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Forms in Fibers

Georgia Leutwiler

FORMS IN FIBERS

Georgia Leutwiler

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Faculty Sponsor: Mary Colton

Faculty Sponsor: Catherine Milovich

Faculty Administrator: Richard Rickert, Ph.D.

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I. INTRODUCTION

The process of creating can be learned while producing a piece of art. The creation of a work of art is dependent upon the artist for the final solution. If a scientist does not work, the invention will be discovered by someone else. But, if the artist does not work, the work of art will never exist. Only the artist can produce his answer, since art is based on self-determination. The solution in art is dependent on invention. There are constant decisions the artist must make while engaging in the activity of creating art work, so his final solution can not always be predetermined. The arts emphasize the achievements of the artist, rather than his knowledge concerning the field.

In his book, Art/Search and Self-discovery, James A. Schinneller states that art should aid in developing a belief in oneself and a desire for creating a more beautiful and meaningful world in which to live. He goes on to write about creating art in a way that is especially meaningful to me.

> "An artist once contended that one paints to unload himself of feelings and visions. Art is involved with this experience of living, seeing, thinking, and feeling, each in his own way. An experience may be relived, details recalled, and life intensified through art activity. In the face of mechanization, and

> the fast, complex, and confusing tempo of our time, creativity indicates the value of the individual and what can be achieved by relating the actions of eye, mind, heart, and hand...
>
> It is through the creative process that art challenges the individual and activates what exists within the senses. A more versatile personality should emerge through art experiences. Qualities such as confidence, initiative, and freedom of thought can grow out of creative activity because the constant problem solving that is evident in such undertakings demands independent judgment and personal sensitivity. These combine to expand the horizons of the individual..."[1]

A work of art is a combination of the invention process, sources of ideas, the elements of art, the principles of art, and the medium chosen, as well as the individual personality, senses, taste, and skill of the artist. I am especially interested in understanding the importance of the creative process as well as applying it to the making of my art pieces. Through study, practice, and producing art work, I hope my art pieces will reflect a progression of individual growth and style.

The sources of ideas for the artist are endless. The main ideas of inspiration that show up in my work are natural environment and geometry. Additional sources such as techniques, influence of other artists, free form, and memory are an important part of my work, also.

[1]James A. Schinneller, Art/Search and Self-Discovery, Fourth Edition, (Worcester, Massachusetts: Davis Publications, Inc., 1975), p. 2-3.

Along with an endless stream of ideas, an artist, whether consciously or unconsciously, has to have an awareness of the elements and principles of art. A developed sense of good taste and an excellent visual way of looking at the work is important, also. Practice in producing meaningful art helps to develop skills in the use of the elements and principles of art.

The medium an artist works in is a personal choice. A good idea and a good sense of the elements and principles of art can be translated by the artist into almost any medium. Some ideas work best in a certain medium, however some artists convey their ideas better in the materials with which they are most familiar. Sometimes the techniques of the process tell the artist the next idea to pursue. Spinning, stitchery, dyeing, fabric surface design, and weaving are the most interesting medium for me to work with.

Although each piece of art an artist does should stand on its own without explanation, a section of this paper will provide a brief description of how each piece in the Culminating Project Exhibit was created. The creative process of each work was achieved in a slightly different way. After the description of art works, the conclusion will include a personal statement about why I work in the art field and my use of art statements as a means of communication.

II. SOURCES OF IDEAS

There are two main sources for inspiration in decoration and design used in the exhibit. They are the natural environment and geometry. The sources of free forms, art work from other artists, techniques, and memories will also be seen in my work. Some of the art works contain both geometrical and natural sources. Free form can be found in nature and art works. Therefore, all the sources of ideas are closely related to each other. The two main sources plus others may be found by themselves or in combinations in works of art throughout history to the present times.

The importance of geometric forms in design or pattern is endless. Geometrical designs are those that are based on the purest of forms. The basic geometric elements are the dot and the line. The elementary figures are such figures like the square, circle, triangle, rectangle, regular polygon, and so on. The more elaborate motifs are the spiral, palmette, traceries, and arabesques. All of these shapes and more can be used as decorative motifs.

Geometrical networks may consist of crossing lines, whether curved or straight. These crossed lines create a fundamental form of design structure which is

called a grid. It can be a system of straight lines crossing to form squares, rectangles, triangles, diamonds, and their variations. Curved line grids create ogee, circle, and scale networks.

The grid may form the basis for a repeat pattern. The basic unit could be any natural, free form, or geometrical design motif. The motif may appear throughout the grid or in a border around the edge.

Geometrical design motifs can be formed in many ways. The reflection or reversal of a form creates a design unit. The kaleidoscope is an example of this type. The use of positive and negative spaces can be effective when used in reflection designs.

Designs can be created by repetition of a form without reflection, as in the Greek fret and its variations. These design units are usually asymmetrical and repeat in an interesting way.

The pure geometric shapes have been universally recognized from the past to the present times. Geometry can furnish both the constructive outline or grid, and the decoration or motif itself. It is necessary to explore the simplest to the more complex geometric forms to better understand design ideas.

Other mathematical concepts can be used as an inspiration besides geometry. The matrix can be used

by substituting design motifs instead of numbers. Both the addition and the multiplication matrix can be used in this method.

Symmetry can be an extremely important design source. There are two types of symmetry or proportion, one of which possesses qualities of activity, and the other of passivity. The active type is called dynamic symmetry. It is the principle for the proportioning of areas. The other is static symmetry which can either be perfectly balanced or asymmetrical. The passive type has been naturally applied by the artists in design. No design, unless it is dynamic, would be possible without the use of passive or static symmetry.[1]

Today computer-aided art is one of the most important links between art and technology. Computers can be used to produce designs and drawings in black and white and in color. It is a design source that has only been available in recent times, and it is not readily accessible to all people even today. Computer art may broaden the established definitions and boundaries of creative activity in the future.[2]

[1]Jay Hambidge, Dynamic Symmetry - The Greek Vase. (New Haven, Connecticut: Yale University Press, 1941), p. 7.

[2]Jasia Reichardt, The Computer in Art, (New York: Van Nostrand Reinhold Company, 1971), p. 1.

Man's natural environment has been a source of inspiration for design and pattern motifs throughout the history of art. There is no real way to find a dividing line between natural and geometric forms, because many forms are common to both. The natural forms or principles often become geometric in design. Nature forms can tend to be more representational while geometric forms are not.

In the past centuries, it was enough for the artist to copy the surface forms of nature. Nature forms were sometimes difficult to use realistically in design so the successful designer converted natural forms into ornamental or decorative ones. When a natural form is simplified or adapted to fit its use in a design or motif, it is called stylized. It can be slightly altered or barely recognized as the original. Combinations of natural objects can be used to make motifs as long as there is a feeling of consistency. Often symbolic meanings are attached to certain nature objects.

In nature nothing is truly ugly. Nor is there anything meaningless, inefficient, or nonfunctional in nature. Nature never wastes. Seeds that do not become plants may become food for animals.

Each species of animal or plant has its own design. Even though there are basic common laws of nature, there is still a collection of unique charac-

teristics that set one nature object apart from all the others. Although almost all different kinds of trees have branching, the difference in their growth pattern creates a difference in the design of their individual shape. Probably no two leaves from even the same tree are ever exactly alike. Each leaf is an individual design and each is attractive in its own way.[1]

In nature, surface texture is either functional, ornamental, or shaped by external influences. It can also be the combined result of several factors. These surface structure textures of objects in nature are virtually unlimited. Textures of nature from the point of view of the artist can be abstract in design or an inspiration for pattern motifs.

The purpose of ornamentation is to improve the looks of things. In nature ornamentation may not be decorative, but rather functional because its purpose is to camouflage or mimic. The beautiful shades and patterns of many mammals, ground-nesting birds, fishes, and insects make them blend with their surroundings if they are not moving. In nature where the ornamentation consists of brilliant colors and flashy patterns, it often serves as a warning to potential enemies. But the beautiful ornamentation of butterflies and shells is not understood.[2]

[1]Andreas Feininger, Roots of Art, (New York: The Viking Press, 1975), p. 51-53.

[2]Ibid., p. 160.

Patterns can be seen in designs that have been inspired by nature. Patterns in nature can be seen almost anywhere there is orderly repetition of form or line. A pattern may be the repetition of one object, a combination of many objects, or the structure and network of how the object is formed. Flowers growing in profusion make a pattern against their green leaves. Pebbles on a path, the footprints of animals, and the lines on the beach where the surf has been all make patterns. There is a pattern in the fur, shells, and feathers of certain animals. The structure of soap bubbles, cracks, and crystals make endless patterns.

Not only was it important for the artist to stylize and symbolize the natural objects, but how the natural environment was constructed became intriguing also. Artists, scientists, and mathematicians throughout history have made contributions to the knowledge of nature by looking beneath the surface of natural things to their structure, function, and meaning. Nature can have hidden meaning in her simplicity.

