

Tradition Today:  
Contemporary Hand Papermaking in North America and Europe

Andrea Knowlton



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Technology and Structure of Records Materials

The practice of making paper by hand draws forth past centuries in a single sheet of tangled fibers. At the same time, the advances of both contemporary hand papermakers and modern technology have merged this tradition with innovation to create paper of unsurpassed beauty and quality. Despite the speed and economic advantages of machine-made paper, traditional handmade paper grasps its hold on the modern world, and mills across North America and Western Europe have re-emerged to produce fine handmade papers for artists, bookmakers, and conservators who seek the highest level of durability, permanence, and aesthetics.

Hand papermaking in the Western world fell into decline with the invention and rapid expansion of papermaking machines in the nineteenth century. By 1828, machines were capable of producing paper thirty inches wide at a rate of sixty feet per minute (Hunter 355). By comparison, a typical handmade paper mill could produce only two to five reams per day (Turner 43). In addition to the increase in speed and volume, papermaking machines promised the advantage of larger sheets with better, more consistent formation (Turner 114).

Although papermaking machines offered the potential for a better paper, many tangential factors of industrial papermaking led to an overall inferior product. At the beginning of the nineteenth century, demand for papermaking materials like rags already outpaced supplies as a result of the steady increase of printing following the invention of movable type and a rise in literacy rates and leisure (Turner and Skiöld 97). The speed and efficiency of the papermaking machine only served to accentuate this shortage of materials. Wood pulp provided an inexpensive and readily available alternative, and soon replaced rags as the primary papermaking furnish. This change from rags to less

stable wood pulp, alongside an increased use of fillers such as bleach and optical brighteners, resulted in a vastly inferior paper than the handmade paper of preceding centuries.

While the materials rather than the method of production ultimately determine the quality and longevity of any paper, handmade paper exhibits many desirable qualities that can only be emulated in machine-made paper with difficulty, if at all. Some of these qualities can be attributed to physical differences between handmade and machine-made papers. The unidirectional movement of the belt of the papermaking machine, for example, results in a strong grain direction of the paper fibers. In handmade paper, on the other hand, the vat man typically shakes the mould in four directions, so the resulting sheet displays little to no grain direction (Hunter 455). As a result of this difference, handmade paper is said to have a drape or flow that is unmatched by machine-made paper (Meirhusby 62). Much of the draw of handmade paper, however, involves the much more subjective aesthetic character of each sheet of paper. Silvie Turner summarizes this quality as “the beauty, the vitality, the depth, the design, the character and expressiveness, the level of skill involved, the *difference* of a handmade sheet” (Turner 41), while Walter Hamady calls it simply “voice” (Vander Weele). No matter how you describe it in words, handmade paper shows signs of a visual and tactile depth and texture unmatched by a machine.

These qualities along with the negative reaction to the rapid deterioration of nineteenth century machine-made papers have led to a renewed interest in hand papermaking in the West. Although the most recent boom in hand papermaking in North America occurred from the late 1960s to the mid-1970s (Turner and Skiöld 97), the

movement actually began much earlier. While the production of handmade paper continued at least in small quantities in Europe, the craft had virtually disappeared in America by the turn of the century (Turner and Skiöld 97). The renaissance of hand papermaking in America was led by Dard Hunter, a young follower of the English Arts and Crafts Movement who sought to create a “one-man” book, for which he would create the paper and type by hand in defiance of the machine age (Baker 1). After learning the craft of hand papermaking in England, Hunter set up a paper mill and experimented with handcraft techniques around 1913 (Baker 3). The Dard Hunter Associates operated another hand papermaking mill in Connecticut between the years of 1928 and 1931 (Hunter 583). Even after these mills ceased operation, Dard Hunter’s studies and descriptions of traditional hand papermaking techniques continued to influence future generations of hand papermakers in North America.

The rise of printmaking as an accepted “high art” further contributed to the revival of interest in handmade paper in the twentieth century. In her description of the movement titled *The Revitalization of Handmade Paper in North America*, Linda Sholund Vander Weele explains, “[A]rt collectors and museum curators of today are focusing more attention on the world of printmaking. The printmaker is no longer a ‘second-class’ artist and can no longer tolerate inferior materials.” Many printmaking processes require a strong, durable, and permanent paper that will also contribute to the aesthetic appeal of the art. Handmade rag papers provided the qualities printmakers sought, but selection was limited to expensive papers imported from Europe (Turner and Skiöld 97). Many of today’s most influential and prominent hand papermakers were

attracted to the craft and profession by their search for quality handmade papers for use in their own art (Vander Weele).

