

No Leafcaster? No Problem! Using the Suction Table to Repair Large Lacunae in an Entire Volume

ABSTRACT

A seventeenth-century English herbal arrived in the conservation laboratory in poor condition. Most of the text block was severely mold- and vermin-damaged. The book consisted of over 150 folios, each of which required significant mending to repair large lacunae. The conservator determined that pulp filling might be an efficient and effective treatment for this volume, but no leafcaster was available. After experimentation borne out of necessity, a system was developed for pulp filling on the suction table. The equipment used included the suction table, a kitchen blender, pieces of blotter, pulp, a water sprayer, droppers, a Teflon folder, spun polyester sheeting, and a Japanese *hake* brush. The poster presentation followed the treatment of the volume, provided guidelines for using the pulp filling technique for large projects, and summarized the successes and challenges encountered during the treatment.

CASE STUDY

The seventeenth-century English herbal arrived in the conservation laboratory in poor condition. Most of the text block was severely mold- and vermin-damaged. Because of the significance of the item and its poor condition, the curator and conservator agreed on a full treatment and rebinding (fig. 1).

Almost every folio needed repair in order to prevent further damage to the text block. Traditional Japanese paper and paste mending of approximately 150 folios in

This paper was first presented as a poster at the Changing Book: Transitions in Design, Production, and Preservation conference, July 23-24, 2005, Iowa City, Iowa, and presented as a poster at the AIC 34th Annual Meeting, June 16-19, 2006, Providence, Rhode Island. It is republished here with permission of both conferences. Received for publication Fall 2006.

poor condition seemed overwhelming. Leafcasting was a logical choice, but no leafcaster or book suction device was available. After consulting various references (see below) and testing the technique, the suction table was used for pulp filling the large lacunae.

Pulp filling may be a beneficial treatment method for some situations. When workflow is planned well, it may be a relatively fast treatment technique. The fills usually adhere well to and blend with the text paper, and the technique may achieve a uniform surface level between pulp and text paper. In addition, like Japanese paper mending, the fills should be easily reversible.

WORKFLOW

Pulp may be made from pure cotton linters, paper pulp, or reconstituted conservation-quality papers. The last approach was used in this case study. A combination of four papers provided the best match. In order to determine the best color and textural match, test squares were made from different combinations of paper.

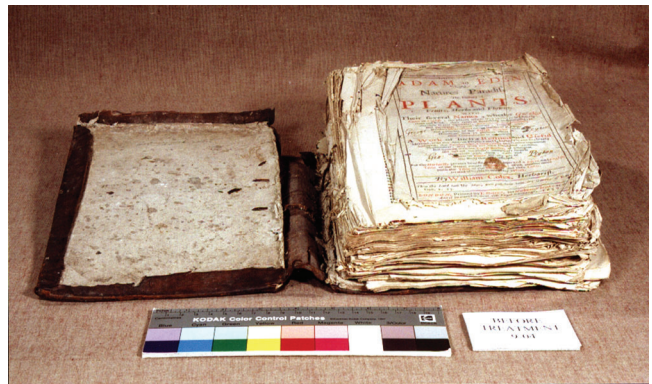


Fig. 1. Book before treatment: William Coles, *Adam in Eden, or, Natures Paradise . . .*, London, 1657. (Courtesy of Special Collections, Kenneth E. Spencer Research Library, University of Kansas)



Fig. 2. Using a dropper to apply pulp.

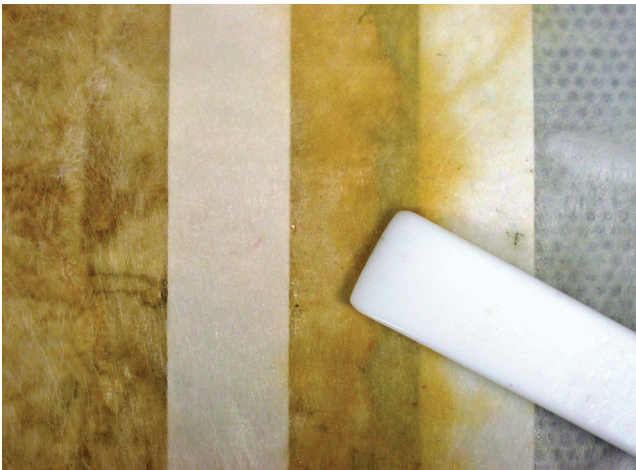


Fig. 3. Using a Teflon folder to encourage adhesion between pulp and paper.



Fig. 4. Applying dilute methyl cellulose with a *hake* brush.

Minimal equipment was required to carry out this project, no more than a blender for mixing pulp and the suction table for the pulp filling process. A few basic supplies were required: pulp, thin blotter for use on the suction table, thicker blotter for masking the fill area, a water sprayer, a dropper and/or small beakers for pulp application, a Teflon folder or roller for smoothing the pulp after filling, spun polyester sheets, and a Japanese *hake* (sizing) brush.