Visual patterns and forms are an important part of the natural world. From only a few formal themes nature creates endless possibilities of harmony and beauty. Because of these themes, the structure of crystal grains looks like the froth of soap bubbles. Branching of trees, branching of arteries, branching of

rivers, and branching of lightning resemble each other. Patterns like the spiral, meanders, branching, one hundred and twenty degree joints, cracking close packing, and the froth of bubbles occur over and over again in many different ways in the natural world.[1]

Nothing in nature is structureless and nature builds its structure by accretion. One of the universal principles in nature is growth through accretion structured in the form of layers. It can apply to plants, animals, mountains, and all of nature. First atoms join to form molecules, and molecules combine to form macromolecules. Next comes cell components and then cells, tissues, organs, and finally living things. Atoms also join to form molecules that are clumped, cemented, fused, or crystalized together to form the minerals that form the rocks. The rocks form the mountains, valleys, and plains that form the landscapes, that form the Earth. The macrostructures of nature can be a never-ending source of inspiration for design possibilities.[2]

The basic patterns, materials, and laws of nature are important in the natural world. The scientist or the mathematician tries to prove relationships

[1]Peter S. Stevens, Patterns in Nature, (Boston: Atlantic-Little, Brown and Company, 1974), p. 3-4.

[2]Andreas Feininger, Roots of Art, (New York: The Viking Press, 1975), p. 138.

of these groups to each other. The natural environment is also important to the artist-designer as inspiration for new creative ideas. The more the artist knows about the way our natural environment is made up such as the structure, color pattern, size and shape of its elements, the greater number of tools he will have at his disposal for self-expression.

Most of the pieces in the exhibit have either geometric or natural environment ideas influencing them. Along with these two main sources, some pieces contain one to three other sources of inspiration in order to convey an idea.

The free form design source can be accidental. It may not consciously be governed by shapes seen in nature or by geometrical measurement. Free forms are not representational and follow no set rules. Some free forms such as stones are found in nature. This category of design sources is one of convenience and includes designs not directly based on nature or geometrical abstractions. Sometimes no matter how the artist tries to escape from images of real things, the mind seems to insist on trying to see realistic images in designs that attempt to escape from realism.

The artist, Henri Matisse, was a master of free form paper cut out designs. He used both the positive

and negative shapes in some of his free form designs.[1]

The past is a magnificent and comprehensive source of inspiration ideas. Aspects of the past that harmonize with the artist's personality or intentions can become influential and, when used, are rescued from obscurity. Sources of inspiration or design ideas may exist in past visual art forms, processes, techniques, traditional literature, music, mathematics, architecture, or in any area relating to mans' history. The present is merely an extension of the past. Both past and present provide endless opportunities for the excavation of ideas. New technology can be applied to the past knowledge to create a combination of both past and present influences. The quality of the current design is related not to the source, but to the ability of the designer to handle materials and to solve logically the design problems in a personal manner. What is done today becomes the historical object of tomorrow. The work of today becomes an additional design source to be assimilated or rejected by those who will follow.[2]

Other sources of inspiration would include imagination, which represents what does not exist. Imagi-

[1]Walter Miles, Designs for Craftsmen. (Weston, Conn: Doubleday & Co., Inc., 1962), p. 59.

[2]James A. Schinneller, Art/Search and Self-Discovery, Fourth Edition, (Worcester, Massachusetts: Davis Publications, Inc., 1975), p. 52-55.

nation cannot create from nothing so it modifies and combines already existing images. To imagine is to remember, so the inspiration of the imaginary is related to an idea from memory.

Nostalgic memory is another way to use the memory as a design source. It involves remembering moments out of the past that have left an impression on the artist. Along with memories would be the effort of the artist to try and convey feelings, emotions, and thoughts.

The study and knowledge of techniques in the craft are also important. The more knowledge the artist has about the techniques that are used the more at ease he is in putting the techniques to use. Sometimes the techniques have a way of speaking to the artist. Techniques can be learned by study samples, inspiration from others in the craft, study of art work in the technique, and available work from the past.

III. THE ELEMENTS AND PRINCIPLES OF ART

The most important reason for doing any of my creative works is the idea. In order to better communicate an idea through any art medium it is extremely vital to have an understanding and an ability to apply the elements and principles of art.

The components which make up a work of art are called the elements of art. They are line, shape, value, texture and color. In the creative process these elements are combined into unified structures. As the artist selects and arranges the elements, he is designing what he considers to be the most effective form in which to express his ideas. Every element in a design or work of art should be an essential component of the artist's intended representational, functional, expressive, or esthetic meaning. This unified combination of selected elements gives a work of art its meaning. The observer of a work of art must be able to recognize that the elements are unified before he will be able to understand or appreciate their significance. Unity and meaning are closely related in art.

When the elements of art are combined into compositions qualities such as rhythm, balance, harmony, emphasis, subordination, variation, and unity result. This

group is known as the principles of art. Both the elements and principles of art are found in nature as well as art.

Repetition with variation of size or color appears often in my work. I am especially concerned that the variation creates the necessary rhythm that will make the piece interesting.

In my work color is used a great deal in the shaded form. In stitchery I often use three to six shades of one color in order to give some shapes the appearance of a dimensional form. Several yarns of different shades can be threaded through a needle and stitched at one time.

Sometimes in dyeing yarns or fabrics it has taken me a whole day just to mix the correct colors. Colors that are more nearly natural lend themselves better to some of my designs.

Because of the uses of many different textiles and fibers, texture is one of the most important elements for the fiber artist. Sometimes the texture of the yarn itself suggests the way it should be used.

IV. DESCRIPTION OF TEXTILES AND FIBERS

Both the practical and artistic qualities of fibers have been an important part of my life. In high school I became interested in clothing construction. As a major in college, I pursued the history, fiber content, marketing, printing, weaving, and designing of textiles. I was also involved in the fashion, drapery, construction, tailoring, and history of clothing. I worked in the fashion merchandising of womens' clothing from infant to adult sizes for five years. It was not until ten years ago that I began to design art in the textile medium. I am especially interested in the history, uses, and economics of textiles in all cultures. I enjoy collecting early American spinning and weaving equipment and I use them as tools of my craft. When I am working on the ancient art of spinning I like to remember the history of fibers as I enjoy the process.

A fabric can be an expression of the fibers of which it is made. Variations in the earliest weaving had to be obtained with color. Once spinning of fibers was developed, about 3000 B.C., the possibilities for unusual effects in weaving were much increased. The invention of spinning made possible the addition of many other characteristics which could be given to the combed or

corded fibers as they were spun or twisted into yarns.

Originally stitchery and weaving were used for functional items only. As techniques and skill improved, textiles became decorative as well as functional. Some contemporary fiber artists may only be involved in the artistic qualities of the fiber field. Using imagination the modern fabric, fiber, or textile designer has expanded the basic possibilities of textiles and fibers into an almost limitless range of effects. Today grasses, seed pods, feathers, or other objects can be found incorporated in fiber art forms by the designers. The distinctive natural shapes of these objects can become an integral element of the structural design.

Structural design in textiles depends on the fiber that is used and the way in which it is woven. There are many kinds of weaves: plain, basket, rib, floating yarns, leno, pile, and figure weaves that include the Jacquard, brocade, and damask. Three-dimensional fiber structures are being used by contemporary designers. Tapestry weaving has been revived in recent years as a significant art form.

The tools to make textiles and textile art forms can be very simple or most complex. Spinning can be done on a tiny drop spindle or a complex commercial machine. Weaving can be achieved in a small wooden frame, backstrap loom, or the complex Jacquard loom.

The decorative design on fabrics falls into one of two categories: embroidery or applique, and printing. Printing can be done by block printing, by the intaglio method or by stenciling, which includes silk screen. Other methods of printing are the dye method, the discharge method, and resist printing.[1]

An experimental attitude in the use of materials in all branches of fiber arts is now evident. The fiber artist is presently concerned primarily with expressive ideas and aesthetic problems. At no other time in history have there been more unlimited qualities of color and textures, in materials, to inspire the fiber artist. Sometimes the limiting of materials and colors can be a difficult problem.

[1]Marjorie Elliott Bevlin, Design Through Discovery, Second Edition, (New York: Holt, Rinehart and Winston, Inc., 1970), p. 157-158.

V. DESCRIPTION OF THE PROCESS

The techniques of textile art processes are as important to me as historical textiles. After spinning is mastered, it becomes a very easy skill that takes many hours in order to accumulate a volume of beautiful handmade yarns. In contrast, it can take years of practice in the craft of weaving in order to learn and use the many different patterns in a creative way. Designing work for a particular craft is easier if a basic knowledge of techniques is understood. Sometimes there are many different ways to achieve the same final results. It is then up to the individual craftsman to determine which technical process would be best for the desired result.

A variety of different techniques is represented in the art work shown in my Culminating Project Exhibit. The processes of surface design, stitchery, and weaving that were used in the exhibit will be explained in this section.

The application of dye to the surface of a fabric can be a technique that progresses quickly. The direct dye technique that is seen in the silk hanging, "Leaf Symmetry," is achieved by applying fiber reactive dye directly to the surface of a fabric. After a design

is chosen, hot wax is applied to the design lines. It is important that the design has lines that completely enclose the areas that are to contain the colors. The enclosed spaces keep the dye from spreading beyond the wax boundary. The dyes are applied with sponges with handles or paint brushes to the wax surrounded areas. If a shaded dye area is desired a chemical water is brushed onto the dye before it has dried.

