WOODCUT

HARRY STERNBERG

PHOTOGRAPHY BY TED DAVIES

Tahquitz Peak
by H. Sternberg
A C.A Gallery

edicated to
y daughter
eslie Louise

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Florentine Figure
Misch Kohn
Weyhe Gallery

Introduction

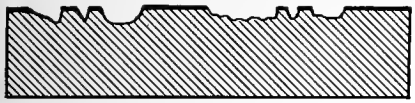
The earliest recorded history of man reveals evidence of his need to communicate ideas and concepts. In order to express himself he used symbol-images, or pictures. The cave drawing, the incised clay tablet, and the illuminated manuscript are characteristic examples of primitive man's mode of communication. All were *original works of art*, none of which could be reproduced. The audience was therefore limited.

The development of the hand-cut wood block (the first of the graphic arts) made possible the *multi-original*. For the first time artists could produce a number of duplicate originals possessing all the special qualities of the single original.

The later evolution of the power press permitted large-scale *reproductions* of original works of art. These reproductions should not be confused with *original prints*.

Der heiligen Leben
by Johann Gruninger, 1502

The Major Graphic Arts Media



RELIEF WOODCUT WOOD

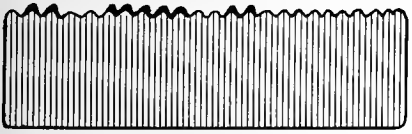
A smooth plank of wood is used for the wood block. The image to be printed is drawn on the block. Those areas which are *not* to print are cut away with gouges, leaving the drawn image raised above the cut away areas. These raised, or relief, areas are then inked and printed.

Detail, K. Kollwitz

INTAGLIO ETCHING METAL

Thin zinc or copper plates are used. Lines, tones, or textures are *incised* into the surface, using acids or tools. The incised lines are filled with printing ink, and the *surface* of the plate is wiped clean. An impression is then pulled on an etching press.

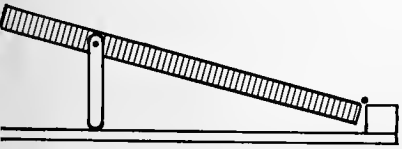
Detail, Picasso



PLANOGRAPHY LITHOGRAPHY STONE

A thick slab of limestone, with one side finely grained, is the litho stone. The image is drawn on the stone with crayon and tusche (litho ink) which are waxy or greasy materials. When the stone is sponged with water, the greasy areas repel the water. When the inking roller is then passed over the stone, the greased areas will attract the ink, while the water-wet areas will repel it. A print is then pulled, using a lithograph press.

Detail, Munch



STENCIL SERIGRAPHY SILK

A piece of stencil silk, stretched on a wooden frame and hinged to a baseboard, is the printing apparatus. The areas which are *not* to print are "stopped out," or blocked out, with glue or shellac brushed onto the silk. Those areas of silk *left open* will print. Printing ink is placed on the silk, and a squeegee (much like a window cleaner's implement) is passed across the screen, forcing the ink through the open "pores" onto the paper underneath the silk. The result is known as a serigraph.

(All prints above from collection of Mrs. J. Konheim)

Detail, H. Sternberg

Selecting Wood For The Block

The wood selected for the block should be of a consistent thickness. It should be soft enough to be cut with reasonable ease by the gouges, yet hard enough so that it will not crumble. The wood that is most commonly used is ⅞-inch thick pine plank. This should be top grade lumber, kiln dried, and without knots. A wide range of widths is available, and lengths can be cut as desired. The scrap heap in a lumber yard is a good source of supply. Poplar, apple, bass, and cherry can be used, each of which varies in hardness and closeness of grain.

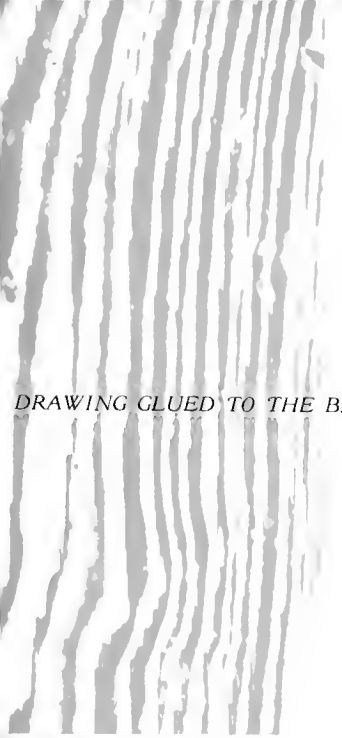
Plywood, which comes in a number of different finishes, has become increasingly popular for use as wood block. It should be of ¾-inch thickness.

Different woods are used to obtain particular grain-texture effects. Experimentation with a variety of woods will determine which one is best for a given project and for the individual artist.

The Preparatory Drawing

A preliminary sketch should be made. The sketch can be traced onto the wood block or lightly redrawn with colored chalk. A careful drawing is then made on the block, using a brush and black ink, or a felt-tipped marking pen. A wash of middle-tone brown ink, or water color, is brushed over the whole face of the block. The block is then ready for cutting.

When a very complicated and detailed block is to be cut, a careful line drawing is needed on the block. The drawing is made on thin tracing paper the same size as the wood block. This drawing is glued onto the block, using a thin starch paste as an adhesive. Then the cutting begins. This technique is illustrated with a woodcut made by Ted Davies.



DRAWING GLUED TO THE BLOCK

WASHING A TONE ON THE BLOCK

DETAIL OF A CUT BLOCK
by Ted Davies

Woodcut Tools

These tools consist of knives and gouges made specifically for woodcutting. The Japanese-designed woodcutting knife, with a 4-inch blade, has the most efficient cutting edge and is the recommended tool. However, any sharp knife made of well-tempered steel may be used. Gouges are V-shaped and U-shaped. These are obtainable in many sizes, as illustrated. They are designed to cut furrows the width and shape of the cutting edge.

A knife, one V-gouge, one U-gouge, and a 1-inch chisel —for cutting out large areas of wood—are sufficient tools for the beginner. Woodcut tools grow dull with use and must be resharpened periodically.

Cutting The Block

The area of wood which is not going to print must be cut away so that it is lower than the printing surface. It is not necessary to gouge out the wood deeply.

The knife is generally used to cut an outline around the area which is to print. The knife must cut at an angle *sloping away* from the printing area. If the knife is held so that it *undercuts* the printing surface, this surface may crumble or collapse when making prints.

The gouge should be held so that the butt of the handle is snug against the pad of the thumb. The gouge is pushed by the pressure of the pad of the hand, not by the fingers. The fingers are used to aim the gouge and guide its direction. The gouge naturally cuts more easily when following the grain of the wood than when cutting against it. A slight rocking movement of the gouge should be used when going against the grain. If the gouge tip is tilted too steeply it will bury itself in the wood. If the angle of cutting is too shallow it will slip and skid off the block.

In order to avoid being stabbed by the gouge, do not cut towards the hand that is steadying the block. To keep the block from slipping during cutting, it should be propped against a strip of wood nailed to the cutting table.

