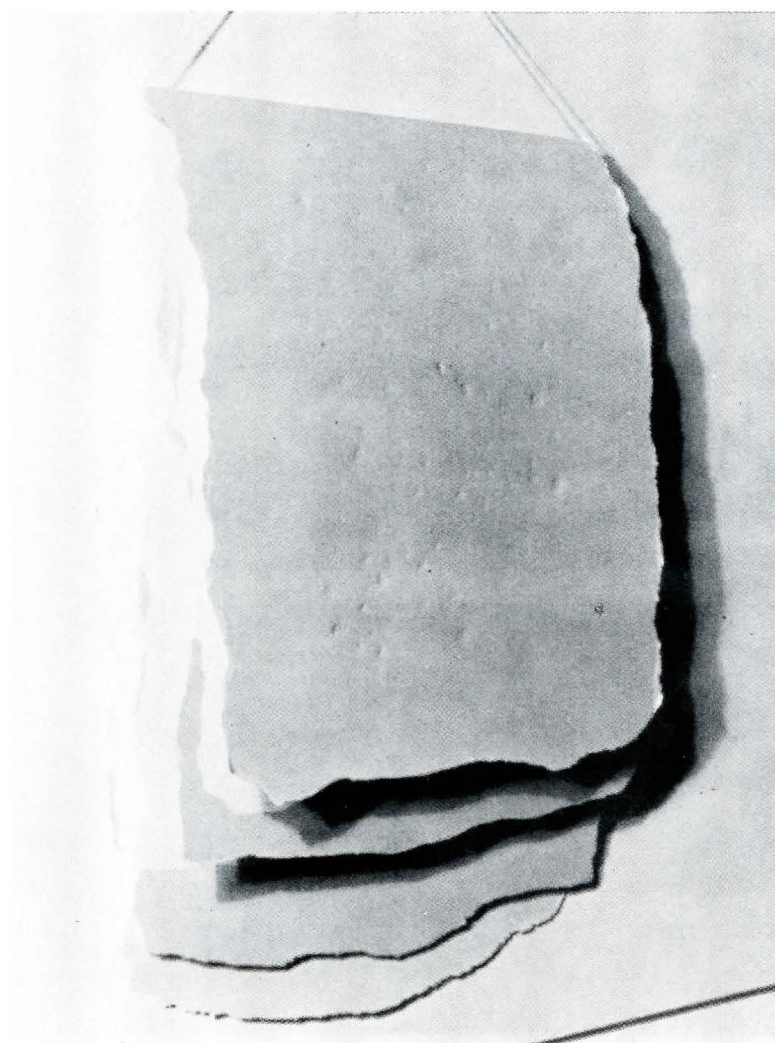


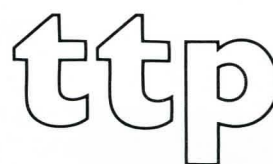
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THE TAMARIND PAPERS

Technical, Critical and Historical Studies on the Art of the Lithograph



Volume II, Number 1
Autumn 1978



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Technical, Critical and Historical Studies on the Art of the Lithograph

Editor: *Clinton Adams*

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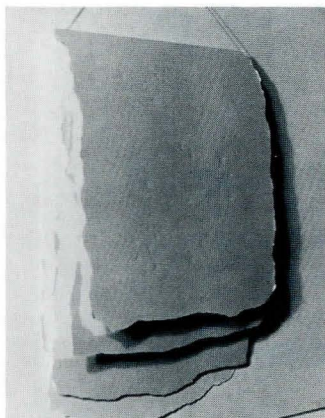
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The **Tamarind Papers** are published twice each year by Tamarind Institute, 108 Cornell Avenue, SE, Albuquerque, NM 87131. Telephone 505: 277-3901. No part of this publication may be reprinted without permission. Tamarind Institute, a division of the University of New Mexico, is successor to Tamarind Lithography Workshop, Los Angeles.

SINGLE COPY PRICE: \$3.00. SUBSCRIPTIONS: one-year, \$6.00; two-years, \$10.00; three-years, \$13.00.

References to TBL in articles and footnotes are to *The Tamarind Book of Lithography: Art and Techniques* by Garó Antreasian and Clinton Adams (New York, Abrams, 1971).

COVER



Michelle Stuart. *Okuping*, 1974-75. 533 by 356 mm.

Printed by John Sommers, Glenn Brill and Frances Thiel in an edition of 24 arabic and 7 roman numbered impressions, plus a *bon a tirer* impression, 2 printer's proofs, 8 trial proofs and 2 Tamarind Impressions [74-249A/249B].

Okuping is one of five lithographs included in a suite, *Tsikomo*, completed at Tamarind Institute in January, 1975. Each of the five lithographs explores in a different way the qualities, shapes, edges and textures of paper. They are thus, to adopt Jules Heller's distinction, not works **on** paper but works **of** paper. Stuart designed templates around which the paper was torn and used sculptmetal to create embossing plates. In *Okuping* the shaped papers was folded and the ink was printed on the underside as well as the front surface of the paper. When suspended, as shown in the illustration, the inside color reflects on to the back sheet creating additional color.

Michelle Stuart, who now lives and works in New York, was born in Los Angeles. She studied at Chouinard Art Institute in Los Angeles and at the New School for Social Research in New York. She also worked with Diego Rivera and studied at *La Escuela de Bellas Artes* in Mexico. Stuart's work has been widely exhibited throughout the United States, as well as in Europe and Australia.

EDITORIAL

On the Importance of Correct Procedure

FOLLOW THE YELLOW BRICK ROAD, goes the famous song from *The Wizard of Oz*, "follow, follow, follow, follow, follow the yellow brick road." While Dorothy and her companions could skip blithely along, confident that they would eventually meet the wizard, the fact is that for contemporary wizardry in lithography, to follow is not necessarily to arrive. Many handbooks, treatises and texts have been published since 1950 on the "how to" of lithography, outlining procedures to follow in almost every possible process within this versatile medium. Among the simplest of procedures is that of going from a crayon or tusche drawing on stone or metal plate to a fully developed image in ink, yet even here, directions vary through an incredible range.

The procedure for stone wash out and roll up in Richard Vicary's 1977 handbook is a case in point. He tells us to wash off the etch gum with water, wash out the drawing with white spirit and a rag, wash the stone with water and a rag, take up the water with a clean sponge until the stone is only damp, roll up with press black and "take proofs until a good black proof has been obtained."¹

Such a procedure will give Vicary's follower an image but in no way could the printed result be called wizardry. Each step by step direction leads the practitioner along a path of image destruction. Removing the etch gum with water could cause some, probably major, dissolution of the drawing material and consequent burning of those opened grease reservoirs both by water and by activation of the gum acidity in the presence of water. The drawing further washed out with white spirit in the presence of water insures further damage and in addition works a greasy substance over a surface which has an imperfectly formed adsorbed gum film in the negative areas. The further consequence is that the adsorbed gum film is encouraged to break down, resulting in unwanted dirt and scum when what is left of the image is rolled up. Finally, in rolling up at this point, without an ink base, inking will be totally inadequate. Tiny grease reservoirs, if they have survived this medieval procedure, will still not roll up fully—perhaps not at all—since they are not assisted in trapping the ink by an adequate grease base.² The proofing, coming at this point, will have two opposite effects. Printing will assist in driving the greasy ink into as yet insufficiently inked grease reservoirs, but it will also be driving ink into grease reservoirs of heavily drawn areas, which at this point are not sufficiently stabilized to resist filling. Rolled up, rich imagery will look both filled and burned.

IT SHOULD NOT BE NECESSARY to indicate the consequences of Vicary's procedure for rolling up a tusche wash drawing.³ He indicates that tusche is more tenuously held, then recommends wash out steps that are similar to those for crayon. After a basic gumming solution has been "dabbed" on the stone and left six hours, it is washed off with water and the image rolled up on top of the drawing material. Proofs are pulled until the image "shows signs of thickening," then

it is etched. Procedures for aluminum are even more inadequately thought out.⁴ Each recommended step leads the follower along a golden path of image destruction, with no attempt to think out the consequences of each step along the way.

It takes more than a list of steps to practice lithography with any degree of competence. Technical lithographic theory is basic and available to all. An attempt to apply that theory is essential. While skill is the cornerstone of technical process, the lithographer must give careful thought to printing elements and the drawing materials, etch strengths and application, wash out and roll up procedures, and ink properties and characteristics. All these and more must be thought of. Procedures must be applied with sensitivity for the artist's intent. At every step in the making of a lithograph, alternatives must be weighed and the correct procedures *for the situation* decided and maintained. Whether it be choice of a modifier in the ink, a method of wash out, a correct ink film on either element or impression, the most satisfactory etch strength or material, or any of a combination of hundreds of alternatives that present themselves for theoretical analysis, correct procedure comes from application of knowledge. Skill and an intelligent and questioning understanding of lithographic theory are combined with a sensitivity to the drawn potential on any element in determining the procedure that will achieve excellence in the printed image.

John Sommers

1. Vicary, Richard. *Advanced Lithography*. London, Thames & Hudson, 1977. Page 21.
2. A correct wash out and roll up procedure is discussed in Information Exchange, this issue of TTP.
3. Vicary, page 22.
4. Vicary, page 24.

COMMENT

IN AN ARTICLE, "Revolution in Hand-Drawn Lithography" (*American Artist*, October 1977, pages 52-59+), Mel Hunter makes extravagant claims for the virtues of "the Mylar method," through which it is possible to put aside "the massive limestone blocks, dark gray zinc plates, and primitive, variable grease-based drawing materials [which] have always been the despair of . . . students." The problems of lithography, he continues, "really result from nothing more than the shortcomings of old-fashioned materials and tools that can be bettered. What have we lived and learned for if not to better the way we make things—even art?"

Few artists who have had an opportunity to draw on stone would agree with Hunter. From Goya to Redon, from Whistler to the present day, countless artists have found the sensuous, responsive surface of the stone to be a full participant in their creative achievements. Although the Mylar method may be a useful tool in the hands of a gifted artist (see TTP's interview with James McGarrell, Vol. I, No. 5, pages 49-64+), it is no panacea, nor can Hunter correctly refer to it as a breakthrough. True, his 1972 article on the process served to stimulate recent interest and led directly to McGarrell's work at Tamarind. But the process is not a new one. Beginning about 1950 Jean Charlot created a series of lithographs by drawing on grained, transparent acetate; plates were then made from these drawings, using light-sensitive materials. Peter Morse in his catalogue of Jean Charlot's prints (Honolulu, University Press of Hawaii, 1977) lists a number of these lithographs (p. xviii) but does not consider them to be "original lithographs." He notes that "Charlot somewhat regrets their exclusion from his catalogue, and it is indeed only a 'hair-splitting ruling' on the photomechanical transfer that keeps them out."

We would not draw this line where Morse does (see our Editorial, "Original Lithographs," in TTP Vol. I, No. 8, pages 98-99). But our dispute with Hunter is far more fundamental. His counsel, if followed, would in the interest of ease and expediency destroy lithography as a creative art, leaving in its place no more than a coarse shadow: an ersatz, plastic art in which convenience and economy would serve as poor substitutes for quality. If this be an "old-fashioned" stand, we are pleased to be so thought.

Clinton Adams

RANDOM THOUGHTS ON PAPERMAKING

by Jules Heller

*There is no art without life;
there is no life without growth;
there is no growth without change;
there is no change without controversy;
there is no controversy without revolution.*

BEGIN WITH THE PAPERMAKER'S ART and you end, or begin again, with the word, "revolution." Few if any sensitively aware persons today would question the statement that we do, indeed, live in the midst of a revolution in papermaking.

Heretofore normal men and women in Canada, the United States, Japan, Sweden, Mexico, Spain, Holland, India—to name a gaggle of countries—have rediscovered, redefined, rebirthed a two-thousand-year-old phenomenon. What magic exists in the making of handmade paper by children from six to sixty plus years old that fascinates so many diverse cultural groups? How may color, texture, pH value, beating time, ingredients, and myriad unknown factors influence one's reactions to the drawing, print, or painting *on* its surface? Where does one place works of art *in* paper? Is it possible to view works *of* paper in terms other than those of traditional mediums?

Printing and printmaking, even though pulled in color, have long been known as the *Black Arts*; papermaking, despite the use of dyes or rainbow-like pigments, is referred to as the *White Art*. I have long pondered this association of paper and whiteness and, if I may steal from my own book, here are some of the myriad thoughts that meander in my skull:

"Throughout the centuries, to this very day, people have taken paper for granted. It is regarded as one of the "givens" of society, as ubiquitous as rain, smog, motherhood, or oleo-margarine. Being so obvious, it has long been invisible. If requested to think "paper," most individuals will meditate a sheet of white paper. Further it is widely believed that *pure white* paper (as with a certain brand of well-advertised soap) is the omega of papermaking.