After the piece is completely dry the wax is removed with a hot iron. The fabric is heat set with the iron and a hot clothes dryer before it is completely cleaned in a washing machine.

Unlike the direct dye method, photo silk screen and blueprint require a great deal of preparation before the actual printing process can begin. This process is complicated and requires a great deal of technical knowledge. But, once the desired image or design is applied to the silk screen, the process of printing can be done quickly. After the fabric is sensitized, blueprint or brownprint is a quick process also. Once the silk screens and the Kodalith transparencies are made they can be used over and over again. For the silk screen print and the blueprints in my Culminating Project Exhibit, it was necessary to process black and white negatives onto Kodalith transparent film.

The black and white negative chosen for a Kodalith transparency should be strong in contrast with no pale tones. It should also be in focus. The negative is placed in the enlarger in a darkroom with a yellow safe light. The Kodalith is placed on the base of the enlarger with the light side up and exposed for twelve seconds. The F-stop will vary in order to get the twelve second exposure. The exposed film is put through the Kodalith developer, stop bath, and fixer. The fixed Kodalith film is rinsed about thirty minutes and then air dried.

This Kodalith will be a positive image and is the image that is used for the silk screen. Because the blueprint or brownprint needs a negative Kodalith, the developed Kodalith is placed on top of an unexposed Kodalith film on the base of the enlarger. The process is then repeated to achieve the negative Kodalith from the positive.

In order to do a blueprint on fabric, the fabric has to be treated with chemicals. A solution of fifty grams of ferric ammonium citrate and two hundred fifty milliliters of distilled water is mixed with a solution of thirty-five grams of potassium ferricyanide and two hundred fifty milliliters of distilled water. Potassium ferricyanide should be handled cautiously. The solution should be stored in the dark until it is used. In a dark

room the fabric is soaked for about three minutes in a flat glass container of solution. It is hung to completely dry in the dark and the solution should not be allowed to drip on the floor. The brownprint method is similar to the blueprint method, only the chemicals are different.

A contact print is made with the positive Kodalith image on top of the sensitized fabric. This is placed under a glass and exposed in the sun or under a sunlamp until the desired darkness of color is achieved. Found objects as well as Kodalith film can be used in the blueprint method. Heavy paper stencils can be cut and used in this process. The image is fixed by washing in lukewarm running water. Hot water should never be used on a blueprint.

There are different ways of applying the photograph onto a screen. The film method is the way the image is applied to the silk screen for the "Japanese Garden" print in the exhibit. Hi Fi green photo sensitive film is cut in subdued lighting about an inch larger than the positive Kodalith. A cloth is placed on a smooth table surface. On top of the cloth the photo sensitive film is placed with the emulsion side down. The Kodalith film is placed on top of the film. If letters are used they have to be reversed. A glass is placed on top to cover the whole image and it is weighted down with bricks.

An eight minute exposure is done with a photo flood lamp about twenty inches over the table. A fan is used the length of the exposure time to keep the glass cool.

The exposed green film is developed with ninety seconds and then rinsed in lukewarm water. The film is placed on a pile of newspaper with its emulsion side up. The silk screen is placed on top and weighted down with bricks. It is blotted with newspaper and left to dry under pressure. After it is dry, the backing paper is peeled off. If the screen is large, several photographs can be used to fill the space. After the screens are made and waterproofed they are ready for printing.

Colortex dyes were used and mixed according to their directions. They allow for transparent qualities in the printing process. These dyes remain on the surface of the fabric and were heat set with an iron in order to become permanent.

Along with the photo silk screens, plain screens were used over paper stencils that were torn and placed directly on the cloth being printed. Sometimes the plain color was printed on the white fabric and the photo silk screen was printed over it.

Another type of printing used in the Culminating Project Exhibit is linoleum block printing. In this

process designs were traced onto linoleum blocks and cut out with linoleum block cutters. Oil base fabric inks were rolled onto the surface and then the inked blocks were placed on the fabric. The block was pressed hard to be sure the print was even.

Unlike the silk screen and the linoleum processes, stitchery does not need a lot of preparation in advance. It also has the advantage in many cases of being portable. It, therefore, can be worked on if desired or convenient wherever the artist goes.

Without the use of stitches, there would be no art of embroidery. They are the means by which ideas, designs, and memories can be placed on fabrics. A stitch should be chosen for use because it expresses perfectly the subject to be embroidered.

All stitches can be placed into groups according to their individual characteristics. They can be divided into four main groups called the flat, looped, chained, and knotted. Other stitch groups come from the four main groups and may be variations or combinations of several stitches. Two groups of this type are the composite stitches and the detached stitches. Stitches can also have groupings by their use in different types of needlework. Canvas stitches and black work stitches are examples of these groups even though they still have their origin in the four main groups of stitches.

More important than knowing a great number of stitches is knowing some stitches very well. A great deal of knowledge about stitches is learned by exploring the possibilities of stitches and seeing how their basic form can be varied.

Dimensional qualities of stitches can be learned when it is discovered how to vary a stitch. The experimenting with a stitch in different threads, yarns, cords, and backgrounds is very important. The choice of thick, thin, fine, and novelty threads can make a great deal of difference in the way a single stitch may look.

The stitch can be pulled tight or left loose. The tension could be a variation of tight and loose, but it should fit the idea and not look like poor technique. Another important way to vary stitches is to change the size of the stitch. Most stitches can be worked small or large. The size can be varied randomly or to fit certain patterns. As the stitch varies, the size of the yarn might change also to create even greater emphasis.

The proportions of the whole or part of a stitch can be altered. One side of a stitch could be longer than the other side. A stitch could be long and thin or short and fat. The final loops of the Knotted Cable Chain or Pekinese can be different lengths and can be

very long. Buttonhole or Open Chain can be narrow or a very wide band, or a gradual change from one into the other.[1]

The angle and the direction of a stitch could be changed. All stitches can be worked to lean one way, cross over each other, make a fan shape, or rotate in a circle. Some stitches can be worked in alternate directions along a line instead of all facing the same way. The Buttonhole Stitch is an example of this.

Some stitches can be worked double or piled on top of each other. The Raised Chain Band can be worked two or even three times on each rung of the ladder to make it more knobby. Sometimes a large stitch can be worked around the outside of the smaller one. The Spider's Web or the Chain Stitch can be worked in this manner. The whole stitch or only part of a stitch can be double.

An especially good idea for varying a stitch to add dimension would be to work stitches on top of each other. There are several methods of doing this. Some stitches can be stitched on top of each other in order to build up rows or walls like the Braid Edge Stitch. Stitches worked in one direction can be worked over stitches worked in another direction. Knots can be

[1]Valerie Harding, Textures in Embroidery, (New York: Watson-Guptill Publications, Inc., 1977), p. 41-43.

worked on top of areas of stitches to break up the evenness. A thin version of a stitch such as Cretan can be used over itself in many layers to give a feeling of depth.

There are endless possibilities of varying the size, texture, dimensions, and color of a stitch. It is not a good idea to use too many ideas in one piece of work because it could become too cluttered. The only limitation is that the stitch should be appropriate for the purpose for which the stitch is intended.

Quilting, trapunto, shadow quilting, gathering, layering, pleating, and smocking are techniques that can be used in creative stitchery. Padding or stuffing of applique pieces or stitchery backgrounds can add emphasis. A few of these techniques appear in the stitcheries in the exhibit.

Many different types of yarns, cords, fabrics, and found objects can be couched to a background fabric. Tubing and wrapped threads can be worked separately and then added later. When these items are couched down, they can be stitched at regular intervals or randomly. They may be allowed to loop or fold away from the fabric where desired to add variety. Other stitches can be used to stitch these threads to the ground fabric besides Couching Stitches. Wire can be covered with threads or stitches. It can then be bent into a variety of shapes,

loops, or coils. Curtain rings can be wrapped with yarn to have a round shape.

The dimensional qualities of stitches can be achieved by an almost limitless arrangement of threads, fabrics, and other materials in order to create a piece of work that is tactile as well as visual. One way of experimenting is to find new textures by looking at other surfaces and patterns not normally associated with stitchery. These ideas should then be applied to stitches on fabric.

A good stitchery is composed of a unity of design, color, line, shape, form, and texture. An extensive knowledge of stitches and what they can do can be helpful in achieving more interesting works of art in stitchery. Studying what has been done with stitchery throughout previous centuries and applying it in my work with an experimental eye for the future is important to me.

Stitchery is usually added to embellish an already existing fabric, to sew pieces of different fabrics together, or to applique an additional fabric to the surface of a background fabric. It is not as common to weave the background that will later have surface stitchery added. In this case the woven background and added stitches should both be necessary and complementary to each other in the design. Many of

the stitchery techniques can be applied to the fabric during the weaving process. Some stitchery and weaving techniques are similar.

It is also interesting to plan a weaving so that when it comes off the loom it can be folded, draped, knotted, or manipulated into its final position with minimal finishing. The use of paper or fabric patterns helps a great deal in designing this type of weaving.

