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A BRIEF HISTORY OF PRINTMAKING WITH EMPHASIS ON PROCESSES
THAT CAN BE TAUGHT WITHOUT THE USE OF A PRINTING PRESS
(TITLE)

BY

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PLAN B PAPER

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
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I HEREBY RECOMMEND THIS PLAN B PAPER BE ACCEPTED AS
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A BRIEF HISTORY OF PRINTMAKING WITH EMPHASIS ON PROCESSES
THAT CAN BE TAUGHT WITHOUT THE USE OF A PRINTING PRESS

I Introduction

When did the engraving of images begin?

How does a woodcut print differ from a stencil print?

What are the means of dating a print?

What is the difference between etching and engraving?

To be able to answer these questions, one becomes involved in world history and one would have to agree that of all the world's great inventions, printing and printmaking are certainly the most cosmopolitan and international.

Without the use of much printing material available and various examples of printmaking techniques, it would be very difficult to answer the above questions or any other questions in regard to the history and culture of our country.

We are all aware of the importance of the invention of paper by the Chinese, the invention of movable type by John Gutenberg and likewise the invention of block printing and many more discoveries through the ages in printing and printmaking.

Although the relationship of these two fields, printing and printmaking, is very close, this paper will be concerned mainly with the origins and techniques of printmaking and practical processes adaptable for elementary art experiences.

II Brief History of Printmaking Origins and Techniques

For five hundred years or more the learned world has been discussing the history of a discovery that has transformed civilization. It is difficult for scholars and authorities of engraving to come to one conclusion as to where engraving was invented because each one is an ardent believer that his country was the first in the invention of the craft. If we were to put all these documents and stories together, we would have to agree that each has a very good argument to support a belief that his country would be first in the invention of printmaking.

On the other hand, some scholars and authorities reject all hypotheses that carry engraving back to very distant origins. They feel that to find the first specimens of engraving there is no need to go back to prehistoric times, where such animals as reindeer, bison, mammoths are pictured on bits of bone or ivory; also as examples of the process there is no need to mention the seals, cylinders, engraved armor or engraved gems left by the ancient civilizations of Egypt, Babylonia, Syria, or Archaic Greece.¹

Engraving, in the modern sense of the word, may be distinguished from a decorative art that consisted in the representation of things on metal, stone, or wood. For example, pieces of jewelry, funeral plates, intaglio or relief impressions, seals, enameled metal, so common during the middle ages, were objects that were the preparatory essentials for an invention, but not the invention itself. Engraving began only on the day when man was first able to print a picture on paper, no matter how it was done,

¹Andre Blum, The Origins of Printing and Engraving (New York: Charles Scribner's Sons, 1940), p. 41. Translated from the French by Harry Miller Lydenberg.

whether on wood or metal, in relief or intaglio.²

It is generally agreed that engraving on wood is the oldest method of making many prints from a single original. Most authorities credit the discovery of woodcuts to the makers of playing cards.

In 969 A.D. a history of the Liao Dynasty in China gives a quotation of the Emperor relative to the game of cards. This is the first clear reference to playing cards. It is probable that playing cards originated in China as a development of the game of dice. Playing cards, called "sheet dice" were one of the earliest forms of block printing in China.³

As we look further into history we find that playing cards were introduced in Europe in 1375 from the East (India and China) by way of the Saracen or Moslem world. The first playing cards were hand painted and expensive. A little later they were painted by the use of stencils, thereby making production less expensive. Later still, they were printed from blocks and colored by hand after the manner used in making block prints.⁴

In France in 1397, card playing had become so popular in Paris that it brought forth an edict forbidding workingmen to play cards and certain other games on working days. The cards used by these workingmen were probably produced by some inexpensive method, perhaps block printing.⁵

However, it is not before the middle of the fifteenth century that we find the first cards printed as woodcuts, such as those in the Ambras collection in Vienna. Up to that time cards were hand painted, not cut on

²Ibid., p. 42.

³Merritt Way Haynes, M.A., The Student's History of Printing (New York: McGraw-Hill Book Company, Inc., 1930), p. 10.

⁴Ibid., p. 14.

⁵Ibid., p. 15.

wood. The German word describing these card makers is KARTENMALER which means "card painters." Paulus Paulirinus, a Prague Jew of the middle fifteenth century, defines these workmen as one "who knows how to make cards from paper...on which he puts images or other characters to a definite number by hand or by forms made for the purpose."⁶

According to this definition, a distinction should be made between the first card makers, whose role was limited to coloring the pictures drawn or traced with a kind of stencil, and those who later printed the cards by means of cut blocks (or planks). This industry did not develop until the second half of the fifteenth century.⁷

From just the few documents stated above, we can see the important role that card makers played in the origins of engraving.

The next step in the development in the use of the woodcut, after card making, was that of printing images representing religious figures.

In this period of history a man wanting to use images in his woodcuts had to belong to the carpenters' guild and conform to its regulations. It was a very strict organization at this particular time and wielded great power over the populace.

However, there was one group of people that the guild could not control and that was the men within the cloisters known as the monks. They were not subject to the guild regulations, and were able to work at their prints with more freedom than their lay brethren. Their prints circulated unnoticed, were run-off without being proceeded against, even circulated outside, thanks to an effective system of distribution. It is because of this condition that the first engravings of images have a monastic origin and

⁶Blum, The Origins of Printing and Engraving, pp. 48-49.