"How do you define the color, *white*? What images, what associations come to mind? The albuminous material surrounding the yolk of an egg; the fifth circle of an archery target; the purity and cleanliness of a well-scrubbed white-enamelled kitchen sink; the virgin-whiteness of a wedding gown; great masses of flour, sugar, and snow; Snow White and her seven little men; the white part of the eyeball; hooking a good-sized white bass; the silvery-white of the birch;

whitecaps on duck-egg blue water; whitewash (political and the Mark Twain variety); white elephants both literal and figurative; the whiteface of mines and clowns; whitefish (smoked) for Sunday brunch; a White Friar and Whitefriars in Fleet Street, London; the American bald eagle; the white heat of anger and the fear-provoking White Horde; white-hot metal and the 374 foot White Horse of Saxon fame; a certain 18th century colonial mansion in Washington, D.C.; Kipling's unfortunate *white man's burden*; white nebula and the white noise of electronic music; a Canadian winter white-out; the White Rose of York and White Russians; January White Sales and a leaping white (silver) salmon for monsieur; white slavery and white supremacists seen against the background of the White Terror of 18th century France; white tie and tails along the Great White Way; Melville's Whale and whitewings (streetsweepers)—to list a double-clutch of words found in the nearest dictionary. But enough. Let us leave this intriguing digression with the disturbing thought that *white*, in the Eastern world, carries with it vast numbers of associations quite *other* than western man's conceptions."*

To limit this article to a reasonable length, I will not attempt to describe how insects, particularly wasps, made and still make paper; nor will I venture descriptions of *amate*, *tapa*, and other bark papers or cloth; nor will I wander into the fields of papyrus, parchment, or vellum. Because of the differences in materials, methods, and techniques that obtain between Eastern approaches to papermaking and those of the Western world, I will ignore the founders of the traditional method (the Chinese) and the developers (Japanese) of *nagashizuki*. Finally, I will omit, if I can, references to the use of pulp for making cast-paper prints or sculptural works . . . for seemingly obvious reasons.

Thus, we are concerned primarily with the ancient and venerable tools, materials, and equipment of papermaking: a mould and deckle, a Hollander beater (a mere three hundred years old) or its equivalent, rags of cotton or linen and/or cellulosic flora, clean water, felts, a press, a drying area and, finally, the sizing of sheets, if desired.

Forming a handmade sheet of paper, working with and handling paper pulp, cannot be compared with the "feel" of working in other mediums. It is at once, sensual, magic, delightful, frustrating, marvelous. Dipping a mould and deckle vertically into a vat containing water and macerated cotton or linen fibers;

*Quotations are from Jules Heller's new book *Papermaking*, reviewed on page 22 of this issue of TTP.

Jules Heller is author of a new book, *Papermaking, and Dean of the College of Fine Arts, Arizona State University.*

allowing the pulp to spill over the leading edge as you bring the mould and deckle to a horizontal position and simultaneously, in one smooth flowing motion, giving it the “shake,” to interlock the fibers; examining the glistening surface carefully as the water drains through the mold; removing the deckle and couching the sheet onto a felt . . . repeating this process again and again until a post of interleaved virgin-wet sheets and felts is formed, pressing the sheets in a hydraulic or other press to drive out the water; removing the sheets and repressing them . . . going through the whole choreography of sheet-forming is an art form in and of itself. There are few wasted or extraneous motions; no two people seem to handle the tools and materials in the same manner; some reveal a rhythmic, minimal flow of movement; others demonstrate a series of jerks, puppet-like movements; yet all produce sheets of paper, even though few will be perfectly formed. This magic web of felted fibrils that holds together—without benefit of manmade glues—this waterleaf that may one day act as the substrate for a drawing, print, or painting; this sheet that grows better with age—is a unique phenomenon.

Careful study of a particular sheet may allow the potential user to determine if an etched or engraved line, relief line, planographic line or area, screen-printed solution will provide the best unity between figure and ground. As the reader well knows, the choice of paper, be it handmade, mouldmade, or machine-made (assuming it is pH neutral or thereabouts), is not arrived at mechanically. Nor is there a formula to determine esthetic judgment which encompasses color, texture, strength, “printability” (forgive the term, but it is used in the press room), and a host of other paper qualities with respect to a specific plate, stone, block of wood, or screen image.

Before continuing, let me state some of my biases clearly, succinctly—to allow the reader a better evaluation of these random thoughts on papermaking:

1. I do not believe we are here discussing a “fad” currently creating much sound and fury, signifying nothing—to steal a phrase from a favorite playwright.
2. I hold no brief for the few handmade papermakers who, naively enough, still believe they possess “secrets” which are and should remain unknown to all others. (I believe the papermaking *industry* does possess invaluable information for artists—as do shelves of books in many languages in even more libraries).
3. I believe one can become more sensitive to, more aware of, more understanding of

works of art *in, on, and of* paper, if one forms a few sheets, no matter how inexpertly.

4. I believe that working *solely* with paper pulp, producing cast-paper prints or sculptural paper works using pulp as a substitute for plaster of paris or other traditional mediums, limits one’s understanding of this old-new medium.
5. I believe that papermaking is one “magnet” that presently attracts the energies of workers in the several fields of fibres, ceramics, sculpture, printmaking, drawing, painting, photography, etc., and allows and encourages them to stretch their ideas in a compatible “new” medium.
6. I do not believe one need be a chemist, restorer, engineer, physicist, or? to form a sheet of paper) simultaneously, it would help, sometimes, if one were a bloody genius in these and all current areas of science and technology.
7. I do not believe there is but one way to get to Heaven, or the other place—so, all ideas, formulae, approaches to papermaking or anything else offered by anyone, *this writer included*, should be taken with the proverbial grain of salt.
8. I believe the act of making a sheet of paper, even under the most primitive of conditions, is not dissimilar to an act of love, except that it may also be compared to a contagious, wonderful disease from which you need or want no cure.

“What are the symptoms of this epidemic disease? Apocryphal writings have long suggested that a positive correlation obtains between the quantity of alcohol an individual consumes and the quality of the paper said individual produces. But even if one is addicted solely to carbonated soft drinks, coffee, or tea, the primary characteristic of the disease is an unquenchable desire to make a sheet of paper or a work of paper, one after another *ad infinitum*; other evidence includes a sensual pleasure in wearing cotton or linen costumes which, at a moment’s notice, are ripped off one’s back and transmuted to handmade paper; a collector who sorts and labels rags for future use may be suspect; others who admit, albeit reluctantly, they grow a few acres of flax on the back forty, who dye the flax, put it through a flax break, scutching knife and board, who whip and comb it through a flax heckle before beating it and turning it into paper are, obviously, hooked for life; people who use a colorful jargon composed of simple, earthy words may be papermakers aborning, especially if the words have meanings other than those shown in standard dictionaries.

The act of making a sheet of paper is not dissimilar to an act of love.

Continued on page 25

HANDMADE PAPERS: Permanence and Possibilities *by Kathryn Clark*

HANDMADE PAPER is a charged object: minute inconsistencies give every sheet an individuality that subtly enhances the artist's stroke upon its surface. An appreciation of the subtleties—the type of fiber, surface, the inconsistencies left by the hand, and the combination of image and paper melting together—intensifies the enjoyment of a work of art on handmade paper.



Kathryn Clark “throwing the wave” while dipping a sheet of handmade paper.

On a basic level, handmade paper is beautifully simple. Cellulose (plant) fibers swollen with water are formed into a sheet, brought into extremely close proximity through pressing, and, as the water in the fibers evaporates, are bonded together by an ionic hydrogen bond. The papermaker may manipulate the water-logged fibers into a seemingly endless variety of colors, thicknesses and shapes. Although the actual understanding and application of each papermaking technique is complicated, the simplicity of the basic process allows an experienced hand papermaker the freedom to apply his own technical judgement and aesthetic taste as the sheet comes alive.

The plant fiber is literally beaten to a pulp by pounding it in a Hollander beater in order to force water inside and to swell and separate the tiny fibrils on its surface. The transparency, softness or hardness of the sheet is controlled by the beating of the fiber. After the pulp is prepared, it is suspended in a vat with more water. A sheet of paper is formed by dipping a sieve-like mold into the vat, collecting fibers on the surface of the mold. Shaking the mold from side to side and front to back causes formation of the sheet as the water drains through.

After the sheet is formed, the edge of the mold (deckle) is removed and the sheet is transferred on to a wool felt. After this “couching” process, the post of felts and paper is pressed to remove excess water and, more importantly, to bring the fibers into contact to make possible the ionic bonding and therefore potential strength of the sheet. As the water evaporates during drying, the plant fibers finally become a sheet of paper.

Papermaking tools are an extension of the papermaker's hand and eye. Natural inconsistency controlled by years of practice makes craftsmanship and therefore art possible. A knowledge of the history of handmade paper, the tools of the craft, and the chemistry of fibers and coloring agents is necessary fully to appreciate each unique sheet in its relationship to all other sheets of paper. The paper for a fourteenth-century manuscript, an eighteenth century etching, and a contemporary lithograph with colored laminations and inner deckles are all intimately connected.

As with all things, there are no “good” or “bad” papers, no absolutes. Primitive Nepalese or Korean handmade paper can be exceedingly beautiful, as can be the pure white, porcelain-like rag paper of the Lessebo Mill in Sweden. The success of the sheet depends upon the appropriateness of its use by the publisher and artist and upon the developed taste of the collector. It is the collector who encourages or discourages that aesthetic application of the sheet by purchasing it or not.

In most cases, an artist is the producer of an object. That object may be merely a memento of the artist's creative experience. Does the artist have a responsibility to the collector to make that art object “permanent” so that the piece can be enjoyed again and again in the same colors and condition the artist originally intended? Yes, certainly, if the artist intended to create a piece of art to excite an unending audience in the original manner in which he made it. On the other hand, the art object may be intentionally impermanent. The artist may wish the resulting object to communicate to the viewer the fragility of all existence, or to em-

phasize the preciousness of the moment, or the natural process of change. He may also want his audience to enjoy a material in its total context in nature including the limits of the permanence of the material. For instance, a handmade paper which is colored with natural dyes will, in most cases, fade or in some way discolor fairly quickly. The papermaker may choose to color his paper with a natural dye, for instance walnut hulls, and the artist may make that sheet into an art object because they both want the viewer to enjoy the beauty of paper colored with walnut hulls, if only for a short time. The enjoyment of that sheet of paper by both the artist and the viewer is highly dependant upon knowing that the sheet has been colored with a particular natural dye.

Making paper by hand offers unlimited aesthetic variety, both in choice of fiber and color. However, when a craftsperson or artist makes an object for sale, he has a responsibility to his client (publisher, gallery owner, and collector) to know how permanent or impermanent that object may be. Not that it need be permanent, but the buyer should know the potential permanence and ideal care of the piece in case he wants it to last. As long as he is informed as to its relative permanence, he has the choice not to buy it. This is why documentation is just as important in paper as it is in prints. The better informed may be publishers, artists, printers, distributors and collectors, the more all will appreciate and enjoy the paper that comes into their hands.

As professional hand papermakers, the choice of materials and techniques is a matter of priorities. If we do not know who is going to use our paper or for what purpose, we normally make an archival, or permanent sheet of paper: one that is made from 100% cotton, of a neutral pH, buffered lightly with calcium carbonate and colored with lightfast pigments. When we make paper from plant fibers which are not assuredly long lasting or color paper with dyes, we are careful to explain to our clients the relative impermanence of the sheet, be it slight or not, so that they can make intelligent choices in purchasing it, and so that they too can inform the ultimate buyers, the collectors. As the maker of an artist's material, it is our responsibility to be well informed about its physical and chemical properties and to give that information to the buyer when there is any question concerning appropriateness of the use of the sheet. To keep ourselves informed about why paper is or is not archival, and continually to learn more about the physical and chemical properties of paper in order to invent new artistic possibilities, we belong to the American Institute for Conserva-

tion and the Technical Association of the Pulp and Paper Industry. Further, we test colored papers for lightfastness in fadeometers at Purdue University; occasionally the Library of Congress has done further testing.

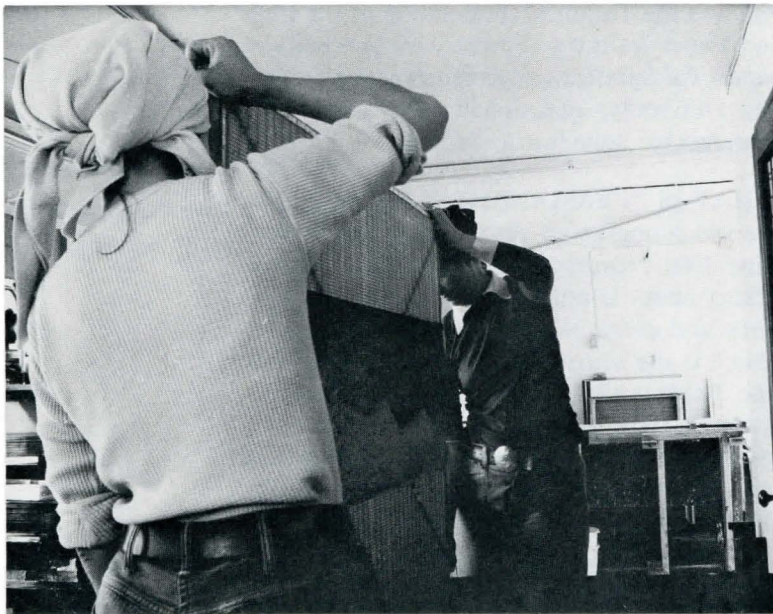
WHAT IS "PERMANENT?" It is an adjective which implies an absolute meaning, something like "forever," and yet what we are talking about is relative, a shade of grey, not black and white. We are talking about paper, what it is and when it is appropriate to use what type. Paper is a fragile medium, yet most of our history is recorded on it. Until recently, losses were due to forces beyond our control such as fire, flood and war. The rise of technology in the past one hundred years has increased the



Kathryn Clark removing the deckle from the paper mould after dipping a sheet of handmade paper.

number of enemies of paper. In their haste to turn out larger and larger quantities of paper, manufacturers have added chemicals that can destroy paper from within. Urban air pollution has in it chemicals that can attack paper from without. The greatest chemical threat to paper, but by no means the only one, is from acids. To prevent deterioration, most archival papers are made from strong plant fibers with a high alpha cellulose content (like cotton), are not bleached with chlorine or other potentially damaging bleaches, are colored with neutral or basic sizings, and are buffered with a base like calcium or magnesium carbonate to act as a shield against acid air pollutants. Then, if those sheets

Kathryn Clark is a papermaker and shop director of Twinrocker Handmade Paper, Brookston, Ind.



