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THE TAMARIND PAPERS

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

Winter 1981–82

COVER: **Bolton Brown.** *Storm,* 1923.
Lithograph, 328 × 283 mm.
Private collection, Albuquerque.

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

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Photograph, page 18: Robert Reck.

NEWS AND NOTES

The Print Research Facility at Arizona State University

Leonard Lehrer, Director of the School of Art at Arizona State University, describes "the Print Research Facility (PRF) as a unique and highly ambitious project now in its third year of existence. . . . It was created to provide a fully developed professional environment within an academic institution for the creation of original works of art. The PRF has had thirty artists produce some fifty prints since its inception in 1979. While the primary medium employed thus far has been lithography, future plans for the facility include the addition of intaglio, collotype, screenprinting, Woodbury-type (a 19th C. photographic process), fine art typography and the printing of limited edition books."

A handsome catalogue of an initial exhibition of lithographs produced at the PRF illustrates works by Walter Askin, Paul Brach, W. P. Eberhard Eggers, Robert Fichter, Wayne Kimball, Leonard Lehrer, James McGarrell, Robert Nelson, Deborah Remington, and other artists.

Most of the artists named have also worked at Tamarind, and most of the lithographs made at the PRF were printed by Joseph Segura and Randy Gibbs, both of whom had earlier participated in Tamarind's printer-training program.

We extend all congratulations and best wishes to the staff of the PRF on the occasion of the first public exhibition of their work at the Phoenix Art Museum.

The Tyler Offset Workshop

Throughout the twentieth century, artists have made use of offset lithography as a medium for creation of original works of art. It was used in the early years of the century by Albert Sterner; it was used to great effect by Jean Charlot during the 1930s in his collaborations with Lynton Kistler in Los Angeles and Albert Carman in New York. Subsequently, a number of the best known printmakers of the 1940s made original offset lithographs in collaboration with Carman. In the making of these lithographs, the artists drew directly on the offset plates with traditional lithographic materials: crayons, pencil, and tusche.

Explorations of the potential of the offset press within art schools and universities has been limited, as good equipment is costly and thus seldom available. In 1975, Warren Infield, then chairman of the Department of Graphic Arts and Design in the Tyler School of Art at Temple University, received a grant from the Ford Foundation for establishment of an offset workshop at Tyler.

An exhibition of lithographs and lithographic reproductions produced in the offset workshop was presented at Tyler in October and November 1981. Included in the exhibition, which was accompanied by a well-illustrated catalogue, were works by Chuck Close, John Dowell, James McGarrell, and Miriam Schapiro, among others. The artists worked in collaboration with Chuck Gershwin, who has served as Tyler's master printer since the offset project began.

The catalogue is admirably forthright in its description of the processes used in production of the lithographs and lithographically printed reproductions which were included in the exhibition. Those that were made photographically from pre-existing drawings or paintings—as was the case with the Close and the Schapiro, among others—are so identified. Others were created by the artists as lithographs, although the Mylar method was used and the lithographs were printed from offset plates produced photographically from the Mylar transparencies. It would appear that none of works included in the exhibition was drawn directly on the plates by the artist.

Within a Department of Graphic Arts and Design it is perhaps natural that emphasis should be given to reproductive technique. Given the rich, creative possibilities of the offset process in the making of original lithographs, it is to be hoped that in the future the Tyler workshop may more fully explore that potential.

Tamarind Symposium

A Tamarind Symposium, *Lithography Then and Now,* was held on November 15 and 16, 1981, at the University of New Mexico. Speakers and topics included Clinton Adams, "Bolton Brown, Artist-Lithographer"; Jacob Kainen, "Memories of Lithography: New York City in the Thirties"; Richard Field, "Tradition and Innovation in Recent Prints"; and June Wayne, "Prints and the Third Wave." Also scheduled were two panel discussions, "The Contemporary Artist and Lithography," with speakers Garo Antreasian, Leonard Lehrer, Deborah Remington, and John Sommers; and "Lithography: Then, Now, and Tomorrow," with Richard Field, June Wayne, and Ruth Weisberg. Marjorie (Bardacke) Devon and Clinton Adams served as moderators.

Lithography IV, the fourth of a series of biennial exhibitions presented by the University of New Mexico Art Museum in association with Tamarind Institute, continued the theme of *Lithography Then and Now.* Contrasted in the exhibition were lithographs from "the Woodstock Ambience, 1917–1939" and the works of nine contemporary artists: Kainen, Lehrer, Remington, Wayne, and Weisberg, together with Margo Humphrey, John Paul Jones, Mel Ramos, and Steven Sorman. The Woodstock exhibition included works by a number of leading American artists of the 1920s and 1930s who were at one time or another residents of or visitors to that Catskill art colony, and many of whom made lithographs in collaboration with Bolton Brown or Grant Arnold.

Newly Published Slide Sets

HISTORY OF AMERICAN LITHOGRAPHY

A short history of American lithography is presented through two hundred black and white slides—organized in five sets of forty slides each—published by Budek Films and Slides (73 Pelham Street, Newport, RI 02840). The lithographs included in these sets were selected by Harry Broadd, professor emeritus at Northeastern Illinois University. The slides are accompanied by a series of lecture notes written by Professor Broadd.

Although the coverage of nineteenth century lithography is exceedingly sketchy, the sets include a broad overview of American lithography between 1900 and 1950. Within this period, Broadd's choices and emphases are often puzzling. Some major artists are omitted—as examples, Ivan Albright, Federico Castellon, Howard Cook, John Steuart Curry, Stuart Davis, Emil Ganso, Marsden Hartley, Jan Matulka, Jackson Pollock, Charles Sheeler, Abraham Walkowitz, Max Weber, and Grant Wood—and others are represented only by one or two lithographs, while, in contrast, minor artists such as Delmar Pachl and Charles Banks Wilson are given five slides each. Despite such imbalances, the five slide sets provide a useful overview of American lithography during the first half of the twentieth century. Coverage of lithography since 1950 is all but non-existent.

JUNE WAYNE'S "THE DOROTHY SERIES"

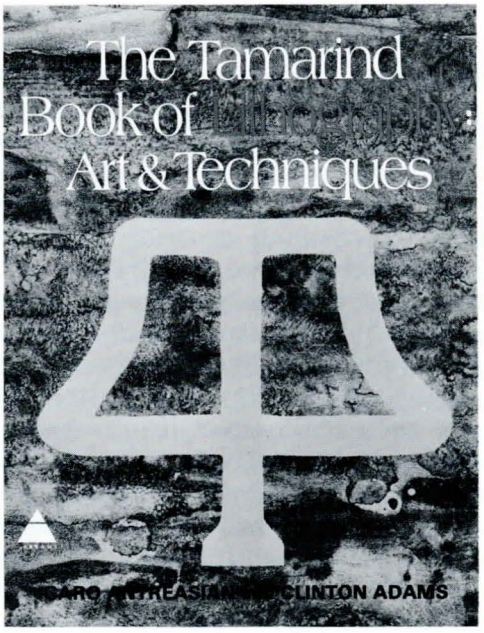
Also available from Budek is June Wayne's *The Dorothy Series,* a visual narrative told through 139 slides based upon the artist's recent suite of lithographs. All of the slides are in color and are accompanied by a sound cassette.

The Dorothy Series, presents a woman—the artist's mother—in the context of her time, a period of early feminist consciousness, of economic depression, and of two world wars. The sound track carries many songs from the sixty-year period of Dorothy's story, as well as excerpts from her letters as read by the artist.

The slide-cassette presentation is packaged in a Kodak Carousel tray and is priced at $150.00 plus $7.50 postage and handling.

TAMARIND SLIDES

Two new series of slides are now available for purchase from Tamarind Institute. *Series V* includes forty slides of thirty-five lithographs [plus five details] created at Tamarind Institute between 1977 and 1981. *Series VI* consists of twenty-five slides of twenty-five lithographs by prominent women artists. All of the slides in these sets are original Kodachromes (not duplicates) and a limited number of sets is available. Prices are $40.00 for *Series V* and $25.00 for *Series VI.* With one exception, the slides do not duplicate slides published in earlier Tamarind series, nor do any of the slides in *Series VI* duplicate those published in *Series V.* Full information as to the artists represented in these series will be sent upon request.



BACK IN PRINT

The Tamarind Book of Lithography: Art & Techniques

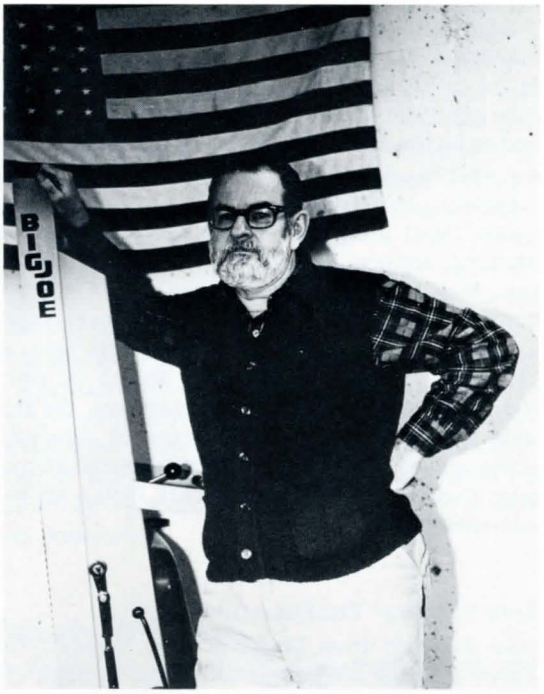
by Garo Antreasian and Clinton Adams

We are pleased to announce that *The Tamarind Book of Lithography,* long the standard work in the field, has again been reprinted by its publishers, Harry N. Abrams, Inc. It is now priced at $27.50, paperback, and may be ordered from the publishers or from Tamarind Institute. We also have a few remaining copies of the hardcover edition at Tamarind Institute; these are available for purchase by institutions *only* at $40.00, postpaid.

DING DONG DADDY
by John Sommers

BILL WALMSLEY, the author of the article that appears on the facing page, has long been known as Ding Dong Daddy. He made the first in a long series of lithographs bearing that title in 1952. But Bill is the second "Ding Dong Daddy." The first, his inspiration, was a cable car gripman in San Francisco in the late 1940s: a man whose amorous interests had led to a complicated life. This human interest story, as exposed in the press, thrilled and scandalized the nation. For Bill, this original Ding Dong Daddy became a symbol through which he could express the duplicity of society in art. In Bill's work, organic and fluidly sensuous shapes are interspersed with letters. Through the often poetic words that result, he makes himself the butt of his comment while at the same time he defends, chastises, or encourages humankind.

Bill began his career as a painter. Later, while in graduate school during the early fifties, he studied lithography with Richard Zoellner and subsequently, as his interest in the medium deepened, he sought to learn more about it. He went to Paris in 1955 to work with the Desjoberts, to the University of Kentucky in 1960, and to Tamarind Lithography Workshop, Los Angeles, in the summer of 1969. While at Tamarind, he observed printers at work, researched many newly-acquired processes on plates and stones, and plied us with endless technical questions. In 1974, he was off again to study at the Curwyn Studio in London, England. Over the years, he systematically developed his knowledge and understanding of lithography, expanded the expressive qualities of tusche wash and color layers, and began to work with fluorescent inks. With his philosophy of free expression and his ability always to be himself, Bill has become well known for the untiringly humorous—but always very serious—lithographs of the Ding Dong Daddy series, thirty-two of which were shown in a retrospective exhibition of his work held in November 1981 at Florida State University, where as professor of art he teaches lithography.



William Walmsley.

FLUORESCENT INKS:
Color Phenomena for Lithography
by William Walmsley

ALTHOUGH FLUORESCENT COLORS are well known, many misunderstandings exist as to their history and character. Basically, fluorescence is a phenomenon in which light-energy of a relatively short wavelength is converted into visible light-energy of a longer wavelength. In other words, fluorescence is light-wavelength conversion. A fluorescent red surface, for example, not only reflects red rays, but also converts almost all other rays into red and reflects them as well.

Indoors and away from direct sunshine, fluorescent colors can last indefinitely. The ultraviolet light-content of sunshine, rather than all light, is their enemy. Fluorescent colors in advertisements fade quickly for several different reasons, including the way in which the inks are mixed, the kinds of vehicles that are used, and the types of plastics used as binders, all of which affect the lightfastness of the inks. The thickness of the pigment-coating, the wall-thickness of the plastic binder, and the concentration of pigment are also significant factors. The higher the loading of pigment, the better the lightfastness of the ink.

The discovery which led to formation of the Dayglo Corporation—the principal manufacturer of fluorescent inks—took place in 1934. Joe Switzer, then age eighteen, was looking around one evening in his father's drugstore in Berkeley, California, with an improvised black light. He noticed that certain chemicals glowed, so he mixed some of these with shellac and went on to astonish his high school classmates with his amateur-magician act. He and his brother Bob, then nineteen, thus began the Switzer Brothers Ultra Violet Laboratories Company, Inc., on an initial budget of a dollar and seventy-five cents, in their mother's kitchen.

It was just before 1940 that the first commercial fluorescent color pigment was developed: a unique combination of chemicals and dyestuffs that glowed in daylight without the aid of a black light. In 1947 the first silkscreen inks were developed, and in 1959 the first fluorescent gravure inks ever made were used on a package for the detergent, Tide. The first one-impression lithographic ink was made in 1962, since which time there have been many improvements and innovations.

When I have observed fluorescent colors in everyday use, I have seen that a fluorescent red, concrete post in our campus parking area has remained intense for well over a month, and that outdoor, fluorescent signs printed by silkscreen have lasted for several months. Because they fade in sunshine, Dayglo silkscreen inks are guaranteed for only one month, however.