Though the activities of contemporary hand papermakers resemble those of their predecessors, many changes have been made to meet the needs of modern times. Before the machine age, the best quality papers were reserved for “governments, lawyers and banks” (Turner and Skiöld 92); today, the primary patrons of hand paper mills include artists, printmakers, bookmakers, and conservators. Papermakers follow essentially the same steps in fiber preparation, sheet formation, and drying as those of centuries past, but some old techniques have changed and new techniques have been added to the traditional methods to meet the needs of today’s customers. Most changes to the process have come about due to the recent focus on paper permanence. Because acid-catalyzed hydrolysis contributes to the breakdown of cellulose more than any other reaction, changes to the papermaking process have been implemented to reduce or eliminate the presence of acid in the paper. Many papermakers have adopted alkaline processes of fiber preparation and sizing rather than traditional acidic processes. Traditional surface sizing, which consisted of dipping dry sheets of paper in hot gelatin or animal glue, is an acidic process. In addition, many traditional papermakers treated the paper with chemicals to harden the gelatin so the size would not wash off if the artist soaked the paper during use. These chemicals often contributed additional acid to the paper (Turner 24). Though initial studies have shown that gelatin sizing may protect paper from degradation despite its inherent acidity (Barrett and Mosier), many papermakers now use a surface size that has been adjusted for use in an alkaline process. Similarly, the alum-rosin size that was traditionally used for internal sizing has been shown to contribute to the rapid

deterioration of cellulose. Today, papers are internally sized with a synthetic size, usually an alkyl-ketene-dimer such as Aquapel, that is compatible with an alkaline process and believed to be archivally sound (Turner 24). Alternatively, many modern hand papermakers sell their papers for bookmaking or conservation as unsized, waterleaf sheets.

Because paper serves a different function for artists, bookmakers, and conservators, each group seeks different qualities in handmade paper. Thus, the methods of paper production have changed to meet these differing needs. Printmakers make up some of the primary customers of today's hand papermakers. Handmade papers used for printmaking processes such as intaglio, letterpress, and lithography require "uniformity, smoothness, opacity, [and] evenness in absorption of ink" (Turner and Skiöld 8). To achieve this combination of qualities, hand papermakers "comb their pulp to remove all fiber clumps that might create imperfections in the surface of their paper" (Meirhusby et al 62). This technique of combing the pulp prior to sheet formation came into use within the past one hundred and fifty years. For conservators who seek to aesthetically match papers from the 15<sup>th</sup> to 18<sup>th</sup> centuries, this sort of uniformity of the paper surface is inappropriate. Book conservators require papers with a more "complex surface texture" that more closely imitates early handmade paper (Wootton et al 181). Despite technological innovations to improve the quality and permanence of handmade papers, contemporary hand papermakers face the challenge of creating papers appropriate to the varying needs and functions of their patrons.

Turner and Skiöld tell us that the most significant change in papermaking today "is that each papermaker strives to produce and often succeeds in making papers that are

individual and personal even when the basic ingredients and the process are the same” (92). Contemporary hand papermakers in Europe and America range from traditional to experimental, depending on the background, purpose, and the customers each serves. What follows below is a summary of the more prominent traditional hand papermakers in North America and Western Europe who focus on producing permanent and durable papers geared towards artists, bookmakers, and conservators. Their papers are readily and consistently available either by order directly from the papermakers themselves, or through major fine art paper retailers in Europe and America.

Twinrocker Handmade Paper was established by Kathryn and Howard Clark in 1971 (Turner 68), and has proved to be one of the most enduring and influential of the hand papermaking mills established during the North American renaissance of the craft. Twinrocker focuses on producing high quality papers designed for art, limited editions prints, and books; all papers are “handmade from cotton and linen rag [and] are a neutral pH...with an archival, internal sizing” (Twinrocker Home Page). Watercolor papers are further surface sized with gelatin. Twinrocker also produces several papers designed for use in conservation bookbinding, which they describe as “compatible in color and thickness with old and rare books” (Twinrocker Home Page). The mill also creates custom papers to order. In addition to producing handmade paper, Kathryn and Howard Clark are active in educating others about hand papermaking in North America. They offer private instruction, tours, lectures, and workshops for individuals and the public (Twinrocker Home Page).