⁷Ibid., p. 49.

character.⁸

The earliest dated woodcut was produced in Europe in 1423. This was an image print representing St. Christopher fording a river with the Child Jesus on his shoulder. The picture was carved in relief on a block from which inked impressions were made on parchment or paper. By this date, the use of block prints had become very common in Germany, Flanders, and the Netherlands. The art of xylographic printing (printing from engraved wood blocks) flourished between 1400 and 1450, when it was superseded by the more artistic copperplate prints.⁹

Briefly, the difference between the two techniques of woodcut and wood engraving is: woodcuts are made on the plank-grain of softish wood and engravings are executed on the end-grain of hard wood. (Plank-grain results when the wood is cut into planks running parallel with the trunk of the tree; end-grain is cut from slices across the trunk.)¹⁰

The wood-block prints may have been made, at first, by moistening the printing surface of the block with ink (only fluid ink was available until the use of linseed oil was discovered); then, placing the sheet of paper on the block and rubbing the surface with some tool like a horn or bone burnisher, or by beating with a block like a proof planer.¹¹

The use of the screw press was probably adopted during the period of the image prints. The areas within the printed outlines of these prints were colored, either by hand or stencilling. This, together with the religious

⁸Ibid., pp. 53-54.

⁹Haynes, The Student's History of Printing, pp. 16-17.

¹⁰John R. Biggs, Illustration and Reproduction (London: Blanford Press, 1950), p. 17.

¹¹Blum, The Origins of Printing and Engraving, p. 92.

character of these prints made them popular in the homes of the poor who could not afford original works of art and who could see pictures of saints and sacred personages only in the churches.¹²

The technical methods of wood engraving were not confined to single prints but also were extended to books. These block books comprise subjects engraved on wood, and a text that sometimes is manuscript (chirographic) or sometimes engraved. They are made up of a series of prints, with a rather long text, the whole making a book. They mark the first step toward the discovery of printed books.¹³

In Germany and Holland in 1425, the block books began to be printed. These were small books printed entirely from engraved blocks, chiefly of pictures, some without text, some with text engraved on the block with the pictures, and others with explanatory text at the foot of the page or on a full page facing the picture. Printed pages always faced each other, followed by two blank pages.¹⁴

The most famous of the early block books was the Poor Man's Bible. Other well-known titles were: Mirror of Man's Redemption, Art of Dying, and Apocalypse. The printing of block books, and later combining type with pictures, continued until well toward the close of the fifteenth century.¹⁵

It would be very difficult indeed to explain in detail all of the various developments in the field of printmaking as they started and developed through the centuries, but all methods came from the simple be-

¹²Haynes, The Student's History of Printing, p. 18.

¹³Blum, The Origins of Printing and Engraving, p. 92.

¹⁴Haynes, The Student's History of Printing, pp. 18-19.

¹⁵Ibid., p. 19.

ginnings described above.

As we leave the history of printmaking and learn about four major techniques in printmaking today, we realize the great importance that our earlier ancestors had in the development of this craft.

III Four Traditional Methods of Printmaking

There are four major techniques for making original prints. A brief description of each is found in the following paragraphs.

Relief Processes

The basic principle of relief processes is that of cutting away part of the surface of a flat block so that the desired pattern or image stands up to provide a printing surface. Woodcuts and wood engravings are well-known. Other materials used are linoleum, lucite, cardboard, chipboard, composition board, plaster, and cut paper. In the case of cardboard or paper cuts, the areas are built up to provide the printing surfaces.¹⁶

Incised Processes (Intaglio)

The principle of incised or intaglio printing is exactly the opposite of relief printing. In the intaglio processes, the printing areas are grooves, furrows or indentations lower than the surface of a metal plate. In other words, the lines or surfaces which are etched out or cut away from the plate carry the ink. The high standing areas are wiped clean and do not print.

In intaglio processes, metal plates, chiefly copper, are used. Some artists have used lucite, zinc or aluminum sheets. The general division within the intaglio processes are: Engraving, etching, aquatint, mezzotint and drypoint. The term "intaglio" is often used to designate those prints in which more than one method is used. Sometimes artists refer to the combining of methods and techniques as a "mixed method."¹⁷

Lithography or Planography

Lithography is based on the natural antipathy of oil and water. The image is made on the stone (or a specially granulated zinc plate) with greasy crayon or ink. The texture of the stone is such that, if moistened, the water adheres to it in an even film except where the grease has been applied.

¹⁶Joshua Binion Cahn (ed.), What Is an Original Print? (New York: Print Council of America, Inc., 1961), p. 10.

¹⁷Ibid., p. 10.

When a roller charged with heavy ink is applied to the moistened surface, the ink adheres only to the greasy areas. After printing, the greasy image remains on the stone and the process of moistening, inking, and printing may be repeated.¹⁸

Stencil Processes

In general the stencil process has been known to artists for centuries. Its basic principle is that of applying color or inks to the perforated or cutout sections of specially treated paper or thin material so that the desired pattern or design comes through the stencil to the surface to be printed. Thus all sections except those of the open design are masked out. Its most recent development is known as silk-screen printing. In the specialized field of fine printmaking this technique is called serigraphy. Variations of this technique are sometimes combined with engraving or etching to produce color prints.¹⁹

The four processes and techniques of printmaking that have been outlined briefly are the most modern ways of printmaking.

It is from these four processes that all other forms of printmaking are developed. Many ways of printing would, of course, need a printing press; however, there are many, many ways of printing without the use of a printing press.

¹⁸Ibid., p. 11.

¹⁹Ibid., p. 11.

IV Various Methods of Printmaking Used in School for
Elementary Grades without Use of a Printing Press

Because in most of our schools today there is no printing press available and also because in the lower elementary grades children could not operate a printing press, the study of printmaking at this age level is restricted. There are, however, many ways that a child can print without a press. Some of these ways of printing, their materials and procedures are as follows:

POTATO PRINTS

Materials: a potato, kitchen knife, pencil, paint pad, paint, and paper.