USING THE KNIFE

USING THE GOUGE

DETAIL OF CUT BLOCK

FINISHED BLOCK

Inking Rollers And Printing Inks

Inking rollers are called *brayers*. They are made of rubber or plastic composition and are available in a variety of widths. A 4-inch wide rubber brayer is recommended for the beginner. Rollers that are made with a wooden core inside a thin layer of rubber do not perform well. The brayer with a solid rubber roller is superior.

The ideal roller is made of composition, or gelatine. It is more sensitive for inking subtle areas of cutting. These are used by commercial power press printers for hand proofing and are designed to ink minute textures and lines. These rollers, however, can be easily nicked and dented. Also, heat can distort the shape of the roller.

The roller, inking slab, and wood block should be cleaned carefully at the end of each session of printing. Do not leave ink overnight on roller or block.

Wood-block printing inks are labeled either "water-base" or "oil-base." The water-base inks are soluble in water, while the oil-base inks are soluble in turpentine. An oil-base ink is recommended for beginners because of the many technical difficulties related to water-base inks.

Lithographic inks, manufactured for commercial power press printing, are superior in many ways to the wood-block inks. They usually are a little stiffer, but a few drops of linseed oil will increase their fluidity.

A pane of heavy glass makes a good inking slab. The ink is first placed *at one end* of the glass slab. Then a *small amount* of ink is picked up on the roller and thoroughly rolled out on the slab until there is a thin, even layer of ink on both slab and roller. The block is then inked lightly and re-inked several times before taking a print.

Printing Papers

Wood-block papers have two important characteristics—softness and absorbancy. While ordinary newsprint will serve for pulling proofs, the final prints are always made on Japanese rice paper—manufactured specifically for wood-block printing. The colors are natural (cream) and bleached white. Numerous sizes, weights, and thicknesses are available.

Rice paper has a rough and a smooth side. These can be distinguished by rubbing the paper between the thumb and forefinger. The smoother side is preferred for printing.

INKING THE BLOCK

Printing

A print is made by rolling ink on the surface of the block, placing a sheet of paper on the block, and applying pressure to the back of the paper.

Although presses may be used for pulling prints, most artists prefer to print by hand because of the sensitive control afforded by the latter method.

Any implement with a slightly curved surface—such as a soup spoon—may be used to make the print. This method is illustrated. The back of the paper must be thoroughly burnished, and care must be exercised not to miss any areas. A printing burnisher superior to the metal spoon is a Japanese rice paddle, made of wood or bamboo. The printing tool specifically designed for this purpose is the Japanese *baren*. It is a curved pad made of coiled string which is glued into shape and covered with bamboo leaves. Unfortunately, the Japanese baren is not easily obtainable.

A solid rubber brayer, vigorously rolled on the back of the paper, yields fairly adequate color prints. An iron, set at medium-warm temperature, also gives good color proofs. Neither roller nor iron, however, will produce as good results for black and white prints as a spoon.

