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ROCHESTER INSTITUTE OF TECHNOLOGY

A Thesis Submitted to the Faculty of
The College of Fine and Applied Arts
in Candidacy for the Degree of
MASTER OF FINE ARTS

THE ELEMENT OF LINE IN JEWELRY DESIGN

By

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May, 1990

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PREFACE

This thesis was concerned with the exploration of the element of line as it applies to jewelry design. My intention was to employ line as a tool to research design and composition in jewelry. Through experimental drawings I used a variety of lines, combined with other design elements to discover and develop ideas. I also captured spontaneity during the experimentation so as to add some playful quality to the designs. This spontaneity would have been difficult to attain if all the exploratory work was done through the making of the jewelry itself. Designs selected from some of my personal design exploration and experimentation with line were then transformed into jewelry.

In the course of this thesis two things did influence my thought process. First, my Ghanaian culture, in which art is made to be expressive through a symbolic sense. This quality of expressiveness is manifested in the entire body of my work. However, in Ghana the craftsman follows a set of traditional and stereotyped ideas and symbols. Thus, there is little scope for originality and creativity. So for many years I have been looking for an environment that will provide me freedom of creativity.

Thus the second influence is an environment with freedom of creativity. This I was pleased to find in America, a country where freedom of expression in art is infinite. This allowed me to shake off inhibitions and restrictions caused by my traditional attitudes and to be as creative as I wish.

These two cultural influences combined with my exploration of line, design principles and technical know-how brought this project into reality.

The element of line in jewelry design is organized into three chapters. The first chapter deals with types of line, characteristics and uses of lines. The second chapter points out briefly some historical references from ancient to modern use of line in jewelry. The third chapter deals with the exploration of line in searching for and developing ideas. Moreover, it deals with evaluation and execution of some of the designs that evolved into jewelry.

It is my hope that the information in these chapters will be of value to anyone interested in developing an appreciation of line and creating his or her own designs with line as it applies in jewelry.

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CHAPTER I

What is Line?

Of all the elements of art, line is the most familiar to us. Since most of our writing and drawing tools are pointed, we have been making lines constantly since we were young children. Line, other than a mark made by a pointed tool, is a form that has length and width. However, the width is so tiny compared to the length, that line is usually perceived as having only one dimension—length. The width or thickness of line may introduce a second dimension. But it is often debatable as to how thick a line may be before it becomes identified as shape.

“Geometry defines a line as an infinite number of points. The usual art definition of a line is a moving dot,”¹ or “the path of a point moving in space.”² This definition is useful to remember in that it recognizes the inherent dynamic quality of line.

Types and Characteristics of Line

A line may move in any direction —horizontally, vertically, circularly, diagonally, undulating or a combination of these. Generally speaking three types of line may be identified: actual, implied and psychic.

Actual line is a continuous mark or a mark without any intermittent points and may vary greatly in weight, character and other qualities, see Fig.

¹David A. Lauer, *Design Basics*, (New York: CBS College Publishing, 1985), p. 123.

²J.W. Giachino and Neil L. Schoenhals, *General Metals for Technology*, (Milwaukee: Bruce Publishing Company, 1964), p. 52.

1. Implied line unlike actual line is created by positioning a series of points or marks so that the eye tends automatically to connect them. Like actual line, it may vary in weight, character and other qualities, see Fig. 2. With psychic line, there is no real or even intermittent points. It is rather a mental connection between two elements or among elements. This usually occurs when something looks or points in a certain direction. Our eye invariably follows and a psychic line results, see Fig. 3.

All the three types of line mentioned above are equally important to the artist in various ways for expression of ideas and solving design problems. Basically all the three types can move in a horizontal, vertical or diagonal direction. But with the exception of psychic line the other two types have variations. These variations of lines basically fall into the category of straight, curved or a combination of these two. This may produce wavy, scalloped, zigzag, shaded or S-shaped lines, see Fig. 4. All these lines have certain characteristics which may be identified as physical and expressive.

Physical characteristics or qualities of lines refer mainly to the general character of lines used for a particular kind of representation. These may be described as thick, thin, smooth, rough, long, short, fuzzy and many others. The various tools, materials and techniques used to create lines often help to determine these physical characteristics. Lines in themselves may produce a feeling of action or motion. This may be referred to as the expressive character of lines. Such characteristics may be described as exciting, repose, dignity, stability, flight and many others. The expressive characteristics of lines are the result of their direction and physical qualities as interpreted by the artist or the viewer. Impressions of daintiness, boldness or gracefulness may be suggested by fine, heavy or curved lines, respectively. With these

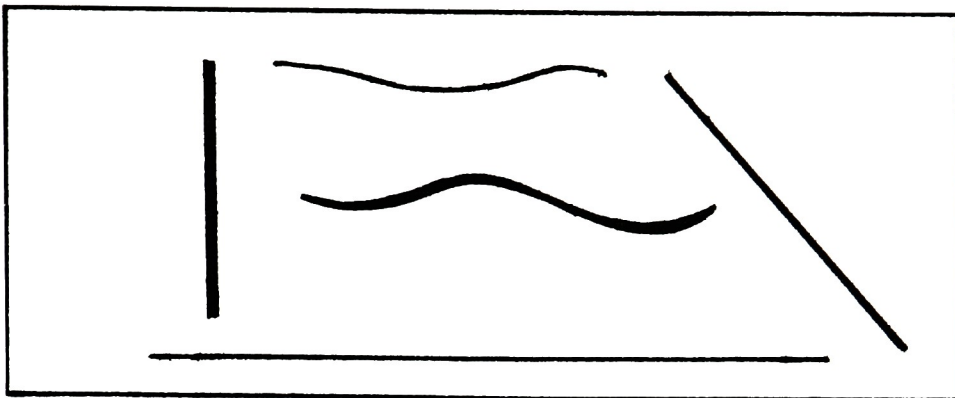


Fig. 1. Actual line

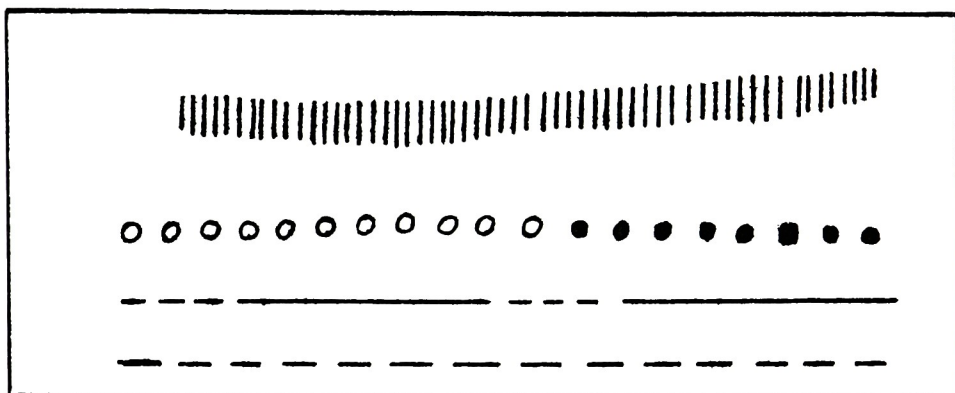


Fig. 2. Implied line

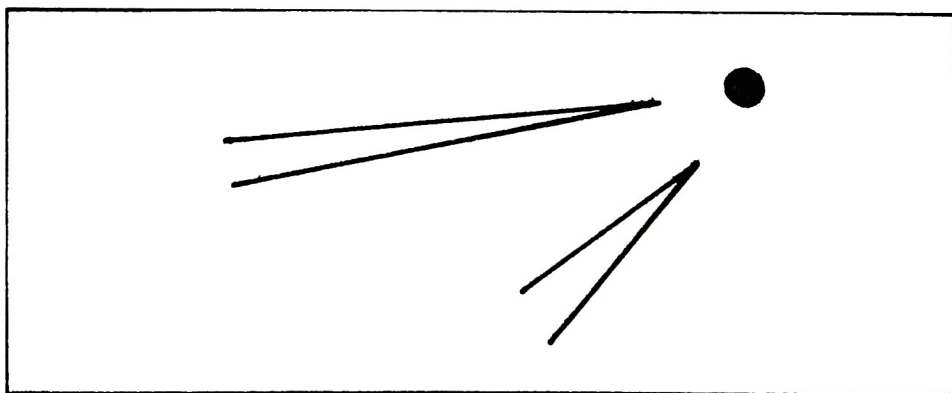


Fig. 3. Psychic line

characteristics of lines in mind, one may be able to use lines to transform a mental image into an actual physical image or communicate and exchange ideas with others.

Purposes of Lines

In the field of art, line may serve as a basic tool for many purposes. Four of these purposes are as follows: to create a shape; to create texture; to divide space and create movement; to create optical illusions.

To Create a Shape

Lines can be used to describe shapes and by shapes we recognize objects. Lines joined together form the boundaries of planes, produce outlines of shapes, contours, openings and intersections of planes. Lines define and give shape to an object and establish size relationships and proportions. For instance, a line may be curved so much that the opposite ends meet to form a circle or oval. Four lines the same length may be touched at the ends to form a square. From these simple illustrations one may go on to recognize the use of lines to define the shape of an animal, leaf, flower or any particular object. The degree to which these lines are exaggerated in length or direction may indicate the degree of abstraction or realism that may be represented in the design.

To Create Texture

Another way lines may be put to use in designing is creating texture. Texture refers to the surface quality of objects and deals most directly with our sense of touch. Texture may be created by grouping lines such as criss-crossing, jaggging, branching or laying series of lines in a regular or irregular

manner. Basically, there are two categories of artistic texture: tactile and visual. Tactile texture refers to the surface quality of objects that can actually be felt, whereas visual texture gives the impression of texture that is purely visual. It cannot be felt or enjoyed by touch, it is only suggested to our eyes. Chasing, wire applique, etching, and filigree are some of the ways lines can be created on metal surfaces to obtain tactile texture. With visual texture on a metal surface using lines, methods such as inlaying, color-anodizing aluminum, niello and lamination may be employed.

To Divide Space and Create Movement

Lines may be used to divide space for the overall design and of its parts to achieve beautiful space relationships where variety of shape, size and the general unity of idea are to be expressed. In the planning of basic shapes—geometric, freeform, abstract or naturalistic—within a design the use of lines is important. In a design where scale of forms or shapes is of importance, lines may be used to divide shapes to create large, medium, or small ones—or a combination of these. Using lines, space may be divided into more than two parts by repetition of spaces, variation of spaces, or a combination of repetition with variety. Lines may be used mathematically to plan progressively larger or smaller areas in a diagonal, horizontal, vertical or circular manner. Or the eye may be used as a guide in creating a variety of areas that seem to harmonize or contrast with each other in a satisfying manner. For instance in Fig. 5, the diagonal lines, irregularly spaced, tend to break the space into more interesting areas of large, medium and small. Repetition, gradation or progression of spaces by use of lines not only creates space division and help to achieve interesting space relationship, but also

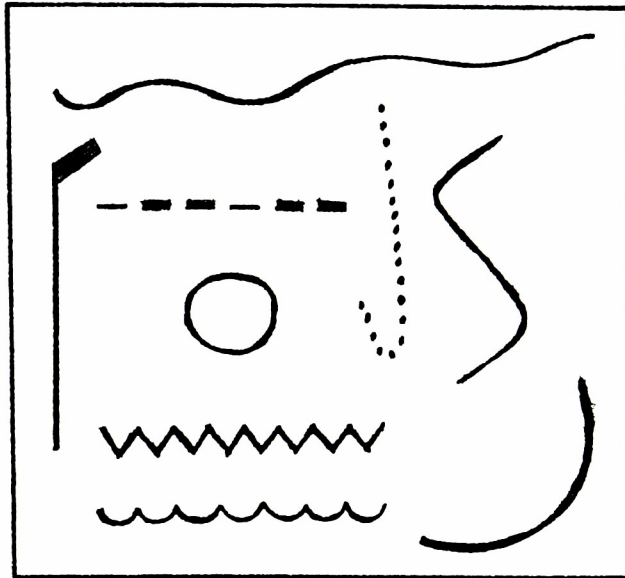


Fig. 4. Variations of lines

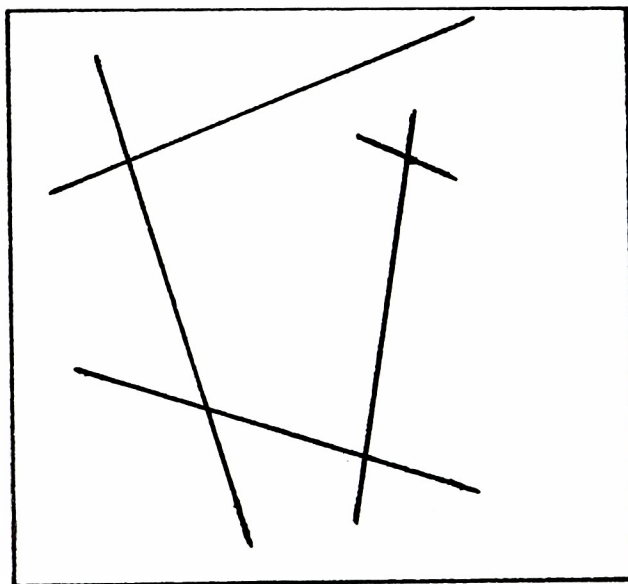


Fig. 5. Lines showing variety in length, direction and spacing

tend to express a sense of movement and therefore overcomes a static quality in a composition.