Above: Susan Hostetler (left) and Kathryn Clark "couching" a landscape in paper pulp by Claire Van Vliet. Below: Clark and Van Vliet (right) "laying" the freshly pressed paper piece. This landscape is the principal work for an artist's book, *Aura* (Janus Press, 1977).

are cared for properly (framed so that some air can circulate in the frame, mounted against neutral pH mat board, kept away from possible condensation of the surface glass as well as direct sunlight, and in an environment of between 50 and 70 degrees with a 50% humidity or so) they should last indefinitely.

Now that we have defined simplistically what we call *permanent* in all paper, both machine and handmade, let us consider the aesthetic requirements and practical necessities facing a hand papermaker. Twinrocker is a "custom" handmade paper house, meaning we make limited editions of handmade paper for a particular project with a group of people who are collaborating on that project: a publisher, an artist, a printer and sometimes a binder or box

maker. With each project, we compare the technical alternatives (choice of fiber, coloring agents, paper molds and physical arrangement of the dipping vats in the studio) with the aesthetic priorities or goals of the client. Often we invent new techniques to make the two work together.

Most of our clients' artistic and practical concerns have to do with size, shape, thickness, inner deckles, watermarks, color laminations and size of the edition, none of which effect the permanence of the paper. For example, while working with Jack Lemon of Landfall Press and artist William Wiley on an edition in 1973, Wiley wanted the paper to play an important part in the imagery and to echo the shape of a lithographic wash that he had drawn on a stone. While Jack was proofing the image in various colors and Wiley was drawing additional stones, we made a shaped paper-mold in the same shape as the lithographic wash and then formed sheets for Jack's proofing in a variety of colors, with and without chicken feathers in the paper, with and without an inner deckle (shaped hole in the sheet), and with a variety of colored fibers from old cotton rags. As the image was being created, the paper was being created too. The technical and aesthetic priorities being balanced simultaneously until we both ended up with respective *bon à tirer* impressions, one a lithograph, the other a piece of paper.

The choice of color in an edition is one of the most important aspects of the collaboration and one in which the advice of a master papermaker is crucial because so many different coloring agents are possible, many of them are of varying light permanence. Being both paper consultants and makers, it is our responsibility to know how lightfast each of the various coloring agents may be, and how it can be used, as well as to develop formulas so that paper pulp can be colored the same way again and again to make editions possible.

To test for lightfastness, a variety of paper samples are masked and then exposed to strong ultraviolet light (carbon or xenon arc) in a Fadeometer to imitate the sun's rays. Tabs from the mask are gradually removed exposing more and more of the sample sheet to the light. To establish possible standards for lightfast handmade papers, under an NEA and Lilly Endowment Grant, we tested a wide variety of paper samples to 100 hours in the Fadeometer. This was the length of time Tamarind had used in testing papers which had been printed with lightfast lithography inks. We felt there was no reason to think that colored papers would be more lightfast than inks which have a much greater percentage of pigment. We believed that

colored papers remaining unchanged for ten 10-hour increments or a total of 100 hours in a Fadeometer would be of archival light permanence. The paper industry standards established by TAPPI suggest that paper not be exposed longer than 30 hours in a Fadeometer. Paper remaining unchanged in a fadeometer for only 10 hours is considered of excellent lightfastness in the industry because they are not concerned with long-term use. We rejected the industry standards because they are not close to the Tamarind standard for lightfast artists' inks. Instead, we sought to learn how to color handmade papers which would match or come close to those standards. Fortunately, we found that papers colored with pigments are of excellent lightfastness, many remaining fast for the total 100 hours. This is a standard that was beyond our highest expectations and which pleases us greatly.

For all papers, both machine and handmade, there are two basic types of coloring agents: *pigments* and *dyes*. Physically they are opposites. Pigments are inert particles suspended in the watery pulp mixture. Their attraction for the paper fiber in the pulp solution is very weak. In other words, it is difficult for pigment to hold on to the fiber; it can fall off creating a mottled or two-sided sheet. Although the papermaker's task is somewhat difficult in dipping sheets colored with pigment, paper so colored is the most light permanent. Dyes, on the other hand, are chemical substances, natural or synthetic, which are soluble in water and which penetrate into the paper fiber. Because they penetrate the fiber, paper colored with dye can be much more intense than sheets colored with pigments, both in brilliance and depth of shade. For instance, it is impossible to make a black paper using only pigment. On the other hand, no dyed sheet will remain as lightfast as a pigment colored sheet. It is appropriate for paper colored with pigments to be pastel or otherwise subtle in intensity. The paper for Jasper Johns' lithograph, *Scent*, published by Universal Limited Art Editions was colored with pigment so that the tone could be a rich off-white and the hue would work naturally with the printing inks made of pigment.

These respective characteristics, their advantages and disadvantages, must be weighed and discussed for each project and with each client. To cite an example, when working with artist Curtis Rhodes last year on the *livre de luxe*, *Mayan Legends: Replies*, which we are co-publishing, he wanted brilliant color areas in the paper to work with and be part of the printed imagery on the surface. Because the aesthetic priority was very important and the images were to be in a book, we decided to use dyed

pulp. After that decision was made, we then used very high quality dyes which would in fact not fade under indirect sunlight. We used pigments, however, for all the areas that did not require brilliant color.

Within the broad category of *dyes*, there are several choices open to the papermaker. Although the paper industry commonly uses *acid* and *basic* dyes, they should not be used by the hand papermaker because they require an acid environment in the paper pulp and are of low lightfastness. Of the dyes that are useful to the hand papermaker, *direct* dyes are considered of excellent lightfastness in the industry but do not come close to pigments in this respect. In our testing, direct dyes remained unchanged in a Fadeometer on the average between 10 and 30 hours. As with all dyes, the potential lightfastness is directly related to the care with which the dying procedure is carried out. Direct dyes are usually sodium salts of colored acids. Unlike acid dyes, they have a natural affinity for cellulose and therefore can be used under practically all dying conditions and also on all types of cellulose fiber.

Another type of dye which is quite useful to the hand papermaker but which is not used in the paper industry is *fiber reactive* dye. This is commonly used instead in the textile industry. It has good lightfastness and is not harmful to the life of the paper. Problems of practical application prevent use of this dye in the paper industry, but on a small scale, in a paper house the size of Twinrocker or for the individual artist working with paper pulp, fiber reactive dyes become practical. As with all dyes, they are not closely repeatable, as much of the dye will rinse away. Generally however, they are slightly more lightfast than are direct dyes, remaining unchanged in a Fadeometer to 40 hours and changing noticeably at 60 hours. Let me emphasize that I am stating averages and generalizations of lightfastness in terms of hours. Every dye within a type is a different chemical. Some dyes may fade after 10 hours, or even immediately, and others remain unchanged for 80 hours. This is why testing every dye is so important. Colors in *fiber reactive* dyes tend to be more brilliant even than *direct* dyes, in fact almost fluorescent, making their usefulness somewhat limited aesthetically. One project in which we used that color brilliance to advantage was the Robert Motherwell lithograph, *Stoneness of the Stone*, published and printed by Brooke Alexander and Ken Tyler. That sheet was a two-color laminate, the base sheet being a warm grey and the laminate a cool grey in the same size and shape as the lithograph stone upon which the image was drawn. In order for the two greys to be rich in color and so as to set

The basic simplicity of the papermaking process has given every papermaker the freedom to experiment.



Claire Van Vliet (left) and Kathryn Clark examining the paper art sheet for *Aura*.

off the two black calligraphic strokes printed on the surface, each grey was composed of many different, brilliant fibers dyed with fiber reactive dyes.

The third type of dye which can be acceptable for hand papermaking and which is the most lightfast is *vat* dye. However, because of the complex dying procedure, vat dyes are not practical for use on a daily basis in a professional hand papermaking house or in an industry mill. They are impractical because of the necessity for tight controls over reduction of the fiber during dying and subsequent oxidation, the necessity for controlled heat during the process, and the relatively long period of time required for dying of each batch. Also, as with all dyes, there is the problem of repeatability. However, where repeatability and time are important factors for the production papermaker, they may not be for the individual artist working with paper pulp as a material. Under these circumstances, I would recommend vat dyes as an effective, highly lightfast and permanent material for dying paper pulp.

BY TOUCHING ON ONLY THE BASICS of coloring handmade paper, I hope I have indicated the importance of judgement on the part of the papermaker in balancing permanence with aesthetic concerns. In the past, Twinrocker has been interested in two different forms of papermaking: (1) making traditional sheets in limited editions and (2) working with artists to make unique paper objects. After working with many artists over the years, making unique paper pieces with them, we have recently become involved in paper imagery in limited editions. All the expertise and experience of sheet-forming and making unique paper objects comes together in this new interest. Tools and techniques have been developed which allow that traditional sheet to be pushed to extremes aesthetically and still to remain repeatable in limited editions. As coloring agents, pigments are ideal since they can be repeated from color formulas.

I spent the last two weeks of July, 1978, at Lakeside Press with four artists and publisher John Wilson to create *bon à tirer* impressions for limited edition paper pieces. While there I worked with the artists, just as a printer would do, to develop an image which is an original multiple like a lithograph. While at Lakeside, we developed color formulas using pigments and built molds and deckles to create the imagery to the artists' designs. This fall at Twinrocker the editions will be made from these *bon à tirer* impressions. Having spent the past seven years documenting experimentation and recording conditions under which dying, beating, dipping and drying were done, it is now possible to leave our own studio and establish professional conditions elsewhere. In addition to creating editions of total paper imagery at Lakeside, we also worked in collaboration with Tamarind printer David Folkman of Little Egypt Enterprises in Houston and artist Bob Camblin to create imagery that is partially paper and partially ink, the two materials merging in one statement. This close collaboration will be finished in November.

The basic simplicity of the papermaking process has given every papermaker the freedom to experiment and develop techniques for many different priorities: aesthetic, practical and archival. By carefully documenting materials, research and testing procedures, the papermaking can continue to apply all that information in new ways to provide the artist with more possibilities and freedom in making collaborative imagery. □

INFORMATION EXCHANGE

a column for discussion of questions
and suggestions from readers

by John Sommers

How Procedures Develop and Change

A QUESTION WAS ASKED in a recent professional lithography workshop at Tamarind about the variation that exists in lithographic procedures. "Why do books on lithography advance so many varying procedures for the same processes?" The question warrants discussion; its answer is complex. For many years little was known of the theory of lithographic etching. The theories of how lithography worked, though varied, went little beyond the mutual antipathy of grease and water. Those who worked in lithography had no dependable theoretical basis as a starting point, so as a general procedure to get from "A" to "B" they tended to evolve their own methods. These often depended on what worked within their separate lithographic styles. The evolution of better methods was yet to come. Empirical accounts of procedures were written, greater amounts of information accumulated, the chemical natures of materials became known, gradually theory evolved, and its application began to be felt in procedure. Demands upon the medium became greater and more complex, and total fidelity of the printed image to the original drawing on stone was required. These increased demands stimulated an increased effort to understand the chemical reactions and physical attractions that were taking place and then to apply this knowledge to procedures. Logical derivation of processes from sound and well-understood theory has resulted in the procedures used today by Tamarind and other professional workshops.

Wash Out Procedure

THIS MINIMAL OUTLINE of a reliable, contemporary wash out procedure will assist those who now follow the procedures presented in different manuals with varying results. After describing each step in the process I will give the reasons for the procedure, indicating its potential technical dangers.¹

Wash out and roll up follows a first etch (after an appropriate lapse of time) or is the first procedure in preparing for the proofing or printing of a lithograph from stones or plates.

In the former case the roll up is always in black ink with a leather roller; in the latter, it may either be printed in black with a leather roller or in color with a hard surfaced roller. The basic procedure remains the same no matter what the purpose, while variations are made to suit the circumstances.

1. Press or processing preparation: The following should be made ready: clean water in a pan, a pan for dirty water squeezed from the sponges during roll up, a gum sponge, sponges for wet and matte sponging as well as a clean old sponge for taking up surface debris at wash off, ink rolled on a slab with a freshly scraped leather roller (or color with a color roller), clean cheese cloth pads, clean dry rags for wash out, lithotine, asphaltum, lacquer thinner and plate lacquer.