SPOONING THE BLOCK

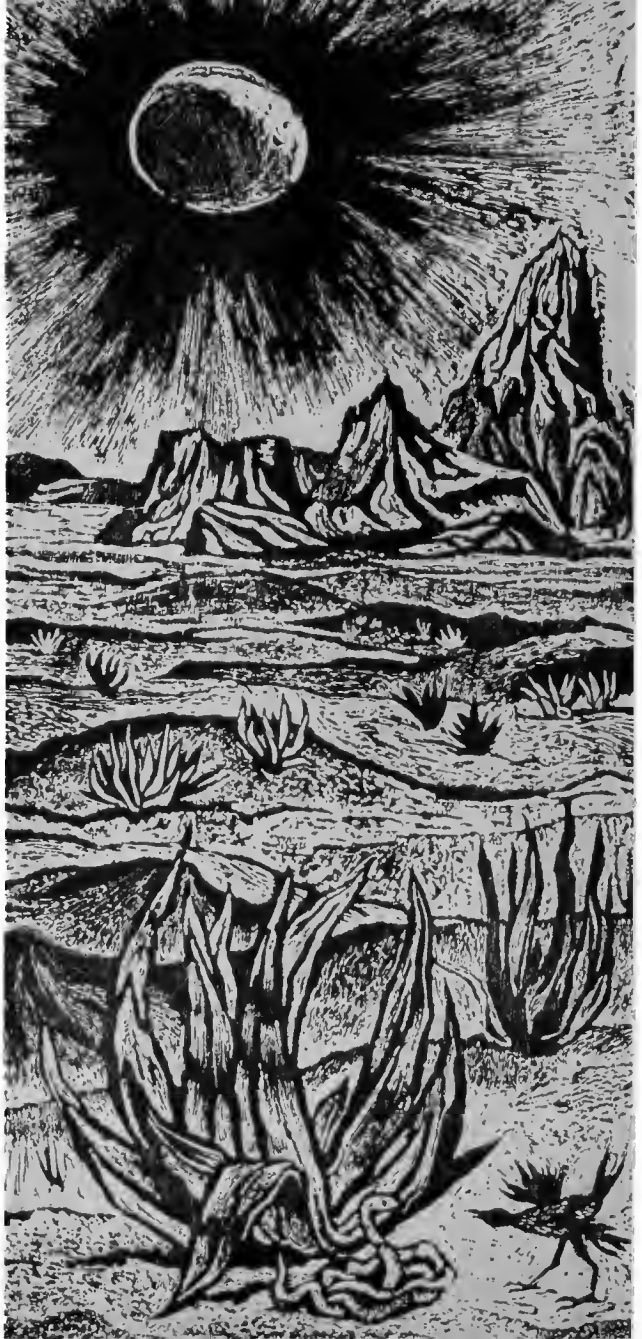
USING A ROLLER FOR PRINTING

USING AN IRON FOR PRINTING

The Drying Rack

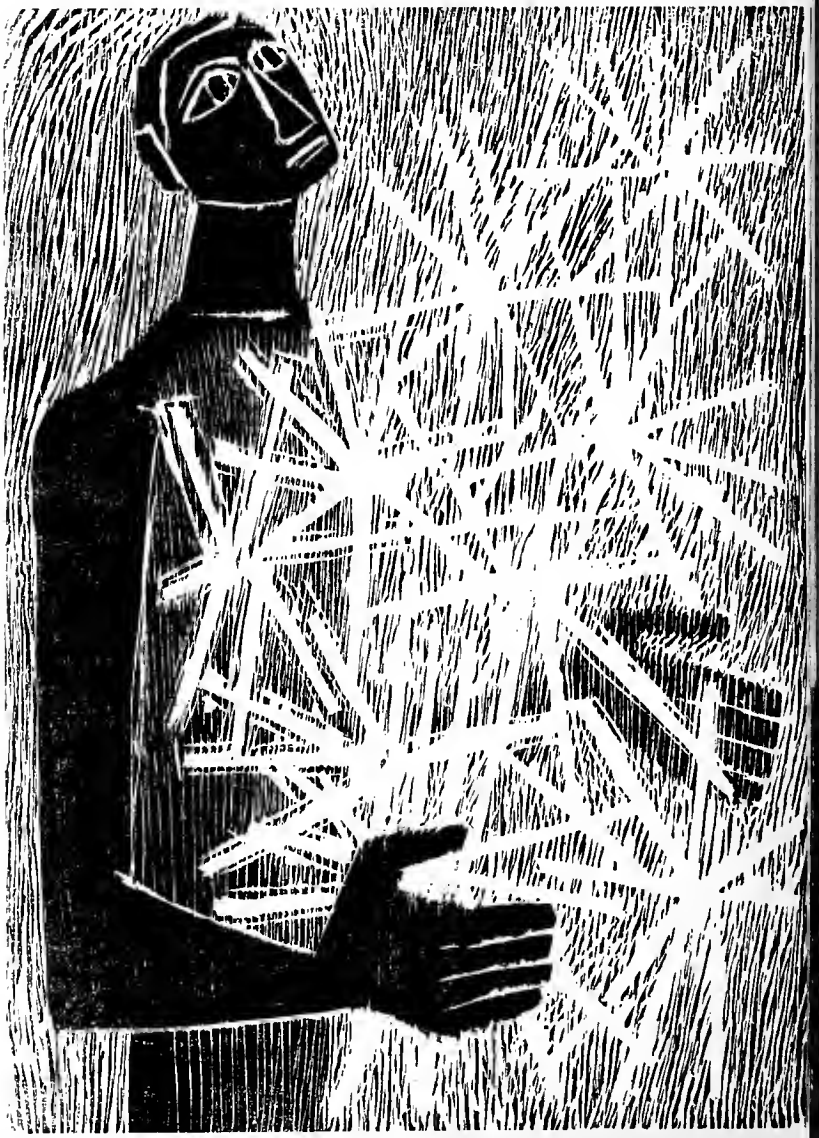
Freshly pulled prints will smear if piled on top of one another. A clothesline-type of print dryer can be easily constructed. Wire is stretched between two points, and clip-type clothespins are strung on the wire. A large number of prints can then be hung in a relatively small area.

THE FINISHED PRINT
Bird and Snake
by H. Sternberg

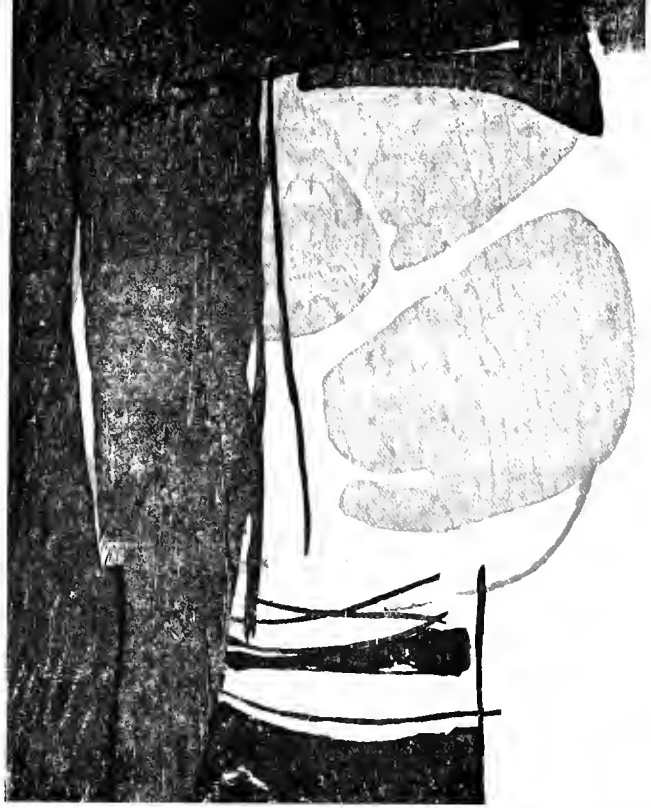


LIFTING A PRINT

People
by T. Deverell
Art Students League Graphic Workshop

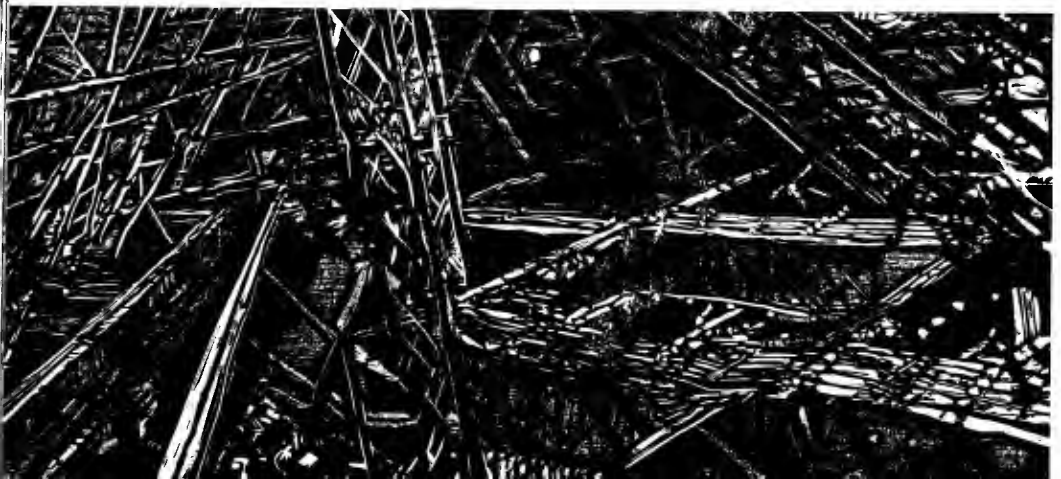


Man Holding Stars
by M. Hoff
Courtesy of the Artist



Composition
by Murao
Art Students League Graphic Workshop

Cat
by A. Singer
Courtesy of the Artist



Detail, The Eiffel Tower
by R. Grill
Country Art Gallery

Contemporary Techniques And Media

Experimentation is one of the outstanding characteristics of contemporary art. Radical improvisations in media and techniques are constantly occurring. It is undeniable that these technical innovations have served to enlarge the expressive range of the woodcut. The print has been transformed from a small, intimate work of art to a work that competes with oil painting in depth and scope, as well as physical scale. The concern with expressive color in painting has tended to direct woodcut to a more extensive use of color. New technical developments have made the woodcut process itself increasingly direct and speedy. Woodcuts have taken on a new freshness and spontaneity, and consequently today's prints bear little resemblance to their ancestors.