I began my work with fluorescent inks in 1968 when I purchased a can of I.P.I., Inmont Corporation, fluorescent pink. I used this ink directly from the can and also mixed it with white for use in a multicolor print. This first attempt was unsuccessful, and the print still remains in the bottom of my storage drawer. Because the fluorescent color was too intense, as it was combined in printing with other standard colors, it dominated the print. After this first failure, I purchased a full set of fluorescent inks. At that time there was no fluorescent blue ink for lithography, as there was for silkscreen, nor was there a magenta, as there is now.

Between 1968 and 1970, I used a standard, process blue for a fluorescent blue, and it was when I mixed process blue with opaque white to make a lighter blue that I made what I believe to have been my first successful fluorescent print. Although several of my earlier prints had been shown in exhibitions, they remain in storage. I have now achieved a satisfactory color resolution, and I notice that the colors seem to float in my prints, one over another, in layers.

As I worked with them, I realized that the fluorescent inks had a mind of their own, so to speak, and this led me in 1971 to purchase the 1969 publication of the *Dayglo Designers Guide.* I did not much care for the work that was shown there, but I could see the possibilities of fluorescent colors when combined with standard colors, and I could visualize complex, fluorescent arrangements. The Dayglo inks, which I began to use in 1976, had a consistency, without dryer, quite different from the inks I had used between 1968 and 1975. These new inks were found to have a very thick, rubbery, molasses-like consistency, whereas the Inmont inks were more like a divinity candy in texture. Both, however, printed beautifully when mixed with a lithographic, transparent white.

I start my prints with a line drawing and work from color area to color area while choosing and changing my colors and deciding how they should fit together in my image. Yellow is usually my first color, as I try to work in a sequence from light to dark. It is very difficult to think "yellow" when putting down a black, tusche wash. If after several runs, I feel I need to repeat one of the colors, I do so. It sometimes requires as many as fourteen color separations to finish a print.

Continued on page 25.

MY TEN YEARS IN LITHOGRAPHY

by Bolton Brown

with an Introduction and Notes by Clinton Adams

Bolton Brown, c. 1891–92.
Photograph, Hill & Watkins, San Jose, Calif.
Courtesy, Stanford University Archives.

INTRODUCTION

BOLTON BROWN, one of America's foremost artist-lithographers of the first half of the twentieth century, did not begin his work in the medium until he had passed his fiftieth birthday. A brilliant, complex, sensitive, but difficult man, Brown had by then already achieved distinction as a result of his many and diverse accomplishments during a long career as a teacher, painter, scholar, mountaineer, writer, and social critic.

Born in Dresden, New York, on 27 November 1864, Brown studied at Syracuse University, where he received degrees as Bachelor of Painting in 1885 and Master of Painting in 1888. While completing his graduate work at Syracuse, Brown served as instructor in freehand drawing at Cornell University; subsequently, in 1891, he became the first member of the art faculty at Stanford University, newly founded in that year. He later became professor and head of the university's Department of Drawing and Painting and remained there until 1901, when he joined Ralph Radcliffe Whitehead and Hervey White in the founding of Byrdcliffe, the Utopian art colony in Woodstock, New York.

While in California, Brown acquired a passionate interest in Japanese prints and in exploration of the then remote canyons and peaks of the Sierra Nevada, with the result that Mt. Bolton Coit Brown, a high peak in the main range of the Sierras, is now named in his honor. Beginning in the 1890s, Brown became active as an author, both on art and mountaineering, and by his death at the age of seventy-one he had published three books and many articles. One of these books, *Lithography for Artists* (Chicago: University of Chicago, 1930), was the first technical work devoted specifically to artists' lithography to be published in the United States.

Brown received many honors during his lifetime, including an honorary degree as Doctor of Literature from Syracuse University in 1920, a lifetime membership in the National Arts Club, and an invitation to become the Scammon Lecturer at the Art Institute of Chicago in 1929. His paintings and—after 1915—his lithographs were frequently exhibited in prominent galleries and museums and often reproduced in national magazines. Following his death in Woodstock on 15 September 1936, memorial exhibitions of his work were held at the New York Public Library, the Woodstock Art Gallery, and the Kleeman Galleries, New York. Since that time, however, Brown's many accomplishments have been unduly neglected. He has been remembered principally as the printer of George Bellows' later lithographs, and little attention has been given to his personal life and career.

In an essay published in the catalogue of the memorial exhibition at the Kleeman Galleries, John Taylor Arms spoke warmly of his association with Brown and then described Brown's journals, which had been

given to him by the artist's widow, Lucy Fletcher Brown: ". . . a series of many large volumes filled with original illustrations, notes and exhaustive descriptions . . . [which] contain the whole technical story of what has been discovered about lithography up to the present time, much of it, I believe, to be found nowhere outside their covers." These volumes, Arms wrote, were now in his library "awaiting a proper repository where they will do the most good."

The journals then, in effect, disappeared. It has not been known what disposition Arms chose to make of them. Only recently has it been learned that they were subsequently acquired by Ward and Mariam Coffin Canaday (Bryn Mawr '06) who, in turn, gave them to the Bryn Mawr College Library as a part of the John Taylor Arms Collection. The Brown papers were not separately catalogued at the library, with the result that their identity was lost. In addition to the journals in which Brown recorded his work in lithography—twelve volumes containing a total of 757 pages—the Arms collection included other notebooks compiled by Brown, miscellaneous papers, and the typewritten manuscript of a previously unknown and unpublished book, "Lithography since Whistler," which Brown completed in 1933. The book is written in five sections: "Senefelder Brings the Art into Existence," "The Old Lithography," "My Ten Years in Lithography," "Pennellism and the Pennells," and "Conclusion."

The third of these sections, "My Ten Years in Lithography," is an autobiographical account of Brown's work as an artist-lithographer and, as such, provides invaluable insights into the development of American lithography during the period between 1915 and 1930. It is published here by kind permission of the Bryn Mawr College Library.*

Brown's manuscript at Bryn Mawr is not a final, polished draft, and in editing it for publication I have corrected typographical errors and some misspellings; I have also changed punctuation to conform to contemporary style. Otherwise, it is printed here just as Brown wrote it, almost fifty years ago.

MY TEN YEARS IN LITHOGRAPHY

IT WAS IN THE WINTER OF 1914–15 when, passing down Lexington Avenue in New York, I came upon an exhibition of lithographs by Albert Sterner in the gallery of the Berlin Photographic Company.[1] As I now look back across the eighteen years, it seems to me very likely that seeing those prints furnished just the last push needed to send me, in the spring, off to study lithography in London. Etchings I had made and printed from youth, but to this other art I was as yet a stranger.[2]

Arriving in London I went at once to the reading room of the British Museum. I read every book in the catalogue, and also examined all their prints. This took a good deal of time, but it gave me—such as it was—a sort of mental background. Walking along the road to Number 16, Kingsway, intending to enroll in Professor Ernest Jackson's class[3] in the County Council School at that address, there caught my eye, lying in a bookseller's window, a volume on lithography. It was the Pennell book, just issued.[4] Conscious of my own supreme ignorance, I thought I had made a fortunate discovery and bought a copy.

In fresh and pleased possession of this treatise I emerged into the lithographic class. It was a mistake. At sight of it, upon some remark of mine, Professor Jackson glowered, "Joe Pennell knows nothing whatever about it," he promptly stated, "all he knows he learned standing by my

*I should like to acknowledge my appreciation to Leo M. Dolenski, Manuscripts Librarian at Bryn Mawr College Library, through whose assistance I was able to locate and study Brown's journals and other papers; to S. William Pelletier, of the University of Georgia, who provided the first indispensable clue to their whereabouts; to David Tatham, who shared with me his research preparatory to presentation of an exhibition of Brown's lithographs at Syracuse University in April 1981; and to Bernard Karpel, Merlin Pollock, Robert Rainwater, Jan-Marie Spanard, and Barry Walker, each of whom provided information which assisted in the writing of the footnotes.

1. Albert Sterner (1863–1946) was a primary force in the development of artists' lithography in the United States. He first made lithographs in Europe in the early 1890s, initially at Lemercier's Paris workshop, then at the studios of Klein and Volbert in Munich. When Sterner returned to New York his lithographs attracted the attention of Martin Birnbaum, an adventurous art dealer who was manager of the American branch of the Berlin Photographic Company (located at 305 Madison Avenue, not on Lexington, as Brown recalls). The 1915 exhibition which attracted Brown's attention was Sterner's second there; an earlier exhibition of his lithographs and monotypes had been held in 1911.
2. It has in the past been thought that Brown began his work in lithography either in California in the 1890s or at Woodstock during his Byrdcliffe years. As example, Karal Ann Marling incorrectly assumed in *Woodstock: An American Art Colony, 1902–1977* (Poughkeepsie, N.Y.: Vassar College Art Gallery, 1977), that Brown's "work in lithography was well known" at the time he and Ralph Whitehead first met in California and that the date of Brown's lithograph, *Sylvia,* was circa 1905. Although a proposal was made that Brydcliffe acquire a lithograph press—to be used under the direction of John Duncan, a visiting Scottish artist—Whitehead turned the suggestion down: he considered lithography "too commercial."
3. Francis Ernest Jackson (1872–1945) was an early member of the Senefelder Club in London.
4. Joseph Pennell, *Lithography* (New York: Frederick Keppel & Co., 1912).

press." This was the first piece of official information I received. Seeing myself getting off on the wrong foot, I hastened to observe that I knew very little about the gentleman and nothing at all about lithography. But even then something in the atmosphere warned me that a man with Pennell's book under his arm was a dubious person. Nevertheless, Professor Jackson went right along and did his duty by me as a student in his class.

He told me what lithographic crayon was made of, and also that the stones were etched with a three to five percent solution of nitric acid. He appointed me a place at a work table and directed the school's stone-grinder—for the students did not grain their own stones—to prepare a stone and put it on my desk. He sent me over to Cornelissen's, in Great Queen Street, for crayon. Then I began to work. The first exercise I set myself was to re-draw one of my little studies of the nude. Of this the school's printer pulled two or three proofs—for the students did not do their own printing. I made another figure drawing, fully modelled, and after that a landscape. By this time the summer vacation had arrived. This was the extent of my schooling in lithography—perhaps five or six afternoons in all.[5]

On the top floor of a private house in Doughty Street I found a furnished flat. This I rented and adopting its principal room as a printery fetched into it stones and other materials, including a press, and tackled lithography. The professional stone-grinder that I had engaged to come and surface the stones failed to appear. I rolled up my sleeves and ground stones myself, all day long, for a week. At the end of that time I was a competent workman and have ever since done my own grinding.

The particular stones on which I learned my trade were a dozen yellow ones, bought at a bargain, secondhand, with pages of music still on them. I bought these yellow stones, in my ignorance, because the Pennell book said "artists liked them." The intensity of my greenness curdles me to think of, even now. On one stone I made a lovely drawing of a group of oak trees. Then came my first lesson in Pennellism, for the yellow stone was too soft to stand the etch properly—the drawing was ruined. I threw aside at once all of the twelve yellow stones and purchased grey ones. I got them from a small establishment on Vine Street. It being wartime, the sole tenant of the head office was a redheaded young woman. She was competent, however, and the selected grey stones were duly laid down in my flat.

Then began my real study; it continued for one year. I lost a month in the middle of the winter with lumbago, but other than this I lost no time at all. I mean there was no time when I was not working. I lost plenty of time, of course, even when I was busiest, because I was so often doing foolish things, but I didn't know it.

Whether my method of studying lithography was the best in the world or the worst, I am not quite certain even yet. Perhaps in some ways it was the best, and in other ways the worst. I do not mean the worst in the sense of teaching me what was not true, but in making me pay a frightful price. What I was really doing—I can see it now—was trying to use all the ideas I had so innocently collected out of books, as well as many which I had picked up here and there as I went about among lithographically addicted people. Intense consciousness of my own ignorance made me listen, abjectly, to everybody and anybody. I was like one of those air-pump carpet sweepers; everything I came near got sucked in. The method seemed reasonable, at the time; perhaps it was so. But somehow, as the days slipped by, twelve and fifteen hours long, the unwelcome knowledge was gradually forced upon me that there are quite a good many people in the world who say things, and even write things, that are not so. It may be, however, only fair to the world at large, to admit that perhaps some parts of the ideas I thought I was gathering eluded me because of my being so ignorant. Gradually then, my mind got itself unloaded of, and disentangled from, its undigested accumulations of

5. On the basis of a statement made by Frederic N. Price in "The Etchings and Lithographs of Arthur B. Davies," *Prints* 1 (November 1930): 8, and later repeated elsewhere, it has been incorrectly assumed that Brown studied lithography with Thomas Way, the printer of Whistler's lithographs.

secondhand gleanings, and I began to walk such a path as I could see by the light of my own lamp.

Some day a poet will arise who will sing, not the glory of a person called God, about whom we know nothing, but the glory of Things. My reference is not to man-made affairs but to those natural substances which reveal themselves to our senses. When I deal with these my feet stand flat upon the floor of the universe. Substances do not lie. And that is why I love to work with them, and why, if that style of phraseology meant anything to me, I should say that they seemed divine.

With a group of these things, then, I got on. If slowly, yet very surely, and with a satisfaction not to be put in words. Every book of the seven million in the British Museum might be wrong, but the stone itself was never wrong. If it failed me, it was, with perfect certainty, I myself that was wrong. To be right, what had to be changed was my idea—nothing else. The stone did not change at all; it never had changed; it was the same to me that it had been to Senefelder, to Lemercier, to Hullmandel, and to all the rest of them. There they lay—those three or four grey stones of mine, on my table—silent, dumb, cold.