Optical Illusions

Lines may be used purposely in a variety of ways to make things appear different from what they seem. For example, in Fig. 6, the diagonal lines tend to make the right end appear to be wider; Fig. 7, the straight lines emphasize the rhythm of a contour shape, such as a fence; and Fig. 8, the straight lines create the illusion of a fence standing up at the left and lying down at the right end. To suggest a change in appearance of an area by means of proportion might involve the lengthening or broadening effects of vertical and horizontal lines. In general, lines running in a vertical direction tend to carry the eye up and down, and make an object appear longer. Whereas lines running in a horizontal direction would make an object appear shorter and wider, see Fig. 9. All the areas are the same size and shape, but in (a) the vertical line tends to carry the eye up and down, and makes the space seem longer. In (b) the horizontal line tends to carry the eye across the space and makes it appear wider.

Horizontal lines placed closer and closer together as they progress upward might tend to create the illusion of height or distance, see Fig. 10. This illusion is due to the fact that the lines are short horizontally and are extended over a relatively long space. Diagonal lines may be used to make a line appear shorter or longer, see Fig. 11. The vertical lines are the same length, but the diagonals in (a) create the optical illusion of additional length. The diagonals in (b) create the optical illusion of reducing the length. This

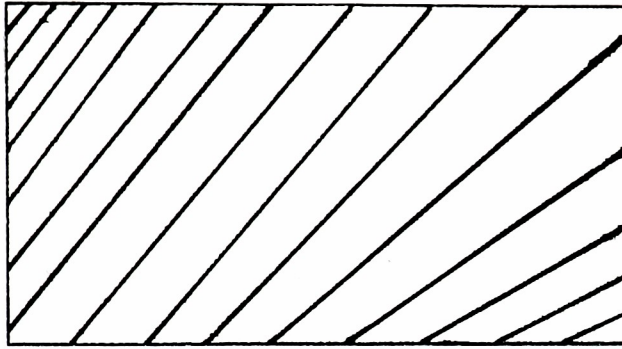


Fig. 6. Diagonal lines tend to make the right end appear to be wider.

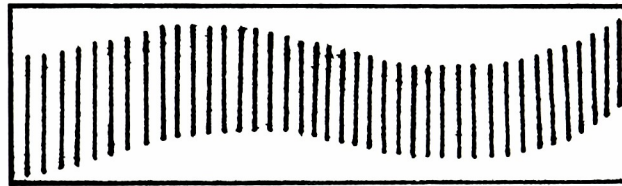


Fig. 7. Straight lines emphasize the rhythm of the contour shape.

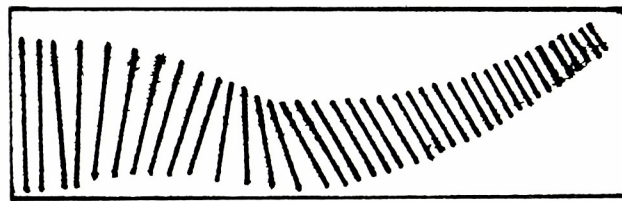
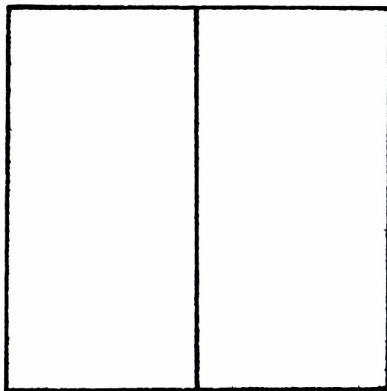
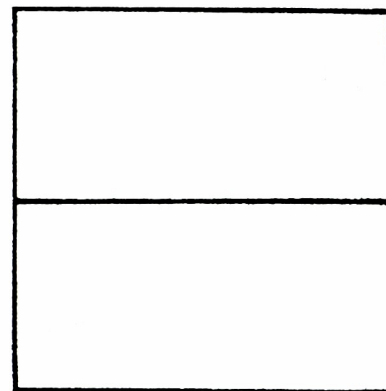


Fig. 8. Straight lines create optical illusion of a fence standing up at the left and lying down at the right.



a

Vertical line tends to make the space appear longer.



b

Fig. 9.

Horizontal line tends to make the space appear wider.

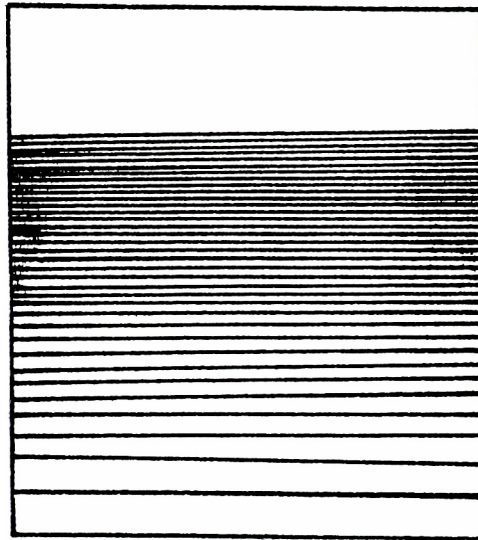


Fig. 10. Horizontal lines placed closer and closer together as they progress tend to create an illusion of height or distance.

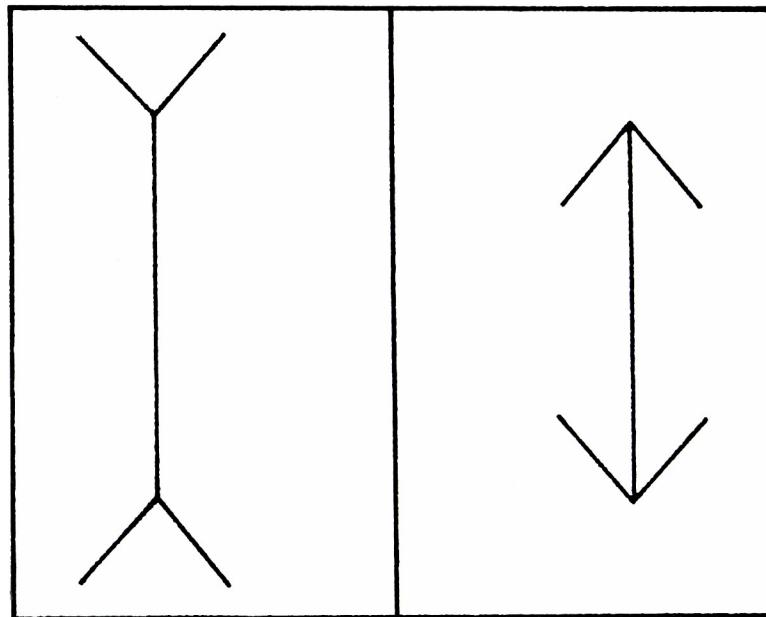


Fig. 11.

a

Diagonal lines create an optical illusion of additional length.

b

Diagonal lines create the optical illusion of reducing length.

illusion can be used to advantage to change the apparent height of a shape or space.

To a large extent line is capable of infinite variety and its power of suggestion is very great. This basic element can be a valuable tool to the artist.

CHAPTER II

Historical References

“Line has served artists as a basic tool ever since cave dwellers drew with charcoal sticks on the cave walls.”³ Throughout the centuries of recorded time in the history of jewelry, the use of line in jewelry design has been prevalent. Line has been used for decoration, representation, expression and other purposes in jewelry design. In jewelry, craftsmen and artists have used a variety of lines in various ways for the delight of enhancing their work; to convey a feeling of fantasy and pleasure; to translate emotions and feelings; to represent things they are already familiar with in a geometric, realistic or abstract manner; to describe historical events and scenes; to transform mental images—traditional, religious or mystical into actual physical images; to communicate and exchange ideas with others. Techniques such as granulation, niello, inlay, forging, piercing, engraving, filigree, chasing, repousse and others, were and are still being used today to create line and linear effects in jewelry design.

Looking at the use of line as an element in jewelry design from ancient to modern jewelry, one may make references to certain cultures, movements and individual artists for their passionate interest in the use of line in jewelry design. Ancient cultures such as Etruscan, Mycenae, Greek and Celtic to mention but a few are noted for their use of line in jewelry.

³David A. Lauer, *Design Basics*, (New York: CBS College Publishing, 1985), p. 126

The Etruscan artistic attitude, and their numerous surviving jewels, are well known for their heroic in design and bewildering in intricacy. The Etruscans used line in a simple and elaborate manner to express their ideas. They seem to have made almost everything that we wear today, using techniques to create lines and linear effects in their jewelry to give the same uninhibited expression as we do today. They made bracelets, fibulae or clasps, earrings, necklaces and pendants, nearly always decorated with linear patterns picked out by granulation or filigree and often by inlay or enamelling. They employed granulation with great imagination in creating variety of lines in decorating their jewels. Inspired as they were, the Etruscans' choice of variety of line idioms enabled them to create intricate, absolutely distinctive abstract designs, and to achieve amazing vitality in their jewels, and showed a seemingly endless fertility of invention using lines. Fig. 12 is a fibula of a typical Etruscan granulation. Here granulation is used to pick out linear details of the birds and patterns on the round shaped objects. Also, the pyramid shaped part is emphasized by outlining it and decorating the inside with continuous meandering abstract design. Figs. 13, 14, 15 are other examples of the Etruscan use of line in jewelry.

With reference to Mycenae, jewels discovered by Schliemann at Mycenae show evidence of their use of line in jewelry in various purposes. Through engraving they used lines describing extremely elaborate battle or hunting scenes of minute scale on rings as seals. They used lines to create symbols, motifs and geometric patterns in decorating large gold buttons, diadems, necklaces and other body ornaments by chasing or filigree. Fig. 16 are examples of three gold buttons from among hundreds discovered by