Procedure: cut a potato in half and place the flat, cut sections down on a paper towel or napkin while you are gathering other materials. (This removes extra moisture from the potato.) Now you are ready to cut a design in the potato half, using a knife and a pencil point to dig lines, shapes, and circles into the smooth surface. Press the cut potato design into a paint pad and then down on a paper to make a print of your design. Printing potato designs on tissue paper is a nice way to make your own gift wrap.²⁰

ROLLER PRINTING

Materials: a cardboard tube or a tin can, glue, paper, paint, a brush, cardboard, and twine, heavy string, or yarn.

Procedure: trail glue over the tube or can. Push the string in the glue. The string should wrap around the tube. Cardboard shapes can also be pasted to the tube or can. When the glue is dry, brush on paint over this. Hold the ends of your homemade printing roller and roll it across a paper to leave a print of your string design.²¹

²⁰Print Art (Wisconsin: Whitman Publishing Company, 1966), p. 11. A Whitman CREATIVE Art Book 1.

²¹Ibid., pp. 16-17.

PRINTING WITH WOOD or GADGETS

Materials: paint, brush, paint pads, and wooden dowels, blocks, checkers, spools, clothespins, assorted household objects such as kitchen utensils, corks, bottle caps, screws, plugs and pieces of sponge, sticks or anything with a suitable flat surface.

Procedure: place a sheet of paper over a cushion of newspapers. Select one of the wooden blocks or objects that you have gathered and brush thin paint over one side or dip small pieces into a paint pad. Place the wood on the paper to be printed and press down. Try twisting, turning, and sliding the wood over the surface as you print.²²

FINGERTIP PRINTS

Materials: paint, paint pads, and papers.

Procedure: touch the tip of one finger to the paint pad, press your finger against a sheet of paper and make a print. Continue to do this, dipping into the paint pad to pick up more paint each time. Cover your paper with prints or plan a design that has a definite pattern. Try other paint colors and different colored papers or shiny foil paper.²³

LEAF PRINTING

Materials: leaves, vaseline, grease, or cold cream.

Procedure: apply a thin film of the grease to the veined side of the leaf. Hold the leaf above the candle flame until it is black from smoke. Place the smoked side of the leaf on a piece of paper and cover it with a second sheet. Rub over the second sheet gently with the fingers to create the leaf print. Overlapping of the leaf prints will make interesting all-over patterns.²⁴

WOOD BLOCK AND STRING PRINT

Materials: wooden block, string, paste or glue, paper, tempera paint, brush.

²²Ibid., pp. 12-13.

²³Ibid., pp. 4-5.

²⁴Willard Wankelman, Philip Wigg, Marietta Wigg, A Handbook of Arts and Crafts for Elementary and Junior High School Teachers (Iowa: Wm. C. Brown Company, 1961), p. 161.

Procedure: coat the entire length of the string with paste or glue. While the string is still wet with the paste or the glue, wrap it around the wooden block to form a design. Place a small amount of tempera paint on a piece of scrap paper and smooth it with a brush to an even consistency. Choose the side of the string-wrapped block which has the most pleasing design and dip it in the film of paint, or merely apply the paint to the string with a brush. Lift the block from the paint and press it against the paper with some pressure. Several prints can be made before applying more paint. It is suggested that the first impression be made on scrap paper to eliminate any excess paint.²⁵

FISH PRINTING

Materials: whole fresh or smoked fish (a frozen fish may be used if allowed to thaw), paint, a brush, and paper towels or colored tissue paper.

Procedure: brush paint over a fish, making sure to cover the scales, fins, and tail. Cover the painted fish with a paper towel or tissue paper and press the paper down with your hand, then carefully remove the paper.²⁶

TEXTURE PRINTS

Materials: cardboard, white glue, paper, paint, a printing roller, a brush, paint plate, and textured materials such as wire screening, burlap, lace, sandpaper, corrugated paper, and toothpicks.

Procedure: cut up and arrange materials on a piece of cardboard and glue them down. This is your printing surface. Add paint to the paint plate and move the roller back and forth to pick up paint. Roll (or brush) the paint onto your texture design and lay a paper over this, rubbing the paper down with a clean roller or your hand. Carefully pull the paper away from the textured materials to see your print.²⁷

PRINTING WITH PAPER

Materials: paint, a paint plate, roller, papers, cardboard, scissors, and glue.

²⁵Ibid., p. 174.

²⁶Print Art, p. 10.

²⁷Ibid., pp. 24-25.

Procedure: cut paper shapes from heavy paper and glue them down on a piece of cardboard to make a picture. Your "paper print" will be a print of this picture. Add extra paper on top of shapes you want to print darker. Apply paint to the paint plate and use a roller to pick up the paint, then roll it out on the paper picture. Cover the painted paper picture with a sheet of paper and rub this carefully with your hand. Pull the paper away. Make more prints and paste the one you like best on colored paper.²⁸

VEGETABLE AND FRUIT PRINTS

Materials: fruits (an orange, grapefruit, apple, or lemon), vegetables (a carrot, onion, celery stalk, potato), paint pads, a brush, paint, and paper.

Procedure: cut a fruit or vegetable in half and press one of the flat, cut sections into the paint pad. Paint can be brushed on large fruit and vegetable halves. Place the painted section on a paper and press down. Use different colors to print with other fruits and vegetables and overlap some of the prints on top of each other. If you are ready for another project, save your potato halves and turn to "potato prints."²⁹

RELIEF PRINTS

Materials: cardboard, string, white glue, paint, a roller, paint plate, and paper.

Procedure: to make a relief print, you must raise the printing design from the printing surface. Make a glue design on a piece of cardboard by squeezing the bottle and trailing glue over the surface. If your glue is not the kind that will dry in a hard line, push string into the wet glue to make a line design. Cut shapes out of cardboard and glue these down. If you want to make many prints it is best to brush shellac over the cardboard printing surface after the glue dries. Add paint to a paint plate and work the roller back and forth to cover this with a smooth layer of paint. Now use the roller to transfer paint to the cardboard. Your printing paper should be placed on a cushion of newspapers. Press the cardboard design, painted side down, on the paper with your hand or a clean roller. Instead of printing one design on each paper, make rows of prints on a large paper or piece of fabric.³⁰

²⁸Ibid., pp. 26-27.