Inasmuch as the texture of a drawing surface has a very important bearing on the drawing, I became profoundly studious of the grain on the stone. Equipped with a set of sieves that yielded graining sand of different sizes, I went on grinding and graining and testing with crayon—hours and whole days—many of them. Everything was recorded in writing. The notes of that winter fill several large volumes. Sand wears off a stone rather slowly and you need a lot of muscle to spin a fifty-six pound graining disc very long. What each grade of sand, and every mixture, would do, I learned—as also how long it would take to do it. And always of course, the crayon tests, every texture at last perfectly understood. It was, as above said, because I saw so clearly the unescapable relation between texture and the size and subject of one's print that I went so deeply into this research. You cannot draw a life-sized gnat on burlap; a life-sized cat you can.

Sometimes it seemed rather a tedious business, grinding down the surface of a stone with sand. The grains themselves would wear round, and the work go slower and slower. One day I happened to think of Carborundum powder, which is as hard as diamonds and sold in a long series of scientifically separated grades. Well, when I tried it I could only stand amazed at my previous inbecility. The texture it gave the stone was better than that given by sand, and you got it in just one twenty-sixth as much time. Now of course I had all my work to do over again—creating a series of textures, I mean, and testing each with the whole battery of crayons, from hardest to softest. I could write a hundred pages about this and not say a thing that was not of the keenest interest to me at the time. In my old notebooks I still read of forty distinct textures, with the exact formula for producing each, and its character under crayon tests.

In my youth I consorted more or less with scientific people, and I have always read scientific books. So I knew how to try an experiment: I was scientist enough for that. Many persons suppose a gamble is an experiment, and others think an adventure is one. Both of these ideas are wrong: an experiment must *prove* something. True, there are in many experiments the adventurer's thrill and the gambler's hope, but these pass. What does not pass is the resultant knowledge; when you have put through a genuine experiment you know something you did not know before. Of course one could put in a lifetime at it: the world is infinite and so is our ignorance. I gave a year to an attempt to reduce my own ignorance, and I never worked harder or more willingly.

Since one cannot experiment effectively unless conditions are right, my studio—or shop, whichever you please—was always in perfect order. Every morning when I stepped into the room it was an inspiration to see it so, to feel that I could jump in and do whatever I wanted to without, at

Bolton Brown. *Moonlit Woods,* c. 1915–16.
Lithograph, 296 × 248 mm.
Collection, University of New Mexico Art Museum.

Many of the lithographs made by Brown in London are, like *Moonlit Woods,* studies in soft, non-linear tonalities.

every turn, being misled or tripped up by slovenly arrangements. And to get this inspired morning attack, I, each night, whether at nine o'clock or at twelve, cleaned the ink off the spatula and the steel scraper, washed them in turps and laid them, like twins in a bed, in the center of the ink slab. I wiped off the press, cleaned the inking stone with turpentine and polished it. I stacked the blotters, set the Carborundum cans in their serial order at the head of the ink slab, rinsed out the damping rag, threw away the dirty water, cleaned out the pail, destroyed waste paper, and to put a finish on the general situation, went to the floor on my hands and knees and scrubbed it clean with water and a large sponge. Every night, no matter how tired I was, this was my ritual. It was my way of praying for success tomorrow. Somewhere Thoreau speaks of wishing to drive a nail, not into the plaster where it had no hold, but into the solid studding, so that he could lie awake in the night and think about it with satisfaction. I understood his feeling perfectly; and, yielding to the impulse it inspired, carried on my affairs as here described.

IT WAS WARTIME; I had very little money; I went to see if I could find a place in the war game. What I found was that the English authorities had already on their lists the names of more than forty thousand willing Americans, whom they could not use. So I watched the soldiers train, in the streets and parks—thousands upon thousands, they were everywhere. And I just stuck to my work.

It was out of old Mr. Cornelissen, who sold me ink and things, that I got more real information than I got from anyone else.[6] He knew; he had been there. He liked to chat over the counter when he learned what I was doing. Sometimes I would take along a sheet of something I had printed and we would discuss it together. He gave me much first hand information that bore on the whole story of lithography in England from the beginning; it was a living tradition with him, much of which he saw and "a part of which he was."

6. The firm of L. Cornelissen & Son, located on Great Queen Street, was long a principal supplier of lithographic materials in London.

FAR FROM MY USUAL HAUNTS, in a remote and inconspicuous alley, I ran across a sign——.[7]Down a dark, narrow hallway, in a——gas-lit single room, I found two men engaged in making litho rollers. They were not super-salesmen for some giant corporation, just two men doing their work: that was all. The situation was one that I could understand: I liked the men. For really, I am a workman too. When we had gotten acquainted and I had explained by dissatisfactions with my roller, they understood and accepted my order for a better one. At my giving my address and name they looked surprised. One said, "Oh, we know you. Some theatrical friends of ours from Chicago told us about you." Such is fame. I had not supposed that a soul in London knew I existed.

7. Brown left a space in his manuscript at this point, as if intending to provide additional information.

The roller made, I used it for a time. Then, grown still more critical, I went back and ordered another, which would be my third. They said, "It will cost you an extra shilling." I let the order stand, despite the extra shilling. Not to be prolix about these rollers: in the course of the season they made—each time at a higher price—six rollers, one after the other, to my specifications, each better than the last. We evolved new ways of stitching the seam to keep it flat, and new sorts of stuff to put under the leather to make it evenly soft. I sat around, while they worked, and let them educate me by tales of rollers and inks and printers and the ideas of the printers about the rollers and the inks—a world in itself, a most interesting and important world, a world through which every lithograph ever made had passed, and been marked by, for better or worse.

I know now—I didn't then—that what I was trying to make a roller do, it is impossible to do. However, in the effort to attain the impossible I certainly shoved up the mark of the possible some. I got a better roller out of those fellows, they said so themselves, than they had ever made before. In our last attack, all three of us, every restriction was laid aside.

They conducted me to a huge stack of cow hides, tanned in France, marvelously, for just this use, and put through a machine that shaved the whole hide down to exactly one thickness. They asked me, "Which one?" Down they came, the whole pile—we handling them largely like tanners. A beauty appeared; I said it would do. On the floor, under the gas light, we crawled around over it on our hands and knees, feeling with our fingertips for the most perfect part. Right in the middle of the hide we found it. "Cut a roller cover right there," said I. The sharp knife gleamed: I held in my hand a square of the finest leather Europe could produce. The roller-covers they use in heaven are *perfectly* even: those we use on earth are as nearly so as we can get them.

I carried home that leather and next day, having laid it out on a true-surfaced stone, I sandpapered it and tested it with a steel that was accurate to the two-thousandth of an inch, till it was truly even—to the limit of that tool's knowledge. It occupied me five hours. But when two layers of specially chosen felt was put on the wooden body of the roller and this leather sewed over it—well, the day I went for it they smiled when I came in. One held out to me a cylindrical package and said, "For twenty-five years we have been making rollers for the best printers in England, but we never made as good a roller as this." "Why not?" I asked. "The Englishmen won't pay for it," was the reply.

For ten years I printed with it, and now that I print no more, I prize it—still perfect—as a trophy.[8]

Naturally, going it blindly as I did, and with my instinct for beginning at the bottom, I fell into pitfalls, varied and numerous. There was one about the etching. I repeat, for saying it just once or twice would not express it—I was green. I read in the Pennell book that etching a stone was a "most dangerous operation." It seemed natural, so right there I caught the Pennell disease; etching became a mental bugbear. At a lithographic supply house a man who was introduced to me as "an expert," told me a liquid sold as Arobene would enable me to print without any etch. Idiot lamb that I was, I let him sell me a bottle. I know now—I did not then—that though this preparation is suitable for commercial ink work—maps, etc.—it is not at all the thing for artistic crayon drawings. It does not etch; it petrifies. I made many lithographs by its use—those early silvery things of mine. I know now—I didn't then—that nitric acid is better.

Senefelder speaks of a preparation of "phosphoric acid mixed with nut-galls" which he says make a stone perfectly printable.[9] Suspecting that "Arobene" was this very thing, I began to try to take Arobene apart—I mean, I tried to determine its ingredients and their proportions, so that I could know what I was really dealing with. Though not a chemist, I have human senses. Arobene had the consistency of gum arabic solution, which it undoubtedly was in part. It tasted like "Arnold's Writing Fluid," which is ink. I procured a bottle of ink and its action on the stone suggested Arobene. For two pence I bought an ounce of green vitriol. Putting this and an equal bulk of gallic acid in a vessel with a little water, in about no time I had ink. Adding gum, testing as I went, I got an article which, plus phosphoric acid, tasted, looked, and acted like Arobene. Now I could make it myself, much cheaper; and also I could vary it and thus learn the function of its separate ingredients. I could do anything I wanted to with it. Every step went on record in the notes. These show that the ideal proportions were arrived at after seventy-six experiments:

⅛ spoonful gallic acid crystals
96 drops dilute phosphoric acid
18 spoonfuls gum arabic solution

According to the notes, after forty more experiments I reached a product that "stands right alongside Arobene and beats it. It costs eighty cents a gallon, and not five dollars, as Arobene does." All this may seem like a silly waste of time; and yet, for me, I do not think it was wholly so.

8. Brown's work as an artist-lithographer was concentrated in an eleven-year period, 1915–1925; he did little printing after 1925 and none after 1932.

9. Aloys Senefelder, *A Complete Course of Lithography* (London: 1819; reprinted, New York: Da Capo Press, 1977), p. 145.

ABOVE: **Bolton Brown.** *A Study of Trees by a River,* c. 1918. Lithograph, 220 × 345 mm. Collection, Tamarind Institute.
BELOW: Detail, actual size.

Brown's early lithographs were often based on sketches or memories of his experiences in the Sierra Nevada during the 1890s. The pencil-like character of this lithograph is characteristic of many prints drawn by Brown in London or soon after returning to the United States.

I was applying a principle—the principle of getting to the bottom of things. By going through 110 experiments I had duplicated a secret compound and learned what natural substances I was really dealing with. And all knowledge of natural substances is clear gain. Secret preparations never did appeal to me: I want to lay my foundations on the raw ribs of the real world, as nature made it. Then I can build till I bump the clouds. And besides, this particular research almost certainly was the cause of my getting acquainted with phosphoric acid, a knowledge of which, all through my ten years as a lithographer, was of high importance to me. That is the beauty of research: you are always liable to turn up values that you never suspected had any existence.

Another trade preparation was an "ink doctor," a whitish salve that worked well enough, but what *was* it? The smell recalled nothing my nose ever knew before. When I was a baby I once took a bite of a cake of soap under the impression that it was a cooky. This ink doctor tasted like that cake of soap: I thought of it instantly. The window of a drug store displayed cakes of an unknown substance stacked in piles. They handed me a piece: I knew its smell at once—the "ink doctor." The stuff was Japan wax. When I put some of this with some tallow and some soap there was the same ink doctor I had bought, only now I knew what I was doing and the cause of the effects that I got.

The days grew amazingly short: it was night all the time except for a small grey interval about noon. They put a whole galaxy of strong electric lights in the ceiling of my work room; it was like day. London, outside, eschewed all illumination on account of the Zeppelins. The authorities compelled each house to darken its windows, all over the city. The heavy blanket on my window got drawn aside a little so that from the street a small sliver of light showed. A policeman came, requesting the sliver be suppressed. It was. The streets were so dark that one night I walked squarely into a front-end collision with a cast iron pillar box. My luck held, and I got off without serious injury. The policemen wore small red lights, hardly more than sparks, in their belts.

The pictorial material down along the river attracted me. I stood there one day, drawing, as is my habit, on my arm. Very civilly a Bobby drifted up and glanced at my paper. He murmured that the regulations would not allow it. Afterwards, from the War Office, or somewhere, I obtained an official permit to do things like that, but I never got around to use it.

Some of my experimental prints I carried over to the print room of the British Museum. When I sent in my card, to my surprise they knew me. And when they had looked at what I had brought they said nice encouraging things.

London, I discovered, is a great market for paper, and the number of paper merchants I visited would make a long list. They seemed to think I ought to know what I was looking for, and when I told them I was looking to see what the world yielded they stared a bit. The kinds of paper I discovered and experimented with were very numerous. I always was rather keen about paper, and these searchings were at once a fascination and a relaxation to me. What I brought home I classified and tabulated and tested—for color, for thickness, for texture, for sizing, for the way it took dampening, for the way it took ink, for the way it dried and flattened after having been printed on. I made the acquaintance of that paper-specialist, J. H. Head, at his store—this time a small one. Head lived on hand-made paper, ate it and drank it, even as in those days I did myself. We had heart-to-heart talks, each agreeing with the other quite delightfully. Prints that I showed him he was absolutely intelligent about; he saw what I was driving at. Showing him one, I asked him, "Have you good eyes?" "Very," he replied. He sold me plate papers, sugar papers, blotting papers, filter papers, and some exquisite white hand-made rag paper with his name watermarked in it. He kept interested track of all my experiments. Once he remarked. "You're an expert;

you can print on anything." He asked me to design an ideal paper for lithographs. This meant to make out the formula of the ingredients and their proportions. He intended to have one "engine" of it made, and it was to have my initials as its watermark. I have always wanted to make paper, but this was as close as I ever came to doing it. Nothing happened, because the government took over all the paper mills just then.

Clerking in that store there was a notably handsome youth—a beautiful human specimen. He had to go to the war. He said, "I wouldn't mind, only I'm the only one that's takin' care of my mother, and she's gettin' old. It's awful." Then, brightening up, he added, "But I'm goin' with a crack company." I don't know what became of him. Mr. Head went also. In Mesopotamia he was killed.

