consideration of color theory within the context of available digital tools. Colored inks from the original print were recreated digitally and printed on Epson Premium Presentation paper with a high-quality inkjet printer using pigment-based inks. An X-Rite spectrophotometer was used to compare $L^*a^*b^*$ values and reflectance spectra of the digitally recreated color and the original screenprint inks. This spectral data informed the navigation of color between digital color spaces and confirmed a successfully recreated color. Digital fills offer potential treatment solutions for treating screen prints and inspire novel considerations of current and forthcoming technologies in the service of future conservation efforts.

Combining Traditional Thinking and Innovative Methods on the Conservation of Chinese Hanging Scroll—A Case Study from the National Palace Museum Collections

Sun-Hsin Hung, National Palace Museum

One of the dilemmas encountered by paper conservators is that the traditional conservation method used in the past requires a hanging scroll to be fully stripped and remounted. This method often can cause serious damages to the painting, is time consuming, and alters the original decorative format of the art. Today, a large number of museum collections need to be conserved; however, limited human resources are available. To overcome the preceding difficulties, we brainstormed from the traditional practice and sought for the development of a new method that consists of easy-to-use materials and

simple treatments. This new method was carried out on two hanging scrolls. The first piece is a calligraphy hanging scroll from the Yuan dynasty, in which creases can be found all over the artwork. Formerly, most conservators would have used paper strips to repair the creases. To avoid the shrinkage problem during the process, past conservators would have used heavy weights to flatten the paper, but this method has limited effect. Therefore, the GORTEX sandwich technique was developed and then flattened with weight. This method enables a better flattening result, but it is a time-consuming process and the blotting paper needs to be replaced multiple times during the procedure. Furthermore, phenomena such as undulation and deformation caused by incomplete drying and uneven shrinkage may occur on the painting. The new method presented in this article offers another solution to the preceding challenges. After adhering the paper strips to Qianlong Emperor's calligraphy, Fong Suei Xuan (strong pure white pineapple paper) strips are pasted on both sides of the hanging scroll to secure the artwork. The calligraphy is then completely humidified and flattened on the drying board. The advantage of this method is the simplicity of the operation and that the blotters do not need to be frequently replaced. The workpiece has a uniform pulling force and is flat after drying. The second hanging scroll is a painting that has partially creased and has severe damages on both the upper and bottom brocades. Traditionally, the upper and the bottom brocades would be exchanged with new replacements. This method is a long, ongoing tradition that has some shortcomings. For example, the connection of the old and new parts will cause inconsistent shrinkage, which results in problems such as unevenness and deformation. To solve the preceding challenges Fong Suei Xuan paper strips were pasted on the four edges of the painting. The artwork was then humidified, flattened, combined with its upper and bottom brocades, and then the entire back of the painting was lined with two layers of Fong Suei Xuan. After the whole painting dried, it was then rewetted. The painting was now flat and soft. This new method not only makes the treatment easy to operate, but, equally important, this method also allows the painting to retain a large percentage of its original decorative mounting format. Moreover, the required time for the process is greatly reduced. The preservation of cultural relics is well and effectively protected under this new conservation method.

The Queen's Bindery Apprenticeship Scheme: A New Look at Traditional Craft Training

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Before there was such a thing as "book conservation," bookbinders applied their expertise to repair and return volumes to

use as an essential part of the profession. Without physical appreciation of how books have been made within their historical context, including thorough understanding of contemporary materials, best practice in book conservation-restoration is not possible but master of arts conservation graduates in the UK may have only fully taken apart and rebound one book during their training. Considerable time and practical experience is needed to acquire proficiency in the various aspects of hand bookbinding and book restoration, and from the Middle Ages, the route to this was apprenticeship training while indentured to a master, regularized in a 1563 Act of Parliament requiring all craftsmen to serve at least 7 years as an apprentice before being allowed to ply their trade. Craft and trade apprenticeships continued little changed in the UK until the mid-20th century, apart from the addition of weekly college attendance and formal examinations. However, over the following decades, academic learning became prioritized over technical and vocational training, which came to be seen as second class. Rapid changes in the pattern of education resulted in a great increase in the numbers of 17- and 18 year olds in full-time study, and this, combined with equally fast shrinking of the country's manufacturing base, led to the decline of apprenticeships across the board. In the case of bookbinding, the rising professionalization of conservation (in itself a good and necessary thing) played into this trend so that from the 1970s bookbinding apprenticeships died out, leaving no rigorous UK system of training as a bookbinder. As the last generation of apprentice-trained practitioners retire and pass away, very real danger has threatened the loss of high-level skills and technical knowledge that should underpin the approach to conservation of bound material. In response, a group of charities and commercial binderies led by Royal Collection Trust has funded a 7-year pilot of a new 5-year apprenticeship in hand bookbinding based in the Royal Bindery, Windsor Castle, aiming to revive the model of passing knowledge to new generations through practical work. Combined with structured teaching geared to recognized vocational qualifications, the goal of the Queen's Bindery Apprenticeship Scheme is to use the best of tradition to provide solid foundations for modern conservation methods. As paid employment, it provides a realistic way of gaining depth and breadth of knowledge. The Queen's Bindery Apprenticeship Scheme was launched formally in 2016 at a reception attended by Her Majesty Queen Elizabeth II. Six apprentices are currently enrolled, with the first cohort due to complete the program in 2021. Reflecting on experience gained so far, this article will describe the syllabus and discuss the theory behind the scheme, as well as its relationship to conservation training. Too often, bookbinding and book conservation have been perceived as being at odds rather than complementary: incorporating conservation ethics and techniques into the apprenticeship as one end of a spectrum of practice intends to explicitly address and make steps to resolve this tension.