Everything must be in readiness before the procedure is begun. Because delays during the procedure can become the source of error and damage, they must be avoided.

2. The image is always freshly gummed and buffed with a cheesecloth pad to a thin, streak-free film, then fanned completely dry.

This is a protective mask through which the image material (ink or drawing) can be washed out with solvent while the negative areas are protected. If the stone or plate has been stored, one cannot know the condition of the former, dried-down film; it may have been spattered with water or scratched; a new film provides a *known* stencil on the surface. If the image is to be put into lacquer base at this point, three such gum masks, separately applied, buffed and dried prior to wash out, will insure that the surface is thoroughly and uniformly covered as a protection against an inability to remove the lacquer together with the stencil. Rather than washing out through a buffed etch film, fresh gum is used, providing the surface with the lowest possible acidity when water is applied, thus protecting the grease reservoirs from burning.

3. Wash out the image material with lithotine and a clean rag.

Lithotine itself, if allowed to sit on the image for a few minutes before massaging the surface, will dissolve the ink or drawing materials, before it is taken up on the cloth. Once the image material is removed as cleanly as lithotine will allow, deep cleaning may be done with lacquer thinner. This will remove all residual material not touched by the lithotine. If the image is already in lacquer this step is omitted. Cleaning residual material from a drawn image or from a grease base image with lacquer thinner will provide for a deeper penetration of the grease base (which may be asphaltum). In addition, tiny grease dots, which may have been bridged over by the gum film, will be cleaned by this more penetrating

This column appears regularly in TTP. Letters, comments and suggestions from lithographers, artist-teachers and students are invited.

solvent. It is thus assured that all the possible grease reservoirs have been cleaned and will receive the grease base at rub up. If the image is to be placed in lacquer after this cleaning, it is recommended that an even more thorough cleaning take place, using Lacquer "C" Solvent or Hancolite.²

4. Apply asphaltum to the image area with a clean cloth, gently buffing it into the image until dry and free of streaks.

By providing a grease base the reservoirs are protected from possible water burn and are capable of trapping ink during the roll up. If the element is aluminum, this step may not provide sufficient protection. If the plate is being rolled up on a grease base, distilled water must be used for sponging. For the most successful roll up on aluminum, the lithographer should learn to provide the plate with an accurate first etch and then put the plate into a lacquer base at the first roll up.

Asphaltum, now compounded for use in offset lithography, may be too thin to provide the needed protection or tack to the grease reservoirs. A heavy bodied asphaltum is recommended; it may either be diluted with lithotine prior to use or diluted on the element when rubbing it in.

5. With Kimwipe pads or a clean old sponge and water, wash off the gum film and surface asphaltum (and/or lacquer).³

This is a critical procedure, for if it is insensitively done grease reservoirs will likely be burned by activated gum acidity, minerals in the water, or a combination of these effects. In addition, when the image is washed off the gum-asphaltum debris may mass into balls and be rubbed into the grease reservoirs with the water.

The element is washed free of gum all around the image and the debris removed. The image area is washed rapidly and with an amount of water which floats the remaining mask off the image. The image surface is sponged matte-wet and immediately rolled upon.

6. The image is rolled up with black ink and leather roller, or with color ink and color roller.

Many factors enter into a successful roll up. The tack of the ink is as important as its grease content. If this is the first roll up the ink must

have sufficient tack to trap well on the grease reservoirs but not so much as to rip them off rather than ink them. It must be of sufficient viscosity so as not to deposit scum over the negative areas. The ink must not trap so fast that richly drawn areas get inked before delicate areas are full, nor should it be so soft as to overink delicate areas while fully charging rich or flat areas. The tack of the ink must allow for repeated passes to insure that inking is even, that it is well distributed, and that the surface is free of roller marks. The grease content must not provide excessive greasiness to the image, particularly if this is the first roll up and grease reservoirs have not yet reached stability, but it must provide enough grease so that the reservoirs are not starved and can stand additional etching processes. There must be a balance in the physical properties of the ink so that combined with the printer's skill, roll up is slow enough to permit control of all areas in ink quantity and character, yet fast enough so that water burn cannot occur.⁴

Each grease dot in the image must have its full complement of ink. If underinked, the dry surface will have a dull appearance; if overinked, the surface will be very glossy and heavy looking. Properly inked, it will have a slight sheen. Each dot, viewed with a ten power glass, will reveal no brown asphaltum still showing; it will be fully covered and slightly rounded, with a soft gloss. Flat areas should not have a "salty" appearance but will be fully inked.

Color inking will follow many of the same rules in ink modification and in judgment of their application. The physical properties of the ink must be considered both for their printing and roll up qualities. Color inking on a stone will have been applied over a lithotine rub up (with a small quantity of color ink) rather than on discoloring asphaltum. On a plate the image would be in lacquer, so no color ink would be rubbed into it; instead, lithotine alone would be applied prior to wash off in order to provide sufficient, colorless, non-staining grease upon which to roll up. Rubbing up with ink on a plate will cause oxidation to occur within the image, resulting in a heavy grey stain which will continue to appear as each impression is printed. Pure color impressions can be pulled if the plate is provided with a lacquer base and is then rolled up in color ink on lithotine alone.

Color inking on a stone may also require a lacquer base to provide safety for delicate grease reservoirs against the corrosive action of the combination of some acidic inks and the constant application of water in sponging. Many color inks are quite acidic in nature and when rubbed into the image can cause damage to the reservoirs; subsequent printing in this situation may slowly undermine delicate image areas and cause them first to recede, then fail.

1. This outline follows but refines the procedure given in TBL (Section 2.10, page 69), *Method I (Preferred)*. the "wet washout" procedure, *Method II*, was included in TBL only as a matter of information and is not recommended.
2. Lacquer "C" Solvent and Lacquer "C" are products of the Lith-Kem-Co Company; Hancolite is a product of the Handschy Chemical Company.
3. Kimwipe pads are made by Kimberly-Clark and are available from offset supply houses.
4. See TBL, sections 11.2 and 11.9, pages 301-02 and 310-11.

As an alternative to these precautions, the image may be frequently put into black ink and rested under gum, or a slightly acidified etch may be used, allowing grease reservoirs to recuperate.

Careful application of the procedures set forth in this outline, in combination with skilled performance at each step and good judgment throughout, will ensure the best roll up. It will not, however, correct for procedural errors in other areas, such as in etch strength and application, improper storage, or poor rolling technique.

Graphite on Stone

PRIOR TO PUBLICATION of TTP 1:8, Daniel Denyse called from the Alberta College of Art in Calgary for information about etching of graphite drawings on stone. I made some suggestions. Later, after publication of TTP 1:8, which included an article and further notes on graphite, Denyse passed along these additional ideas—procedures that he found helpful, assisting his spray-etching technique and enhancing his ability to hold light tonal passages:

I tried the different ways of processing the stone that you suggested; it seems that I wasn't etching it properly. In order that I could better see my air brush etching of the stone, I added some iron oxide to the etch solution. It seemed to resolve my problems completely. I was able to see the sprayed etch on the stone and I could spot-etch quite accurately. In addition, I found that if I rubbed up my stone with acetone prior to drawing, it helped in getting the light tonal areas to hold.

Tannic Acid Plate Etch

QUESTIONS ARE FREQUENTLY ASKED in Tamarind's aluminum plate workshops as to the purpose of tannic acid in aluminum plate etch.

The addition of tannic acid to etches as a means of toughening gum films is introduced in TBL (see Kistler etch tables, TBL page 59), and in other sections of the book there is thorough discussion of the properties of gum arabic and the mechanism of absorption.⁵ It is known that tougher adsorption bonds are created by the presence of tannic acid in an etch, and that it is the presence of carboxyl groups (COOH) in a compounded etch which provides this tougher bond.⁶ It has been suggested that gum arabic, which provides the chief means for desensitization of lithographic surfaces, has the empirical formula, $n(C_6H_{10}O_5)$, while tannic acid contains the carboxyl group, $C_{14}H_{10}O_9$. Absorption is defined as "the condensation of gases liquids

or dissolved substances on the surfaces of solids . . ." and a maximum condensation is what is sought in creating an adsorbed gum film. Gum arabic forms the best adsorbed gum film at its most aggregate concentration. That aggregate property of gum arabic is most evident at acidities from pH 4.6 to 6.3 and decreases as acidity increases. The minimum aggregate property of gum arabic is observed at pH 0.7.⁷

The stock solution which we refer to as Tannic Acid Plate Etch (TAPEM) was formulated in 1975. It is designed to provide for maximum production of gum film and image absorption. The formulation has a pH of 2.4 and was developed upon the basis of the information given above. When mixing etches, the pH of the TAPEM stock solution is raised by the addition of gum arabic and is lowered by the addition of phosphoric acid, a less corrosive acid than nitric and one that does not attack aluminum. The formula for TAPEM is as follows:

	U.S. Measure	Metric Measure
Hanco Plate Etch, Tannic Acid Type, MS-214	42 oz.	980 ml.
Gum arabic, (pH approximately 4.8)	63 oz.	1475 ml.
Hydrogum	22 oz.	520 ml.
Phosphoric acid (H_3PO_4)	1 oz.	25 ml.
	128 oz. (1 gallon)	3000 ml. (3 liters)

The combination and interaction of these materials provides for maximum adsorption of both image and gum film by providing high concentrations of carboxyl groups. The best gum adsorption is achieved if the etches provided to the plate have a pH that is close to the maximum aggregate concentration of gum arabic. The presence of tannic acid, while concentrating carboxyl groups, provides a non-corrosive acidification to a compounded etch which assists in image adsorption on an aluminum plate. The use of phosphoric acid allows pH adjustment with smaller amounts of total acid that would be the case with tannic acid alone. Hydrogum in the mixture provides the advantageous presence of adsorbing molecules which are smaller than those of gum arabic. While gum arabic adsorbs better, the smaller molecule provided by the mesquite gum theoretically gives closer grouping in the gum adsorption process and provides, in addition, a gum material which is easier to apply and buff down smoothly.

5. See TBL, section 2:3, 9.11, and 10.1; also TTP 1:4, pages 46-48.

6. See TBL, section 9.14 and 10.4.

7. See Riddell, George L. *A Study of Certain Aspects of Lithographic Printing* (a thesis), London, n.d., page 14; and *Handbook of Chemistry and Physics*, 13th edition, pages 1643 and 2306.

Ghost Images inside Frames

A RECENT LETTER to Tamarind expressed concern about a problem in framing of fine prints, a problem commonly encountered by artists, collectors and museums. Catherine Asher of the Lilly Library at Indiana University in Bloomington wrote as follows:

In the past year we have re-matted and framed over one hundred prints, lithographs, etchings, engravings, etc. The previous framing was done about 25 years ago, with acidic materials. We noticed that a number of these frames had an image on the glass that corresponded to the print design. Then in the past year a local framer used rag board and proper procedures to frame a print that was made within the last five years. It took only a few months for the air space to get cloudy, and finally for the air to clear and a similar image to appear on the glass. Do you know what this phenomenon is? The situations are different enough that I can't hazard a theory. The image is very clear and detailed, and does not seem to be caused by microdust or static.

At Tamarind we have indeed experienced this phenomenon in the temporary framing of lithographs on our workshop walls. We do not have a complete explanation but we do have a theory.

The appearance of an image on the inside surface of the glass seems to occur when that surface is too close to that of the print. When the print and the glass are separated by at least the thickness of a mat board the problem is relieved. Our theory is that the movement of humid air in and out of the frame causes condensation on the inside surface of the glass. The air carries micro-particles of various materials; these pass through the paper, board and the ink layers of the print in proportion to their thickness and enter the frame through fine cracks and crevices as well. Condensation occurs on the inside glass surface in relative proportion to the distance of the ink image from the glass. It evaporates from that surface in relative proportion to the ink film on the paper, being trapped for a longer period on the glass surface opposite the densest ink film. During this period, prior to evaporation, it collects micro-particles. Subsequently, evaporation and equalization of air pressure and humidity occur, leaving a deposit of particles on the glass surface, duplicating the image as a ghost. No matter how well sealed a frame may be, this interchange is constantly taking place. In areas of high humidity and barometric change, such condensation, evaporation and air pressure equalization is more frequent and, as a result, the afterimage on the glass develops more quickly.

Inks dry slowly. Sometimes the process of oxidation, through which they dry, goes on for years, depending on the many variables of ink density, composition and modification. Some component of the ink could be contributing to the phenomenon of ghost images on glass. One aspect of the drying process which surely contributes to it is the utilization of oxygen from the air, drawing in more air until the ink is dry. A smaller space between the print and the glass may be sufficient in an area of low humidity; a larger space may be needed elsewhere. It is of utmost importance, however, that the print never be placed directly against the glass. In that circumstance condensation, absorbed by the print, will contribute to the deterioration of the paper and adherence of the ink to the glass, particularly if the drying process is not complete.⁸

One further comment. Asher's question mentions a print framed 25 years ago. This is an excessively long time for a print to remain in a frame. If preservation of a work of art is a goal, it should ideally be rotated through a cycle of display and rest in a case or drawer. □

8. A Tamarind publication, *Questions to Ask Your Framer and Answers You Should Get*, discusses other considerations in the framing of fine prints.