British men with only one leg began to be seen stumping along the street on a crutch. When I was buying some Carborundum at a hardware store, an officer came to the counter where they sold wire cutters. He did not look around at all, nor say a word; he just stood there and worked the nippers, studying their action. I could see him—at midnight, on his belly in a mudhole, cutting German wires, lives hanging on every second. In silence he selected the best wire cutters and carried them, his personal nippers, back to the great war.

WHEN PRINTS CAME LIGHT, as phosphoric acid was sure to make them, though I didn't know it then, I thought more pressure would make them come darker. So I increased it, screwing things tighter and tighter until the pinch was so great that to turn the handle demanded every ounce of my muscles, from the soles of my feet to the grip of my fingers. The very press itself used to skate around the floor as I surged. This sort of thing, taken together with waltzing a fifty-six pound grinder around and around—not to mention the stones themselves—so lamed and stiffened every muscle in my body that for six weeks I could hardly get my sleep at night; every few minutes I would be waked up by aches and forced to change my position. Once hardened to it, however, I came out in condition for a prizefight: weight down, hard as nails, feeling like a rubber ball.

But I learned, in time, that a printer need not be a prizefighter; I used my brain more and my brawn less. The table of my press was fourteen inches wide, finding which too small for my expanding ambition, I sold it and bought a much larger one; also larger stones to go with it. I drew—it was about Christmas by this time—I drew the design with the line of poetry beneath it: *Three Bathers* was its title, and it was on a stone grained very coarsely in an effort to get atmosphere, and what I always think of in my own mind as penetrability: an open texture lets the eye go into it, and even suggests going through it, hence a feeling of air and space—a thing which a landscape painter, dealing with a woodland scene, naturally values. Before I had time to print this stone I became perfectly helpless from lumbago. Two weeks in bed; two weeks creeping about; then back again on the works. I lost a month. Perhaps it gave me time to think.

There developed in the prints a tendency to streakiness—scraper marks, presumably. I know now—I didn't then—that owing to the design's being merely pickled in phosphoric acid instead of being regularly etched, the ink did not have a normal adhesion, and hence the ease with which the scraper affected it in streaks.[10] So from this bog I now set about experimenting my way out. At first I laid the trouble to the tympan, and for weeks the tympan was the center of my world. At last I abolished the old zinc tympan and replaced it with one of copper; a maker of presses whom I consulted told me to. I asked, "If copper tym-

10. Brown uses the work, "pickled," to describe treatment with a very weak, phosphoric acid etch over an extended period of time.

pans are the best, why do you not fit your presses with them when you put them out?" His reply was, "The Englishmen won't pay for them."

The disposition of the prints to come pale still continuing, I decided that the scraper was the probable cause. I went to a mill and had a new scraper block made. I suppose in time one would get used to the English, but at first some of their ways strike the practical American as almost funny. It seems they never can accept you as just a human being; they must know *who* you are, as they put it. When I was explaining to those mill people about the scraper I wanted, one of them kept saying, "But who are you—who are you?" I finally said, "Well, in a large and strict way, I have never been able to find out, but for present purposes I am the man who wants this scraper stick. Can't we get down to business?" So, one man was set at it and I watched him and he made it and I carried it away—for a shilling. I did away with the scraper leather in favor of strips of plate paper faced with a ribbon of parchment. This worked, but it also opened the door to a whole new series of experiments on the scraper shoe. At one time I had a strip of sheet iron against the wood, with paper strips in front of it. It was all nonsense; I know it now—I didn't then. Anyway, I learned a lot: a man can be learning, even when is acting foolishly.

In the absence of practical experience, my imagination had a way of substituting its fancies. One of these whimseys was that dampening the stone with a common sponge or cloth wears off the design. It doesn't—I know it now—I didn't then. I got busy and invented a roller like a pie crust roller, covered with soft cloth and then with fine wash leather. I bought and paid for and put together the materials of this device—a damping roller. It damped quite perfectly, of course, and I gloated over it for a time, but gradually drifted back to the ordinary usage.

There was another era when life centered round the question of the lubrication of the tympan. I tested all the greases in London. Then I worried over the backing board under the tympan and tried all the kinds I could think of, and the discovery which I finally made was that if you get your stone quite perfectly ground, perfectly placed, with a copper tympan and a flawless scraper, you can pull impressions without any backing at all.

A world of thought went into the study of the art of damping the printing paper. I learned; I learned thoroughly; but, oh, the price I paid. Into a big tray of water on the table, one by one, I would lay sheets of Whatmans, pushing it down into the water and smoothing it out with my hands. Slow and tedious, even this; and this was but the beginning. Now, one by one, I took them out, laid each smoothly on blotting paper, laid another blotter over it, and then another sheet of Whatmans, and so continued to do till forty or fifty were thus stacked. The pile, between two drawing boards, was now put in a screw press and squeezed terrifically. It was then taken out and the sheets separated from the damp blotters and restacked, one by one with dry ones. This new pile was now returned to the screw press to remain—under severe pressure—till printed upon the next day. I know now—I didn't then—that a heavily sized paper like Whatmans is not at all a suitable paper for my kind of printing.

Coloring paper, also, was a thing I went into for a while. By means of staining trays, sponges, and the bathtub, I got some exquisitely toned, or dyed, sheets. Tea, coffee, India ink, and various colored inks used by engineers, were my coloring materials. It was a lot of work, but the results were lovely.

When I carried some proofs over to the school and showed them to Professor Jackson, he said, "You can print." But he was puzzled, as well he might be, by the fact that the stones did not "go dark." One was a very small edition. "And then the stone went dark?" he asked. "No," said I, "it went light." "Well, it *ought* to have gone dark," he snapped.

He did not know I had merely petrified it instead of etching it.[11] I know it myself now a great deal better than I did then.

I mailed some proofs to a friend in New York. The customshouse people would not believe they were prints; they declared they were drawn and not printed and must meet the law as drawings. They were quite stiff about it for a while, but in the end my friend got them convinced that they were wrong, and that the things were merely some extremely good lithographic prints from drawings on stone. The truth is that you can do marvelous things with phosphoric acid in the way of preserving the exact look of a drawing. The professional lithographers, to this day, have been unable to explain certain of my effects which are due to my intimate acquaintance with this acid. Even long after I was etching my stones in the usual way I never neglected to have by me a bottle of this, my most magical assistant. I never heard of any other printer who uses it as I do. It is the most subtle thing in the world, if you have the patience to master it.

Occasionally I took a little time off and walked over to the British Museum Print Room with a print or two to show. I liked to go there, partly because it is such a storehouse of treasures and partly because the gentlemen in charge were always so courteous to me. I felt welcome, and if the officials there were not interested in what I was doing they acted as though they were: they encouraged me.

On the way to the museum I used to go by parks and school-grounds full of young men learning to march and to shoot cannon. They took it in the most drab and matter-of-fact way. The only feeling I sensed in them was one of being considerably bored with it all. Of the traditional, military, hurrah-boys attitude, there was exactly none whatever. Speaking of things of war: I was in High Holborne Street; people farther down began to gather along the curb; I heard a drum—a single drum—beating march time. A quiet man on horseback appeared—an officer at the head of a body of troops. His horse was perfectly quiet, and he was. There was nothing slovenly or sleepy, but oh, how quiet! You did not think of the man as an officer; he just seemed like a man, silent, on a horse that paced slowly up the middle of the street. And the people standing packed on the sidewalks—masses of them—were also as silent as the officer and his men. Not a word was spoken, anywhere; all you heard was the steady throb of the one drum and the sound of the feet of thousands of marching men, everyone of them carrying his full fighting equipment, every one as quiet as his leader; rank after rank, never slower, never faster.

So, thought I, so, England makes war. Then I knew that I too was English and that these were my blood brothers. And I loved the way they chose to go to war.

That was the winter in which England ceased to be an island. It was eleven at night; I had just gone to bed. Two miles away, down towards the river, a bomb exploded. I heard it, and my instant first thought was this about England being no longer an island. As I rose and stepped toward the window of the mansard roof, a second explosion, nearer—then a series, approaching, each louder and nearer than the last. The final crash was very near; with the bang of its detonation I heard the simultaneous smash of ten thousand panes of glass. Then, a mile up in the night sky, directly overhead, came the Zeppelin, silvery clear now, and bright like a fish's belly, from the many searchlights that had found her. She had dropped her last bomb and passed off either among real mists or those of her own spreading, many guns shooting at her, shells howling up all over the city. But she floated too high. I saw the shell-bursts far short of her, mere harmless fireworks. My window commanded the whole display as if it were a show.

I dressed and went out. As I passed through the hall on the ground floor the janitor was standing on a chair tinkering at a gas jet. He paid no

11. Brown apparently uses the words, "petrified" and "pickled," interchangeably.

attention to me. When I returned he was still tinkering and still oblivious of anything unusual. It would have been beneath his dignity to show any interest in such a triviality as an airship blowing holes in London. I rather like it: it seemed "so English."

I followed the line of the explosions—several first-class fires along it—down nearly to the river. Smashed glass coated the pavements in places, half-a-foot thick. Thousands of people were out. I did not see a look of fear or of anger on one face. Nor one person moving faster than a walk. I entered a court, many-storied buildings on all sides roaring in flames, a bomb-hole in the middle big enough to drop an omnibus in. At first I was alone; then, from the other side, a policeman approached. His eagle eye centered upon me. "Well, who are YOU?" he demanded. I said, "Nobody!" He let it go at that. Twenty persons were killed that night, one near our house, a school teacher; a chunk of iron was blown through her stomach; she sat down against a wall and so died.

Ernest Watson. *Portrait of Bolton Brown,* 1919.
Lithograph, 254 × 311 mm.
Printed by Bolton Brown at Pratt Institute, March 1919.
Collection, Lauris Mason.

I BEGAN A SERIES of etching experiments, using ordinary acid and the common methods. You can learn anything by experiments, if you know how to try them and if you stick to it long enough. Consequently, after a while I found myself able to etch a stone in the accepted professional manner. Indeed, I went this manner one better, for there is a considerable element of guesswork in that; whereas, when I got through I had the thing reduced to the cold certainty of a science. And from that day no stone of my handling has ever been spoiled or injured in the process of being etched.

When I had decided to return to New York, not knowing how readily I might be able to get together, in wartime, another working equipment, I had all my stuff boxed and shipped to America, just as it was. It would weigh, all told, about 1500 pounds. But the shipping agents weighed it—at any rate they claimed to have weighed it—and said there were fifteen tons of it, and I had to pay on that basis because my arrangements did not make it possible to stay and fight with them about it. They charged me a hundred and fifty dollars.

A day or two before I left my flat in Doughty Street, the postman brought me a personal note from the Keeper of the Prints at the Museum, expressing interest in my work and wishing me well; which was an appreciated courtesy to a man, who, after all, was a total stranger.

DURING MOST of the summer of 1916 I rested; rusticated, in fact, on an old ancestral farm up on Seneca Lake where I was raised.

At the opening of the winter season I lectured at Columbia University. A little later, as an indirect result of this, they installed me and a press (loaned by Mr. Louis Bechtold, president of the Senefelder Litho Stone Company) in the main exhibition gallery at Pratt Institute, in Brooklyn. I became an exhibit. The walls were covered with my prints. I arranged with John Sloan, George Bellows, Ernest Watson, Albert Sterner, and others, to appear here in public on stated evenings and make a drawing on stone, I meanwhile to be discoursing to the audience on the principle of the thing. On the following day, also before an audience, I etched and printed the drawings made the evening before. The newspapers reviewed the affair favorably. John Sloan's lithograph was an artistic success: I printed an edition for him. Sterner drew a nude, with a background intended for trees. Bellows evolved a memory of the "Men's Night Class," a chaotic scene—an old stove, easels, one youth consuming a sandwich, another guzzling something out of an upturned bottle, and, as centerpiece, the nude female model, standing. When, as usual, I put this stone on view with the others, it so shocked the sensibilities of the Institute that someone took it from its place and turned it modestly to the wall. "I don't see what George wanted to go and do a thing like that for," said one. I called George up; he was surprised, but let the matter pass.[12]

12. Brown's exhibition and demonstrations at Pratt Institute were scheduled afternoons and evenings between 3 and 15 March 1919. The lithograph Brown printed for Sloan was *Saturday Afternoon on the Roof* (Morse 192).

    Brown's description of Bellows' image corresponds in every detail to *The Life Class, First Stone* (Mason 8). Lauris Mason, in *The Lithographs of George Bellows: a Catalogue Raisonné* (Millwood, N.Y.: KTO Press, 1977), quotes a catalogue published by the Art Institute of Chicago, *George Bellows: Paintings, Drawings and Prints* (1946) which concludes that this print, known only in one impression, "is probably one of Bellows' earliest—if not his first—lithograph." It is now evident that this is the lithograph printed by Brown at Pratt Institute in 1919.

That winter I maintained a press, for public printing, at Mr. Bechtold's place, at 32 Greene Street. I called it The Artists' Press, and claimed that it was the smallest and best press in New York. The plant remained there, functioning at intervals, for several seasons.

One day Arthur B. Davies came in. He was a pleasant man. The drawings he wanted me to print were on zinc. I declined, on the grounds of ignorance. He rather insisted, however, saying he would take all the risks and, no matter what happened, I should be paid just the same. As I was charging a dollar a print and he wanted some hundreds I set to work and for the first and last time printed from zinc plates. Mr. Davies was satisfied with the impressions.[13]

I issued a little card, or folder, encouraging artists to try lithography, and advertising my willingness to print for them.[14] This was spoken of here and there and posted on sundry more-or-less artistic bulletin boards. Unknown to themselves, I selected half a dozen men whose drawings suggested lithographic possibilities, and visited them in their studios. One of them was Cesare, the cartoonist. He came down to my Greene Street place and drew on stone a portrait of General Mitchell. As soon as he began to draw he remarked that the medium was the most delightful he had ever used in his life. The drawing he made was not published, because its author was dissatisfied with it as a portrait.