The pulp fill procedure is relatively simple. First, a damaged folio is placed on a piece of thin blotter and lightly misted to minimize distortion while drying. The suction table is turned on to a low setting and the areas to be filled are masked around with thicker blotter to prevent pulp from migrating and covering undamaged areas of the paper. The pulp is applied by dropper, by pouring, or by any other useful method (fig. 2). Once the pulp has been applied, the suction setting is raised to a level that balances suction time with ease of manipulation.

When the pulp has filled in the appropriate areas, a piece of spun polyester is placed over the entire surface of the damaged folio. Adhesion between the pulp and paper is encouraged with the gentle use of a Teflon folder or roller (fig. 3). Next, the paper is sized through the spun polyester using a *hake* brush. Dilute methyl cellulose was used as the size in this case study (fig. 4). The paper is left to dry on the suction table as appropriate, then carefully transferred to dry between sheets of spun polyester and thick blotters under gentle weight.

RESULTS

After pulp filling was completed for the text block, small edge tears were mended with Japanese paper and paste. The folios were recollated and sewn on cords. A new leather binding was created to preserve separately uncovered textual information discovered on the inside of the front original pasteboard. A drop-spine, cloth-covered box was constructed to house the finished binding and original cover (fig. 5).

The following conclusions were reached using the seventeenth-century herbal as a test case: (1) it is possible to fill large lacunae on the suction table with minimal supplies, although a leafcaster is still better designed for a large-scale project, and (2) advance preparation significantly aided the workflow. For example, squares of different papers used to make the pulp were batched and stored in individual envelopes in quantities sufficient to make twelve ounces of pulp at a time. As time allowed, two or three envelopes of the paper squares were soaked in water overnight to reduce spoiled pulp.

This technique also presented its challenges. The pulp must not be applied too thickly, or the filled area will not be flush with the test paper. If the area of loss over many pages

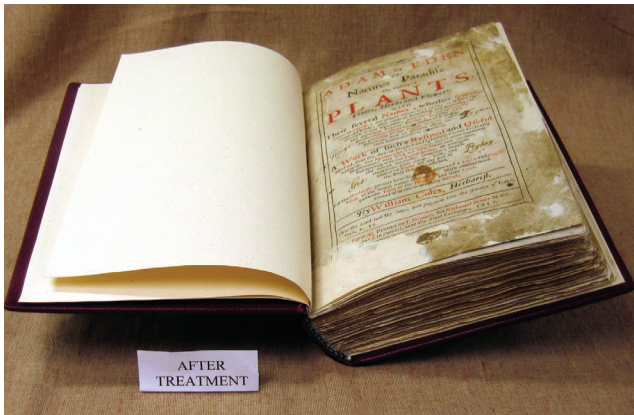


Fig. 5. Book after treatment. (Courtesy of Special Collections, Kenneth E. Spencer Research Library, University of Kansas)

is consistently located in one region of the text block, the re sewn book might appear lopsided in the area of fills. In this case study, the text was printed on cross-grain paper that wrinkled when the paper was wetted on the suction table. A lower-than-desired suction setting was used to compensate for this development. In addition, for very large fills, great quantities of pulp were required to achieve uniform, opaque results. This technique required trial and error to perfect. Thanks to careful preparation, completing pulp fills for each badly damaged folio took under eight minutes. Hence, the relative speed of this technique compared to traditional paper fills depends upon the particulars of the individual project.

ACKNOWLEDGMENTS

The author would like to thank Richard Clement, Curator of Special Collections, Kenneth E. Spencer Research Library, University of Kansas, for his support of this treatment. In addition, the author wishes to publicly acknowledge all those who have taught her about pulp, pulp filling, and leafcasting over the years, in particular Timothy Barrett, Mary Wootton, Barbara Korb el, and fellow members of the hand papermaking organization the Friends of Dard Hunter.

REFERENCES

- American Institute for Conservation Book and Paper Group. 1994. Chapter 26: Filling of losses. In *Paper conservation catalog*, 9th ed.
- Futernick, Robert. 1983. Leaf casting on the suction table. *Journal of the American Institute for Conservation* 22(2): 82-91.
- Hamm, Patricia D. 2003. Second generation wet paper pulping. *Book and Paper Group Annual* 22: 27-31.

Korb el, Barbara. 2000. Pulp repairs of tears and losses. *Quarto: Newsletter of the Guild of Book Workers Midwest Chapter* 13(3): 6. Also at <http://palimpsest.stanford.edu/byorg/gbw/chapters/midwest/quarto/quarto13-3.pdf>. Accessed August 7, 2006.

WHITNEY BAKER
 Conservator
 University of Kansas Libraries
 Lawrence, Kansas
 wbaker@ku.edu