Ikat is the process in which certain areas of a warp are wrapped to resist the dye bath and after the warp is dyed it is placed on the loom and woven to produce the dyed warp pattern. Ikat requires designing, dyeing, and weaving skills. The process can be simple or extremely complex, depending on the difficulty of the pattern on the warp threads to be dyed. Ikat can be even more difficult when warp and weft threads are dyed in order to create a design.

The ikat weavings in the exhibit have the addition of dyed paper as part of their composition. Besides paper, natural objects, pieces of fabric, and other non-yarn objects could be incorporated into the warp as it is woven to form a woven collage.

VI. DESCRIPTION OF THE WORK IN THE EXHIBIT

Works of art cannot help but be personal statements about the life, feelings, culture, educational background, and personal growth of the artist who makes them. For educational purposes, the step by step processes that were followed in making the art work in the Culminating Project Exhibit will be described in this section. Although each piece of art should be strong enough to stand alone without any comment, these explanations are hoped to be informative as to where ideas come from, techniques used, and a general understanding of the artist who created them. Sometimes the idea came first, sometimes the technique came first, and sometimes just a feeling or emotion came first. Some of the pieces are planned with exact size detailed sketches, and sometimes there was no sketch at all. The creative process for each piece was handled a little differently. Although the pieces of art can have more than one idea source, they will be grouped according to the natural environment and geometric sources of inspiration. The other design sources will also be described.

Visual patterns and forms are an important part of the natural environment. The inspiration for endless

possibilities for harmony and beauty can be found throughout nature from only a few formal themes. Limiting the endless possibilities of nature in order for me to create meaningful works of art can be a difficult task. Some of the art works in the Culminating Project Exhibit are more closely related to the natural environment than any other design source.

The canvas embroidery, "Tri-Shell Intertwining," is based on a technique that was seen at a stitchery exhibit. The technique was changed by doing it in a shaded color range. Because of my desire to do this stitch, I chose a sketch I had completed earlier. The actual stitchery was done in short periods of time during the day, because it was boring work. The effect of the stitch was worth the effort. The stitchery idea was based on the shell theme. It takes three stylized shells intertwining to make the composition. None of the three shells could have stood alone which symbolizes the dependance of each shell on the other.

The stitchery art form can be very slow and time consuming at times. For the machine embroidery, "Sea Within Me," I set up the challenge of completing a stitchery in several weeks. The idea was taken from my tiny two inch stylized shell sketch which was to represent a large and a small shell side by side. It was done on the sewing machine so the stitchery part would go fast.

The speed and shading possibilities of machine embroidery are great advantages in the creative stitchery field.

The creative stitchery, "Flowing," is a nostalgic memory piece. The idea is based on the many evenings I sat by a mountain clear water stream in Gatlinburg, Tennessee. The idea came not at the stream, but in the longing to be there when far away. The stitchery is to give an impression of how I felt and what I saw. The memory of the quiet noises of the stream was especially important. It was started from a previous actual size sketch about highway cloverleafs and I later converted this sketch to represent pools of water in a flowing stream. The piece of fabric that surrounds the three pools of water is the largest single piece of applique I have ever stitched. A velvet type of fabric gives the illusion of water. The applique pieces were cut bigger than the space and the pieces were pushed to fit the marked lines. This allowed the fabric to form random folds. This shiny pile applique was to represent water reflections, water flowing, or water ripples after an object has hit the surface. The stitchery portion was to represent rocks, shells, mosses, plants, and so on in water pools of a stream. Shells were added even though they were not in the stream. The batting was added and the piece was quilted only enough to hold it together to

a denim backing. When I saw the special spot by the stream once again after the stitchery was completed, I could tell that my memory of this place was quite accurate.

The creative stitchery, "Roots," was started from a five inch sketch. The sketch was based on the branching principles of nature, but it was not patterned after any particular nature object. The sketch did not resemble roots until the brown colors were chosen. The large rust wool was appliqued on the background in one piece and stuffed as it was stitched. This applique piece was then stitched in four colors to give a shaded appearance. The couched yarns were twisted before being sewn down and yarns were removed gradually as it was stitched so that it tapered from thick to thin evenly.

The direct dye technique was used to create the silk banner, "Leaf Symmetry." After a hike into the Tennessee Mountains to observe leaf shapes, I stylized several interesting leaves and arranged them into a pattern. The sketch of the repeat pattern was the size of half of the final piece. The silk was folded crosswise with the paper design underneath the silk. Hot wax was applied to the lines of the design. It took one whole day to mix the dye shades. The colors of the leaves were to show the transition from late summer into autumn. The placement of the color was also very important for

the total design. When the colors were finally chosen, they were applied with sponge brushes into the wax surrounded areas. To achieve the shaded areas in the leaves and the background, a chemical water was added to lighten the dye that had already been applied. The wax was removed and the piece could be unfolded revealing the total design for the first time.

The quilted silk screen print, "Japanese Garden," did not have any original sketch or idea of any kind. The piece was simply printed on a white piece of fabric and the design came as the process continued. Long before the printing started, black and white photographs were taken of flowers, of the Japanese Garden, and of a Japanese model. The photographs were processed onto Kodalith film and the film was processed onto silk screens. With the screens ready, I tried to print an illusion of a Japanese Garden. The print is meant to be a landscape design with sky, water, reflections of a person, and plant life. The purple color is for design purposes only. The printing process combined the photo silk screen and paper stencil techniques. The paper stencils were torn in a free form manner. Colortex fabric dyes were used. After the print was completed, a green border was stitched on and it was quilted.

The seven page book, "No Dogs Please," was based on photographs that were taken at the Japanese Garden in

St. Louis. The black and white negatives were transferred to Kodalith film. The next step was to sensitize the fabric. The sensitized fabric with the Kodalith photo on top was placed in sunlight to expose the fabric. This is called the blueprint process. The letters for the book were cut out of construction paper. The book binding was a piece of sensitized fabric wadded and unwadded several times while exposed to sunlight. Embroidery adds a touch of emphasis on each page. A fabric book would be fun to do again sometime.

The stitchery and weaving, "Patches," was woven for the purpose of adding stitchery to embellish it later. This was a first attempt in trying to weave an interesting background on which stitchery could be applied. I started weaving with my free form sketch right side up taped on the loom. While I was weaving I realized my sketch had been turned upside down by mistake. Luckily it really did not matter because I was not following the sketch accurately anyway. I had to be careful that the woven fabric would be appropriate for the stitchery. It was also important that the stitchery be a necessary addition to the final piece.

The importance of geometric forms and mathematical concepts in design is endless. Geometry can be the constructive outline, the order of a pattern, or the decoration itself. It can be both very simple or

extremely complex. Some of the art pieces in the Culminating Project Exhibit were more influenced by geometry than any other design source. A few of these geometric designs were also influenced by other art work observed or by interesting techniques.

The canvas embroidery, "My Box," was one of the few times I created a design for a particular shape. The 1889 box was bought at an antique show on Memorial Day, 1980. At the time the box was purchased, the plan was to do a stitchery to fit in the box and to use the sewing tools inside the box for my treadle sewing machine. The design was to be a dimensional stitchery design to fit the panels. The purpose was to make all panels go together, but separately to be independent and interesting also. The first design was the most successful and the one that was finally chosen, although four other designs were attempted. With this design the stitchery would have to be flat rather than dimensional, but this design gives the illusion of dimension and relates to the angles of the box. The floss was a rayon Marlett from West Germany and the colors were chosen to relate to the untouched colors of the box. The canvas embroidery was stitched to brown Ultrasuede fabric and glued onto the box panels. The box design is unique in the way it can be both a dimensional box and a flat hinged surface. I hope that the addition of the canvas embroidery makes

the box very special.

The creative stitchery, "Square Within Square," was inspired by the Braid-Edge Stitch taught in a workshop by fiber artist, Joan Michaels Paque. In order to better understand the design possibilities of the stitch I stitched experimental samples. I also worked on many sketches of design possibilities and eventually chose a very simple square design on graph paper for the technique. The stitched walls that raise perpendicular to the background surface were planned to be of different heights and different colors. It was hard to visualize how the final piece would look because only a flat sketch was used. The background stitchery was finished quickly. The stitchery required to do the perpendicular walls seemed endless. Three similar, but different sketches were designed with the possibility of making this stitchery one of a group of four. I have not decided if these additional pieces will ever be completed.

The geometric canvas embroidery, "Square Rotation," was inspired by other artists and other stitcheries studied. The use of color and movement was very important in the Yaacov Agam Exhibit at Neiman-Marcus in St. Louis County in the Fall of 1980. It was also evident that some attempts at achieving lines and pattern could already be seen in the stitchery field. Design ideas were attempted on graph paper. Rather than

repeat anything that had been done before, I decided to rotate the color lines. It was more interesting not to have them run through the design. The design motif on the white background is an arrangement of five rectangles of various sizes. After the small six inch graph paper sketch was finished, I decided that the color effect would be more interesting if three shades of a color were used instead of just one shade. Concentric circles were drawn on the canvas to indicate where the change of shade would occur. This accidently created a circle that can be seen differently as the viewer walks around the piece. The shaded color lines were stitched over cording, while the white design area has no cording. The side of the piece has darker corners with lighter shades in the center. There is also a color change in the center of each side. The stitchery on the side seemed to take a long time to complete. The small white cord around the stitchery was added because the canvas showed in spots along the edge. Although it was necessary, it also adds to the total look of the piece. This type of design idea would be very interesting to pursue again. More changes of line direction would be challenging.