PRINTER'S CHOPS 1960-1978

Compiled by Holly Roberts

From time to time in the past Tamarind has published descriptions of the chops that appear on lithographs printed at Tamarind Lithography Workshop, Los Angeles, and at the Tamarind Institute. In order to provide current information for museums, libraries, galleries and collectors, these lists have been revised and consolidated, covering the eighteen year period between July 1, 1960, and June 30, 1978.



BA



KA



FA



GA



RA



LB



JPB



LEB



JBy



FB



RBw



RB



BB



GB



The *Tamarind chop*, derived from the alchemist's symbol for stone, appears on all Tamarind lithographs, whether printed at Tamarind Lithography Workshop, Los Angeles (between 1960 and 1970), or at Tamarind Institute (since 1970).



The *University of New Mexico chop* was used alone or in conjunction with the Tamarind chop on lithographs printed at the University as a part of the Tamarind printer-training program between 1960 and 1970. Since 1970 it has occasionally been used (without the Tamarind chop) on lithographs drawn by student artists and printed by student printers.



The *trapezoid symbol* of the University of New Mexico was adapted for use as a chop by Tamarind Institute in September, 1974. It has since been used on lithographs printed by apprentice and student printers. Personal printer's chops are now used only after a printer attains the level of senior printer.

When a Tamarind printer-fellow demonstrates ability to print an edition of professional calibre, he or she designs a personal chop which henceforward appears on each edition for which that printer is responsible.* Printer-fellows who complete the professional printer-training program receive certification as TAMARIND MASTER PRINTER, a designation which attests to their ability to collaborate with artists of every aesthetic. Tamarind lithographs printed since 1960 bear the chop of one of the following printers:

- BA** **Ben Q. Adams**, TAMARIND MASTER PRINTER; printer-fellow, Jan 1972-Jul 73; printer TI, 1973-75; founder-director Western Graphics, Albuquerque.
- KA** **Kinji Akagawa**, printer-fellow, Jan 1965-Jul 66.
- FA** **Frank Akers**, printer-fellow, Sep 1967-Sep 68; printer at Universal Limited Art Editions, Long Island.
- GA** **Garó Antreasian**, TAMARIND MASTER PRINTER; technical director TLW, 1960-61; technical consultant TLW, 1961-70; technical director TI, 1970-72; currently on faculty Univ. of New Mexico; member, National Advisory Board, TI.
- RA** **Robert Arber**, printer-fellow, Jun 1971-Mar 73; co-director Hand Graphics, Santa Fe, 1975; currently founder-director Robert H. Arber & Son, Alameda, NM.

- LB** **Lloyd Baggs**, printer-fellow, Sep-Dec 1971; printer for Sam Francis, 1972; printer Editions Press, San Francisco, 1972-74; printer-in-charge Cirrus Editions, Los Angeles, 1974-75; currently printer-in-charge Keylan Press, Los Angeles.
- JPB** **Joy Pural Baker**, TAMARIND MASTER PRINTER; printer-fellow, Jan 1976-Jun 77; currently assistant director Southwest Graphics, Scottsdale, AZ.
- LEB** **Lynn Baker**, TAMARIND MASTER PRINTER; printer-fellow, Jan 1973-Dec 74; master printer-in-charge TI, 1975-77; currently director Southwest Graphics, Scottsdale, AZ.
- JBy** **John Beckley**, printer-fellow, Jun-Sep 1965; currently on faculty Bucknell Univ, Lewisburg, PA.
- FB** **Frank Berkenkotter**, printer-fellow, Jun-Aug 1964.
- RBw** **Robert Bigelow**, printer-fellow, Feb-Sep 1966; on faculty John Frazier Univ, Vancouver, British Columbia.
- RB** **Robert Blanchard**, printer-fellow, Feb 1976-Jun 77; currently director Dayspring Graphics, Inc., Albuquerque.
- BB** **Bernard Bleha**, printer-fellow, Sep 1964-Sep 65; printer Gemini, G.E.L., 1965-66; currently on faculty Green River Community College, Auburn, WA.
- GB** **Glenn Brill**, TAMARIND MASTER PRINTER, printer-fellow, Aug 1974-Jun 76; printer TI, 1976-77; currently studying at Cranbrook Academy of Art, Bloomfield Hills, MI.

* In a very few cases, printers have designed new chops after leaving Tamarind; such new chops do not appear on Tamarind lithographs and hence are not included in this list.

SB

JB

WC

PC

CC

EdS

MD

JD

KD

EE

RE

JFr

DF

MF

JF

WG

RG

FG

RGn

EH

RH

SB **Stephen Britko**, TAMARIND MASTER PRINTER; printer-fellow, Nov 1973-Apr 75; printer TI, 1975; director and master printer Southern Illinois Univ, Edwardsville, 1976; director and master printer Normal Editions Workshop and on faculty Illinois State Univ, Normal, 1976-77; currently shop manager and master printer TI.

JB **John Butke**, printer-fellow, Sep 1966-Sep 67; Aug 1970-Jan 72; on faculty Univ of Wisconsin-Stout, Menominee, 1972-73; currently teaching South High School, Worcester, MA.

WC **Wesley Chamberlin**, printer-fellow, Jan-May 1962; currently on faculty San Francisco State Univ.

PC **Paul Clinton**, TAMARIND MASTER PRINTER; printer-fellow, Feb 1969-Mar 70; printer Gemini, G.E.L.; printer Cirrus Editions; printer and on faculty Graphicstudio, Univ of South Florida, Tampa; currently on faculty Ft. Steilacoom Community College, Tacoma, WA.

CC **Christopher Cordes**, TAMARIND MASTER PRINTER; printer-fellow, June 1971-Aug 73; printer Cirrus Editions, 1974-75; currently on faculty Univ of Rhode Island.

EdS **Ernest de Soto**, TAMARIND MASTER PRINTER; printer-fellow, Mar 1965-Dec 66; master printer Collector's Press, San Francisco, 1967-70; co-director and master printer Collector's Press, 1970-72; co-director and master

printer Editions Press, San Francisco, 1972-75; founder-director and master printer Ernest F. de Soto Workshop, San Francisco.

MD **Marlys Dietrick**, TAMARIND MASTER PRINTER; printer-fellow, Jan 1976-Aug 77.

JD **John Dowell, Jr.**, printer-fellow, Feb 1963-Aug 64; on faculties Indiana State Univ, Terre Haute; Univ of Illinois, Urbana; Tyler School of Art, Rome; currently on faculty Tyler School of Art, Philadelphia.

KD **Kaye Dyal**, printer-fellow, Aug-Nov 1964.

EE **Erwin Erickson**, printer-fellow, Feb-Sep 1966; currently on faculty Univ of Wisconsin, LaCrosse.

RE **Robert Evermon**, printer fellow, May 1965-Dec 66; Tamarind research-fellow, Jan 1967-Apr 68; on faculties Nova Scotia College of Art and Design, Halifax; Cranbrook Academy of Art, Bloomfield Hills, MI; currently on faculty British Columbia College of Art, Vancouver.

JFr **Jurgen Fischer**, printer-fellow, Apr 1965-Jul 66.

DF **David Folkman**, TAMARIND MASTER PRINTER; printer-fellow, Feb 1967-Jul 68; master printer Collector's Press, San Francisco, 1968-69; on faculty Southern Illinois Univ, Carbondale; currently director and master printer, Little Egypt Enterprises, Houston.

MF **Manuel Fuentes**, printer-fellow, Sep 1967-Apr 69; on faculty Otis Art Institute, Los Angeles.

JF **Joe Funk**, printer-fellow, Jul 1960-Jun 61; director Kanthos Press; co-director and printer-in-charge Joseph Press; on faculty Otis Art Institute, Los Angeles.

WG **Walter Gabrielson**, printer-fellow, Oct 1964-Mar 66; currently on faculty California State Univ, Northridge.

RG **Robert Gardner**, printer-fellow, Jun-Sep 1962, Aug 1963-Sep 64; currently on faculty Carnegie-Mellon Univ, Pittsburg; member, National Advisory Board, TI.

FG **Fred Genis**, printer-fellow, Dec 1966-Jul 67; printer-in-charge Universal Limited Art Editions, New York, 1967-69; co-director Hollander's Workshop, Inc., New York, 1969-72; currently director Lithography workshop in The Netherlands, printer-in-charge and on faculty Royal Academy of Art and Design, 'sHertogenbosch, Netherlands.

RGn **Ronald Glassman**, printer-fellow, Sep 1968-Jul 69; artist-in-residence Scottish Arts Council, Scotland, 1975-76.

EH **Edward Hamilton**, TAMARIND MASTER PRINTER; printer-fellow, Mar 1969-Jun 70; printer Cirrus Editions, Los Angeles, 1970-74; currently printer for June Wayne, Los Angeles.

RH **Russell Hamilton**, TAMARIND MASTER PRINTER; printer-fellow, Aug 1976-May 78; printer TI, 1978; currently printer Western Graphics, Albuquerque.



IH



BH



EHs



JH



JJ



HK



DKy



DK



WK



DKr



MK



AK



AKs



RK



BL



WL



IL



CL



JL



JLn



Bly



SL



JM



WM

IH **Irwin Hollander**, TAMARIND MASTER PRINTER; printer-fellow, Sep 1961-Jun 63; technical director TLW, 1963-64; founder-co-director Hollander's Workshop Inc., New York, 1964-73; on faculty Cranbrook Academy of Art, Bloomfield Hills, MI, 1973-76; currently on faculty Wayne State Univ, MI.

BH **Bohuslav Horak**, printed in Europe; printer-fellow, Nov 1960-Jul 61; technical director TLW, 1961-63; currently on faculty Univ of Houston.

EHs **Edward Hughes**, printer-fellow, Sep-Dec 1967, Mar-Aug 1968. Deceased.

JH **John Hutcheson**, TAMARIND MASTER PRINTER; printer-fellow, Jul 1972-Sep 73; director and master printer Lithography Workshop, Nova Scotia College of Art and Design; currently printer Tyler Graphics Ltd., Bedford Village, NY.

JJ **Julio Juristo**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1970-Aug 71; master printer Graphicstudio and on faculty Univ of South Florida, Tampa, 1971-76; currently director-publisher Topaz Ltd., Tampa.

HK **Harold Emerson Keeler**, printer-fellow, Aug 1961-Feb 62; directed own workshop Seattle, WA. Deceased.

DKy **Donald Kelley**, printer-fellow, Sep 1966-Jan 68, Sep 1968-Jun 69; currently on faculty Univ of Cincinnati.

DK **Douglas Kendrick**, printer-fellow, Jan 1973-Jun 74.

WK **W. Wayne Kimball, Jr.**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1970-Dec 71; on the faculties San Diego State Univ, 1973-74 and 1977-78; California State Univ, Long Beach, 1974-75; The Univ of Texas, San Antonio, 1975-77; currently on faculty Arizona State Univ, Tempe.

DKr **Don Kinner**, printer-fellow, Sep 1971-Mar 72.

MK **Michael Knigin**, printer-fellow, Oct-Dec 1964; director Chiron Press, New York; currently on faculty Pratt Institute, Brooklyn.

AK **Anthony Ko**, printer-fellow, Sep-Dec 1966; Sep 1968-Jun 69; senior printer Collector's Press, San Francisco; currently on faculty Edinboro State College, PA.

AKs **Aris Koutroulis**, printer-fellow, Feb 1963-Jul 64; currently on faculty Center for Creative Studies, College of Art and Design, Detroit.

RK **Ron Kraver**, printer-fellow, Sep 1970-Oct 71; on faculties at Univ of Florida, Gainesville, 1972-75 and Univ of Hawaii, Oahu, 1976-77.

BL **Bill Lagattuta**, printer-fellow beginning Aug 1977.

WL **William Law III**, TAMARIND MASTER PRINTER; printer-fellow, Feb 1969-Jun 70; printer Tamstone Group, Inc., Los Angeles; master printer Petersburg Press,

New York and London, 1972-77; currently part-time printer Cirrus Editions, Los Angeles.

IL **Ian Lawson**, printer-fellow, Jul-Sep 1966.

CL **Chen Lee**, printer-fellow, Jan-Oct 1973.

JL **Jason Leese**, printer-fellow, Jan-Dec 1963. Deceased.

JLn **Jack Lemon**, printer-fellow, Apr-Sep 1966; currently technical director The Landfall Press, Chicago.

Bly **Bruce Lowney**, printer-fellow, Jul-Dec 1967; artist-in-residence Roswell Museum and Art Center, Roswell, NM, 1970 and 1974; on faculty Minneapolis College of Art and Design, 1971-72.

SL **Serge Lozingot**, printed in Europe; TAMARIND MASTER PRINTER; printer-fellow, Dec 1966-Jul 68; studio manager TLW, 1968-70; printer-in-charge Tamstone Group, Inc., Los Angeles; currently master printer-studio manager and technical director Gemini, G.E.L., Los Angeles.

JM **John Maggio**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1971-Mar 73; printer for June Wayne, Los Angeles, 1972; currently on faculty Univ of North Carolina, Greensboro.

WM **William Masi**, printer-fellow, Jan 1976-Dec 77; currently printer Southwest Graphics, Scottsdale, AZ.