²⁹Ibid., pp. 8-9.

³⁰Ibid., pp. 20-21.

CLAY PRINTS

Materials: clay, "clay tools," paint, paper, and a brush. For clay tools use a pencil, nails, and a kitchen knife.

Procedure: gently push a piece of clay large enough to hold in your hand against a flat surface. This will shape part of the clay into a smooth area that you can decorate by using your clay tools. Draw in the clay with the pointed tools or push the pointed end or the side of your tools into the clay to form a design. Brush a thin film of paint onto a piece of scrap paper and gently press the flattened, decorated end of the clay into the paint. Print on another paper.³¹

MONO-PRINTS

Materials: paint, a brush, roller, cardboard, "tools," and white drawing paper. Your tools are a comb, pencil, cardboard pieces, and wooden sticks.

Procedure: use a roller or a brush to spread a thin layer of paint over a piece of heavy cardboard. Or apply paint to any smooth scrap wood or linoleum surface. Carefully lay a sheet of paper on top of the paint area and draw on the paper with a sharp pencil, pressing the lines into the paint beneath the paper. Pull back the paper and you have a print of your pencil drawing. (This is just one of the various ways mono-prints can be developed.)³²

PRINTING WITH STRING AND THINGS (A Form of Monoprint)

Materials: paint, paper, a paint plate, printing roller, string, and things such as paper clips, wire sawdust, washers, pennies, and cardboard shapes.

Procedure: arrange one material, such as string, on top of a smooth surface and cover this with a paper. Roll a paint-covered roller across the paper--and watch a string design appear! Remove the string from under the paper and replace with several paper clips, cutout cardboard shapes or other items. Clean the paint off your roller, then use another paint color and roll this over the paper. You can continue adding other objects and working with other colors on this paper, or begin a new print.³³

³¹Ibid., pp. 14-15.

³²Ibid., pp. 22-23.

³³Ibid., pp. 18-19.

The previously mentioned printing processes along with Cardboard or Rubber Block Printing, Clothes Pin or Stick Print, Crayon and Foil Print, Linoleum Block Print, Finger Paint Printing, Paraffin Print, Plaster Print, Sandpaper Print, Screen Process Printing, Soap Block Print, and Spool or Dowel Print are just a few of the many, many ways that printing can be done in our schools today and without the use of a printing press.