The weaving, "Knotted Twins," was designed from paper patterns. The paper had been folded into the desired shape. The two strips were woven separately. After they were taken off the loom, they were folded

into the previously planned shape. Once this weaving was planned it was easy to do and the finishing was also easy.

The weaving, "Paper Ikat I," was a first attempt at the ikat design process. To add interest, paper would be used with the weaving. The paper strips and a paper background were dyed along with the ikat warp. It took over four dyeings of paper and warp to get the desired color combinations. The paper background shape had to be torn before the ikat warp was woven, because the edges had to accept the dye colors. The paper strips were dyed in the various colors used for dyeing the warp. The ikat design pattern was taken from a small one inch graph paper sketch. Although the ikat was tied for a fringe, it was later woven where the fringe would have been. In the weaving process I decided that the dyed paper strips were appropriate. The completed weaving was hand stitched to the paper background. Because the weaving contained paper and might have become creased if it was stored curled, it was decided to display the weaving framed.

The weaving "Paper Ikat II," was a second attempt at the ikat design process. It was patterned after the first ikat design, but it was not meant to be a copy. A similar design was used to tie the knots. The dye process was much more complicated, because an attempt

was made to get shades of a color used. This took many more dips into the dye bath. It was planned that the center of the ikat would be the lightest area. A part for fringe was tied and dyed in the ikat process, but it was woven instead. The original warp color was light pink and the paper was white so there was some concern about if they would eventually match. The paper was dipped in a light pink dye bath to compensate for the color difference. In this weaving the paper weft strips have torn edges and they have been extended beyond the dyed paper background. It is a good discipline to attempt the same design and process for a second time. The two ikat weavings are both similar and yet quite different in appearance. The process alone causes uniqueness of design and color.

The fabric construction stitchery, "Woven Squares," was designed on graph paper. I chose the colors as a challenge because I felt they would be difficult to work with. The color combination was not chosen before I saw the fabric in the store. The background squares were constructed with both sides of one fabric. It was difficult to construct the square that had to be woven into the background. The trim on the woven square was added for a touch of emphasis. Both hand and machine stitchery were required in the construction of this piece.

The block print, "Shapes in Grey," was printed with the use of thirteen individually cut linoleum blocks. The block designs were all related because of the diagonal lines from the corners that cross in the middle. Each block still remained an individual design. They were designed to fit together in a composition. The blocks were printed on Ultrasuede fabric because I liked the color and because the edge did not have to be turned. I used both sides of the grey Ultrasuede fabric. The smallest block was printed on colored fabric to add emphasis. The printed fabric was sewn into a fabric matt.

Sometimes a work of art can have more than one influence. Not only are the design sources of geometry, and natural environment important, but also important are the uses of emotion, memories, free form, the influence of other artists, the elements of art, and the principles of art. Most of the pieces in the exhibit may have more than one design source. Often one piece of work can be the inspiration of the piece that will follow. All of the work the artist does will be the stepping stones to the pieces that will be done in the future. Most of the pieces in the Culminating Project Exhibit already have created an idea for a follow up piece if only time would allow the opportunity to complete it.

VII. CONCLUSION AND PERSONAL STATEMENTS

From the endless supply of ideas to select from for the compositions chosen comes a clue into the personality of the artist. Not only does the artist reflect the social and spiritual ideas of his culture, but he also reflects his artistic standards through the quality of his art. The quality of art statements and techniques should not only be appropriate in the contemporary culture, but they should also be comparable to the quality of good art statements throughout previous civilizations. The artist learns to master his technique and he uses his skill to say something to the world.

For art work to live it must communicate. Communication between the work at any stage of completeness and the artist or the finished work and the viewer is an important part of the creative process. The creating of a work of art is the process in which the artist thinks, acts, and then responds to the result of his action. He then proceeds to the next step of action and response in the sequence that will finally produce his finished work. Sometimes the very decision that is a piece of work is finished can be quite important.

Not only is there dialogue between the artist and the art object, but there is a different relationship between the viewer and the art object because the viewer

usually only sees the complete work. It is not enough that it means something special to the artist, the art work must also convey to the viewer meaning or feeling, along with its form. The work becomes an object of aesthetic value only when it causes a response in the viewer. The nature of the response is dependent upon the active participation of the viewer. Even if the work of art has a statement to make, it is still the observer who shapes that statement into a personal communication by committing himself to the experience. A work of art may communicate to passive observers, but it speaks more eloquently when it creates a visual interaction with the observer. Creators of art tend to look for ways to exhibit their work in order to create an opportunity for communication. Artists also tend to become skilled observers.[1]

The idea of a work of art is its most important quality. Sources of ideas come from natural environment, geometry, other artists, free form, memory, and so on. Sometimes several sources are in one piece of art. The artist has the capability of transforming the source into a work that is a reflection of himself and his culture. The artist's eye sees the surface of things, but also discerns and interprets the organic structure and the

[1]Nathan Knobler, The Visual Dialogue, (New York: Holt, Reinhart and Winston, Inc., 1966), p. 312.

potentiality that can be underneath.

I have especially been interested in mathematics from elementary school through college classes and in individual nonstructured study. Because of my enjoyment of this subject, I like to incorporate it in my work.

All parts of the natural world are interesting to me. The skill of photography has trained my vision to be more sensitive to the many wonderful natural sights I have personally experienced. Photographs by others have helped me experience natural sources I have never seen personally. The microscopic structures of nature are as interesting to me as the much more expansive landscapes. The natural environment will always be an important design source in my work.

A good idea and a good sense of the elements and principles of art can be translated by the artist into almost any technique or media. The quality of workmanship or technique is very important in a work of art. The technique should not interfere with the idea, but should instead enhance it. Techniques should not stand out as being more important than the idea and it should not be so poorly executed as to distract from the idea. Along with good technical qualities, good quality supplies and finishing techniques should also be emphasized.

The artist needs to know the skills of his craft. Most artists can more easily stay in one skill than I can.

Although I can stay in the fiber field, I still tend to be interested in spinning, weaving, stitchery, basketry, direct dye, surface design, and silk screen. Because I know many branches of the fiber craft, it takes a lot of effort to keep up with all the technical skills and equipment. It is especially interesting to me to combine several techniques in one piece. The techniques are limited to not more than two or three at a time in order not to distract or distort from the intended idea.

The invention of photography has both helped and hindered art. Currently photography can be an important tool for the artist. It can be used as a method of study to record what contemporary artists are doing. Photography can be used as a tool to explore the natural environment. It is an especially important source for enhancing visual capacity and training the creative way of seeing.

It was photography that brought me back to the creative arts ten years ago. After competing in international photography salons for several years, I had a need for a more individual expression. As I began to do more and more fiber art pieces photography as an art form became less important. I now use photography more as a tool in the creative process rather than for competition as I did before. I especially use photogra-

phy for surface design in the photo silk screen, blueprint, and brownprint processes.

The fiber background came from my background in textiles and clothing in undergraduate work. I also had an equal amount of credits in applied arts. These skills were not being used after I graduated until ten years ago. There have been many changes in how art has been taught since I graduated from college. It was my college experience to learn skills only. Not much emphasis was placed on idea. As I have pursued the fiber arts for the last ten years, the idea has become the most important part of a work. Pursuing the idea first has made the fiber field more interesting to me.

Because of the desire to create unique yarns, spinning has been revived with new enthusiasm. There is also a great joy and satisfaction that comes from the process and skill. Since a yarn is the product of spinning, I try to use the yarns I spin in a creative way through stitchery or weaving into a final art statement.

It is not only important to me to know and enjoy the skill of spinning, it is also important to do this skill on antique equipment. I have enjoyed collecting and restoring spinning and weaving equipment so that it is usable.

Any idea is easily translated into the creative stitchery technique. Stitchery, applique, and canvas work are conveniently worked on in any situation. Combinations of different types of stitchery can be used together.

Although weaving is sometimes portable on smaller looms, it is usually done only where the loom is situated. With careful designing a piece can be formed into a structure right after it comes off the loom. Most ideas can be achieved in weaving although some techniques are more difficult and slower than others. Stitchery can be applied to a woven piece on or off the loom.

Once the screens are made silkscreen can be a speedy process. The screens can be used over and over again in endless combinations. Photography can be used to create an image on a silk screen. Pressed leaves and flowers can be used as design motifs for a silk screen. This is something I would like to pursue in the future. I have been pressing plant life for over a year for this purpose.

Art work not only reflects the technical skills of the artist, but it also translated man's perception into feelings. Although an artist can learn a great deal about techniques by studying, the essential part of the creative process lies in those parts which fall outside

the rules, precepts, measurements, and other communicable laws or secrets.