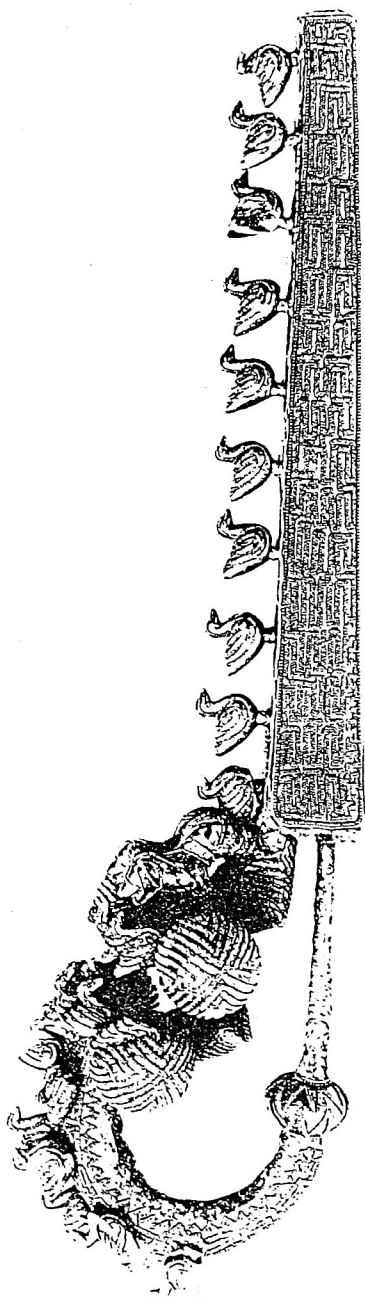


Fig. 12. Etruscan Fibula, 650 BC

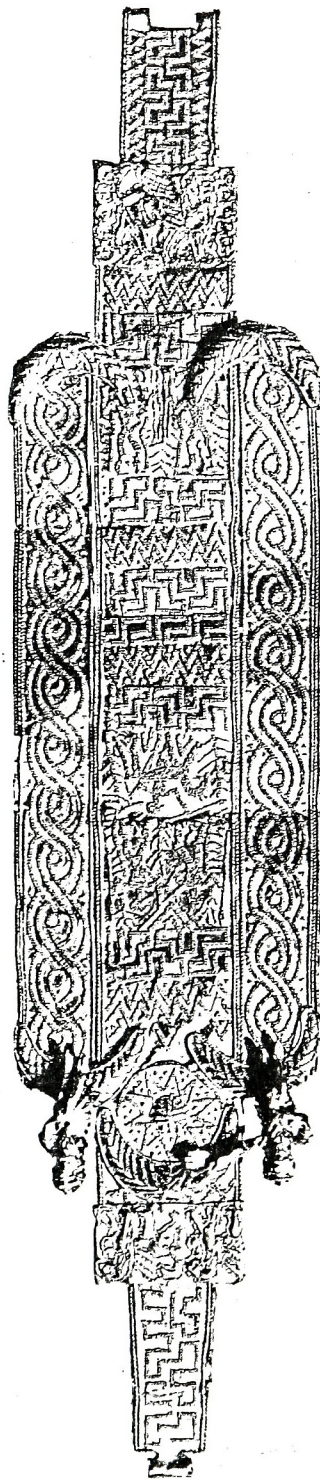


Fig. 13. Etruscan Bracelet, 700-600 BC

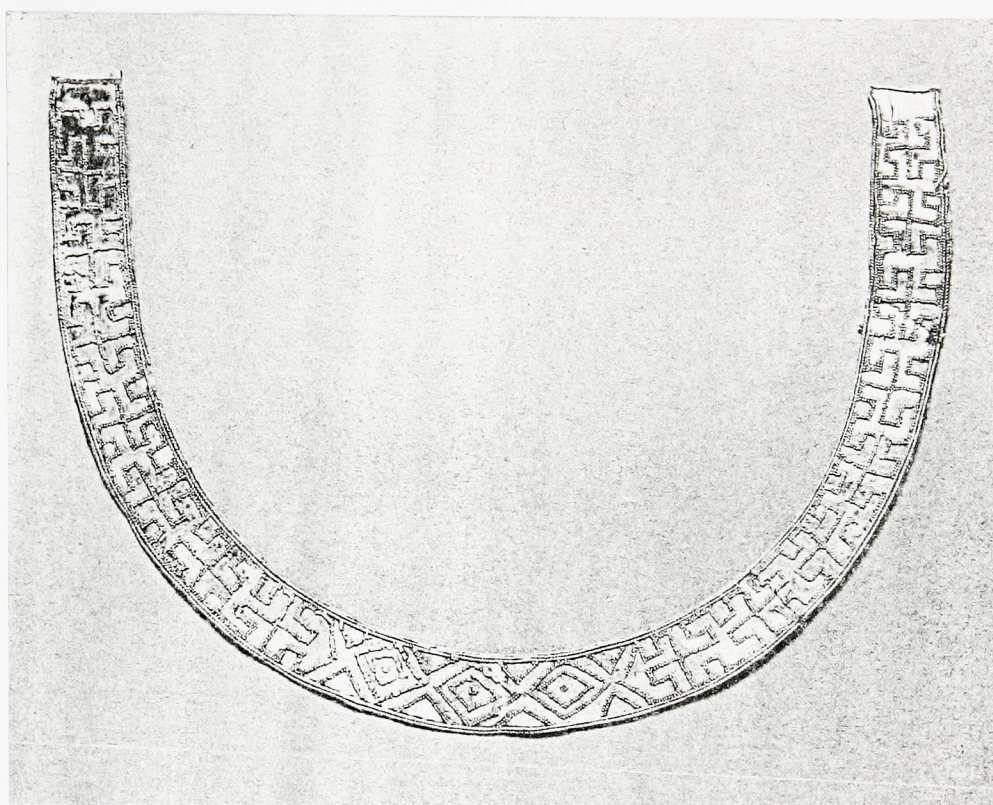


Fig. 14. Etruscan Horseshoe-shaped
Strip-Breast Ornament, 7th Century BC



Fig. 15. Etruscan Gold Animal Head Pendants, 7th Century BC



Fig. 16a,b,c. Three gold buttons from among hundreds discovered by Schliemann at Mycenae.

Schliemann at Mycenae, showing the use of lines in decorating and creating distinctive abstract designs on the buttons.

Ancient Greece is another culture which used lines in various ways for decoration and representation purposes in jewelry design. They gloried in the human figure and loved to accentuate it with lines created by the technique of granulation. They used lines to create abstract designs, describe animals, gods and goddesses on sceptres, crowns, necklaces, ends of bracelets and earrings, through granulation, engraving, inlaying or filigree. A pectoral ornament showing line details on the winged goddess and the lions picked out by gold granules is an example of a piece from a set of five gold plaques, see Fig. 17. Other examples of the use of lines through granulation by the Greeks, see Figs. 18-19. Their delicate use of lines in filigree pins is well known. Using wires—twisted or plain—bent by various methods into the desired design and soldered onto a gold sheet, they were able to create intricate linear effects. They also used filigree in open work patterns without a background, thereby achieving a lacy kind of ornamentation.

Last but not least, the Celts used lines predominantly in their jewelry design. They are noted for their strong interest in the use of interlacing line in jewelry. With the Celts, line was the common denominator in the shaping of form both in silhouette and surface modeling. Line binds and controls the manipulation of the shaping of the surface and forms patterns and designs on it, see Fig. 20. Their expression is consistently linear. Motifs are formed by line, or are simply shapes made up of lines. Their interwoven ornaments were often picked out by piercing, usually chased, not engraved, giving a soft curve of extraordinary grace. The Celts as part of recorded history are remembered for their special contribution to



Fig. 17. Pectoral Ornament—Greek

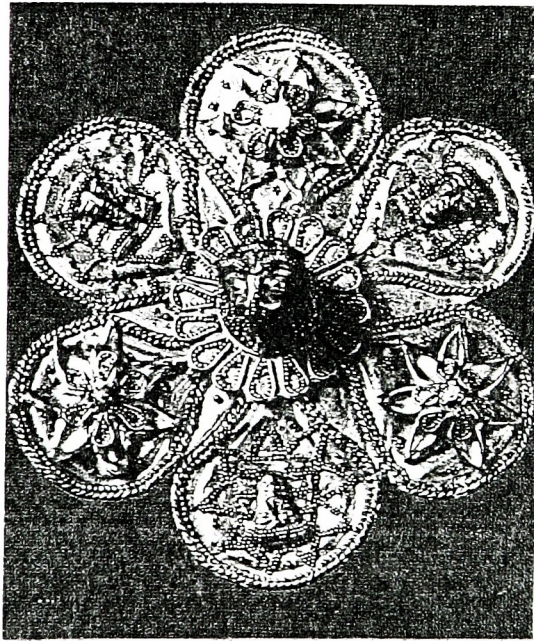


Fig. 18. Gold rosette with six rounded petals each outlined with twisted wire—Greek, 7th Century BC

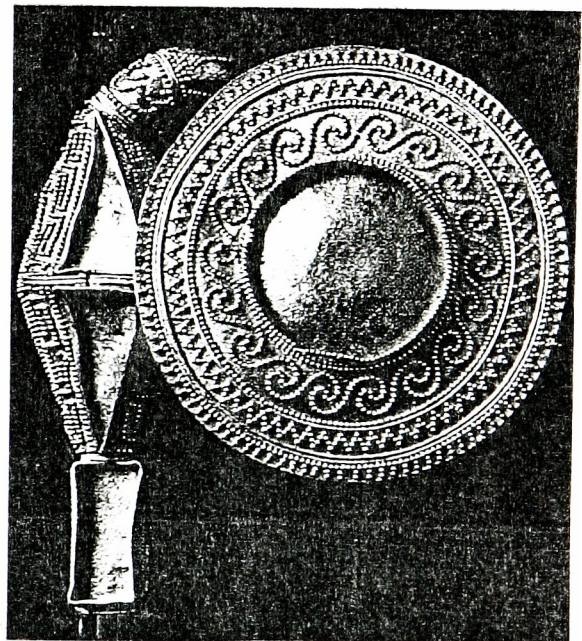


Fig. 19. Gold earring—Greek, 8th Century BC

jewelry in relation to the sinuous line later re-expressed around 1895 by Art Nouveau.

The use of line creatively in jewelry design continued through the ancient period into the modern age with occurrences of swings in taste from elaborate to simple, back and forth, as well as different purposes. One notable occurrence during this period—the Art Nouveau movement—occurred at the turn of the century, and its influence was felt both in Europe and America. Though this movement was short-lived, it did much to draw together all the arts, and as far as jewelry was concerned, made its mark in no uncertain form. T. Lambert, René Lalique, Georges Fouquet, Wilhelm Cranach, T. Fahrner and others all created jewelry of exceptional quality and originality, but all were inspired by a lanky intertwined line, see Figs. 21-26. Though this intertwined line associated with Art Nouveau jewelry owed something to the new awareness of Japan at that time, it has some expression of its own origin.

“The new free-flowing ‘whiplash’ line expressed the struggles of art at the turn of the century. It suggested movement, as well as passion, vitality, the youthful vigour of the new ideas, and it was through line that, in the critic Robert Melville's phrase, the ‘visible waves of erotic vertigo’ were generated.”⁴

The moving line in Art Nouveau jewelry very often was used on its own, rather than to join different elements in a design and create an abstract linear look. In other pieces, it represents organic or sensuous symbols such as wriggling marine plants, rippling hair, billowing veils, or even the natural curves of the female form. “The excessive use of this line and its

⁴Vivienne Becker, *Art Nouveau Jewelry*, (New York: E.P. Dutton, 1985), p. 14.