POTATO PRINTING METHOD





ROLLER PRINTING METHOD





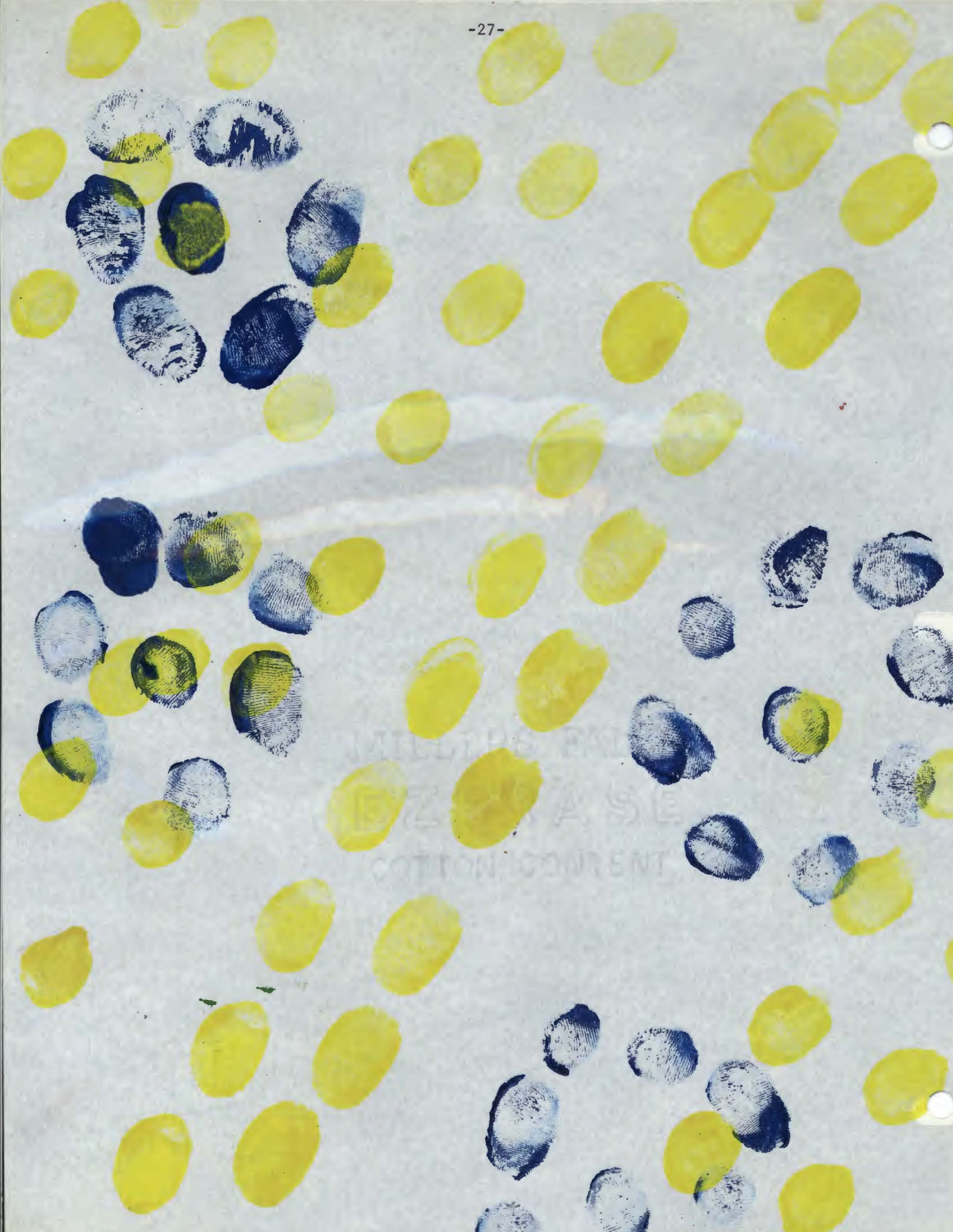
PRINTING WITH WOOD METHOD





FINGERTIP PRINTING METHOD





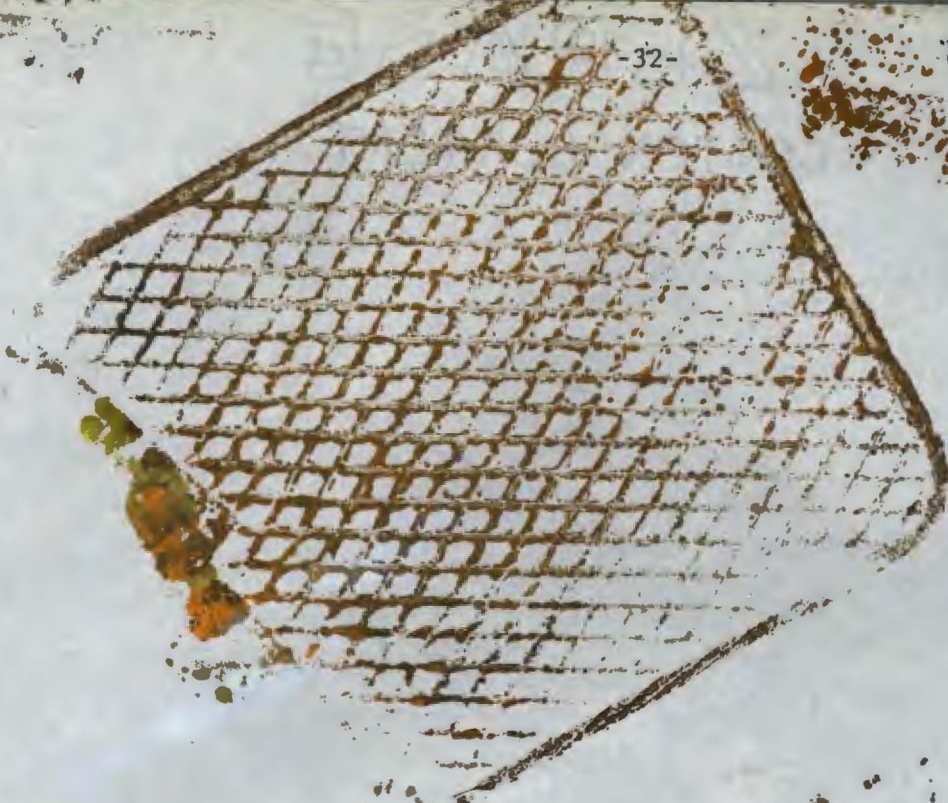
WILLIAMS PAPER
CASE
COTTON CONTENT

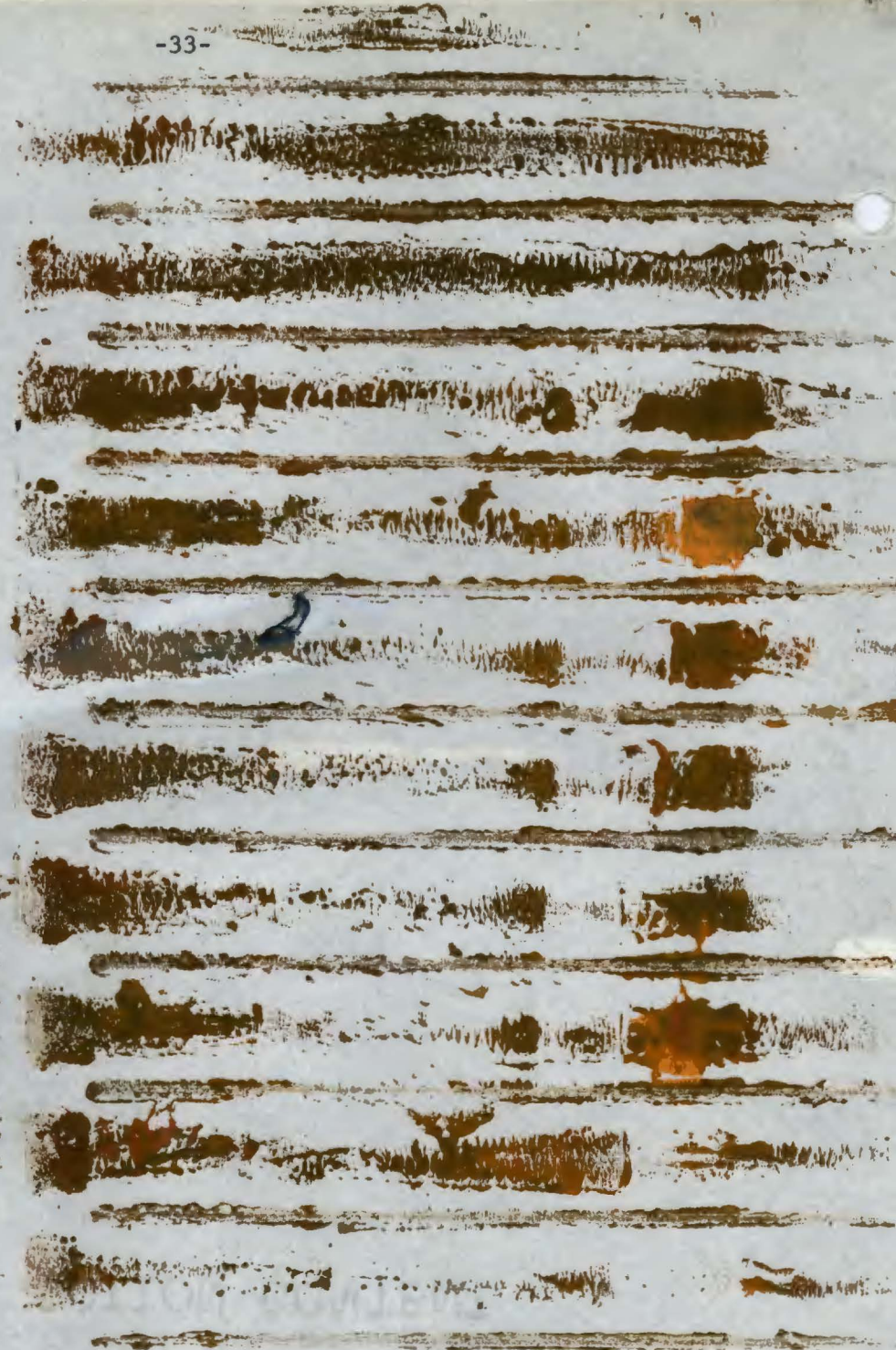
GADGET PRINTING METHOD



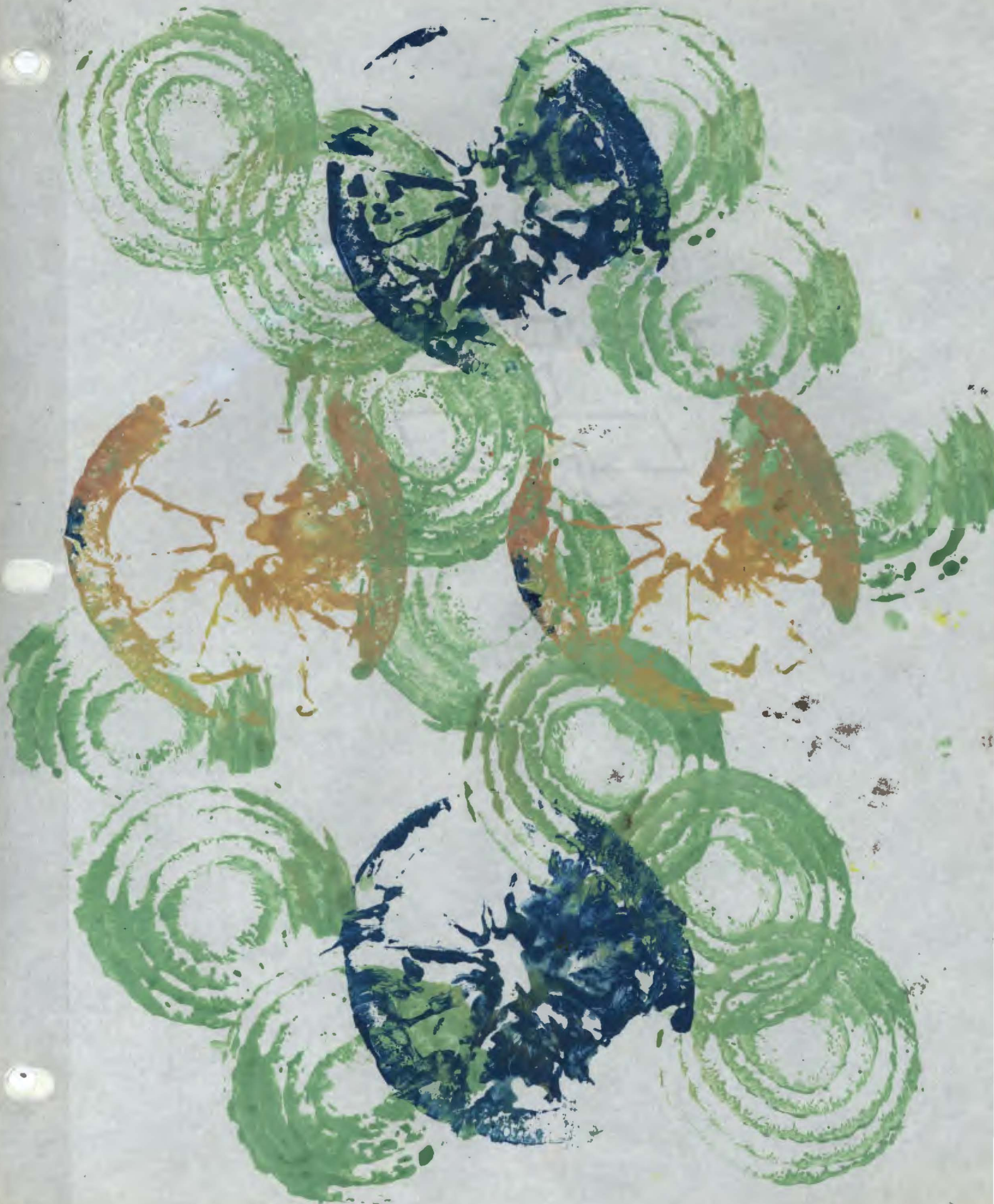


TEXTURE PRINTING METHOD





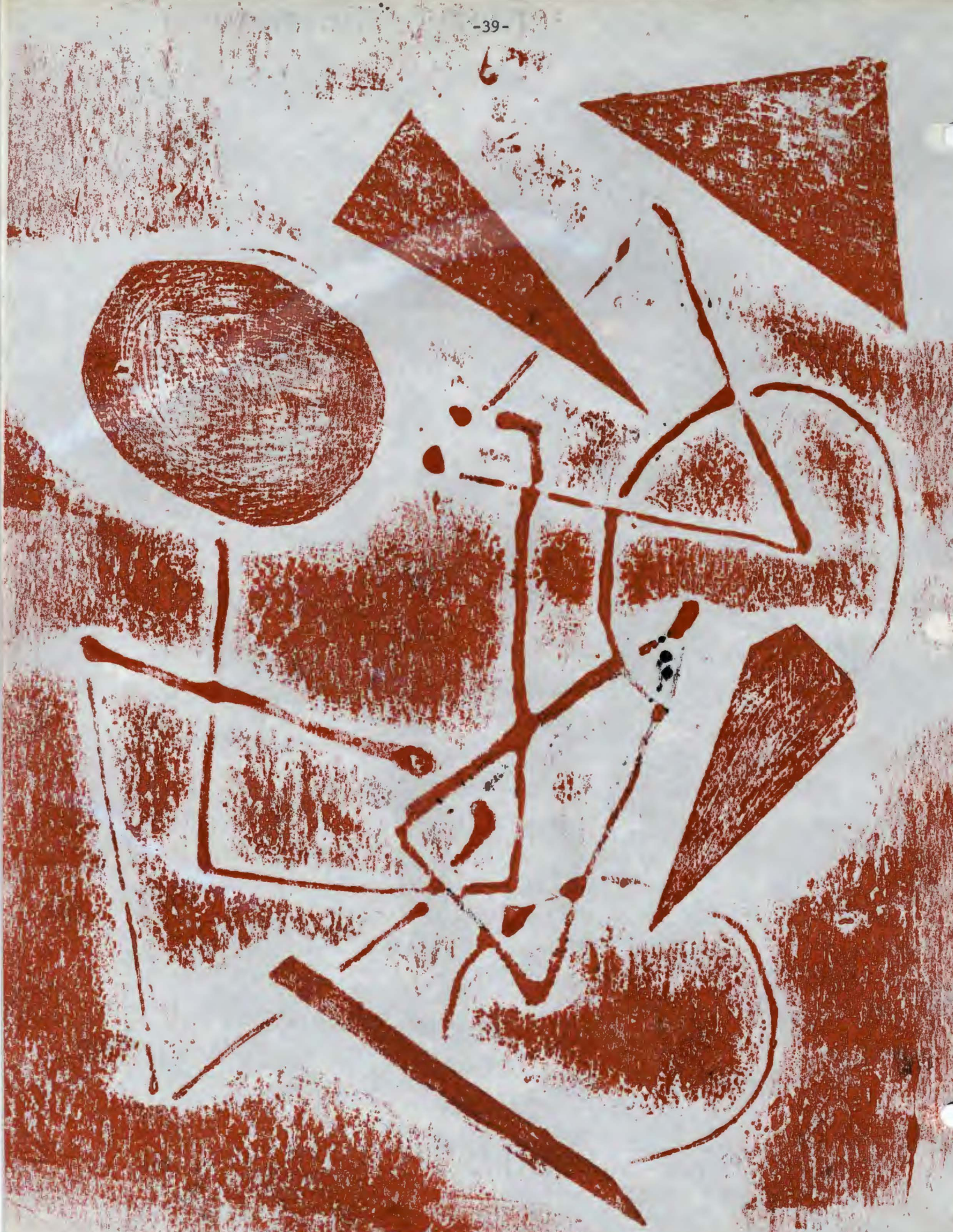
VEGETABLE AND FRUIT PRINTING METHOD





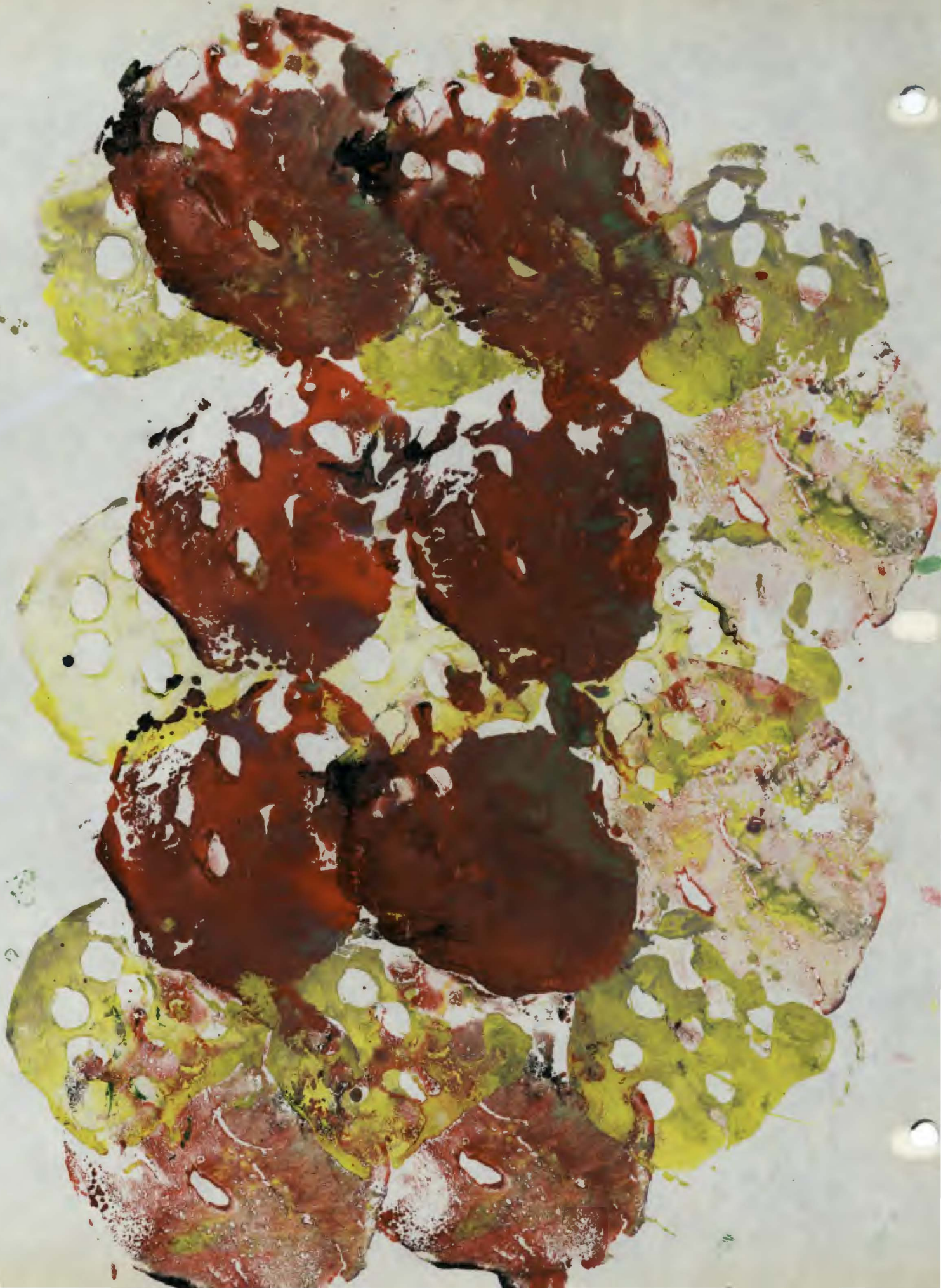
RELIEF PRINTING METHOD





CLAY PRINTING METHOD





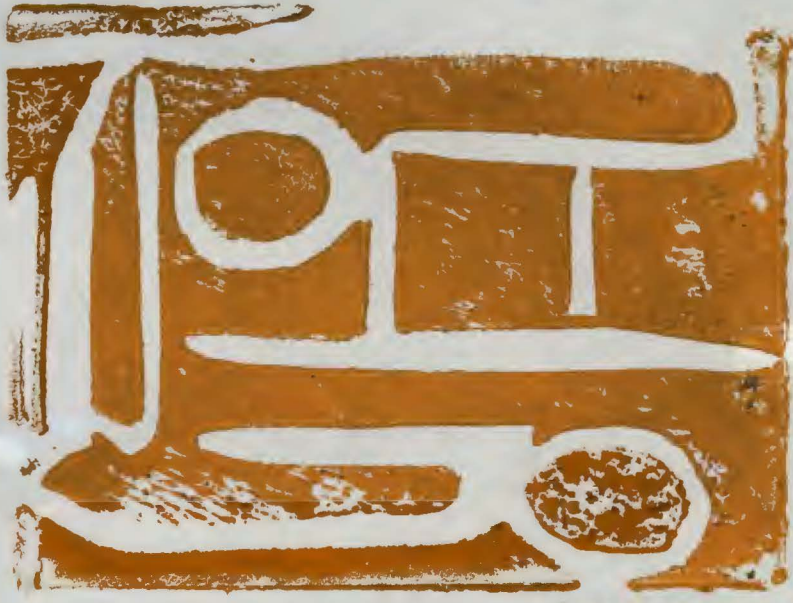
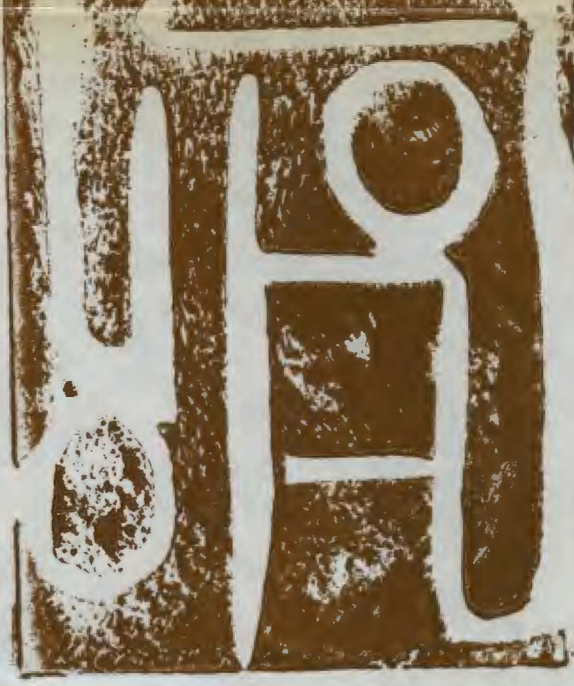
MONO-PRINTING METHOD