Other men, in the same way, were invited down, and came, one at a time, just to try their hands. One was Chauncey Ryder.[15] He took hold rather seriously. He bought four stones and each summer took them with him to the country, where at his convenience, with a piece of my crayon, he made on each of them a landscape drawing. They were interesting drawings and they did exactly what he wanted them to do, which was to give the qualities he had been getting habitually with a very soft lead pencil. But it merely went on in the purely "leadpencilish" way; he did not pass over into any new or more lithographic technique.

I recall the interview between Grueger, the illustrator, and me, in his studio.[16] I went there because his work showed that he could make good lithographs if he would. This I pointed out to him and he recognized it. We had an amicable chat. But his last question settled me. He said, "Well, suppose I did make lithographs. What would I do with them?" So I went away. Numbers of others I called on with similar intent, but for the most part seemed not accomplish much.

You see, my thought in those days—I know better now—was that if a number of able men would draw on stone, we could soon put up an exhibition of lithographs that would really be lithographs and that would knock the spots off anything the city had ever seen. We could interest the public, and if there wasn't any public we could create one. We could give the present generation, for the first time, a glimpse of the hitherto unsuspected possibilities of the art. It was a perfectly good scheme. But the other fellows didn't see it. I was a workman and I was an artist, but as a propagandist I fell short. Besides, though everybody was civil enough, both to me and to lithography, there was always an undercurrent driving against me. Etching had the field—commercially and psychologically. It was a flourishing industry. Nobody who was interested in any phase of it wanted the competition of lithography. One dealer told a friend of mine that he did not want the artists to start making lithographs because it was so easy that if they did the world would be swamped with lithographs. And then, to vast numbers of Americans the very name was against it; for to them its only associations were with commercial calendars and labels on cigar boxes.

Moreover, there were a good many people, even some artists, who thought, or pretended to think, that drawing on paper with greasy crayon was practicing lithography. The shadow of Pennell was broad in the land. He had taught the people and they had sat at his feet. My insistence upon a lithography that was genuine went contrary to certain

13. Satisfied Davies may have been, but he did not continue to work with Brown. Merrill Rueppel, in *Graphic Art of Arthur B. Davies and John Sloan* (Ann Arbor: University Microfilms International, 1978), speculates that Davies returned to work with George Miller because he "was dissatisfied with Brown's work." More likely, Brown poorly concealed his disdain for Davies' drawings and for his use of zinc.
14. Bolton Brown, "Lithography: Advertisement of The Artists' Press," (New York: May 1919), 2 pages.
15. Chauncy Ryder (1868–1949) was a noted academic painter and etcher.
16. Brown probably refers to Frederic R. Gruger (1871– ?).

17. Susan A. Hutchinson, who first joined the staff of the Brooklyn Museum in 1899, was appointed curator of the Department of Prints when it was organized in 1915. She served in that capactiy until her retirement in 1935.
18. Frank Weitenkampf (1866–1962) was curator of prints at the New York Public Library from 1900 to 1942. Author of *American Graphic Art* (1912; revised edition, New York: Macmillan, 1924). Weitenkampf was an effective advocate of the fine print throughout a long and active career. He performed an invaluable service to historians of the American print through compilation of an extensive clipping file on prints and printmakers.
19. In the article on lithography in the eleventh edition of the *Encyclopedia Britannica,* Whistler, Pennell, and Fantin-Latour, all of whom were advocates of the transfer method, were mentioned prominently as "lithographers."
20. See Bolton Brown, *Lithography* (New York: FitzRoy Carrington, 1923), pp. 18–21.
21. Brown refers to the letter written by Walter R. Sickert, the English painter (1860–1942), which was published in the *Saturday Review,* 26 December 1896, under the title "Transfer Lithography." In that letter Sickert was sharply critical of a Pennell exhibition in which transfer lithographs were presented as "lithographs": "The artist who does transfer lithographs is . . . using a debased instrument. It has its conveniences, it is true, but it is nonsense to talk of a revival of lithography on these terms. It is full decadence. . . . Drawings of merit may be executed in this, as in any other medium; but the art of lithography is degraded. . . . Mr. Whistler is a genius. But he must not help Mr. Pennell to debase the currency."

    Following publication of Sickert's letter, Pennell brought a suit for libel, in which Whistler appeared as a witness. Pennell won the case. But although the law was thus determined, the matter was far from closed in Bolton Brown's mind. He fought unrelentingly until his death against what he considered to be the misrepresentation of transfer lithographs as true lithographs. For an account of the Sickert-Pennell trial from Pennell's perspective, see Elizabeth Robins and Joseph Pennell, *The Life of James McNeill Whistler* (London: William Heinemann, 1908), vol. 2, pp. 186–92. See also Katharine Lochnan, "Whistler and the Transfer Lithograph: A Lithograph with a Verdict," *Print Collector's Newsletter* 12 (November-December 1981): 133–37. Brown would rise from

financial interests. People would be civil but they would not seriously push forward what I was trying to push forward. One of the largest dealers in the city told me himself, in so many words, that on account of having "money tied up in Pennell's transfers they could not afford" to go against their business interests. The newspaper critics and museum curators were caught in the same trap; they were committed. The twenty years of Pennell's hornblowing had paralyzed whatever faculties they originally may have possessed. They took the tone that my insistence on distinguishing sharply between drawing on stone and transferring from paper was just a personal whimsey: "You know how artists are." They would smile and, unasked, freely forgive my little aberration. "Two of a trade can never agree," laughed Miss Hutchinson, print curator at the Brooklyn Museum, when I was making my point against Pennell's transfer doctrine.[17] And then, another friend, Dr. Weitenkampf,[18] in charge of the prints at the New York Public Library: "Yes," he replied to me, "but in the gardens of the gods there are many flowers." "Quite so," I countered, "and for every one of them there is a name." Dr. Weitenkampf had been holding one of his educational exhibitions, a display arranged to show typical examples of all the print processes, and so I went on, "You do not jumble, in your collection, prints which are etchings and prints which are steel engravings, and yet these are printed in the same way, and the only connection between transfers and lithographs is that they are printed in the same way. Why this inconsistency? Here you put up a professedly educational show; all sorts of processes especially to teach the ignorant what the words etching, mezzotint, and lithograph really mean; and in place of a lithograph by any one of the scores of masters who created and made deservedly famous the unique art of drawing on stone, you put up and label as 'A Lithograph' a Joe Pennell transfer. And then you have the nerve to talk to me about the garden of the gods. The garden of the gods will be all right by me as soon as you give each flower its proper *name.*"

There would seem to be two reasons why newspaper writers and curators took up with Pennell in this contention. One is that having once accepted him at his own valuation as a "lithographer" (see *Encyclopaedia Brittanica,* Eleventh Edition)[19] and Whistler as a "master," and Fantin-Latour as a shining example, they would lose face if they did not stick to their original position. That they should learn something, and acknowledge it, would be quite too much to expect. A book I was just reading remarks, "The journalistic profession tends to make men oracular." And then again, if they were to try to speak of transfers as transfers and crayonstones as crayonstones, obviously they would have to have powers of observation great enough to enable them to tell one from the other. Where would a critic land who, in the presence of a steel engraving, criticized it as if it were an etching? They like to remember, and do their best to believe, Pennell's statement that whether a thing has been drawn on stone or on paper "no critic can tell the difference." I shall not go into this matter technically here; I have sufficiently handled elsewhere this preposterous and brazen lie.[20]

The simple fact is that, if we accept lithography historically—and technically as well—in the same sense that Walter Sickert and the world formerly understood it,[21] none of the three men just named was a lithographer at all. But curators, dealers, and art writers class their work as lithography. Precisely because they do so I have been compelled to coin a new word for the thing which formerly the word lithography meant: I refer to the word *Crayonstone.*

IT WAS AS A PAINTER that, back in 1912, the National Arts Club elected me a life member. In February, I think it was in 1924, the club invited me to install in its extensive galleries a comprehensive demonstration of

lithography.[22] The chairman of the Arts Committee was Harold Howland; he dealt with me and of course he knew nothing. He desired me to produce a lot of other fellows who should be a part of the show. "Well, who are the others?" he kept saying, "You aren't the only one." "Indeed," I replied, "I shall be extremely glad to meet the other artist-lithographers whenever they get here. I am really lonesome. Go out and dig up a few of these other fellows and we will have them in, too gladly." But he couldn't dig up one, and neither could I.

Therefore I hung the walls full of my own prints. A press also, in fact a complete printing plant, was included in my demonstration. It even included a printer, since I wore my work apron and functioned in that capacity throughout the month. The situation lent itself more to portraiture than to my usual landscapes, and I had the luck to induce several good-looking ladies to sit as models while I drew them on the stone. Among these stands out the memory of the beautiful and gifted Russian, the Baroness Leja de Torinoff, escaped from the Bolsheviks barely with her life, while her people were, under her eyes, butchered in the streets. While the drawing was being made she told me about the old life she had lived in Russia: their estate included many villages, eight hundred peasants, and her set of dinner dishes was of pure gold.

On the walls of the club gallery I posted a program, assigning certain evenings to certain groups of people. One evening was for the members of the Association of Lithographic Employers. These were the men who ran the big commercial houses; they "employ" the actual workmen who do the printing. When their evening came, a most interested and interesting group of them turned up. I gave a talk and, upon request, pulled a few prints in their presence. At once they wanted me to have a session of instruction to which they would send their chief printers to learn how these things were done. They spoke of a school at Woodstock, and when I told them I had no lodgings for such a body of men, they thought the men might be provided with tents. Well, it was a lovely thought! My woods and stream banks all full of printers in tents wanting me to teach them! But it was just a mirage; I let it pass.

I showed my group of employers how perfectly easy and sure it was if you only knew how. A little scrawly print lay on the stand. Holding it up, I offered it as an illustration of my statement. "At noon today," I said, "one of our typewriter-girls came through this gallery on her way to lunch. Observing she was interested, I said, "Come on. I'll show you how to make a lithograph if you care enough about it to omit your lunch!" She abandoned the lunch idea and at my direction placed a stone on the graining stand. I touched nothing. Step by step I simply gave her orders. "Do this. Do that." And she had presently grained the stone, dried it, sketched on it, etched and gummed it down, dried it, sluiced it off, washed out crayon, rolled up with ink, put stone on press, laid on paper, and pulled a print—all inside of an hour." And there was the print itself to confirm my story—technically perfect. They looked at each other—those lithographic employers. Said one, "That isn't much like the way it goes with our men, is it?"

Another evening was given to the actual printers, the men the employers employed. This evening was totally different from any of the others. The reason was that every one of these men had been educated not through his ears by words but through his eyes and his muscles to an understanding of the very things that I also had been so enthusiastically studying. When we talked—and we talked a lot—each knew what the other meant, in terms of sense experience. Whereas, the talk of literary people is just words derived from other words. I cannot speak for my visitors, but for me that evening was a treat. One grizzled veteran of the roller, gazing meditatively on the prints about, observed, "Lithography always was a trick, and you have a super-trick." They talked with each other, quietly, and some produced from their vest-pockets little folding

21. *continued*
the grave to challenge Lochnan's statement that "the convenience of the [transfer] paper, together with the fact that it left the drawing the same way around were great improvements over the cumbersome stone and reversed image" (p. 134).

22. Brown's demonstration at the National Arts Club was in 1922, not 1924. See the *New York Times,* 9 March 1922, p. 16.

microscopes through which they intently scrutinized the black granules that composed the tones of my lithographs. I did not ask them what they learned, but I judged they found each black speck doing its duty.

Another night was scheduled for the "art critics." Honestly desirous to bring them into contact with some actualities that they would not ordinarily have the opportunity to see and, if it might be, to awaken in them a more intelligent interest in the powers and resources of the greatest of all the print processes, I wrote them personal notes, quite sincere and as courteous as I could. Not one of them put in an appearance or answered my invitation. I have a feeling when I consider art critics as a class and in a general way, that they do not want to know things—they want to *say* things. And moreover, when a matter is open to demonstration and has been conclusively demonstrated, there is nothing further to be argued about; the gabfest has been spoiled.

One afternoon there entered a man from China—a Chinese man. An American gentleman had him in tow, seemed to be showing him our city, as it were. After some floating about, the American came over to me and explained the superior brand of his Chinaman. I forget the details now. "And," said he, "he says he has seen a great many things in this country that have interested him, but the only one he has wanted to carry back to China is that print of yours over there." It was the *Morning Sunshine* print and it was bought and taken to China.[23]

There was a middle-aged lady who wanted her portrait done on stone. I agreed to do it and to give her six perfect proofs for a hundred and fifty dollars. While the event was in progress, and going well, the sister of my sitter appeared and began to look over my shoulder and make suggestions. I had drawn the lips slightly parted and this she assured me would not do at all: portraits never had their mouths open. Moreover, she assured me that she had known her sister all her life and therefore knew her very much better than I, and if I were wise I would listen to her advice.

A collector, old enough to have grey hair, looked about for a time and then spoke across the room to me, "You'll turn in your grave when you know what prices these will bring after you're dead."

When Mr. Pennell came in I welcomed him properly, but the handshake I got was pretty fishy. That was the time he told me he had discovered how the old masters had made their grand skies. He gloried in puncturing somebody's balloon, so now he was puncturing these overrated old boys for my benefit. With much positiveness and as gravely as though he expected me to believe him, he affirmed that they made their skies by rubbing them with a rag, and that he "could make one in five minutes." If Pennell had had the least glimmer of a sense of humor, what a different world he would have found himself in. Glancing along the walls as he shambled out he growled, "Well, I haven't got up to that—or down to it."