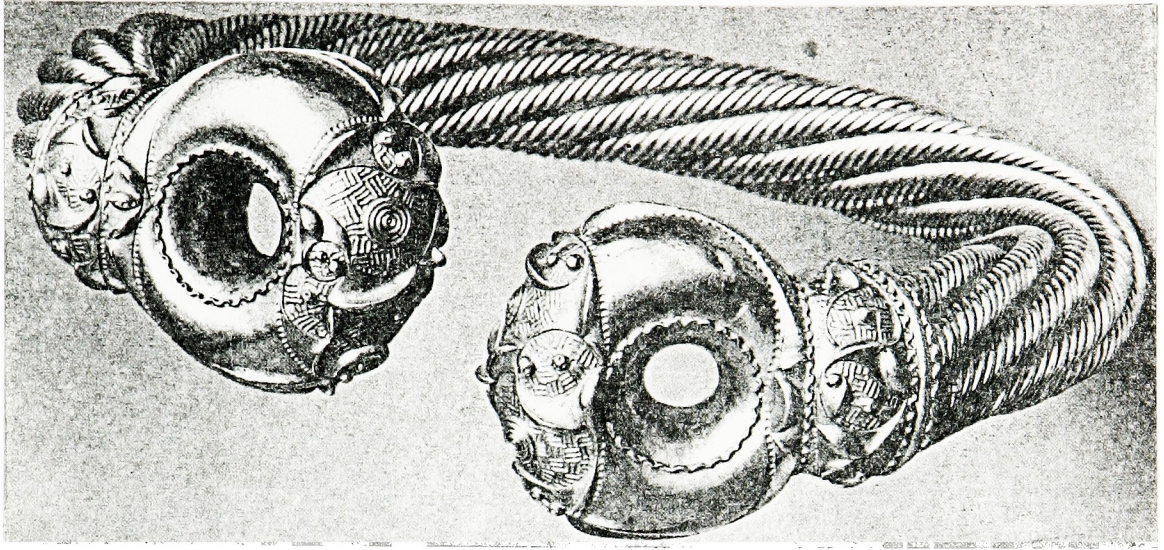


Fig. 20. Torque of Electrum—Celtic, 50 BC



Fig. 21. T. Lambert—Silver Necklet with Pendant

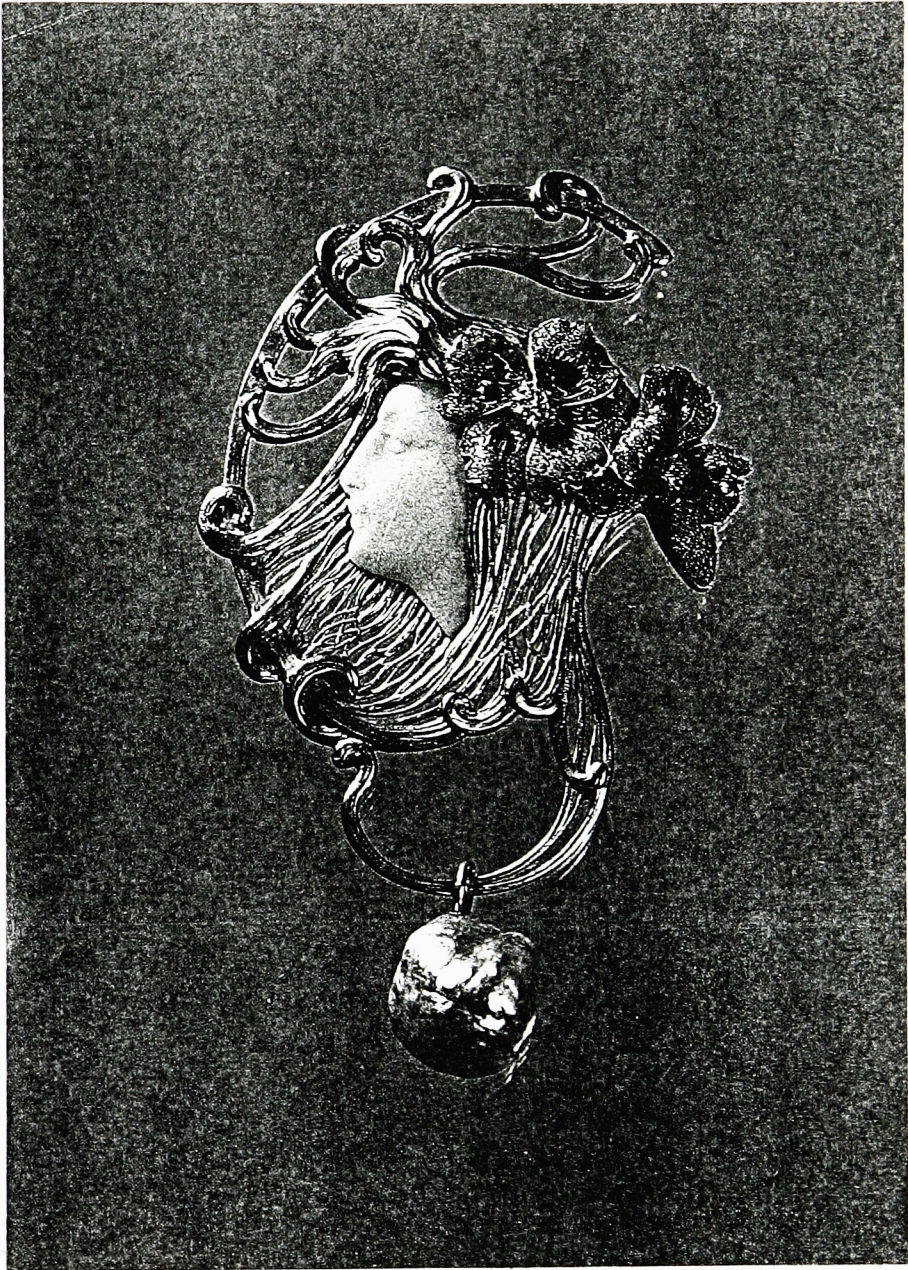


Fig. 22. René Lalique—Pendant, 1898-99



Fig. 23. G. Fouquet—Necklet with Pendant

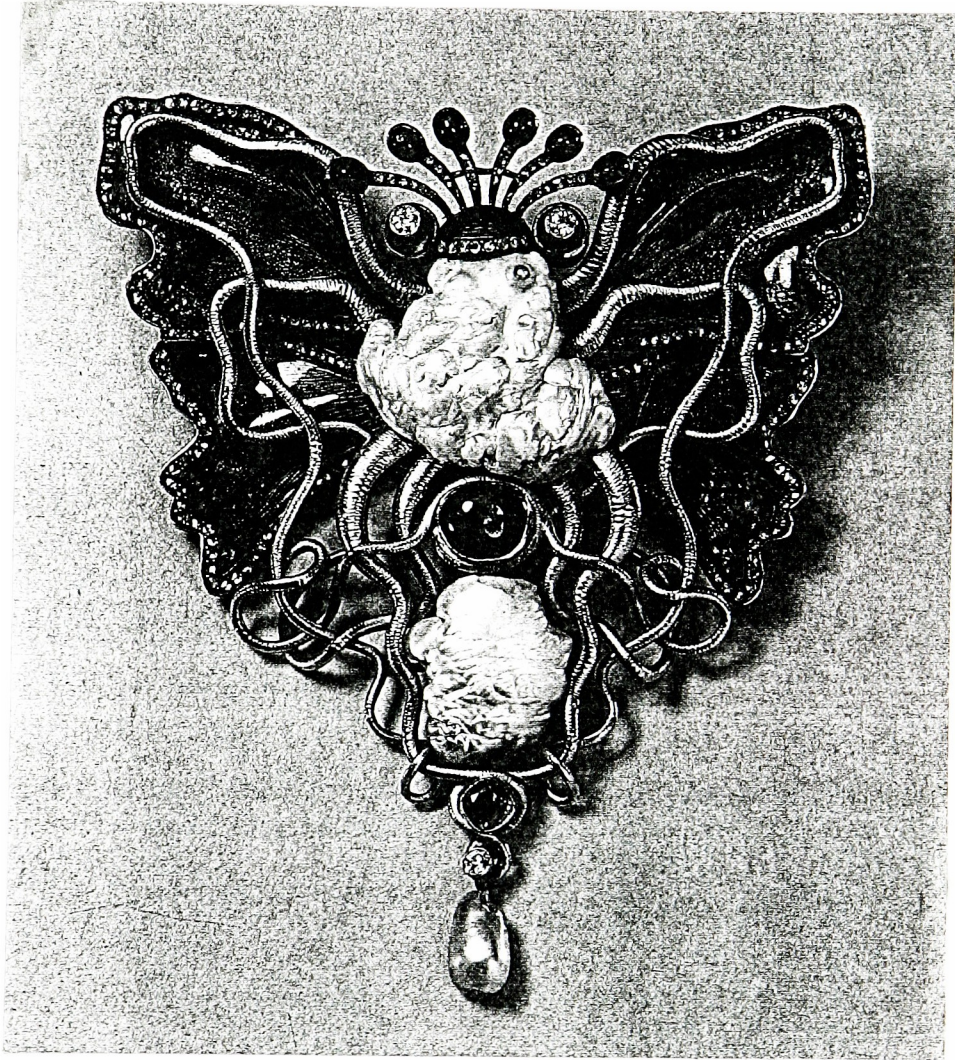


Fig. 24. Wilhelm Lucas von Cranach—Brooch, 1900

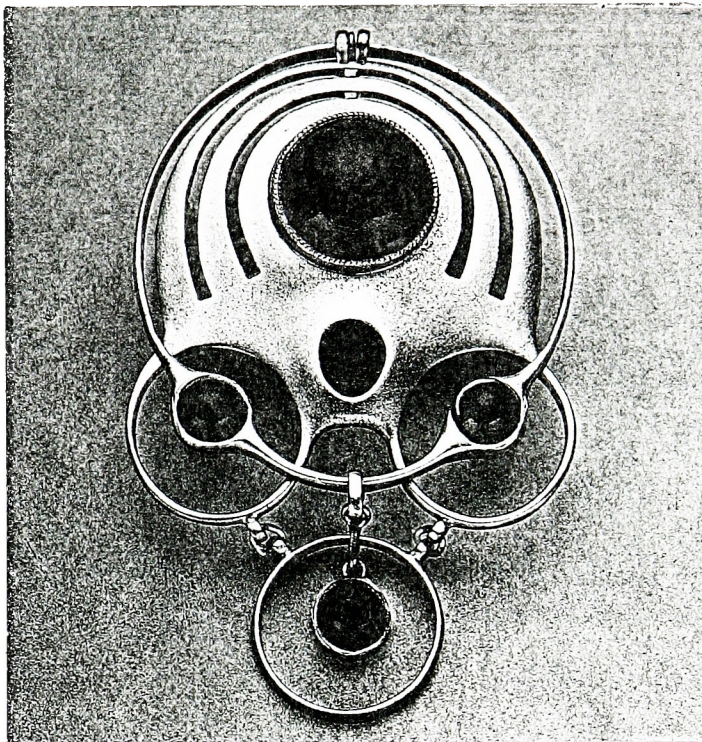


Fig. 25. T. Fahrner—Silver Brooch, 1905

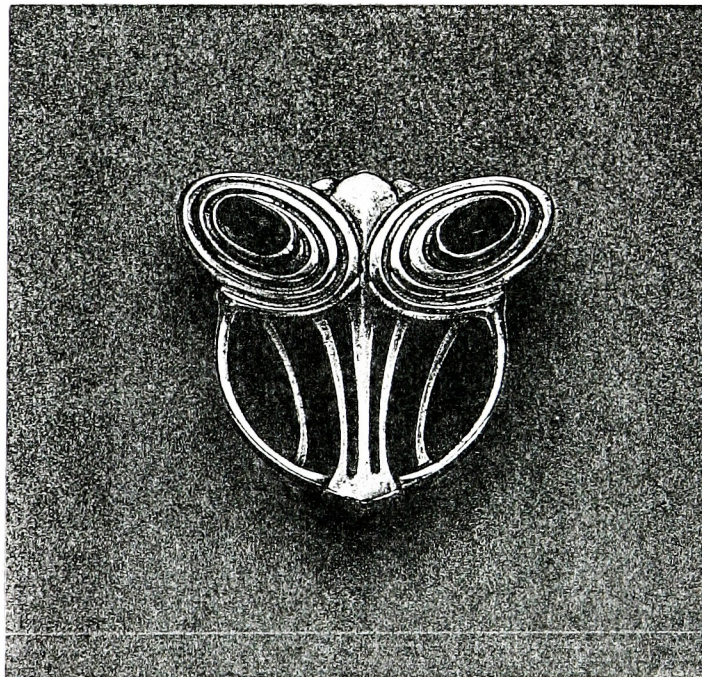


Fig. 26. T. Fahrner—Silver Brooch, 1900-02

overpowering presence in many cases, brought about various pejorative remarks for the style as a whole. Art Nouveau was nicknamed 'Paling Style' (eel style) in Belgium, 'Style Nouille' (noodle style) in France and 'Bandwurmstil' (tapeworm style) in Germany."⁵

The use of line, and the linear aspect of design, are the common characteristics of Art Nouveau jewelry from different countries, and are also what distinguishes the jewelry of one country from that of another. The French, for instance, use line in a figurative manner (as in the portrayal of flowing hair or seaweed), while other countries concentrate on the line itself turning it into abstract designs. For instance, Germany and Austria's style was angular and straight lines rather than the curves of France and Belgium. In England, the Celtic revival with its interlacing and whiplash, its groups of leaning squares and triangles and people of mingled colors, was the basis of modern jewelry design. In Scotland, Mackintosh used a highly individualistic, austere approach to the controlled but dynamic line, which was further explored in German and Austrian jewelry at the turn of the century and which was to be developed in modern styles.

The importance of the melodious line was expressed by Walter Crane: "Line is all important. Let the designer, therefore, in the adaptation of his art, lean upon the staff of line—line determinative, line emphatic, line delicate, line expressive, line controlling and uniting."⁶

The character of line itself is related to economic, social, or cultural developments. People today do not react to pretty sentimental curves as they did in 1900 and consequently there is more variation of line; more angular,

⁵Becker, *Art Nouveau Jewelry*, p. 15.

⁶Becker, *Art Nouveau Jewelry*, p. 15.

bent, shaded and broken lines are used in all forms of contemporary jewelry design, see Figs. 27-32.