Many Twinrocker interns have continued as talented papermakers and educators in their own right. Timothy Barrett received his training in papermaking from Kathryn

and Howard Clark at Twinrocker, and has since played an instrumental role in the revival of hand papermaking in America. After two years at Twinrocker, Barrett studied the art of hand papermaking for two years in Japan (Turner and Skiöld 110). He now serves as Research Scientist of the Paper Research and Production Facility at the University of Iowa Center for the Book, and he remains an active researcher in the areas of both hand papermaking and paper durability and permanence (Center Staff). The Paper Facility, directed by Lynn Amlie, produces both traditional Western-style and Japanese-style handmade papers primarily designed for use in book conservation. UICB papermakers prepare their own papermaking furnish for Western-style papers from raw flax, hemp, and/or cotton. The raw materials are fermented as necessary and cooked in a calcium hydroxide solution; two percent calcium carbonate is added to the pulp. Western papers are formed on both laid and wove moulds, and then loft dried, humidified, and flattened. The papers are not sized, but may be gelatin sized and hand burnished on request of the customer. The Facility produces long-fiber papers during winter months following strict Japanese papermaking traditions. Kozo fibers are cooked in lye of vegetable ash and/or sodium carbonate; *tororo-aoi* is grown locally and added to the pulp to aid in sheet formation. UICB papers are available through Bookmakers, Talas, and direct order from the Center itself (Book and Paper Store Home Page).

Amanda Degener and Bridget O'Malley, a former UICB intern, founded Cave Paper in June 1994 in Minneapolis, Minnesota. Together they design papers primarily for use by artists, bookbinders, and calligraphers. All papers are made of Belgian or Egyptian flax cooked in a 3% calcium hydroxide solution. The papers are loft dried and then sized in a 2.5% solution of gelatin. Other common components of the papers

include cotton rag and denim. Cave papers stand out for their unique use of natural dyes and pigments to color the papers. Bridget O'Malley developed walnut dyed papers while working under Timothy Barrett at the University of Iowa Center for the Book. Other natural dyes and pigments used in the papers include indigo and red iron oxide (Cave Paper Home Page).

Christine Laver established Griffen Mill, described as “makers of archival handmade papers for bookbinders and conservators” (Griffen Mill Home Page), in England in 1987. Cotton, linen, and hemp fibers make up the papers, which are neutrally sized and internally buffered to a pH between 7.3 and 8.4. Paper production ranges from tissue papers designed for sympathetic guarding and repairs to gray paste paper at 180 gsm that allows conservators and bookbinders to make their own historical pasteboard. With a minimum order of 100 sheets, Griffen Mill will match old papers for use in restoration or conservation projects. Griffen Mill also works with wallpaper conservators to produce appropriate papers for use in recreating historic wallpapers (Griffen Mill Home Page).

Ruscombe Paper Mill produces a dazzling array of handmade papers in a variety of weights, colors, and textures for artists, bookmakers, and conservators alike. The mill was established in 1989 in Cotswold, England by Christopher Bingham but moved to Margaux, France in 1995. Ruscombe Mill papers are made of varied combinations of cotton, flax, abaca, and refined and raw hemp. The pH and metal content of the water used in paper production are closely monitored. All of the papers are internally, neutrally sized with Aquapel and buffered with calcium carbonate. Watercolor papers are surface sized with a pH corrected gelatin solution and loft dried. All other papers are restraint

dried (Ruscombe Paper Mill Home Page). Ruscombe Mill has developed several lines of papers designed for different purposes. This includes the “machine-age” papers dyed to match the colors of nineteenth century papers at various stages of aging, which allows permanent papers to blend aesthetically when used in conservation treatments of nineteenth century materials. Other historic lines of paper include imitations of well-known papers, such as Girtin’s Broad Laid watercolor paper, David Cox drawing paper, and Turner’s Blue (Turner 59, 63). Like other contemporary hand papermaking mills, Ruscombe Mill offers custom papers made to order (Ruscombe Mill Home Page).

In 1983, Turner and Skiöld stated, “Because the movement in America is so alive, the charge of personal energy that makers put into their papers, their determination, zeal and enthusiasm have provided us with an enormous number of impressive makes that has outshone much of the production in Europe” (100). Today, this portrayal describes an expanding group of hand papermakers across North America and Western Europe. Contemporary hand papermaking mills offer a variety of papers that range from traditional to experimental, with aesthetic and physical properties calculated to serve the needs of artists, bookmakers, calligraphers, printmakers, conservators, and many others. At the same time, a renewed energy and focus has been placed on producing papers that are both durable and permanent according to the most current research and testing. Through their efforts and imagination, today’s hand papermakers link the past with the present in a unique blend of tradition and innovation.