For a month this affair at the club afforded me employment, amusement, and even—as in the affair of the old masters' skies—scraps of education. Fellow members, drifting through, made affable remarks and quoted for my encouragement the appreciative things they had heard somebody say. On the whole I enjoyed it. True, I did an extremely small amount of business. I did get fifty dollars for a proof of *Moonlight Bathers.* But as I have never been a businessman my luck in this direction neither surprised nor unduly depressed me.

Probably it was as a result of this demonstration that the firm of Knoedler and Co., then on Fifth Avenue, invited me to give a show in their galleries.[24] They told me they learned that in lithography I was the top man. The exhibition was duly hung, constituting my third one-man show, the first having been given in the Ehrich Gallery.[25] In the matter of the Knoedler display it was Mr. Collins whom I personally dealt with. Everything went as smoothly as possible. We had a stand in the center of

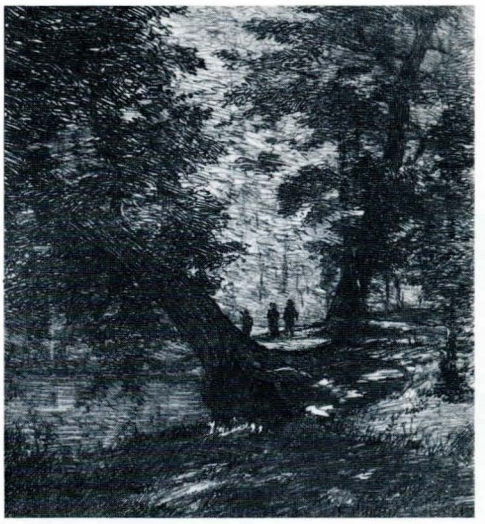
23. Beginning with his first lithographs in London, it was Brown's practice to assign a serial number to each stone. He soon began to write these numbers within the image on the stone and to encircle them. By use of these serial numbers and information contained in his journal, it is now possible for the first time accurately to date most of Brown's lithographs. (A second series of numbers, not encircled and usually prefaced by the letter "C", refers to crayon formulas given in his journal; these numbers should not be confused with the serial numbers.) *Morning Sunshine* (Brown 238) was drawn in 1920.

24. Brown's exhibition at Knoedler & Co. was reviewed in the *New York Times,* 22 October 1922, sec. 8, p. 8.

25. The Ehrich Gallery, directed by Harold Louis Ehrich (1880–1932), was located at 707 Fifth Avenue.

the gallery with a grained stone on it and a piece of crayon attached thereto by a string so anyone could try his hand. At Mr. Collins' request I was present most of the time. I did not want to be and warned him that I was worse than worthless in such a capacity, but as he thought otherwise I yielded and kept myself more or less in evidence. We sold a few—not many. We got forty dollars for a copy of *Summer Night* and thirty for one of *The Picnic.* This latter was the first sale of a print by my "New Process" (for which, see *Lithography for Artists*).[26] It is the print which appears in reproduction on the jacket of this volume. One critic found fault and took me seriously to task about some of the new process effects. "Why," he growled, "you have no right to do this. This sort of thing belongs to the etchers. You're stealing it."

Miss Elisabeth Luther Cary gave us the once-over, and printed so cool a review of us that some considered it prejudiced.[27] Miss Cary is a "Whistlerite," and Whistler is a "great lithographer"—on paper. When the President of the Architectural League looked at the portrait studies he said, "I never saw it better done." The President of the Heywood Lithographic Company spoke most appreciatively, and he was the man who paid forty dollars for the *Summer Night.*



Bolton Brown. *Picnic,* 1922.
Lithograph, 238 × 218 mm.
Collection, Tamarind Institute.

AT ONE TIME there was talk to the effect that the Society of Painter-Gravers[28] was to open a club house, and on the top floor were to be etching presses and lithographic presses and I was the man that was to go with them. But it was just another mirage. Various organizations had me before the public to lecture and demonstrate. I think I lectured twice at Columbia University. Once I gave a talk at Princeton. At the Milwaukee Art Museum I made and printed a crayonstone lithograph before the audience. In a number of other cases I did the same thing. It became a routine with me. The Philadelphia Print Club put me on for an evening. The response was excellent but the audience was so small that it hardly existed. When I sat down, the president of the club asked Albert Sterner to take the floor. He said he did not see that I had left him anything to say, but by way of filling up the gap he stepped to a group of old-time lithographs which I had put on a screen there and condemned them in bulk. They were not his style, of course. They were not in the style of anybody today, but they were very excellent things in their own style, nevertheless. Albert assured us, however, that they were "perfectly worthless." Strange—how all the idiots lived just before *we* came along.

At Montclair, New Jersey, I gave a similar lecture and demonstration—audience packed and keenly attentive. A press had been trucked out from New York for the occasion. Two hours before it was time to begin I made the discovery that the handle had not come with the press. Over the phone we got one started from the city and just as I had a crowbar arranged to do its work it arrived. This press and its haulage were the free voluntary contributions to the cause by the President of the Senefelder Litho Stone Company, Mr. Louis Bechtold, a gentleman who has all along understood what I was trying to do and has steadily backed me up in it.

At one time I had almost launched Charles Platt, the architect, upon lithographic seas, he being, with brush and pencil, quite as much artist as architect.[29] I bought him a beautiful grey stone and sent it, surfaced by me, to his studio. He made on it a drawing of a French village, and then brought it over to Sterner's press at which I happened to be working. While I was preparing it to be printed, Mr. Platt and Sterner stood beside me, talking and joking with each other and with me. Habitually doing my work in solitude, this social hobnobbing distracted me a little. I unconsciously omitted one of the steps in my operation and thereby ruined the drawing. Only once beside this time did such an accident happen to me, or, to speak more accurately, did I commit such a blunder. I was pre-

26. Bolton Brown, *Lithography for Artists* (Chicago: University of Chicago, 1930). Brown describes his "new process" on pp. 66–67 and illustrates *The Picnic* (Brown 430).
27. Elisabeth Luther Cary (1867–1936) was art editor of the *New York Times* from 1908 until 1936. She was an active print collector and many of her articles for the *Times* dealt with prints and printmakers. In a letter to the *Times* following her death, Carl Zigrosser spoke of a recent conversation in which they had talked together "about lithography and the relative claims of transfer versus crayon stone lithography." Zigrosser described Cary as a critic of "absolute honesty. She remained above the battle, and surveyed impartially all movements to the best of her critical ability" (*New York Times,* 19 July 1936, sec. 4, p. 9).
28. The Society of Painter-Gravers of America was founded in 1915 by Sterner, Bellows, Childe Hassam, Boardman Robinson, and others. *See* Ralph Flint, *Albert Sterner, His Life and His Art* (New York: Payson & Clarke, 1927), p. 28.
29. Charles Adams Platt (1861–1933).

30. Glenn G. Newell (1870–1947) was a frequent prizewinner in exhibitions throughout the 1920s.

George William Eggers. *Daylight Saving,* 1924.
Lithograph, 358 × 331 mm.
Printed by Bolton Brown.
Collection, University of New Mexico Art Museum.
Gift of Bernard Karpel.

31. George William Eggers (1883–1958) was director of the Art Institute of Chicago from 1916 to 1921. He and Brown had first met at Byrdcliffe when Eggers was briefly a student-craftsman there. Later, Eggers came to share Brown's enthusiasm for lithography; some of his lithographs were printed by Brown, others he printed for himself on the press that had once belonged to his friend, George Bellows.

paring to print a stone of Glenn Newell's—a drawing of cattle—and he was present.[30] A box of talcum powder and a box of pulverized castile soap stood at hand and I picked up the wrong box. Yes, in dealing with many hundreds of stones, during a period of ten years, I ruined two of them.

Other men beside Platt also ordered stones and received them. Benda, the illustrator, was one of them. I know there were others but I cannot recall definitely, and it makes no difference anyway. Besides getting the artists to buy stones I had another way, which was to loan stones of my own, ready surfaced. I invented a carrying case which should obviate the necessity of nailing the stone up in a box and also had the advantage that it would bring the stone back with the drawing on it in perfect safety. Mr. Bechtold lent me a workman whom I taught to grain a stone, thus relieving me of this heavy labor. Mr. Bechtold came to understand exactly what kind of stones I wanted for my artists, and their sizes, and why.

Another idea my brain evolved was that of simply hiring an artist, for a lump sum, to make me a drawing on a stone, just as a magazine publisher hires him to make a drawing on paper. I would then print the drawing (just as the publisher does) and sell the prints to the best advantage I could. With my skill in printing and my judgment of quality in drawing, this scheme seemed to have distinct possibilities: it only required money, commercial sense, and a little luck. The project did not look so bad, even as business, but the main fascination of it to my mind was the thought of the splendid body of work which I might thus be instrumental in bringing into the world. If I could choose my men, furnish each with exactly his affinity in the way of surface, crayon, and subject—well, we would certainly do things the like of which had never been done before. We would show that the possibilities of this method, when fully understood and used, are vastly greater than has ever been dreamed of.

My public lectures and demonstrations were continually going on. It would be tedious to try to recall and recite them all. My vanity, however, is gratified to reflect that in not one of them did I fail, or boggle at, what I set out to do. One or two more of these public affairs come into my memory as I write. One was at the Detroit Museum of Art where I faced an audience packed to the doors. Another was at Chicago—it was in the days when my old friend George W. Eggers was director of the Art Institute.[31] I demonstrated in Fullerton Hall. What comes back to me about it is the very graceful introductory remarks of the director: he has a gift that way. And one other thing: I pulled the stone and table it rested on clean off the press; they landed on the floor of the stage with a startling crash. We had them back, however, in a moment, none the worse. This happened because I was using an unfamiliar press, not fitted, as most are, with a catch which automatically stops the table from running off this way.

At places where there was no press available I lectured, as one might say, out of my head. I did this at the Brooklyn Museum, and when I had finished, Miss Hutchinson, the curator, was kind enough to say that the talk was so clear that a press would have been superfluous. In a similar way I spoke at a dinner of the Architectural League, also at a gathering of the Association of Women Painters, at the Ethical Culture School, the Salmagundi Club, and the Pen and Brush Club. I gave a course of three lectures at the school of the National Academy.

The Graphic Arts Society invited me to address them in the auditorium at Art Center—Mr. Pennell to be present and to speak in rebuttal. I gave my talk. When Pennell's turn came he began by saying that he found it necessary to "undertake the education of Bolton Brown." Going on then to demolish me, he quoted, and being himself, he quoted so inaccurately that the audience called out, "NO, NO!" I suppose the committee's general idea had been to get Pennell and me tangled up in a personal set-to, just to see what would happen. But I never could see much sense in squab-

bling—in this silly personal way—about matters of art. And besides I was not dealing with a matter of art—that is, of esthetics, matters of taste—but with objective facts, open to demonstration, and by me and a hundred others conclusively demonstrated. So, why squabble, and, above all, why squabble with a Pennell? I merely let him talk. If he was under the impression that I might be educated I was under no similar illusion with regard to him. □

The second part of "My Ten Years in Lithography" by Bolton Brown will appear in the next issue of *The Tamarind Papers.*

FLUORESCENT INKS

Continued from page 7.

The choice of paper is equally important in my lithographs. I believe the soft, Japanese rice papers take my inks better than do the standard, rag printing papers, and I prefer the way they work under a black light with fluorescent colors. I have used many different rice papers, but at this time I prefer to use Goyu.

Personally, I have encountered no difficulty in printing with or cleaning up fluorescent colors in hand lithography, although Irwin Hollander and other printers have told me that they have had problems in cleaning up when printing with these inks. Commercial offset technicians have also told me this. Nevertheless, several artists have made excellent use of fluorescent inks in their prints. To name a few, Robert Rauschenberg made a suite of prints titled *Reels (B & C)*—referring to Bonnie and Clyde—two of which were exhibited at the University of Kentucky in *Graphics 69.* Vasarely uses fluorescent green with standard colors for his optical effects, and Frank Stella has used fluorescent colors in his paintings and prints.

Serious artists do use fluorescent colors, though not so often as we might expect, considering that they have now been developing and improving for forty years. I like bright colors, and I like the particularly keen energy of fluorescents. They work well with the fast fluid images I use in my prints, and I have had no problems with permanence. Although I have seen the fluorescent inks printed on the cover of a catalog fade in thirty minutes, all of my prints still glow, including those done in 1968. I believe these inks may be used successfully in many other kinds of work. Perhaps with a greater understanding of the properties of fluorescent inks, both technical and aesthetic, artists will begin to take advantage of that special light-energy that has been feeding my creations for thirteen years. □

POSITIVE-WORKING PLATES: Further Comment

by William Lagattuta with Susan von Glahn

ALTHOUGH POSITIVE-WORKING aluminum plates have long been used in offset printing, they have only recently been used in the making of hand-printed lithographs at Tamarind Institute.[1] Through use of these plates, an image may be transferred photographically, directly from a postivie transparency, without the intervening step of a negative, thus avoiding a possible loss of fine detail.

Positive-working plates were first tested at Tamarind in 1975. Their use was suggested in order to meet the technical requirements of a project then in progress: a series of lithographs by Jacob Landau, designed as illustrations for Dante's *Divine Comedy.*[2] The specific requirements of Landau's project were (1) to maintain the detail, subtle tonalities, and finely rendered lines of the original drawing in the printed impression, (2) to avoid reversal of the image that occurs when a drawing is made directly on the printing element, and (3) to permit transportation and reuse of the printing element at a later date.

