

# Inksmith

INFORMATION FOR ARTISTS FROM DANIEL SMITH

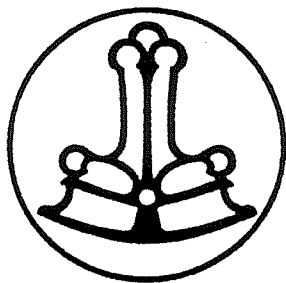
## Twinrocker Handmade Paper—The First 25 Years

by Will Jackson

**S**ince 1971, Twinrocker has supplied handmade papers of exceptional quality to artists worldwide. What follows is a brief account of Twinrocker's history and influence, along with a description of their papermaking process.

As Twinrocker celebrates its 25th anniversary, Daniel Smith celebrates its 20th. Dan began selling Twinrocker papers in 1978, two years after he introduced his own handmade inks. In the 1978 catalog, he wrote:

"Twinrocker Papers are made by Kathryn and Howard Clark at their mill in Indiana. I am completely taken aback with the beauty of their sheets and the sophistication of their craftsmanship....All their papers have a neutral pH, and are sized with archival material. They are probably the most permanent sheets made anywhere in the world."



The history of Twinrocker is deeply entwined with the history of the American handmade paper Renaissance. In 1970, the manufacture of handmade paper in America was nearly a lost art. Hand papermaking mills had thrived in North America starting in 1690, but by 1800, industrial machine papermaking practices began to overshadow the manufacture of handmade paper. In 1907 the last American commercial handmade papers were made by the L.L. Brown Mill in Massachusetts.

The revival of interest in handmade paper began with Dard Hunter (1883-1966), whose life was dedicated to researching and preserving the history of paper and papermaking. He amassed an amazing paper collection (now preserved at The American Papermaking Museum on the campus of Georgia Tech in Atlanta), wrote the definitive book on the subject, and from 1928 to 1931 operated his own small mill making handmade papers. Although the economic and artistic climate of the time prevented his mill from enduring, Hunter's influence has been strongly felt by each succeeding generation of papermakers.

While in Japan just after World War II, Douglass Morse Howell—another key figure—became obsessed with making paper and the use of paper pulp to create imagery. It was from Howell that Laurence Barker, who taught printmaking at the Cranbrook Academy of Art from 1963 to 1970, learned to make paper. In 1965, Aris Koutroulis, a professor at Wayne State University, learned the craft from Barker. As part of his printmaking curriculum, Koutroulis had his students do a two-week team project making paper. Using a Hollander beater and standing press, the students—including Kathryn Clark—had their first exposure to the hand papermaking process.

Working on her M.F.A. in Printmaking, Kathryn was strongly influenced by the work of the Tamarind Institute in Los Angeles. From 1962 to 1972, aided by a grant from the Ford Foundation,

Tamarind revitalized fine art lithography, which also had been a dying art. A Tamarind master printer before he began teaching, Aris Koutroulis had guided Kathryn in the Tamarind philosophy of maintaining traditional processes while introducing technical innovations and in its ethic of fine craftsmanship.

Moving to San Francisco in 1967, Kathryn printed lithographs for Ernest deSoto, also a former Tamarind master printer, at Collector's Press. While there, she wondered why they weren't printing their fine lithographs on handmade paper. Surprised to learn that outside Cranbrook and Wayne State there was little knowledge or awareness of handmade paper and that there were no American suppliers of fine handmade papers, Kathryn and her husband Howard decided to try to make paper themselves.

Since, at the time, most visual artists were not as concerned with the qualities of the paper they were using as book artists were, the Clarks found strong encouragement from fine book printers in the Bay Area such as Clifford Burke and Andrew Hoyem. They told the Clarks that America needed a hand mill and that they were just the right people to do it. Howard, with his background in mechanical engineering and industrial design, could build the necessary equipment, and Kathryn could change from printmaker to papermaker.

Founding Twinrocker on April Fool's Day, 1971, the Clarks were excited at the opportunity to save a dying craft, and optimistically thought that papermaking couldn't be that difficult. "Part of the intrigue and a lot of the pain," Kathryn recalls about the early years, "was due to our being so naive when we began." But, she notes, the possibility of quitting became more difficult daily due to their ever-greater investment in the craft, their ever-increasing knowledge of papermaking, and the sense that they were "almost there" as far as really being able to make high quality paper.