TM



JMt



GM



JMh



KN



RN



TO



BP



JR



CR



DR



JRk



RR



ER



JRc



DS



MSz



CS



RS



JLS



WS



CSm



DSh



JS

TM **Toby Michel**, TAMARIND MASTER PRINTER; printer-fellow, Aug 1976-May 78; printer TI, 1978.

JMt **Jean Milant**, TAMARIND MASTER PRINTER; printer-fellow, Feb 1968-Jan 70; currently founder-director Cirrus Editions Ltd., and Cirrus Gallery Ltd., Los Angeles.

GM **George Miyasaki**, printer-fellow, Aug-Sep 1961; currently on faculty Univ of California, Berkeley.

JMh **John Muench**, printer-fellow, Aug-Sep 1961; visiting critic Boston Univ and Rhode Island School of Design, Providence; associate director Impressions Workshop, Boston; currently director Maine Printmaking Workshop, Portland and artist-in-residence, Westbrook College, Portland, ME.

KN **Kenjilo Nanao**, printer-fellow, Oct 1968-Jan 69; printer Collector's Press, San Francisco; currently on faculty California State Univ, Hayward.

RN **Richard Newlin**, printer-fellow, Jul 1972-Mar 74; printer Editions Press, San Francisco.

TO **Thom O'Connor**, printer-fellow, Feb-Aug 1964; currently on faculty State Univ of New York, Albany.

BP **Bruce Porter**, TAMARIND MASTER PRINTER; printer-fellow, Jan 1972-Apr 73; printer Gemini, G.E.L., 1973; printer Tyler Graphics Ltd., 1974; currently master printer Petersburg Press, New York.

JR **James Reed**, printer-fellow, Oct 1973-Jan 75; printer Little Egypt Enterprise, Houston; owner-director Milestone Graphics; printer Galeria del Circulo, Mexico City.

CR **Charles Ringness**, TAMARIND MASTER PRINTER; printer-fellow, Sep 1968-Jan 70; printer Collector's Press, San Francisco; studio manager Graphicstudio and on faculty Univ of South Florida, Tampa; currently on faculty Univ of Saskatchewan, Saskatoon.

DR **Donald Roberts**, printer-fellow, Sep-Nov 1962; on faculty Ohio Univ, Athens.

JRk **John Rock**, printer-fellow, Nov 1962-Mar 63, Aug-Nov 1965; on faculty Oregon State Univ, Corvallis.

RR **Robert Rogers**, printer-fellow, Jan 1968-Apr 69; currently printer-in-charge Lithography Workshop and on faculty Nova Scotia College of Art and Design.

ER **Ernest Rosenthal**, printer-fellow, Apr 1964-Apr 65; on faculties of Occidental College, Los Angeles and California State Univ, Northridge; currently on faculty California State Univ, Dominguez Hills.

JRc **Jeff Ruocco**, printer-fellow, Apr-Sep 1964.

DS **David Salgado**, printer-fellow, Aug 1974-Jan 76; printer-in-charge New Leaf Press, San Francisco; currently printer-in-charge ADI-Graphic Editions, San Francisco.

MSz **Maurice Sanchez**, printer-fellow, Aug 1966-Sep 68; printer Collector's

Press, San Francisco; printer Petersburg Press Ltd., 1972-76; currently printer Derrier L'etoile Ltd. and Aripeka Ltd. Editions, New York.

CS **Conrad Schwable**, printer-fellow beginning May 1978.

RS **Richard Shore**, printer-fellow, Aug 1974-Jan 76; currently printer-in-charge of offset printing, American Atelier, New York.

JLS **Jeff Sippel**, printer-fellow beginning May 1978.

WS **H. Wayne Simpkins**, TAMARIND MASTER PRINTER; printer fellow, Jun 1970-Jun 72; currently on faculty Memphis State Univ, TN.

CSm **Clifford Smith**, TAMARIND MASTER PRINTER; printer-fellow, Feb-Mar 1964, Jul 1964-Jul 65; studio manager TLW, 1965-68; director of education TLW, 1968-70; on faculties of San Diego State Univ and Univ of Portland, OR; currently on faculty Museum Art School, Portland, OR.

DSh **Daniel Socha**, printer-fellow, Jun 1968-Aug 69; printer TI, 1971; printer Universal Limited Art Editions, New York, 1969-70; currently on faculty Univ of Illinois, Urbana.

JS **Judith Solodkin**, TAMARIND MASTER PRINTER; printer-fellow, Jul 1972-Apr 74; currently on faculties School of Visual Arts, Pratt Graphics Center, New York; and Rutgers College, New Jersey; and founder-director of Solo Press, New York.



Jss



ES



DSd



AS



ESst



MS



HT



PT



FT



LT



DT



KT



EW



HW



TW



JW



TWk



JZ

JSS **John Sommers**, TAMARIND MASTER PRINTER; printer-fellow, Sep 1968-Jan 70; studio manager TI, 1970-75; currently technical director TI and on faculty Univ of New Mexico.

ES **Emiliano Sorini**, printed in Europe; printer-fellow, Sep-Dec 1960; printer Bank Street Atelier, New York; on faculties Yale Univ, New Haven; Queens College, New York; and Pratt Graphics Center, New York.

DSd **Donn Steward**, printer-fellow, Nov 1965-Jul 66; printer Universal Limited Art Editions, Long Island.

AS **Anthony Stoeveken**, TAMARIND MASTER PRINTER; printer-fellow, Sep 1966-Sep 68; technical director Graphicstudio, Univ of South Florida, Tampa, 1968-70; currently on faculty Univ of Wisconsin, Milwaukee.

ESst **Eugene Sturman**, TAMARIND MASTER PRINTER; printer-fellow, Jun-Aug 1968, Jul 1969-Jun 70; on faculties California State Univ, Long Beach, 1971-73 and Univ of California, Los Angeles, 1973-77.

MS **Mary Sundstrum**, printer-fellow, Jan 1972-Apr 73; on faculty Minneapolis College of Art and Design; currently printer Hand Graphics, Santa Fe.

HT **Hitoshi Takatsuki**, TAMARIND MASTER PRINTER; printer-fellow, Mar 1969-Jun 70; printer for Sam Francis, 1970-73; currently master printer Natenshi Gallery Print Workshop, Tokyo.

PT **Peder Talbert**, printer-fellow, Nov 1973-Jun 74.

FT **Frances Thiel**, TAMARIND MASTER PRINTER; printer-fellow, Aug 1974-Jul 76; printer TI, 1976; currently manager Graphics and Production Dept. of Valley Administrative Services, Ellensburg, WA.

LT **Larry Thomas**, printer-fellow, Jun 1969-Jun 70; on faculty Pratt Institute, 1972-77; currently on faculty Georgia State Univ, Atlanta.

DT **David Trowbridge**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1969-Jun 70; printer Cirrus Editions Ltd., Los Angeles; on faculties Honolulu Academy of Arts, 1971; and Nova Scotia College of Art and Design, 1976; currently on faculty and gallery director Univ of California, Santa Barbara.

KT **Kenneth Tyler**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1963-Jul 64; technical director TLW, 1964-65; founder-director Gemini Ltd., 1965-68; founder-director Gemini, G.E.L., 1968-73; currently founder-director Tyler Graphics Ltd., Bedford Village, NY.

EW **Emil Weddige**, printer-fellow, Jun-Aug 1962; on faculty Univ of Michigan, Ann Arbor.

HW **Harry Westlund**, TAMARIND MASTER PRINTER; printer-fellow TLW, Feb 1970-Jun 70; printer-fellow TI, Jun 1970-Jan 71; printer TI, 1971; master printer-in-charge Tamarind Publications, 1972-75; printer Cirrus Editions Ltd., Los Angeles; and currently founder-director Serigraphics, Albuquerque.

TW **S. Tracy White**, TAMARIND MASTER PRINTER; printer-fellow, Jun 1969-70; assistant studio manager, TI, 1970-71.

JW **John Will**, printer-fellow, Sep 1970-71; currently on faculty Univ of Calgary, Alberta.

TWk **Theo Wujick**, printer-fellow, Sep 1967-Aug 68; director Graphicstudio, Univ of South Florida, Tampa, 1970-71; currently on faculty Univ of South Florida, Tampa.

JZ **Joe Zirker**, printer-fellow, Jan 1962-Apr 63, Sep-Nov 1964; on the faculty San Jose City College, CA.

Though it is not common, some artists design a chop for their own use. Eight artists have in the past used such chops on Tamarind editions:

1. **Peter Paone**. Lives in Philadelphia.
2. **Paul Pletka**. Lives in Santa Fe, NM.
3. **Fritz Scholder**. Lives in Scottsdale, AZ, and Galisteo, NM.
4. **Ed Singer**. Lives in Albuquerque.
5. **Nancy Steen**. Lives in Los Angeles.
6. **Earl Stroh**. Lives in Taos, NM.
7. **June Wayne**. Lives in Los Angeles.
8. **John Wenger**. Lives in Albuquerque.



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BOOKS IN REVIEW

Papermaking. By Jules Heller.

Published by Watson Guptill, New York, 1978. 216 pp., 208 illustrations, including 8 in color. \$22.50.

RAGS make paper, PAPER makes money, MONEY makes banks, BANKS make loans, LOANS make beggars, BEGGARS make RAGS.

This anonymous quotation from the eighteenth century serves as poignant front matter for the recent publication, *Papermaking*, by artist, teacher and author Jules Heller. It is followed by other archaic and often droll quotations from Aristotle to Elizabeth, Queen of Rumania, which serve as chapter headings throughout the book. By relating directly and indirectly to paper, papermaking and the frailties of man they provide humanistic warmth while giving literary flavor and dimension to each chapter of this engaging book.

As with other arts and crafts that have undergone recent revival, so it has been with papermaking. A recent conference on paper art and technology in San Francisco drew a crowd of participants from at least nine nations. As Heller states:

"... more and more contemporary artists have become attracted to handmade paper either as a meaningful support for their two-dimensional visual ideas or as a most flexible, three-dimensional self controlled, self manipulated, permanent medium of expression. Recent exhibitions of handmade paper prints and unique paper works in prestigious museums and galleries the world over strongly suggest that establishment institutions are beginning to offer the new/old medium their official stamp of approval. Colleges and universities in greater and greater numbers believe they are slightly out-of-date if papermaking is not taught as a respectable studio discipline by at least one member of their staff."

Just as during other revivals, both the serious student and novice practitioner have been greatly hampered by a paucity of reliable up-to-date information addressed to their needs. Until now there has been little of substance which surveyed the great scope and numerous techniques of hand papermaking as practiced today. By consequence Heller's

book is not only timely but provides useful information for a surprisingly wide audience of makers and users of paper. Along the way he has provided historical perspective to a very ancient craft while at the same time illuminating the seemingly conflicting points of view between those who desire to make perfect sheets of paper as carriers for images of artists and printers, and all others who see paper as a medium in its own right.

Heller has accomplished his aim with a warm, easy-going and highly personalized account of paper and papermaking which throughout reveals his urbane wit as well as his broad understanding of the state of the art as practiced today. Beginning with brief concise definitions of paper, Heller traces the historical evolution of the craft with a clear text and fresh descriptive material. The process of making paper is excellently described from beginning to end with illustrations and captions featuring James Yarnell, proprietor of the Oak Park Press and Papermill. This chapter is further augmented by a simple and forthright commentary on the activity of paper making by Walter Hamady, well known artist, papermaker and teacher from the University of Wisconsin.

The text proceeds with a very simple do-it-yourself approach to making paper using a Waring blender. Though somewhat reminiscent of cuisine art, this section is no doubt intended to remove the aura of mystique from papermaking and to demonstrate how anyone with the urge can make paper with even the simplest materials of today's household. For the more serious student, there follows a highly informative chapter on workshop and equipment giving detailed but practical information on the theoretical functions, construction and operation of beaters, moulds, deckles, vats and other equipment necessary to this activity.

Heller surveys some of the better known papermakers and their mills including Douglas Howell, Laurence Barker in Barcelona, Simon Green in England, Joseph Wilfer, Donald Farnsworth, Bon Serpa and the husband/wife teams of John and Kathleen Koller and Howard and Kathryn Clark. Barker's observations about papermaking skill and what constitutes a good papermaker provide a revealing description of prevailing ideology. In fact, the brief quotes by the leaders in the field sound surprisingly the same. Regardless of how phrased, there underlies a strong feeling for craft and the handmade object, a strong reverence for tradition and simultaneously an openness of attitude to innovation. There is also expressed an uneasy self-consciousness concerning personal responsibilities in maintaining the highest aesthetic standards for a dynamic and rapidly emerging art form. In spite of disclaimers generally heard to the contrary, it would seem by these statements that the papermakers of today

(as many printmakers) have remarkably similar and perhaps rather narrow views about their activity.

The second part of *Papermaking* is devoted to theory and practice. By utilizing an unusual technique of page layout, special quotations and processes have been boxed and isolated from those of more generalized content. Though perhaps useful, this style is sometimes distracting to the balance and clarity of the overall text.

One of the most appealing sections of the book is the gallery of black and white and color plates illustrating examples of work on and of paper. Comments by the artists and by the author further our understanding about the underlying motivations and techniques resulting in these works. At the same time we are exposed to the surprising malleability and tremendous aesthetic potential of paper pulped in its own right.