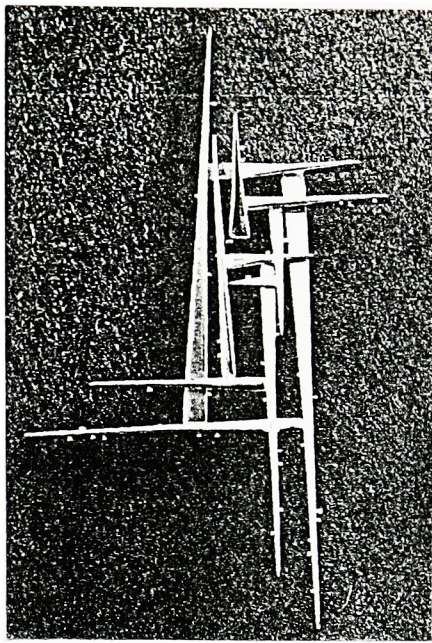


Fig. 27. John Paul Miller—Brooch

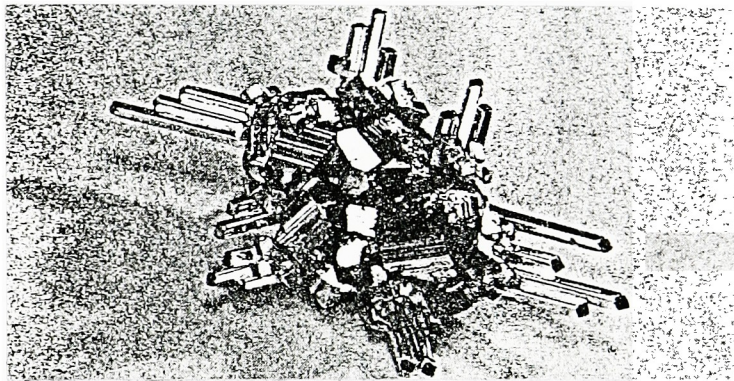


Fig. 28. John Donald—Brooch

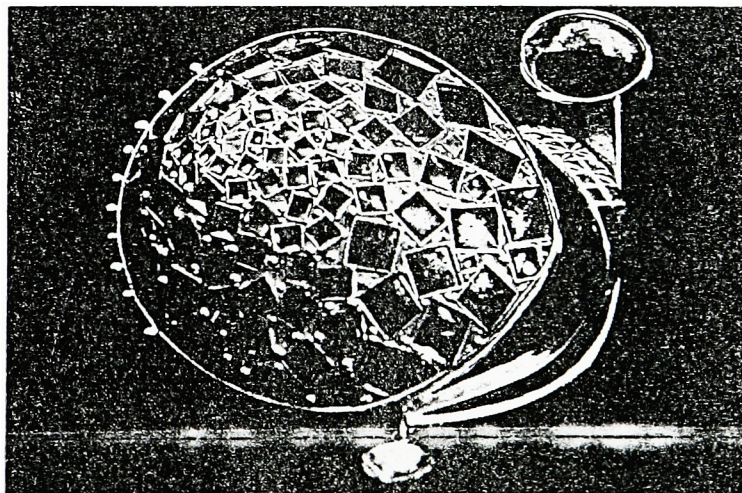


Fig. 29. Mary Kretsinger—Brooch

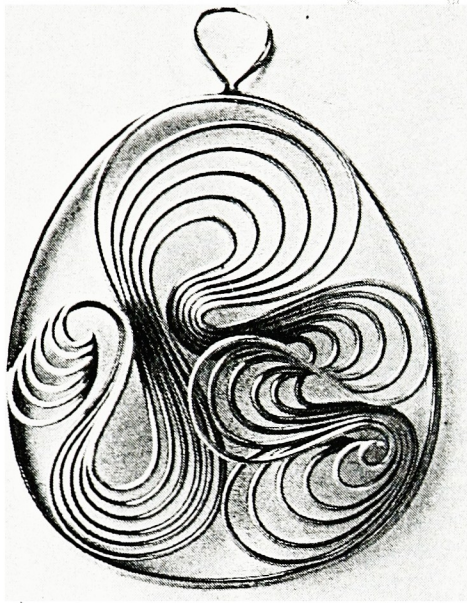


Fig. 30. Max Frölich—
Pendant

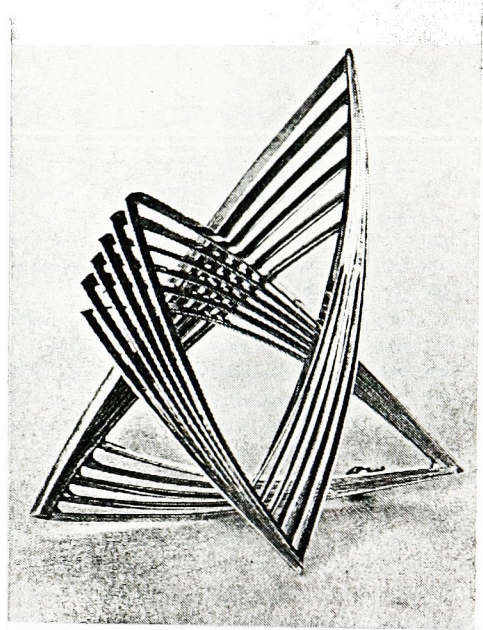


Fig. 31. Archibald Dumbar—
Brooch

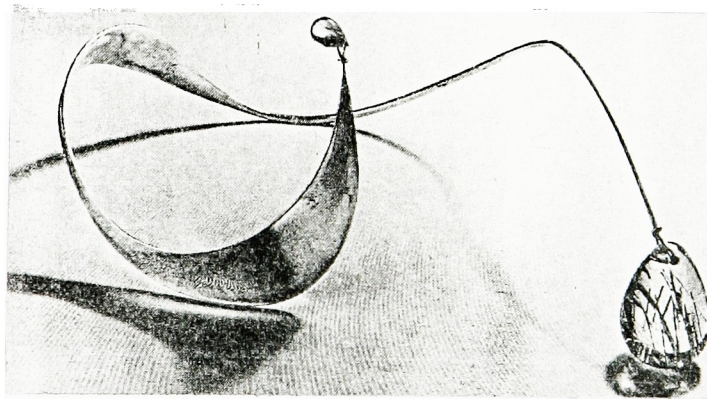


Fig. 32. Torun Bülow Hübe—
Neckpiece

CHAPTER III

In the two previous chapters I dealt with some aspects of the qualities of line and line as an element in jewelry design since time immemorial respectively. Thus one would realize that the use of line and linear forms in jewelry is not new. However, as I have stated earlier, my thesis is concerned with the exploration of line and its application in jewelry design. As in all fields of endeavour one needs a working vocabulary related to that particular area of activity to be able to express, communicate and exchange ideas with others. My exploration of line is to provide me with that needed working vocabulary to search for ideas, develop and transform some of these ideas that evolved into jewelry.

Secondly, this exploration will serve as a means to develop my appreciation of line for itself, rather than expecting it to be used to represent something with which I am already familiar such as an animal. Line, to me is a versatile design tool that lends itself well to the ideas I wish to express. And it is only by its exploration that will I discover, develop and express these idea effectively and to the best of my imagination.

Searching for and Developing Ideas

At the beginning of this project I set myself some problems to help me explore and become more aware of the characteristics of line. Some of the problems are: find examples of suggestions of line in nature, such as veins in a leaf, grain of wood and branches of a tree; look for examples in nature where exact repetition is evident, where variety does not lead to unity; look

for various types of lines in books and magazines illustrations asking myself questions in evaluating the illustration.

Questions such as: in what ways do the lines reflect the character of the illustration? In what ways do the lines fail to reflect the character of the illustration? In what ways has variety been expressed in the lines—thickness, thinness, length of lines, direction of lines, straight versus curved? Does this variety of lines lead to pleasing proportion, emphasis or rhythm?

I also collected examples of actual materials that have a linear quality—paper chips, string, yarn, match sticks and toothpicks. These projects helped me greatly to develop my sensitivity to line and stimulated my ability to observe. They also offered me excellent keys to creating pleasing organizations of lines.

With this acquired knowledge I got involved in some creative design experiments with line using various tools and materials. These experiments were a variety of ways to explore, discover ideas and apply these ideas in later development for execution into jewelry. Experiments such as making an assortment of kinds of lines—wavy, straight, curved, zig zag—with pencils, pens, cords and brushes. I worked with the tools in many ways—freehand, with a ruler or I used different amounts of pressure to produce different thickness of lines. For instance, in one experiment I varied pressures on a brush in different directions. I obtained some thick and thin continuous lines. Some of these I further developed to obtain the linear elements with the narrow part and broad end used in some of my works, see Figs. 33 and 34.

In another experiment I painted India ink over a piece of scratchboard. This provided a satisfactory surface on which I created lines freehand with

wood cutting tools. Lines, basically parallel, continuous, overlapping, curved, relatively straight and angular. I also scratched lines along a straight edge, crisscross, zig zag and series of parallel lines. I used this idea in decorating the surface of some of my works, see Figs. 35, 37, 40 and 41.

In another experiment I glued cords of various thicknesses and lengths in various arrangements on cardboards to achieve rhythm and tactile texture. The wavy tactile texture on the brass elements of Figs. 33 and 34 is the outcome of this experiment. Likewise, the rectangular ones on the brass element of Fig. 37 achieve a continuous related movement.

Another method I used in my line exploration was visual brainstorming. I wrote down words and sketched whatever I could think about that could be expressed with lines. In one example I concentrated on expressions of movement and emotion. I wrote down words associated with this idea. Some of the words mentioned are agitation, radiate, step by step, anxiety, diverse, restlessness, embrace, reach out, explosion, rapture, upsurge, entangle, graceful and retrospective. I then sketched the words with a variety of lines I thought would best express them. I tried combining a variety of lines, thick and thin, curve and straight, short and long and other combinations to determine what factors were involved in using these combinations harmoniously.

During this experimentation, I did not try to evaluate the sketches. Instead I freed my mind and let my thoughts and imagination flow onto my sketch book. At the same time I looked for instances that may suggest other possibilities. I found this method very rewarding as I discovered how many thoughts and insights I actually had about an idea. I also captured a

spontaneity which would be difficult to attain if all the exploratory work was done through making the jewelry itself.

With this store of ideas and appreciation of line I decided to apply this knowledge to some of my Ghanaian tradition designs with the American attitude of freedom of expression in art. The idea was to come out with a fresh form of jewelry not typically Ghanaian nor American. This fresh form of jewelry reflects some aspects of shapes derived from Ghanaian traditional designs. However, the design elements and composition had been approached so as to show variety, freer and sometimes more playful attitude typically of creative American jewelry. I used lines to distort, dissect, exaggerate and rearrange some of these designs. This stage of my development was both frustrating and exciting. The reason being that with each of the designs I strove for a new arrangement that was carefully planned but which gave a quality of casual freedom. Solutions were usually slow in taking place and however much I kept on pushing nothing seemed to come out satisfactory. Sometimes in such situations I stopped working for a moment—a few hours, a day or two—and come back later on with fresh thoughts to clear the problem. At times, I keep on designing and redesigning without being too critical. In this way I often achieve interesting results. This excites me and gave me the motivation to try lots of possibilities. I constantly looked and relooked to find different points of view or fresh design inspiration. After a time well spent in developing designs, I decided to make selections. This was based on a choice from many possibilities, not just one or two. These selected designs were evaluated, further developed and executed into jewelry.

Evaluation and Execution of Designs

After selecting the best sketch designs, I decided to transform them into brooches, with the exception of one design. This I decided to transform into a set of brooch and pair of earrings, see Figs. 40 and 41. The idea was to present myself a challenge to see how well I could transform that design into another form of jewelry other than a brooch.

From this point I analyzed the selected designs and choose the ones that appeared to be the best for me to make. The criteria I used to make the selections to mention but a few were: availability of materials and processes to be used to construct the pieces; technical know-how; originality of the designs; aesthetic aspect; and unusual sizes.

I included unusual sizes with the idea of forcing me into a different approach. I usually worked in small sizes. So by varying the sizes this forced me to look for new design solutions. For instance, I had a problem with two of the unusual sizes I selected due to their length, see Figs. 38 and 39.

The problem was maintaining the long linear element and not getting it broken, distorted or the wearer feeling uncomfortable when in motion. With Fig. 38 I solved this problem by bending the long linear element to be more horizontal than vertical as in Fig. 39. In the case of Fig. 39, I spent some time with my chief advisor, Mark Stanitz to figure out a solution. We came up with several solutions and finally decided to make it articulated. This was achieved by separating the piece into two parts and joining them by a hinge loosely. This way the long linear element moved back and forth freely with the movement of the wearer.

Concerning the aesthetic aspects such as surface decoration and structural design, I have to apply the principles of design as guide lines to achieve a sense of pleasing proportion, balance, rhythm and emphasis. I have to apply the principles of design as guidelines. This helped me in some cases to determine how well the various design elements were organized into a pleasing whole. I had to find answers to questions such as: are the lines pleasing to the eyes; what effects do the various lines have on each as a whole; will color harmonize with the setting in which it will be placed; how well the various textures related to each other; what effect did the various shapes have on the textures and vice versa?

For instance, about five of the pieces I constructed, see Figs. 34, 35, 36, 37 and 39, I used silver wires of various lengths and thicknesses. These were arranged to create unusual detail as the centre of interest. This harmonized with the other design elements into a pleasing whole. In getting these wires arranged, I first drilled holes through the parts to be connected. I then passed the wires through the holes to connect the parts. I reinforced the pieces by soldering the wires at places they passed through the holes.

In another instance, I introduced color by including brass elements in some of my pieces. The color contrast of the brass and silver posed some problem. I had to find a solution with the setting in which the brass element will be placed to achieve a sense of harmony. To achieve this, I soldered silver wires, or shapes on some of the brass forms. In three of the pieces, I placed the brass forms between the silver elements. This worked well to achieve the sense of harmony I was looking for, see Figs. 33-35. However, with another piece I placed the silver elements between two colored brass forms, see Fig. 36. I was not pleased with this arrangement. Because the

colored brass forms tended to lead the eye away from the centre of interest, I corrected this tendency by creating a few lines on each of the brass forms by sand blasting. Though this added some accent to the brass forms, it helped to bring the eye back and forth as one tends to relate the lines to that of the central lines. Looking at the pieces one tends to experience a feeling of gracefulness, anxiety retrospective, easy movement, daintiness and boldness expressed by the arrangements, variety and characteristics of the lines.