*Continued on page 21...*



An interior view of the Twinrocker papermill, built in 1972, showing the vats and other original equipment.

Essentially, Howard and Kathryn were interested in doing for paper what Tamarind had done for lithography. They wanted to make papers of the quality of the finest European handmade papers, but offer a greater variety of shapes, sizes, weights and colors and also make custom orders. While the European mills focused on high-production, making white and cream papers in only a few standard sizes, the Clarks' goal was to make low-production limited edition papers, in much the same way as limited edition prints are produced. Twinrocker was the first studio papermill in the West. The way it was set up, philosophically and organizationally, was similar to a Tamarind printshop.



Howard and Kathryn Clark in 1973, holding a broadside featuring a famous poem about papermaking. The handmade sheet was a gift from the Clarks' friends Dr. Hoffman—a printing teacher at Cal State, Los Angeles—and his papermaking colleague Dr. Urabec.

In July of 1971 Kathryn's twin sister Margaret Prentice and her husband Kit Kuehnle joined the Twinrocker team. With Howard, they produced papers which Kathryn tested as she printed lithographs at Collector's Press. Ernest deSoto had told them, "If you can make paper that prints as well as Arches or German Etching, I'll buy it," which he did. Twinrocker's first big order of art paper was 22"x 30" white wove paper for a Collector's Press deluxe edition of *Cuevas Comedies*, a suite of lithographs by Mexican artist Jose Cuevas.

Kathryn Clark's fascinating memoir, *A Twinrocker Notebook*, covers the years 1971 to 1983 and reveals how strong the Twinrocker mission—to revitalize hand papermaking in America—was from the start. By the end of 1971, in addition to producing useful, high-quality printmaking papers, the Clarks had begun the educational outreach that would really help boost awareness of the craft. In March 1972, an exhibition of the Cuevas suite at the Walnut Creek Civic Arts Gallery was accompanied by a month of on-site demonstrations and lectures by the Twinrocker crew, followed by additional lectures in Los Angeles.

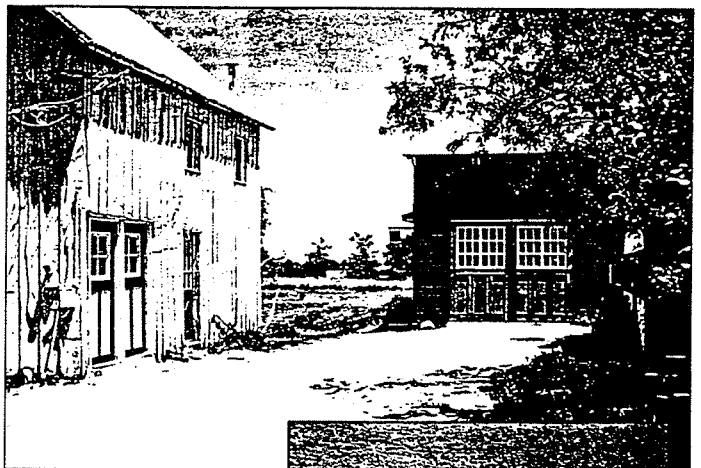
In May, Twinrocker left California, moving to Howard's family's farm in Brookston, Indiana, a move partly determined by Howard's father's death and partly to make the Twinrocker enterprise more financially feasible. While the move was difficult, it ultimately yielded great rewards.

As Kathryn says, "People were amazed at Twinrocker because we were making paper in a tiny town in the middle of nowhere—literally in the middle of a cornfield in Indiana." Not being in the midst of any of the big scenes—New York, Chicago, San Francisco, Los Angeles—gave them independence. They were able to focus on learning and developing their craft, and through travel and growing word of mouth about their papers' quality, built solid relationships with artists in all the major centers. Their isolation got people's attention and added an element of romance to their revival of the old craft.

It was in Brookston that the Clarks' dedication and complementary abilities became increasingly important. Along with Margaret and Kit, they built a papermaking studio from scratch, though none of them had built a building before. Howard's skills in machine design and fabrication were crucial for making the tools they needed, particularly in such a remote location.

