

## Archives Conservators Discussion Group 2003: Flattening and Drying

Notes and bibliography by: FRANK TRUJILLO AND KRISTEN ST. JOHN

### ABSTRACT

The article is a summary of the Archives Conservators Discussion Group at the 31st Annual Meeting of the American Institute for Conservation in Alexandria, Virginia, June 9, 2003. The general topic was flattening and drying of archival material on paper. The topic was a continuation of the previous year's session on humidification and flattening. The session included presentations on *karibari*, techniques used in textile conservation, and research into the effects of humidification on letterpress copy inks. A short list of references is included.

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The topic for the Archives Conservators Discussion Group session was a continuation of the previous year's discussions on humidification and flattening. During that earlier session, participants expressed interest in different flattening and drying techniques. For this session, three participants gave prepared presentations. Three other participants could not attend, but sent information and samples for the session. Throughout the session and at the end of the prepared presentations, members of the audience asked questions and added comments of their own.

The first presentation was by Kathleen Kiefer, a textile conservator at the Winterthur Museum, Garden, and Library. Ms Kiefer worked as an archives conservator early in her career. Her presentation explained how textile conservators treat objects that require humidification and

flattening. Ms Kiefer spoke about some of the problems facing textile conservators during treatment. Many of the solutions have relevance to the humidification and flattening of paper documents. Localized humidification is often used to flatten objects. Overall flattening is not typically undertaken due to the dimensionality of textiles. Much like trying to retain plate marks on a print, retaining creases as evidence is important to textile conservators.

Some of the tools Ms Kiefer uses are familiar to book and paper conservators. She spoke of using Gore-Tex, high-density polyethylene, blotter, weights, and at times a Preservation Pencil to create localized humidification. Large humidification chambers are used when treating an oversize object, though textile conservators treat large objects "in the round" rather than under a domed suction table. At times a garment steamer is used for intractable problems, although it was pointed out that use of a steamer is considered aggressive treatment. Ms Kiefer explained some wet cleaning techniques textile conservators undertake. One technique is to spread a drying cloth over a wet textile and blot the textile through the cloth with towels. Degradation products move from the object to the drying cloth in a controlled manner. The presentation provided an opportunity to gain insight into the topic of humidification and flattening through a different point of view, allowing book and paper conservators to re-evaluate and compare their own methods.

The second speaker was Yoshiyuki Nishio, director of the Nishio Conservation Studio. Mr. Nishio's topic was a simplified way of making a *karibari* board. A traditional *karibari* has ten layers of Japanese papers adhered to a core usually made of white cedar. In the 1980s, Mr. Nishio began using a Gatorboard foam *karibari*. The Gatorboard is first prepared by sanding both sides to facilitate easy paper adhesion. Mr. Nishio recommends using a heavy Japanese paper. The edges of the Japanese paper to be used over the Gatorboard must be feathered. The Japanese paper is adhered to the Gatorboard with a strong paste. Mr. Nishio uses a mix of wheat starch paste and Rhoplex AC33. Only

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This open discussion took place on June 9, 2003, during the AIC 31st Annual Meeting, June 5–10, 2003, Arlington, Virginia. The moderators organized and led the discussion and recorded notes. Readers are reminded that the moderators do not necessarily endorse all the comments recorded and that although every effort was made to record proceedings accurately, further evaluation or research is advised before putting treatment observations into practice.

a couple of layers of Japanese paper are needed for the simplified method of *karibari*. After paper adhesion to the Gatorboard, the *karibari* is dried upright overnight and then sealed with an acrylic. The simplified *karibari* is more sensitive to moisture than the traditional form and can be more easily warped. In addition, there is a lack of airflow between the layers of Japanese paper and the Gatorboard. On the positive side, the easy *karibari* weighs two-thirds the total weight of a traditional one, costs less than the \$600-800 needed to complete a traditional *karibari*, is easily transportable, and does not require up to two years for the color of the persimmon juice used in a traditional *karibari* to cure. Mr. Nishio uses the simplified *karibari* for adhering lining paper to objects. He recommends using methyl cellulose as an adhesive between lining paper and *karibari* to avoid loss of paper on the board after drying. He inpaints on the simplified *karibari*. He points out that the application of weights is possible on the solid core Gatorboard.