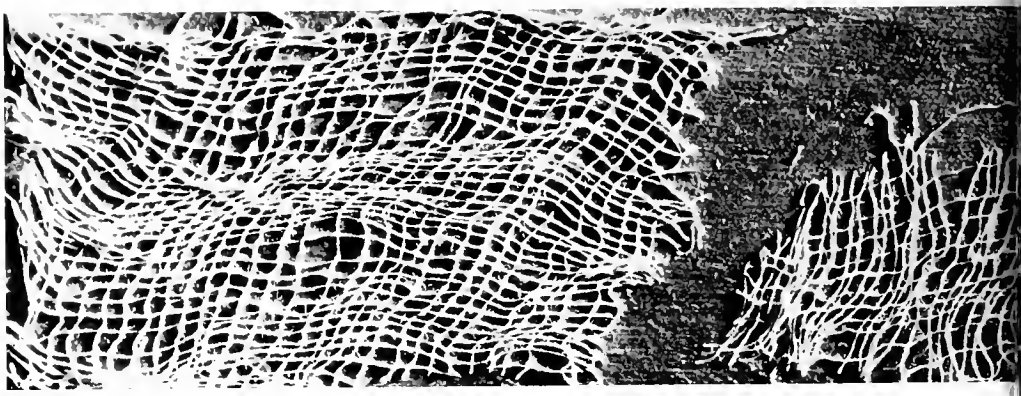
Color separations of a four-color woodcut
Portrait of Leslie
by H. Sternberg

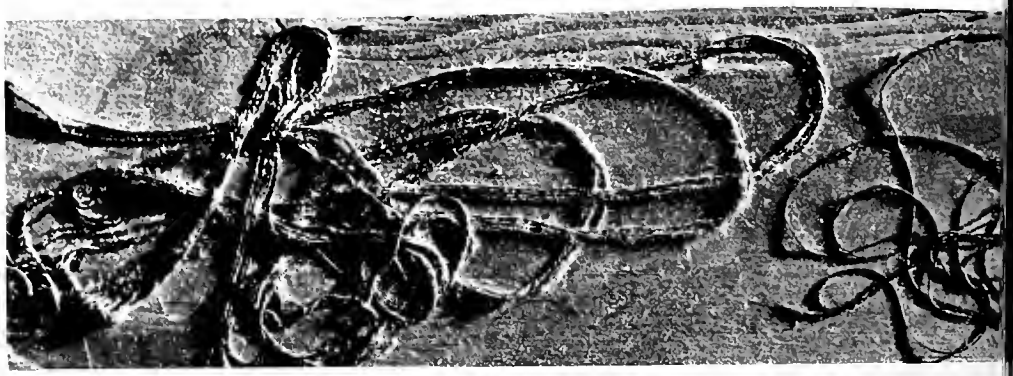
Applied Relief Textures

In woodcut the raised surfaces are the areas which print. The traditional technique, as previously explained, calls for cutting away areas of wood which are not to print. A contemporary innovation involves gluing materials to the surface of the wood block, thus achieving a raised printing area without cutting away any of the block. This concept has expanded the textural possibilities of wood block. Some examples are illustrated on this page. Elmer's Glue is the adherent used to glue sewing thread, string, and mosquito netting to the wood block.

Other textural effects result from the use of glass cement, or plastic glues. These are dripped or trickled onto the wood block.

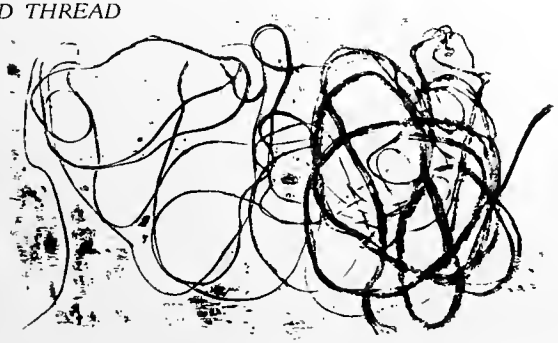
With imagination and experimentation many other printable materials can be found.





MOSQUITO NETTING

STRING AND THREAD



The King
by E. Giobbi
Art Students League Graphic Workshop

The Potted Plant
by E. Nathan
Courtesy of the Artist

A two-color woodcut using a cardboard cut for color and a wood block for black.

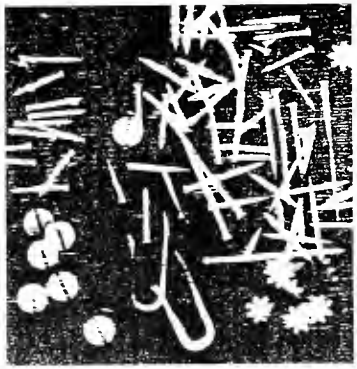
Harlequins
by H. Sternbe
A. C. A. Gallery

A three-color woodcut showing color separations and combinations.

YELLOW PLUS RED

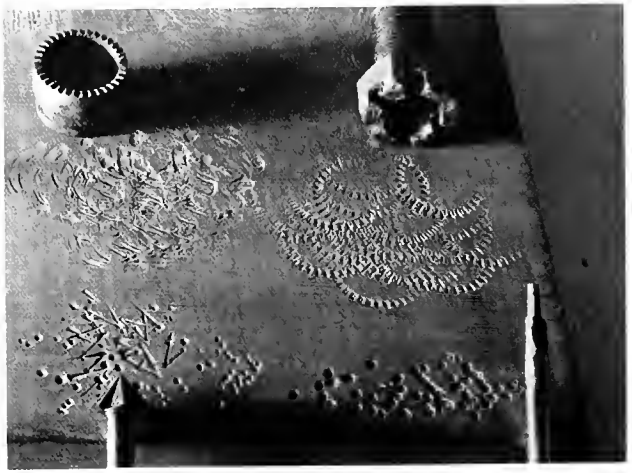
YELLOW PLUS RED PLUS BLUE

Desert Cactus
by H. Sternberg



NAILS AND SCREWS

RANDOM PICKINGS FROM THE TOOL BOX

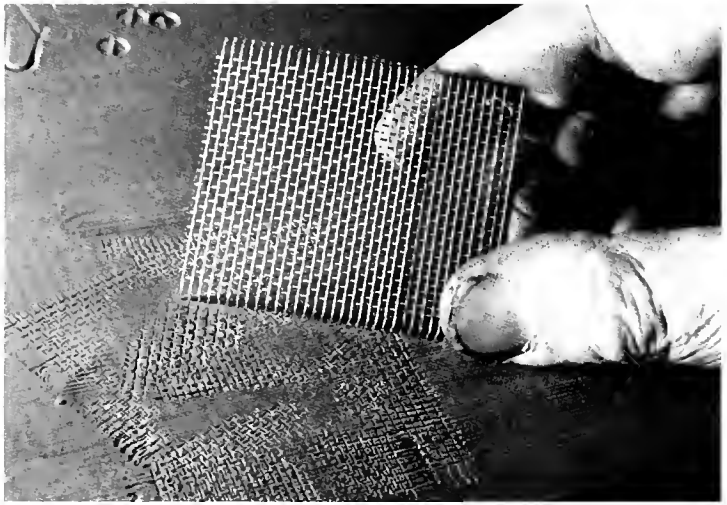


Indented Textures

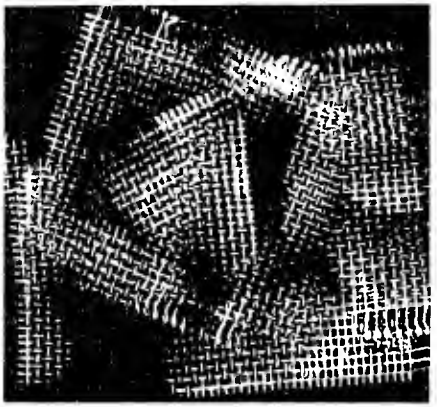
Many interesting kinds of textures are obtained by pressing or hammering unusual materials on the wood block so that the wood becomes indented. The textural effects of nails, brads, screws, wire screening, and picture wire are illustrated on these pages. Any material rigid enough to make an impression in wood can be used. Coarse sandpaper is used to abrade, roughen, and scratch the surface of the block.