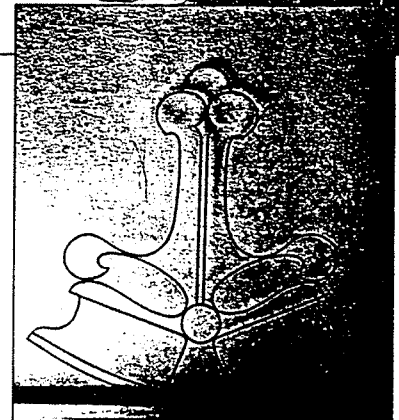
After Margaret and Kit left to pursue other interests at the end of 1972, other people began to ask the Clarks if they could come to Twinrocker to learn to make paper. In order to spread knowledge of the craft and to create a group of colleagues, the Clarks accepted two people at a time who would learn at Twinrocker for two years each. Most of these apprentices, as the Clarks called them, were recent graduates of various art schools. An unwritten commitment on the part of the apprentices was that, in their own ways, they would promote and contribute back to the hand papermaking field once they left. This is indeed what happened, with apprentices such as Katherine Kiddie, Tim Barrett, Lee McDonald, Susan Hostetler, Czashka Ross, Tim Payne, Jennie Frederick, Bernie Vinzani and Katie MacGregor going on to pursue the craft in the United States, Europe, Japan and Australia.

Continued on next page...

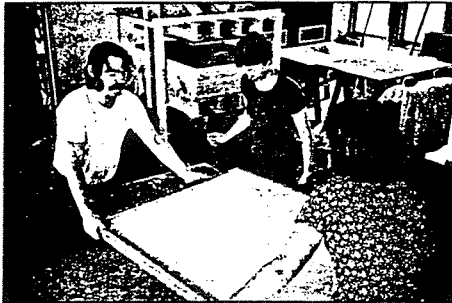


Above: The Clark farm's old barn, renovated in 1974 for paper sorting and storage, and the paper mill.

Right: The Twinrocker watermark is derived from Kathryn Clark's printer's chop—a stylized K over a C, to form a rocking chair. Placed back-to-back, this formed the basis for the watermark. Its symmetry is unusual and a practical advantage. The watermark is always placed in the corner, rocking toward the center of the sheet so that it reads correctly from either side of the sheet as well as both horizontally and vertically.



Over the next few years, the Clarks maintained an intense schedule of building equipment, refining their papermaking abilities, collaborating with artists, and lecturing. They were shaky years financially. New challenges such as creating a 35-by-48 inch mould for a Jim Dine lithograph, *The Red Bandana*, consumed both time and money. A few well-timed grants and fellowships from the NEA and other organizations helped Twinrocker stay afloat.



Howard Clark, Kathryn Clark and Katherine Kiddie dipping and lifting the 35" x 48" mould for Jim Dine's lithograph *The Red Bandana* in 1973.

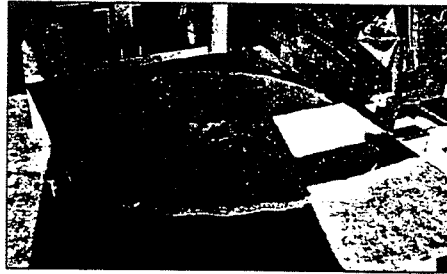
Meanwhile, the interest in handmade paper was increasing exponentially. By 1975, Howard and Kathryn had lectured and demonstrated papermaking extensively in the Midwest and California, and The American Craft Museum in New York had held a major exhibition on the Twinrocker mill. In October 1975, the first National Hand Papermaking Conference drew 23 people. Two years later, the third National Conference, held at the Center for Book Arts in New York, attracted over 200 participants. By this time, Kathryn wrote, "We had found a balance among the stimulation of travel and artist's visits, and the quiet focus of working alone in our rather isolated paper mill."

In 1978, Howard says, "I was getting ready to build a new beater for Twinrocker, and several people asked me if I could make one for them." In response to this evident need, Howard operated Twinrocker Equipment from 1979 to 1984, designing and fabricating about 40 Hollander beaters and dozens of hydraulic presses for individual artists and universities all over the country. This again helped promote further education in the craft.

Another significant milestone in Twinrocker's history was their development

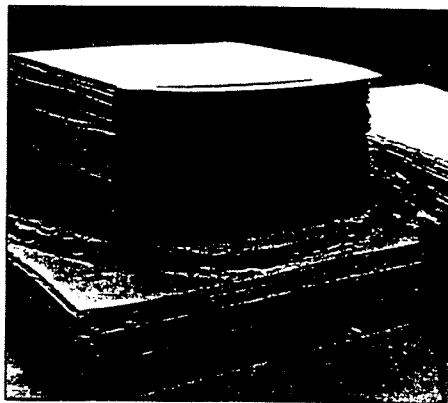
in 1985 of watercolor paper, a type of paper which is technically very difficult to produce. The Twinrocker watercolor papers, individually gelatin-sized, are noted for their subtle, responsive surface. They are hard-sized, producing a strong, durable paper which stands up well to scrubbing. The whiteness of the sheets gives a beautifully reflective surface for watercolor painting.