The textile designer Anni Albers, in her book On Designing, discusses the process of creating a piece of art in a way that is very meaningful to me. She suggests that if we want to learn to do, or to form, we have to turn to art work.

> Art work deals with the problem of a piece of art, but more, it teaches the process of all creating, the shaping out of the shapeless. We learn from it that no picture exists before it is done, no form before it is shaped. The conception of a work gives only the temper, not its consistency. Things take shape in material and in the process of working it, and no imagination is great enough to know before the works are done what they will be like.
>
> We come to know in art work that we do not clearly know where we will arrive in our work, although we set the compass, our vision; that we are led, in going along, by material and work process. We have plans and blueprints, but the finished work is still a surprise. We learn to listen to voices: to the yes or no of our material, our tools, our time. We come to know that only when we feel guided by them our work takes on form and meaning, that we are misled when we follow only our will. All great deeds have been achieved under a sense of guidance.
>
> We learn courage from art work. We have to go where no one was before us. We are alone and we are responsible for our actions. Our solitariness takes on religious character; this is a matter of my conscience and me.
>
> We learn to dare to make a choice, to be independent. There is no authority to be questioned. In art work there is no established conception of work; any decision is our own, any judgment. Still, there is one right opinion as to quality of a work of art, spontaneous and indisputable---one of

> our absolutes. There is a final agreement upon it, of those initiated, no matter how much personal taste or trends of the time influence the judgment.
>
> In making our choice we develop a standpoint. How much of today's confusion is brought about through not knowing where we stand, through the inability to relate experiences directly to us. In art work any experience is immediate. We have to apply what we absorb to our work of the moment. We cannot postpone the use of what we learn. Much of our education today prepares us for a later day, a day that never comes. Knowing for later is not knowing at all.[1]

In my life I get a great deal of satisfaction out of shaping a piece of art. The process of doing the creating is more important to me than selling the work, commissions, or knowledge of techniques. My work has often served its purpose when the piece of art is completed because it is the challenge of working with unknown outcomes that is exciting to me. When my life is going well and when it is not, the challenge of creativity in art can hold my life together and give it meaning.

[1]Anni Albers, Anni Albers: On Designing, (Middletown, Connecticut: Wesleyan University Press, 1961), p. 31.

VIII. LIST OF WORK IN THE EXHIBIT

STITCHERY

1.	Flowing	Creative Stitchery	44" by 32"
2.	Roots	Creative Stitchery	32" by 22"
3.	My Box	Canvas Embroidery	13" by 6"
4.	Tri-Shell Intertwining	Canvas Embroidery	15" by 11"
5.	Square Rotation	Canvas Embroidery	28" by 28"
6.	Square Within Square	Canvas Embroidery	20" by 20"
7.	Sea Within Me	Machine Embroidery	17" by 17"
8.	Woven Squares	Fabric Construction	32" by 32"

SURFACE DESIGN

9.	Leaf Symmetry	Direct Dye	8' by 3'
10.	Japanese Garden	Photo Silk Screen	38" by 46"
11.	No Dogs Please	Fabric Blueprint	13" by 13"
12.	Shapes of Grey	Fabric Block Print	32" by 20"

WEAVING

13.	Paper Ikat I	Ikat Weaving	32" by 16"
14.	Paper Ikat II	Ikat Weaving	51" by 24"
15.	Knotted Twins	Weaving	33" by 32"
16.	Patches	Stitchery & Weaving	30" by 18"

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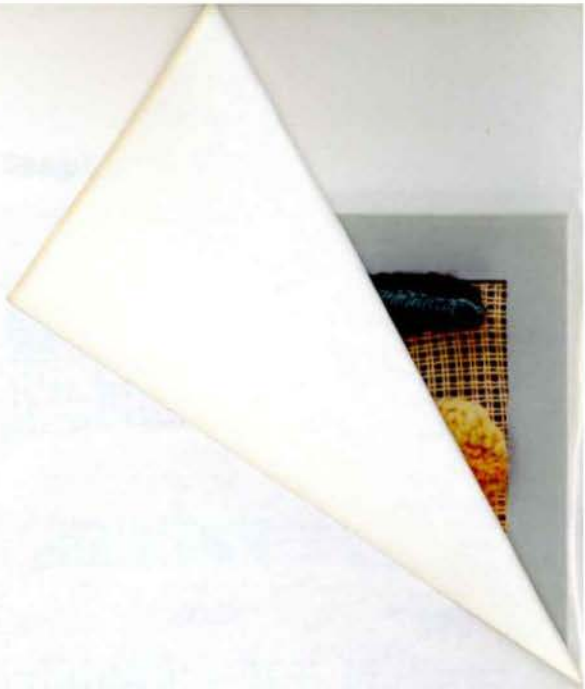