## Contemporary Handmade Paper Resources:

### *Papermakers:*

Cave Papers  
[www.cavepaper.com](http://www.cavepaper.com)  
1334 6<sup>th</sup> St NE  
Minneapolis, MN 55413  
612-359-0645  
[bomalley@cavepaper.com](mailto:bomalley@cavepaper.com)

Griffen Mill  
[www.griffenmill.com](http://www.griffenmill.com)  
[enquiries@griffenmill.com](mailto:enquiries@griffenmill.com)

Ruscombe Paper Mill  
[www.ruscombepaper.com](http://www.ruscombepaper.com)  
SARL Bingham Rustige  
4, cours Pey-Berland  
33460 Margaux, France  
00-33-(0)5.57.88.73.77  
fax: 00-33-(0)5.57.88.73.92  
[info@ruscombepaper.com](mailto:info@ruscombepaper.com)

Twinrocker Handmade Paper  
[www.twinrocker.com](http://www.twinrocker.com)  
100 East Third St. / PO Box 413  
Brookston, Indiana 47923  
1-800-757-8946

University of Iowa Center for the Book  
(UICB)  
[www.uiowa.edu/~ctrbook/Book\\_Paper\\_Store/handmadepaper.html](http://www.uiowa.edu/~ctrbook/Book_Paper_Store/handmadepaper.html)  
Oakdale Campus, University of Iowa  
319-335-4410  
[handmade-paper@uiowa.edu](mailto:handmade-paper@uiowa.edu)

### *Retailers:*

BookMakers  
[www.bookmakerscatalog.com](http://www.bookmakerscatalog.com)  
8260 Patuxent Range Rd, Suite C  
Jessup, MD 20794  
301-604-7176  
fax: 301-604-7787  
[bookmakers@earthlink.net](mailto:bookmakers@earthlink.net)

Harcourt Bindery (for Griffen Mill papers)  
[www.harcourtbindery.com](http://www.harcourtbindery.com)  
51 Melcher St.  
Boston, MA 02210  
617-542-5858  
fax 617-451-9058  
[info@harcourtbindery.com](mailto:info@harcourtbindery.com)

New York Central Art Supply  
[www.nycentralart.com](http://www.nycentralart.com)  
62 Third Avenue @11<sup>th</sup> Street  
New York, NY 10003  
1-800-950-6111  
fax: 212-475-2513  
[sales@nycentralart.com](mailto:sales@nycentralart.com)

TALAS  
[www.talasonline.com](http://www.talasonline.com)  
568 Broadway  
New York, NY 10012  
212-219-0770  
fax: 212-219-0735  
[info@talasonline.com](mailto:info@talasonline.com)

## Works Cited and Consulted

- Baker, Cathleen A. "Introduction to Dard Hunter." *The Friends of Dard Hunter, Inc. Home Page*, 1996. <<http://www.friendsofdardhunter.org/darda.html>>.
- Barrett, Timothy. *Japanese Papermaking: Traditions, Tools, and Techniques*. New York: Weatherhill, 1983.
- Barrett, Timothy, and Cynthea Mosier. "The Role of Gelatin in Paper Permanence." *Journal of the American Institute for Conservation* 34 (1995): 173-186.
- Book and Paper Store Home Page*. University of Iowa Center for the Book, 1 Oct. 2004. <[http://www.uiowa.edu/~ctrbook/Book\\_PaperStore/handmadepaper.html](http://www.uiowa.edu/~ctrbook/Book_PaperStore/handmadepaper.html)>.
- Cave Paper Home Page*. 1 Oct. 2004 <<http://www.cavepaper.com/index2.htm>>.
- Center Staff*. University of Iowa Center for the Book, 1 Oct. 2004. <[http://www.uiowa.edu/~ctrbook/Center\\_People/Centerstaff.htm](http://www.uiowa.edu/~ctrbook/Center_People/Centerstaff.htm)>.
- Griffen Mill Home Page*. 1 Oct. 2004 <<http://www.griffenmill.com>>.
- Hunter, Dard. *Papermaking: The History and Technique of an Ancient Craft*. New York: Dover, 1943.
- Meirhusby, Barbara, Jesse Munn, Terry Wallis, and Mary Wootton. "Quality Materials: Handmade Paper, Taking a Closer Look." *The Book and Paper Group Annual* 12 (1993): 61-65.
- New York Central. *Fine Art Papers*. Catalog. New York, 2003.
- Ruscombe Paper Mill Home Page*. 1 Oct. 2004 <<http://www.ruscombepaper.com>>.
- Turner, Silvie. *The Book of Fine Paper: A Worldwide Guide to Contemporary Papers for Art, Design and Decoration*. New York: Thames and Hudson, 1998.
- Turner, Silvie, and Birgit Skiöld. *Handmade Paper Today: A Worldwide Survey of Mill, Papers, Techniques and Uses*. London: Lund Humphries, 1983.
- Twinrocker Handmade Paper Home Page*. 1 Oct. 2004 <<http://www.twinrocker.com>>.
- Vander Weele, Linda Sholund. *The Revitalization of Handmade Paper in North America*. Madison, 1975.
- Wootton, Mary, Jesse Munn, and Terry Wallis. "Observations Concerning the Characteristics of Handmade Paper: The Library of Congress Endpaper Project." *The Book and Paper Group Annual* 15 (1996): 179-197.