Over the years, as Twinrocker's fame spread, the variety of projects also continued to expand. The Clarks have continued to realize their goals of providing a wide variety of top-quality papers and of working collaboratively with artists. They have worked with top presses such as Cirrus Editions, Gemini GEL, Landfall Press and ULAE and produced papers for works by artists including Claes Oldenburg, Ellen Lanyon, James Rosenquist, Louise Bourgeois, Robert Natkin, Christo, Jim Dine, Robert Rauschenberg, Bryce Marden, William Wiley and Claire Van Vliet among an ever-growing list.



An early shaped paper (1973) made from colored cotton rags and chicken feathers, featuring an inner deckle or hole in the center of the sheet. It was made for William Wiley's *Mask*, published by Landfall Press of Chicago.

Having always been a for-profit organization (a rarity in the hand papermaking world), Twinrocker has—since the beginning—pursued a variety of markets. In addition to all the custom projects, Twinrocker produces an extensive range of stock papers. Since 1978 Daniel Smith has offered a selection of these, including the beautiful Feather Deckle papers for which Twinrocker is renowned.



Above & Right: Twinrocker papers are produced in a wide variety of shapes, surfaces, weights and sizes.

Since opportunities to learn about hand papermaking have become widespread, the Clarks now spend less of their time on the road, lecturing and educating, and more on the farm, producing and distributing their paper. When university art departments began to offer classes in papermaking, the Clarks moved from teaching temporary apprentices to hiring individuals like Travis Becker from the local community and training them as professional papermakers. In the late 1980s, Twinrocker also opened a new, larger mill in downtown Brookston, allowing them to increase their paper production.

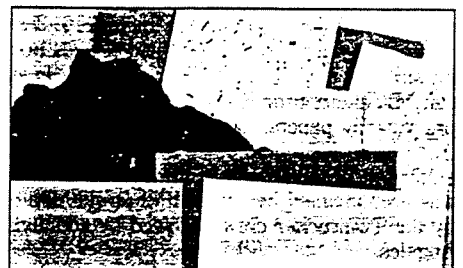
Twinrocker today is, in many ways, a showcase of archaic technology. The handbuilt structures house hand-fabricated machines designed to produce handmade paper. Howard even drives a handmade car, a Morgan roadster built in England the way cars were many years ago.

"The whole notion of archaic technology in a modern world is so interesting," Kathryn says. "Why is anything handmade important? Printing on handmade paper or driving a handmade car gives a joy, a connection with other people you don't get with a machinemade object. You enjoy fine craftsmanship. When you eat on fine handthrown plates or drink from beautiful handblown glassware, it enhances your quality of life on a very sophisticated level. Which isn't to say there isn't beauty in the more crude or primitive handmade crafts, too—it's just a different kind of aesthetic."

After 25 years, Kathryn and Howard continue their hands-on, daily involvement in papermaking, constantly taking on new projects and commitments. Their zeal for the craft, their belief in the handmade product, remains unchanged.

In summing up their success, and the success of hand papermaking in general, Kathryn notes, somewhat wryly, "We're now influencing the look of machinemade papers," and indeed the latest generation of stationery and printing papers includes colors, flecked surfaces and recycled materials that recall handmade sheets.

It seems safe to say, though, that while machinemade papers may try to duplicate the look, they will never duplicate the "soul" of handmade papers. "Someone described handmade paper as 'a charged object,'" Howard relates, "and it's true—there's a liveness there."