Innovative Methods of Using Japanese Paper in Reconstruction of Tutankhamun Golden Open Shoes

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The discovery of the tomb of Tutankhamun in 1922 by Howard Carter is considered one of the biggest archaeological discoveries of the 20th century. Among the many thousands of finds were the sandals and open shoes of the king. Our study focuses on one of the rare and unique golden open shoes, Carter No. 4758. This pair of shoes is made of composite materials (leather, gold sheets, faience, and bark), unlike most ancient Egyptian footwear, which were usually made of bark, palm, papyrus, or leather. Furthermore, the shoes contained a lot of magnificent decorative bead works.

In this study, we focus on using Japanese paper in different shapes by adding a new technique to the regular process considered common in the most of restoration processes around the world. The object had two main problems. One of them was the separation of most of the decorative golden fragments, except for few fragments still attached to a small part of the fully deteriorated leather. Later, we used this part as a reference. The second problem was the fragility of the object, especially the sole and strap.

Our conservation challenge was to fit out the Japanese paper. As a kind of natural paper, it has the same characteristic of normal paper, so we faced a problem when choosing the suitable thickness of the paper, because if we preferred to use the thicker one due to its strength, it would not be transparent enough. However, the thinner paper was transparent but not strong enough to hold the gilded fragments. It was a great challenge, so after a lot of studies and experiments, we decided to use a thin sheet of Japanese paper coated with a low concentration of Paraloid B-72 as a film sheet to make strong transparent support. To fix the decorative golden fragments, we used small strips of Japanese paper as bridges to join the separated parts.

Using Japanese paper in the conservation field is common with similar materials like paper, photographs, and papyrus. In this work, we tried to develop the function of this material to be used not only with organic material but also with inorganic materials such as gilded fragments and beads.

Various Methods for Conservation of Chinese Folding Fans Decorated with Painting and Calligraphy

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Folding fans possess a practical use, unique mounting style, storage method, and production materials. When they are often unfolded and then used, it is not unusual for them to show more than 10, and perhaps as many as 30 to 40, creases, thus causing them to wear out and break. Folding fans are made from fan coverings and fan ribs. Of these, the making of the fan covering alone requires more than 10 procedures: the material must be cut; the surface must be prepared and smoothed; it must be shaped; glue and potassium alum water must be applied; and it must then be dried and pressed, mounted, coated, folded, cut, threaded, sprinkled with gold, the edges bound with silk thread, and so on. Therefore, choosing the most appropriate way to restore folding fans is vitally important. The approach presented here for treatment is to do so with the least intervention possible, with the methods for doing so being chosen in accordance with the level of damage or decay present in the folding fan. We first discuss a method of how to treat partial breaks in the fan covering itself. Because the surface of the fan covering is coated with a very strong glue-potassium alum water, the surface is already quite crisp and thus fragile. Water does not permeate the surface easily, so it is not easy to separate the paper layer. After many experiments, using a 10% to 20% alcohol solution to moisten the layers, and kozo paper tears with fiber to segment and reinforce the breaks, was found to be a relatively easy method of restoration. The second method is to take a folding fan that has significant damage and segment its backing paper and then remount it. This is a significant task, and before being able to master the appropriate repair techniques, one is required to first understand the process of making folding fans, as well as how to select the appropriate materials and methods for reinforcing the torn areas. The sequence of the treatment is as follows: removing the fan rib, segmenting and removing the backings of the fan covering, lining the fan covering, folding the fan covering, binding the edge with silk threads, inserting the fan ribs into the fan covering, and so on. Of these procedures, the lining of the fan covering, the folding of the fan covering, the binding with silk threads, and insertion of the rib, and so forth, are quite similar to the processes used in making folding fans. The third method is remounting the folding fan into an album. If this method is chosen, this means that the folding fan has already undergone very serious degradation, and thus it is necessary to detach the fan rib from the fan covering: it will not be possible to preserve this object as a folding fan properly considered. If this type of remounting is done, certain artistic and historical information will be lost. Conservators and art historians must come up with a better strategy for dealing with this situation.