Most of the silver linear elements I used were formed by forging, filing and pre-polished before assembling. The fingerlike brass and silver forms were hollow and were formed by sinking in wood. Like the linear elements, they were pre-polished. The pre-polishing makes it easier to get a good final finish on the hard to get areas of the assembled pieces. All the works were assembled by soldering. Getting these pieces done successfully has been a great pleasure for me, especially the range of variations. Despite the variety, all the pieces are unified by a tendency to interact direct with line.

This makes me feel I have acquired an increased understanding of line and applied it effectively in jewelry design.

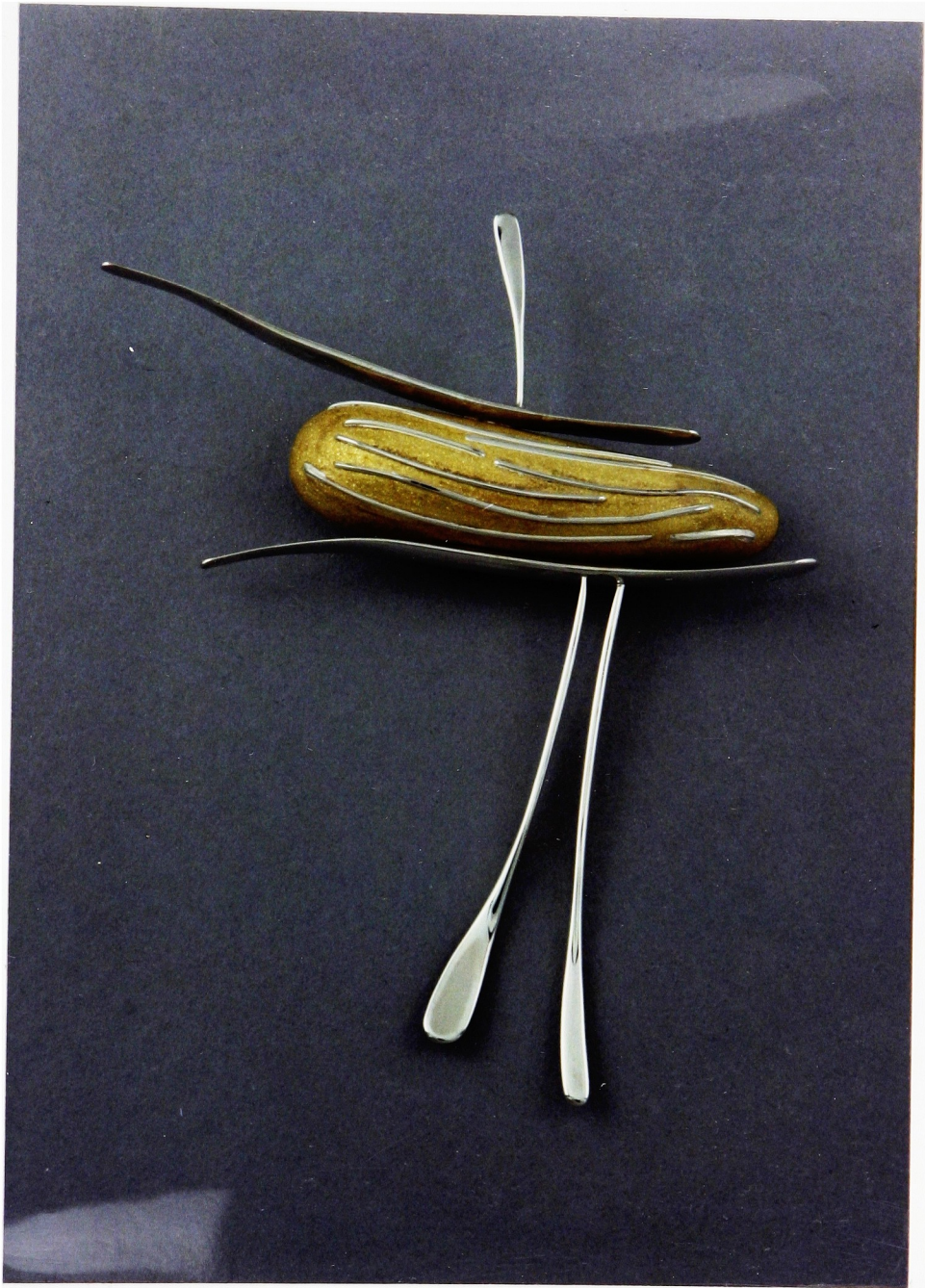


Fig. 33. Thesis Series 1 – Brooch

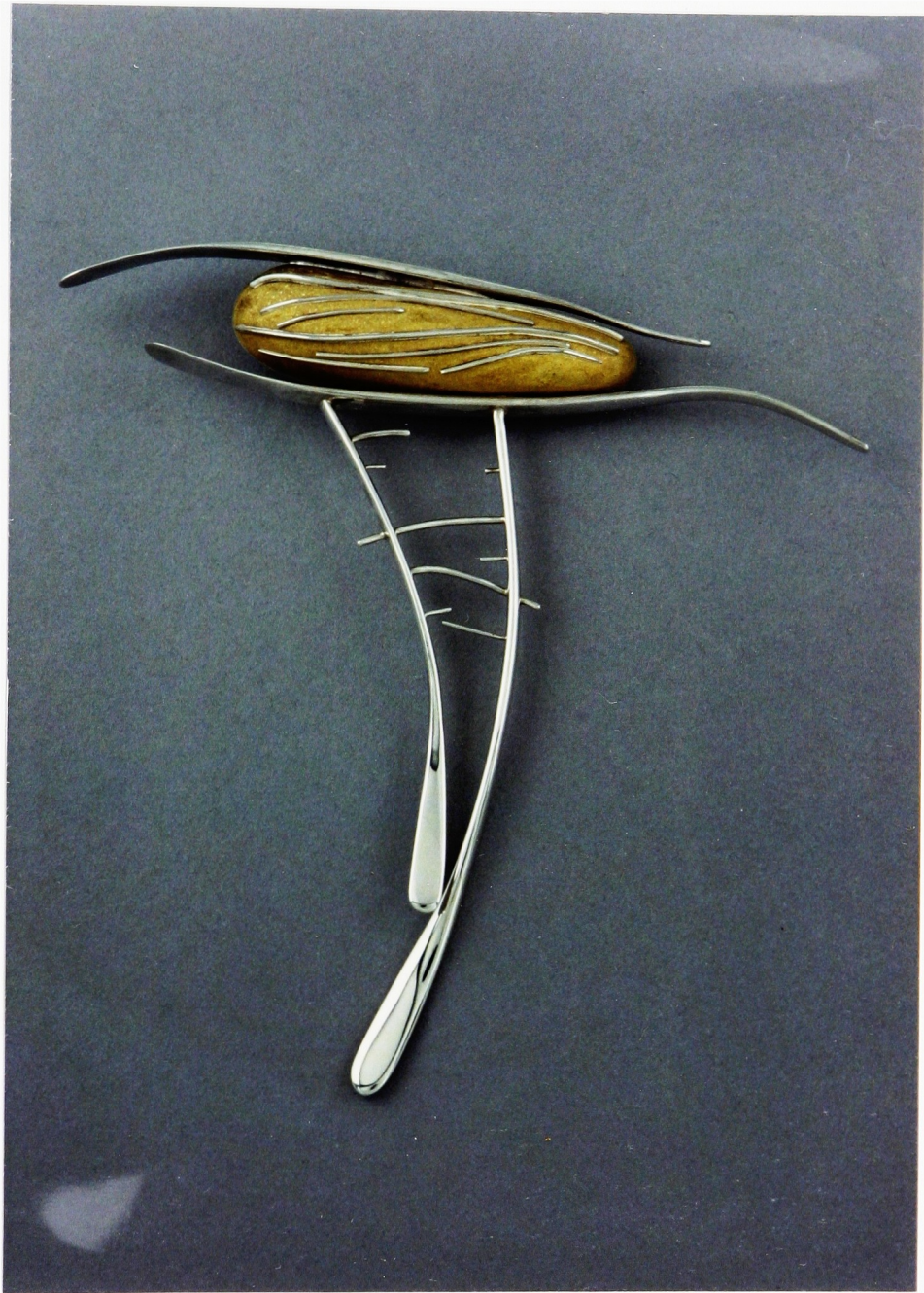


Fig. 34. Thesis Series 2 – Brooch

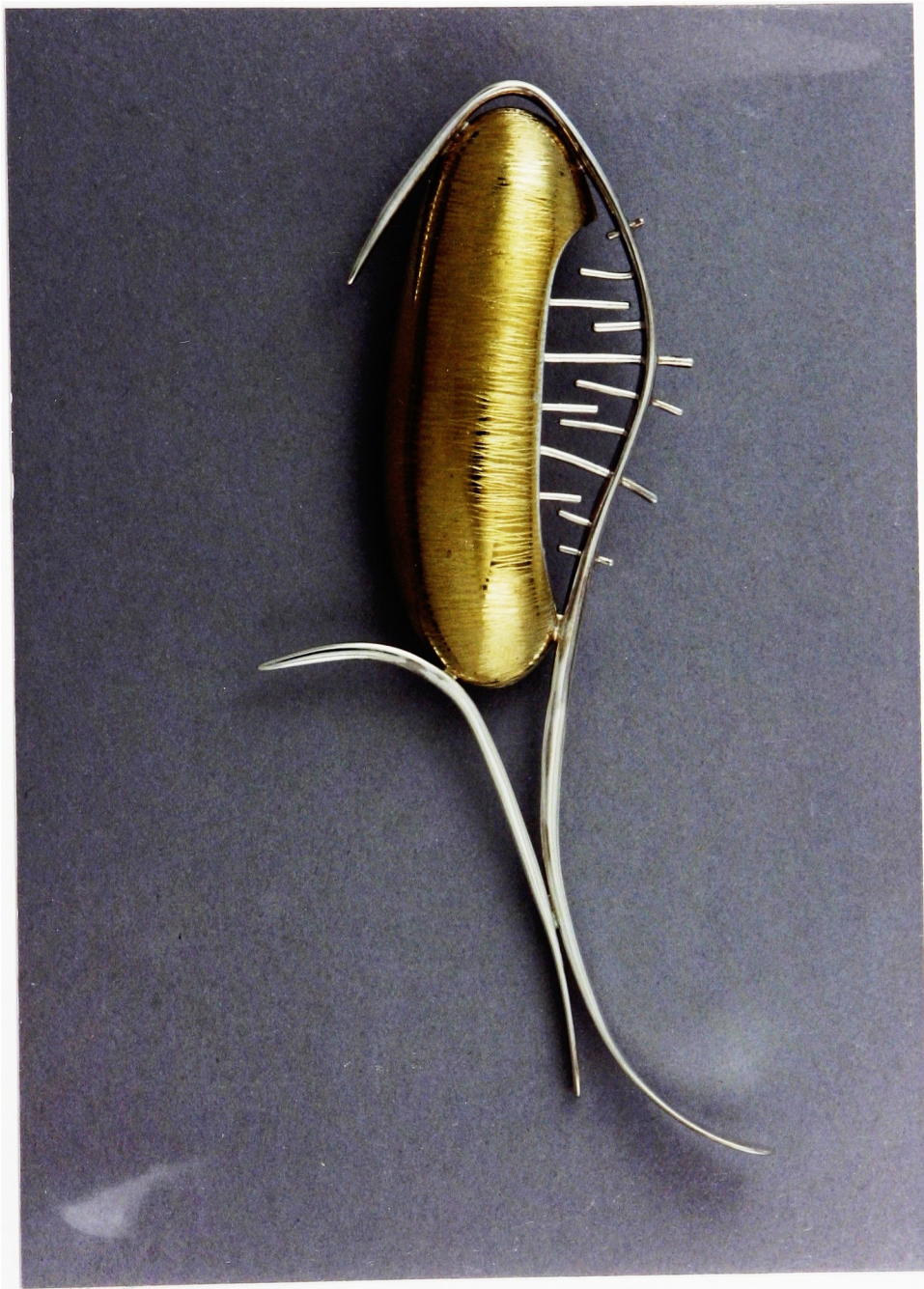


Fig. 35. Thesis Series 3 – Brooch

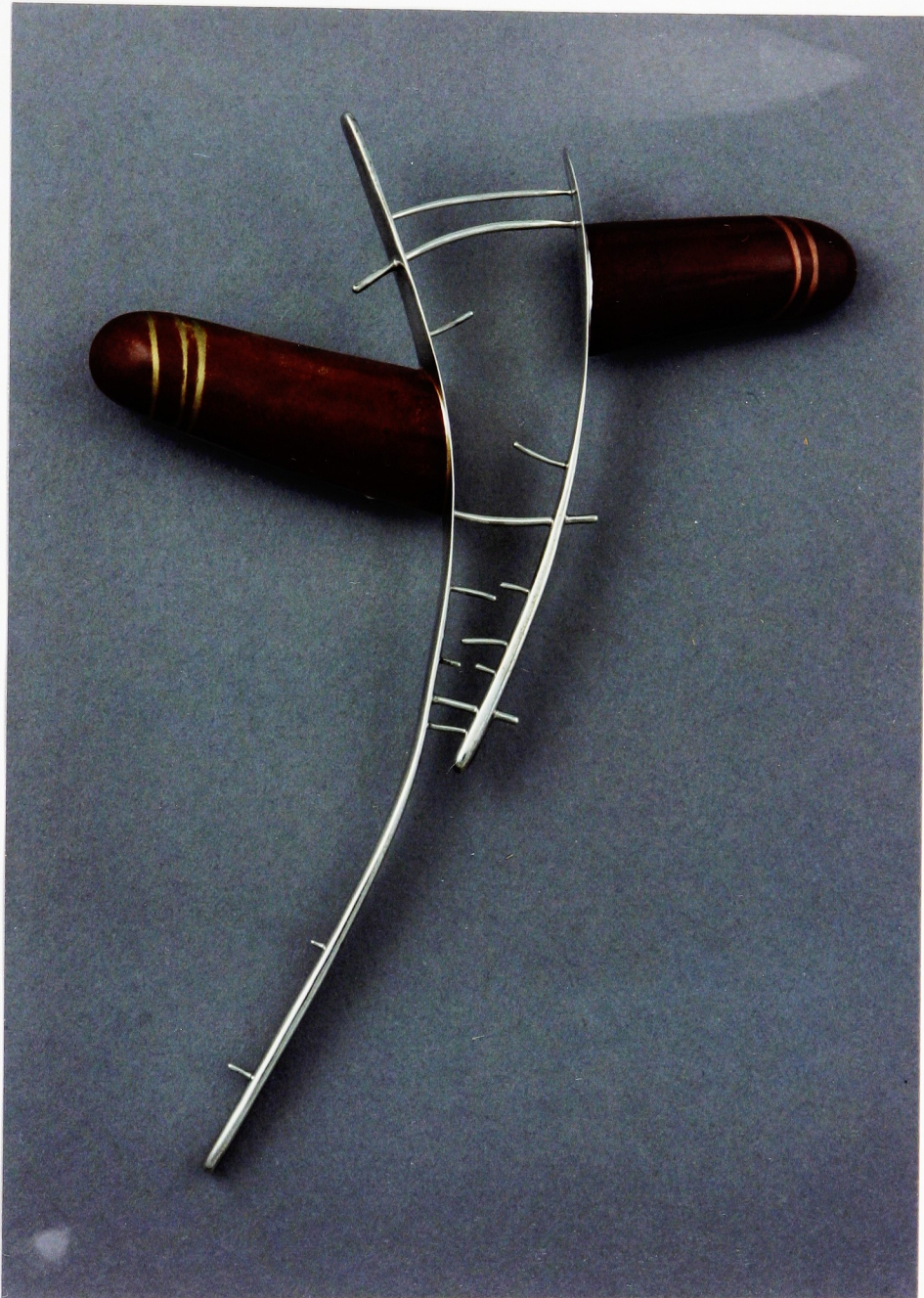


Fig. 36. Thesis Series 4 – Brooch

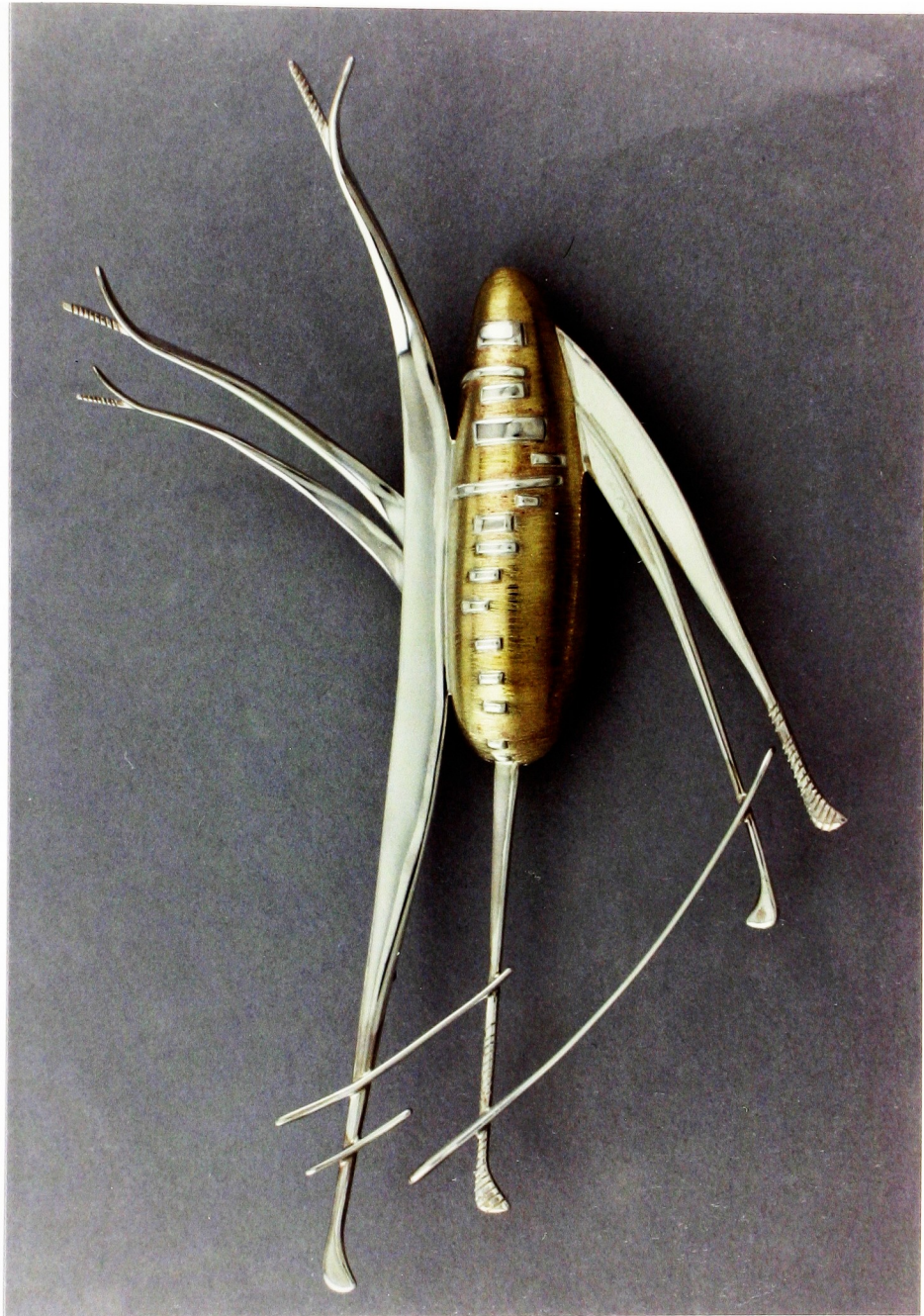


Fig. 37. Thesis Series 5 – Brooch

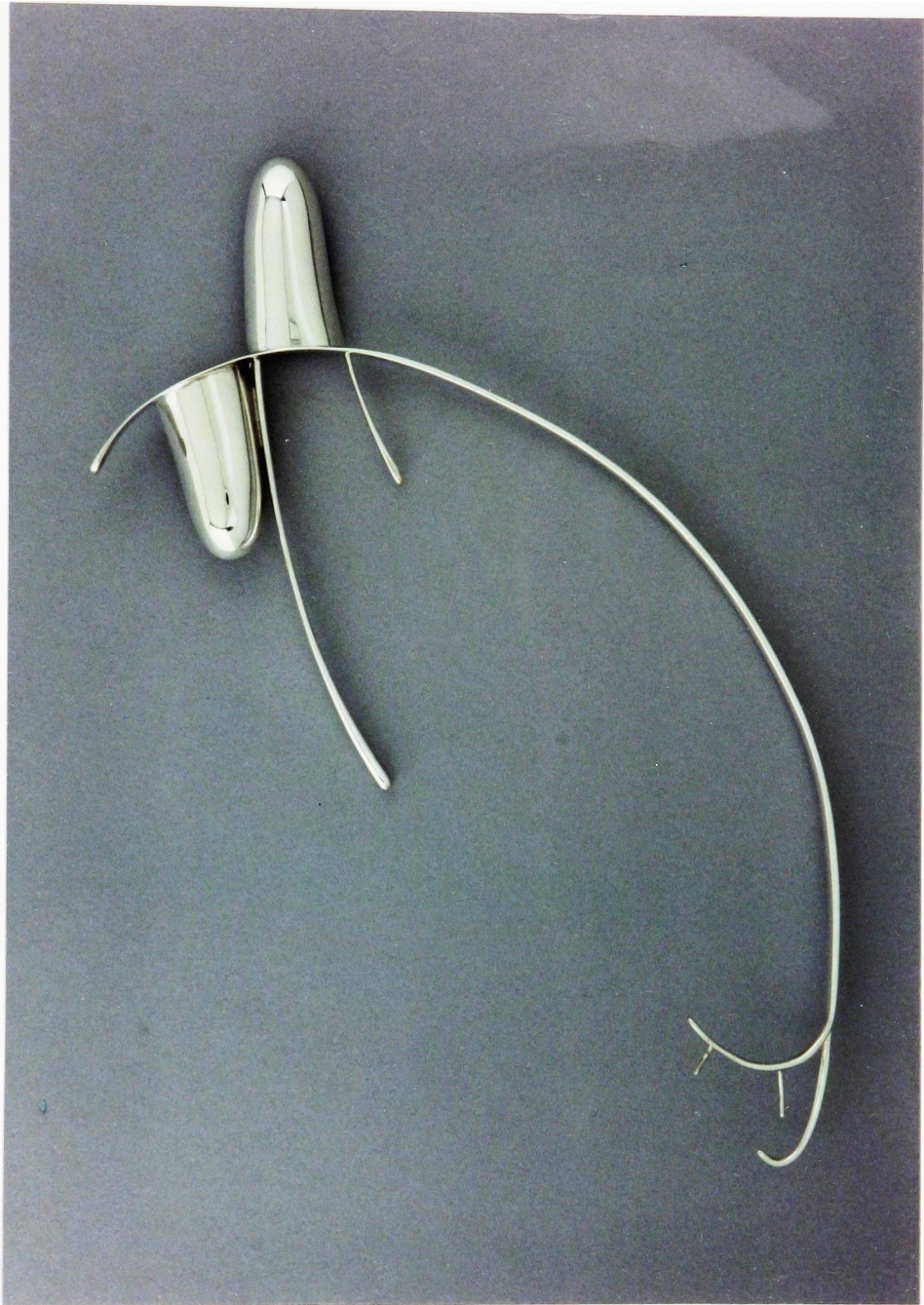


Fig. 38. Thesis Series 6 – Brooch

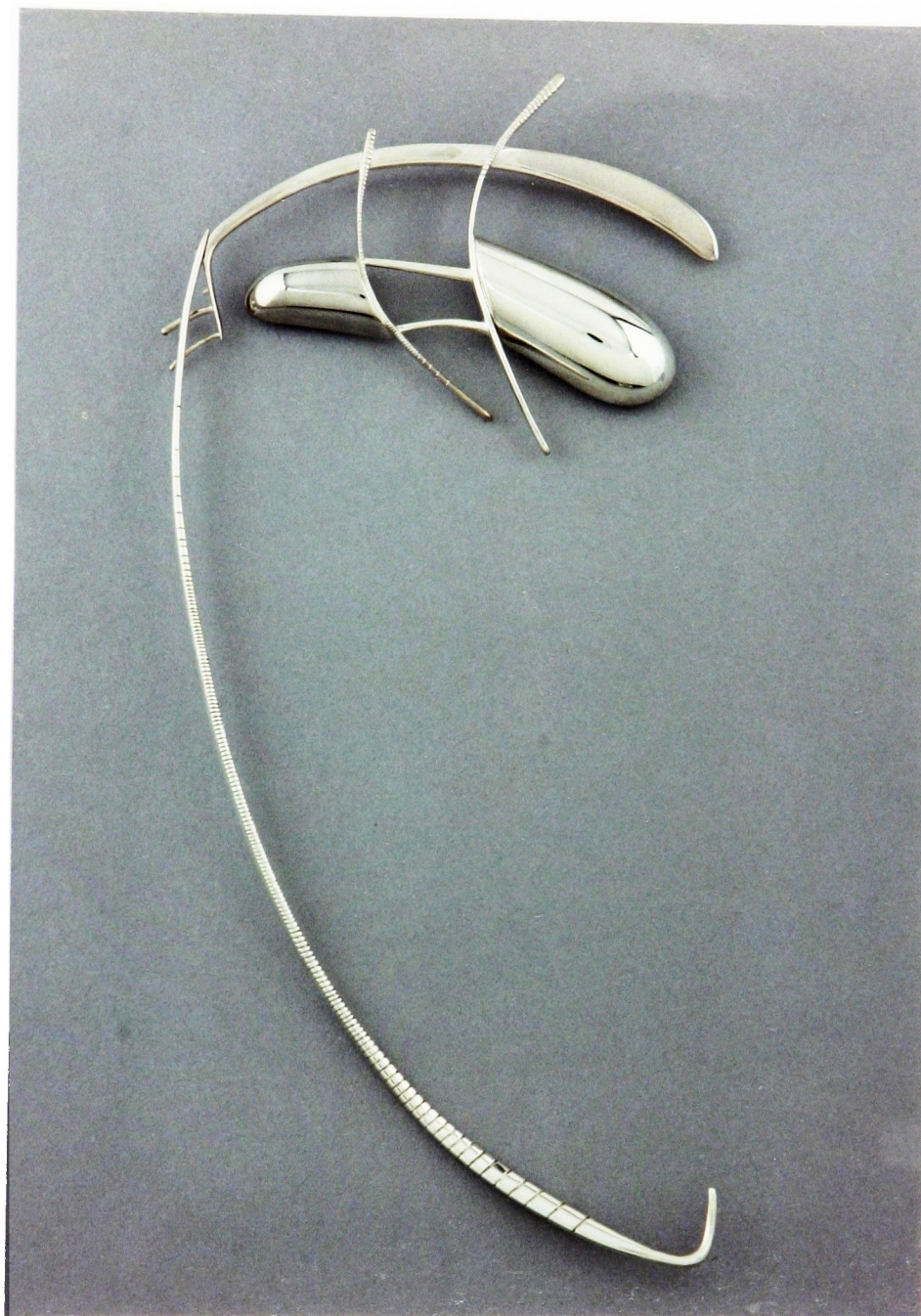


Fig. 39. Thesis Series 7 – Brooch

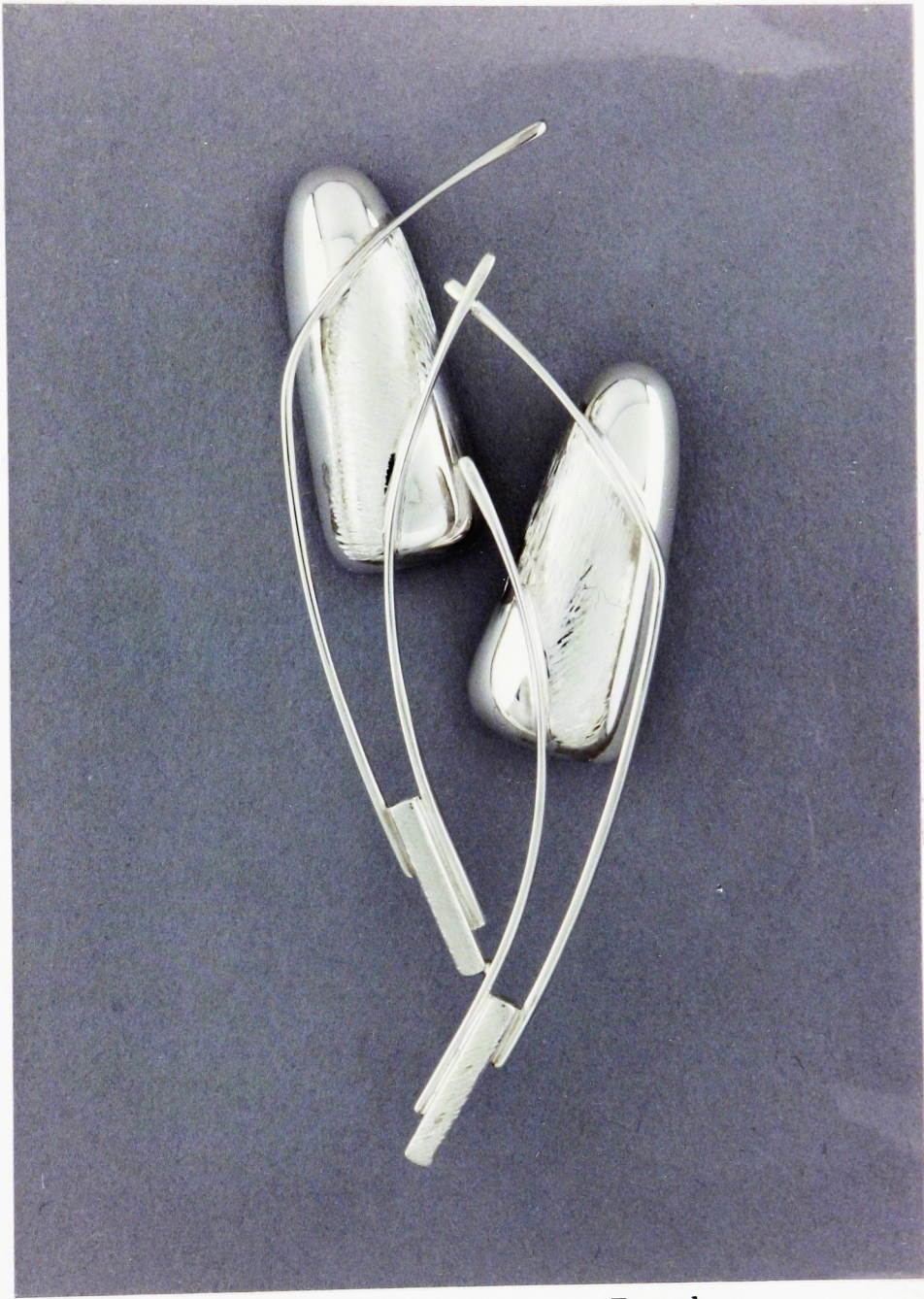


Fig. 40. Thesis Series 8 – Brooch

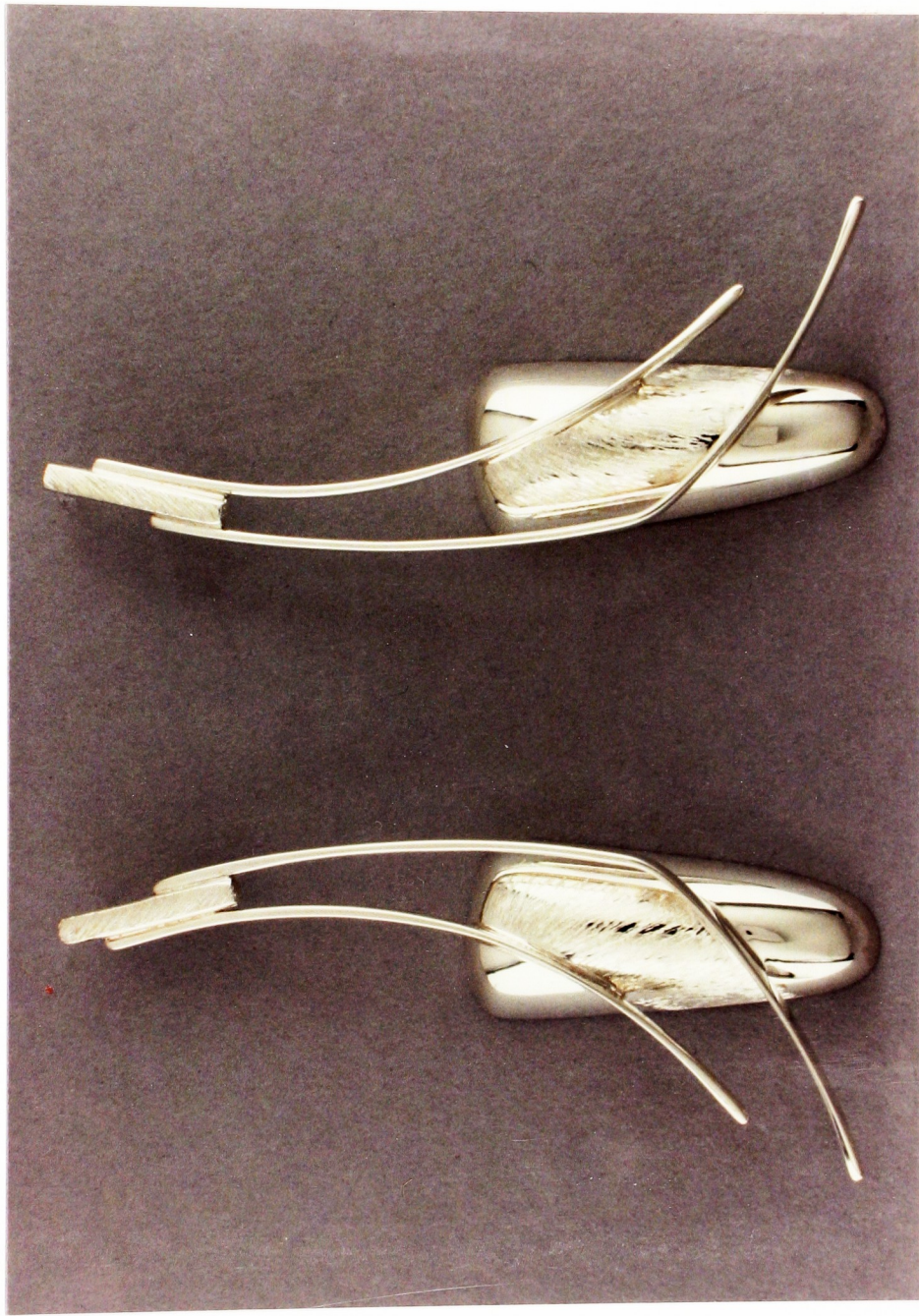


Fig. 41. Thesis Series 9 – Earrings

CONCLUSION