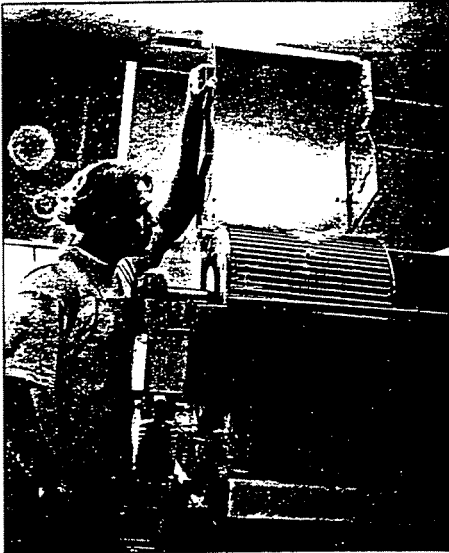


## Making Paper by Hand

*Based, with permission, on information from a Twinrocker brochure.*

**The Fiber:** Twinrocker papers are made from materials high in cellulose content such as cotton rags and flax. These materials are soaked in a high-alkaline solution containing wood ash to soften and begin to break down the fiber. The fiber is then rinsed with clear water to wash out the non-cellulose components. Cotton rags produce white sheets. Flax and abaca produce sheets of warmer colors.

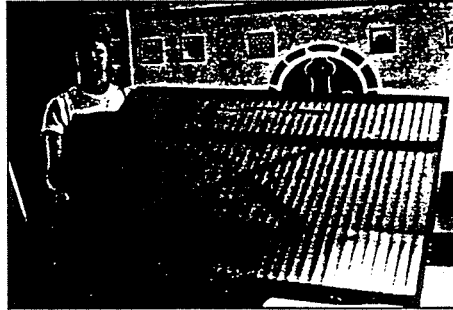
**The Pulp:** The first step in making paper is to literally beat the fiber to a pulp in a Hollander beater. Developed by the Dutch in the 1600s, the Hollander beater was a great leap forward in papermaking technology. In the Hollander, the plant fibers are mixed with pure water, and the pounding action of the beater crushes and abrades the fibers.



*Travis Becker beating paper pulp in the Hollander beater.*

This process works water molecules deep into the structure of the fiber, causing them to attach to bonding sites on the cellulose fibers. The "chemical" which changes plant fibers into paper pulp is water. As the paper dries and the water leaves the pulp for the first time, the fibers come closer together and form new bonds, called "hydrogen bonds". The beating process creates these bonds and is crucial in determining the physical characteristics of the finished paper—those relating to rattle, hardness or softness, translucency or opacity. The more water is beaten or pounded into the plant fibers, the more rattly and translucent the paper will be after it has dried (which is why primitive handmade papers tend to be soft and opaque). These factors control printability, abrasion resistance, folding strength and translucency.

**The Mould:** The papermaker's main tool is called a "mould". In the West, a professional-quality mould is a sieve made of Honduras mahogany covered with a mesh of fine brass wire. The surface is supported by thin wedge-shaped wooden ribs. The mesh covering is woven in two different and distinct patterns today: "laid", showing distinct lines, and "wove", for a smooth-surfaced paper. The watermark is part of the mould.



*Kathryn Clark displays the mould for a James Rosenquist print, published by ULAE, which contains a watermark of the artist's signature. The watermark is a wire design attached to the surface of the mould.*

**Paper Formation at the Vat:** Each sheet is formed, one at a time, by dipping a traditional European hand mould into a vat of pulp, scooping up a thin layer of pulp on its surface, throwing off any excess (called "throwing the wave") and then, while holding the mould perfectly level, shaking it from side to side and front to back as the water drains through. This "shake" when done correctly, interlocks the fibers into a smooth, even mat that is said to have good formation. This takes considerable skill. As Howard Clark says, "If you lose concentration, you'll destroy the sheet of paper." The declle is then removed and the mould drained to remove excess water.



*Dipping the mould.*

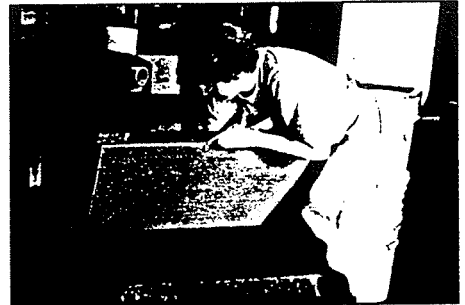


*Removing the declle.*



*Draining the mould.*

**Couching:** The freshly formed sheet is then "couched" or transferred onto a wool felt. Couched, pronounced *cooched*, is from the French verb *coucher*, meaning to put to bed between blankets. The papermaker is literally "putting the paper to bed!" After couching the sheet, another felt is placed on top of the paper. The process of dipping and couching continues until a "post" or a stack of a sufficient and convenient height is created.