The book concludes with a brief, entertaining and agreeably biased chronology of the geographical evolution of papermaking and a useful glossary of papermaking terms. An excellent list of suppliers follows, for which alone the novice should be thankful. There is also included a seven page bibliography for the more advanced, ranging from Alice Adams' article on "Douglass Howell" in *Craft Horizons* to Joseph Young's essay on "Pages and Fuses: An Extended View of Robert Rauschenberg" in *Print Collector's Newsletter*.

The obvious enthusiasm, knowledge and good will that Dr. Heller brings to his subject should whet the imagination of the uninitiated and add to the general knowledge of the more experienced student of papermaking. As with his earlier book *Printmaking Today*, this more recent publication will without doubt encourage greater numbers of young and old to try their hand at making paper. Anticipating that happy circumstance, Heller hastens to provide a wise admonition late in the text: "No one will become a professional handmade papermaker by reading this or any other book, nor will anyone be competent enough to produce sheet after sheet, ream after ream of the same quality, size, texture, thickness and color—it takes years of apprenticeship to a master."

As in printmaking, the critical distinctions between mere practice and significant achievement in the art of paper will probably become increasingly blurred, distorted, or even worse, ignored. Although lying outside of the author's objectives, it still might have been useful to focus at least some attention on such critical opinion, past and present, regarding this provocative art.

GARO Z. ANTREASIAN

Garó Z. Antreasian, Professor of Art at the University of New Mexico, is co-author of *The Tamarind Book of Lithography: Art & Techniques*.

Printmaking: History and Process. By Donald Saff and Deli Sacilotto.

Published by Holt, Rinehart and Winston, New York, 1978. 436 pp., 700-plus illustrations, including 40 in color. \$22.95 hardcover, \$14.95 paper.

The title of their book, *Printmaking: History and Process*, suggests that Donald Saff and Deli Sacilotto are ambitious authors. Although a book on printmaking that is no larger than 11 x 8 1/8 x 13/16 inches cannot possibly cover all the material suggested by such a title, any book that attempts to bracket all forms of printmaking, historically and technically, is certain to receive attention from interested laymen, art students, teachers of printmaking techniques, and dedicated professional printmakers. At first glance, this book (available both in soft and hard cover editions) appears to be a light treatment of a detailed and complex subject. After a thoughtful and comprehensive examination, however, this reviewer found the book to be a warm, eminently sensible treatise containing a wealth of historical data, clearly defined technical procedures, and detailed formulas of interest to concerned readers.

A sense of confidence permeates the book. The authors have done their homework, especially in the sections devoted to printmaking history. Clear descriptions, precise phrases, and charged words ("... dynamic composition ... masterful expressiveness ... monumental quality, etc.") add color to the text, and subtly compel the reader to examine the accompanying and appropriate illustrations to verify and understand the authors' viewpoints. Such assurance gives authenticity to the facts of history, and that certainty continues in the sections of the book devoted to techniques. Readers—specially serious students—proceed with faith that the authors knew what they were doing when they wrote the book.

The information in *Printmaking: History and Process* is presented in five parts: I. **Relief**; II. **Intaglio**; III. **Lithography**; IV. **Serigraphy**; and V. **Trends: Processes/Surfaces**. In addition, there are appendices, a bibliography, a list of suppliers, a glossary and an index. Carefully researched historical sections, presented chronologically and organized with positive expressions of opinion, followed by sections of accurate description of technical procedures, create stylistic rhythms and balances pleasing to the reader and appropriate to the intent of the authors. For example, Part I, **Relief**, opens with the assertive and powerful statement: "Few inventions in the history of civilization have played such a key role in the evolution of thought as the development of the printed image." Thus, having told the reader where the truth lies, the authors proceed for 436 pages to support their statement with opinions and

facts related to printmaking history and technique. From **Relief** through **Intaglio**, from **Lithography** through **Serigraphy**, the authors provide interesting capsules about artists who were influential in the development of each medium. Each category is described so that a layman can understand it. Saff and Sacilotto seem to be well-versed in technical matters, and the how-to-do-it procedures they outline for use in each medium are logical and comprehensible. Students with varying degrees of experience, while under instruction, should progress easily using this book as a guide. Especially stimulating to the bright, innovative student in printmaking will be Part V, **Trends: Processes/Surfaces**, a chapter which suggests more than it describes. Plastics, metals, papers—in fact, all materials and methods—are tools for the imaginative artist today, and Part V points out not only new methods but also old methods used in new ways. An example is the description of the use of aqua regia, combined with a photo-sensitive resist, to etch gold.

Printmaking: History and Process has a few errors in editing, but most are only minor irritants. On page 48 there is a reference to Troya as "rice" paper (an error corrected, in effect, on page 372). On pages 179-80 the illustrations of lithographs probably should have followed what are now pages 181-82, rather than having been included in Part II, **Intaglio**. The errors of omission, however, are more obvious to the professional printmaker (each printmaker will develop his own list) because he can delve into personal experience and past research for information that might have been included in the text. (Although the historical parts of the text are rich with references to artists' works and styles, this reviewer would have mentioned the Hohokam Indians of Arizona, who were the first, so far as is known, to use acid for decorative etching. And, considering the attention given to women in the professions today, a point could have been made through reference to some of the 19th century women who worked in lithography. Lady Caroline Cawdor of England and Francisca Schopfer of Germany produced lithographs in 1802 and 1803, soon after the medium was invented. The absence of Alois Senefelder, inventor of lithography, from the bibliography is jarring to the knowledgeable reader.)

Chapter 6 of Part III, **Lithography**, opens with a brief definition of lithography, clearly stating what it is and how it differs from other printmaking media. For the student and the professional, the following sections on various lithographic techniques are stated equally well, without pretension, and each section presents the reader with most of the necessary details of intricate processes. Although not intended to be the final word on the subject, the authors' statement (page 209) that "... lithography's

chemical basis [is] ideally combined with the intuition that breathes life into its application" is important. The statement has such an authoritative ring that every student should consider it seriously. For it is true, as every experienced artist-lithographer-teacher knows, that there are many times when a procedure "feels" right, but cannot be taught through the written or spoken word.

The authors have covered a lot of material in the 25 pages commencing on page 218 (Preparing the Stone or Metal Plate). The information that is given would enable most students, while under the instruction of a good teacher, to learn much about lithography. The experienced lithographer, however, would have reservations about some of the recommended procedures and, among other things, would probably caution his students about the old-time but risky procedure of putting graded paper shims under a stone to compensate for unequal leveling. A better procedure would be to grain the stone properly in the beginning. Several other techniques and procedures are given which might be questioned, but the assumption must be made that student-readers will use the book under competent instruction.

Printmaking: History and Process is one of the best contemporary books on printmaking and should be read by everyone who has an interest in the subject. Legible type supported by superbly reproduced illustrations combine to make each page visually exciting. And the warmth of the content in the sections on history, contrasted with the cool, crisp methodology in the sections on techniques, reflects the authors' sensibilities. Any reader, whether serious amateur, aspiring student, or crusty professional, can read the book, cover to cover, and be affected by the smooth integration of content and style. Actually, the authors have subordinated the techniques to the image, so to speak, and in so doing have created a "work of art." Saff and Sacilotto said it themselves on page 24: "As in all great works, technique is subjugated to expression and content." Whether or not their fine book is a "great work" will be determined by posterity, but it is a good book and should be included in all libraries, public and private.

ROBERT GARDNER

Robert Gardner, artist and lithographer, is professor of art at Carnegie-Mellon University in Pittsburgh.

The Thames and Hudson Manual of Advanced Lithography. By Richard Vicary. Published by Thames and Hudson, Ltd., London, 1977, 192 pp., 108 illustrations, including 8 in color. \$12.50.

This British author's introduction begins with an expedient and simplistic overview of lithographic techniques adopted by artists since 1950 and advances to the current disagreement regarding creative standards and "originality" in use of photographically related sources. Acknowledging the "all-embracing media concept" of contemporary printmaking, Vicary, as though with a stroke of genius, concedes to the "mixed-media print" interests. With all bases covered, he then makes a curious appeal in the final paragraph for the revival of letterpress printing, in this case "the production of limited edition books, combined with lithography in the manner pioneered by Volland . . ."

This appeal for the revival of letterpress is, in fact, the apparent purpose of Vicary's book, much to the neglect of its announced subject, *Advanced Lithography*. The appeal itself is riddled with contradiction. The author has cited various ways in which lithography has advanced during the past five of six years, noting several developments in offset lithography which, in hindsight he admits, have contributed to the demise of extensive letterpress usage. And yet after acknowledging its logical obsolescence, Vicary unjustifiably insists upon a letterpress revival. Vicary's later appeal then comes as a complete anomaly.

Following the **Introduction**, the format is similar to most of the currently popular technical manuals, with chapters that include chemistry, basic processing on stones and plates, transfers, washes, and photographic techniques. Also included is a brief discussion of presses, but only for offset and letterpress printing. There is an unusual chapter on paper-plate lithography, which has little technical significance to advanced lithography because of its limited use and results.

The technical chapters, including **Basic Chemistry and Basic Processes on Stones**

and **Plates**, are written in a careless manner, making it difficult to assemble the facts into logical sequences of cause and effect. Additional confusion stems from Vicary's use of chemical terminology and procedures. With the translations made from British to American English, the procedures appear antiquated and excessive for the heralded advancements made in lithography since 1950. In certain instances the procedural differences are so radical that they are unsafe and poorly advised.

The best written and most informative chapters are **Transfer Papers and Transferring** and **Photographically Prepared Images**. Though little new is revealed, these chapters are written with an innovative and creative perspective. On the contrary, **Wash and Wash Texture** is a weak discussion with limited sensibility regarding an area in which much competency has been established through research. It is disheartening to read so antiquated a discussion. One may only hope that Vicary does not accurately represent the level of current British participation in the development of lithography.

The *raison d'être* which supports the author's various interludes into letterpress printing and limited edition books is found in the chapter titled **Lithography in Illustration**. The discussion opens with a spotty historical outline, then is followed by a traditional aesthetic discussion regarding typefaces and their relation to the overall book format, and concludes with the mechanical explanations of layout. The historical development of limited edition books is a worthy subject, but unfortunately expertise is lacking here, and the technical information could be acquired in more comprehensive form from trade manuals on typography and the production of books.

The concluding chapter, **Lithography Since 1950**, briefly outlines Picasso's influence on printmaking, the revolution of the 1950s, and "the recent decline of the Romantic influence of Bonnard and Vuillard towards a more trenchant but less poetic message." Following this glib historical potpourri, there is a brief description of "Some Printmaking Workshops" in France, England and the United States, listed basically for their involvement with the publication of limited edition books.

Two major and ambiguous premises seem to be causing confusion throughout Vicary's book. First, he states that the artist-lithographer could work isolated from commercial outlets. This is impossible. Vicary never clearly recognizes nor states the distinctions and adaptive mechanisms between offset and direct lithography which exist today. Second, Vicary promotes letterpress printing as a "poetic message" which he uses as justification for its revival. This is not a justification but merely romantic speculation.

Vicary has written yet another weak

technical manual with a strong emphasis on a "submerged plot." Neither the technical aspects of lithography (offset as well as direct) nor the aesthetic of letterpress printing are discussed in terms that address themselves to an advanced involvement—as is promised in Vicary's title—and each is given a fifty-fifty chance at the list of best sellers.

CHRISTOPHER CORDES

Christopher Cordes, a master-printer, artist and teacher of lithography is a member of the faculty at the University of Rhode Island.

Fine Prints: Collecting, Buying, and Selling. By Cecile Shapiro and Lauris Mason. Published by Harper & Row, New York, 1976. 256 pp. \$10.95.

Fine Prints is a guide book to accompany the traveller on a first trip into the world of art collecting. Beginning with the basic ingredient—a love for fine prints—the authors provide a straightforward step-by-step approach to becoming a knowledgeable collector of fine prints. It should be noted that although the book is concerned only with prints, its approach to collecting is applicable to any art medium. While the book addresses itself primarily to the amateur and is written and organized for the benefit of the novice collector, the explanations, suggestions and tips it contains can be of considerable help to experienced collectors as well.

Shapiro and Mason write from their own long personal experiences in collecting and as a result the book is enjoyable and easy to read. Of the 256 pages, approximately half consist of text. The rest contain practical information in the form of illustrations (documented as to source and location), sample pages from auction catalogues, locations of major American and foreign auctions, print documentation provided by workshops, diagrams for framing and storing prints, sources (with addresses) of conservation materials and of professionals in that field, and a bibliography, listed by subject. The authors encourage collectors to catalogue their prints and reference books upon acquisition and they provide diagrams and suggestions as to convenient and usable systems.

One chapter devoted to selling of prints includes references to investment possibilities, artists' rights, tips on pricing and places for profitable sales. Shapiro and Mason also include a brief discussion of tax benefits in gifts to museums and libraries, as well as what might be expected in capital gains taxes on profitable sales. The personal aspects of the book are again evidenced in their mention of the pleasure to be found in giving prints from personal collections for birthdays, marriages, graduations and the like.