LINOLEUM BLOCK PRINTING METHOD





Leaf Printing Method



V Summary

It must be said that although only the surface has been touched in this study of the origin of printmaking, it is easy to see the universal scope of printmaking and understand it as one of the world's most widely used inventions. From the four traditional methods of printmaking previously discussed, it is not difficult to see how many variations of techniques were developed and how they are used at the present time.

Examples of some simple printing methods that could be experienced by elementary students are shown in the section which deals with printmaking without a press. All materials used in these examples are common objects that could be found in most schools and households. It is hoped that these illustrations will demonstrate the variety to be found in simple printing methods.

The question of how this particular field of art can enrich our children's education is important. It can be answered in the following way.

A study of printmaking even though limited to simple methods can lead to meaningful experiences. The student can understand how books are printed, how art prints are made, how different materials are used in printmaking; also, a child can become acquainted with his cultural and social background as well as that of other cultures. Printmaking is one of the wonderful art experiences that a child can encounter that may give him the feeling of accomplishment or that he is a worthwhile human being.

After all, is this not the purpose of teaching? Is not this the end result of what teachers want to make the student feel, no matter what his

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educational level may be. The teacher wishes to instill a belief of the individual nature of each human being and make clear that each student has a capacity to learn and understand in spite of individual differences. One of the ways that these ends can be accomplished in the field of art is through the study of and the making of prints.