*Couching the sheet.*

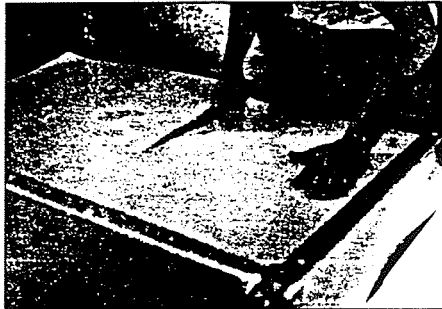
**Pressing:** The post is then placed in a hydraulic press under tons of pressure and the bulk of the water is squeezed out. After pressing, the sheets are strong enough to be lifted by hand off the felts and stacked, creating a "pack." After the pack is pressed, the paper is ready to be dried.

*Continued on next page...*



*Pressing the post.*

**Gelatin Sizing:** Watercolor papers undergo the additional step of gelatin sizing. They are immersed by hand in a double-walled tub full of diluted gelatin, hence the term tub-sized, meaning a gelatin or surface sizing. The outer walls of the tank are full of warm water to keep the liquid state. The sheets are then pressed to remove excess gelatin and hung to dry.



Two watercolor sheets being gelatin-sized.

**Drying and Paper Surfaces:** For a rough surface, the sheets are hung to air dry in the drying loft where they shrink, unrestrained, creating a beautiful random rough texture. Paper with a cold pressed surface is machine dried, giving a smooth but toothy surface. And paper which is hot pressed is burnished between two stainless steel plates in a calender after the paper is dry, hence the three terms hot pressed, calendered or plated, all meaning the same thing.

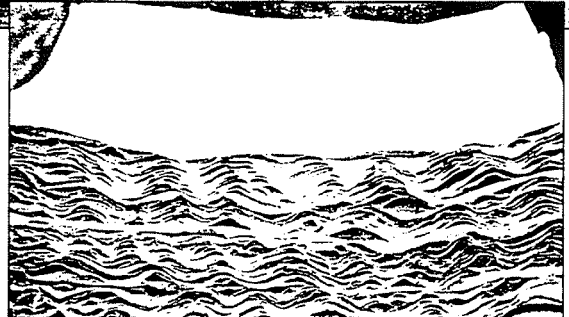


Hanging papers to dry in the drying loft.



The Twinrocker Mill in downtown Brookston, Indiana as it appears today. Twinrocker fits well in Brookston, a town of about 1200 people. The town cherishes its traditions and quality of life. Many families have lived there for over a hundred years.

Right: A completed stack of Twinrocker paper.



**INKSMITH** is part of **DANIEL SMITH: The Catalog of Artists' Materials.**

This publication is available free of charge to active customers. All rights reserved. Reproduction in whole or in part without permission is prohibited. We will consider all unsolicited manuscripts and slides for possible publication. Please include a self-addressed, stamped envelope if you wish any materials returned. Send all queries to Editor, Daniel Smith, PO Box 84268, Seattle, WA 98124-5568.

**CALL FOR ARTWORK**

The theme for the 1996/1997 Reference Catalog will be "Dreams."  
Please see the inside cover of this catalog for details on submitting artwork.

**The Mark of the Maker**

A film by David MacGowan and Laurie Kennard.

This film tells the Twinrocker story in Kathryn and Howard Clark's words. Critic Martha Blown's words are accurate—The Mark of the Maker is "appealing and well-made, enticing the inexperienced viewer to learn more about hand papermaking, inspiring the working artist to persist, and recording with an artist's sensibility a proud bit of American history and ingenuity."

The film received an Academy Award Nomination for Best Documentary Short.

VHS video, 28 minutes, color. GH7949901 \$29.95



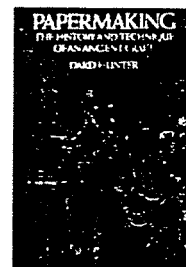
**Papermaking**

by Jules Heller.

Combining thorough descriptions of contemporary papermaking practice with a good deal of paper lore, this book is a good choice for anyone

interested in making paper or learning more about it from the artist's point of view. The book is well-illustrated and written in a lively, insightful way.

8-1/4" x 11", 216 pages, hard. GH7549169 \$29.95



**Papermaking:**

The History and Technique of an Ancient Craft

by Dard Hunter.

This definitive history of papermaking covers every aspect of the subject, giving accurate

discussions of the craft of papermaking as it evolved over the centuries. The book is profusely illustrated with historic images.

5-1/4" x 7-3/4", 648 pages, soft. GH7550121 \$11.95