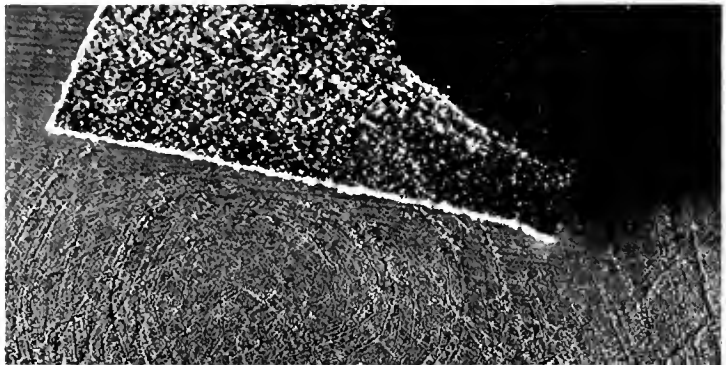
The natural grain of wood can be printed by soaking the wood in water or turpentine, then rubbing it briskly with steel wool. This lowers the softer grain, leaving the hard grain raised for printing.

PICTURE WIRE

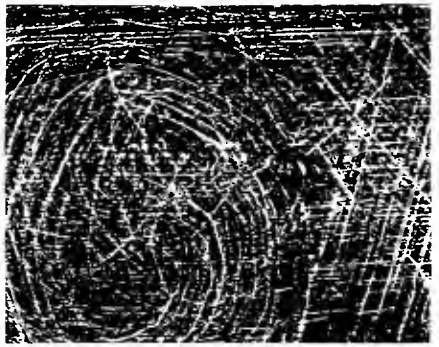


WIRE MESH





SANDPAPER



The Registration Board

To achieve accurate registration of several color blocks, it is necessary to transfer one drawing to all of the blocks needed.

The first block cut is called the *key block*. This key block is inked and placed in registered position in the corner of the right angle of the registration board. A piece of wax paper is placed over the block, and the top of the paper is pressed through the projecting nails. These nail holes are the registration marks. A print is then made on the wax paper. Leaving the wax paper in registered position on the nails, the inked block is removed and another block is placed in registered position under the wax paper. The impression is then rubbed off onto the wood. This is repeated on each color block.

Color Printing

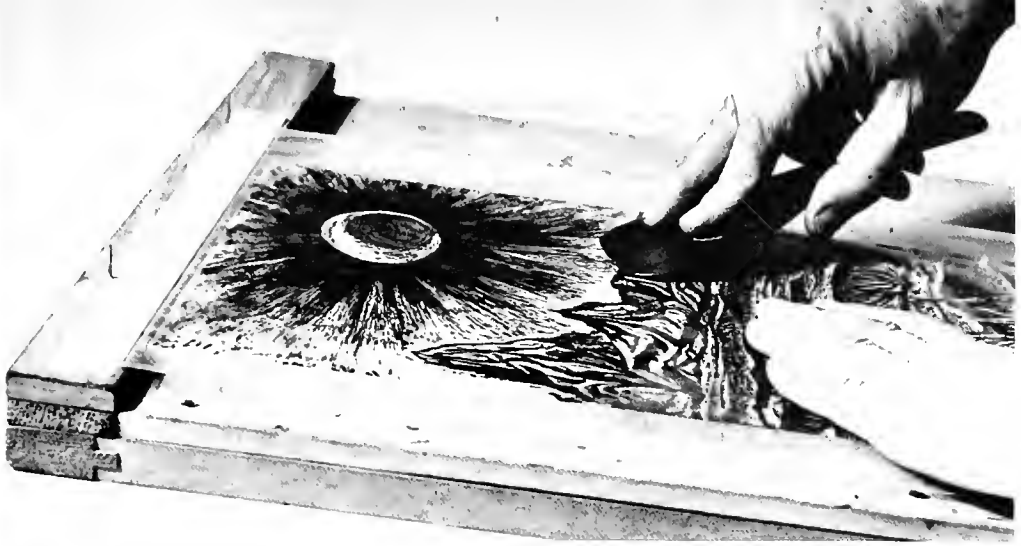
Making color prints requires a procedure similar to that described above.

After all the color blocks have been cut, the printing paper is pushed over the nails. The first color block is slid into registered position, and the first color is printed on the paper.

It is advisable to complete the printing of all the sheets on the first color block and to permit these to dry before proceeding with the second color block.

The nail holes made in the paper when printing the first color are used for registration throughout the edition. These steps are repeated with each color block until the full color print is completed. Care should be exercised not to widen or distort the nail holes.

REGISTRATION BOARD WITH WAX PAPER TRANSFER



SPOONING THE PRINT

LIFTING THE PRINT

A three-color woodcut by Ted Davies

CUTTING A CARDBOARD BLOCK

SPRAYING THE CARDBOARD BLOCK

Cardboard Cuts

Cardboard can be used instead of wood, particularly for printing large simple areas of color. Any cardboard at least ¼-inch thick will serve as the block. A mat cutting knife is the only tool needed.

The image which is to print is drawn on the cardboard with black ink. A knife cut is made around this image. The areas which are *not* to print are lowered by peeling off layers of the cardboard. Inserting the tip of the knife under a corner of the area, and then lifting, will begin the peeling process.

When the cardboard cut is completed, shellac or fixatif must be brushed or sprayed over the entire surface *before* printing is begun.

The surface of the cardboard determines the print's texture.

Stamping Repeat Designs

When a design pattern, a texture, or a symbol is repeated seve times on a woodcut (like the repeat of a flower pattern on a dre the tediousness of cutting the same image over again can avoided by cutting a single stamp of the design. A small blo of wood, with the design cut in its base, can be used like a rub stamp. Other stamps illustrated are: a piece of wooden dowel a a small metal saw blade. Exploring the tool box and the scr heap often yields interesting new materials. A pad of newspap placed under the printing paper provides the resiliency needed f obtaining a sharp impression of the stamp.