Next Barbara Rhodes, conservator for the Department of Library Services, American Museum of Natural History, spoke about her research into letterpress copy inks. The use of copy press paper was popular for over one hundred years from the early 1800s to the early 1900s. A letterpress copy document was made by pressing a damp paper against the surface of slow drying ink. Some of the inks used were iron-gall copy ink, logwood bichromate ink, and aniline inks. Aniline inks are also found in copy pencils of the same time period. Ms Rhodes's research is an effort to answer the question of how to humidify such slow drying inks. Potential problems for humidification include the solubility of the inks, the widespread use of humectants in the inks, and the fact that the iron-gall and logwood bichromate inks oxidize and seal. Ms Rhodes passed around samples she prepared as part of her research that showed how inks are affected by humidification. Her work on the topic continues and should provide helpful information as many collections are full of this once popular form of document reproduction.

After these presentations, discussion group co-chairs Nora Lockshin and Kristen St. John shared information from three other conservators. Even though these conservators could not join the session, they graciously shared their research and new techniques.

Spanish conservator Salvador Muñoz Viñas has been developing a large-scale vacuum-based system for the flattening of paper sheets of any size that he has used successfully in a project of restoring large-format (1.6 by 1.25 m) movie posters. His system involves lining fragile posters and drying them on suction tables using an oscillating vacuum. The project is described generally in a lay text article (in Spanish) titled "Los carteles de la colección Ortega del IVAC: Trabajos de conservación" (Muñoz Viñas

2003). He is currently writing a technical article on the process.

Tim Vitale sent notes about his recent research in paper drying. In the early 1990s Mr. Vitale and Jane Sugarman published seminal work on the chemistry of drying paper (Sugarman and Vitale 1992; Vitale 1992a and 1992b). His recent work has focused around paper texture size domains (micron, millimeter, centimeter, decimeter, and meter). Through the use of a texture ruler he encourages conservators to consider how various actions of humidifying, drying, and flattening change paper texture. He notes that small-scale differences in the evaporation of water from the sheet reaching equilibrium will cause cockling or distortion on the decimeter scale (two to four inches). As the evaporation is more uniform, distortion occurs on the meter scale as curl rather than cockling.

Finally Janice Schopfer and Scott Homolka of the Western Regional Paper Conservation Laboratory sent samples of synthetic, non-absorbent materials they have been using in an air-flow drying system. In addition, they sent an illustrated handout describing recent experiments. The forced-air drying system in use at the Western Regional Paper Conservation Laboratory was initially developed in the 1970s. A current version was developed by Bob Futernick and Kim Nichols in 1998. The more recent version of the press began with the use of stacks of archival, corrugated board, mat board, blotter paper, and/or non-woven polyester sheets in which the paper to be flattened is sandwiched. Once these sandwiches are layered they are placed into a press with a uniform drying surface of 40 by 60 inches. A blower provides continuous airflow through the stack. Papermaker Lee McDonald has developed a modification of this system using synthetic materials in the place of the corrugated board and blotter paper. The new stack contains: non-woven polyester (Hollytex), polypropylene felts, polyethylene screens, polyethylene/polypropylene corrugated mats, and archival quality mat board. Advantages of synthetic materials include longer material reuse and decreased drying time of items in the stack. Contact information for Lee McDonald: P.O. Box 200264, Charlestown, Massachusetts 02129 ([www.toolsforpaper.com](http://www.toolsforpaper.com)).

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NORA LOCKSHIN  
 McMillan Conservator  
 Smithsonian Center for Archives Conservation  
 Washington, D. C.  
 LockshinN@si.edu

KRISTEN ST. JOHN  
 Book and Paper Conservator  
 Los Angeles, California  
 kristen\_stjohn@yahoo.com

FRANK TRUJILLO  
 Book Conservator  
 Columbia University  
 New York, New York  
 fhtrujillo@yahoo.com