Using line as a research tool in jewelry design has been very exciting, inspirational and insightful. This is due to the versatility of line. Separating line from other design elements and exploring it has enabled me to acquire a profound appreciation of line. It also stimulated my awareness of the application of line in searching and discovering never-ending ideas in jewelry design. This project has been very rewarding in that it helped me greatly in discovering how many thoughts and insights I actually had about an idea. Moreover, it provided me a way of seeking new heights and accepting new challenges.

Completing each experiment really helped to build my confidence and go on to face other challenges. This opened doors to many design ideas I would never have dreamed of in any other way. If I had not faced those challenges I would have become complacent in my research and missed opportunities to grow, develop and to reach out toward excellence. My observation, design ability and sensitivity to line has been greatly sharpened because I am looking for new design inspiration and unusual design problems.

My growing awareness of the application of line in jewelry design carried me through my thesis very satisfactorily. It enabled me to create new design ideas by applying the attitude of the American freedom of expression in art to some of my Ghanaian traditional designs. Carrying out experiments on this idea greatly raised my artistic level in jewelry which had been

dominated for years by traditional attitudes and designs. Attitudes such as the craftsman have preconceived ideas and designs, and usually view his works within a narrow conception. Thus, produces works which tend to be duplication of established ideas and designs. Moreover, in Ghana there is a deep love for ideas, techniques, beliefs and practices which had been passed on from one generation to another. The craftsman thus has little or no option but accept and produce what are assented to by most Ghanaians.

In this situation, the craftsman used designs which are symbolic and liked by most Ghandians. These designs denote, among other things the omnipotence of God, unity, love, interdependence, wisdom and bravery. Growing up and trained in this environment influenced my thinking from doing something different or daring, because in a way I am committed to the same attitudes and designs.

However, by shaking off inhibitions and restrictions engendered by traditional attitudes I began to approach creative jewelry boldly. This was influenced by the new environment I am experiencing in America—freedom of self expression, motivation to accept challenges to expand one's artistic horizons and open mindedness. I learned to be more experimental, spontaneous and accepted challenges in my search for fresh, creative and distinctive qualities in my jewelry design. Blending these two cultural influences in my designs through the exploration of line is the visual results of my work. The outcome of this approach is definitely a point of departure for me, which is beginning to unfold. This I hope to continue in the coming years for further progress and accomplishment.

Finally, is a great deal of fun taking the project from beginning to an end. It has been a grand adventure which turned out to be very satisfying

and enlightening. However, it takes a lot of hard work and frustration to bring it to a success.

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