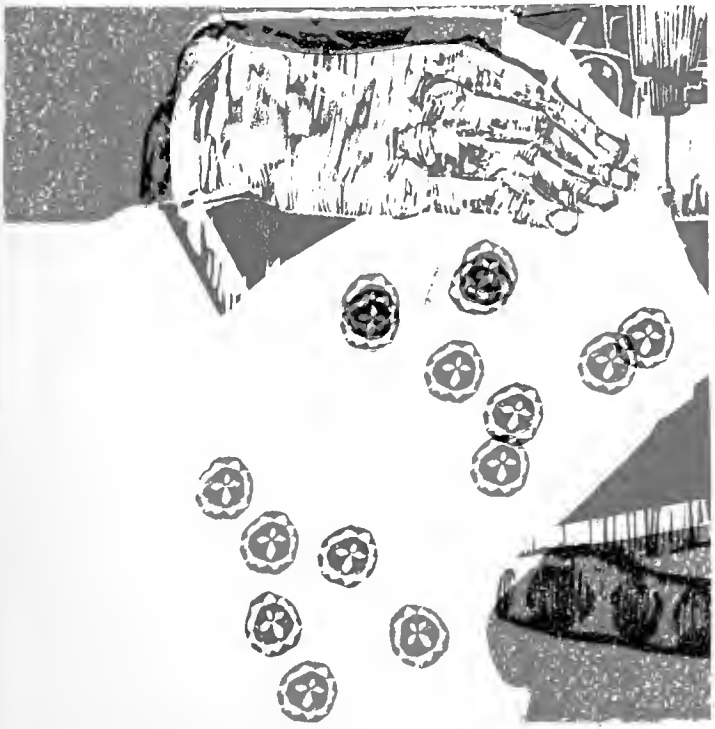
THE CUT

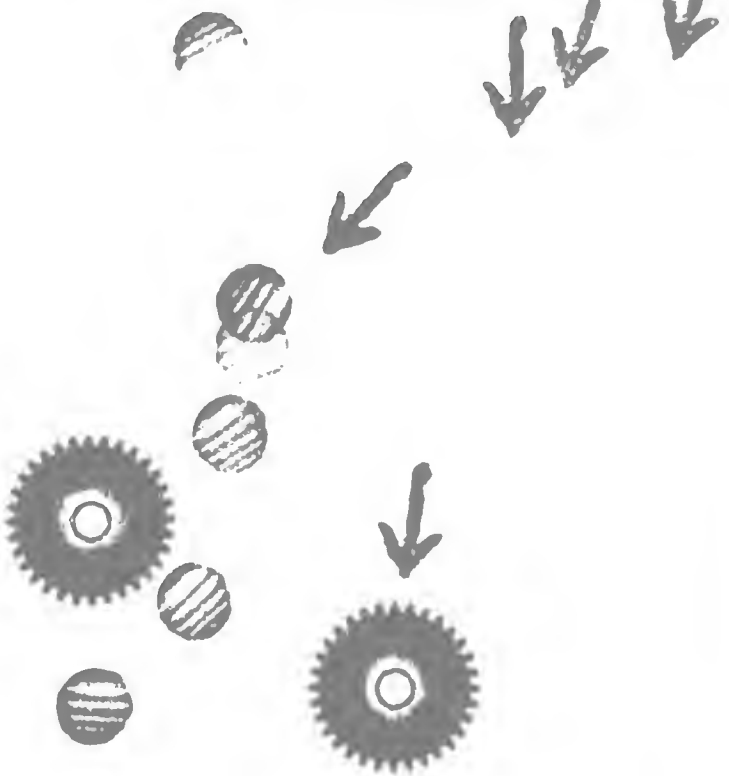
THE PRI

STAMPS FOR REPEAT DESIGNS

STAMPING

Detail from a Print by E. Nathan





Man at Market
by M. Gat
A. C. A. Gallery

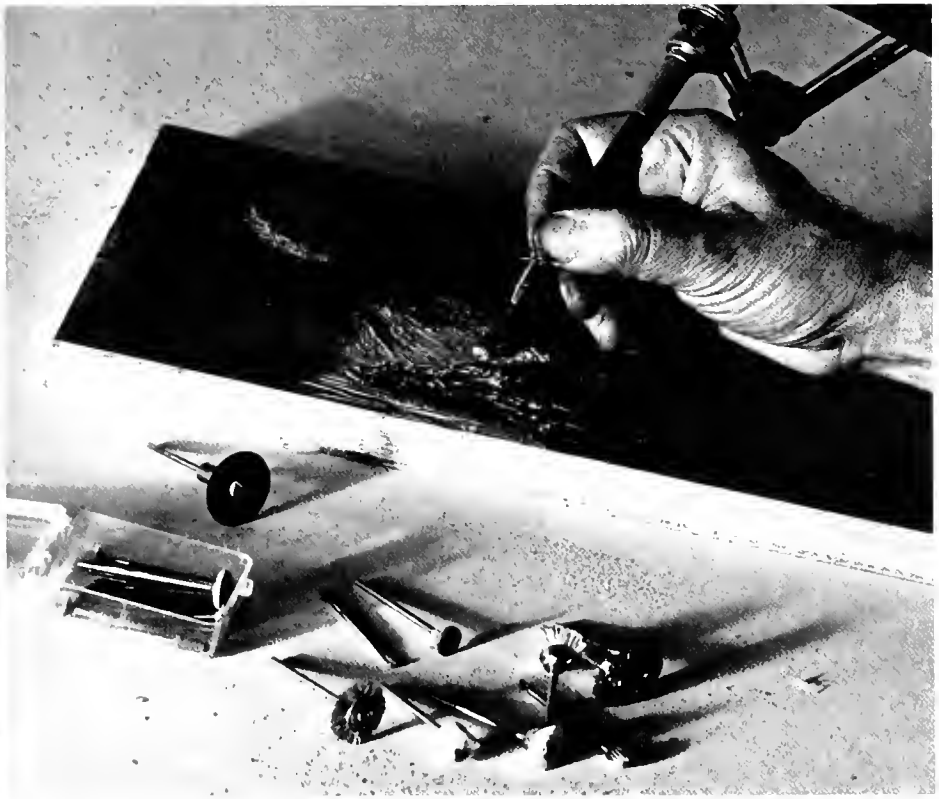
Tranquil Garden by A. Vellini — Pratt Graphic Workshop