At that time, with the plates then available, a number of technical difficulties were encountered which prevented the printing of large, consistent editions. The plates had little tolerance for the gums and chemicals commonly used in hand lithography; they required chemicals manufactured specifically for the maintenance of a high pH on the printing surface. Additional problems, including the filling or loss of images and a chemical breakdown of the surface, resulted from the abrasiveness of hand printing on plates designed for use on an offset press, where both inking and moisture are subject to mechanical control.

Alympic Gold positive, pre-sensitized plates (electro-chemically grained, anodized aluminum, covered with a light-sensitive, photopolymer coating) proved to be reliable in subsequent work at Tamarind. Jacob Landau provided a sample drawing made with All-Stabilo graphite pencil #8008 on frosted acetate for use in exposure of a test plate.[3]

1. See *TTP* (Spring 1979): 51.
2. Alympic Gold positive, pre-sensitized plates and Posidev developer are available from the Howson-Algraphy Co., Inc., 480 Meadow Lane, Carlstadt, NJ, 07072.
3. The drawing used in Tamarind's tests was done on Cronoflex, a Dupont product. Landau tried several kinds of pencils, including All-Stabilo graphite #8008 and Black #8046, Koh-i-noor "Negro" #350, #2 grade, and Koh-i-noor #1555. Other brands may be used in accordance with individual preference.

Many autographic materials may be applied to frosted acetate, to Kodalith, or to photographic films which contain a screen-dot pattern. Pencil marks on frosted acetate form a random dot pattern and produce a wide range of tonal effects on a positive-working plate. Tests have shown that tusche washes—either water or solvent washes—on acetate result in heightened contrast, as the light burns through the middle tones during exposures. Washes may, however, be applied directly on the plate after processing and counteretching an image from acetate; such washes retain grey tones, though as a result of the shallow, mechanical surface of the plate, there is little reticulation. A variety of textural qualities may be obtained in other ways: Working directly, materials such as cheesecloth or translucent Oriental papers may be placed on the pre-sensitized plate and exposed, offering an alternative to other transfer processes. Indirectly, textures may be achieved through frottage techniques, by placing the acetate over a selected, relief surface, rubbing it with crayon, then exposing the image thus made on to a positive-working plate.

Once the positive image is created on the acetate, tests must be conducted to determine a correct exposure time. The plate is prepared under a yellow safelight and cannot be exposed to daylight until it has been developed. A platemaker with a carbon arc lamp, pulsed xenon, or ultraviolet light source is used for the exposure. The printer may make small test plates and expose a representative portion of the image—along with a step wedge—before exposing an entire plate.[4] It is imperative that the image areas be strong enough to withstand a long exposure, so that the light-receptive areas of the plates may react properly. If the exposure time is too short, the polymer coating in the non-image areas will not be removed completely during development, which will cause scumming and other problems in printing.

After exposure, the plate should be developed with Posidev developer, a mild alkaline solution which gently etches the anodic film and causes the non-image surfaces to become more receptive to water. The procedure is as follows: Place the plate in a tray and pour the developer over it. Wipe the entire plate with a soft cotton pad, without applying pressure (efficient development depends upon the volume of developer used, not on the amount of pressure that is applied). Pour off the developer and repeat the process, using a second application. On the average, it takes only three to five minutes to develop a plate. Wash the surface thoroughly with water, apply Western A. G. E. (asphaltum gum etch), and buff it down as the label directs. After so doing, follow normal etching and processing procedures for aluminum plates.

The printing of positive-working plates requires certain precautions. The amount of ink on the slab and roller must be monitored constantly to avoid overinking. It is advisable to use the lightest possible pressure consistent with a full impression. Scumming and physical breakdown of the plate may occur if the ink layer is too heavy or if too much pressure is applied through the press. Intermittent applications of hydrogum, lightly buffed down with kimwipes after each twenty impressions, may help to maintain the adsorbed gum film.

In the course of Tamarind's tests, thirty impressions in black and forty impressions in colored ink were first pulled from the Landau plate; then the plate was counteretched and crayon drawing was added. Another thirty impressions were printed, during which the plate was completely stable. The plate was then again counteretched, and water washes were added. A final thirty impressions were printed, again without apparent change in the image and without scumming in the negative areas.

In conducting these tests, we were much aware of the possibility that positive-working plates may be readily misused in artists' lithography: they lend themselves to purely reproductive work. But the possibility of their misapplication should not prevent their appropriate use in hand printing; many artists will find that these plates offer creative alternatives for use in lithography. Some reasons for use of positive-working plates have already been suggested. The method may be of particular value to artists who employ collage-like techniques, or who combine photographic elements with drawing. A simple negative—or drawing on transparent or translucent film—may be exposed both on a positive-working and on a negative-working plate in order to achieve an accurate image transposition. Ultimately, it is the decision of the artist and the printer to determine the circumstances in which the use of positive-working plates may best satisfy the aesthetic requirements of a creative project without violation of the ethical standards of artists' printmaking. □

4. A step wedge is a transparent value scale used in photographic and commercial printing industries; it contains a number of steps from transparent to solid black. A Stouffer 21 Step Sensitivity Guide, distributed by the Howson-Algraphy Co., was used for these tests. The Landau drawing was exposed for five minutes (ninety units) with a pulsed xenon platemaker. The light penetrated step 3 of the scale, assuring that the plate would be clear in that area after development.

INFORMATION EXCHANGE
A column for discussion of questions and suggestions from readers
by John Sommers

Neutral Rag Papers At The Press

BUFFERED PAPERS introduce new problems as the printer endeavors to maintain printing surfaces during the proofing and running of lithographs. In an earlier "Information Exchange" we noted that "printers may have already encountered printing problems resulting from the use of buffered papers, without having been able to determine the cause."[1] This has proved to be the case. Guitta Corey of Solstice Press in Anchorage Alaska telephoned in December to ask about a printing problem new to her. Early into the second proofing of a crayon drawing on an aluminum plate, ink dots began to appear in the negative areas. Large open areas could be cleaned out with hydrogum and magnesium carbonate, plate conditioner, and/or deletion fluid, but this solution was only temporary, and in the long run actually complicated the problem, for when those materials were applied, even if followed by gum arabic, they only weakened an adsorbed gum film already under siege. To complicate the problem further, ink dots which appeared in the negative areas between image dots caused bridging, and the resulting printed impression was randomly spotted in the areas drawn with crayon.

The cause of the problem is subtle and, in retrospect, one to be expected. The pH of paper (before buffering) results from the way it is made: the pH of the water that is used, the nature of the fibers, the bleaches that are employed, the pigments and dyes that are added, and the amount of time the paper is washed before couching. Water, the single most abundant material in a paper slurry, will have a pH determined by its source. The natural pH of the water is derived from the paths it has followed above or underground. Prior to its use in papermaking it may have been chemically treated by man or affected by acid rain. Whatever the source of the water used in papermaking, its pH is usually too low to permit a neutral finished paper (pH 7). To solve this problem, buffering agents (compounds used for buffering, carbonates of calcium and/or magnesium, neutralize well, often causing the pH of the paper to be above neutral, sometimes as high as pH 9. Not all of the compound placed in the slurry is consumed in the neutralizing chemical reaction, thus some of it is left as a residue between the fibers of the finished paper. The residue of buffering, forced out of the paper in printing, is deposited on the surface of the plate in intimate contact with the adsorbed gum film, which must be maintained at a pH of 4.5 to remain effective. As the buffering compound reacts chemically with the acidity of the printing surface, the pH is raised slowly and in a spotty fashion. Particles of the buffering compound lie on the plate surface and are pressed into the plate and its adsorbed gum film each time an impression is printed on buffered paper. As a result, the adsorbed gum film begins to deteriorate, and as the gum arabic molecules come off the plate surface, holes are left exposing raw plate. These holes are capable of reacting to the greasy residue of ink application, with the result that ink dots suddenly begin to appear. If care is not taken, the ink dots will become established, and more dots will appear as the adsorbed gum film continues to deteriorate even more rapidly as the neutralizing residue accumulates. In addition, some residue from the paper is picked up in the sponge and deposited in the sponging water, slowly raising its pH. If this situation is complicated by a high pH in the sponging water (tap water in many cities has a pH of 5 and above) this neutralizing activity will take place even faster. Sponging water is best at a pH of 4.5, for at this degree of acidity the adsorbed gum film remains strong, attached, and impermeable.

It is easier to avoid these problems than to solve them. The printer must become acquainted with the buffered papers which are in the marketplace, and when printing is to be done on these papers, provision must be made to keep the plate or stone surface at a pH of 4.5. The simplest procedure is to test the pH of the sponging water and, if it is above 4.5, to add phosphoric acid drop-by-drop until the correct pH is reached. It is also possible to add a very small amount of gum arabic to the water; its presence in the sponging water refreshes the adsorbed gum film as the printing element is sponged (too much gum, however, will cause the printing paper to adhere in printing). If a pH of 4.5 is maintained throughout the printing session, the alkaline residue in the buffered papers will not interfere with the adsorbed gum film.

If a particularly greasy ink is being printed,

1. "A New Concern: Buffered Papers," *TTP* 4 (Winter 1980-81): 30.

or if the ink has a tendency to disintegrate (scum), constant effort must be made to remove this contaminating material from the plate surface between passes with the roller. All inks deposit some residue of their vehicles and wetting agents as they are applied: residues which are often invisible, but reveal their presence through tiny, colorless, water-repelling specks when they are left to accumulate on the surface of the printing element or in the sponges. If such a residue is accompanied by "tint out" (pigment which dissolves in the sponging water), it is easy to see and is then usually removed. Though the printer may not see it, a residual component of the ink is being deposited as inking proceeds. In addition, if the run in question is the second or third, an often invisible accumulation of ink residue occurs from offset of the previous printing. The effect of the accumulation of these residues of ink on the plate surface is very much like that of buffering agents. The accumulating material is constantly pressed into the adsorbed gum film, dislodging gum arabic molecules and exposing minute areas of raw plate or stone to grease. Such an action cannot continue long without the formation of unwanted ink dots, as happens when the buffering materials accumulate.

Recommended Procedures:

To remove scum that is not established and to ease the accumulation of ink residues on the surface, prepare a felting solution of 120 ml of water to 15 ml of hydrogum or gum arabic and add four to six drops of phosphoric acid. Mix the solution well, saturate a cloth pad, and wring it out. Use this pad to wipe both the area where the roller is first placed on the printing element and where the roller ended its travel across the printing element. Do this after each pass but before sponging, then wipe that area with a separate sponge and wet-sponge the surface. If the deposit of scum is not visible, or if offset is extremely light, a wet cloth may be used instead of the felting solution. Use of either a felting solution or a wet cloth requires the occasional application of gum arabic to the plate to refresh the adsorbed gum film. This should be done only when the image is rolled up in ink but it may be done in the loose-gumming fashion, either with a sponge or with a Kimwipe. After a few minutes rest, the gum is washed off and the printing continues.

To clean a printing element on the first appearance of ink dots, apply hydrogum and magnesium carbonate to the inked surface and scrub it with a sponge. This may be done with the image rolled up in color ink and without the application of talc; scum and dots which are not established will come off in the cleaning material. When the surface of the element has been washed, apply one of the etches below, allowing it to rest ten minutes, then wash off the etch and resume printing. Dots caused by the residue of buffering agents, if not established, may not appear when the image is rolled up in black ink. When they do appear, however, the following procedure is suggested: roll up the image in printing ink, apply talc, wash out the ink through a buffed gum stencil, apply asphaltum and roll up the image in black ink. After talc is buffed into the black ink, it is completely safe to use the cleaning methods which follow. Apply hydrogum and magnesium as above and if the dots come off slowly or incompletely, add 30 ml of Richgraphic plate conditioner[2] or an equal amount of Scum Off (Hanco, product number 8605) to the gum and magnesium carbonate mixture and continue to scrub; dots which are not established will be cleaned away. Wash the cleaning residue from the stone or plate and rinse the surface well. Apply one-part TAPEM and two-parts gum arabic to an aluminum plate, one-part cellulose plus two-parts gum arabic to a zinc plate or two to four drops of nitric acid in 30 ml of gum arabic (pH between 2.8 and 3.8) to a stone. Spread the etch over the surface with a sponge and buff it well with a cheesecloth pad. Allow the dry etch to remain on the surface for a minimum of ten minutes. Apply fresh gum to the surface buffing it smoothly, wash out the image with lithotine, roll it up in printing ink and resume printing.

If ink dots or other scum do not come off using the cleaning process described above, they have become established: each dot now has its own grease reservoir. Depending upon the printing element and the degree of deterioration of the printing surface, cleaning away the unwanted dots may be difficult or impossible. Cleaning techniques which employ deletion fluids can be tried and, depending on the complexity of the image, may be successful. It is possible to scrub away dots which are established in the negative areas with deletion fluid, but if they have bridged image dots, are intermingled with them, or have caused them to rupture, the situation has become extremely serious.