Extensive lists are included of major public collections, arranged by location in the United States and abroad, and clearly annotated. Print clubs and dealers are listed, although these listings are admittedly more selective in an attempt to provide a representative sampling. The book concludes with glossaries of terms (the French and German terms translated by Joan Ludman) which range from the most basic to the most esoteric. Reinforcing the step-by-step, guidebook approach are the final five pages reserved for the individual collector's personal notes as to acquisitions and addresses.

Certainly there are points to criticize and disagree with in this book. I personally believe it wise routinely to include the paper size as well as the image size when cataloguing a print. This and other such points are minor in comparison to the service the book provides. This book is meant to be read, referred to and used in a practical manner. In their preamble to one list Shapiro and Mason state their aim as ". . . to get you off to a good start." The authors have been successful. This book should do exactly that.

JUDY BOOTH

Judy Booth is Assistant Director of Tamarind Institute.

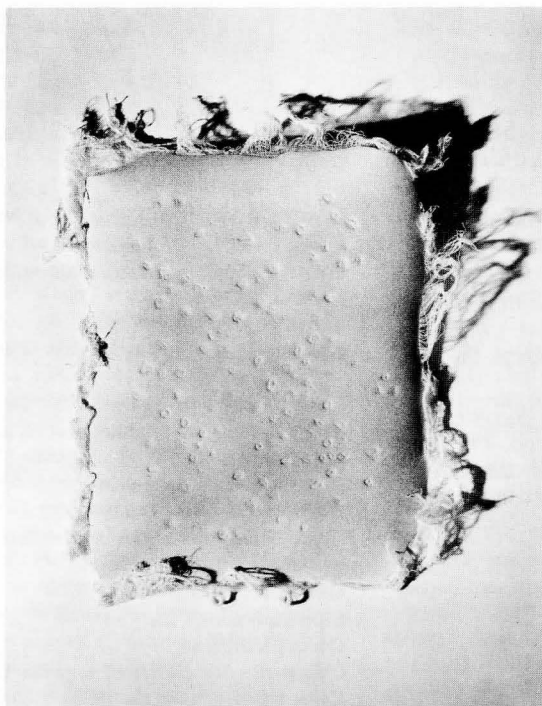
Prints and the Print Maker: A Handbook for Buyers, Collectors and Connoisseurs.
By Theodore B. Donson.

Published by Thomas Y. Crowell, New York, 1977. 493 pp. \$19.95.

What first appears to be a privileged view of the print world's inner sanctum turns out to be something far different. Mr. Donson attempts to give us substance but delivers only illusion. It is assumed that much of the book is gossip, half-truth and innuendo; however, I must confess the book was great fun to read. There is a certain aura about the inside story. The author generally covers the field of different print media and the distinction between original prints, reproductions and forgeries. Predominantly, the book concerns itself with the marketplace for prints; thus, you will find chapters covering auctions, publishers, dealers and prints as investments. Moreover, the book has nine appendices that are of some interest, including a print lexicon, a bibliography and directories of print publishers, dealers and galleries. The book is an enjoyable quick read, but beware of the artful dodger of the print world.

TIMOTHY M. SHEEHAN

Timothy M. Sheehan is an attorney at law, in practice in Albuquerque.



Michelle Stuart. *Tsikupuming*, 1974-75. 349 by 280 mm. Arches paper was torn to a template, mounted on cheesecloth, and edges were raveled. Printed in three colors and embossed from a raised metal plate made with Sculpt-metal.

RANDOM THOUGHTS ON PAPERMAKING

Continued from page 7

"Individually, papermakers are male and female artists wedded to personalized blue jeans or generalized banker's or engineer's flannel, wear no socks or sport the latest fad in leg coverings, they are bemoccasined, booted, or wear bespoke shoes made in London, they may seem scruffy-looking as befits a certain age-group or pass as examples of walking, dress mannikins, they may be technically-oriented or free spirits whose attitude to paper formulae and papermaking (and all else) in general is summed up in hunch or intuition: a pinch of this, a smidgin of that . . . but, it works.

"Is there a standard taste for spaghetti sauce? Is there but one recipe for curry? What is a poem? How does one properly dance the role of *Giselle*? Is the unwritten novel running 'round your head the same as mine? How do you produce a first-rate film? Compose meaningful music? Play a jazz piano? Stalk bonefish in the out-islands?"

I strongly urge you, literally, to get your hands and feet wet by making some sheets of paper in doing a work *of* paper. Who knows? You, too, may be bitten by the papermaking bug. □

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TAMARIND PUBLICATIONS

Back Issues, TTP

Volume 1, complete, with Xerox copy of number 1 (out-of-print): \$22.00. Single copies: \$4.00.

Books

The Tamarind Book of Lithography: Art and Techniques by Garo Antreasian and Clinton Adams. Published in 1971, this book remains the standard reference work of all aspects of the lithographic process. 463 pages, 479 illustrations including 87 in color. \$29.65, hardcover; \$19.95, paper.

Tamarind Suite Fifteen. Text by Gustave von Groschwitz. Published in commemoration of the initial fifteen years of the Tamarind program, with lithographs by Adams, Antreasian, deKooning, Hare, Kanemitsu, Krushenick, McGarrell, McNeil, Oliveira, Price, Remington, Ruscha, Scholder, Wayne and Woelfer. 56 pages, 46 illustrations including 15 in color. \$9.50, paper.

Tamarind: Homage to Lithography. Preface by William Lieberman, introduction by Virginia Allen. Published by the Museum of Modern Art in 1969, this catalogue reports upon Tamarind's first decade in Los Angeles. 64 pages, 46 illustrations including 8 in color. \$4.00, paper.

Pamphlets

Paper by Quentin Fiore. The history of the manufacture of paper by hand. \$1.00.

Questions to Ask Your Framer and Answers You Should Get. An informative pamphlet. \$1.00.

A Portfolio of Print Furniture Designs. Hand-some and utilitarian cabinets for storage of fine prints. \$2.50.

The Longevity of the Original Print Depends on the Paper that Supports it. Includes paper samples. \$1.00.

Color Slides

Color slides of lithographs made at Tamarind Lithography Workshop, Los Angeles (1960-1970) and at Tamarind Institute, Albuquerque (1970-1978) are available for purchase. More than 100 artists are now represented in this collection, and additional sets will be published at intervals. Sets of 40 to 60 slides are priced from \$30.00 to \$60.00. Lists of artists and titles are available upon request.

Prices of books, pamphlets and slides include handling and postage (except foreign postage) at book rate and are subject to change without notice.

Color Film

Tamarind's award-winning film, *FOUR STONES FOR KANEMITSU*, records the making of a color lithograph by the noted artist, Matsumi Kanemitsu. Beginning with the graining of the stones, the camera closely follows the artist and the printers—Master Printer Serge Lozingot and his assistant, Eugene Sturman—through every step of the creative process. Fully revealed to the viewer are the esthetic and subjective problems faced by Kanemitsu, as are the technical challenges met by the printers in realization of the artist's vision. Each of the four stones is drawn on camera and proofed in several colors so that choices may be made. When difficulties are encountered in proofing, the audience shares the tension as well as the excitement until proofing is successfully resolved, the bon a tirer impression is pulled, a second state is drawn, and the finished editions curated and signed. Never before has the actual sense of making a complex, color lithograph in a professional workshop been so vividly and effectively captured as in *FOUR STONES FOR KANEMITSU*, a superb and much honored film. Color: 28 minutes, 20 seconds. Purchase price, 16 mm, \$400.00. Rental for one to three days, \$60.00 plus shipping.

DIRECTORY OF SUPPLIERS

Listings in TTP's Directory of Suppliers are available to all manufacturers and distributors of materials and services appropriate to use in professional lithography workshops. Information regarding listings will be sent upon request.

Andrews/Nelson/Whitehead. 31-10 48th Avenue, L.I.C., NY 11101. (212) 937-7100. Black printmaking papers; Arches, German etching, Murillo; grey & tan Rives, Rives with linen fiber content, Special watermarks, neutral mat board also in colors. Lithograph stones.

Charles Brand Machinery, Inc. 84 East 10th St., NYC 10003. (212) 473-3661. Manufacturers of custom built litho presses, etching presses, polyurethane rollers for inking, electric hot plates, levigators and scraper bars. Sold worldwide. Presses of unbreakable construction and highest precision.

Crestwood Paper Co. 315 Hudson St., NYC 10013. (212) 989-2700. Handmade & mouldmade printmaking papers. Somerset printmaking paper: mouldmade, 100% rag, neutral pH. Avail. white & cream, textured & satin finishes in 250 gr. & 300 gr. in asstd. sizes. Manufactured in England.

Evermon's Lithograph Stones. 249 Dunsmuir St., Vancouver, BC, Canada V6B1X2. (604) 224-7230. The alternative lithograph stone at an alternative price. 30 x 40 x 3" Grade A, \$495; Grade B, \$275. 24 x 36 x 3" Grade A, \$300; Grade B, \$200.

Galaxy Industries, Inc. 27 Proctor Hill Rd., Hollis, NH 03049. (603) 465-2400. Durethane hand rollers, electro-hydraulic etching presses, Evermon air powered levigators, Plasti-Seal shrink packager systems, roll racks, plastic mailing tubes, publishers of *Graphics* magazine of Original and Fine Art Prints.

Glenn Roller Co. Dept. H, 2616 Stingle Ave., Rosemead, CA 91770. (213) 283-2838. Light weight hand rollers for printmaking, durometers from 20 to 75, all sizes available, chrome handles. Very high quality. A must for the professional

Goes Lithographing Co. 42 W. 61st St., Chicago, IL 60621. (312) 684-6700. Ball-grained aluminum & zinc plates. Rental of hand-powered and power cylinder presses, stone or plate. Telephone Chris Goes for quotations.

Govin's Inc. P.O. Box 2271, Tampa, FL 33601. (813) 229-7971. Long reach embossers (chops). Rubber wet stamps. Special designs our specialty. Artists' and printers' seals.

Graphic Chemical & Ink Co. 728 N. Yale Ave., Box 27T, Villa Park, IL 60181. (312) 832-6004. Complete line of supplies for the lithographer. Rollers, all kinds & made to order. Levigators, grits, stones, tools & papers. We manufacture our own specially formulated black and colored inks.

Imago Handmade Paper Mill. 1333 Wood St., Oakland, CA 94607 (415) 465-4744. Custom handmade rag papers for printmakers, book printers and painters. Sample books of our custom stock papers are \$2 (swatch book) and \$10 (working sample book). Custom orders on request.

William Korn, Inc. 111 8th Avenue, NYC 10011. (212) 242-3317. Manufacturers of lithographic crayons, crayon tablets, crayon pencils, rubbing ink, autographic ink, asphaltum-etchground, transfer ink, music plate transfer ink; tusche in liquid, stick & solid form (1 lb. can).

Light Impressions Corp. 131 Gould St., Rochester, NY 14610. (716) 271-8960. Exclusive distributors of Kwik Print light sensitive color imaging materials. Complete line of archival framing products & materials. Free catalogue on request.

Printmakers Machine Co. 724 N. Yale Ave., Box 71T, Villa Park, IL 60181. (312) 832-4888. Sale of printmaking presses only. Sole manufacturer of Dickerson, Sturges & Printmakers litho presses. Quality presses, manufactured by skilled workmen, sold worldwide.

Rembrandt Graphic Arts. The Cane Farm, Rosemont, NJ 08556. (609) 397-0068. Etching and litho presses, yellow & grey litho stones, Hanco inks, Western Litho plates, KU rollers, printmaking paper, chemicals, solvents, tools. Relief, etching, litho & silkscreen supplies.

Daniel Smith Inks. 518 N. 64th, Seattle, WA 98103. (206) 783-8263. Ink maker for print artists; dealer for Hanco inks & chemicals, Rudolph Faust inks; importer of Hunter-Penrose etching & offset proof presses; supplies & sundries: all of professional quality at savings.

The Structural Slate Co. 222 E. Main St., Pen Argyl, PA 18072. (215) 863-4141. "Pyramid" brand Pennsylvania slate stone: backing slate, slate plate supports.

Takach-Garfield Press Co., Inc. 3207 Morningside Dr., NE, Albuquerque, NM 87110. (505) 881-8670. Hand or electrically operated lithograph presses, hand-inking rollers, hand levigators, automatic tympan, punch registration systems, polyethylene scraper bars and straps.

Twinrocker Handmade Paper, Inc. Brookston, IN 74923. (317) 563-3210. Custom handmade papers in any color, size up to 35 x 48". Watermarks, shapes, inner deckles, laminations, sizing. Visiting artists program. Custom paper pulp, cotton fiber, Howard Clark Hollander beater, hydraulic press.

Wepplo Press Co., Inc. 8412 Haeg Dr., Bloomington, MN 55431. (612) 881-0982. Manual or electric etching and lithography presses (including our electric hydraulic litho press). Complete line of accessories includes scraper bars, color rollers, levigators, hot plates, sinks, and acid bath. Brochure available.

Western Litho Plate. 3433 Tree Court Industrial Blvd., St. Louis, MO 63122. (314) 225-5031. Manufacturers of lithographic plates, chemistry and plate processing machinery. Many types of lithographic printing plates, both positive and negative working. Also lithographic chemicals, including finishers: gum etch, Super A.G.E. and A.G.E.