The Vatican Seen From the Air by C. Summers — Associated American Artists

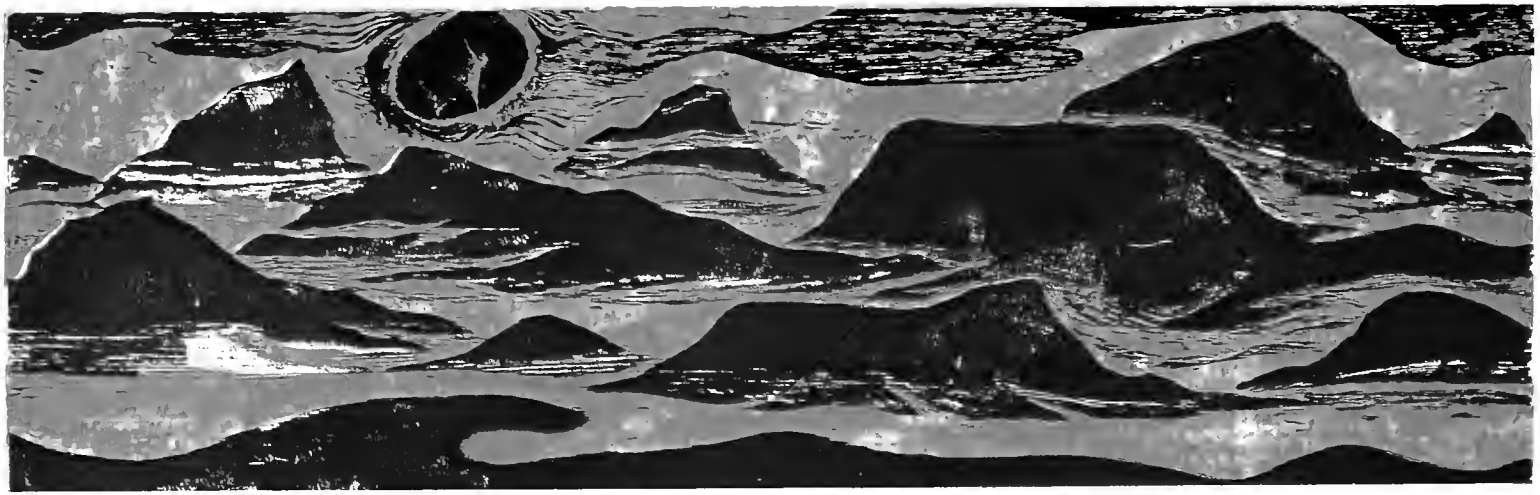
The Power Drill

The use of powered cutting tools in woodcut is relatively new. The tool itself is similar to that used by dentists, but is smaller and more compact. It consists of a flexible shaft attached to a motor. At the end of the shaft is a grip into which cutting burrs and grinding wheels can be fitted interchangeably. A foot-controlled rheostat that starts, stops, and varies the speed of the motor, is desirable. The rapidly revolving burrs do the cutting, so that the hand is used solely to guide the tool. By using several burrs and varying the speed of revolution, a wide variety of textures and lines may be obtained on the face of the wood block.

CUTTING WITH THE POWER DRILL

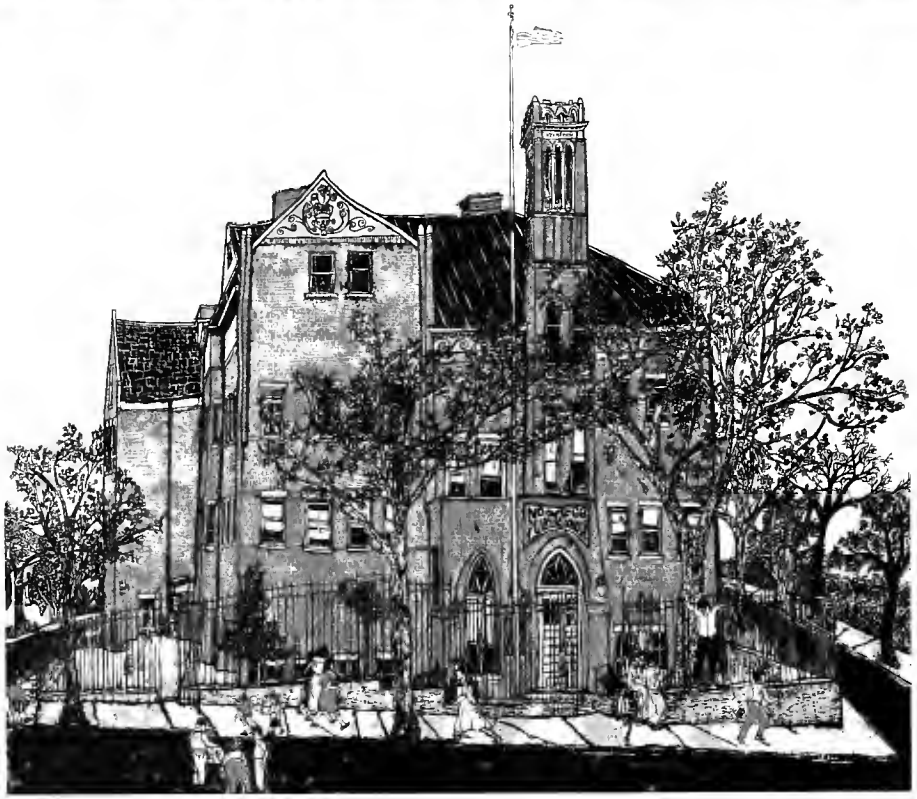


Mountains and Desert
by H. Sternberg
A C A Gallery



Mountains and M
by H. Sternberg

Sewi
by E. Nath
Courtesy of the Ar



P. S. 66
by Ted Davies
Courtesy of the Artist

Benediction Tata 5
by Gonzales
Weyhe Gallery

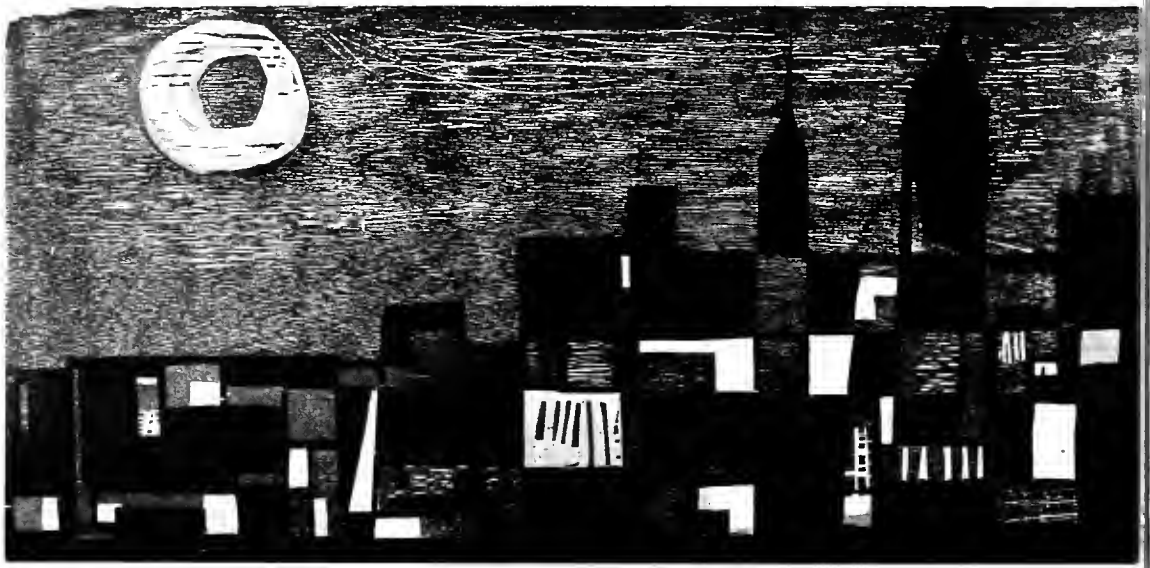
Peek at Peaks
by J. Roman Andrus
Courtesy of the Artist