X. SAMPLES OF TECHNIQUES

Photographs of Stitchery Samples

Photographs of Stitchery Samples

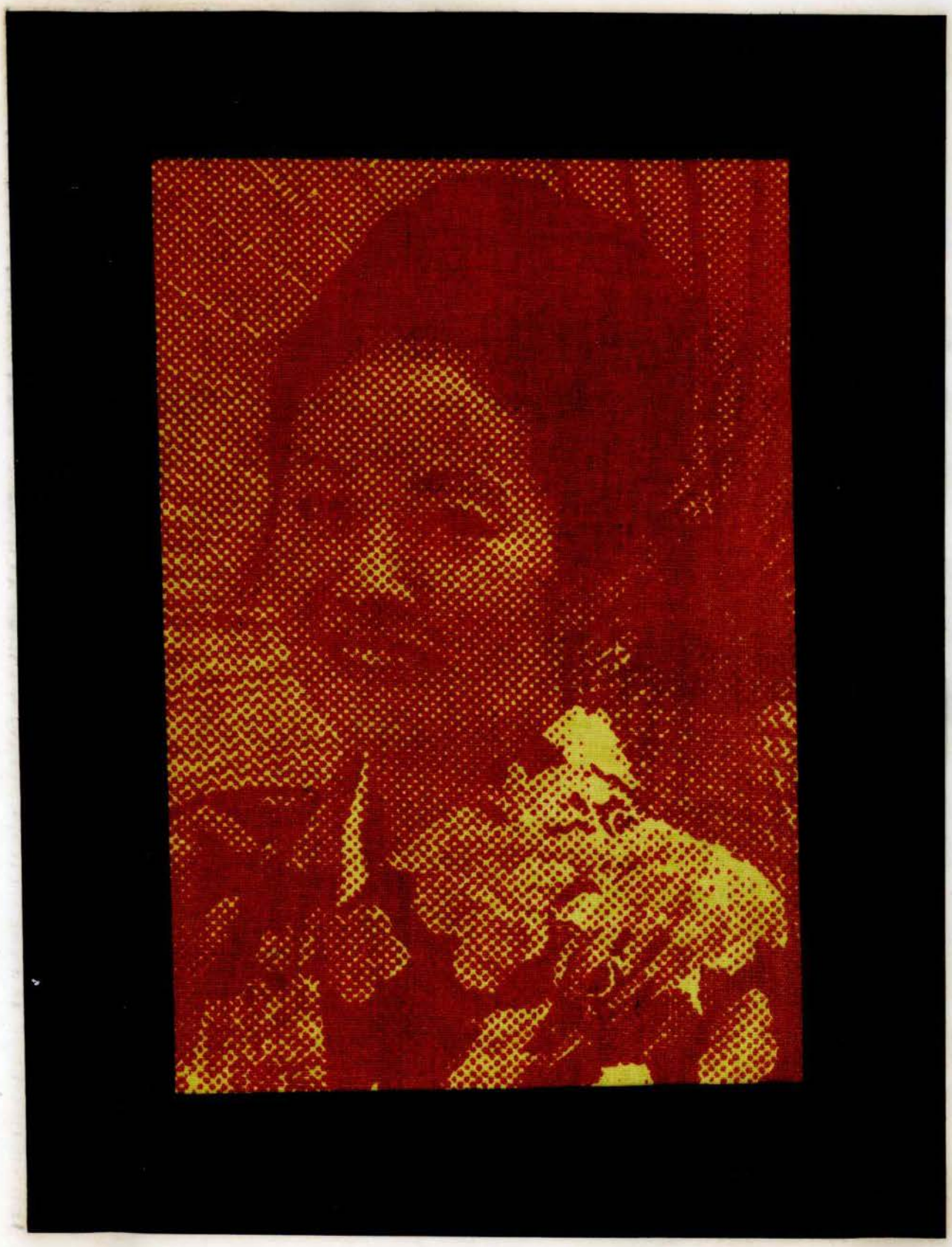
Photographs of Stitchery Samples

Stitchery Samples

Direct Dye on Silk Fabric

Kodalith Film

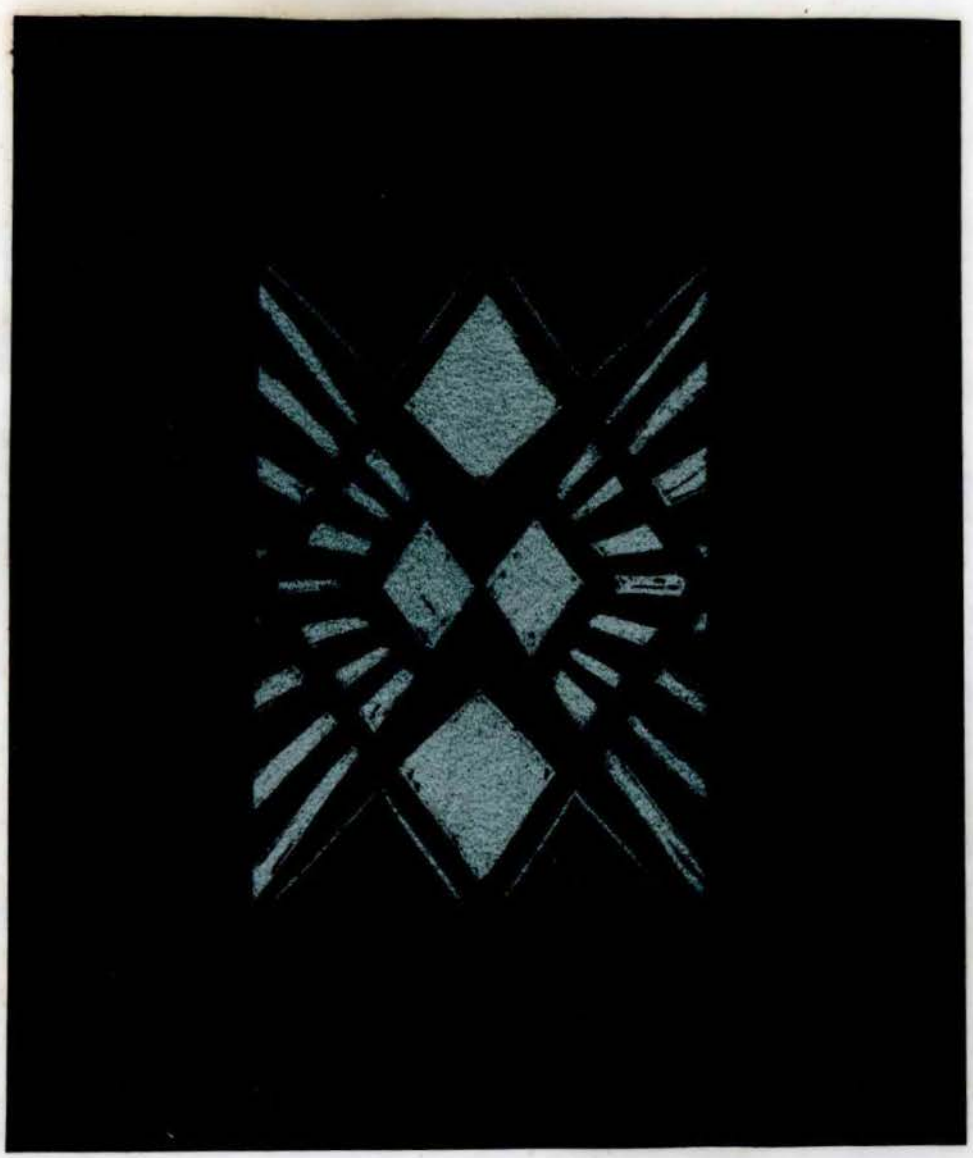
Photo Silk Screen Print



Blueprint

Brownprint

Fabric Block Print



XI. PHOTOGRAPHS OF WORK IN THE EXHIBIT

1. Flowing

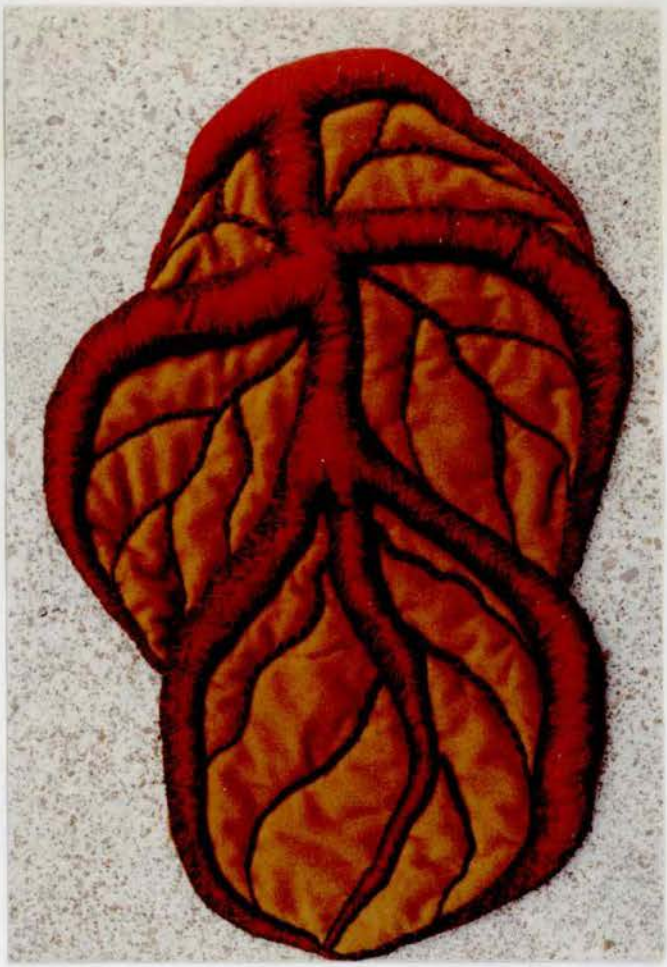
Creative Stitchery

44" by 32"

2. Roots

Creative Stitchery

32" by 22"



3. My Box

Canvas Embroidery

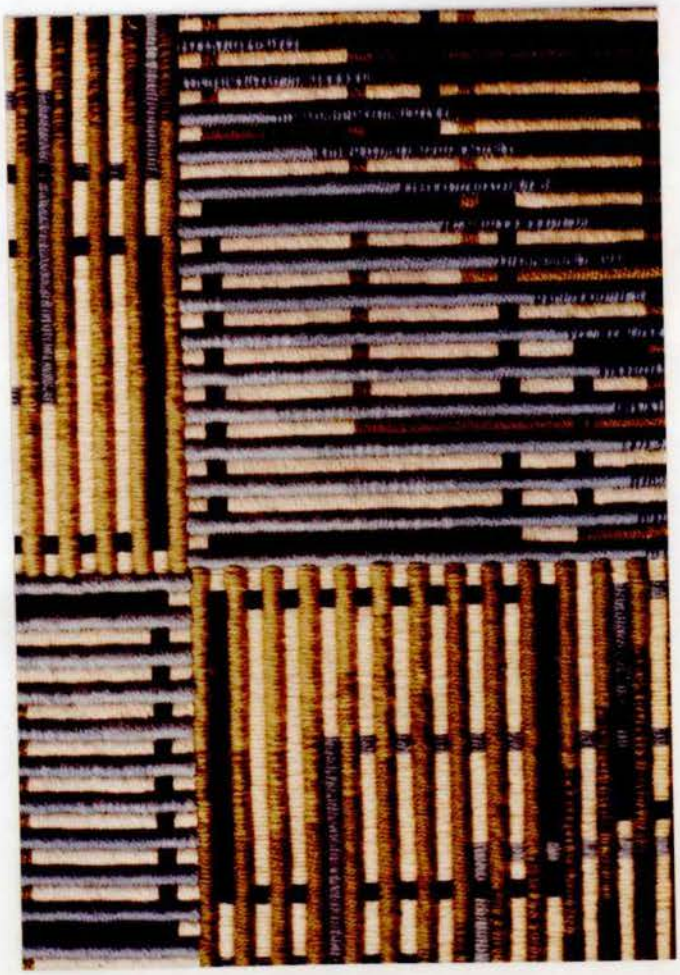
13" by 6"

4. Tri-Shell
Intertwining

Canvas Embroidery

15" by 11"