On stone, image dots which have bridged one with another may be picked out with a needle, and the surface may then be lightly etched, but this procedure is not possible on plates. If the dots within the image on a plate or stone are not firmly established, and if the image was initially

2. Richgraphic plate conditioner is no longer available on a regular basis but may be special-ordered from its manufacturer. See also *TTP* 3 (Spring 1980): 59.

put into a lacquer base, it is possible to remove bridged ink dots with a very dilute solution of Richgraphic Plate Cleaner, 30 ml in 200 ml of water. The image should be rolled up in black ink and talc applied after which the plate surface may be carefully washed with the plate cleaner mixture; careful and delicate application must be made in the image areas so as not to remove too much ink from the image for Richgraphic Plate Cleaner has a powerful solvent action even when diluted.[3]

Finally, there is the phenomena of the ruptured-image ink dot to consider. I have seen this situation in only two instances, once in a wash on a plate and once in a crayon drawing on stone. In both cases the printer saw the occurrence instantly and, upon rolling up the image in black ink, found it to be corrected. Examination of the ruptured image dot under a powerful glass revealed a small hole in the center of the dot with a surrounding residue of ink. Speculation as to cause leads me to believe that some particle of an unidentified paper buffering agent was pressed into the dot and caused a chemical reaction which exploded ink out of the center of the image dot. In both cases the image was in lacquer, and because the printer reacted immediately by rolling up the image in black ink and applying a light etch, no permanent damage was done. Further study of this occurrence on both stone and aluminum, without a lacquer base, is needed, and could serve to extend our present knowledge of the chemical nature of lithographic images. □

3. Richgraphic Plate Cleaner concentrate is a deletion fluid formulated for use on negative working photographic plates; while it will remove all ink from the plate surface it will not irreparably harm a photo-lacquer base. Blue and watery in consistency, its pH is well above 10.6, while the diluted plate cleaner has a pH of 10.3. This pH is very close to maximum (lye has a pH of 14). The effect of such a high pH is completely to destroy an adsorbed gum film on any surface, causing it to lose its bonds and to be released from the surface. In addition, the high pH has an effect equivalent to a very strong etch and will attack any grease reservoir not protected by lacquer, ink, and talc, burning it partially or completely.

Dolphin Lithographic Transfer Paper

ABOUT A YEAR AGO Garo Antreasian asked me to conduct tests on a new lithographic transfer paper distributed by Dolphin Papers in Indianapolis, Indiana.[1] After corresponding with Frank Mayberry of Dolphin Papers, who sent a generous supply of DLTP, I designed a series of tests so as to use the paper in every conceivable way. These tests proved DLTP to be one of the most versatile and dependable transfer papers I have ever used. In all applications—the transfer of drawings, stone-to-stone transfers, or plate-to-plate transfers—results were consistently excellent. No special techniques need be used on aluminum; the printer must only learn correct transfer methods and follow them carefully.

DLTP, manufactured in England, is roller-coated with a base layer of starch and a second layer of dextrine, both in very pure form so as to introduce no impurities. The coating is heavy, slick, and smooth, and is therefore not well suited to delicate, crayon drawings, for as on other hard-surfaced papers, crayon techniques tend to slur. Consistently good results are obtained, however, when drawings are made vigorously with crayon, with solvent-based tusche, or with rubbing techniques.

DLTP was chosen as the best available transfer paper through extensive testing by David Keister, printer at Rudy Pozzatti's Echo Press in Bloomington, Indiana. During his tests, Keister also developed a unique method for executing transfers with DLTP. At Tamarind, Keister's method was tested against other procedures and found to be the best, not only with DLTP but also with Charbonnel matte transfer paper and with Prone gum-label paper. The only difficulties one encounters when using this method lie in estimating the degree of dampness that is best, in making the damp pack, and in judging the length of time that a sheet of DLTP should be left in the damp pack in order to achieve the "tackiness" of surface that is required in each transfer procedure. These judgments can be made only when using the recommended transfer process and while applying former experience with transfer papers. In David Keister's procedure, outlined below, my comments have been inserted in brackets:

The use of Dolphin Litho Transfer Paper is an exacting procedure and extreme care must be taken to insure the desired results. *All procedures described require the use of a damp pack.* Before preparing it, everything at the press should be ready for the transfer procedure

1. See the Directory of Suppliers, p. 32.

which is to take place. [Press pressure for all DLTP procedures should be moderate.] Printers and artists must handle DLTP with great care at every stage of the drawing and transfer process.

Preparation of a damp pack

The damp pack is made with clean, dry sheets of newsprint at least two inches larger on all sides than the sheet of DLTP:

1. Use a sponge to wet thoroughly four sheets of clean newsprint.
2. In order to assure that each of these sheets be *evenly* dampened, interleaf the wet sheets of newsprint with dry ones to create a stack of newsprint with alternating wet and dry sheets. Smooth out the stack with your hands and put a weighted board on it. Allow the moisture to move through the stacked sheets for two to three minutes.
3. Using the originally dampened sheets—now evenly dampened—start another stack with these damp sheets and three new, dry sheets:

1 dry sheet
2 damp sheets
1 dry sheet
2 damp sheets
1 dry sheet

4. Smooth the stack, weight it, and allow it to stand for two to three minutes.
5. Remove the middle dry sheet and replace it with two clean, dry sheets. Weight the damp pack for one more minute.

All is now ready for either the direct transfer or the re-transfer technique.

Direct transfer

1. With the press in readiness, place the DLTP carefully between the two driest sheets of newsprint in the damp pack. The DLTP emulsion should become evenly tacky; the time required to achieve this will depend on the dampness within the pack. Test the tackiness by exposing a corner of the DLTP and lightly tapping the emulsion with your finger. [This is a critical stage because the DLTP emulsion softens quickly; *the emulsion must be only sticky enough to secure it to the plate or stone as it passes through the press under pressure.* If the emulsion becomes too soft, the drawing, or re-transfer, will be squeezed into it, co-mingling emulsion and ink or drawing material, and the transferred image will be damaged. The advantage of this procedure is that it allows the transfer paper to be secured to the surface without water being interposed between the drawing and the printing element, an important advantage in all transfer procedures, but of particular importance on plates.][2]
2. As quickly as possible, place the DLTP paper—now evenly tacky—emulsion side down on the *dry* stone or plate surface, back it with a clean sheet of newsprint, cover it with a rigid tympan and run it once through the press.
3. Using a sponge and warm water, wet the back of the transfer until it is evenly translucent; this will take one or two minutes.
4. Carefully remove the transfer backing from the surface of the stone or plate.
5. Using a very soft brush, apply a mixture of gum arabic and water one-to-one, to the surface of the printing element and spread it evenly over the image. This application is made to remove the emulsion left by the transfer paper. In direct transfer procedures, it is important to remember that water-soluble drawing materials can be easily damaged. Extreme care must be used in removing this gum-water-emulsion mixture.
6. Using a soft cheesecloth, wipe the surface to a smooth finish and fan it dry. [Because of the danger in removing this water-gum mixture, I recommend a different procedure when using water-soluble materials. I blot up the excess water and emulsion using a very soft, clean cheesecloth, folding it to a dry section after each blotting. I fan the surface dry and rely on the etches to remove any further residual emulsion.]
7. Apply rosin and talc to an image on a stone, or talc to the image on a plate and buff it lightly. Apply gum arabic and buff it tightly with a cheesecloth. [When some images are taken from drawing material to roll up with only gum arabic as an etch, there is a danger of excessive grease-growth (filling). Except for very light crayon drawing or solvent tusche wash on aluminum, I recommend that a well transferred image be given an etch slightly weaker than that which would be used on a direct drawing.][3]
8. The image may now be washed out using lithotine, an ink base applied, and the image rolled or rubbed up.

Retransfer technique

1. In a one-to-one ratio, mix Charbonnel retransfer ink or Sinclair and Valentine stiff transfer ink (FL-61173) with Graphic Chemical's Senefelder Crayon Black ink.[4] Roll up the image to be transferred and pull a proof to insure correct inking, then roll it up again in preparation for printing on DLTP. Fan the printing element until dry.
2. Place a clean sheet of DLTP, emulsion side up, into the damp pack. Allow the emulsion to become only slightly tacky. If the emulsion is

2. "Lithographic Transfer Papers," *TTP* 1 (Summer 1977): 84.
3. Ibid., p. 85.

too sticky it will adhere to the printing element when the image is pulled. If properly dampened, it will release slowly as it is pulled from the surface, and the image will be of excellent quality, picking up very fine tonalities often lost with other techniques. This impression on DLTP will be useful as a transfer as long as the ink does not dry. It must be carefully protected while it is in storage. If desired, additions and deletions may be made on the transfer before it is transferred to the new surface.

3. Follow the direct transfer procedures as given above, steps 1 through 8.

4. Tamarind does not use retransfer ink. Instead, we prepare a mixture of Charbonnel Noir à Monter, for grease content, and Graphic Chemical's Senefelder Crayon Black, for firmness. The two inks are hand-mixed in a proportion which satisfies the requirements of each image. If delicate imagery is to be transfered, the ink should be a firmer mixture, and, if sufficiently firm, may require addition of a varnish to ensure adequate tack and grease content. If the image to be transferred is rich and broad, a softer ink (containing more Noir à Monter) will ensure the fullness of rich passages and/or solids.

Daniel Cytron: Fine Artist's Color and Ink

COLOR LITHOGRAPHY has all but replaced the traditional use of the medium in the making of black-and-white prints. For some artists who work in lithography, color saturation and special effects of pigmentation are of prime importance. For a number of reasons, these qualities are often difficult to achieve with the lithographic inks that are generally available. The pigments with which most color inks are made cannot provide the depth and resonance of color required by artists who are accustomed to working with oil paint, perhaps using the paint directly from the tube. Working with a number of painters, Daniel Cytron, a painter himself, developed special compounds of pigments to satisfy the individual requirements of these artists. It would follow that, in response to a perceived need for fully saturated pigments in lithographic inks, he would apply his experience in the formulation of artist's pigments to the making of such inks.

Under the business name of Fine Artist's Color and Ink, Cytron compounds and distributes both pigments for painting and pigments for lithography. The colors are specially compounded on order and are delivered within a few days. The color inks are rich and heavy-bodied, containing as much pigment as can possibly be incorporated into them; as such, they are not designed to be printed by themselves but must instead be modified in some way through use of transparent base, opaque white ink, and/or varnishes and other modifiers.

It is not possible in this brief description of Cytron's inks to provide full information about each of his colors, but the list that follows may indicate their range: *Cobalt Brite Blue* (pure cobalt pigment), *Cerulean Blue* (pure cobalt pigment), *Blue* (indanthren Blue), *Black* (iron, cobalt and manganese), *Permanent Copper Complex Yellow, Organic Primrose Yellow* (quinophthalone), *Crayon Green* (pigment yellow 83 and pigment blue 15), *Ultramarine Blue* (pigment blue 29), *Turquoise Green* (phthalocyanine), *Hot Red* (mono azo), *Violet* (carbazole). All of these inks contain highly condensed pigment and are not designed to have a long shelf life. They must be used within a few weeks of delivery. For this reason they are packaged in small glass jars and are sold by volume rather than by weight.

As I have already mentioned, some inks are compounded for special effects. Among these are *Silver* (pearl essence), *Exterior Pearlessence White* (hi-strength pearl), and *Iridescent Gold* (pearl essence). These are truly unique printing inks and provide the special effects that their names suggest.

Daniel Cytron has said that he is willing to formulate an ink for any printing need. To discuss special orders or to order any of the inks listed in this article, call him at (213) 488-9990 or write to Fine Artist's Color and Ink, 212 Los Angeles Street, Fifth Floor, Los Angeles, CA 90012. □

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 Ave. LIC, NY (213) 937-7100. Largest selection of papers for printmaking. Sheets & rolls, colors, special makings, large sizes, custom watermarks. 100% rag Museum Board in 4 shades of white 2, 4 & 6 ply. Acidfree Colored Matboard.

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 and mouldmade printmaking papers. Somerset printmaking paper: mouldmade, 100% rag, neutral pH. Avail. white, cream, softwhite, & sand, textured & satin finishes, in 250 gr. & 300 gr., asstd. & custom sizes.

Dolphin Papers. 624 E. Walnut St., Indianapolis, IN 46204. (317) 634-0506. Dolphin Litho Transfer Paper. Acid-free papers for printmaking, drawing and painting. Arches; Rives; Fabriano; Richard de Bas; Barcham Green; Lenox; others. Free catalog and price list available on request.

Glenn Roller Co. Dept. H, 2617 River Ave., Rosemead, CA 91770. (213) 283-2838. Lightweight hand rollers for printmaking, durometers from 20 to 75, all sizes available, chrome handles. Very high quality. A must for the professional.

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

Handschy Industries, Inc. 528 North Fulton, Indianapolis, IN 46202. (317) 636-5565. Manufacturer Hanco printing inks and lithographic supplies, including gum arabic, cellulose gum, etc.

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 and 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 storage, framing and display products. 64-page Archival Supplies catalog free 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, hot plates, yellow and gray litho stones, Hanco inks, Faust inks, aluminum plates, KM rollers, printmaking papers, chemicals, solvents, tools. Relief, etching, litho and silkscreen supplies.

Daniel Smith Ink Co., Inc. 1111 W. Nickerson, Seattle, WA 98119. (206) 783-8263/Toll Free 1-800-426-6740. Manufacturer of fine lithographic and etching inks and distributor for Handschy, Graphic Chemical, Faust, L&B. Various materials for printmakers including aluminum plates, Carborundum, rollers. Large selection and inventory of European and oriental papers.

The Structural Slate Co. 222 E. Main St., Pen Argyl, Box 187, PA 18072. (215) 863-4141. "Pyramid" brand Pennsylvania slate stone: backing slate, slate plate supports.

Takach-Garfield Press Co., Inc. 3207 Morningside Dr. N.E., Albuquerque, NM 87110. (505) 881-8670. Hand or electric operated lithograph presses. Hand operated etching presses. Inking rollers, automatic tympan and 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 × 48″. Watermarks, shapes, inner deckles, laminations, sizing. Visiting artists program. Custom paper pulp, cotton, flax abaca, linen fiber, books, paper moulds, hydraulic press & Hollander Beater.

Wepplo Press Co., Inc. 8412 Haeg Dr., Minneapolis, MN 55431. (612) 881-0982. Table model etching, manual or electric etching and lithographic floor models Also electric hydraulic litho press. Accessories include scraper bars, color rollers, levigators, hot plates, sinks, acid bath. Brochure available.