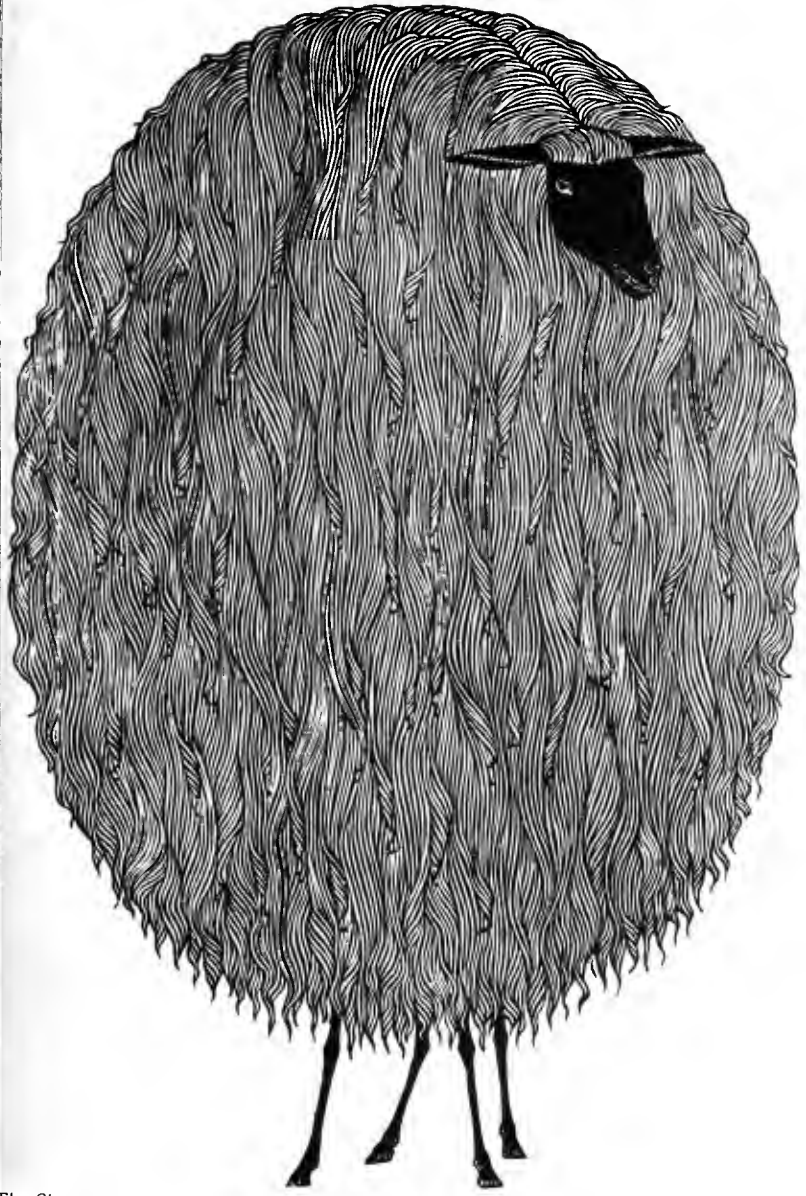
The Snake
by H. Sternberg
A C A Gallery

Uomo e falco
by R. Pozzatti
Weyhe Gallery

The Gypsy
by J. Landau
Associated American Artists

New York at Night
by I. Amen
Associated American Artists





The Sheep
by J. Hnizdovsky
Associated American Artists

Bee Keeper
by Frasconi
Weyhe Gallery

Editions Of Prints

The edition signifies the number of prints made from one set of blocks at one printing. The size of the edition is a matter of individual choice.

At the bottom of each print should appear the title, the artist's signature, and the number of the particular print written next to the size of the edition. For example 4/30 would indicate that this is the fourth print in an edition of thirty.

In printing a second edition it is the traditional practice of printmakers to change the color scheme of the print for the purpose of distinguishing one edition from the other. The edition is then marked "second edition."

Matting The Print

Prints should be matted for their protection and appearance. A face board and a backing board are needed. These are hinged with paper tape along one end so that the two sheets open like a portfolio. The opening (window) is cut in the face board. The standard practice is to make this opening about ¼-inch larger than the print at the sides and top, and ½-inch larger at the bottom. The print is then tipped (pasted) to the backing board.

Materials and Sources

Most woodcut materials can be purchased at hardware stores, art supply stores, and lumber yards. The following items may be obtained at the sources indicated—

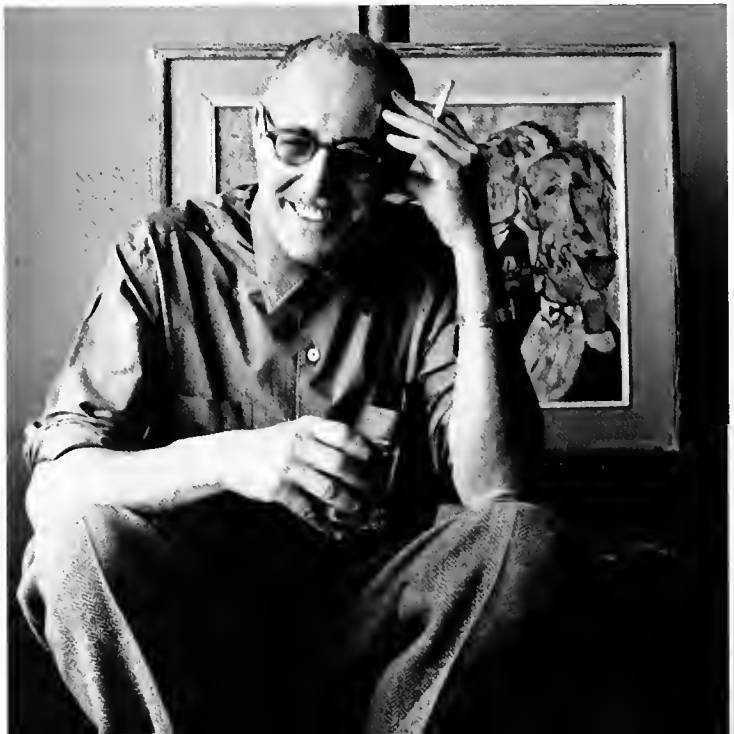
concentrated starch: grocery stores
brayers and lithographic printing inks: commercial printing ink manufacturers
rice paper: art supply stores, importers of Japanese goods
Japanese rice paddle: Japanese restaurants, importers of Japanese goods

About The Author

Harry Sternberg was born in New York City. He studied drawing, anatomy, and painting for five years at the Art Students League, and was for two years a private pupil of Harry Wickey, with whom he studied graphics.

Mr. Sternberg is represented in the permanent collection of more than fifteen museums, including the Museum of Modern Art, Whitney Museum (N.Y.), Bibliothèque Nationale (Paris), National Museum (Tel Aviv), and Victoria and Albert Museum (London). He was a Guggenheim Fellow in 1936 and has received numerous purchase prizes and awards throughout his career.

Mr. Sternberg formerly taught graphics at The New School for Social Research and is currently teaching at the Art Students League in New York City. His courses are: Drawing, Painting, Composition and Graphics, Lithography, Etching, Serigraphy, and Woodblock. Mr. Sternberg spends his summers in California, where he teaches at the Idyllwild Arts Foundation.



Date Due

Due	Returned	Due	Returned
NOV 2 2 '67			
OCT 12 '69	RL OCT 11 '69 RL		
OCT 30 '69	OCT 30 '69 RL		
JUL 27 '70			
OCT 27 '70	NOV 4 '70		
MAY 3 '72	MAY 1 '72		
AUG 15 '72	JUL 27 '72		
APR 22 '73			
DEC 17 1984	DEC 04 1995 JAN 26 1995		
FEB 13 1995			
SEP 02 2002	JAN 25 2003		
SEP 26 2003			