5. Square Rotation
   Canvas Embroidery
   28" by 28"

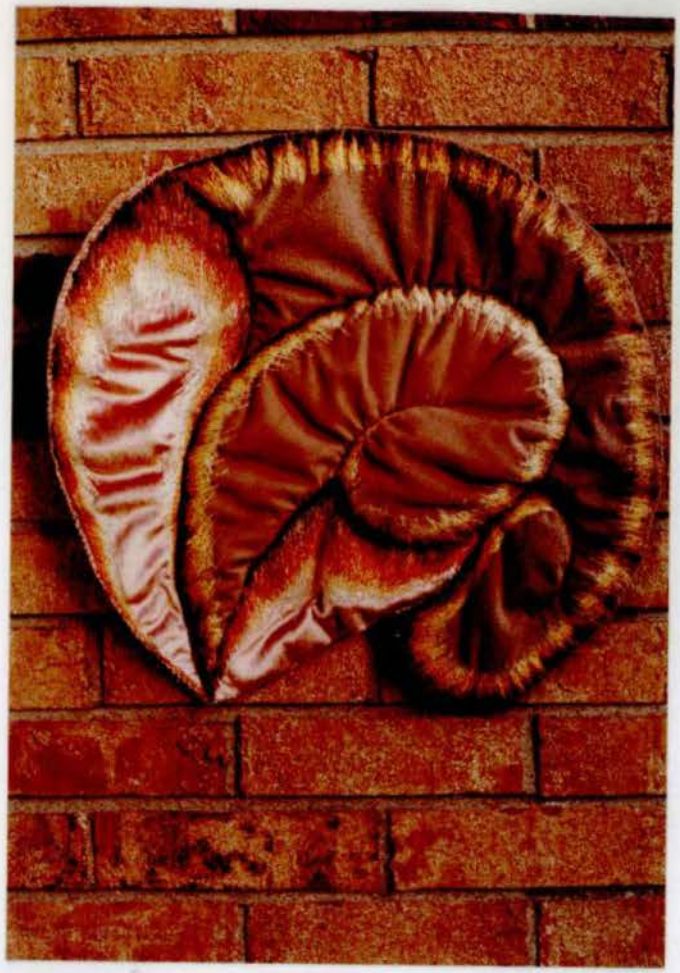


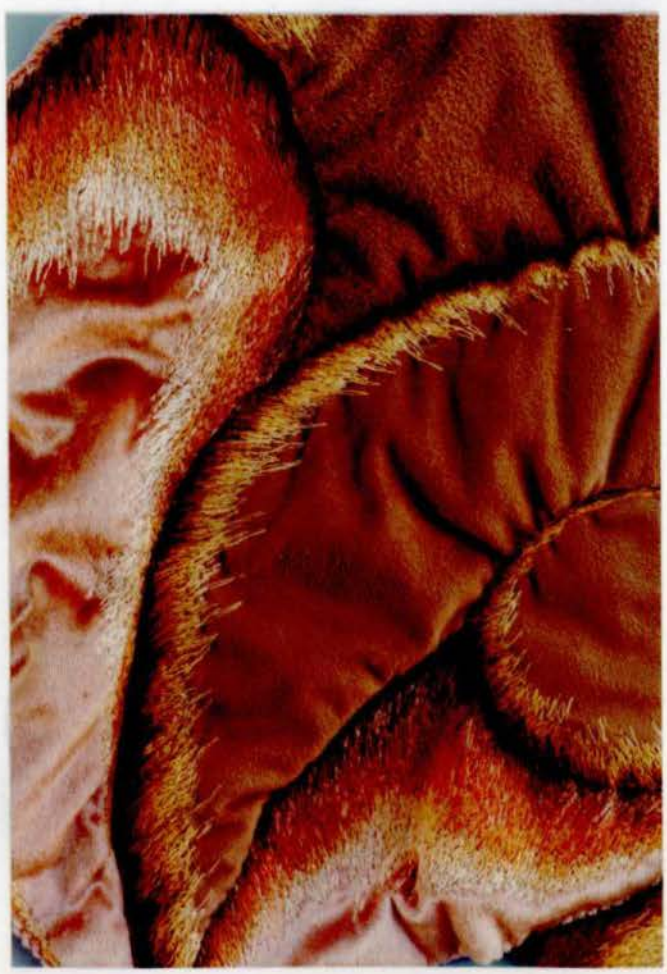
6. Square Within Square

Canvas Embroidery

20" by 20"

7. Sea Within Me
Machine Embroidery
17" by 17"

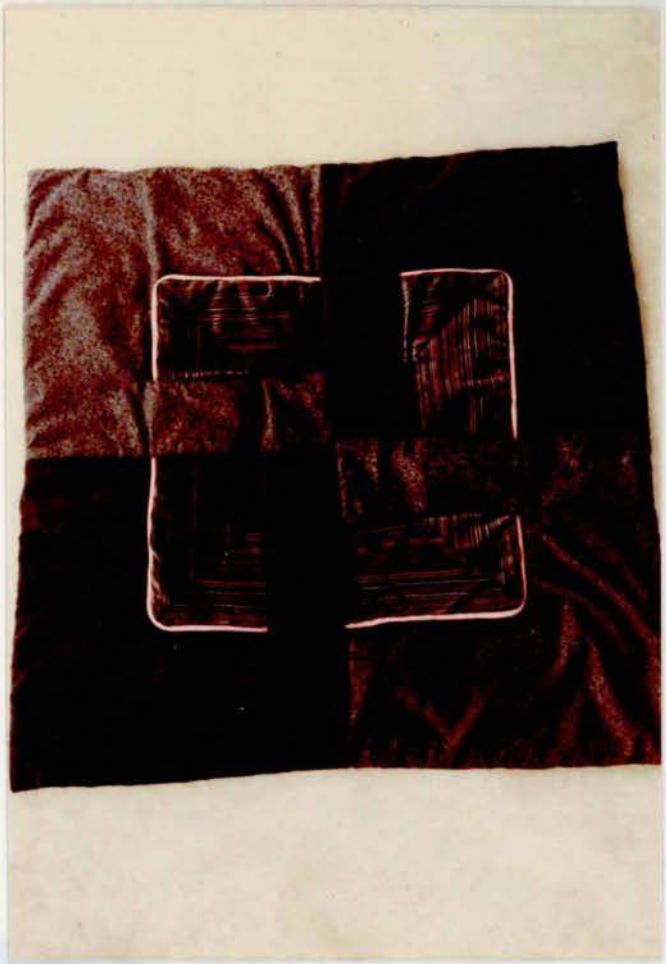




8. Woven Squares

Fabric Construction

32" by 32"



9. Leaf Symmetry

Direct Dye

8' by 3'

10. Japanese Garden

Photo Silk Screen

38" by 46"

11. No Dogs Please

Fabric Blueprint

13" by 13"

12. Shapes of Grey

Fabric Block Print

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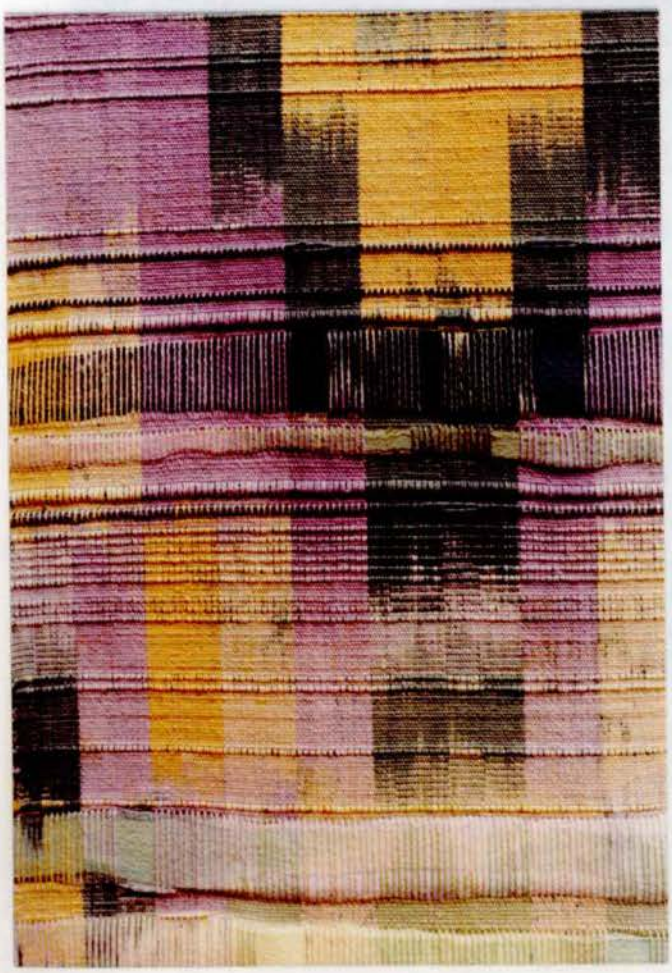
Ikat Weaving

51" by 24"



15. Knotted Twins

Weaving

33" by 32"

16. Patches

Stitchery and
Weaving

30" by 18"

Photographs of Culminating Project Exhibit


Georgia L. Leutwiler
2
APR 81C13
Georgia L. Leutwiler
6
80CII
Georgia L. Leutwiler
APR 81C13
35
Georgia L. Leutwiler
26
APR 81C13
Georgia L. Leutwiler
14
80C8
3
Georgia L. Leutwiler
81C13
Georgia L. Leutwiler
7
80CII
Georgia L. Leutwiler
APR 81C13
38
Georgia L. Leutwiler
30
APR 81C13
APR 80C6
Georgia L. Leutwiler
20


9
MAY 81C6
Georgia L. Leutwiler
16
APR 81C13
Georgia L. Leutwiler
12
APR 81C13
Georgia L. Leutwiler
Georgia L. Leutwiler
4
MAY 81C6
+
4
JAN 79C7
Georgia L. Leutwiler
Georgia L. Leutwiler
7
MAY 81C6
17
APR 81C13
Georgia L. Leutwiler
13
APR 81C13
Georgia L. Leutwiler
Georgia L. Leutwiler
2
MAY 81C6
JAN 79C7
Georgia L. Leutwiler
7
+